User Guide

Infosuite User Guide

Infosuite 5.7.2021.1 User Guide

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Version Approval

Version	Name	Title / Organisation	Approval Record

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Contents

What is Infosuite?

Infosuite is the latest version of the Panintelligence software. Infosuite is a web application which delivers the power of data visualisation through a web interface. This allows for an optimal user experience across all platforms: desktop, tablet and mobile.

Infosuite allows all business users access to a truly self-service world of intelligent reporting, allowing you to monitor, alert and act on business-critical information. Reports often tell us what we already know; when business users steeped in domain knowledge use Infosuite they can get to the bottom of what they don't already know.

Infosuite also offers powerful Analytical processes which allow users to find patterns and trends that would otherwise remain hidden. The I.T. department should not drive the data available to the business, it is you who should have control.

Connecting to Infosuite

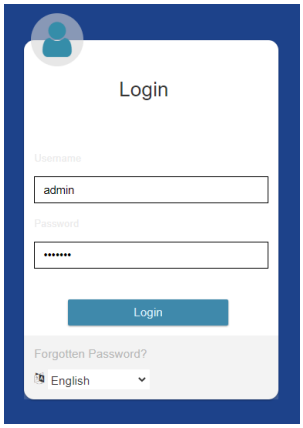
You connect to Infosuite via a web browser.

If you've installed on your local machine with the default settings (or you are actually on the server), then you can connect using: http://localhost:8224/Infosuite

Depending upon how the dashboard has been configured, you may have a different URL to connect to.

If you are connecting to a deployed dashboard, you will need to ask for the URL from your administrator.

You can bookmark or favourite the page as you would any website. Once successful, you will be presented with the login screen.

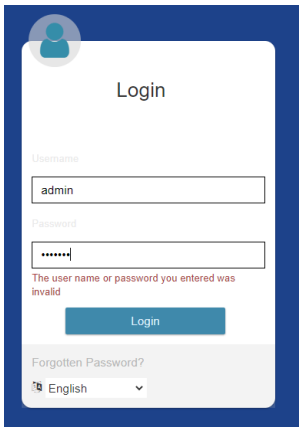


NB: The Infosuite Dashboard can be configured to accept an external login, in which case you will not be presented with this login screen. At the login screen, you will need to enter the username and password supplied by your administrator. Enter your credentials and hit the 'Login' button in the bottom right-hand corner.

Invalid username or password.

If you enter either a username or password combination that is invalid, then you will receive the message shown below.

You will need to re-enter your username and password and retry. **NB**: The username is not case sensitive, but the password is.

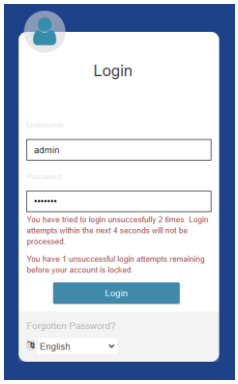


Tarpit

To prevent forced entry attacks your username will enter the tarpit if you get your password wrong multiple times.

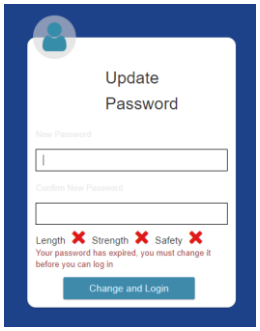
This results in exponentially longer wait times between retries. It will also tell you how long you must wait before retrying.

The required waiting time gets longer and longer. If you get into difficulty, your administrator will need to re-save your user account to clear the tarpit.

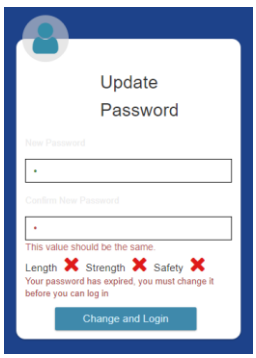


Password Expired / Update your password

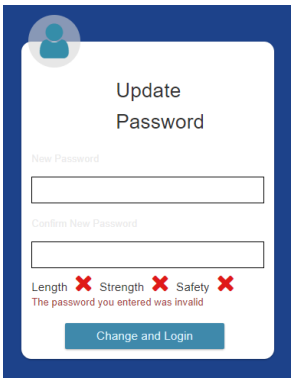
You may see the message shown below from time to time, and you'll probably get it when you first login. It means that your username and password is correct, but that your password has expired and you now need to provide a new one. Type the new password, and confirm it, in the second box. Then click 'Change and Login'.



The values must match and they are case sensitive. If you see this message, then re-type and try again.



Finally, when providing your new password, you could potentially see the following message



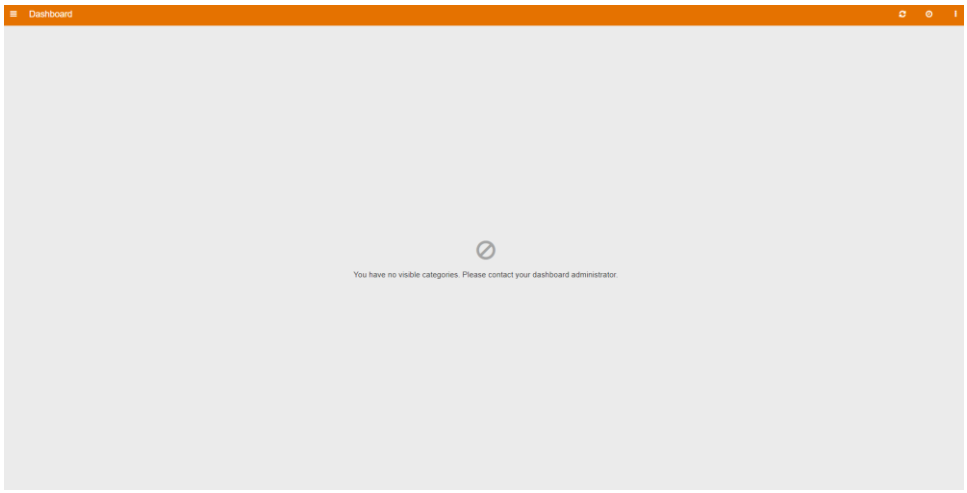
This is because your password is not complex enough. Your administrator can put minimum requirements for passwords into the system. Try using a phrase – a mixture of case, characters, and numbers, i.e.

Turn a phrase like 'I Love Data' into IL0v3D@t@

Logged in

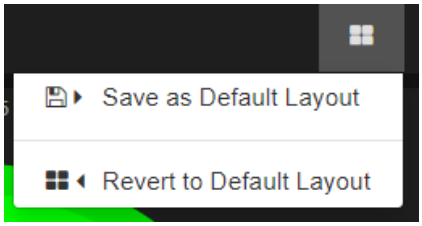
Once you have logged in, you should be presented with the default dashboard, which (on a brand-new installation) is just a series of simple charts over the Dashboard itself.

If you see a blank screen after login or you see the following error message, your administrator has not allocated any categories (dashboard pages) to you.



You will only have access to the categories granted to you by the administrator.

If you have been assigned categories but still can't see anything then the most common reason is that a default layout hasn't been saved. To rectify this Chart Developers should always remember to save the default once they've finished configuring a category:

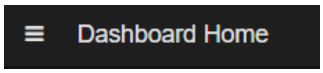


Categories

Categories in Infosuite are pages within the application which can be configured to hold charts (or data tables etc.). Categories are also used to control how much information users can see.

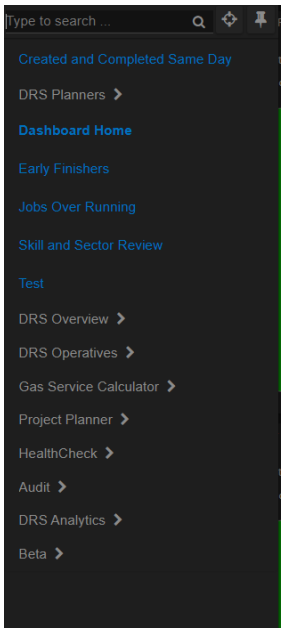
Panintelligence has been designed to work across all platforms with consideration given to touch devices, and the controls have been designed to be more familiar on those devices. The icons used are similar to those found in other software to make it easy to navigate.

Panintelligence shows one category (page) at a time. To access the list of Categories, click on the ('Burger') icon at the top left of the screen, highlighted below in red.



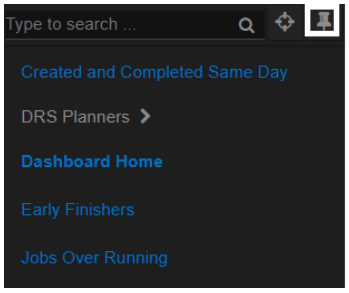
The category list will then slide in from the left side of the screen in a tree structure, with sub-categories available underneath.

These can be opened and closed by clicking on the arrow beside each group. In the example below, DRS Planners is the group heading for several additional categories and subcategories.



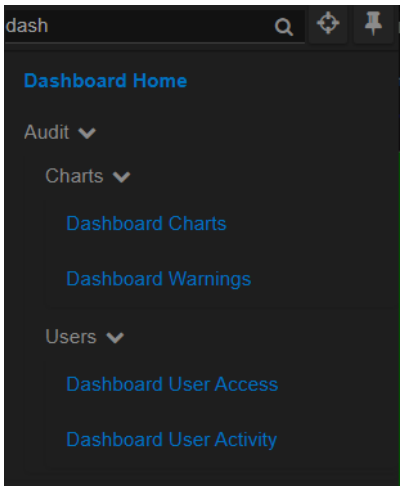
Clicking the heading 'DRS Planners' will display the child categories beneath it. Once you have selected a category the list will disappear from the screen again, maximising the amount of space available to view charts.

If you want to permanently see the category list, you can pin the category slider with the pin icon as shown below.



There is also a text box with a Search function. If you start to type in the name of a category it will display all those categories containing that string of text, even if they are a nested category. There is no need to use any wildcard symbols in your search.

In the example shown below, by typing ‘dash’ in the search box, the Infosuite interface will show all possible matches and their location within the category tree structure.



In the example provided, the filter is showing ‘Insuran**ce’** and ’Dashboard User Ac**ce**ss’ because they both contain the string ‘dash’.

NB: The parent and child items are also shown in the list to aid navigation and add context.

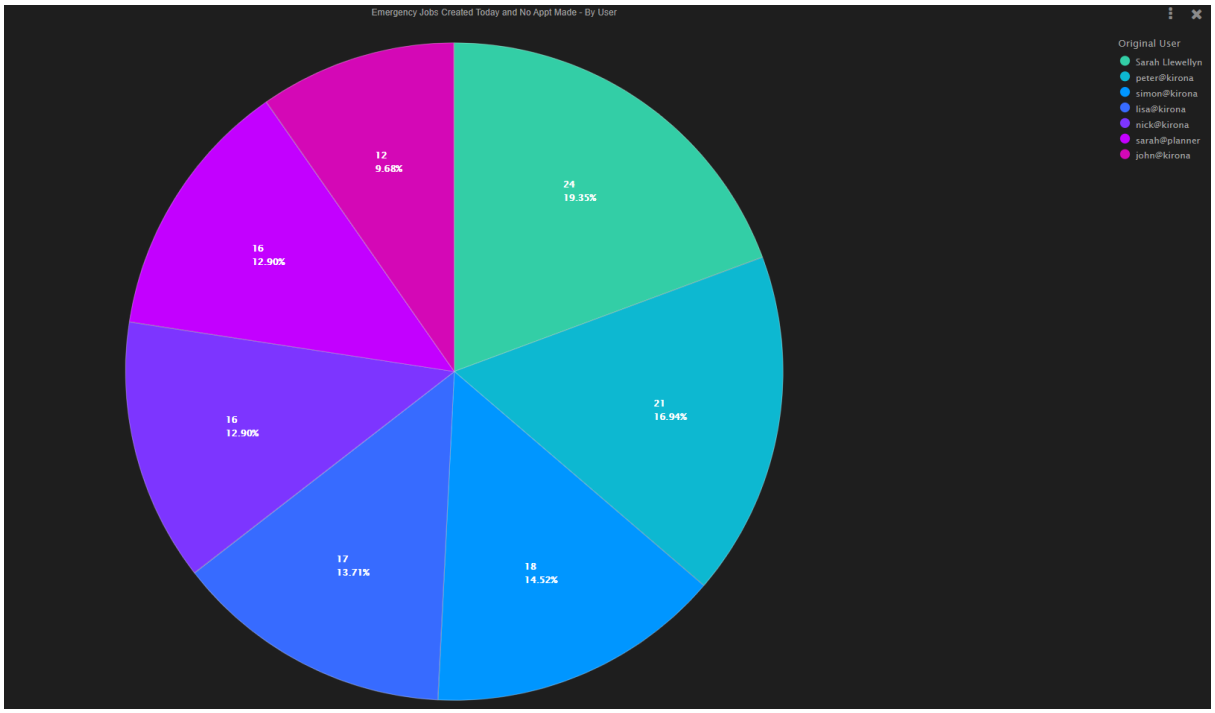
Clearing the search box will then show the entire list of available categories again. To close the Category menu, either select a category or click anywhere on the Dashboard page itself.

Session Filters

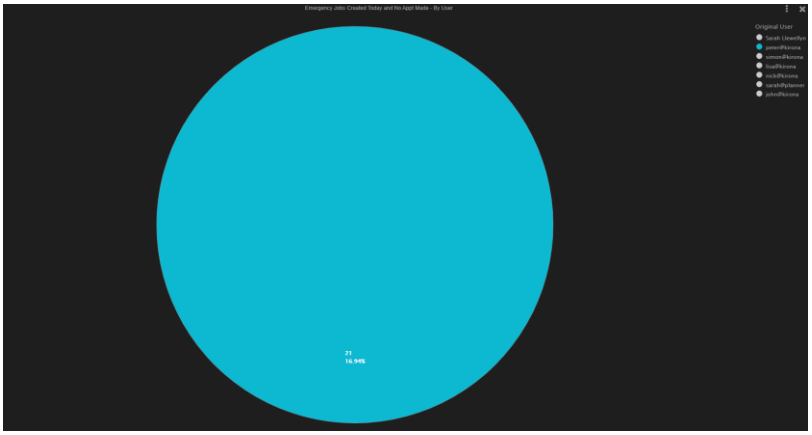
The Infosuite interface includes several session filters. These filters are temporary and only apply to the current user session.

Legend filter

In the category below, if we select the pie chart and show it on full screen, clicking on individual items in the Legend will rebuild the chart, filtering to only show items that correspond to that value.

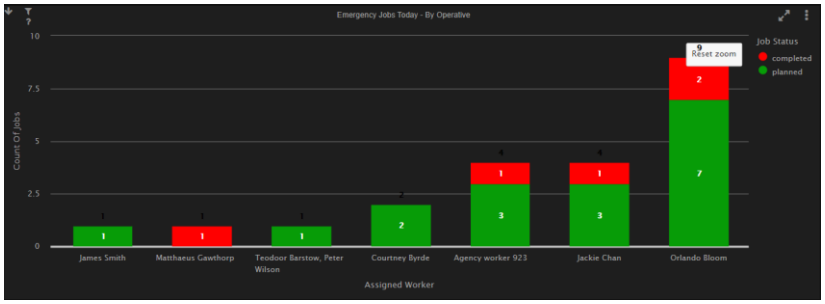


In the pie chart above, if you click on **peter@kirona** in the legend, the chart will then look like the one below. You can see in the Legend item, at the top right of the pie chart in the following screenshot, that **Completed** is greyed out to indicate that it is not currently selected.



Drag Out Filters

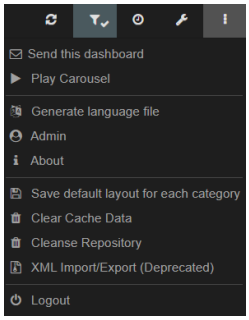
On a line, bar, or area chart, you can adjust the chart to focus on a particular area by dragging a box over a section of a chart. This will highlight the section in blue, as shown below, and this zooms the chart in to focus on the selected area. The result will then look like the example below



To clear the drag out filter, simply click on the Reset Zoom button, highlighted below in red.

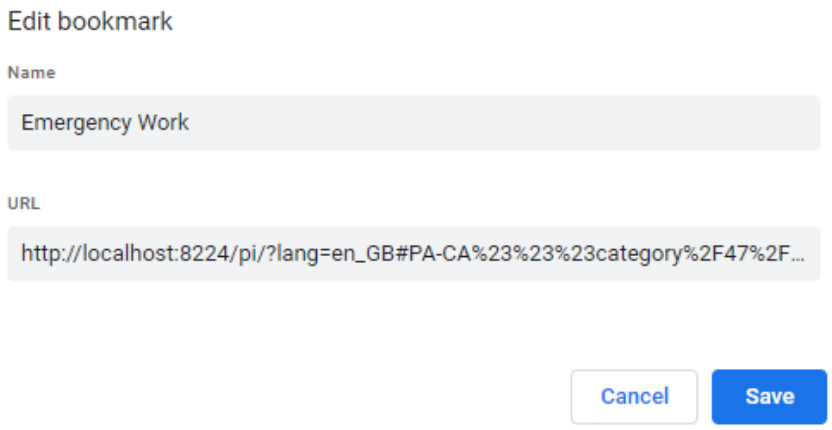
Send Dashboard

By accessing the dashboard controls in the top right of the screen, you can send out the link to a filtered dashboard. The button at the top right of the screen, shown here,  has several different options, the top one is **Send this dashboard.**



Bookmark/Favourites

It is also possible to Bookmark or favourite a category with filters applied in your web browser. Like any other URL, it allows you to immediately revisit this set of filters without having to reapply each filter again. This allows you to create several tailored filters for each category, e.g. for your team or department, last week's or last month's data, or a certain product across a specific period.



Dashboard Controls

There are buttons in the top right of the screen; these allow further control of the dashboard.

Working from Left to Right

 Publish Layout: See the Chapter on Layouts

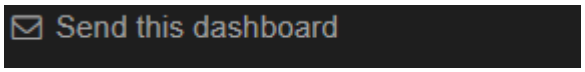
 Refresh Category: Refreshes all elements on the page

 Dashboard Configuration: Opens the Admin Panel, see administration chapters

 More Options: Opens Dashboard Tools

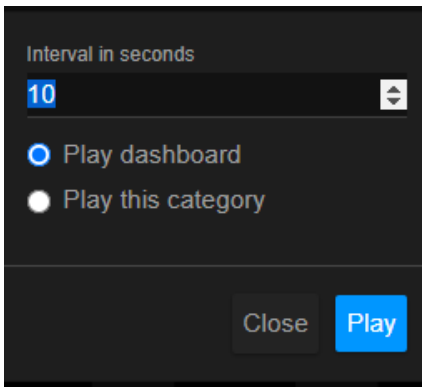
Send Dashboard

As mentioned previously, we can send this dashboard. This sends a URL, which allows someone (providing they have access) to directly access the filtered category we are viewing.



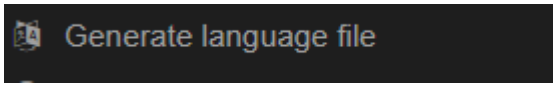
Play Carousel

This will cycle the interface through the different categories, and you can set the interval between cycles. This is used when the dashboard is viewed on a TV or large monitor to provide a communal view.



You can decide on the interval (how often the dashboard refreshes) and to either. Play dashboard (Cycle through all categories available to this user) or Play this category (Refresh only the visible category).

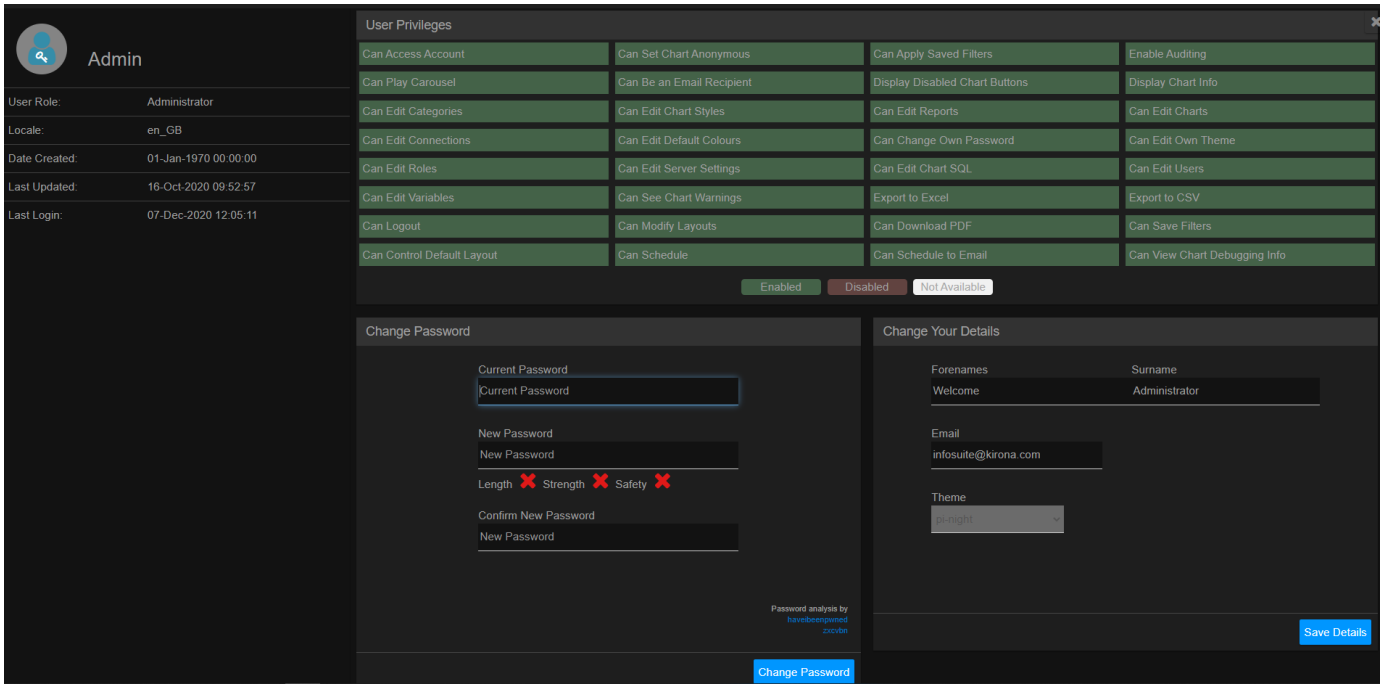
Multilingual



Use and edit localisation, which refers to the ability to provide multi-lingual support for the application.

Who is logged in?

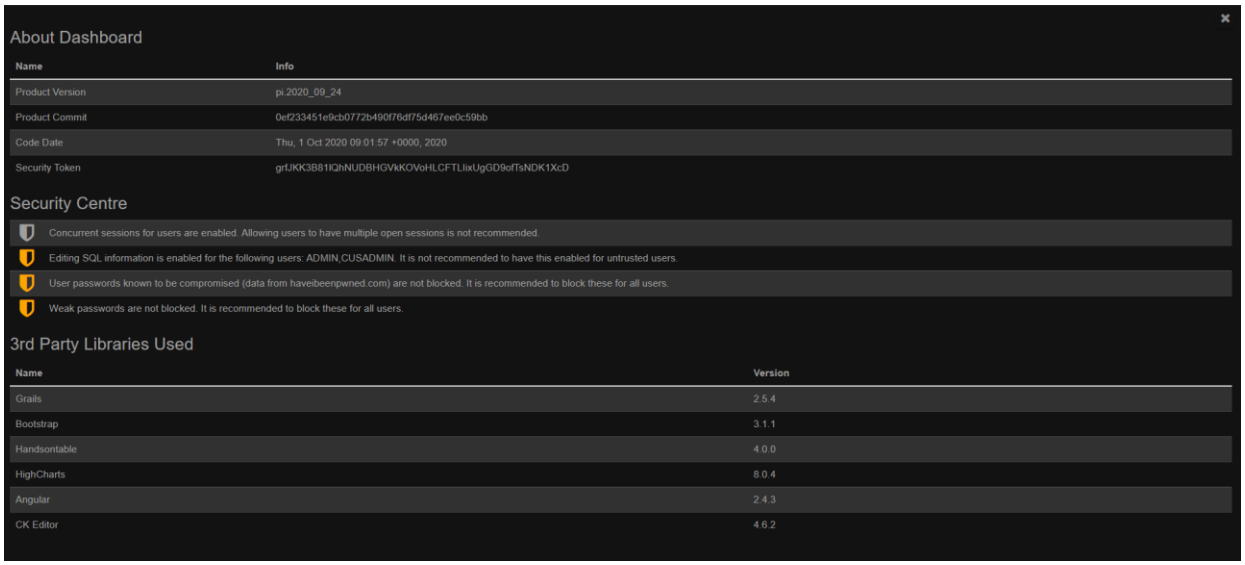
Here, we can see who we are logged into the dashboard as. In this example, we are logged in as Admin. Clicking on this name will provide information about your account's privileges.



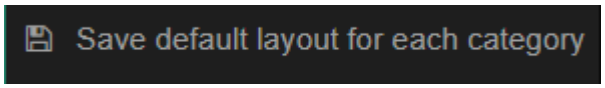
Here we can see our role and the last time we logged in. Under user privileges, we can see what we do and don't have access to. We can also change our password from this screen, and change some of our user account details such as the Theme and our Email address.

About

Clicking on this item will open a screen which tells you what version is currently installed.

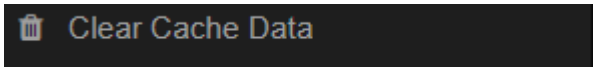


Save default layout for each category



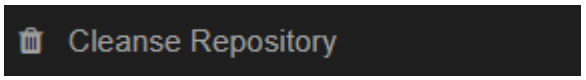
This is typically used when the user has been doing a lot of configuration work in multiple categories and wishes to ensure that their 'view' of all the categories is saved as the Default Category for other others, it saves having to go into each category individually.

Clear Cache Data



Clear Cache Data will clear the dashboard cache.

Cleanse Repository



Cleanse Repository will clear any redundancies in data. NOTE! This should only be used under supervision of support.

Logout

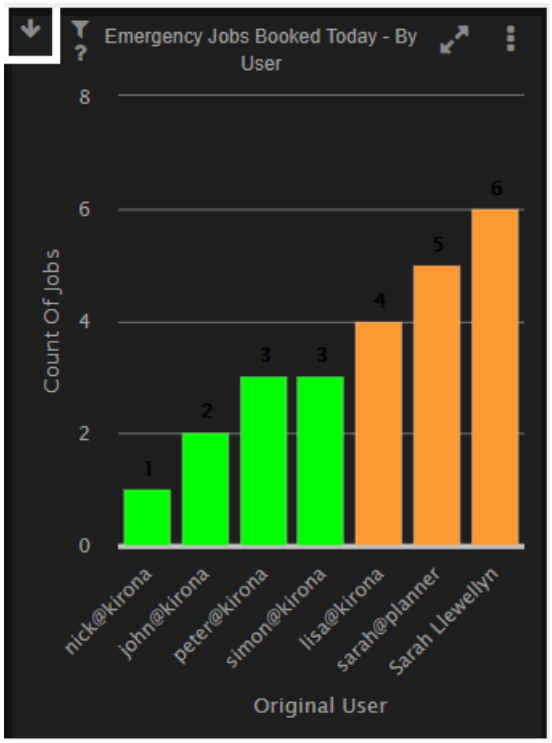
Logout will log you out of the Infosuite interface.

Chart Controls

Notifications

Drill Path Notification

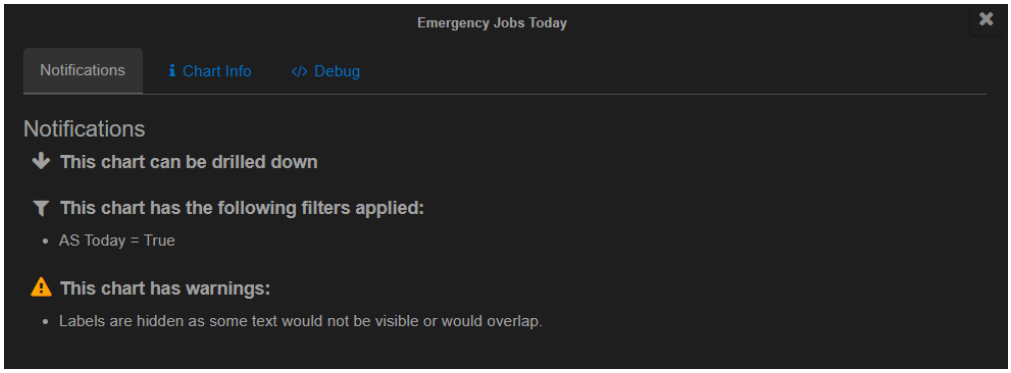
In Infosuite, you can immediately see if a chart has a drill path, as shown in the Notifications section (in the top left of a chart cell) because it will have a down arrow.



Alert Notification

The Notification button at the top left of a chart cell can also indicate other information. If there is an orange warning triangle, as shown, this indicates a few possibilities. Clicking on the alert button will open the following window and provide more information on what the warning(s) relate to.

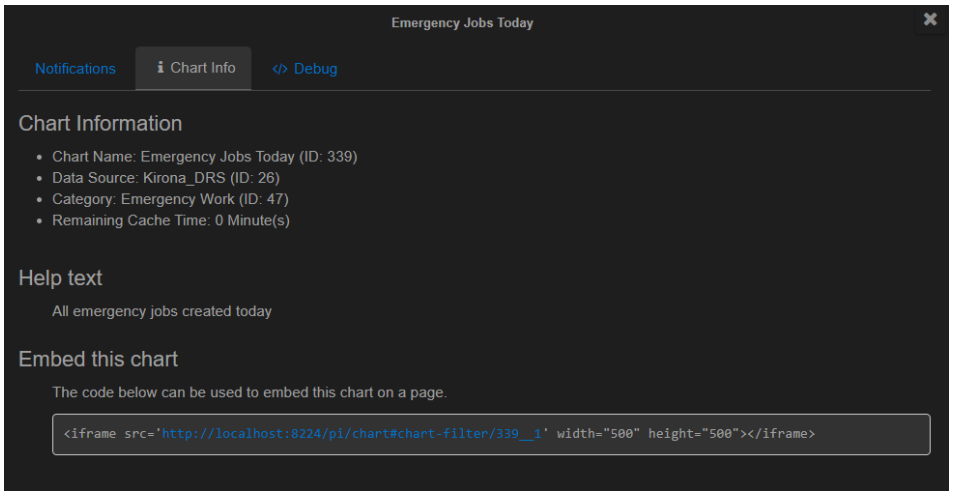
The Notification button has three tabs. The first – Notifications – indicates that the down arrow is telling you the chart has a drill path.



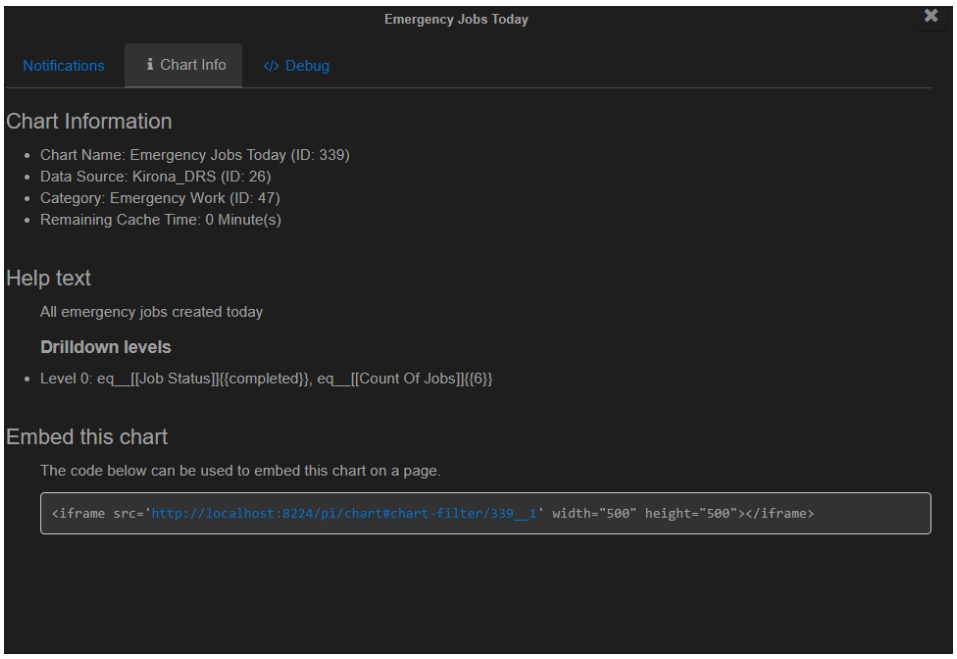
The orange triangle is a warning to show that, on this chart, Labels are hidden. This means that some charts do not have enough room to display the Labels as the text would overlap. Making the charts larger (for example viewing in full screen mode) will often enable all the Labels to show, in which case this particular notification would no longer be displayed.

Chart Information

Chart Info tab – This tab, as shown below, provides more information about the chart, such as the data source/ category, any help text entered and the URL to embed this chart into your other applications.



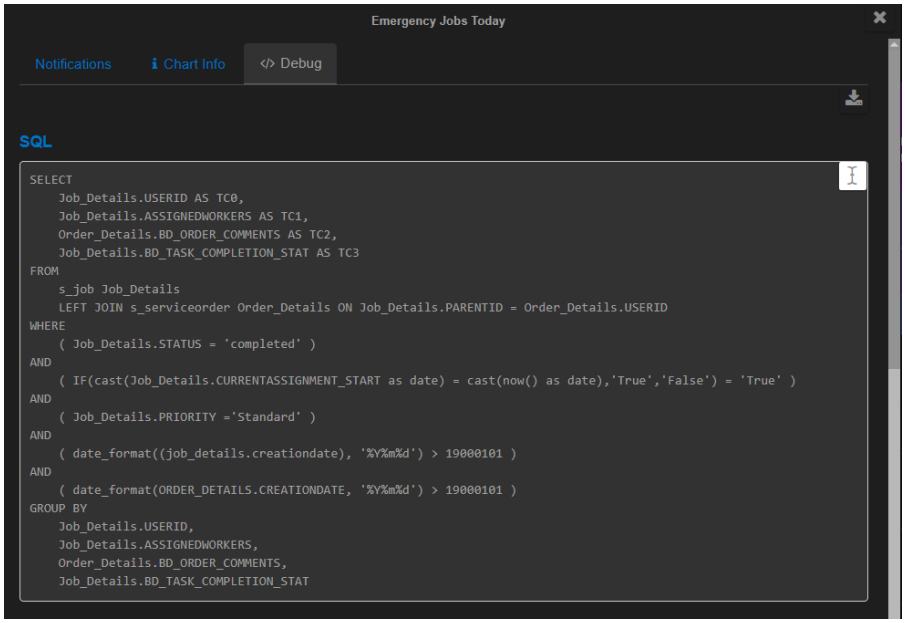
The Chart Info tab will also provide you with additional information when you drill into a chart. Below you can see that it shows which drill level the chart is currently on and what items have been drilled down on in the prior levels.



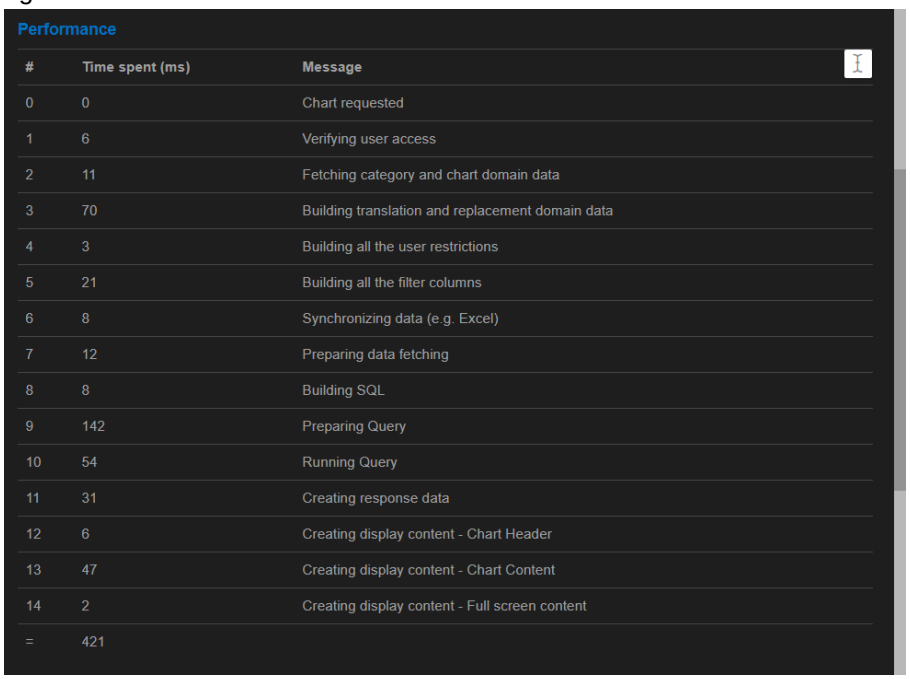
Debug

This show information about the chart that can be used to debug and/or improve performance of the chart and can be split into three sections as shown below.

SQL. This is the SQL that the Dashboard has automatically (unless Manual SQL override has been used ; unlikely, but worth checking!) generated to produce the chart you have requested, combining the objects, table joins, chart filters, sorts and also any category object filters.



Performance. This is a breakdown of the tasks the Dashboard goes through to generate the chart, with timings against each section and an overall total.



Performance

#	Time spent (ms)	Message
0	0	Chart requested
1	6	Verifying user access
2	11	Fetching category and chart domain data
3	70	Building translation and replacement domain data
4	3	Building all the user restrictions
5	21	Building all the filter columns
6	8	Synchronizing data (e.g. Excel)
7	12	Preparing data fetching
8	8	Building SQL
9	142	Preparing Query
10	54	Running Query
11	31	Creating response data
12	6	Creating display content - Chart Header
13	47	Creating display content - Chart Content
14	2	Creating display content - Full screen content
=	421	

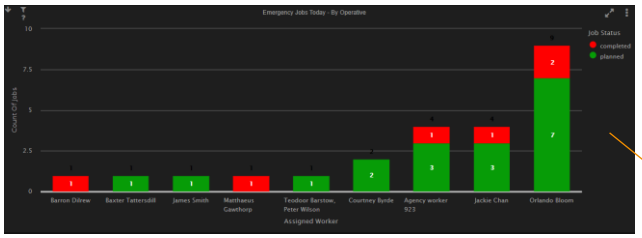
Code. This is the dashboard code that has been generated to produce the chart in question and this information can be useful for debugging purposes.

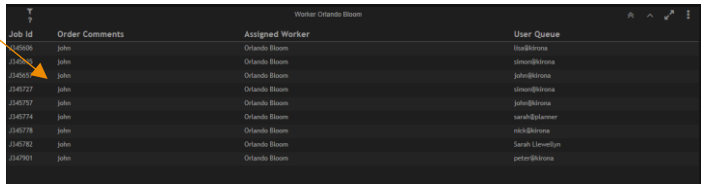
Code

```
<div id='chart-panel339__5789517e-d789-4bba-bfcb-b9e0fe62495a'></div>

<script>
var tableDataWhole_339__5789517e_d789_4bba_bfcb_b9e0fe62495a = {
    "jsonGroupHeaderData": [

    ],
    "jsonData": [
        {
            "____TC2": "john",
            "____TC1": "Barron Dilrew",
            "____TC0": "J345555",
            "____TC3": "FOLLOW ON"
        },
        {
            "____TC2": "john",
            "____TC1": "Agency worker 923",
            "____TC0": "J345580",
            "____TC3": "FOLLOW ON"
        },
        {
            "____TC2": "john",
            "____TC1": "Jackie Chan",
            "____TC0": "J345605",
            "____TC3": "DONE"
        },
        {
            "____TC2": "john",
```

Drill up and Down

When a chart or a table has a drill path defined, you can click on the chart block, or double-click on the table row, to drill down into the underlying detail.





Once you have drilled down, you will see the following icons:

The first Icon with the two upward arrows returns the chart back to the top level. The Second Icon returns the charts up one level.

Interface Navigation

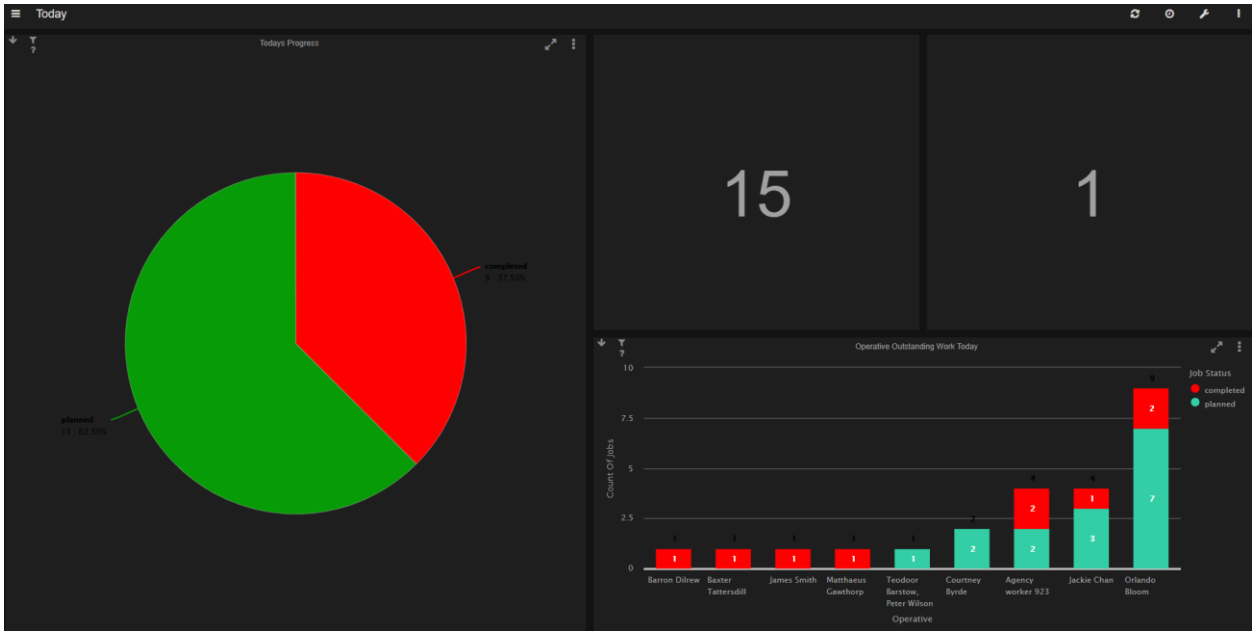
The dashboard is designed to work using regular browser controls. If you move from one category to another, or drill down / up, then you can easily navigate forwards and backwards using the browser controls. Similarly, you can refresh an entire page by refreshing the browser.

The Dashboard is entirely URL driven, so you can bookmark, favourite, copy and send URLs in any way that suits you. You can also use this to embed dashboard elements in other pages or even within your own application.

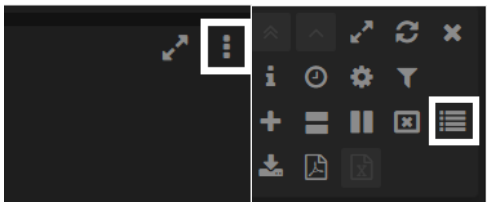
Layouts

You can quickly modify the way the dashboard is presented to you.

The first change you may want to make is to replace a chart in a cell with a different chart. To do this, we will open the Chart Library and select the chart we want to display. Let's look at an existing category.

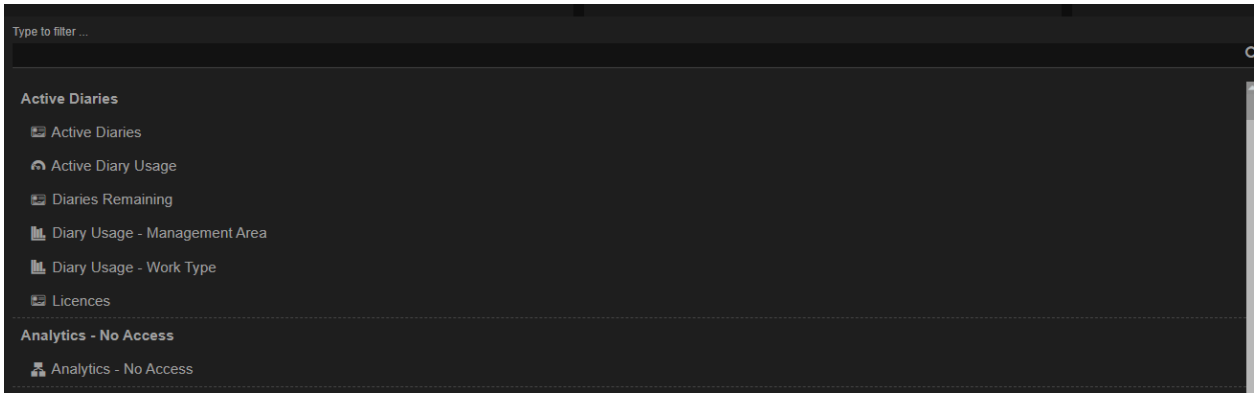


Changing the Displayed Chart



To swap the chart displayed in the chart cell on the right, first open the tools on the chart cell. Then select the Chart Library icon from the Tools.

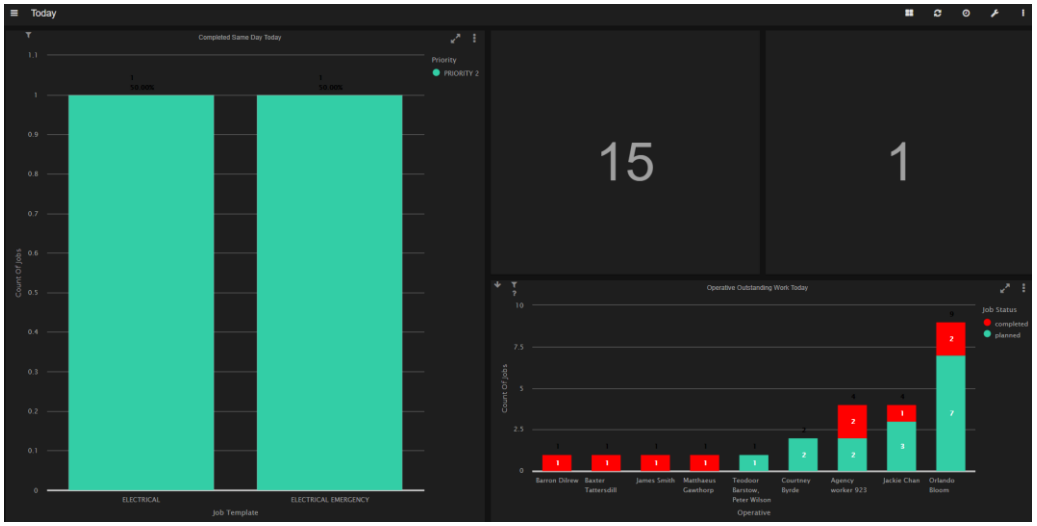
The Chart Library list will appear. This will show a complete list of all the charts you have access to; with charts grouped by the categories they belong to.



NB: If you cannot see the chart you require here you will need to ask an administrator to grant you access to the category that the chart belongs to. If you can see the chart on someone else's dashboard ask which category it is grouped under – this is the category you need access to.

To replace the current chart with the one in the library simply click it in the library list and the existing chart will be replaced. This doesn't delete or change the functionality of the previous chart, you are merely changing what you see in your layout.

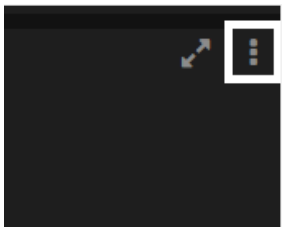
NB: This means you are no longer looking at the default view for the category. You now have your own custom view that will be different to what other users see.



Adding A New Chart Cell

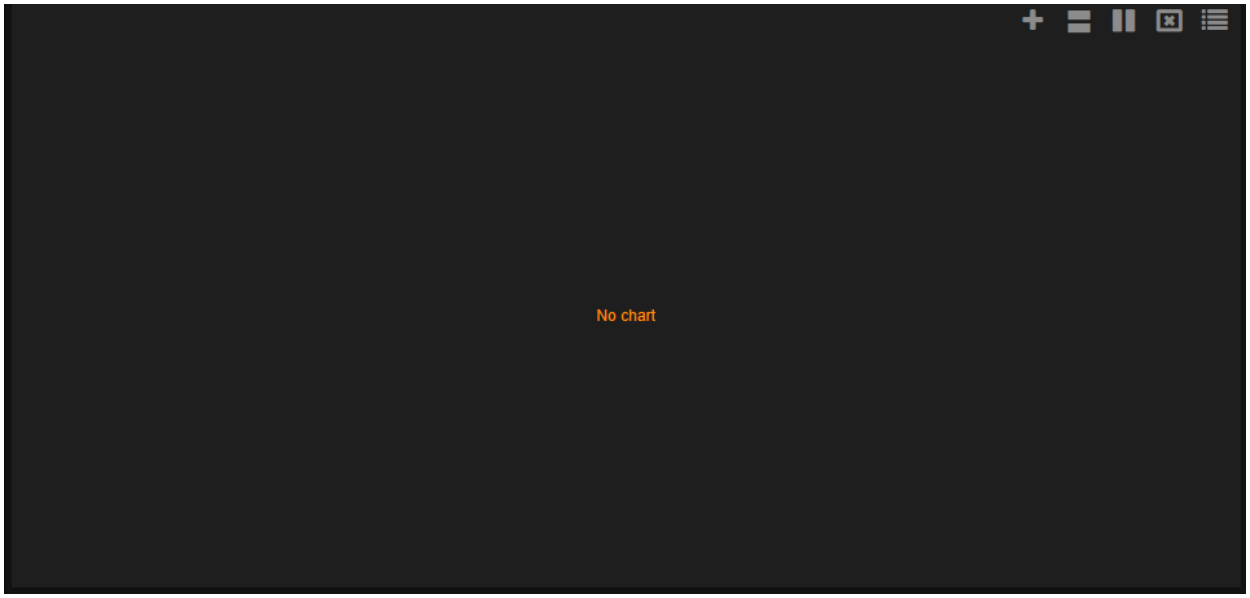
Sometimes we want to add an item from the Chart Library into a new cell on the category. In this case, we need to create a new cell on the category page. This involves splitting an existing chart cell. A category will always have at least one chart cell, so can always be split in this way.

To create a new cell we open the chart tools on the cell we wish to split.



There are two buttons we can use; the first will split from left to right, and the second from top to bottom.

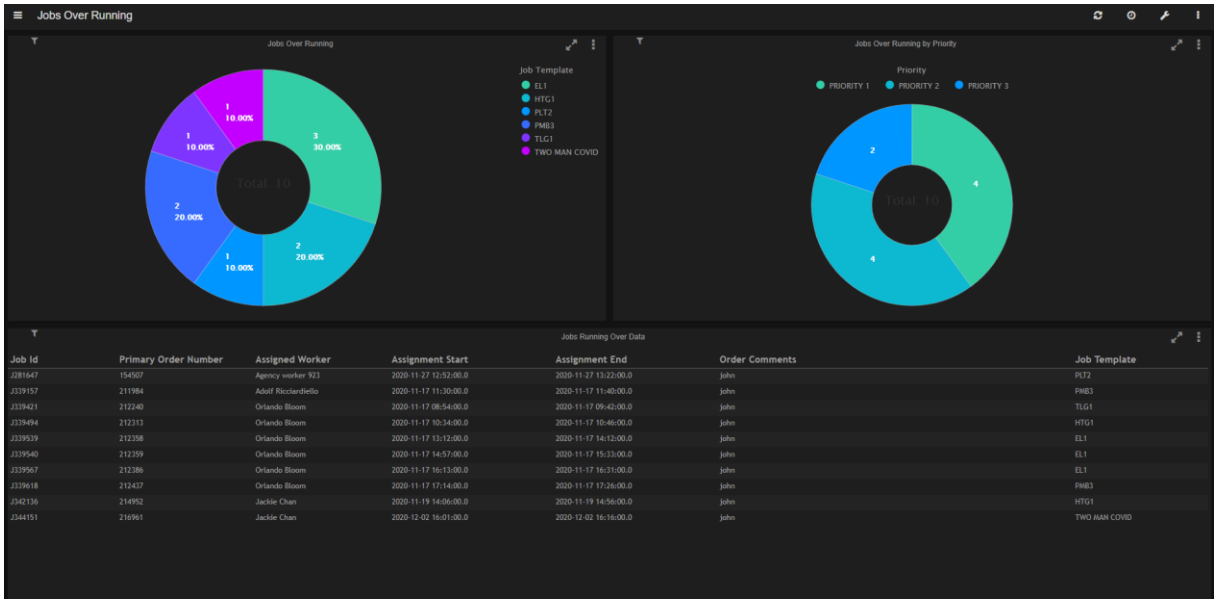
You will notice the new empty cell has buttons immediately available in the top right hand corner. Now we can select a chart from the library to place in the new chart cell;



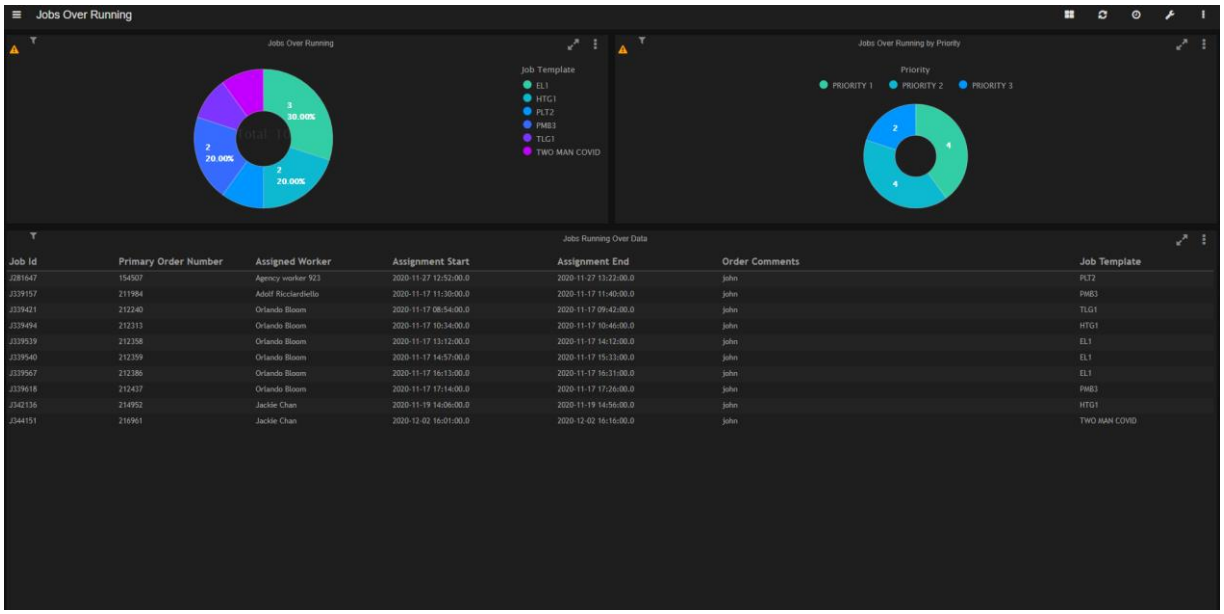
Resizing Charts

Between the chart cells there is a grey dividing line. If you hover over this with a mouse, or touch using mobile or tablet, you will see this line changes to become a wider grey bar.

You can now drag this bar from side to side if the divider runs from top to bottom, as shown to the left. Alternatively, if you have selected a divider which runs from left to right you can drag it up and down.



You can drag and resize the chart cells to optimise the space used for the charts.

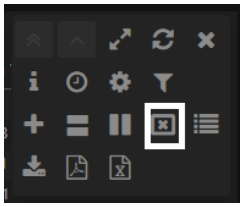


The size of a cell is held as a screen proportion, thus if you open the dashboard on a different device it will resize using the proportions, redrawing to the available screen size.

NB: This is now your own individual layout. If you look at other users' screens, they may not look the same as yours.

Removing A Chart Cell

If there is a chart in the cell, then open the chart tools and look for the X cell option highlighted below. If it is an empty cell then the delete button is located in the top right of the screen.



NB: This deletes the cell, not the chart. You can reapply this chart to any layout by selecting it from the Chart Library.

Publishing a Layout

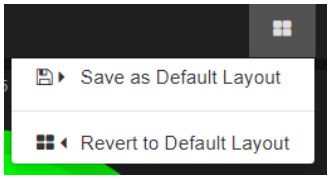
There are two types of layout in the dashboard. Depending upon your user account you will either be restricted to see the default layout for a category, or you will be allowed to create your own tailored layout.

What if you want other users to see the layout you have created? There are two types of user that we can push a layout to.

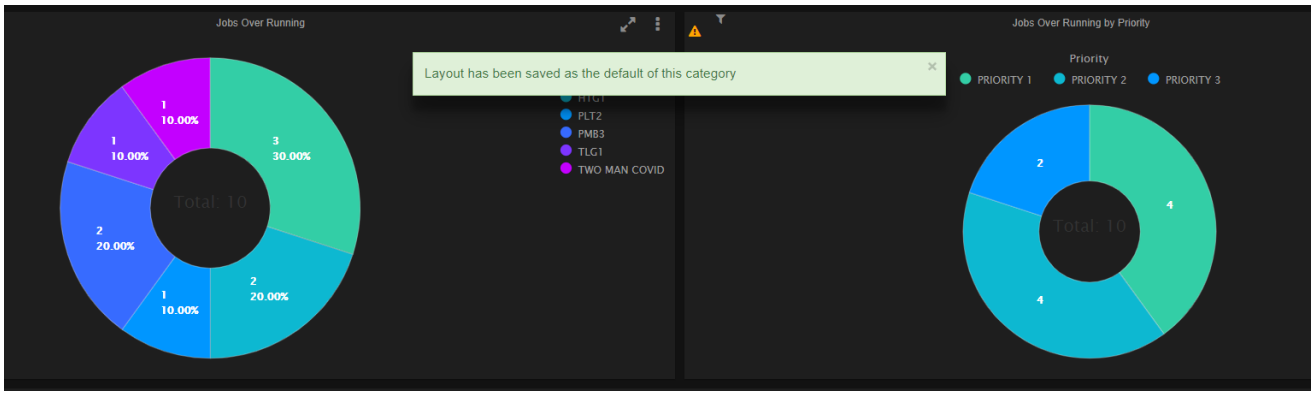
- A user who does not have the ability to create their own layout. In Infosuite we call these users Chart Viewers.
- A user who can create their own layout, but hasn't yet changed it; so they are currently viewing the default layout.

We cannot publish layouts to users who have their own tailored layouts.

To publish a layout all we need to do is click the button which looks like  located in the top right-hand corner of the dashboard and then select 'Save as Default Layout'.



Clicking 'Revert to Default Layout' would change your layout back to be the same as the current default layout. Once published you will receive a confirmation in a 'snack bar' popup as shown below.



NB: Other applicable users will need to refresh their browser session to pick up the newly published layout.

Charts

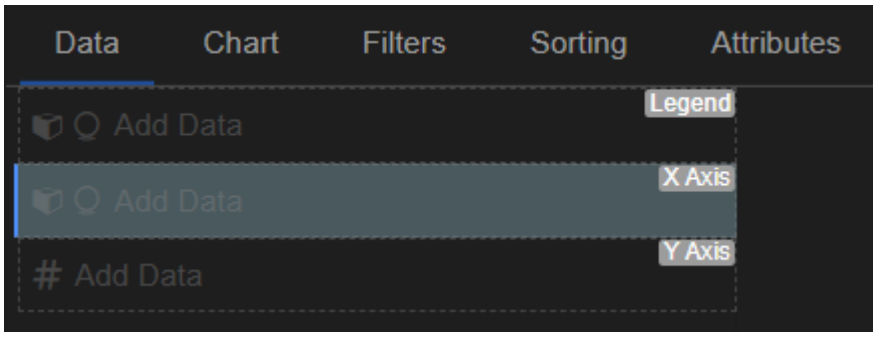
This guide provides information on how to create, edit and use charts on a dashboard. This will include creating a basic chart that can be ready to use in a matter of seconds to adding attributes, targets, colour and object replacement that will all help to make your dashboards look amazing. A full list of charts, and suggestions on how they can be used on a dashboard can be found in section 12 on page 74. The list of chart types includes bar, column and pie charts as well as maps, cards and combined charts along with a whole list of other useful data visualisation charts.

Creating a chart

To create a chart, click the 'Create new chart' icon in the top-right corner of a cell on the dashboard.

NB: If the cell already contains a chart, clicking the 'Create new chart' icon will allow you to create a new chart from scratch and replace the one currently in that cell.

On the 'Edit chart' screen, the Data tab will be displayed. This will show some of the suggested fields that can be used to create a standard Bar Chart.



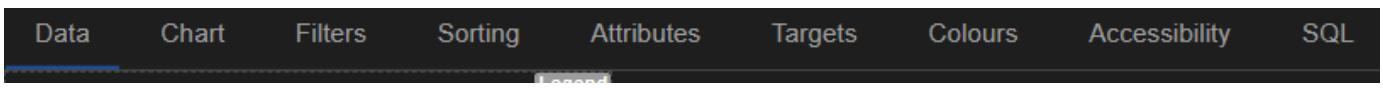
You can:

- Select the data that you want to use for a default Bar chart
- Choose the data that you want to use and then select a different type of chart on the Chart tab
- (please note that data requirements may alter for different types of chart)
- Choose the chart that you want to create on the Chart tab, this will then show you the appropriate objects for that type of chart when you return to the Data tab

The order that you perform these steps is down to personal preference and really depends on whether you know the data but are unsure of the best chart type or prefer to select the chart type first and then add the data.

Adding data to a chart

Within the data screen, the Data Sources that you have been given access to will be displayed on the left-hand side. This means that you can pick objects (data) from any of these Data Sources. When a Data Source is expanded, or you search for an object by name, only objects that can be placed into the selected field will be displayed in the list of available objects.



Firstly, click into the field that you want to add an object to.

Example

The 'Dimension' field has been selected, this is identified by the background shading and blue line on the left-hand side of the field.

Dimensions – qualitative information such as the names of Operatives or Assigned Sectors

Measures – aggregated data such as Count of Jobs or Average Duration but also refer to non-numeric data.

When you filter a data source, by typing the object name into the 'Type to filter' field, the specified search criteria will be underlined in the list of matching objects.

Example

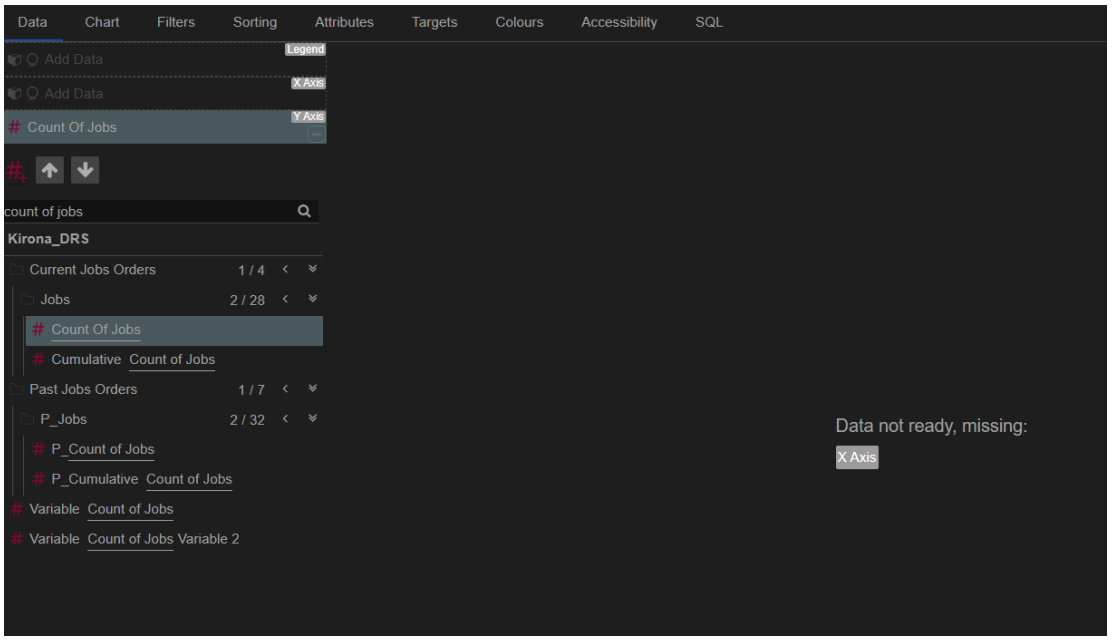
This example shows that the data source has been filtered to only show objects that contain the text employee. We can see which data source the object is in and the list of objects that match the type of data required for the selected field.

To select an object, click on it in the data source and it will be added to the selected field. The chart preview section will be updated to show the remaining objects that are suggested for the type of chart you are creating.

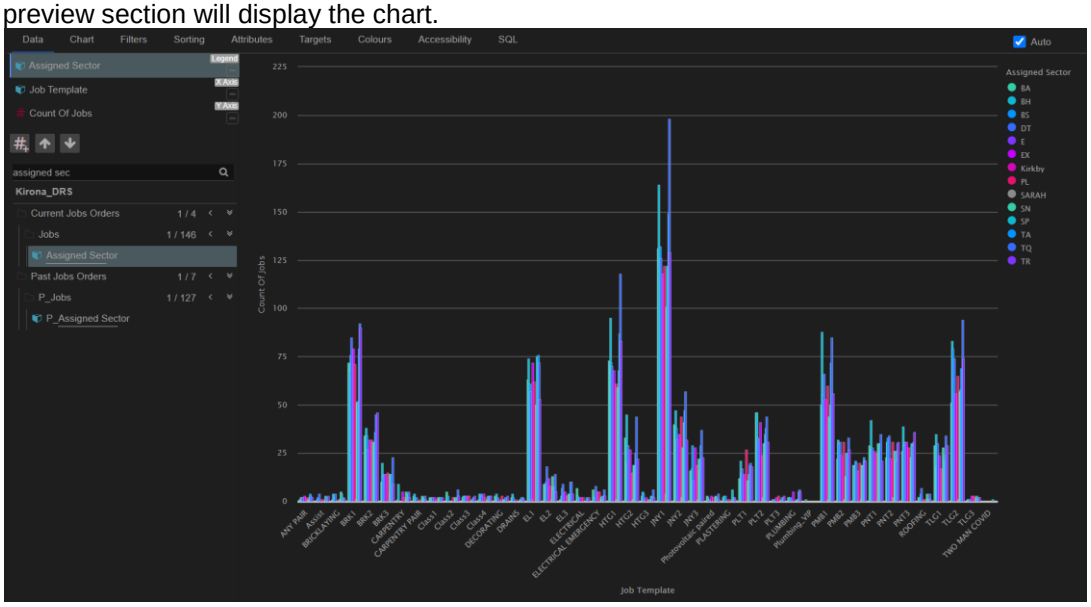
NB: The objects displayed in the Chart preview area are not necessarily all required for the chart you are creating.

Example

Data has been added to the Number field, but the Chart preview section shows that there may be other data fields that still need to be completed.

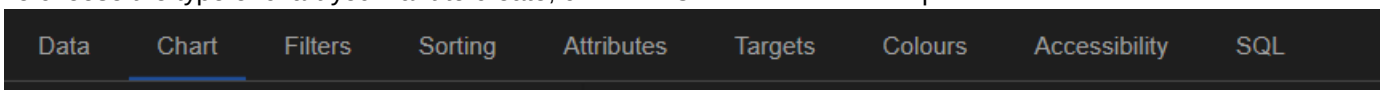


Repeat the steps listed above to add the remaining data objects. When all objects have been added, the Chart preview section will display the chart.



Choosing the chart type

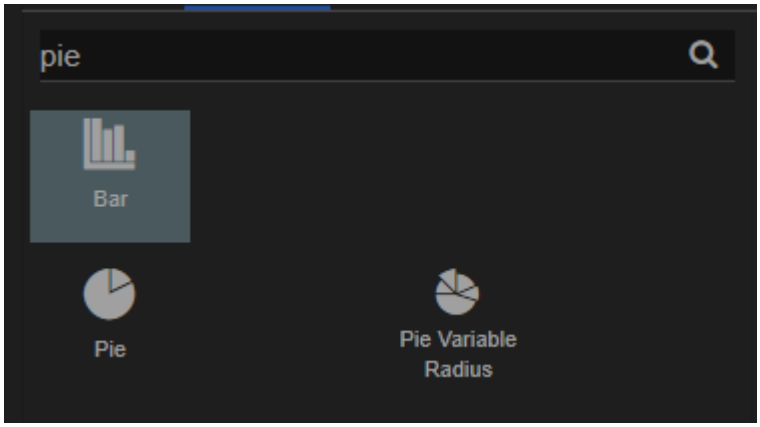
To choose the type of chart you want to create, click the ‘Chart’ menu at the top of the ‘Edit chart’ screen.



A list of available chart types will be displayed. Either scroll through the list to view the available options or type the name of the chart type in the ‘Type to filter’ field to filter the list.

Example

Text has been entered into the ‘Type to filter’ section to filter the list for Pie chart types.

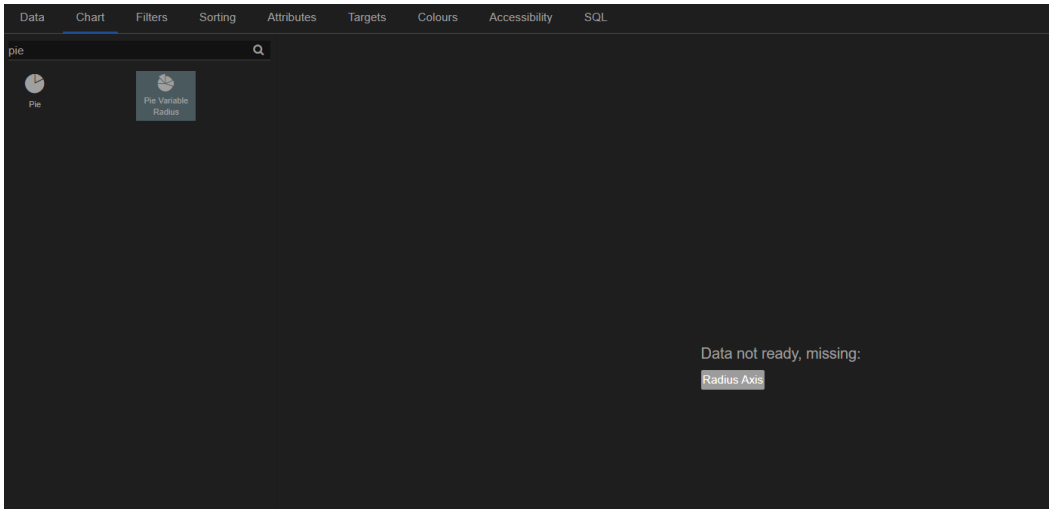


NB: You do not need to enter the full chart type name; the list will be filtered automatically to show possible matches as you type.

Click the required chart type to select it. The Preview area on the right-hand side of the screen will now show the suggested data objects to build this chart.

Example

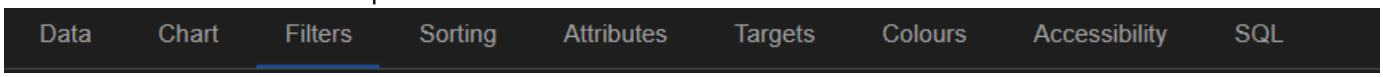
This example shows that a Pie Variable Radius chart has been selected and the data that is suggested to create the chart.



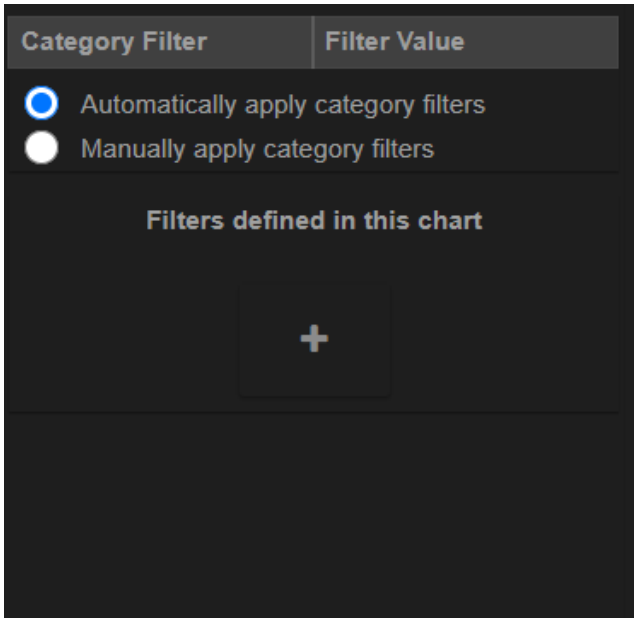
Filters

Filters can be used to control the amount of information that is displayed in a chart. For example, you may only be concerned with seeing certain job roles or job roles where the employee number is greater than or less than a certain figure.

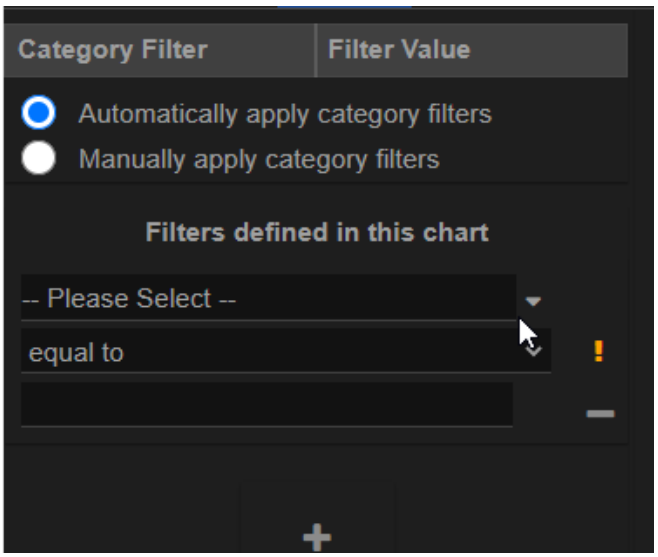
Click the ‘Filters’ menu at the top of the ‘Edit chart’ screen.



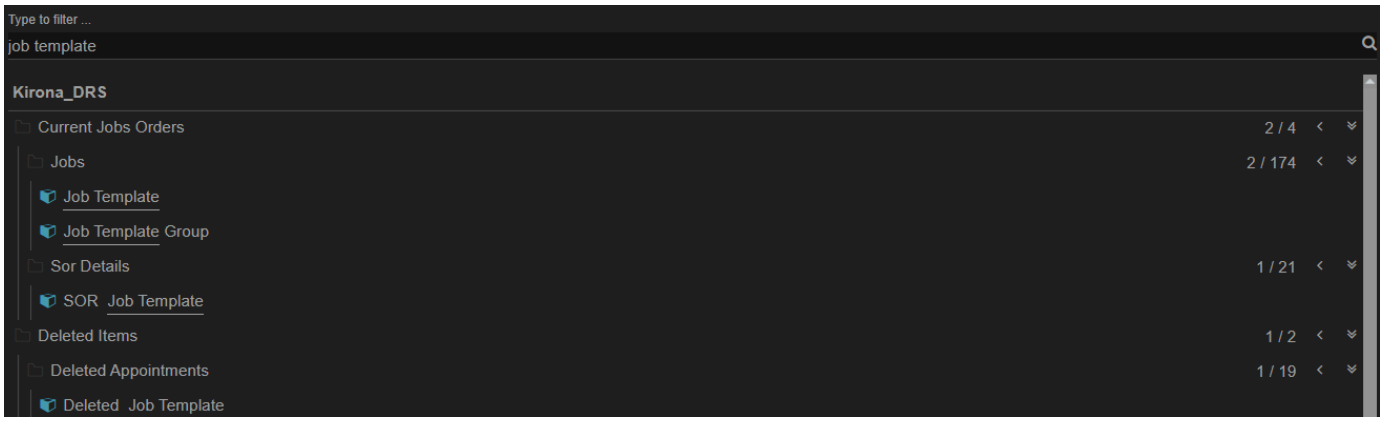
Click the + Icon beneath ‘Filters defined in this chart’



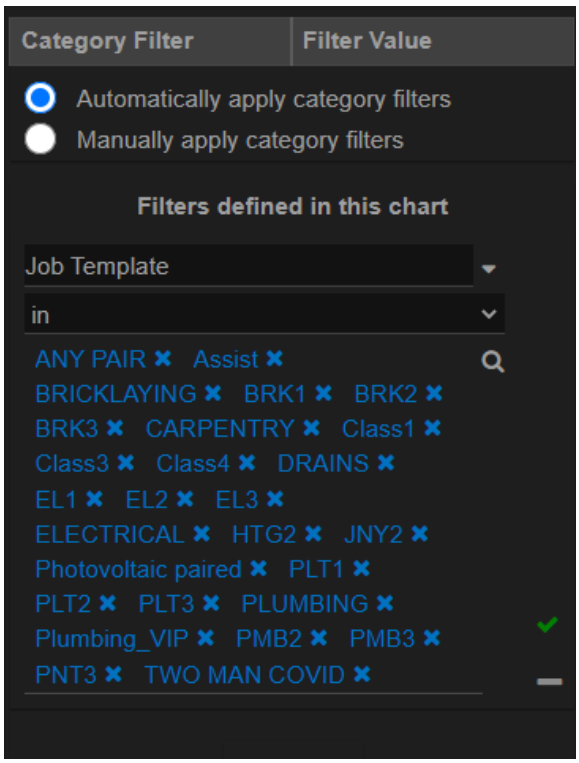
This will allow you to specify the criteria for the filter



Click the drop-down next to ‘Please Select’, this will open a ‘Type to filter’ window displaying the fields in the Data Source that you originally selected the object from. Either scroll through the list to find the object or start typing the name of it into the search field to filter the list.



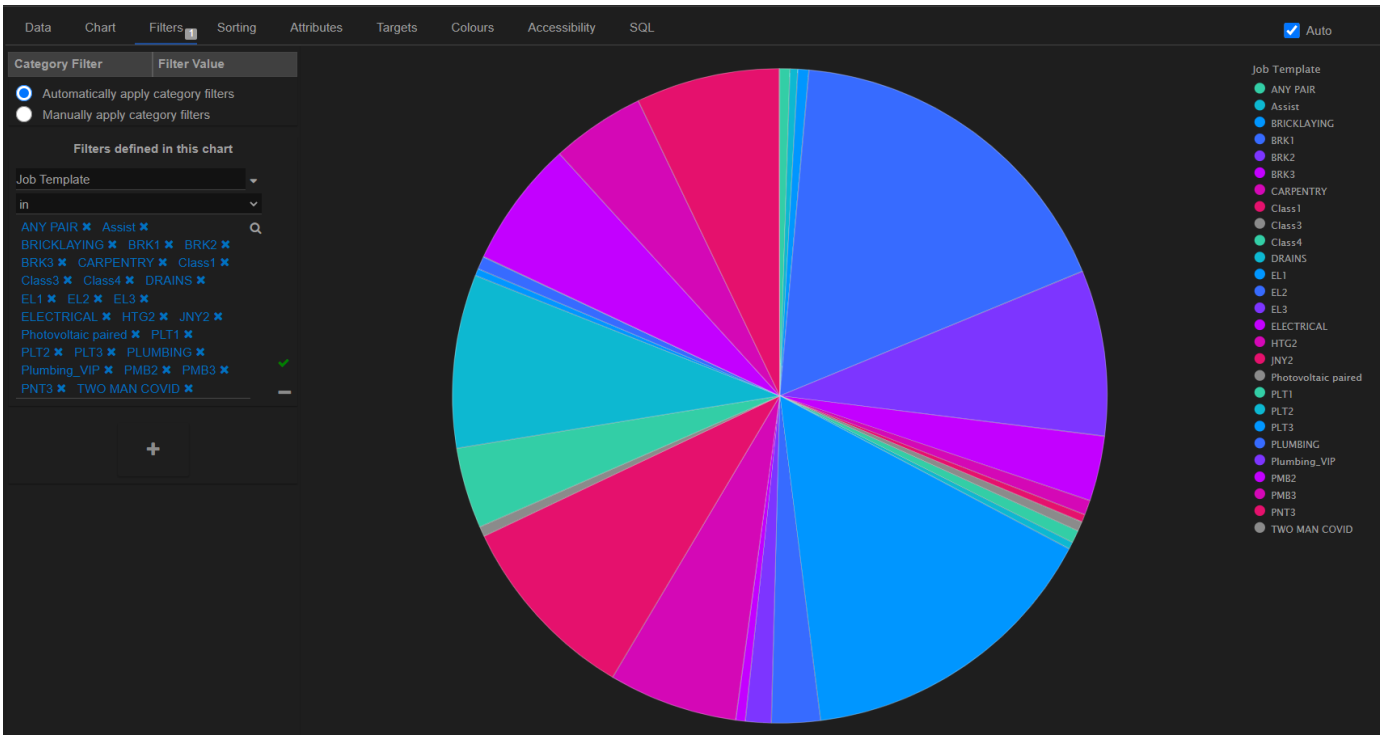
Click on the object that you want to filter on and then specify the filter criteria.



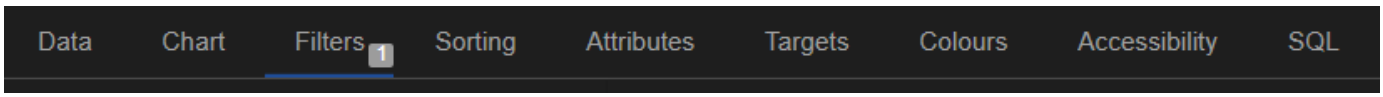
If you need to add more filters click the ➕ sign and repeat the steps mentioned above.

Example

This example shows that the chart has been filtered to show jobs which are part of a large list of Job Templates. Any Job Templates not in this list will not be included in the Pie Chart.



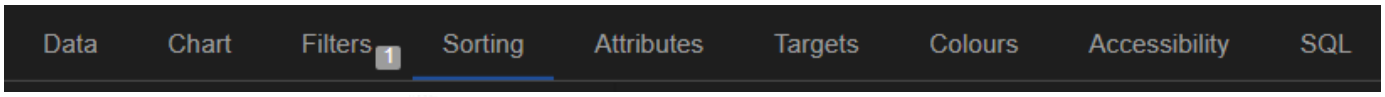
NB: When filters have been applied to a chart a small number appears next to the Filters tab in the 'Edit chart' screen. This shows how many filters have currently been applied without needing to open the filters tab.



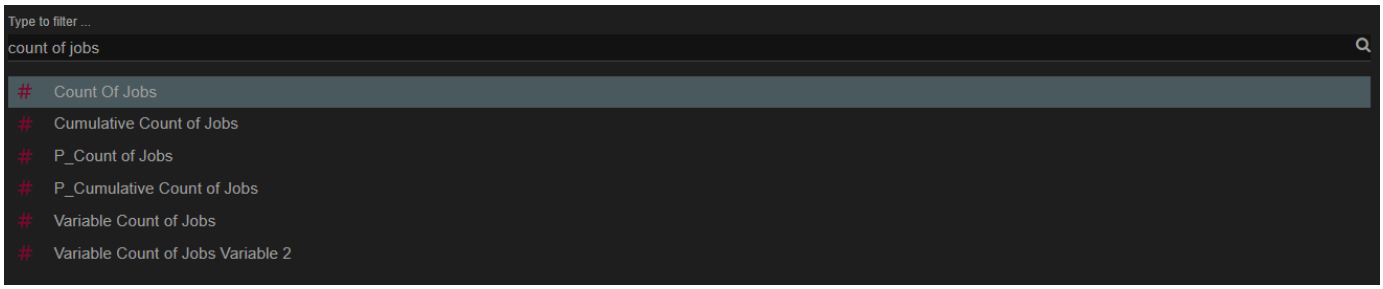
Sorting

The data displayed in a chart is usually displayed in ascending order.

Click the ‘Sorting’ menu at the top of the ‘Edit chart’ screen.



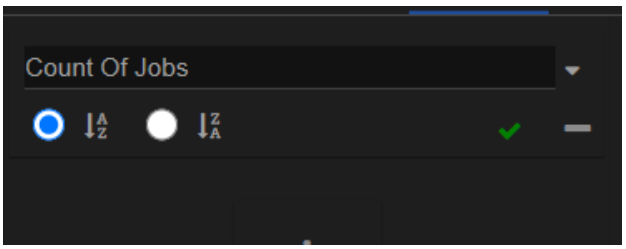
To add sorting to a chart, click the ➕ icon. You will be able to select the object you want to sort. Click the drop-down arrow next to ‘—please Select—'. The ‘Type to filter’ dialog box will be displayed showing the objects that you can sort on.



Click the object that you want to use. You will be returned to the ‘Edit chart’ screen, where you can specify the sort order by clicking ascending or descending order.

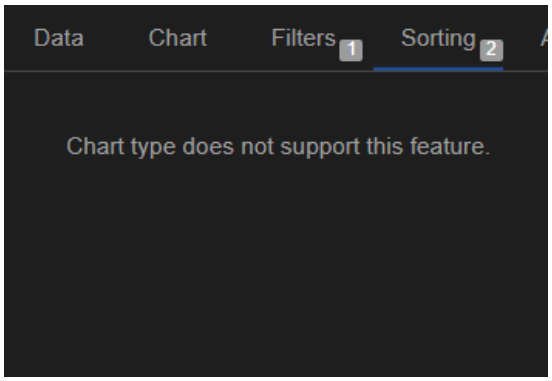
Example

This example shows that the pie chart will be sorted on the Job Role object in Descending order.



To add additional sort options, click the ➕ icon again and repeat the steps listed above.

NB: Some chart types do not support sorting. If sorting is not available for the type of chart you are creating, the following message will be displayed on the sorting screen.



Attributes

The options available on the Attributes screen will vary depending on what type of chart you are creating; some chart types use more of these options than other chart types. Click the 'Attributes' menu at the top of the 'Edit chart' screen.

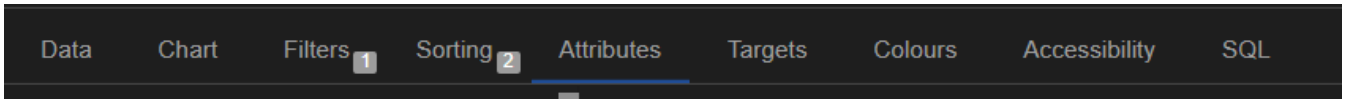
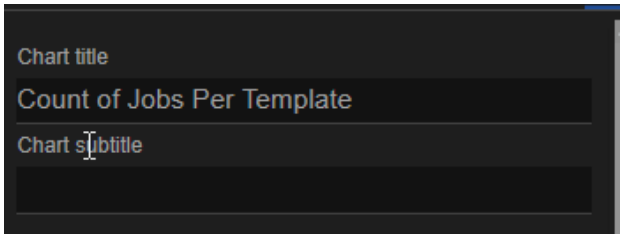


Chart title

If a Chart Title is not specified on the 'Attributes' screen, the name that you assigned to the chart when saving it will be shown on the dashboard. To enter a different title, click into the 'Chart title' field and enter the details, this title will replace the chart name on the dashboard but the name given to the chart when saving it will be the one displayed in the Chart Library. Please refer to the section saving a chart on page 54 for further details.



Using Object Replacement in Chart Titles

When specifying a Chart title, you can also use object replacement to explain any filters that have been applied to the chart. When an object, Dimension or Measure, is referred to it must always be enclosed in double curly braces, for example {{Employee Count}}. This is known as object replacement and can be used almost anywhere to replace an object with a value, the value usually comes from a filter. To add object replacement to a Chart title please follow the instructions listed below.

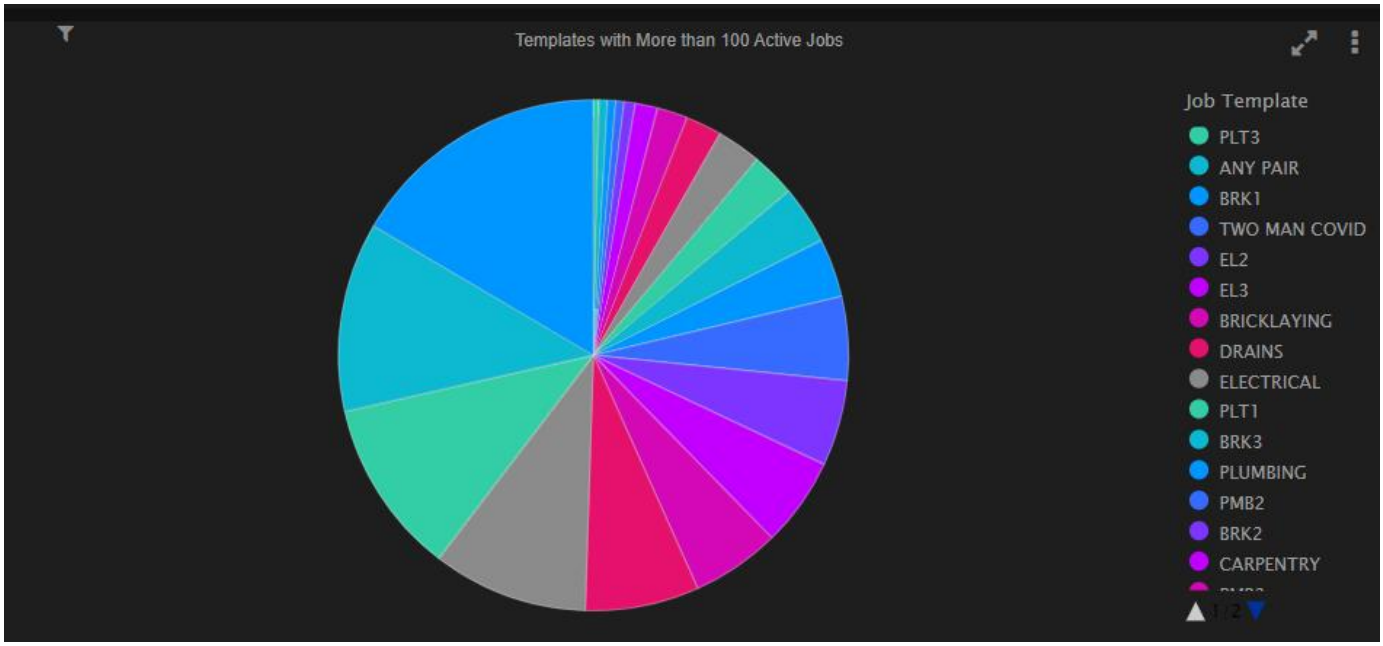
Click into the Chart title field. Type the standard text that you want to include in the title for example.
'Count of Jobs Per Template For {{Job_Template}}'

When you want to pick up the information from the object used in the 'Filter' section, type the name of the object enclosed in double curly braces. For example, 'Job_Template '

NB: The name of the object must be typed exactly as it appears in the data source; this includes making sure that the case matches in addition to the spelling. For example, if the object name was entered as {{job_template}} using lower case letters it would appear in the chart title as 'Number of employees over {{job_template}}' – although the spelling is correct, the case isn't and therefore the value from the object would not be picked up.

Example

A filter was applied to this chart that only shows Job Templates with over 100 Active Jobs. By using the object name '{{Count of Job}}' in the Chart title we can use this field to explain the filter.

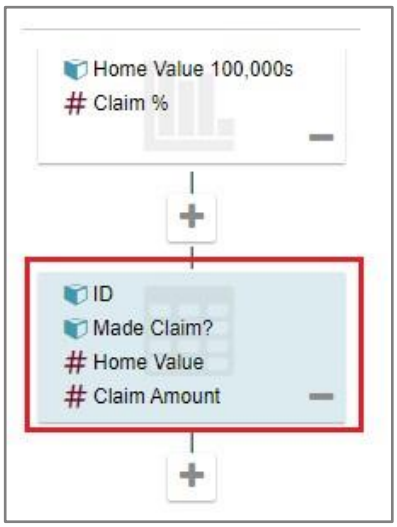


If the information on the Filter page is changed for example, to show employee numbers over 200, the Chart title will update automatically with the changes. The Chart title field can also be used to create a chart title at each drill down level, please refer to the section Drill Down levels on page 61 for full details on how to set up a drill down level.

To set a different title for each drill down level, select the relevant drill down level on the left-hand side of the 'Edit chart' screen and follow the instructions listed above.

Example

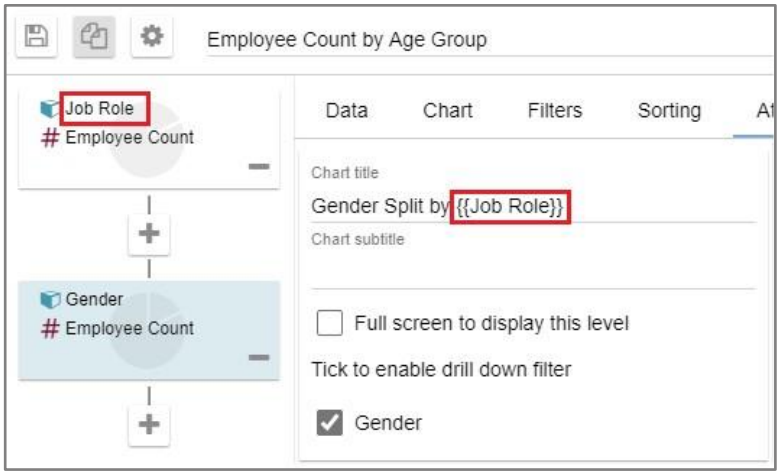
The following example shows that 2 drill levels have been created for this chart. The second level has been selected, which means that any attributes we change, including the chart title, will apply to this level.



NB: If an object name is used in a title for a drill level, you can use this to explain the drill level in more detail.

Example

The Pie chart, in the following screenshot, has been filtered to show job roles that have more than 100 employees. When a user clicks on a segment of the Pie chart, the drill level will show the split between gender for the selected job role. The Chart title added to the drill level uses the object name {{Job Role}} from the previous level.

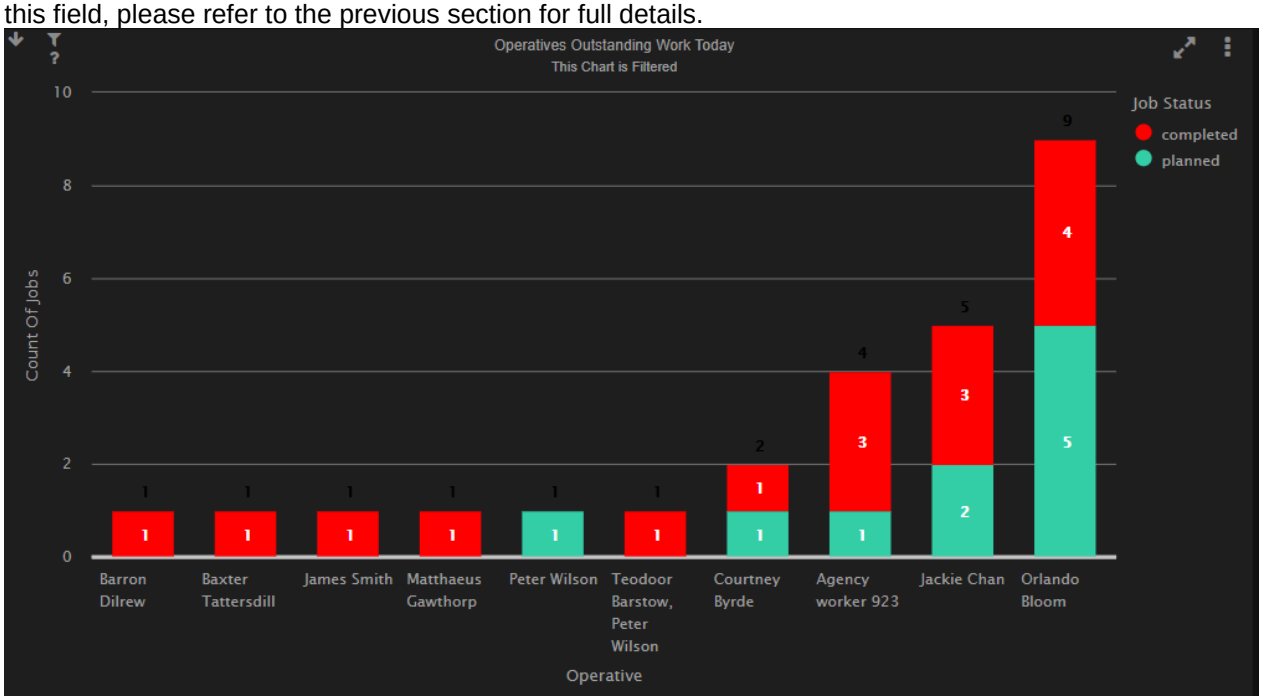


NB: This functionality can be used to create a 'breadcrumb' trail as you drill down through the levels, reminding the user what was selected at the prior level(s).

Chart Subtitle

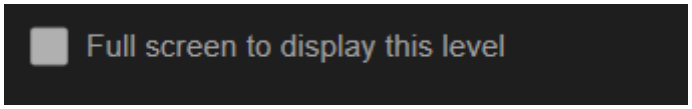
A Chart subtitle works in the same way as the Chart title except that it displays beneath the title and, by default, in a smaller font. If a Chart Title has not been entered, the Chart Subtitle will be displayed beneath the default title (the name given to the chart when saving it).

To enter a Chart subtitle, click into the Chart subtitle field and enter the text. You can also use object replacement in this field, please refer to the previous section for full details.



Full Screen to Display This Level

This tick box does not apply to the top level of a chart. This option is applied when using drill steps, please refer to section Viewing Drill Down levels on page 62, and forces the drill step to be opened in full screen view. This functionality is useful when drilling to a data table with many columns from a small cell on the dashboard.



NB: If the user is already viewing the chart in full screen mode, the tick in this box will have no effect.

Enable drill down filter

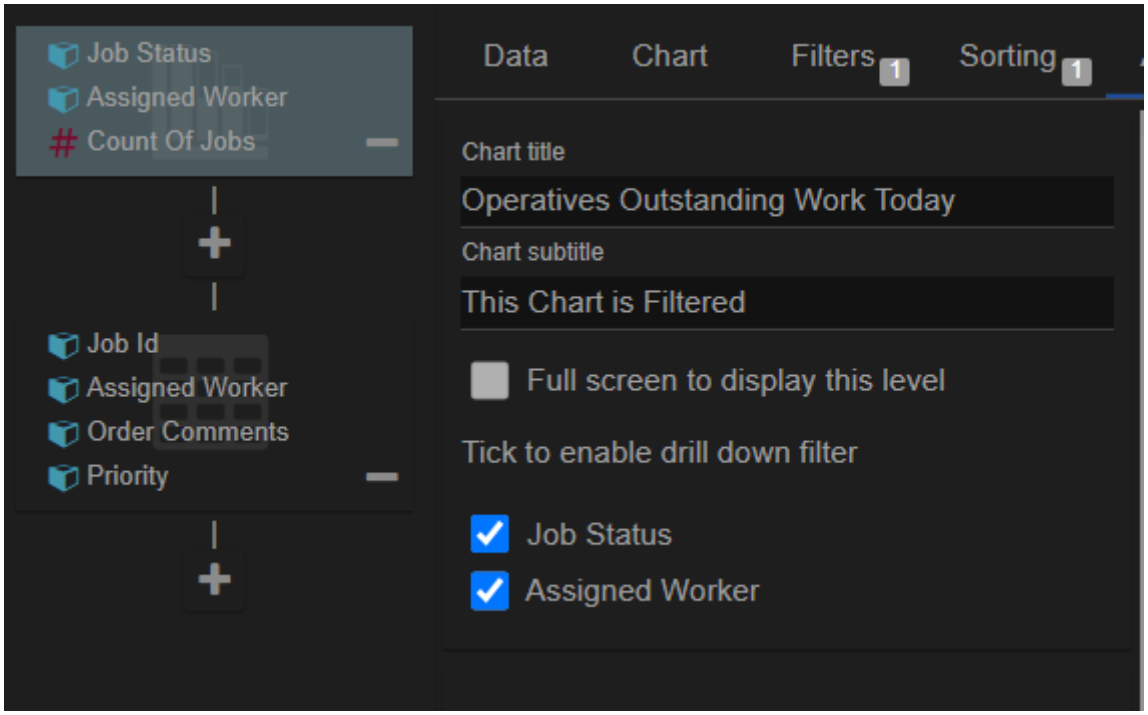
Drill down filters can be used as a way of viewing related information in other charts. For example, in a chart that shows Sales by Region, the drill down filter could be used display the Stores in each Region and their associated Sales Figures when a user clicks on one of the Regions in the main chart.

This option is ticked by default and is used to filter the next level of information based on what a user clicks in the previous stage. If this box is unticked, users will still be able to drill down to other stages, but these stages will not be filtered based on the option they clicked on in the first chart.

The options available in the 'Tick to enable drill down filter' section are linked to the Dimensions that you added on the 'Data' screen.

Example

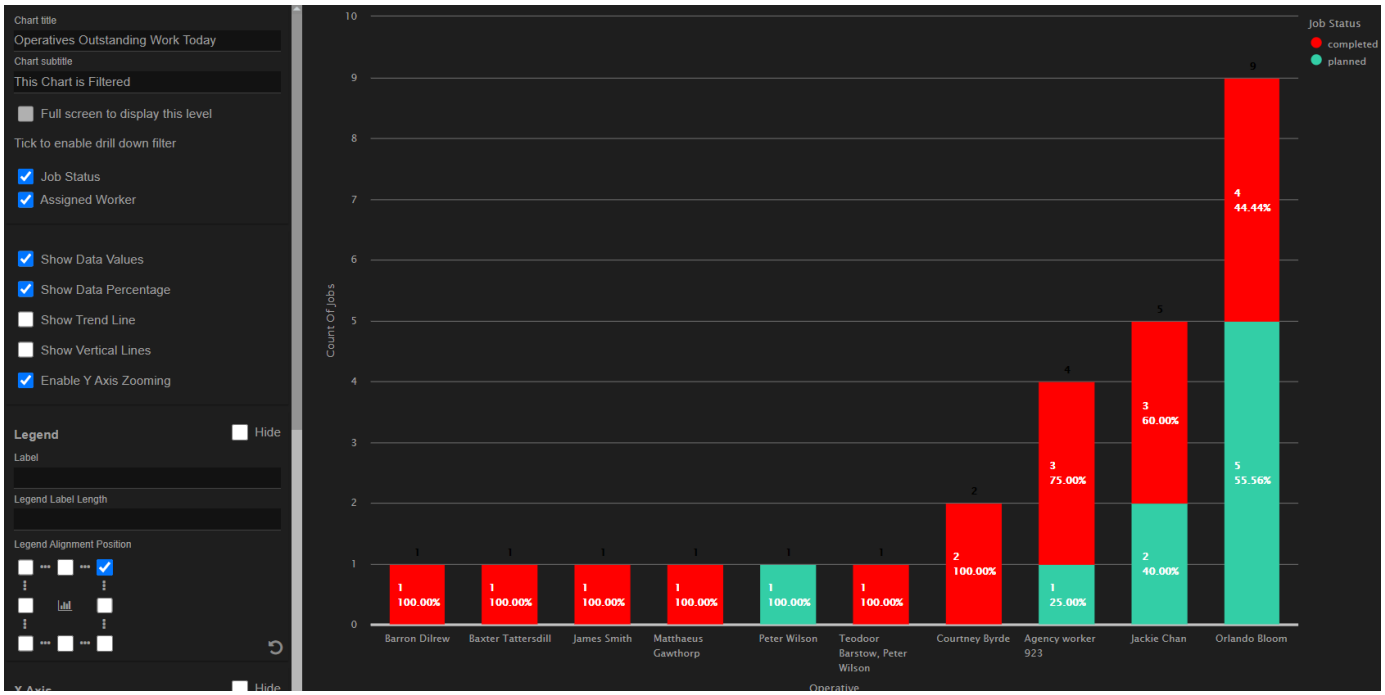
The following screenshot shows that, in this chart, users will be able to drill down into the next level by clicking the Age Group.



Show Data Values and Percentages

Ticking ‘Show Data Values’ will show the measure value on the chart segments. Depending on the chart type, these labels are shown in different ways.

NB: If the chart has a lot of data segments or the cell size is too small, the data labels may not display correctly on the dashboard. When this happens, you will see a warning triangle at the top-left of the cell.

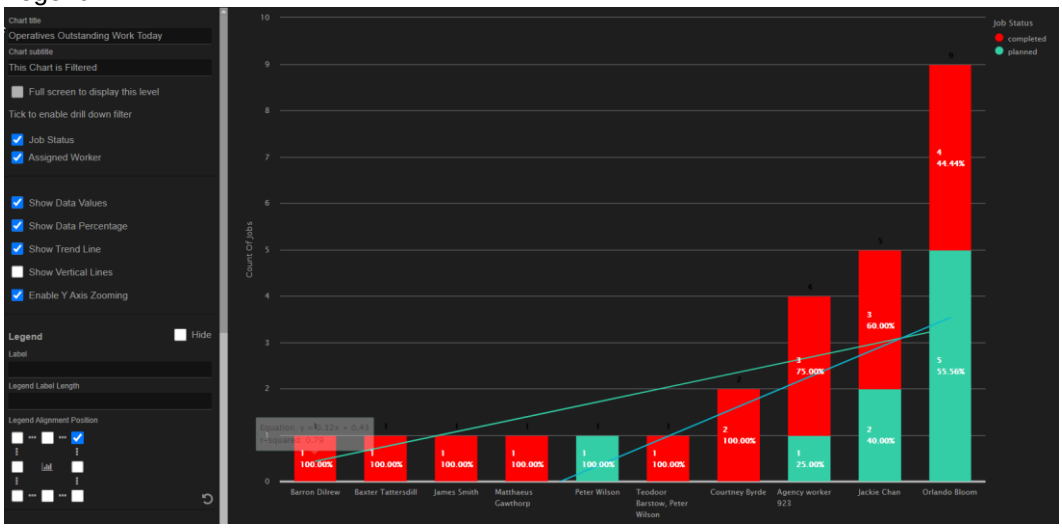


Show Trend Line

This option is only available for certain chart types, usually column or bar charts, and is used to display a linear trend line on a chart. This line is a simple regression line.

Example

This example shows a bar chart with a Trend Line. Two trend lines appear on the chart: one for each item in the Legend.

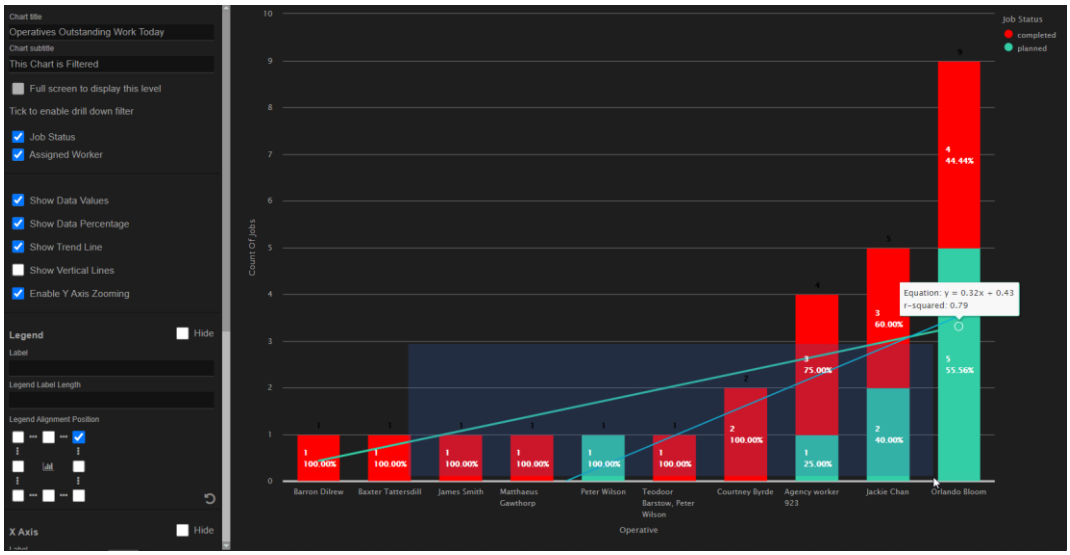


Show Vertical Lines

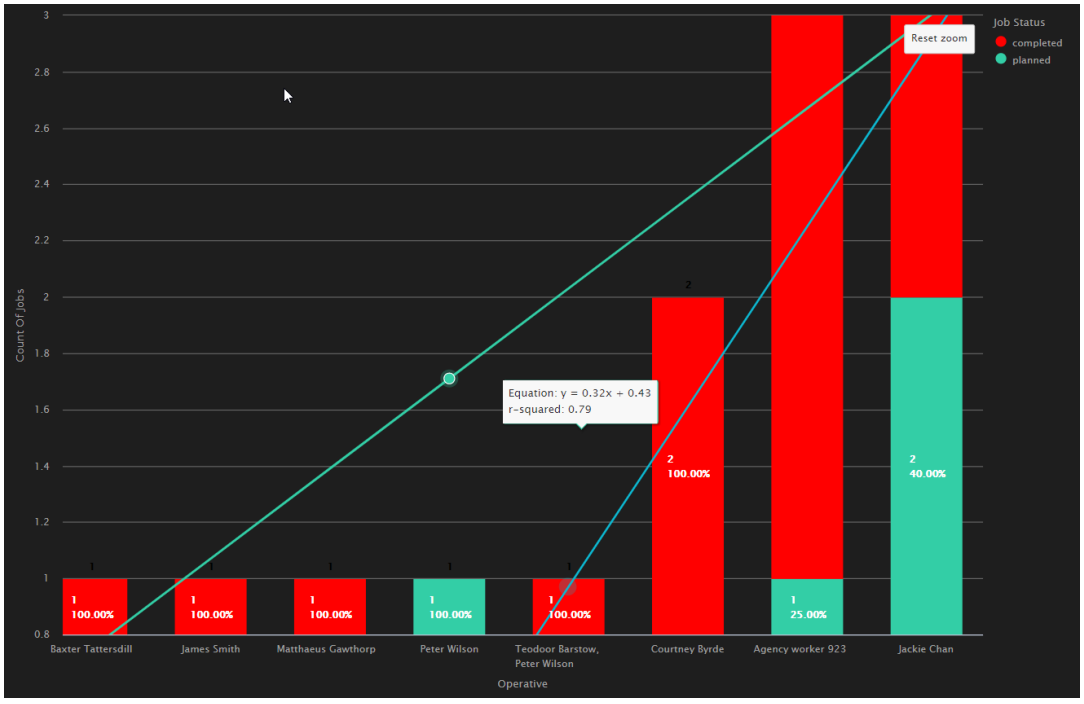
This option is only available for certain chart types. Bar charts display horizontal lines by default, this option allows you to also add vertical lines. These lines can be used to help users read the data. **NB:** If you have selected a column chart the line will be a horizontal line rather than vertical.

Enable Y Axis Zooming

This option is only available for certain chart types. Ticking this box will enable users to not only zoom horizontally, which is available as a standard option, but also vertically. Click and drag a rectangle over an area of the chart that you want to zoom in on.

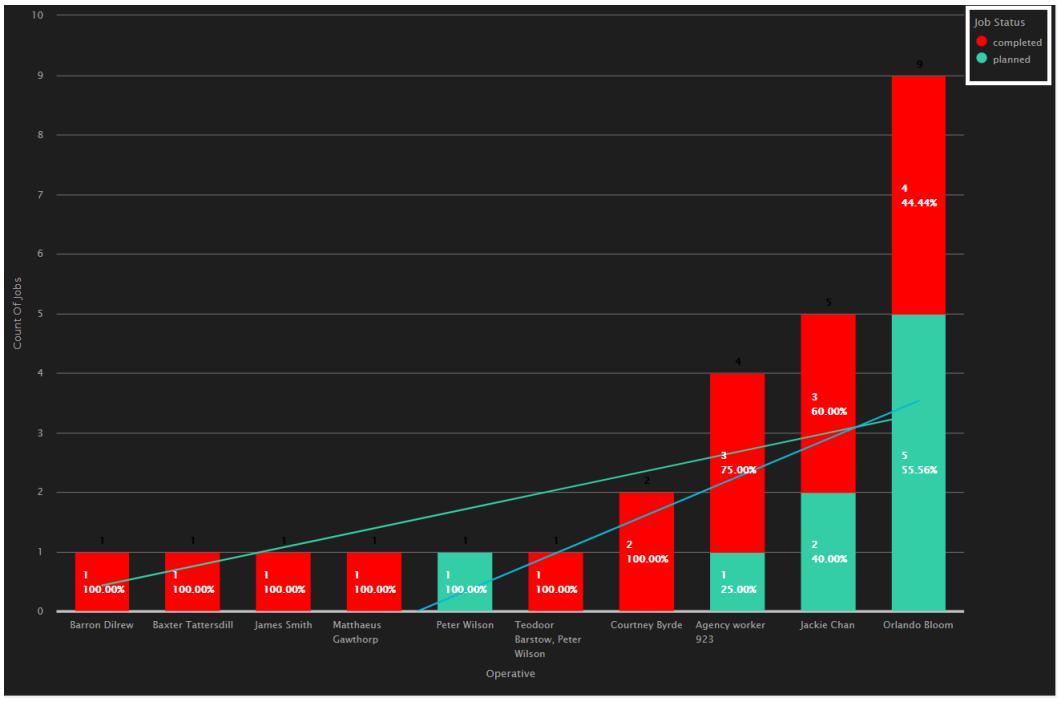


This results in the selected area of the chart being enlarged, as shown in the following screenshot. The ‘Reset zoom’ button can be used to revert to normal view.

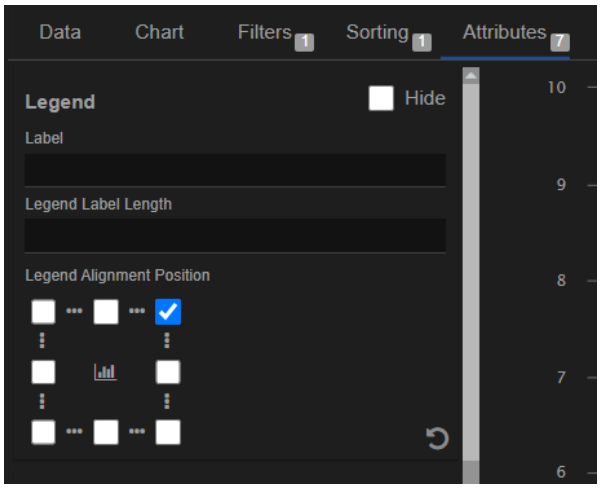


Legend Options

A Legend is an optional second dimension that you can add to many chart types and is usually positioned at the top-right of the cell. This section covers the options available for the Legend.



Legend options can be changed/ selected in this area on the Attributes screen.



Hide

If the 'Hide' box is ticked, the legend will not be displayed on the chart.

Label & Legend Label Length

The object name is the default label for a legend. The 'Label' field can be used to change this default name to something that will provide a better explanation of the data.

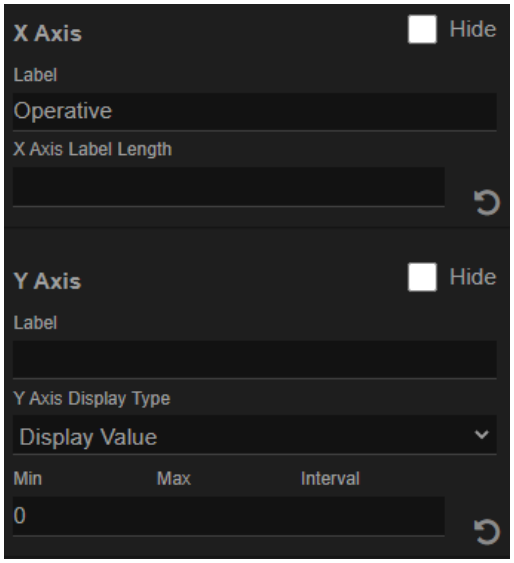
Legend Alignment Position

This changes where the Legend is positioned in relation to the chart. In some cases, particularly when using column or bar charts, moving the legend above or below the chart can provide more space for the chart to be displayed properly.

To change the position of the legend, tick the relevant position box.

The X and Y Axis

The X Axis, running along the bottom of the chart, and the Y Axis, running vertically at the side of a chart, will normally display the name of the object represented on that axis. The options available for both axes can be changed in this section of the Attributes screen.



By ticking the 'Hide' box you can choose to hide one or both axes. This option might be useful in the following circumstances:

- The X Axis is self-explanatory
- The chart is in a small cell and space is at a premium
- The X Axis values take up a lot of space
- The Object Name is not helpful in the context of this chart

The 'Label' field for both the X & Y axis can be used to change the default text, which is the object name, to text that is easier to understand.

X Axis Label Length

This works in the same way as the Legend Label Length, please refer to the section Legend Options on page 39 for further details. Y Axis Display Type

The default display type for the Y axis is 'Display Value', an alternative display type of 'Display Value as Percentage' can be used to change the total of the Y axis to be the relative percentage of each X Axis total.

The Min, Max and Interval options are used to:

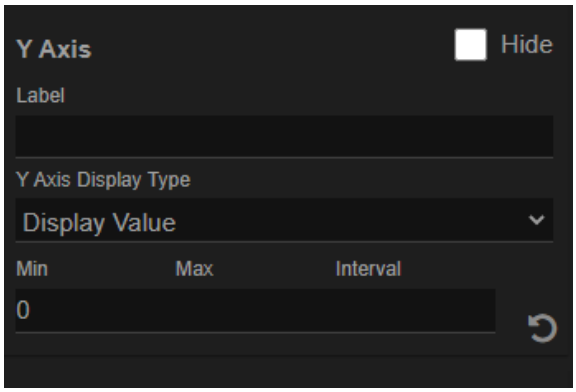
Min – changes the minimum value on the Y axis

Max – changes the maximum value on the Y axis

Interval – changes the increments that the Y axis is displayed in. This can be helpful if the Y axis has a large number of values.

NB: If you set a min value higher than the lowest data point or a max value lower than the highest data point the changes will be ignored.

The '**Reset to default'** icon can be used to remove any changes that you made in either the X or Y Axis sections.



Measure Configuration

The Measure (value) that is used in the chart is shown in an area beneath the X & Y Axis sections.

In this section, you can specify the following:

Prefix – what appears at the start of the numbers on the Y Axis, e.g. currency symbol such as £

Suffix – what appears at the end of the numbers on the Y Axis, e.g. %

Thousand Separator – how thousand values are separated, e.g. 1,000

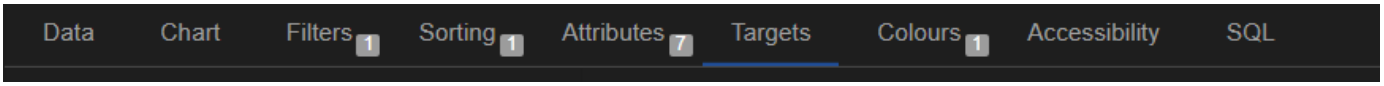
Decimal Separator – how decimal values are separated, e.g. 1.3 or 1,3

Decimal Places – how many decimal places are displayed at the end of a number

NB: The changes that are made to the Measure at chart level (Attributes screen) will not affect the measure if it is used anywhere else on the dashboard.

Targets

The Target screen is used to add target areas or target lines to a chart. These can be a useful way of visualising whether a value is achieving the performance expected. Click the 'Targets' menu at the top of the 'Edit chart' screen.



To add a Target, click the + icon beneath the colour palette. The Target can represent a range of numbers for example, 100 to 200 or can represent a single value e.g. 100. If you specify a different number in the From and To fields, a target area will be created on the chart. If you specify the same value in the From and To fields, a target line will be created on the chart.

The drop-down arrows in the From and To sections are used to choose how the Target is displayed.

Value - this allows you to specify a figure that you want to use as the target, type the value that you want to use next to the Value drop-down arrow

Max - this allows you to select the maximum value of the bars in the chart. You can set the target to be a single line on the Max amount by choosing Max in both the From and To fields or you can use Max in either the From or To fields and choose another option, e.g. Value in the remaining field to create a target area.

Min - this allows you to select the minimum value of the bars in the chart. You can set the target to be a single line on the Min amount by choosing Min in both the From and To fields or you can use Min in either the From or To fields and choose another option, e.g. Value in the remaining field to create a target area. **Avg** - the AVG field will work out the average value based on the information in the chart and apply a target at that point. If you only want a single line to appear on the average value, ensure that you select AVG in both the From and To fields

Positive Infinity - This option will extend the target line to the very top of the chart

Negative Infinity - This option will extend the target line to the very bottom of the chart

Changing the colour of the target line

The Target line will initially be displayed in the default dashboard colour. To change the colour, click one of the colour sections on the right-hand side of the colour shade area at the top of the screen. In the following screenshot the red area of the colour section has been selected and the colour shade section will now show different variations of this colour from light to dark.

Click a variation of the colour in the colour shade area to select the colour that you want to use. The two squares beneath the preview area will show the current colour on the left and the newly selected colour on the right.

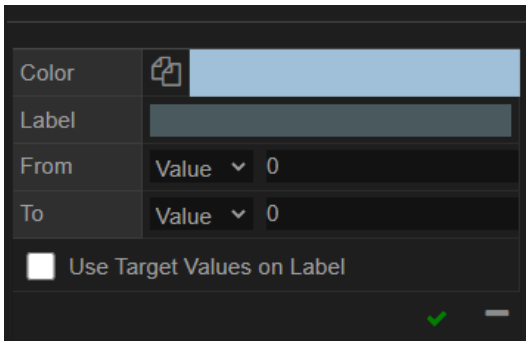
To apply the newly selected colour, click the 'Colour' square, above the Label field. You should see a small paintbrush appearing in the Colour area and the new colour choice will be applied to the target area.

As well as choosing a shade of colour, you can also select from one of the colour options configured in your Dashboard theme, which are displayed beneath the colour shade square and then follow the steps listed above to apply the chosen colour.

Adding a Label to the Target Line

When a target line or area has been added to a chart, you can see the details by hovering over the target line. In addition, you can also add a label that will appear on the target line all the time.

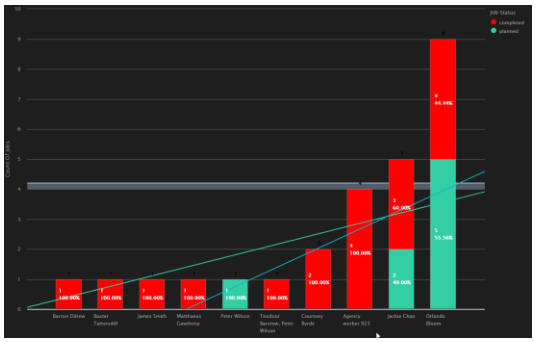
To add a label, type the text that you want to use in the 'Label' field.



The 'Use Target Values on Label' tick box can be used to also add the values that have been specified in the Target area From and To fields to the target line. This option is useful when you have used a Max or Min value for example.

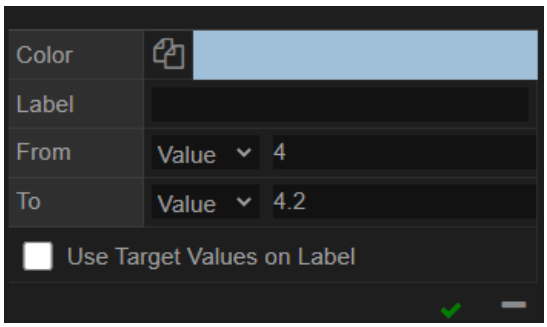
Example

This example shows that a target line has been added to the chart that represents the average number of employees. The colour of the target line has been changed and a label has been added to provide clarity.



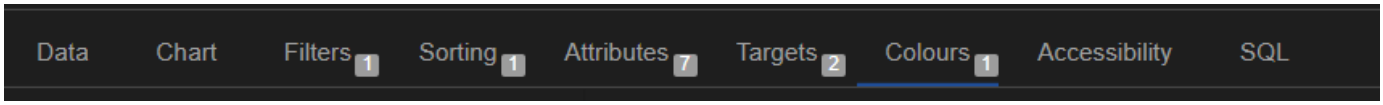
NB: If a label is not added, you can still see target information by hovering anywhere over the target line. It is also possible to use a pre-existing numeric measure in the Target area, which will indicate a different target value for each bar in your chart. The measure must already exist in the database and must be entered in the following way on the Target screen - #~Measure Name~#. ***Example***

The following example shows that a pre-existing measure (Attrition %) has been used in the Value From field only.



Colours

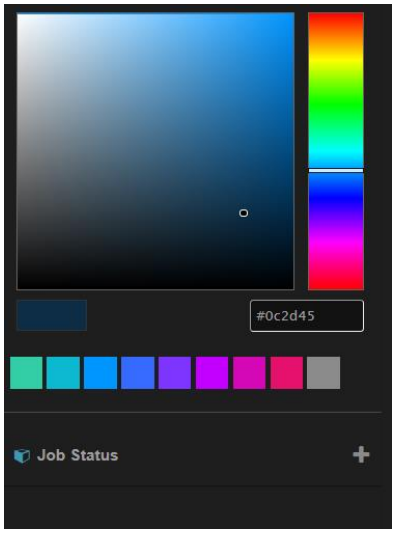
The colours section can be used to change the colours that are currently used on a chart. Click the ‘Colours’ menu at the top of the ‘Edit chart’ screen.



Changing the colour

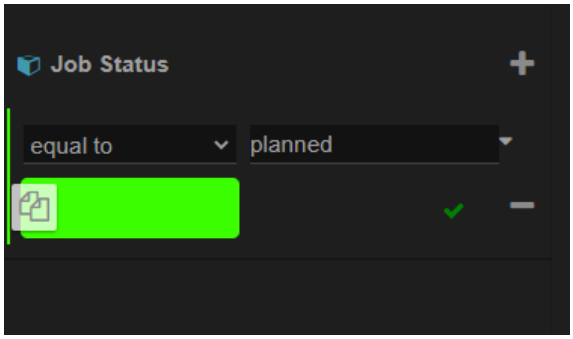
The objects that have been added to the chart fields will be displayed beneath the colour palette. To change the colour for a particular object, click the + icon next to the relevant object.

For example, to change the colour used for a job role click the + icon next to Job Role.

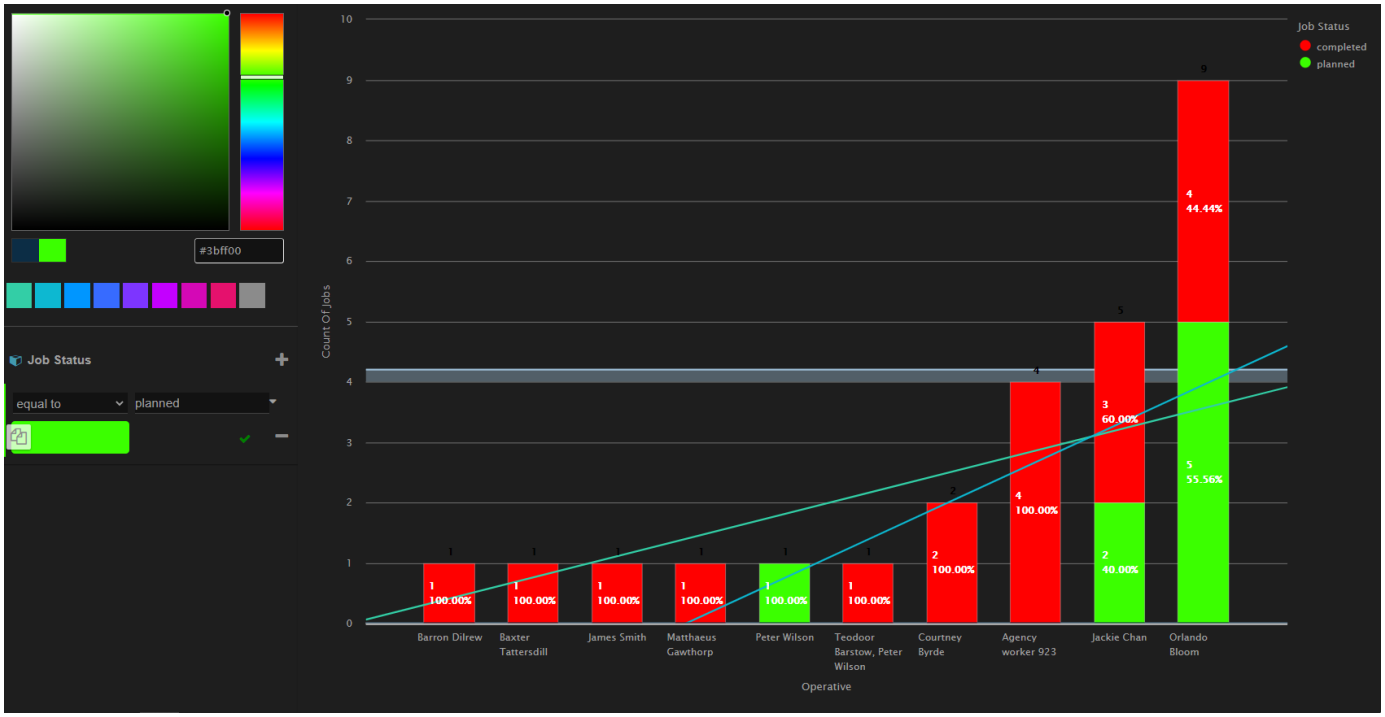


The options that you see next will differ depending on whether you are changing the colour for a Dimension or a Measure. The first drop-down field is used to choose the relevant comparison operator for example, equal to or not equal to and the second field is used to enter either a number (Measure objects) or choose a value from available options (Dimensions).

Click the first drop-down arrow and select the comparison operator that you want to use.



Select from the available comparator values and then select a filterable value from the following dropdown.



If you are filtering on a Measure, you will be able to add specific values for the colour configuration.

Removing colours

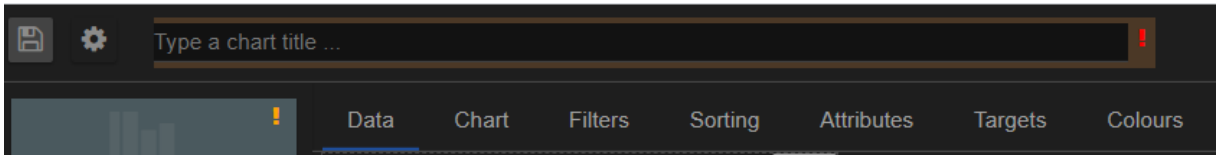
To remove a colour option from a chart, click the − icon next to the relevant section.

Any areas of the chart that used this colour will revert to the default colour.

Saving a chart

When the content has been added and you want to start using the chart on the dashboard you must give it a unique name and save it.

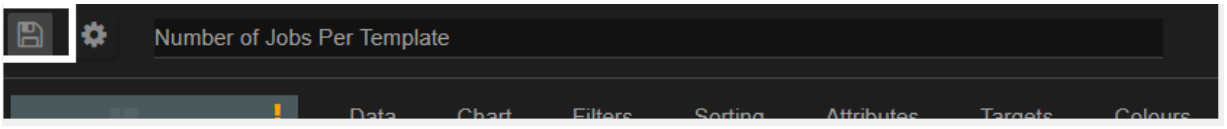
Click into the name field and type the name that you want to use for the chart. This name does not have to be visible on the dashboard itself but should be something meaningful so other users will be able to search for and use the chart from the Chart library.



If you enter a name that has already been used for another chart, the name field will remain a light orange background with a red exclamation mark.

When a unique name has been entered, the name field will have a white background and the exclamation mark will disappear.

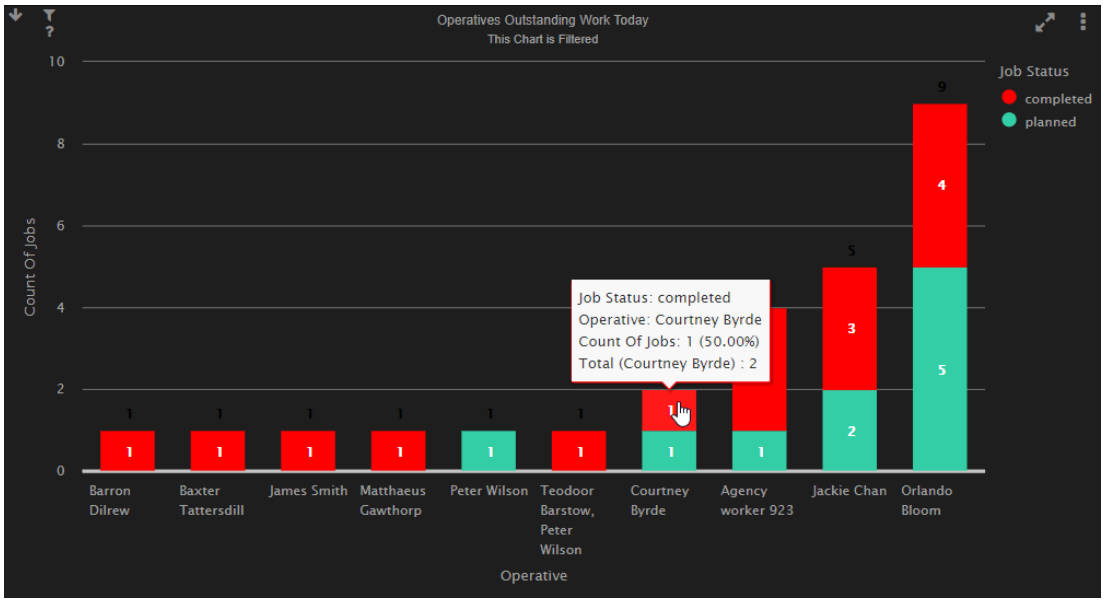
You will then be able to click the Save icon and view the chart on the dashboard. The chart will also be stored in the Chart Library.



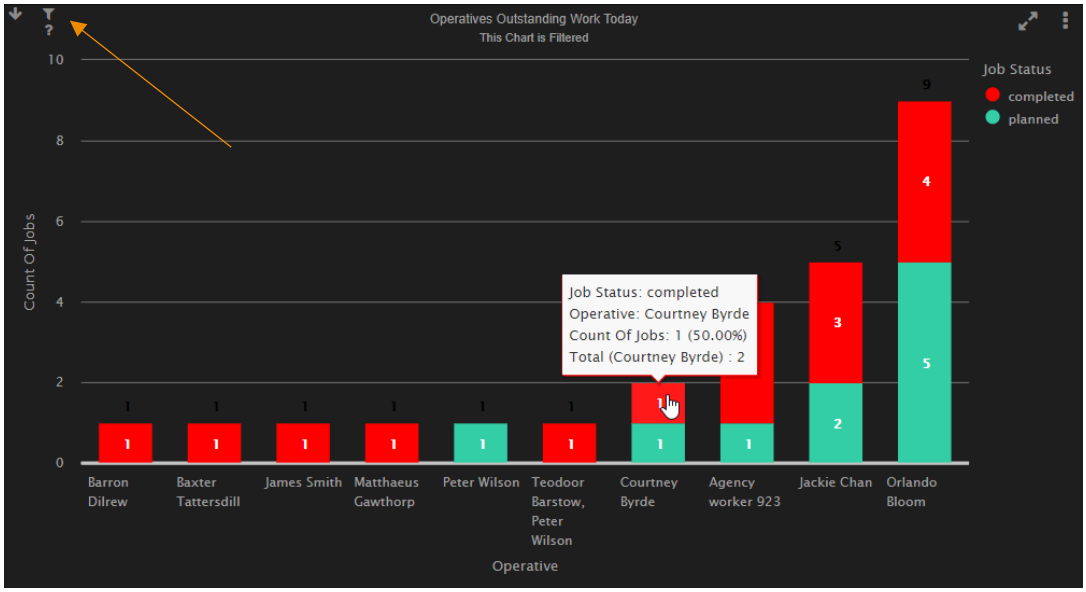
Viewing a chart

Once created, all charts will be visible on the dashboard. When you hover over the elements in a chart e.g. segments of a pie chart, bars in a bar chart or bubbles on a map you will see additional information. The type of information that you see will vary depending on the data that you used to create the chart and the type of chart you are viewing.

Hover over a bubble to see the related information.



If a filter has been applied to a chart, a filter icon will be displayed in the top-left corner.



To view what filters have been applied, click the filter icon.

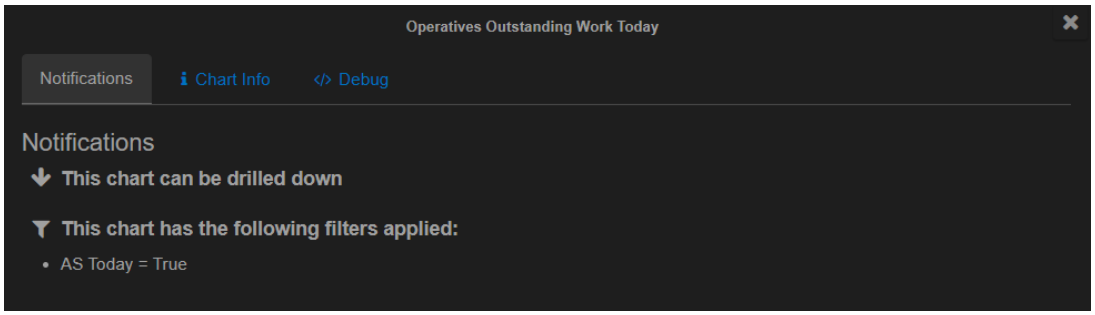
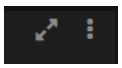


Chart Tools

At the top right of all chart cells, you will see two buttons (although they can be configured to not show).



The first button will display the chart in full screen mode and the second opens a chart tools menu with additional options.

The icons in the chart tools menu are explained in more detail in the following table.

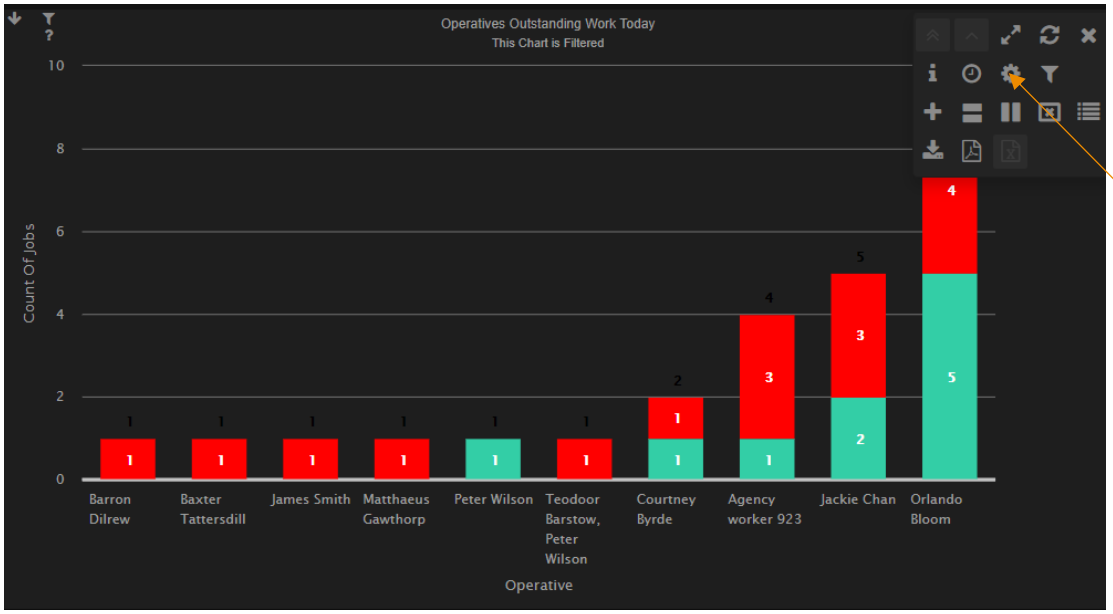
Icon	Meaning
	Drill up to the top level of the chart
	Drill up one level of a chart
	Display the chart in full screen mode

Icon	Meaning
	Refresh the current chart
	Close the Chart Tools menu
	Opens the chart information panel, this will show the name of the chart used, the Data Source that was used and any drill down levels
	Scheduler button, this will only be displayed if your licence permits it
	Edit chart – opens the Edit chart screens
	Used to create a temporary filter on the selected chart
	Create a new chart
	Splits the current chart cell horizontally
	Splits the current chart cell vertically
	Removes the current cell – any charts that were in the cell will still be available in the Chart Library
	Opens the Chart Library
	Used to download data as a .csv file – useful for large data tables
	Download the selected chart as a PDF file
	Download as an Excel file

NB: The items that are visible in the Chart Tools menu are linked to user privileges, if you can't see some of these options they may not be available for the user role that you have been granted.

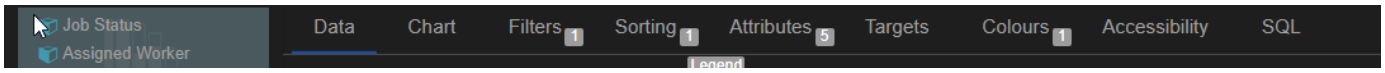
Editing a chart

If you need to make any changes to a chart, click the 3 dots at the top right of the cell. Click the 'Edit chart' icon. The options at the top of the screen will show if any Filters or Colours for example have been applied to the chart.



Example

The 'Edit chart' screen shows that one Filter, one Sorting, 5 Attributes and 1 Colour option has been set on this chart.

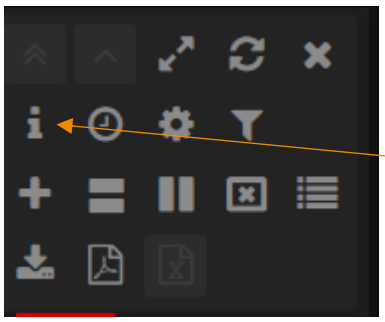


You can view what these are by clicking the appropriate menu. When you have finished making changes to your chart, remember to click the Save icon again.

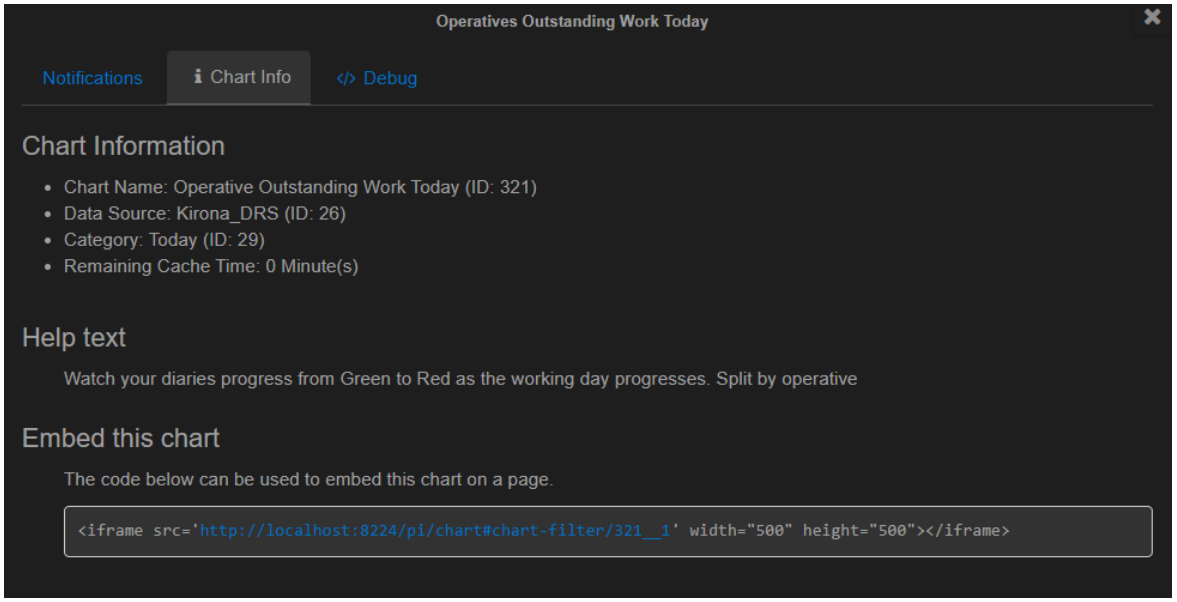
Viewing Chart Information

The Chart information icon can be used to check what type of chart has been created and which data source has been used to build the chart.

After clicking the 3 dots at the top of the chart cell to open the Chart tools menu, click the Chart information icon.

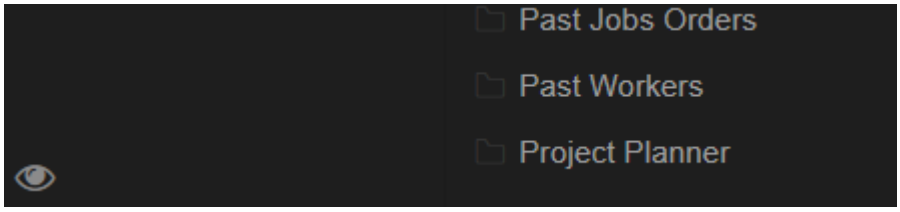


The Chart Information dialog box will show details about the selected chart.



Peek button

If you are making changes to your chart but need to refer to the original on the dashboard for clarification, click the peek button at the bottom-right of the 'Edit chart' screen.



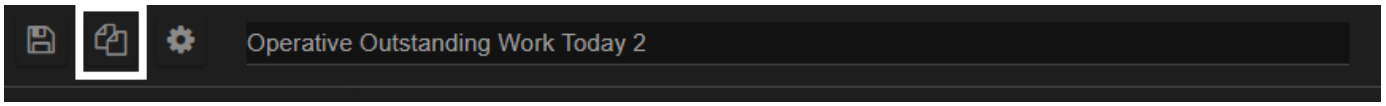
This will open a read only view of the dashboard over the top of the 'Edit chart' screen. To return to the 'Edit chart' screen, move the mouse away from the peek-a-boo button.

Duplicating a chart

To duplicate an existing chart, click into the chart cell that contains the chart you wish to copy. Click the 3 dots at the top-right of the cell and then click the 'Edit chart' icon.

Click into the chart name field at the top and give the chart a new name.

Click the copy icon next to the Save icon. This will create a duplicate of the selected chart; the current chart will remain unchanged.

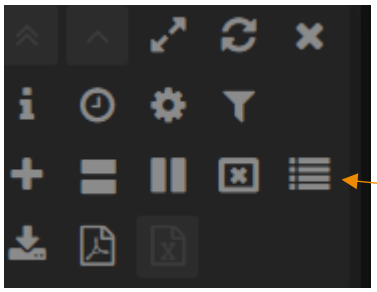


NB: When a chart is duplicated, the duplicated copy is placed into the Chart Library. The chart that was originally in the cell will remain unchanged.

Replace chart from library

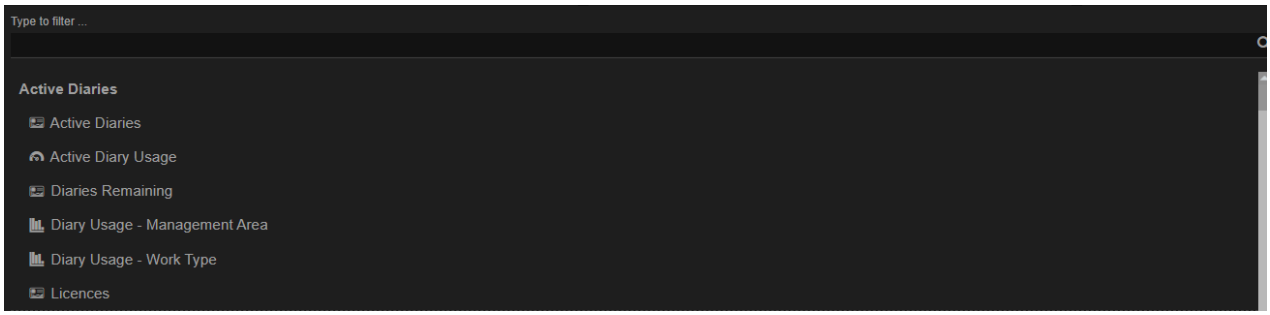
The ‘Replace chart from library’ option can be used to replace the current chart on the dashboard with one that was created previously.

Click the 3 dots at the top-right of the cell and then click the ‘Replace chart from library’ icon.



A dialog box showing all available charts will be displayed. You can find a chart by scrolling through the list or by searching for it by name.

To search for a chart, type some or all the chart name into the ‘Type to filter’ field. As you start typing, the list of available charts will be filtered to show all chart names that contain the text. A small icon will be displayed to the left of the chart name, helping to identify the type of chart.



NB: You can type text from anywhere within a chart name, it does not have to be the start of the chart name.

Click on the name of the chart that you want to use, the original chart on the dashboard will be replaced with the selected chart.

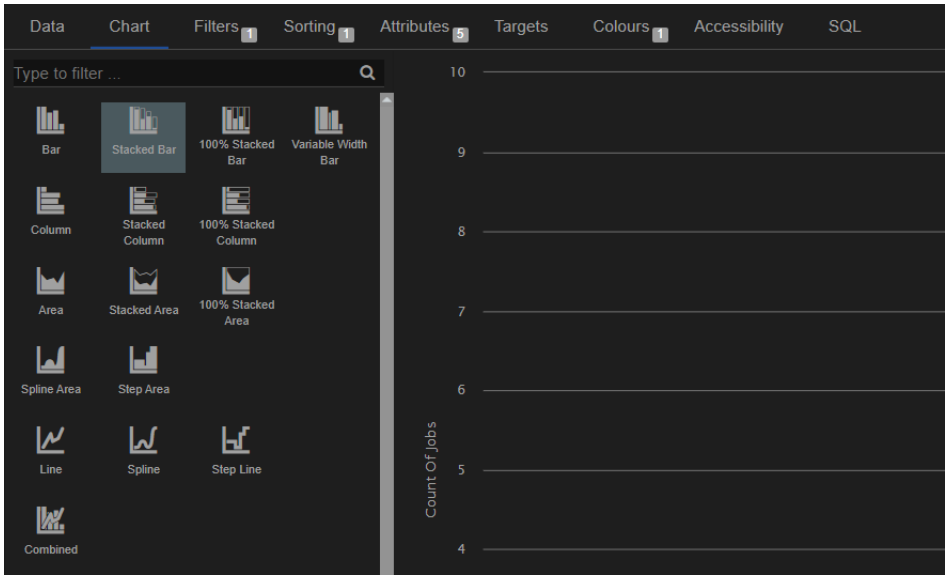
Changing the chart type

Changing the chart type is another way of exploring the data. Selecting the most appropriate chart type will enable you to better convey the message for the data in question. Some charts will provide better visualisation than others for a specific data set, some look more visually appealing and some need specific data requirements to work correctly. To change the chart type, click the 3 dots at the top-right of the cell and then click the ‘Edit chart’ icon.

Click the Chart Menu at the top of the Edit Chart screen.

A list of all the available chart types will be displayed. To change to a different chart type, click the chart icon and the chart will update in the preview section.

NB: Please be aware that some of the charts may display a warning when you select them. This will be due to the original chart not having the required data for the newly selected chart. If you see a message, like the one displayed in the following screenshot, when you select a new chart type you will need to add the missing data to the Data screen. Please refer to the section Adding data to a chart on page 25 for further details.



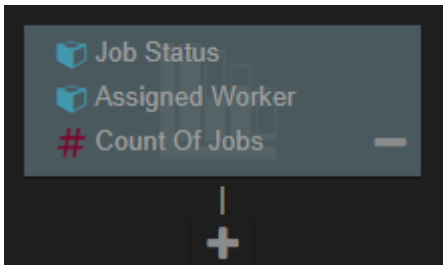
When the new chart type has been selected and all missing data has been added, click the Save button to confirm the changes and return to the dashboard.

Drill Down

A drill down level allows you to specify what a user will see when they click on a certain area of a chart. For example, if they click on a Region in a bar chart, this could drill down into another chart/ table that shows the number of stores in that region or the number of sales.

Creating Drill Down levels

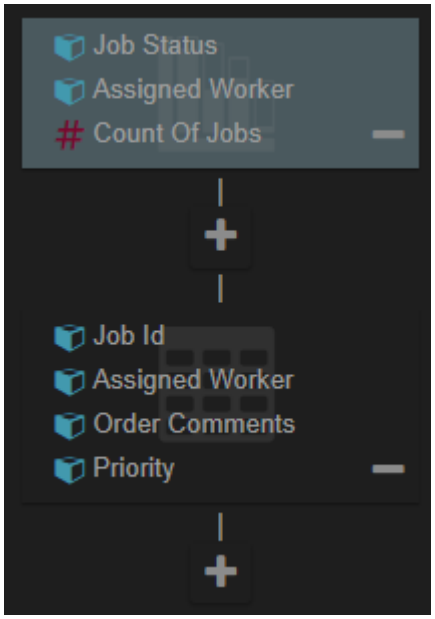
To create drill levels, click the 'Edit chart' icon in the Chart tools menu on your chart. Click the + icon beneath the current chart formation on the left hand side of the screen.



You can now select the chart type and add the data that you want to display for this drill level. Please refer to the section Adding data to a chart.

To create additional drill levels, repeat the steps listed above.

When all drill levels have been created, click the Save icon at the top of the 'Edit chart' screen to return to the dashboard.



When drill down levels have been set -up on a chart, a small downward facing arrow top left corner of the chart cell. This indicates to a user that they can click one of the segments in the chart itself, for example one of the bars in a bar chart and view further information relating to that segment only. The downward facing arrow will remain visible in the top left corner of the chart cell until a user has drilled down to the last level.

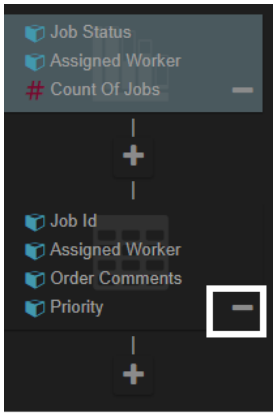
Returning to the Top Level

When a user has drilled down into underlying data on a chart, the two chevron icons at the top-right of the chart cell can be used to go back up through the levels.

Click the double chevron icon to return to the highest level (main chart) Click the single chevron icon to go back one level at a time.

Removing Drill Down levels

To remove a drill down level, click the 'Edit chart' icon. In the 'Edit chart' screen, click the remove icon next to the drill level that you want to remove.

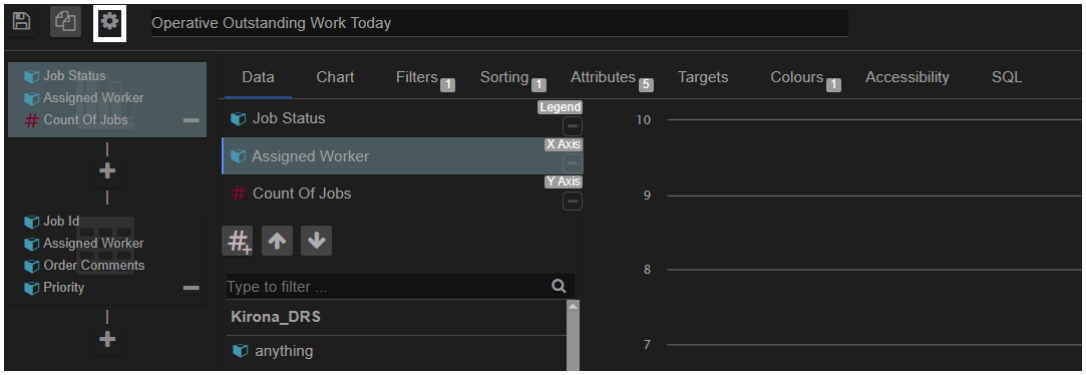


Link

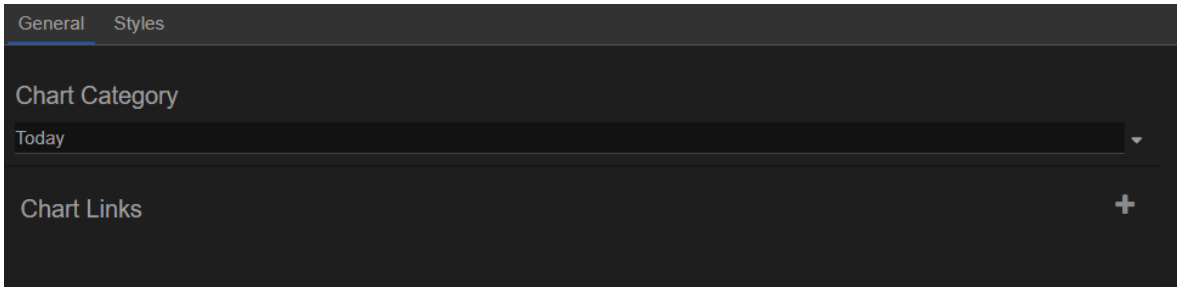
Link buttons appear at the bottom of a chart cell and can be used to link to another chart.

In order to use link buttons, you will need to create the chart(s) that you want to create the link to, this can either mean creating the chart from scratch or linking to an existing one in the library. If you need to create a new chart, please refer to the section creating a chart on page 25 for full details.

To create the link buttons, click the 'Edit chart' icon in the Chart tools menu. Click the Config button at the top-left of the 'Edit chart' screen.

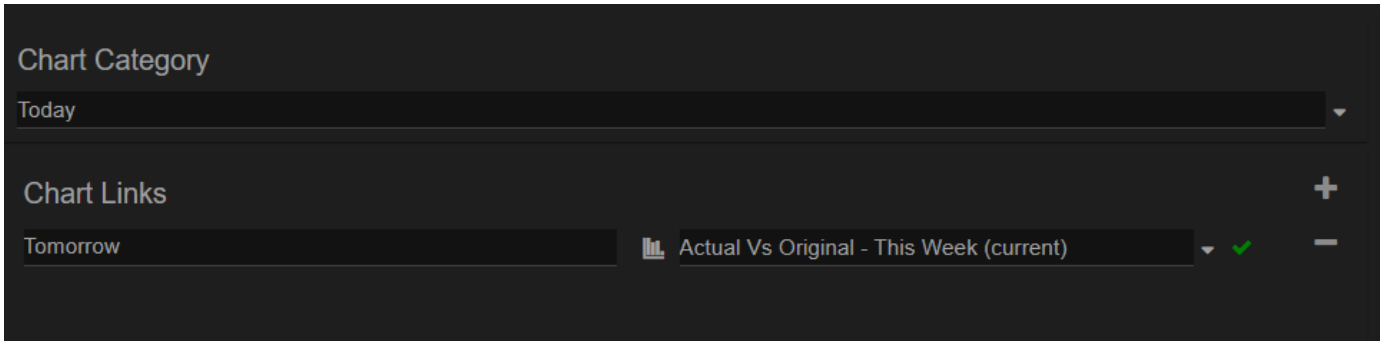


In the Config screen, click the + icon in the Chart Links section.

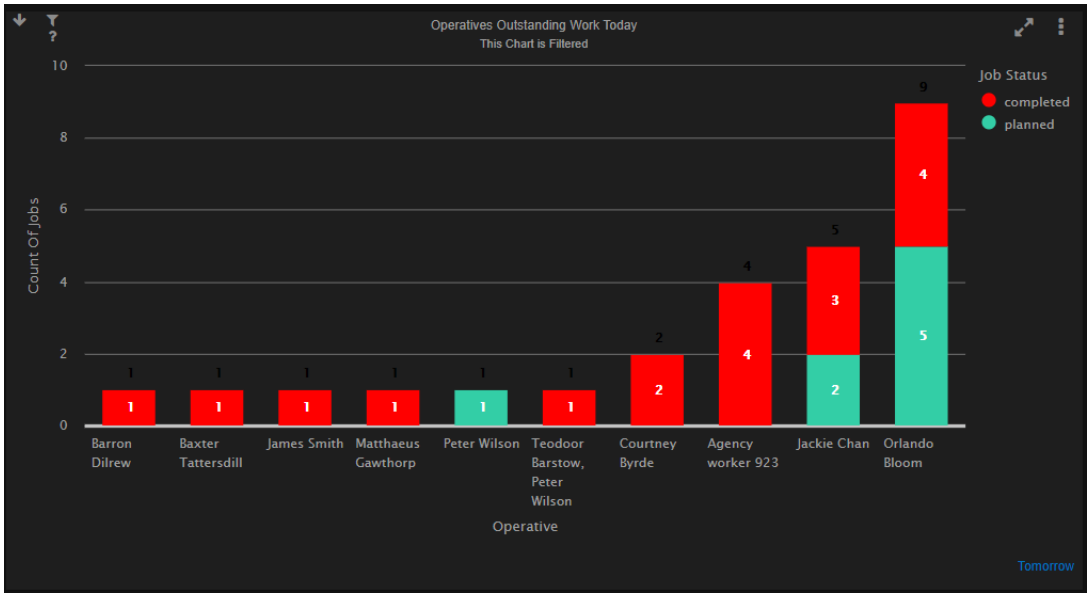


In the Label field, type the text that you want to appear as the link. The text should give some information to a user about what they might see by clicking the link.

In the next field, click the drop-down arrow. This will display the Chart Library from where you can select the chart that you want to link to.

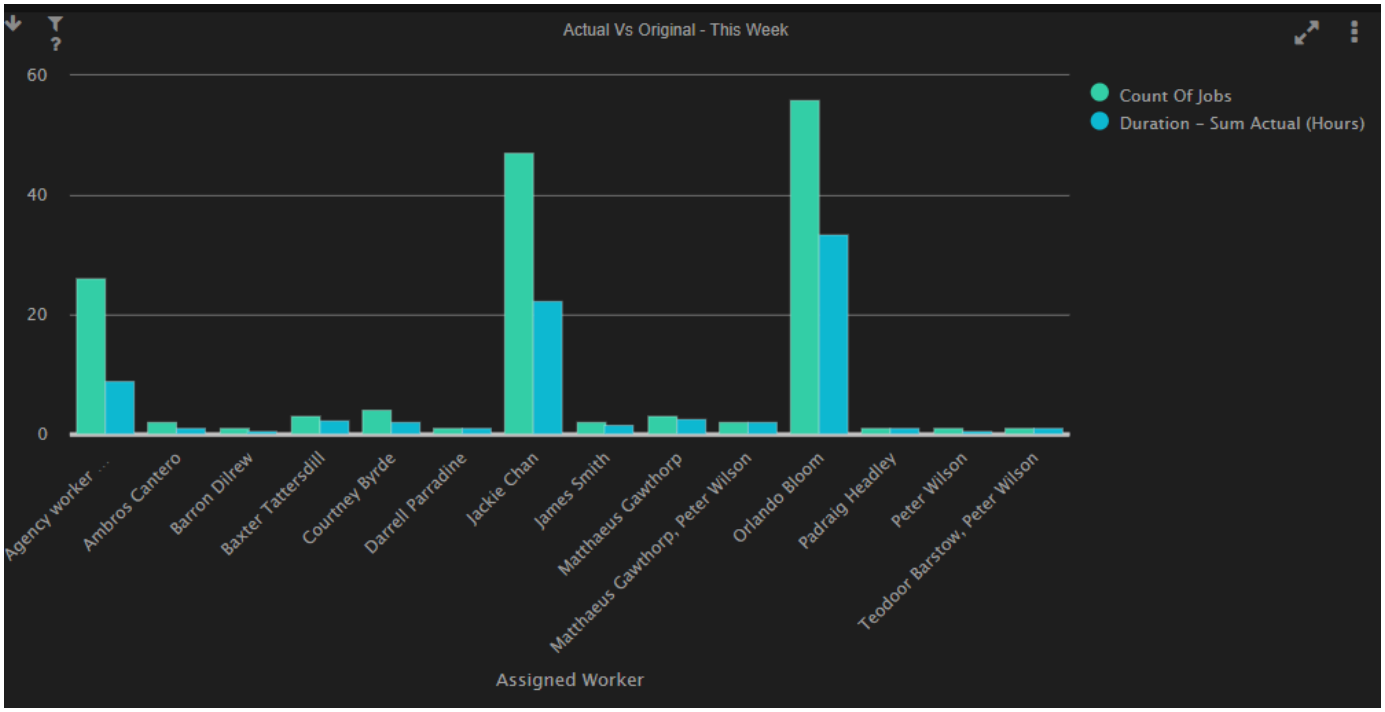


When all Links have been created, click the Save button in the top-left corner. This will return you to the dashboard, where you will be able to see the link button at the bottom right of your chart.



Example

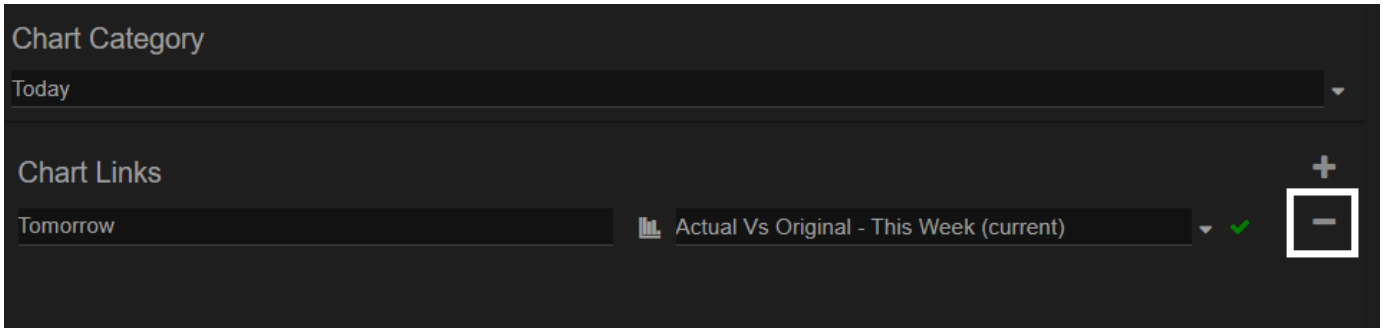
The following example shows the chart that is displayed after the link button in the previous screenshot is clicked.



NB: Remember that you may need to create the link buttons on every chart that is connected so users can navigate to all the connected charts from which ever chart they are currently viewing.

Removing Link Buttons

To remove link buttons, click the 'Edit chart' icon in the 'Chart tools' menu in the chart cell that you created the link buttons in. Click the 'Config' icon at the top of the 'Edit chart' screen and click the remove icon next to the link that you want to remove.



Click the Save icon to confirm the changes. The link button will no longer be displayed in the chart cell.

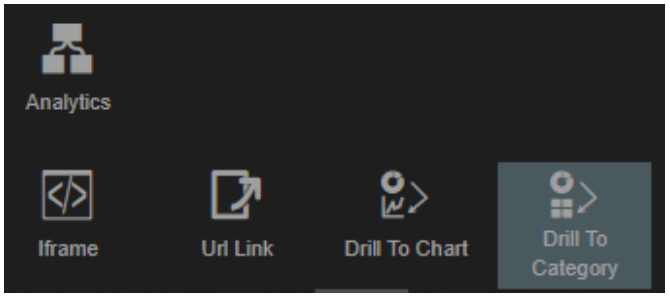
Drill to category

A drill to category allows users to click on an area in a chart and view additional information in another dashboard category. Available categories can be seen by clicking the 3 lines at the top-left of the dashboard.

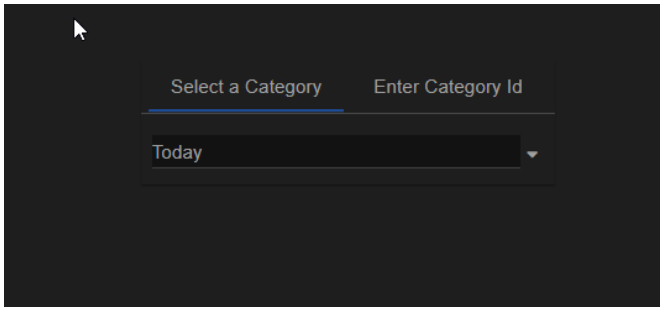
Creating a Drill to Category Level

This enables you to drill down on one chart and be taken to another dashboard category. Create your main chart by following the steps in the section creating a chart on page 25.

Click the 'Edit chart' icon and in the 'Edit chart' screen, click the + icon beneath the chart details on the left-hand side. On the Chart Screen, scroll down and click on the 'Drill to Category' at the bottom of the list of charts.



Click the drop-down list, that is displayed in the chart preview section on the right-hand side of the screen and select the dashboard category that you want to drill to.



Click the Save icon at the top of the screen.

Viewing Drill to Category levels

When a Drill to Category level has been created, a small downward facing arrow will be displayed at the top left of the chart cell on the dashboard. To view drill down information, click anywhere in the chart cell.

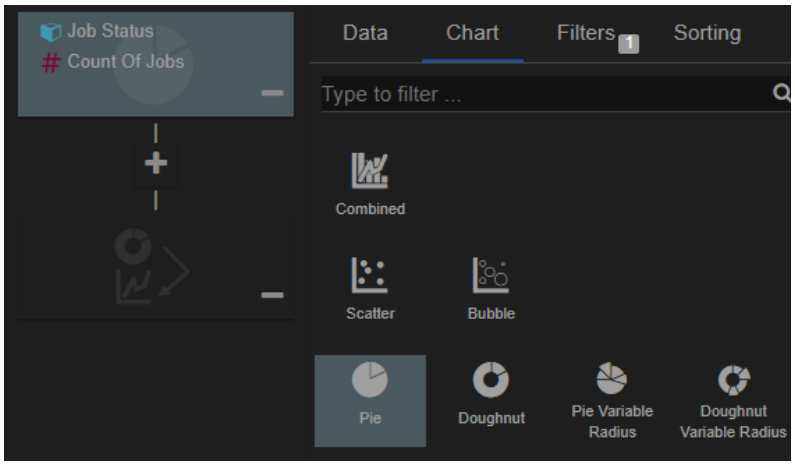
NB: Remember you can use the browser 'back' button to return to the previous category after doing this.

Drill to Chart

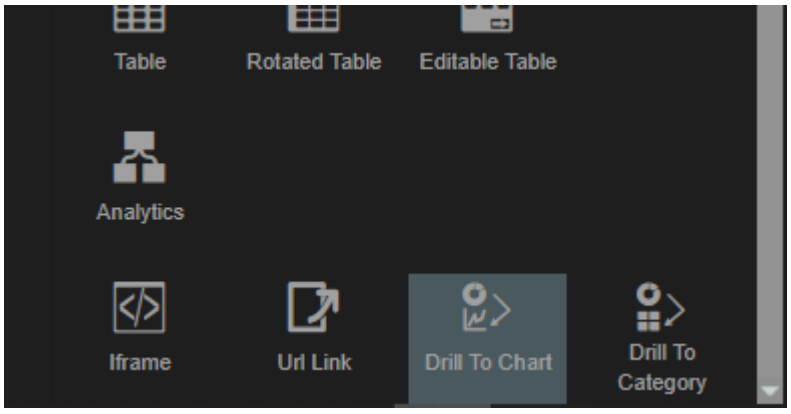
Drill to Chart allows a user to click on part of one chart and view related information in another chart. For example, we may have a bar chart that shows the different stages of a marketing campaign. When one of the bars (Stage) is clicked, a different chart will be displayed showing information about that stage.

In order to use Drill to Chart, you will need to create the chart that you want to create the link to, this can either mean creating the chart from scratch or linking to an existing one in the library. If you need to create a new chart, please refer to the section creating a chart on page 25 for full details. Create your first chart and then click the 'Edit chart' icon in the Chart tools menu.

Click the + icon beneath the objects for your first chart at the top-left of the screen.



Click the Chart menu in the 'Edit chart' screen and from the available charts, click 'Drill to Chart'.

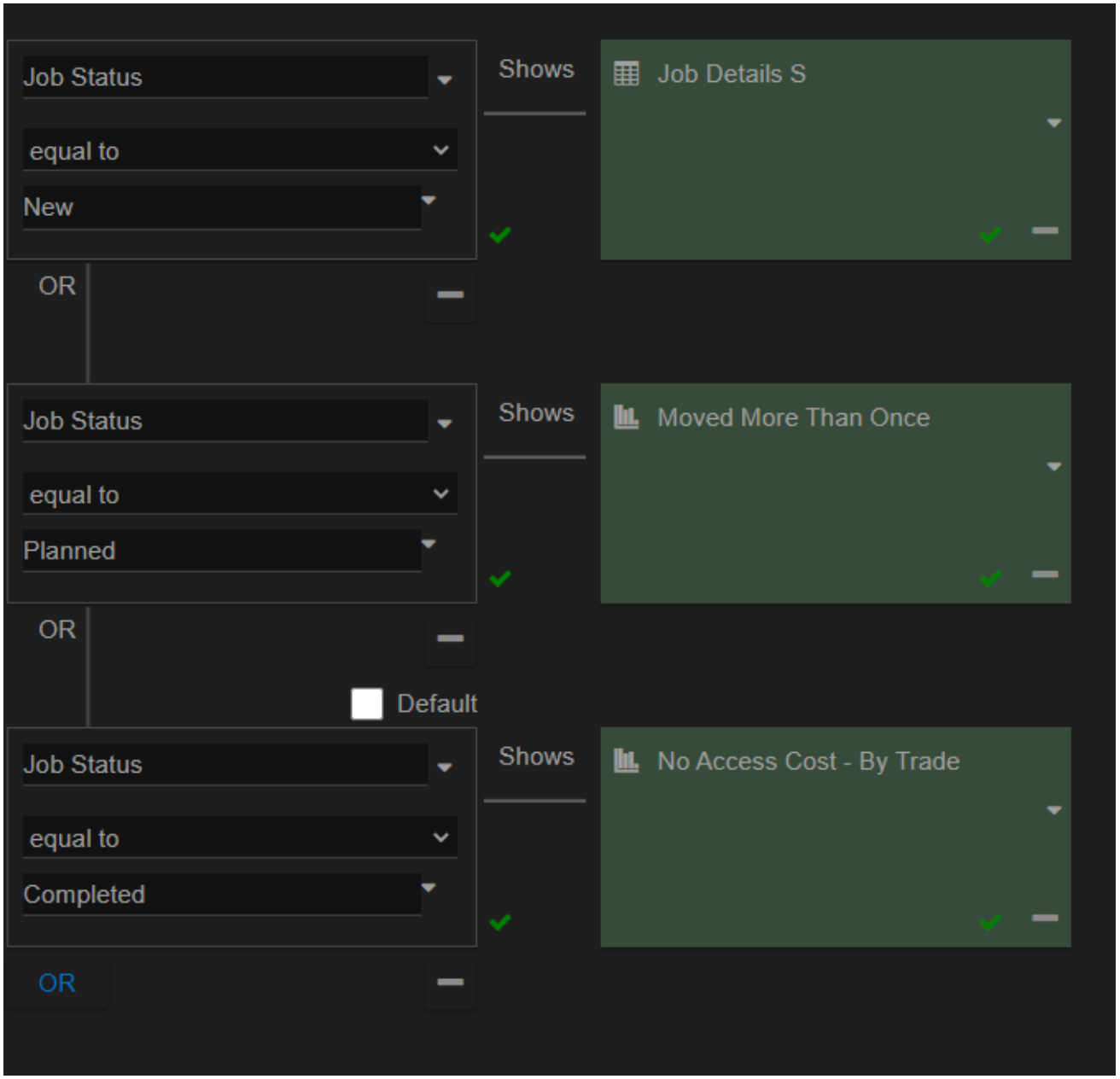


You will now be able to create the different 'Drill to Chart' settings.

Click the '—Please Select—' drop-down arrow, a list of the objects used to create your name chart will be displayed. Choose the comparison operator that you want to use for example, greater than or equal to and then click the final drop-down and choose the relevant option from the list.

Click the drop-down list in the second box and select the name of the chart that you want to display from the library.

To create further steps for example, if the Stage = Won display Won – Location chart OR if Stage = Lost display Lost – Employee Detail chart click the OR button. When all steps have been created, click the Save icon at the top-left to return to the dashboard.

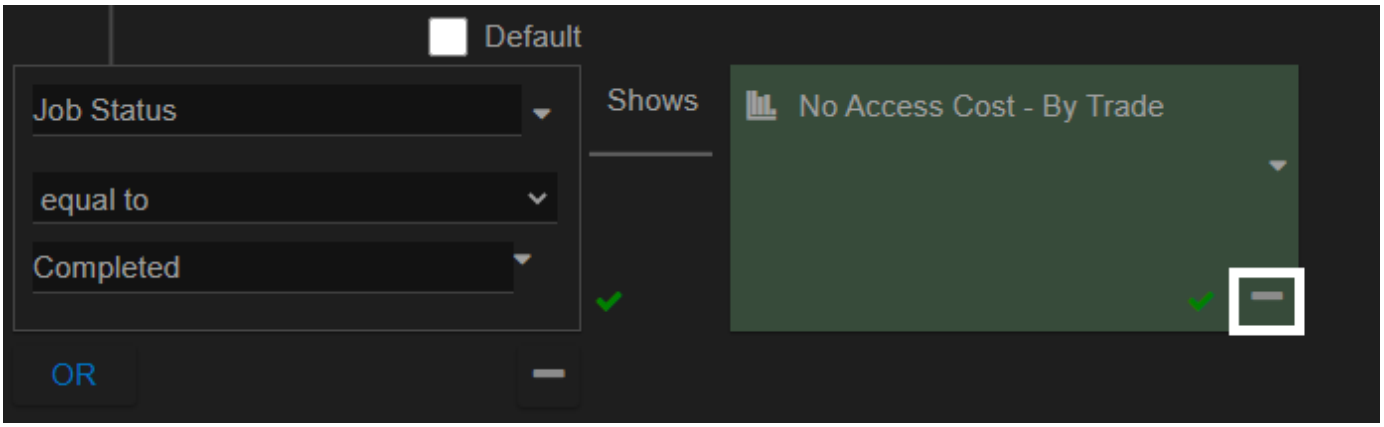


NB: You can specify as many AND/ OR conditions as you need to create a complex Drill to Chart scenario. However, ensure that you have already created, or have access to, the charts that you need for each of the Drill to Chart steps.

Deleting a Drill to Chart step

To remove any of the steps that have been created, click the 'Edit chart' icon on your main chart (this is where the 'Drill to Chart' levels have been created).

Click the 'Drill to Chart' icon at the top-left of the screen.

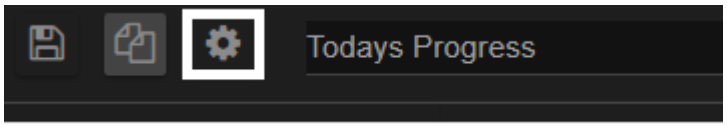


To remove one of the steps, click the icon beneath the relevant step.

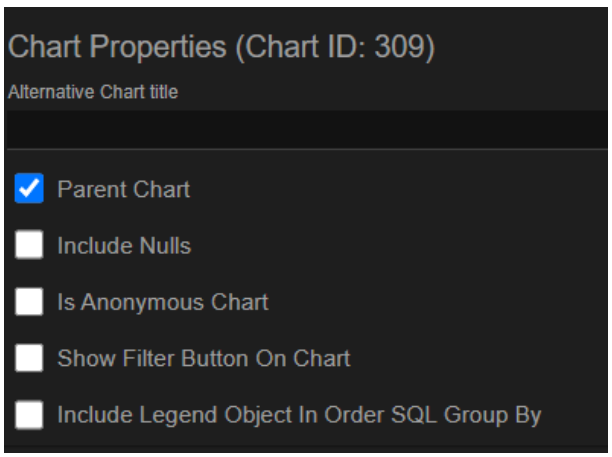
Parent Charts

When a parent chart is set up, it means that you can control other charts on the dashboard based on selections made in the parent chart. To create a parent chart, choose the chart that you want to use and click the 'Edit chart' icon in the 'Chart tools' menu.

Click the 'Config' icon at the top of the 'Edit chart' screen.



On the right-hand side of the Config screen, tick the 'Parent Chart' box. Click the Save icon to return to the dashboard. When a chart has been set up as a parent chart, this icon



Will be displayed in the top-left corner of the chart cell. If you hover over the icon it will display a tool tip to let you know that you are viewing a parent chart.

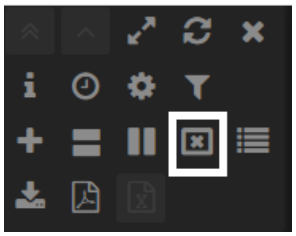
Deleting a chart

There are different methods that can be used for deleting a chart. Which one you use will depend on whether you want to delete the chart completely or just remove it from the dashboard.

Method 1

This method will remove a cell from the dashboard, also removing the chart within it. The chart will remain in the Chart Library, meaning it can be used again. Click the 3 dots at the top right of the chart cell.

Click the Remove Cell Icon.

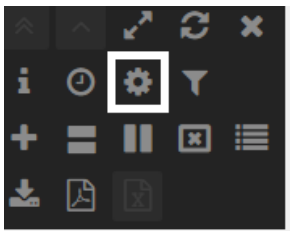


Method 2

To remove a chart from the dashboard you can replace with a different chart type. Please refer to the section Replace chart from library on page 59 for full details.

Method 3

This method will remove the chart from the dashboard and the Chart Library. Click the ‘Edit chart’ icon.



Click the ‘Cog’ icon next to the Chart Name.

At the bottom right of the screen, click the ‘Delete Chart’ button.

Method 4

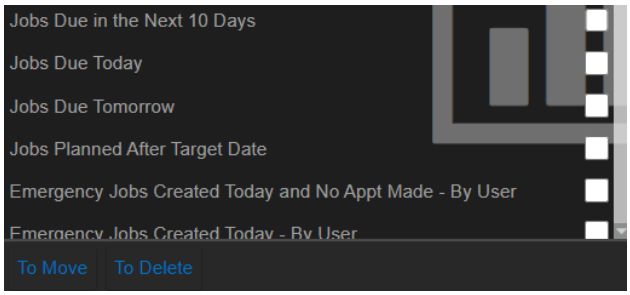
This method can be used with multiple charts (and also a single chart) and is used to either delete the charts permanently or to remove them from user’s access, meaning that they can be re-enabled later if required.

Click the Dashboard Configuration icon at the top-right of the dashboard.

Click ‘Category Access’

If you know which category the chart sits in, click the Category Name on the left-hand side otherwise click

‘All’. A list of either the charts in the selected Category or all charts in the dashboard will be displayed on the right-hand side of the screen. Select the chart(s) that you want to delete. Click either the ‘Delete’ icon to remove the charts permanently or the ‘Move’ icon to move them to a different category.



Accessibility

This functionality was primarily designed for use with embedded charts and enables Infosuite charts to be used in conjunction with screen reading software.

If the user is using a screen reader, and you don’t do anything in this tab, then the default system generated message for this chart will be read out. To see what that default system generated message would be click the ‘Generate the default message template for modification’ button (circled in blue) and the default message syntax will pull through (circled in red).

By default the screen reader would read out the chart title “Actual v Target” (it would also read out any chart subtitle you had setup) and then “Where Alan Ward then Daily Target is one hundred and thirty-five thousand pounds and Targets – Actual is forty two thousand, nine hundred and fifteen.27 pounds” it would then repeat for each Account Manager.

The default message is generated by the underling code behind the chart and can therefore by default look (and thus sound) quite programmatic. Hence giving you the option to manually edit it. So, in this case, this would sound better;

Note that;

- If you manually override the default message you may need to revisit it if the chart is subsequently changed.
- You don’t need to click the ‘Generate’ button if you just want to use the default message, this merely displays it for information and, if required, alteration.
- You can reference category objects {{ }} and system variables [[ ]] in the message.
- Non-chart functionality (such as the category name) is not read out, which is why this functionality is primarily intended for use in embedded charts.

Chart SQL

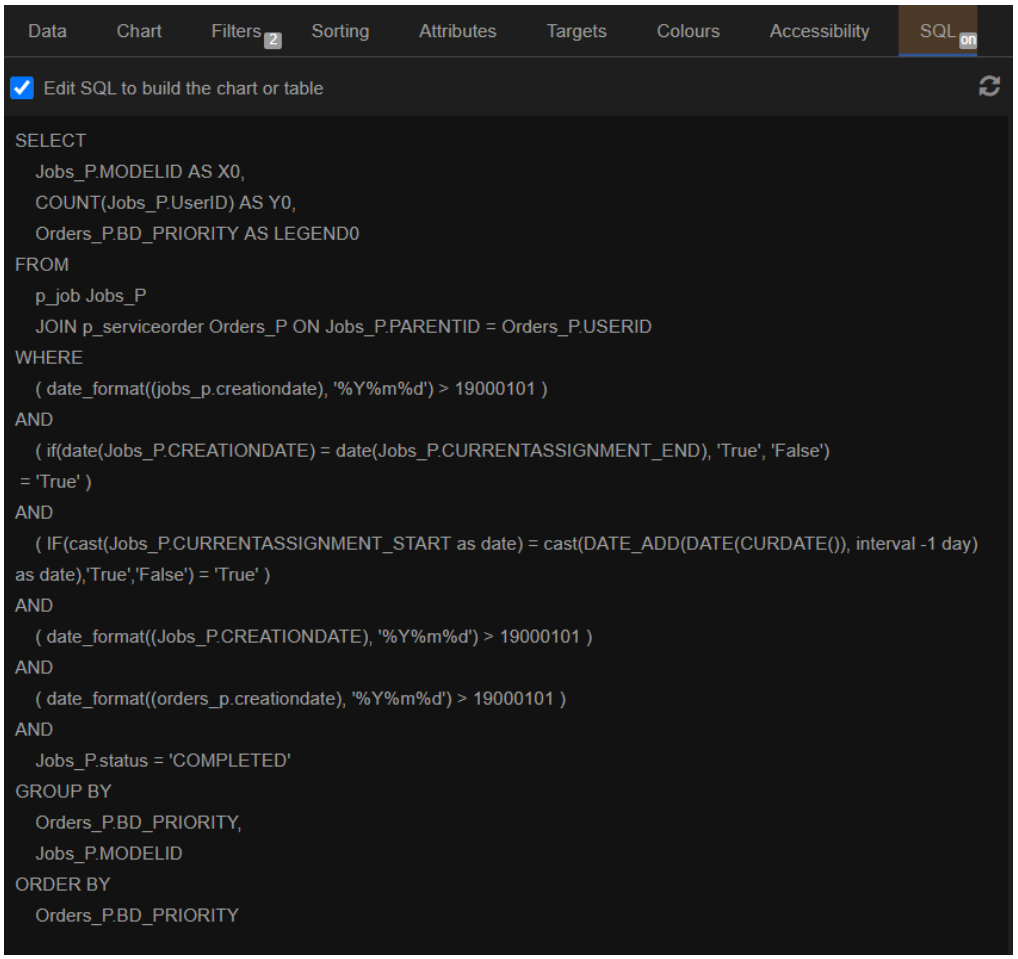
Using this functionality you can manually define the SQL to be used for a chart or data table.

Normally (i.e. when not utilising this screen) the SQL is automatically generated depending on the definition of the objects and tables and table joins in the metadata, the application of filters, sorting, category objects etc.

However once you have overwritten/changed the SQL using this screen the functionality of the dashboard in relation to this chart is fundamentally changed and the SQL for this chart will no longer automatically update as a result of things you may do elsewhere in the dashboard. For example you will need to code all filters etc. manually, and if changes are made to the definition of an object, or table joins etc. they will no longer automatically be reflected in the SQL of any chart where you have used the functionality of this screen.

Normally there are better approaches then manually altering the SQL. That said, there are a few circumstances when this can be useful, if you want to utilise database hints for example.

To manually edit the SQL, select the SQL tab and enter the SQL you wish to use.

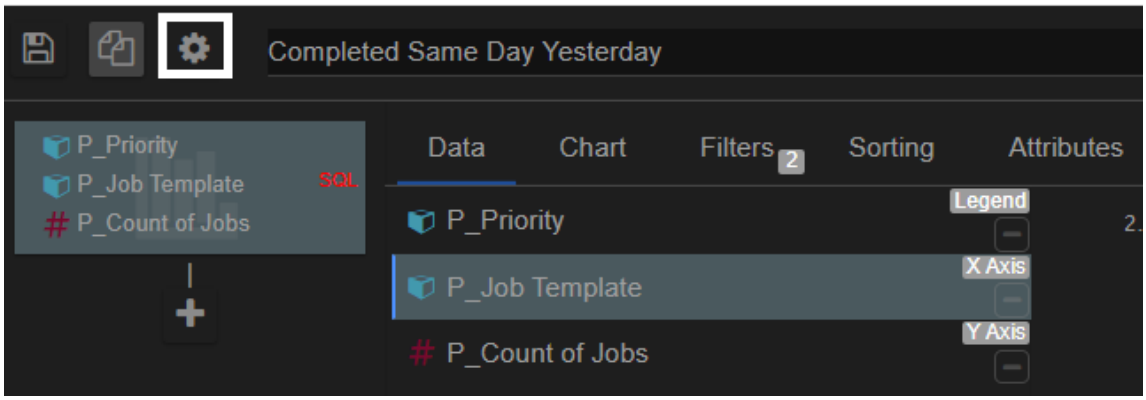


NB: Once the SQL has been overridden, the indicator says ‘on’. This is so that you can spot a chart with manual SQL quickly.

If someone asks you to debug a chart, be sure to check for manual SQL first. Many hours have been lost trying to figure out what has happened, only to notice this at the last moment.

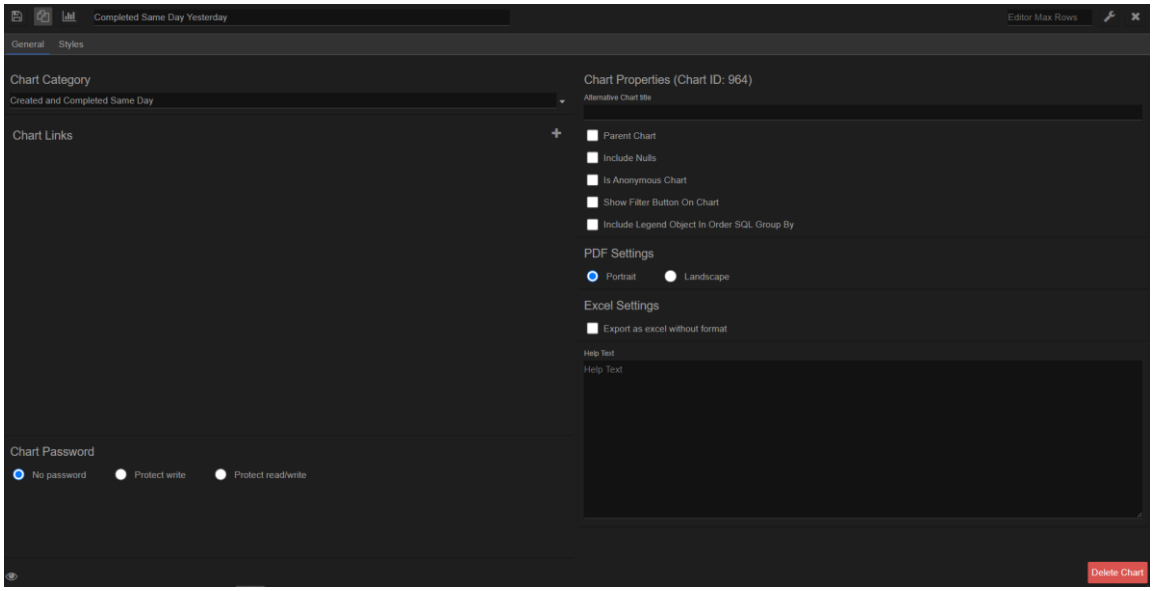
Chart Configuration

The previous chart options only apply to the specific level of drill you are at. In this section we can set chart options that apply to the whole chart – i.e. to all drill levels.



Clicking on this panel opens the following screen.

NB: the button becomes a toggle, allowing you to return to the chart.



The options on the screen perform these functions:

Chart Category – This drop down list allows you to change the parent category that this chart belong to, which may have an effect on security – i.e. which users can view it. All charts can be assigned to the pseudo category ‘Home’; which means it can be accessed by all users.

Chart Links- This section allows you to add link buttons to the chart so we can navigate to other charts/tables based on the button we click.

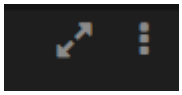
Chart Password – This section allows you to restrict the chart with a password. A text box will appear under the radio buttons that will ask you to create and confirm your password when a protected state is selected.

Parent Chart – This checkbox will set the current chart as a parent; this will mean that all other charts on the category will be filtered by the value that is selected on this chart. If you click this button then any drilldowns on this chart will become inaccessible; because selecting a data segment will also filter the other charts, rather than drilling down.

Include Nulls – This checkbox will show NULL values on the chart if there are any.

Is Anonymous Chart – This checkbox will allow you to view the chart without needing to log into the dashboard for example to embed into a website or intranet. The ability to do this is controlled by the end users' licence.

Show Filter Button On Chart – This checkbox will show the Temporary filter button on the chart.



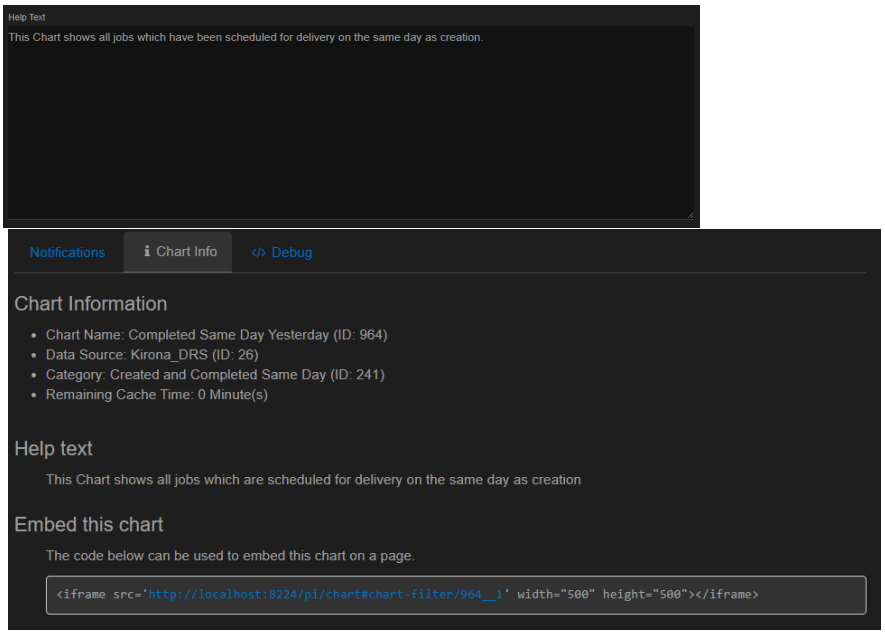
Include Legend Object in Order SQL Group By – This checkbox will put the Legend Object within the 'Group By' section of the SQL generated by the chart.

PDF Settings – this enables you to choose whether PDF's rendered from this chart are formatted in Portrait or Landscape mode.

Export as Excel without format – this will remove any dashboard formatting applied to objects (for example prefix, suffix, decimal places and thousand separators) from Excel files produced by the dashboard. Formatting applied to the chart (such as colour options, as per below) will not be removed. Example with this option unticked;

Help Text

Whatever you place within the Help Text area of the Chart configuration, will be displayed to the end users in the Chart Info window.

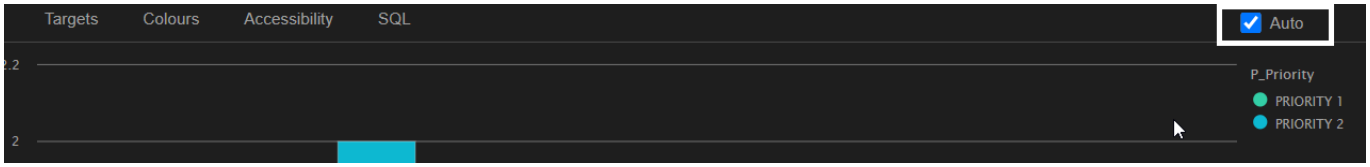


Delete Chart

Clicking this button will delete the chart you are currently editing. Charts can also be deleted 'en masse' (or individually) in Admin Tools – Category Access.

Auto Refresh

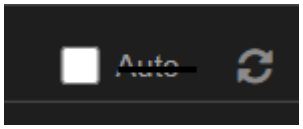
In the top right corner of the Edit Chart screen, there is a Toggle button which allows you to control the auto-refreshing of the chart.



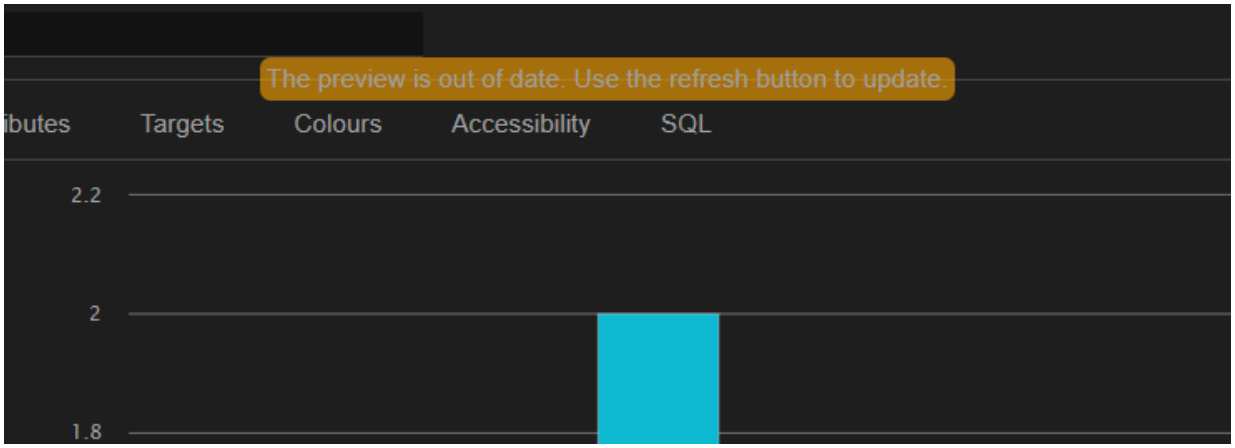
By default, it is on. This is useful as it allows you to quickly explore your data.

However there may be times when you just want to create or edit the chart, and then only refresh once all your changes have been completed.

You can do this by toggling this button to the off position by clicking it.



Now the chart will not refresh or update in the preview panel as you make changes. When you now make a change, you will see a message saying the following:



When you have made the changes you require, you can either refresh the view by clicking the Refresh button, or by turning auto refresh back on.

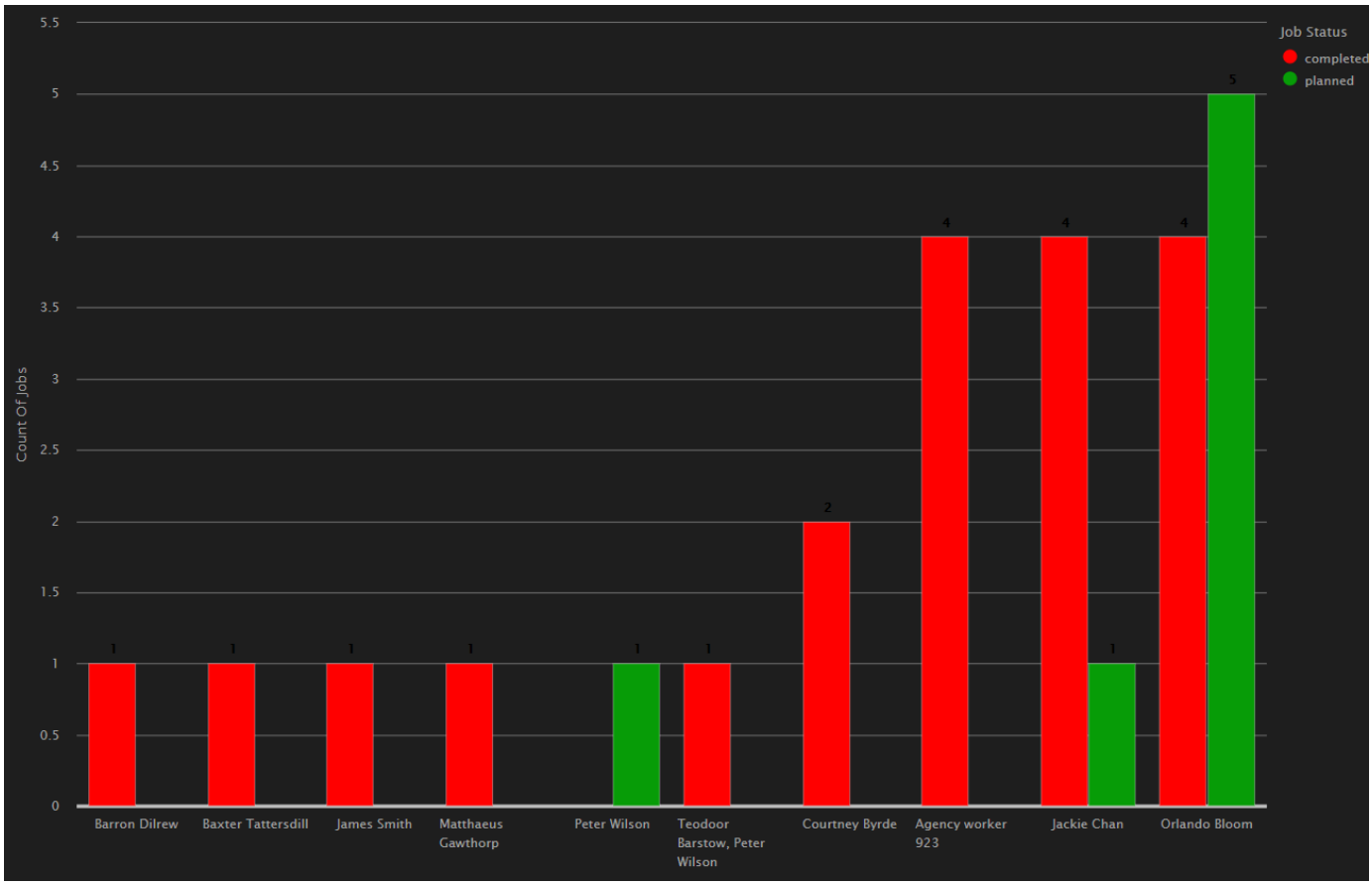
Chart Types

Bar charts

Bar chart

This is the default chart type when you create a new chart. It is probably the most widely used and simplest type of chart and is best used when you want to compare value sizes. Bar charts are comprised of an X Axis (Dimension), which determines how many bars are displayed and a Y Axis (Measure), which determines the height of each of the bars.

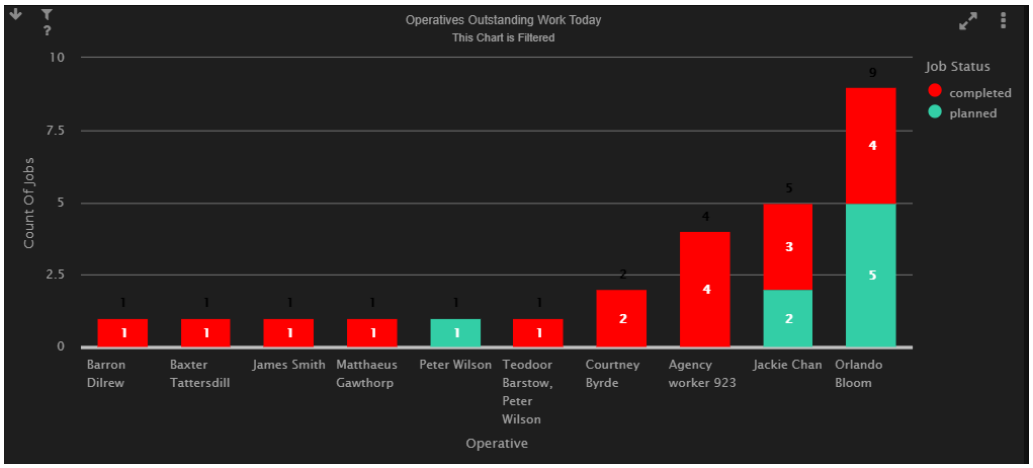
Example



Stacked Bar chart

A Stacked Bar Chart is used to compare numbers across two dimensions. The bars representing each dimension are stacked on top of one another and provide a good visualisation of how the dimension values compare to each other. Stacked Bar charts are comprised of an X Axis (Dimension), which determines how many bars are displayed and a Y Axis (Measure), which determines the height of each of the bars. A further dimension (Legend) is stacked on top of the first bar and this shows how the information in each bar is split.

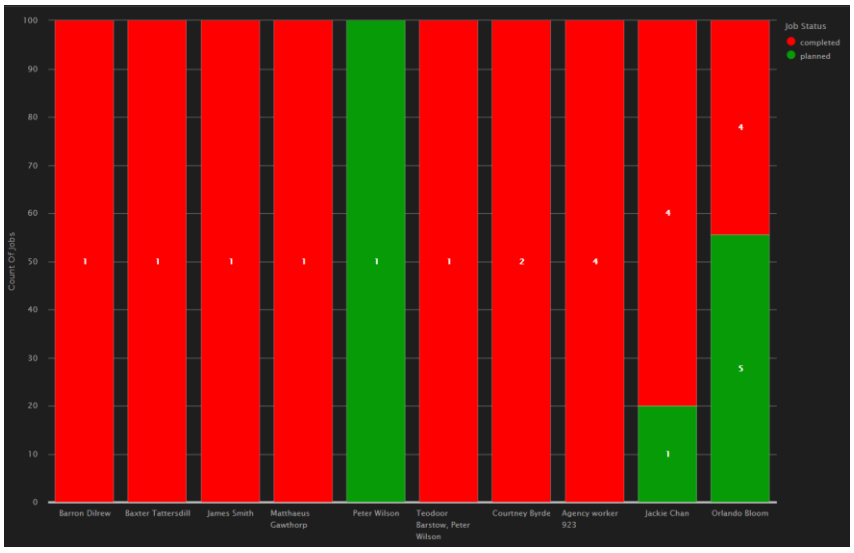
Example



100% Stacked Bar chart

This chart is very similar to a stacked bar chart, but shows the values broken down into percentiles. It is therefore best used when the percentage/ proportion is more important than the absolute value. Each of the bars in this chart will add up to 100%. It is almost identical to the Stacked Bar chart but instead of showing the Employee Count as a number it shows it as a percentage. The Legend (Gender) is then used to show the percentage split between male and female employees for each Job Role.

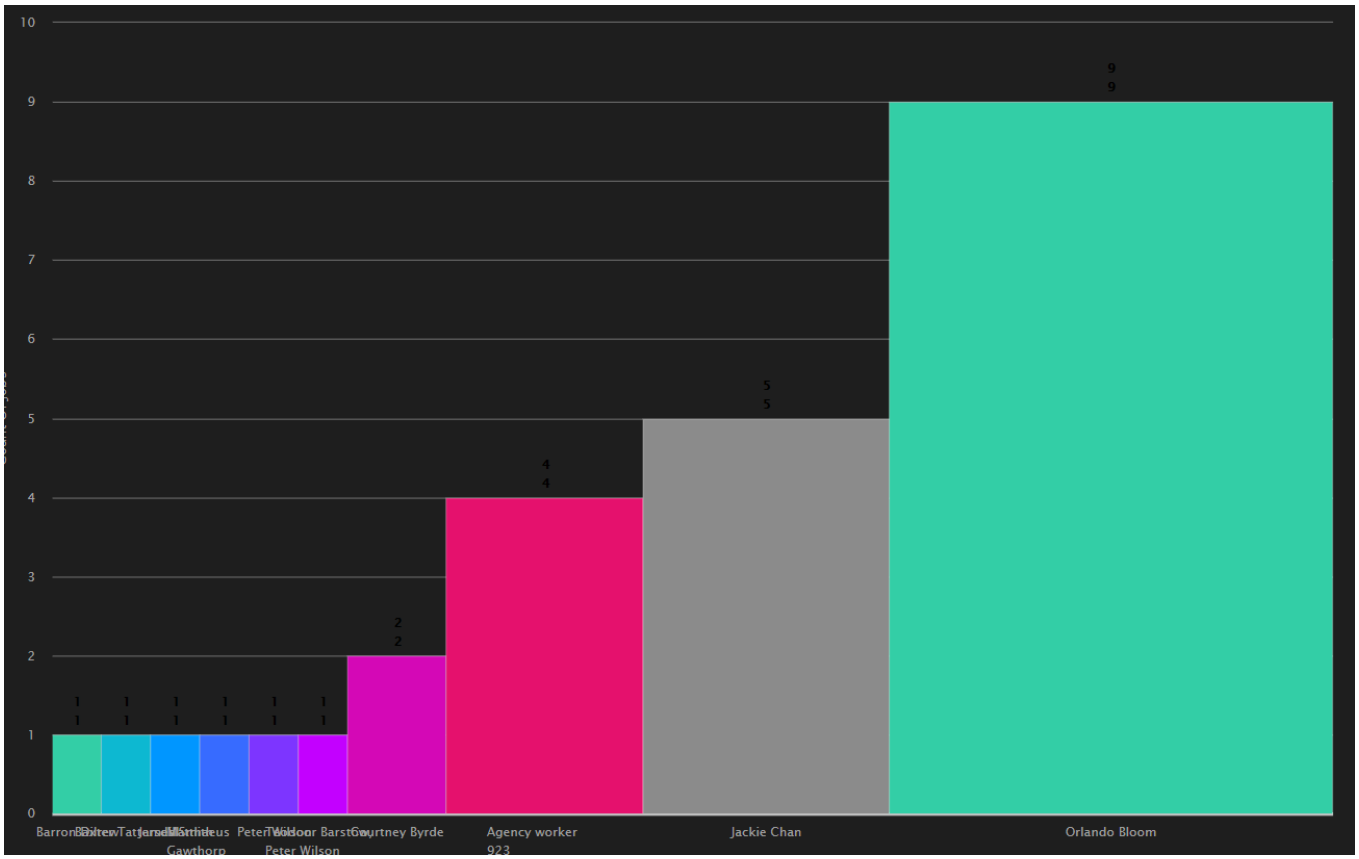
Example



Variable Width Bar chart

This is a bar chart with two measures; one that determines the height of each bar (Y Axis), another that determines whether the width of the bars are displayed (Width) and an X Axis (Dimension) that determines how many bars are displayed.

Example



NB: In the 'Attributes' section you can specify whether the width of the bars is displayed as a value or a percentage.

Column charts

Column charts are very similar to Bar charts except for the orientation of the bars.

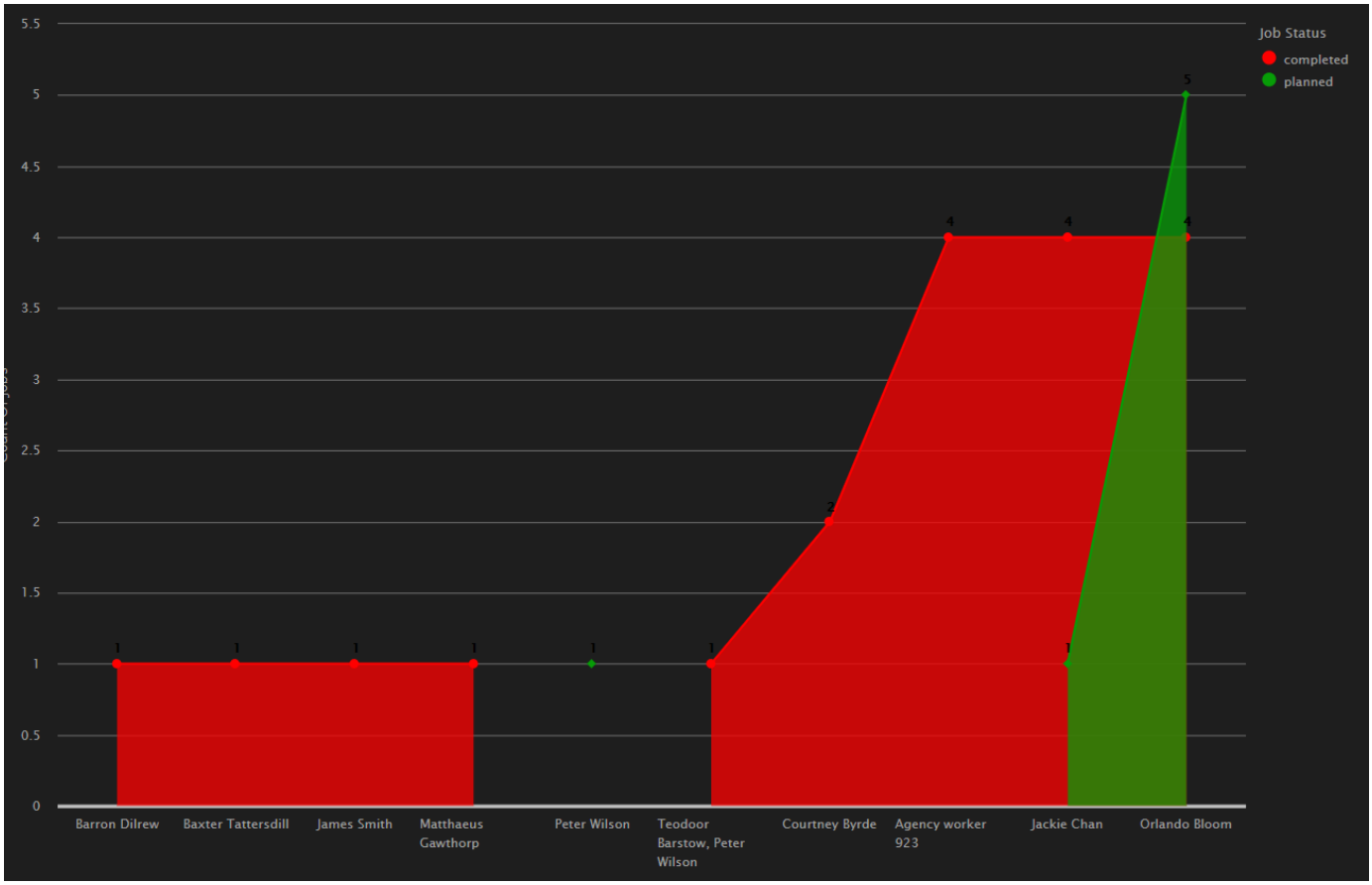
Area charts

A basic area chart is based on a Line chart but instead of using just a line, the area between the axis and line is filled with colour. They are a good choice to use when you want to emphasise change over time.

Area chart

An area chart is typically used to look at continuous values to detect trends over time. It can be used with or without a legend. Area charts use an X Axis (Dimension) and a Y Axis (Measure). A further dimension can also be added to the chart (Legend) that can be used to explain a split between the data. For example, if Gender was added to the Legend field, we could see how the employee number was split between Male and Female employees across each Job Role.

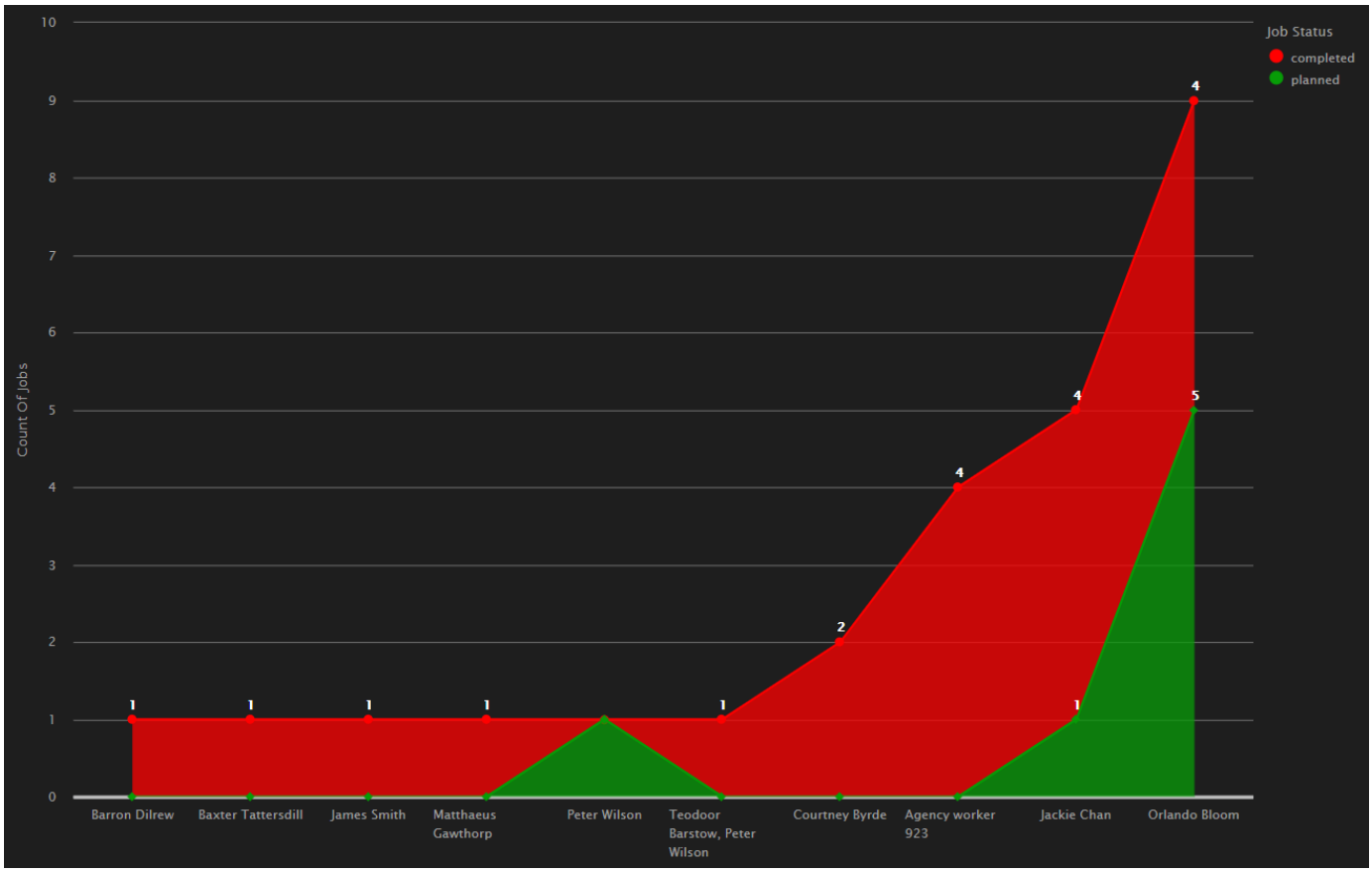
Example



Stacked Area chart

This is used in the same circumstances as the area chart, but stacks / aggregates the values to give a total number of employees for each job role.

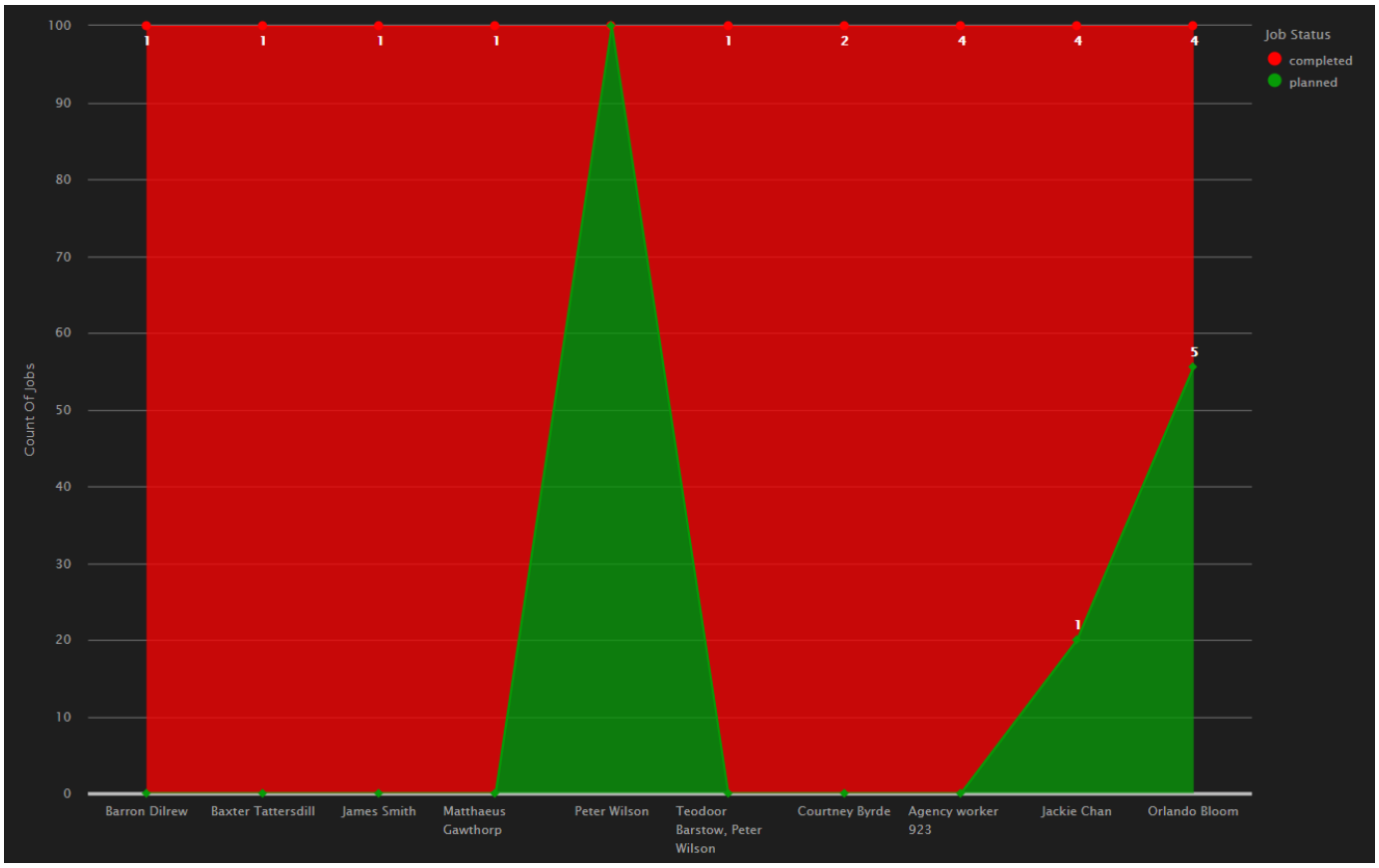
Example



100% Stacked Area chart

This is used in the same circumstances as the area chart, but where the proportions are the primary area of interest, rather than the absolute values.

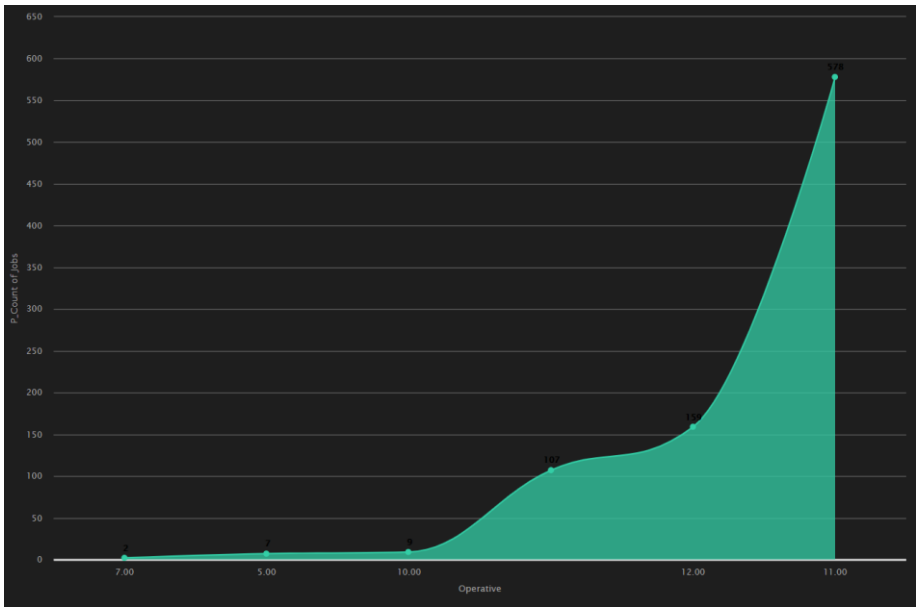
Example



Spline Area chart

This is a combination of an area chart and a spline chart and is basically an area chart with a smooth curve instead of a jagged line. It is designed for visualising quantitative data, showing how the measure changes over time. Like an area chart it can be used with or without a legend.

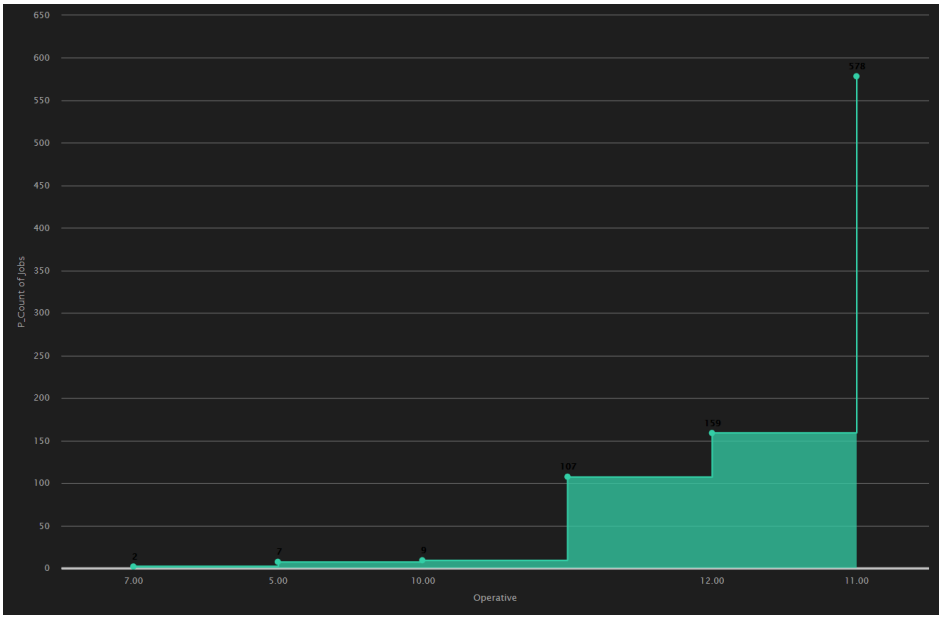
Example



Step Area chart

This is used in the same circumstances as the Area or Spline Area charts. It is an Area Chart but with the points connected by horizontal and vertical lines. This type of chart is used when you want to highlight any irregularity of changes. Like an area chart it can be used with or without a legend.

Example

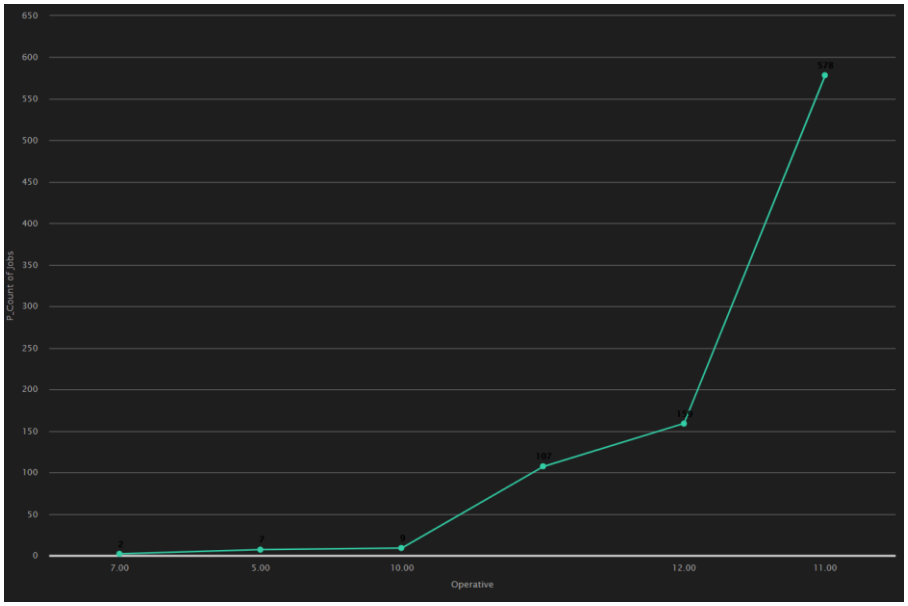


Line charts

Line chart

Along with a bar chart this is probably one of the most used chart types. This chart is typically used to look at continuous values to detect trends over time and can be used with or without a Legend.

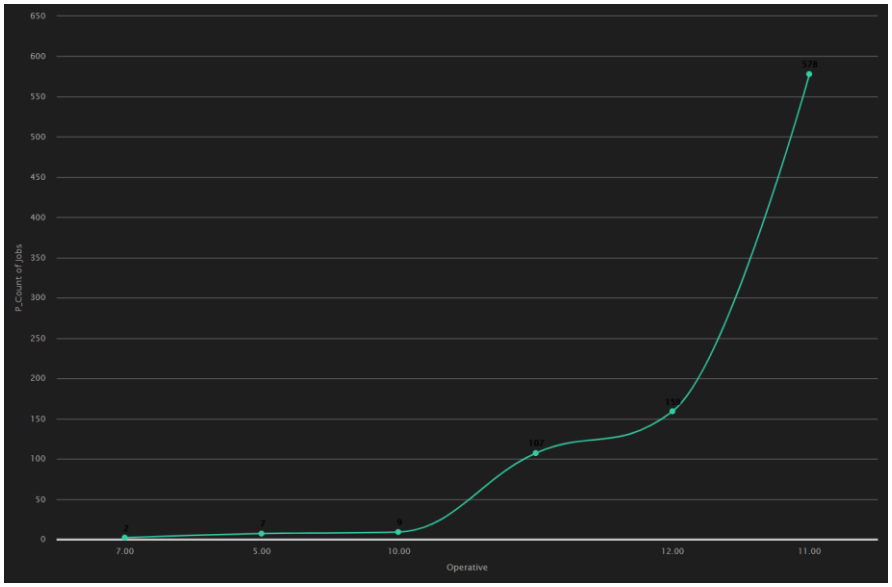
Example



Spline chart

This chart type is used to emphasise trends in data over equal time intervals. It is essentially the same as a line chart, but with smooth curves instead of angular lines. Like a line chart it can be used with or without a legend.

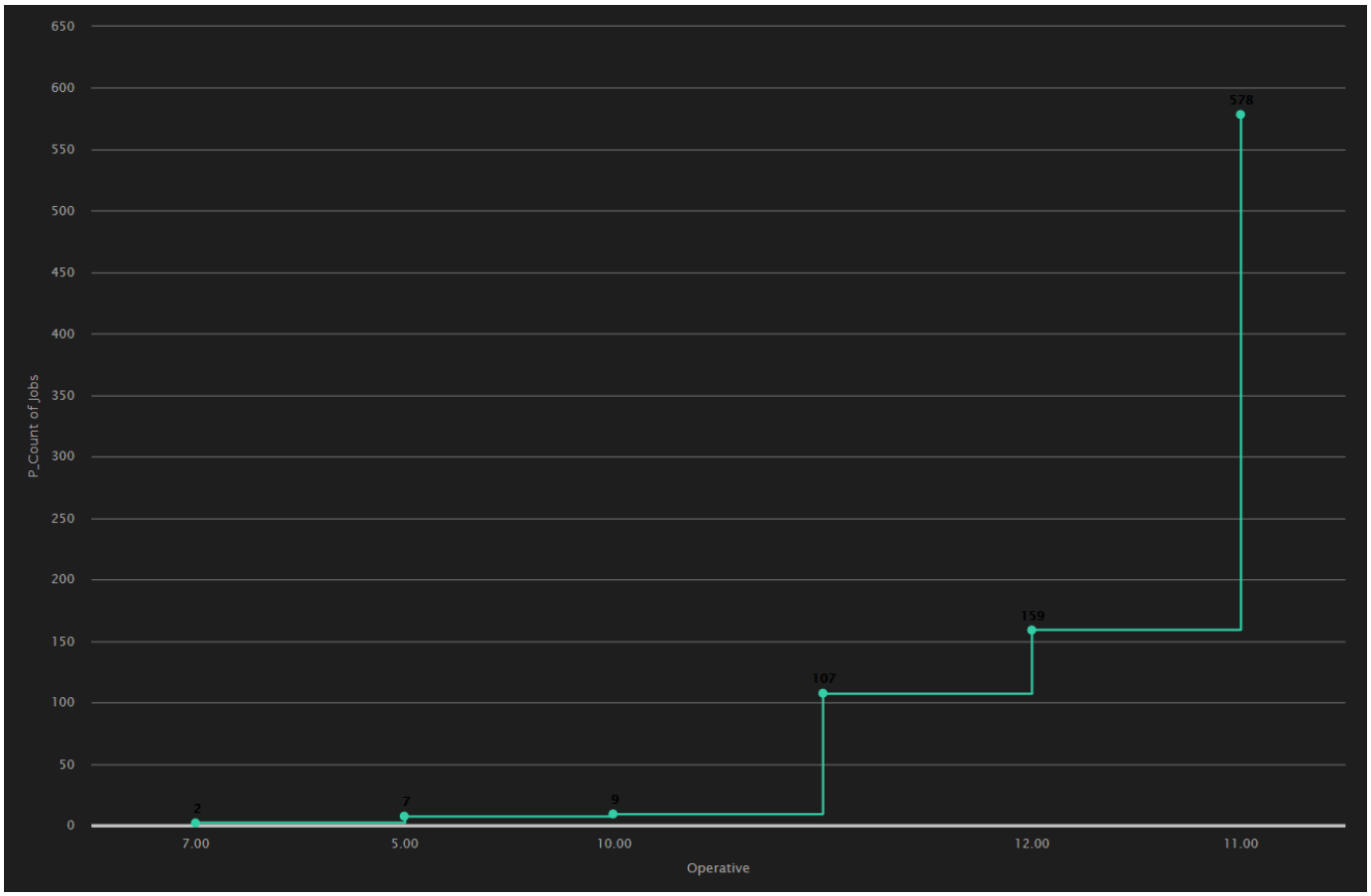
Example



Step Line chart

This chart is typically used to look at continuous values to detect trends over time. Generally used when you want to highlight any irregularity of changes. Like an area chart it can be used with or without a legend.

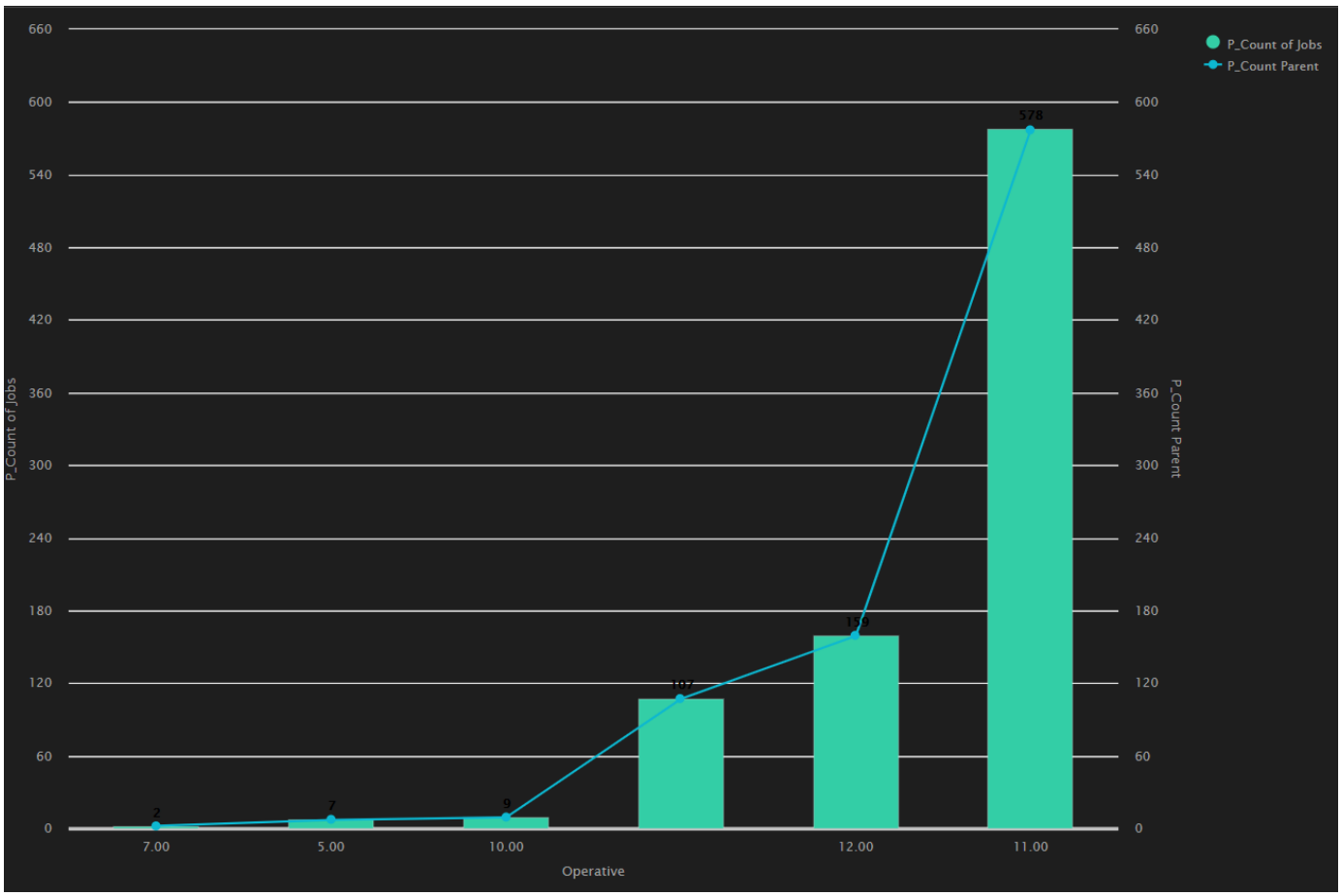
Example



Combined charts

The combined chart can be used to compare sets of data against each other on the same chart. The measures on the combined chart can also be changed to represent the data in different ways using the attribute screen. By default, one measure will show as a bar, and the other as a line, but this can be changed in the Attributes screen to any combination of bar/line/area chart in order to visualise the data in the best way.

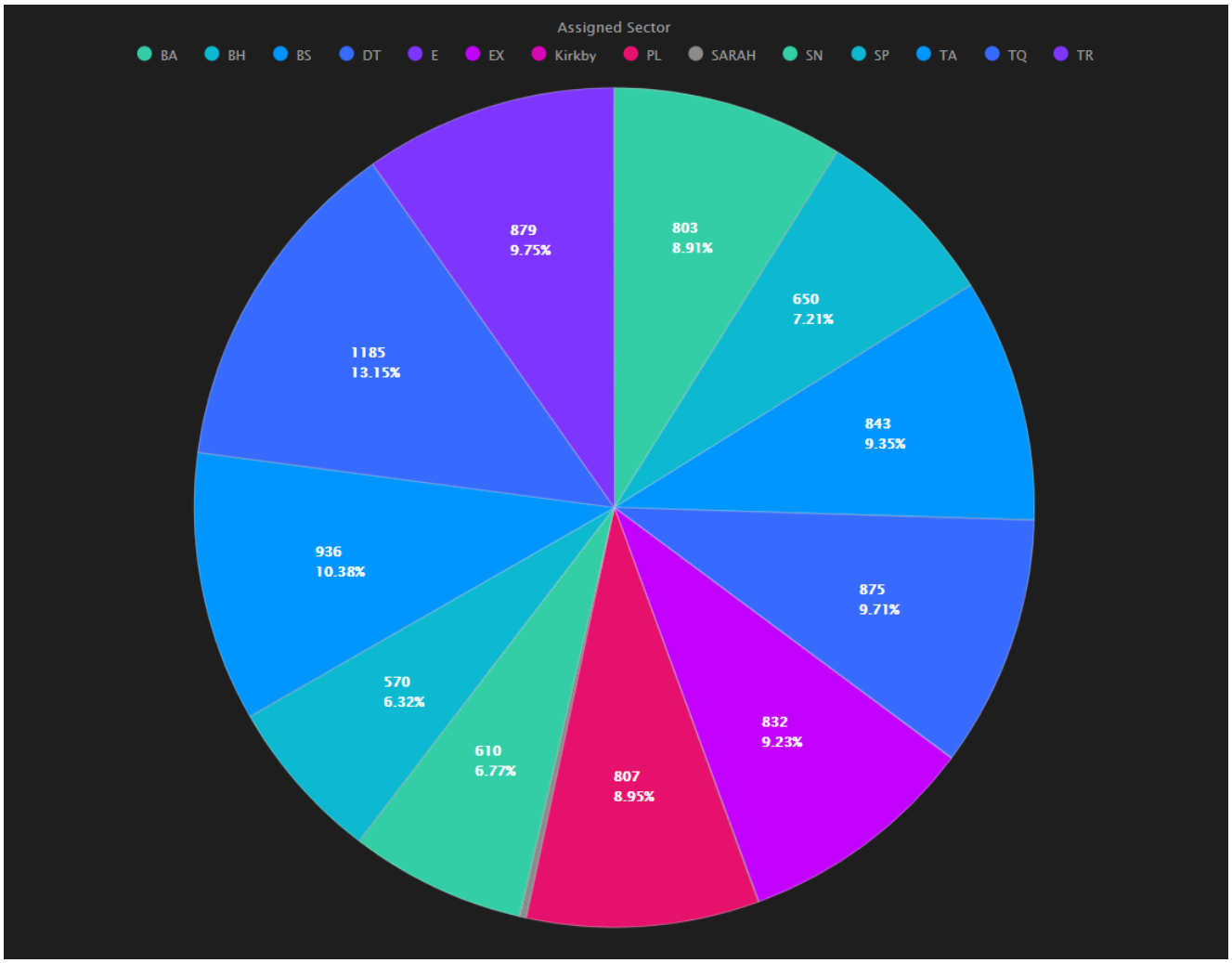
Example



Pie chart

These are most appropriate for viewing proportional data against a non-date dimension. The chart can be sorted either alphabetically or by value. Pie charts use a Legend (Dimension), which determines how many slices are displayed and a Number (Measure), which determines the size of each of the slices.

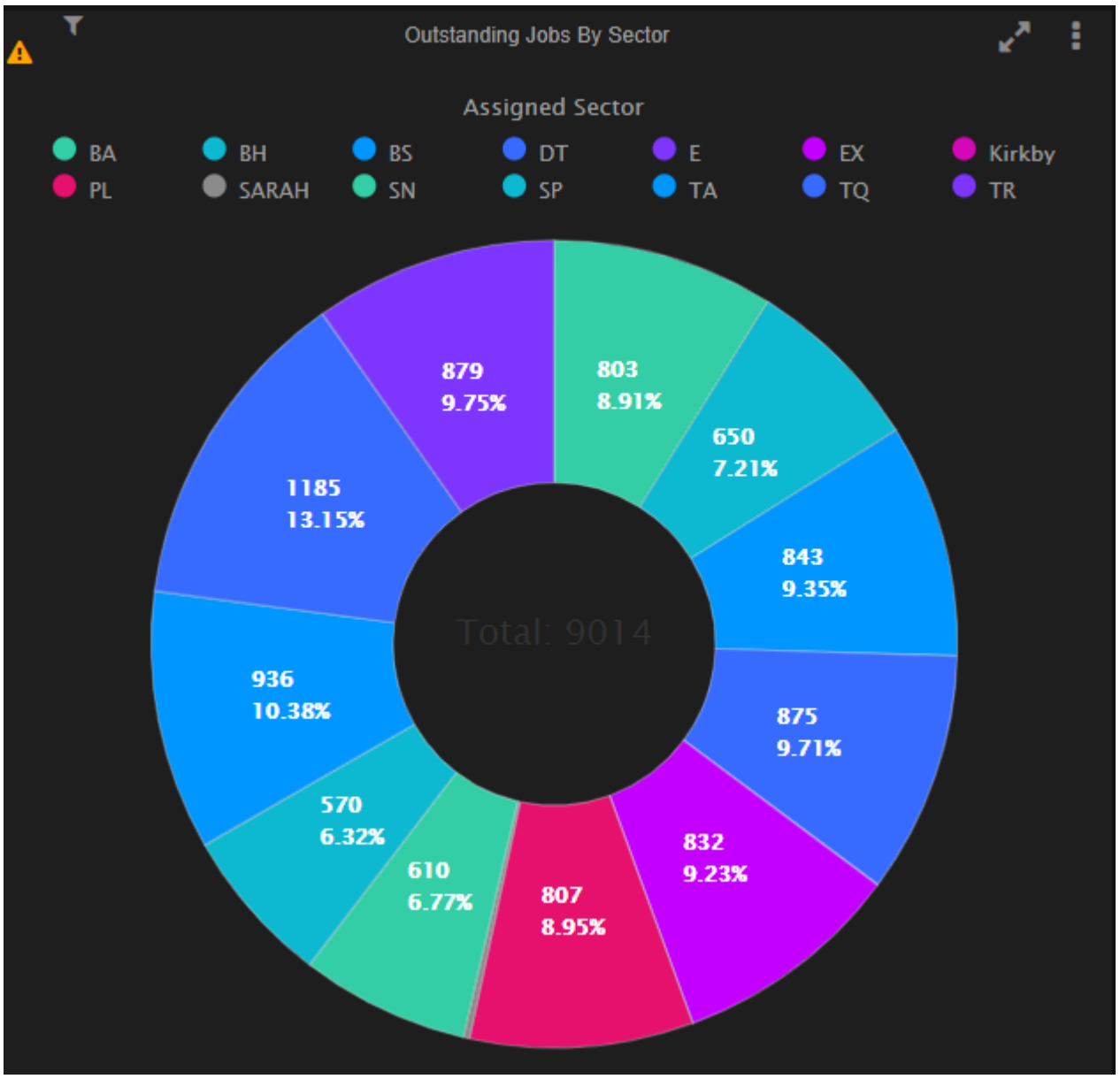
Example



Doughnut chart

As with the pie chart the doughnut is used for viewing proportional data with one dimension. Doughnut charts use a Legend (Dimension), which determines how many segments are displayed and a Number (Measure), which determines the size of each of the segments.

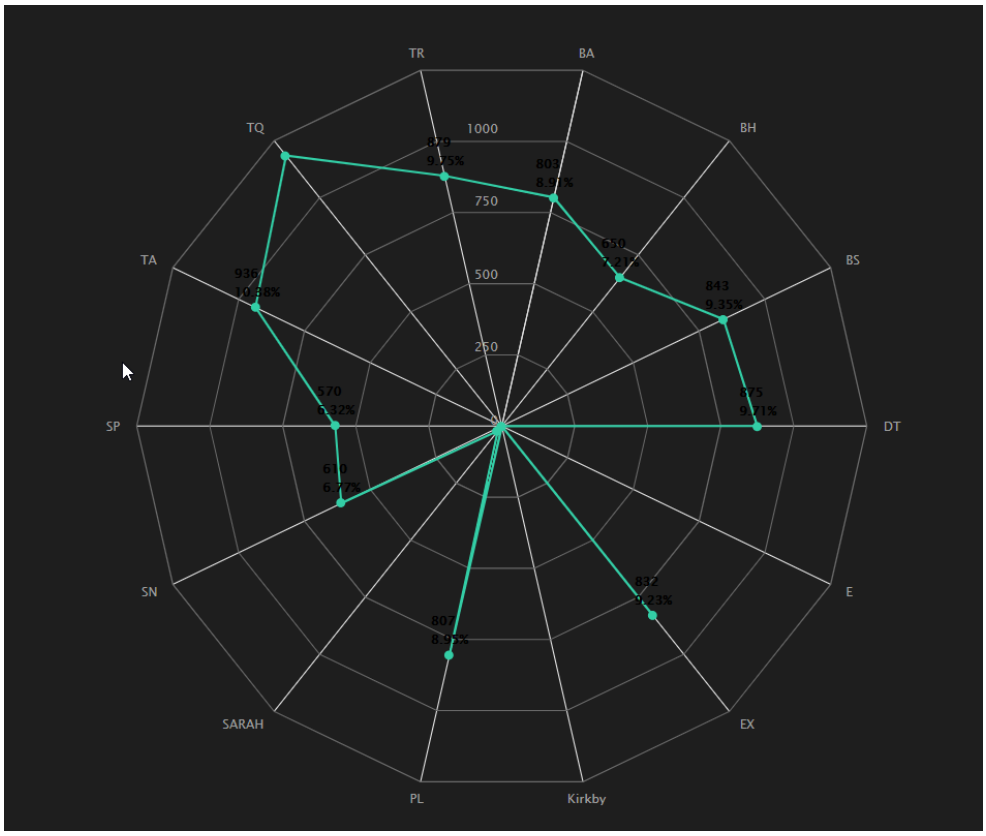
Example



Spider chart

This chart type is typically used when looking at multiple dimensions.

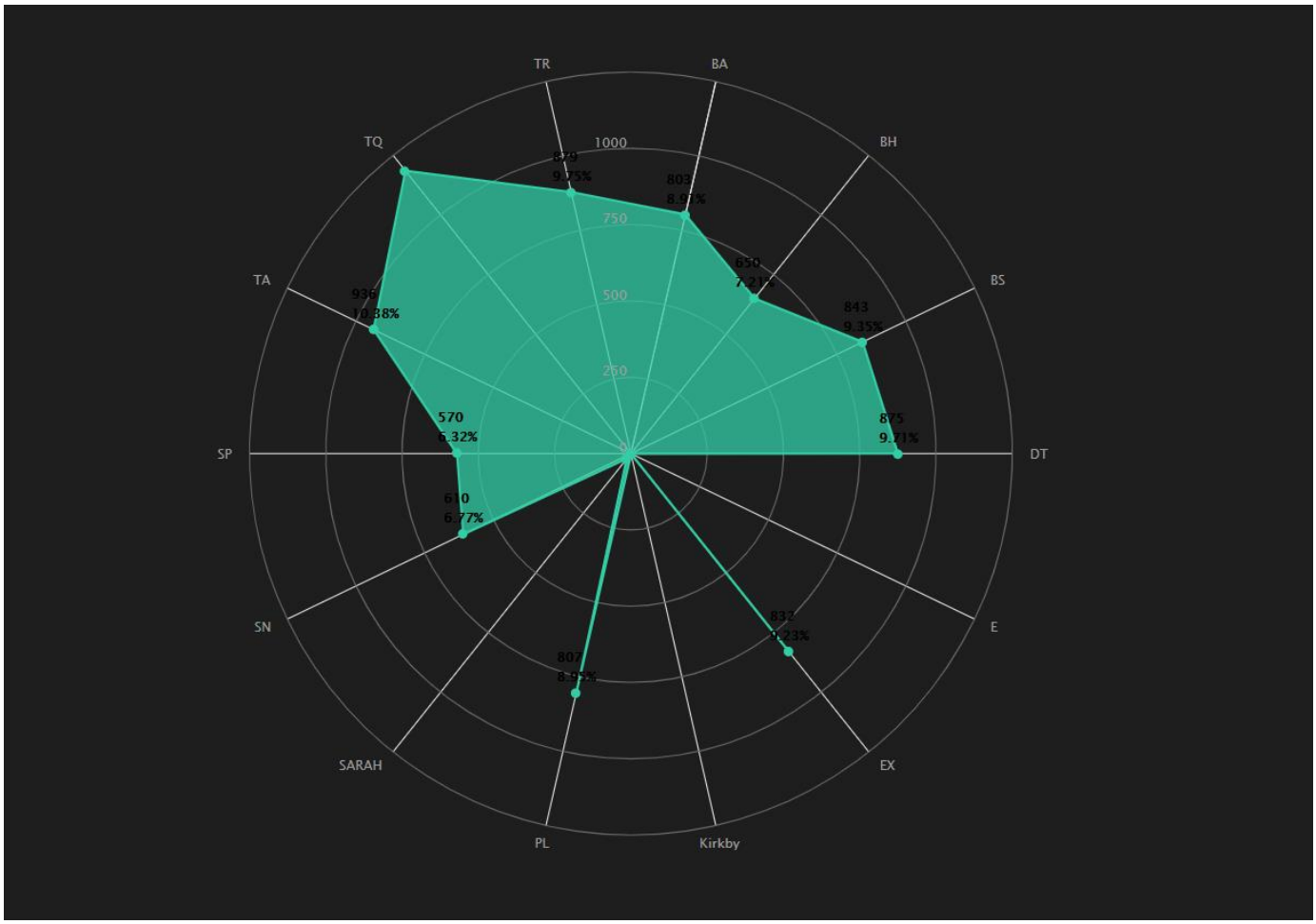
Example



Radar chart

The Radar chart is a good choice of chart if you need to determine which variable is performing best. A radar chart is based on a Spider chart but instead of using just a line, the area between the axis and line is filled with colour

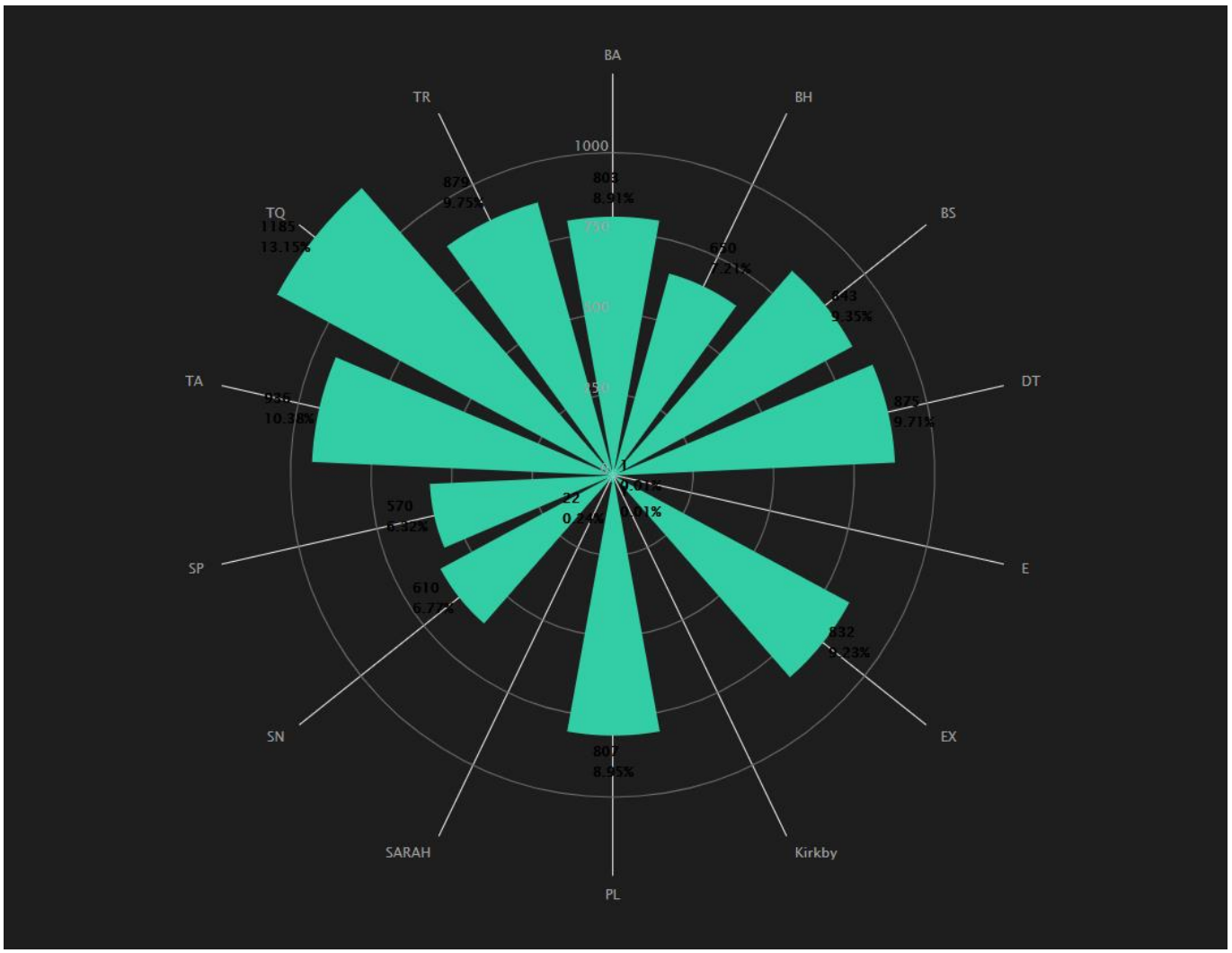
Example



Wind Rose chart

This chart type uses radiating spokes from a centre point. The length of the spoke represents the value, e.g. the longer the spoke, the higher the value.

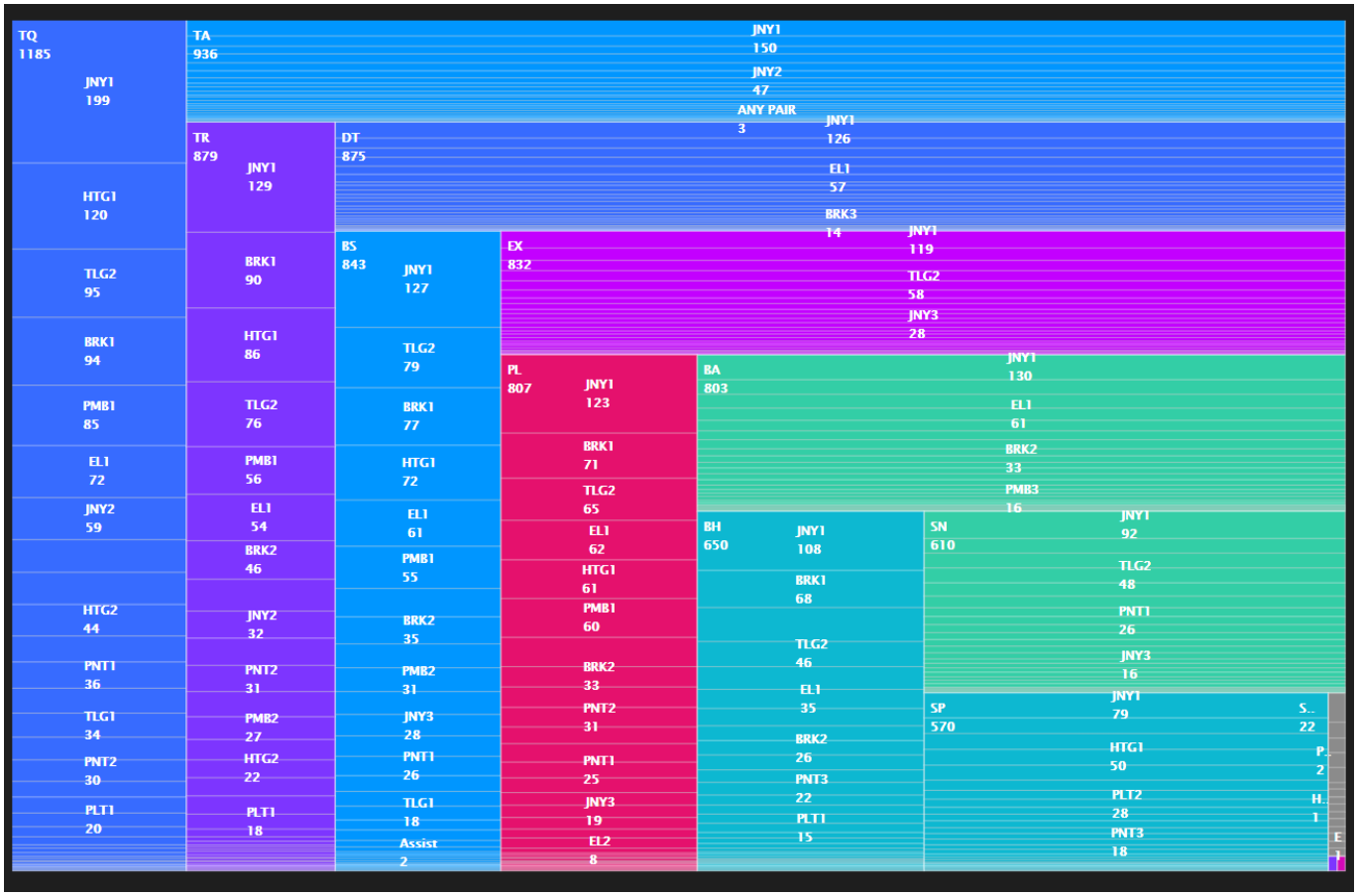
Example



Treemap

Treemap charts are used to display hierarchical data within nested rectangles. Each rectangle has an area proportional to the data it represents, the larger the rectangle, the higher the data value.

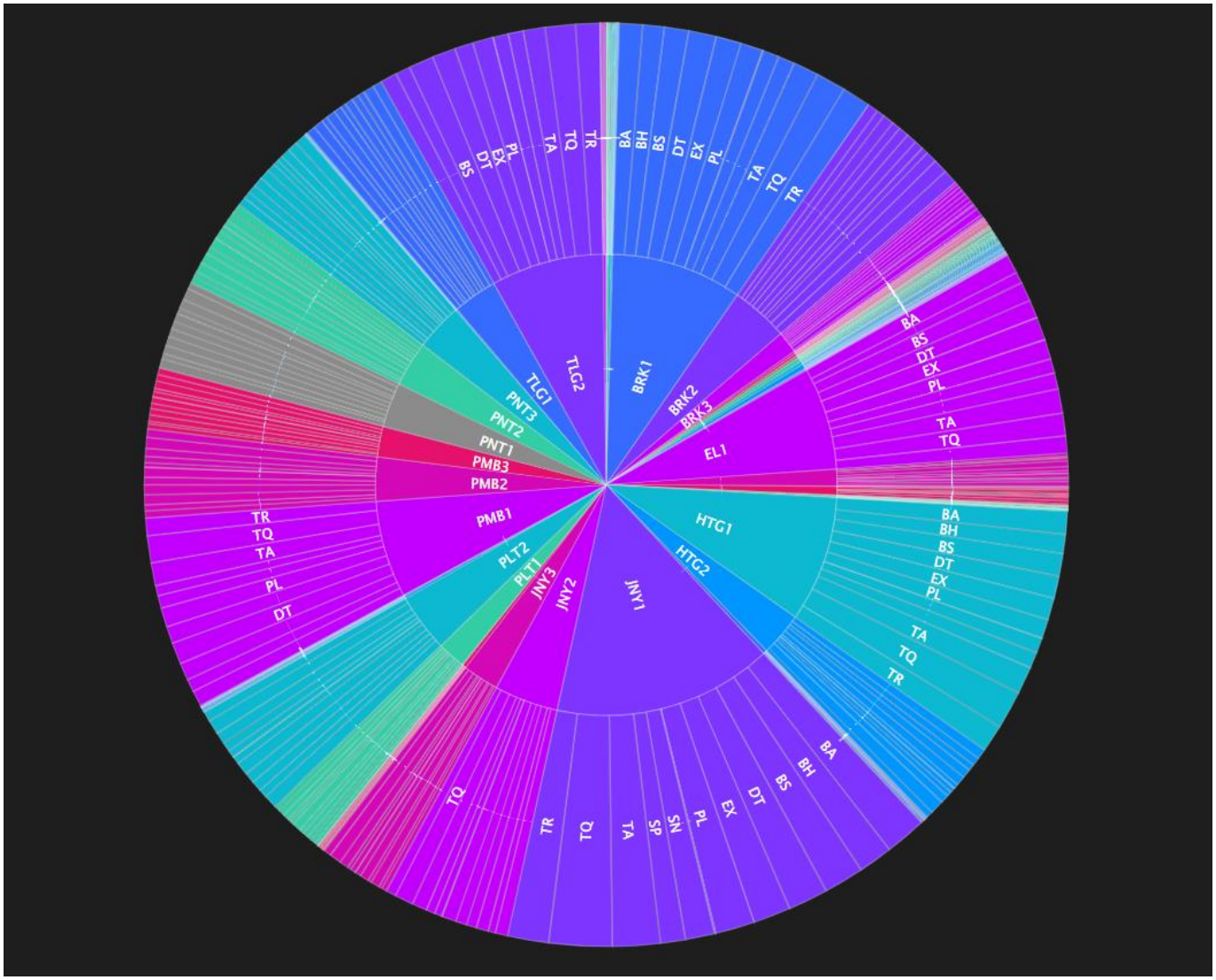
Example



Sunburst chart

This type of chart must contain two or more dimensions in order to function correctly. This chart is best utilised to show hierarchical data.

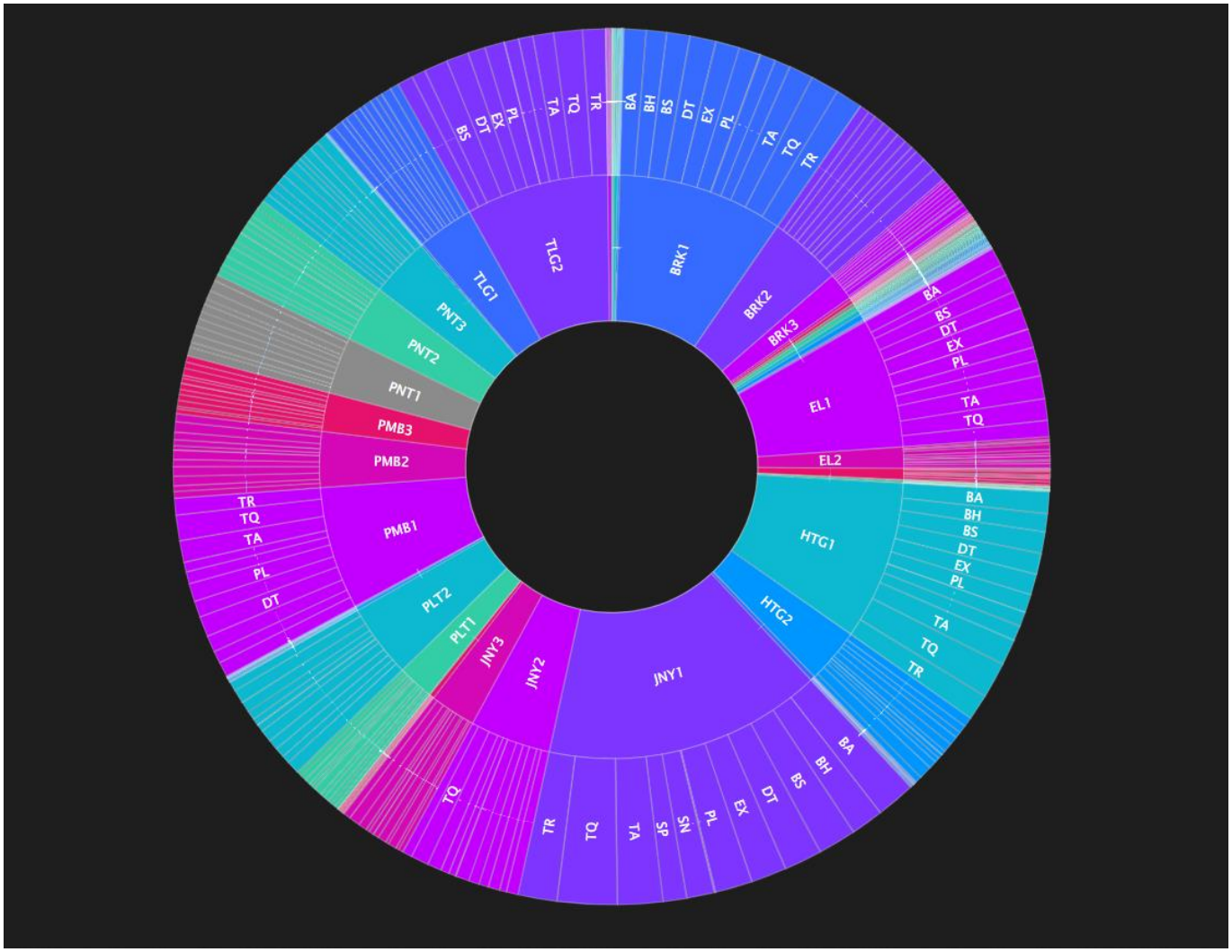
Example



Doughnut Sunburst chart

As the name implies this is a cross between a Sunburst and a Doughnut and should, like a Sunburst chart, be used on hierarchical datasets.

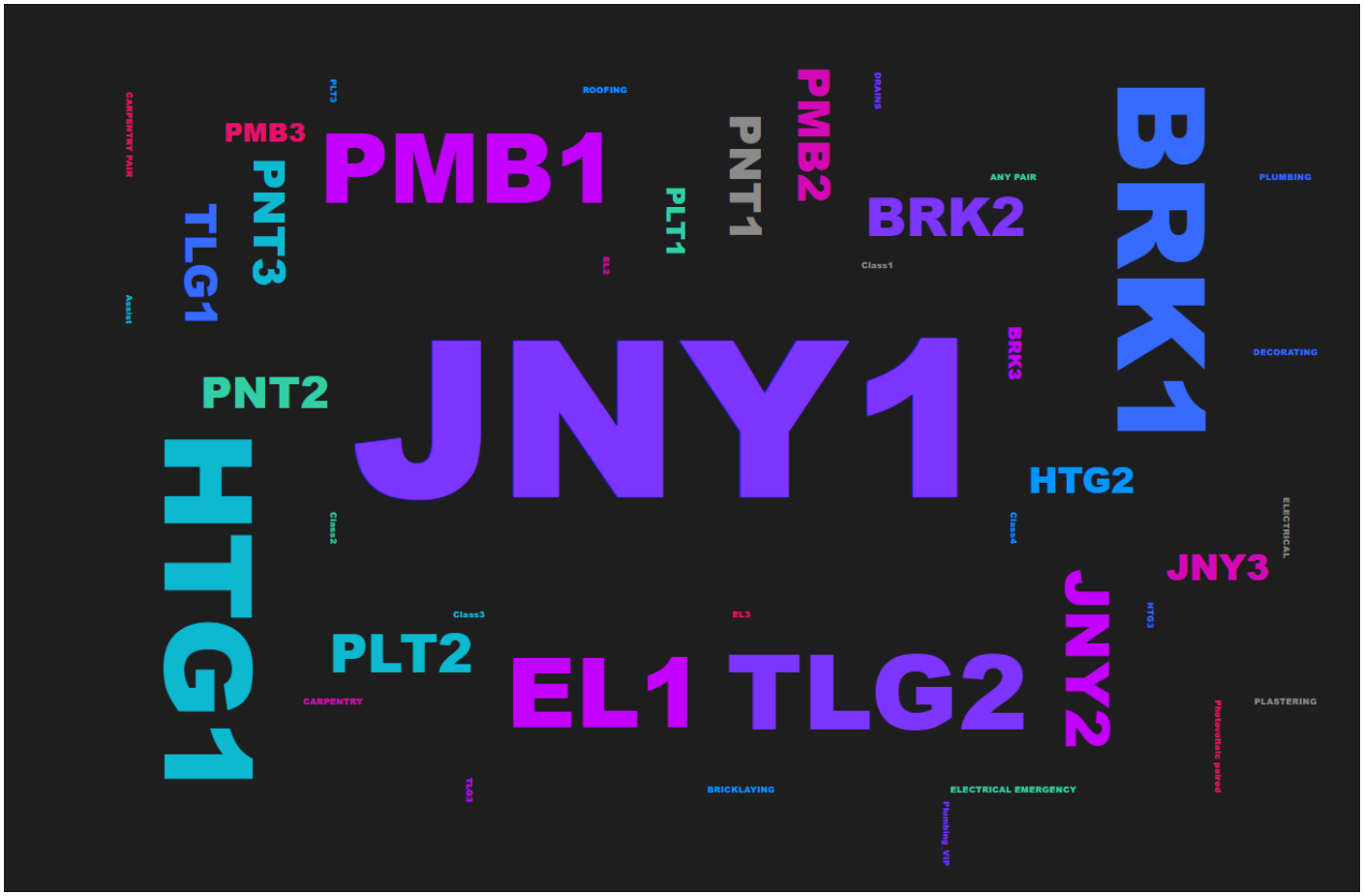
Example



Word Cloud

A word cloud will display the dimensions in the chart as Text, with the size of the text based proportionally on the measure. This is best used to show the relative importance of the dimensions where the precise values are not particularly important and there is no time element. The size of the text indicates how large the related value is.

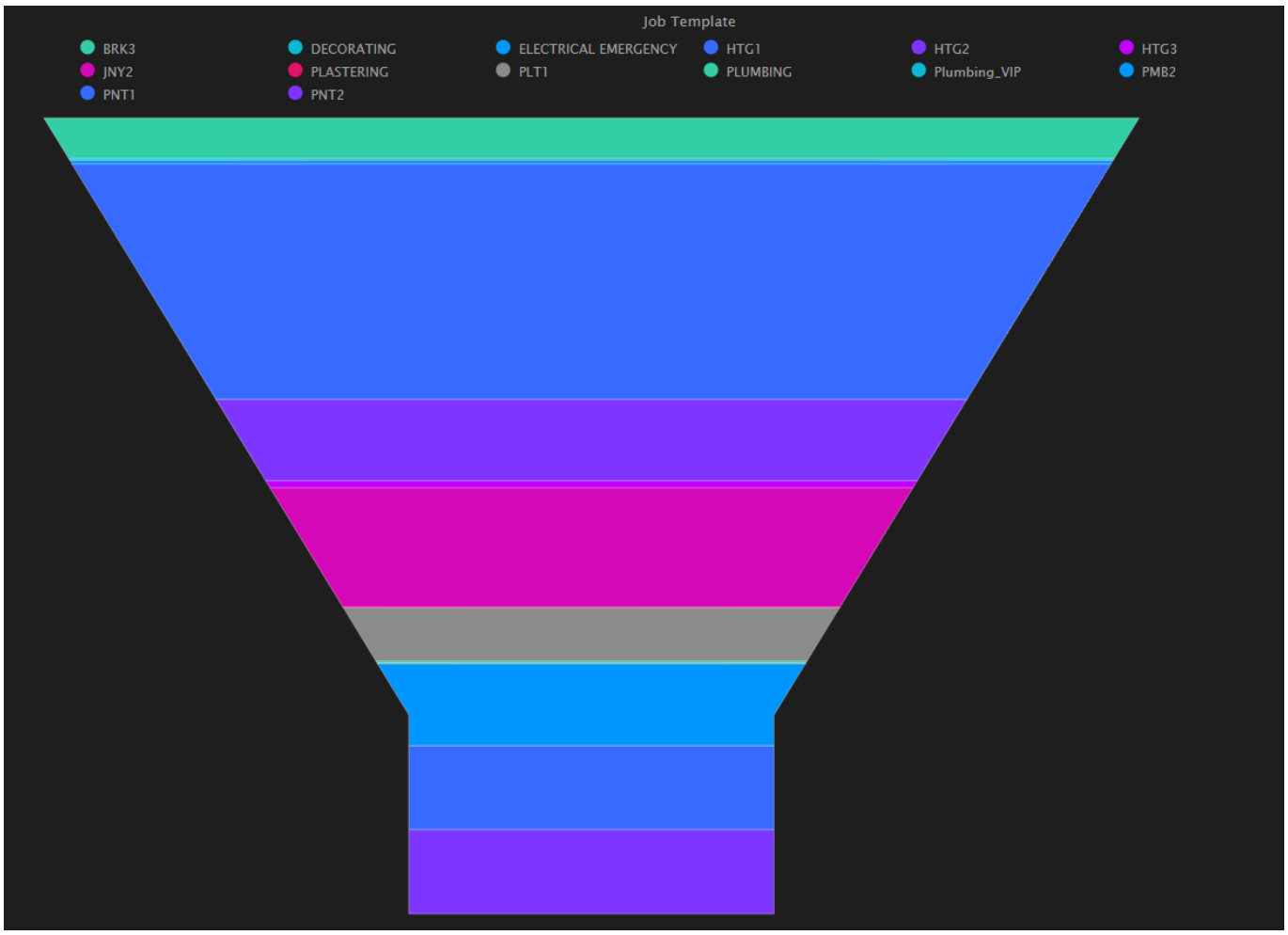
Example



Funnel chart

This chart is used for visualising the progressive reduction of data as it passes from one phase to another. It is typically used for example, when looking at completion stages on a project or stages in a sales cycle. All the individual sections of the funnel chart add up to total value of the measure.

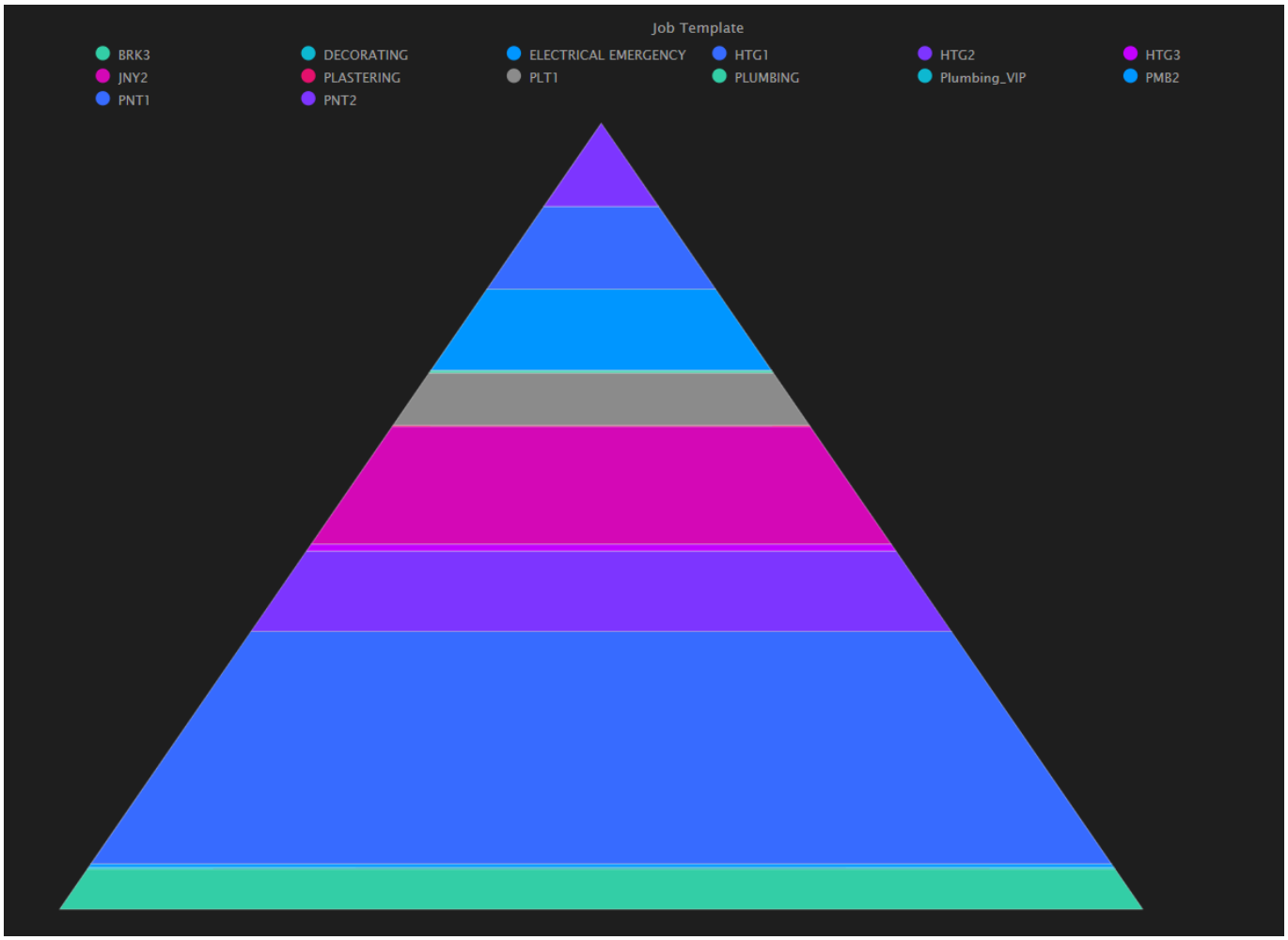
Example



Pyramid chart

This chart is typically used to show the progressive order of data, when the items are best arranged in a way that shows the hierarchical structure, as well as the measure. You can choose whether to have the largest value at the top of the pyramid or the bottom by using the options in the Sorting section on page 31.

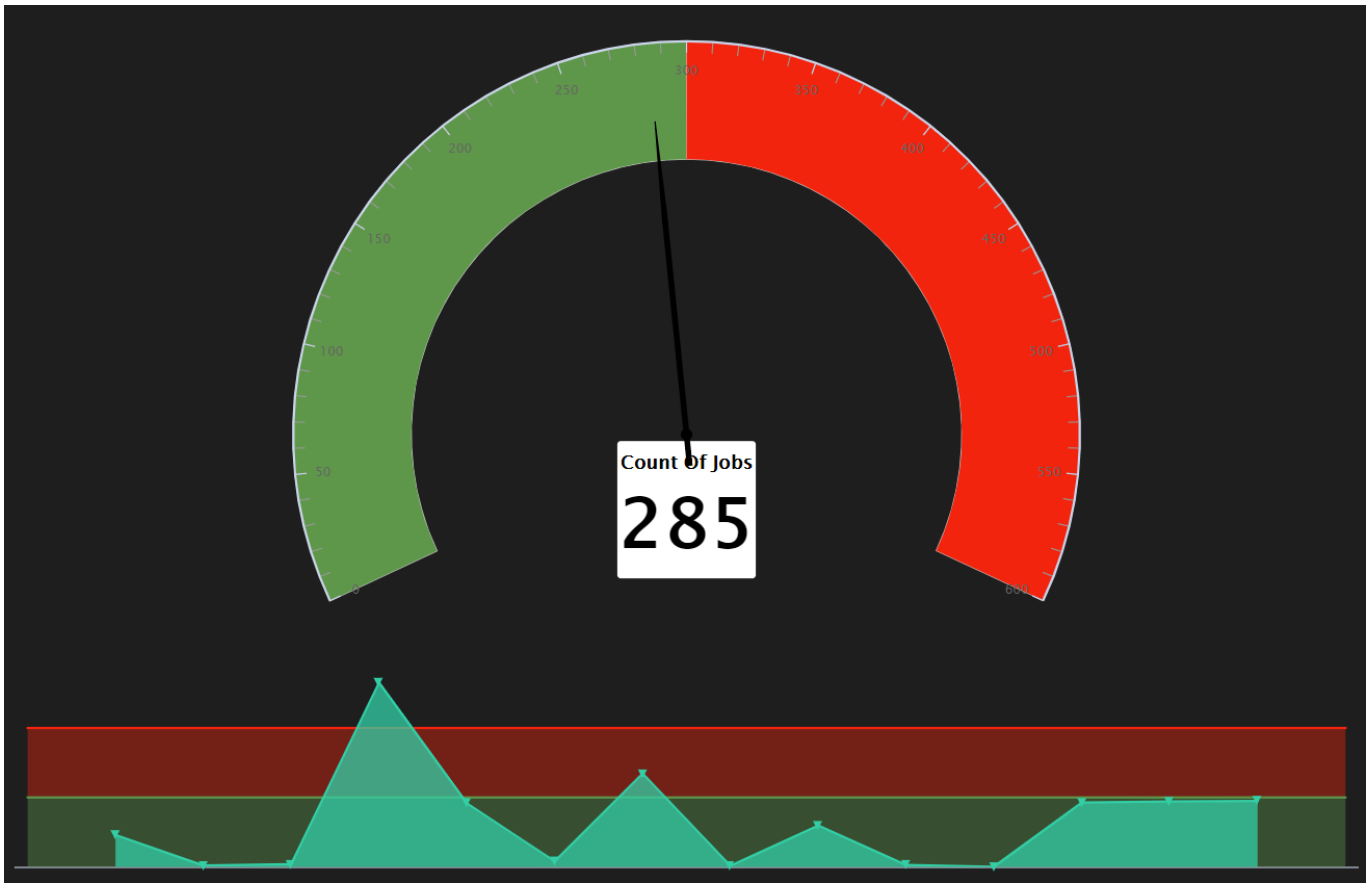
Example



Speedometer

This chart is used when the data range in which the values fall is the most important visual indicator. This type of chart does not require a dimension. A Speedometer can also include a Sparkline, which is a small graph that appears beneath the Speedometer. These graphs have limited functionality but are very useful for showing trends and can be used to introduce a time element to the speedometer. To create a Sparkline, add data to the Sparkline section on the 'Data' screen. If you do not want the Sparkline to be displayed, do not add data to the Sparkline section.

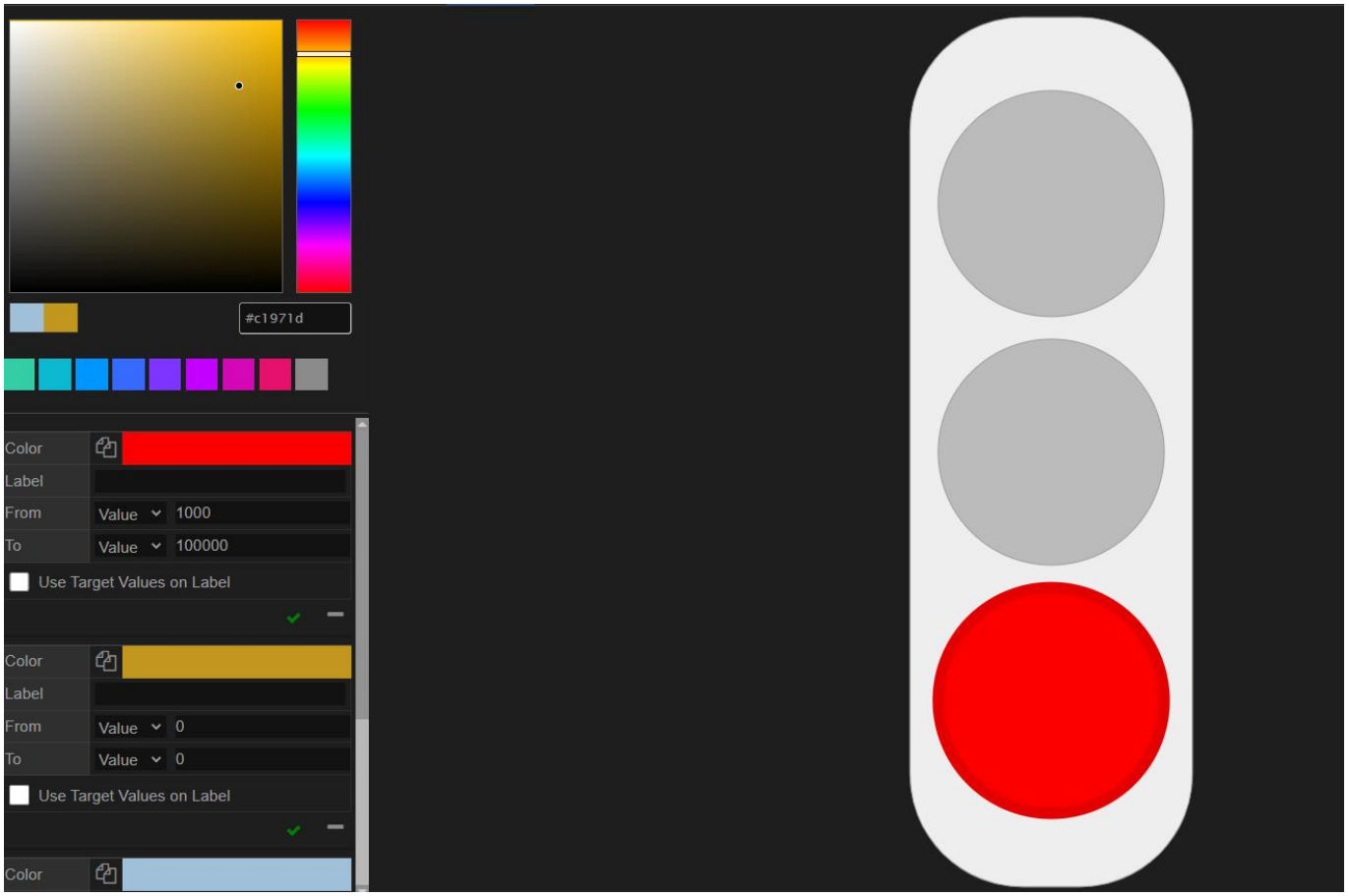
Example



Traffic Light

This is similar to the speedometer but is more binary; the values are simply shown as traffic lights and the user has no indication of how close (or not) the current value is to passing into a different zone. Again, a dimension could be added to this to create a Sparkline. This chart would work well if linked to a Parent chart, please refer to the Parent charts section on page 70 for further details.

Example



Lightbulb

Essentially the same as a Traffic Light, but only one bulb is shown that changes colour depending upon which target range the measure falls in.

Example

Card chart

Card charts can be used to display text only (not related to measures in your data source), a single value (related to a measure) or a combination of text, values and images.

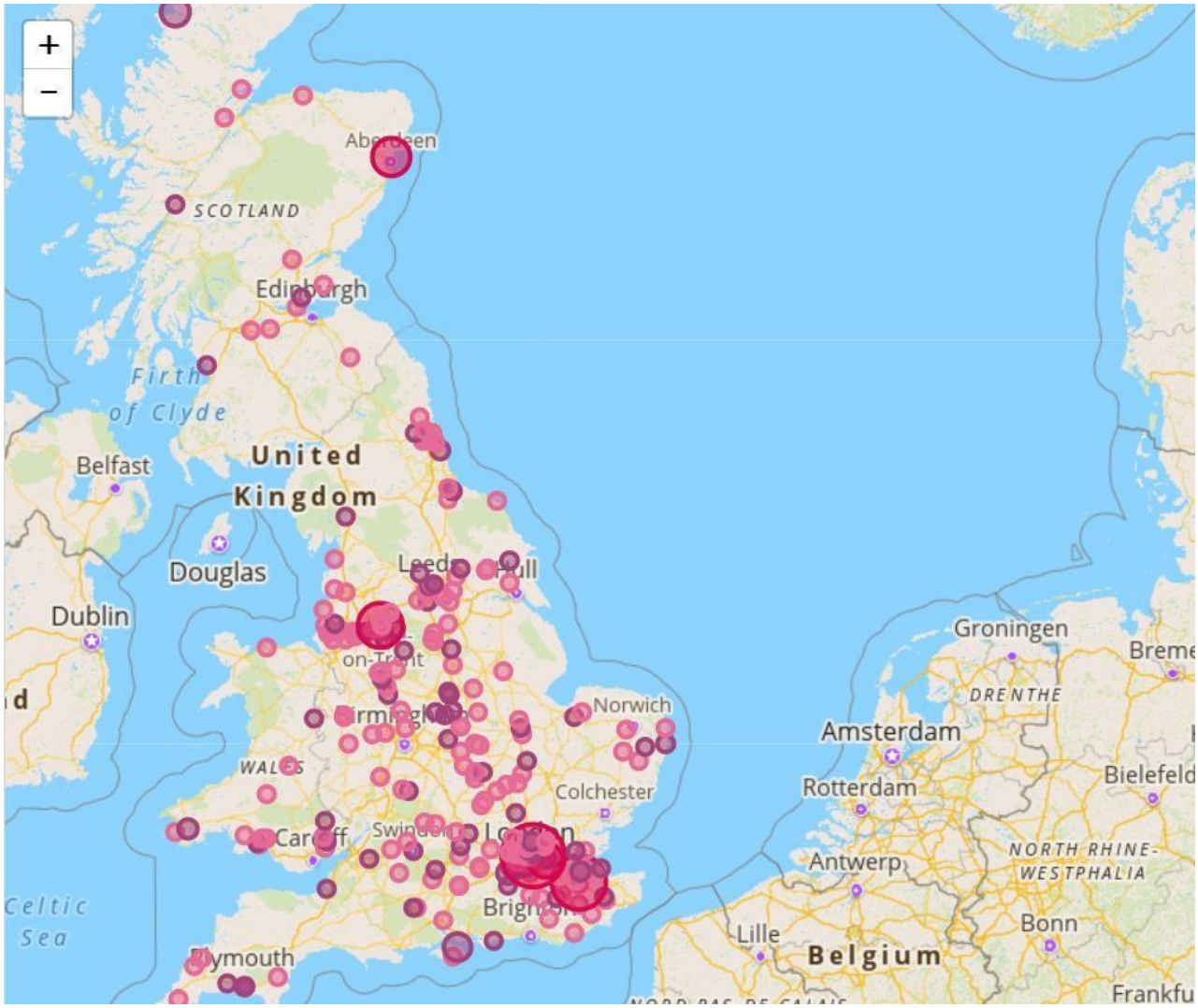
Example

Map chart

Map charts are mainly used when viewing precise geographical data points. This chart type requires specific data in order to work. It needs a single object that returns coordinates (latitude/longitude) with a label, and a measure that will be attached to each of these coordinates. The size of a circle on a map is determined by how large the measure is for a coordinate. The larger the circle, the higher the measure value.

Unless you actually have latitude and longitude stored in your database you will need to create a table or view that contains the latitude and longitude that you can then join to your dataset; this might be at a very granular level such as postcode or it might be at a higher level such as mapping 'Northern Sales Region' to the latitude and longitude for somewhere central to your sales region of that name (Wikipedia entries on most cities will provide their Latitude/ Longitude).

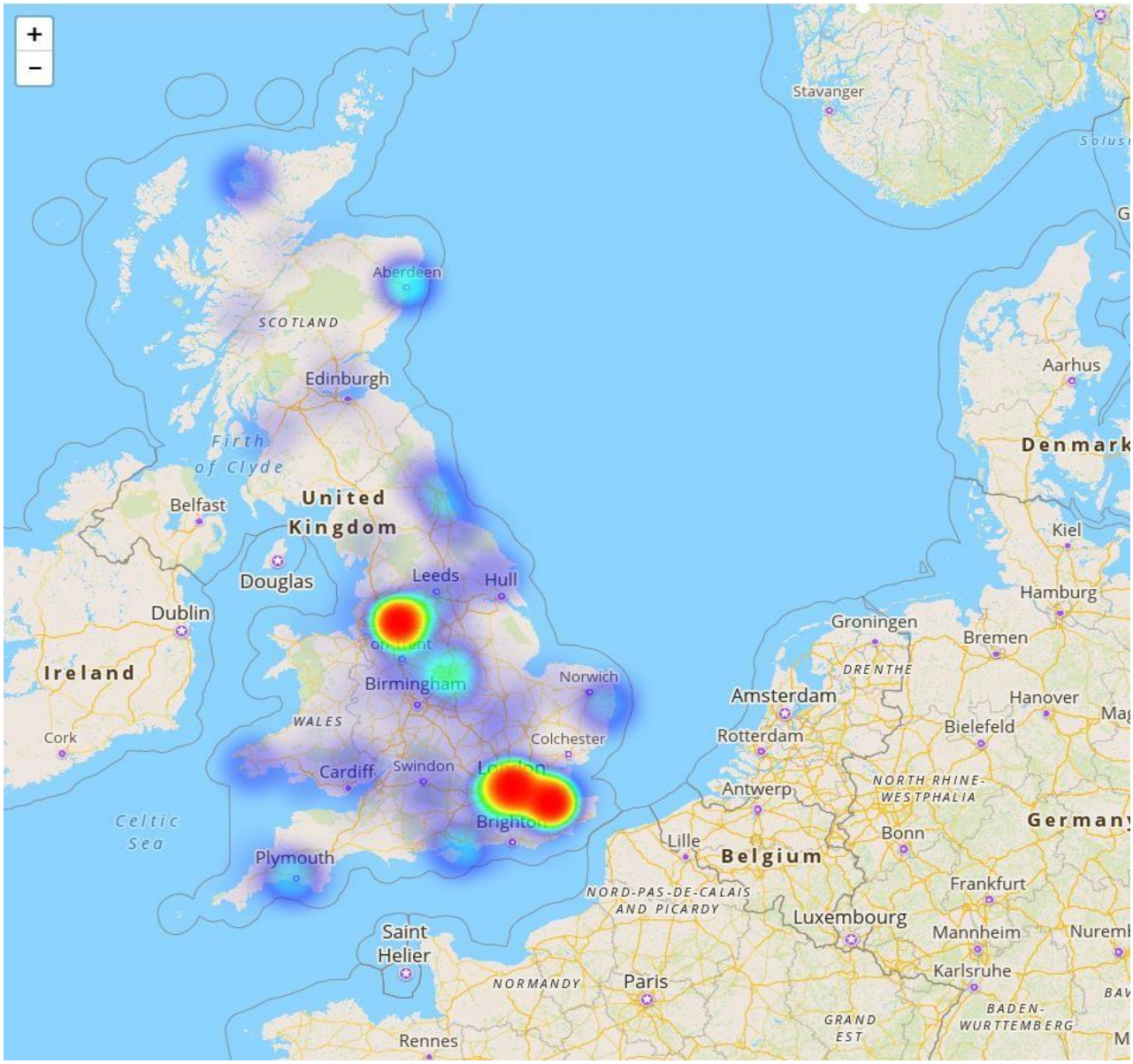
Example



Heat Map

This requires the same dimension object as a map to ascertain Latitude/ Longitude. Heat maps are used when the precise location is not important, but the general location is. For example, the number of orders in a certain area, the colours in the heat map indicate the areas where there is a bigger concentration of the measure value.

Example

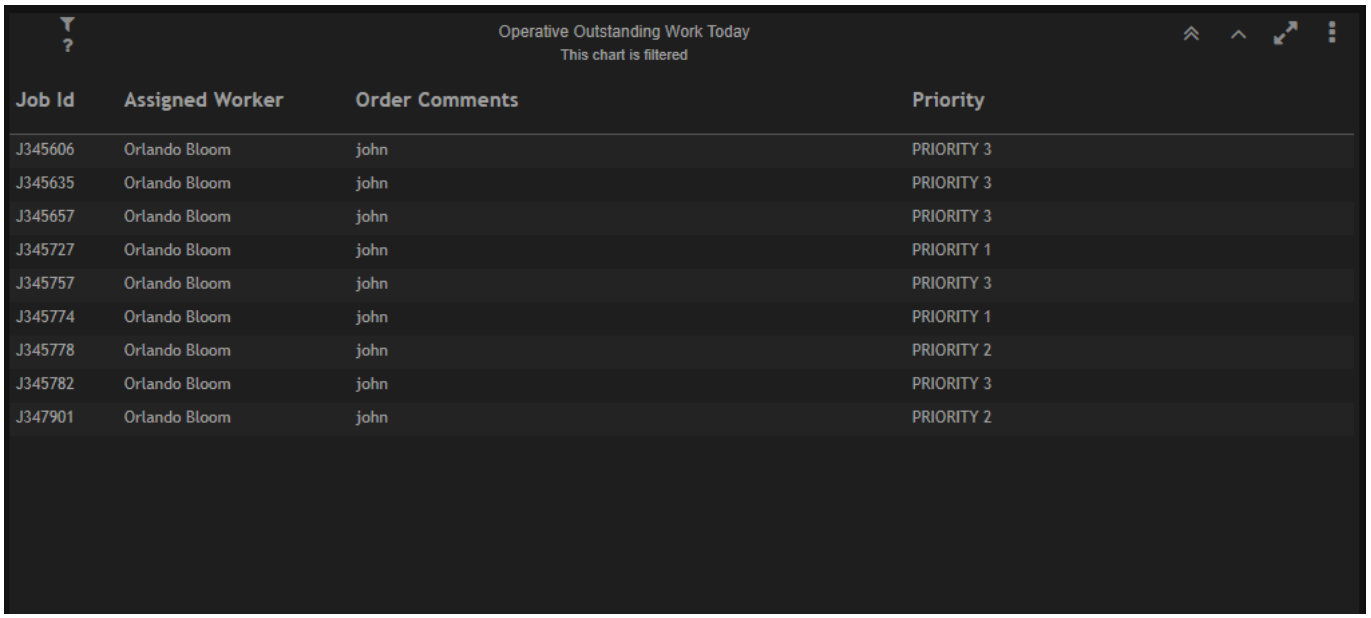


Tables

Table

A table (sometimes known as a data grid) is typically used to return exact values from a mix of dimensions/ measures without the hindrance of a limit on the number of dimensions/ measures. It is also frequently used as the final level of a drill down to show the individual data items that make up the total(s) from the previous level.

Example



Job Id	Assigned Worker	Order Comments	Priority
J345606	Orlando Bloom	john	PRIORITY 3
J345635	Orlando Bloom	john	PRIORITY 3
J345657	Orlando Bloom	john	PRIORITY 3
J345727	Orlando Bloom	john	PRIORITY 1
J345757	Orlando Bloom	john	PRIORITY 3
J345774	Orlando Bloom	john	PRIORITY 1
J345778	Orlando Bloom	john	PRIORITY 2
J345782	Orlando Bloom	john	PRIORITY 3
J347901	Orlando Bloom	john	PRIORITY 2

Rotated Table

This is a table that shows the database rows as columns and the database columns as rows. This is usually used where you want to show multiple columns from the database, for a single record, as a list. For example, if you had a ‘customer’ category where you always filtered on a single customer, you might create a Rotated Data Table like the example below.

Unlike a standard table this chart type doesn’t support:

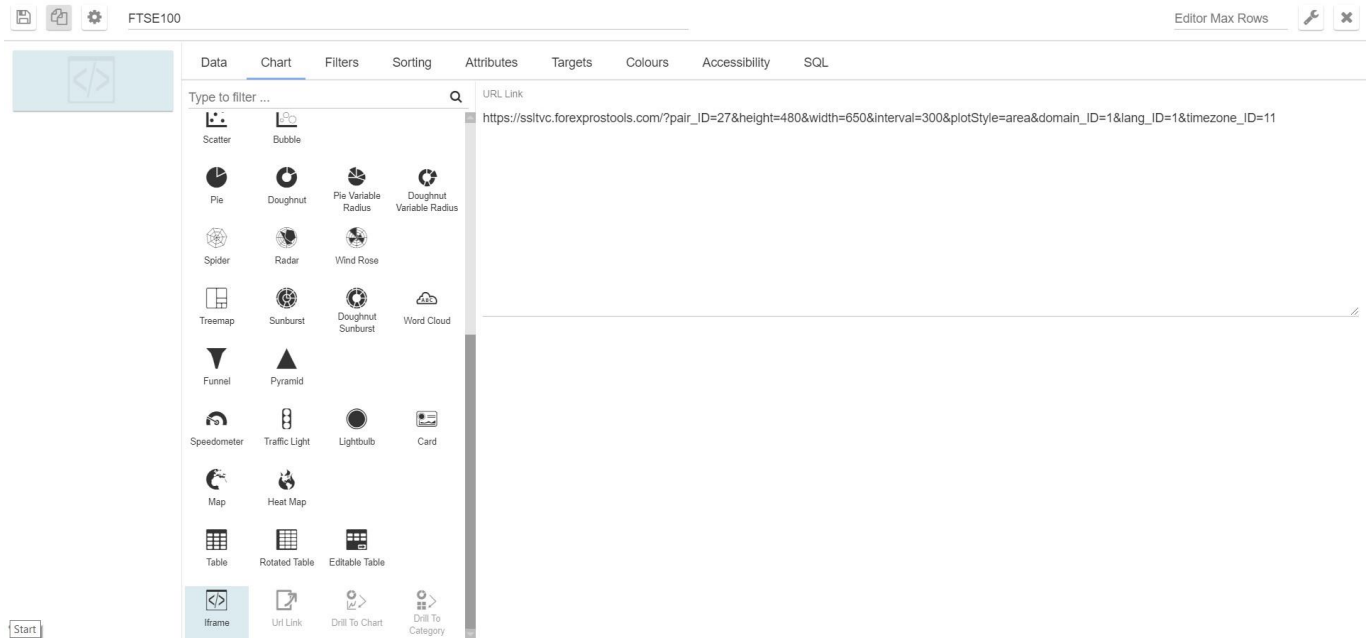
- Table Header
- Targets
- Define Column Width Sizing
- Define Column percentage/Width
- Define Row Width Sizing
- Define Row percentage/Width
- Define Display Value (original data/percentage data)

Example

Job Template	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR	ANY PAIR
Count Of Jobs	2	1	3	1	1	1	5	1	1	1	1
Priority	PRIORITY 1	PRIORITY 1	PRIORITY 1	PRIORITY 2	PRIORITY 2	PRIORITY 2	PRIORITY 2	PRIORITY 3	PRIORITY 3	PRIORITY 3	PRIORITY 3
Job Status	completed	completed	new	completed	completed	completed	new	completed	completed	completed	completed
Completion Sta	CARDED	WORK IN PROGRESS		CARDED	CERTIFIED	DONE		CARDED	CERTIFIED	COMPLETED	DONE

iFrame

This chart type allows the user to display, in a dashboard cell, information from an external source. It is set up by inputting the full URL of a (embeddable) site/video into the 'URL Link' input box (shown below). When setting up an iframe chart it is important to note that if the target website has been configured to prevent itself being embedded into an iframe then it won't work from within the dashboard.



Analytics

This chart type in only displayed as an option if you have purchased the Analytics module and is used mainly to predict possible outcomes based on a set of objective data provided.

URL Link

This is used to navigate to a URL when a value is selected in the prior level of the hierarchy. Note that in this example the data object (Customer Postcode) is being passed into the Google Maps URL using {{Location Postcode}} – which is in the prior drill level - to bring up a Google Map of the correct area.

Change the chart type for combined chart

The User can choose what chart type they want to use for each series in a Combined Chart, specifically between Bar Chart, Line Chart and Area Chart.

How to use:

1. Go to the edit chart screen of a Combined Chart
2. Click on the Attributes tab and locate 'Allocate Data to Charts'
3. You can select, for each of the two Y Axis, whether you want to use a Bar, Line or Area chart; by using the drop down lists.
4. You can then select, using the radio buttons, which chart type you wish to use for each measure.

Data Tables

Many of the attributes, and indeed other settings, that we have already discussed apply equally to data tables, but these also have some settings which are unique to them, which we will cover here.

Functionally one of the main differences with a data table is the ability to add many more objects (measures and/or dimensions). Once you have changed the chart type to 'Data Table' you could potentially add an almost infinite number of columns, although this obviously is not recommended in the real world.

To add extras columns (of either type) simply press the '+' button and search for the relevant object where it says 'Type to filter …..' and then select the object you want; it will then be added as a new column on the table. This table looks like this;

Example

Cross Tabs

In a Chart we saw that adding a header created a Legend Item, for example splitting up a stacked bar chart into segments. What would happen if we did the same in a Data Table?

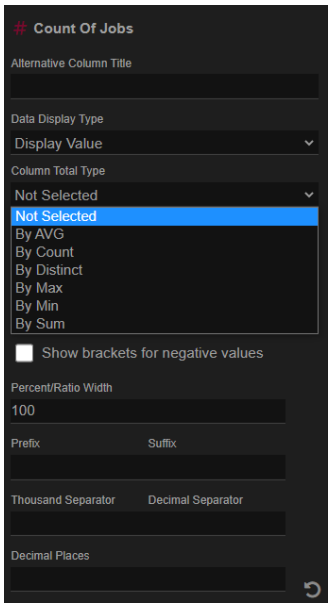
The measure gets 'cross tabbed' into year columns. Note: You can remove the text 'Invoice Date – Year' from the chart by, in 'Attributes', giving the object a 'Alternative Column Title' of <nbsp> (non breaking space)

Example

Data Table Total Types

On data table dimensions and measures, you can change the Column Total Type. The options available are different, depending on the type of object;

Example

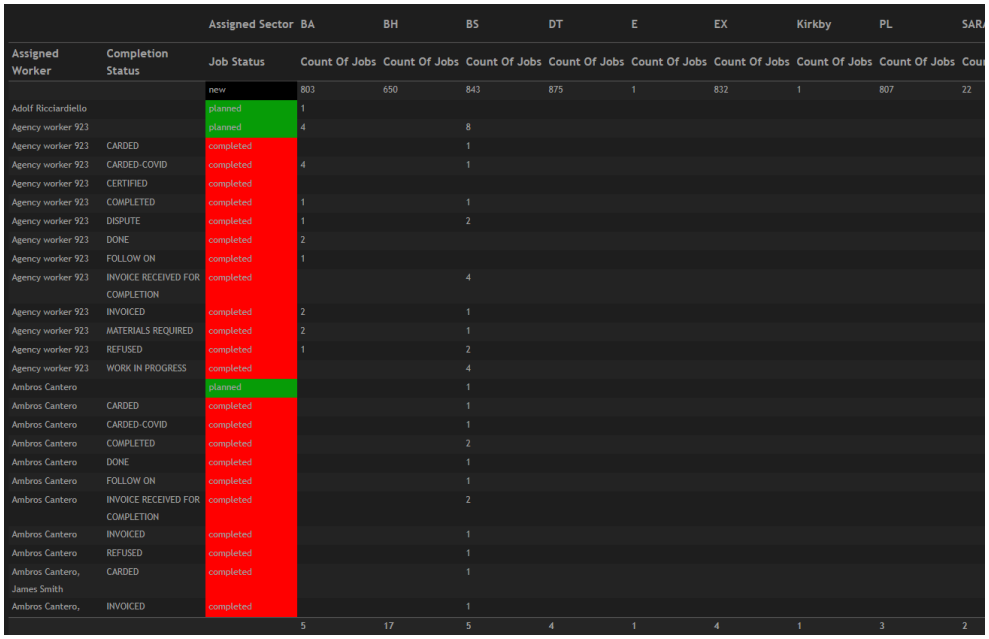


'Not Selected' is the default.

If you select 'By Count' then the column for this dimension will display a row count;

		Assigned Sector	BA	BH	BS	DT	E	EX	Kirkby	PL	SAR
Assigned Worker	Completion Status	Job Status	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Cou
		new	803	650	843	875	1	832	1	807	22
Adolf Ricciardiello		planned	1								
Agency worker 923		planned	4		8						
Agency worker 923	CARDED	completed			1						
Agency worker 923	CARDED-COVID	completed	4		1						
Agency worker 923	CERTIFIED	completed									
Agency worker 923	COMPLETED	completed	1		1						
Agency worker 923	DISPUTE	completed	1		2						
Agency worker 923	DONE	completed	2								
Agency worker 923	FOLLOW ON	completed	1								
Agency worker 923	INVOICE RECEIVED FOR COMPLETION	completed			4						
Agency worker 923	INVOICED	completed	2		1						
Agency worker 923	MATERIALS REQUIRED	completed	2		1						
Agency worker 923	REFUSED	completed	1		2						
Agency worker 923	WORK IN PROGRESS	completed			4						
Ambros Cantero		planned			1						
Ambros Cantero	CARDED	completed			1						
Ambros Cantero	CARDED-COVID	completed			1						
Ambros Cantero	COMPLETED	completed			2						
Ambros Cantero	DONE	completed			1						
Ambros Cantero	FOLLOW ON	completed			1						
Ambros Cantero	INVOICE RECEIVED FOR COMPLETION	completed			2						
Ambros Cantero	INVOICED	completed			1						
Ambros Cantero	REFUSED	completed			1						
Ambros Cantero, James Smith	CARDED	completed			1						
Ambros Cantero,	INVOICED	completed			1						
			25	47	22	15	1	11	1	10	2

If you select ‘By Distinct’ then you will also get a count, but this time of the distinct values in that column, so in this example although there are (still) 181 rows (prior screen shot) there are only 19 distinct Product Groups;



		Assigned Sector	BA	BH	BS	DT	E	EX	Kirkby	PL	SARA
Assigned Worker	Completion Status	Job Status	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Count Of Jobs	Cou
		new	803	650	843	875	1	832	1	807	22
Adolf Ricciardiello		planned	1								
Agency worker 923		planned	4		8						
Agency worker 923	CARDED	completed			1						
Agency worker 923	CARDED-COVID	completed	4		1						
Agency worker 923	CERTIFIED	completed									
Agency worker 923	COMPLETED	completed	1		1						
Agency worker 923	DISPUTE	completed	1		2						
Agency worker 923	DONE	completed	2								
Agency worker 923	FOLLOW ON	completed	1								
Agency worker 923	INVOICE RECEIVED FOR COMPLETION	completed			4						
Agency worker 923	INVOICED	completed	2		1						
Agency worker 923	MATERIALS REQUIRED	completed	2		1						
Agency worker 923	REFUSED	completed	1		2						
Agency worker 923	WORK IN PROGRESS	completed			4						
Ambros Cantero		planned			1						
Ambros Cantero	CARDED	completed			1						
Ambros Cantero	CARDED-COVID	completed			1						
Ambros Cantero	COMPLETED	completed			2						
Ambros Cantero	DONE	completed			1						
Ambros Cantero	FOLLOW ON	completed			1						
Ambros Cantero	INVOICE RECEIVED FOR COMPLETION	completed			2						
Ambros Cantero	INVOICED	completed			1						
Ambros Cantero	REFUSED	completed			1						
Ambros Cantero, James Smith	CARDED	completed			1						
Ambros Cantero,	INVOICED	completed			1						
			5	17	5	4	1	4	1	3	2

Data Needed for Each Chart Type

The following table explains the different types of data you need to specify in order to create a chart.

This table shows the suggested data for the different chart types, but some charts will support additional Dimensions that can be used as Legends.

Chart Type	**Minimum required data**	
	Dimension	**Measure**
Bar	1	1
Stacked Bar	1	1
100% Stacked Bar	1	1
Variable Width Bar	1	2
Column	1	1
Stacked Column	1	1
100% Stacked Column	1	1
Area	1	1
Stacked Area	1	1
100% Stacked Area	1	1

Spline Area	1	1
Step Area	1	1
Line	1	1
Spline	1	1
Step Line	1	1
Combined	1	2
Scatter	1	2
Bubble	1	3
Pie	1	1
Doughnut	1	1
Pie Variable Radius	1	2
Doughnut Variable Radius	1	2
Treemap	1	1
Spider	1	1
Radar	1	1
Word Cloud	1	1
Funnel	1	1
Wind Rose	1	1
Pyramid	1	1
Speedometer		1
Traffic Light		1
Lightbulb		1
Card		1
Map	1	1
Heat Map	1	1

Other ‘Attributes’ Specific to Data Tables

On Measures and Dimensions in a data table you can;

- **Make the column invisible**; the column is not displayed but does form part of the SQL that is executed to build the table. This means that a) it will ‘Group By’ that column and b) it can be used to drill down on (which means it can also be enclosed in {{ }} for display at the next drill level). Including a unique identifier, but making it invisible would, for example, ensure that all rows were displayed; even if they weren’t unique.
- **Display column as HTML;** If you embed HTML tags within the definition of the data object, and this option is ticked, then that HTML will be applied in the data table ; for example to display an image or to force certain items to display in bold or a different colour.
- Specify the **Percent Ratio/Width**. By default all columns will be ‘100’ meaning that they are of equal width. If you make one of the columns ‘50’ it will display at half the width of the ‘100’ columns, if you make another column ‘200’ it will display at twice the width. The numbers don’t need to add up to 100!

Additionally, on a Measure you can:

- **Show brackets for negative values;** Negative values in the column in question will be displayed as (45.68) instead of -45.68

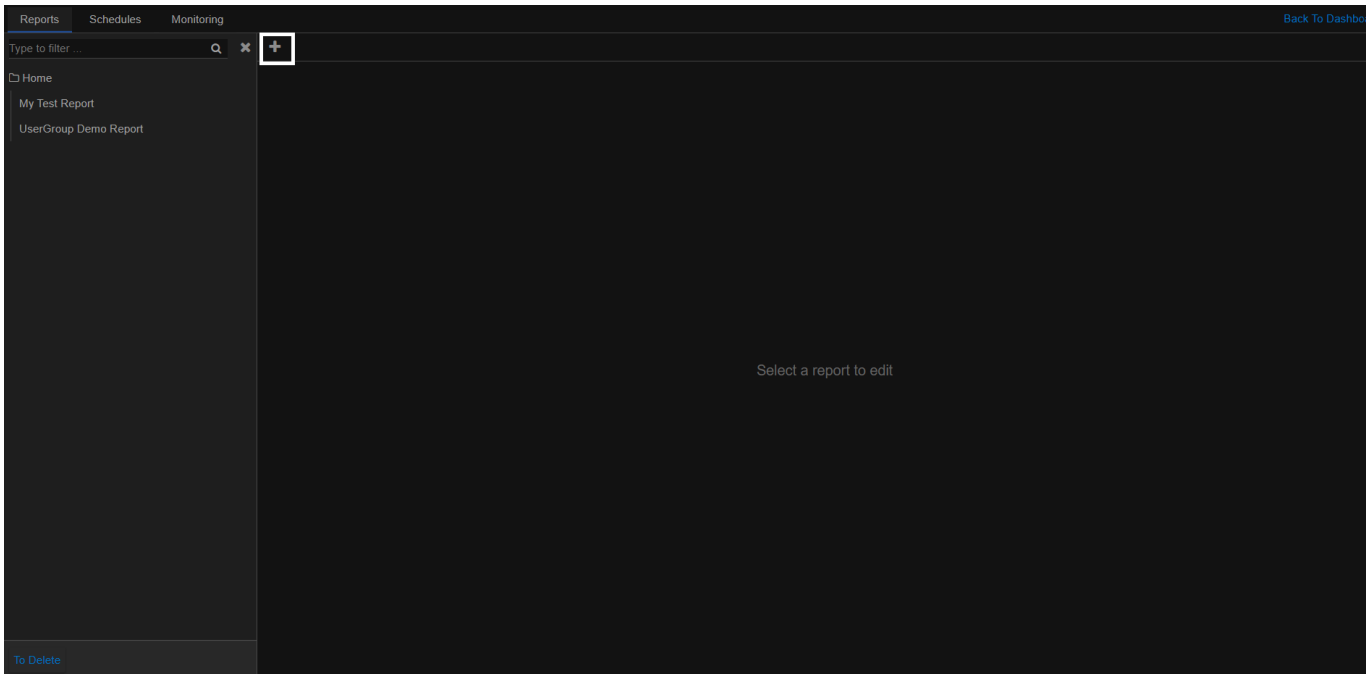
Infosuite Reports

Infosuite Reports is an additional module, controlled by the Scheduler component and is restricted by the licence a user has been issued with. When Infosuite Reports is enabled, you will see the Clock icon on the dashboard header tool bar.

NOTE: This module is licenced separately to Standard Infosuite.

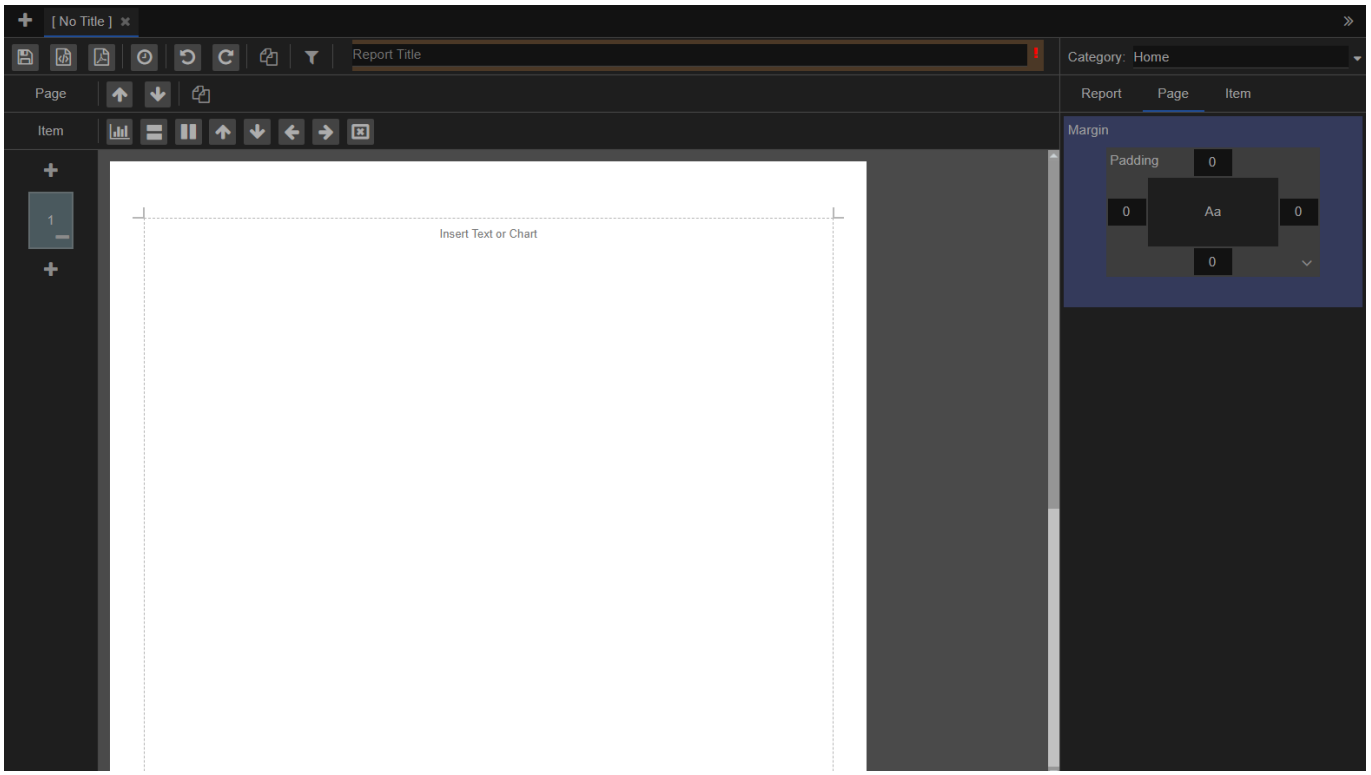
Once clicked you will be presented with the Reports page as shown below. From here you can;

- Create a new report
- Create a scheduler task or
- Monitor the progress of existing scheduled tasks



Creating a Report

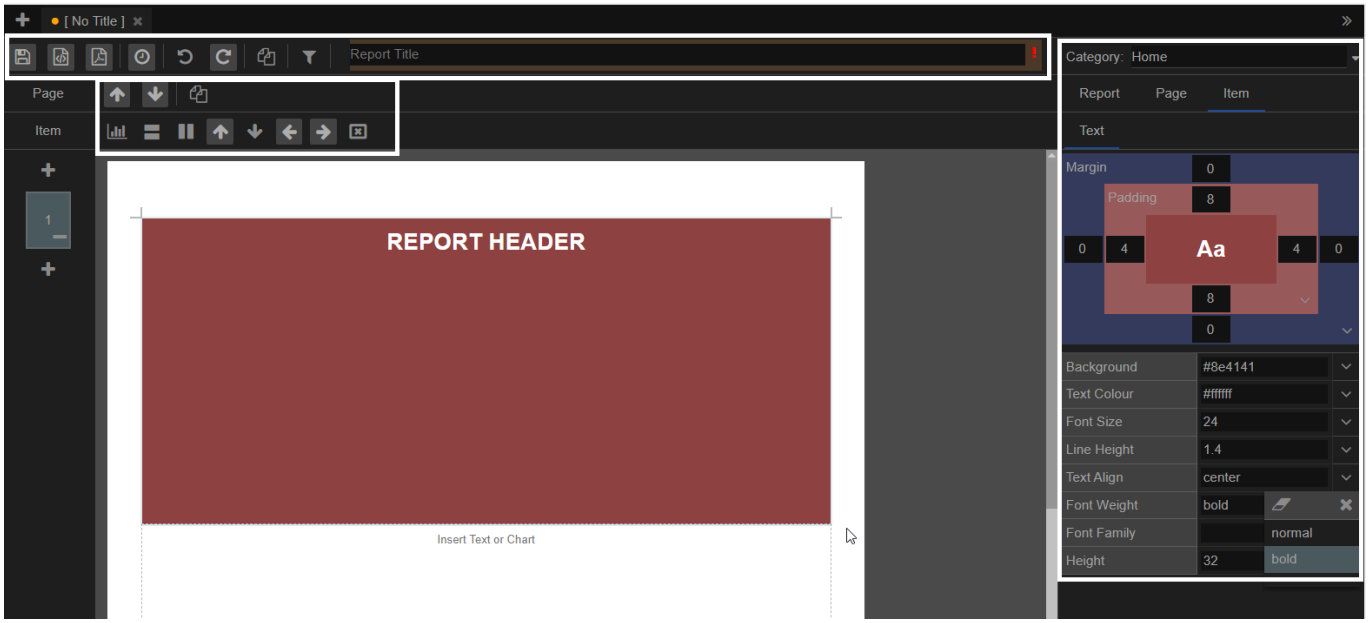
To create a new report, click the plus button.



Once you have clicked the plus button you will be presented with essentially a blank form.

Creating a report works a lot like creating a chart, you need a title for your report and you need the data you're going to be utilising in your report.

Reports can also be customised using the various options on the tool panels:



The buttons on this page may look familiar from the edit chart screen and most of them serve the same function. Let's start with the red section, this has buttons for (left to right);

- Save
- Preview
- Generate PDF
- Schedule this report
- Undo
- Redo
- Duplicate

The orange outlined area contains buttons for; **Page:**

- Move current page up • Move current page down **Item:**
- Select Chart from Library
- Split top and bottom
- Split left and right
- Move up
- Move down
- Move left
- Move right
- Remove box

The Section outlined in Black only appears if you click on a part of the report that isn't covered by chart.

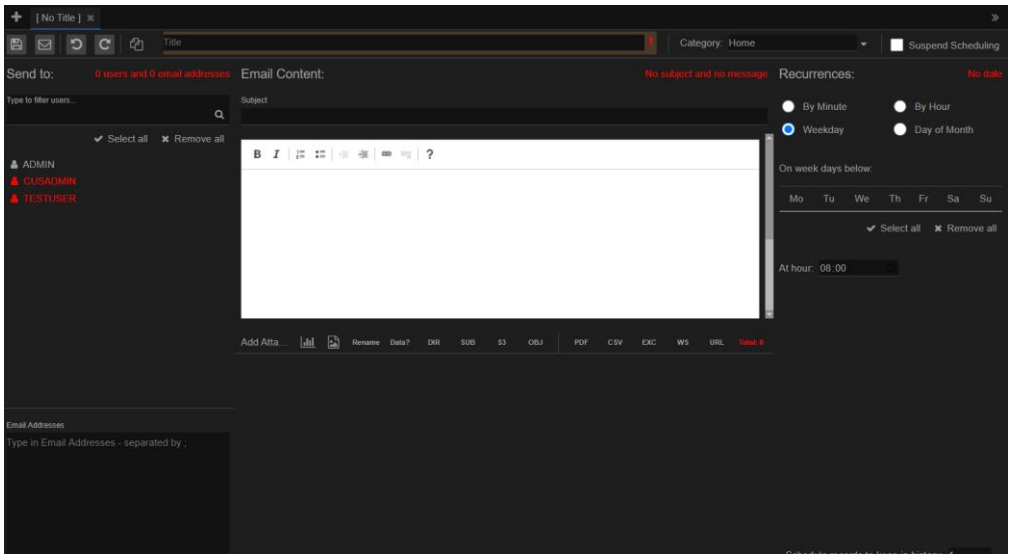
All of these fields allow you to make changes to the currently highlighted square using the built-in options and all of the choices made are shown in the above panel as a preview.

Once you've finished creating your report you can then schedule this out to users or to email addresses. This can be done quite easily by clicking the 'Schedule this report' button mentioned above. This will take you to the schedules screen with your report showing in the attachments section.

Schedule a Report

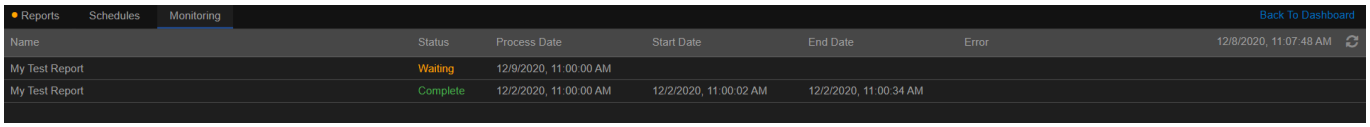
From this screen you can set up the recipients, the days of the week and how often the schedule occurs.

Infosuite Reports includes the ability to schedule to directory and the ability to add multiple items to the report by clicking either the Chart library button or the Select Report from library button.



Monitor Schedule

We have looked at the 'Reports' and 'Schedule' tabs, the final tab is 'Monitoring'.

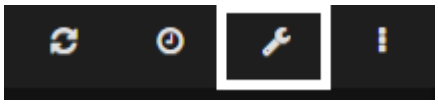


This shows a history of past schedules, and what will happen in the future. This screen would also show any charts that had failed to run. Note that if the Dashboard instance isn't running when a schedule was due to run it will 'catch-up' the next time it is started.

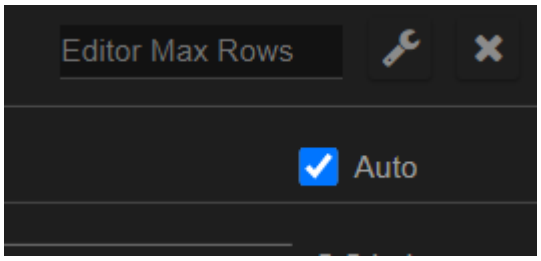
Configuration Screen

This section explains functions used by a system administrator and is only applicable to users who have the Administrator role assigned to them.

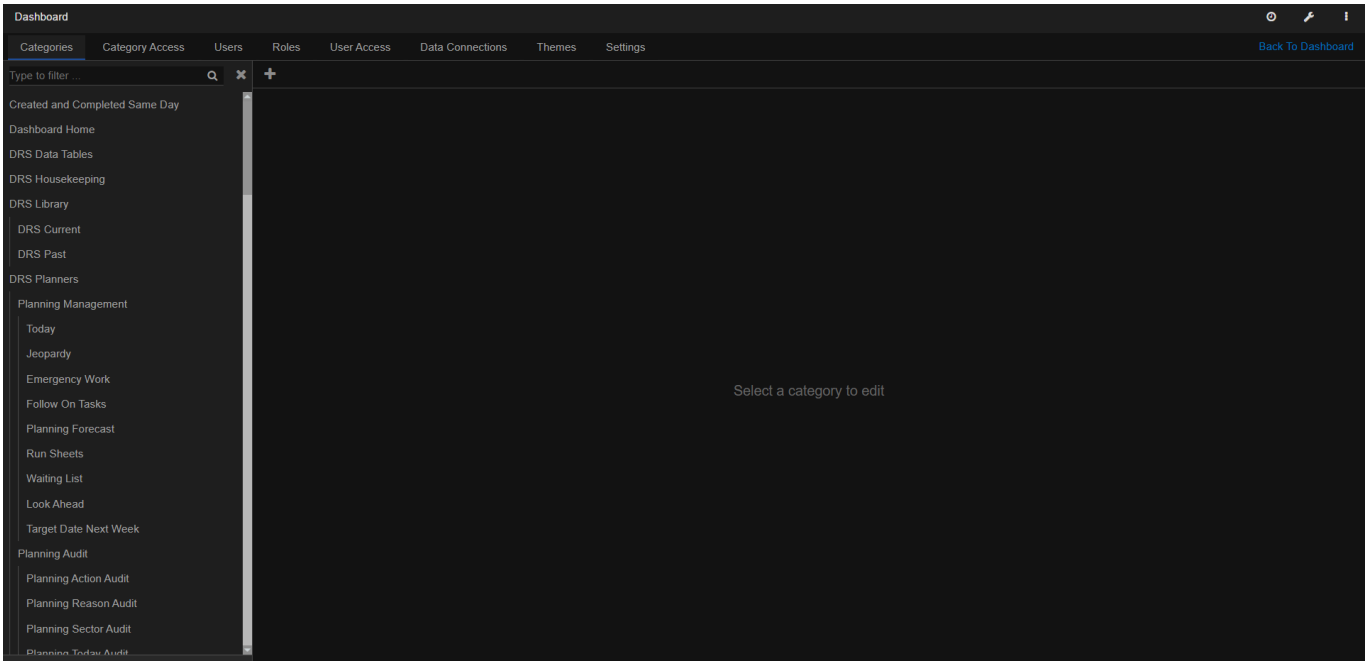
In the top right-hand corner of the application a spanner icon will be visible to Administrators. Clicking this icon with open the configuration area of the application.



You can also open the configuration area directly from the edit chart screen, again using the same spanner icon.



When you click the Dashboard Configuration icon, the following screen will be displayed



Across the top of the configuration page there are a set of tabs, detailed below;

Categories – This is where you create / maintain the individual dashboard pages or 'tabs'. Additionally sometimes (but rarely) there is a requirement (usually for security purposes) to make categories that are not displayed as tabs.

Category Access – Here you can see what each category has access to.

Users – This is where you create / maintain application users.

Roles – Here you create / maintain roles that can control access to elements within the application. This allows categories to be grouped together under a common heading to ease of management of large numbers of Dashboard users.

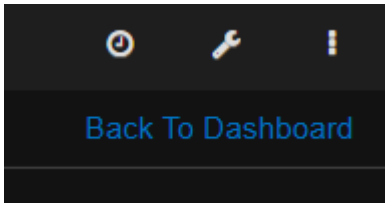
User Access – This quickly allows you to view what a user has access to and grant or revoke access to Roles and Categories.

Data Connections – This is where you can create and modify your connections to source databases, including the metadata.

Themes – Allows you to visually edit the Dashboards style sheet(s). You can create multiple themes here allowing different users to have different styles within the Dashboard.

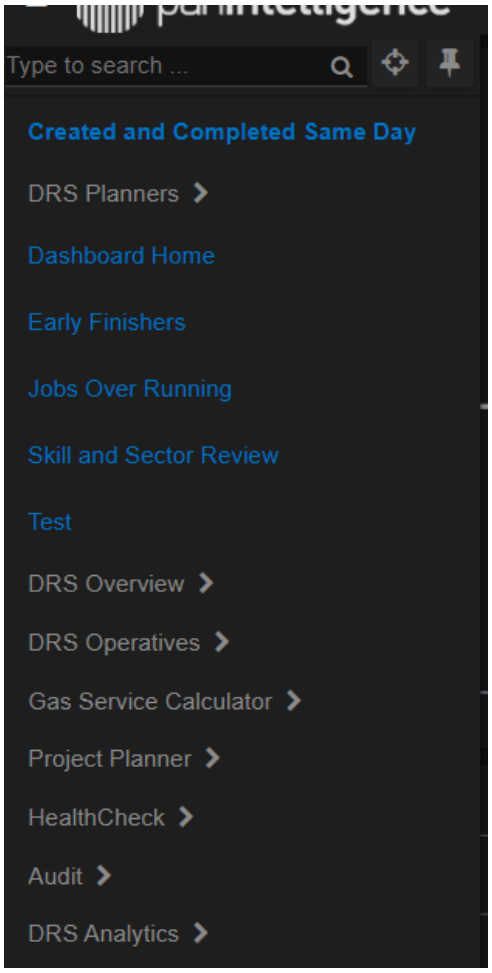
Settings – Controls global settings for the Dashboard, such as mail servers, proxy servers and variables. Each of these tabs are explored in the following chapters.

To close the configuration screen and return to either the dashboard page or edit chart screen click the text in the top right-hand corner which says 'Back To Dashboard'



Categories

Categories within Infosuite are managed here. Categories are the pages that are represented in the left-hand panel of the Dashboard. (Optionally across the top).

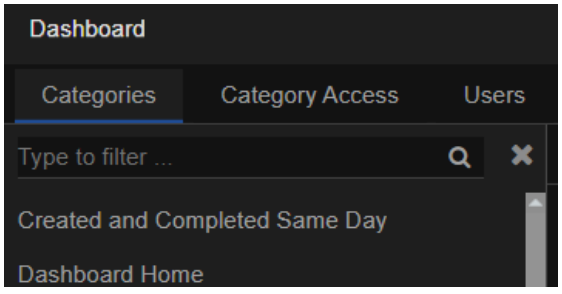


An administrator can create, modify or delete a category.

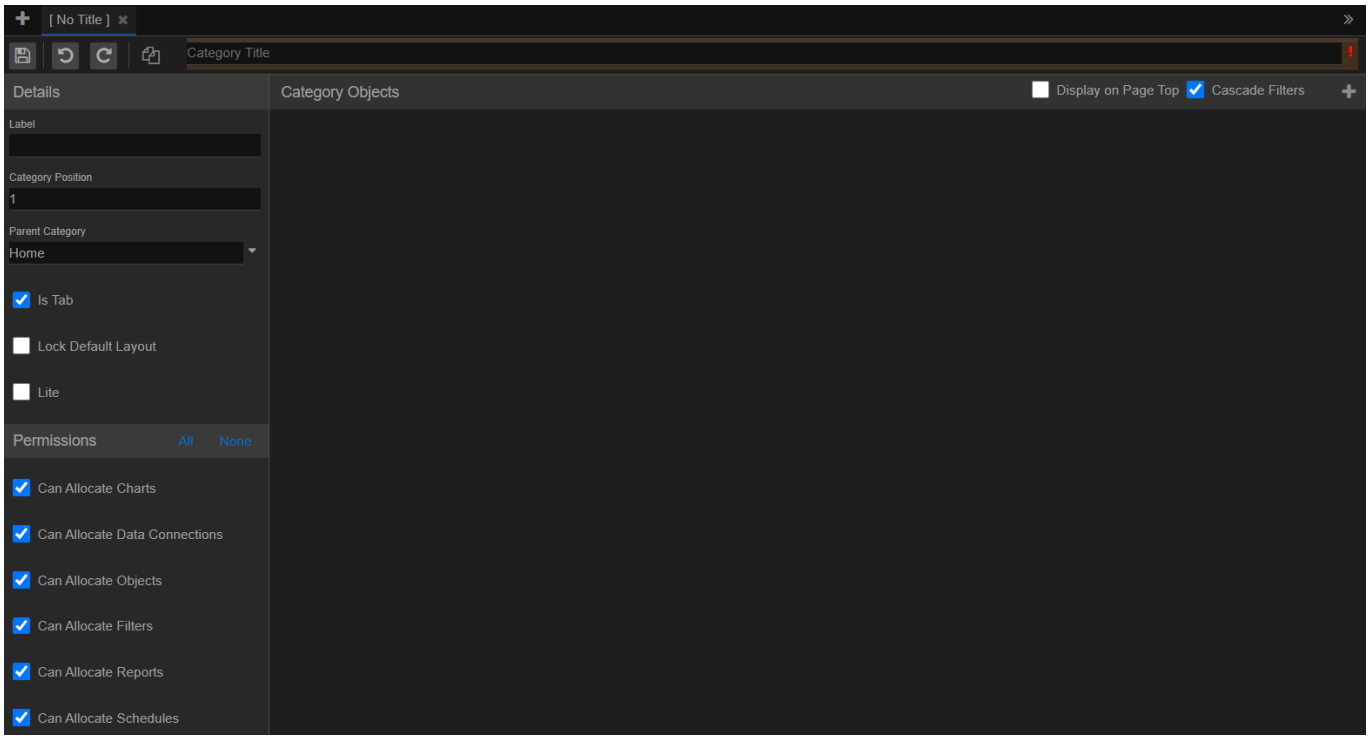
Creating a new category

To add a new category first make sure the categories panel is selected in the Configuration Screen, clicking on the text ‘Categories’ will select the panel, a blue line is visible under the word categories indicating that it has been selected.

Then click the ‘+’ icon to add a new category.



You will now be presented with the new category panel.



You will notice that at the top of the panel the field for Category Title is highlighted and has a red exclamation mark.

If you place the mouse over this exclamation mark, you will see the message ‘Category title is required’. This is because this is a mandatory field. It is the only mandatory field for a category, it also has to be unique.

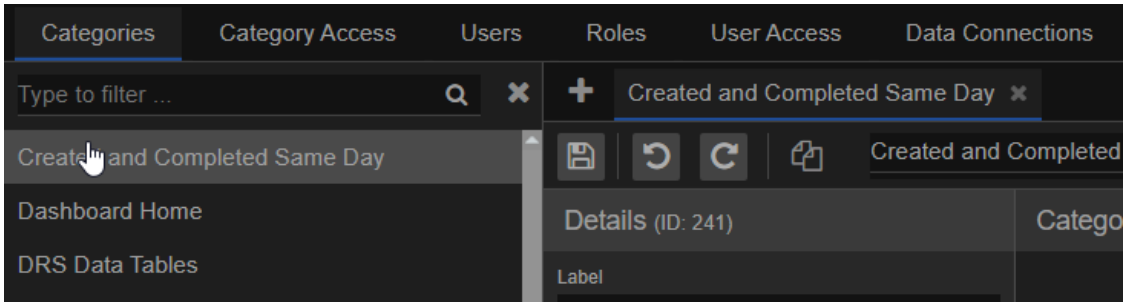
If you enter a category title, then this field should no longer be highlighted, and the exclamation mark should disappear.

You should also notice the save button has now become enabled. Once saved the new category will appear in the category list in the Dashboard.

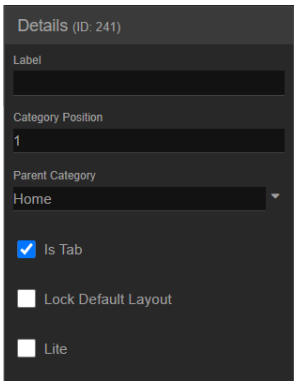
Editing an existing category

To edit an existing category, make sure you have the Categories panel selected. Then select the category you wish to edit in the left-hand list, you can use the search at the top of the panel to quickly find the category you want.

Once selected the category will open in the right-hand panel.



This sub panel contains details which affect the way the category is presented to the user.



Label – This is an alternative description that can be given to a category, unlike the category title this does not need to be unique, if this is populated it will be the name used for display purposes. It is useful when you want multiple items to have the same display name, for example where they exist under different Parent Categories (see below).

Category Position – By default categories will appear in alphabetical order in the category list. This option can be used to override that behaviour and force categories into a non-alphabetical order.

Parent Category – Categories can be nested or grouped underneath each other to help a user to navigate. You select the category that you want to place this category under. By default it will chose 'Home' which is a pseudo category used to denote the top level.

Is Tab – Sometimes a category hasn't been created for display purposes, instead it is used as a way of grouping objects together, often for security purposes. Unticking this box will remove the category from the user's category list window. This is also useful to temporarily hide a category or even to have a category that can be embedded in another application but is not available within the main Dashboard.

Lock Default Layout – This prevents new items being added to a category.

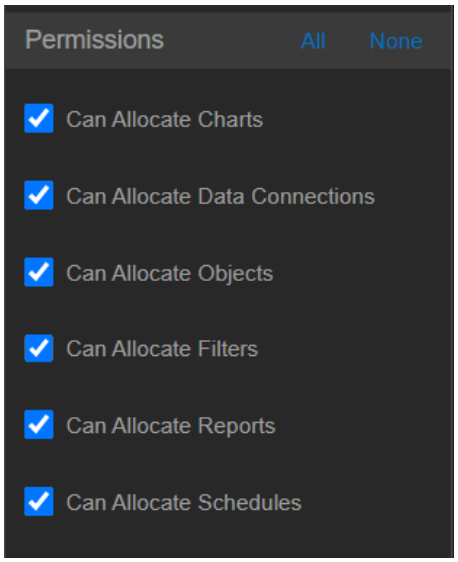
Lite – this makes the category a 'Lite' category. This is tied to the licence you have been assigned, and allows you to designate categories as lite, enabling lite users to be able to access them. If you haven't purchased any Lite users then you don't need to do anything with this field.

Category Permissions

Categories serve two purposes in the Dashboard.

- As Dashboard pages
- For security purposes, to control access to Dashboard elements

Category Permissions are relevant to the second purpose. Here you can decide what types of objects can be held in a category.



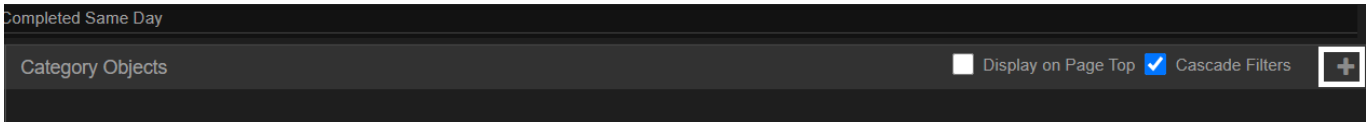
Categories can hold Charts, Data Connections, Objects, Filters, Reports and Schedules.

By default, a category can hold any of these objects. Unticking these options will prevent a user from adding new items of this type to the category in question.

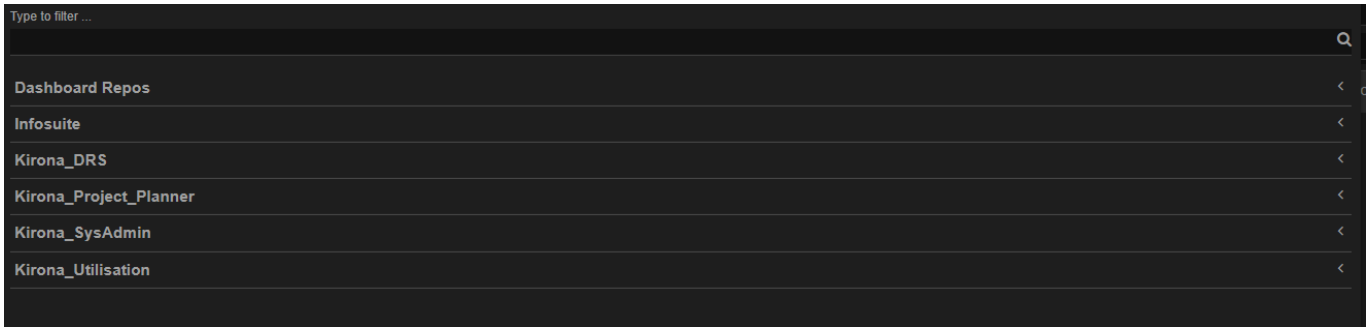
Category Objects

Category objects allow us to filter all the charts contained within a category, as long as the charts can connect to objects of the same name within their respective Data Connections. These category objects (also known as category filters) are set up within the categories panel of the configuration screen. Firstly, we need to select the category that we wish to apply filters to, in this case we've chosen the category named 'My New Category'.

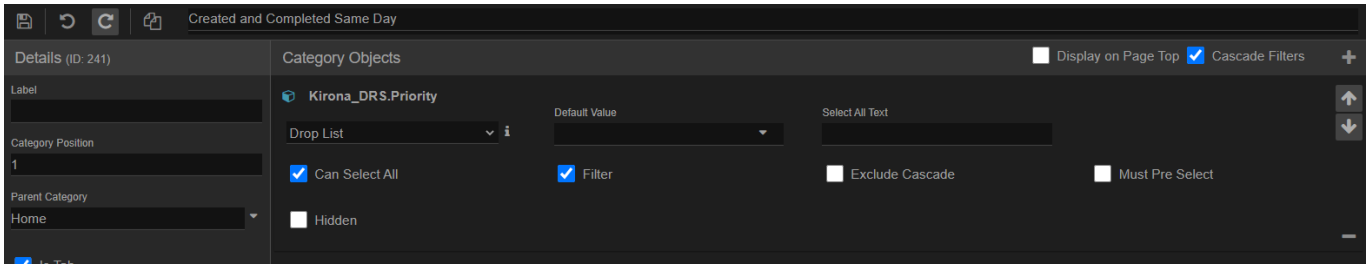
Once we've chosen the category to add an object to we then cross over to the "Category object" window and click the plus button in the top right corner.



Once you click the plus button you will be presented with the following pop-up.

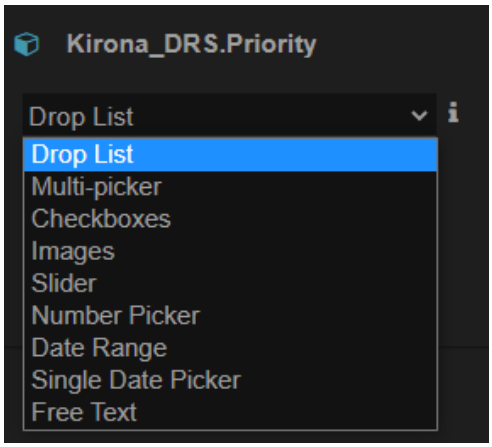


This pop-up menu will show you the data connections and the data objects in those connections (by expanding the chevrons or typing the object name into the filter) and from here we select which object we wish to set as a category object.



Filter Types

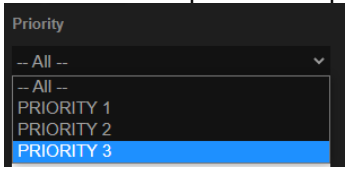
There are a few different filter types that can be set up on this screen by changing the first drop down list:



The options available are described below:

Drop List

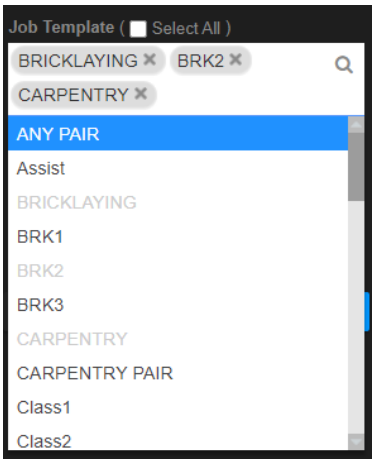
The most commonly used (and default) filter type is the Drop List. This allows the selection of a single item at a time. At the top of the Drop List, there is often an ‘All’ option. When ‘All’ is selected this filter is ignored.



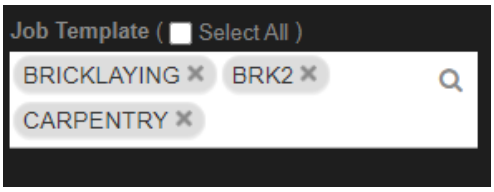
Multi-Picker

This is like a drop List but allows multiple items to be selected at once. Clicking into the text area opens the Search Panel.

You can then either select an item or start typing to search, note that this is a ‘contains’ search, not a ‘starts with’ search.



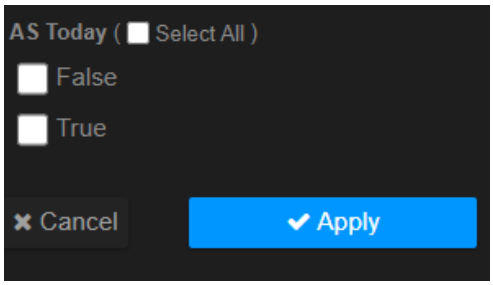
Then click an item to select. Multiple items can be added by repeating the process.



You can remove items from the list by clicking the X next to the selected item. To use the filter with the items you have selected click the ‘Apply’ button.

Checkboxes

Checkboxes work similarly to multi-pickers in that you can select multiple values from the list. As opposed to the multi-picker, all of these options are laid out on the category filter panel and thus best suite where the total number of potential options are limited.



Images

This category object type allows for an image to be associated with each potential data value, which will then be displayed on the category filter tab.

The images shown for each object should be self-explanatory for each data set that they represent and must be created/stored correctly in order to work:

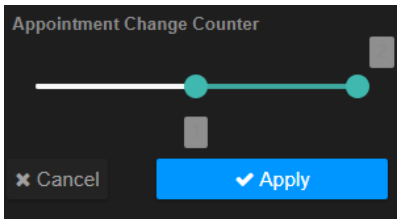
- Add the images to the logo directory (tomcat/webapps/panMISDashboardResources/images)
- The images must be named the same as each data value option. If a selectable value is Car, the name of the image must also be Car.
- The file extension defaults to png.

The logo directory can be changed by adding a system variable for IMAGE_REPOSITORY_DIRECTORY

The file extension can be changed by adding a system variable for IMAGE_RESOURCE_EXTENSION

Slider

This filter type allows you to move a slider to do a 'between' filter on values in the data set.

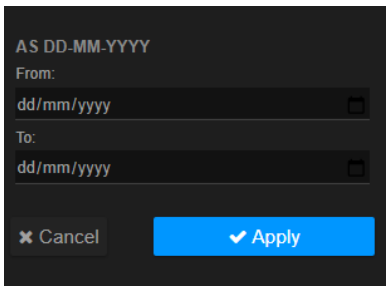


Number picker

This filter works in the same way as a drop list but specifically for number-based dimensions.

Date Range

The date range filter must be used on a date object and works by inputting (or selecting from the Calendar) from and to dates, which are then passed into a 'between' filter on the chart.



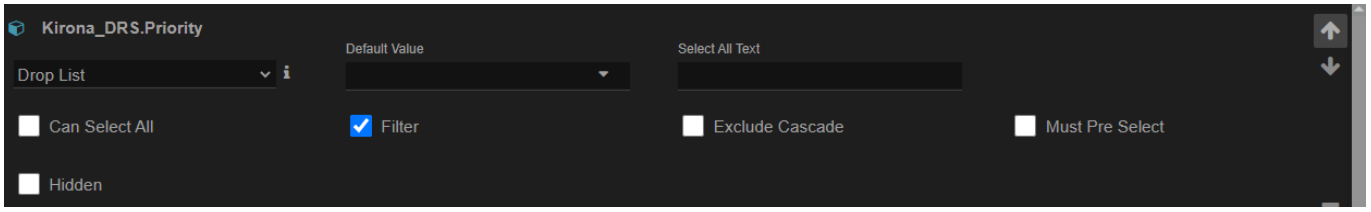
Single Date Picker

Unlike the date range filter, you may only select one date value from the data set to filter by.

Free Text

This allows for the use of free text within the filter box. Bear in mind that this uses a LIKE filter and therefore cannot be used to return specific values, it will also be slower on larger tables.

Category Object Settings



Along with the category object types, we also have several settings that can be toggled depending on the type of object filter.

As shown above the five different tick boxes available are:

- Can Select All
- Filter
- Exclude Cascade
- Must Pre Select
- Hidden

Of these only ‘Filter’ and ‘Can Select All’ are selected by default.

Can Select All

The ‘Can Select All’ tick box is used to toggle the user’s ability to select an ‘All’ option on the drop-down filter list, effectively ignoring this particular filter until something is specifically selected.

If the option is ticked then the user is presented with;

Where ‘All’ is the default. If the option is unticked however then a) the ‘All’ option is removed and b) the default is the first value on the list (although see also ‘Default Value’).

Another feature that ties in with ‘Can Select All’ is the ‘Select All Text’ option. This can be used to replace the text that is displayed on the filter screen in place of the default ---All---.

Filter

If this option is unticked then the object in question will no longer be passed as a filter into the SQL used to define the chart and therefore it will no longer filter the chart(s) automatically.

Exclude Cascade

The exclude cascade option controls the effect that the preceding filter has on this specific filter. If configured where filters can act on each other to limit result returns, this will no longer happen.

In addition to the Exclude cascade box on each object, there is a 'master' exclude button at the top which will exclude the cascade effect for all category objects on the category

Must Pre-Select

This controls if a value must be 'pre-selected' before the user can see any information on the category they are viewing. This is normally used for performance purposes to force a user to select the filter they want applied before rendering the charts, rather than after. If this option is selected then when the user goes into the category they will get a messages.

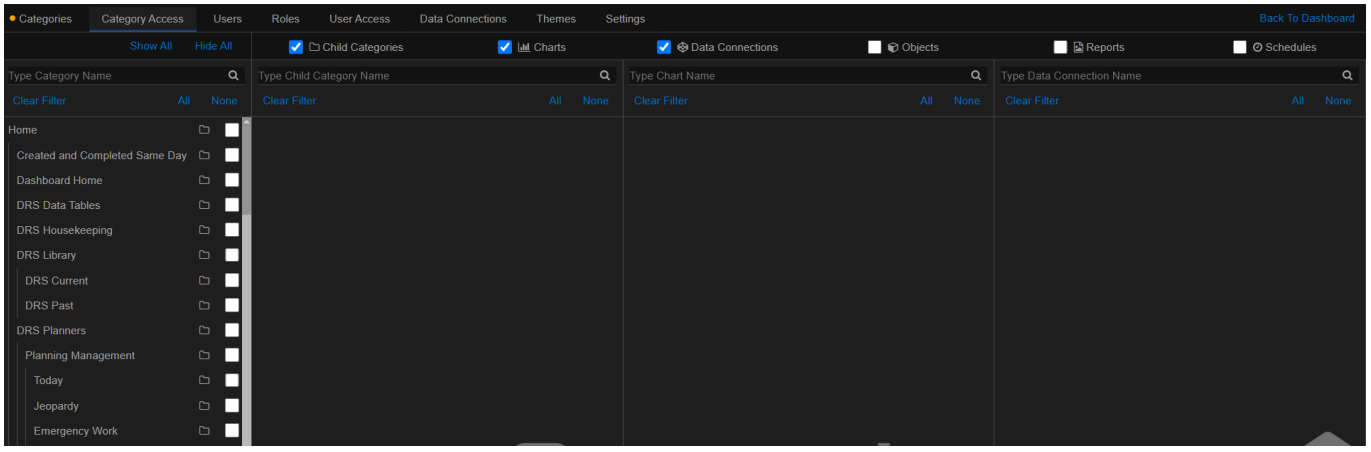
Display On Page Top

If this option is ticked then the category objects will display across the top of the dashboard, rather than along the right hand side.

Hidden

A hidden category object can be used where you want to apply a filter to all the charts in the category en masse, and you don't want the user to have the ability to change it. For example excluding Cancelled Orders or Inter-Group Sales or Voided Tickets, this saves having to configure a filter on each chart; especially useful if some users can create their own charts, but are not aware of these filters (or might forget about them).

Category Access



The purpose of this screen is not to assign users to categories (to do that see 'User Access' instead), but rather to display what having permissions for a given category will in turn give you access to. It also enables you to achieve 'en masse' functions that would otherwise take some time ; for example changing a group of chart to be owned by a different category.

For any category, or combination of categories (selected in the list to the left) this screen will show certain panels, in this example 'Child Categories', 'Charts and 'Data Connections' (the default) have been selected.

'Child Categories' will show any children of the category selected in the category hierarchy. Otherwise each of the other panels will show the items of that type (Charts, Objects etc.) owned by the category or categories you have selected from the list on the far left.

In the example above we can see that 'Summary' owns five charts, but has no Child Categories and doesn't own any Data Connections.

In addition ticking the button next to any given item in the panels will reveal a ‘To Move’ button at the bottom of the panel, enabling you to assign ownership of the item(s) in question to another category or, in the case of ‘Child Categories’ (only) you can move them to ‘sit under’ a different category in the category hierarchy.

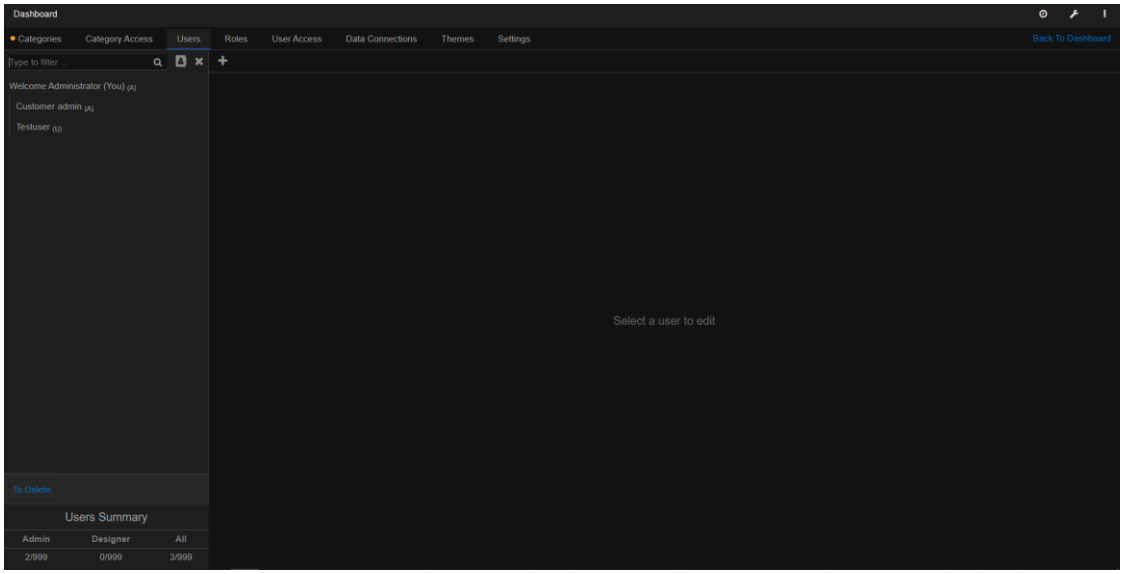
Furthermore on ‘Charts’ (only) you can delete any selected charts entirely.

Remember that:

- A chart can be owned by a category but might not actually be placed in that category for viewing purposes.
- A chart can exist in multiple categories, but can only be owned by one category
- To gain access to a category which has parent(s) you need to have access to those parents as well
- Assigning ownership of anything to the (pseudo) category of ‘Home’ will give everyone access to it.

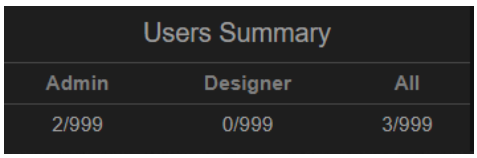
Users

In this section we will go through the process of how to create, modify and delete users. We will also show how users can be assigned access to areas of the dashboard, and permissions to do certain tasks.



This area is controlled by your licence key, you are only allowed to create users within the limits set within the licence key.

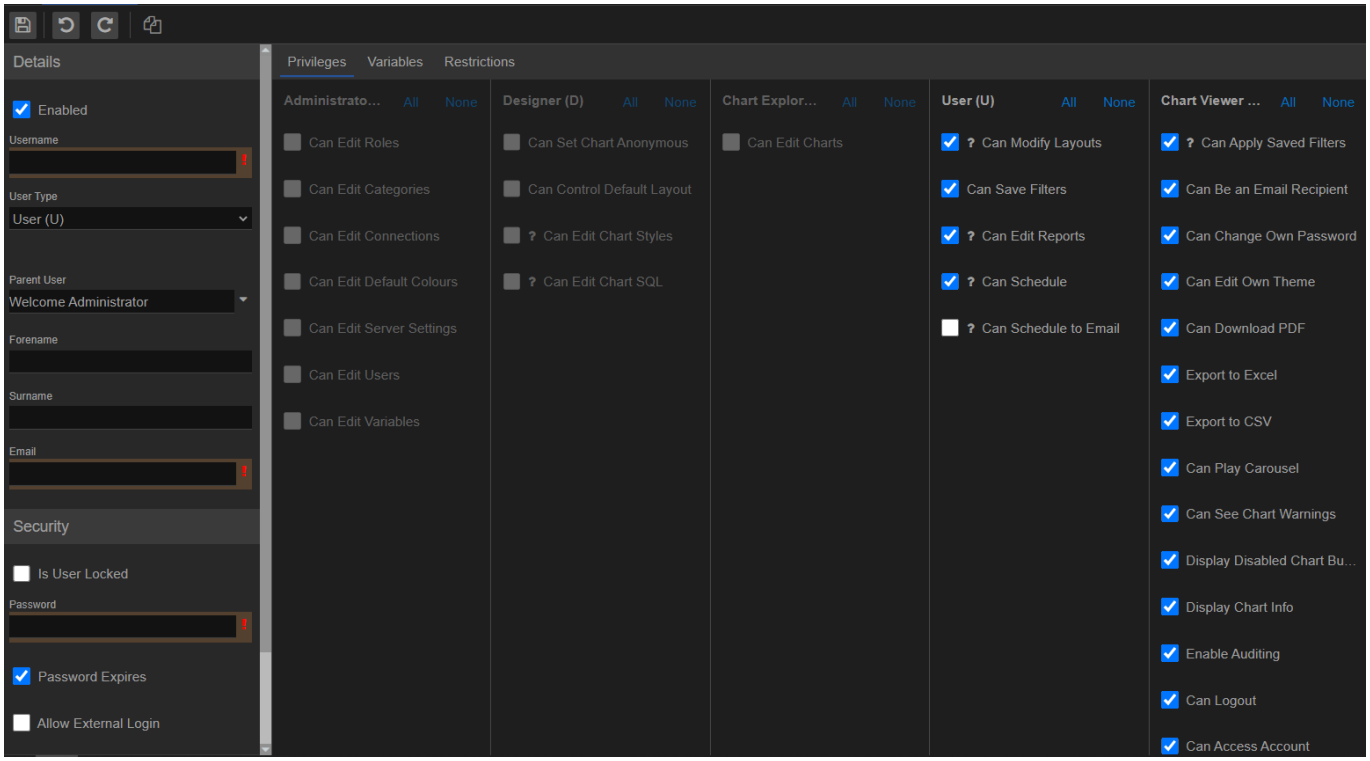
In the bottom left of the screen there is a counter which shows your current usage.



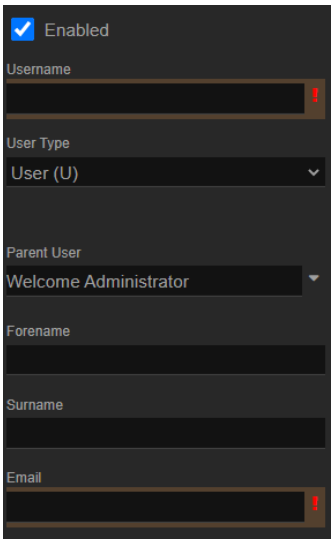
In this case we have only used 3 out of a possible 100 admins, 2 out a possible 100 designers and 48 out of a possible 10,000 users.

User Creation

To create a new user, we click the plus button in the top left of the panel shown previously. This will then pop out an interface that is used to set the details for the new user as well as any permissions that need assigning to them.



Let's start with the first section of the first panel;



Enabled: If this check box isn't ticked then the user cannot login – and the user is not counted against the licence numbers. This can be used to free up a user licence without deleting the user (you may wish to retain it for audit purposes, even if they have left).

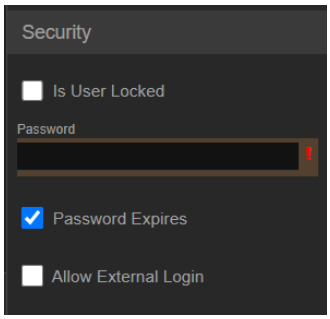
Username: This is the username used when the user logs onto the dashboard.

User Type: This is the type of user assigned to the dashboard user. For more detail on User Types see below.

Parent User: The user immediately above this one is the user hierarchy.

Forename: /Surname: Optional name of user.

Email: This is mandatory because it is used for forgotten passwords. The second part of this screen pertains to security.

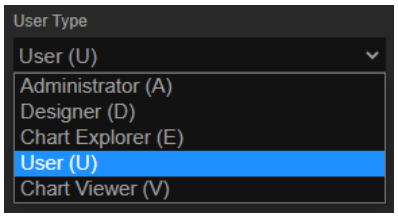


Is User Locked: This will be ticked once the user has locked themselves out by attempting too many incorrect logins. This must be unticked in order to unlock the account and allow the user to log in again. **Password:** Use a nice strong password, this is where you can also reset a user's password if they have forgotten it.

Password Expires: By default this is on. This forces the user to change their password at their next logon. **Allow External Login**: Used for alternative authentication methods.

User Type

There are five user types, this controls what a user can or cannot do. There is more control over specific functions in user privileges – see later. As you move down the list you get progressively less functionality.



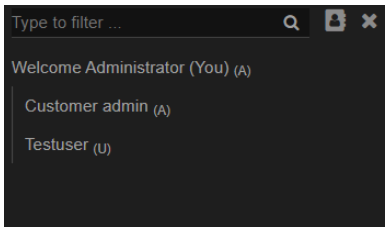
Administrator (A): Highest level users, and the only ones who can access these screens and the other admin functions.

Designer (D): Everything a Chart Explorer can do, but can also save Charts.

Chart Explorer (E): Not a commonly used type. Everything a User can do but can also get into the edit chart screen for advanced searching but cannot save charts.

User (U): Everything a Chart Viewer can do, but can also design their own layouts.

Chart Viewer (V): Can alter their dashboard layout, but it won't be saved ; in other words they cannot create their own layouts, instead Infosuite will automatically pick up the 'default' layout for each category every time they log on. Cannot create or alter charts.



In the user list you can quickly see which users have which type set as they have the type indicator next to their name. Welcome Administrator is a (A) Administrator and so on.

Lite Users

Unless you specifically know that you have Lite Users you can safely ignore this section.

A Lite user is an additional user setting which restricts certain user accounts to a limited number of charts based on the chart limit set in the license. The Lite user is used to deploy a subset of reports to a larger user audience. Restrictions to Lite users are applied through the licence key.

The number of charts they can access is controlled by the categories that are assigned to the user. For a user to be counted as a Lite user by the licence key they must fulfil all the following criteria.

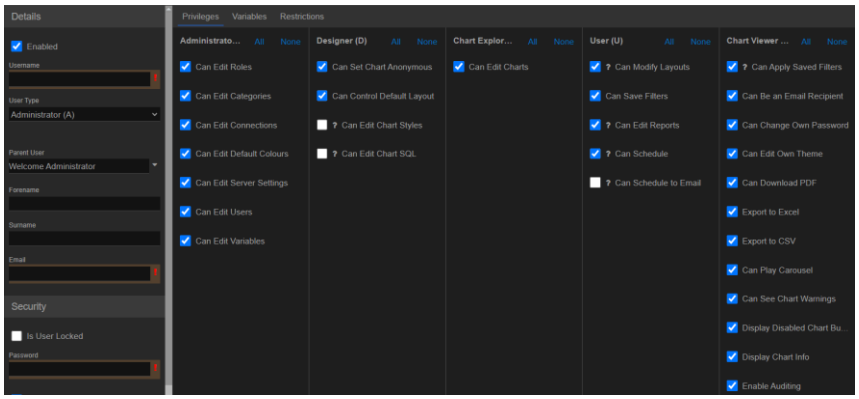
- The Lite user must be a Chart Viewer type.
- They must only be assigned categories that are themselves Lite categories.
- The total number of active Lite users configured must not exceed the maximum Lite user limit.

- The Lite categories themselves must not contain more charts than the maximum Lite chart limit allows.

There is also an optional level of control that can be provided in the licence key, in this you can specify which categories can be used as Lite categories. If the licence key specifies the name of Lite categories, then only categories with the same names can be configured as Lite categories.

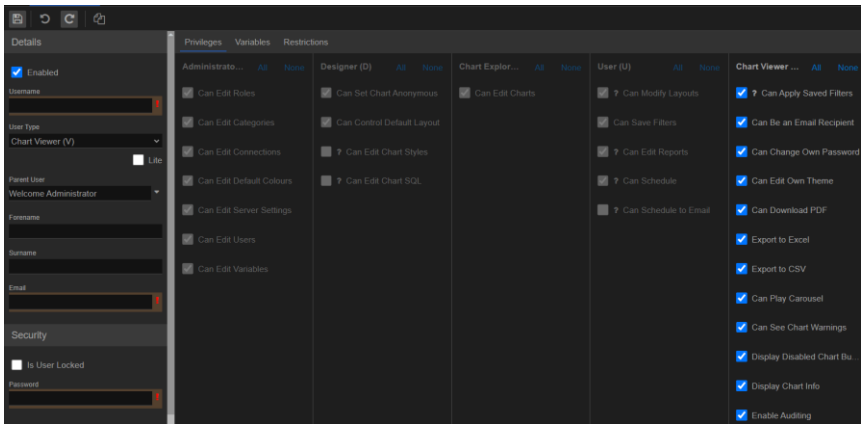
The limit itself is set in the licence key located on the Infosuite server.

User Permissions and Privileges



The top level Administrator account has all privileges activated by default. As shown above this allows them to control most aspects of Infosuite and its users. Each function in Infosuite is assigned a privilege, these are defined in blocks by User Type. If you wished you could, as shown below, create an Administrator who's only actual Administrator function is to Edit Users.

Or a Chart Viewer who cannot export data to Excel or CSV, and who cannot download a PDF;

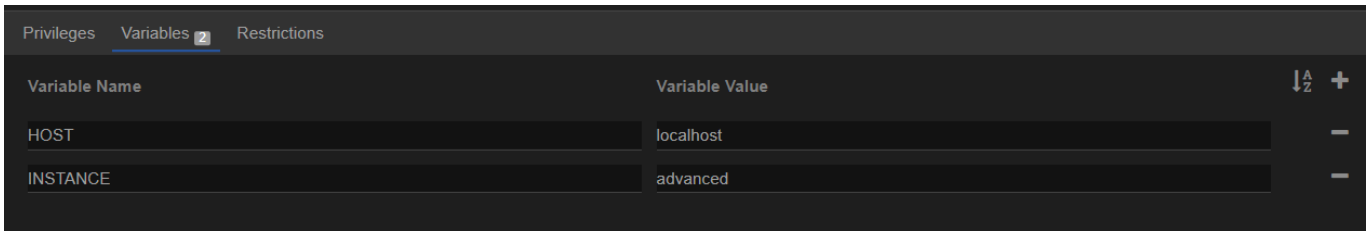


User Variables

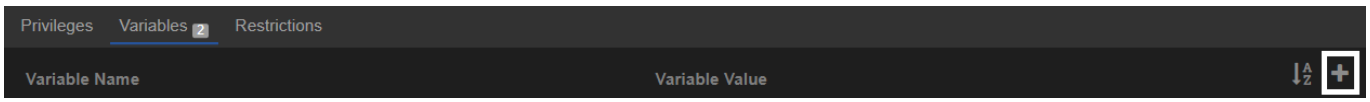
User variables can be used to replace elements using double square brackets. This functionality can be utilised for;

- Data connection details. Different users can connect to different databases without having to set up multiple Data Connections.
- Swap tables viewed within a connection. Different users can view database level restricted tables or views.
- Swap SELECT, WHERE or ORDER BY clauses.
- Pass date time format masks.
- Apply filters in charts.
- Change chart titles.

Variables are incorporated into the “Users” interface;

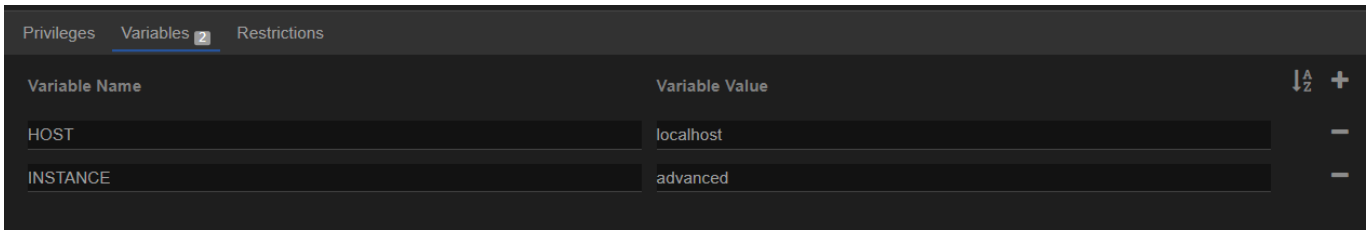


To create a new variable click the ‘+’ icon.

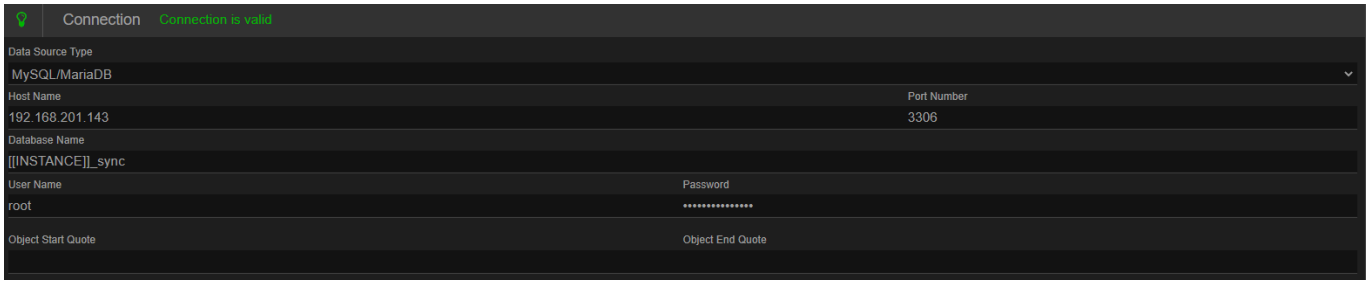


We are then presented with an editable section underneath the Variable Name/Value headings. This is where you will specify your user variable. It is simple enough to add more, just click plus again.

We can use this in multiple ways but the one we will show as an example is using Variable replacement for a data connection:



We have set up our variable ‘INSTANCE’ for this user. This relates to the database name being used in the data connection screen. Now we can specify [[INSTANCE]] as the database name on the data connection and that will be translated, for this user, into ‘advanced’, for other users it might return a different value.



This functionality can be used to give different users access to different databases using the same Data Connection based on the variable set on each specific user.

NB: User variables work in conjunction with system variables.

If you have a **system** variable ‘USER_NAME’ set to ‘FRED’ then;

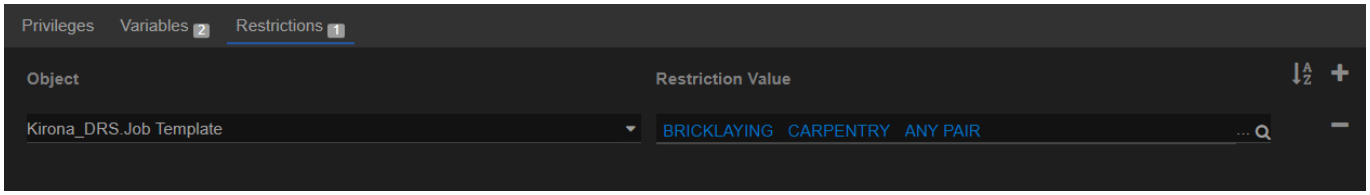
- If a user has a **user variable** ‘USER_NAME’ of ‘JOE’ then for that user if will return ‘JOE’.
- If a different user doesn’t have a **user** variable then it will use the **system** variable ‘FRED’ instead.

On the other hand if you don’t have a **system** variable for ‘USER_NAME’ set at all then;

- If a user has a **user variable** ‘USER_NAME’ of ‘JOE’ then for that user if will return ‘JOE’.
- If a different user doesn’t have a **user** variable then there will be no **system** variable to fall back on, which could well cause problems.

User Restrictions

Users can also have User Restrictions.



This works like the variables tab, in that you click the plus button to create a new restriction but this time when you click the plus button you will be presented with a pop up list of the data connections your user has access to:

Once you have selected a data connection you will then need to select the data object in it that you wish to restrict on.

The next step is to add the restriction value, this is done by clicking the magnifying glass at the end of the line for the restriction value. Once clicked upon you will be presented with the following screen that will show all values within that data object.

From this screen you can select as many or as few values as you wish and then click apply for the restriction to take effect.

NB: These restrictions will only apply to charts that contain the data object of Account Manager (which is actually AnalysisCode1 in this underlying database) or any data objects that contain a WHERE clause that links to that object.

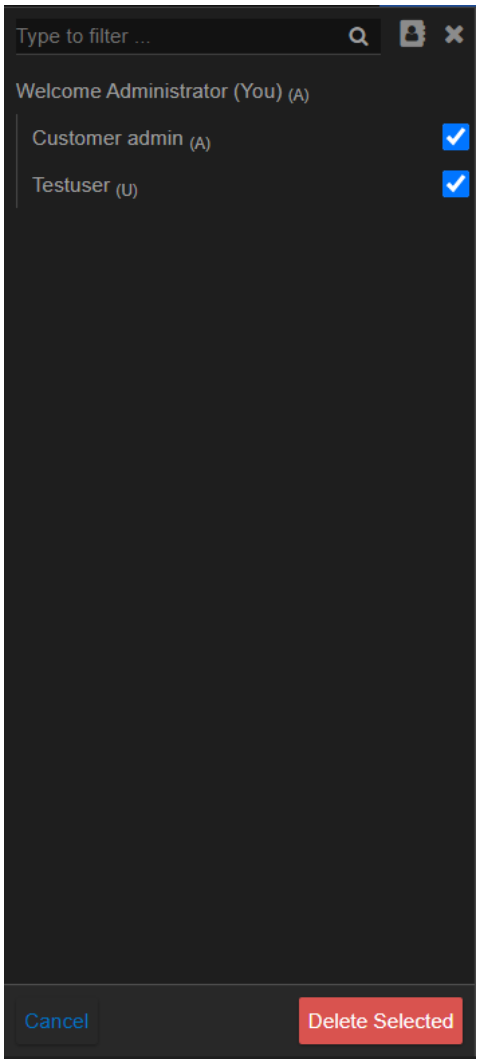
For other users this SQL line will either be;

- Replaced with their name if they also have a User Restriction configured or
- Removed completely (showing data for all Account Managers) if they don't have any User Restriction on this object.

User Deletion

To delete users, click the delete mode button at the bottom of the user list.

Then select the users you want to delete.



Finish by clicking ‘Delete Selected’.

NB: This will delete users regardless of whether they are in use or not unless they are a Parent of another user in which case the option to delete them will be removed.

Roles

What Are Roles?

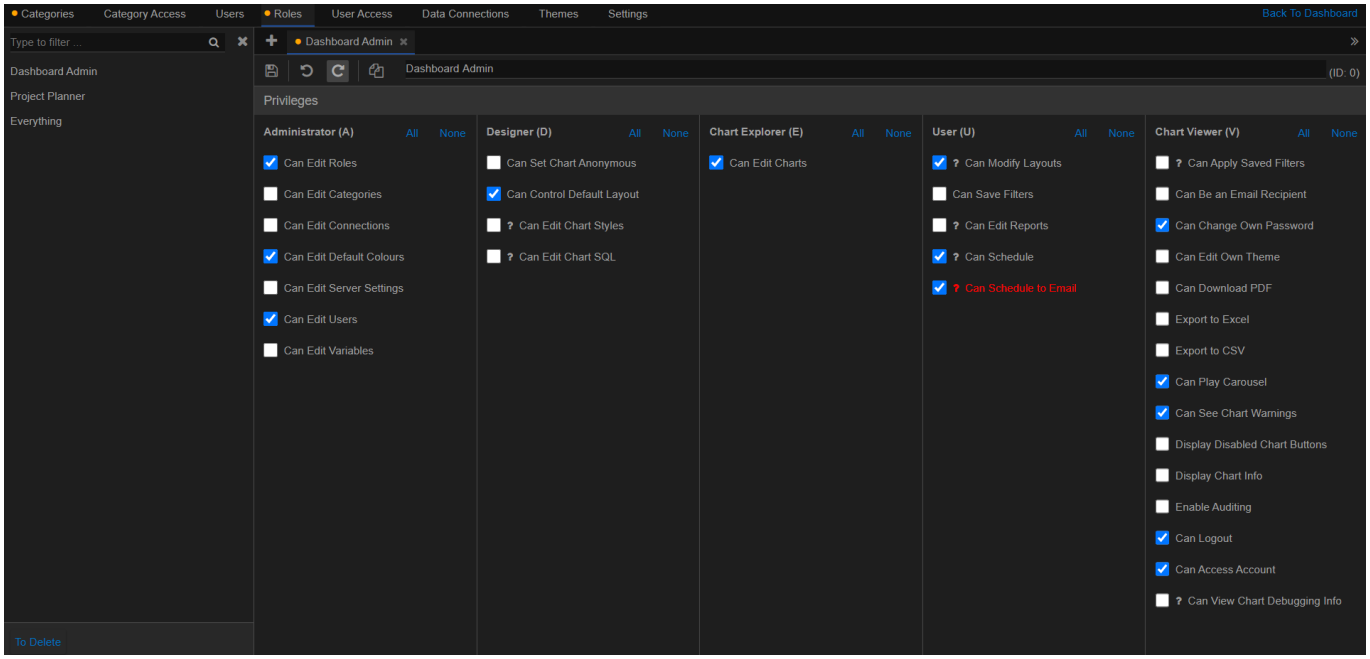
Roles provide a simple way to group categories together, this makes controlling large numbers of Infosuite users with the same access requirements much easier.

On this page you can create, edit and delete Roles. Allocating Roles to Users is done on the ‘User Access’ tab, as is Assigning Categories to Roles. A user can have more than one role, and it doesn’t preclude them also being allocated individual categories.

Consider you have thirty Infosuite users who are all Sales Managers. Sales Managers currently have access to six categories. If you create a seventh category for Sales Managers, and haven’t used Roles, then you would need to assign the new category to each of the 30 users individually.

However if you had created a role of ‘Sales Manager’ and assigned the six original categories to that, and then assigned each of the 30 users to the role ‘Sales Manager’ then to grant them access to the new category you would just have to add it to the Role.

Roles also allow you to apply access controls (privileges) to a group of users.

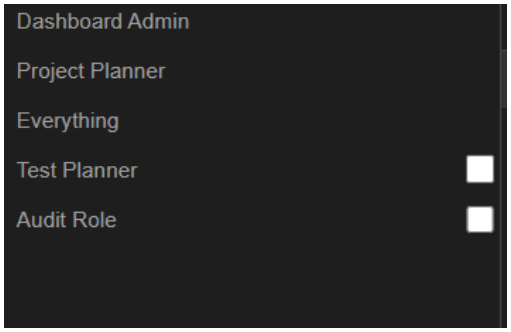


Create A Role

To create Roles, we will need to go into the Roles section of the configuration screen. Once on the Roles page we will need to click the plus button to create a new Role. After adding a new Role we will need to give the Role a Title (which must be unique), we can then set up some permissions for the role. Permissions as explained in the User creation chapter will give users various permissions when using Infosuite.

Delete A Role

To delete a Role click the ‘To Delete’ button at the bottom left hand corner of the screen. Once we click the “To Delete” button we are then presented with a tick box option next to certain roles.



You can see from the above screenshot that one of the roles cannot be deleted, if we hover over this role we’ll see that the role can’t be deleted due to 1) being assigned to a category or 2) it has permissions and links to users. This means that all category permissions/ users given this role must be unassigned in the user access section before they can be deleted.

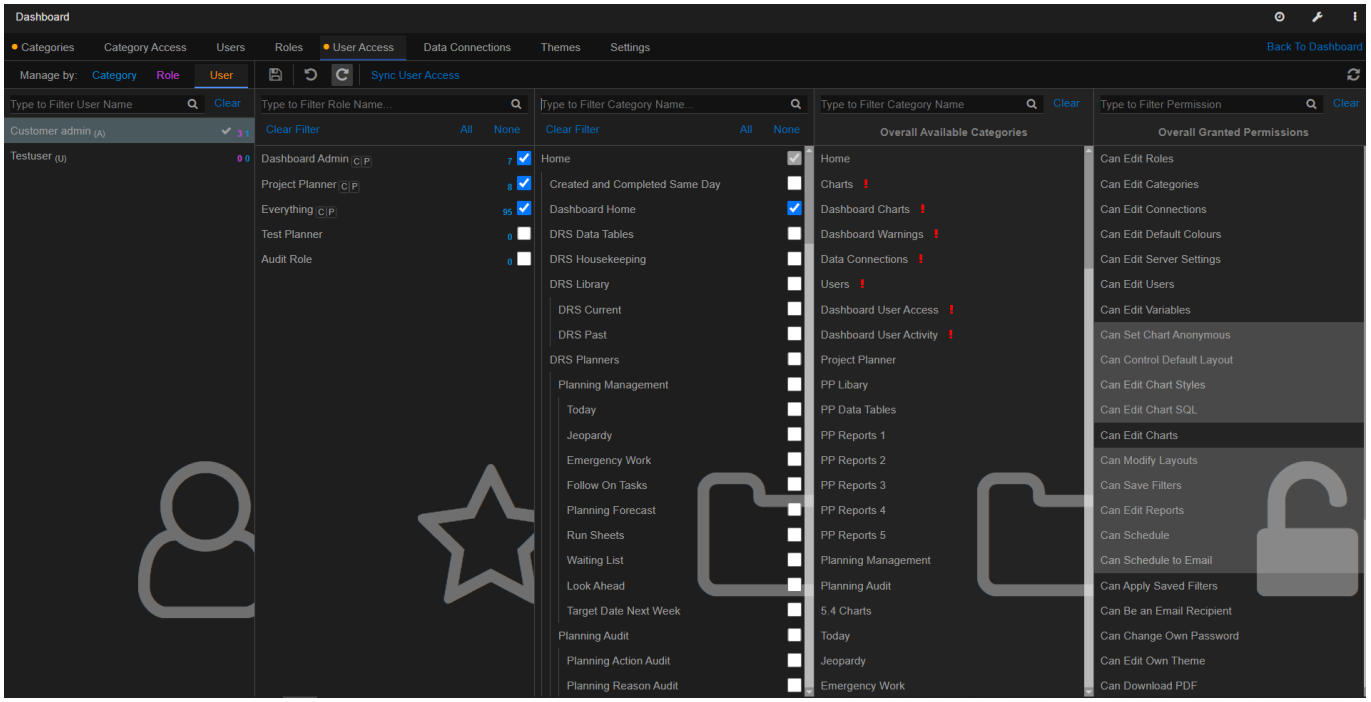
Once we have selected a role that can be deleted the “Deleted Selected” button will be highlighted and once clicked this will delete the selected role.

User Access

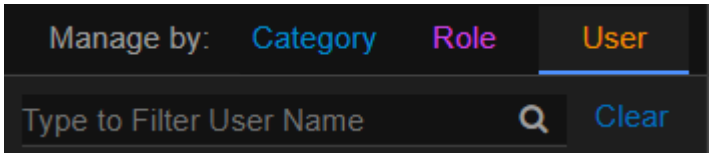
The User Access screen is where we control which

- Categories and Roles are granted to a User
- Categories are allocated to a Role

It also enables us to see exactly what the user has access to as a result of such configuration.



There are three perspectives in this panel. Category, Role and User.



These different views will allow you to view by

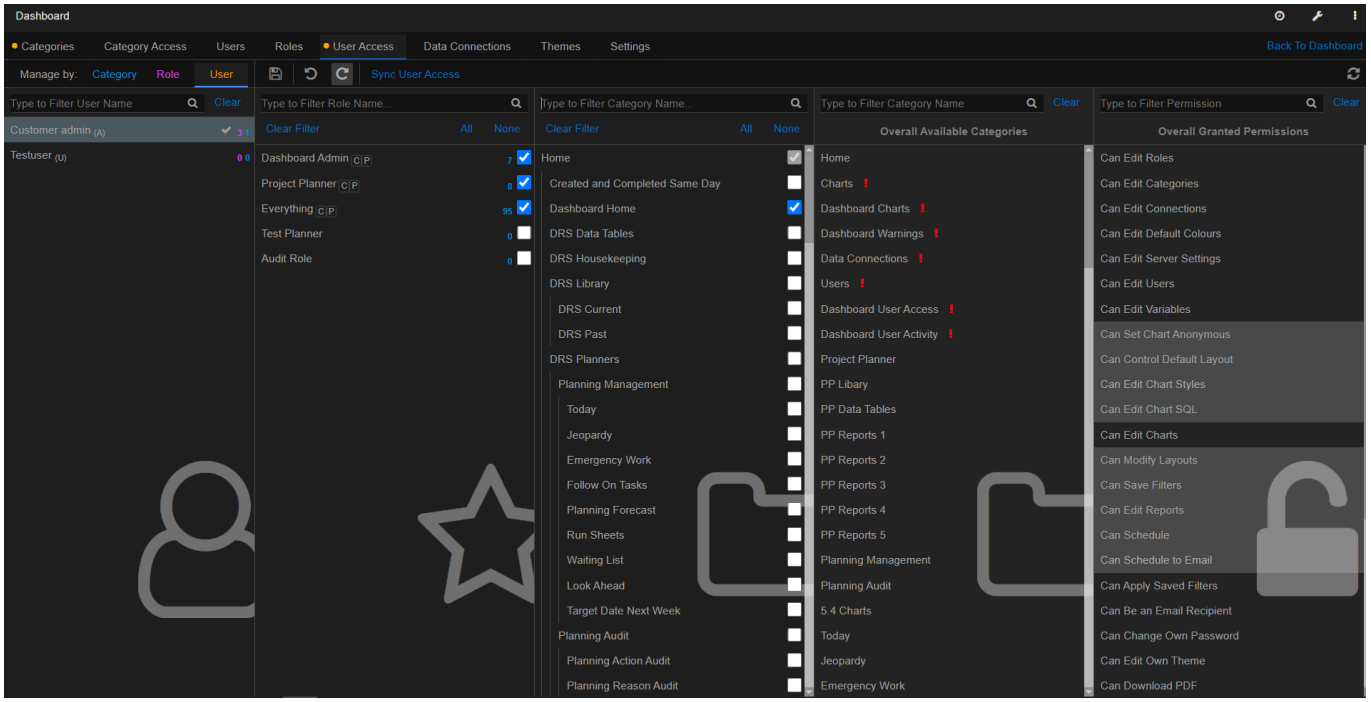
Categories and what role/user has access to categories.

What categories are assigned to a Role and which users are assigned to that role.

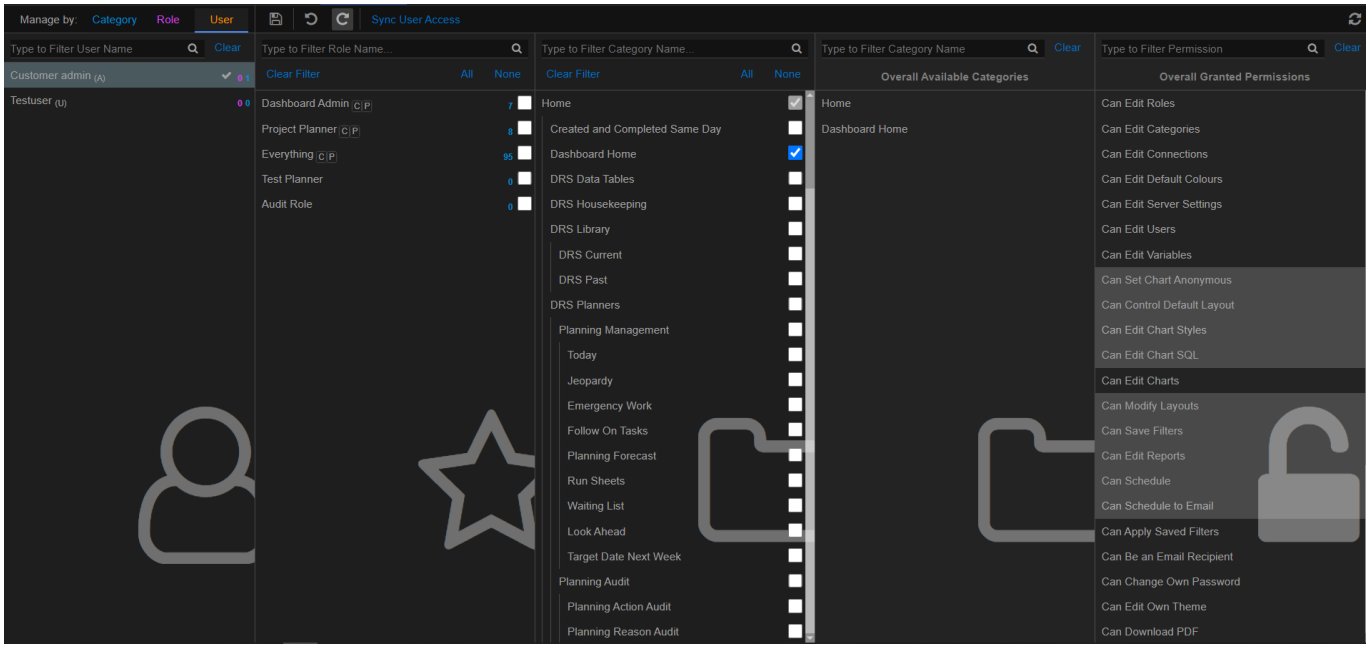
Users, which Roles/Categories they have access to and their overall permissions

Manage by User

On start-up you will see a blank section on the right and the user panel on the left, in order to start assigning categories to users we need to select a user to change:



As you can see from the screen shot above this user currently has nothing assigned to them and therefore they wouldn't see anything if they were to log into the dashboard.



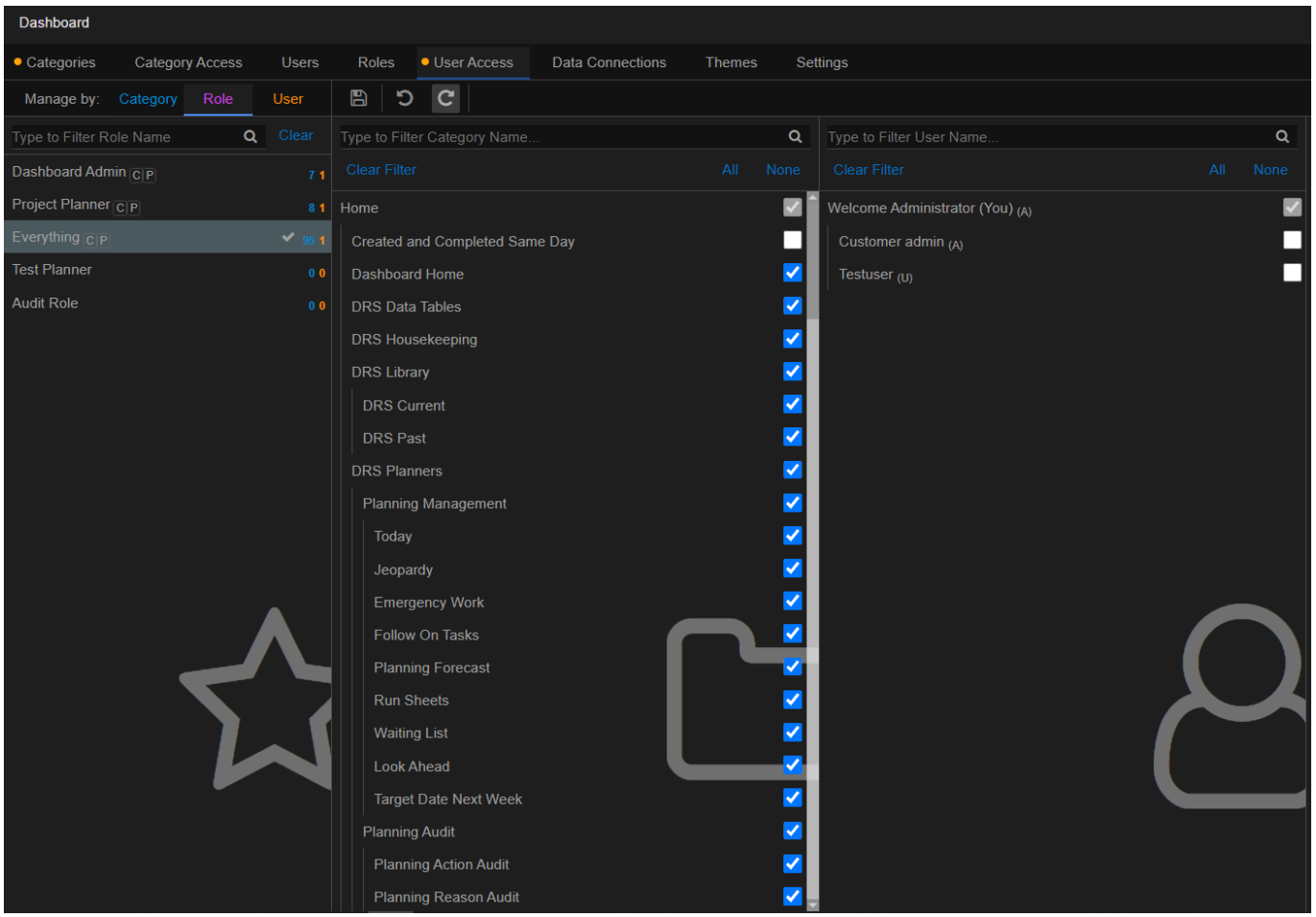
You may see the red exclamation mark error shown above if you selected a child category without selecting its parents as well. This will also prevent you from seeing that category until you have added the parent categories.

Don't forget to save the changes.

Manage by Role

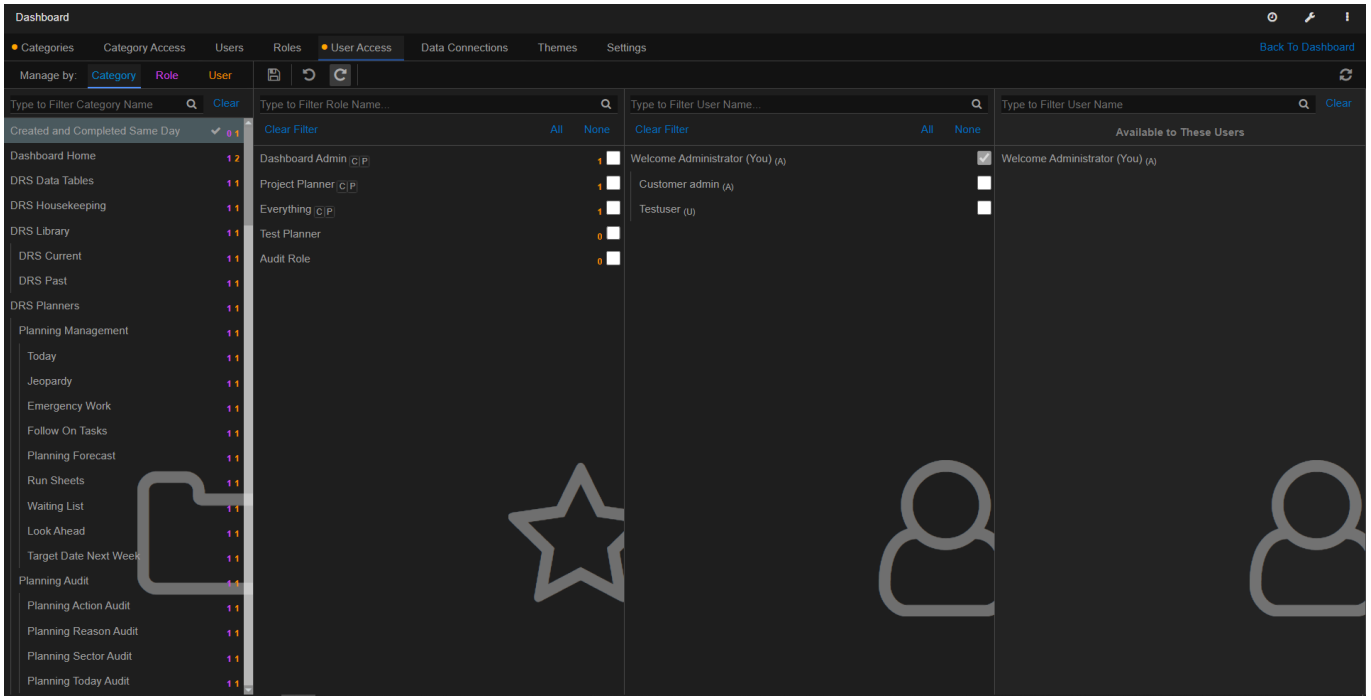
Let's move on to access by Role. As explained in Chapter 28 we can create a Role with varied permissions which can then be assigned en masse to users in order to give them the same privileges. This can be used in the same way to assign categories en masse to users.

When we click on a Role we will see the following screen:



Manage by Category

This shows the breakdown of who has access to this specific category based on role access and specific user access and then collates this information to provide you with a list of users who have access to this category.

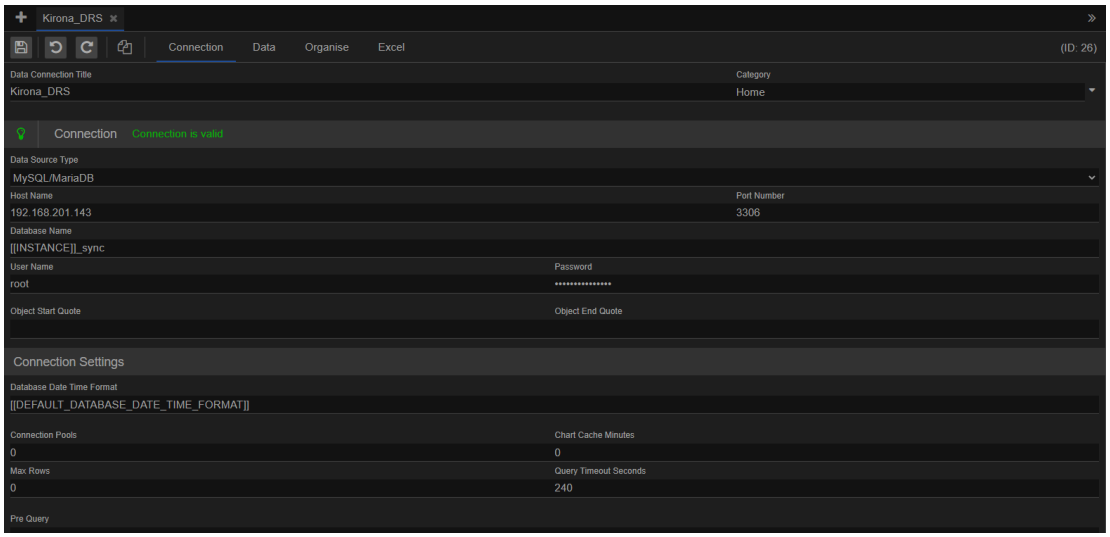


Data Connections

This is where we configure the data sources we want Infosuite to connect to and build charts against.

Creating a New Connection

Open the Data Connection section and click the '+' button to add a new connection. Selecting an existing data connection in the left-hand list will allow you to edit that data connection instead.



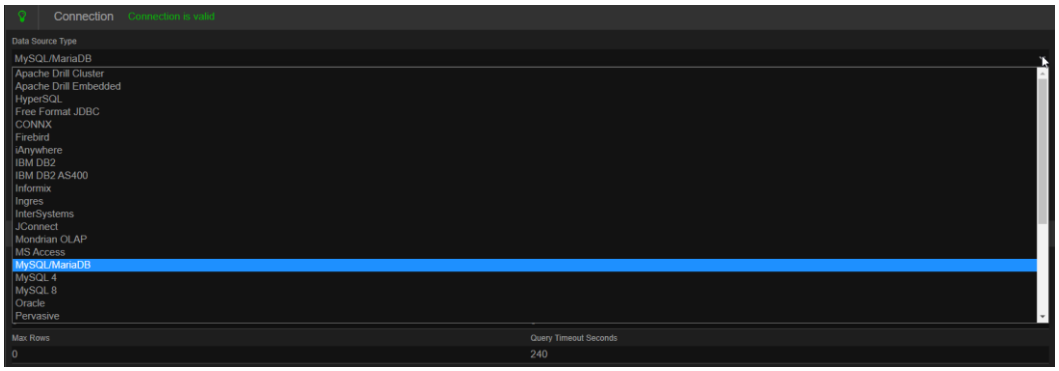
There are a number of options here, some of which are mandatory, but many you can just leave at the default values, depending primarily on what type of database(s) you want to connect to. The normally critical ones are in

red, the rest can normally be ignored initially, although you may want to revisit them further into your Infosuite journey.

Data Connection Title: The name you want to give to this Data Connection. Always mandatory and has to be unique.

Category: This is the category that this Data Connection is assigned to. This is mandatory and, by default, will be set to 'Home' – which is a psuedo category that everyone has permissions for automatically. If you wanted to restrict access to this Data Connection (and thus the charts connected to it) then you could change the owning category to something more restrictive.

Data Source Type: This drop list shows the Data Source Types which we ship drivers for.



If the database you want isn't listed, but you do have a JDBC driver for it, then you can use 'Free Format

JDBC' to configure this.=, in which case the driver should be placed in

{InstallDirectory}\Dashboard\tomcat\custom_jdbc_drivers

Host Name: The name or IP Address of the server where this data source is located. Obviously this machine has to be 'visible' on the network from wherever this Infosuite server is located. **Port Number:** The port number on 'Host Name' that the database is 'listening' on. You may need to create an incoming firewall rule on 'Host Name' to allow TCP/IP traffic on this port.

Database Name: The name of the database on 'Host Name' that you wish to connect to.

User Name: The user name configured in 'Database Name' that you wish to connect to the database as. This user will need to have, at the very least, read permissions for 'Database Name'. **Password:** The password configured in 'Database Name' for 'User Name'.

Object Start Quote: For example on some databases this might be [or '

Object End Quote: For example of some databases this might be] or '

Database Date Time Format: This is the datetime format for this database, if not populated the default format yyyy-MM-dd HH:mm:ss will be utilised. This is used for 'Date Range' Category Objects to resolve the end time by adding a day and removing a millisecond.

Connection Pools: If you are restricted by the number of open connections you are allowed to the database this will cap the number it creates. This also means that new pools will not be created when multiple charts are executed, instead existing connections will be 'pooled' and reused once free.

Chart Cache Minutes: By default this is 0 (zero) meaning the chart data is not cached. If this was set to 60 then the first time a given SQL query from Infosuite was executed the result set would be cached for the next 59 minutes and 59 seconds. Within that time period anyone looking at the same chart would get the same result as the original user got ; the SQL would not be executed again. After 60 minutes had passed then the SQL **would** be re-executed, and then the clock would reset for another 59 minutes and 59 seconds. If you are connecting to a Data Warehouse for example then it makes sense to set this to a higher number; as the data is not going to be constantly changing and then is little point reexecuting the SQL whilst the data is static.

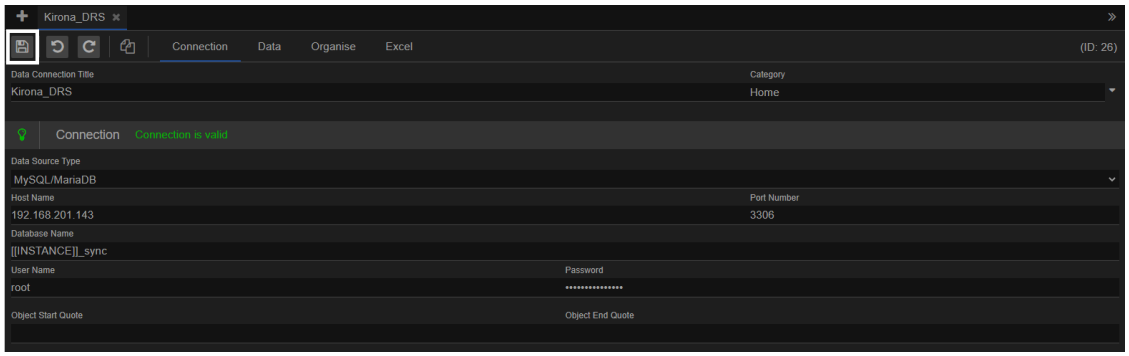
Max Rows: This only applies to data tables. If this was set to 5,000 then any data tables built using this data connection would be limited to display only the first 5,000 rows retrieved. As the data in data tables can take some time to render (also depending on the number of columns) this helps address potential performance issues. This parameter does not apply to charts; if this was set to 5,000 but a given chart needed to read from 10m rows of data then it would do so.

Query Timeout Seconds: If the database chosen supports Query Timeout then this will be applied after the time period specified in this parameter; the query would be cancelled and the Infosuite user would see a 'Timeout' message.

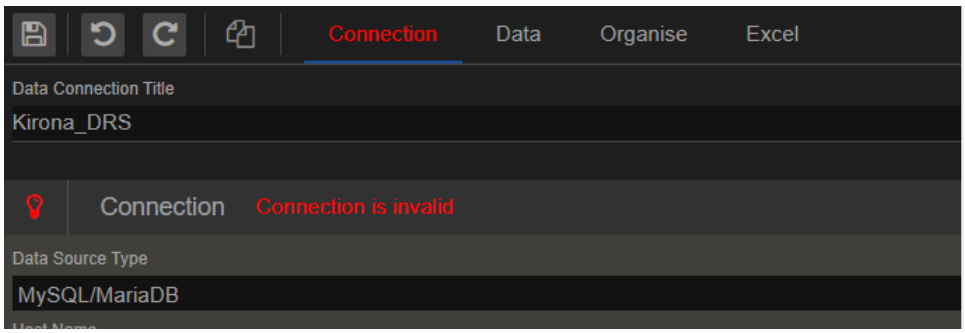
Pre Query: This can be used to define SQL commands that you might want to run prior to the dashboard executing the SQL it needs for charts. Examples might include setting session variables or flushing buffers.

Don't forget that you can use [[USER_VARIABLES]] and [[SYSTEM_VARIABLES]] for most of these options if applicable for your particular implementation, as shown in a previous chapter. Password cannot be held using a [[VARIABLE]] for security reasons.

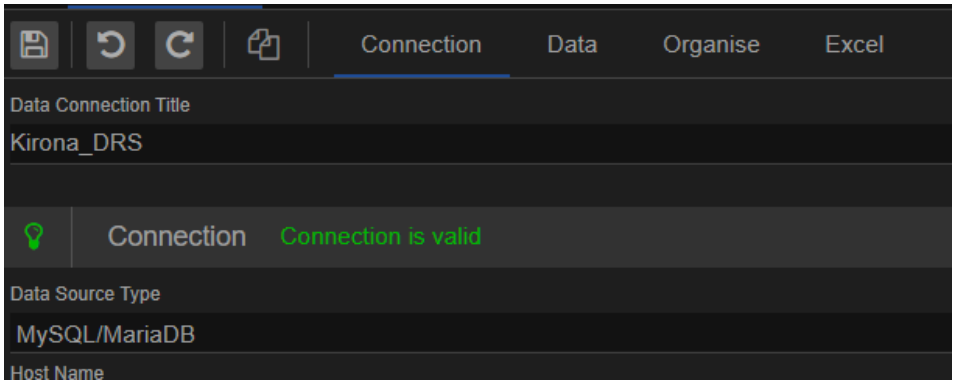
After you have configured the relevant connection options then clicking on the 'Save' (floppy disk) icon;



will attempt to save and validate the Data Connection. If it goes red, then it hasn't validated



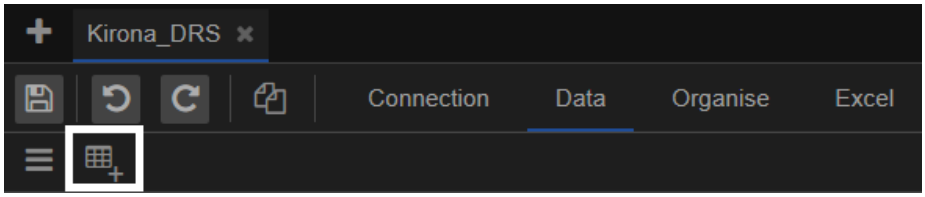
Where as if it goes green, then it has validated.



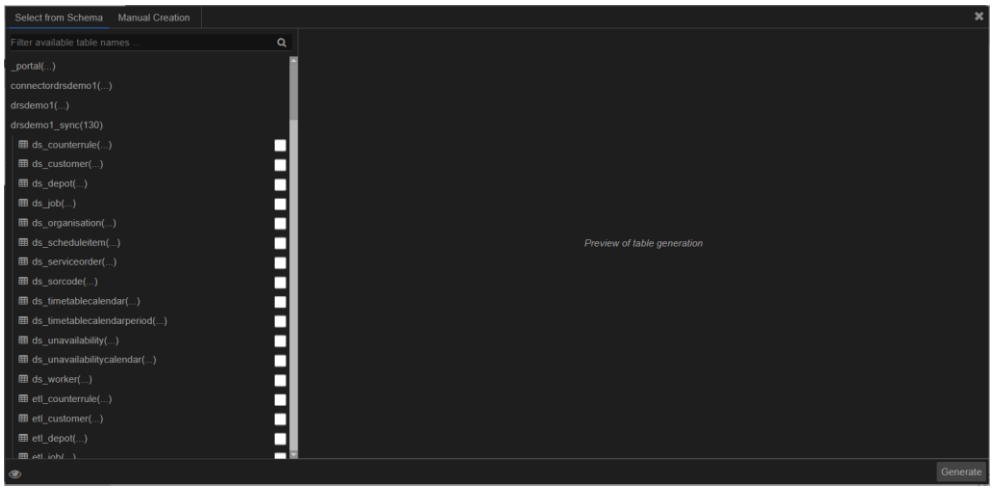
Adding Tables or Views

NB: The dashboard does not move any data, it will read directly from whatever tables or views you configure in this section.

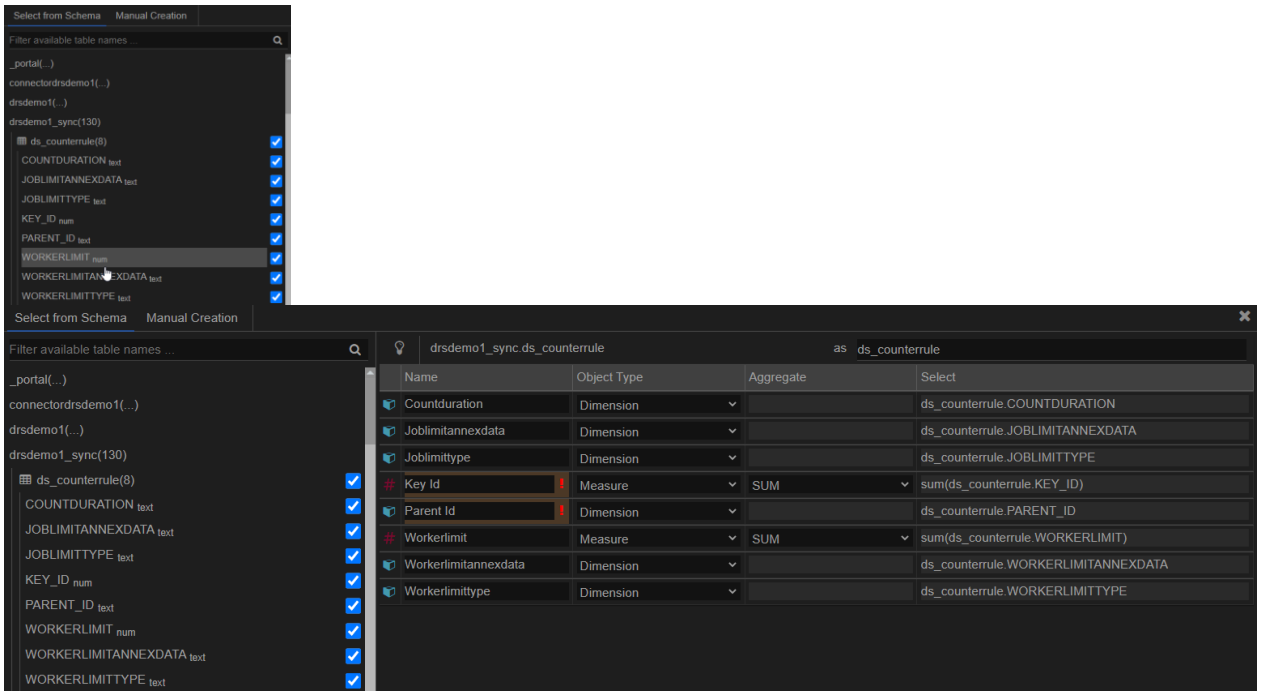
Once you have created a valid Data Connection you will need to add tables (and/or views) to it.



We do this by going across to the data tab on the connection and clicking the “Add new table button”. This will then bring up a list of the schemas in your database, one of which will contain the table(s) you are interested in.



If we drill down into a schema with data, we will see a list of tables that we can join to and if we then drill into the tables we will see a list of the data objects available to us for each of those tables.



Once we have chosen the table we wish to create, with the objects that we wish to add for that table, we then click the generate button in the bottom right hand corner.

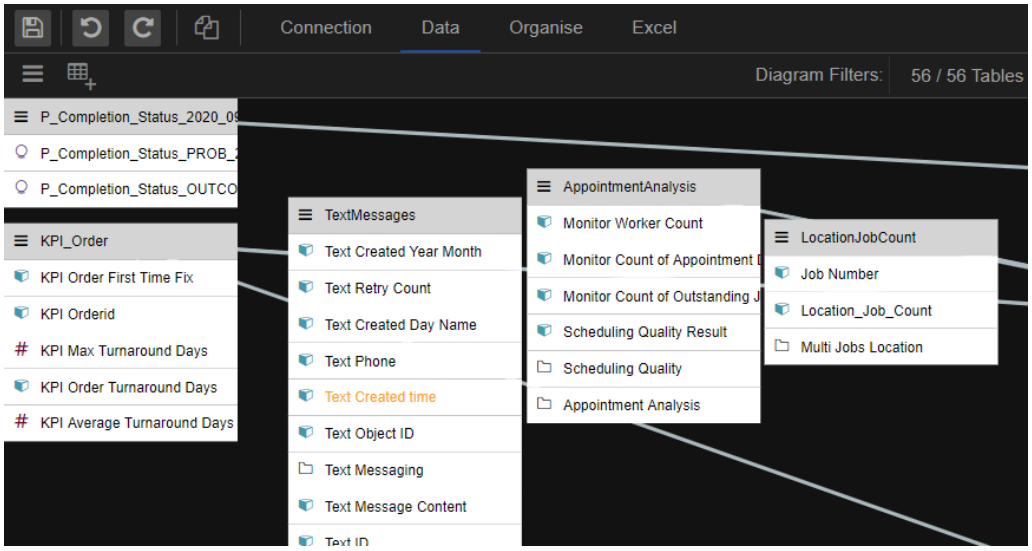
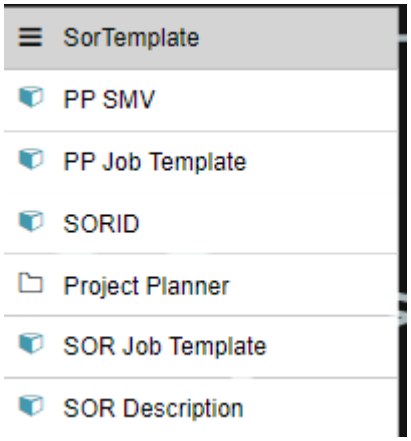


Table Configuration



For a given table (or view) we can specify parameters than apply to that table as a whole by clicking on the grey header bar.

This will show the following details if you select the Details Header from the table display;

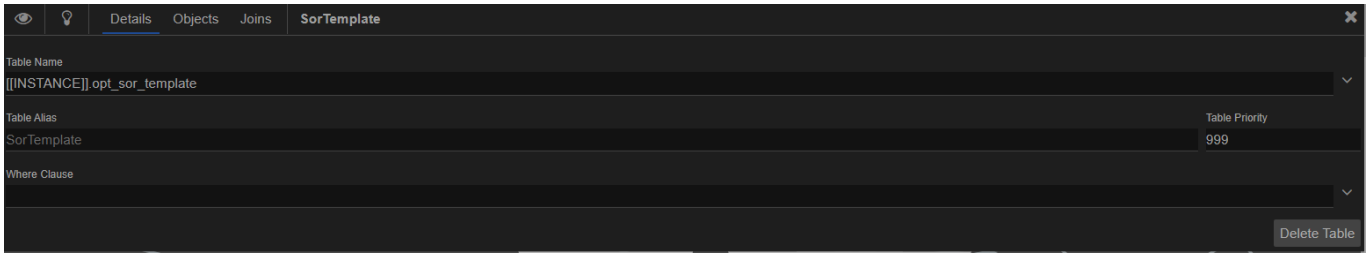


Table Name: this is the name of the table (or in this case view) that you are connected to. This can be changed, for example if you had originally pointed to a table, but now wanted to point to a view holding similar data instead.

Table Alias: this is the alias applied to 'Table Name'. This cannot be changed at this juncture (because it has been copied down to all the fields/columns in this table); you can only change it when the object is first created, specifically the 'as' in the prior example becomes the alias. There are two main reasons for using an alias;

- Brevity / Ease of Use
- Wanting to use the same table/view in same data connection more than once. Commonly this situation arises for parameter tables like AccountingPeriods or for functionality tables such as the view PreCannedDates which we often use to derive 'Last Week' or 'Last Year' for example.

Table Priority: defaults to 999 and you rarely need to change this. This is used when there is more than one way for Infosuite to join tables together, given the metadata you have configured.

Infosuite will take the route of least resistance based on the Table Priority you have specified. If Jobs remains at 999 and Regions is set to 800 then it will go Customers -> Regions -> Areas, on the other hand if Jobs has been set to 750 and Regions is 999 it will take the Customers -> Jobs -> Regions -> Areas route.

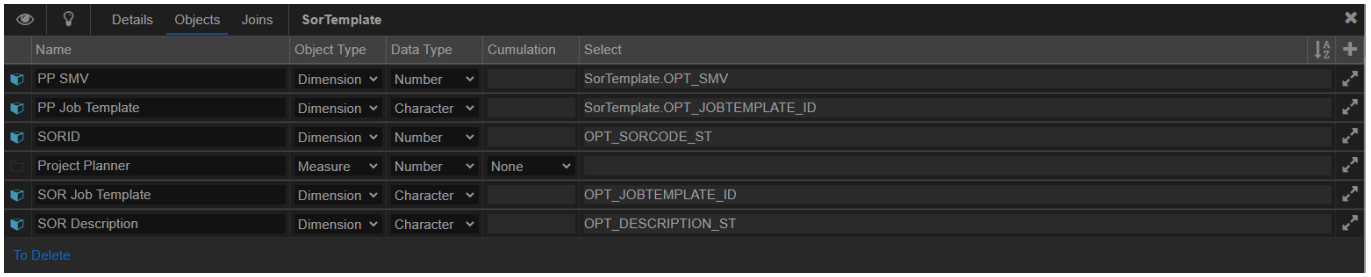
As stated, we'd rather this situation didn't arise in the first place, it might even be better to use the alias functionality already detailed to have two Regions and Areas tables.

This same functionality can also be used to force the 'driving' table ; if a table has a lower number the SQL will drive off that table first; i.e. it will be placed first in the FROM clause.

Where Clause: This is an overarching WHERE clause that will be added to all SQL generated using this table. In this example we never want users to see Cancelled Orders, so rather than having to remember to filter them on every single chart we have used this instead.

Object Configuration

If we click on the 'Objects' tab for a given table then we will see a summary of the objects within it.

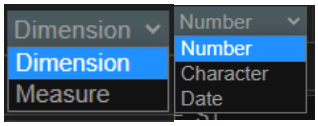


Note that clicking the AZ button (circled in blue) will sort the objects alphabetically which can be useful for quickly locating the one you want. This sort will be saved with the data connection.

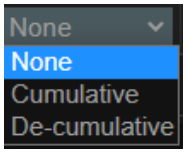
For each object we are only seeing a summary of the settings in the above screen shot, however clicking on the arrow button (circled in red) will show the full configuration options for the object you have chosen.

(Object) Name: The name you have assigned to this object, which must be unique (within this data connection).

Object Type: All objects must be either Measures or Dimensions. As we have seen charts usually require a Measure and a Dimension ; the thing you are measuring (eg Sales Value or Number Of Orders) and the thing you want to split it by (Account Manager, or Month for example), which we call a Dimension. If in doubt; if there is no maths Sum, Average, Max, Min etc.) required then it is a Dimension. A number can be a Dimension if you don't want to perform a mathematical function on it.



Data Type: Can be Number, Character or Date. See also 'Number Options' below.



Cumulative: Only applies to Measures. The default is 'None'

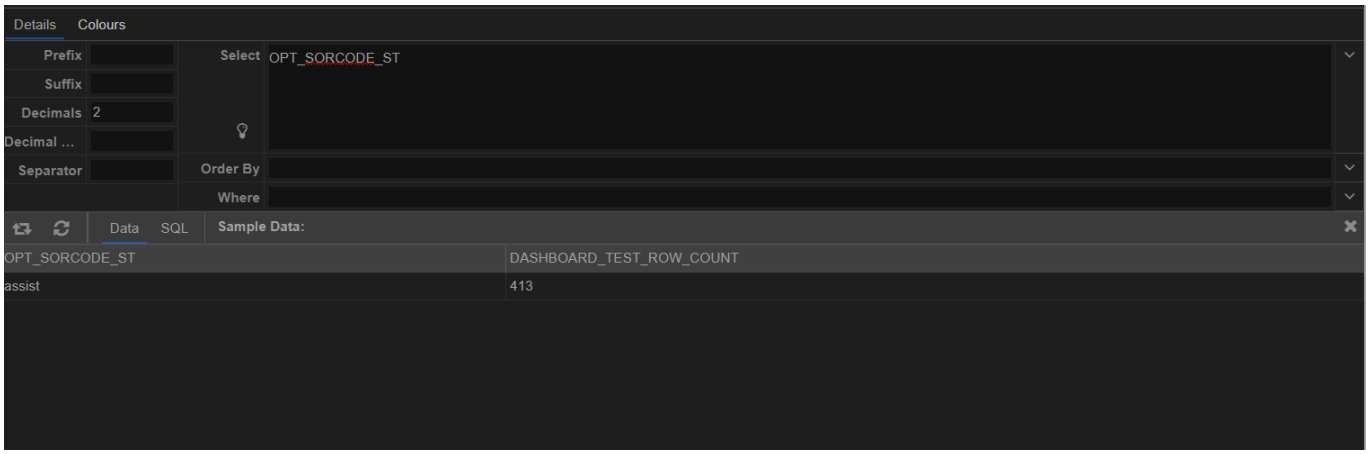
If you choose Cumulative then this Measure will show the Cumulative Sum of the Measure at each Dimension Point. If you wanted to show Cumulative Sales v Cumulative Target for example then the object would need to be set to cumulative.

If you choose De-cumulative then this Measure will show the De-Cumulative Sum of the Measure at each Dimension Point.

Select: This is the SQL that will be used to retrieve this object. Note that it is using the table (view) alias [SOPOrderReturn] as we saw on the table summary. This can be as simple as shown in the example (i.e. one database column) or more complicated. However pretty much any SQL that would be valid in a 'SELECT' clause against this table can be entered here.

Test Button: (circled in blue); Pressing this will test the object and bring back a sample of the data if the

SQL is valid;



Switching to the 'SQL' tab (circled in yellow) will show the SQL executed to retrieve this sample;

Note that the overarching WHERE clause to exclude Cancelled orders, configured at table level, has been automatically applied to the SQL.

Order By: The optional ORDER BY clause to be used for this object.

Where: This is similar to the table level WHERE clause, but in this case will only be applied when this object is used in a chart/data table. This is optional.

Index Field: Optional. If this object is used in a category object (such as a Drop List Filter) than any object defined in this field will be used in the WHERE clause to restrict the data, rather than the object defined in 'Select' field. As the name implies this is normally used for performance reasons where one field is indexed and the other isn't (and there is a direct correlation between them). For example:

Treat index field as SQL: Early vector databases could deliver a performance benefit using hash indexes and this would enable that functionality to be accessed. Rarely required.

Index Field Type: This determines how the index defined in 'Index Field' is formatted, for example enclosing in quotes if it is a date type.

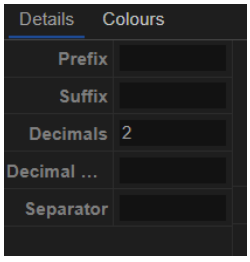
Category: The category this object is owned by. By default this will be 'Home' which is usually fine. However you may, for example, have a non-display category called 'HR', if this object was 'Salary' and was owned by the 'HR' category then only people who had been allocated 'HR' would be able to use this object.

Label: This is how the object will be displayed in any charts/tables. If this is null then 'Object Name' will be used instead. We can see therefore that is wouldn't be unusual for the database object to be called, for example, 'UserField5', the Infosuite Object Name might be 'Order Header Account Manager' and the label might be 'Account Manager'.

Can Use In Filters: If you don't wish this object to be used in Chart Filters then unlick this option. You might do this if the field wasn't indexed and the table was particularly large for example.

Number Options

If you have chosen a 'Data Type'' of Number then some additional options are shown;



- Prefix will be displayed before the number
- Suffix will be displayed after the number
- Decimals would round the result to however many decimal places are specified here.
- Decimal Separator allows you to define the decimal separator
- Thousand Separator allows you to define the thousand separator
- The above configuration therefore would display 1234567.89 as £1,234.6k (note it's dividing by 1000).

Colour Options

By default a chart will colour chart segments based on the colours created in the theme(s). The first chart segment will have the first colour, the second the second colour etc. For much of the time this is fine.

You can also manually, on a chart by chart basis, change the colours to be used for different objects; for example make a certain Division of the organisation appear in a certain colour.

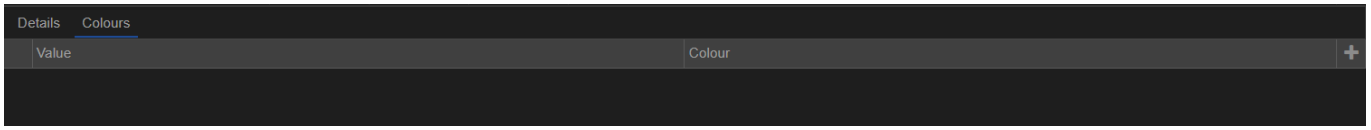
There may be certain objects however where you always want certain values to appear in fixed colours.

The two main reasons for this are;

- Within the organisation there is already a firm colour association, it would be a brave Dashboard builder who showed Ferrari in blue.
- You want charts to be consistent. For example if you had two charts side-by-side ; one showing Sales

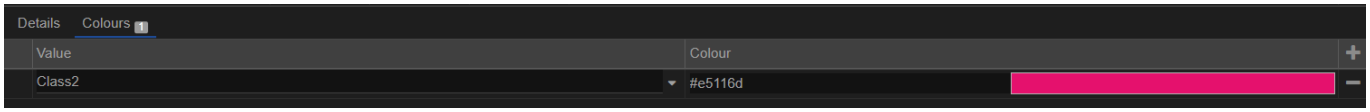
Value by Product Group (or Department or Salesman etc.) and the other showing Sales Quantity by Product Group it would be potentially confusing / misleading if the same Product Group was different colours on each chart.

Therefore on a Dimension object it is possible to assign colours to values. To do so click on the ‘Colours’ tab for a given Dimension object and any existing rules will be shown, to create a new one click the ‘+’ icon.



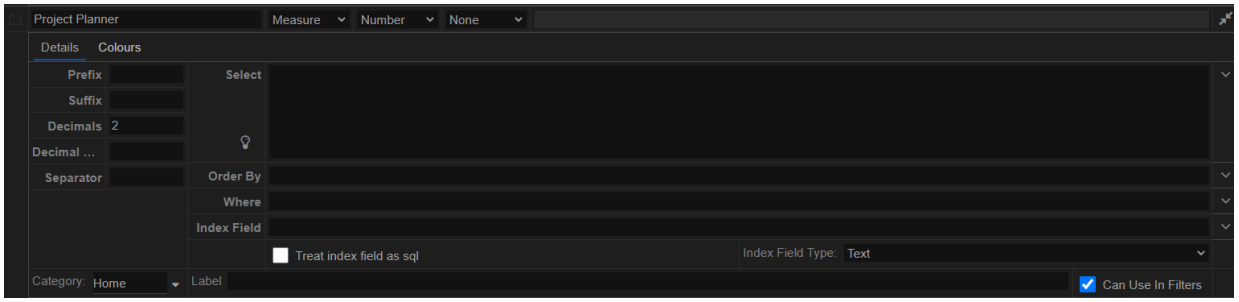
On the resulting screen pressing the down arrow next to ‘Please Select’ will bring up a list of the values in this object. Then select a value will return it to the original screen where you can then select a colour to be used for that value.

You can repeat this process to set any number of colour values as required.

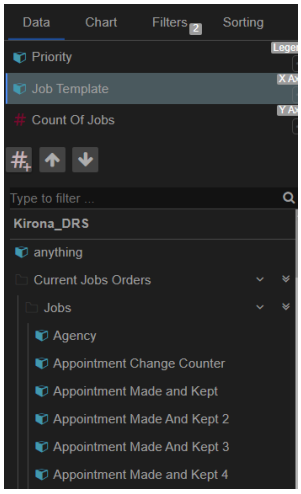


Folder Objects

If an object is created with no ‘Select’ SQL it is has a different icon instead of the hash for Measures or the cubes for Dimensions;



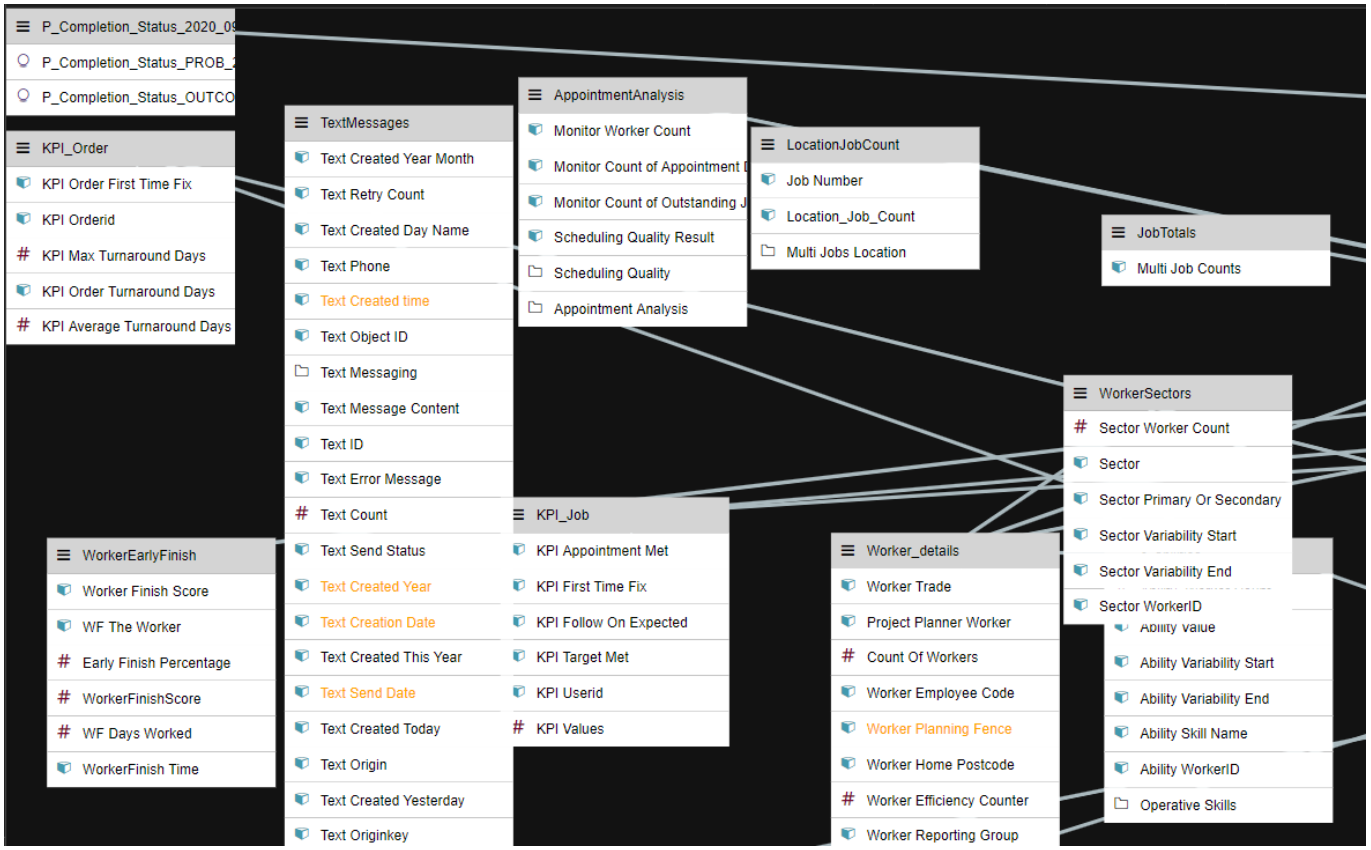
Objects created in this way cannot be used in charts, but they are useful for grouping together objects into categories. In the Chart Editor screen shot below the chevron to the left of ‘SALES INVOICES’ has been ticked to display the objects grouped together under that heading;



Objects can be placed into Folder Objects on the 'Organise' tab of the Data Connection window, described later in this chapter.

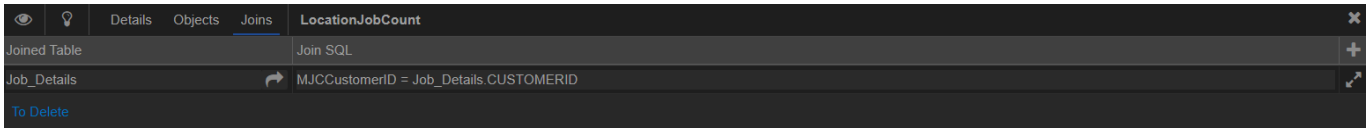
Table Joins

Normally to create a fully functioning Dashboard we will need to reference more than one table/view and the table join(s) will need to be defined in the dashboard.

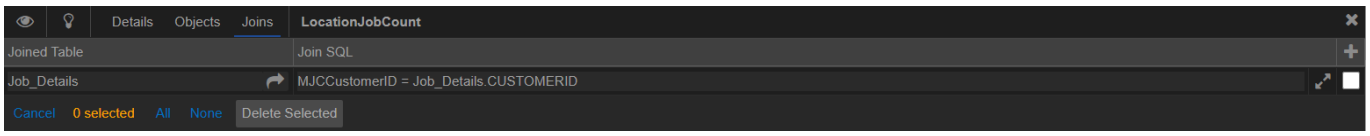


Deleting An Existing Join

Clicking on the Table header (the bit in grey) will show the following window and we need to click on the 'Joins' tab to view the existing join;



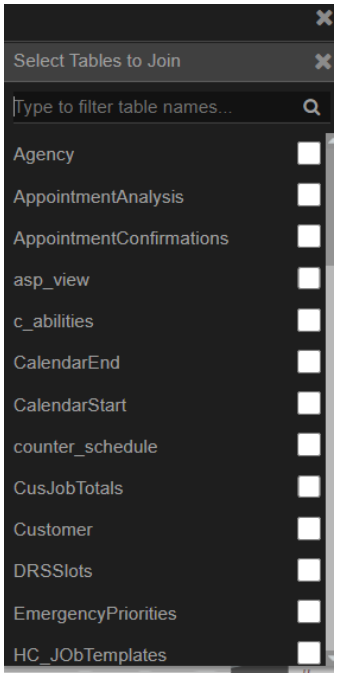
If we then click the 'To Delete' button (bottom left in blue) the screen changes slightly and a tick box is displayed at the end of the join row. To delete this join select the tick box and then press 'Delete Selected';



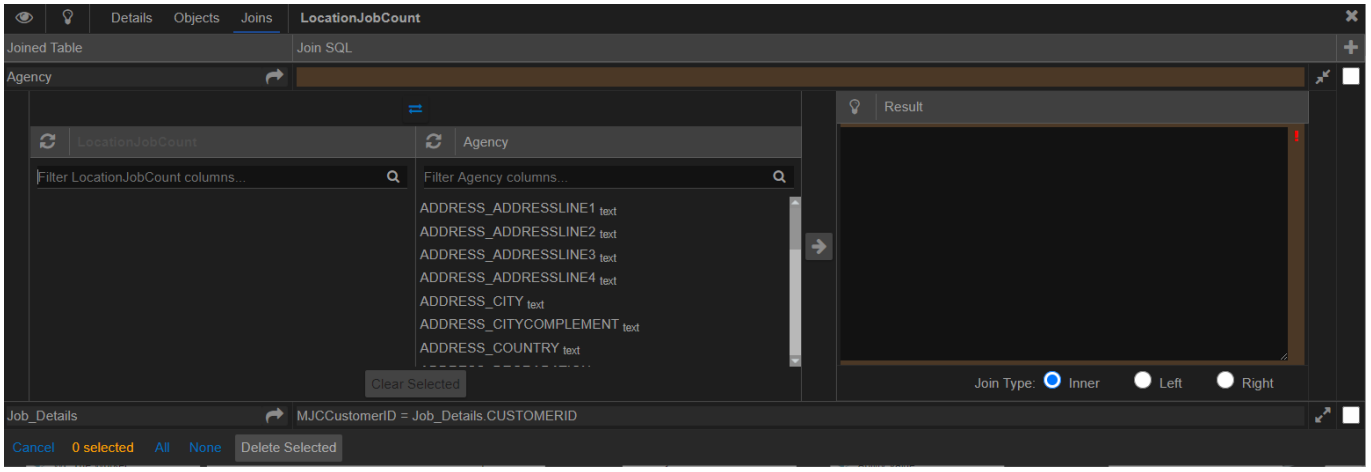
Creating A Join

To recreate the join we click onto the table we want to join from (LocationJobCount in this case), and again click on the 'Joins' tab, this time however we want to click on the '+' icon to create a new join;

We will then be presented with a list of the tables (or views) already configured in this data connection.



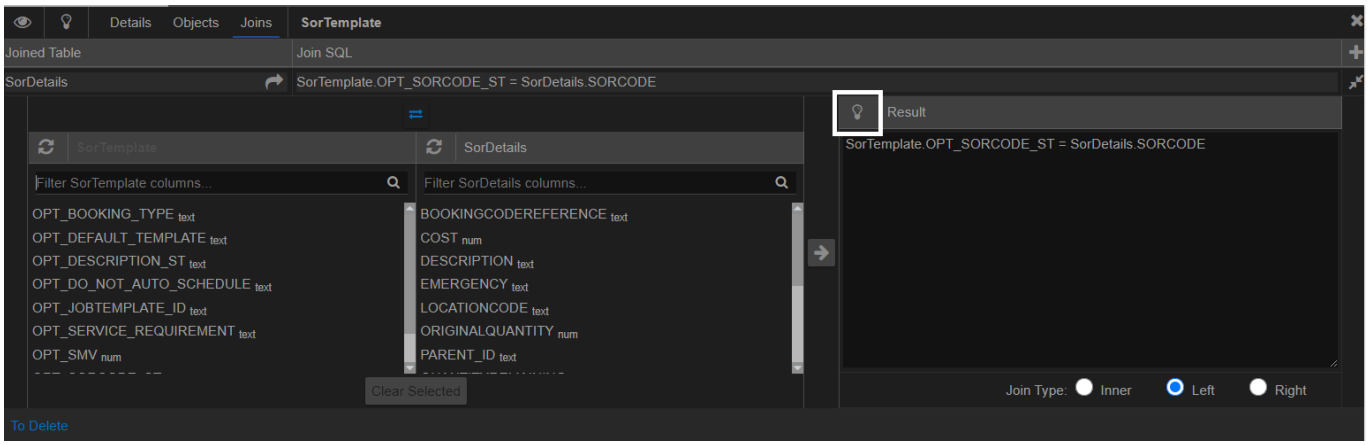
Clicking on that newly created line will display the following, listing the columns in each table;



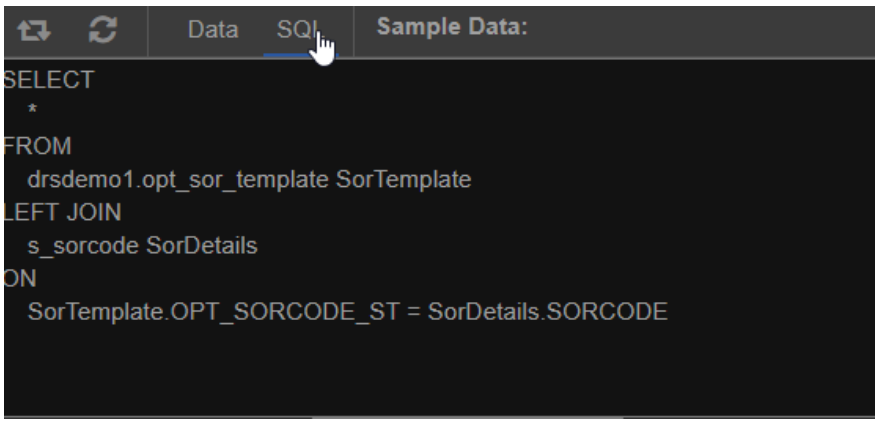
At this juncture you could manually type in the join in the 'result' window. Normally however (even if the join is more complex than a simple 'equal to') it is better to select the field(s) from each table using the two lists on the left hand side, which will ensure that the correct aliases and object quotes are pulled through.

Testing A Join

After the join has been built it can be tested using the 'Lightbulb' icon next to 'Result' which will return sample data from across both tables;



Clicking the 'SQL' tab would display the SQL executed to get this result set;

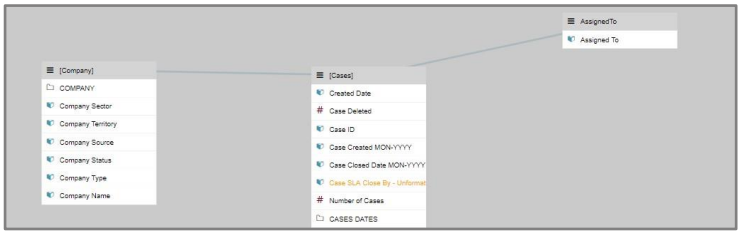


Join Types

- The default join type is Inner, but you can also create Left or Right (Outer) joins
- 'Left' is the table to the left of 'JOIN' immediately after 'FROM'
- 'Right' is the table specified in the JOIN statement, i.e. to the right.
- In both a left and right join it will **always** return the rows where there **is** a match between the two tables, the left and right logic simply determines whether it will **also** include items where there is no such match.
- A left join would return all rows from the left table, even if there were no matches on the right table.
- A right join would return all rows from the right table, even if there were no matches on the left table.
- The default option of inner join will only return rows that match on both tables.

Which Joins will it use?

The dashboard will resolve the minimum joins it needs to use to connect the objects you have placed in a chart, bearing in mind the Table Priority. For example if you had the following Meta Data;



Then a chart using an object from 'Company' and an object from 'Cases' would only resolve the join between those two tables.

If on the other hand your chart had an object from 'Company' and an object from 'AssignedTo' then it would resolve the join from Company to Cases and the join from Cases to AssignedTo.

The same would apply if your chart had objects from 'Company' and 'Cases' but you also had 'AssignedTo' as a category object ; when the chart SQL was created initially it wouldn't join to

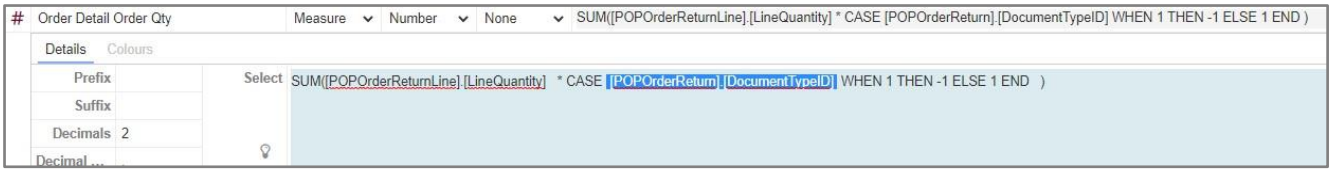
'AssignedTo', but once a category object on the 'AssignedTo' table had been selected that table would also be joined on the underlying chart SQL.

Forcing A Join / Referencing Fields on Other Tables

There is nothing to stop you in the object 'Select' statement referencing a field or fields that don't exist on this table, but on another one that it is joined to (although you would have to set this up manually). This is perfectly legitimate.

However if you then built a chart that only used objects from the one table Infosuite wouldn't automatically resolve the join to the other table and therefore our object (and thus the chart) would fail ; the dashboard has no way of knowing that one of the objects references a field held on another table.

Example



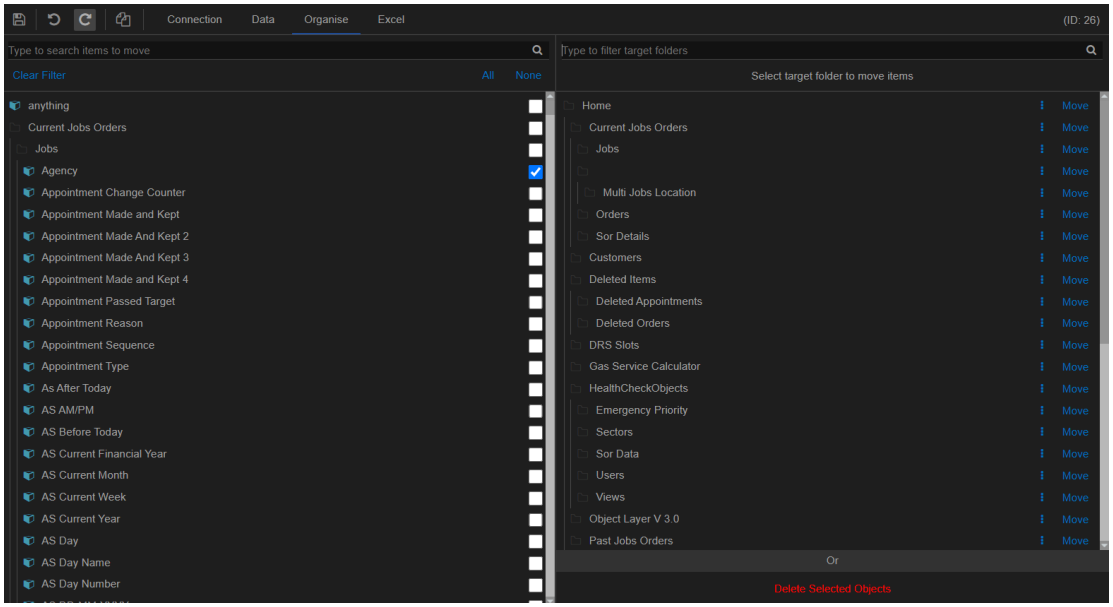
This object on the order detail line (POPOrderReturnLine) table is referencing a column on the order header table (POPOrderReturn); specifically DocumentTypeID.

If you were to build a chart that included this object but only looked at the order detail line table then it would fail because it has no notion of how to find POPOrderReturn.DocumentTypeID.

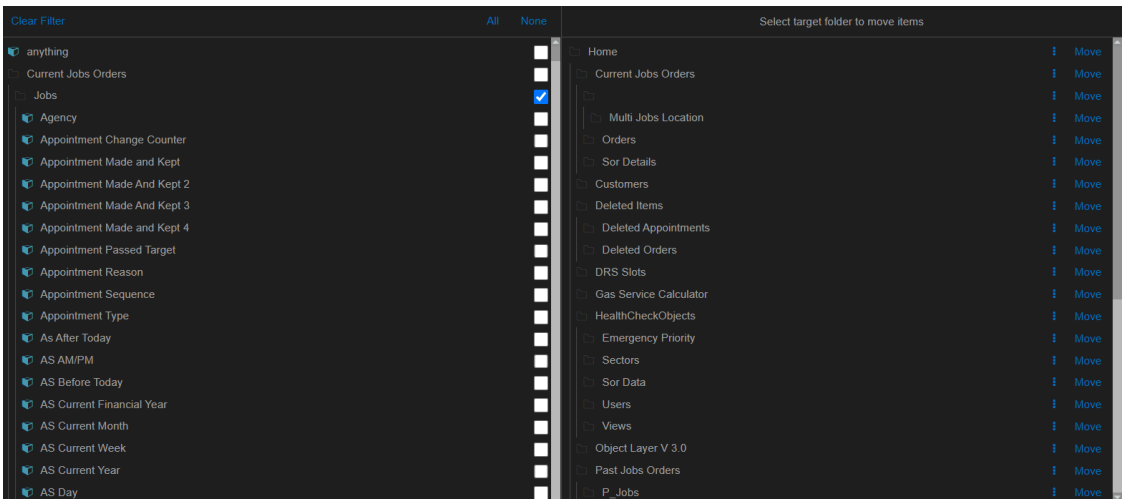
In this scenario you need to 'force the join' to POPOrderReturn, and generally the easiest way to do this is to add a filter from POPOrderReturn to your chart. This will then force Infosuite to resolve the join to POPOrderReturn and it will then be able to find POPOrderReturn.DocumentTypeID . This could be a 'nonsense' filter such as Order Status <> 'Micky Mouse' or it could be something slightly more sensible such as Order Year > 1980, it doesn't really matter (as long as it's not going to actually restrict the orders you want) ; you are only doing it to enforce the join.

Organise

The Organise tab within a Data Connection allows you to place Objects under other objects, including the 'Folder' objects previously described.

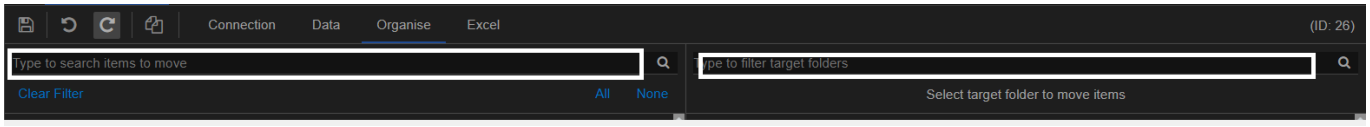


Here we can see that the Folder Object 'Jobs' on the left hand side has a number of objects under it. We can also see on the right hand side that 'Jobs' sits under 'Home'. If we were to click the tick box next to 'Jobs' on the left then it would disappear from the right hand side, this is because you can't move an object to be owned by itself.

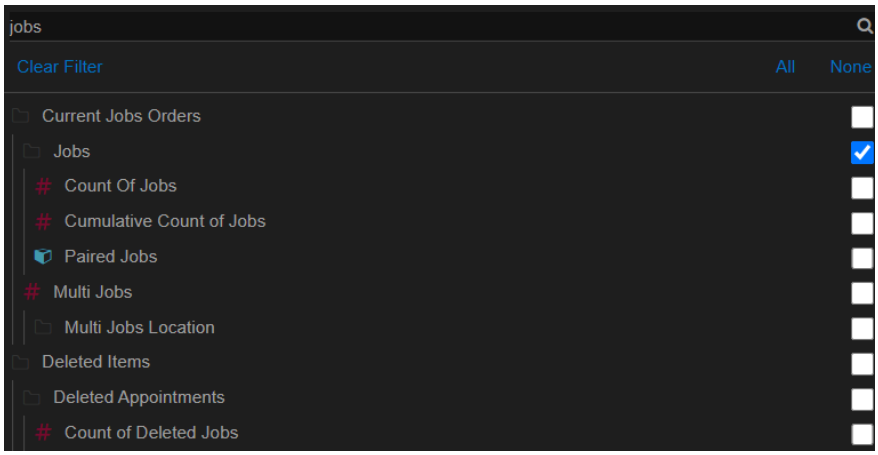


For ease of management you can also;

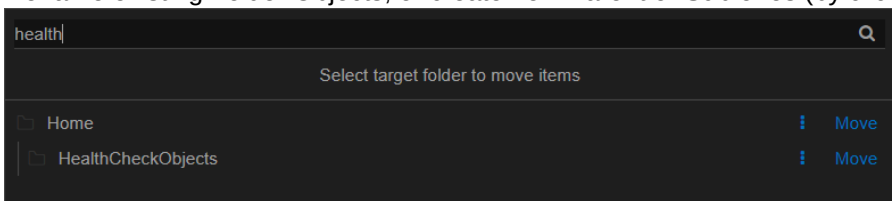
Filter both the left and right hand lists;



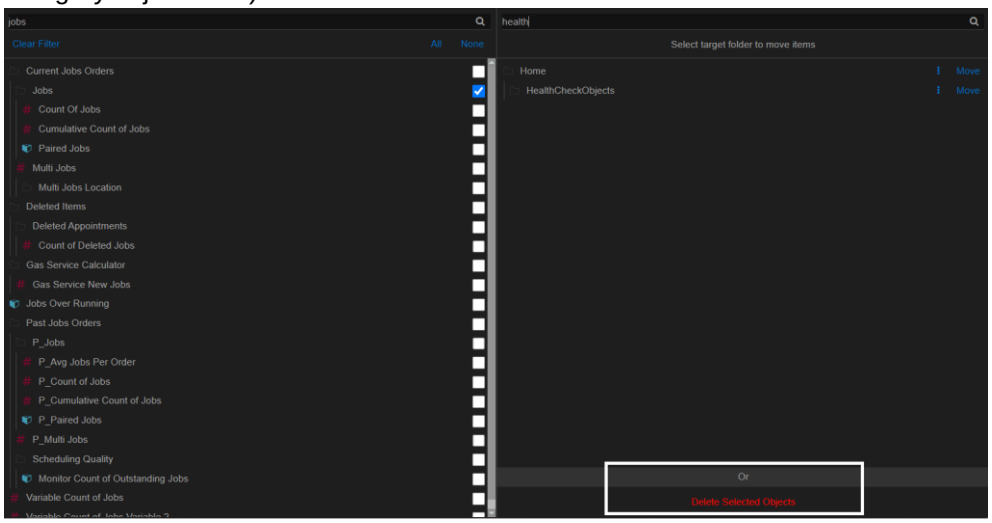
Select ‘All’ on the left hand list (before or after filtering); then (optionally) unclick the ones you don’t want to action.



Rename existing Folder Objects, or create new Parent or Sub ones (by clicking the three vertical dots)



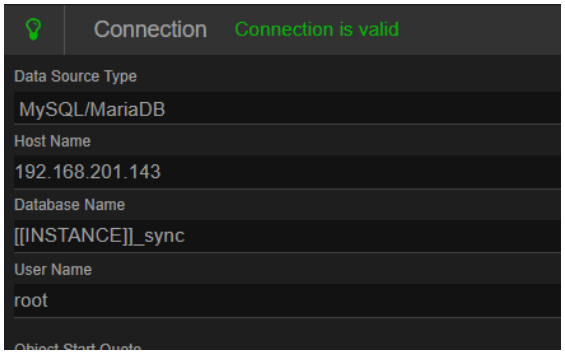
Delete the objects you have selected (subject to them not being parents and not being used on any charts, category objects etc.)



Excel as a Data Source

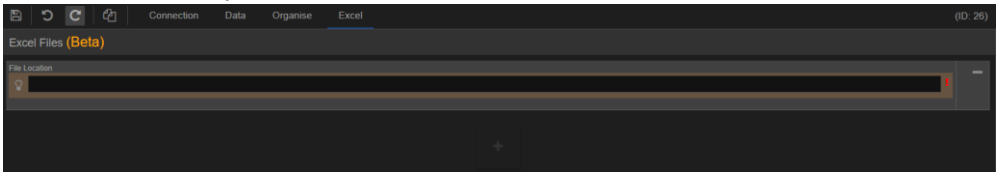
Excel can be used as a data source, which will load the Excel columns and rows into your underlying database as a table. When the data changes in the Excel file the table, and thus the charts, will also be updated.

- This functionality works with SQL Server, MySQL and MariaDB. For other databases, or non Excel data, you will need to manually load the file into a table.
- Your Excel file;
- Should be in .xlsx format
- Needs to 'look' like a database table; ie simple rows and columns of data
- Whilst it could contain totals and subtotals this isn't a good idea as they would need to be identified and excluded (ie filtered) to stop the data doubling (or trebling) up.
- In addition the database user you have configured for this data connection will need to have been granted create and insert privileges (or equivalents) on the 'target' database.

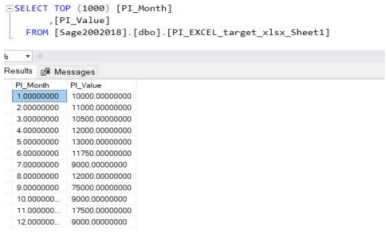


To use Excel as a data source, from within the Data Connection you wish to use;

- Select the Excel tab (in Yellow below)
- Press the + button to open a new connection.

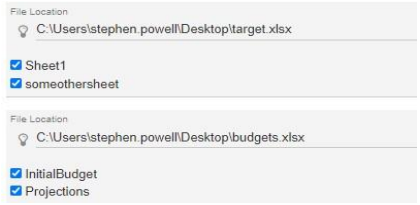


- Fill in the path to the Excel file (note: the file and path need to be accessible from, and are relative to, the dashboard instance, not your client instance).
- Press the light bulb icon, which will return the sheets in the Excel file
- Tick the sheet(s) you wish to connect to ('Sheet1' in this example). Each sheet will become a separate table in the database.
- Press the 'Save' (Floppy Disk) icon.
- The tables created will be named Infosuite_EXCEL_your_file_name_your_sheet_name. So this Excel file called target.xlsx



- Setup the object metadata as you would do for any other table.
- If you add an additional sheet to the underlying Excel file it will appear and can be used in the same way;

- You can also add in additional Excel files by pressing the + button again and repeating.



Once this has been done the tables can be treated as any other data table would be ; you could for example create a view over it and then point the dashboard at that view, or you could point the dashboard directly at the table(s) in question.

When the dashboard reads from the table it checks if the underlying Excel file has been updated since the last database refresh and, if so, reimports the data automatically.

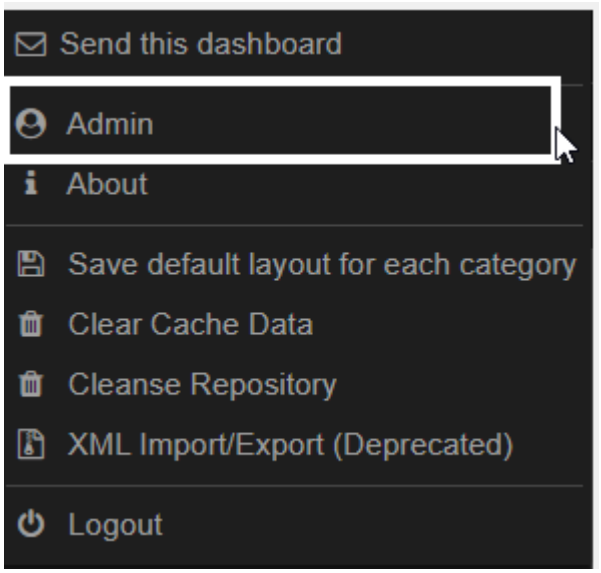
Themes

A theme enables you to style different elements of the dashboard, from colours to fonts to splash screens on logon.

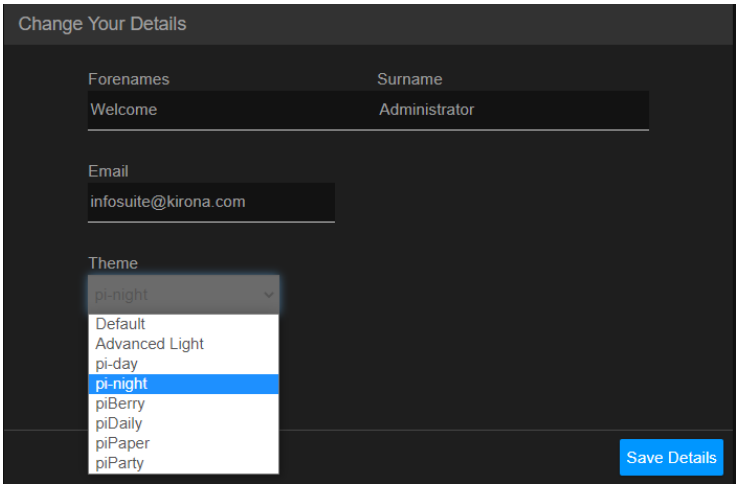
You can configure as many different themes as you want. Different users can be configured to use different themes (for example different trading divisions of one organisation), or indeed switch between them.

The theme a user sees can be determined by;

Changing it on the fly by selecting the user name from the ‘three dots’ menu

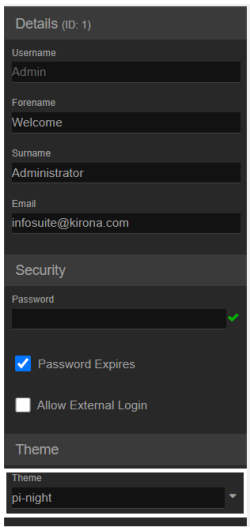


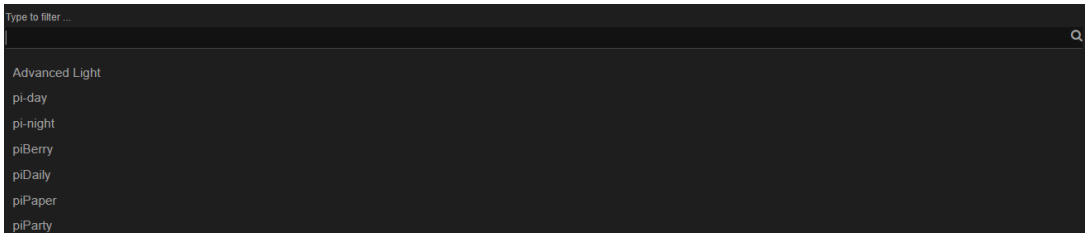
And then choosing a different theme from the ‘Theme’ drop list;



Or

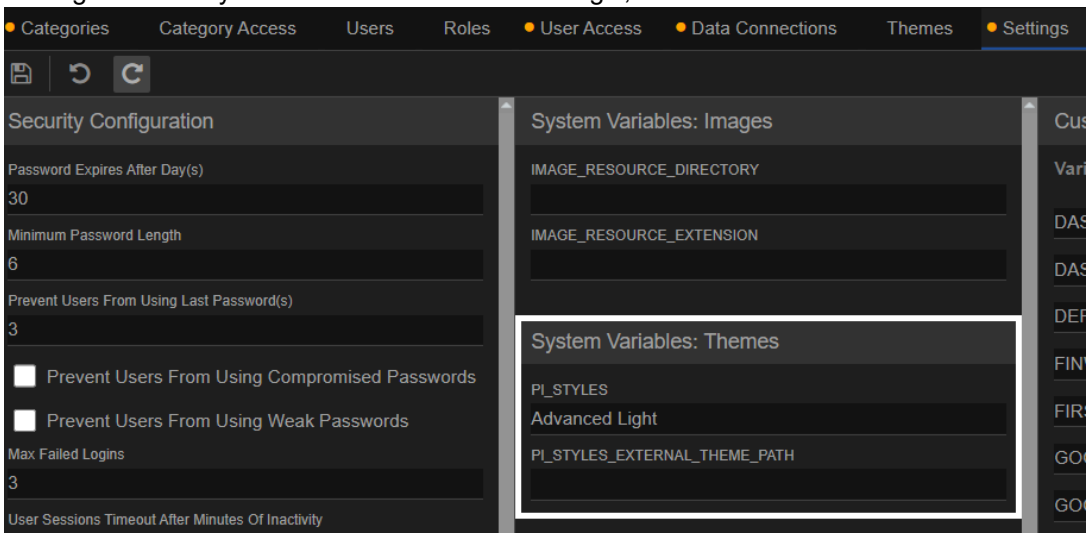
Choosing a theme on the user Config screen;





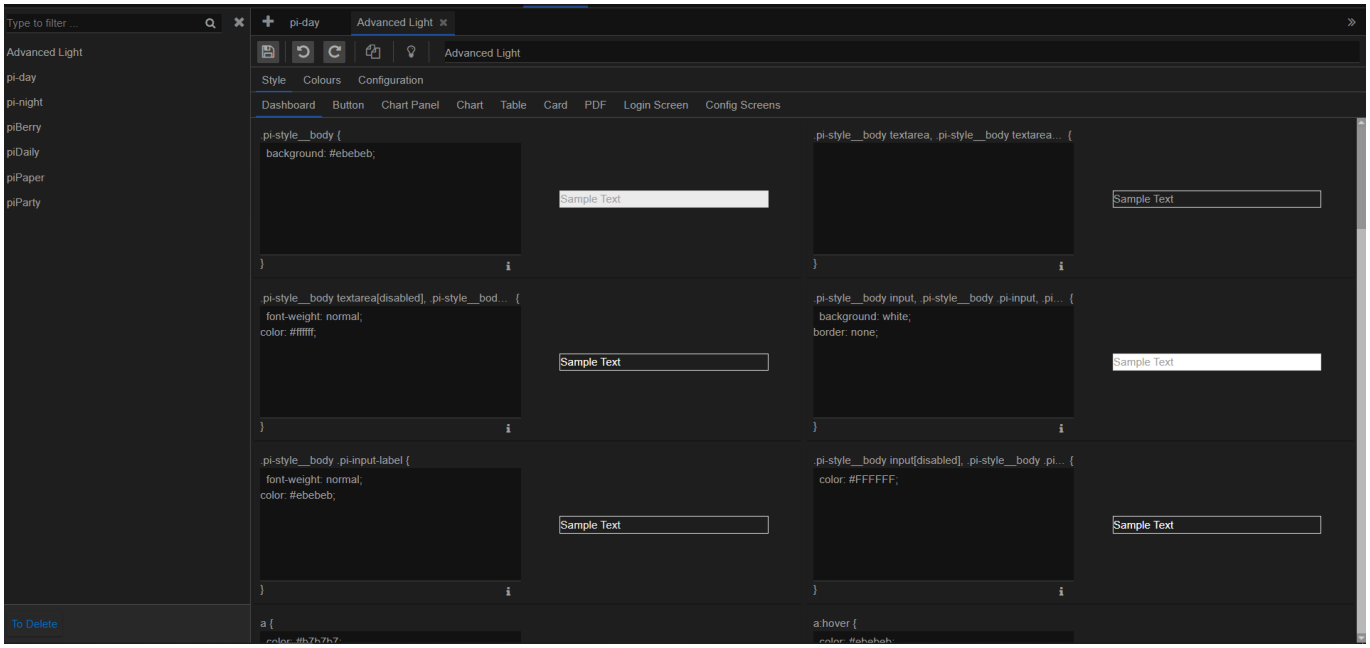
Or

Setting a default system wide theme under ‘Settings’;

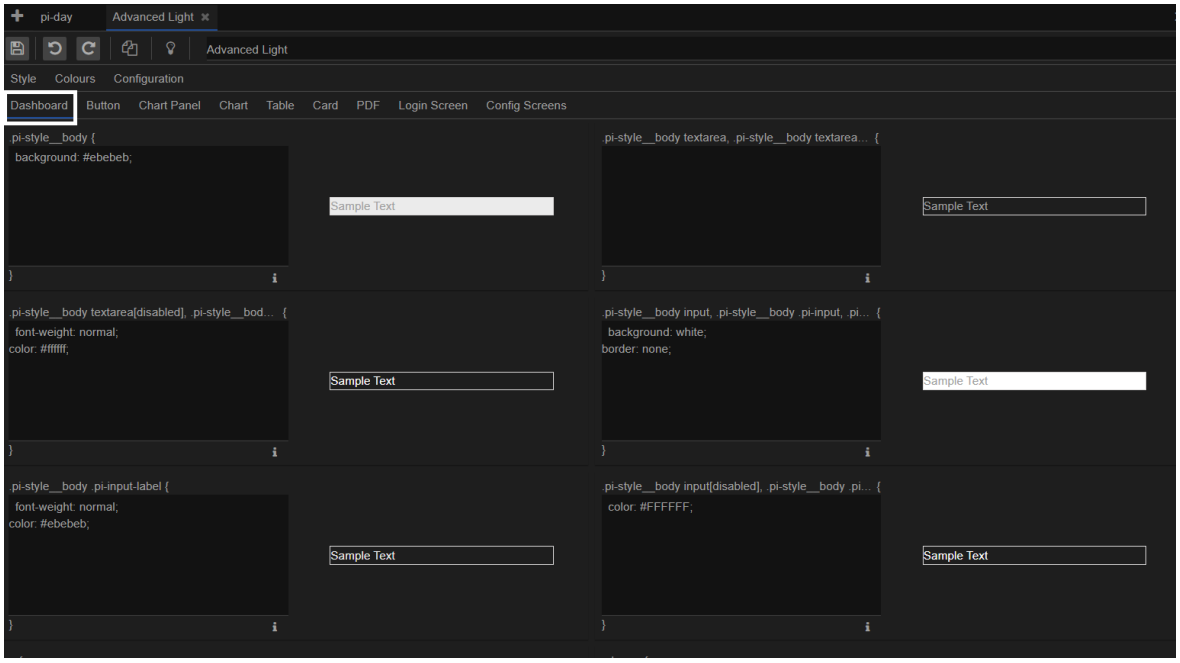


Within the themes configuration screen, you can;

- Alter an existing theme
- Create a theme from scratch (by clicking the '+' button circled in blue below)
- Copy an existing theme (by clicking the copy button circled in blue below) and alter the elements you want to be different
- Delete existing themes (using the 'To Delete' button at the bottom of the list)

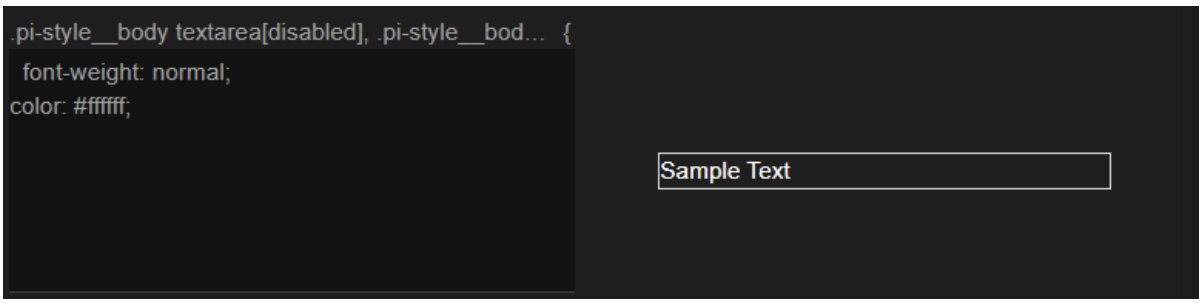


Style

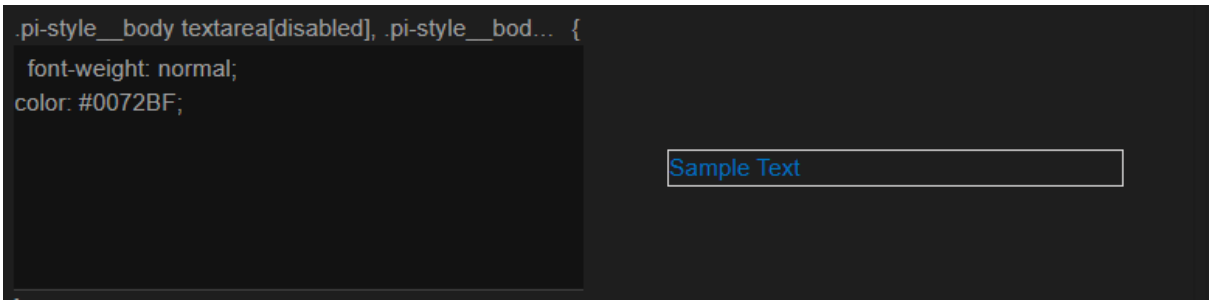


Under the ‘Style’ tab there are a series of sub-tabs; Dashboard, Button, Chart Panel, Chart, Table, Card, PDF, Login Screen, Config Screens. Under each of these you will find the elements you are able to configure for that particular part of the dashboard. Each of these options are covered in more detail towards the end of this document under ‘Dashboard CSS Tags’. Some knowledge of CSS and HTML is useful but not absolutely essential.

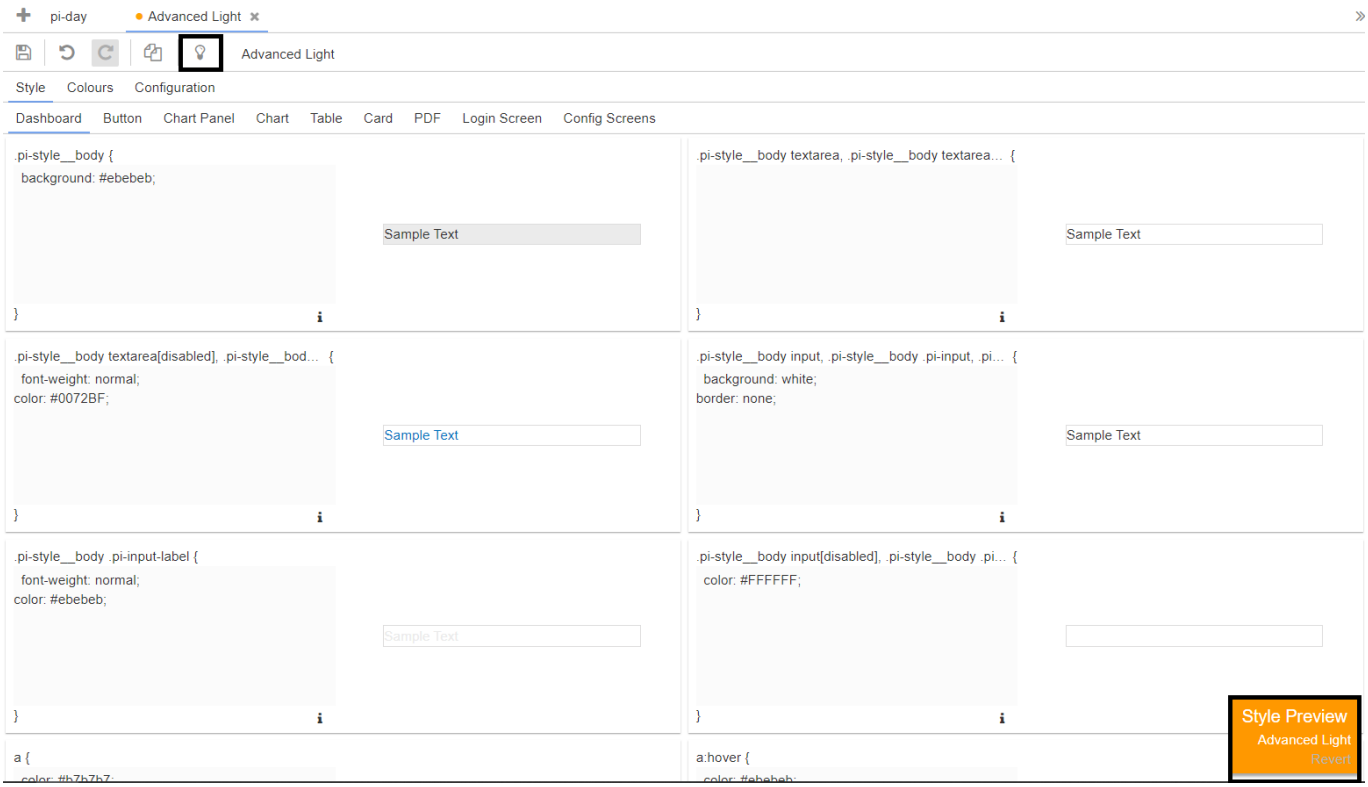
Each panel relates to one tag (shown in yellow), the current values for that tag (in blue) and an example of the current setting (circled in red).



Changing the colour from #000000 to # 0072BF for example changes the sample text to blue;



Taking this a step further; pressing the ‘Preview’ (‘Lightbulb’) icon will apply the change to the current dashboard. At this point a ‘revert’ window appears in the bottom right hand corner, clicking ‘Revert’ will undo your changes (up to the last time you saved this theme).



As you can see this particular change has actually changed the configuration screen itself but, if this wasn’t the case, you can at this point click ‘Back To Dashboard’ (as normal) to see the effect of your change(s) on the whole Dashboard. The ‘Style Preview’ option will remain in-situ, which is especially useful if the change you have made means you can no longer easily access the Themes screen!

As usual you can save your changes to a theme by clicking the floppy disk icon in the upper left hand corner.

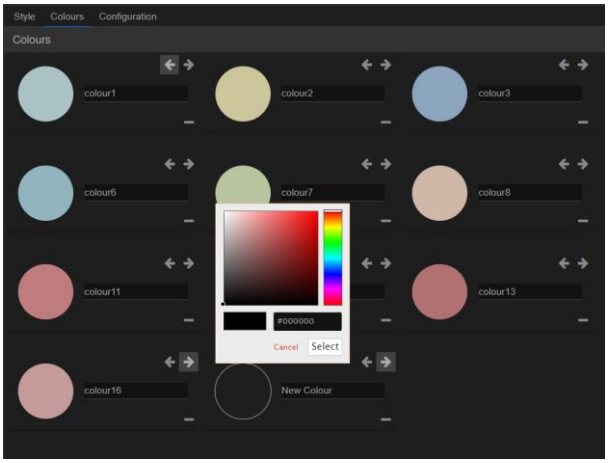
Colours

This section globally defines the colour palette used by the dashboard. Charts will pick from these colours when they render (unless you have manually specified colours on the chart or on the dimension configuration).

A chart that needs three colours will pick the first three colours you have defined on this page. If you have defined ten colours but your chart needs eleven then the first colour on this screen will be utilised twice. It therefore makes sense to ensure that you have a reasonably large number of colours specified, and that they are sufficiently different from each other that values can be correctly isolated in charts.

To define a new colour, press the plus button on the far right-hand side.

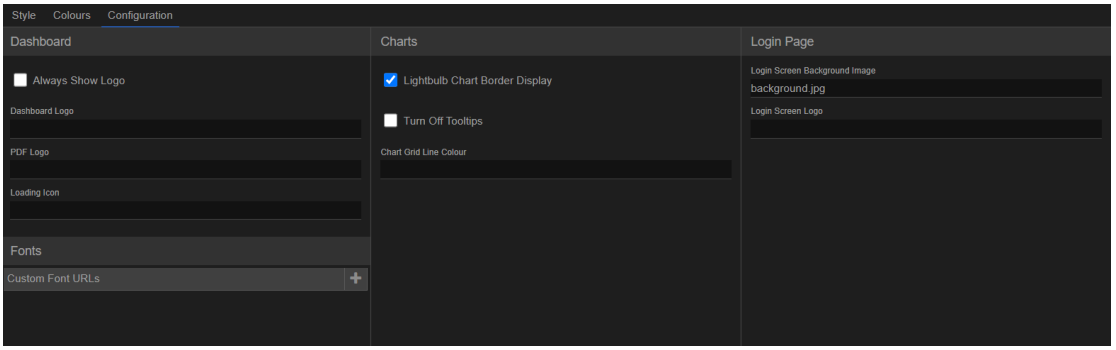
Next, click on the colour example, select the desired colour and press the Select button. Finally, press the save button.



To delete a colour, press the minus sign at the bottom the colour you wish to delete. Press the minus sign at the bottom of the colour you wish to delete.

Configuration

This section allows users to define additional aspects associated with the stylistic parts of the dashboard, over and above the CSS tags.



Always Show Logo – When ticked, this will force the logo to always be displayed on the category. Unticking it will hide the logo when the category list isn't displayed.

Dashboard Logo The logo used inside the dashboard (see above)

The image needs to be located in: \tomcat\webapps\panMISDashboardResources\themes\<<YOUR_STYLE_NAME>>\img

PDF Logo The logo file that will be used when a PDF is generated.

The image needs to be located in: \tomcat\webapps\panMISDashboardResources\themes\<<YOUR_STYLE_NAME>>\img the optimum size for a logo is around 100px X 50px.

Custom Font URLs This allows you to configure Custom Fonts to be utilised in Infosuite. The URL specified needs to contain the @Font_Face rules (for example https://fonts.googleapis.com/css2?family=Balsamiq+Sans&display=swap). An example of what you would enter in this field might be something like;

@font-face {font-family: AwesomeFont;src: url(/path/to/awesome_font.woff);}

Lightbulb Chart Border Display When ticked; a border will be displayed around the edge of a light bulb. You can also disable tooltips ('hover over') for these charts.

Chart Grid Line Colour. The colour of the gridlines used in a chart. Uses HEX codes or certain named colours (see here https://www.w3schools.com/cssref/css_colors.asp for more info).

Login Screen Background Image. The background 'splash' screen displayed when the login window is presented. Supports the same image types as Login Screen Logo (see below).

Login Screen Logo. The image used on the login screen.

The image needs to be located in:
\tomcat\webapps\panMISDashboardResources\themes\<<YOUR_STYLE_NAME>>\img

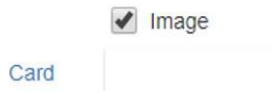
The following image types are supported:

- PNG
- JPG
- BMP
- GIF

Other Styling Not Covered Elsewhere

Images in Card chart types.

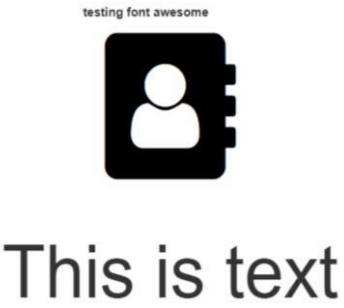
You can embed an image inside a card chart by using the Image button on a card.



The images need to be located here \tomcat\webapps\panMISDashboardResources\images

Font Awesome

Placing ‘Font Awesome’ Icons in Cards/Tables



To search for an icon; take a look here https://fontawesome.com/v4.7.0/icons/ The HTML required to show an icon is: <span class= "THE NAME OF THE FONT ICON"style="color:#ffffff; font-size:0.8em;">

Logos in reports

The logo needs to go in the following folder: “…\Dashboard\tomcat\webapps\panMISDashboardResources\images”

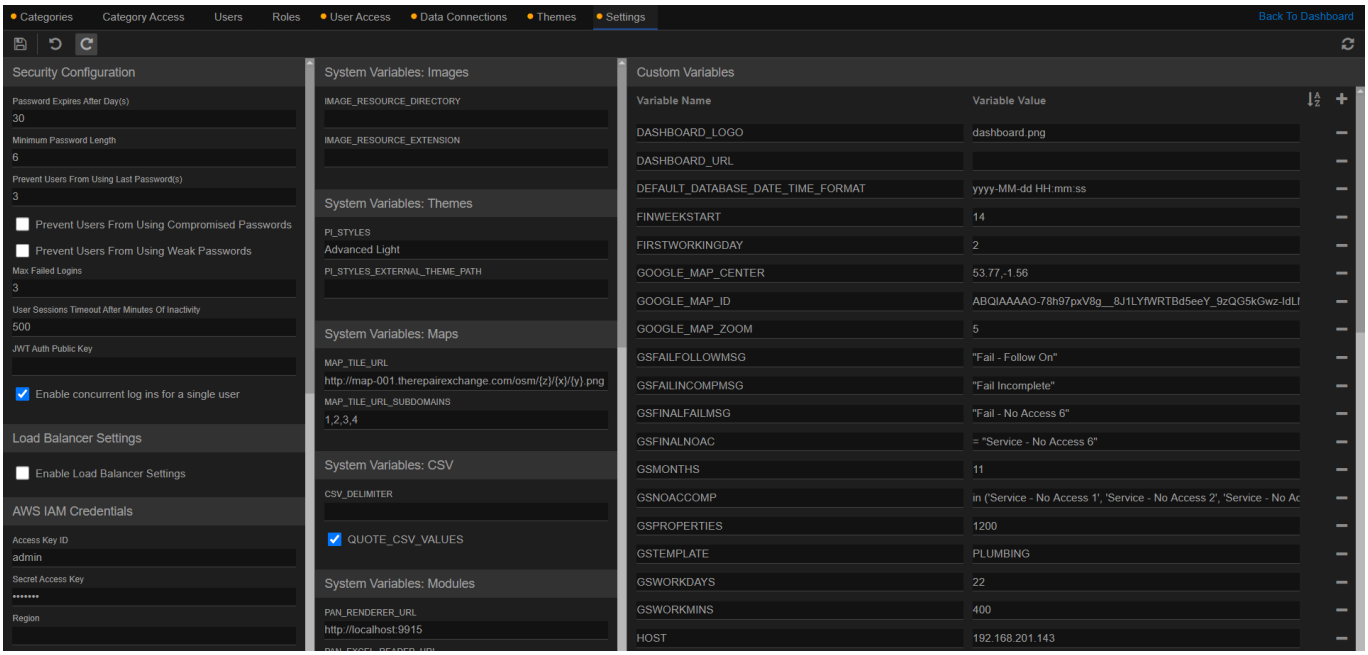
Making the dashboard vertically larger

Add the property “height: 4000px;” to the .Infosuite-style__page-content class

This will extend the height of the “page” allowing you to scroll up/down the dashboard; rather than the vertical size being decided by the monitor.

Settings

Broadly the Settings tab, accessed via ‘Configuration’, encompasses all dashboard wide settings not covered elsewhere.



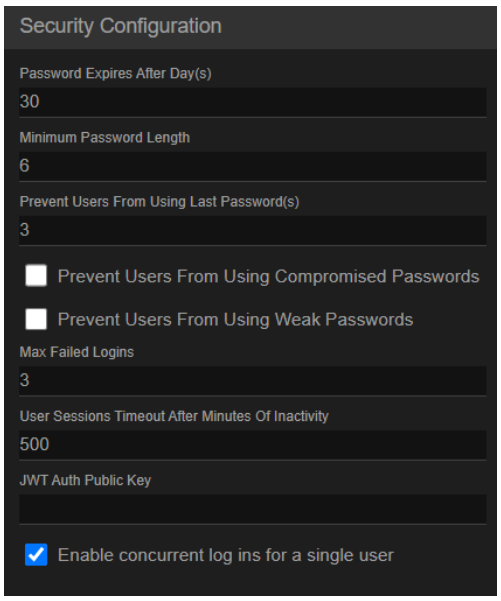
These settings can be sub-categorised as;

- Security and Network
- System Variables
- Custom Variables

The two ‘variables’ are often referred to collectively as ‘Global Variables’ (as opposed to ‘User Variables’). We will look at each of these in turn.

Security & Network

Security Configuration



Password Expires After Day(s): The amount of time a user's Dashboard password can remain the same before they are forced to change it.

Minimum Password Length: The minimum length that a user's password can be set to. If a user tries to set a password shorter than this it will be rejected and they will need to set a new one.

Prevent Users From Using Last Password(s): If this is set to 15 for example, users cannot create a new password which is the same as any of their last 15 passwords.

Prevent Users From Using Compromised Passwords: This prevents the user from creating a new password which has been compromised. Compromised status is ascertained by reference to the haveibeenpwned API (https://haveibeenpwned.com/API/v3)

Prevent Users From Using Weak Passwords: This prevents the user from creating a new password which our password strength estimation algorithm considers 'weak'.

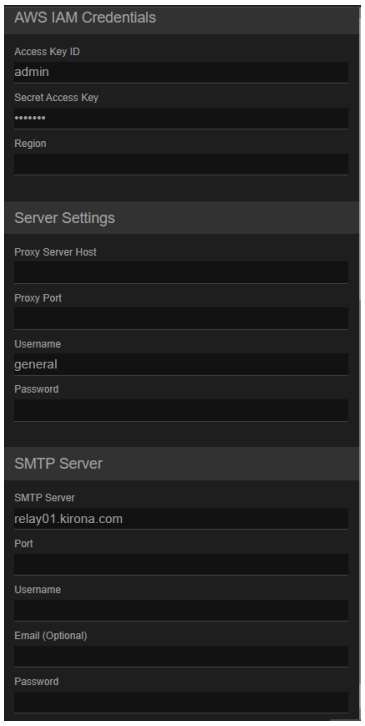
Max Failed Logins: The number of times a user can attempt to log in with an incorrect password before their account is locked.

User Sessions Timeout After Minutes Of Inactivity: The amount of time a dashboard session will remain active if it is not being used.

JWT Auth Public Key: If you are using JWT Authentication this is where you enter (as one line, no spaces) the Base 64 String Version of your **public** key. See 'Authentication' for more information.

Enable concurrent log ins for a single user: This will allow multiple browser sessions to connect using the same Infosuite username, *if the licence you are using also supports this*. If this is not enabled (and/or the licence doesn't support it) then subsequent logins will succeed, but they will automatically log out prior sessions.

Network Configuration



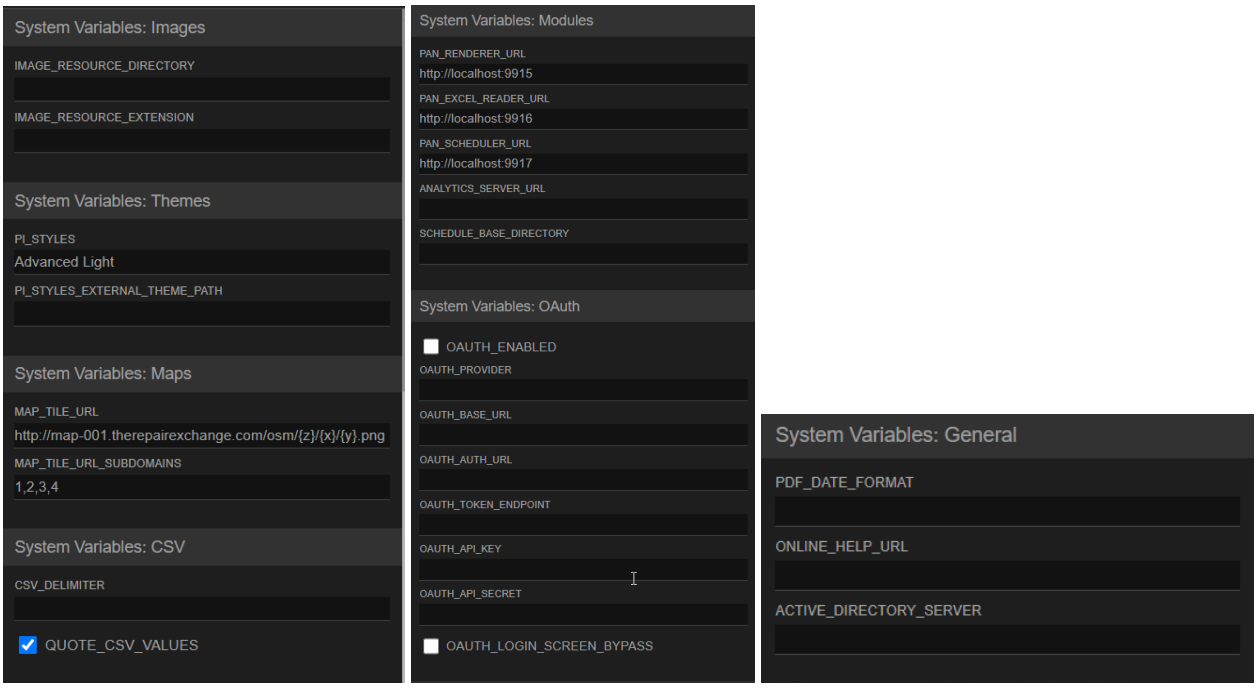
Enable Load Balancer Settings: If you have configured load balancing (see later section) and wish to utilise it click this button.

AWS IAM Credentials: SMGP have asked Blake 25/09, chased 30/09. No answer.

SMTP Server Instructions: for the dashboard to connect to your email server. The example shown is for Office365. SSL and TLS refer to the encryption configuration for your SMTP mail server

System Variables

These are a series of, not necessarily related, variables that pertain to the general operation of the dashboard.



Images: Here you can define the directory path in which images are stored for use in, for example, category object visualisation. You can also provide an extension, although, if null, it will default to .png **Themes:** Here you define the name of the default style (see 'Themes'). The second field is to specify the *web* url directory of any external themes. Using this would make the themes read-only, so populating this disables the ability to edit themes using the Infosuite functionality.

Maps: This tells the dashboard where to go to use the map functionality. You shouldn't need to change this, unless you have a licence for some other mapping service.

CSV: By default the Comma Separated Variable limiter is a Comma (the clue is in the name). But if your data itself contains commas you might want to choose another option. QUOTE_CSV_VALUES, if ticked, will enclose the values in quotes.

Modules: These are the URL's of the assorted Infosuite modules. If you have configured your instance to run on non-standard ports (as in this example) then you will need to change these to match what you configured in the initial install, otherwise the dashboard won't know how to contact, for example, the Excel reader.

OAuth: These variables govern the OAuth authentication, if you are using it. More can be found in the Authentication section of this guide.

General:

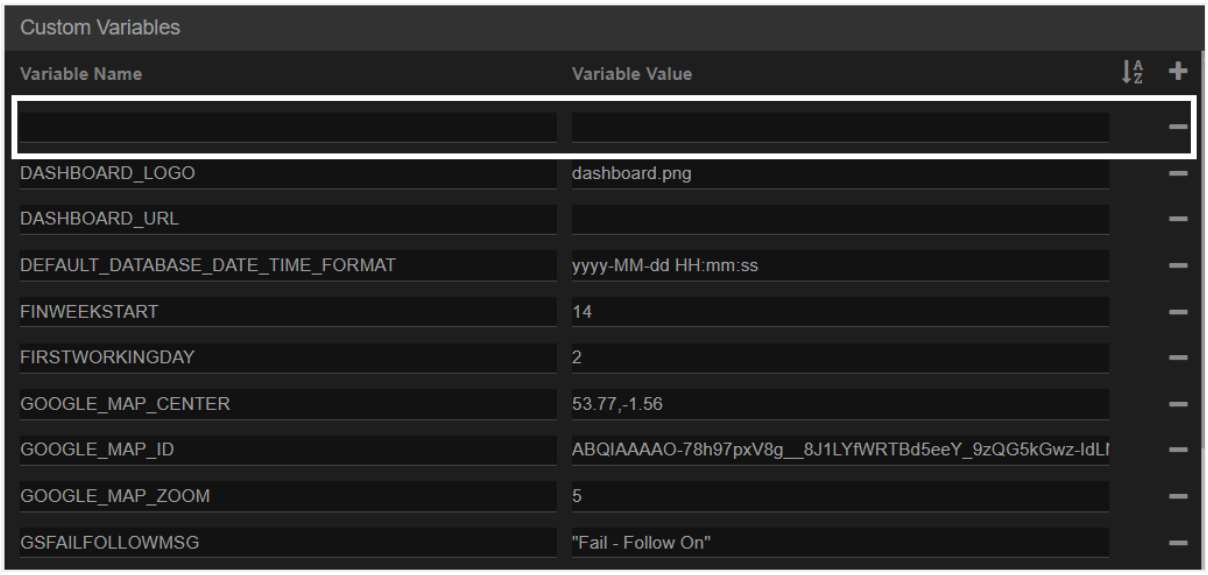
PDF_DATE_FORMAT: Here you can overwrite the default date format (yyyy-MM-dd) that is used on the timestamp on system generated PDFs.

ONLINE_HELP_URL: Here you can specify a URL to take the user to online help.

ACTIVE_DIRECTORY_SERVER: This is now deprecated, it is NOT required for AD Authentication.

Custom Variables

This section contains a list of user maintainable variables. To create a new variable click the '+' icon in the upper right hand corner, a new blank line will then be created where you can enter the name of the variable and it's current value.



Like user variables that are covered earlier in this guide, these variables can be utilised throughout the system, in this case by addressing them as [[VARIABLE_NAME]]. This functionality could for example be used in (not a definitive list!);

- Within SQL Statements
- As Filter options on Charts
- In Data Connections
- In Object Definitions

Many Infosuite charts, Objects and Connections use these variables to create dynamic data links without having to edit the items individually.

General Hints and Tips

Many of the below have been mentioned, or alluded to, already. But the below covers many of the most common stumbling blocks (after forgetting the Admin password that is!).

Manual SQL

If someone other than yourself has created a chart and it's not doing what you would expect; double check that Manual SQL hasn't been utilised.

Showing All Rows in a Data Table

The SQL generated by Infosuite will *always* 'GROUP BY' the dimension objects you have selected, even on data tables (unless you have used Manual SQL), this is fundamental to its behaviour; it always assumes that you want to summarise and aggregate, and 99% of the time that *is* what you want to do.

If you did want to show all the rows in a data table then add a unique identifier to the field list. Optionally you can make this an invisible column. It will the 'GROUP BY' the unique identifier as well, therefore brining back all rows.

Category Filters v Chart Filters

Remember that category filters by default will override chart filters. So, by default, if you filter a chart to only show calls where the call year is >= 2015 (perhaps for performance reasons) but then create a category filter (e.g. a Drop List filter) using the same call year object then that will take precedence and the chart will initially show all call years. The easiest way to work around this is to create another object that also resolves call year but give it a different name, use one for the category object and the other for the chart filter.

Dates with Time Element

As per normal freehand SQL if you format a datetime field as a date, but then order it by the unformatted date, and there IS a time element (i.e. the times are not all 00:00:00.000) then you will get some very bizarre results. If you have stripped the time out of the date then you need to do the same with the order by.

Similarly if you format a date to be Month-Year (without date) then you need to use an order by that will give the correct result, you cannot order by the original date field. The example below works in SQL Server, it is easier to use EOMONTH however this won't work with older versions of SQL Server.

Chart Owner

By default a chart is ‘owned’ by the category it was originally created in. If a chart is copied and/or moved to different categories it will still be owned by the original category unless the user manually intervenes. Therefore if you create a chart in a category called ‘Directors’ but then also place it (or a copy of it) into another category (say ‘All Staff’) then only people who have been allocated the category ‘Directors’ will be able to see it. The solution is to change ownership of the chart to ‘All Staff’; or indeed to ‘Home’ (which everyone has access to automatically without having to be specifically allocated it).

Date Dimensions

In a traditional Data Warehouse a Date Dimension table (or view) is often created. This can be linked to all the primary date fields in your metadata if required. It may typically look something like this;

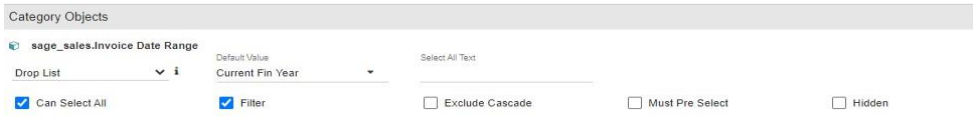
	Date	Year	Month	Day	QuarterNumber	WorkingDay
823	2012-04-02 00:00:00.000	2012	4	2	2	Y
824	2012-04-03 00:00:00.000	2012	4	3	2	Y
825	2012-04-04 00:00:00.000	2012	4	4	2	Y
826	2012-04-05 00:00:00.000	2012	4	5	2	Y
827	2012-04-06 00:00:00.000	2012	4	6	2	N
828	2012-04-07 00:00:00.000	2012	4	7	2	N
829	2012-04-08 00:00:00.000	2012	4	8	2	N
830	2012-04-09 00:00:00.000	2012	4	9	2	N
831	2012-04-10 00:00:00.000	2012	4	10	2	Y
832	2012-04-11 00:00:00.000	2012	4	11	2	Y
833	2012-04-12 00:00:00.000	2012	4	12	2	Y
834	2012-04-13 00:00:00.000	2012	4	13	2	Y
835	2012-04-14 00:00:00.000	2012	4	14	2	N

Primarily due to the ongoing effort to maintain Bank Holidays (not to mention the international implications of this, or even between England / Scotland / Wales and Northern Ireland!) we don’t supply this to users, but feel free to build your own.

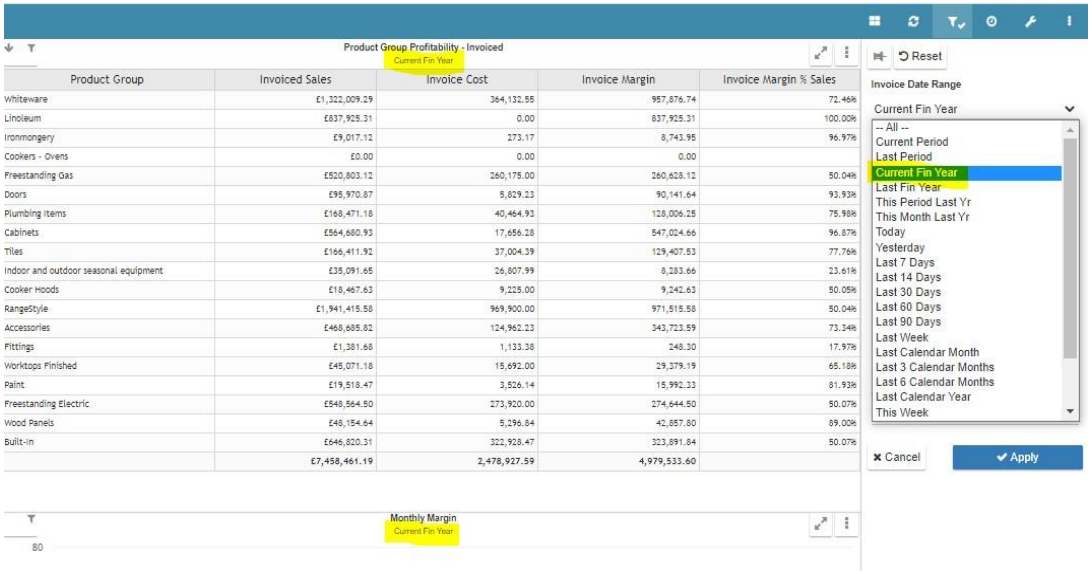
We do however have a view vw_pandash_PreCannedDates that we can supply:

ROWKEY	DATEKEY	DATE_PERIOD_KEY	DATE	DATE_DATE	SHORT_DATE_NAME	LONG_DATE_NAME	DATE_FROM	DATE_TO	YEAR	QUARTER	YEAR_AND_QUART...	MONTH_NUMBER	MONTH_NAME
1	202009...	2020009	2020-09-25 00:00:00.0...	2020-09-25	Today	Today	2020-09-25 00:00:00.0...	2020-09-25 23:59:59.9...	2020	3	2020 Q3	9	September
2	202009...	2020009	2020-09-24 00:00:00.0...	2020-09-24	Yesterday	Yesterday	2020-09-24 00:00:00.0...	2020-09-24 23:59:59.9...	2020	3	2020 Q3	9	September
3	NULL	NULL	NULL	NULL	Last 7 Days	Last 7 Days (19 Sep 2020 - 25 Sep 2020)	2020-09-19 00:00:00.0...	2020-09-25 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
4	NULL	NULL	NULL	NULL	Last 14 Days	Last 14 Days (12 Sep 2020 - 25 Sep 2020)	2020-09-12 00:00:00.0...	2020-09-25 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
5	NULL	NULL	NULL	NULL	Last 30 Days	Last 30 Days (27 Aug 2020 - 25 Sep 2020)	2020-08-27 00:00:00.0...	2020-09-25 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
6	NULL	NULL	NULL	NULL	Last 60 Days	Last 60 Days (28 Jul 2020 - 25 Sep 2020)	2020-07-28 00:00:00.0...	2020-09-25 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
7	NULL	NULL	NULL	NULL	Last 90 Days	Last 90 Days (28 Jun 2020 - 25 Sep 2020)	2020-06-28 00:00:00.0...	2020-09-25 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
8	NULL	NULL	NULL	NULL	Last Calendar Month	Last Calendar Month (01 Aug 2020 - 31 Aug 2020)	2020-08-01 00:00:00.0...	2020-08-31 23:59:59.9...	NU...	NULL	NULL	8	August
9	NULL	NULL	NULL	NULL	Last 3 Calendar Months	Last 3 Calendar Months (01 Jun 2020 - 31 Aug 202...	2020-06-01 00:00:00.0...	2020-08-31 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
10	NULL	NULL	NULL	NULL	Last 6 Calendar Months	Last 6 Calendar Months (01 Mar 2020 - 31 Aug 20...	2020-03-01 00:00:00.0...	2020-08-31 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
11	NULL	NULL	NULL	NULL	Last Year	Last Year (01 Jan 2019 - 31 Dec 2019)	2019-01-01 00:00:00.0...	2019-12-31 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
12	NULL	NULL	NULL	NULL	This Month	This Month (01 Sep 2020 - 30 Sep 2020)	2020-09-01 00:00:00.0...	2020-09-30 23:59:59.9...	NU...	NULL	NULL	9	September
13	NULL	NULL	NULL	NULL	This Year	This Year (01 Jan 2020 - 31 Dec 2020)	2020-01-01 00:00:00.0...	2020-12-31 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
14	NULL	NULL	NULL	NULL	This Week	This Week (21 Sep 2020 - 27 Sep 2020)	2020-09-21 00:00:00.0...	2020-09-27 23:59:59.9...	NU...	NULL	NULL	NULL	NULL
15	NULL	NULL	NULL	NULL	This Month Last Year	This Month Last Year (01 Sep 2019 - 30 Sep 2019)	2019-09-01 00:00:00.0...	2019-09-30 23:59:59.9...	NU...	NULL	NULL	9	September
16	NULL	NULL	NULL	NULL	This Week Last Year	This Week Last Year (23 Sep 2019 - 29 Sep 2019)	2019-09-23 00:00:00.0...	2019-09-29 23:59:59.9...	NU...	NULL	NULL	NULL	NULL

Using this and joining it to certain key date columns (normally using a ‘BETWEEN’ join) ….



You can then configure a Category Object like this, which will enable you to quickly roll out categories like the example below, where the user is initially shown the figures for the 'Current Fin Year' but they can then filter to show the same charts for a wide variety of different date ranges.



Note that {{Invoice Date Range}} has been referenced in each of the chart subtitles, so there is no ambiguity as to what date range the chart is currently looking at, especially if it is subsequently created as a PDF.

Non-Dashboard Targets

Whilst the dashboard does have target functionality this is best used for overall company wide targets. However some targets (especially in ERP/Accounting/CRM systems) can be rather complex. It is also often the case that targeting is one of the reasons users are taking data out of the core system and into Excel.

It is normally best to load such targets into the underlying database (if they don't already exist) either via a normal database load or using our Excel load functionality.

Note that when you do this is it is nearly always advisable to create a view to compare actual with target. Otherwise you may get problems of some targets being excluded where the customer has no sales, or vice versa.

A simplified pseudo SQL example;

```
SELECT  SalesValue    'Value'
        Date
        Customer
          'Actual'   'Type'
FROM    ActualSales
UNION ALL
SELECT  BudgetValue   'Value'
        Date
        Customer
        'Budget'      'Type'
FROM    TableWithTargets
```

Of course your actual targets may actually be at Branch, Product, Account Manager Etc. level.

Use Line Measures, Not Header Measures

This may seem obvious, but it has caught people out before; it is generally recommended to obtain measures (whether it be order quantity, invoice value, hours worked etc.) from the lowest level of granularity.

So although Invoice Value may exist on the Sales Invoice header of a system we would not generally recommend using that. Instead use the line (Detail) values, this is because you can then easily change the chart to split by things that are only held at line value, such as the Product Group or Stock Code.

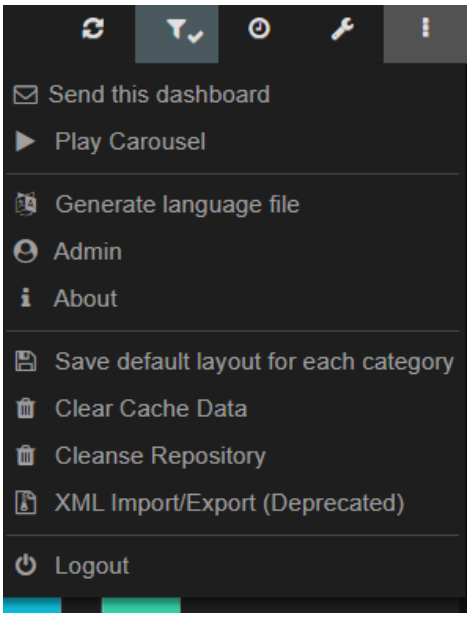
If you use the header value then splitting by the Product Group could give you very misleading figures. The only reason to use the header values instead of the line values would be performance; reading from fewer lines across fewer tables, but this is rarely necessary.

Multilingual

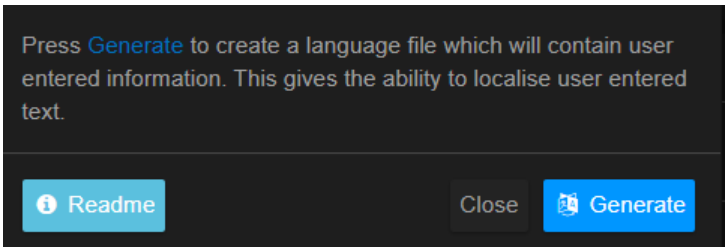
This guide will provide detailed instructions on how to setup, use and edit localisation.

When ***localisation*** is referred to this means the ability to provide multi-lingual support for the application.

Firstly, you need to login to the dashboard and open the right-hand side menu and select ‘Generate language file’ from the menu.



Pressing ‘Generate’ which will create a language file which will contain all the user entered information.



NB: User entered information is referring to data input by a user e.g. chart names, category names etc.

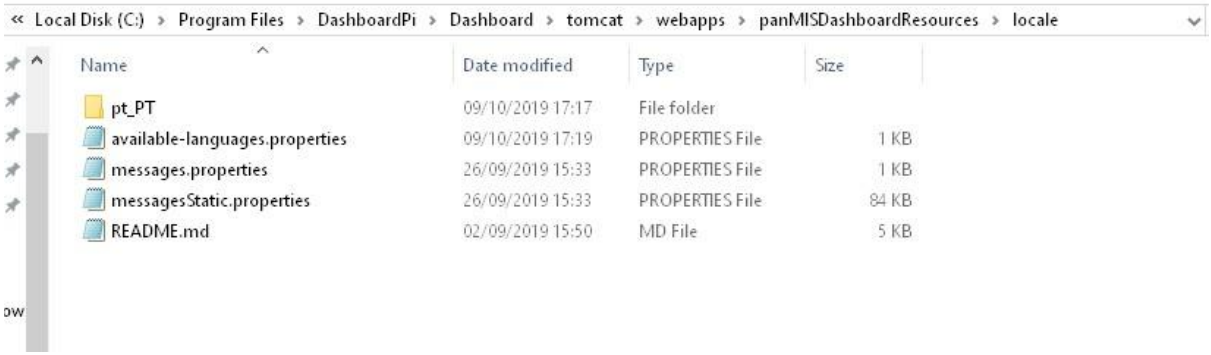
Once the generation is done the language file will be saved to the install directory of the Dashboard. An address link will be presented to show you its location.

Once the file has been generated there are a few steps you must take. First head to the localisation folder.

INSTALL_DIR/tomcat/webapps/panMISDashboardResources/locale

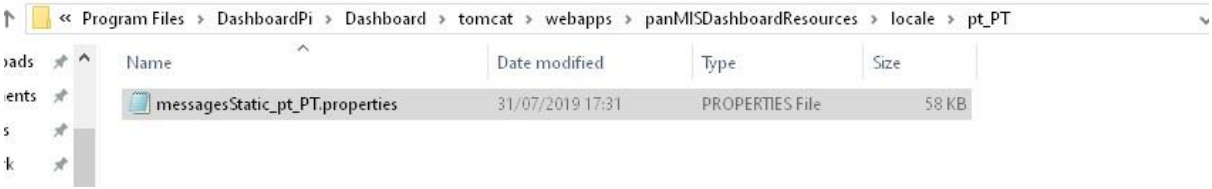
The messages files contained within this directory are property files containing key / value pairs. Editing the value portion of the property will change the text which is displayed in the application. All files must be UTF-8 encoded.

To add new localisations to the application - e.g. Portuguese create a sub directory inside the *locale* directory. E.g. add the directory `pt_PT`

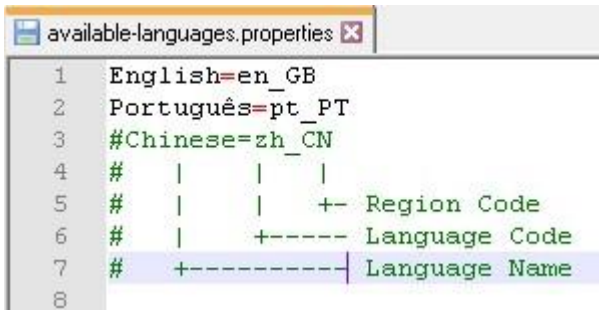


Copy the messagesStatic.properties file from the locale folder and paste the file into the new sub directory created in step 1. This file needs to be renamed to include the directory name e.g.

'messagesStatic_pt_PT.properties'. This file can then be edited to change the language for various parts of the dashboard.



Finally, you need to edit available-languages.properties in locale to enable the dashboard to pick up your new language files - e.g. add Portuguese=pt_PT. This will then create a dropdown menu for the language on the login screen of the dashboard.



Parts of the text within the dashboard display in priority order which the localisation also follows. For example, Chart Titles can be set from the chart title section of the edit chart screen as well as the attribute section of the Edit Chart screen. The text below explains the order for different parts of the dashboard:

Category name

- Label from language file e.g. MIS_CATEGORIES.LABEL.b8b9470f3d714bfd8f337348d5ad55fc=This value will replace the Category LABEL
- Label from app
- Name from language file e.g. MIS_CATEGORIES.NAME.b8b9470f3d714bfd8f337348d5ad55fc=This value will replace the Category NAME
- Name from app

Chart Titles

- Language file hierarchy level title e.g.
- MIS_DEFINED_CHARTS.f1924dcb7dfa492aa1e7711b48cbb2dc.MIS_HIERARCHIES.49e94b60841a4
- 3a58333d6db0bc39efd=This value will replace the drill level specific title
- App hierarchy level title (drill level specific title)
- Language file chart title e.g. MIS_DEFINED_CHARTS.f1924dcb7dfa492aa1e7711b48cbb2dc=This value will replace the overall chart title
- App chart title
- Top level title replaced x-axis, y-axis,

y2-axis and legend override

- Language file chart override e.g.
- MIS_DEFINED_CHARTS.ca86a1141a51454ca99b9854c770919f.MIS_CHART_COLUMNS.070b630ea
- a2843f6b3260f12db40c27a=This value will replace the overrides (for x-axis, y-axis, y2-axis or legend override) in the chart
- App chart override
- Language file object label override e.g.
- MIS_COLUMNS.LABEL.d0c280131cdd4244b46c0737938ae776=This value will replace the data connection object LABEL in the chart
- App object label
- Language file object display name override e.g.
- MIS_COLUMNS.LABEL.d0c280131cdd4244b46c0737938ae776=This value will replace the data connection object NAME in the chart
- App object display name

Category objects (category filters)

- Language file object label override e.g.
- MIS_COLUMNS.LABEL.d0c280131cdd4244b46c0737938ae776=This value will replace the data connection object LABEL in the chart
- App object label
- Language file object display name override e.g.
- MIS_COLUMNS.LABEL.d0c280131cdd4244b46c0737938ae776=This value will replace the data connection object NAME in the chart
- MIS_CATEGORY_OBJECTS.SELECT.ALL.235f1c4ade104574a379dce979b12455=This value will replace that on the category object when all is selected

It is also important to note that any changes made to the dashboard e.g. adding a new chart, making a change to existing charts or changing any texts will require the user to re-generate the language file. This new language file will include the changes made in the dashboard. The user then can merge the two and include the changes found in the new language file.

Authentication

Security plays a big role in everyday life and even more so when the information you store is of a sensitive nature. With security in mind we have set up several features, detailed below to protect you and your data from harm.

Authenticating with OpenID Connect and multifactor authentication (MFA)

Below is a simple guide on what OpenID connect is and how to set it up.

Providers

Which provider you use will depend on the technology stack you are currently using within your organisation. If you have an existing user account directory with one of the providers, that would then be the provider to choose. If you use a provider that is not yet supported pass a request to support@panintelligence.com and we may be able to add support in a future release if the provider supports OpenID Connect. If you do not have an existing identity provider Auth0 is an independent provider which you could use.
We currently support the following providers:

- Microsoft Azure Active Directory (Office 365)
- Auth0
- Keycloak
- Generic (the potential to work with any other OpenID Connect provider)

Setup

- Microsoft Azure Active Directory (MFA available)
- From the Azure portal (portal.azure.com) go to Azure Active Directory and then App registrations.
- Click New application registration
- Add a Name, choose Web app / API for the type and set the sign on URL to your dashboard
- e.g. https://dashboard.company.com/Infosuite
- Click create
- You will see an Application ID, this is your API Key, you will need this later
- To get an API key click Settings, Keys and add any entry under Passwords. The generated value is your API Secret, you will need this later
- You will also need your provider URL; this will be in the format https://login.microsoftonline.com/TENANT (or /common)
- Click Reply URLs in the Settings pane and add https://dashboard.company.com/Infosuite/auth/oAuthComplete/*
- To complete the setup, you will need to assign users to the Application you have just created
- If you wish to use MFA you should turn this on in Azure Active Directory and for the users you want to benefit from it.

Auth0 (MFA requires at least Developer Pro account)

- When logged into the Auth0 management console go to Applications
- Click Create Application
- Add a Name and choose Regular Web Applications, then click Create
- Switch to the Settings tab and take a note of your Client ID and Client Secret, you will need these later (as API key and API secret)
- You will also need your provider URL; this will be in the format https://company.eu.auth0.com

- Under Allowed Call back URLs add https://dashboard.company.com/Infosuite/auth/oAuthComplete • Under Allowed Web Origins add https://dashboard.company.com
- Keycloak
- Full Keycloak setup steps are not yet available. You will need to setup OpenID Connect credentials for Standard Flow and obtain a Client Id and Secret with an Access type of Confidential. You will need to allow redirect URIs to http(s)://server:port/Infosuite/* and obtain a URL
- (e.g. https://server:port/auth/realms/Panintelligence/), API key (e.g. dashboard), and API secret (e.g. abcd1234-d730-dh26-dh37-8ss2g54kld34).

Generic

In the case where your OpenID Connect provider is not officially supported by the Dashboard you can attempt to use the Generic provider. Full compatibility cannot be guaranteed but any issues can be reported to support, and we will endeavour to improve the connector. With the Generic provider you will need to obtain an auth URL and token endpoint which you can provide to the Dashboard as described below.

Dashboard Prerequisites

- A setup identity provider with your users configured
- An application setup in the provider for the Dashboard (below)
- A URL, API Key and API Secret for your provider
- Users in the dashboard with unique email addresses matching those in your identity provider and external login enabled

Setup

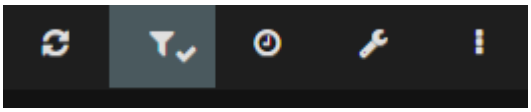
- Add the following variables to the dashboard in the Admin area to enable OpenID Connect
- OAUTH_ENABLED: TRUE
- OAUTH_PROVIDER: (auth0, Microsoft, Keycloak or generic)
- OAUTH_BASE_URL: (URL identified in the provider setup stage)
- OAUTH_API_KEY: (API key for the newly created application)
- OAUTH_API_SECRET: (API secret for the newly created application) **Generic Provider**
- In the case of the Generic provider set the above as well as these additional variables:
- OAUTH_AUTH_URL: (auth URL identified)
- OAUTH_TOKEN_ENDPOINT: (token endpoint identified)
-

Auto login

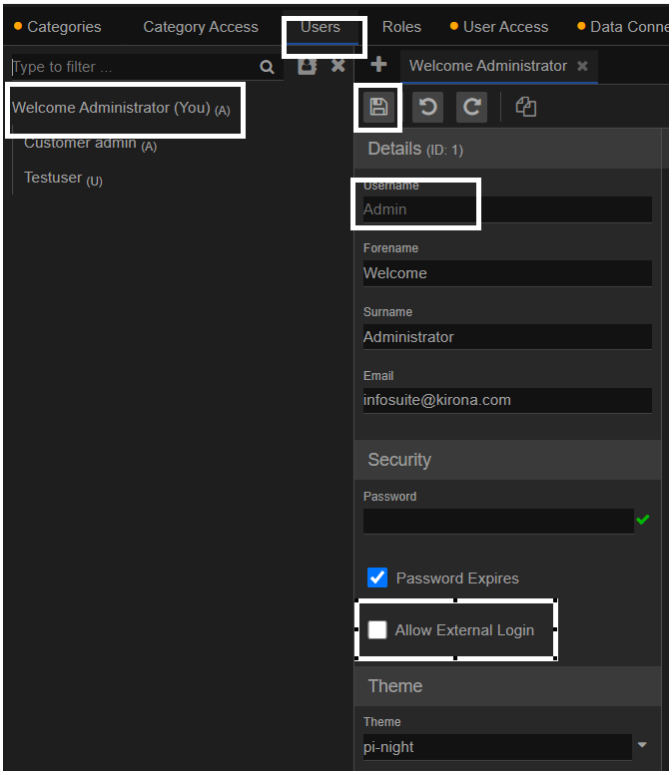
Auto login to the dashboard via OpenID Connect can be achieved by using the /auth/oidc URL. If the variable OAUTH_LOGIN_SCREEN_BYPASS exists and is set to true, the login screen will be bypassed by default. If direct access to the login screen is needed it can be reached via the /login URL.

Configuring Single Sign On

First you will need to log into the Dashboard as a user who has access to the configuration tab. usually the Admin user. After logging in, navigate to the ‘Configuration Spanner' along the ribbon at the top.



Head to the ‘Users’ tab in the top ribbon. At this point will need to create a user with the same ‘UserCode’ as the one you log in with on your machine. Tick the option ‘Allow External Login’



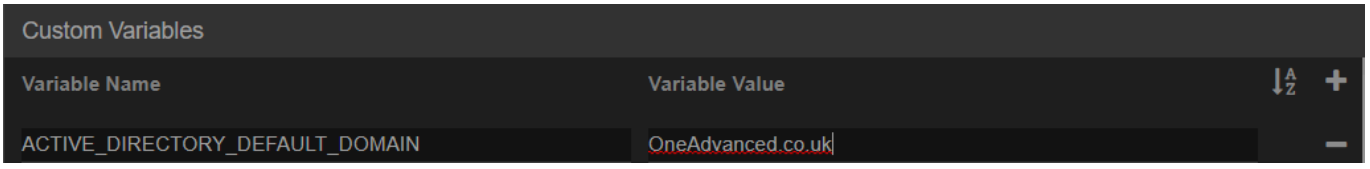
Don't forget to hit 'Save'

Now you will need to create a global variable under 'Settings'.

To create a new variable, click on the plus button icon on the right.

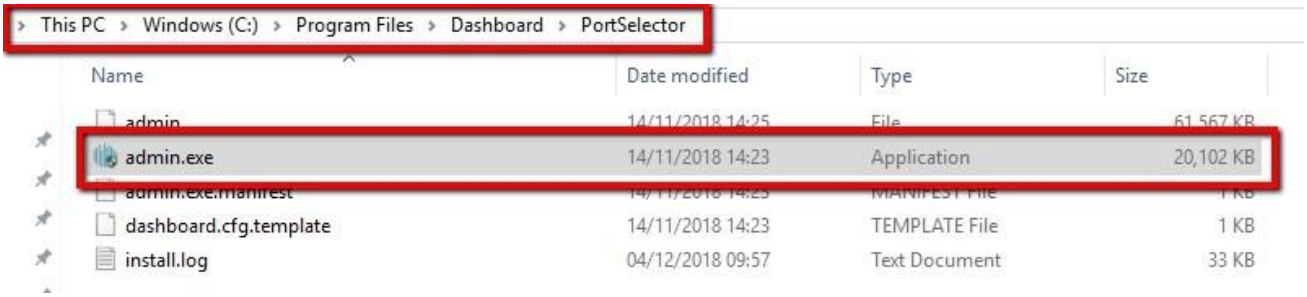
Call the new variable; ACTIVE_DIRECTORY_DEFAULT_DOMAIN In the 'Variable Value' enter the domain the users are on.

Once this has been configured, ensure that you save the settings by selecting the save icon in the top left.



Once this has been configured, you will need to navigate to where the dashboard is installed and find the

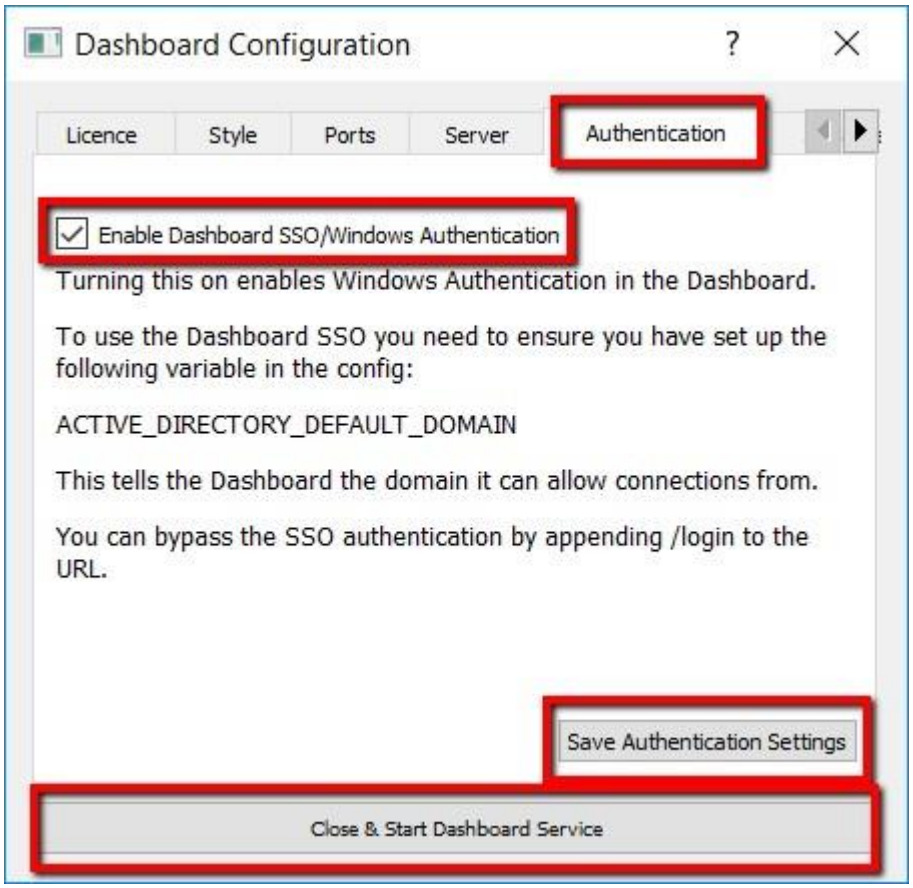
'admin.exe' file usually located in the file path: **INSTALL_DIRECTORY**\Dashboard\PortSelector Run the file as an Administrator



Select the option to 'Stop Services and Enter Admin'

Once the dashboard configuration box appears, navigate to the 'Authentication' tab along the top, click the tick box to 'Enable Dashboard SSO/Windows Authentication'

Save the Authentication settings and select 'Close & Start Dashboard Service'



Once the services have come back up and running, navigate to browser, close any instances of the dashboard and reopen them.

You should find that this takes you straight the homepage of the dashboard for the user configured for SSO.