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[1] Altair Panopticon Designer

Workbooks

In this chapter, you will learn how to do the following:

- access your Panopticon workbooks on the web or within Altair Panopticon Designer (or Panopticon Designer).
- open a workbook

Accessing Altair Panopticon Designer Workbooks

The Panopticon Designer can be installed on your Windows PC and it lets you access, view, edit, and design workbooks to be published to the web or stored locally. These Panopticon workbooks that have been published to the web can be accessed through a web browser.

Using the Panopticon Server is the best way to make Panopticon workbooks and dashboards available to large numbers of users.

What you see on the screen, including all filters and visualizations are the same regardless of whether you are looking at the workbook on the web or within the Panopticon Designer application.
However, some controls and the amount of interactivity available are not the same in the Panopticon Designer and the web.

Example 1

For a Table visualization, here are the options available on the context menu:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New Action...</td>
<td>Filter Include</td>
<td>Filter Include</td>
</tr>
<tr>
<td>Edit Actions...</td>
<td>Filter Exclude</td>
<td>Filter Exclude</td>
</tr>
<tr>
<td>Filter Include</td>
<td>Filter Clear</td>
<td>Filter Clear</td>
</tr>
<tr>
<td>Filter Exclude</td>
<td>Drill Down</td>
<td>Drill Down</td>
</tr>
<tr>
<td>Filter Clear</td>
<td>Drill Up</td>
<td>Drill Up</td>
</tr>
<tr>
<td>Drill Down</td>
<td>Drill to Top</td>
<td>Drill to Top</td>
</tr>
<tr>
<td>Drill Up</td>
<td>Copy Image</td>
<td>Copy Image</td>
</tr>
<tr>
<td>Drill to Top</td>
<td>Copy Data</td>
<td>Copy Data</td>
</tr>
<tr>
<td>Copy Image</td>
<td>Copy Raw Data</td>
<td>Copy Raw Data</td>
</tr>
<tr>
<td>Copy Data</td>
<td>Adjust Column Width</td>
<td>Adjust Column Width</td>
</tr>
<tr>
<td>Copy Raw Data</td>
<td>Adjust All Column Widths</td>
<td>Adjust All Column Widths</td>
</tr>
<tr>
<td>Adjust Column Width</td>
<td>Hide</td>
<td>Hide</td>
</tr>
<tr>
<td>Adjust All Column Widths</td>
<td>Unhide</td>
<td>Unhide</td>
</tr>
<tr>
<td>Hide</td>
<td>Show Shelves</td>
<td>Show Shelves</td>
</tr>
<tr>
<td>Unhide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Show Shelves</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Example 2

For a Scatter Plot visualization, here are the options available on the context menu:

- New Action...
- Edit Actions...
- Set snapshot here
- Filter Include
- Filter Exclude
- Filter Clear
- Drill Down
- Drill Up
- Drill to Top
- Copy Image
- Copy Data
- Copy Raw Data
- Morph into...
- Show Shelves
- Set snapshot here
- Filter Include
- Filter Exclude
- Filter Clear
- Drill Down
- Drill Up
- Drill to Top
- Copy Image
- Copy Data
- Copy Raw Data
- Show Shelves

Depending on the visualization, some more options are made available such as Toggle Display Mode, Rubber Band Selection, Adjust Column Width, or Copy Image. Refer to the sections below for more information.

NOTES

The user experience is virtually identical for people accessing a workbook over the web or those using Panopticon Designer software installed on a Windows PC.
Over the web, workbooks can be retrieved using HTML5:

Smartphones have small screens and therefore Panopticon Designer automatically uses a special mobile format to display workbooks on such devices. The mobile format shows workbooks and constituent dashboard. However, interactivity is limited to navigating between dashboards.

This includes:

Figure 1-9. Workbook Listing (Portrait)  

Figure 1-10. Workbook View (Portrait)  

Figure 1-11. Workbook View (Landscape)
Opening a Workbook

When you first open the Panopticon Visual Data Discovery web page, there are no published workbooks displayed in the Altair Panopticon Server.

After publishing workbooks to a folder/sub-folder in Panopticon Designer, or uploading workbooks in Panopticon Server, the default web page for the Panopticon Server lists available folders and published and uploaded workbooks. The workbooks include their Titles and thumbnail images.

Enter text in the Filter Workbooks box to filter the workbook thumbnails.
Click on the thumbnail corresponding to the workbook you want to use. The selected workbook will display full screen.

Figure 1-12. The selected workbook is displayed full screen
NOTES

• Each workbook can contain several dashboards.
• Each dashboard in a workbook may contain multiple visualizations, legends, and filters.
• Each dashboard shows up as a tab at the top of the screen. Click on the dashboard tab you want to use.
• A notification message displays when a connection issue with the Panopticon Server or web socket occurs.

VIEWING WORKBOOK HISTORY AND RE-publishING

NOTES

The analyst must have an allowed authorization to the workbook to view its history or republish.

Aside from opening workbooks, analysts can also perform the following:

❑ View the change history of workbooks
❑ Republish an archived workbook to the recent version of Panopticon Server
❑ Rename an archived workbook

Steps:

1. In the Workbooks tab, click the History button of a workbook.

The History of Workbook <Name> dialog displays:
You can sort the archival list either through the *Date* or *User name* by clicking on the or button.

Also, move to the other pages of the list by clicking on a page or clicking the or button.

2. Click on an archived workbook in the list.

Then click Republish. A notification message displays.

3. Click Yes. A notification message displays.

4. Click OK.

5. You may also opt to rename an archived workbook by entering a new one in the *New Name* box and follow steps 2 to 4 to republish it.
[2] Elements of a Workbook

Workbooks may contain different elements depending on the design created by your administrator.

In Panopticon Designer, the workbook layout is displayed into either any of the two modes:

- **Design Mode**
  - Allows you to create Panopticon workbooks and add or change elements in dashboards. Panopticon Designer defaults to the Design Mode.

- **Presentation Mode**
  - Allows you to use your Panopticon workbooks and dashboards to analyze data. Essentially, **Presentation Mode** in Panopticon Designer is the same as accessing a published workbook via a web browser.

---

Figure 2-1. Elements of a workbook in Design Mode
Each of these elements are discussed as follows.

**Workbook Tabs (Dashboards)**

Each tab or dashboard in a workbook provides a view of your data that will normally include one or more data visualizations, filters, and legends.

You can move between dashboards within the workbook by clicking the appropriate tab.
Visualizations

Each dashboard (tab) contains one or more data visualizations consisting of:

- Title
- Shelf
- Visualization

Figure 2-4. Elements of a dashboard in Design Mode

**TITLE**

Each of these visualizations can be given a descriptive title to help users understand the information presented. If no title is specified, the empty title is not displayed.
VISUAL FILTER APPLIED

Visualizations themselves can be filters to screen the dataset. Right-clicking on data points to bring up the context menu, exposes the ability to filter in, or filter out the selected items.

Once the visualization has been filtered in this way, the filter applied icon appears on the top right of the visualization. Clicking this removes the visualization filter.

CONTEXT SENSITIVE HELP

Dashboard publishers can create Context Sensitive Help for their users. These help files are made available by clicking the Question Mark icon at the top right of each visualization title. Click on the Help icon to display the associated Help text.

Figure 2-5. The corresponding Help is displayed after clicking the Help icon

ZOOM OUT

When a visualization is zoomed, either through using the mouse wheel, or through the rubber band zoom toolbar, the zoom out icon appears on the top right of the visualization. When clicked, it will zoom out, and the icon will change into its inactive state.

NOTES

Zoom and Zoom Out are available in the following visualizations:

Candle Stick, Line Graph, Needle Graph, Network Graph, Numeric Line Graph, Numeric Needle Graph, Numeric Stacked Needle, OHLC Graph, Order Book, Price Brand, Scatter Plot, Spread Graph, Stacked Needle Graph, Timeseries Combination, and Timeseries Scatter Plot.
MAXIMIZE

Each of these visualizations can be maximized to display the full dashboard area by clicking the Maximize icon. To return to normal, click the visualization Restore icon.

SHELF

The Shelf contains menus for variable selection and provides control over the breakdown of the data. You can also control the level of detail within a hierarchy, as presented in the associated visualization, and also how the data is cross-tabbed.

It can be shown or hidden by right-clicking on a context menu item.

Figure 2-8. The elements of the Shelf in Panopticon Designer

Figure 2-9. The elements of the Shelf in the Web Client
In the Shelf, you can perform the following:

- Add Cross Tab Columns
- Add Cross Tab Rows
- Add Breakdown Columns

Right-clicking on a column or row displays a context menu:

- Drill
- Sort
- Remove Column
- Add Column
- Swap Columns and Rows

Right-clicking on a Breakdown column displays a context menu:

- Drill
- Sort
- Remove Column
- Add Column
- Move Right

- Drill
- Sort
- Remove Column
- Add Column
- Move Left

Refer to the sections below for instructions on how to drill, sort, remove, add or swap columns and rows. In addition, how to move breakdown columns.

Also, refer to [3] Cross Tabbing for more information.
COPYING TEXT LABELS AND TITLES IN VISUALIZATIONS

Copy Text labels and titles in visualizations by highlighting the Text and selecting **Copy** in the context menu that displays.

![Copy Text labels and titles in visualizations](image)

Paste it into other applications.

VISUALIZATION VARIABLES

Variables are the columns of data used by visualizations. If the variable is set up to show more than one column of data, a drop-down list box displays the available selection. Select one in the list that you want to view and Panopticon Designer will update the visualization based on your selection.

![Variables in visualization](image)

**Figure 2-10. Visualization Variables**

Additionally, selected variables can be changed through the right-click context menu. Within a visualization, variables such as Size and Color can be changed.

**Example:**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Color</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Day Change % (USD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Month Change % (USD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Month Change % USD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Month Change % (USD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Week Change % (USD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Week Change % (USD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Day Change % (USD)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHANGING THE SELECTED BREAKDOWN IN A HIERARCHICAL
DATA STRUCTURE

It is quite common for data visualizations to be set up using a hierarchical data structure. You can use Panopticon Designer to aggregate data on the fly within the hierarchy as needed.

To change the breakdown, click the down arrow and pick from the available list.

![List of breakdown options]

Figure 2-11. Selecting a Breakdown in the Panopticon Designer – Design Mode

![Selected breakdown options]

Figure 2-12. Selecting a Breakdown in the Panopticon Designer – Presentation Mode

CHANGING THE HIERARCHY ORDERING

The hierarchy that is selected is not fixed but can be instead changed dynamically. You can change the hierarchy by dragging the columns.

You can also right-click on a column and select Move Right or Move Left on the context menu. For example, you have the following breakdown hierarchy: Industry, Supersector, and Symbol.
Move the leftmost column to the right. Move the middle column either to the left or right. Move the rightmost column to the left.

CHANGING THE VISIBLE DETAIL LEVEL (VISIBLE DEPTH)

The level of detail shown in a visualization is called the **Visible Depth**.

You can change the Visible Depth by dragging the handle that appears on the right hand side of the breakdown in the Panopticon Designer. This is the **Visible Depth** slider. You will see the Visible Depth tooltip display when you hover on it.

In the Web client, the **Visible Depth** handle is not displayed. As a substitute clicking on the breakdown item updates the visible depth to that level.
In the following examples, we have set up a hierarchy for a set of financial information that includes: Region, Country and Company.

**Figure 2-14. Show Entire Hierarchy**
Leave the Visible Depth slider in place all the way to the right.

**Figure 2-15. Aggregate to Countries**
Move the slider to the left until only the Region and Country variables are highlighted. Panopticon Designer will automatically do all the calculations necessary to update the associated visualization.

**Figure 2-16. Aggregate to Regions**
Move the slider to the left until only the Region variable is highlighted. Panopticon Designer will automatically perform the calculations to update your visualization.

**Date/Time Aggregation in Visualizations**

The Panopticon Designer software supports a wide range of Aggregation Methods that are displayed in the Web client. These methods are mathematical computations applied to a set of values. Values may include a group of numbers or numeric field values and variables.

Starting version 17.2, TimeMax aggregation of Date/Time fields is supported in the Web client. The TimeMax aggregate finds the latest Date/Time values across all rows below a node and will be reflected in the following locations:

- Text Box part
- Details variable
- Visualization action view model

For example, in the Panopticon Designer, the workbook is defined as:
In the Web client, the workbook is displayed as:

- The latest Date/Time is automatically displayed in the Text Label part (e., 1/1/2006)
- Clicking on the topmost breakdown item (i.e., Name) displays the latest Date/Time in the Time column as well as the Sum of the Age column
Clicking on a visualization Action item (e.g., Time Navigation) displays the TimeMax value in the Text Label part (e.g., 2006-01-01T00:00:00Z)
Clicking on a visualization in the Panopticon Designer displays n/a value for the Time field.

However, in the Web client, the TimeMax aggregate is displayed in the Details variable.
NOTES

Since this is for the Web client only, any PDF created will use the old aggregation.

**DRILLING INTO HIERARCHICAL DISPLAYS**

You can drill into cross tab columns, cross tab rows, and breakdown columns.

**Steps:**

To drill into a hierarchical data structure, you can either:

- click on the breakdown item to highlight, or
- within the visualization, double-click on the item you wish to drill into.

Right-click and select the level you want to drill down into using the associated visualization.

**Selecting the drill down level:**
In Panopticon Designer

The selected level will appear gray.

In the Web Client

Click the gray item to return to the default view that includes all categories in the data.

SORTING A VISUALIZATION

It is quite common for data visualizations to require sorting to highlight different aspects of the data.

Steps:

1. Right-click on the desired breakdown column, cross tab column, or cross tab row and from the context menu, select Sort.
2. Select the desired sorting method.

Performing the action again sorts the visualization in the alternate direction; for example, ascending becomes descending.

You will be able to sort a visualization on the basis of any of the data columns used in the visualization for Breakdown (Title), Size/Height, Color, Icon or Details.

This example shows different sorting methods for a Horizontal Bar Graph showing market performance by industry.
REMOVE COLUMN

Steps:
Right-click on a breakdown column, cross tab column, or cross tab row and from the context menu, select **Remove Column**.

---

Figure 2-25. In Panopticon Designer

![Panopticon Designer](image1)

---

Figure 2-26. In the Web Client

![Web Client](image2)

---

Figure 2-27. Removing a cross tab column or row in the Web Client

![Web Client](image3)
ADD COLUMN

You can also add columns in a breakdown hierarchy, cross tab column, or cross tab row.

Steps:

1. You can either:
   - right-click on a breakdown column, cross tab column, or cross tab row and from the context menu, select **Add Column**.

   ![Figure 2-28. Adding a breakdown column in Panopticon Designer](image)

   ![Figure 2-29. Adding a breakdown column in the Web Client](image)

Select other columns in the list to add more hierarchical levels in the breakdown.

   - click on any of the following icons and select the column in the context menu

   - to add a cross tab column
You can swap the cross tab columns and rows. This is only available in the Web client.

**Steps:**

Right-click on a cross tab column or row and from the context menu, select **Swap Columns and Rows**.
Interacting with Visualizations

The data visualizations in Panopticon Designer are highly interactive. Users can manipulate the various controls and filters associated with the visualizations in order to find patterns and outliers very quickly. These visualizations are not intended to be static displays but rather are exploratory tools you can use to discover and better understand the useful information buried in your data.

REFRESH PAGE

Click the Refresh icon to update the information in the workbook.

PAUSE REALTIME DISPLAY

Click Pause Real-Time icon to pause refreshing of the information in the workbook.

RUBBER BAND ZOOM AND SELECTION

In the Panopticon Designer, a workbook supports three types of interaction:

- Default Input Mode
- Rubber Band Selection
- Rubber Band Zoom

Default Input Mode allows single items to be selected by mouse clicking upon them. Clicking again removes the selection. Multiple items can be selected by holding down the [Ctrl] key.

Rubber Band Selection allows multiple items to be selected or lassoed by defining an area with the mouse. When selected, the mouse pointer is displayed as cross hairs. Clicking and
dragging the mouse defines the selected area in grey. Once confirmed the selected items are highlighted.

**Rubber Band Zoom** works in a similar manner to Rubber Band Selection. When selected, the mouse pointer is displayed as a magnifying glass. Clicking and dragging the mouse defines the zoomed area in grey. Once confirmed the zoom occurs, and scroll bars are added to the visualization. Additionally, the **Zoom Out** icon at the top right of the visualization is enabled. Clicking here will remove the zoom, returning the visualization to its previous state.

**NOTES**

Rubber Band Zoom interaction is also available in Web client and works similarly to the one in Designer.

**Figure 2-31. Before zooming**
During
Mouse pointer has been dragged to define an area of interest.

Figure 2-32. During selection for zooming

After
Visualization is zoomed into the defined area.
Scroll bars have been added, and the Zoom Out icon has been enabled.

Figure 2-33. After zooming

In the Web client, Rubber Band Zoom is supported for visualizations that have:

- Numeric X and Y axes
- Date/Time X and Y axes

These are Candle Stick, Line Graph, Needle Graph, Network Graph, Numeric Line Graph, Numeric Needle Graph, Numeric Stacked Needle, OHLC Graph, Order Book, Price Brand, Scatter Plot, Spread Graph, Stacked Needle Graph, Timeseries Combination, and Timeseries Scatter Plot visualizations.
When the cross tab consists of two Text axes, Rubber Band Zoom is not available.

To perform a Rubber Band Zoom, you can either:

- Right-click on a visualization and select **Zoom**
- Click on the **Rubber Band Zoom** icon on the topmost right of a visualization

Both options turn the mouse pointer into a **Zoom In** icon.
**During**
Mouse pointer has been dragged to define an area of interest.

![Figure 2-34. During selection for zooming](image)

**After**
Visualization is zoomed into the defined area and the **Zoom Out** icon has been enabled, along with the **Zoom In** icon.

![Figure 2-35. After zooming](image)
To revert to the original state of the visualization you can either:

- click the **Zoom Out** icon at the top right of the visualization
- select **Zoom Out** in the context menu

### ZOOMING IN AND OUT WITH MOUSE WHEEL

You can use the mouse wheel to zoom in and out on visualization in the Panopticon Designer and Web Client.

Examples:

**No Zoom**

![Figure 2-36. No zoom](image)
**Slight Zoom**

One mouse wheel rotation.

Figure 2-37. Slight zoom

**Detailed Zoom**

Many mouse wheel rotations.

Figure 2-38. Detailed zoom

**PANNING AROUND WITHIN THE ZOOMED AREA**

In the Panopticon Designer, you can hold down the **Ctrl** key while dragging your mouse to pan around within the zoomed area.
**Before Zoom**

Mouse pointer has been dragged to define an area of interest.

**During Zoom**

Mouse pointer has been dragged to define an area of interest.

---

**Figure 2-39. During selection for zooming**

**Figure 2-40. During selection for zooming**
**Panning**

Hold down the **Ctrl** key and drag the mouse to pan around the zoomed area. The mouse pointer turns into a "hand".

**Figure 2-41. Panning**

---

**DETAILS POP-UP**

Hover over an item to display the Details associated with the item. The dashboard publisher can change the information that appears in the Details Pop-up display.

For tablets which are touch enabled, touch the item to display the details pop-up.

**Figure 2-42. Details pop-up in the Panopticon Designer**
PINNING DETAILS POP-UP

In the Web client, you can keep a Detail pop-up displayed in visualizations.

Right-click on a visualization item and select **Pin Details** in the context menu.
The Details pop-up is displayed and pinned.

Repeat until you pin all of the Details pop-up that you want to display.
The *Pin Details* option in the context menu is disabled once the details of a visualization item or data point is pinned.

To unpin, you can either click \( \times \) or right-click on the item and select **Unpin** on the context menu.
Select **Unpin All** in the context menu to remove all of the pinned Details pop-up.
CONTEXT MENU

Panopticon Designer provides a right-click Context Menu in each visualization.

On computers supporting a right mouse button, hold your cursor over the visualization and right-click and you will see the following options:

- New Action
- Edit Actions
- Set snapshot here
- Filter Include
- Filter Exclude
- Filter Clear
- Drill Down
- Drill Up
- Drill to Top
- Copy Image
- Copy Data
- Copy Raw Data
- Morph into...
- Show Shelves
For Table visualizations, additional options are available:

- Adjust Column Width
- Adjust All Column Widths
- Hide
- Unhide

For tablets which are touch enabled, touching and holding will display the context menu.

**NOTES**

The context menu in the web browser will not display the following options:

- New Action
- Edit Action
- Copy Image
- Morph Into
- Adjust Column Width
- Adjust All Column Widths
- Hide
- Unhide

<table>
<thead>
<tr>
<th>Set Region, Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reuters Stock Quote</td>
</tr>
</tbody>
</table>

- Filter Include
- Filter Exclude
- Filter Clear

- Drill Down
- Drill Up
- Drill to Top

- Copy Data
- Export Raw Data

- Zoom
- Zoom out

- Show Shelves

- Pin Details
- Unpin
- Unpin All
ALIGN OR DISTRIBUTE VISUALIZATIONS

Visualizations in a dashboard can be automatically aligned (by row or column) or distributed (horizontally or vertically).

Steps:

1. Right-click on an empty space in the dashboard to bring up this context menu:

   - Align in Row
   - Align in Column
   - Distribute Horizontally
   - Distribute Vertically

2. To enable these options, select two or more visualizations. Click one and then use the Ctrl key to select multiple visualizations.
   Then right-click on an empty space in the dashboard.

3. Select any of the following options:
   - Align in Row
• Align in Column

• Distribute Horizontally
  Adjusts the size of visualizations to be distributed horizontally in the dashboard. You can then opt to Align in Row or Column.
- Distribute Vertically
  Adjusts the size of visualizations to be distributed vertically in the dashboard. You can then opt to Align in Row or Column.
ADDITIONAL VISUAL TABLE INTERACTIVITY

The Table visualization additionally supports:

- Expansion/Collapse of sections of the hierarchy by clicking on the ▼ to expand, and ▲ to collapse.

Additionally, the right click context menu includes options for **Expand All** and **Collapse All**
However, when the **Virtual Mode** option is selected in the **Table Settings** in Panopticon Designer, the table will be in a flat mode and the expand and collapse options will no longer be available.

Expanding and collapsing can also be done by selecting specific items to display. Right-click on the item and then select **Show <Item>** on the context menu.
Sorting by clicking a text axis column heading (every level of hierarchy)

The text axis column headers are displayed when Show Column Labels is enabled in the Table Settings dialog.

This sorting is available on the Web client.
Initially, click to sort in ascending order. Then click again to sort in descending order.
- Sorting by clicking on the table column heading to sort

![Flat Table of Company Performance](image)

- Adjusting column widths or hiding and displaying back the hidden columns through the right click context menu.

  Adjust Column Width
  Adjust All Column Widths
  Hide
  Unhide

  1 Day Change % (USD)
  1 Month Change % (USD)

Adjusting column widths can also be done by hovering on a column border and dragging the Left-Right arrow to the desired width.
❑ Scrolling within the table can be through dragging the scroll bar or moving the mouse wheel. In addition, only the data cells are scrolled, the hierarchical text axis and column headings are always displayed (subject to screen real estate).

❑ Adjusting the width of the Text axis leaf can also be done by dragging the **Left-Right** arrow that displays when hovering on the leaf border.

Adjust to the desired width.

❑ Click on a table column heading and drag either to the left or to the left to re-arrange the order

From:

![Flat Table of Company Performance](image)

To:

![Flat Table of Company Performance](image)
Hiding Dashboard Tabs and Toolbar Icons Using Input Parameter

In the Web Client, you can hide the dashboard tabs and toolbar icons in single dashboard workbooks by adding a parameter in the URL.

For example, in the How to Actions workbook, there are five dashboards:

Selecting the second dashboard, Scatter of Filtered Universe will display the standard workbook app URL:

http://localhost:8080/panopticon/workbook/#/How%20To%20Actions/Scatter%20of%20Filtered%20Universe

The dashboard tabs and toolbar icons (Refresh, Pause Real-Time, Create PDF Report, and Bookmarks Panel) are displayed.
The same dashboard can be explicitly displayed by adding index.html in the URL:
http://localhost:8080/panopticon/workbook/index.html#/How%20To%20Actions/Scatter%20of%20Filtered%20Universe

To display a single dashboard (e.g., Scatter of Filtered Universe), explicitly add single.html in the URL:
http://localhost:8080/panopticon/workbook/single.html#/How%20To%20Actions/Scatter%20of%20Filtered%20Universe

The dashboard tabs and toolbar icons are no longer displayed as well.
Consequently, single dashboard workbooks can be embedded into larger web-based portals.

Parameter Setting

Certain visualizations on a dashboard can be pre-filtered or parameterized to display a detailed subset of all the available information, based on pre-defined parameters.

These parameters can be set through the context menu by right-clicking on the required visualization item and clicking the item with the blue lightning bolt.

In the example below, the selected Bar in the Bar Graph represents Financials in Asia Pacific.
By clicking on **Set Region, Industry** in the context menu, the two dashboard parameters are set as follows:

**Industry** = Financials, **Region** = Asia Pacific

Consequently, visualizations that use these parameters will be updated to show the appropriate detailed content.
Actions (Context Jump Points)

Actions can be added to each dashboard, as defined by the dashboard publisher.

The available Actions are listed at the top of the context menu, with a yellow lightning bolt ⚡. Actions include:

- Update visualizations on the same dashboard to show more detailed/relevant data
- Jump to contextual dashboards
- Jump contextually to external web pages
- Run JavaScript functions

The first action can also be executed by double-clicking on an item at the bottom of a hierarchy. (Double-clicking elsewhere will cause a drill into a particular branch of the hierarchy.)

In the example below, the Actions listed include:

- Stock Quote from Yahoo.
  Opens the Web browser at the Yahoo Finance Stock Quote for the selected company.
- News on Company
  Opens the web browser at the Google News page for the selected company.
- Company Performance
  Jumps to the Company Performance tab, pre-filtered on the selected company.
- Company Ownership
  Jumps to the Company Ownership tab, pre-filtered on the selected company.
The actions available in each workbook are defined by those who designed and published the workbook.

In this case a dialog is displayed which allows you to enter data. Additionally, it lists any parameter values defined from the selected data points.

SELECTING RELATIVE DATES IN ACTION DATE PICKER AND ACTION DATE RANGE PICKER CONTROLS

Both the Action Date Picker and Action Date Range Picker controls have pre-populated quick ranges that allow you to readily select a date range.

For example, for an Action Date Picker, if the current date is November 28, 2018, clicking \( \text{This Year} \) will display:

```
28/11/2018 20:52:03
```

- Last 24 Hours
- Last 7 Days
- Last 1 Month
- Last 3 Months
- Last 6 Months
- Last 1 Year

...and the equivalent for Today, Prior Day, Prior Business Day, Prior Week, Prior Month, Prior Quarter, This Week, This Month, This Quarter, This Year.

Clicking **This Year** will recalculate the current date to the start of the current year (January 1, 2018):

```
01/01/2018 00:00:00
```

For the Action Date Range Picker, clicking \( \text{This Year} \) will display:
The recalculated date range will include the start and end dates based on the selected quick range.

For example, clicking **This Year** will recalculate the current date range from the start of the current year (January 1, 2018) to the end of the current year (December 21, 2018):

```
```

Select any of the following quick ranges:

<table>
<thead>
<tr>
<th>Date Ranges</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last 24 Hours</td>
<td>Back 1 day from today</td>
</tr>
<tr>
<td>Last 7 Days</td>
<td>Back 7 days from today</td>
</tr>
<tr>
<td>Last 1 Month</td>
<td>Back 1 month from today</td>
</tr>
<tr>
<td>Last 3 Months</td>
<td>Back 3 months from today</td>
</tr>
<tr>
<td>Last 6 Months</td>
<td>Back 6 months from today</td>
</tr>
<tr>
<td>Last 1 Year</td>
<td>Back 1 year from today</td>
</tr>
<tr>
<td>Today</td>
<td>Start of current day</td>
</tr>
<tr>
<td>From Yesterday</td>
<td>Start of 1 day from today</td>
</tr>
<tr>
<td>This Week</td>
<td>Start of the week from today</td>
</tr>
<tr>
<td>This Month</td>
<td>Start of the month from today</td>
</tr>
<tr>
<td>This Quarter</td>
<td>Start of the quarter from today</td>
</tr>
<tr>
<td>This Year</td>
<td>Start of the year from today</td>
</tr>
<tr>
<td>Prior Day</td>
<td>Start of 1 day from today</td>
</tr>
<tr>
<td>Prior Business Day</td>
<td>Back 1 business day from today (ignore Saturday and Sunday)</td>
</tr>
<tr>
<td>Prior Week</td>
<td>Start of the prior week from today</td>
</tr>
<tr>
<td>Prior Month</td>
<td>Start of the prior month from today</td>
</tr>
<tr>
<td>Prior Quarter</td>
<td>Start of the prior quarter from today</td>
</tr>
<tr>
<td>Prior Year</td>
<td>Start of the prior year from today</td>
</tr>
</tbody>
</table>
Screen Data with Filters

Filters let you screen the amount of data displayed in the visualizations within your workbook. You can focus on the data that is most interesting to you and filter out data that may be hiding the patterns, trends or outliers that you are trying to find.

All filters act immediately on their parent data sets and linked visualizations. As you change the settings on a filter, you instantly see the results in the associated visualization.

Filters can be applied locally to a dashboard or be globally applied across all dashboards in a workbook. If globally applied, they are represented either to the left or the right of each dashboard.

If locally applied, the filters are arranged within the dashboard.

**VISUALIZATION FILTERS (DASHBOARD SPECIFIC)**

Visualizations themselves can be filters. Right-clicking on a selection of items within the visualization will display the context menu, and support:

- Filter Include – Filter the dashboard to only include this selection
- Filter Exclude – Filter the dashboard to exclude this selection
- Filter Clear – Removes any visual filters
When a visualization filter has been applied, a filter icon is displayed on the top right of each visualization and the dashboard.
Clicking on the ▼ icon, will remove all visual filters.

FILTERS WITHIN A FILTER BOX

Filter controls are contained in one or more filter box.
When a filter is applied, a filter icon appears to the left of the filter title.

- Style
  - ▼ 2 of 3 values
  - Exchange
    - ▼ 2 of 2 values
- Mcap(USD)
  - 17.00%

The layout of the filter box can be modified by right-clicking on the filter box to display its context menu:

Show Active
Collapse All
Expand All
Reset All
CATEGORICAL FILTERS (TEXT FILTERS)

Categorical Filters are based on text stored in columns in your database. Categorical Filters are sometimes referred to as Text Filters.

There are six types of Categorical Filter:

- Free Text
- Single Selection List
- Single Selection Drop Down
- Multiple Selection List
- Multiple Selection Drop Down
- Include/Exclude List

By default, the filter will perform a partial match on all items starting with the entered text.

Find partial matches using the wild card asterisk ‘*’.

For example:

Entering T* will return all symbols starting with the letter “T”.
Entering *T will return all symbols ending with the letter “T”.

Entering *T* will return all symbols that include the letter “T”.

Single Selection lists allow all items to be displayed, or to apply a filter on a specific single selection. The possible values are displayed alphabetically sorted under the filter title.
Single Selection drop down filters show their status just below the filter title.

Click the down arrow and text to display all available choices for the filter.

You will see a set of radio buttons. As you select an item, Panopticon Designer will update the associated visualizations to reflect your choices.

Only a single item or all items may be selected. When collapsed, it shows the summary text or the single selected item. For the example below, the region selected is Europe.

**NOTES**

In the Web Client, the summary text is based on the generated predicate and not on the data selected in Panopticon Designer. Therefore, if the selected item is deleted in the data source, the summary text will still have a value in the Web Client.

Multiple selection lists, also display the list of possible values under the filter title. In this case, one or many values can be filtered. Removing the check box selection from the Select All option, will remove all the selections from every item.

Multiple selection drop-down filters show their status just below the filter title. In the example to the right, we can see that there are three possible categories to choose from.
Click the down arrow and the total number of columns (e.g., 3 of 3 values) to display all available choices for the filter. You will see a set of checkboxes. You can select or deselect any of the values available in the filter. Panopticon Designer will update the associated visualization to reflect your choices.

When the filter is applied, the down arrow is updated to show the filter status, and the number of selected items is displayed.

The Include/Exclude List filter mode is only available on the Web client. This filter allows to include or exclude a set of values from a given column. It consists of a Free Text filter used for finding values to include or exclude and a list of values that are currently used in the filter.

**NOTES**

- The search bar is the same as the Free Text filter such that only 10 items that match the current search setting are loaded.
- There is no Select All option. When there is no value, this means no filtering will be done in both the Include or Exclude mode.

In the Panopticon Designer:

**Country**

Only available in the web client

In the Web client:

**Country**

[Include] [Exclude]
PERCENTILE RANGE FILTERS

Percentile Range Filters let you filter based on the data distribution, whether quartiles, quintiles, deciles or percentiles.

Select the range for the Percentile Range Filter by grabbing the handles at either end of the filter and moving them to the desired setting. The legend for the filter will display the values for the high and low points you have selected.

You can also directly enter the percentage values you want to use in the filter. Click on the legend and enter specific values with accuracy of up to two decimal points.

You can cross the handles so that the extremes (distribution tails) at each end of the range are included in the dashboard. This filters out data in the middle of your data set (the range between the crossed handles) and lets you focus on the outliers.
NUMERIC RANGE FILTERS

Numeric Range Filters use the absolute values contained in your database. They show the distribution curve for your data along with the range from the lowest to the highest value in your data set.

You can drag the handles at either end of the filter to isolate the region of interest. The legend shows the selected filter values in gray.

You can cross the handles so that the data at each end of the range is included. This filters out data in the middle of your data set and lets you focus on the outliers.

DATE RANGE FILTERS

Date Range Filters use the absolute values contained in your database. They show the distribution curve for your data along with the range from the lowest to the highest value in your data set.

They operate in a similar manner to Numeric Range Filters.

TIME WINDOW FILTERS

When using a data set enabled for time series analysis, Time Window Filters allow you to both define a time window and select the displayed time slice (Snapshot time).

As with numeric range filters the handles can be dragged to specify a time window, which will automatically filter the display of any time series visualization and update any time window-based calculations.
The selected time slice shown on non-time series visualizations is displayed through the snapshot marker which itself can be dragged.

The snapshot time can also be updated by right-clicking on the time series visualization and selecting **Set Snapshot here** from the context menu.

**NOTES**

The **Set Snapshot Here** option is only available in the visualization context menu in the Web Client when the **Snapshot Grid Line** is rendered or set to Dotted, Dashed, or Solid in the Panopticon Designer.

A **Play/Pause** button can be displayed to automatically animate through the time series, and if required the time window handles can be removed from the filter.

Workbooks can be designed with time window filters so that filtering on time either:

- Simply limits the time window displayed on screen
- Dynamically executes a further data query to retrieve more granular data. For example: Go from minute by minute data to second by second data.

In the case of dynamically executing queries based on the time window filter, data can be retrieved based on:

- Selected start of the time window
- Selected end of the time window
- Selected Snapshot time
Drilling Into Visualizations

Visualizations themselves can be used to drill into lower or upper details by selecting items, and right clicking to display the context menu with three options:

- **Drill Down**
- **Drill Up**
- **Drill to Top**

- Drill Down – Drills down to the lower level of the selected value
- Drill Up – Enabled when the lower level of the selected item is displayed. Click to drill to the upper level
- Drill to Top – Drills to the top level of the selected value

Data Export

Both the Image and the data can be exported from a visualization and copied to the clipboard for future use in another application. Additionally, the whole dashboard image can also be exported to the clipboard.

Visualization level data is exported by right clicking on the visualization and selecting any of the following export options in the Panopticon Designer:

- Copy Image
- Copy Data
- Copy Raw Data

In the Web client, the following data export options are:

- Copy Data
- Export Raw Data

The data exported will be what appears on screen, or in a linked table. Specifically, all the columns that appear in the Detail pop-up, including:

- Only those items that are visible (for example, items that have not been filtered)
- Same Visible detail (or depth) level displayed in the visualization.
Data for a single item can be exported by selecting the item.

In the Web Client, right-clicking and selecting **Copy Data** copies the data to a clipboard.

You can then copy the data to other applications such as MS Excel or Notepad.

Also, right-clicking and selecting **Export Raw Data** exports all data from the source table and not just the actively displayed nodes within a visualization to a .CSV file.
MORPHING VISUALIZATIONS

In Panopticon Designer, you can change visualization into any other visualization by simply right clicking and selecting **Morph into**, and then selecting the required resultant visualization from the available listing.

When used in combination with the Copy and Paste functionality, dashboards can be quickly created.

When morphing between visualizations with the same variables, there is no further configuration required. For example, from a Horizontal Bar Graph to a Vertical Bar Graph.

However, when morphing between visualizations with different variables, the new visualization will need to be configured to include columns for empty variables. For example, when converting from a Pie Chart to a Scatter Plot, the X and Y axis must be defined.

Snapshot Time

A time series visualization consists of a series of time slices, within a defined time window. The snapshot time identifies a particular slice which can be highlighted further in separate visualizations.

The snapshot is highlighted on the time series visualization through the aid of a vertical grid line.

The snapshot can be selected to focus on particular spikes or abnormalities in the data through either:

- Moving the snapshot on the time filter
- Right-clicking on the graph, and selecting **Set snapshot here**
The snapshot will be set for the selected time. For example: **6/27/2008**

Setting the snapshot can also be displayed on the associated Time Filter Box of a Timeseries visualization. For example, for **2/4/2008**:
You can also drag the snapshot line anywhere in the visualization. Hover your mouse on the snapshot line and move it either to the left or to the right.

**NOTES**

The **Set Snapshot Here** option is only available in the visualization context menu in the Web Client when the **Snapshot Grid Line** is rendered or set to Dotted, Dashed, or Solid in the Panopticon Designer.

**Ad Hoc PDF Report Generation**

PDF reports of a workbook can be produced on an on-demand basis by clicking on the PDF icon to the right of the dashboard tabs.

Clicking this icon displays the **PDF Settings** dialog where you can specify the dashboards that will be included in the generated PDF:

- All
- Current
- Selected
Figure 2-48. PDF Settings in Panopticon Designer

PDF Settings
Select the dashboards to be included in the generated PDF.

- Included Dashboards: All Dashboards
- Create multiple pages to show all data items
- Hide scroll bars

OK  Cancel

Figure 2-49. PDF Settings in the Web Client

For **Selected**, check the box of the dashboards that will be included.
For visualizations that include scroll bars (commonly visual tables, and horizon graphs), specify whether to either:

- Output all of the data items, producing multiple pages in the resulting PDF report
- Hide scrollbars

**NOTES**

Ad hoc PDF generation in the Web Client using Google Chrome (or other browsers) may be hindered by the AdBlock Extension.

To remove the AdBlock Extension in Google Chrome, perform these steps:

1. Click the **Chrome Menu** icon on the browser toolbar.
2. Highlight **Tools**, then click **Extensions** from the sub-menu.
3. Click **Remove** in the AdBlock Plus entry (e.g., uBlockOrigin).
4. Click **Remove** in the confirmation message that displays.

---

**Legends**

**ICON LEGEND**

The Icon Legend lists all those icons displayed within the associated visualization.

- Upgrade
- Downgrade
- Hold

**REFERENCE LINE LEGEND**

The Reference Line Legend lists all the reference lines used in the associated Time Series Visualization. It can be used to hide and show selected reference lines.
COLOR LEGEND - CATEGORICAL STYLE

The Categorical Style Color Legend lists all the text categories and associated colors used in the associated visualization for the selected categorical color variable.

Industry
- Financials
- Consumer Goods
- Health Care
- Industrials
- Oil & Gas
- Technology
- Consumer Services
- Basic Materials
- Utilities
- Telecommunications

COLOR LEGEND - NUMERIC STYLE

The Numeric Style Color Legend displays the color range used within the associated visualization for the selected numeric color variable.

1 Day Change % (USD)

-4.94% 0.00% 4.94%

Right-clicking on the Numeric Color Legend displays the list of available Color Palettes. You can select the Color Palette you like best for the associated visualization.
Clicking and changing the listed values in the Numeric Color Legend dynamically changes the color range.

Dragging the slider below the color gradient also dynamically changes the color range. This lets you focus on central ranges and outliers more easily.

**COLOR LEGEND – DISTINCT OUTLIER**

For Numeric color palettes, you can set Distinct Outliers. For example:

- Sequential color palettes:

<table>
<thead>
<tr>
<th>Title</th>
<th>Without Distinct Outlier Colors</th>
<th>With Distinct Outlier Colors</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Red</td>
<td><img src="image" alt="White Red Without" /></td>
<td><img src="image" alt="White Red With" /></td>
</tr>
<tr>
<td>White Green</td>
<td><img src="image" alt="White Green Without" /></td>
<td><img src="image" alt="White Green With" /></td>
</tr>
<tr>
<td>White Blue</td>
<td><img src="image" alt="White Blue Without" /></td>
<td><img src="image" alt="White Blue With" /></td>
</tr>
<tr>
<td>White Orange</td>
<td><img src="image" alt="White Orange Without" /></td>
<td><img src="image" alt="White Orange With" /></td>
</tr>
<tr>
<td>Gray</td>
<td><img src="image" alt="Gray Without" /></td>
<td><img src="image" alt="Gray With" /></td>
</tr>
</tbody>
</table>

- Diverging color palettes
Right-click on the **Numeric Color Legend** and select **Distinct Outliers**. The distinct outliers are applied to the visualization associated to the Numeric Color Legend.
To disable, uncheck **Distinct Outliers**.

**COLOR LEGEND – COLOR STEPS**

For stepped color gradient, you can also set the number of color steps. Right-click on a Numeric Color Legend and select a value.
[3] Cross Tabbing

Cross tabbing produces a matrix of smaller linked visualizations, which each show a subset of the parent data set, displaying the joint distribution of two or more variables that do not exist within a hierarchy.

Cross tabbing is also known as trellising, latticing, and small multiples, although the purpose is the same in each case. Panopticon Designer displays cross tabbed visualizations in order to allow trends and outliers to be more easily seen, by enforcing comparison of changes, similarities and differences among displays.

The following Panopticon visualizations can be cross tabbed:

- Bar Graph
- Bullet Graph
- Candlestick
- Categorical Line Graph
- Circle Pack
- Donut Chart
- Donut Gauge
- Dot Plot
- Funnel Chart
- Grouped Needle Graph
- Heat Matrix
- Horizon Graph
- Line Graph
- Needle Graph
- Numeric Needle Graph - Horizontal
- Numeric Line Graph
- Numeric Line Graph – Vertical
- Numeric Stacked Needles
- OHLC Graph
- Order Book
- Pareto Chart
- Pie Chart
- Price Band
- Scatter Plot
- Spread Graph
- Stacked Needle Graph
- Stack Graph
- Ticker Tile
- Treemap
- Timeseries Combination
- Timeseries Scatter Plot
- Waterfall Chart

Cross tabbing is controlled through the Breakdown on the Shelf above the visualization.

As an example, the Bar Graph on the right shows a portfolio split into Industries and regions.
The Bar Graph can be stacked so that the three regions are stacked onto each industry bar.

However, the stacking has made it difficult to compare the differences in regions between various industries.

Cross tabbing by region separates the display into three Bar Graphs, one for each region.

It is now possible to both compare the weightings between particular regions and across particular industries.

Cross tabbing can enhance the understanding of data sets by displaying the similarities and differences between subsets of the data.

As a further example, the Scatter Plot on the right displays the performance distribution of a large instrument universe.

- Color: 1 day Change %
- X: 1 Week Change %
- Y: 1 Month Change %
Cross tabbing the scatter plot by region, allows the identification that the positive 1 day performance is primarily present in Europe.

And that the majority of the positive 1 day performance is where the 1 week performance is also positive.

Cross tabbing again by industry shows that the European performance profile is driven by specific Industries:

- Consumer Goods
- Health Care
- Telecommunications
Investigation through Filtering, Drilling, and Zooming

On a complex cross tab with a large number of smaller visualizations, it can be difficult to see the detail of each child visualization.

Three approaches can be used to focus attention on particular areas:

- Filtering
- Zooming
- Drilling

![Figure 3-4. Scatter Plot Cross Tabbed by Region & Industry](image)

Zooming into the Scatter Plot by rotating the mouse wheel allows the small multiple under the mouse pointer to be expanded.

Hold down the Ctrl key while dragging your mouse to pan around within the zoomed area, to focus on other of the small multiple scatter plots.
Drill into the cross tab by either:

- Double-clicking on a Scatter Point
- Right-clicking on the cross tab control to display the context menu and selecting Drill.
Figure 3-6. Drilled into the Cross Tabbed Scatter Plot
[4] Bookmarking

Bookmarks are saved configurations of the active dashboard and workbook. A bookmark can be added, by authenticating, and clicking on the **Bookmarks Panel** icon. This is enabled when the Workbook is in Presentation Mode in Panopticon Designer.

In the Web client, the Bookmarks panel is displayed on the right side of the Dashboard tabs.

Bookmarks are not available with anonymous access workbooks.

Bookmarks do not save data, but do save:
- Selected Dashboard
- Selected Parameters
- Selected Filters
- Selected Breakdowns, Hierarchies, Visible Depth, and Drill Level
- Selected Variables (Size, Color, X, Y, etc.).

Consequently, although the underlying data may change, a specific view of that data can be specified and bookmarked for future usage.

Bookmarks can be added and are available to all authenticated users of the workbook.

Bookmarks also generate a unique URL, which can be sent to another individual with access, allowing them to see exactly the same view of the selected dashboard.

In the Panopticon Designer:
In the Web client:

New bookmarks can be added by clicking the **New** button.

Entering the **Bookmark Title** and clicking the **Add** button.

Multiple bookmarks are displayed in the listing as follows:

To rename a bookmark, click **Edit**.
Enter the new bookmark title and click **Rename**.

Update a bookmark by clicking **Update**.

To delete, click **Edit** and then the **Delete** icon of a bookmark. A message displays.

Click **OK**.