Enterprise Architect

User Guide Series

Standard Charts

How to chart model data? In Sparx Systems Enterprise Architect, generate data such as status, priority and phase as standard or custom charts, such as Bar Charts, Pie Charts or Line Graphs on Dashboard diagrams to include in reports and presentations.

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Standard Charts

Enterprise Architect repositories typically contain a wealth of data that is crucial to business planning, organizational strategy, decision making and Project Management. One way of summarizing this data in a format suitable for swift and easy appraisal is to present it in the form of Dashboards/Charts and graphs, which are ideal for including in reports and distributing via the Internet.

Expressive and elegant Charts and graphs can be created within Enterprise Architect, and provide a convenient mechanism for presenting information such as requirements status, element priority and authorship, version and phase information, test case status and more. Charts are elements that can be placed onto any diagram, but they are commonly created on Dashboard diagrams, which are one of the extended diagram types. There are pre-set Charts that can simply be dragged onto a diagram, and user defined Charts where you can define the Chart type, the content and the Chart appearance.

This expressive and flexible feature provides an invaluable tool for the Project Manager and, apart from day-to-day tracking, provides useful information for inclusion into executive presentations.

Types of Chart Available

Using Enterprise Architect, you can create a number of different Charts including:

- Pie - 2-dimensional and 3-dimensional
- Doughnut - 2D and 3D
- Torus
- Line Graph (Time Series)
- Table (Model Views)
- Horizontal bar - 2D and 3D
- Vertical column - 2D and 3D
- Heat Maps

You can also generate some of these Charts filtered according to another data quantity, presenting this as table columns, segments of a bar or separate bars in a cluster.

Creating a Chart

You create a Chart element by dragging a 'Chart' icon onto a diagram from the 'Dashboard' pages ('Pie Charts', 'Bar Charts', 'Series Charts' and 'Model Views') of the Diagram Toolbox. Standard Chart icons are also available from the 'Dashboard' page itself, and from the common 'Charts' page of the Toolbox. You then define the type of Chart, the data it presents, the source of that data and the appearance of the Chart, within the element properties.

Depending on the type of Chart you are creating, the data can be sourced from across the whole model, from specific Packages within the model, or from a custom SQL Query that extracts the information from the model. You can also paste the data from an external CSV file into the element, to

be presented as a Chart.

Each Chart is dynamic, and is automatically updated whenever you edit it or open its parent diagram. You can also manually refresh it using an option on the element context menu. Time Series Charts can also be automatically updated by the Cloud Server according to a schedule that you define in the element properties.

Key Features

A major benefit of generating a Chart as and from a model element is that many of the facilities for working with elements - and the Packages and diagrams that contain them - are available on the Chart, such as:

- Including Charts and graphs in document reports
- Hosting Charts on a website to facilitate communication
- Automatically updating and processing the element content (and hence refreshing the Chart)
- Performing XMI imports and exports on Chart Packages
- Saving a Chart as a diagram image
- Setting the Chart diagram as the model or user default diagram
- Defining a Chart as a model Pattern
- Changing the element properties and getting an immediate change to the content and/or appearance of the Chart; useful in, for example, testing a search and visualizing the results

You can have a number of Chart elements on a single diagram, and apply one of several Dashboard Styles to lay out the diagram neatly to best display the types of chart you have created.

Automation Interface

You can also set up and manage Charts using the Enterprise Architect Automation Interface (Object model). See the *Dynamic Charts* Help topic.

Chart Elements

The starting point for defining your own data charts is to drag one of the Chart element icons from the Diagram Toolbox onto your diagram. The Chart icons are divided into two groups:

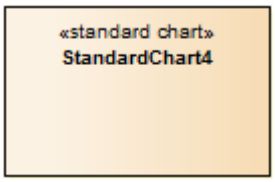
- Patterned Pie Charts, Bar Charts, Series Charts and Model Views, which create Charts ready-defined for specific purposes and just require small adjustments to tailor them for your project data
- Basic templates for Standard Charts (Pie Charts, Bar Charts and Heat Maps), Time Series graphs and Model View tables, which create Charts that you develop to meet your own requirements

Both groups of icons are available from the 'Dashboard' pages of the Diagram Toolbox. Basic template icons are also available from the common 'Charts' page of the Diagram Toolbox.

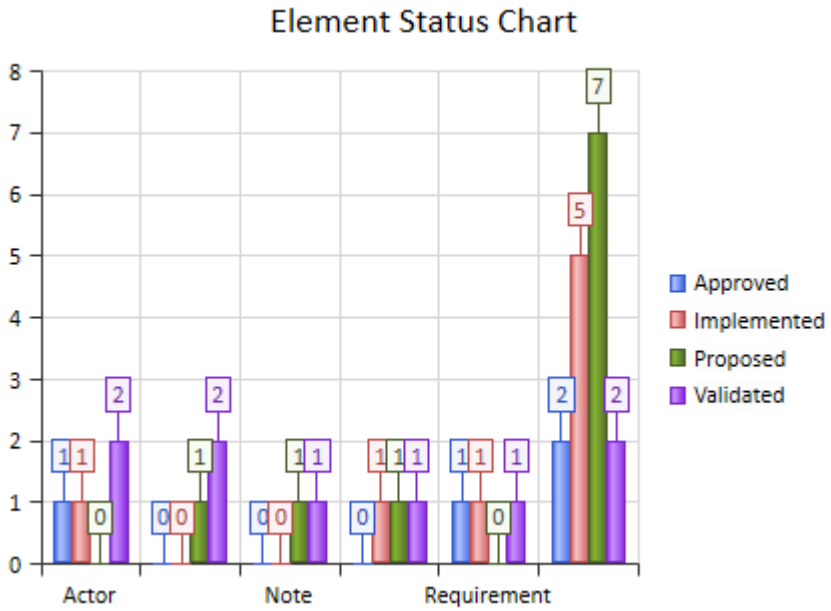
Additionally, you can obtain basic Pie or Bar Chart displays on a diagram by selecting the 'Publishing > Dashboards & Charts' Perspective and the 'EA Dashboard Pattern Group' in the Model Wizard.

Initial Appearance

The Chart element initially displays as a 'normal' element, as shown:



However, depending on which type of Chart icon you select, the element either immediately transforms to the Chart and its 'Properties' dialog automatically displays, or you select to display the 'Properties' dialog and, once you identify the Chart type and contents, the element becomes the Chart you have defined; for example:



This Chart image is dynamically generated - it shows the selected properties of the model elements at the moment that:

- The definition is saved, or
- The element's parent diagram is opened, or
- You right-click on the element in the open diagram and select the 'Refresh Chart' or 'Refresh List' menu option, or
- For TimeSeries Charts, either when the Cloud server is triggered by the update timetable you have defined in the

Chart properties, or when you click on the Manual Record button in the 'Properties' dialog

You can add a Chart element to any existing diagram, and any number of these elements to one diagram. To make the Charts clear, easy to locate and simple to report on, you might store your Charts:

- On dedicated Dashboard diagrams, the diagram having the same name as a Chart it contains
- Where Charts are not related or for comparison, with just one Chart element per diagram (the Chart depictions are, however, very clear within quite small Chart elements)
- Within a child Package of the Packages that they report on

Define Chart

You define the Chart represented by an element using the element's 'Properties' dialog. On the 'General' page of the dialog, notice that the element has a stereotype: EAUML::Chart, TimeSeriesChart or ModelView.

You define a Time Series Chart and a Model View Chart each in a specific way. You define a Standard (Pie, Bar or Heat Map) Chart in three stages:

1. Double-click on the element to open the 'Properties' dialog, and (if the Chart does not already have a specific name) on the 'General' page type in the function of the Chart as its name; for example, Element Status Chart.
2. Select the 'Chart Details | Source' page and define the type of Chart, the type of data you want the Chart to show, and

the source of that data.

3. Select the 'Chart Details | Appearance' page and define exactly how you want the Chart to display on the screen and in reports.

Standard Chart Data

When you have created a Standard Chart element (for a Pie Chart, Bar Chart or Heat Map), the next step is to define:

- What type of Chart to create
- What data the Chart will collate and present
- What the source of the data is

You define these aspects on the Chart element's 'Properties' dialog.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

On the Chart element's 'Properties' dialog, display the 'Source' tab.

Ribbon	Design > Element > Properties > General > Properties Dialog > Source
Context Menu	Right-click on element | Properties | Source
Keyboard Shortcuts	Alt+Enter | Source
Other	Double-click on element | Source

Define Chart Data

Task	Action
Define Chart Type	In the 'Type' field, click on the drop-down arrow and click on the basic type of Chart to create (Pie, 2D Bar, 3D Bar or Heat Map). After you have specified the data type and source, you can further refine the Chart type using the 'Appearance' page of the dialog.
Define Data Types	The fields for defining the Chart data depend on which Chart type you have specified. Some fields are not shown, whilst others might be disabled. For Pie and Bar Charts, click on the button next to the 'Series' field and, from the menu and sub-menus, select the primary object type and property to show in the Chart. For example: Element.Status For a Bar Chart, whether 2D or 3D, or a Heat Map you can optionally select a secondary object type and property by

	which to impose a grouping of the data on the Chart. In the 'Group By' field, click on the ... button and select this object type and property. For example: Element.ObjectType This combination produces a Chart that shows the numbers of elements having each status, grouped by element type. For a Heat Map you have two other fields available: • Size By - Click on the ... button and select the data type and property to generate cells identifying each combination of that data type and the property values, of a size determined by the number of instances of each combination; for example, if you select Element.Author each cell will represent an Author name and the size of each cell will indicate the number of elements in the data set with that author name • Color By - (Optional) click on the ... button and select the data type and property used to apply color to a cell - if you want to color by the same combination as is used to size a cell, leave this field blank; the color is retrieved by matching this combination

	to a color defined in a Color Set on the 'Appearance' page for the Heat Map **Note** • SQL Searches and CSV strings define the data selection, so if you select either of these as the data source the data fields are disabled
Define Data Source	The data you present in your Chart is likely to come from within your model, although you can also copy a simple Comma Separated Value (CSV) spreadsheet from an external file into the dialog, for display. You have several options for locating the data within your model. You can search: • Within one or more specific Packages • Across the whole model • As defined by a tailored SQL Query You can also filter the data you are collecting, to highlight specific features of the model. Again, as the CSV and SQL definitions specify the data characteristics themselves, the filtering option is not enabled for them. An advantage of defining the search or CSV table within the element is that the search or data is available with the Chart

	element where all users can access it, rather than being restricted to the workstation of the person who created the data Chart. Fully specifying and committing one type of data source will clear the definition of any previously-used data source.

From a Package

Your model contains a great deal of information on both project design and project management, and a major benefit of the Chart feature is providing the facility to capture, summarize and present that information from:

- A specific Package in the model
- A number of specific Packages in the Model
- Across the whole model, and
- From external models, both local and via network and Cloud connections

You can also select to include information from just a Package itself, or from the Package and all its child Packages.

If you want to further refine the data to omit certain quantities or highlight others, you can apply element filters to the data from the selected Packages.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

On the Chart element's 'Properties' dialog, click on the 'Source' tab, then on the 'Package' child tab.

Ribbon	Design > Element > Properties > General > Properties Dialog > Source > Package

Context Menu	Right-click on element | Properties | Source| Package
Keyboard Shortcuts	Alt+Enter | Source | Package
Other	Double-click on element | Source| Package

Specify Source Packages

Field/Button	Action
Model	Defaults to the current model as the source of the data for this Chart. If the data is held in a different model, click on the button and select the appropriate menu option to: • Open a .eap, .qea or .feap model in a local directory, through a file browser • Open a model on a DBMS through the Enterprise Architect Native Connection, via the 'Open Server Connection' dialog • Open a model on a DBMS through the 'ODBC Connection Wizard'; the

	Windows 'Data Link Connection' dialog displays • Open a model through the Cloud connection; the 'Cloud Connection' dialog displays • Open a model through a connection string; a prompt displays for you to enter the string If you want to return to the current model as the data source, select the 'Current Model' menu option.
Details	If you have selected a different model or project to open, this field shows the connection path for that model.
Add	Click on this button and select either: • 'Add Package' to identify a specific Package from which to extract the information - the 'Select a Toolbox Profile Package' dialog displays, from which you select the Package, or • 'Search Model' to extract the information from the whole model; the text 'Model' in the Source list confirms your selection You can click on the Add button a number of times, to add several specific

	Packages to the Source list.
Remove	Click on a Package name in the Source list and click on this button to remove the Package as a source of data for the Chart.
Include Child Packages	Select this checkbox against a Package in the Source list to extract information from its child Packages. Clear the checkbox to ignore any child Packages when extracting information from the parent Package.
OK	Click on this button to scan the specified Packages, close the dialog and generate the Chart.
Cancel	Click on this button to abort the changes and close the dialog.

Element Filters in Standard Charts

If you are creating a Heat Map, Pie Chart or Bar Chart of object properties from the Packages within your model, you can refine the data that is presented in the Chart to include only elements that have specific properties rather than every element encountered, using element filters.

Whilst you apply the element filters using a special page of the Chart element 'Properties' dialog, this page is identical in use to the 'Element Filters' tab in the Document Template Designer.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

On the Chart element's 'Properties' dialog, click on the 'Element Filters' tab.

Ribbon	Design > Element > Properties > General > Properties Dialog
Context Menu	Right-click on element | Properties | Element Filters
Keyboard Shortcuts	Alt+Enter | Element Filters

Other	Double-click on element | Element Filters

Notes

- Element filters are not available for Charts constructed using an SQL Query or CSV file contents

Custom Query

Your model contains a great deal of information on both project design and project management, and a major benefit of the Chart feature is providing the facility to search through your model and extract specific aspects of that information using your own SQL Query, within the Chart element.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

On the Chart element's 'Properties' dialog, click on the 'Source' tab, then on the 'Custom SQL' child tab.

Ribbon	Design > Element > Properties > General > Properties Dialog > Source > Custom SQL
Context Menu	Right-click on element | Properties | Source| Custom SQL
Keyboard Shortcuts	Alt+Enter | Source | Custom SQL
Other	Double-click on element | Source| Custom SQL

Extract Information Using SQL Query

Field/Button	Action
panel	Type in your SQL Query. The field provides the facilities of the Common Code Editor, such as Intelli-sense. The Select statement must include the alias 'Series'. For Heat Maps and Bar Charts you also have the option of grouping the results using the alias 'GroupName'. For example: Select **t_object.**Status AS Series**,** **t_object.**Author AS GroupName from t_object Using SQL, you can also use the 'ChartValue' alias to reflect the actual value of an instance, as captured in a Tagged Value. With the dialog fields, two instances of a property such as Cost have an equal value of 1, whereas the SQL can capture the **value** of Cost being, say, 6 and 1 and so represent the first instance with a Heat Map cell that is 6 times larger than the second. This is an example of such a SQL statement:

	select **t_object.**Name AS Series**,** Packages**.**Name AS GroupName**,** aColor**.[**Value**]** AS Color**,** aSize**.[**Value**]** AS ChartValue from **t_object, t_package** RootPackage**, t_package** Packages**,** **t_objectproperties** aColor, **t_objectproperties** aSize This statement can also be used for Bar Charts, except that the 'Color' alias is ignored; the 'Color' alias applies only to Heat Maps. Additionally, you can also use #<macro>#s as string replacers in any WHERE statements in your query, as for other SQL Search Queries.
OK	Click on this button to execute the query, close the dialog and generate the Chart.
Cancel	Click on this button to abort the changes and close the dialog.

CSV Data

Although your model contains a great deal of information on both project design and project management, you might want to check or present the status of some external spreadsheet data for comparison or for review before importing it into your model. A major benefit of the Chart feature is providing the facility to quickly paste in and display, in the appropriate Chart format, the contents of an external CSV file.

Before you start, copy the content of the CSV file to the clipboard.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

On the Chart element's 'Properties' dialog, click on the 'Source' tab, then on the 'CSV' child tab.

Ribbon	Design > Element > Properties > General > Properties Dialog > Source > CSV
Context Menu	Right-click on element | Properties | Source| CSV
Keyboard Shortcuts	Alt+Enter | Source | CSV

Other	Double-click on element | Source | CSV

Review External CSV Data

Field/Button	Action
panel	Right-click on the panel and select the 'Paste' option to paste the contents of the CSV file. If necessary, edit the data so that the first row defines the series name, in the format: Series,Name1,Name2,Name3... Edit the first column to represent the series object (the objects listed along the x-axis of the Chart). You need perform only very basic editing on the text.
OK	Click on this button to process the data, close the dialog and generate the Chart.
Cancel	Click on this button to abort the changes and close the dialog.

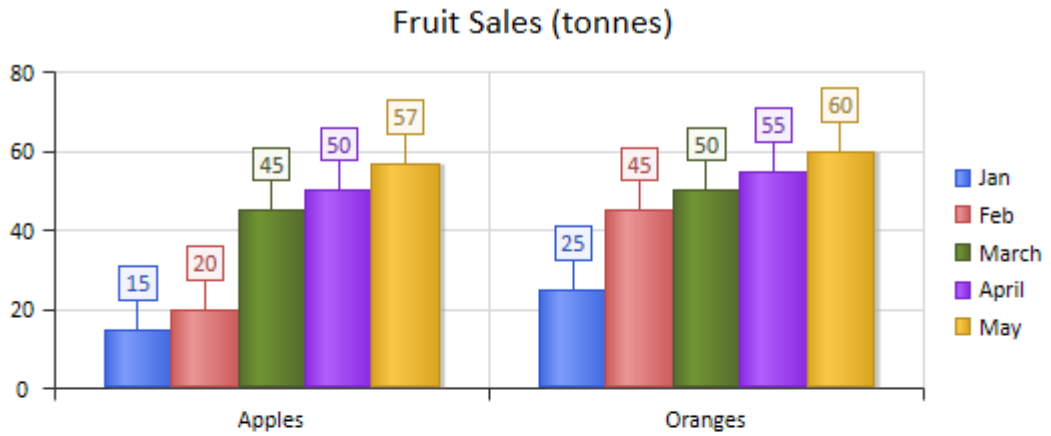
Output

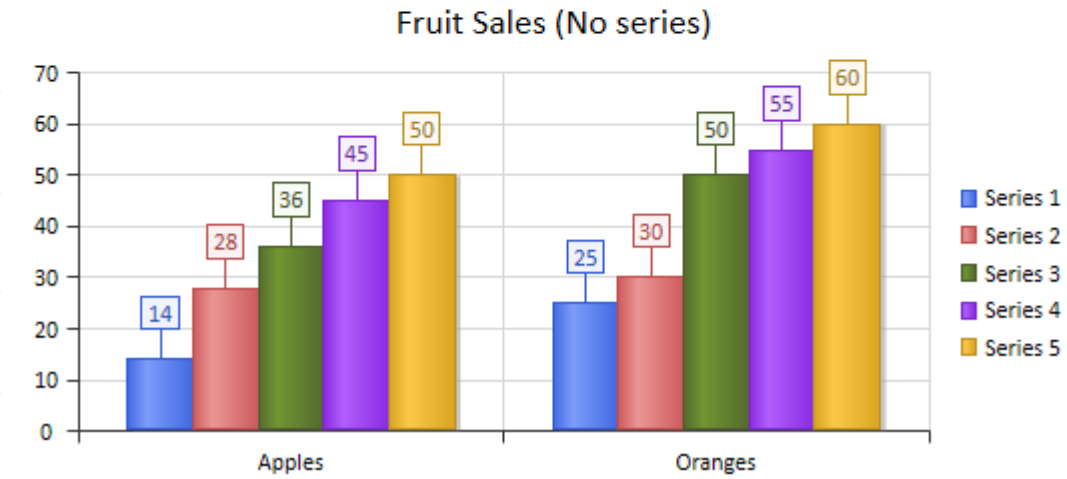
Using simple CSV input such as this, for two chart elements Fruit Sales (tonnes) and Fruit Sales (No Series), two bar charts were created.

Series,Jan,Feb,March,April,May

Apples,15,20,45,50,57

Oranges,25,45,50,55,60





The CSV data for Fruit Sales (tonnes) provides a label for the series, essentially the aspect being compared (the sales for each month). The data for Fruit Sales (No series) omitted the first line of information, so the chart defaults to an

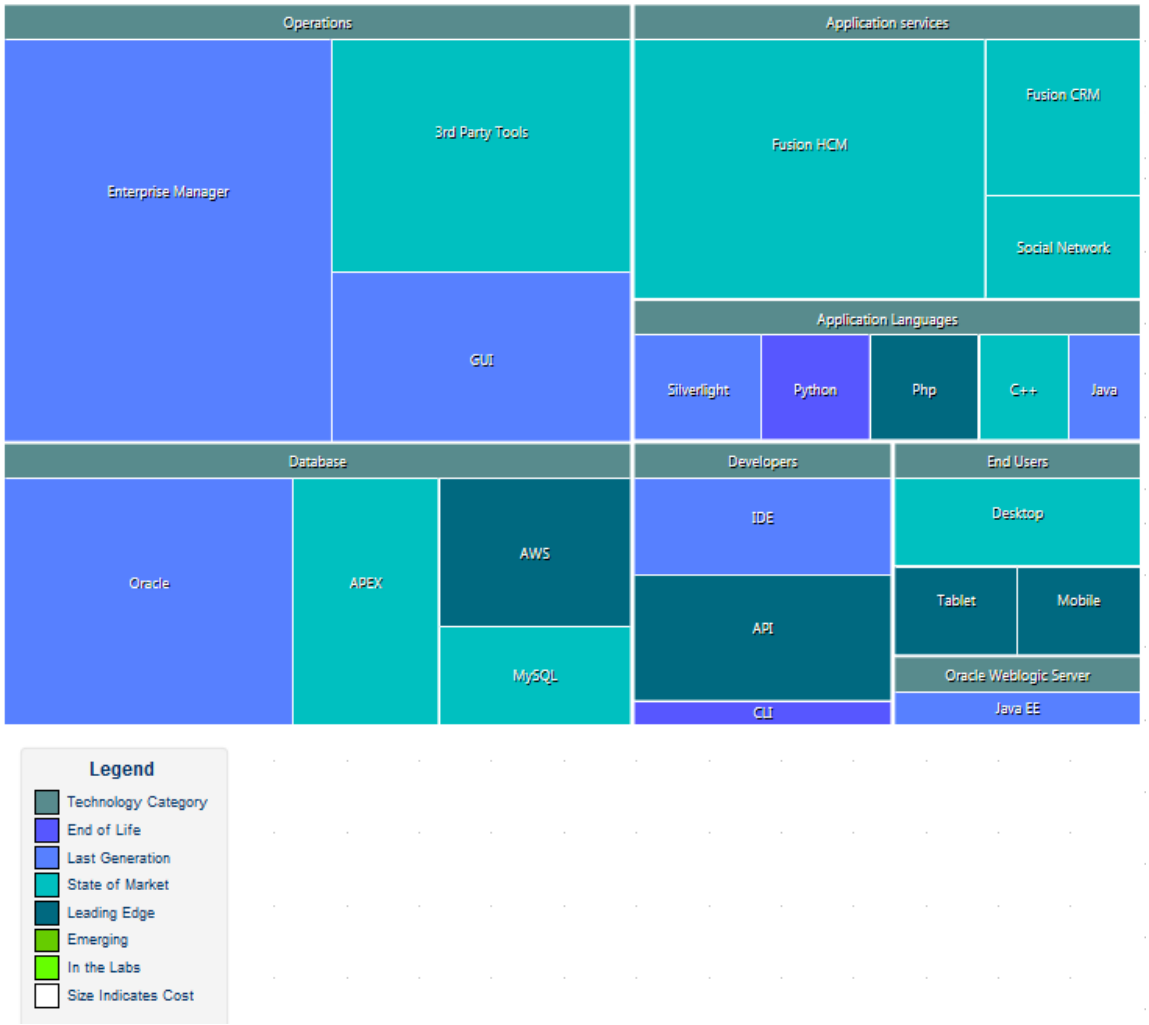
unnamed series set.

Heat Maps

In addition to the more familiar Bar charts, Column charts and Pie charts, Enterprise Architect supports a grid-based layout called a Heat Map, which uses the color, size and grouping of cells to represent specific aspects of a data set.

Heat Maps are typically used to illustrate co-dependant properties that could influence strategic or project level decisions. For example, a Heat Map might group Requirements by Requirement Type into a matrix of categories, then further divide each category by Requirement Status, using the number of requirements of each status as the determinant of cell size. As an additional visual clue, the color for each cell can use yet another variable from the data set; for example, a cost number based on the sum of expected costs associated with each Requirement. In common with other types of chart, you can construct the data set using either the dialog fields or custom SQL that you have created or copied.

This example of a Heat Map indicates the relative costs of various elements of a software platform, at the same time showing (by cell color) what stage in a product lifecycle each component has reached.



The use of Heat Maps depends to some extent on having good data that can be used to visually cue different aspects of the current model. For example, if you decide to use a cost analysis as part of a Heat Map, it is necessary to represent the cost using a field or Tagged Value. This should form part of the background modeling work that will feed the data sets driving well formed and useful Heat Maps.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open

the chart element's 'Properties' dialog. (If the appropriate Chart element does not exist, open the 'Charts' page of the Diagram Toolbox and drag a 'Standard Chart' icon onto a diagram.)

The 'Properties' dialog defaults to displaying the 'Source' tab and its 'Package' child tab.

Ribbon	Design > Element > Properties > General > Properties Dialog
Context Menu	Right-click on element | Properties | Properties
Keyboard Shortcuts	Alt+Enter
Other	Double-click on element

Configure a Heat Map

Having accessed the 'Properties' dialog for the Chart element, you can complete the fields on the 'Source' and 'Package' tabs to configure your Heat Map.

Option	Action
Type	Click on the drop-down arrow and select 'Heat Map' as the chart type.

Size By	Click on the ... button and select the object type and property that the Heat Map cells will represent. A cell is created for each unique combination of object type and property, and the size of the cell indicates the number of times that combination occurs. For example, if you select Element.Author each cell will represent an Author name, and the cell size indicates the number of elements in the data set with that author name.
Group By	(Optional) Click on the ... button and select the object type and property that the grouping of the Heat Map cells will represent. For example, if you size by Defect.Status and group by Element.Author, each group will represent an Element Author and each cell within the group will represent the number of elements with that Author name having each of the defect statuses.
Color By	(Optional) Click on the ... button and select the object type and property that the color of each cell will represent. If you want to color by the same object

	type/property combination as you used to size the cells, then leave this field blank. The color is retrieved by matching this combination with a color defined in the selected Color Set on the 'Appearance' page of the Heat Map 'Properties' dialog (see the *Heat Map Appearance* Help topic).
Chart Source	In the 'Model' field, click on the ... button and select which model to derive the data from, either the current model or one that you search for as a Local File, or through the Native Connection or OBDC Connection Wizard, or on the Cloud. Alternatively, you can select to enter a connection string for the model. If appropriate, select which Package(s) to search for the data to represent in this Heat Map, as explained in the *From a Package* Help topic. (Click on the Add button and on the 'Add Package' option, then select from the Package Browser.)

Customizing Results for the Heat Map

As an alternative to specifying the parameters of the Heat Map in the 'Package' tab, you can create a customized Heat

Map using SQL.

You again specify the chart type in the 'Type' field, but immediately select the 'Custom SQL' tab. The other fields on the 'Source' tab are then grayed out.

On the 'Custom SQL' tab, your SQL statement should contain these four column aliases (as demonstrated in the *Example Custom Queries* section of this topic):

- Series - Represents the Heat Map cell and the label
- GroupName - Provides grouping for Heat Map cells; this alias can be excluded if no grouping is required
- ChartValue - Defines the size of a Heat Map cell according to the numerical value of a property (a value of, say, 12 units) rather than as a simple instance of the property (a value of 1 unit)
- Color - Returns a value that determines the color of the cell, by reference to the 'Color Set' value types defined in the Heat Map appearance

Also see the *Custom Query* Help topic.

Example Custom Queries

Example	Description
Example 1	In this query, each cell will represent an Author and will be sized relative to the number of Component elements the Author has created.

	Select t_object.Author AS Series, count(*) AS ChartValue FROM t_object WHERE t_object.Object_Type = 'Component' Group By t_Object.Author
Example 2	In this query, each cell and its relative size will represent a Defect status. Each cell will be grouped by author and colored on priority type. This query would be accompanied by a Color Set definition of Value Type 'String' with the values 'High', 'Medium' and 'Low' and their respective colors. Select t_objectproblems.Status AS Series, t_object.Author AS GroupName, t_objectproblems.Priority AS Color, count(*) AS ChartValue FROM t_object, t_objectproblems WHERE t_object.Object_ID = t_objectproblems.Object_ID AND (t_objectproblems.ProblemType='Defect') group by t_objectproblems.Priority, t_object.Author, t_objectproblems.Status

	order by 1,2,3

Define a Model View Chart

Your model contains a great deal of information on both project design and project management, and a major benefit of the Chart feature is providing the facility to capture, summarize and present that information in the form of a Model View table that you can operate on both as a single element and as a list of selectable items. On one diagram you can put a number of Model View elements reporting on different aspects of the model, to create a tailored automatic status review of your project.

For a Model View Chart, the type is defined in the template and the content is defined in the SQL Query that you create as the data source. After you generate the Chart, you can perform a number of operations on the data it displays, including changing the organization of the columns in the display.

Access

Select a Model View Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog. (If you do not have an appropriate Model View Chart already, in the Diagram Toolbox drag either the general 'Model View' icon from the 'Dashboard' page or a more specific icon from the 'Model Views' page onto a diagram.)

The 'Properties' dialog defaults to showing the 'Source' tab.

Ribbon	Design > Element > Properties > General > Properties Dialog
Context Menu	Right-click on element | Properties | Properties
Keyboard Shortcuts	Alt+Enter
Other	Double-click on element

Specify Content

Field/Button	Action
data panel	Type in the SQL Query to define what type of data to extract from the model, and what structures in the model to extract it from. For example: SELECT t_object.Name, t_object.Status, t_object.Author FROM t_object WHERE t_object.Object_Type = 'Change' This Query returns a list of Change elements, showing the element name, status and author. Column names will display as returned by the database

	(unless you are using a translated edition of the system, in which case translations might be automatically applied). Columns can also be aliased by appending AS '<column name>' after the column reference. You can also use #<macro>#s as string substitutions, as for other SQL Search Queries.
OK	Click on this button to close the dialog and generate the Chart.
Cancel	Click on this button to abort the changes and close the dialog.

Edit Chart Entries

Having created the Model View Chart, you can drag the borders of the element to a suitable display size, manipulate the display as for other Search views, and work on individual entries through a context menu. Right-click on the element and select the 'Edit List View' option, then right-click on the element or a specific item to display the 'edit mode' context menu.

Context Menu Option	Action

Exit Edit Mode	Close the Chart as a list of accessible entries and revert to the Chart as a single element.
Properties	Open the 'Properties' dialog for the selected item in the Model View.
Copy Selected to Clipboard	Copy the selected item to the clipboard.
Documentation	Display options to generate a report on the selected item or items, either as: • One report on all selected items, or • A separate report for each of the selected items In either case, the 'Generate Documentation' dialog displays. If you have selected to generate separate reports, the 'Generate Documentation' dialog displays separately for each report in turn.
Find in Diagrams	Locate the selected item in any diagrams in which it is used. If the item is only used in one diagram, the display switches to that diagram with the item highlighted on that diagram.

	If the item is not used in any other diagram, or is used in more than one diagram, the 'Element Usage' dialog displays.
Find in Project Browser	Locate and highlight the selected item in the Browser window.

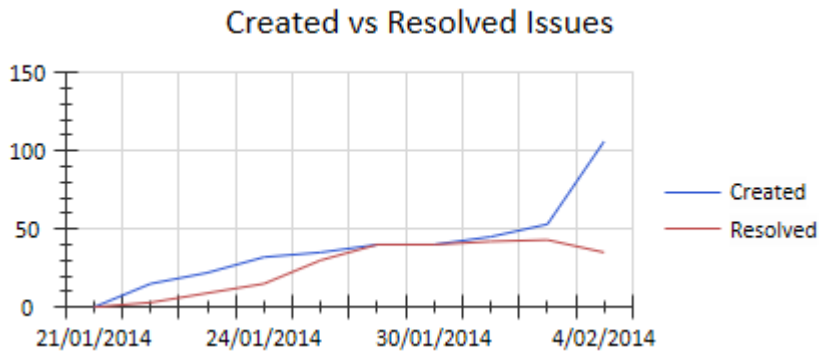
Notes

- As long as the SQL Query contains the alias *ea_guid AS CLASSGUID*, you can also drag items out of the list and drop them onto the diagram containing the Chart element, in the same way as you would from the Browser window
- Within edit mode, you can manipulate the column headings as for other search outputs, including changing the widths and sequence of columns, toggling the filter bar, moving headings into and back out from the 'Field Chooser' dialog, and grouping entries within a hierarchy of properties ('Group by Column'); the heading arrangement you set remains in place when you subsequently redisplay the diagram, until such time as you specifically change it

Define a Time Series Chart

Your model contains a great deal of information on both project design and project management, and a major benefit of the Chart feature is providing the facility to capture, summarize and present that information. Using the Time Series Chart you can record changes in multiple series of data over time. Each series corresponds to an SQL Query that you can either run manually or update automatically on a schedule run by the Cloud service. The value of each series is plotted on the line graph on the day or at the time it was collected.

As an example, you might generate the Chart manually on different days, running two Queries showing Issues created and Issues resolved, for comparison. The Chart might resemble this:



After defining the content of the Time Series Chart, you can modify its appearance on the 'Appearance' page of the element's 'Properties' dialog.

Access

Select a Time Series Chart element on a diagram or in the

Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

If you do not have an appropriate Time Series Chart already, drag onto a diagram the general 'Time Series Chart' icon from the 'Charts' page of the Diagram Toolbox, or a specific icon from the 'Series Chart' page.

The Chart 'Properties' dialog, by default, displays the 'Source' tab.

Ribbon	Design > Element > Properties > General > Properties Dialog
Context Menu	Right-click on element | Properties | Properties
Keyboard Shortcuts	Alt+Enter
Other	Double-click on element

Define Content

Field/Button	Action
Model	Defaults to the current model as the source of the data for this Chart. If the

	data is held in a different model, click on the ... button and select the appropriate menu option to: • Open a .eap, .qea or .feap model in a local directory, through a file browser • Open a model on a DBMS through the Enterprise Architect Native Connection; the 'Open Server Connection' dialog displays • Open a model through the ODBC Connection Wizard; the Windows 'Data Link Connection' dialog displays • Open a model through the Cloud connection; the 'Cloud Connection' dialog displays • Open a model through a connection string; a prompt displays for you to enter the string If you want to return to the current model as the data source, select the 'Current Model' menu option.
Element	If you have selected a different model as the source of data, you can link your current chart to an existing Time Series chart in that other model. Click on the ... button at the end of this field; a search dialog displays listing all

	the Time Series elements in the specified model. Click on the required chart and on the OK button. The selected element name displays in the 'Element' field. If there are too many Time Charts to review quickly, you can use the 'List Header' facilities to filter the list. To cancel the selection of an element, click on the ... button and select the <none> item.
Details	When you have selected a different model or project to open, this field shows the connection path for that model.
Package	To generate the Chart on the entire project, leave this field blank or click on the ... button and select the '<none>' entry. Otherwise, click on the ... button and select the specific Package to generate the Chart on. This field is disabled if the 'Element' field has a value.
Include Child Packages	If you have specified a Package, select this checkbox to extract information from the child Packages of that Package. Clear the checkbox to ignore any child

	Packages when extracting information from the parent Package.
Data Point Interval	Click on the down-arrow and select either: • 'Manual', to generate the Chart manually at any time or date you need; the Manual Record button is enabled • A time interval at which the Cloud Server will automatically regenerate the Chart This field is disabled if a model other than the current model is selected in the 'Model' field.
Exclude Weekends	Enabled when the 'Data Point Interval' field is set to 'Daily'. • Select the checkbox to refresh the Chart on each week day except for Saturday and Sunday • Clear the checkbox to refresh the Chart on each week day including Saturday and Sunday
Run On	Enabled when the 'Data Point Interval' field is set to 'Weekly' or 'Monthly'. If that field is set to: • 'Weekly' - click on the down arrow and

	select the day of the week on which to refresh the Chart • 'Monthly' - click on the down arrow and select the date in the month on which to refresh the Chart
Series	Lists the SQL Queries that will be run whenever the Chart is regenerated. This panel also shows the date on which the Query was last executed, and the number of records displayed as a result.
Edit	Click on an SQL Query name in the 'Series' list and click on this button to edit the Query. The 'Edit Series' dialog displays; see the *Edit Series Dialog* table.
Add	Click on this button to add a new SQL Query to the 'Series' list, to be executed when the Chart is regenerated. The 'Edit Series' dialog displays; see the *Edit Series Dialog* table.
Remove	Click on an SQL Query in the 'Series' list and click on this button to delete the Query as a source of information for the Chart. A confirmation prompt displays. Click on

	the Yes button to delete the Query.
Manual Record	If you have set the 'Data Point Interval' field to 'Manual', click on this button to regenerate the Chart. The 'Results' column in the 'Series' list updates (if changes have occurred); the Chart itself does not change until you click on the OK button to close the dialog.
OK	Click on this button to scan the specified Packages, close the dialog and generate the Chart.
Cancel	Click on this button to abort the changes and close the dialog. The aborted changes include updates to the 'Results' column if you have clicked on the Manual Record button.

Edit Series Dialog

Field/Button	Action
Examples	(Optional) Click on the drop-down arrow and select an example SQL Query to use

	intact or to edit to suit your requirements.
Series Name	Type a name for the SQL Query, to use as a reference to the Query in the 'Series' list on the 'Source' page.
Query	Type the text of the SQL Query.
Test Query	(Optional) Click on this button to test the Query you have written or updated. A message displays to confirm that the Query was successful or to identify that problems exist.
OK	Click on this button to save the Query, close the dialog and add or update the Query in the 'Series' list on the 'Source' page.
Cancel	Click on this button to abort the changes, close the dialog and return to the 'Source' page.

Chart Appearance

Each of the Chart formats provided on the system - Model View, Time Series, 2D Bar Chart, 3D Bar-Chart, Heat Map and Pie Chart - has a default appearance, but you can modify this appearance to better suit the information you are presenting. You can, for example, change the:

- Configuration
- Direction of shading
- Orientation
- Use of a legend or key
- Color and intensity and/or
- Position of labels, if you choose to display them

The options vary between the Chart types, and are described separately.

Access

Select a Chart element on a diagram or in the Browser window, then use any of the methods outlined here to open the Chart element's 'Properties' dialog.

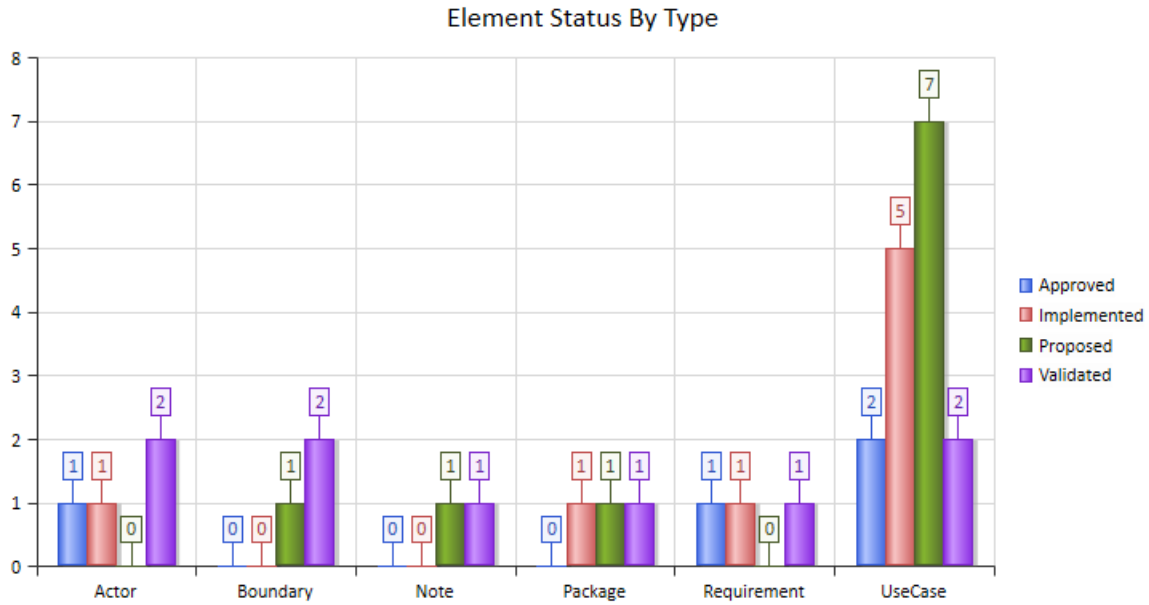
On the chart element's 'Properties' dialog, select the 'Appearance' tab.

Ribbon	Design > Element > Properties > General > Properties Dialog > Appearance

Context Menu	Right-click on element | Properties | Appearance
Keyboard Shortcuts	Alt+Enter | Appearance
Other	Double-click on element | Appearance

2D Bar Chart

A 2-dimensional Bar Chart can have this appearance:



You define this appearance - or its alternatives - on the 'Appearance' page of the element 'Properties' dialog, after having set the 'Type' field on the 'Source' page to '2D' Bar. Each change in setting is immediately illustrated by an example Chart on the 'Appearance' page.

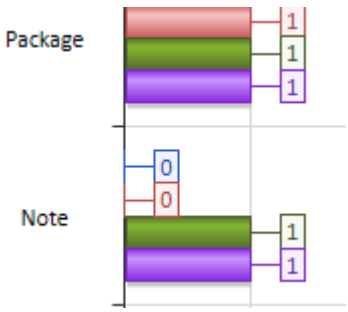
Access

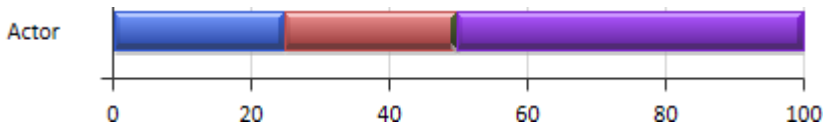
Select a Chart element on a diagram or in the Browser window.

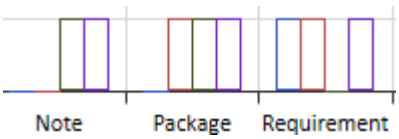
Ribbon	Design > Element > Properties > General > Properties Dialog > Appearance
Keyboard Shortcuts	Alt+Enter | Appearance

Other	Double-click on element | Appearance

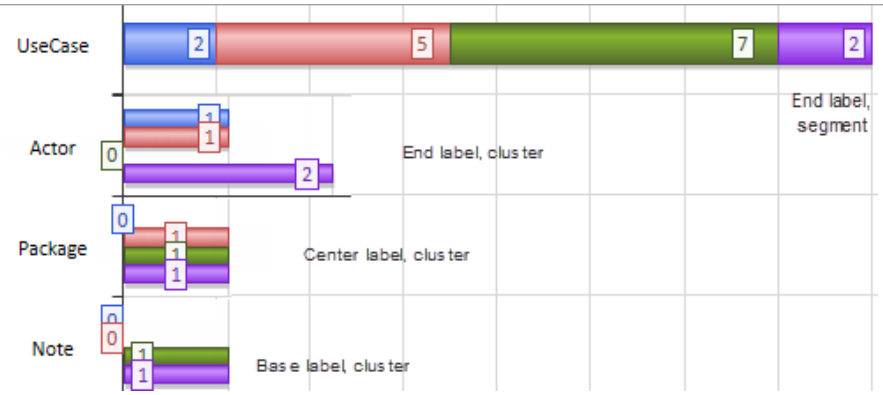
Define 2D Bar Chart Appearance

Field	Action
Category	Click on the drop down arrow and select the Bar Chart category: • Column (the default, as illustrated) or • Horizontal Bar 
Type	Click on the drop down arrow and select how the object Type is represented: • As a Cluster of columns (the default, as illustrated) with each property represented by a column or bar in the cluster • As a Stack, where each object is represented by a single column or bar and each property is represented by a

	segment of that bar; the bars are different lengths, depending on the sum of the values of the segments • As a 100% Stack, where the single bars or columns are of equal lengths (100%) and the segments represent the percentage contribution of each property  This option is grayed out if the 'Group By properties' field on the 'Chart Details | Details' page has no value. The Chart then displays as a simple column or horizontal bar for each object.
Gradient	Click on the drop down arrow and select the direction of the color gradient in each bar: • Solid Color (no color gradient) • Horizontal (color fades from bottom to top) • Vertical (color fades from left to right) • Pipe (the default, as shown; color fades from edges to center) • Bevel (each bar appears raised, with

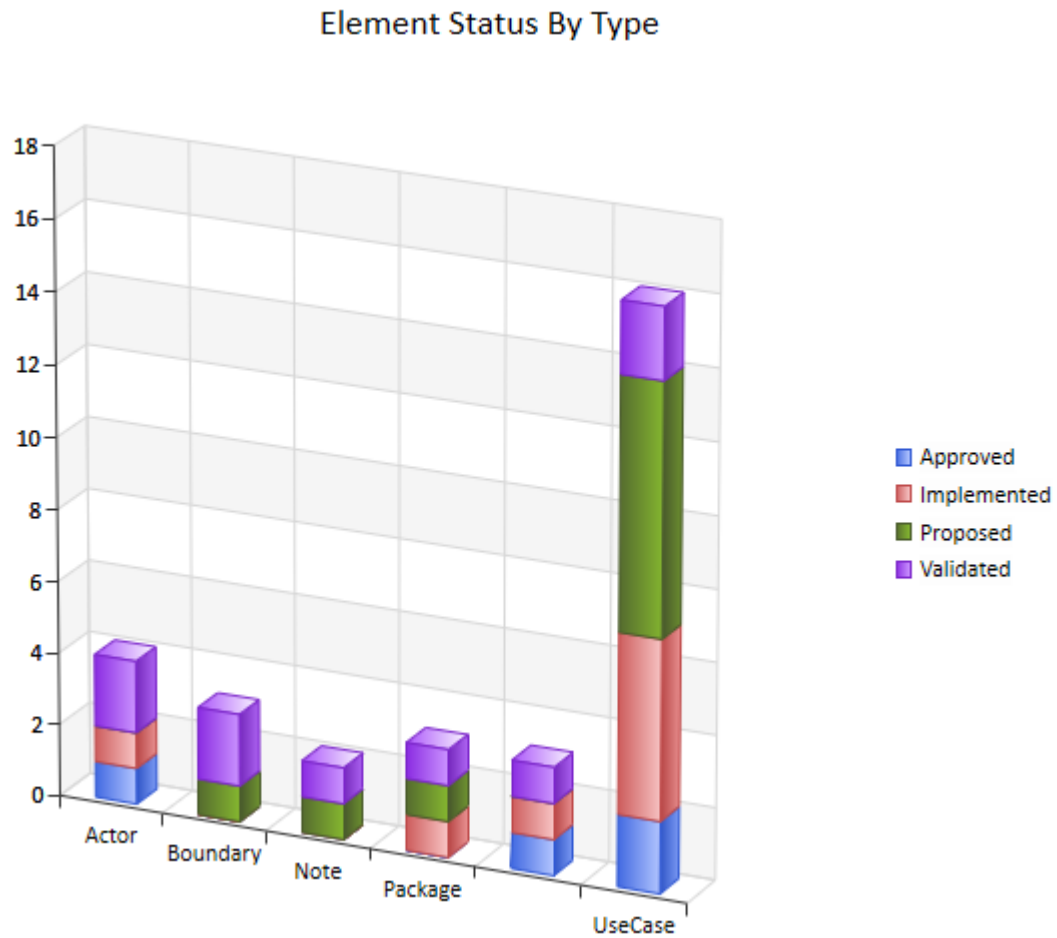
	color shading)
Transparency	Click on the slider and drag it across until the illustration shows the degree of transparency you require. The left extreme (no transparency) sets the bars to full fill color (as shown earlier); the right extreme (full transparency) sets the bars to colored edges and no fill. 
Show Data Labels	This checkbox defaults to selected, to display the column or segment values as a framed label (as shown). Deselect the checkbox to hide the labels (as shown for the 'Gradient', 'Type' and 'Transparency' fields).
Display Shadow	This checkbox defaults to selected, to display the column or bar with a gray shadow (as shown). Deselect the checkbox to omit the shadow. (At a transparency of

	approximately 50% through to 100% the bars do not have a shadow either.)
Display Legend	Select this checkbox to show the meaning of the Chart bars, columns or segments as a legend to the right of the diagram. Deselect the checkbox to hide the legend.
Label Position	If 'Show Data Labels' is selected, click on the drop down arrow and select the position in which to display the labels relative to the column, bar or segment: • 'Center' - the label is shown in the center of the column, bar or segment • 'Inside End' - the label is shown inside the top of the column or segment, or at the right end of the bar • 'Inside Base' - the label is shown inside the base of the column or segment, or at the left end of the bar • 'Outside End' - the label is shown off the end of the column, bar or segment and linked to it by a line (the default, as illustrated previously) The other three options are illustrated in this composite picture:

	
OK	Click on this button to apply the changes and close the dialog.
Cancel	Click on this button to abort the changes and close the dialog.

3D Bar Chart

A 3-dimensional Bar Chart can have this appearance:



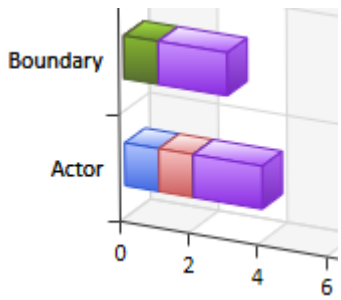
You define this appearance - or its alternatives - on the 'Appearance' page of the element 'Properties' dialog, after having set the 'Type' field on the 'Source' page to '3D Bar'. Each change in setting is immediately illustrated by an example Chart on the 'Appearance' page.

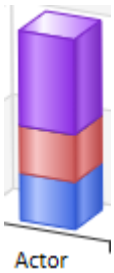
Access

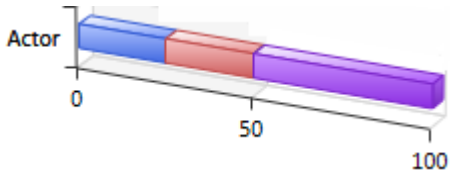
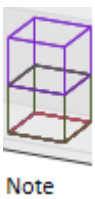
Select a Chart element on a diagram or in the Browser window.

Ribbon	Design > Element > Properties > General > Properties Dialog > Appearance
Keyboard Shortcuts	Alt+Enter | Appearance
Other	Double-click on element | Appearance

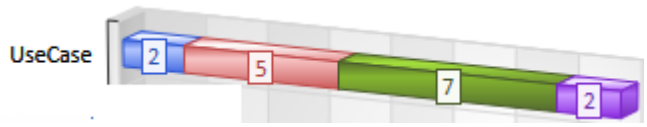
Define 3D Bar Chart Appearance

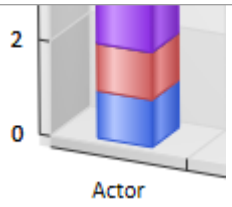
Field	Action
Category	Click on the drop down arrow and select the Bar Chart category: • Column (the default, as illustrated) or • Horizontal Bar 
Gradient	Click on the drop down arrow and select the direction of the color gradient in each bar:

	• Solid Color (no color gradient) • Horizontal (color fades from bottom to top) • Vertical (color fades from left to right) • Bevel (color shading from the edges to the center of each face) • Pipe (the default, as shown; color fades from edges to center) 
Type	Click on the drop down arrow and select how the object Type is represented: • As a Cluster of columns (the default) with each property represented by a column or bar in the cluster • As a Stack (as illustrated earlier) where each object is represented by a single column or bar and each property is represented by a segment of that bar; the bars are different lengths,

	depending on the sum of the values of the segments • As a 100% Stack, where the single bars or columns are of equal lengths (100%) and the segments represent the percentage contribution of each property  This option is grayed out if the 'Group By properties' field on the 'Chart Details | Details' page has no value. The Chart then displays as a simple column or horizontal bar for each object.
Transparency	Click on the slider and drag it across until the illustration shows the degree of transparency you require. The left extreme (no transparency) sets the bars to full fill color (as shown); the right extreme (full transparency) sets the bars to colored edges and no fill.  Note

Label Position	Click on the drop down arrow and select the position in which to display the default data labels relative to the column, bar or segment: • 'Center' - the label is shown in the center of the column, bar or segment • 'Inside End' - the label is shown inside the top of the bar or segment • 'Inside Base' - the label is shown inside the base of the bar or segment • 'Outside End' - the label is shown off the end of the bar or segment (the default) The first option is illustrated in the *Show Data Labels* description; the other three options are illustrated in this composite picture:
Show Data Labels	This checkbox defaults to selected, to display the column or segment values as

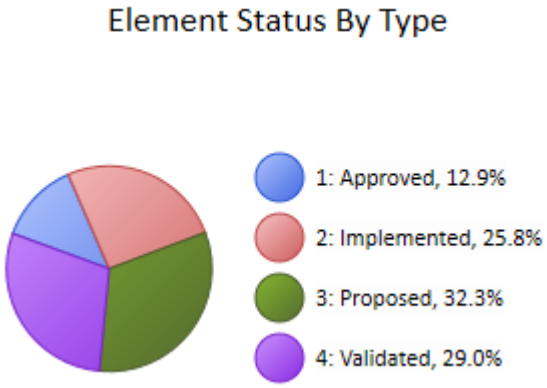
	a framed label:  Deselect the checkbox to hide the labels.
Display Legend	Select this checkbox to show the meaning of the Chart bars, columns or segments as a legend to the right of the diagram. Deselect the checkbox to hide the legend.
Fill Walls and Floor	Select this checkbox to add darker shading to the end and back walls of the Chart, to provide contrast. Clear the checkbox to leave the walls pale.
Thick Walls	If the 'Fill Walls and Floor' checkbox is selected, this checkbox is enabled. Leave the checkbox unselected to leave the walls and floor as open, 2-dimensional lines (as illustrated earlier). Select this checkbox to show the walls and floor of the Chart as closed, 3-dimensional blocks.

	
Position Dial	 Click on the arrows on this dial to alter the perspective of the reader in viewing the Chart. • The rotating arrow at the center returns the Chart to its default position (viewed from the upper right front of the Chart); the remaining arrow descriptions identify changes from this position • The small top arrow flattens the Chart, as if you were looking at it from higher up and further out • The left- pointing arrow rotates the Chart by increments anti-clockwise around the vertical axis, so that you can swing the y-axis of the Chart around to the right of the Chart and back; the end of the Chart pointing 'into' the screen has the end wall visible • The right -pointing arrow rotates the Chart in a clockwise direction around the vertical axis • The upward broad arrow swings the

	left rear corner of the Chart out of the screen (from the default position, only one move) • The downward broad arrow swings the left rear corner of the Chart into the screen in several increments • The small bottom arrow swings the base of the Chart around 'out of the screen', as if you were looking at it from further out and lower down; ultimately, you see the Chart from the base
OK	Click on this button to apply the changes and close the dialog.
Cancel	Click on this button to abort the changes and close the dialog.

Pie Chart

A Pie Chart can have this appearance:



You define this appearance - or its alternatives - on the 'Appearance' page of the element 'Properties' dialog, after having set the 'Type' field on the 'Source' page to 'Pie'. Each change in setting is immediately illustrated by an example Chart on the 'Appearance' page.

Access

Select a Chart element on a diagram or in the Browser window.

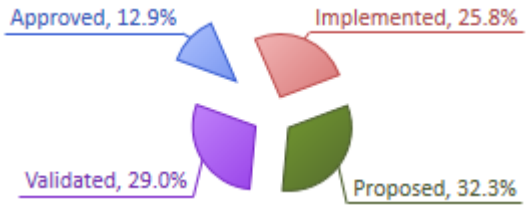
Ribbon	Design > Element > Properties > General > Properties Dialog > Appearance
Keyboard Shortcuts	Alt+Enter | Appearance
Other	Double-click on element | Appearance

Define Pie Chart Appearance

Field	Action
Category	Click on the drop down arrow and select the Pie Chart category: • 3D Chart - the Chart displays as a 3-D disc tilted away from you • Doughnut - the Chart displays as a 2-D ring • Doughnut 3D - the Chart displays as a 3-D ring with a rectangular profile • Torus 3D - the Chart displays as a 3-D ring with an elliptical profile • Pie - the Chart displays as a 2-D disc (the default, as illustrated)
Label Position	You can show the meaning and value of each segment of the Chart as a label (see *Show Data Labels*); if you want to do this, you can specify where on the Chart the label will display. Click on the drop down arrow and select the position in which to display the labels relative to the segments: • Center - the label is shown in the

	middle of the segment • Inside End - the label is shown inside the rim of the segment, • Inside Base - the label is shown closer to the point of the segment • Outside End - the label is shown outside the rim of the segment and linked to it by a line (the default, as shown for the 'Exploded' field)
Show Data Labels	Select the checkbox to display a label against each segment of the Pie Chart. • If the 'Show Index in Labels' checkbox is selected, only the index numbers (1, 2, 3...) display in the labels, keyed to the legend (see *Display Legend*) • If the 'Show Index in Labels' checkbox is not selected, the property name and percentage (such as Approved, 12.9%) display in the labels
Gradient	Click on the drop down arrow and select the direction of the color gradient across the Chart: • Solid Color (no color gradient) • Diagonal Left (the default, as shown; color fades from right to left) • Diagonal Right (color fades from left to

	right) • Radial (color fades from edges to center) • Bevel (dark rim and color fading from the bottom to the top) The Torus 3D category of Chart relies on a specific color gradient to create the effect of the Torus, therefore changes in the Gradient settings have no effect on Charts of this type.
Hole Size	This field is available for the Doughnut and Doughnut 3D categories of the Pie Chart. Click on the slider and drag it to expand or contract the size of the hole in the middle of the Chart. The default (and the fixed size of the Torus 3D category) is 50%. If you drag the hole size to 0%, the Chart is effectively a Pie Chart or 3D Chart.
Show Index in Labels	If you are displaying the meaning and value of each segment, you can display a legend providing this information (see *Display Legend*) and have a simple index to the legend as a label against each segment. Select the checkbox to display the index

	(1, 2, 3...) as the label text Clear the checkbox to display more complete information in the label.
Exploded	Select the checkbox to pull each segment of the Chart out away from the other segments, with the 'first ' segment separated out even further. 
Fit Diagram Area	As you re-size your Chart element, the Chart width and height normally change with the element but stay in proportion. Leave this checkbox unselected to maintain this behavior. Select this checkbox to expand the Chart to fit the element space, even if the Chart has to elongate disproportionately up and down or sideways.
Display Legend	You can select to show the meaning and value of the Chart segments on the Chart itself, as labels, or you can display some or all of this information as a legend to the right of the diagram. Select this checkbox to display a legend

	for the Chart. Deselect the checkbox to hide the legend.
Position Dial	 For the 3D Chart and Doughnut 3D categories: • The small top (up) arrow swings the Chart toward horizontal, so you are increasing the side view; the extreme is to show the front edge of the Chart • The small bottom (down) arrow swings the Chart towards vertical, so you are increasing the top view; the extreme is to show a Pie Chart or Doughnut Chart For all categories of Pie Chart: • The rotating arrow at the center returns the Chart to its default perspective • The left- pointing arrow rotates the Chart by 24-degree increments anti-clockwise • The right -pointing arrow rotates the Chart in 24-degree increments clockwise
OK	Click on this button to apply the changes and close the dialog.

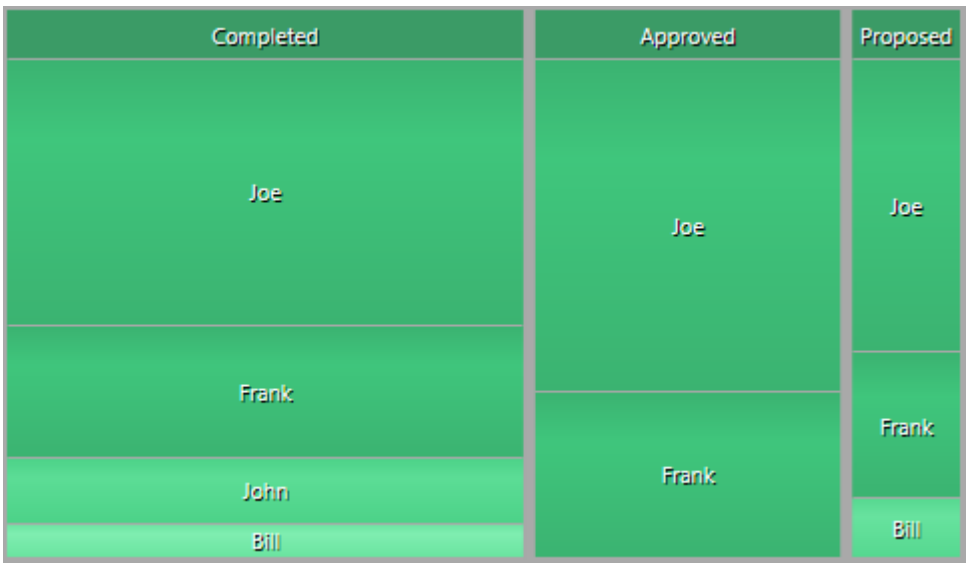
Cancel	Click on this button to abort the changes and close the dialog.

Heat Map Appearance

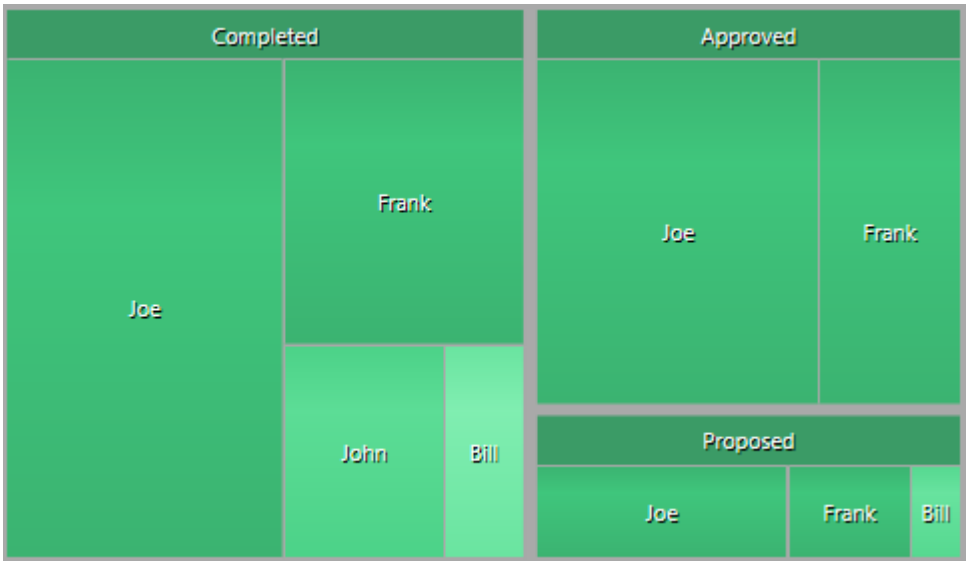
A Heat Map is an extremely versatile visual analysis tool, and the detailed appearance of the final chart depends on the data you have selected to represent and the ways in which you have decided to format it. Considering just the layout, there are two principal formats:

- 'Sliced' - Data is laid out in a series of columns with the internal space of each column divided up into rows of diminishing height
- 'Squarified' - Where data is presented in rectangular groups, with each group containing one or more various-sized blocks; the largest groups are generally displayed at the left and the others reducing across and down

Sliced Heat Map



Squarified Heat Map



There are two groups of options to define the chart appearance:

- The 'Color Set' - which defines the way in which the Heat Map uses color to represent characteristics of the data shown
- The 'Appearance' options - which define the layout style for the Heat Map

Access

Select a Chart element on a diagram or in the Browser window.

Ribbon	Design > Element > Properties > General > Properties Dialog > Appearance
Keyboard Shortcuts	Alt+Enter | Appearance
Other	Double-click on element | Appearance

Color Sets

Option	Action
Value Type	Click on the drop-down arrow and select how the property values represented by the Heat Map will be treated - as strings of characters, or as numerical values. In either case, you can link the values to specific colors that are applied to the cells that represent those values, as the color set.
Results	(Enabled if the 'Value Type' field is set to 'Numeric'.) Click on the drop-down arrow and select whether the Heat Map should represent individual results as discrete values, or merge them as a sum. You would then define the color set to apply a color to either the specific value or to the total of the summed values. For example, you might assign the color blue to a value of 5, green to a value of 10, and red to a value of 15. Suppose the Heat Map found the data 'Resource Fred = 5 hours' and 'Resource Fred = 10

	hours'. If you have selected: • 'Discrete Values', the chart would show two cells for Fred, one blue and one green (indicating that Fred had devoted 5 hours of work to one thing and 10 to another) • 'Sum', the chart would show one red cell for Fred (indicating that Fred had performed 15 hours of work in total)
Color Set Values	These settings provide the definitions of colors to apply to cells representing specific text or numerical values. Click on the *Add Color Value* text and type in the text string or numerical value that the color will represent. This value must be of the type you defined in the 'Value Type' field. • A text string must exactly match the data value that you expect to retrieve from the source, including case • Numerical values can either be precise or contain operators to define ranges; for example: - 10 - 15..20 - >10 - <40 Click off the field; a white checkbox

	displays in the 'Color' column. Either: • Click on the hexadecimal number and overtype it with the number of the color to represent the value, or • Click on the drop-down arrow and select or define the color to use These settings operate for data specified by the 'Color By' field on the 'Package' tab or the 'SQL AS Color' alias; if this data is not specified, the colors default to data specified in the 'Size By' field or 'AS Series' alias.

Appearance Options

The values that you set in these fields are immediately reflected in the example Heat Map in the lower right corner of the dialog.

Option	Action
Layout	Click on the drop-down arrow and select from the two options: • Squarified: 'Window' layout (the default) • Slice: 'Column' layout
Group Width	Click on the drop-down arrow and select

	the appropriate option to set the thickness of the lines separating and surrounding the groups.
Gradient	Click on the drop-down arrow and select the type of color gradient to apply to each cell.
Group Color	Click on the drop-down arrow and select or define a single color to apply to all group headings and - if no color values are defined - all group cells.
Auto Color	Select this checkbox to override the 'Group Color' selection and automatically apply a separate color to each of the group headings and - if no color values are defined - the cells within each group.
Lighten smaller results	Select this checkbox to make the cells progressively lighter as they reduce in size.

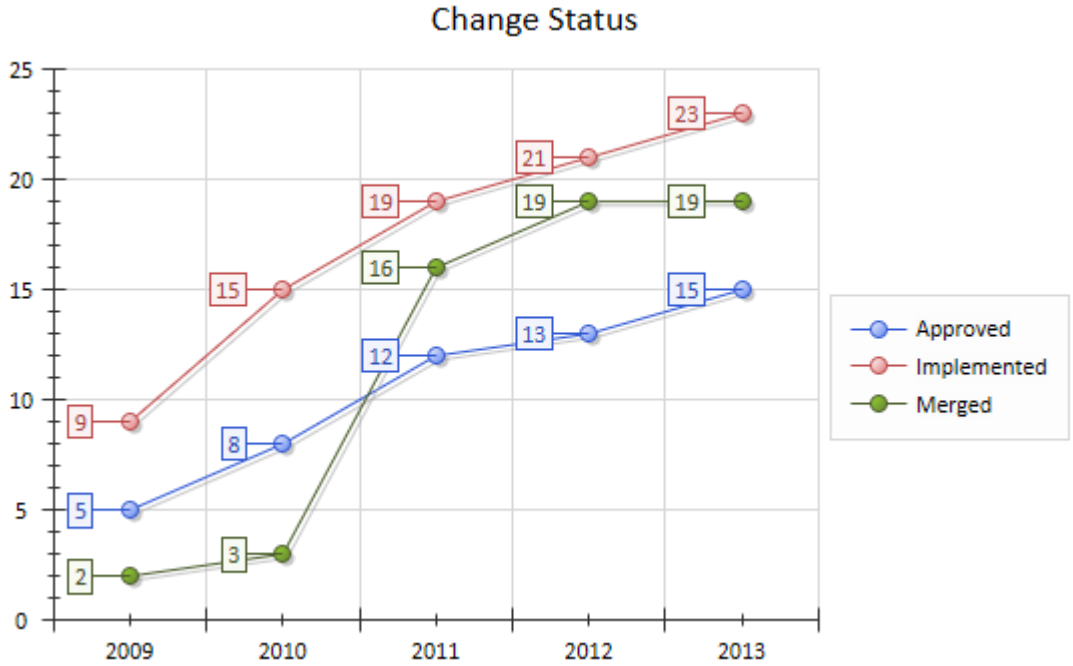
Notes

- Regardless of which format you select - Squarified or Sliced - very small cells might be hard to review; if small results are significant, running the SQL query (or, if one

has not been used, a parallel Model Search) as a search can help identify the types and/or values

Time Series Chart

A Time Series Chart can have this appearance:



You define this appearance - or its alternatives - on the 'Appearance' page of the element 'Properties' dialog, after having set the data source, content and refresh interval on the 'Source' page. Each change in appearance setting is immediately illustrated by an example Chart on the 'Appearance' page.

Access

Select a Chart element on a diagram or in the Browser window.

Ribbon	Design > Element > Properties > General > Properties Dialog > Appearance

Keyboard Shortcuts	Alt+Enter | Appearance
Other	Double-click on element | Appearance

Define Time Series Chart Appearance

Option	Action
Type	Click on the drop down arrow and select how the object Type is represented: • As a Stacked Line, where the summed values of the data points for a time interval are represented by the positions of the markers, and the label on each marker identifies the contribution that data point made to the total; for example, at a given time there are 3 Approved changes, 5 Implemented changes and 9 Merged changes (as recorded in the marker labels), so the total number of changes is 17 and the Chart shows the markers at 3, 8 (3+5) and 17 (3+5+9) • As a 100% Stacked Line, where the summed values of data points total 100%, the markers for each data point

	indicate the percentage contribution each data point made to that total, and the label on each marker indicates the value of the data point • As a Stacked Spline, similar to a Stacked Line but instead of the connecting lines being straight the trend of the line is extrapolated into a curve • As a Step line, where the markers represent the value of the data points and the connecting lines are horizontal until the data value changes at the next sample point; that is, there is no assumption of change between the sample points • As a Line (the default, as illustrated), where a marker indicates the value of each data point and the data points for an object are connected by a straight line
Show Data Markers	Defaults to selected, to show a marker symbol to highlight the data point. Deselect the checkbox to hide the data markers.
Marker Shape	Disabled if the 'Show Data Markers' checkbox is not selected.

	Click on the drop-down arrow and select a shape for the data markers. The options are: • Circle • Triangle • Rectangle • Diamond
Marker Size	Disabled if the Show Data Markers checkbox is not selected. Click on the drop-down arrow and select the size of the data markers, in pixels. Options are: • 7 • 10 • 15 • 20
Show Data Labels	This checkbox defaults to selected, to display each data value as a framed label (as shown). Deselect the checkbox to hide the labels, if you want to observe the trend rather than the actual values.
Label Angle	Disabled if the 'Show Data Labels' checkbox is not selected. Click on the drop down arrow and select

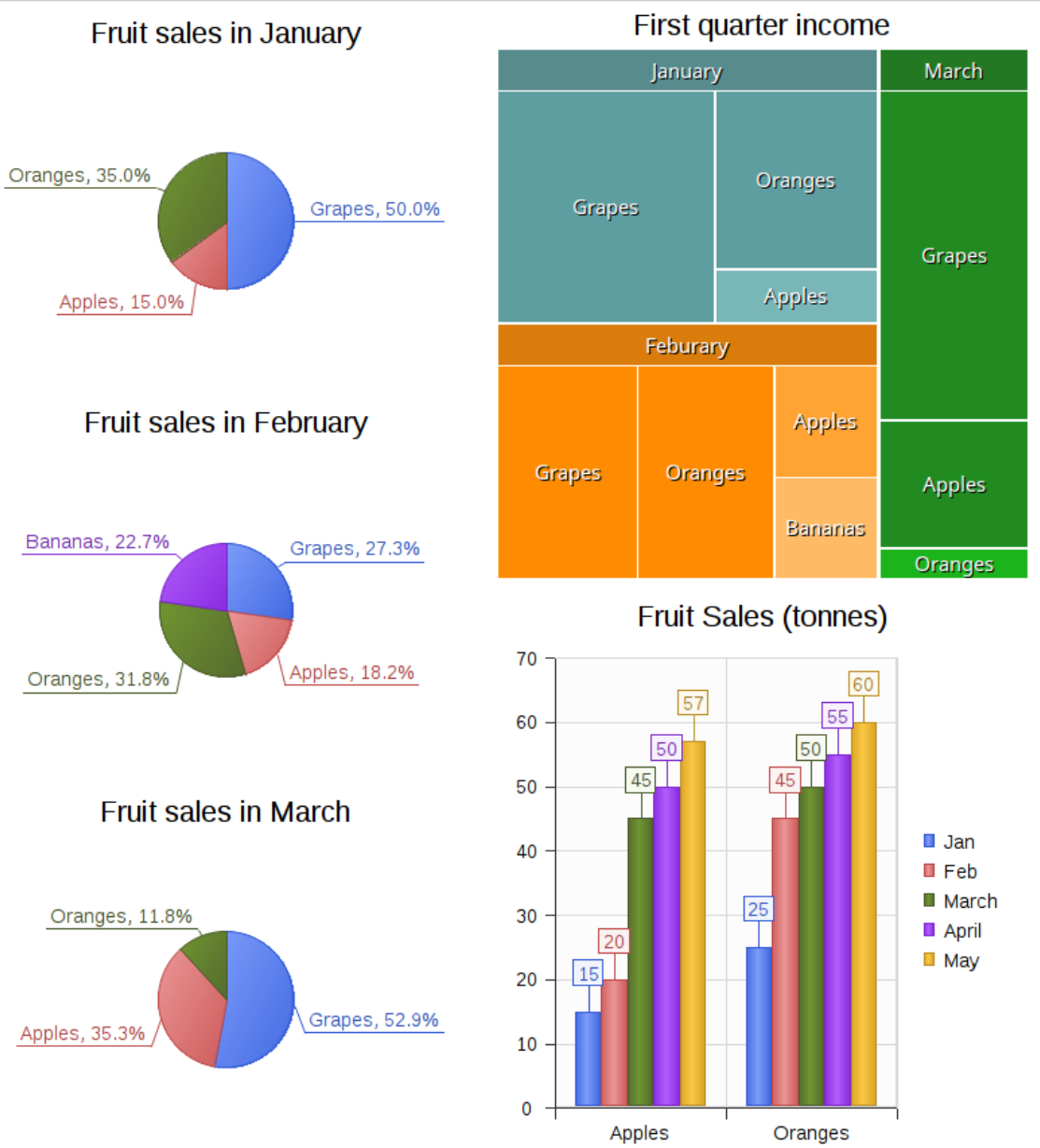
	the angle at which to display the data labels on the data points. Options are: • -90 - parallel to and left of the data point • -45 - at a 45 degree angle above and to the left of the data point • 0 - directly above the data point • 45 - at a 45 degree angle above and to the right of the data point • 90 - parallel to and right of the data point If there is any overlap of labels the position of those labels adjusts to ensure a clear display.
Display Shadow	This checkbox defaults to selected, to display the line and markers with a gray shadow (as shown). Deselect the checkbox to omit the shadow.
Line width	Click on the down-arrow to change the width of the line on the Chart. The options are: • 1 Pixel • 2 Pixels • 3 Pixels

	• 4 Pixels • 5 Pixels
Line Style	Click on the down arrow and select the format of the line. Options are • Solid () • Dash ( ) • Dot () • Dash Dot () • Dash Dot Dot ()
OK	Click on this button to apply the changes and close the dialog.
Cancel	Click on this button to abort the changes and close the dialog.

Using Dashboard Styles

Dashboard Styles are a range of layout options that act on all the elements shown in a diagram, to arrange those elements in different grid formats in which the elements are rendered as blocks with common borders. The styles are designed to be used with Dashboard diagrams containing Chart objects. Using the Dashboard Styles for diagrams you can create impressive reports or track KPIs, metrics and other key data points relevant to your business. If you need to re-order a Chart position, you can manually drag and drop the chart, and it will automatically snap into place with all other charts forming around it.

We encourage you to experiment with the styles for different numbers of Chart, different types of Chart, and different combinations. This example is a useful arrangement of five charts in the Horizontal - Continuous (3 Row) style. A vertical style might be more appropriate for Timeline charts, which tend to be flatter.

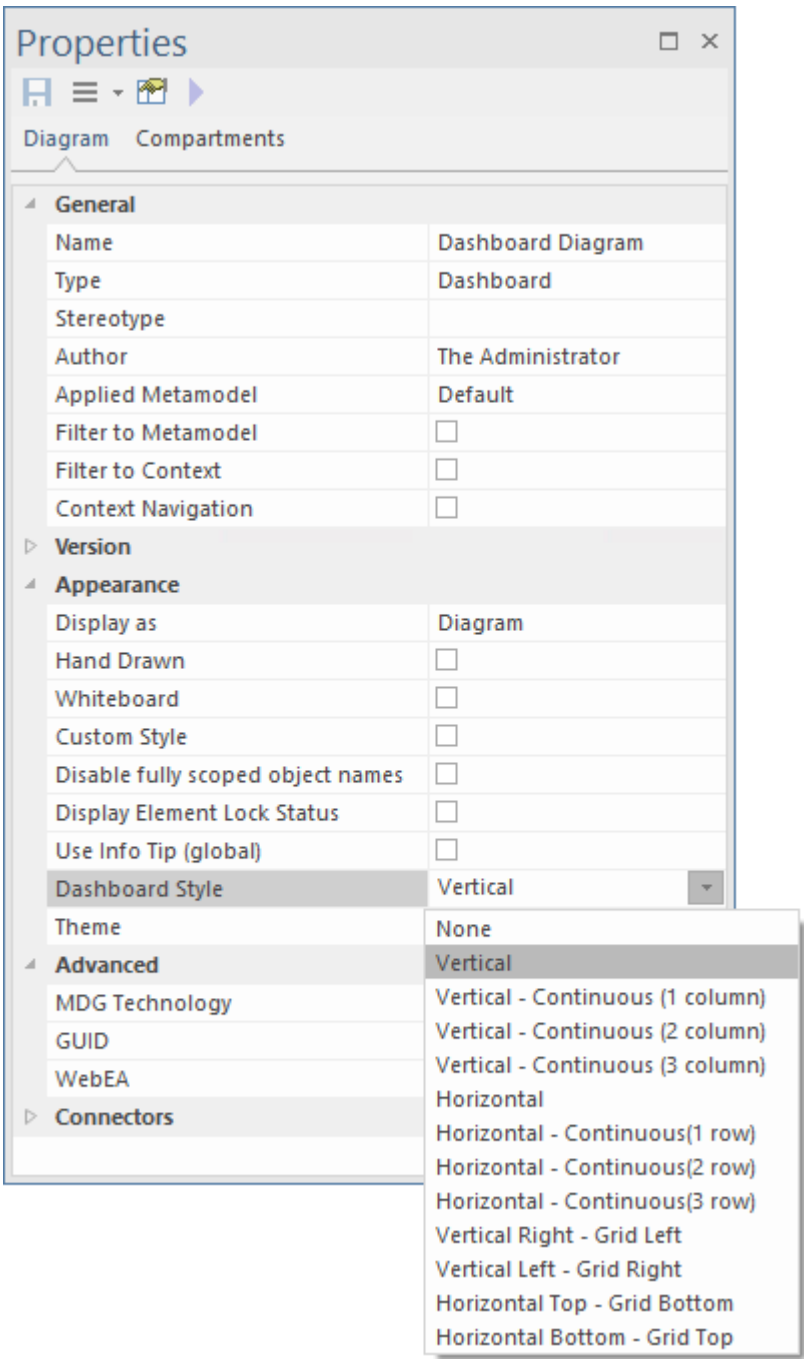


If there are many Chart elements, one of the Continuous styles will provide a scrollable grid of the elements, allowing you to view all the Charts.

Access

Open the diagram containing Chart elements that you want to lay out, click on the diagram background, then use the ribbon or keyboard method to open the Properties window for the diagram. In the 'Appearance' section, in the

'Dashboard Style' field, click on the drop-down arrow and select the style to apply.



Ribbon	Start > Design > Create > Properties
Keyboard Shortcuts	Alt+1 | Create | Properties

Grid Styles

These styles arrange the Chart elements into the smallest uniform grid, such as 2x2, 2x3 or 3x3, which will be sized to completely fill the current view. The longer axis - if there is one - will be determined by whether you select a Vertical or a Horizontal style. For example, a Vertical style will format six Charts in a grid three charts long and two charts high, whereas a Horizontal style will make the grid two charts long and three charts high.

However, if the number of Charts cannot form a uniform grid, there will be one element left; these styles position that remaining element on a specific face of the grid.

Style	Description
Vertical Right - Grid Left	The element with the Z order of 1 is selected as the 'odd' element and placed on the right of the diagram, with the rest of the elements in a grid on its left.
Vertical Left - Grid Right	The element with the highest Z order (such as 5, or 7, or 9) is selected as the 'odd' element and placed on the left of the diagram, with the rest of the elements in a grid on its right.
Horizontal	The element with the highest Z order

Top - Grid Bottom	(such as 5, or 7, or 9)is selected as the 'odd' element and placed on the top of the diagram, with the rest of the elements in a grid below it.
Horizontal Bottom - Grid Top	The element with the Z order of 1 is selected as the 'odd' element and placed on the bottom of the diagram, with the rest of the elements in a grid above it.

Horizontal/Vertical Styles

Style	Description
None	No style is applied. If a style was previously applied, None does not change the previous layout, but any restrictions imposed by the previous style - such as constraining objects to the view - will not now be applied.
Vertical	Lays out all elements vertically within the size of the view. This makes all elements the same width as the current view, and divides the height evenly between all the elements on the diagram (for example, three elements will each have the total

	width and one third of the height of the view). You cannot directly change the height and width of an element.
Vertical - Continuous (1 Column)	Lays out all elements vertically, with some elements being outside the view and displayed using the scroll bar if necessary. Each element is the full width of the view; you cannot directly change the width of the element, but you can change its height.
Vertical - Continuous (2 Column)	Lays out elements vertically, divided equally between two columns, with some elements being outside the view and displayed using the scroll bar if necessary. If the number of elements is not even, one element occupies the full width of the view; otherwise each element occupies half the width of the view. You cannot change the width of an individual element, but you can change the element height.
Vertical - Continuous (3 Column)	Lays out elements vertically, divided equally between three columns, with some elements being outside the view and displayed using the scroll bar if necessary. If the number of elements is

	not divisible by three, one element occupies the full width of the view, or two elements each occupy half the width of the view; otherwise each element occupies a third the width of the view. You cannot change the width of an individual element, but you can change the element height.
Horizontal	Lays out all elements horizontally within the size of the view. This makes all elements the same height as the current view, and divides the width evenly between all the elements on the diagram (for example, three elements will each occupy the total height and one third of the width). You cannot directly change the height and width of an element.
Horizontal - Continuous (1 Row)	Lays out all elements horizontally, with some elements being outside the view and displayed using the scroll bar if necessary. Each element is the full height of the view; you cannot change the height of an individual element, but you can change the width.
Horizontal - Continuous	Lays out elements horizontally, divided equally between two rows, with some

(2 Row)	elements being outside the view and displayed using the scroll bar if necessary. If the number of elements is not even, one element occupies the full height of the view, otherwise each element occupies half the height of the view. You cannot change the height of an individual element, but you can change the width.
Horizontal - Continuous (3 Row)	Lays out elements horizontally, divided equally between three rows, with some elements being outside the view and displayed using the scroll bar if necessary. If the number of elements is not divisible by three, one element occupies the full height of the view, or two elements occupy half the height of the view, otherwise each element occupies a third the height of the view. You cannot change the height of an individual element, but you can change the width.

Notes

- The styles as a group are effectively permanent; once a diagram has had a style applied, you cannot change the

layout other than by applying another style, and you cannot restore the original un-styled layout

- After a style has been applied, if you need to re-order the elements you can do so by simply dragging them into their new position
- Resizing the view will also resize the elements to fit the view, appropriate to the dimension that the style fixes
- Whilst the styles will operate on diagrams of any type, you might obscure information if you apply the styles to elements other than Charts; for example, as the elements are automatically laid out in a grid, significant relationships or positions of elements would not be maintained

Including Charts in Reports

If you want to distribute your Charts in the form of a printed or printable report, you can do so in two ways:

- Print the diagram containing the Chart (for small and/or informal distributions of a Chart or group of Charts)
- Generate a 'Diagrams Only' report to show all Charts in the selected Package, without any other model or element details

If you want to show the Chart definitions and other properties of each Chart element, you can generate other types of document report on the Packages containing the diagrams and elements.

It is also possible to include the Charts (in the form of a normal diagram) as a feature of any web documentation that you might generate on the model or Packages.