

Desktop Studio: Charts

Intellicus Enterprise Reporting and BI Platform



©Intellicus Technologies
info@intellicus.com
www.intellicus.com

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For details, visit: <http://www.intellicus.com/acknowledgements.htm> .

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Working with Charts

Charts are pictorial representation of data, which make it quicker and easier to analyse large volumes of data. Charts can also be used to denote a trend, measure facts and figures over a period of time, etc. Intellicus Studio provides the facility to display a chart with the report output. You can choose the most suitable chart type from the different type of chart types offered for including in the report.


Charts contain a lot of options, but use of these options would depend on the following factors:

- **Type of chart chosen:** When you plot a bar chart, make sure that you select numeric data for at least one of the axes.
- **Number of fields chosen for the charts:** To plot a bar chart you need data for at least two series. In addition, a pie chart would always show only one data series and is useful when you want to emphasize a significant element.



Important: In case of **bound charts**, chart is plotted depending on the section where chart component is placed. This is because the data made available for chart depends on data source used for report. In case of **unbound charts**, this is not the case. In whichever section you place the chart, entire records received, will be considered for plotting the chart. This is because the data made available for chart comes from its own data source.

To create a chart:

Click  icon from the toolbar and click-and-drag the mouse inside the Layout window of the Layout Editor to mark an area.

Alternatively, you can also do this: on **Insert** menu, click **Chart** option. Mouse pointer will change to +. Now click and drag the mouse to mark an area.

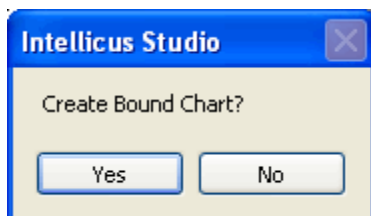


Figure 1: Bound Chart Confirmation

Click **Yes** for a bound chart and **No** for an unbound chart. In both the cases a default chart will be created in the marked area.

To customize the chart you need to right-click on the chart and select the Properties menu item.

Bound Chart

In a bound chart report, SQL statement used for the current report will be used as the base data for the chart. All other steps would remain the same (as explained for unbound reports).

Unbound Chart

You need to specify data source for the data to be represented as a chart. To do this, right-click on the chart and invoke the properties dialog box. This properties dialog box contains many tabs under which you have to provide the details to create the chart. These tab screens serve as a wizard to create a chart. Simply select a tab and enter the details.

This screen also contains a chart preview pane and the selected control's description.

Data Source tab

On data source tab you will carryout three activities:

- Getting Data
- Selecting fields to plot on chart
- Data Formats

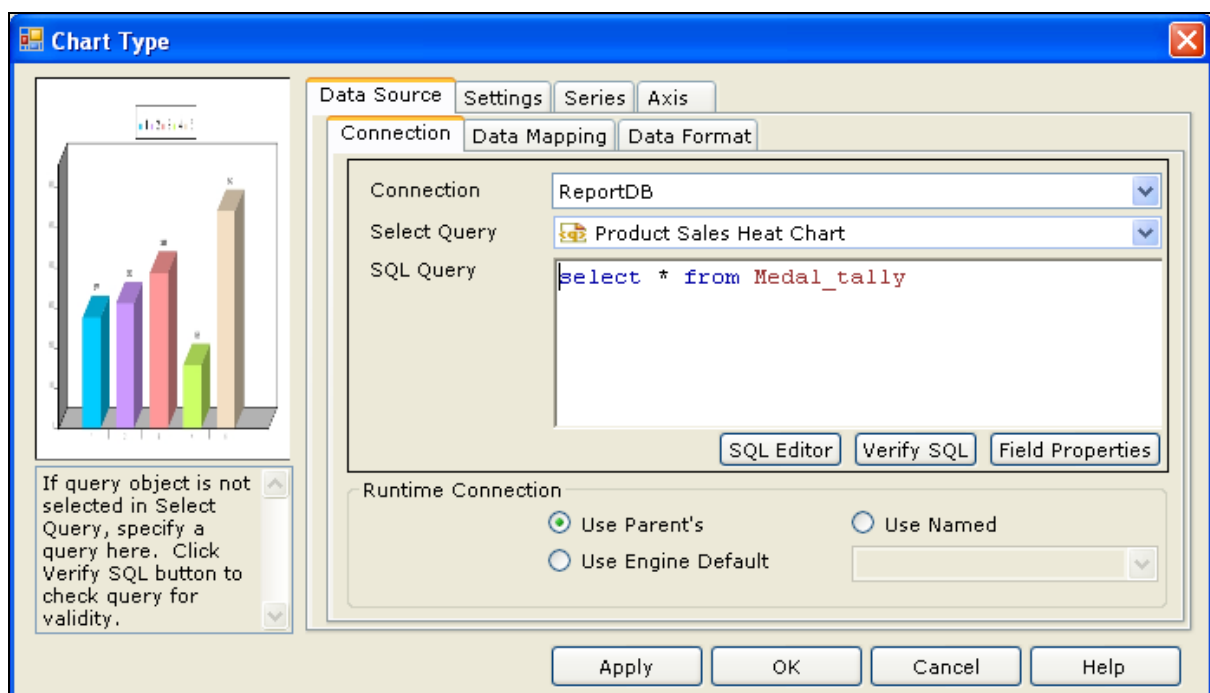


Figure 2: Unbound Chart Data Source

Setting connection details

Data source is defined here for an unbound chart. Also, preferences of connection to be used at run time, is also setup here.

Connection Name: Select the connection name to use for to get data for chart.

Select Query: Pre-designed queries are available in repository folders. In this dropdown, navigate to the folder where the desired query is available and select it. Click **Verify SQL** button. The SQL will be displayed in **SQL Query** text box.

SQL Query: If query object is not selected in **Select Query**, specify a query here. Click **Verify SQL** button to check query for validity.

SQL Editor: Click this button to open SQL Editor dialog box. This dialog box is used to design SQL query. If you design a query using SQL Editor, that query will appear in **SQL Query** box.



Note: The SQL Editor opened from here will have **Sort** and **Filter** tab disabled.

Verify SQL: Click this button to check the SQL for errors. This button can also be used as refresh button for the fields that are defined for retrieval using the SQL provided above. For example, once you have selected the fields from the Fields to add in the chart, and have switched over to some other tab, when you return to this tab the fields that are not selected will not be displayed.

Runtime Connection: Select the data connection to be used at run time. At runtime data will be fetched from that connection.

- **Use Parent's:** Select this option to select the database connection that the parent report has used.
- **Use Engine Default:** Select this option to use the connection that was marked as default from the Intellicus Report Engine Connection Manager dialog.
- **Use Named:** Using which, you can provide the named (configured connection) to fetch data for the cross-tab report. This will override the default connection.



NOTE: Chart can be created using OLAP type connections also.

Setting data mapping

On this tab, fields to be placed on Group axis (X-axis) and Value axis (Y-axis) are set.

Fields received from query are listed in the **Available Fields**.

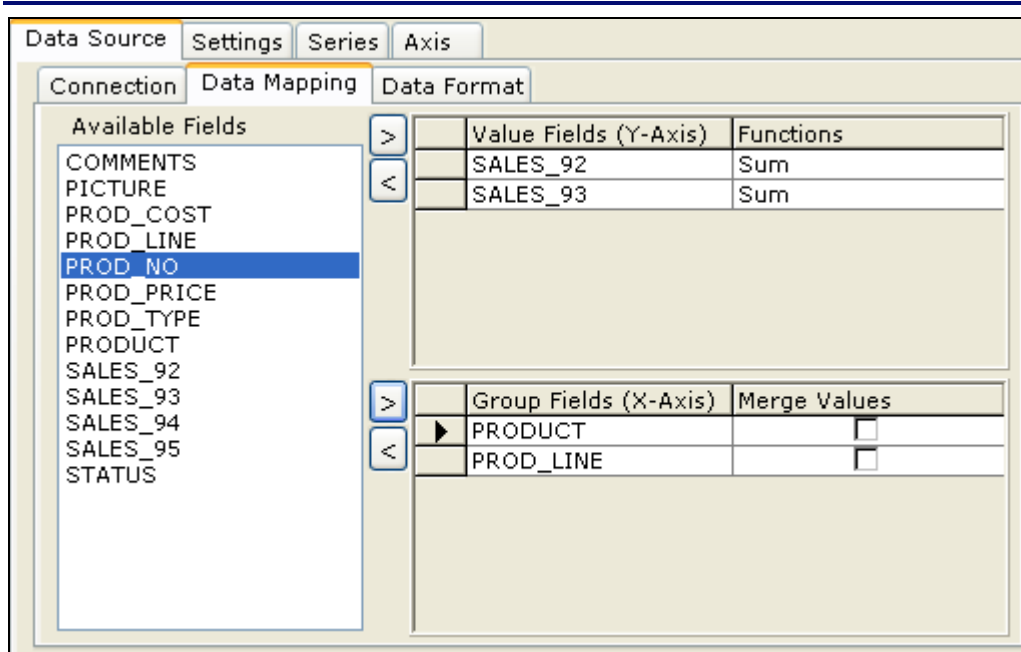





Figure 3: Data mapping field of chart dialog box


Placing a field on Value Axis

Click the field and click  button near **Value Fields** title. Selected field will be listed under **Value Fields**. If other than the default, select function to be applied on field. Multiple fields can be placed on this axis.

To remove a field, click the field listed in **Value Fields** and click  button.

Placing a field on Group Axis

Click the field and click  button near the **Group Fields** title. Selected field will be listed under the **Value Fields**. Multiple fields can be placed on this axis. In that case, you can select the grouping by clicking **Merge Values** check box.

To remove a field, click the field listed in the **Group Fields** and click  button.

Setting Data formats

On this tab, we set data format for fields placed on Group Axis.

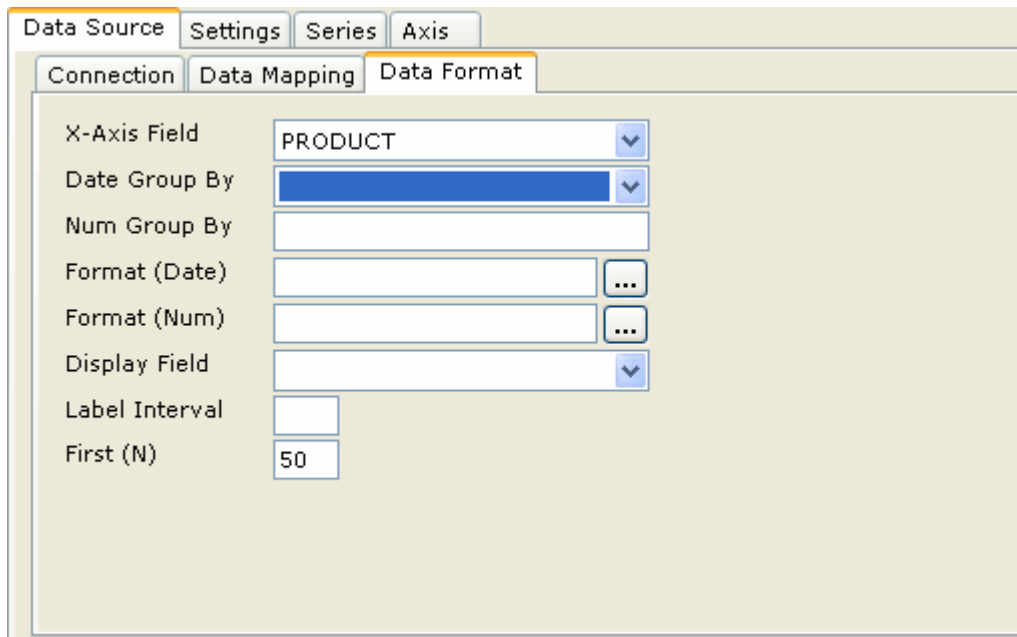


Figure 4: Setting data format

X-Axis Field: Select the field for which data format is being setup.

Date Group By: For a date type field, select group option here.

Num Group By: If the field is of number type, specify a number indicating group. For example, to form group of 1-5, 6-10, specify 5.

Format (Date): For a date type field, specify format here.

Format (Num): For a number type field, specify format here.

Display Field: Select a field here if a different field should be displayed on axis.

Label Interval: Specified as a number, label will appear on every 'n'th value. For example, if you specify 2 and axis has Date set by month, Labels for Jan, March, May, etc will appear.

First (N): To include only few top values in the chart. For example, in a chart having sales summary field, specify 20 to include records having top 20 figures of sales summaries.

Chart – Settings Tab

Chart type, visual effects and legend related settings are done on Settings tab. This tab has three sub-tabs:

- General
- Effects
- Legends

General Tab

Select **Chart type** from the list available. Click the respective chart type to select it.

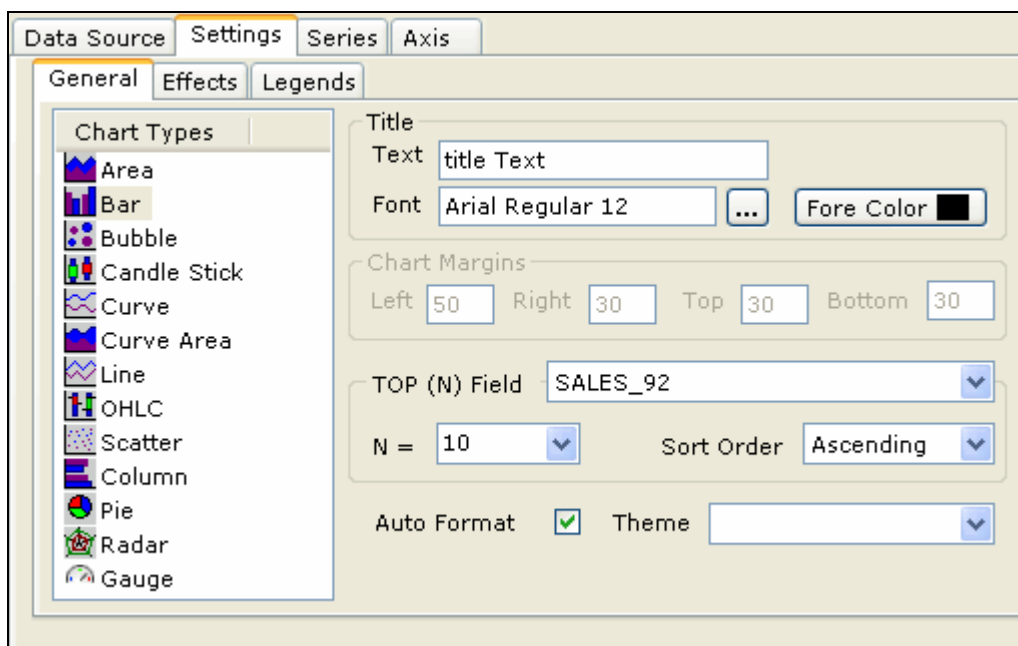


Figure 5: Chart Settings – General Tab

Title

- **Text:** Specify text that will appear as title of the chart.
- **Font:** Font properties for the title text.
- **Fore Color:** Select text color for the chart.

Chart Margins

Specify space to be kept blank from Left, Right, Top and Bottom edges of chart component.

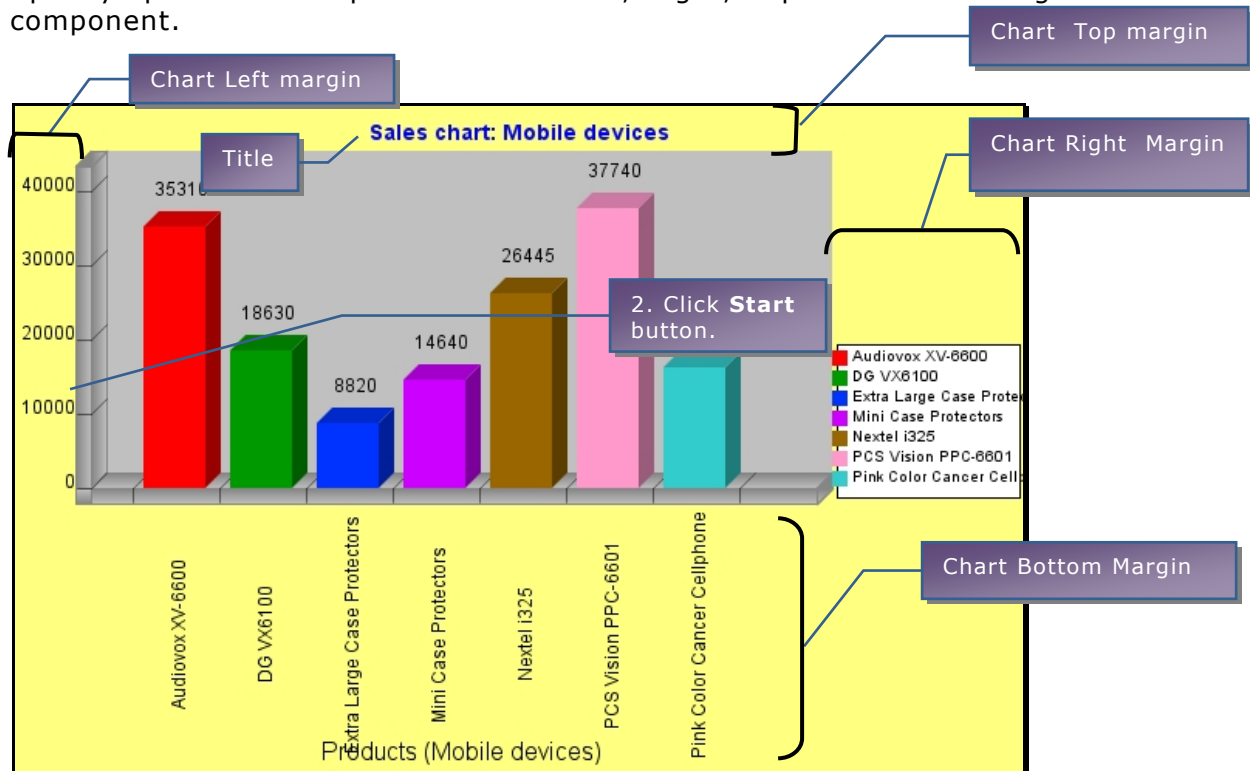


Figure 6:Chart > Settings > General tab

Top (N)

By specifying Top (N) details you can limit number of data points plotted on chart. For example, if you have 100 products, but want to plot product having highest 5 sales, specify Top (N).

Field: This dropdown lists all the fields selected for X axis and Y axis.

N = The number of data points to be plotted.

Sort Order: Select *Ascending* to plot lowest of the 'N' values. Select *Descending* to plot highest of the 'N' values.

Auto Format: Select (check) this check box to automatically apply these formatting aspects:

- Multicolor
- Label Angle (Axis > Style)
- Chart Margins (Settings)
- Angle (Series > Point labels)

Theme: To apply pre-configured color combination (theme) on the chart.

Effects tab

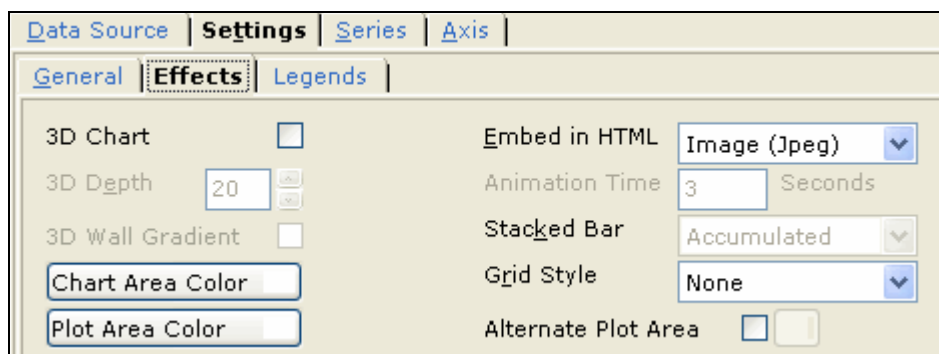


Figure 7: Chart Settings - Look and feel effects

3D chart: Select this checkbox to have the chart having three-dimensional effect.

3D Depth: Set depth of the third dimension.

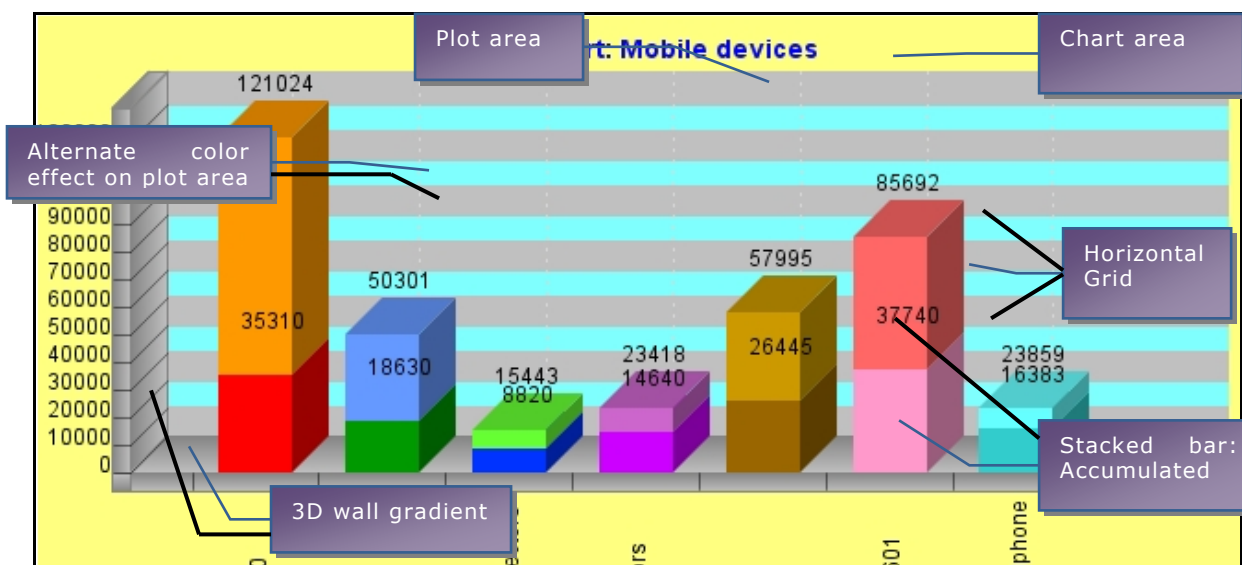


Figure 8: Chart Settings > Effects tab

3D Wall Gradient: Select this checkbox if you want gradient effect on wall.

Embedded in HTML: The way chart should be embedded when report is viewed as HTML. Select *Image (Jpeg)* to embed image as a JPEG format image. Select *Flash* to embed image as a flash animation.

Animation time: Applicable when Embedded in HTML is set as Flash. Specify time in second for which animation should continue.

Stacked Bar: Applicable for bar charts. Select *Side by side* to place bars one besides other, *Accumulated* to place bars one above other, select *Percentage* to have accumulated in percent form.

Grid Style: Select the grid style among options – Horizontal, Vertical, Both or Secondary Y-axis.

Select colors for Chart area (**Chart Area Color**), plot area (**Plot Area Color**) and alternate color for plot area (**Alternate Plot Area**).

Legends tab

Legend related settings are done on **Legend** tab of the **Settings** tab.

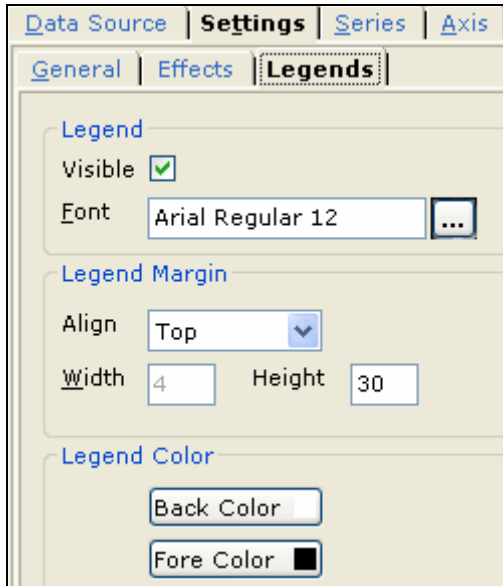


Figure 9: Setting - legends

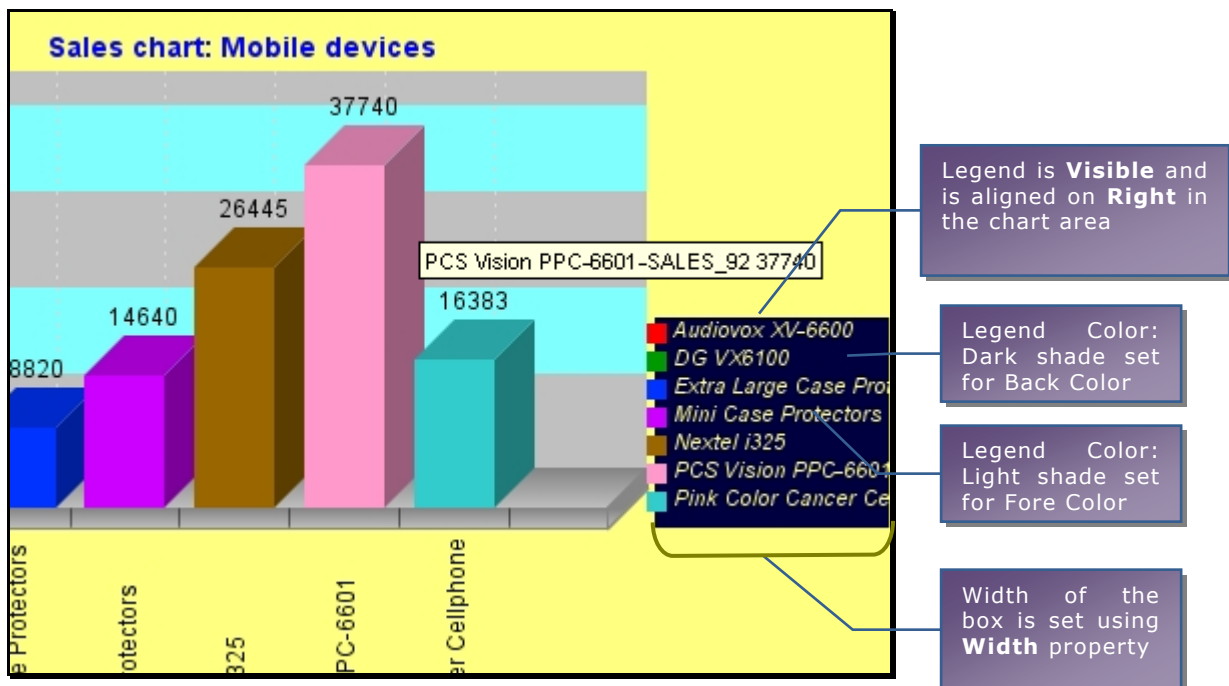


Figure 10: Settings > Legends tab

Legend

Visible: Select to make legends to appear (visible) on chart.

Font: Select font properties for legend text.

Legend Margin

Align: Select placement option for legend text from Left, Right, Top or Bottom.

Width and Height: Setup width (top and bottom alignment) and height (left and right alignment) of legend box.



Tip: You may need to change chart margins (Settings > General tab on Chart Properties dialog) to get actual effect of Width / Height of Legend box.

Legend Color

Select color options for Back color of legend box and Fore color of legend box.

Series Tab

Series tab of **Chart Properties** dialog box has behaviour and formatting settings for Series. This tab is divided in 5 sub-tabs:

- General
- Border
- Marker
- Point Labels
- A chart type specific tab (Gauge, OHLC, CandleStick or Split-pie)

For all of these sub-tabs, select either **<<All Series>>** or respective series before making settings. Some of the entry boxes may not be applicable on the selected chart type and so it will be disabled. To move a series up or down, click the respective series and click Up arrow or Down arrow available on the right of series selection box.

As you shift the highlight on chart types tabs specifically required for the highlighted (selected) chart type appears.

When you select **<<All Series>>**, the chart type selected on Settings tab's General sub-tab gets selected.

General tab

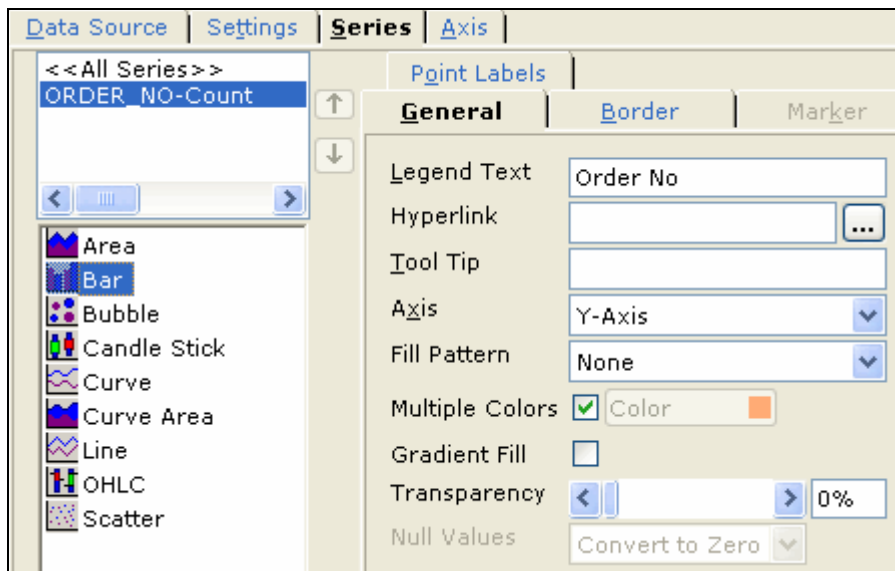


Figure 11: General tab of Settings

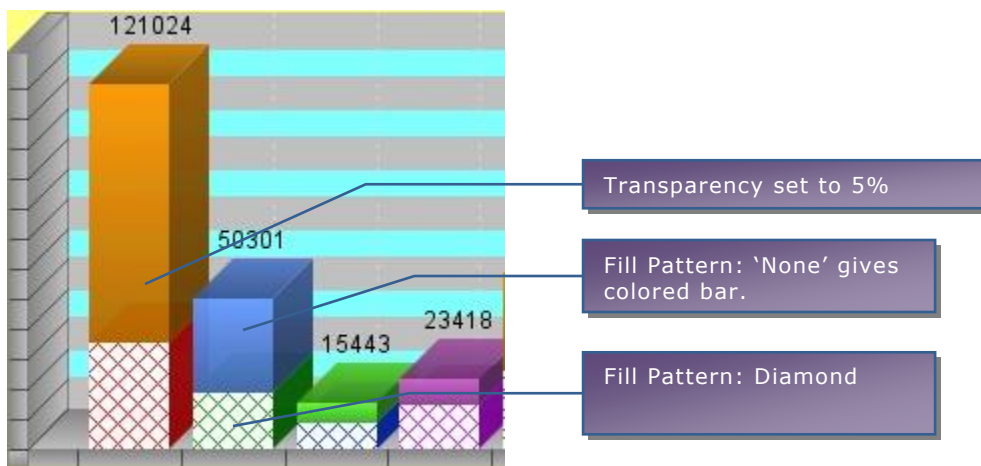


Figure 12: Series > General tab

Legend Text: Specify text for legend of this series.

Hyperlink: Specify hyperlink properties to make this series a clickable hyperlink. When you click this series, it will open a URL or report as specified.

Tooltip: Specify tool tip that will appear when you hover the mouse on series. Tool tip can be static or dynamic. To have a dynamic tooltip, specify field within <% and %>.

Axis: Select the axis on which this series should be placed.

Fill Pattern: Select pattern for selected series.

Multiple Colors: Select (check) this check box to have multiple colors for series. Select the color you want for selected series.

Gradient Fill: Select (check) this check box to have gradient effect on chart series.

Transparency: Select transparency settings by dragging the slide button towards the left or right side. 0 is opaque, 100 is completely transparent.

Null Values (line charts): Select how a null value should be handled on chart.

- **Convert to Zero:** To consider Null as zero. Line of the chart will pass through the point plotting zero value.
- **Ignore:** For not considering the value to be plotted on chart. Line from previous point will not be plotted further touching point. Another line will be plotted from next point.
- **Trend:** For not considering the value to be plotted n chart. But line from previous point will be plotted to connect next point, depicting the trend. Line will not break like that in Ignore.

Border tab

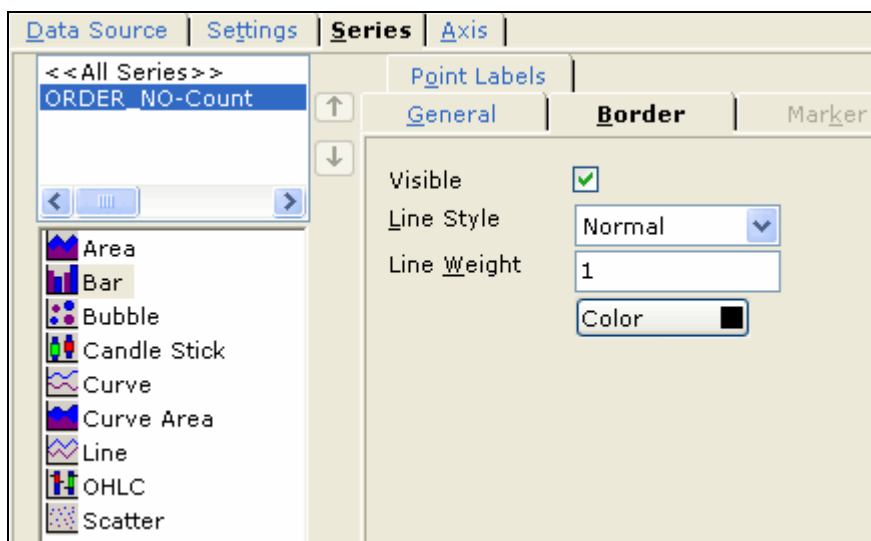


Figure 13: Border tab under Series

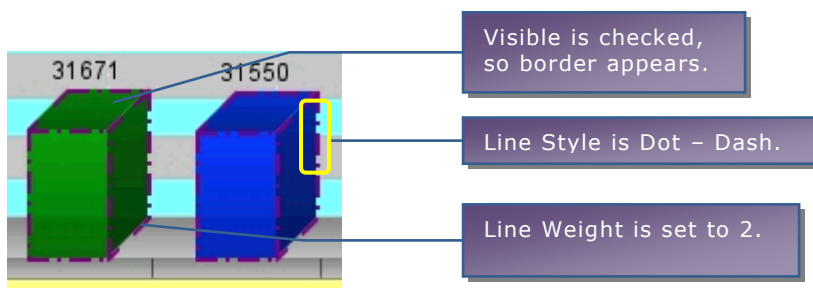


Figure 14: Series > Border tab

Visible: Select (check) this checkbox if border should be visible.

Line Style: Select line style from drop down options.

Line Weight: Specifies thickness of line in pixels. Select color of border by clicking the **Color** button.

Marker tab

This is applicable for following chart types:

- Area
- Line charts
- Curve
- Curve Area
- Scatter

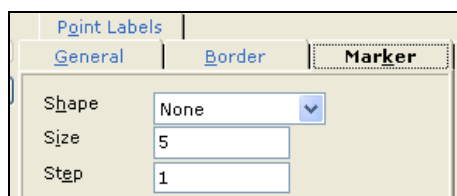


Figure 15: Marker tab on Series

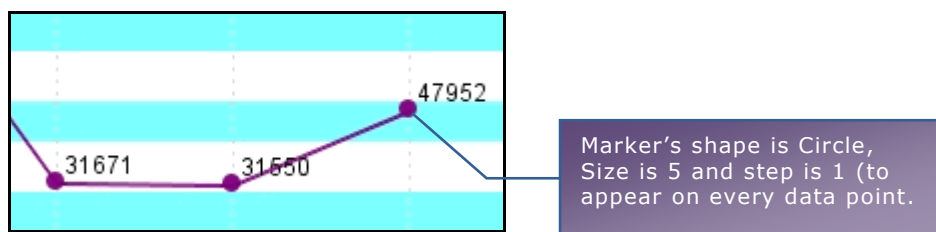


Figure 16: Series > Marker tab

Shape: Select shape of the marker from the drop down.

Size: Select size of markers.

Step: Specify difference in value (steps) to be kept between two markers. For example, if you provide 2 here, market will be placed at every 2nd data point.

Point Labels tab

These are the markers that appear on chart and near the series and display value.

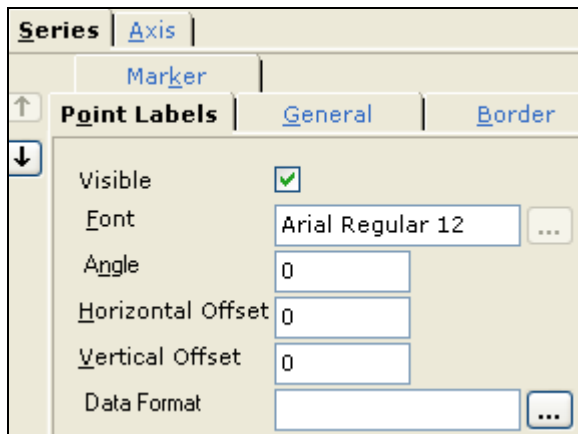
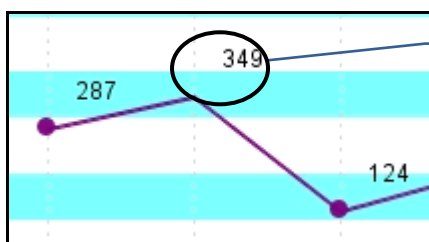


Figure 17: Point labels on Series tab



Visible is checked, Angle is 0, Horizontal offset is 10 and vertical offset is 10.

Figure 18: Series > Point Labels

- **Visible:** Check this to make point labels visible.
- **Font:** Select font properties for text of point labels.
- **Angle:** Specify angle of point label.
- **Horizontal Offset:** Specify horizontal distance (in pixel) from series from where point label's text will start.
- **Vertical Offset:** Specify vertical distance (in pixel) from series from where point label's text will start.
- **Data Format:** Select the format for the data from the available options.

Gauge tab

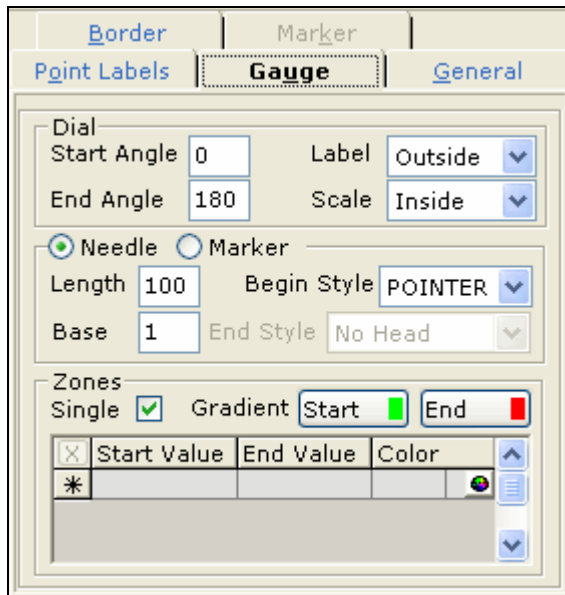


Figure 19: Gauge tab on Series

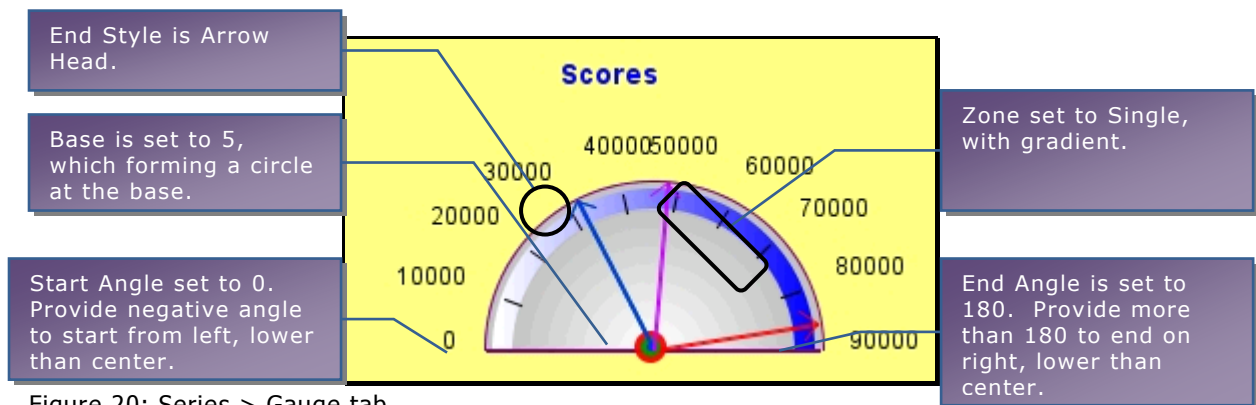


Figure 20: Series > Gauge tab

Dial

- **Start Angle:** Specify angle at which dial should start. This is specified in degrees and from left to right.
- **End Angle:** Specify angle at which dial should end. This is specified in degrees and from left to right.
- **Label:** Select Outside to place labels outside the dial area. Select Inside to have labels inside the dial.
- **Scale:** Inside to display scale inside the dial area. Select Outside to display it outside the dial.

Needle, Marker

Select Needle to have a needle starting from center like automobile dials. Select a marker to have a marker indicating the point.

- **Length:** Specify length of needle in terms of percent of radius.
- **Base:** Specify base width in terms of percent of radius.
- **Begin Style:** Select any one from Line and Pointer.
- **End Style:** Select end style for needle.

Zones

Your dial may have multiple zones. This increases readability of the chart.

Single zone

To have single zone, select **Single** checkbox, select Gradient **Start** color and **End** color.

Multiple Zones

For each zone, specify **Start Value**, **End Value** and **Color**. To get color picker, click the button in **Color** column.

New row appears automatically. To delete a row, select it and click **X** button on top-left of the table.

OHLC tab

This tab will appear when you select OHLC as chart type.

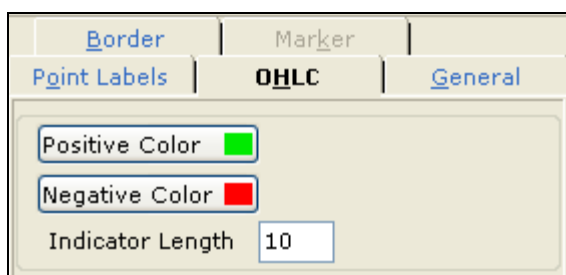


Figure 21: OHLC tab on Series

- **Positive Color:** Select the color that should plot positive difference.
- **Negative Color:** Select the color to plot negative difference.
- **Line Width:** Specify line width.

Candle Stick

This tab will appear when you select Candle Stick as chart type.



Figure 22: Candle Stick tab on Series

- **Positive Color:** Select the color that should plot positive difference.
- **Negative Color:** Select the color to plot negative difference.

Pie tab

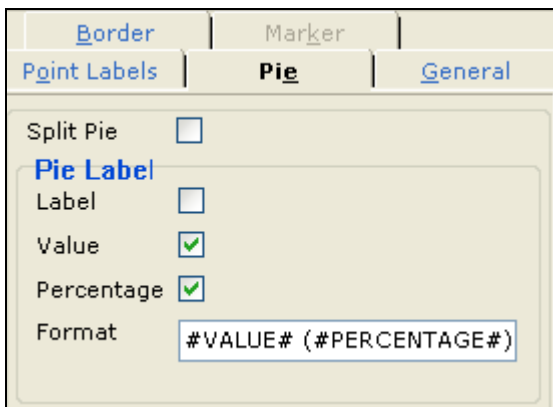


Figure 23: Pie tab on Series and its effect on pie chart

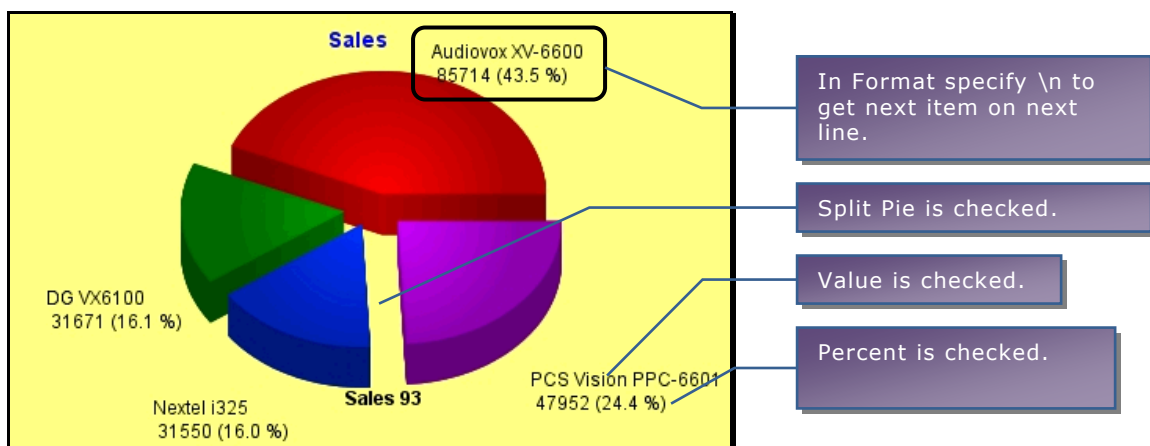


Figure 24: Series > Pie tab

Split Pie: Check the checkbox to get split-pie appearance.

Pie Labels

- **Label:** Check (select) this checkbox to get Labels on Pie chart.
- **Value:** Check (select) this checkbox to get actual values on Pie chart.
- **Percentage:** Check (select) this check box to get value as percent of total (of values) on Pie chart.
- **Format:** Appears automatically as per checkboxes selected above.

Charts – Axis tab

Make look and feel related settings for X axis, Y Axis and secondary Y Axis on this tab.

Scale

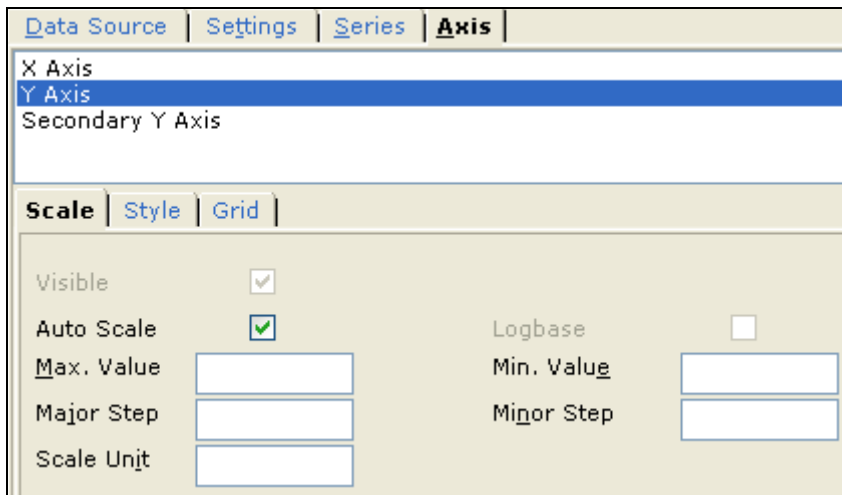


Figure 25: Axis - Scale on Chart properties dialog box

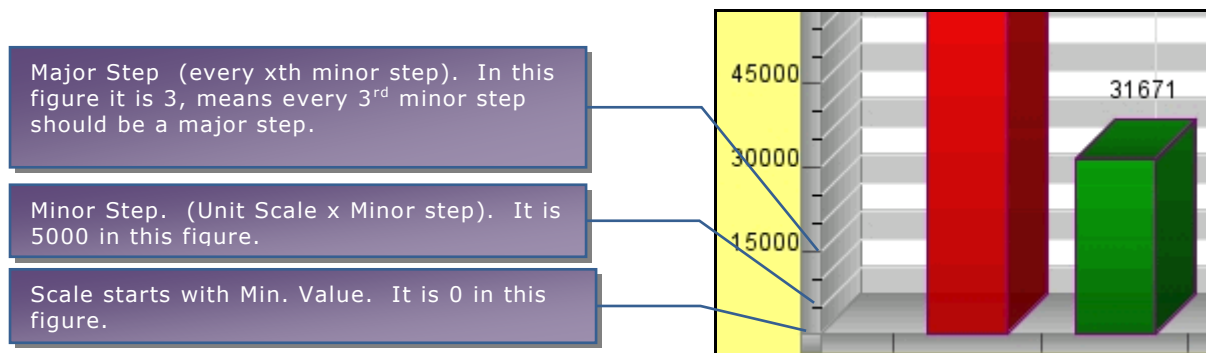


Figure 26: Axis > Scale tab

Auto Scale: Select this to let application decide the scaling at report run time.

If **Auto Scale** is clear (unchecked),

- **Max. Value:** Maximum value to be shown on Y-axis.
- **Min. Value:** Minimum value to be shown on the Y-axis.
- **Scale Unit:** The unit to be considered for calculation or Minor step and Major step.
- **Minor Step:** Scale Unit multiplied by number specified here.
- **Major Step:** Specify value as every xth minor step.

Example:

- Minimum Value: 0
- Longer line at: 100, 200, 300, etc.
- Shorter line at: 20, 40, 60, 80, etc.
- Maximum Value: 500

Give values this way:

- Minimum Value:0
- Maximum Value: 500
- Scale unit: 2
- Minor Step: 10 (so you will get shorter line at 2x10, 4x10, 6x10, etc.)
- Major Step: 5. (so, you will get longer line at 100, 200 – 5th minor step, etc).

Style

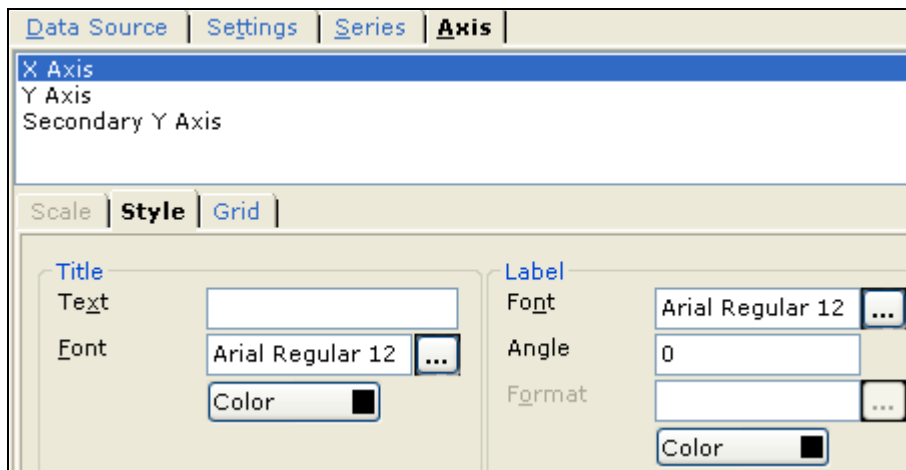


Figure 27: Style tab on Axis

Title

- **Text:** Specify title text for the selected axis.
- **Font:** Set font properties for the title text.
- **Color:** Select color for the title text.

Label

These are value names (like Jan, Feb, etc.)

- **Font:** Select font properties for Label.
- **Angle:** Select angle for label text.
- **Format:** (not applicable for text labels) select format for label.
- **Color:** Select color for title text.

Grid

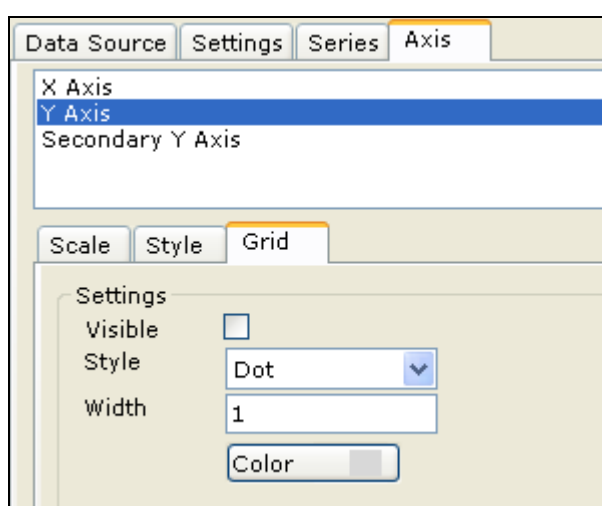


Figure 28: Grid tab on Axis

Settings

- **Visible:** Select this checkbox to make Major Grid visible.
- **Style:** Select style for grid from dropdown.
- **Width:** Specify width (in pixels).
- **Color:** Select color for respective grid line.

Quick Chart

Use this feature when you want to create a bound chart and the fields that you want to place on the chart are already placed on detail section. Quick Chart feature auto-sets the fields for X-axis and Y-axis (value axis). To use this feature,

1. From the fields placed on the detail section, select the fields that are to be placed on chart. To select multiple fields, press and hold down shift key and click the fields.
2. Click the **Chart** button from the toolbar and place the chart control on layout designer.

From the selected fields, those with data-type *text* and *date* are auto-set for x-axis and those with data-type number are set for y-axis (value axis).

All other settings for the chart control can be carried out from the **Chart Properties** dialog box.

