THREE D GRAPHICS

Js:Chart

JavaScript Charting Engine

Quick Start GUIDE

MARCH, 2013

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Getting Started

These steps define the information you need to include in your HTML file to draw a chart.

1) Define the tdgchart.js file in the script tag.

```
<script type="text/javascript" src="tdgchart.js"></script>;
```

2) Define the target location in your web page to draw the chart. Example:

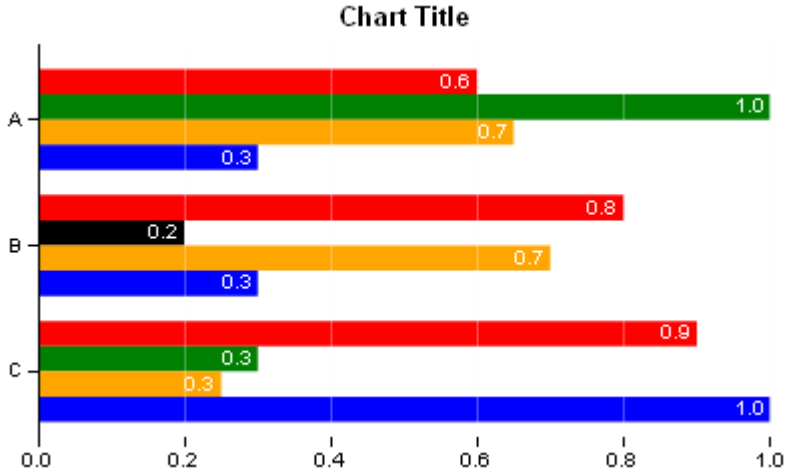
```
<div class='chart' id='chart1'></div>;
```

3) Create the chart in a script type tag:

```
<script type="text/javascript">
var chart = new tdgchart();
```

4) Draw the chart.

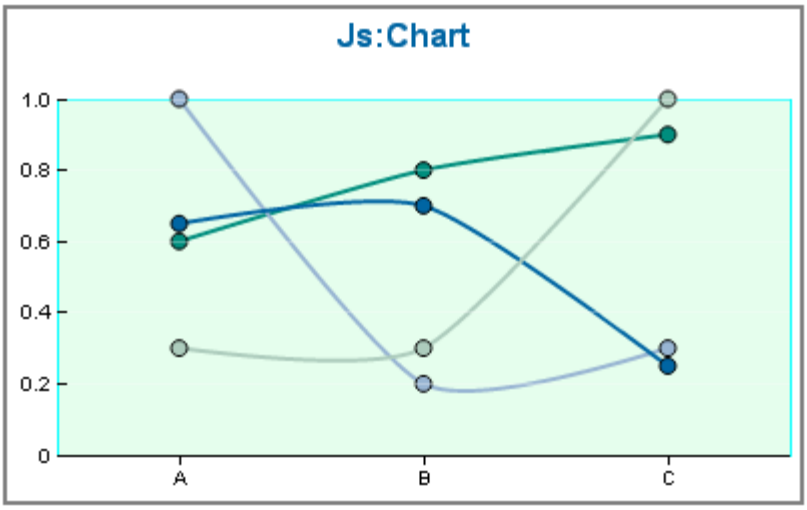
```
chart.draw('chart1');
</script>
```



A single parameter may be supplied with the tdgchart() function to specify properties that define the appearance of a chart.

EXAMPLE:

```
var data = [
[0.6, 1.0, 0.65, 0.3],
[0.8, 0.2, 0.7, 0.3],
[0.9, 0.3, 0.25, 1.0]
];
var props = {
   data: data,
   chartType: 'line',
   border: {width: 2, color: 'grey'},
   title: {
         text: 'Js:Chart',
         font: 'bold 12pt Sans-Serif', color:'rgb(0,101,163)'},
   chartFrame: {
         border: {width: 1, color: 'cyan'},
         fill: {color: 'hsla(140, 100%, 50%, 0.1)'}},
   blaProperties: {orientation: 'vertical',lineConnection: 'curved'},
   dataLabels: {visible: false},
   series: [
   {series: 0, color:'rgb(0,142,126)', marker: {visible: true}},
   {series: 1, color:'rgb(152,181,211)', marker: {visible: true}},
   {series: 2, color:'rgb(0,101,163)', marker: {visible: true}},
   {series: 3, color:'rgb(173,204,189)', marker: {visible: true}},
   ],
};
var chart = new tdgchart(props);
chart.draw('chart1');
```



NOTES:

- Different chart types may require more than one value to draw each riser or marker (see the chartType property for details). The default properties file (e.g., properties.js) includes an example data set that will draw a bar, line, or area chart.
- If properties are not specified, property settings from a default properties file (e.g., properties.js) will be used. Your Js:Chart package may include multiple default properties files for different chart types.
- After the tdgChart() constructor, additional properties can be set using dot notation (e.g., chart.title.text = 'A New Chart Title';).
- The *backend* and *allowBackendFallback* properties can be used to choose a rendering technology (Java Script or Flash). These properties MUST be passed to the tdgchart() constructor.
- Any chart instance is retrievable from the target DOM node. This allows you to retrieve the generated chart instance out of the HTML DOM node that was created to contain the chart. This makes it possible to access the chart anywhere, even if it was created by an entirely separate process. You can use this chart as any other chart (i.e., change properties, add event handlers, redraw the chart, etc.). After a chart.draw(), getElementById() provides direct access to the chart instance. Example:

```
<div id = 'myChartDiv'>

var chart = new tdgchart();
chart.draw('myChartDiv');

var div = document.getElementById('myChartDiv'); Standard javascript
var chart = div.chart;
```

These three blocks of code (creating the *div*, creating the chart, pulling the chart out of the *div*) would typically reside in different parts of an application.

Js:Chart dynamically adds a chart property to the standard *div* element in the HTML page that was retrieved by getElementById(). This allows you to set Js:Chart properties and call Js:Chart methods using div.chart. Examples:

```
div.chart.title.text = 'New Title Text';
div.chart.redraw();
```

The last line of the code segment (var chart = div.chart) just creates a convenience variable that stores 'chart' directly and allows you to set Js:Chart properties and call Js:Chart methods using chart. Examples:

```
var chart = div.chart;
chart.title.text = 'New Title Text';
chart.redraw();
```

Properties Overview

Colors & Gradients

Color properties define the color of an object. All objects can be assigned a color and transparency setting. Area and line objects can be assigned a color definition or a gradient definition.

Color Definitions

color: 'string': For color and transparency settings, the string can be one of the following:

- a color name (e.g., 'coral'),
- three RGB values (i.e., 'rgb (r,g,b)'),
- three RGB values and a transparency setting (i.e., 'rgba(r,g,b,a)'),
- three Hue-Saturation-Lightness values (i.e., 'hsl(h,s,l)'),
- three HSL values and a transparency setting (i.e., 'hsla(h,s,l,a)'), or
- hex values (e.g., '#f00' or '#ff00AA').

The World Wide Web Consortium (W3C) web site at http://www.w3.org/TR/css3-color/#colorunits provides details about color specifications.

Gradient Definitions

Gradients can be defined by a string or a JSON object.

JSON Object: This JSON object definition defines a linear or radial gradient:

```
color:  {
   type: 'string',
   start:{
         x: number | 'string',
         y: number | 'string'
   },
   end:{ // Linear Gradients Only
         x: number | 'string',
         y: number | 'string'
   },
   radius: 'string',  // Radial Gradients Only
   stops: [
               {
                     offset: number | 'string',
                     color: 'string'
               },
               ...
         ]
}
```

type: a string that defines the type of gradient: 'linear' or 'radial'

start/x: specifies the starting X-coordinate in the destination object space.

start/y: specifies the starting Y-coordinate in the destination object space.

end/x: If type is 'linear', specifies the ending X-coordinate in the destination object space.

end/y: If type is 'linear', specifies the ending Y-coordinate in the destination object space.

radius: If type is 'radial, specifies the radius of the gradient in the destination object space.

stops: a comma separated list of "offset color" pairs. This array can be any length, and can be a list of objects or arrays.

The *start: x/y* and *end: x/y* parameters can be specified as numbers (e.g., 0/20) or as strings (e.g., '5%'/'20%'). Numbers are interpreted as raw Scalable Vector Graphics (SVG) pixel coordinates. For example, start: x:0/y:0 is the object's top left corner. Negative numbers are not valid; any number less than zero is treated as zero. Numeric start/end coordinates are only useful for objects where you can set the area dimensions (e.g., the chart background area). For example, if the chart background/draw area is set to 200 by 200 pixels and start x:0/y:0 and stop x:100/y:0 is used to define a linear gradient, the gradient will be applied from the left edge to the center of the rectangle. If an object's size is calculated by the library (e.g., legend area, chart frame, risers, etc.), string percentages are typically used. For radial gradients, start: x/y defines the center of the gradient (e.g., start: x: '50%'/y: '50%' draws the gradient in the center of the object).

For radial gradients, the *radius* property defines the distance from the center to the outermost edge of the gradient. For example if an object is 200 by 200 pixels with a gradient start: x:'50%'/y:'50%' and radius: '100%', the outermost gradient edge will be 100 pixels beyond the edges of the object. In this example, 100% of 200 pixels is 200 pixels, so the gradient is actually 400 pixels from extreme left to extreme right. For a radial gradient that starts in the center (start: x:'50%'/y:'50%'), radius: '50%' is normally used to draw the gradient from the center to the outermost edges of the object.

The *stops:offset* values can be numbers or strings with '%'. Only numbers between 0 and 1 are valid, and are treated as percentages. A value 0.5 is the same as "50%". Numbers less than zero are treated as zero, and numbers greater than one are treated as 1.

string: To define a gradient in a string, use one of the following:

For a linear gradient, use a string in the following format:

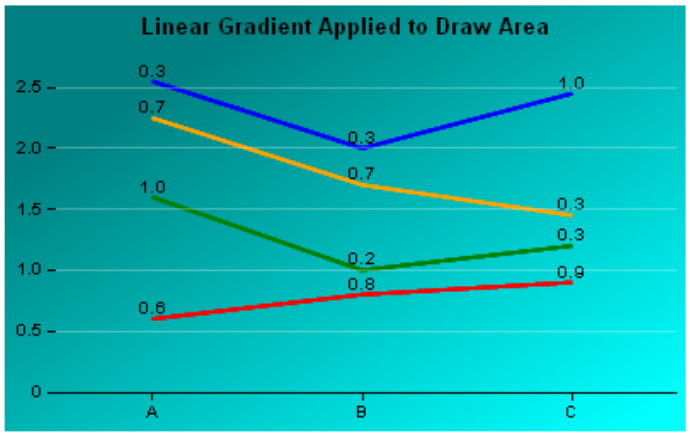
```
linear-gradient(startX, startY, endX, endY, stopsOffset
stopsColor,...stopsOffset stopsColor)
```

For a radial gradient, use a string in the following format:

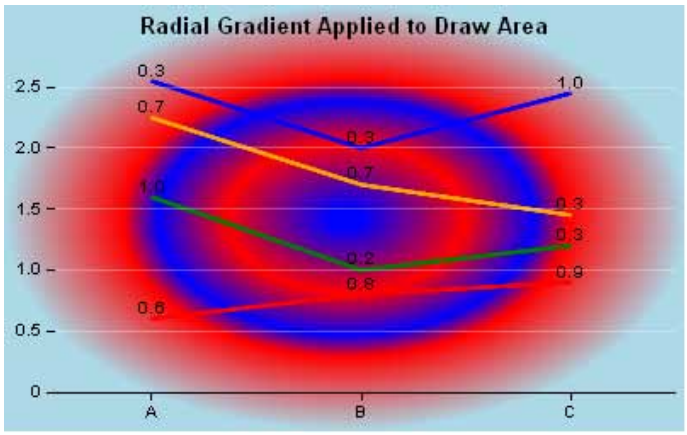
```
radial-gradient(startX, startY, radius, stopsOffset,
stopsColor,...stopsOffset stopsColor)
```

Examples:

```
fill: {
   color: 'linear-gradient(0,0,100%,100%, 20% teal, 95% cyan)'
   },
```




```
fill: {
   color: 'radial-gradient(50%,50%,50%, 20% blue, 35% red, 55% blue,
75% red, 1 lightblue)'
   },
```



You can learn more about SVG and defining gradients at: http://www.w3.org/TR/SVG/pservers.html.

Font Properties

All font properties are specified as a string (e.g., '10pt Sans-Serif') using the format defined at: http://www.w3.org/TR/CSS2/fonts.html#font-shorthand

Formatting Numbers

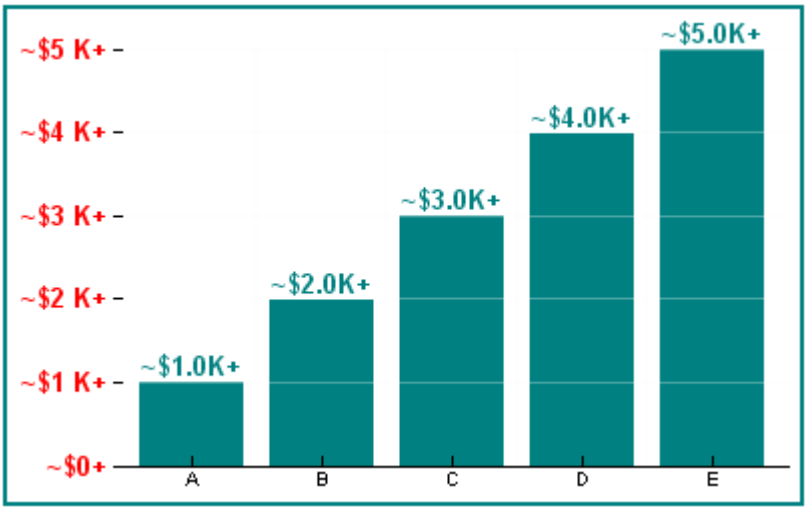
The numberFormat property specifies the format of numeric labels using one of the following:

- 'auto' (automatic - the default)
- a traditional JSON object
- a format string
- a function

auto: Use numberFormat: 'auto' to let the charting engine choose the number format based on the chart data. Prefix and suffix characters can be added to the chosen format by enclosing auto in brackets.

Example:

```
data: [[1000,2000,3000,4000,5000]],
title: {visible: false},
border: {width: 2, color: 'teal'},
blaProperties: {orientation: 'vertical'},
yaxis: {labels: {font: 'bold 10pt Sans-Serif', color: 'red'},
   numberFormat: '~${{auto}}+'
   },
dataLabels: {font: 'bold 10pt Sans-Serif', color: 'teal',
   numberFormat: '~${{auto}}+'},
series: [{series: 0, color: 'teal'}]
```



JSON object: The traditional JSON object includes the following properties to format the numeric labels:

```
numberFormat: {
   mode: 'numeric', // or 'percent', 'currency', 'scientific'
   thousandSep: ',',
   decimalSep: '.',
   decimalPlaces: 2,
   grouping: 'K', // One of 'K', 'M', 'B', 'T'
   prefix: 'a ',  // added to the front of the label
   suffix: ' b',  // added to the end of the label
}
```

mode: Use 'numeric', 'percent', 'currency', or 'scientific'

thousandSep: Character to separate values above and in multiples of a thousand (e.g., 1,000,000).

decimalSep: Character to separate decimals (e.g., 1.00)

decimalPlaces: Number of decimal places (i.e., number of digits to show to the right of the decimalSep character).

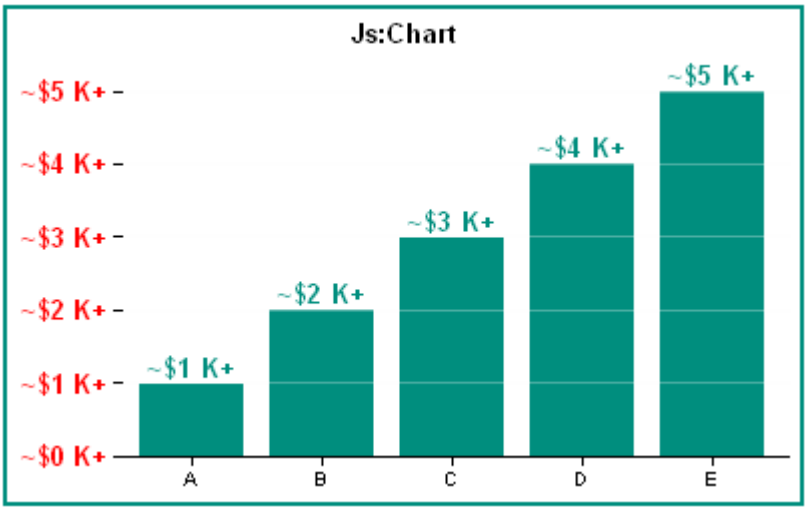
grouping: Use 'K', 'M', 'B', or 'T' to group large numbers by thousands (i.e., 1,000 = 1K), millions (i.e., 1 million = 1M), billions (i.e., 1 billing = 1B), or trillions (i.e., 1 trillion = 1T).

prefix: Character(s) to add to the front of the label

suffix: Character(s) to add to the end of the label

Example:

```
yaxis: {
   labels: {font: 'bold 10pt Sans-Serif', color: 'red'},
   numberFormat: {
         mode: 'currency',
         decimalPlaces: 0,
         grouping: 'K',
         prefix: '~',
         suffix: '+',
   }
}
```



Format String: You can also specify the format of numeric labels using a format string:

```
numberFormat: 'string'
```

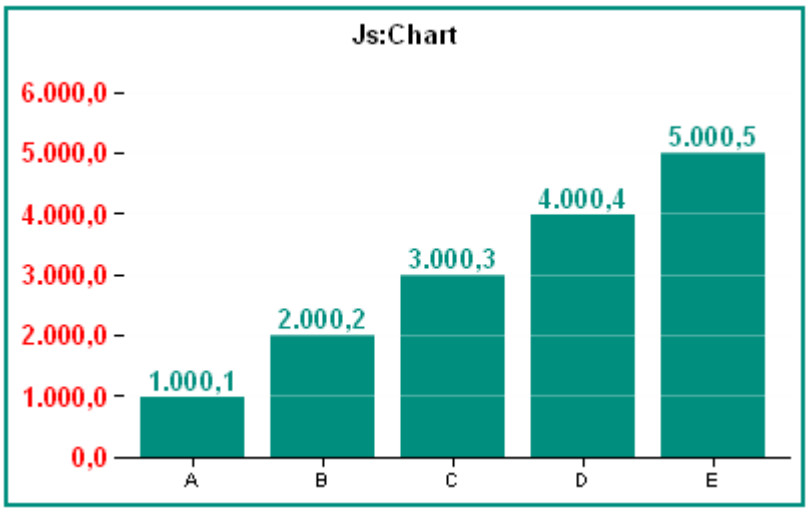
The number format string must be in the format defined by the MSDN .NET Framework 4 Custom Numeric Format Strings defined at: http://msdn.microsoft.com/en-us/library/0c899ak8(vs.71).aspx

In addition to the format specifiers defined here, you may also use the following characters:

- 't' to specify a thousands separator character.
- 'd' to specify a decimals separator character.
- back tick (`): A percent sign (%) in a format string causes a number to be multiplied by 100 before it is formatted. Add a back tick in front of the percent sign (`%) to disable the multiplication.

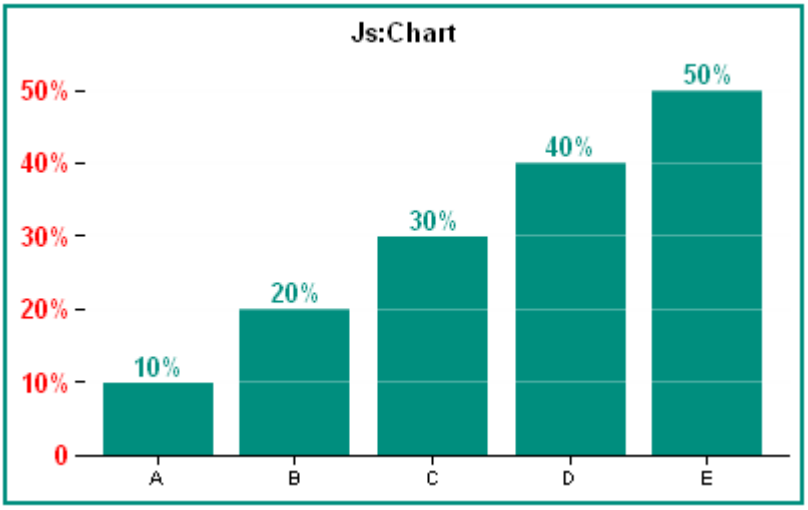
Example:

```
// format 4000.5 as '4.000,5' (European standard)
chart.yaxis.numberFormat = 't.d,#,#.#'
```



Example:

```
// format percentage without multiplier
chart.yaxis.numberFormat = '[>9]#`%;[<0]-#`%;[<=9]#`%;[=0]0'
```



Function: The numberFormat property can also process a user-defined function for fully custom number formatting callbacks. The expected function takes one argument (the number to format) and returns a string. Example:

```
// Return number with a '$' in front
chart.yaxis.numberFormat = function(n){ return '$' + n; };
```

This cannot be used inside the traditional JSON-style blocks { x: y }. It can only be used with the 'dot' notation as shown in this example.

NOTES:

- Except with numberFormat auto, do not use a semicolon (;) as a prefix, suffix, thousands separator, or decimal separator character. A semicolon is only valid is for separating multiple conditional formats (e.g., '[>=0]#,#;[<0]-#.#').
- Except with numberFormat auto, do not use a pound sign (#), period (.) or question mark (?) as a prefix or suffix character. These are special characters that cannot be interpreted as a string.

- If a percent sign (%) is used as the prefix or suffix character in a JSON object definition, the number format will use the percent mode regardless of the mode setting.
- If you use the string format to specify the range of data to which the number format is applied, make sure the format string includes the entire range of data. Example:

```
numberFormat: '[>9]#,#;[<0]-#.#;[<9]#.#;[=0]0'
```

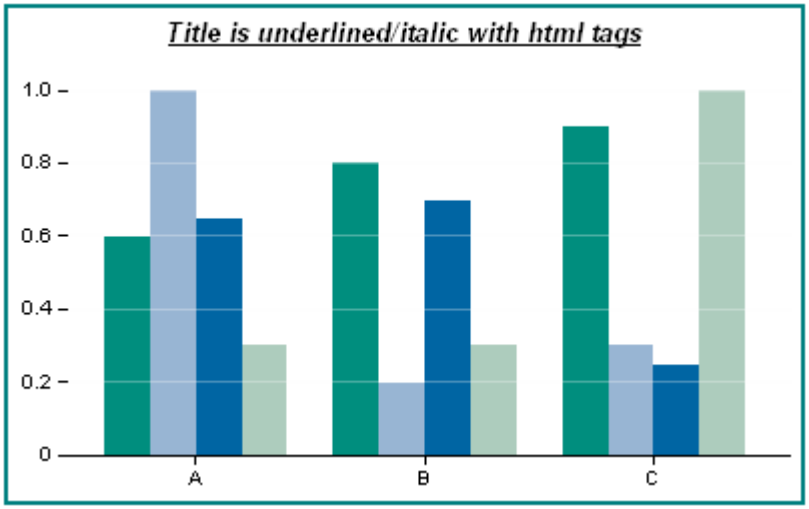
This format string defines the format for values less than nine and greater than nine but does not specify the format for a value equal to nine. The following corrected format string will cover the entire range of data:

```
numberFormat: '[>=9]#,#;[<0]-#.#;[<9]#.#;[=0]0'
```

HTML Codes in Strings

HTML codes can be embedded in any label or title strings: HTML codes in titles and labels are not processed by the library. They are simply passed on to the browser and will appear as they are rendered by the browser. Example:

```
title: {text: '<u><em>Title is underlined/italic with html
tags</em></u>'},
```



Data & Property Definitions

The data that draws a chart is defined in the form of one or more arrays. Different chart types have different data requirements. The chartType property defines the number and format of values required to draw each chart type.

Null Data Support

You can use null, undefined, or multiple commas (,,) in a data array to identify missing data points. Js:Chart will allocate space for the missing data but the riser/marker will not appear in the chart. Examples of valid missing data definitions:

```
[[1,2,null,4]]
[[1,2,undefined,4]]
[[1,2,,3]]
```

You cannot replace an entire array of data with null but an empty array is valid:

```
[[1,2], null, [3,4]] // invalid
[[1,2], [], [3,4]] // valid
```

Property Values

All properties can be assigned a value of undefined or null (not quoted strings). When undefined or null is used as a property value, the property is ignored. The default value assigned to the property in the default properties file (e.g., properties.js) is used.

Default Property Values

The following table shows the values from the default properties file (e.g., properties.js) that will be used when properties are not defined. Your Js:Chart package may include multiple default properties files for different chart types.

Property	Default Value	Allowable Values
allowBackendFallback	false	true/false
axisAutoLayout.rotate45	true	true/false
axisAutoLayout.rotate90	true	true/false
axisAutoLayout.truncate	true	true/false
axisAutoLayout.stagger	true	true/false
axisAutoLayout.skip	true	true/false
backend	'js'	'js' | 'flash'
border.color	'transparent'	color string
border.dash	''	string of numbers
border.width	0	Number
catchErrors	true	true/false
chartFrame.border.color	'transparent'	color string
chartFrame.border.dash	''	string of numbers
chartFrame.border.width	0	Number
chartFrame.fill.color	'transparent'	color string or gradient
chartFrame.shadow	false	true/false | JSON Object
chartsPerRow	undefined	Number
chartType	'bar'	'area', 'area3d', 'bar', 'bar3d', 'boxplot', 'bubble', 'bullet', 'funnel', 'gantt', 'gauge', 'heatmap, 'histogram', 'legend', 'line', 'mekko' 'parabox', 'pareto', 'pie', 'polar', 'radar', 'scatter', 'sparkline', 'stock', 'streamgraph', 'surface3d', 'tagcloud', 'treemap', 'waterfall'
colorMode.colorList	undefined	['string'...'string']

Property	Default Value	Allowable Values
colorMode.data	undefined	[[n...n],[n...n]...]
colorMode.mode	'bySeries'	'byGroup', 'byGroupSelection', 'byHeight', 'byInterpolation', 'byInterpolationAlt', 'byMetric', 'bySeries', 'bySeriesSelection'
data	[[0.6, 0.8, 0.9], [1.0, 0.2, 0.3], [0.65, 0.7, 0.25], [0.3, 0.3, 1.0]]	array of numbers and/or string, depends on chartType
dataLabels.color	'black'	color string
dataLabels.displayMode	'x'	'x', 'y', 'z', '%', '%+', 'cumulative', groupLabel, seriesLabel
dataLabels.font	'7.5pt Sans-Serif'	font string
dataLabels.formatCallback	undefined	function()
dataLabels.numberFormat	'auto'	string | JSON Object | function()
dataLabels.position	'top'	'bottom', 'center', 'insideBottom', 'insideTop', 'left', 'outside', 'right', 'top'
dataLabels.visible	true	true/false
dataSelection.enabled	false	true/false
dataSelection.eventCallback	undefined	function to call when user selects something on the chart
dataSelection.eventCallback	undefined	function to call when user selects something on the chart
dataSelection.linkedCharts	[]	[array of tdgchart instances]
dataSelection.selectionMode	['click', 'ctrlClick', 'dragRect']	array of strings with one or more of ['click', 'ctrlClick', 'dragRect']
dataSelection.selectionRect.border.color	'black'	color
dataSelection.selectionRect.border.dash	''	string of numbers
dataSelection.selectionRect.border.width	0	number
dataSelection.selectionRect.fill	'rgba(120, 120, 120, 0.6)'	color
dataSelection.unselectedBorder.color	'transparent'	color
dataSelection.unselectedBorder.dash	''	string of numbers
dataSelection.unselectedBorder.width	0	number

Property	Default Value	Allowable Values
dataSelection.unselectedColor	'grey'	color, undefined, or a percentage string (-100% to 100%)
dataSubset.startGroup	undefined	number
dataSubset.stopGroup	undefined	number
depth	undefined	0...100
fill.color	'white'	color string or gradient
footnote.align	'center'	'center', 'chartFrame', 'left', 'right'
footnote.color	'black'	color string
footnote.font	'10pt Sans-Serif'	font string
footnote.text	'Chart Footnote'	string
footnote.tooltip	undefined	'string' | function() | undefined
footnote.visible	false	true/false
groupLabels	"ABCDEFGHIJKLMNOPQRSTUVWXYZ".split('')	string | array of strings
height	250	number
htmlToolTip.autoContentFont	'10pt Sans-Serif'	font string
htmlToolTip.autoTitleFont	'bold 12pt Sans-Serif'	font string
htmlToolTip.enabled	false	true/false
htmlToolTip.mouseMargin	10	number
htmlToolTip.snap	false	true/false
htmlToolTip.sticky	false	true/false
htmlToolTip.style	undefined	undefined, 'seriesFill', or an object or string defining CSS properties
interaction.click	undefined	undefined | 'otherSliceDrillDown'
interaction.mousedrag	undefined	'select','pan','riserDrag','rotate',undefined
interaction.dblclick	undefined	'resetView' | undefined
introAnimation.duration	1000	number
introAnimation.enabled	false	true/false
labelPadding.frame.bottom	5	number
labelPadding.frame.left	5	number
labelPadding.frame.right	5	number
labelPadding.frame.top	5	number
labelPadding.label.bottom	5	number
labelPadding.label.left	5	number
labelPadding.label.right	5	number
labelPadding.label.top	5	number

Property	Default Value	Allowable Values
mouseOverIndicator.color	'yellow'	color string
mouseOverIndicator.enabled	false	true/false
mouseOverIndicator.marker.border.width	1	number
mouseOverIndicator.marker.border.color	'darkblue'	color string
mouseOverIndicator.marker.border.dash	''	string of numbers
mouseOverIndicator.marker.color	'lightblue'	color string or gradient
mouseOverIndicator.marker.position	'top'	'top'
mouseOverIndicator.marker.rotation	0	number
mouseOverIndicator.marker.shape	'circle'	'arrow', 'bar', 'circle', 'cross', 'diamond', 'fiveStar', 'hexagon', 'hourglass', 'house', 'pin', 'pirateCross', 'plus', 'rectangle', 'sixStar', 'square', 'thinPlus', 'tick', 'triangle'
mouseOverIndicator.marker.size	5	number
previewSelection.enabled	false	true/false
previewSelection.eventCallback	undefined	function to call when user selects something on the chart
previewSelection.selectedBorder	undefined	undefined, or a {width: 10, color: 'black', dash: '5 5'} style object
previewSelection.selectedColor	undefined	color, undefined, or a percentage string (-100% to 100%)
previewSelection.selectionMode	['click']	['click','rightClick']
previewSelection.selectRelatedObjects	false	true/false
riserBevel	undefined	'bevel', 'cylinder', 'darken', 'darkenInverted', 'lighten', 'lightenInverted'. For pie charts, 'bevel', 'cylinder', 'donut'
riserCycleEndLightness	0.8	0...1
riserDepthGap	0.2	0...1
riserShadow	false	true/false
subtitle.align	'center'	'center', 'chartFrame', 'left', 'right'
subtitle.color	'black'	color string
subtitle.font	'10pt Sans-Serif'	font string
subtitle.text	'Chart Subtitle'	string

Property	Default Value	Allowable Values
subtitle.tooltip	undefined	'string' | function() | undefined
subtitle.visible	false	true/false
swapData	false	true/false
swapDataAndLabels	false	true/false
title.align	'center'	'center', 'chartFrame', 'left', 'right'
title.color	'black'	color string
title.font	'10pt Sans-Serif'	font string
title.text	'Chart Title'	string
title.tooltip	undefined	string | function()
title.visible	true	true/false
width	400	number
legend.backgroundcolor	'transparent'	color string or gradient
legend.labels.color	'black'	color string
legend.labels.font	'7.5pt Sans-Serif'	font string
legend.lineStyle.color	'black'	color string
legend.lineStyle.dash	''	string of numbers
legend.lineStyle.width	0	number
legend.markerPosition	'left'	'bottom', 'left', 'right', 'top'
legend.markerSize	8	number
legend.maxEntries	undefined	number
legend.position	'right'	'bottom', 'free','left', 'right', 'top'
legend.shadow	false	true/false
legend.title.color	'black'	color string
legend.title.font	'10pt Sans-Serif'	font string
legend.title.text	'Legend Title'	string
legend.title.visible	false	true/false
legend.visible	false	true/false
legend.xy.x	330	number
legend.xy.y	80	number
xaxis.altFrameColor	undefined	color string or gradient
xaxis.baseLineStyle.color	'black'	color string
xaxis.baseLineStyle.dash	''	string of numbers
xaxis.baseLineStyle.width	1	number
xaxis.bIsLog	false	true/false
xaxis.bodyLineStyle.color	'transparent'	color string
xaxis.bodyLineStyle.dash	''	string of numbers
xaxis.bodyLineStyle.width	1	number

Property	Default Value	Allowable Values
xaxis.centerGroupLabels	false	true/false
xaxis.colorBands	[]	{start#,stop#,color}
xaxis.intervalMode	undefined	'count', 'interval', 'skip'
xaxis.intervalValue	undefined	number
xaxis.invert	false	true/false
xaxis.labels.color	'black'	color string
xaxis.labels.font	'7.5pt Sans-Serif'	font string
xaxis.labels.rotation	undefined	0, 45, 90, 135, 180, 270
xaxis.labels.visible	true	true/false
xaxis.majorGrid.aboveRisers	true	true/false
xaxis.majorGrid.lineStyle.color	'rgba(255, 255, 255, 0.3)'	color string
xaxis.majorGrid.lineStyle.dash	''	string of numbers
xaxis.majorGrid.lineStyle.width	1	number
xaxis.majorGrid.visible	false	true/false
xaxis.majorGrid.ticks.length	5	number
xaxis.majorGrid.ticks.lineStyle.color	'black'	color string
xaxis.majorGrid.ticks.lineStyle.width	1	number
xaxis.majorGrid.ticks.style	'outer'	'inner', 'outer', 'span'
xaxis.majorGrid.ticks.visible	true	true/false
xaxis.max	undefined	Number
xaxis.min	undefined	Number
xaxis.minorGrid.count	undefined	number
xaxis.minorGrid.lineStyle.color	'black'	color string
xaxis.minorGrid.lineStyle.dash	''	string of numbers
xaxis.minorGrid.lineStyle.width	1	number
xaxis.minorGrid.ticks.length	5	number
xaxis.minorGrid.ticks.lineStyle.color	'black'	color string
xaxis.minorGrid.ticks.lineStyle.width	1	number
xaxis.minorGrid.ticks.style	'inner'	'inner', 'outer', 'span'
xaxis.minorGrid.ticks.visible	false	true/false
xaxis.minorGrid.visible	false	true/false
xaxis.mode	undefined	ordinal', 'numeric', 'time', 'color' or undefined
xaxis.numberFormat	'auto'	string | JSON Object | function()
xaxis.swapChartSide	false	true/false
xaxis.title.color	'black'	color string
xaxis.title.font	'7.5pt Sans-Serif'	font string

Property	Default Value	Allowable Values
xaxis.title.text	'X Axis Title'	string
xaxis.title.visible	false	true/false
xaxis.timeAxis.enabled	false	true/false
xaxis.timeAxis.interval	undefined	'seconds', 'minutes', 'hours', 'days', 'weeks', 'months', 'quarters', 'years
xaxis.timeAxis.labelFormat	undefined	label format string
xaxis.timeAxis.startTime	undefined	time string
xaxis.timeAxis.stepSize	undefined	number
xaxis.timeAxis.stopTime	undefined	time string
yaxis.altFrameColor	undefined	color string or gradient
yaxis.baseLineStyle.color	'black'	color string
yaxis.baseLineStyle.dash	''	string of numbers
yaxis.baseLineStyle.width	1	number
yaxis.bIsLog	false	true/false
yaxis.bodyLineStyle.color	'transparent'	color string
yaxis.bodyLineStyle.dash	''	string of numbers
yaxis.bodyLineStyle.width	1	number
yaxis.colorBands	[]	{start#,stop#,color}
yaxis.colorScale.colors	['#253494', '#2C7FB8', '#41B6C4', '#A1DAB4']	[array of color strings]
yaxis.intervalMode	undefined	'count', 'interval', 'skip'
yaxis.intervalValue	undefined	number
yaxis.invert	false	true/false
yaxis.labels.color	'black'	color string
yaxis.labels.font	'7.5pt Sans-Serif'	font string
yaxis.labels.visible	true	true/false
yaxis.majorGrid.aboveRisers	true	true/false
yaxis.majorGrid.lineStyle.color	'rgba(255, 255, 255, 0.3)'	color string
yaxis.majorGrid.lineStyle.dash	''	string of numbers
yaxis.majorGrid.lineStyle.width	1	number
yaxis.majorGrid.ticks.length	5	Number
yaxis.majorGrid.ticks.lineStyle.color	'black'	color string
yaxis.majorGrid.ticks.lineStyle.width	1	number
yaxis.majorGrid.ticks.style	'inner'	'inner', 'outer', 'span'
yaxis.majorGrid.ticks.visible	true	true/false
yaxis.majorGrid.visible	true	true/false
yaxis.max	undefined	Number

Property	Default Value	Allowable Values
yaxis.min	undefined	Number
yaxis.minorGrid.count	undefined	number
yaxis.minorGrid.lineStyle.color	'black'	color string
yaxis.minorGrid.lineStyle.dash	''	string of numbers
yaxis.minorGrid.lineStyle.width	1	number
yaxis.minorGrid.ticks.length	5	number
yaxis.minorGrid.ticks.lineStyle.color	'black'	color string
yaxis.minorGrid.ticks.lineStyle.width	1	number
yaxis.minorGrid.ticks.style	'inner'	'inner', 'outer', 'span'
yaxis.minorGrid.ticks.visible	false	true/false
yaxis.minorGrid.visible	false	true/false
yaxis.mode	undefined	ordinal', 'numeric', 'time', 'color' or undefined
yaxis.numberFormat	'auto'	string | JSON Object | function()
yaxis.swapChartSide	false	true/false
yaxis.title.color	'black'	color string
yaxis.title.font	'7.5pt Sans-Serif'	font string
yaxis.title.text	'Y Axis Title'	string
yaxis.title.visible	false	true/false
y2axis.altFrameColor	undefined	color string or gradient
y2axis.baseLineStyle.color	'black'	color string
y2axis.baseLineStyle.dash	''	string of numbers
y2axis.baseLineStyle.width	1	number
y2axis.bodyLineStyle.color	'transparent'	color string
y2axis.bodyLineStyle.dash	''	string of numbers
y2axis.bodyLineStyle.width	1	number
y2axis.intervalMode	undefined	'count', 'interval', 'skip'
y2axis.intervalValue	undefined	number
y2axis.invert	false	true/false
y2axis.labels.color	'black'	color string
y2axis.labels.font	'7.5pt Sans-Serif'	font string
y2axis.labels.visible	true	true/false
y2axis.majorGrid.aboveRisers	true	true/false
y2axis.majorGrid.lineStyle.color	'rgba(255, 255, 255, 0.3)'	color string
y2axis.majorGrid.lineStyle.dash	''	string of numbers
y2axis.majorGrid.lineStyle.width	1	number
y2axis.majorGrid.ticks.length	5	number
y2axis.majorGrid.ticks.lineStyle.color	'black'	color string

Property	Default Value	Allowable Values
y2axis.majorGrid.ticks.lineStyle.width	1	number
y2axis.majorGrid.ticks.style	'inner'	'inner', 'outer', 'span'
y2axis.majorGrid.ticks.visible	true	true/false
y2axis.majorGrid.visible	true	true/false
y2axis.max	undefined	number
y2axis.min	undefined	number
y2axis.minorGrid.count	undefined	number
y2axis.minorGrid.lineStyle.color	'black'	color string
y2axis.minorGrid.lineStyle.dash	''	string of numbers
y2axis.minorGrid.lineStyle.width	1	number
y2axis.minorGrid.ticks.length	5	number
y2axis.minorGrid.ticks.lineStyle.color	'black'	color string
y2axis.minorGrid.ticks.lineStyle.width	1	number
y2axis.minorGrid.ticks.style	'inner'	'inner', 'outer', 'span'
y2axis.minorGrid.ticks.visible	false	true/false
y2axis.minorGrid.visible	false	true/false
y2axis.numberFormat	'auto'	string | JSON Object | function()
y2axis.title.color	'black'	color string
y2axis.title.font	'7.5pt Sans-Serif'	font string
y2axis.title.text	'Y2 Axis Title'	string
y2axis.title.visible	false	true/false
zaxis.altFrameColor	undefined	color string or gradient
zaxis.baseLineStyle.color	'black'	color string
zaxis.baseLineStyle.dash	''	string of numbers
zaxis.baseLineStyle.width	1	number
zaxis.bIsLog	false	true/false
zaxis.bodyLineStyle.color	'transparent'	color string
zaxis.bodyLineStyle.dash	''	string of numbers
zaxis.bodyLineStyle.width	1	number
zaxis.colorBands	[]	{start#,stop#,color}
zaxis.intervalMode	undefined	'count', 'interval', 'skip'
zaxis.intervalValue	undefined	number
zaxis.invert	false	true/false
zaxis.labels.color	'black'	color string
zaxis.labels.font	'7.5pt Sans-Serif'	font string
zaxis.labels.visible	true	true/false
zaxis.majorGrid.aboveRisers	true	true/false
zaxis.majorGrid.lineStyle.color	'rgba(255, 255, 255, 0.3)	color string

Property	Default Value	Allowable Values
zaxis.majorGrid.lineStyle.dash	''	string of numbers
zaxis.majorGrid.lineStyle.width	1	number
zaxis.majorGrid.ticks.length	5	number
zaxis.majorGrid.ticks.lineStyle.color	'black'	color string
zaxis.majorGrid.ticks.lineStyle.width	1	number
zaxis.majorGrid.ticks.style	'outer'	'inner', 'outer', 'span'
zaxis.majorGrid.ticks.visible	true	true/false
zaxis.majorGrid.visible	true	true/false
zaxis.max	undefined	Number
zaxis.min	undefined	Number
zaxis.minorGrid.count	undefined	number
zaxis.minorGrid.lineStyle.color	'black'	color string
zaxis.minorGrid.lineStyle.dash	''	string of numbers
zaxis.minorGrid.lineStyle.width	1	number
zaxis.minorGrid.ticks.length	5	number
zaxis.minorGrid.ticks.lineStyle.color	'black'	color string
zaxis.minorGrid.ticks.lineStyle.width	1	number
zaxis.minorGrid.ticks.style	'inner'	'inner', 'outer', 'span'
zaxis.minorGrid.ticks.visible	false	true/false
zaxis.minorGrid.visible	false	true/false
zaxis.mode	undefined	ordinal', 'numeric', 'time', 'color' or undefined
zaxis.swapChartSide	false	true/false
zaxis.title.color	'black'	color string
zaxis.title.font	'10pt Sans-Serif'	font string
zaxis.title.text	'Z Axis Title'	string
zaxis.title.visible	false	true/false
blaProperties.barGroupGapWidth	0.2	0...1
blaProperties.comboCharts.areaSeriesLayout	undefined	'stacked', 'absolute', 'percent'
blaProperties.comboCharts.barSeriesLayout	undefined	'stacked', 'absolute', 'percent', 'sideBySide'
blaProperties.comboCharts.lineSeriesLayout	undefined	'stacked', 'absolute', 'percent'
blaProperties.lineConnection	'linear'	'curved', 'linear', 'stepAfter', 'stepBefore', 'stepBetween'

Property	Default Value	Allowable Values
blaProperties.lineFillEffect	undefined	undefined, 'seriesAuto', 'seriesLighten', 'seriesLightenOpaque', color, gradient,percent string ('-100%'-'100%')
blaProperties.orientation	'horizontal'	'horizontal' | 'vertical'
blaProperties.seriesLayout	'sideBySide'	'stacked', 'absolute', 'percent', 'sideBySide'
blaProperties.stackTotalLabel.color	'black'	color string
blaProperties.stackTotalLabel.font	'10pt Sans-Serif'	font string
blaProperties.stackTotalLabel.numberFormat	'auto'	string | JSON object | function()
blaProperties.stackTotalLabel.visible	false	true/false
boxPlotProperties.connectorLine.color	'black'	color string
boxPlotProperties.connectorLine.dash	''	string of numbers
boxPlotProperties.connectorLine.width	1	number
boxPlotProperties.drawHatAsBox	false	true/false
boxPlotProperties.hatWidth	'100%'	number | percent string
boxPlotProperties.medianLine.color	'black'	color string
boxPlotProperties.medianLine.dash	''	string of numbers
boxPlotProperties.medianLine.width	1	number
bulletProperties.drawFirstValueAsBar	true	true/false
funnelProperties.baseWidth	'20%'	number | percent string
funnelProperties.groupLabel.color	'black'	color string
funnelProperties.groupLabel.font	'10pt Sans-Serif'	font string
funnelProperties.groupLabel.visible	false	true/false
funnelProperties.riserGap	0	number
funnelProperties.topWidth	'100%'	number | percent string
ganttProperties.durationValues	false	true/false
ganttProperties.interval	undefined	'seconds', 'minutes', 'hours', 'days', 'weeks', 'months', 'quarters', 'years
ganttProperties.labelFormat	undefined	label format string
ganttProperties.staggerRisers	true	true/false
ganttProperties.startTime	undefined	time string
ganttProperties.stopTime	undefined	time string
gaugeProperties.axisTickLength	"30%"	number | percent string

Property	Default Value	Allowable Values
gaugeProperties.axisWidth	"22%"	number | percent string
gaugeProperties.endAngle	45	number
gaugeProperties.fill.color	'transparent'	color string or gradient
gaugeProperties.groupLabel.color	'black'	color string
gaugeProperties.groupLabel.font	'10pt Sans-Serif'	font string
gaugeProperties.groupLabel.visible	false	true/false
gaugeProperties.needleBase.border.color	'transparent'	color string
gaugeProperties.needleBase.border.dash	''	string of numbers
gaugeProperties.needleBase.border.width	0	number
gaugeProperties.needleBase.color	'#1f77b4'	color string or gradient
gaugeProperties.needleBase.size	"6%"	
gaugeProperties.outerBorder.border.color	'transparent'	color string
gaugeProperties.outerBorder.border.dash	''	string of numbers
gaugeProperties.outerBorder.border.width	0	number
gaugeProperties.outerBorder.fill.color	'#1f77b4'	color string or gradient
gaugeProperties.outerBorder.width	'10%'	number | percent string
gaugeProperties.secondaryNeedlesAsMarkers	false	true/false
gaugeProperties.startAngle	135	number
gaugeProperties.totalLabel.color	'black'	color string
gaugeProperties.totalLabel.font	'10pt Sans-Serif'	font string
gaugeProperties.totalLabel.numberFormat	'auto'	string | JSON object | function()
gaugeProperties.totalLabel.visible	false	true/false
histogramProperties.binCount	undefined	number
histogramProperties.binSize	undefined	number
histogramProperties.startBinValue	undefined	number
paraboxProperties.activeGroup	undefined	group label string
pieProperties.explodeClick.distance	25	number
pieProperties.explodeClick.duration	700	number
pieProperties.explodeClick.enabled	false	true/false
pieProperties.explodeClick.limitExplodeCount	false	true/false
pieProperties.feelerLine.color	'black'	color string
pieProperties.feelerLine.dash	''	string of numbers
pieProperties.feelerLine.visible	true	true/false
pieProperties.feelerLine.width	1	number
pieProperties.groupPiesBySelection	false	true/false
pieProperties.holeSize	0	number | percent string
pieProperties.label.color	'black'	color string

Property	Default Value	Allowable Values
pieProperties.label.font	'10pt Sans-Serif'	font string
pieProperties.label.visible	false	true/false
pieProperties.otherSlice.border.color	'transparent'	color string
pieProperties.otherSlice.border.dash	''	string of numbers
pieProperties.otherSlice.border.width	1	number
pieProperties.otherSlice.color	'grey'	color string or gradient
pieProperties.otherSlice.legendLabel	'Other'	string
pieProperties.otherSlice.marker.border.color	'transparent'	color string
pieProperties.otherSlice.marker.border.dash	''	string of numbers
pieProperties.otherSlice.marker.border.width	0	number
pieProperties.otherSlice.marker.shape	'circle'	'arrow', 'bar', 'circle', 'cross', 'diamond', 'fiveStar', 'hexagon', 'hourglass', 'house', 'pin', 'pirateCross', 'plus', 'rectangle' 'sixStar', 'square', 'thinPlus', 'tick', 'triangle'
pieProperties.otherSlice.showDataValues	true	true/false
pieProperties.otherSlice.threshold	undefined	number (absolute data value), a percent string, a 'top n' string, undefined
pieProperties.rotation	0	0...359
pieProperties.skew	0	0...100
pieProperties.totalLabel.color	'black'	color string
pieProperties.totalLabel.font	'10pt Sans-Serif'	font string
pieProperties.totalLabel.numberFormat	'auto'	string | JSON object | function()
pieProperties.totalLabel.visible	false	true/false
polarProperties.drawAsArea	false	true/false
polarProperties.extrudeAxisLabels	false	true/false
polarProperties.straightGridLines	false	true/false
stockProperties.downRiserColor	'#e2675b'	color string or gradient
stockProperties.hiLowLine.color	undefined	color string
stockProperties.hiLowLine.dash	''	string of numbers
stockProperties.hiLowLine.width	1	number
stockProperties.interval	undefined	'seconds', 'minutes', 'hours', 'days', 'weeks', 'months', 'quarters', 'years'
stockProperties.labelFormat	undefined	label format string
stockProperties.startTime	undefined	time string

Property	Default Value	Allowable Values
stockProperties.stopTime	undefined	time string
stockProperties.upRiserColor	'#77b39a'	color string or gradient
tagcloudProperties.font	'bold 12pt Georgia'	font string
tagcloudProperties.maxNumberOfTags	50	number
threedProperties.rotate	40	0...90
threedProperties.shadeSides	true	true/false
threedProperties.tilt	40	0...90
treemapProperties.cellBorder.color	'white'	color
treemapProperties.cellBorder.dash	''	string of numbers
treemapProperties.cellBorder.outerCellWidth	3	number
treemapProperties.cellBorder.width	1	number
treemapProperties.header.border.color	'lightgrey'	color or gradient
treemapProperties.header.border.dash	''	string of numbers
treemapProperties.header.border.width	0	number
treemapProperties.header.fill	'lightgrey'	color or gradient
treemapProperties.header.height	'6%'	number or percent string
treemapProperties.header.label.color	'black'	color
treemapProperties.header.label.font	'8pt Sans-Serif'	font string
treemapProperties.header.label.visible	true	true/false
treemapProperties.scaleCellFonts	false	true/false
waterfallProperties.appendTotalRiser	true	true/false
waterfallProperties.connectorLine.color	'black'	color string
waterfallProperties.connectorLine.dash	''	string of numbers
waterfallProperties.connectorLine.width	1	number
waterfallProperties.negativeRiserColor	'#e2675b'	color string or gradient
waterfallProperties.otherRiserColor	'#aaaaaa'	color string or gradient
waterfallProperties.otherRisers	[]	[string(s)]
waterfallProperties.positiveRiserColor	'#77b39a'	color string or gradient
waterfallProperties.subtotalRisers	[]	[string(s)]
waterfallProperties.zeroRiserColor	'#7593bd'	color string or gradient

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THREE D GRAPHICS