

# Candlestick Charts

## Overview

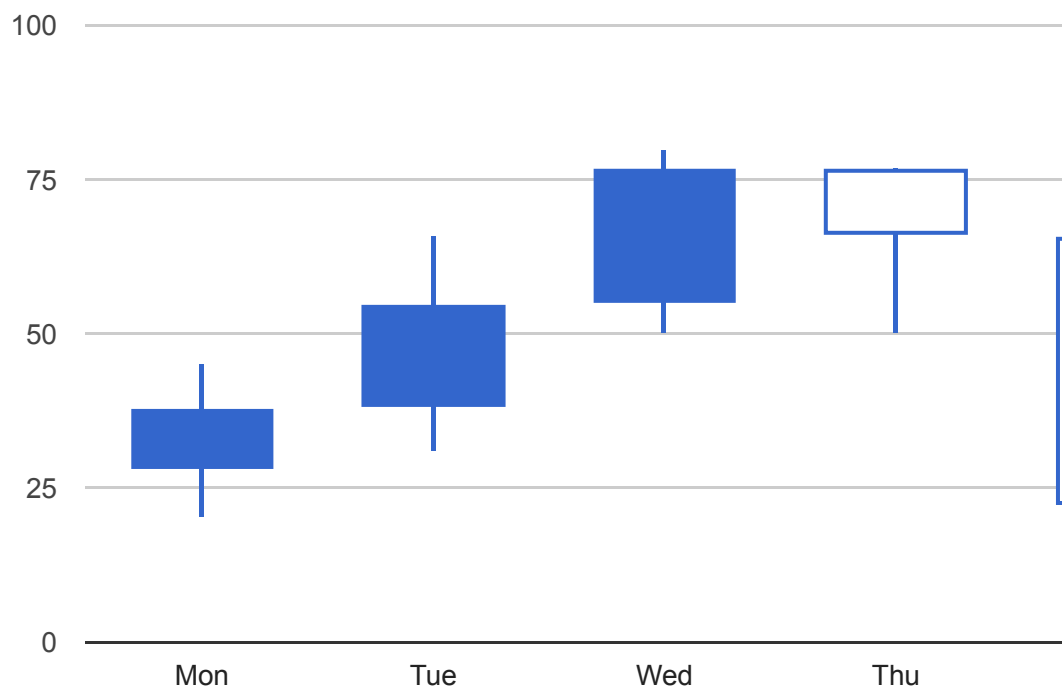
---

An interactive candlestick chart.

A candlestick chart is used to show an opening and closing value overlaid on top of a total variance. Candlestick charts are often used to show stock value behavior. In this chart, items where the opening value is less than the closing value (a gain) are drawn as filled boxes, and items where the opening value is more than the closing value (a loss) are drawn as hollow boxes.

## Example

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```

<html>
<head>
  <script type="text/javascript" src="https://www.gstatic.com/charts/loader">
  <script type="text/javascript">
    google.charts.load('current', {'packages':['corechart']});
    google.charts.setOnLoadCallback(drawChart);

function drawChart() {
  var data = google.visualization.arrayToDataTable([
    ['Mon', 20, 28, 38, 45],
    ['Tue', 31, 38, 55, 66],
    ['Wed', 50, 55, 77, 80],
    ['Thu', 77, 77, 66, 50],
    ['Fri', 68, 66, 22, 15]
    // Treat first row as data as well.
  ], true);

  var options = {
    legend:'none'
  };

  var chart = new google.visualization.CandlestickChart(document.getElementById(

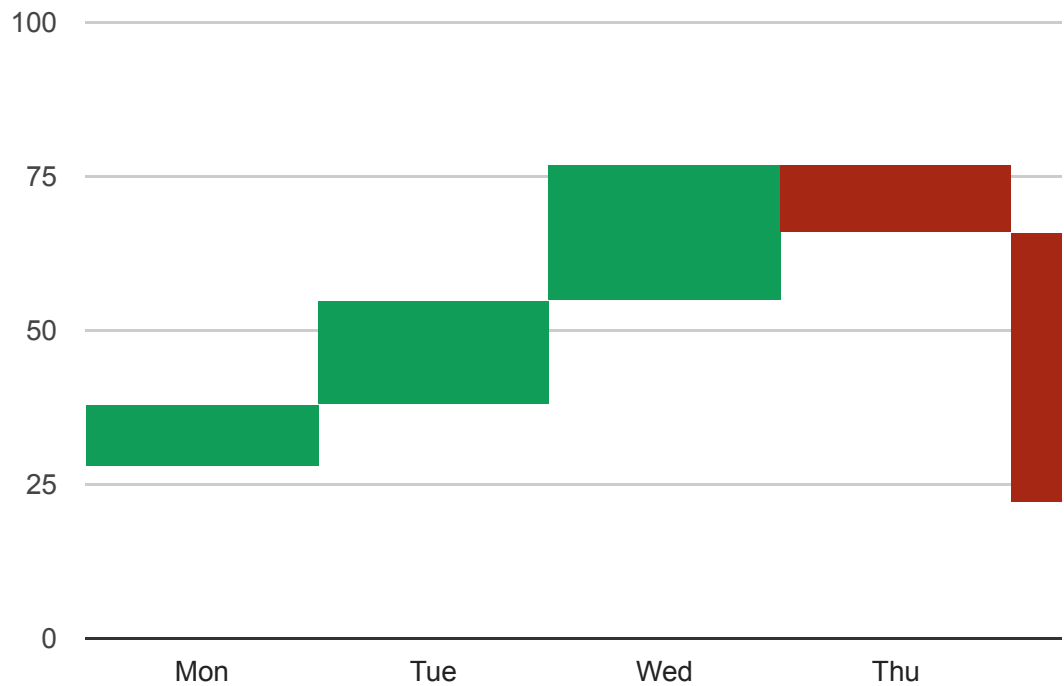
  chart.draw(data, options);
}
</script>
</head>
<body>
  <div id="chart_div" style="width: 900px; height: 500px;"></div>
</body>
</html>

```

## Waterfall charts

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With the right set of options, candlestick charts can be made to resemble simple waterfall charts.



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In the code below, we're eliminating the top wicks by having the same values in the first and second columns, and the bottom wicks by having the same values in the third and fourth columns. We set `bar.groupWidth` to `'100%'` to remove the space between the bars.

```
<html>
<head>
  <script type="text/javascript" src="https://www.gstatic.com/charts/loader">
  <script type="text/javascript">
    google.charts.load('current', {'packages':['corechart']});
    google.charts.setOnLoadCallback(drawChart);
    function drawChart() {
      var data = google.visualization.arrayToDataTable([
        ['Mon', 28, 28, 38, 38],
        ['Tue', 38, 38, 55, 55],
        ['Wed', 55, 55, 77, 77],
        ['Thu', 77, 77, 66, 66],
        ['Fri', 66, 66, 22, 22]
        // Treat the first row as data.
      ], true);
```

```

var options = {
  legend: 'none',
  bar: { groupWidth: '100%' }, // Remove space between bars.
  candlestick: {
    fallingColor: { strokeWidth: 0, fill: '#a52714' }, // red
    risingColor: { strokeWidth: 0, fill: '#0f9d58' } // green
  }
};

var chart = new google.visualization.CandlestickChart(document.getElementById('chart_div'));
chart.draw(data, options);
}
</script>
</head>
<body>
  <div id="chart_div" style="width: 900px; height: 500px;"></div>
</body>
</html>

```

There is currently no easy way to label the bars. The best option is to use overlays (<https://developers.google.com/chart/interactive/docs/overlays>).

## Loading

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`google.charts.load` package name is "corechart".

```
google.charts.load('current', {packages: ['corechart']});
```

The visualization's class name is `google.visualization.CandlestickChart`.

```
var visualization = new google.visualization.CandlestickChart(container);
```

## Data format

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Five or more columns, where the first column defines X-axis values or group labels, and each multiple of four data columns after that defines a different series.

- **Col 0:** String (discrete ([https://developers.google.com/chart/interactive/docs/customizing\\_axes#Discrete\\_vs\\_Continuous](https://developers.google.com/chart/interactive/docs/customizing_axes#Discrete_vs_Continuous)) used as a group label on the X axis, or number, date, datetime, or timeofday)

(continuous

([https://developers.google.com/chart/interactive/docs/customizing\\_axes#Discrete\\_vs\\_Continuous](https://developers.google.com/chart/interactive/docs/customizing_axes#Discrete_vs_Continuous))

) used as a value on the X axis.

- **Col 1:** Number specifying the low/minimum value of this marker. This is the base of the candle's center line. The column label is used as the series label in the legend (while the labels of the other columns are ignored).
- **Col 2:** Number specifying the opening/initial value of this marker. This is one vertical border of the candle. If less than the column 3 value, the candle will be filled; otherwise it will be hollow.
- **Col 3:** Number specifying the closing/final value of this marker. This is the second vertical border of the candle. If less than the column 2 value, the candle will be hollow; otherwise it will be filled.
- **Col 4:** Number specifying the high/maximum value of this marker. This is the top of the candle's center line.
- **Col 5 [Optional]:** A tooltip (<https://developers.google.com/chart/interactive/docs/roles#tooltiprole>) or style (<https://developers.google.com/chart/interactive/docs/roles#stylerole>) column for the candlestick.

In order to have more series, it is possible to add additional sets of 4 columns, with a similar structure to columns 1-4. Each such set represents another series of candlesticks. The total number of columns should be 4 times the number of series plus 1 (and any optional tooltip columns).

## Configuration options

| Name              |  |
|-------------------|--|
| aggregationTarget | <p>How multiple data selections are rolled up into tooltips:</p> <ul style="list-style-type: none"><li>• 'category': Group selected data by x-value.</li><li>• 'series': Group selected data by series.</li><li>• 'auto': Group selected data by x-value if all selections have the same series, otherwise.</li><li>• 'none': Show only one tooltip per selection.</li></ul> <p><b>aggregationTarget</b> will often be used in tandem with <b>selectionTarget</b>.<br/>e.g.:</p> |

|                    |   |
|--------------------|---|
|                    | <pre>var options = {   // Allow multiple   // simultaneous selections.   selectionMode: 'multiple',   // Trigger tooltips   // on selections.   tooltip: {trigger: 'selection'},   // Group selections   // by x-value.   aggregationTarget: 'category', };</pre> <p><b>Type:</b> string<br/><b>Default:</b> 'auto'</p>   |
| animation.duration | <p>The duration of the animation, in milliseconds. For details, see <a href="https://developers.google.com/chart/interactive/docs/animat">https://developers.google.com/chart/interactive/docs/animat</a></p> <p><b>Type:</b> number<br/><b>Default:</b> 0</p>  |
| animation.easing   | <p>The easing function applied to the animation. The following options are supported:</p> <ul style="list-style-type: none"> <li>• 'linear' - Constant speed.</li> <li>• 'in' - Ease in - Start slow and speed up.</li> <li>• 'out' - Ease out - Start fast and slow down.</li> <li>• 'inAndOut' - Ease in and out - Start slow, speed up, then slow down.</li> </ul> <p><b>Type:</b> string<br/><b>Default:</b> 'linear'</p> |
| animation.startup  | <p>Determines if the chart will animate on the initial draw. If <b>true</b>, the chart will animate to its final state.</p> <p><b>Type:</b> boolean<br/><b>Default:</b> false</p>   |
| axisTitlesPosition | <p>Where to place the axis titles, compared to the chart area. Supported values are:</p> <ul style="list-style-type: none"> <li>• in - Draw the axis titles inside the chart area.</li> <li>• out - Draw the axis titles outside the chart area.</li> <li>• none - Omit the axis titles.</li> </ul> <p><b>Type:</b> string<br/><b>Default:</b> 'out'</p>  |
| backgroundColor    | <p>The background color for the main area of the chart. Can be either a color string, for example: 'red' or '#00cc00', or an object with the following</p>  |

|                                      |  |
|--------------------------------------|--|
|                                      | <b>Type:</b> string or object<br><b>Default:</b> 'white'   |
| backgroundColor.stroke               | The color of the chart border, as an HTML color string.<br><br><b>Type:</b> string<br><b>Default:</b> '#666'   |
| backgroundColor.strokeWidth          | The border width, in pixels.<br><br><b>Type:</b> number<br><b>Default:</b> 0   |
| backgroundColor.fill                 | The chart fill color, as an HTML color string.<br><br><b>Type:</b> string<br><b>Default:</b> 'white'   |
| bar.groupWidth                       | The width of a group of candlesticks, specified in either of these <ul style="list-style-type: none"> <li>• Pixels (e.g. 50).</li> <li>• Percentage of the available width for each group (e.g. '20%'), no space between them.</li> </ul> <b>Type:</b> number or string<br><b>Default:</b> The <u>golden ratio</u> ( <a href="http://en.wikipedia.org/wiki/Golden_ratio">http://en.wikipedia.org/wiki/Golden_ratio</a> ) |
| candlestick.hollowIsRising           | If true, rising candles will appear hollow and falling candles will appear solid.<br><br><b>Type:</b> boolean<br><b>Default:</b> false (will later be changed to true)   |
| candlestick.fallingColor.fill        | The fill color of falling candles, as an HTML color string.<br><br><b>Type:</b> string<br><b>Default:</b> auto (depends on the series color and hollowIsRising)  |
| candlestick.fallingColor.stroke      | The stroke color of falling candles, as an HTML color string.<br><br><b>Type:</b> string<br><b>Default:</b> auto (the series color)  |
| candlestick.fallingColor.strokeWidth | The stroke width of falling candles, as an HTML color string.<br><br><b>Type:</b> 2<br><b>Default:</b> number  |
| candlestick.risingColor.fill         | The fill color of rising candles, as an HTML color string.<br><br><b>Type:</b> string<br><b>Default:</b> auto (white or the series color, depending on hollowIsRising)   |
| candlestick.risingColor.stroke       | The stroke color of rising candles, as an HTML color string.   |

|                                     |   |
|-------------------------------------|---|
|                                     | <b>Type:</b> string<br><b>Default:</b> auto (the series color or white, depending on hollowsR   |
| candlestick.risingColor.strokeWidth | The stroke width of rising candles, as an HTML color string.<br><br><b>Type:</b> number<br><b>Default:</b> 2  |
| chartArea                           | An object with members to configure the placement and size of drawn, excluding axis and legends). Two formats are supported<br>A simple number is a value in pixels; a number followed by % is <code>{left:20, top:0, width: '50%', height: '75%' }</code><br><br><b>Type:</b> object<br><b>Default:</b> null   |
| chartArea.backgroundColor           | Chart area background color. When a string is used, it can be either English color name. When an object is used, the following properties are supported: <ul style="list-style-type: none"> <li><b>stroke:</b> the color, provided as a hex string or English color name</li> <li><b>strokeWidth:</b> if provided, draws a border around the chart area (color of <b>stroke</b>).</li> </ul> <b>Type:</b> string or object<br><b>Default:</b> 'white' |
| chartArea.left                      | How far to draw the chart from the left border.<br><br><b>Type:</b> number or string<br><b>Default:</b> auto  |
| chartArea.top                       | How far to draw the chart from the top border.<br><br><b>Type:</b> number or string<br><b>Default:</b> auto   |
| chartArea.width                     | Chart area width.<br><br><b>Type:</b> number or string<br><b>Default:</b> auto  |
| chartArea.height                    | Chart area height.<br><br><b>Type:</b> number or string<br><b>Default:</b> auto   |
| colors                              | The colors to use for the chart elements. An array of strings, where each string, for example: <code>colors: [ 'red', '#004411' ]</code> .<br><br><b>Type:</b> Array of strings<br><b>Default:</b> default colors   |
|                                     |   |



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| enableInteractivity | <p>Whether the chart throws user-based events or reacts to user in throw 'select' or other interaction-based events (but <i>will</i> throw re hovertext or otherwise change depending on user input.</p> <p><b>Type:</b> boolean<br/><b>Default:</b> true</p>   |
| focusTarget         | <p>The type of the entity that receives focus on mouse hover. Also mouse click, and which data table element is associated with ev</p> <ul style="list-style-type: none"> <li>'datum' - Focus on a single data point. Correlates to a cell in t</li> <li>'category' - Focus on a grouping of all data points along the r data table.</li> </ul> <p>In focusTarget 'category' the tooltip displays all the category val values of different series.</p> <p><b>Type:</b> string<br/><b>Default:</b> 'datum'</p> |
| fontSize            | <p>The default font size, in pixels, of all text in the chart. You can o chart elements.</p> <p><b>Type:</b> number<br/><b>Default:</b> automatic</p>   |
| fontName            | <p>The default font face for all text in the chart. You can override th elements.</p> <p><b>Type:</b> string<br/><b>Default:</b> 'Arial'</p>  |
| forceFrame          | <p>Draws the chart inside an inline frame. (Note that on IE8, this op in i-frames.)</p> <p><b>Type:</b> boolean<br/><b>Default:</b> false</p>   |
| hAxis               | <p>An object with members to configure various horizontal axis ele object, you can use object literal notation, as shown here:</p> <pre> {   title: 'Hello',   titleTextStyle: {     color: '#FF0000'   } } </pre> <p><b>Type:</b> object</p>   |

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|                     | <p><b>Default:</b> null</p>   |
| hAxis.baseline      | <p>The baseline for the horizontal axis.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)</p> <p><b>Type:</b> number<br/><b>Default:</b> automatic</p>   |
| hAxis.baselineColor | <p>The color of the baseline for the horizontal axis. Can be any HTML color (<a href="https://developer.mozilla.org/en-US/docs/Web/CSS/color_value">https://developer.mozilla.org/en-US/docs/Web/CSS/color_value</a>).</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)</p> <p><b>Type:</b> number<br/><b>Default:</b> 'black'</p>   |
| hAxis.direction     | <p>The direction in which the values along the horizontal axis grow.</p> <p><b>Type:</b> 1 or -1<br/><b>Default:</b> 1</p>  |
| hAxis.format        | <p>A format string for numeric or date axis labels.</p> <p>For number axis labels, this is a subset of the decimal formatting (<a href="http://icu-project.org/apiref/icu4c/classDecimalFormat.html#format">http://icu-project.org/apiref/icu4c/classDecimalFormat.html#format</a>). <code>{format: '#,###%'} </code> will display values "1,000%", "750%", and "100%". For date axis labels, this is a subset of the date formatting (<a href="http://icu-project.org/apiref/icu4c/classSimpleDateFormat.html#format">http://icu-project.org/apiref/icu4c/classSimpleDateFormat.html#format</a>). <code>{format: 'MMM d, y'}</code> will display the value "Jul 1, 2011" for July 1, 2011.</p> <p>The actual formatting applied to the label is derived from the locale (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#loading-charts-with-a-specific-locale">https://developers.google.com/chart/interactive/docs/customizing-charts#loading-charts-with-a-specific-locale</a>)</p> <ul style="list-style-type: none"> <li><code>{format: 'none'}</code>: displays numbers with no formatting</li> <li><code>{format: 'decimal'}</code>: displays numbers with thousands separators</li> <li><code>{format: 'scientific'}</code>: displays numbers in scientific notation</li> <li><code>{format: 'currency'}</code>: displays numbers in the local currency</li> <li><code>{format: 'percent'}</code>: displays numbers as percentages</li> <li><code>{format: 'short'}</code>: displays abbreviated numbers (e.g., "1M")</li> <li><code>{format: 'long'}</code>: displays numbers as full words (e.g., "one million")</li> </ul> |

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|                       | <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-axis">https://developers.google.com/chart/interactive/docs/customizing-axis</a>)</p> <p><b>Type:</b> string<br/><b>Default:</b> auto</p>   |
| hAxis.gridlines       | <p>An object with members to configure the gridlines on the horizontal axis. If you are using the <code>hAxis</code> object, you can use object literal notation, as shown here:</p> <pre>{color: '#333', count: 4}</pre> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-axis">https://developers.google.com/chart/interactive/docs/customizing-axis</a>)</p> <p><b>Type:</b> object<br/><b>Default:</b> null</p>   |
| hAxis.gridlines.color | <p>The color of the horizontal gridlines inside the chart area. Specified as a hex color string.</p> <p><b>Type:</b> string<br/><b>Default:</b> '#CCC'</p>  |
| hAxis.gridlines.count | <p>The number of horizontal gridlines inside the chart area. Minimum is 1. If not specified, the chart automatically compute the number of gridlines.</p> <p><b>Type:</b> number<br/><b>Default:</b> 5</p>  |
| hAxis.gridlines.units | <p>Overrides the default format for various aspects of date/datetime on the horizontal axis with chart computed gridlines. Allows formatting for years, months, days, hours, minutes, seconds, and milliseconds.</p> <p>General format is:</p> <pre>gridlines: {   units: {     years: {format: [/format strings here*/]},     months: {format: [/format strings here*/]},     days: {format: [/format strings here*/]},     hours: {format: [/format strings here*/]},     minutes: {format: [/format strings here*/]},     seconds: {format: [/format strings here*/]},     milliseconds: {format: [/format strings here*/]}   } }</pre> <p>Additional information can be found in <a href="https://developers.google.com/chart/interactive/docs/datesandtimes">Dates and Times</a> (<a href="https://developers.google.com/chart/interactive/docs/datesandtimes">https://developers.google.com/chart/interactive/docs/datesandtimes</a>)</p> |

|                            |  |
|----------------------------|--|
|                            | <b>Type:</b> object<br><b>Default:</b> null  |
| hAxis.minorGridlines       | <p>An object with members to configure the minor gridlines on the hAxis.gridlines option.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-axis">https://developers.google.com/chart/interactive/docs/customizing-axis</a>)</p> <b>Type:</b> object<br><b>Default:</b> null  |
| hAxis.minorGridlines.color | <p>The color of the horizontal minor gridlines inside the chart area.</p> <b>Type:</b> string<br><b>Default:</b> A blend of the gridline and background colors   |
| hAxis.minorGridlines.count | <p>The number of horizontal minor gridlines between two regular gridlines.</p> <b>Type:</b> number<br><b>Default:</b> 0  |
| hAxis.minorGridlines.units | <p>Overrides the default format for various aspects of date/datetime with chart computed minorGridlines. Allows formatting for year, month, seconds, and milliseconds.</p> <p>General format is:</p> <pre> gridlines: {   units: {     years: {format: [/*format strings here*/]},     months: {format: [/*format strings here*/]},     days: {format: [/*format strings here*/]},     hours: {format: [/*format strings here*/]},     minutes: {format: [/*format strings here*/]},     seconds: {format: [/*format strings here*/]},     milliseconds: {format: [/*format strings here*/]}   } } </pre> <p>Additional information can be found in <a href="https://developers.google.com/chart/interactive/docs/datesandtimes">Dates and Times</a> (<a href="https://developers.google.com/chart/interactive/docs/datesandtimes">https://developers.google.com/chart/interactive/docs/datesandtimes</a>)</p> <b>Type:</b> object<br><b>Default:</b> null |
| hAxis.logScale             | <p>hAxis property that makes the horizontal axis a logarithmic scale. Set to true for yes.</p>   |

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|                    | <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-axis-ticks">continuous</a> (https://developers.google.com/chart/interactive/docs/customizing-axis-ticks)</p> <p><b>Type:</b> boolean<br/><b>Default:</b> false</p>  |
| hAxis.scaleType    | <p><b>hAxis</b> property that makes the horizontal axis a logarithmic scale.</p> <ul style="list-style-type: none"> <li>• null - No logarithmic scaling is performed.</li> <li>• 'log' - Logarithmic scaling. Negative and zero values are not supported. To use logarithmic scaling, set <b>hAxis</b>: { <b>logscale</b>: true }.</li> <li>• 'mirrorLog' - Logarithmic scaling in which negative and zero values are not supported. To use logarithmic scaling, set <b>hAxis</b>: { <b>logscale</b>: true }.</li> </ul> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-axis-ticks">continuous</a> (https://developers.google.com/chart/interactive/docs/customizing-axis-ticks)</p> <p><b>Type:</b> string<br/><b>Default:</b> null</p> |
| hAxis.textPosition | <p>Position of the horizontal axis text, relative to the chart area. Supported values are 'in', 'out', and 'none'.</p> <p><b>Type:</b> string<br/><b>Default:</b> 'out'</p>  |
| hAxis.textStyle    | <p>An object that specifies the horizontal axis text style. The object has the following properties:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is a number representing the font size in pixels.</p> <p><b>Type:</b> object<br/><b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, fontSize: &lt;global-font-size&gt;}</p>  |
| hAxis.ticks        | <p>Replaces the automatically generated X-axis ticks with the specified ticks. The ticks should be either a valid tick value (such as a number, date, date range, or object), or an object, it should have a v property for the tick value, and an l property for the label string to be displayed as the label.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>• <b>hAxis</b>: { ticks: [5,10,15,20] }</li> </ul>  |

|   |  |
|---|--|
|   | <ul style="list-style-type: none"> <li>• <code>hAxis: { ticks: [{v:32, f:'thirty two'}, {v:32, f:'thirty two'}]</code></li> <li>• <code>hAxis: { ticks: [new Date(2014,3,15), new Date(2014,3,15)]}</code></li> <li>• <code>hAxis: { ticks: [16, {v:32, f:'thirty two'}, {v:32, f:'thirty two'}]</code></li> </ul> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> chart (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)</p> <p><b>Type:</b> Array of elements<br/> <b>Default:</b> auto</p> |
| <code>hAxis.title</code>                            | <p><code>hAxis</code> property that specifies the title of the horizontal axis.</p> <p><b>Type:</b> string<br/> <b>Default:</b> null</p>   |
| <code>hAxis.titleTextStyle</code>                   | <p>An object that specifies the horizontal axis title text style. The object has the following properties:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is in pixels.</p> <p><b>Type:</b> object<br/> <b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, italic: false, bold: false, size: 12}</p>   |
| <code>hAxis.allowContainerBoundaryTextCutoff</code> | <p>If false, will hide outermost labels rather than allow them to be cropped. If true, will allow label cropping.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis">discrete</a> chart (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis</a>)</p> <p><b>Type:</b> boolean<br/> <b>Default:</b> false</p>   |
| <code>hAxis.slantedText</code>                      | <p>If true, draw the horizontal axis text at an angle, to help fit more text. Default behavior is to slant text if it is too long to fit horizontally. that this option is available only when the <code>hAxis.textPosition</code> is 'right'.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis">discrete</a> chart (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis</a>)</p> <p><b>Type:</b> boolean</p>   |

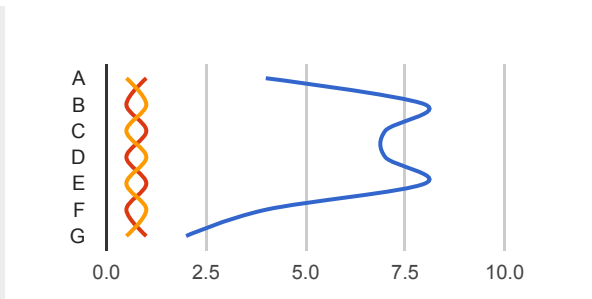
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|                                     | <b>Default:</b> automatic  |
| <code>hAxis.slantedTextAngle</code> | <p>The angle of the horizontal axis text, if it's drawn slanted. Ignore is in auto mode, and the chart decided to draw the text horizontal.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete">discrete</a> (https://developers.google.com/chart/interactive/docs/customizing-charts#discrete)</p> <p><b>Type:</b> number, 1–90<br/><b>Default:</b> 30</p>  |
| <code>hAxis.maxAlternation</code>   | <p>Maximum number of levels of horizontal axis text. If axis text labels might shift neighboring labels up or down in order to fit labels clearly, the chart will use the most number of levels to use; the server can use fewer levels, if needed.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete">discrete</a> (https://developers.google.com/chart/interactive/docs/customizing-charts#discrete)</p> <p><b>Type:</b> number<br/><b>Default:</b> 2</p>   |
| <code>hAxis.maxTextLines</code>     | <p>Maximum number of lines allowed for the text labels. Labels can wrap, and the number of lines is, by default, limited by the height of the chart.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete">discrete</a> (https://developers.google.com/chart/interactive/docs/customizing-charts#discrete)</p> <p><b>Type:</b> number<br/><b>Default:</b> auto</p>   |
| <code>hAxis.minTextSpacing</code>   | <p>Minimum horizontal spacing, in pixels, allowed between two adjacent labels. If labels are spaced too densely, or they are too long, the spacing can drop below the minimum. If the spacing is too small, the label-unclutter measures will be applied (e.g, truncating the labels).</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete">discrete</a> (https://developers.google.com/chart/interactive/docs/customizing-charts#discrete)</p> <p><b>Type:</b> number<br/><b>Default:</b> The value of <code>hAxis.textStyle.fontSize</code></p> |
| <code>hAxis.showTextEvery</code>    | <p>How many horizontal axis labels to show, where 1 means show every label, and so on. Default is to try to show as many labels as possible.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete">discrete</a> (https://developers.google.com/chart/interactive/docs/customizing-charts#discrete)</p> <p><b>Type:</b> number<br/><b>Default:</b> automatic</p>  |
| <code>hAxis.maxValue</code>         | <p>Moves the max value of the horizontal axis to the specified value. Ignored if this is set to a value smaller than the maximum x-value of the chart. <code>hAxis.viewWindow.max</code> overrides this property.</p>  |

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|                      | <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)</p> <p><b>Type:</b> number<br/><b>Default:</b> automatic</p>   |
| hAxis.minValue       | <p>Moves the min value of the horizontal axis to the specified value. Ignored if this is set to a value greater than the minimum x-value. <code>hAxis.viewWindow.min</code> overrides this property.</p> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)</p> <p><b>Type:</b> number<br/><b>Default:</b> automatic</p>  |
| hAxis.viewWindowMode | <p>Specifies how to scale the horizontal axis to render the values when string values are supported:</p> <ul style="list-style-type: none"> <li>'pretty' - Scale the horizontal values so that the maximum and minimum are a bit inside the left and right of the chart area. This will cause <code>hAxis.viewWindow.max</code> to be ignored.</li> <li>'maximized' - Scale the horizontal values so that the maximum and minimum are on the left and right of the chart area. This will cause <code>hAxis.viewWindow.min</code> and <code>hAxis.viewWindow.max</code> to be ignored.</li> <li>'explicit' - A deprecated option for specifying the left and right values. (Deprecated because it's redundant with <code>hAxis.viewWindow.min</code> and <code>hAxis.viewWindow.max</code>.) Data values outside these values will be truncated. <code>hAxis.viewWindow</code> object describing the maximum and minimum values.</li> </ul> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)</p> <p><b>Type:</b> string<br/><b>Default:</b> Equivalent to 'pretty', but <code>hAxis.viewWindow.min</code> and <code>hAxis.viewWindow.max</code> take precedence if used.</p> |
| hAxis.viewWindow     | <p>Specifies the cropping range of the horizontal axis.</p> <p><b>Type:</b> object<br/><b>Default:</b> null</p>  |
| hAxis.viewWindow.max | <ul style="list-style-type: none"> <li>For a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">continuous</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#continuous-axis</a>)<br/>The maximum horizontal data value to render.</li> <li>For a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis">discrete</a> (<a href="https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis">https://developers.google.com/chart/interactive/docs/customizing-charts#discrete-axis</a>)<br/>The maximum horizontal data value to render.</li> </ul>   |



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|                                   | <p>The zero-based row index where the cropping window ends. be cropped out. In conjunction with <code>vAxis.viewWindowMode</code> [min, max) that denotes the element indices to display. In other words, <code>index &lt; max</code> will be displayed.</p> <p>Ignored when <code>hAxis.viewWindowMode</code> is 'pretty' or 'maximized'.</p> <p><b>Type:</b> number<br/><b>Default:</b> auto</p>  |
| <code>hAxis.viewWindow.min</code> | <ul style="list-style-type: none"> <li>For a <a href="https://developers.google.com/chart/interactive/docs/customizing-view#continuous">continuous</a> chart (https://developers.google.com/chart/interactive/docs/customizing-view#continuous) The minimum horizontal data value to render.</li> <li>For a <a href="https://developers.google.com/chart/interactive/docs/customizing-view#discrete">discrete</a> chart (https://developers.google.com/chart/interactive/docs/customizing-view#discrete) The zero-based row index where the cropping window begins. will be cropped out. In conjunction with <code>vAxis.viewWindowMode</code> range [min, max) that denotes the element indices to display <code>min &lt;= index &lt; max</code> will be displayed.</li> </ul> <p>Ignored when <code>hAxis.viewWindowMode</code> is 'pretty' or 'maximized'.</p> <p><b>Type:</b> number<br/><b>Default:</b> auto</p> |
| <code>height</code>               | <p>Height of the chart, in pixels.</p> <p><b>Type:</b> number<br/><b>Default:</b> height of the containing element</p>  |
| <code>legend</code>               | <p>An object with members to configure various aspects of the legend. you can use object literal notation, as shown here:</p> <pre>{position: 'top', textStyle: {color: 'blue', fontStyle: 'italic', size: 14}}</pre> <p><b>Type:</b> object<br/><b>Default:</b> null</p>   |
| <code>legend.alignment</code>     | <p>Alignment of the legend. Can be one of the following:</p> <ul style="list-style-type: none"> <li>'start' - Aligned to the start of the area allocated for the legend.</li> <li>'center' - Centered in the area allocated for the legend.</li> <li>'end' - Aligned to the end of the area allocated for the legend.</li> </ul> <p>Start, center, and end are relative to the style -- vertical or horizontal. For a 'right' legend, 'start' and 'end' are at the top and bottom, respectively. For a 'left' legend, 'start' and 'end' are at the bottom and top, respectively. For a 'top' legend, 'start' and 'end' are at the left and right of the area, respectively. For a 'bottom' legend, 'start' and 'end' are at the right and left of the area, respectively.</p>   |

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|                  | <p>The default value depends on the legend's position. For 'bottom' legends default to 'start'.</p> <p><b>Type:</b> string<br/><b>Default:</b> automatic</p>  |
| legend.maxLines  | <p>Maximum number of lines in the legend. Set this to a number greater than 1 to display more than one line in the legend. Note: The exact logic used to determine the actual number of lines is not guaranteed.</p> <p>This option currently works only when legend.position is 'top'.</p> <p><b>Type:</b> number<br/><b>Default:</b> 1</p>  |
| legend.position  | <p>Position of the legend. Can be one of the following:</p> <ul style="list-style-type: none"> <li>• 'bottom' - Below the chart.</li> <li>• 'left' - To the left of the chart, provided the left axis has no series. If the left axis has series, the legend on the left, use the option <b>targetAxisIndex</b>.</li> <li>• 'in' - Inside the chart, by the top left corner.</li> <li>• 'none' - No legend is displayed.</li> <li>• 'right' - To the right of the chart. Incompatible with the <b>vAxes</b> option.</li> <li>• 'top' - Above the chart.</li> </ul> <p><b>Type:</b> string<br/><b>Default:</b> 'right'</p> |
| legend.textStyle | <p>An object that specifies the legend text style. The object has the following properties:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is the size of the font in pixels.</p> <p><b>Type:</b> object<br/><b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, fontSize: &lt;global-font-size&gt;}</p>   |
| orientation      | <p>The orientation of the chart. When set to 'vertical', rotates the chart 90 degrees counter-clockwise. (For a column chart instance) a column chart becomes a bar chart, and an area chart becomes a stacked area chart.</p>  |



Type: string  
 Default: 'horizontal'

reverseCategories

If set to true, will draw series from right to left. The default is to

This option is only supported for a [discrete](https://developers.google.com/chart/interactive/docs/custom)  
 (https://developers.google.com/chart/interactive/docs/custom  
 (https://developers.google.com/chart/interactive/docs/custom

Type: boolean  
 Default: false

selectionMode

When **selectionMode** is 'multiple', users may select mult


Type: string  
 Default: 'single'

series

An array of objects, each describing the format of the correspor values for a series, specify an empty object {}. If a series or a va be used. Each object supports the following properties:

- **color** - The color to use for this series. Specify a valid HTM
- **fallingColor.fill** - Overrides the global **candlestick** series.
- **fallingColor.stroke** - Overrides the global **candlesti** this series.
- **fallingColor.strokeWidth** - Overrides the global **candlestick.fallingColor.strokeWidth** value for th
- **labelInLegend** - The description of the series to appear in
- **risingColor.fill** - Overrides the global **candlestick.** series.
- **risingColor.stroke** - Overrides the global **candlestic** this series.
- **risingColor.strokeWidth** - Overrides the global **candlestick.risingColor.strokeWidth** value for thi
- **targetAxisIndex** - Which axis to assign this series to, wh opposite axis. Default value is 0; set to 1 to define a chart wh against different axes. At least one series much be allocated different scale for different axes.

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|               | <ul style="list-style-type: none"> <li>• <b>visibleInLegend</b> - A boolean value, where true means that the series is visible in the legend and false means that it should not. Default is true.</li> </ul> <p>You can specify either an array of objects, each of which applies to a series, or an object with nested objects. For example, you can specify an object where each child has a numeric key indicating the index of the series. In the following example, the following two declarations are identical, and the first declares the series from the legend, and the fourth as red and absent from the legend.</p> <pre>series: [   {color: 'black', visibleInLegend: false}, {},   {color: 'red', visibleInLegend: false} ] series: {   0:{color: 'black', visibleInLegend: false},   3:{color: 'red', visibleInLegend: false} }</pre> <p><b>Type:</b> Array of objects, or object with nested objects<br/> <b>Default:</b> {}</p> |
| theme         | <p>A theme is a set of predefined option values that work together to create a specific visual effect. Currently only one theme is available:</p> <ul style="list-style-type: none"> <li>• 'maximized' - Maximizes the area of the chart, and draws the chart area. Sets the following options:</li> </ul> <pre>chartArea: {width: '100%', height: '100%'}, legend: {position: 'in'}, titlePosition: 'in', axisTitlesPosition: 'in', hAxis: {textPosition: 'in'}, vAxis: {textPosition: 'in'}</pre> <p><b>Type:</b> string<br/> <b>Default:</b> null</p>   |
| title         | <p>Text to display above the chart.</p> <p><b>Type:</b> string<br/> <b>Default:</b> no title</p>   |
| titlePosition | <p>Where to place the chart title, compared to the chart area. Supported values are:</p> <ul style="list-style-type: none"> <li>• in - Draw the title inside the chart area.</li> <li>• out - Draw the title outside the chart area.</li> <li>• none - Omit the title.</li> </ul> <p><b>Type:</b> string<br/> <b>Default:</b> 'out'</p>  |

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| titleTextStyle        | <p>An object that specifies the title text style. The object has this format:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is an integer.</p> <p><b>Type:</b> object<br/> <b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, fontSize: 14, bold: false, italic: false}</p>   |
| tooltip               | <p>An object with members to configure various tooltip elements. The object can use object literal notation, as shown here:</p> <pre>{textStyle: {color: '#FF0000'}, showColorCode: true}</pre> <p><b>Type:</b> object<br/> <b>Default:</b> null</p>   |
| tooltip.ignoreBounds  | <p>If set to <b>true</b>, allows the drawing of tooltips to flow outside of the chart area.</p> <p><b>Note:</b> This only applies to HTML tooltips. If this is enabled with HTML tooltips, the chart bounds will be cropped. See <a href="https://developers.google.com/chart/interactive/docs/customizing_tooltips">Customizing Tooltip Content</a> (https://developers.google.com/chart/interactive/docs/customizing_tooltips).</p> <p><b>Type:</b> boolean<br/> <b>Default:</b> false</p>   |
| tooltip.isHtml        | <p>If set to true, use HTML-rendered (rather than SVG-rendered) tooltips. See <a href="https://developers.google.com/chart/interactive/docs/customizing_tooltips">Customizing Tooltip Content</a> (https://developers.google.com/chart/interactive/docs/customizing_tooltips).</p> <div>  <p><b>Note:</b> customization of the HTML tooltip content via the <a href="https://developers.google.com/chart/interactive/docs/roles#tooltip">tooltip</a> role (https://developers.google.com/chart/interactive/docs/roles#tooltip) in a <a href="https://developers.google.com/chart/interactive/docs/customizing_bubble_chart">Bubble Chart</a> (https://developers.google.com/chart/interactive/docs/customizing_bubble_chart).</p> </div> <p><b>Type:</b> boolean<br/> <b>Default:</b> false</p> |
| tooltip.showColorCode | <p>If true, show colored squares next to the series information in the tooltip. If <b>focusTarget</b> is set to 'category', otherwise the default is false.</p> <p><b>Type:</b> boolean<br/> <b>Default:</b> automatic</p>   |

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| tooltip.textStyle | <p>An object that specifies the tooltip text style. The object has this structure:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is a number.</p> <p><b>Type:</b> object<br/> <b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, fontSize: &lt;global-font-size&gt;}</p>   |
| tooltip.trigger   | <p>The user interaction that causes the tooltip to be displayed:</p> <ul style="list-style-type: none"> <li>'focus' - The tooltip will be displayed when the user hovers over the data point.</li> <li>'none' - The tooltip will not be displayed.</li> </ul> <p><b>Type:</b> string<br/> <b>Default:</b> 'focus'</p>   |
| vAxes             | <p>Specifies properties for individual vertical axes, if the chart has more than one vertical axis. It is an object that contains all the properties supported by the <b>vAxis</b> object, and can contain all the properties supported by the <b>vAxis</b> object to override any global settings for the same property.</p> <p>To specify a chart with multiple vertical axes, first define a new series with the <b>series.targetAxisIndex</b> property, then configure the axis using <b>vAxes</b>. For example, the following code specifies series 2 to the right axis and specifies a custom title and text style for the right axis:</p> <pre>{   series: {     2: {       targetAxisIndex: 1     }   },   vAxes: {     1: {       title: 'Losses',       textStyle: {color: 'red'}     }   } }</pre> |

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|                     | <p>This property can be either an object or an array: the object is a numeric label that specifies the axis that it defines--this is the function of objects, one per axis. For example, the following array-style notation is shown above:</p> <pre>vAxes: [   {}, // Nothing specified for axis 0   {     title:'Losses',     textStyle: {color: 'red'} // Axis 1   } ]</pre> <p><b>Type:</b> Array of object, or object with child objects<br/> <b>Default:</b> null</p> |
| vAxis               | <p>An object with members to configure various vertical axis elements; you can use object literal notation, as shown here:</p> <pre>{title: 'Hello', titleTextStyle: {color: '#FF0000'}}</pre> <p><b>Type:</b> object<br/> <b>Default:</b> null</p>   |
| vAxis.baseline      | <p><b>vAxis</b> property that specifies the baseline for the vertical axis. If the grid line or smaller than the lowest grid line, it will be rounded to the nearest grid line.</p> <p><b>Type:</b> number<br/> <b>Default:</b> automatic</p>   |
| vAxis.baselineColor | <p>Specifies the color of the baseline for the vertical axis. Can be a string or a hex color. For example, 'red' or '#00cc00'.</p> <p><b>Type:</b> number<br/> <b>Default:</b> 'black'</p>  |
| vAxis.direction     | <p>The direction in which the values along the vertical axis grow. Specify 1 for increasing values and -1 for decreasing values.</p> <p><b>Type:</b> 1 or -1<br/> <b>Default:</b> 1</p>   |
| vAxis.format        | <p>A format string for numeric axis labels. This is a subset of the ICU format string (http://icu-project.org/apiref/icu4c/classDecimalFormat.html#format). For example, {format: '#,###%' } will display values "1,000%", "750%", and "0%". You can also supply any of the following:</p> <ul style="list-style-type: none"> <li><b>{format: 'none' }</b>: displays numbers with no formatting</li> </ul>  |

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|                                    | <ul style="list-style-type: none"> <li>• <code>{format: 'decimal'}</code>: displays numbers with thousands</li> <li>• <code>{format: 'scientific'}</code>: displays numbers in scientific</li> <li>• <code>{format: 'currency'}</code>: displays numbers in the local cu</li> <li>• <code>{format: 'percent'}</code>: displays numbers as percentages</li> <li>• <code>{format: 'short'}</code>: displays abbreviated numbers (e.g.,</li> <li>• <code>{format: 'long'}</code>: displays numbers as full words (e.g.,</li> </ul> <p>The actual formatting applied to the label is derived from the lo<br/>more details, see <a href="https://developers.google.com/chart/interactive/docs/library_">loading charts with a specific locale</a><br/>(<a href="https://developers.google.com/chart/interactive/docs/library_">https://developers.google.com/chart/interactive/docs/library_</a><br/>.</p> <p><b>Type:</b> string<br/><b>Default:</b> auto</p> |
| <code>vAxis.gridlines</code>       | <p>An object with members to configure the gridlines on the vertical<br/>object, you can use object literal notation, as shown here:</p> <pre>{color: '#333', count: 4}</pre> <p><b>Type:</b> object<br/><b>Default:</b> null</p>   |
| <code>vAxis.gridlines.color</code> | <p>The color of the vertical gridlines inside the chart area. Specify</p> <p><b>Type:</b> string<br/><b>Default:</b> '#CCC'</p>   |
| <code>vAxis.gridlines.count</code> | <p>The number of vertical gridlines inside the chart area. Minimum<br/>compute the number of gridlines.</p> <p><b>Type:</b> number<br/><b>Default:</b> 5</p>  |
| <code>vAxis.gridlines.units</code> | <p>Overrides the default format for various aspects of date/datetin<br/>with chart computed gridlines. Allows formatting for years, mor<br/>milliseconds.</p> <p>General format is:</p> <pre>gridlines: {   units: {     years: {format: [/*format strings here*/]},     months: {format: [/*format strings here*/]}     days: {format: [/*format strings here*/]}     hours: {format: [/*format strings here*/]}     minutes: {format: [/*format strings here*/]}     seconds: {format: [/*format strings here*/]}</pre>   |



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|                            | <pre>         milliseconds: {format: [/format strings here*/]},       }     } </pre> <p>Additional information can be found in <a href="https://developers.google.com/chart/interactive/docs/datesandtimes">Dates and Times</a> (<a href="https://developers.google.com/chart/interactive/docs/datesandtimes">https://developers.google.com/chart/interactive/docs/datesandtimes</a>)</p> <p><b>Type:</b> object<br/><b>Default:</b> null</p>   |
| vAxis.minorGridlines       | <p>An object with members to configure the minor gridlines on the vAxis.gridlines option.</p> <p><b>Type:</b> object<br/><b>Default:</b> null</p>   |
| vAxis.minorGridlines.color | <p>The color of the vertical minor gridlines inside the chart area. Specified as a hex color or a CSS color name.</p> <p><b>Type:</b> string<br/><b>Default:</b> A blend of the gridline and background colors</p>  |
| vAxis.minorGridlines.count | <p>The number of vertical minor gridlines between two regular gridlines.</p> <p><b>Type:</b> number<br/><b>Default:</b> 0</p>   |
| vAxis.minorGridlines.units | <p>Overrides the default format for various aspects of date/datetime with chart computed minorGridlines. Allows formatting for year, month, seconds, and milliseconds.</p> <p>General format is:</p> <pre> gridlines: {   units: {     years: {format: [/format strings here*/]},     months: {format: [/format strings here*/]},     days: {format: [/format strings here*/]},     hours: {format: [/format strings here*/]},     minutes: {format: [/format strings here*/]},     seconds: {format: [/format strings here*/]},     milliseconds: {format: [/format strings here*/]},   } } </pre> <p>Additional information can be found in <a href="https://developers.google.com/chart/interactive/docs/datesandtimes">Dates and Times</a> (<a href="https://developers.google.com/chart/interactive/docs/datesandtimes">https://developers.google.com/chart/interactive/docs/datesandtimes</a>)</p> <p><b>Type:</b> object</p> |

|                    |  |
|--------------------|--|
|                    | <p><b>Default:</b> null</p>  |
| vAxis.logScale     | <p>If true, makes the vertical axis a logarithmic scale. Note: All values must be positive.</p> <p><b>Type:</b> boolean<br/><b>Default:</b> false</p>  |
| vAxis.scaleType    | <p>vAxis property that makes the vertical axis a logarithmic scale</p> <ul style="list-style-type: none"> <li>• null - No logarithmic scaling is performed.</li> <li>• 'log' - Logarithmic scaling. Negative and zero values are not supported. To use logarithmic scaling, set <code>vAxis: { logscale: true }</code>.</li> <li>• 'mirrorLog' - Logarithmic scaling in which negative and zero values are not supported. A negative number is the negative of the log of the absolute value of the number on a linear scale.</li> </ul> <p>This option is only supported for a <a href="https://developers.google.com/chart/interactive/docs/customizing-charts#continuous">continuous</a> chart.</p> <p><b>Type:</b> string<br/><b>Default:</b> null</p> |
| vAxis.textPosition | <p>Position of the vertical axis text, relative to the chart area. Supported values are 'in' and 'out'.</p> <p><b>Type:</b> string<br/><b>Default:</b> 'out'</p>   |
| vAxis.textStyle    | <p>An object that specifies the vertical axis text style. The object has the following properties:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is in pixels.</p> <p><b>Type:</b> object<br/><b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, fontSize: &lt;global-font-size&gt;}</p>  |
| vAxis.ticks        | <p>Replaces the automatically generated Y-axis ticks with the specified ticks. Each tick should be either a valid tick value (such as a number, date, date range, or time range) or an object. If it is an object, it should have a v property for the tick value, and an l property for the label string to be displayed as the label.</p> <p>Examples:</p>   |

|                                   |   |
|-----------------------------------|---|
|                                   | <ul style="list-style-type: none"> <li>• <code>vAxis: { ticks: [5,10,15,20] }</code></li> <li>• <code>vAxis: { ticks: [{v:32, f:'thirty two'}, {v:32, f:'thirty two'}]</code></li> <li>• <code>vAxis: { ticks: [new Date(2014,3,15), new Date(2014,3,15)] }</code></li> <li>• <code>vAxis: { ticks: [16, {v:32, f:'thirty two'}, {v:32, f:'thirty two'}]</code></li> </ul> <p><b>Type:</b> Array of elements<br/> <b>Default:</b> auto</p>  |
| <code>vAxis.title</code>          | <p><code>vAxis</code> property that specifies a title for the vertical axis.</p> <p><b>Type:</b> string<br/> <b>Default:</b> no title</p>   |
| <code>vAxis.titleTextStyle</code> | <p>An object that specifies the vertical axis title text style. The object has the following properties:</p> <pre>{ color: &lt;string&gt;,   fontName: &lt;string&gt;,   fontSize: &lt;number&gt;,   bold: &lt;boolean&gt;,   italic: &lt;boolean&gt; }</pre> <p>The <b>color</b> can be any HTML color string, for example: 'red' or 'blue'. The <b>fontSize</b> is a number.</p> <p><b>Type:</b> object<br/> <b>Default:</b> {color: 'black', fontName: &lt;global-font-name&gt;, fontSize: &lt;global-font-size&gt;}</p> |
| <code>vAxis.maxValue</code>       | <p>Moves the max value of the vertical axis to the specified value; this property is ignored if this is set to a value smaller than the maximum y-value of the chart. <code>vAxis.viewWindow.max</code> overrides this property.</p> <p><b>Type:</b> number<br/> <b>Default:</b> automatic</p>  |
| <code>vAxis.minValue</code>       | <p>Moves the min value of the vertical axis to the specified value; this property is ignored if this is set to a value greater than the minimum y-value of the chart. <code>vAxis.viewWindow.min</code> overrides this property.</p> <p><b>Type:</b> number<br/> <b>Default:</b> null</p>   |
| <code>vAxis.viewWindowMode</code> | <p>Specifies how to scale the vertical axis to render the values with the specified range. The following modes are supported:</p> <ul style="list-style-type: none"> <li>• 'pretty' - Scale the vertical values so that the maximum and minimum values are inside the top and bottom of the chart area. This will cause values to be rounded to the nearest integer.</li> </ul>   |

|                                   |  |
|-----------------------------------|--|
|                                   | <p><code>vaxis.viewWindow.max</code> to be ignored.</p> <ul style="list-style-type: none"> <li>'maximized' - Scale the vertical values so that the maximum and bottom of the chart area. This will cause <code>vaxis.viewWindow.max</code> to be ignored.</li> <li>'explicit' - A deprecated option for specifying the top and bottom (Deprecated because it's redundant with <code>vaxis.viewWindow.max</code>. Data values outside these values are ignored. <code>vAxis.viewWindow</code> object describing the maximum and minimum values.</li> </ul> <p><b>Type:</b> string<br/> <b>Default:</b> Equivalent to 'pretty', but <code>vaxis.viewWindow.min</code> and <code>vaxis.viewWindow.max</code> take precedence if used.</p> |
| <code>vAxis.viewWindow</code>     | <p>Specifies the cropping range of the vertical axis.</p> <p><b>Type:</b> object<br/> <b>Default:</b> null</p>   |
| <code>vAxis.viewWindow.max</code> | <p>The maximum vertical data value to render.</p> <p>Ignored when <code>vAxis.viewWindowMode</code> is 'pretty' or 'maximized'.</p> <p><b>Type:</b> number<br/> <b>Default:</b> auto</p>   |
| <code>vAxis.viewWindow.min</code> | <p>The minimum horizontal data value to render.</p> <p>Ignored when <code>vAxis.viewWindowMode</code> is 'pretty' or 'maximized'.</p> <p><b>Type:</b> number<br/> <b>Default:</b> auto</p>   |
| <code>width</code>                | <p>Width of the chart, in pixels.</p> <p><b>Type:</b> number<br/> <b>Default:</b> width of the containing element</p>  |

## Methods

| Method                           |  |
|----------------------------------|--|
| <code>draw(data, options)</code> | <p>Draws the chart. The chart accepts further method calls only after the <code>chart.draw</code> (<code>#Events</code>) event is fired. <a href="https://developers.google.com/chart/interactive/docs/reference#vis_events">Extended description</a></p> <p>(<a href="https://developers.google.com/chart/interactive/docs/reference#vis_events">https://developers.google.com/chart/interactive/docs/reference#vis_events</a>)</p> <p><b>Return Type:</b> none</p> |

|                                  |  |
|----------------------------------|--|
| <b>getAction(actionID)</b>       | <p>Returns the tooltip action object with the requested <b>actionID</b>.</p> <p><b>Return Type:</b> object</p>   |
| <b>getBoundingBox(id)</b>        | <p>Returns an object containing the left, top, width, and height of chart element <b>id</b>. The format for <b>id</b> isn't yet documented (they're the return values of <a href="https://developers.google.com/chart/interactive/docs/events">events</a>), but here are some examples:</p> <pre>var cli = chart.getChartLayoutInterface();</pre> <p><b>Height of the chart area</b></p> <pre>cli.getBoundingBox('chartarea').height</pre> <p><b>Width of the third bar in the first series of a bar or column chart</b></p> <pre>cli.getBoundingBox('bar#0#2').width</pre> <p><b>Bounding box of the fifth wedge of a pie chart</b></p> <pre>cli.getBoundingBox('slice#4')</pre> <p><b>Bounding box of the chart data of a vertical (e.g., column) chart</b></p> <pre>cli.getBoundingBox('vAxis#0#gridline')</pre> <p><b>Bounding box of the chart data of a horizontal (e.g., bar) chart</b></p> <pre>cli.getBoundingBox('hAxis#0#gridline')</pre> <p>Values are relative to the container of the chart. Call this <i>after</i> the chart is rendered.</p> <p><b>Return Type:</b> object</p> |
| <b>getChartAreaBoundingBox()</b> | <p>Returns an object containing the left, top, width, and height of the chart area (i.e., excluding labels and legend):</p> <pre>var cli = chart.getChartLayoutInterface();</pre> <pre>cli.getChartAreaBoundingBox().left</pre> <pre>cli.getChartAreaBoundingBox().top</pre> <pre>cli.getChartAreaBoundingBox().height</pre> <pre>cli.getChartAreaBoundingBox().width</pre>  |

|   |  |
|---|--|
|   | <p>Values are relative to the container of the chart. Call this <i>after</i> the chart is drawn.</p> <p><b>Return Type:</b> object</p>   |
| <b>getChartLayoutInterface()</b>                    | <p>Returns an object containing information about the onscreen placement of the chart and its elements.</p> <p>The following methods can be called on the returned object:</p> <ul style="list-style-type: none"> <li>• <b>getBoundingBox</b></li> <li>• <b>getChartAreaBoundingBox</b></li> <li>• <b>getHAxisValue</b></li> <li>• <b>getVAxisValue</b></li> <li>• <b>getXLocation</b></li> <li>• <b>getYLocation</b></li> </ul> <p>Call this <i>after</i> the chart is drawn.</p> <p><b>Return Type:</b> object</p> |
| <b>getHAxisValue(position, optional_axis_index)</b> | <p>Returns the logical horizontal value at <b>position</b>, which is an offset from the container's left edge. Can be negative.</p> <p>Example: <code>chart.getChartLayoutInterface().getHAxisValue(position)</code></p> <p>Call this <i>after</i> the chart is drawn.</p> <p><b>Return Type:</b> number</p>   |
| <b>getImageURI()</b>                                | <p>Returns the chart serialized as an image URI.</p> <p>Call this <i>after</i> the chart is drawn.</p> <p>See <a href="https://developers.google.com/chart/interactive/docs/printing">Printing PNG Charts</a> (https://developers.google.com/chart/interactive/docs/printing).</p> <p><b>Return Type:</b> string</p>   |
| <b>getSelection()</b>                               | <p>Returns an array of the selected chart entities. Selectable entities are categories and legend entries. For this chart, only one entity can be selected at a given moment. <a href="https://developers.google.com/chart/interactive/docs/reference#visualselection">Extended description</a> (https://developers.google.com/chart/interactive/docs/reference#visualselection).</p> <p><b>Return Type:</b> Array of selection elements</p>   |
| <b>getVAxisValue(position, optional_axis_index)</b> | <p>Returns the logical vertical value at <b>position</b>, which is an offset from the container's top edge. Can be negative.</p>   |

|  |   |
|--|---|
|  | <p>Example: <code>chart.getChartLayoutInterface().getVAxisValue</code></p> <p>Call this <i>after</i> the chart is drawn.</p> <p><b>Return Type:</b> number</p>  |
| <code>getLocation(position, optional_axis_index)</code>  | <p>Returns the screen x-coordinate of <b>position</b> relative to the chart's co</p> <p>Example: <code>chart.getChartLayoutInterface().getLocation(</code></p> <p>Call this <i>after</i> the chart is drawn.</p> <p><b>Return Type:</b> number</p>  |
| <code>getYLocation(position, optional_axis_index)</code> | <p>Returns the screen y-coordinate of <b>position</b> relative to the chart's co</p> <p>Example: <code>chart.getChartLayoutInterface().getYLocation(</code></p> <p>Call this <i>after</i> the chart is drawn.</p> <p><b>Return Type:</b> number</p>   |
| <code>removeAction(actionID)</code>                      | <p>Removes the tooltip action with the requested <b>actionID</b> from the cha</p> <p><b>Return Type:</b> none</p>   |
| <code>setAction(action)</code>                           | <p>Sets a tooltip action to be executed when the user clicks on the action</p> <p>The <b>setAction</b> method takes an object as its action parameter. This should specify 3 properties: <b>id</b>— the ID of the action being set, <b>text</b> — should appear in the tooltip for the action, and <b>action</b> — the function to be run when a user clicks on the action text.</p> <p>Any and all tooltip actions should be set prior to calling the chart's <b>draw</b> method. <a href="https://developers.google.com/chart/interactive/docs/reference#vis">Extended description</a> (<a href="https://developers.google.com/chart/interactive/docs/reference#vis">https://developers.google.com/chart/interactive/docs/reference#vis</a></p> <p><b>Return Type:</b> none</p> |
| <code>setSelection()</code>                              | <p>Selects the specified chart entities. Cancels any previous selection. Selected entities are candlesticks, legend entries and categories. For this chart, entity can be selected at a time. <a href="https://developers.google.com/chart/interactive/docs/reference#vis">Extended description</a> (<a href="https://developers.google.com/chart/interactive/docs/reference#vis">https://developers.google.com/chart/interactive/docs/reference#vis</a></p> <p><b>Return Type:</b> none</p>  |
| <code>clearChart()</code>                                | <p>Clears the chart, and releases all of its allocated resources.</p> <p><b>Return Type:</b> none</p>   |

# Events

For more information on how to use these events, see [Basic Interactivity](https://developers.google.com/chart/interactive/docs/basic_interactivity) ([https://developers.google.com/chart/interactive/docs/basic\\_interactivity](https://developers.google.com/chart/interactive/docs/basic_interactivity)), [Handling Events](https://developers.google.com/chart/interactive/docs/events) (<https://developers.google.com/chart/interactive/docs/events>), and [Firing Events](https://developers.google.com/chart/interactive/docs/dev/events) (<https://developers.google.com/chart/interactive/docs/dev/events>).

| Name                   |  |
|------------------------|--|
| <b>animationfinish</b> | <p>Fired when transition animation is complete.</p> <p><b>Properties:</b> none</p>   |
| <b>click</b>           | <p>Fired when the user clicks inside the chart. Can be used to identify when the title, data elements, legend entries, axes, gridlines, or labels are clicked.</p> <p><b>Properties:</b> targetID</p>  |
| <b>error</b>           | <p>Fired when an error occurs when attempting to render the chart.</p> <p><b>Properties:</b> id, message</p>   |
| <b>onmouseover</b>     | <p>Fired when the user mouses over a visual entity. Passes back the row and column indices of the corresponding data table element. A candlestick correlates to a cell in the data table, a legend entry to a column (row index is null), and a category to a row (column index is null).</p> <p><b>Properties:</b> row, column</p>      |
| <b>onmouseout</b>      | <p>Fired when the user mouses away from a visual entity. Passes back the row and column indices of the corresponding data table element. A candlestick correlates to a cell in the data table, a legend entry to a column (row index is null), and a category to a row (column index is null).</p> <p><b>Properties:</b> row, column</p> |
| <b>ready</b>           | <p>The chart is ready for external method calls. If you want to interact with the chart, and call methods after you draw it, you should set up a listener for this event <i>before</i> you call the <b>draw</b> method, and call them only after the event was fired.</p> <p><b>Properties:</b> none</p>                                 |
| <b>select</b>          | <p>Fired when the user clicks a visual entity. To learn what has been selected, call <a href="#">getSelection()</a> (#Methods).</p>  |



Properties: none

## Data policy

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All code and data are processed and rendered in the browser. No data is sent to any server.

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