

Time Series

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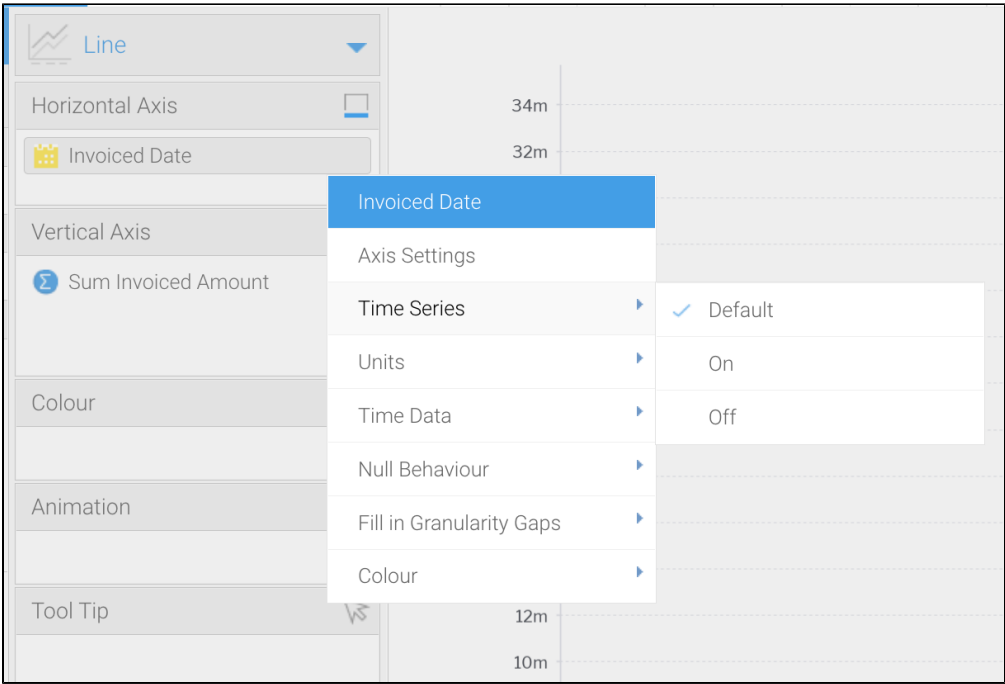
Overview

Time series charts show a series of data points, presented against an x axis that displays time in uniform intervals. Unlike categorical charts, time series charts can effectively show gaps in the data through the use of these uniform time intervals.

Using time series charts gives you access to additional features, such as yearly comparisons, unit adjustment and display options, and a date slider. These are described below.

Enable time series charts


Logically, you can use time series charts only when a time/date field is available in the horizontal axis. The time series option is enabled on most chart types by default, but you can check by clicking on the triangle to the right of the date/time field, which will produce a pop-up menu.



If **Default** shows a tick beside it, time series is already on. However, you can select **On** if you want to ensure it always remains on, regardless of chart type.

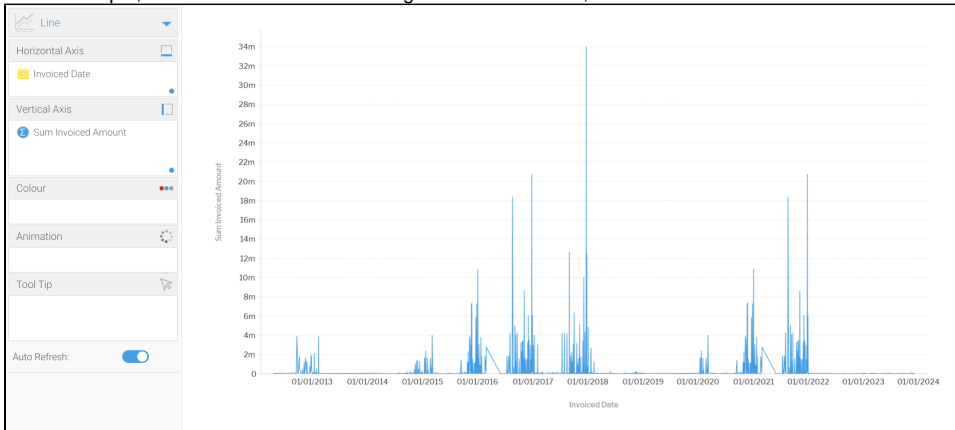
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If you have a line chart which is time series spanning more than one year range, you can use this option to split the single line into 12-month groups for easy comparison. When using this option, the units are set to month and cannot be changed.



This option won't be displayed while the Drill Down option for your report is switched on. By default, it is enabled, so you must switch it off manually in the Report Builder.

1. Using the information above, ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field



2. Click on the **Settings** tool  to display the **Chart Settings** dialog box

The **Chart Settings** dialog box is open, showing the **Size & Position** section. The settings are as follows:

- Width:** Specify the width (pixels) of the chart as it should display on the report preview page. (Input field)
- Height:** Specify the height (pixels) of the chart as it should display on the report preview page. (Input field)
- Chart Position:** Specify the position of the chart in relation to the table. (Dropdown menu: Top)
- Horizontal Alignment:** Specify which edge of the table the chart should be aligned to. (Dropdown menu: Left)
- Time Format:** (Dropdown menu)
- Style:** (Dropdown menu)
- Interaction:** (Dropdown menu)

3. Click on the **Time Format** section heading to expand it

The **Chart Settings** dialog box is open, showing the **Time Format** section. The settings are as follows:

- Yearly Comparison:** Display multiple years on the x axis of the chart, with one line per series. (Toggle switch: On)
- Style:** (Dropdown menu)
- Interaction:** (Dropdown menu)

4. Use the toggle for **Yearly Comparison** to enable the option


Chart Settings

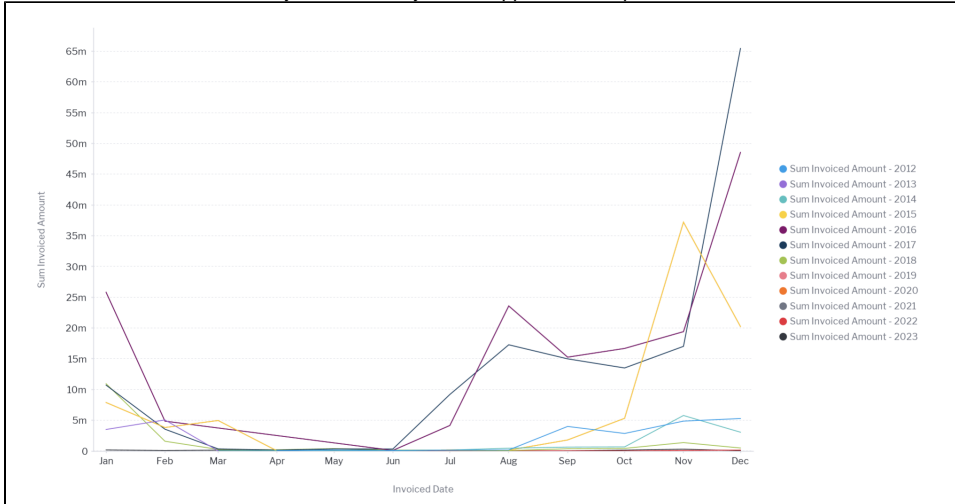
Size & Position

Time Format

Yearly Comparison

Change the x axis to display a calendar year, and create a distinct line for each year there is data for.

5. Click on the **Close** button  in the top right corner to close the dialog box
Your line chart will refresh, and year available year will appear as a separate line



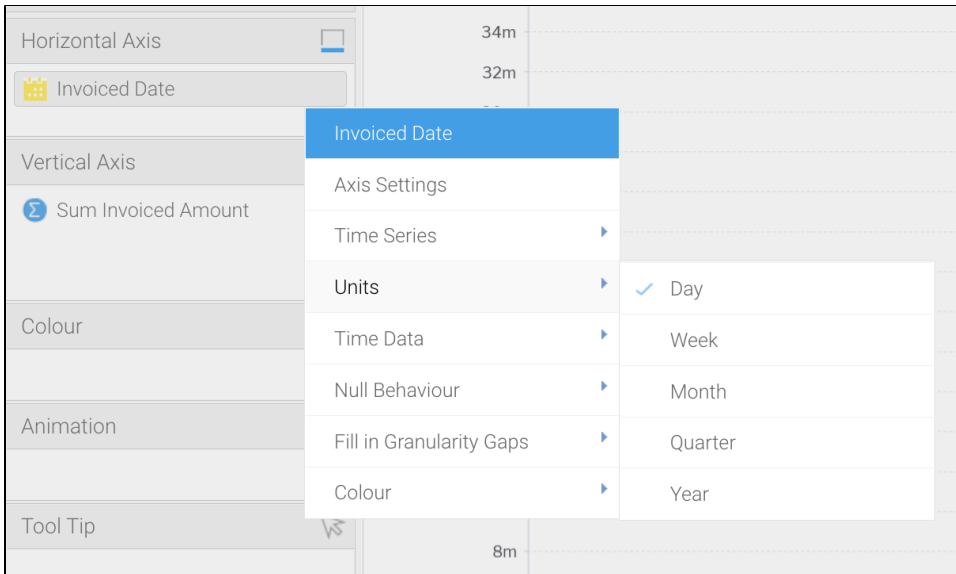
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Change chart units

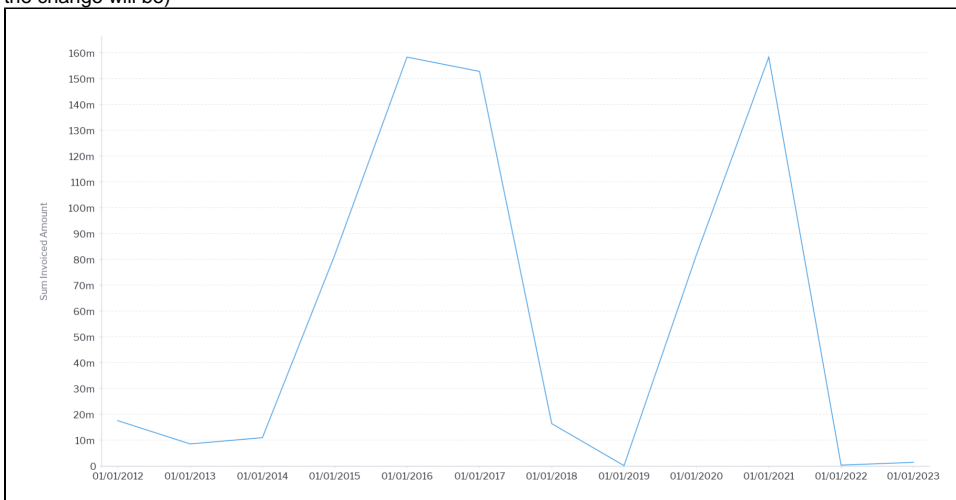
Changing the chart units lets you select the time granularity of the chart display independent of what the underlying table displays. This won't alter any continuous units displayed along your horizontal access if your units. It might alter discrete units on your horizontal access.

Note that this option doesn't appear while the **Yearly Comparison** option is enabled.

1. Ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field
2. Ensure that the **Yearly Comparison** option is toggled off (use the steps from the previous section if you need to check)
3. Click on the small blue triangle next to your date/time field to display the pop-up menu, then move your mouse to the **Units** option to display a sub-menu



- Click on any of the unticked options and check your chart to see how it is altered (the bigger the difference between granularity, the more obvious the change will be)




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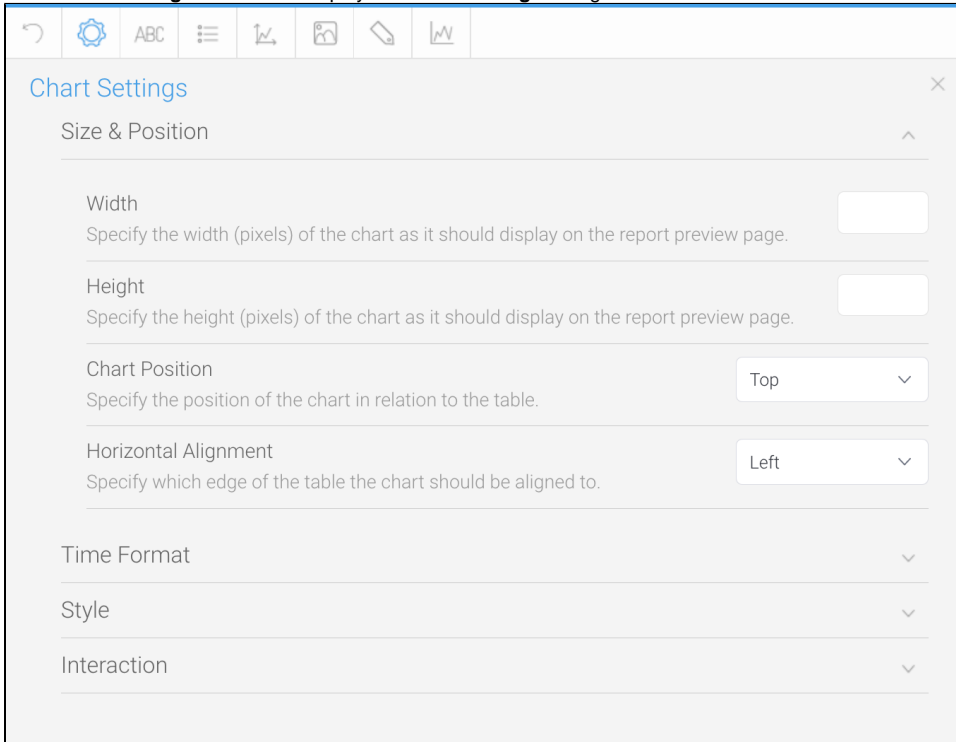
Enable visible unit selection

The Visible User Selection options lets you change the time granularity on published charts without any affect on the underlying data. This gives end users more flexibility in what they can see in chart visualisations.

Note that this option will not be available if the **Yearly Comparison** option is enabled. See the [Yearly Comparison](#) section above for details on where to locate this option.

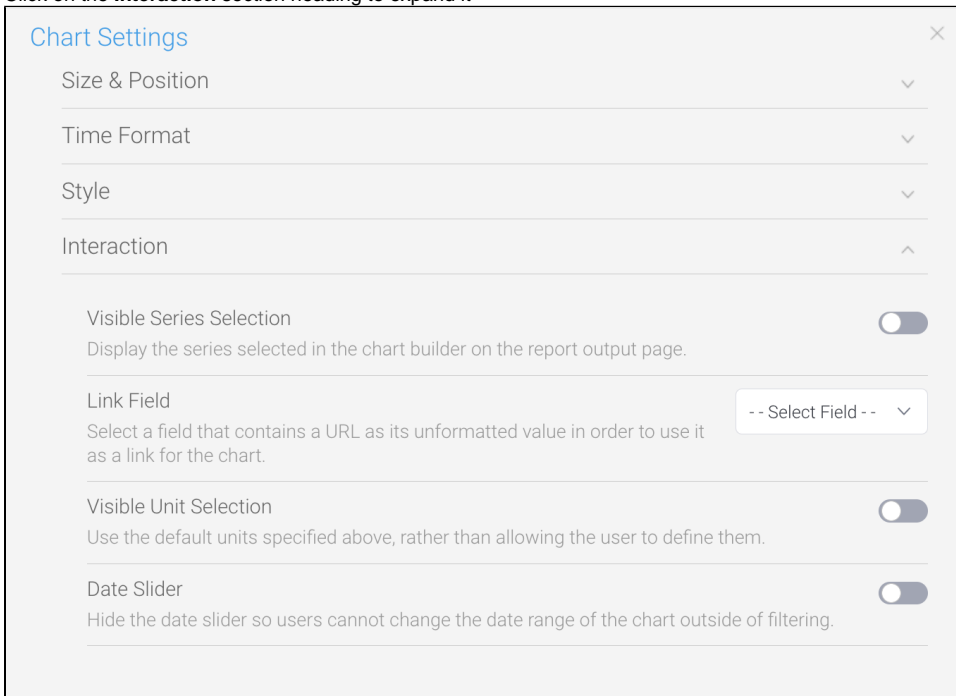
- Using the information above, ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field

2. Click on the **Settings** tool  to display the **Chart Settings** dialog box




The **Chart Settings** dialog box is shown with the **Size & Position** section expanded. It includes input fields for **Width** and **Height**, and dropdown menus for **Chart Position** (set to **Top**) and **Horizontal Alignment** (set to **Left**). Other sections like **Time Format**, **Style**, and **Interaction** are collapsed.

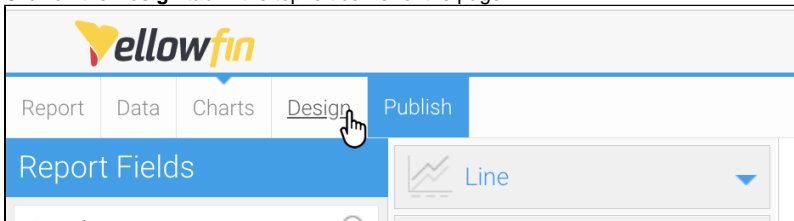
1. Click on the **Interaction** section heading to expand it



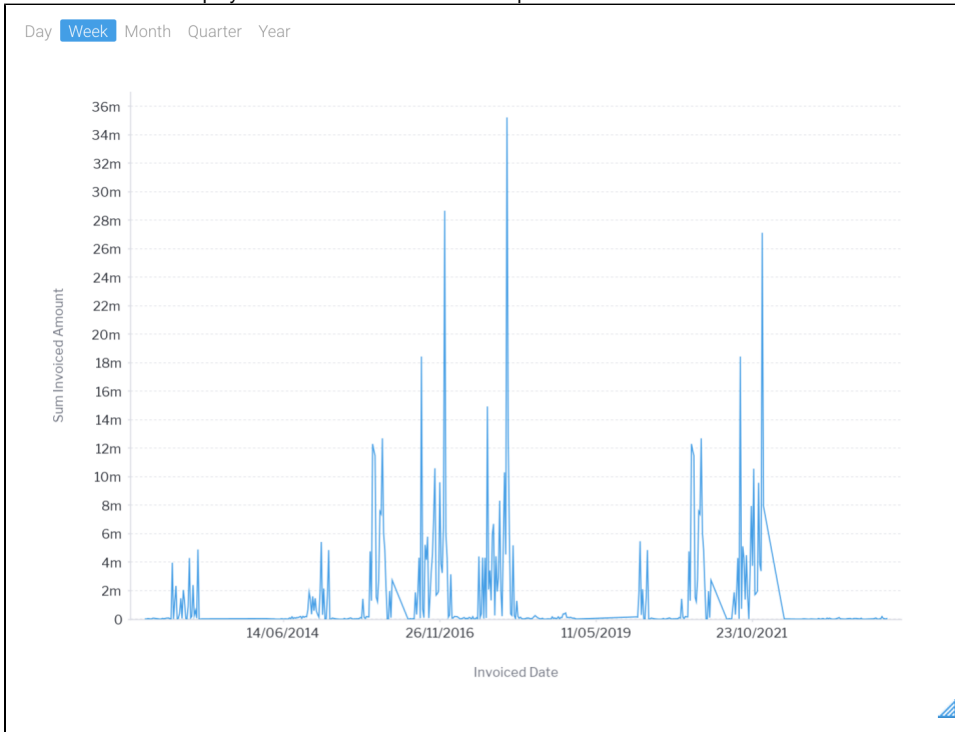
The **Chart Settings** dialog box is shown with the **Interaction** section expanded. It includes a **Visible Series Selection** toggle (enabled), a **Link Field** dropdown (set to **-- Select Field --**), a **Visible Unit Selection** toggle (enabled), and a **Date Slider** toggle (disabled).

2. Click on the toggle for **Visible Unit Selection** to enabled it
3. Click on the **Close** button  in the top right corner to close the dialog box
To see the new option, let's preview the chart

- Click on the **Design** tab in the top left corner of the page



Your chart will now display a list of available units in the top left corner for the user to select



- Click on the different options to get a feel for how the unit selector works
- Click on the **Charts** tab in the top left corner of your screen to return to the Chart Builder


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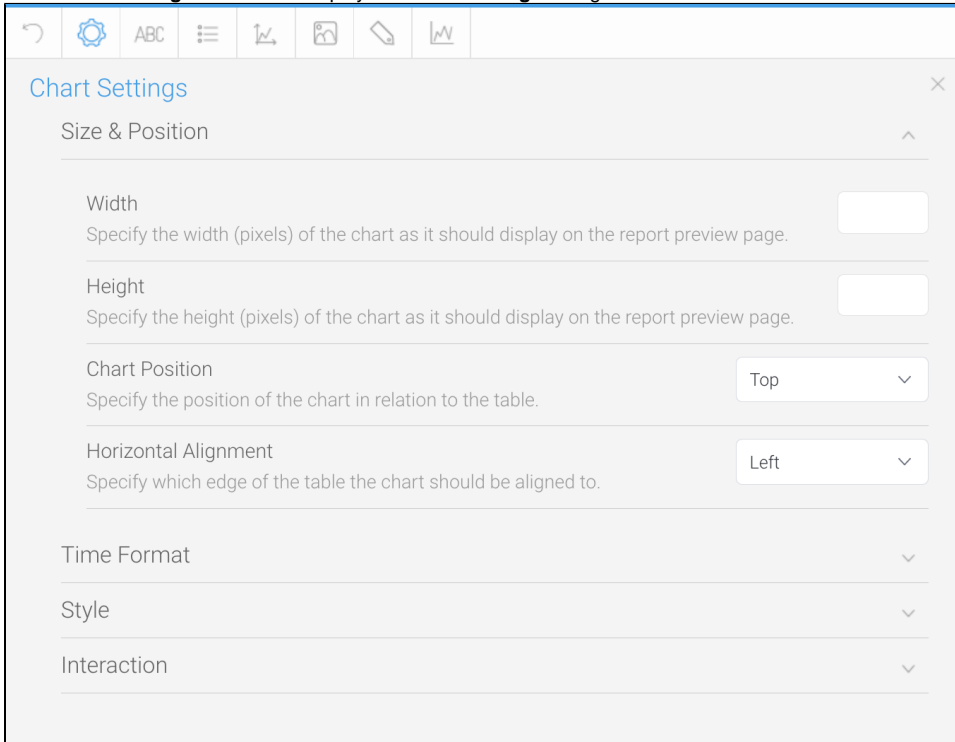
Date Slider

A date slider lets you to zoom in and out of time-banded data on published charts. This option won't affect the underlying chart data.

Note that this option will not be available if the **Yearly Comparison** option is enabled. See the [Yearly Comparison](#) section above for details on where to locate this option.

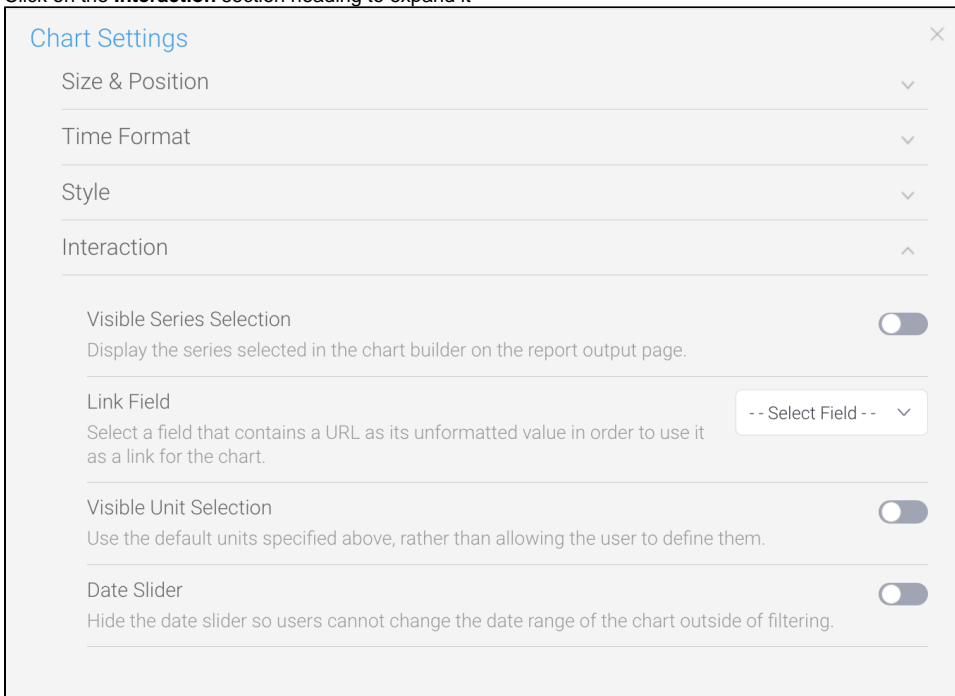
- Using the information above, ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field

2. Click on the **Settings** tool  to display the **Chart Settings** dialog box




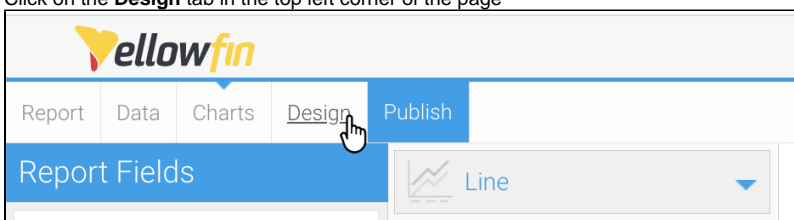
The **Chart Settings** dialog box is displayed. It has a title bar with a close button (X) in the top right corner. Below the title bar is a section header **Size & Position** with an expand/collapse arrow. Under this section, there are four settings: **Width** (text input field), **Height** (text input field), **Chart Position** (dropdown menu set to **Top**), and **Horizontal Alignment** (dropdown menu set to **Left**). Below these are three more sections: **Time Format**, **Style**, and **Interaction**, each with a dropdown arrow.

3. Click on the **Interaction** section heading to expand it

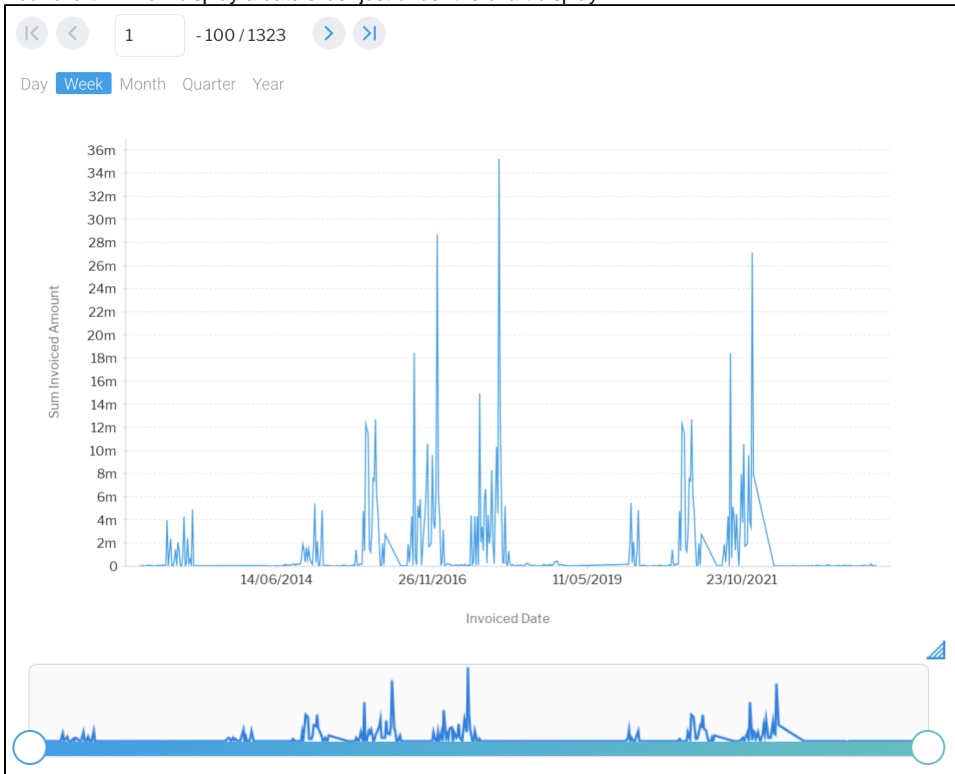


The **Chart Settings** dialog box is shown with the **Interaction** section expanded. The **Size & Position**, **Time Format**, and **Style** sections are collapsed. The **Interaction** section contains four settings: **Visible Series Selection** (toggle switch, currently off), **Link Field** (dropdown menu set to **-- Select Field --**), **Visible Unit Selection** (toggle switch, currently off), and **Date Slider** (toggle switch, currently off).

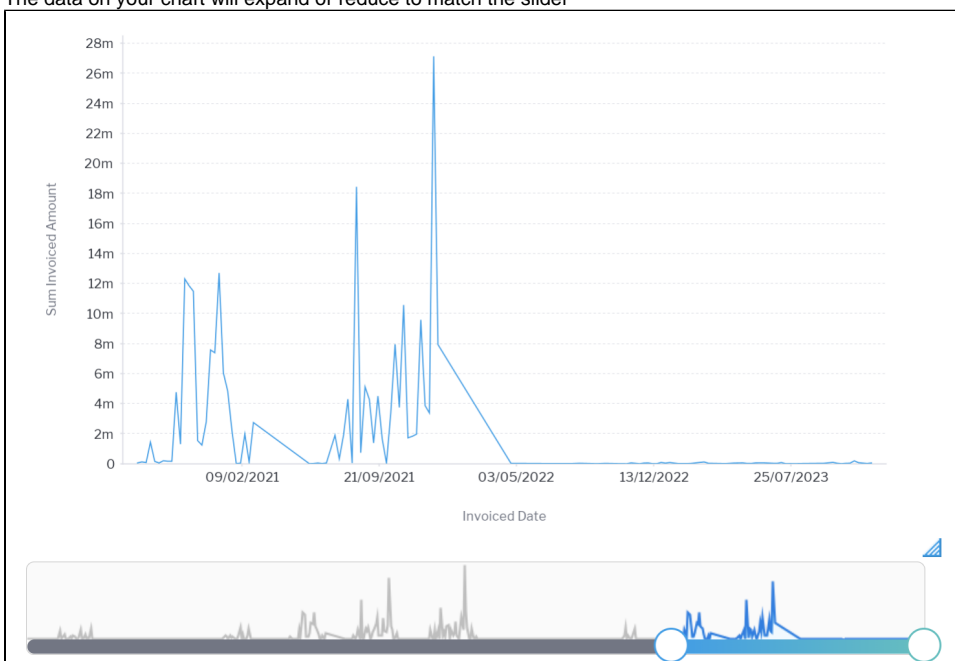
4. Click on the toggle for **Date Slider** to enabled it
5. Click on the **Close** button  in the top right corner to close the dialog box
To see the new option, let's preview the chart
6. Click on the **Design** tab in the top left corner of the page



Your chart will now display a date slider just under the chart display



7. Hold your mouse button down on one end of the chart slide and move it, then release your mouse button to see the effect. The data on your chart will expand or reduce to match the slider.



8. Click on the **Charts** tab in the top left corner of your screen to return to the Chart Builder.



You can use the Slider Series option to choose which series to use in the slider if your chart has more than one available.


Change the date format

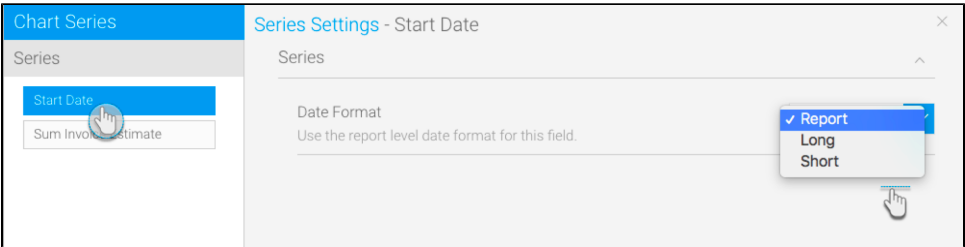
You can change the date format on your charts to different styles more suited to your needs. This is available for all discrete charts that support time series.

Type	Description	Example
Report	This shows the date format as it is in the report. For example, if the date is in a numeric format, then it will be displayed as dd/mm/yyyy here. Note: This format can only be selected for continuous time series.	Default from the field format
Long	Shows the full name of the selected date unit. For example, if month is the selected unit, it will display the full name of the month.	Monday, August Quarter 1
Short	Shows the shorter version of the selected date unit. Note: Some time units have no difference between their long and short versions, such as Year.	Mon, Aug Q1

Note that this option will not be available if the **Yearly Comparison** option is enabled. See the [Yearly Comparison](#) section above for details on where to locate this option.

To check or change your date format for a series, follow the steps below.

- Using the information above, ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field
- Click on the **Series** tool  on the toolbar
- Select the date/time field from the left side panel.
- Click on the drop down for **Date Format** to see the available options



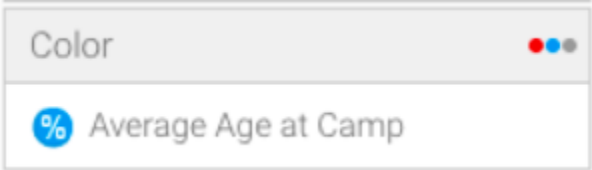
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Display metric in color field

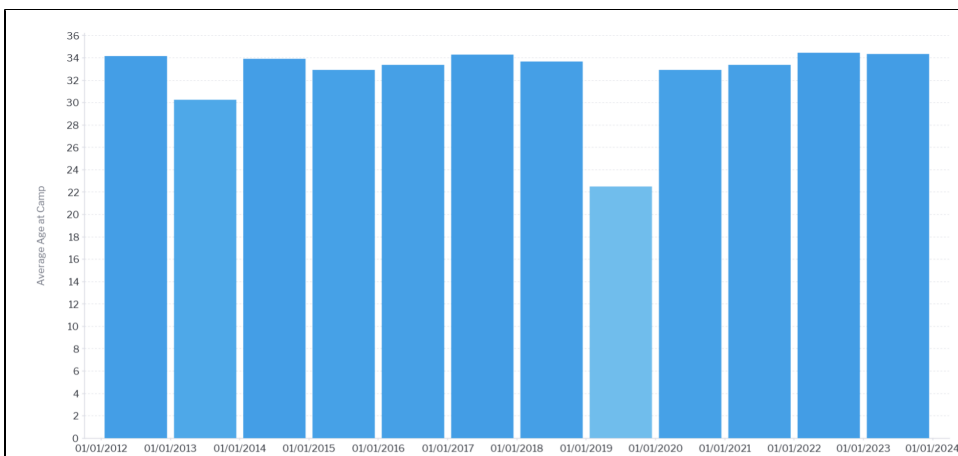
You can add a metric value to the color field when creating a time series chart. This will allow the metric field's values to be represented in the chart with the help of colors.

Note that this option will not be available if the **Yearly Comparison** option is enabled. See the [Yearly Comparison](#) section above for details on where to locate this option.

- Using the information above, ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field
- If your chart is an auto-chart, consider changing it to a specific chart type that distinguishes colors, such as a bar chart
- Drag a metric field to the color field in your chart builder



- The colors of the chart data will change according to the value of the applied metric field. A legend will also appear at the bottom to help distinguish between the color range.



As seen in our example above, the 2019 bar has an average age of 23, and is therefore a lighter shade of color than the 2010 bar which has an average age of 33.

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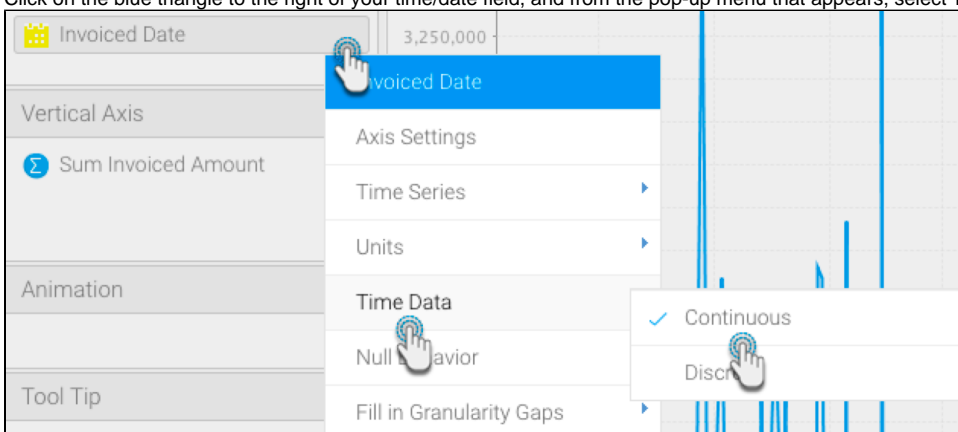
Control null behavior

If your data is missing any values (that is, it contains NULL values), then you can select how to control the gap in time granularity. Time granularity refers to the date or timestamp unit of your chart (millisecond, second, minute, hours, day, week, month, quarter, or year). You can choose to do the following to control the gap:

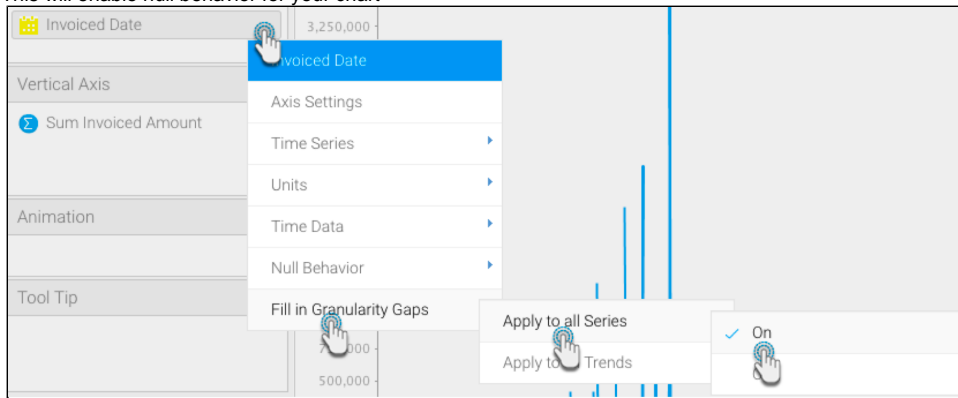
- break the line where there are gaps in time granularity,
- skip over the missing values without filling in the gaps with any additional values,
- or, treat each missing value as zero.

Note: This functionality is provided for all variations of line charts that support continuous time series, including auto-charts, line charts, stepped charts, combination charts, and overlay chart.

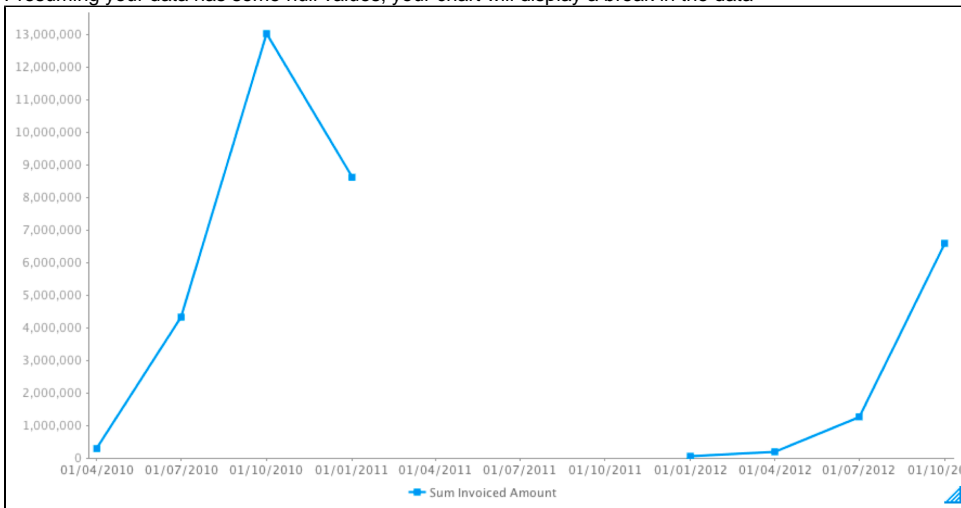
1. Using the information above, ensure that **Time Series** is enabled for your chart (this requires a time/date field in your X axis)
In our example, we have created a chart using the Ski Team view, with **Invoiced Date** in the **Horizontal Axis** field
2. Click on the blue triangle to the right of your time/date field, and from the pop-up menu that appears, select **Time Data**, then **Continuous**



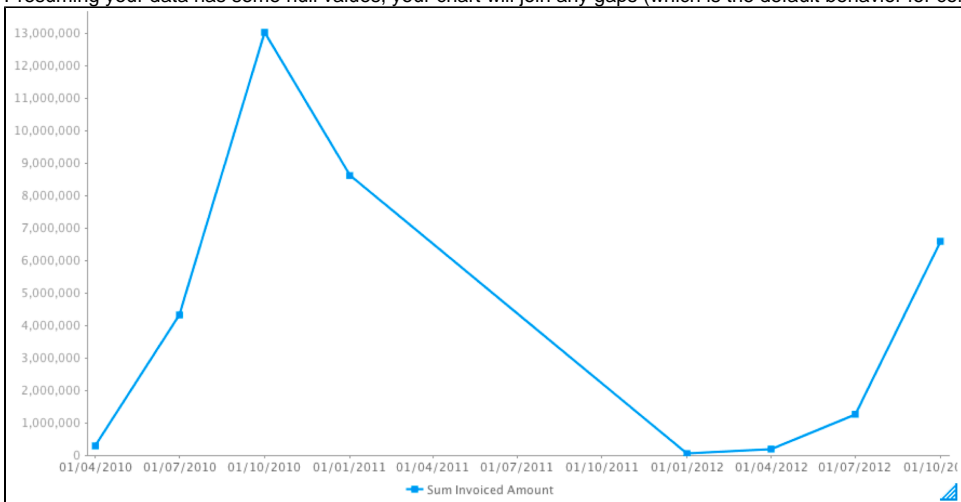
3. Click on the same blue triangle and this time select **Fill in Granularity Gaps**, then **Apply to all Series**, then **On**. This will enable null behavior for your chart



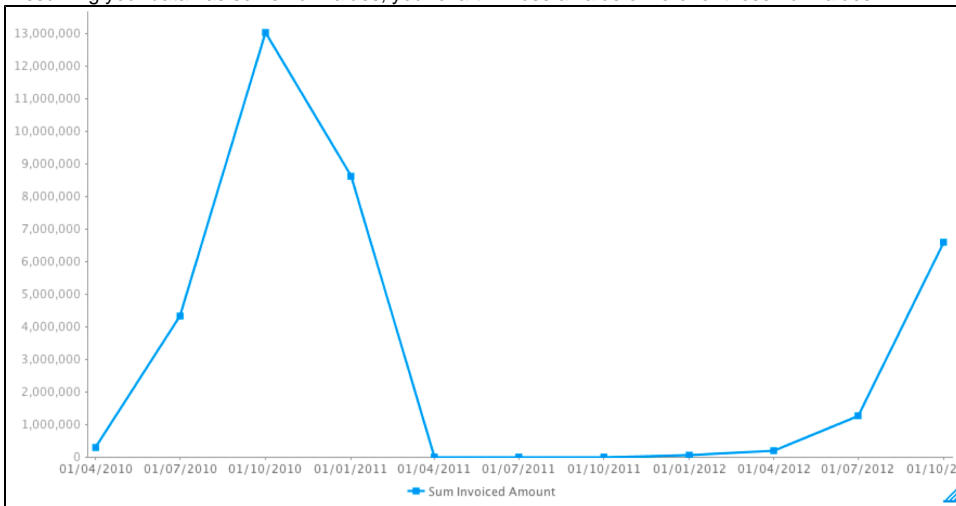
4. Click on the same blue triangle and this time select **Null Behaviour**, then select **Break**. Presuming your data has some null values, your chart will display a break in the data



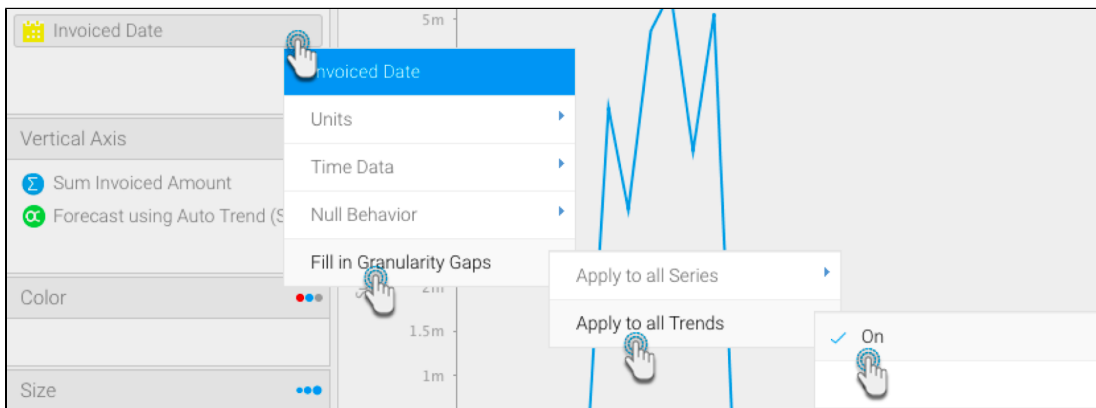
5. Click on the same blue triangle and select **Null Behaviour**, then select **Skip**. Presuming your data has some null values, your chart will join any gaps (which is the default behavior for continuous time series charts)



6. Click on the same blue triangle and select **Null Behaviour**, then select **Zero**
Presuming your data has some null values, your chart will use a value of zero for those null values



In addition to these null behavior options for line charts, you can also apply them to a trend line, when a [Chart Function](#) (such as Trend, Average, or Accumulation) is used. To enable this, switch on the **Apply to all Trends** setting from the date field menu.



The Null Behavior options are also available via the **Chart Settings**  too. In the Chart Settings dialog box, click on the Style section to expand it, then look for the **Null Behavior** option.