

# Splunk® Enterprise Search Tutorial 7.3.1

## Create an overlay chart and explore visualization options

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## Create an overlay chart and explore visualization options

In this example, you create a chart that overlays two data series as lines over three data series as columns. The overlay chart will show Actions such as **Adds To Cart** and **Purchases** on one type of chart and the Conversion Rates, such as **Views To Purchases**, in another type of chart.

You will use the `stats` command to count the user actions. The `eval` command is used to calculate the conversion rates for those actions. For example, how often someone who viewed a product also added the product to their cart.

This example uses the `productName` field from the Enabling field lookups section of this tutorial.

If you do not configure the field lookups, the searches in this section will not produce the correct results.

Let's start by running a search and viewing the results as a chart.

1. Start a new search.
2. Change the time range to **All time**.
3. Run the following search.

```
sourcetype=access_* status=200 | stats count AS views  
count(eval(action="addtocart")) AS addtocart  
count(eval(action="purchase")) AS purchases by productName | eval  
viewsToPurchases=(purchases/views)*100 | eval  
cartToPurchases=(purchases/addtocart)*100 | table productName  
views addtocart purchases viewsToPurchases cartToPurchases |  
rename productName AS "Product Name", views AS "Views", addtocart  
as "Adds To Cart", purchases AS "Purchases"
```

The `eval` command is used to define two new fields. These fields contain the conversion rates.

- ◆ The **viewsToPurchases** field calculates the number of customers who viewed the product to the number of customers who purchased the product. The calculation returns a percentage.
- ◆ The **cartToPurchases** field calculates the number of customers who added the product to their cart to the number of customers who purchased the product. The calculation returns a percentage.

**New Search** Save As Close

sourcetype=access\_\* status=200 | stats count AS views count(eval(action="addtocart")) AS addtocart count(eval(action="purchase")) AS purchases by productName | eval viewsToPurchases=(purchases/views)\*100 | eval cartToPurchases=(purchases/addtocart)\*100 | table productName views addtocart purchases viewsToPurchases cartToPurchases | rename productName AS "Product Name", views AS "Views", addtocart as "Adds To Cart", purchases AS "Purchases"

✓ 34,282 events (before 4/22/19 2:32:01.000 PM) No Event Sampling Job Format Preview Smart Mode

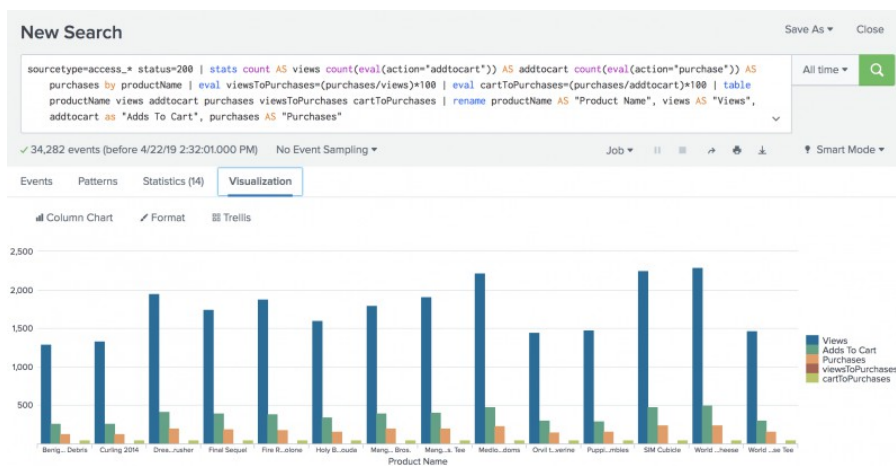
Events Patterns **Statistics (14)** Visualization

20 Per Page Format Preview

Product Name	Views	Adds To Cart	Purchases	viewsToPurchases	cartToPurchases
Benign Space Debris	1292	278	134	10.371517827863778	49.629629629629626
Curling 2014	1336	263	138	10.32934131736527	52.47148288973384
Dream Crusher	1954	421	206	10.542476978317297	48.9311163895487
Final Sequel	1745	483	208	11.461318851575931	49.62779156327544
Fire Resistance Suit of Provolone	1879	396	187	9.952102182011789	47.22222222222222
Holy Blade of Gouda	1684	347	161	10.837406483798523	46.39769452449568
Manganiello Bros.	1799	397	209	11.617565314863368	52.64483627284831
Manganiello Bros. Tee	1917	412	206	10.745957224838464	50
Mediocre Kingdoms	2222	488	238	10.711071107110712	49.583333333333336
Orvil the Wolverine	1455	313	158	10.309278350515463	47.92332268378607
Puppies vs. Zombies	1481	296	162	10.9385558384874	54.729729729729726
SIM Cubicle	2251	479	246	10.92847623278543	51.356993736951985
World of Cheese	2295	509	245	10.675381263616558	48.1335952848723
World of Cheese Tee	1475	386	161	10.915254237288135	52.614379884967325

#### 4. Click the **Visualization** tab.

This is the same chart in the section Create a basic chart, with two additional data series, **viewsToPurchases** and **cartToPurchases**.

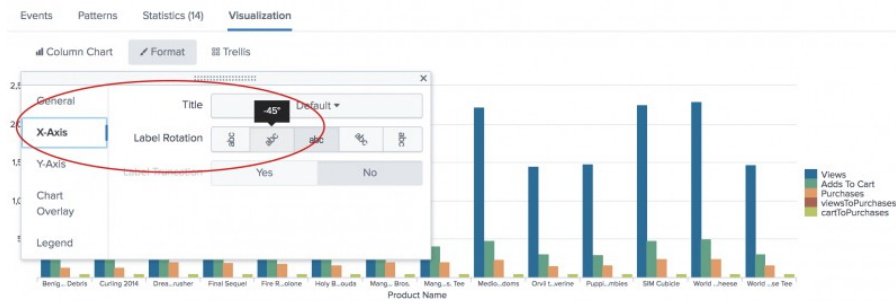


The next few steps reformat the chart visualization to overlay the two data series for the conversion rates, onto the three data series for the actions.

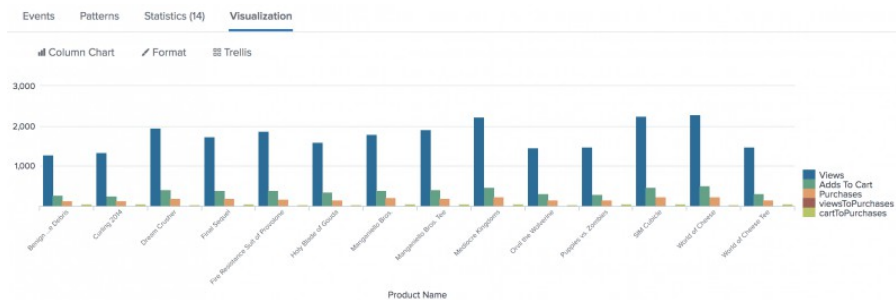
## Format the X-Axis labels

Notice that the labels on the X-Axis are truncated. Because there are so many products, the labels are truncated making them difficult to read. Let's fix that.

1. Click **Format** and **X-Axis**.
2. For **Label Rotation** select the second option, which is **-45 degrees**.



3. Close the Format dialog box.  
Notice the change in the labels on the X-Axis.



## Format the Y-Axis values and add a title

Look at the numbers on the Y-Axis. The numbers range from 1000 to 3000 and there is no title to identify what that axis tracks. Let's make the chart easier to read,

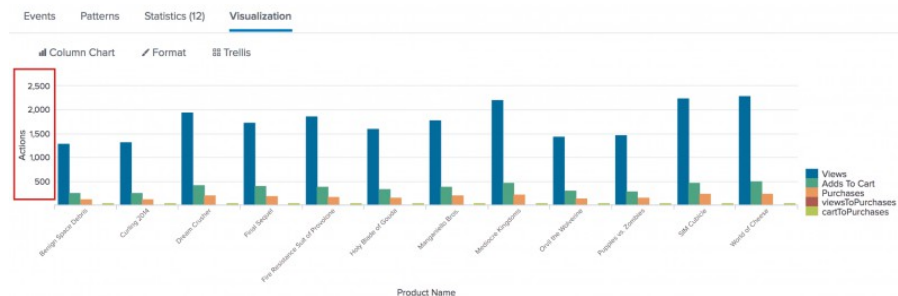
1. Click **Format** and **Y-Axis**.  
We're going to add a title and specify different number intervals on the Y-Axis.
2. For **Title**, choose **Custom** and type **Actions**.

3. For **Interval** type 500.
4. For **Max Value** type 2500.

Format dialog box, Y-Axis tab:

- Title: Custom
- Scale: Linear
- Y-Axis: Actions
- Interval: 500
- Min Value: optional
- Max Value: 2500
- Number Abbreviations: Off

5. Close the Format dialog box. Notice the changes to the label and values on the Y-Axis.

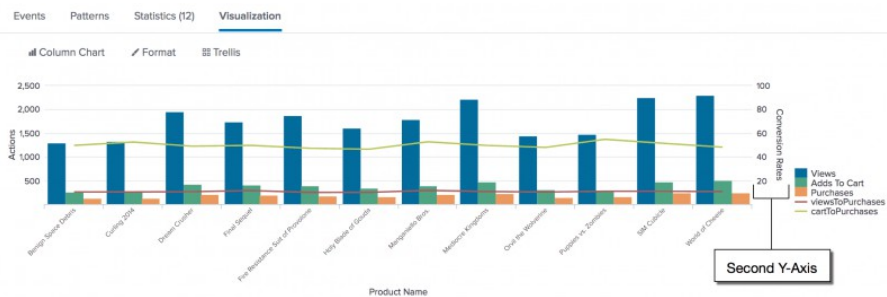


## Format the second Y-Axis

Look at the legend. It shows that some of the columns represent **actions** such as Views and Purchases, and some columns represent **conversion rates** such as viewsToPurchases. The actions are counts of the values in specific fields. The conversion rates are percentages. These two types of information should be shown separately.

1. To fix this issue, click **Format** and **Chart Overlay**.  
To separate the actions from the conversion rates, you can overlay one set of values over another set of values. In this example you will overlay the conversion rates, as lines, over the actions, which will remain as columns.
2. For **Overlay**, click inside the box. Begin and select **viewsToPurchases**.  
Click inside the box again and select **cartToPurchases**. This identifies the two series that you want to overlay on to the column chart.
3. For **View as Axis**, click **On**.
4. For **Title**, choose **Custom**

5. Type **Conversion Rates**.
6. For **Scale**, click **Linear**.
7. For the **Interval** type 20. For the **Max Value** type 100.
8. Close the Format dialog box. Notice that the conversion rates now appear as lines in the chart.

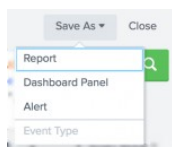


The axis on the right side of the chart is called a **second Y-Axis**. The label and values for the line series appear on this axis.

## Save the revised chart as a report

You've made great changes to the chart to make it more readable. Now it's time to save the chart as a report.

1. Click **Save As** and select **Report**.



2. In the Save Report As dialog box, for **Title** type **Comparison of Actions and Conversion Rates by Product**.
3. For **Description**, type **The number of times a product is viewed, added to cart, and purchased and the rates of purchases from these actions**.
4. Click **Save**
5. In the confirmation dialog box, click **View**.



## Next step

Create a report from a custom chart

## See also

stats command in the *Search Reference*  
eval command in the *Search Reference*  
Chart overview in *Dashboards and Visualizations*