

Introduction

You can use Splunk platform visualizations to organize and communicate data insights. Visualizations and dashboards let you help users monitor or learn about important metrics and trends. You can choose to build dashboards with Classic Dashboards, our original tool using Simple XML, or Dashboard Studio, our UI-driven experience with customizable layouts and advanced visualization tools.

Visualization Concepts

Getting started

You can create visualizations from the Search page or when you are building a dashboard.

Search

Run a search to generate results that you want to visualize. Use Splunk Search Processing Language (SPL) commands to generate results for the visualization type that you are building.

After generating search results, click the **Visualizations** tab to select a visualization type and format the visualization.

Dashboard

You can create visualizations when you are building or editing a dashboard. Use dashboard editor to add new visualizations or reuse prebuilt content.

Visualization types

There are several visualization options available in the Splunk platform. In both dashboard building experiences, you can use a visualization picker interface to select a visualization type.

Visualization options include:

- Column, bar, area, and line charts
- Pie charts
- Scatter and bubble charts
- Single value visualizations and gauges
- Tables
- Maps
- Custom visualizations (Classic Dashboards only)
- Custom choropleth SVGs (Dashboard Studio only)

Choose a visualization type that fits your use case and your data. For example, if you are comparing sales totals for different product types over a time period, you can use a bar or column chart. To show trends in product sales over a time period, you can use a line chart.

Search and data formatting

Data formatting means search result aggregations, data series grouping, or the result fields that a search must generate for a visualization to render.

Data format requirements vary by visualization type. When you create a visualization, you use search commands to generate results in a particular data format. This format should provide the fields or values that you want the visualization to represent.

For example, a single value visualization shows a single metric. You can use "... | stats count" to generate an aggregated count field that the single value represents.

When you hover over visualizations in the Visualization Picker, search syntax and commands are suggested to help you generate results in the correct data format.

Format visualizations

When creating or updating visualizations in Search, you can use the **Format** menu to configure visualization components.

To customize visualizations in dashboards, you can also use Simple XML source code for Classic Dashboards, and JSON source code for Studio Dashboards.

Depending on the visualization type, different format options are available. For example, you can configure axis label positioning in a bar or column chart. You can specify different map tiles to change the background of a Choropleth map. You can also configure ranges and colors for a single value visualization.

Publish visualizations

You can save a visualization as a dashboard panel or as a report.

Schedule reports to generate search results at a specific time interval. You can opt to include a visualization with them.

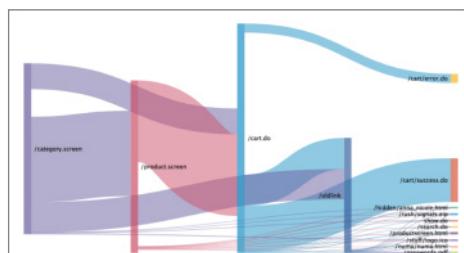
You can also save a visualization as a dashboard panel. Add it to an existing dashboard or use it to begin building a new dashboard. You can create and add more visualizations to a dashboard or edit the dashboard to add and configure content.

Additional visualizations options

Custom visualizations

Available in Classic Dashboards.

To expand the visualization options in your Splunk deployment, you can download custom visualization apps from Splunkbase. Installed custom visualizations appear in the Visualization Picker.



Trellis layout



In Classic Dashboards, you can apply trellis layout to split search results on a field or aggregation so that a visualization renders in several segments. Each segment represents a value in the split field.

Custom visualizations developer API

Some use cases might require a customized visualization. With Classic Dashboards, the Splunk Custom Visualizations developer API lets you create custom visualization apps to use and share.

Visualization search examples

The following examples represent one possible use case and search for each visualization type. There are many additional search and use case options for visualizations.

Bar or column chart Compare sales totals by product.	... stats count by product
Table Show sales metric for products and their product categories.	... stats count by product, category
Area or line chart Show sales trends for different products.	... timechart count by product
Pie chart Show how a daily sales total comprises different product categories.	... stats count by category
Scatter or bubble chart Show earthquake event counts by magnitude, depth, and location.	... stats count by place, mag, depth

Single value	 Show a current sales metric for a retail product.	<pre>...product="video _ game" timechart count</pre>
Choropleth map	 Show sales totals for each state in the United States.	<pre>source=my _ data.csv lookup geo _ us _ states longitude as Longitude, latitude as Latitude stats count by featureId geom geo _ us _ states</pre>

Dashboard Concepts

Dashboard

A dashboard is a group of visualizations and contextual content, such as titles and descriptions, that present information in a visual format. Dashboards use layout elements to structure their content.

Dashboard editors

Use the dashboard editor to create and edit dashboards in Splunk Web. You have two dashboard editor options, Classic Dashboards, or Dashboard Studio, to create and edit dashboards in Splunk. The editors give you access to an editing user interface (UI) and a Simple XML source code editor for Classic Dashboards and a JSON source code editor for Dashboard Studio. You can use the editing UI or the source code editor to build dashboard components, change layout, and implement interactive behavior.

You can configure most dashboard functionality in either the editing UI or in the source code editor. Some advanced configurations are only available in Simple XML.

Simple XML

Simple XML is the source code for Classic Dashboards that you can use to structure and customize dashboards. Simple XML is made up of parent and child elements. Elements can have configuration attributes. Additionally, visualization elements use <option> child elements for formatting and behavior configuration.

Most configurations that you make in Simple XML can also be made in the dashboard editing UI. Some customizations are only available in Simple XML, however. For example, conditional drilldown behavior or configuring responsive display changes require Simple XML. Use the dashboard source code editor to make these customizations.

Dashboard Studio

Dashboard Studio is our UI-driven option for building dashboards with customizable layouts and advanced visualization tools. You can choose to use a grid layout for quickly building dashboards with snap-to alignment and adjustable panel sizing, or use absolute layout for detailed formatting with free placement, sizing, and layering of objects. This dashboard editor has interactive capabilities and offers a wide range of visualization choices, including custom choropleth SVGs to illustrate custom maps, floorplans, or objects.

You can easily customize your dashboards with UI tools. This includes rearranging, resizing, and layering objects and using custom images, icons, shapes, and text boxes. **While no custom code is required, you can still choose to access the JSON based source code in “view mode”.** Dashboards can be shared PNG or PDF with on-demand export that maintains the look and feel of your dashboard.

Inputs

You can add inputs to a dashboard to capture user selections or typed text and trigger responsive behavior.

Available input types include dropdown and multiselect selection lists, text fields, and time range pickers. Selection inputs can have static choice values and labels. You can also use a search to generate input choices dynamically.

Inputs use tokens to represent user selection or typed values. You can use input tokens to pass the user-provided value to visualizations or other elements in the dashboard and trigger responsive actions. For example, you can use an input token in a search to generate a visualization representing the value that a user selected.

Searches

Searches provide the data that visualizations represent in dashboards.

You can use different types of searches to generate dashboard content.

- Inline search strings directly in a visualization
- Saved searches that you reference in a visualization
- Global base searches whose results you use with post-process searches to generate different results in various visualization

Permissions

Dashboards

Dashboards are knowledge objects with access and editing permissions. Your user role and capabilities determine your options for creating, sharing, and administering dashboards.

If you have the admin role and its default capabilities, you can configure dashboard visibility in different apps in your deployment.

You can also set read and write permissions associated with specific roles.

Saved searches in dashboards

Saved searches in a dashboard are knowledge objects with independent permissions. A saved search can run with the permissions of the user who created it or the user who is viewing its results, including in a visualization.

Depending on saved search permissions in your dashboards, some users might see visualizations that represent a more limited result set. Your user role and capabilities determine your options for adjusting permissions to manage your dashboard user experience.

Building Interactive Dashboards

Drilldown

Drilldown is a tool for creating dashboard interactivity. You can add drilldown to a dashboard visualization to share additional data insights with users when they click on it. Use the drilldown editor to add and configure drilldown in your dashboards.

Drilldown actions in Classic Dashboards

Drilldown can trigger different interactive responses to a user click. You can configure drilldown to open a secondary search, another dashboard, or an external URL in the browser. You can also use drilldown to trigger contextual changes in the same dashboard.

You can use tokens to customize content in a drilldown target. Use tokens to capture and pass values to a drilldown target, such as a search string or a URL, and customize its content. You can also use tokens to trigger interactive content display, such as showing or hiding a panel or updating a visualization title.

Tokens

Tokens are like programming variables. They represent data that changes, such as a search result field, a user selection in an input, a user click for drilldown, a search result field value, or a flag that you set to trigger interactive behavior. As with programming variables, you can use tokens to capture dynamic values and to access them.

Some tokens are predefined in Splunk software. You can also create custom tokens to represent additional values or to control dashboard behavior.

Token syntax requires dollar signs or quotation marks around a token name. For example, \$mytoken\$ is a user-defined token can be set by an input, and passed to a search powering a visualization. Check Splunk documentation for more details on syntax, including special character escaping.

Additional Resources

There are many additional resources to help you with creating visualizations and dashboards.

Splunk Documentation

docs.splunk.com

Classic Dashboards and Visualizations (Simple XML)

docs.splunk.com/Documentation/SplunkCloud/latest/Viz

Dashboard Studio

docs.splunk.com/Documentation/SplunkCloud/latest/DashStudio

Topics include guidance on:

- Search and data formatting for visualizations
- Visualization configurations
- Building dashboards in the dashboard editor user interface
- Building dashboards in source code
- Dashboard permissions
- Dashboard interactivity (inputs, tokens, and drilldowns)

Troubleshooting and reference topics:

- Chart display issues
- Searches powering dashboards
- Source code reference

Custom Visualization Apps (Classic Dashboards only)

docs.splunk.com/Documentation/CustomViz

Custom Visualization Developer API documentation (Classic Dashboards only)

docs.splunk.com/Documentation/Splunk/latest/AdvancedDev/CustomVizDevOverview

Splunk Dashboard Examples App (Classic Dashboards only)

splunkbase.splunk.com/app/1603/

Splunk Education courses

splunk.com/view/education/SP-CAAAAH9

Splunk Community

community.splunk.com

Splunk user community on Slack

splunk-usergroups.signup.team/