Lab Exercises

Lab typographical conventions:

[sourcetype=db_audit] OR [cs_mime_type] indicates either a source type or the name of a field.

> **NOTE:** Lab work will be done on your personal computer or virtual machine, no lab environment is provided. We suggest you **DO NOT** do the lab work on your production environment.

The lab instructions refer to these source types by the types of data they represent:

Type	Sourcetype	Fields of interest
Web Application	access_combined_wcookie	action, bytes, categoryId, clientip, itemId, JSESSIONID, productId, referer, referer_domain, status, useragent, file
Database	db_audit	Command, Duration, Type
Web server	linux_secure	COMMAND, PWD, pid, process

Lab Module 10 – Creating Reports and Dashboards

> **NOTE:** This lab document has two sections. The first section includes the instructions without answers. The second section includes instructions with the expected search string (answer) in red.

Description

In this lab, you will be building reports and dashboards for members of the Buttercup Games organization.

Steps

Scenario: The security team would like a report of IPs that seem to be up to no good.

Task 1: Use the stats count function to get a report of users trying to access forbidden pages in the Buttercup Games web application.

1. Navigate to the Search view. (If you are in the **Home** app, click **Search & Reporting** from the column on the left side of the screen. You can also access the Search view by clicking the **Search** menu option on the bar at the top of the screen.)

> **NOTE:** For this course, you will be searching across all time using the main index. This is NOT a best practice in a production environment, but needed for these labs due to the nature of the limited dataset.

2. Enter a search that returns all web application events with a forbidden status (403).

Results Example:

i	Time	Event
>	5/21/18 11:15:37.000 PM	67.133.102.54 - - [21/May/2018:23:15:37] "GET /product.screen?productId=SF-BVS-01&JSESSIONID=SD2SL4FF6ADFF4958 HTTP 1.1" 403 2282 "http://www.buttercupgames.com/product.screen?productId=SF-BVS-01" "Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.2.28) Gecko/20120306 YFF3 Firefox/3.6.28 (.NET CLR 3.5.30729; .NET4.0C)" 773 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookie
>	5/21/18 11:07:46.000 PM	91.205.189.15 - - [21/May/2018:23:07:46] "GET /cart.do?action=remove&JSESSIONID=SD0SL7FF8ADFF4960 HTTP 1.1" 403 720 "http://www.buttercupgames.com/product.screen?productId=SF-BVS-01" "Mozilla/5.0 (compatible; NetcraftSurveyAgent/1.0/cc-prepass-https; +info@netcraft.com)" 378 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookie
>	5/21/18 10:43:51.000 PM	76.169.7.252 - - [21/May/2018:22:43:51] "GET /oldlink?&JSESSIONID=SD4SL6FF8ADFF4960 HTTP 1.1" 403 3640 "http://www.buttercupgames.com/oldlink" "Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.2.28) Gecko/20120306 YFF3 Firefox/3.6.28 (.NET CLR 3.5.30729; .NET4.0C)" 122 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookie

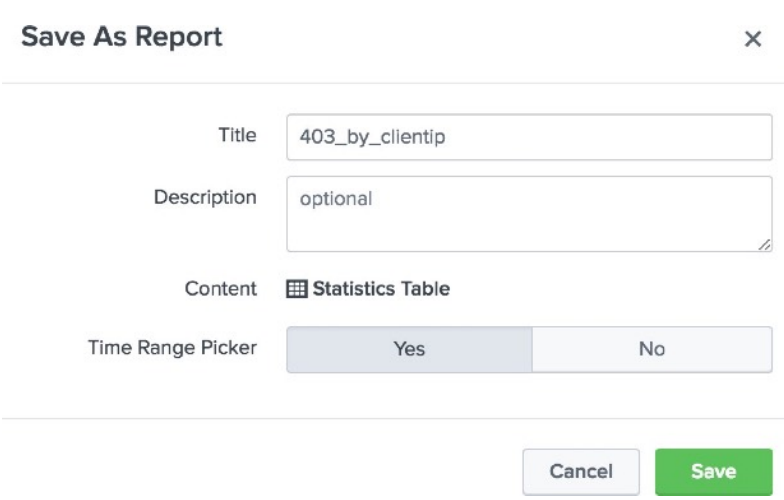
3. Use the `stats count` function to count the events by `clientip` and rename the count to `attempts`.

Results Example:

clientip	attempts
107.3.146.207	11
108.65.113.83	3
109.169.32.135	4
110.138.30.229	2
110.159.208.78	3
111.161.27.20	2

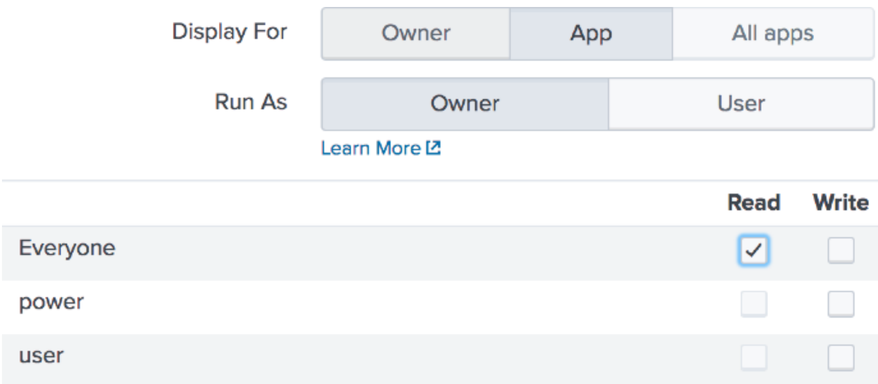
4. Use the `sort` command to display the results so that the `clientip` with the highest `attempts` appears first.
5. For the `clientip` with the most `attempts`, what was the total number of `attempts?` This might show up during the quiz module.
6. Use the **Save As** menu (above the time range picker) to select **Report.**
7. Enter a **Title** of `403_by_clientip` for the report and click **Save**.

Example:



8. Use the **Permissions** link to make the report display for the App, run as Owner, and be readable by Everyone. Click **Save**.

Example:



9. Access a list of the reports available to you using the **Reports** menu option on the green at the top of the screen.
10. Notice that the `403_by_clientip` report is in the list. Click on the report title to run the report.

Scenario: The CFO has asked you to create a dashboard where she can see how product sales are doing in one place.

Task 2: Use stats functions to create visualizations of products sold, and add them to a dashboard.

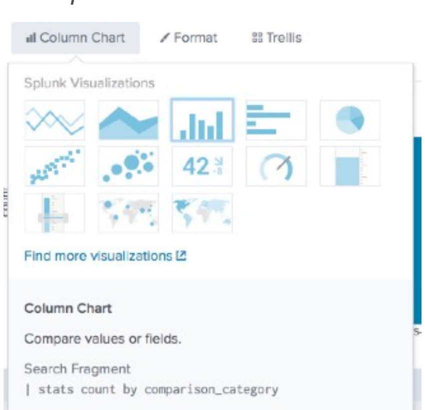
11. Navigate to a new Search view. (Access the Search view by clicking the **Search** menu option on the bar at the top of the screen.)
12. Enter a search that returns all web application events for all time where an item was successfully purchased. Remember, when an item is successfully purchased a `success.do` file is served and a `200` status is returned.
13. Use the `stats count` function with a `by` clause to count events by the `productId`.

Results Example:

productId	count
BS-AG-G09	935
CU-PG-G06	935
DB-SG-G01	1319
DC-SG-G02	1308
FI-AG-G08	988
FS-SG-G03	1155

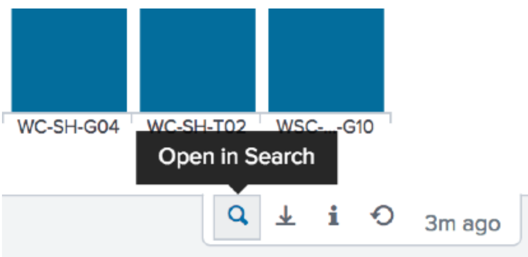
14. Select the **Visualization** tab and choose the **Column Chart** from the visualization selections.

Example:



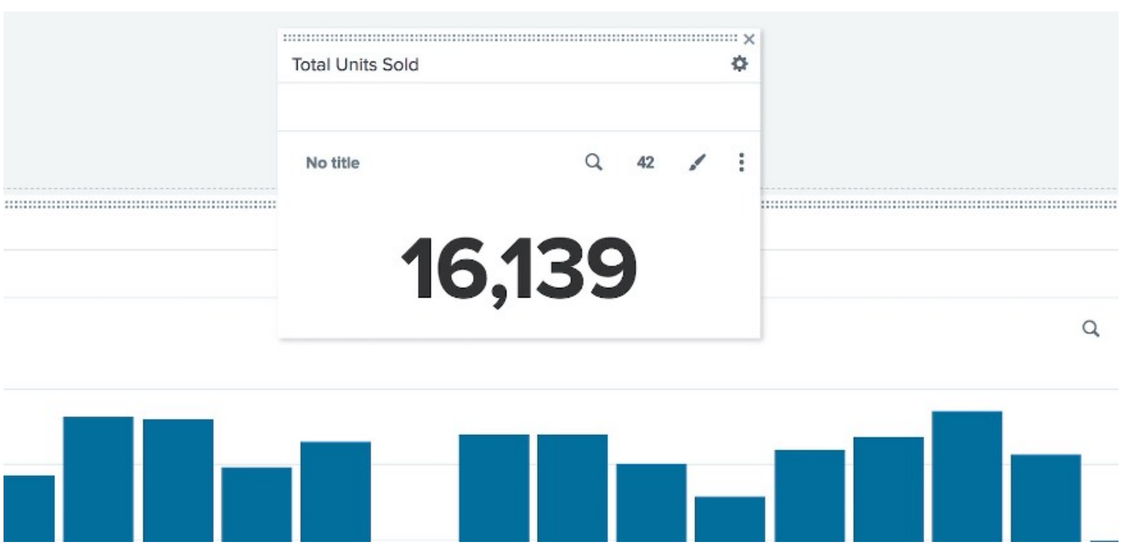
15. Use the **Save As** menu to select **Dashboard Panel.**
16. Save the dashboard with these values:
    - Dashboard: *New*
    - Dashboard Title: *Sales Dashboard*
    - Panel Title: *Product Sales*
17. Once saved, click **View Dashboard.**
18. Roll over the columns in the chart to see the interaction, and notice the tools at the bottom of the panel.

Example:



19. Use the **Open in Search** icon at the bottom of the panel, to open the search view and run the search.
20. Remove the `by` clause from the search to return the total count of products sold.
21. Select the **Visualization** tab and choose the **Single Value** visualization from the **Splunk Visualizations** menu.
22. Use the **Save As** menu to select **Dashboard Panel.**
23. Save the dashboard with these values:
    - Dashboard: *Existing*
    - Dashboard Title: *Sales Dashboard*
    - Panel Title: *Total Units Sold*
24. Once saved, click **View Dashboard.**
25. The `Total Units Sold` panel is probably the first item our CFO will want to see. Click the **Edit** button at the top of the dashboard.
26. Click and hold the bar at the top of the `Total Units Sold` panel and drag the panel to the top of the dashboard. Once in place, drop and click **Save**.

Example:



27. What other panels might be useful to the CFO? Return to some of the searches you have previously run, and add them to the dashboard.

Lab Exercises

Lab typographical conventions:

[sourcetype=db_audit] OR [cs_mime_type] indicates either a source type or the name of a field.

NOTE: Lab work will be done on your personal computer or virtual machine, no lab environment is provided. We suggest you **DO NOT** do the lab work on your production environment.

The lab instructions refer to these source types by the types of data they represent:

Type	Sourcetype	Fields of interest
Web Application	access_combined_wcookie	action, bytes, categoryId, clientip, itemId, JSESSIONID, productId, referer, referer_domain, status, useragent, file
Database	db_audit	Command, Duration, Type
Web server	linux_secure	COMMAND, PWD, pid, process

Lab Module 10 – Creating Reports and Dashboards with Solutions

NOTE: This lab document has two sections. The first section includes the instructions without answers. The second section includes instructions with the expected search string (answer) in red.

Description

In this lab, you will be building reports and dashboards for members of the Buttercup Games organization.

Steps

Scenario: The security team would like a report of IPs that seem to be up to no good.

Task 1: Use the stats count function to get a report of users trying to access forbidden pages in the Buttercup Games web application.

1. Navigate to the Search view. (If you are in the **Home** app, click **Search & Reporting** from the column on the left side of the screen. You can also access the Search view by clicking the **Search** menu option on the bar at the top of the screen.)

NOTE: For this course, you will be searching across all time using the main index. This is NOT a best practice in a production environment, but needed for these labs due to the nature of the limited dataset.

2. Enter a search that returns all web application events with a forbidden status (403).
(index=main sourcetype=access_combined_wcookie status=403)

Results Example:

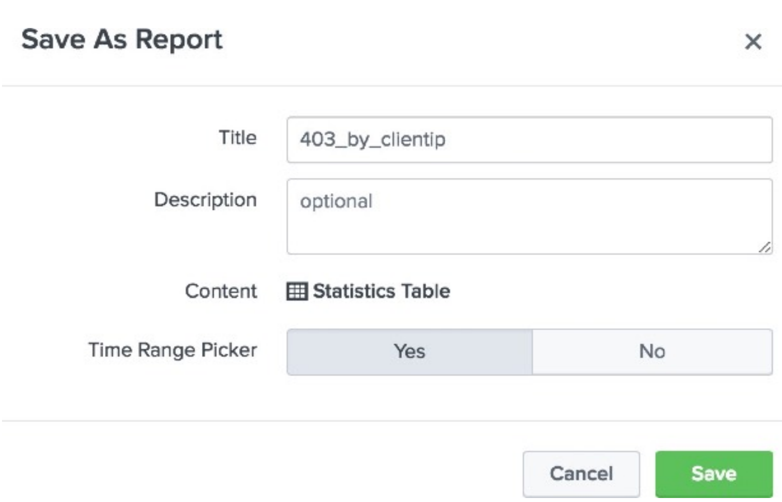
i	Time	Event
>	5/21/18 11:15:37.000 PM	67.133.102.54 - - [21/May/2018:23:15:37] "GET /product.screen?productId=SF-BVS-01&JSESSIONID=SD2SL4FF6ADFF4958 HTTP 1.1" 403 2282 "http://www.buttercupgames.com/product.screen?productId=SF-BVS-01" "Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.2.28) Gecko/20120306 YFF3 Firefox/3.6.28 (.NET CLR 3.5.30729; .NET4.0C)" 773 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookie
>	5/21/18 11:07:46.000 PM	91.205.189.15 - - [21/May/2018:23:07:46] "GET /cart.do?action=remove&JSESSIONID=SD0SL7FF8ADFF4960 HTTP 1.1" 403 720 "http://www.buttercupgames.com/product.screen?productId=SF-BVS-01" "Mozilla/5.0 (compatible; NetcraftSurveyAgent/1.0/cc-prepass-https; +info@netcraft.com)" 378 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookie
>	5/21/18 10:43:51.000 PM	76.169.7.252 - - [21/May/2018:22:43:51] "GET /oldlink?&JSESSIONID=SD4SL6FF8ADFF4960 HTTP 1.1" 403 3640 "http://www.buttercupgames.com/oldlink" "Mozilla/5.0 (Windows; U; Windows NT 5.1; en-US; rv:1.9.2.28) Gecko/20120306 YFF3 Firefox/3.6.28 (.NET CLR 3.5.30729; .NET4.0C)" 122 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookie

3. Use the `stats count` function to count the events by `clientip` and rename the count to `attempts`.
(index=main sourcetype=access_combined_wcookie status=403 | stats count as attempts by clientip)
Results Example:

clientip	attempts
107.3.146.207	11
108.65.113.83	3
109.169.32.135	4
110.138.30.229	2
110.159.208.78	3
111.161.27.20	2

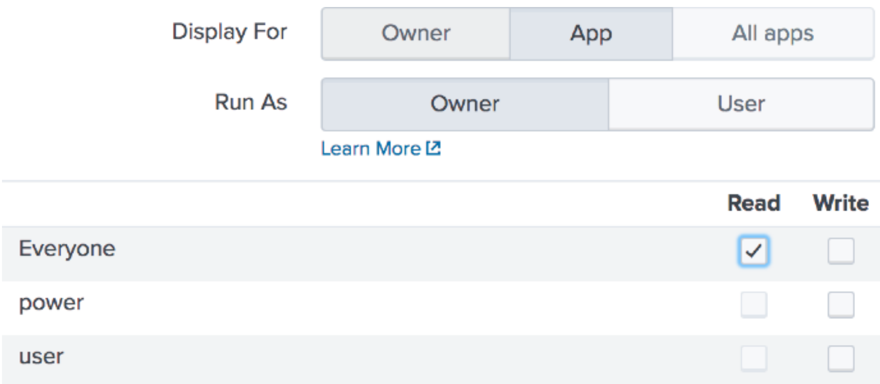
4. Use the `sort` command to display the results so that the `clientip` with the highest `attempts` appears first.
(index=main sourcetype=access_combined_wcookie status=403 | stats count as attempts by clientip | sort -attempts)
5. For the `clientip` with the most `attempts`, what was the total number of `attempts?` This might show up during the quiz module. (100)
6. Use the **Save As** menu (above the time range picker) to select **Report.**
7. Enter a **Title** of `403_by_clientip` for the report and click **Save**.

Example:



8. Use the **Permissions** link to make the report display for the App, run as Owner, and be readable by Everyone. Click **Save**.

Example:



9. Access a list of the reports available to you using the **Reports** menu option on the bar at the top of the screen.
10. Notice that the `403_by_clientip` report is in the list. Click on the report title to run the report.

Scenario: The CFO has asked you to create a dashboard where she can see how product sales are doing in one place.

Task 2: Use stats functions to create visualizations of products sold, and add them to a dashboard.

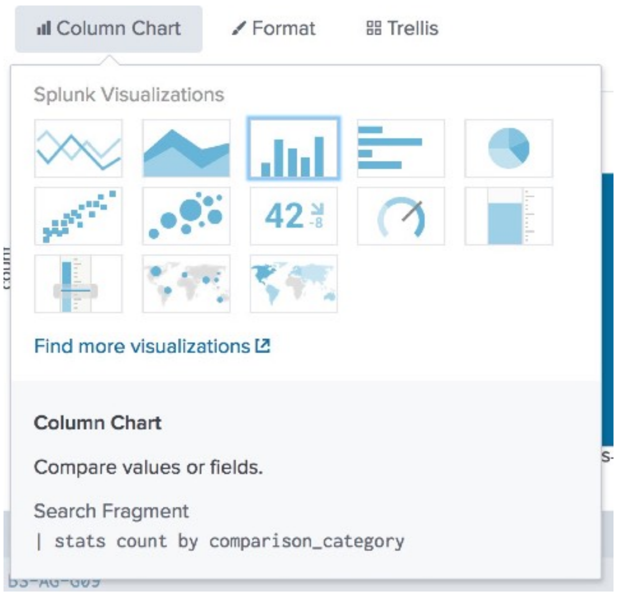
11. Navigate to a new Search view. (Access the Search view by clicking the **Search** menu option on the bar at the top of the screen.)
12. Enter a search that returns all web application events for all time where an item was successfully purchased. Remember, when an item is successfully purchased a `success.do` file is served and a `200` status is returned.
(index=main sourcetype=access_combined_wcookie file=success.do status=200)
13. Use the `stats count` function with a `by` clause to count events by the `productId`.
(index=main sourcetype=access_combined_wcookie file=success.do status=200 | stats count by productId)

Results Example:

productId	count
BS-AG-G09	935
CU-PG-G06	935
DB-SG-G01	1319
DC-SG-G02	1308
FI-AG-G08	988
FS-SG-G03	1155

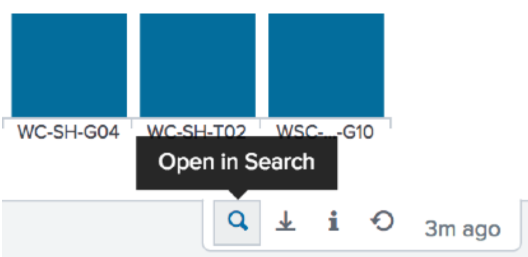
14. Select the **Visualization** tab and choose the **Column Chart** from the visualization selections.

Example:



15. Use the **Save As** menu to select **Dashboard Panel.**
16. Save the dashboard with these values:
    - Dashboard: *New*
    - Dashboard Title: *Sales Dashboard*
    - Panel Title: *Product Sales*
17. Once saved, click **View Dashboard.**
18. Roll over the columns in the chart to see the interaction, and notice the tools at the bottom of the panel.

Example:

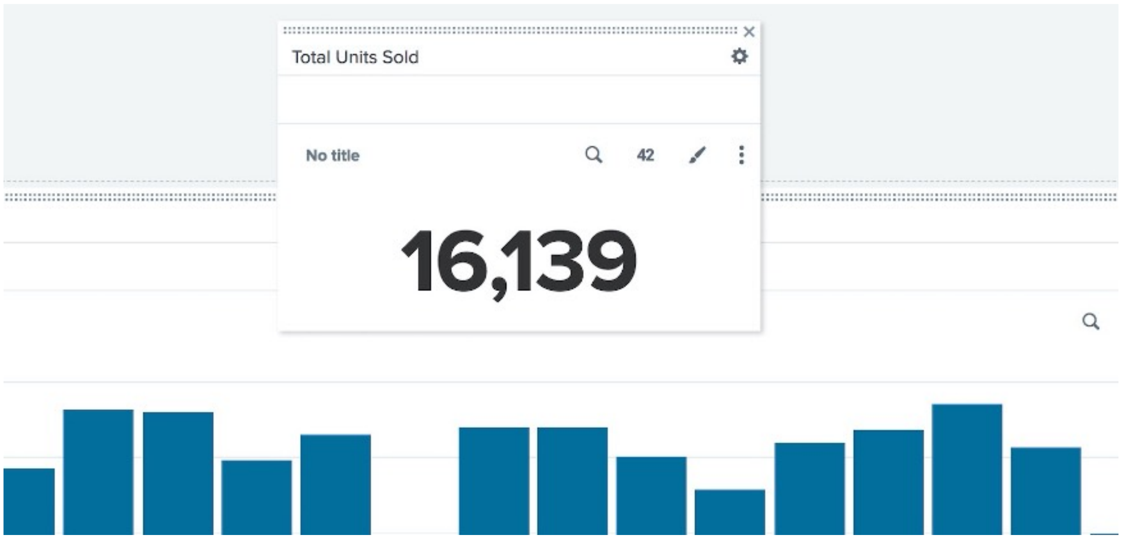


19. Use the **Open in Search** icon at the bottom of the panel, to open the search view and run the search.
20. Remove the `by` clause from the search to return the total count of products sold.

    (index=main sourcetype=access_combined_wcookie file=success.do status=200 | stats count)
21. Select the **Visualization** tab and choose the **Single Value** visualization from the **Splunk Visualizations** menu.
22. Use the **Save As** menu to select **Dashboard Panel.**
23. Save the dashboard with these values:
    - Dashboard: *Existing*
    - Dashboard Title: *Sales Dashboard*
    - Panel Title: *Total Units Sold*
24. Once saved, click **View Dashboard.**
25. The `Total Units Sold` panel is probably the first item our CFO will want to see. Click the **Edit** button at the top of the dashboard.

26. Click and hold the bar at the top of the `Total Units Sold` panel and drag the panel to the top of the dashboard. Once in place, drop and click **Save**.

Example:



27. What other panels might be useful to the CFO? Return to some of the searches you have previously run, and add them to the dashboard.