Lab Exercises

Lab typographical conventions:

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

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 8 – Basic Commands

NOTE: Now that you understand the basics of searching in Splunk, we will make labs a little more challenging. 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 using some of the common Splunk commands including fields, table, rename and dedup.

Steps

S cen ario: The Marketing team tracks all user sessions related to marketing campaigns. It would like a report of all user sessions that include purchase actions so that it can put a value on the different campaigns it's running.

Task 1: Search for the requested data.

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 that include a purchase action with a web status of 200.

Results Example:

< Hide Fields	All Fields	i	Time	Event
selected FIELDS a host 1 a source 1 a sourcetype 1		>	5/21/18 11:57:14.000 PM	189.169.32.135 [21/May/2818:23:57:14] "POST /cart/success.do?JSESSIONID=SDISL7FF6ADFF89341&productId=FI-AG-G08 HTTP 1.1" 200 3 767 "http://www.buttercupgames.com/cart.do?action=purchase&" "Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0; BOIE9;ENUS)" 985 host= web_application source = access_3CDAY/log sourcetype = access_combined_wcookie
INTERESTING FIELDS a action 1 # bytes 100+ a categoryld 7 a cilentip 100+ # date_mour 24 # date_minute 60 a date_mounth 2		>	5/21/18 11:57:13.000 PM	189.169.32.135 [21/May/2818:23:57:13] *POST /success.do?action*purchase&categoryId*SHOOTER&productId*MC-SH-G048JSESSIONID*SD1 L7FF6ADFF89341 HTTP 1.1* 280 268 *http://www.buttercupgames.com/cart.do?action*addtocart&categoryId*SHOOTER&productId*MC-SH-G84* Mazilla/5.0 (compatible; MSIE 9.0; Windows NI 6.1; NOW64; Trident/5.0; BOIE9;ENLS)* 448 host=web_application source = access_3ODAYJog sourcetype = access_combined_wccokle
		>	5/21/18 11:53:43.000 PM	198.35.3.23 [21/May/2018;23:53:43] "POST /success.do?action=purchase&categoryId=ARCADE&productId=MB-AG-G078JSESSIONID=SD85L88 6ADFF4957 HTTP 1.1" 200 2915 "http://www.buttercupgomes.com/cart.do?action=addtocart&categoryId=ARCADE&productId=M8-AG-G07* "Mozila/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0; BOIE9;ENUS)" 448 host= web_application source = access_3ODAY.log sourcetype = access_combined_wcockle
# date_second 60 # date_wday 7 # date_year 1 # date_zone 1		>	5/21/18 11:51:56.000 PM	198.35.3.23 [21/May/2018:23:51:56] *POST /cart/success.do?JSESSIGNID=SD8SL8FF6ADFF4957&productId=DC-56-G02 HTTP 1.1* 200 594 http://www.buttercupgames.com/cart.do?action=purchase&* "Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0; B 1E9;ENUS)* 448 host = wob_application source = access_30DAYJog sourcetype = access_combined_wcookle

3. Select the file field in the Interesting Fields list.

Results Example:

Values	Count	%
success.do	16,139	89.991%
error.do	1,795	10.009%

- **4.** Notice that there are two different files that were returned from the web server. They are: error.do and success.do. Our web development team informs us that the success.do is served when the order is processed and error.do is served when there is an error with the information being processed.
- 5. The team is only looking for successful purchases, so change your search to only return those.

Results Example:

< Hide Fields	I All Fleids	i	Time	Event
selected Fields a host 1 a source 1 a sourcetype 1	the type 1 ING FIELDS 1 100+ typid 7 to 100+ tour 24 mday 30 minute 60	>	5/21/18 11:57:14.000 PM	109.169.32.135 [21/May/2018:23:57:14] "POST /cart/success.do?JSESSIONID=SD1SL7FF6ADFF89341&productId=FI-AG-G08 HTTP 1.1" 200 3 767 "http://www.buttercupgames.com/cart.do?action=purchase&" "Mozilla/5.0 (compatible; MSIE 9.0; Nindows NT 6.1; MOW64; Trident/5.0; B0IE9;ENUS)" 986 host= web_application source = access_3ODAY.log sourcetype = access_combined_wcookle
INTERESTING FIELDS a action 1 bytes 100+ a categoryld 7		>	5/21/18 11:57:13.000 PM	109.169.32.135 [21/May/2018:23:57:13] "POST /success.do?action=purchase&categoryId=SHOOTER&productId=WC-SH-G04&ISESSIONID=SD15 L7FF6ADFF89341 HTTP 1.1" 200 268 "http://www.buttercupgames.com/cart.do?action=addtocart&categoryId=SHOOTER&productId=WC-SH-G04" " Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0; BOIE9;ENUS)" 448 host= web_application source = access_3ODAY.log sourcetype = access_combined_wcookle
a clientip 100+ # date_hour 24 # date_mday 30 # date_minute 60 a date_month 2			>	5/21/18 11:53:43.000 PM

6. You will see fields that do not matter to the team. Use the fields command to only return the action, JSESSIONID and status fields. Does your search run faster using the command?

7.

INTERESTING FIELDS

- a action 1
- a JSESSIONID 100+
- # status 1
- 7. The fields list looks cleaner, but seeing the events like this might still be confusing for the team.

Task 2: Put the data into an easy to read table.

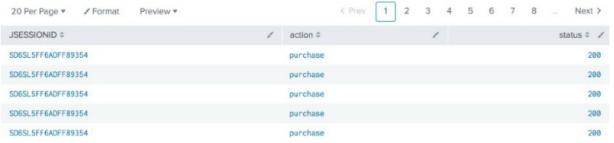
8. Replace the fields command with the table command to display the data as a table.

Results Example:



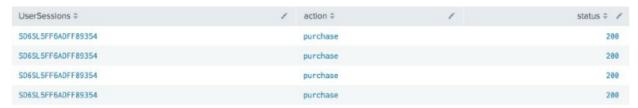
9. Change the order of the fields so that JSESSIONID is the first column.

Results Example:

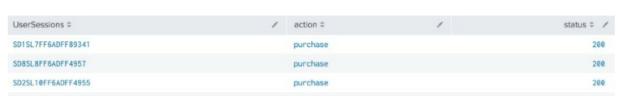


10. Session IDs are called "UserSessions" in the marketing data. Rename JSESSIONID so that your report matches the marketing data.

Results Example:



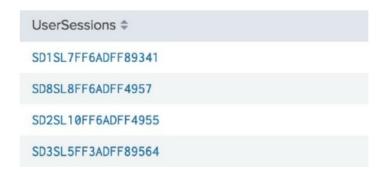
- 11. Sort UserSessions using the sort command.
- **12.** Notice that some UserSessions values show up multiple times. Also notice the number of events returned on the **Statistics** tab.
- 13. Remove the sort command and use dedup to remove any identical session values.



14. How many events are now listed on the **Statistics** tab?

NOTE: As a best practice and for best performance, place dedup as early in the search as possible.

15. While having action and status fields displayed was nice for a sanity check of the data, the marketing team will not need to have these displayed. Remove them from your table display. *Results Example:*



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 8 – Basic Commands with Solutions

NOTE: Now that you understand the basics of searching in Splunk, we will make labs a little more challenging. 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 using some of the common Splunk commands including fields, table, rename and dedup.

Steps

S cen ario: The Marketing team tracks all user sessions related to marketing campaigns. It would like a report of all user sessions that include purchase actions so that it can put a value on the different campaigns it's running.

Task 1: Search for the requested data.

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 that include a purchase action with a web status of 200. (index=main sourcetype=access_combined_wcookie action=purchase status=200)

Results Example:

< Hide Fields	⊞ All Fleids	1	Time	Event
selected FIELDs a host 1 a source 1 a sourcetype 1		>	5/21/18 11:57:14.000 PM	109.169.32.135 [21/May/2018:23:57:14] "POST /cart/success.do?JSESSICNID~SDISL7FF6ADFF89341&productId~FI-AG-608 HTTP 1.1" 200 3 767 "http://www.buttercupgames.com/cart.do?action~purchase&" "Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WCW64; Trident/5. 0; BCIE9;ENUS)" 985 host = web_application source = access_3CDAY.log sourcetype = access_combined_wcookie
Interesting FIELDS a action 1 # bytes 100+ a categoryld 7 a clientip 100+ # date_hour 24 # date_mday 30 # date_minute 60 a date_month 2 # date_second 60 a date_year 1 a date_zone 1 a file 2		>	5/21/18 11:57:13.000 PM	109,169,32.135 [21/May/2018:23:57:13] "POST /success.do?action*purchase&categoryId*SHOOTER&productId*NC-SH-G048JSESSIOHID*SDIS L7FF6ADFF89341 HTTP 1.1" 200 268 "http://www.buttercupgames.com/cart.do?action*addtocart&categoryId*SHOOTER&productId*WC-SH-G84* " Maxilla/S.0 (compatible; MSIE 9.0; Windows NT 6.1; NOW64; Trident/S.0; B0IE9;ENLS)" 448 host= web_application source = access_30DAY.log sourcetype = access_combined_wcookie
		>	5/21/18 11:53:43.000 PM	198.35.3.23 [21/May/2018:23:53:43] "FOST /success.do?action=purchase&categoryId=ARCADE&productId=M8-AG-G07&JSESSIONID=SD65L8FF 6ADFF4957 HTTP 1.1" 200 2915 "http://www.buttercupgames.com/cart.do?action=addtocart&categoryId=ARCADE&productId=M8-AG-G07* "Mozil la/5.0 (compatible; MSIE 9.0; Nindows NT 6.1; NOM64; Trident/5.0; BOIE9;ENUS)" 448 host= web_application source = access_3ODAY.log source!ype = access_combined_wcookie
		>	5/21/18 11:51:56.000 PM	198.35.3.23 [21/May/2018:23:51:56] "POST /cart/success.do73SESSIONID=SD8SL8FF6ADFF4957&productId=DC-SG-G02 HTTP 1.1" 200 594 " http://www.buttercupgames.com/cart.do?action=purchase&" "Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOM64; Trident/5.0; 80 IE9;ENAS)" 448 host = web_application source = access_30DAY.log sourcetype = access_combined_wcookle

3. Select the file field in the Interesting Fields list.

Results Example:

Values	Count	%	
success.do	16,139	89.991%	
error.do	1,795	10.009%	

- 4. Notice that there are two different files that were returned from the web server. They are: error.do and success.do. Our web development team informs us that the success.do is served when the order is processed and error.do is served when there is an error with the information being processed.
- 5. The team is only looking for successful purchases, so change your search to only return those. (index=main sourcetype=access combined wcookie action=purchase status=200 file=success.do)

Results Example:

< Hide Fields I≡ All Fields	I All Fields	i	Time	Event
SELECTED HELDS a host 1 a source 1 a sourcetype 1		>	5/21/18 11:57:14.000 PM	109.169.32.135 [21/May/2018:23:57:14] "POST /cart/success.do?JSESSIONID=SD1SL7FFEADFF89341&productId=FI-AG-G08 HTTP 1.1" 280 767 "http://www.buttercupgames.com/cart.do?action=purchase&" "Mozilla/5.0 (compatible; MSIE 9.0; Nindows NT 6.1; WOW64; Trident/5 0; BDIE9;ENUS)" 986 host= web_application source = access_3ODAYMog sourcetype = access_combined_wcookle
INTERESTING FIELDS a action 1 # bytes 100+ a categoryld 7 a clifentip 100+ # date_mour 24 date_minute 60 a date_minute 60 a date_month 2		>	5/21/18 11:57:13.000 PM	109.169.32.135 [21/May/2018:23:57:13] "POST /success.do?action=purchase&categoryId=SHOOTER&productId=MC-SH-G04AISESSIONID=SD1 L7FF6ADFF89341 HTTP 1.1" 200 268 "http://www.buttercupgames.com/cart.do?action=addtocart&categoryId=SHOOTER&productId=MC-SH-G04" Mozilla/5.0 (compatible; MSIE 9.0; Windows NT 6.1; MOW64; Trident/5.0; BOIE9;ENUS)" 448 host= web_application source = access_3ODAYJog sourcetype = access_combined_wcookle
		>	5/21/18 11:53:43.000 PM	198.35.3.23 [21/May/2018:23:53:43] "POST /success.do?action*purchase&categoryId*ARCADE&productId*MB-AG-G07&ISESSIONID*SD8SL8F6ADFF4957 HTTP 1.1" 200 2015 "http://www.buttercupganes.com/cart.do?action*addtocart&categoryId*ARCADE&productId*MB-AG-G07* 'Mozila/5.0 (compatible; MSIE 9.0; Windows NT 6.1; WOW64; Trident/5.0; B0IE9;ENUS)* 448 host= web_application source = access_3ODAYJog sourcetype = access_combined_wcookie

6. You will see fields that do not matter to the team. Use the fields command to only return the action, JSESSIONID and status fields. Does your search run faster using the command?

(index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | fields action, JSESSIONID, status)

INTERESTING FIELDS

- a action 1
- a JSESSIONID 100+
- # status 1
- 7. The fields list looks cleaner, but seeing the events like this might still be confusing for the team.

Task 2: Put the data into an easy to read table.

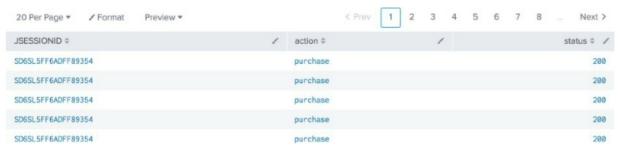
8. Replace the fields command with the table command to display the data as a table. (index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | table action, JSESSIONID, status).

Results Example:



9. Change the order of the fields so that JSESSIONID is the first column. (index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | table JSESSIONID, action, status).

Results Example:



10. Session IDs are called "UserSessions" in the marketing data. Rename JSESSIONID so that your report matches the marketing data. (index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | table JSESSIONID, action, status | rename JSESSIONID as UserSessions).

Results Example:



11. Sort UserSessions using the sort command. (index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | table JSESSIONID, action, status | rename JSESSIONID as UserSessions | sort UserSessions)

- **12.** Notice that some UserSessions values show up multiple times. Also notice the number of events returned on the **Statistics** tab.
- 13. Remove the sort command and use dedup to remove any identical session values. (index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | dedup JSESSIONID | table JSESSIONID, action, status | rename JSESSIONID as UserSessions)

Results Example:

UserSessions ‡	/	action \$	/	status ‡ /
SD1SL7FF6ADFF89341		purchase		200
SD8SL8FF6ADFF4957		purchase		200
SD2SL10FF6ADFF4955		purchase		200

14. How many events are now listed on the **Statistics** tab?

NOTE: As a best practice and for best performance, place dedup as early in the search as possible.

15. While having action and status fields displayed was nice for a sanity check of the data, the marketing team will not need to have these displayed. Remove them from your table display. (index=main sourcetype=access_combined_wcookie action=purchase status=200 file=success.do | dedup JSESSIONID | table JSESSIONID | rename JSESSIONID as UserSessions).

