Using Splunk Enterprise To Optimize Tailored Long-term Data Retention

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Overview

- **Problems To Address**
  - Limited Retention Capabilities
  - Search Completion Time for Extended Searches

- **Goals**
  - Maintain key event fields for a specific retention period
  - Maintain the smallest footprint possible for archiving this retained content

- **Challenges**
  - Storage Budget Limitations
  - Significant Bloat in Current Data Set
Considerations

- Standard summaries using stats, and sistats adds key=value to raw event causing the summary events to use more space than the original raw event in many cases.
- Standard summaries using stats, and sistats create very heavy tsidx indexes causing additional overhead.
- Standard summaries add additional field content (metrics etc.) to the summary event causing additional bloat.
- Multiple sourcetypes are many times stored across different indexes defined reduced and disparate retention settings.
Bloat In Standard Summary Event

Original Source Event:

Jun 22 12:07:04 1,2017/06/22 12:07:03,001606001116,THREAT,url,1,2017/06/22
12:07:03,192.168.0.2,184.106.31.170,0.0.0.0,0.0.0.0,rule1,crusher,,web-
browsing,vsys1,trust,untrust,ethernet1/2,ethernet1/1,blocked,2017/06/22
12:07:03,37148,1,52586,80,0,0x208000,tcp,alert,"modern-design.cn/rex/config.bin",(9999),not-
resolved,informational,client-to-server,0,0x0,192.168.0.0-192.168.255.255,United States,0,text/html
Reduction Using stats/sistats And Fields

- Summary search using stats/sistats command:

```
index=main sourcetype=pan:threat | fillnull value "nan" action dest_ip src_ip | eval orig_sourcetype=sourcetype | sistats count by _time, host, orig_sourcetype, action, dest_ip, src_ip | fields _time, host, orig_sourcetype, action, dest_ip, src_ip | collect index=summary addtime=0
```

- Summary search using fields command:

```
index=main sourcetype=pan:threat | fillnull value "nan" action dest_ip src_ip | eval orig_sourcetype=sourcetype | fields _time, host, orig_sourcetype, action, dest_ip, src_ip | collect index=summary addtime=0
```
Desired Results

- Output using `sistats/table` statement results:

```plaintext
search_name=sum_panthreat_sistats, search_now=1498155300.000, info_min_time=1498154880.000,
info_max_time=1498155180.000, info_search_time=1498155301.125, action=blocked, dest_ip="194.106.31.170",
orig_host="127.0.0.1", orig_sourcetype="pan:threat", psrsvd_gc=1, psrsvd_v=1, src_ip="192.168.0.2"
```

- Output using `fields` statement results:

```
11:57:59,192.168.0.2,184.106.31.170,0.0.0.0,0.0.0.0,rule1,crusher,,web-browsing,vsys1,trust,untrust,ethernet1/2,ethernet1/1,forwardAll,2017/06/22
11:57:59,53995,1,56068,80,0,0,0x208000,tcp,alert,"www.st-resources.net/config.bin",(9999),not-
resolved,informational,client-to-server,0,0x0,192.168.0.0-192.168.255.255,United States,0,text/html
```

- Desired output:

```
1498154279,127.0.0.1,pan:threat,blocked,192.168.0.2,184.106.31.170
```
Implementing The Desired Result

Constructing a summary search using a CSV output:

```
index=main sourcetype=pan:threat | fillnull value "nan" action dest_ip src_ip | eval orig_sourcetype=sourcetype | eval _raw= _time."","host.","orig_sourcetype.","action.","dest_ip.","src_ip | fields _time _raw | collect index=summary addtime=0
```

Build the summary Field Definition to Define Your Fields

```
props.conf

[source::sum_panthreat_csv]
KV_MODE=none
REPORT-parse_sum_panthreat_csv = parse_sum_panthreat_csv

transforms.conf

[parse_sum_panthreat_csv]
DELIMS = ","
FIELDS = orig_time, orig_host, orig_sourcetype, action, dest_ip, src_ip
```
Final Result Of Bloat Reduction

Extracted Fields View

<table>
<thead>
<tr>
<th>Type</th>
<th>Field</th>
<th>Value</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selected</td>
<td>host</td>
<td>ekrieser-mbp2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>source</td>
<td>sum_panthreat_csv</td>
<td></td>
</tr>
<tr>
<td></td>
<td>sourcetype</td>
<td>stash</td>
<td></td>
</tr>
<tr>
<td>Event</td>
<td>action</td>
<td>blocked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>dest_ip</td>
<td>192.168.0.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>index</td>
<td>summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>linecount</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>orig_host</td>
<td>127.0.0.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>orig_source_type</td>
<td>pan:threat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>orig_time</td>
<td>1498156379</td>
<td></td>
</tr>
<tr>
<td></td>
<td>splunk_server</td>
<td>ekrieser-mbp2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>src_ip</td>
<td>74.125.224.195</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>_time</td>
<td>2017-06-22T12:32:59.000-06:00</td>
<td></td>
</tr>
</tbody>
</table>
Review Of Key Points To The Solution

- Use summary searching to consolidate critical data stored across disparate sourcetypes and indexes
- Construct a single field called _raw that contains the desired summary content in some type of a CSV or character delimited form
- Pass _time, and _raw to the summary index
- Define the field format of the summary event using DELIM, and FIELDS transforms definitions
Things To Take Into Consideration

- Parsing fields with equal (=) signs can be a pain
- Take particular care in defining delimiter to use (CSV may not be the best in your use case)
Average Savings Stats

72% Reduction In Storage Volume

26% Faster Searches

Over 3x Longer Retention at Zero Additional Cost
Q&A

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Thank You

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