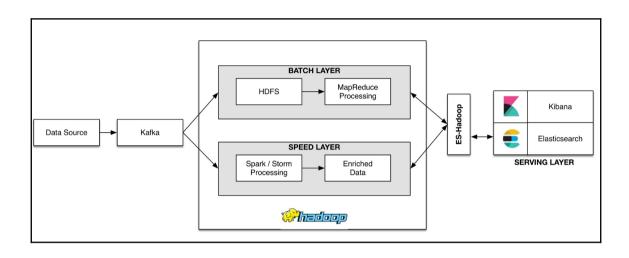
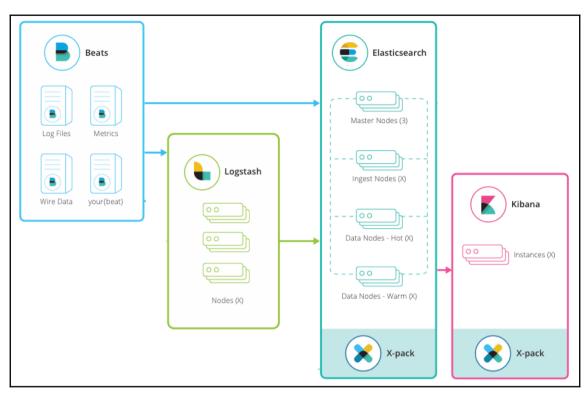
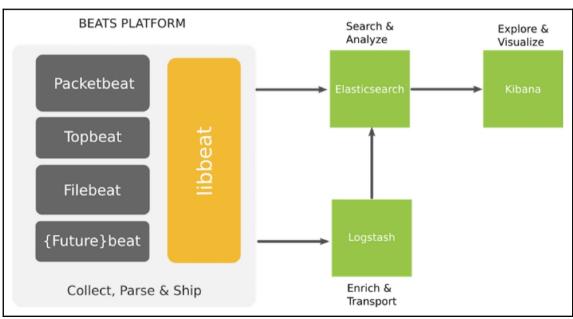
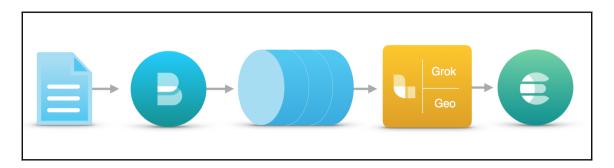
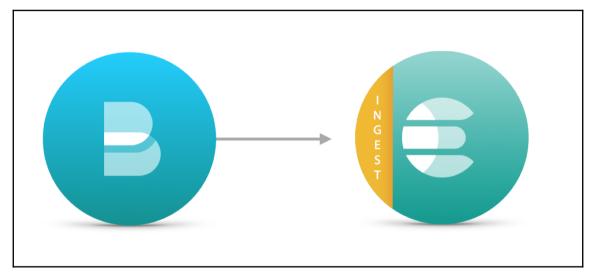
Chapter 1: Introduction to Data Driven Architecture

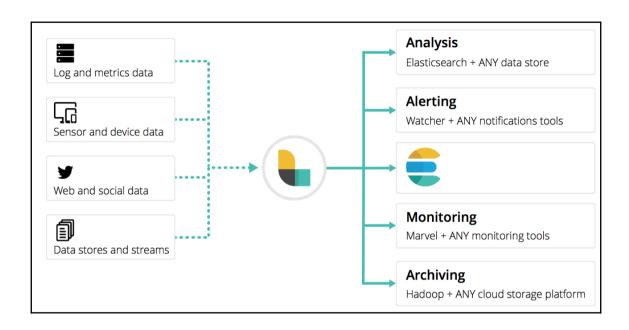


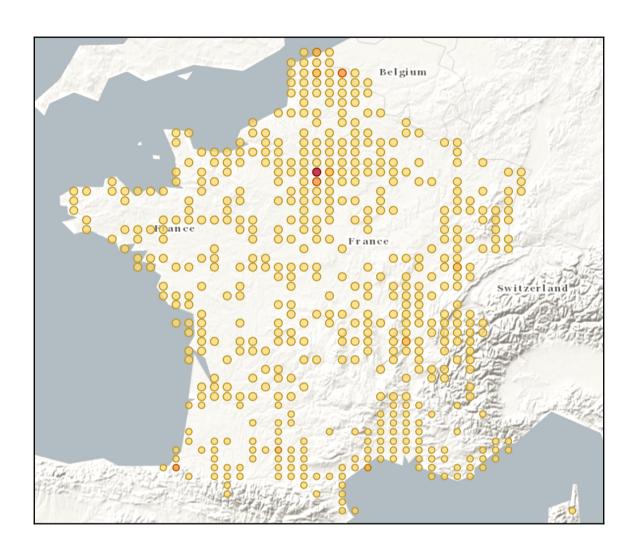


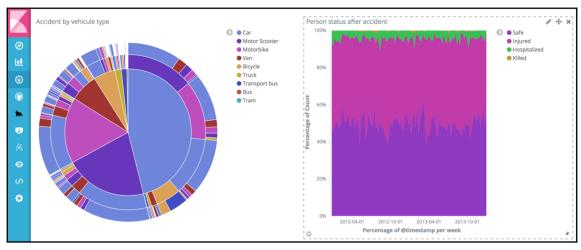


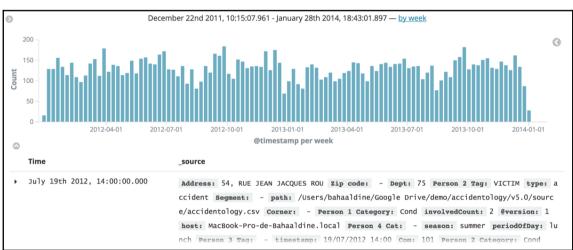


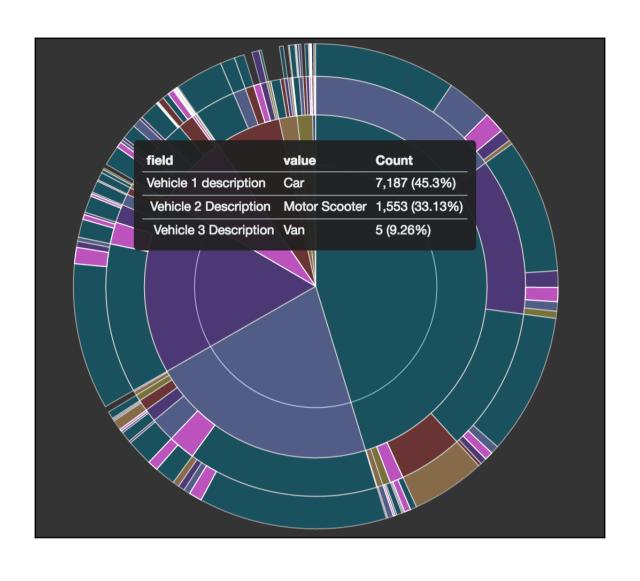






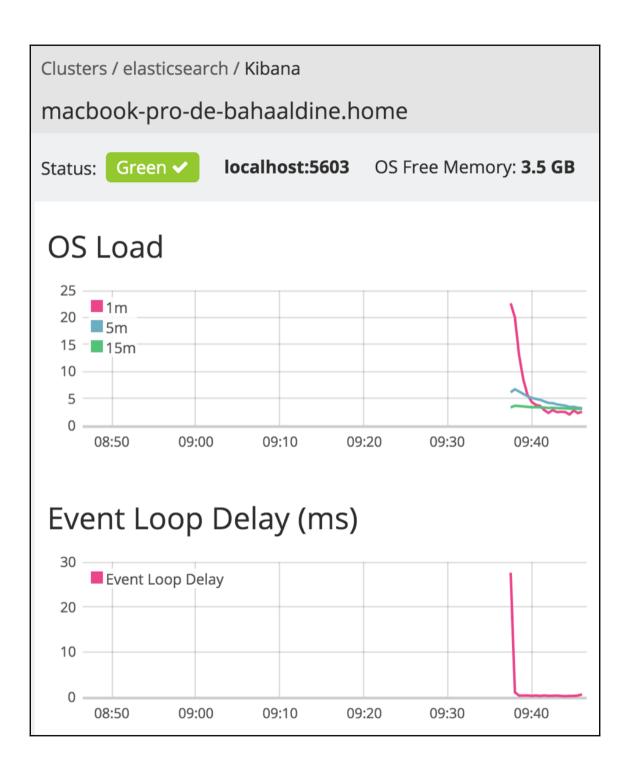


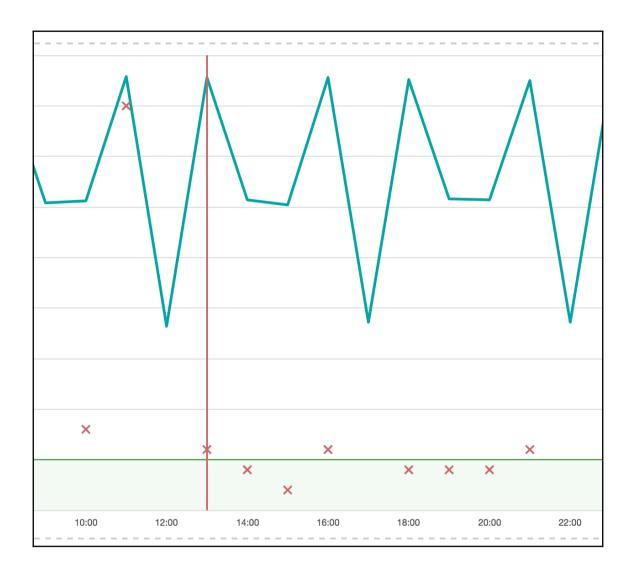


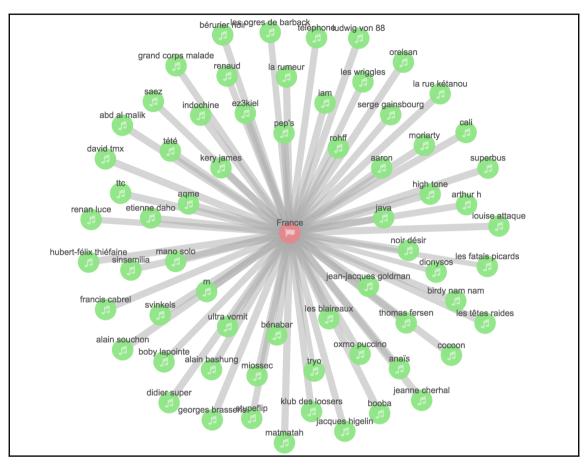


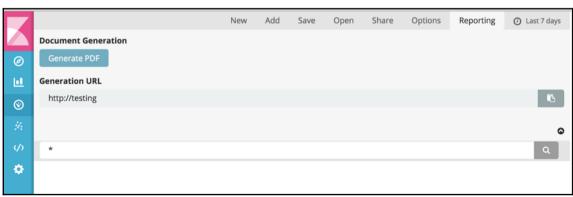


- Ø Discover
- **■** Visualize
- O Dashboard
- catsize
- **m** goriguard
- **3** Timelion
- 🖔 Graph
- Monitoring
- (/) Console
- Management









Chapter 2: Installing and Setting up Kibana 5.0

Download Elasticsearch

Want to upgrade? We'll give you a hand. Upgrade Guidance »

Version: 5.0.2

Release date: November 29, 2016

> Not the version you're looking for? View past releases. Notes:

Downloads:

Downloads

Kibana 5.0.0-alpha4

Not for production use! Requires Elasticsearch 5.0.0-alpha4.

 WINDOWS
 sha1
 LINUX 64-BIT
 sha1
 LINUX 32-BIT
 sha1

 RPM 64-BIT
 sha1
 DEB 64-BIT
 sha1
 DEB 32-BIT
 sha1

Installation Steps

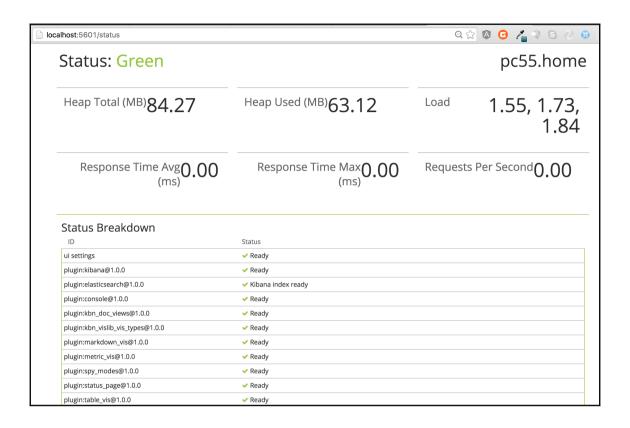


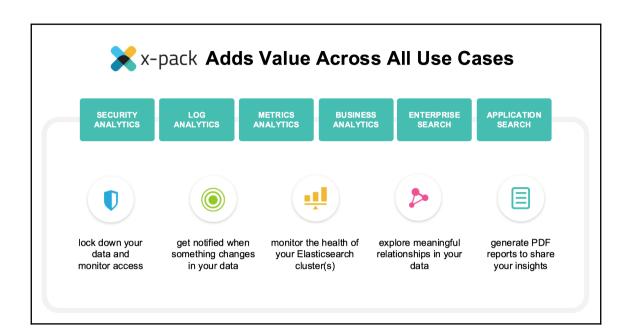


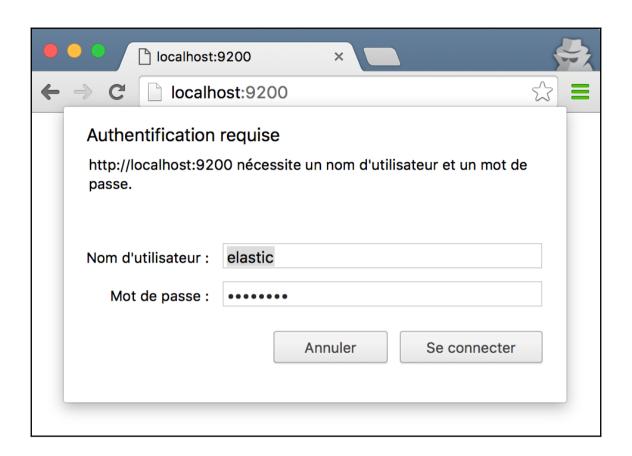


Download and unzip Kibana

- Extract your archive
- Open config/kibana.yml in
- Point your browser at http://yourhost.com:5601

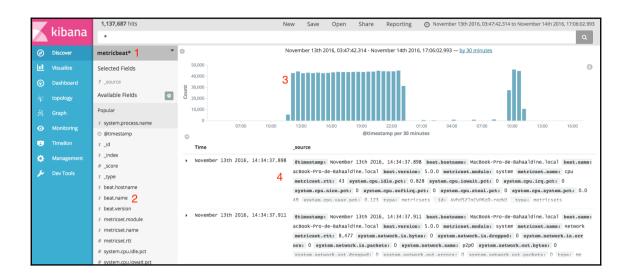


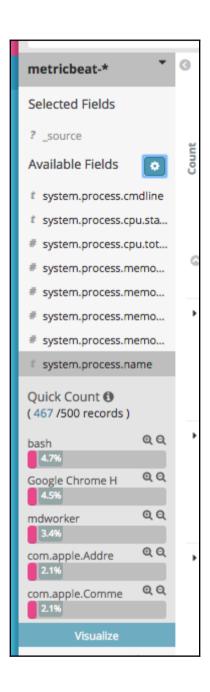












	Time	_source
•	July 13th 2016, 10:50:07.492	@timestamp: July 13th 2016, 10:50:07.492 beat.hostname: MacBook-Pro-de-Bahaald ine.local beat.name: MacBook-Pro-de-Bahaaldine.local metricset.module: system metricset.name: memory metricset.rtt: 2,051 system.memory.actual.free: 5,57 5,241,728 system.memory.actual.used.bytes: 10.808GB system.memory.actual.used.pct: 67.55% system.memory.free: 1.241GB system.memory.swap.free: 1,112,
	Table JSON	<u>Link to /metricbeat-2016.07.13/metricsets/AVXjcuxCzpFq4ry7i6v3</u>
0	@timestamp	Q Q □ * July 13th 2016, 10:50:07.492
t	_id	Q Q □ * AVXjcuxCzpFq4rY7i6V3
t	_index	ℚ ℚ □ * metricbeat-2016.07.13
#	_score	@ @ □ * 2
t	_type	Q □ * metricsets
t	beat.hostname	Q Q □ * MacBook-Pro-de-Bahaaldine.local
t	beat.name	Q Q □ * MacBook-Pro-de-Bahaaldine.local
t	metricset.module	Q Q □ * system
t	metricset.name	ℚ ℚ □ * memory
#	metricset.rtt	Q Q □ * 2,051
#	system.memory.actual.free	Q Q □ * 5,575,241,728
#	system.memory.actual.used.byt	es Q Q II * 10.808GB
#	system.memory.actual.used.pct	Q Q □ * 67.55%
#	system.memory.free	Q Q □ * 1.241GB
#	system.memory.swap.free	
#	system.memory.swap.total	
#	system.memory.swap.used.bytes	
#	system.memory.swap.used.pct	Q Q 🗆 * 74.11%
#	system.memory.total	
#	system.memory.used.bytes	
#	system.memory.used.pct	Q Q □ * 92.24%
t	type	Q □ * metricsets

Create New Visualization



Area chart

Great for stacked timelines in which the total of all series is more important than comparing any two or more series. Less useful for assessing the relative change of unrelated data points as changes in a series lower down the stack will have a difficult to gauge effect on the series above it.



■ Data table

The data table provides a detailed breakdown, in tabular format, of the results of a composed aggregation. Tip, a data table is available from many other charts by clicking grey bar at the bottom of the chart.



✓ Line chart

Often the best chart for high density time series. Great for comparing one series to another. Be careful with sparse sets as the connection between points can be misleading.

</> Markdown widget

Useful for displaying explanations or instructions for dashboards.



Metric Metric

One big number for all of your one big number needs. Perfect for showing a count of hits, or the exact average a numeric field.



Pie chart

Pie charts are ideal for displaying the parts of some whole. For example, sales percentages by department. Pro Tip: Pie charts are best used sparingly, and with no more than 7 slices per pie.

Tile map

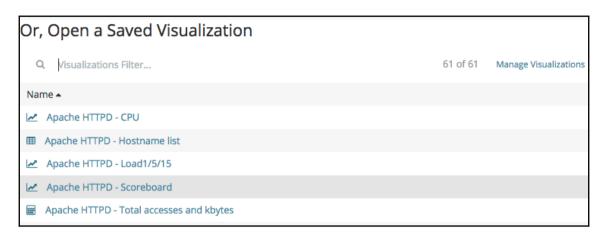
Your source for geographic maps. Requires an elasticsearch geo_point field. More specifically, a field that is mapped as type:geo_point with latitude and longitude coordinates.

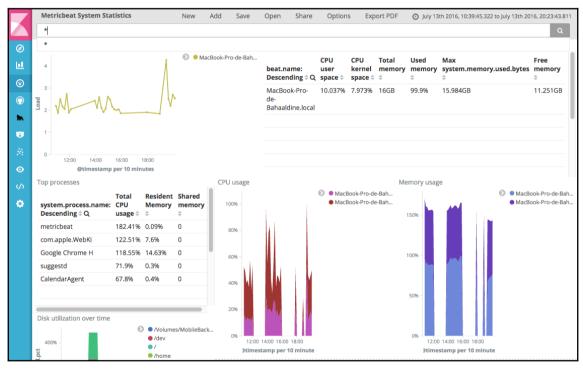
Timeseries

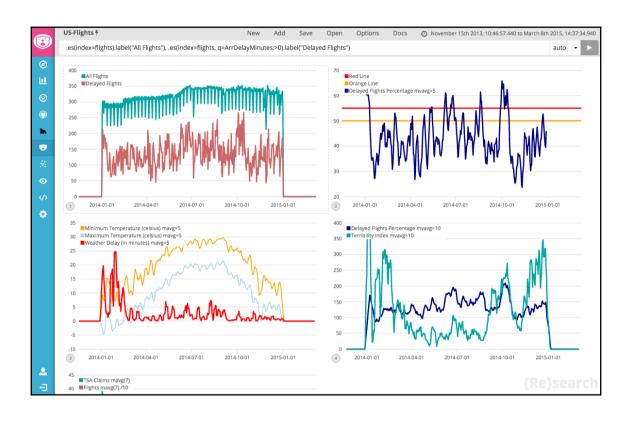
Create timeseries charts using the timelion expression language. Perfect for computing and combining timeseries set with functions suchs as derivatives and moving averages

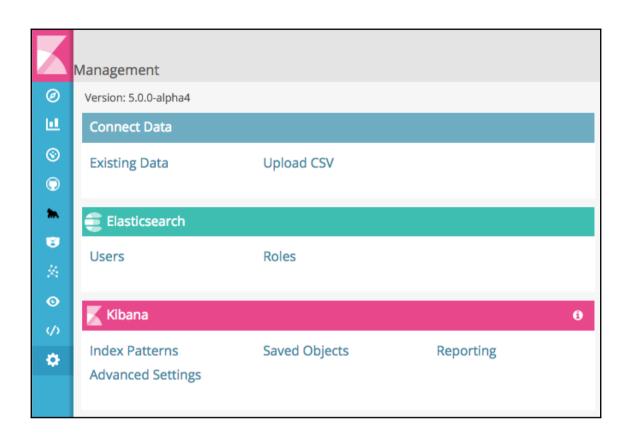
III Vertical bar chart

The goto chart for oh-so-many needs. Great for time and non-time data. Stacked or grouped, exact numbers or percentages. If you are not sure which chart you need, you could do worse than to start here.



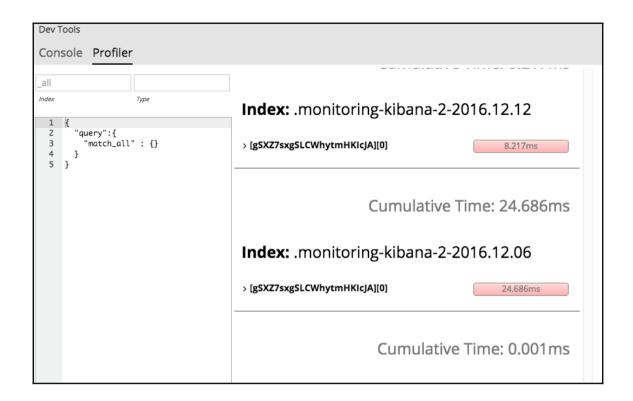


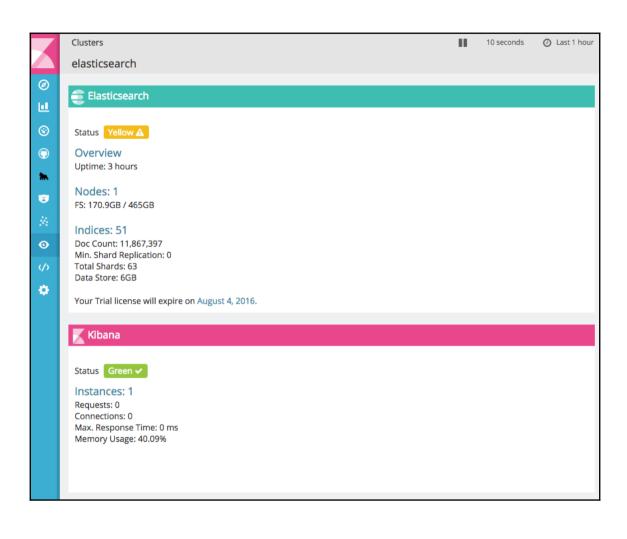


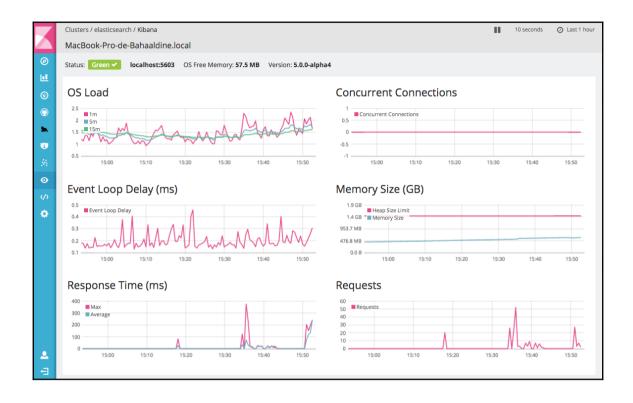


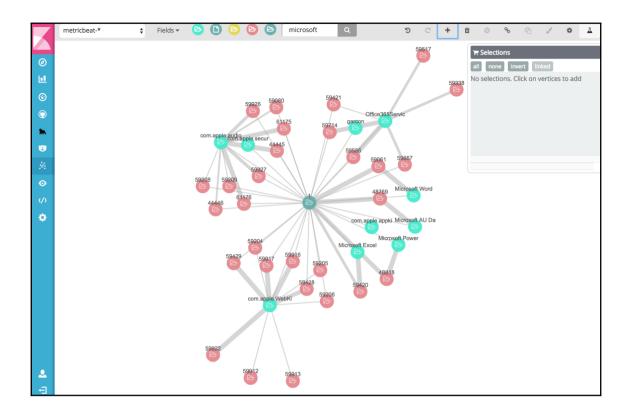
```
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       Console
                                                                                                                                                                   History Settings Help
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4 - "bool": {
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                                                                                                    9 -
        10
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8
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                                                                                                  11
          12 -
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          15 -
                                                                                                  16
          16 -
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          17 -
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                                                                                                  18 -
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                                                                                                                    },
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                                                                                                  44
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                                                                                                  47
                                                                                                  48
                                                                                                                          pgta : 5515,
"pid": 3313,
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                                                                                                  49
                                                                                                  50
                                                                                                   51
O
```





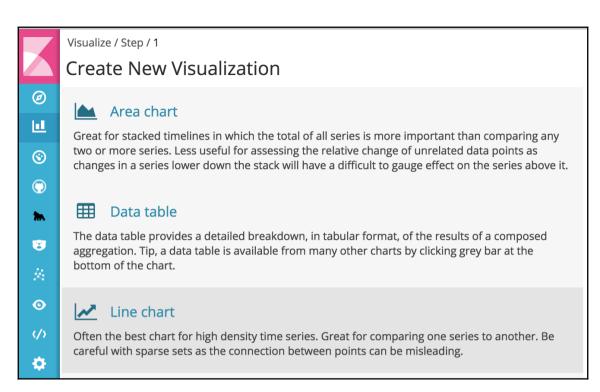


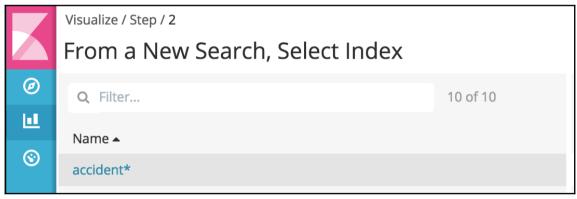


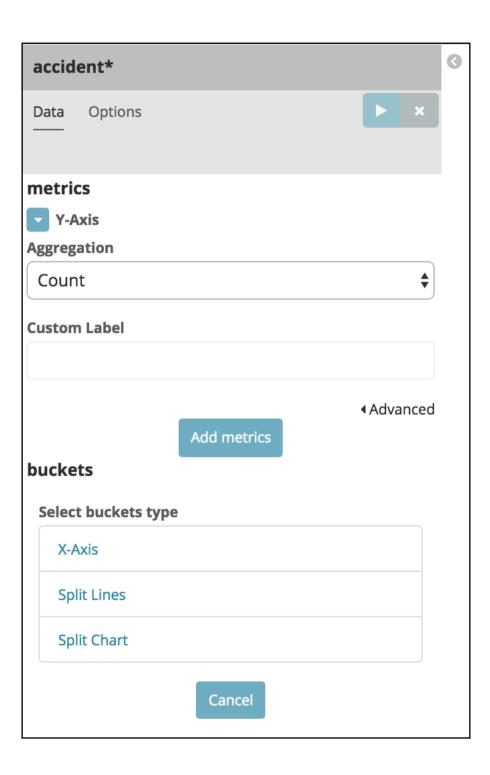


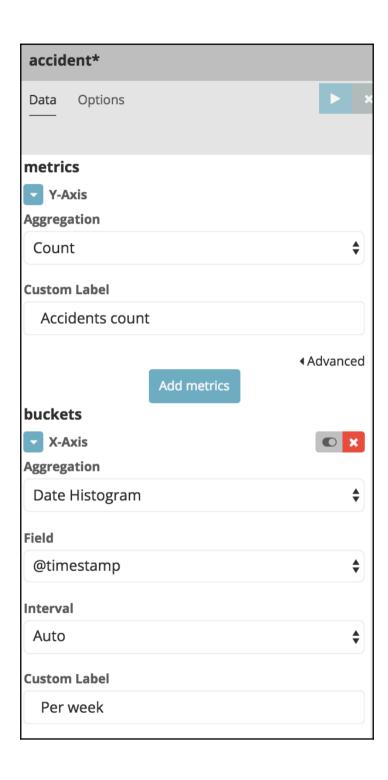
Chapter 3: Business Analytics with Kibana 5.0

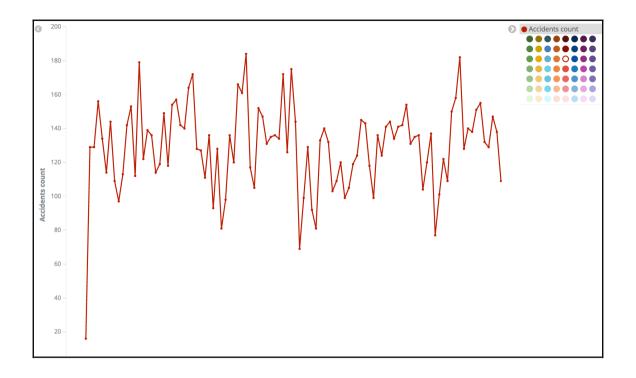
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                                          2
0
                                          3 +
                                               "_shards": {
                                                 "total": 10,
                                          4
Ш
                                                 "successful": 10,
                                          5
                                                 "failed": 0
                                          6
③
                                          7 -
                                         8 - }
m
8
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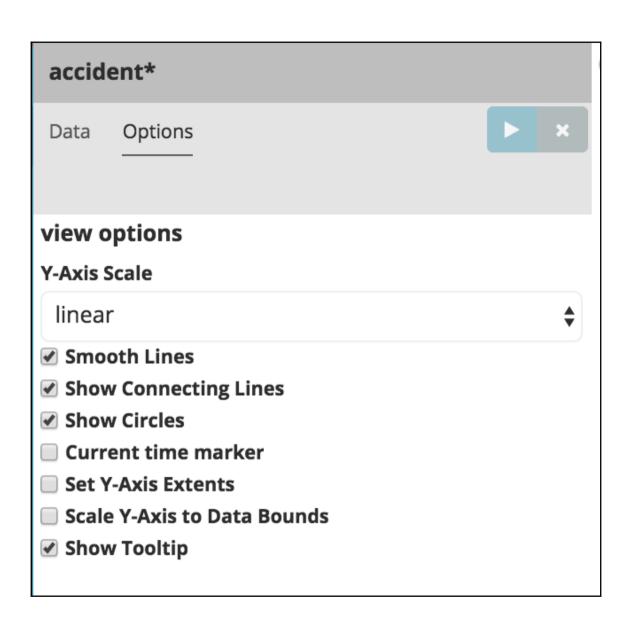


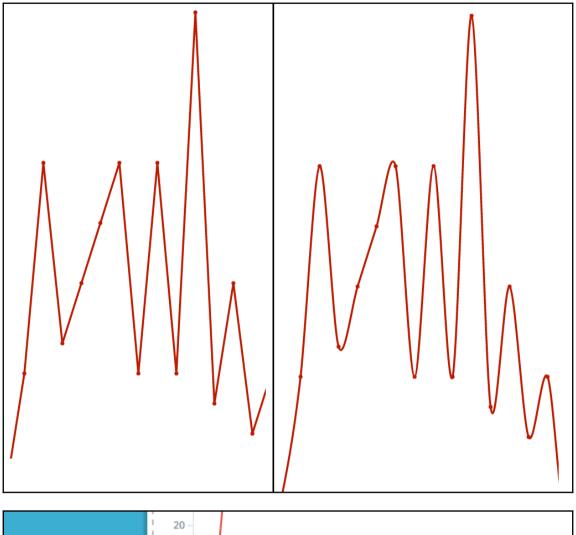




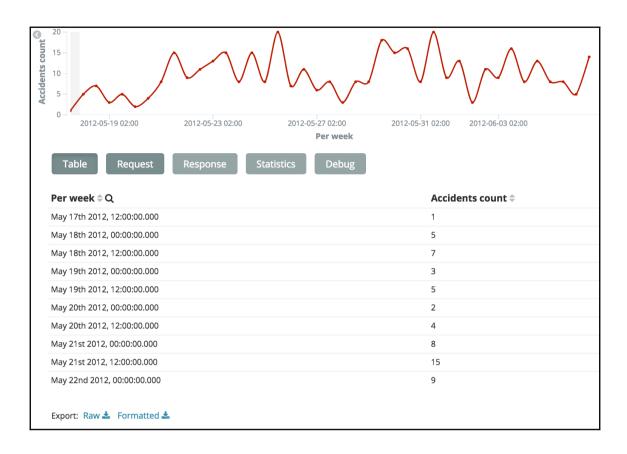




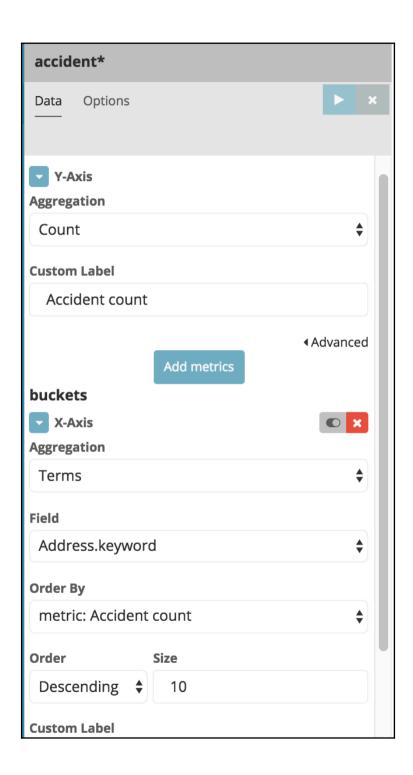


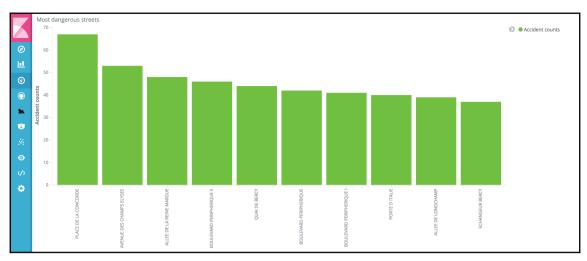


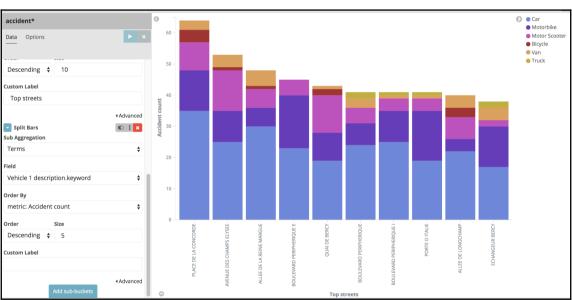


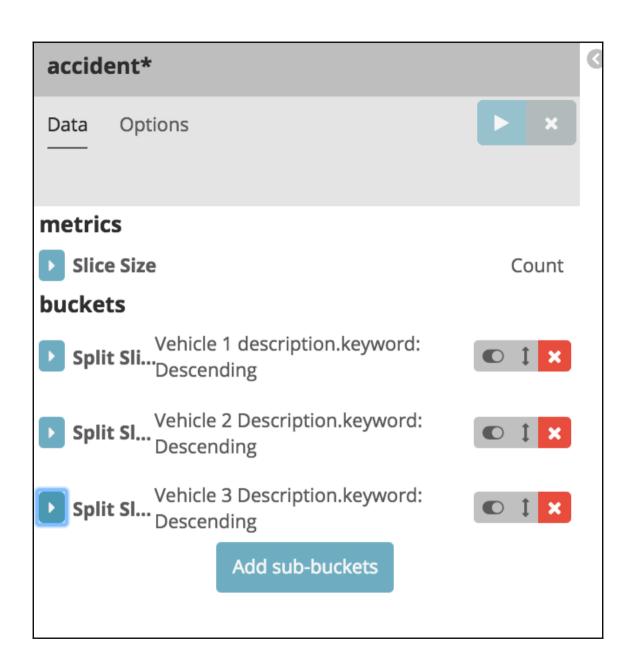


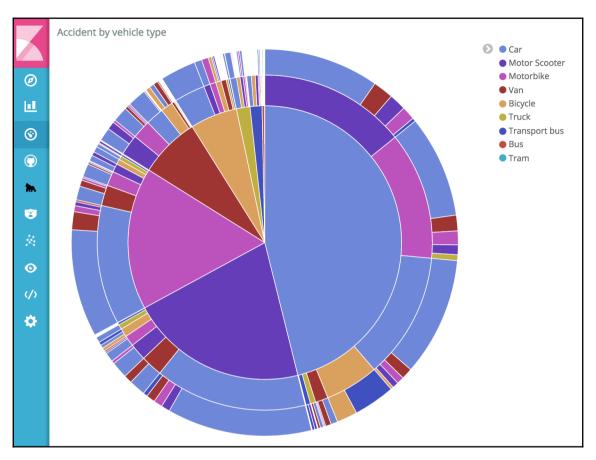


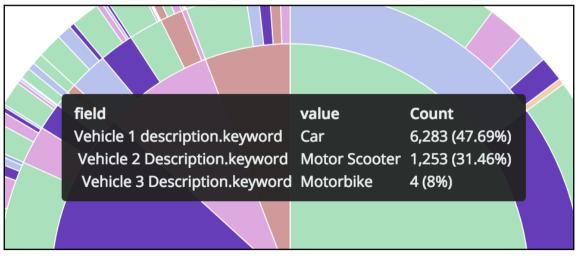


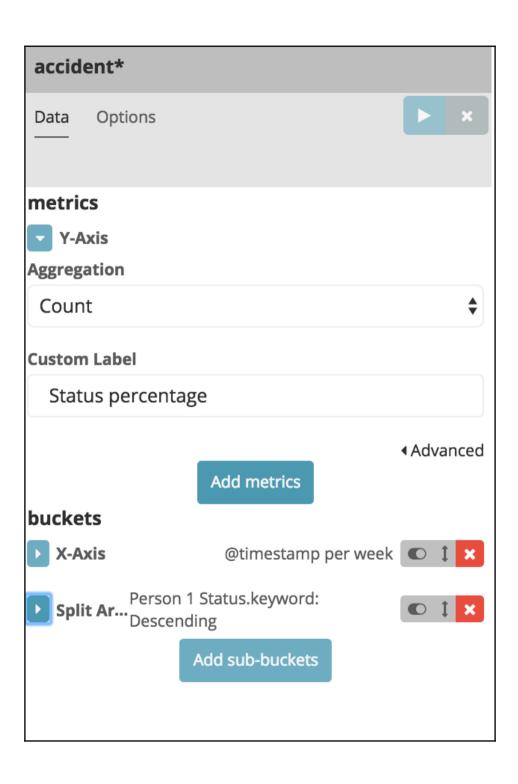


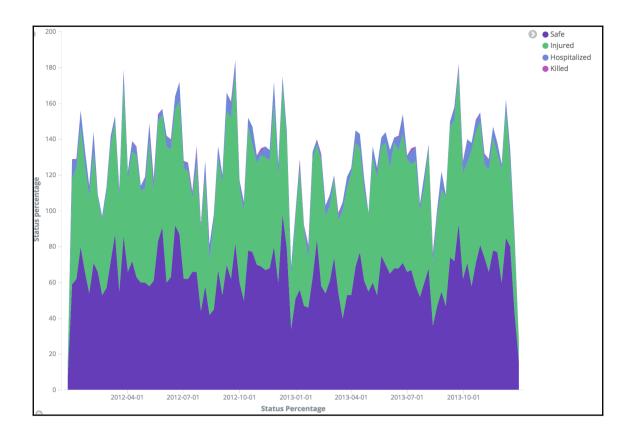


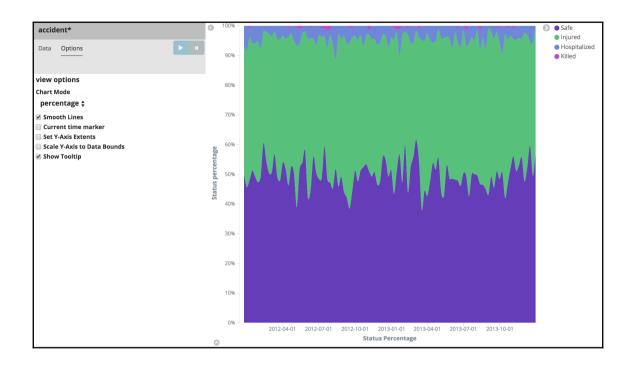


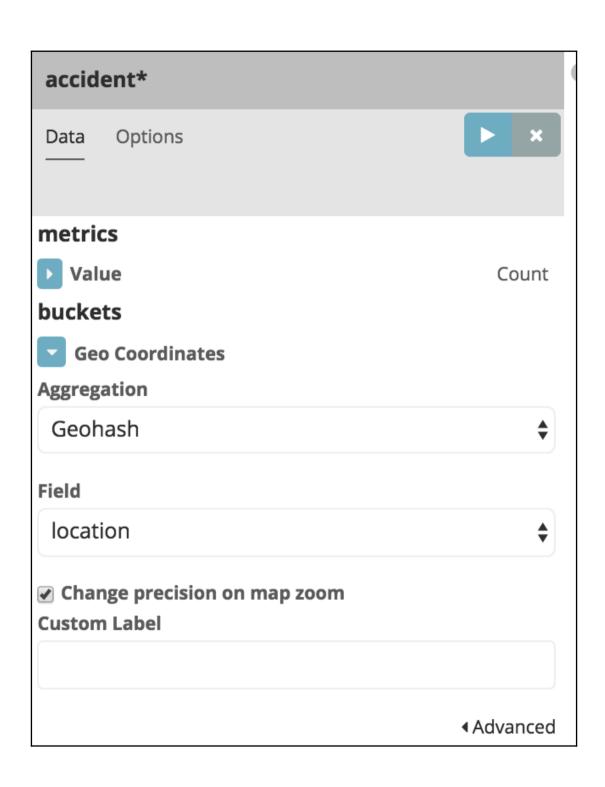


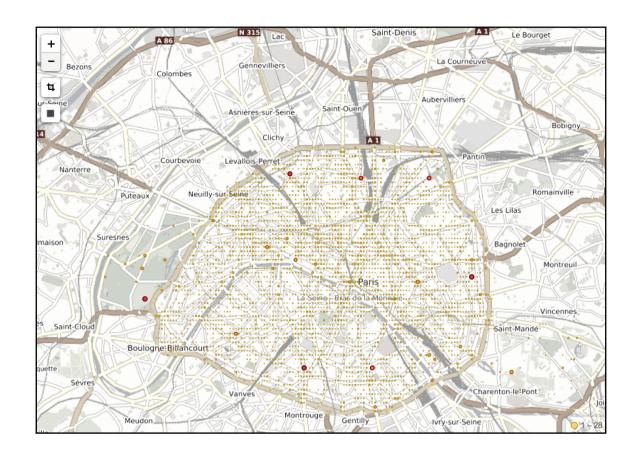


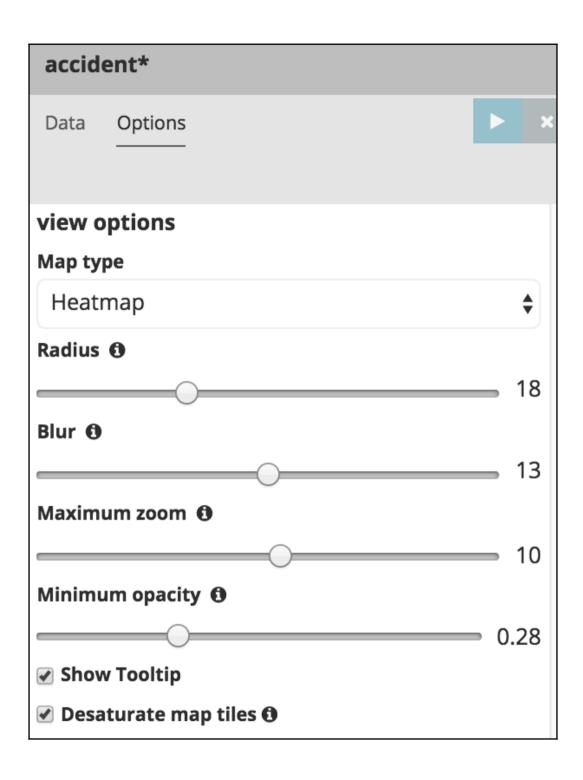


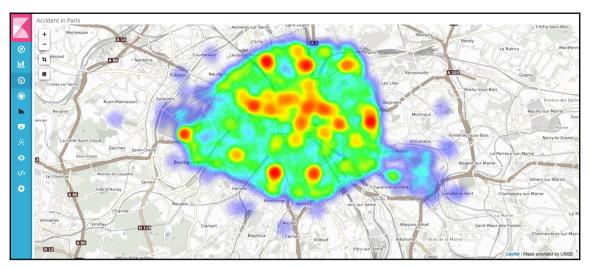


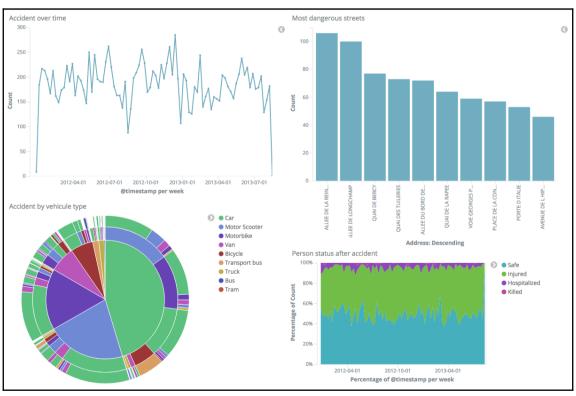


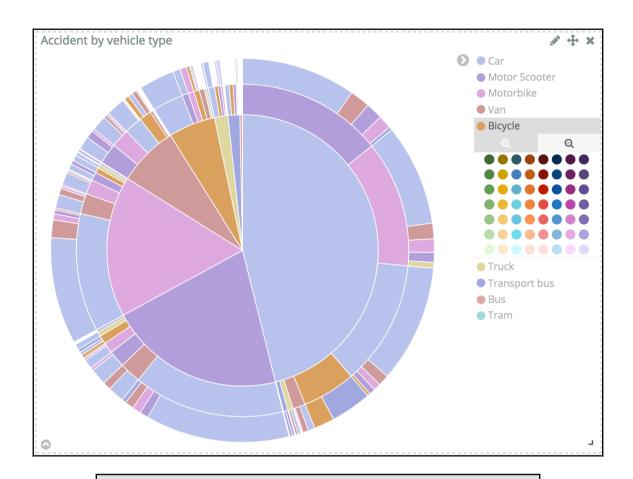




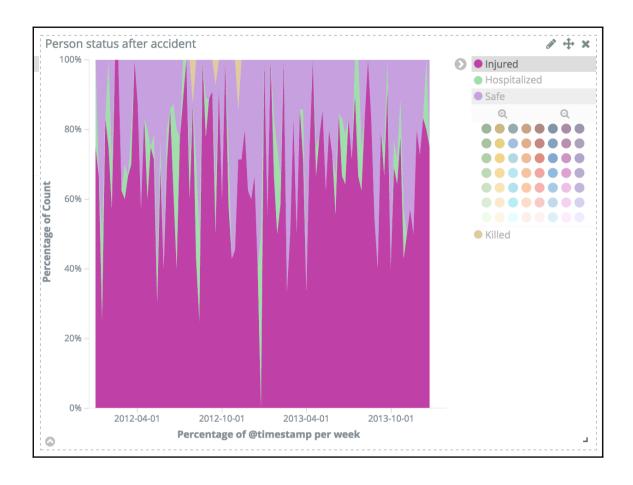


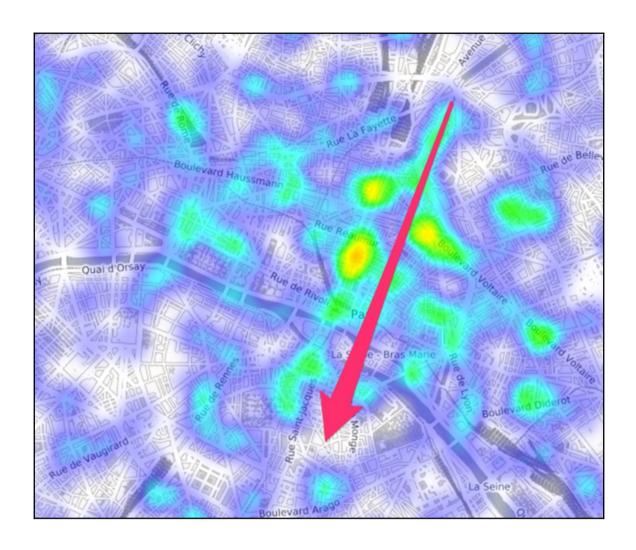


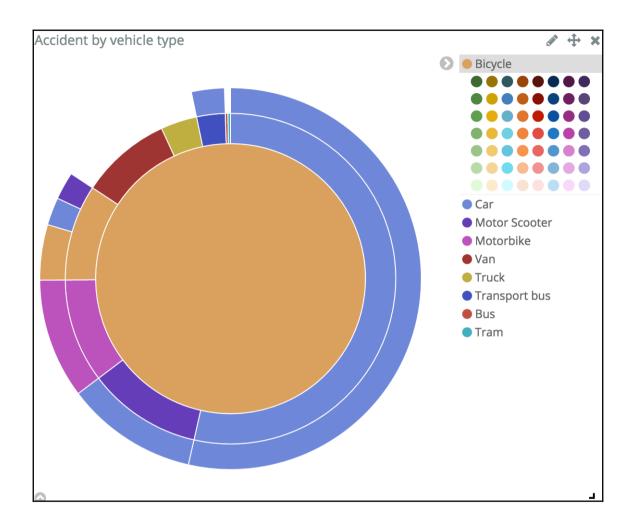




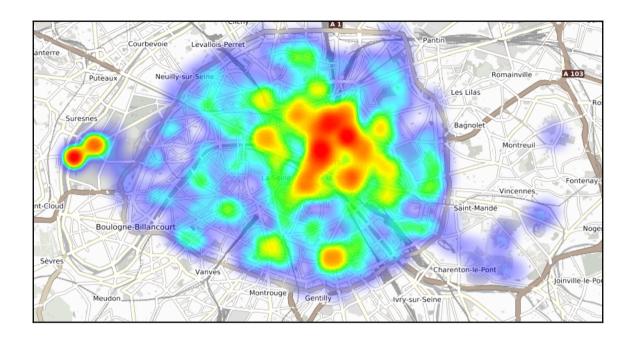
Vehicle 1 description.keyword: "Bicycle"

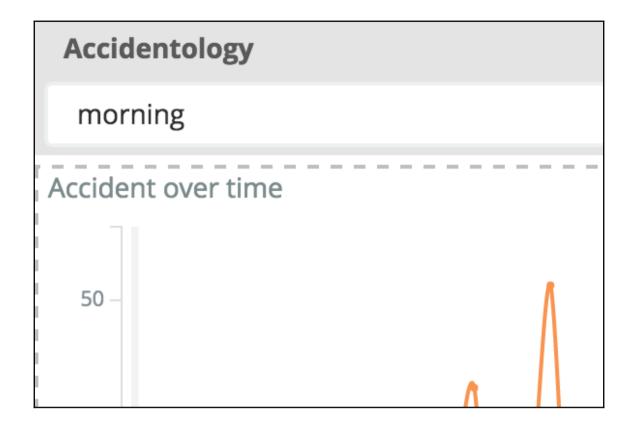


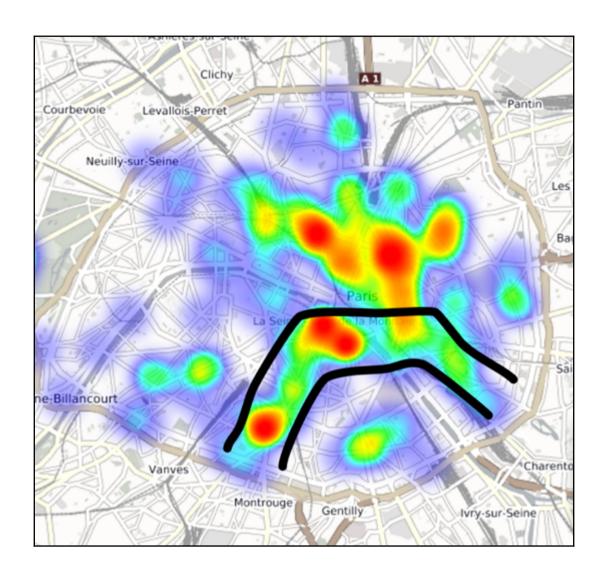


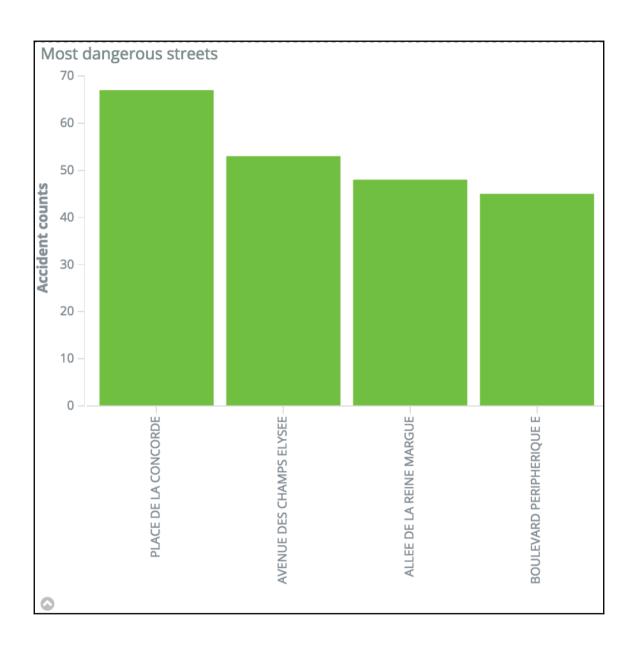


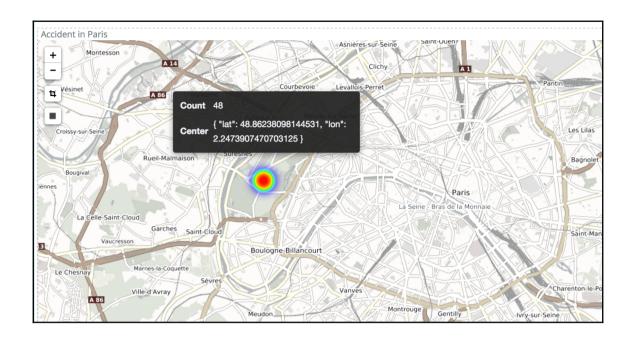


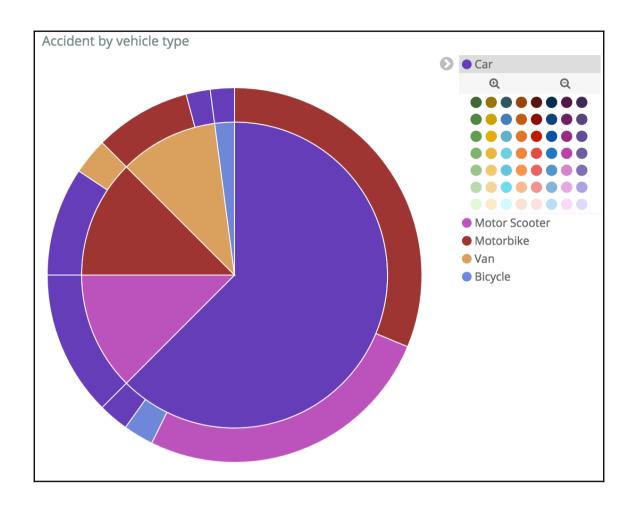






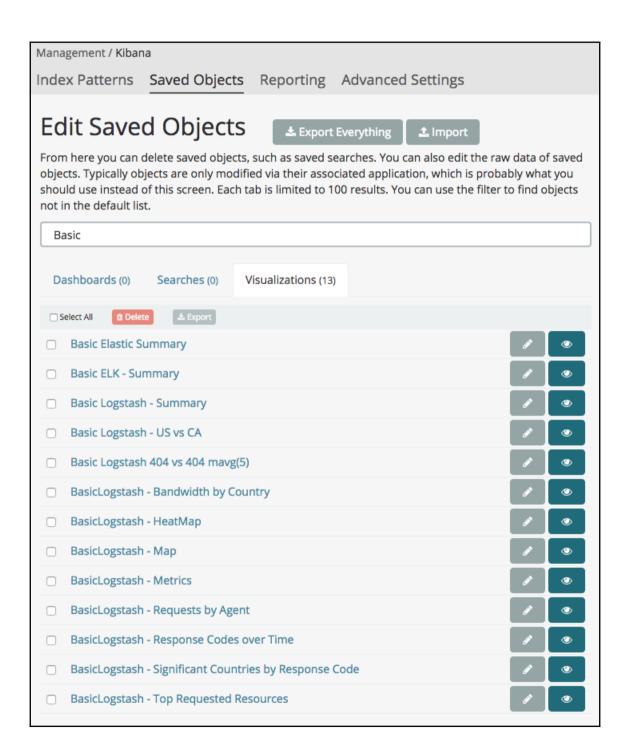


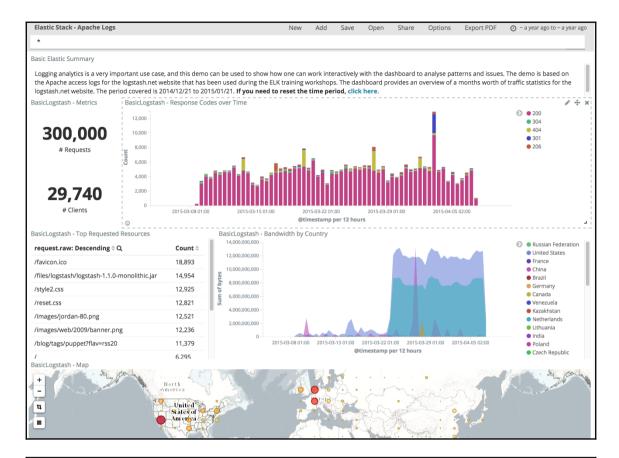




Chapter 4: Logging Analytics with Kibana 5.0

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                                                                   yellow open basic-logstash-2015 1 1 300000 0 180mb
        2 - {
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0
        3
        4 - "settings": {
               "location": "/Users/bahaaldine/Dropbox
          /Packt-B05755/sources/chapter4/basic_logstash_rep
③
                 "compress": true
7.
        9
8
       11 GET _snapshot/basic_logstash_repository/_all
       12
       13 POST /_snapshot/basic_logstash_repository
           /snapshot_201608031111/_restore
0
       14
       15
          GET /_snapshot/basic_logstash_repository/snapshot
           _201608031111/_status
ø
     17 GET _cat/indices/basic*
```





Basic Elastic Summary

Logging analytics is a very important use case, and this demo can be used to show how one can work interactively with the dashboard to analyse patterns and issues. The demo is based on the Apache access logs for the logstash.net website. The dashboard provides an overview of a months worth of traffic statistics for the logstash.net website. The period covered is 2014/12/21 to 2015/01/21. **If you need to reset the time period, click here**.

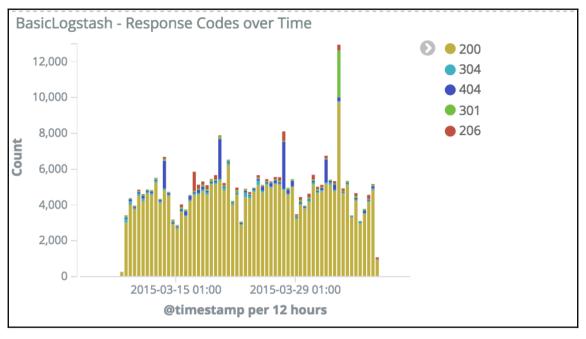
BasicLogstash - Metrics

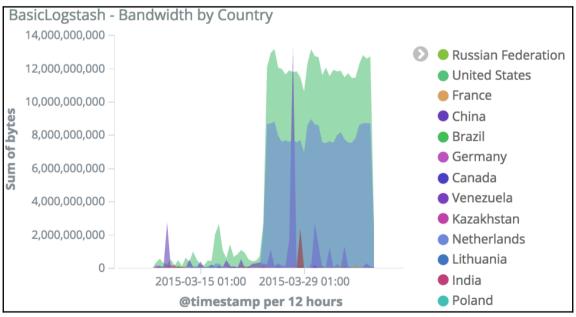
300,000

Requests

29,740

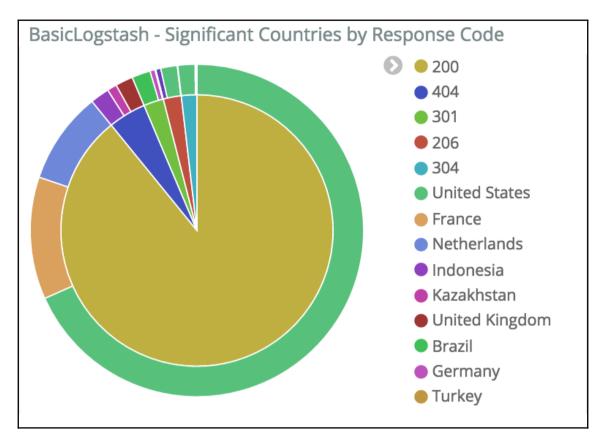
Clients



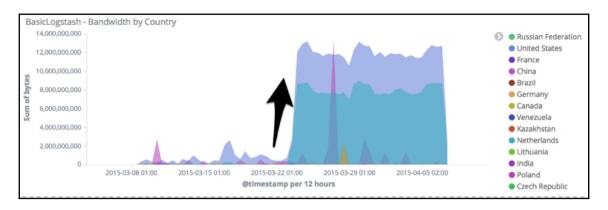


BasicLogstash - Requests by Agent		0
agent.raw: Descending 🕏 Q	Count	
"Chef Client/10.18.2 (ruby-1.8.7-p302; ohai-6.14.0; x86_64-linux; +http://opscode.com)"	14,072	ı
"_"	11,092	
"Mozilla/5.0 (Windows NT 6.1; WOW64; rv:27.0) Gecko/20100101 Firefox/27.0"	10,151	
"Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:27.0) Gecko/20100101 Firefox/27.0"	8,773	
"UniversalFeedParser/4.2-pre-314-svn +http://feedparser.org/"	8,529	

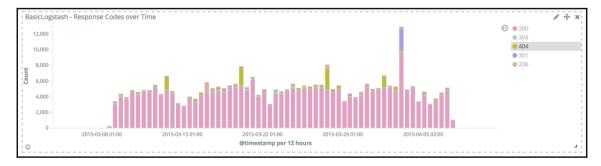
BasicLogstash - Top Requested Resources	
/images/jordan-80.png	12,521
/images/web/2009/banner.png	12,236
/blog/tags/puppet?flav=rss20	11,379
/	6,295
/presentations/fpm-scale12x.pdf	5,327
/?flav=rss20	5,103
Export: Raw & Formatted &	





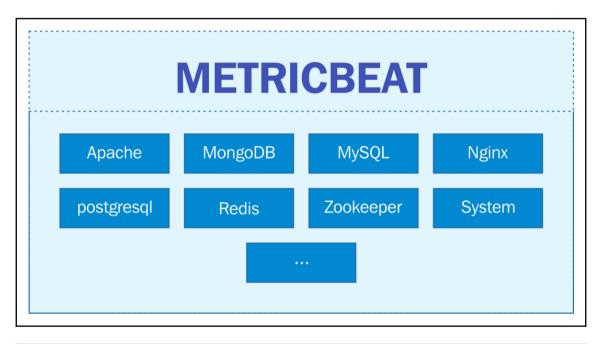


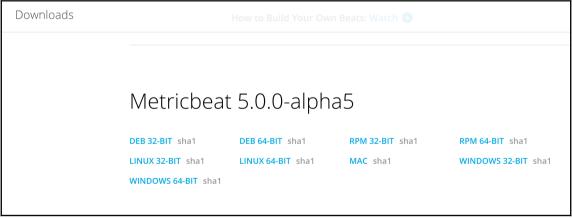


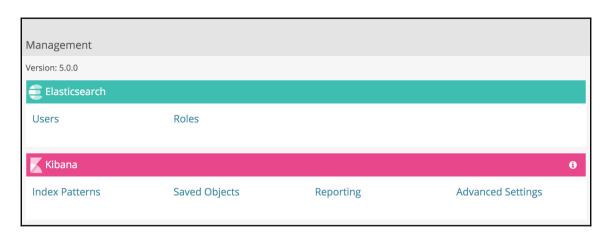


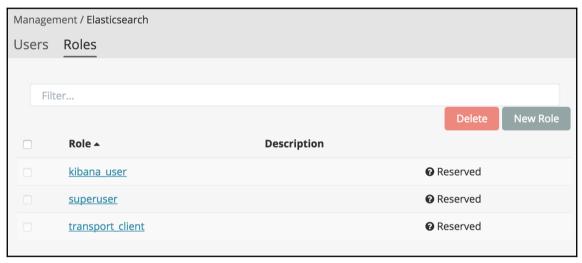
BasicLogstash - Top Requested Resources	Ø ⊕ ×
request.raw: Descending Q	Count
/wp/wp-admin/	79
/blog/wp-admin/	76
/wordpress/wp-admin/	73
/wp-admin/	71

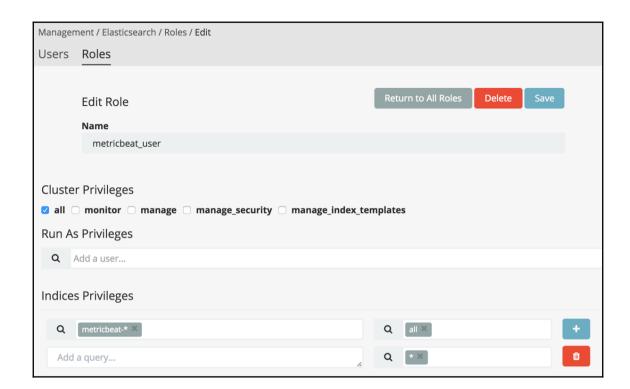
Chapter 5: Metric Analytics with Metricbeat and Kibana 5.0





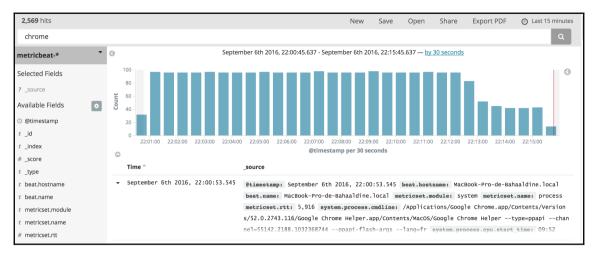


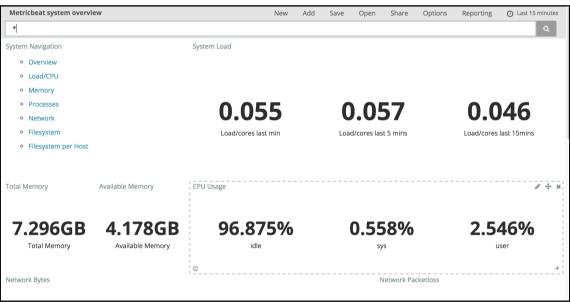


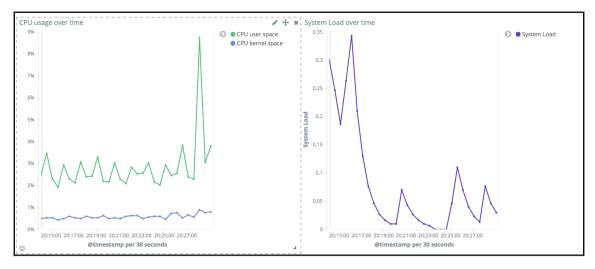


Manage	ment / Elasticsearch / Users		
Users	Roles		
	New User	Return to All Users Save	
	Username		
	metricbeat		
	Password		
	Change Password		
	Full Name		
	Metricbeat		
	Email		
	metricbeat@beat.go		
Roles			
Q	metricbeat_user ×		



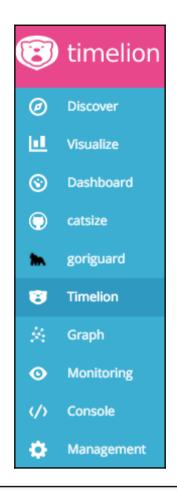








system.process.name: Descending \$ Q	Total CPU usage \$	Resident Memory	
zoom.us	147.98%	1.59%	0
Google Chrome H	110.54%	6.94%	0
CalendarAgent	107.03%	0.31%	0
bsdtar	91.77%	0.03%	0
suggestd	77.2%	0.2%	0



Welcome to **timelion** the timeseries expression interface for

everything

Timelion. Timeline. Get it? Ok, enough with the puns. Timelion is the, clawing, gnashing, zebra killing, pluggable timeseries interface for *everything*. If your datastore can produce a timeseries, then you have all of the awesome power of Timelion at your disposal. Timelion lets you compare, combine and combobulate (not actually a word) datasets across multiple data sources, even entirely different technologies, all with the same easy-to-master expression syntax. While the beginning of this tutorial will focus on Elasticsearch, once you're rolling you'll discover you can use nearly everything you learn here with any datasource timelion supports.

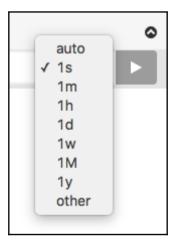
Why start with elasticsearch? Well, you're using timelion, so we know you have Kibana, so you definitely have Elasticsearch. So the answer is: **Because its easy.** Timelion want everything to be easy. Ok, let's do this thing. If you're already familiar with Timelion's syntax, Jump to the function reference, otherwise click the **Next** button in the lower right corner.

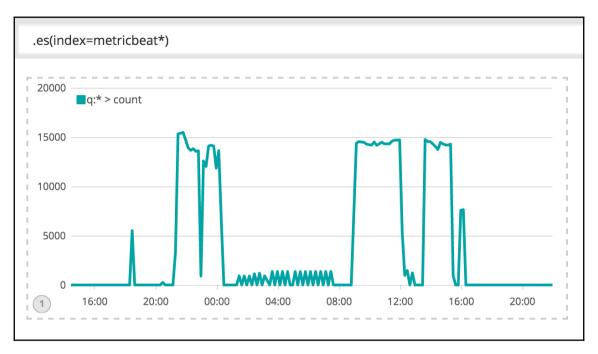
Don't show this again

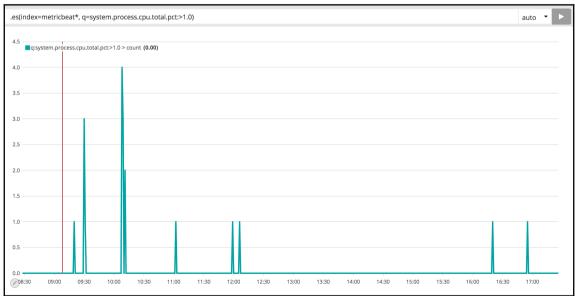
Next

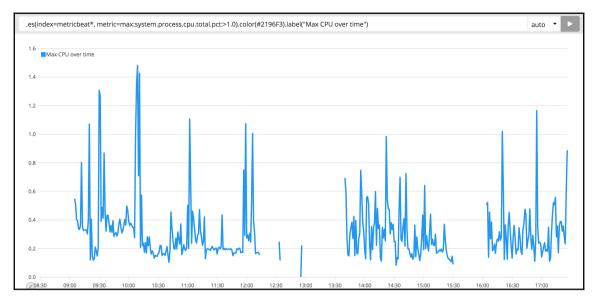


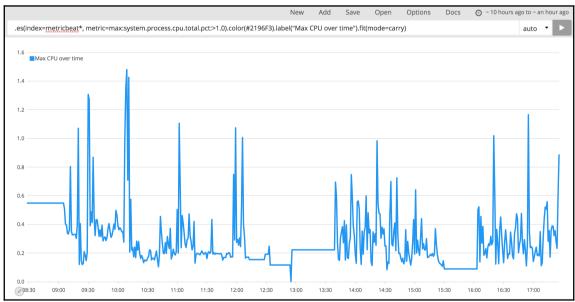
Timelion: Error: Max buckets exceeded: 31622400 of 2000 allowed. Choose a larger interval or a shorter 276s More Info OK

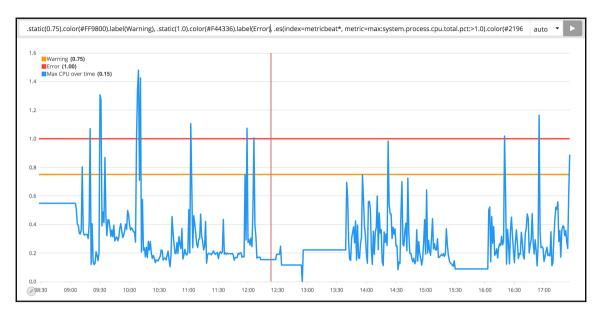


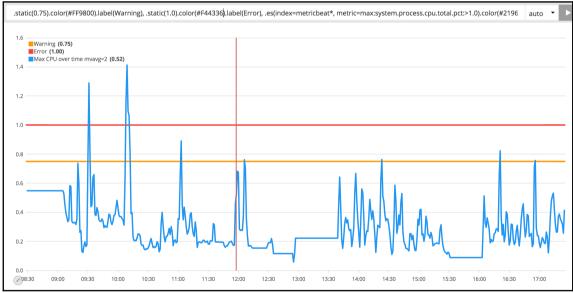


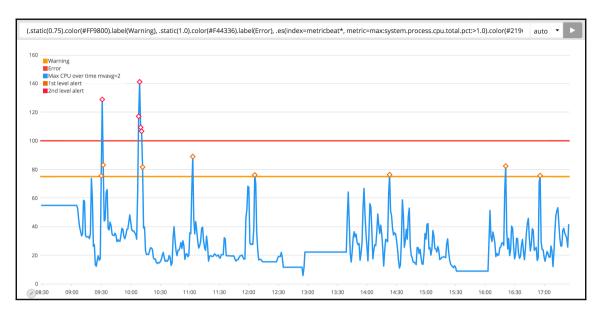


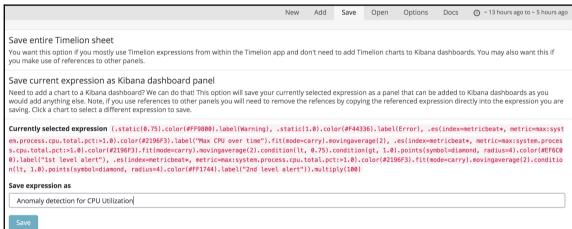


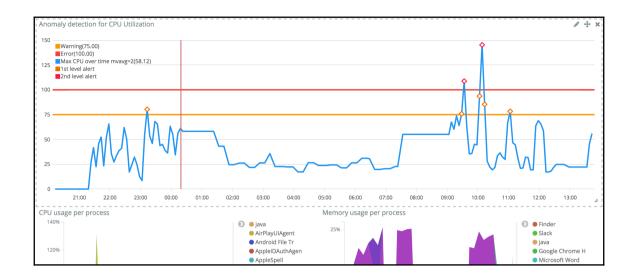








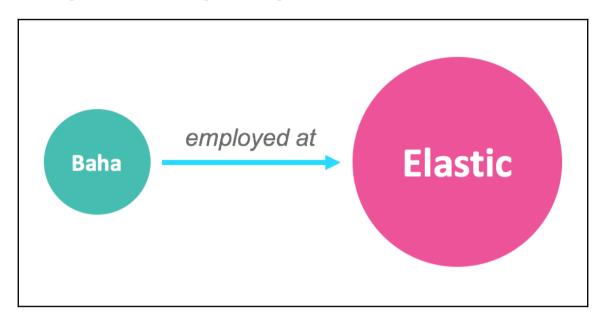


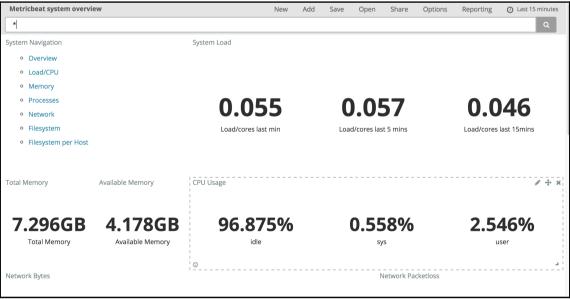


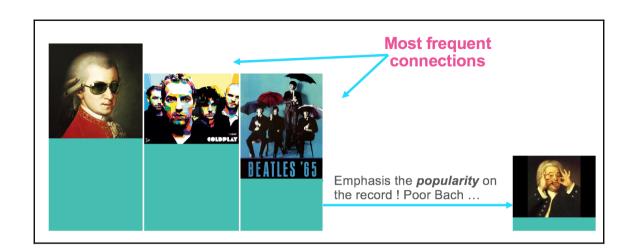
```
Elasticsearch Console
         UJ
         84 - }
         85
(
         86
         87
Ш
         88
             PUT _xpack/watcher/watch/cpu_watch
         89 - {
③
                "trigger": {
         90 -
         91 -
                  "schedule": {
"interval": "10s"
         92
         93 -
},
         94 -
         95 -
                "input": {
8
                  "search": {
         96 -
                    "request": {
         97 -
矣
         98 -
                       "indices": [
         99
                         "metricbeat*"
0
        100 -
                      "body": {
        101 -
(/)
                         "size": 0.
        102
                         "aggs": {
        103 -
*
                           "max_cpu": {
        104 -
        105 -
                             "max": {
                               "field": "system.process.cpu.total.pct"
        106
        107 -
                           }
        108 -
        109 -
                        },
        110 -
                         "query": {
        111 -
                           "bool": {
                             "must": [
        112 -
        113 -
                               {
        114 -
                                 "range": {
Q
        115 -
                                 "@timestamp": {
                                   "gte": "now-10s"
        116
```

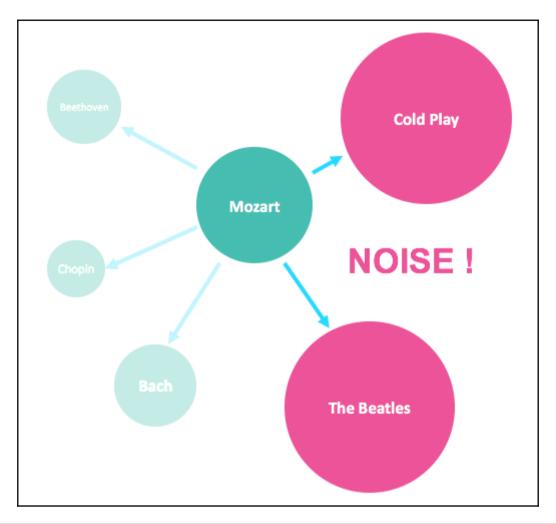


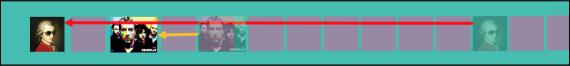
Chapter 6: Graph Exploration in Kibana



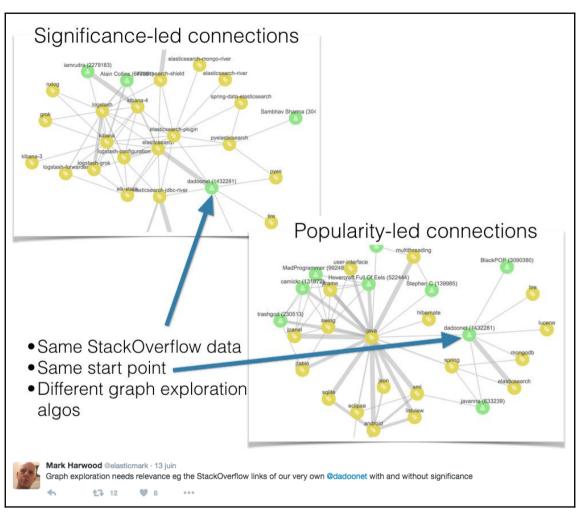


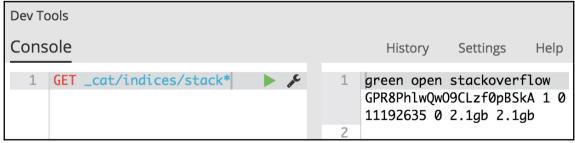






johann sebastian bach franz schubert georg friedrich händel wolfgang amadeus mozart antonio vivaldi van beethoven johannes brahms franz joseph haydn





Configure an index pattern

In order to use Kibana you must configure at least one index pattern. Index patterns are used to identify the Elasticsearch index to run search and analytics against. They are also used to configure fields.

Index contains time-based events

Index name or pattern

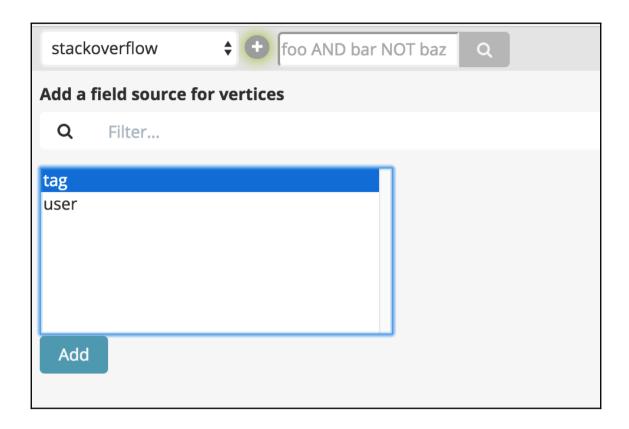
Patterns allow you to define dynamic index names using * as a wildcard. Example: logstash-*

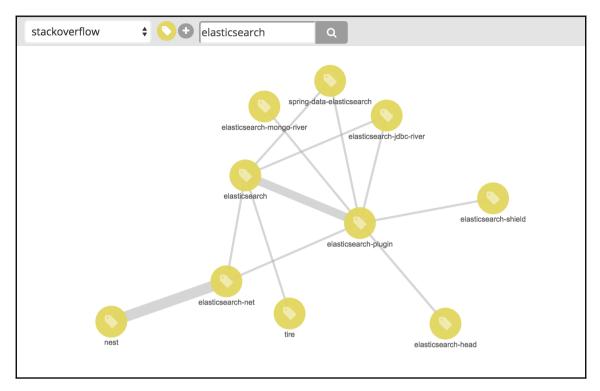
stackoverflow

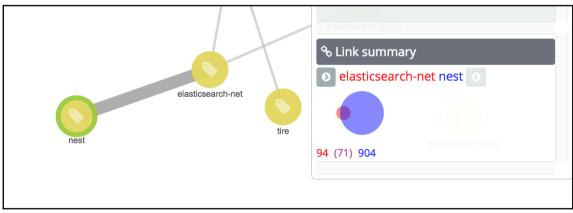
Create

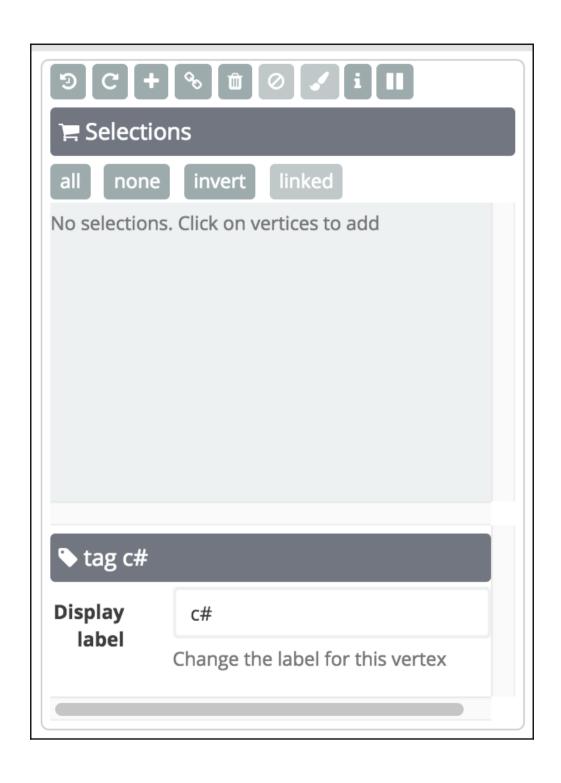
```
tag: javascript, jquery user: learnmore (1742289),
 ckoverflow score: 1
Table
          JSON
 1 - {
      "_index": "stackoverflow",
 2
       "_type": "qna",
 3
       "_id": "AVgSYpTT1vXMTQ2oWJCN",
 4
 5
       "_score": 1,
       "_source": {
         "tag": [
 7 -
          "javascript",
 8
 9
          "jquery"
10
         "user": [
11 -
12
           "learnmore (1742289)",
           "Vohuman (848164)"
13
14
15
16
```

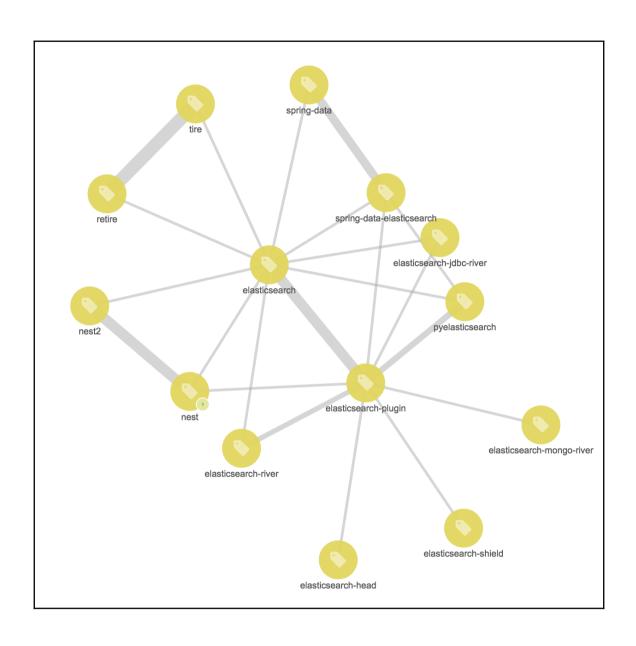


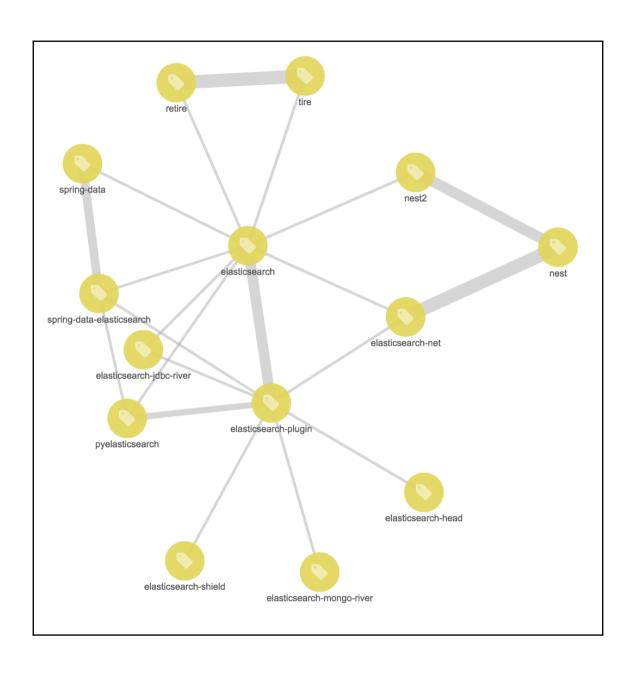




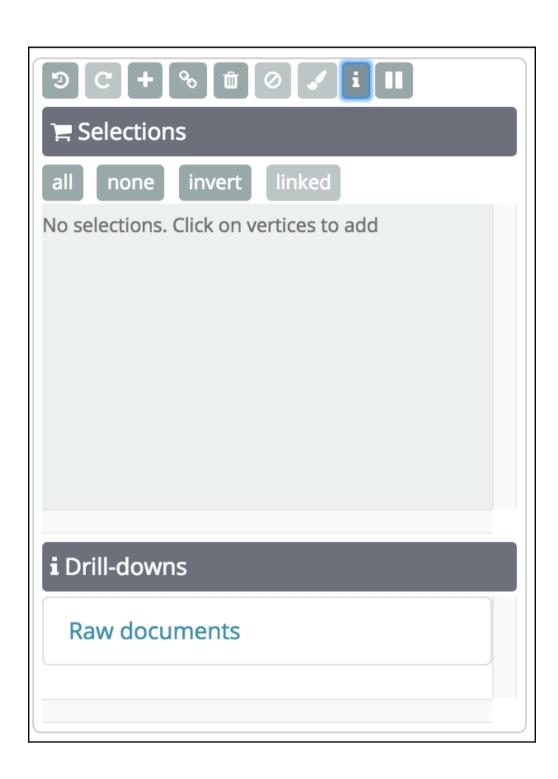






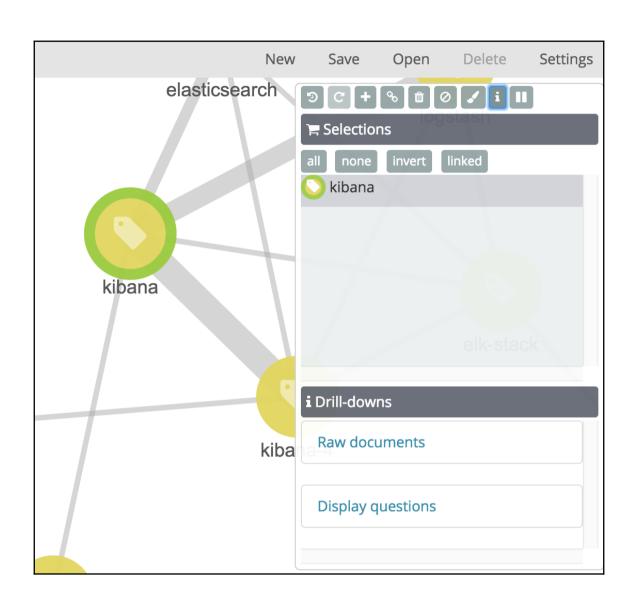


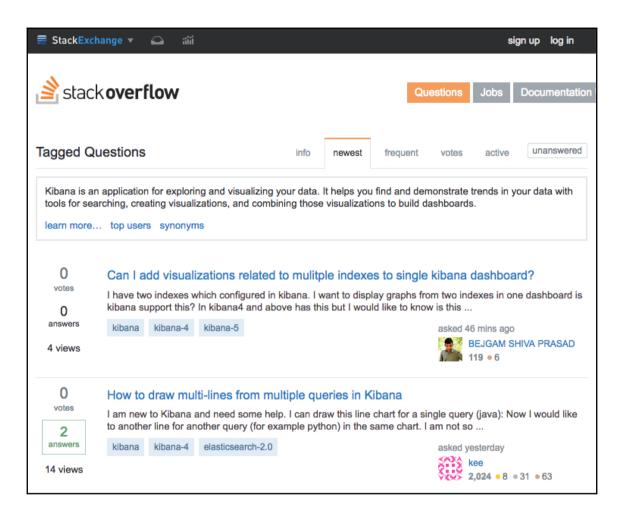




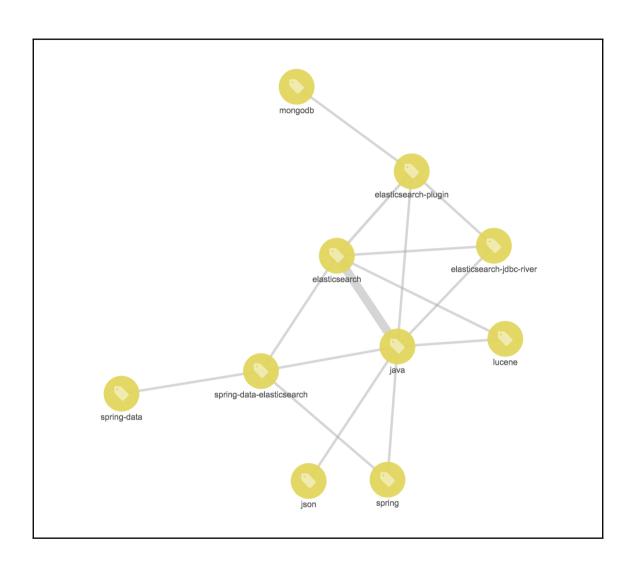


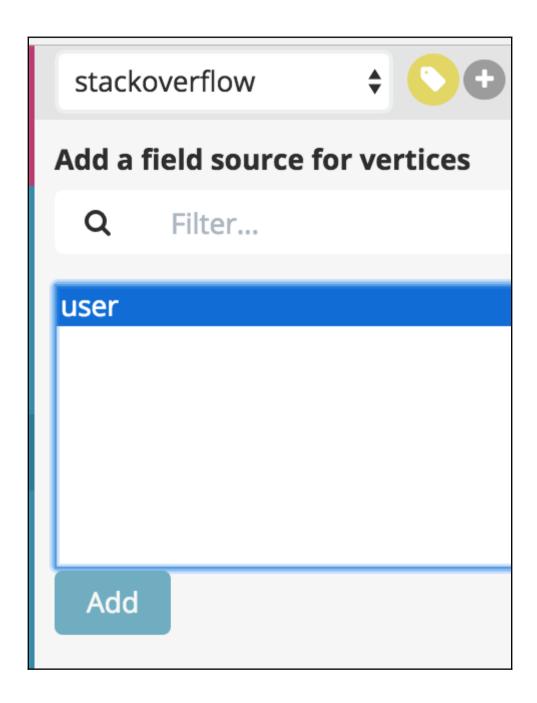


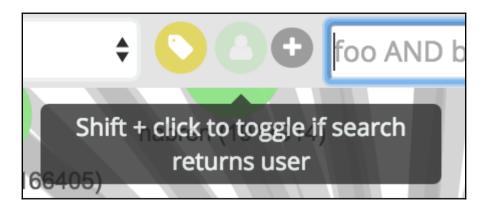


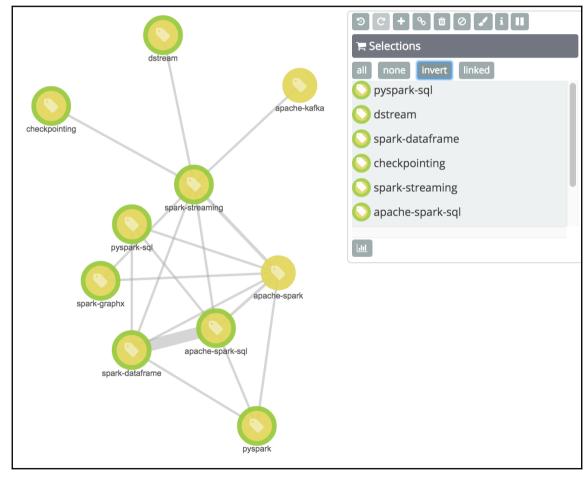


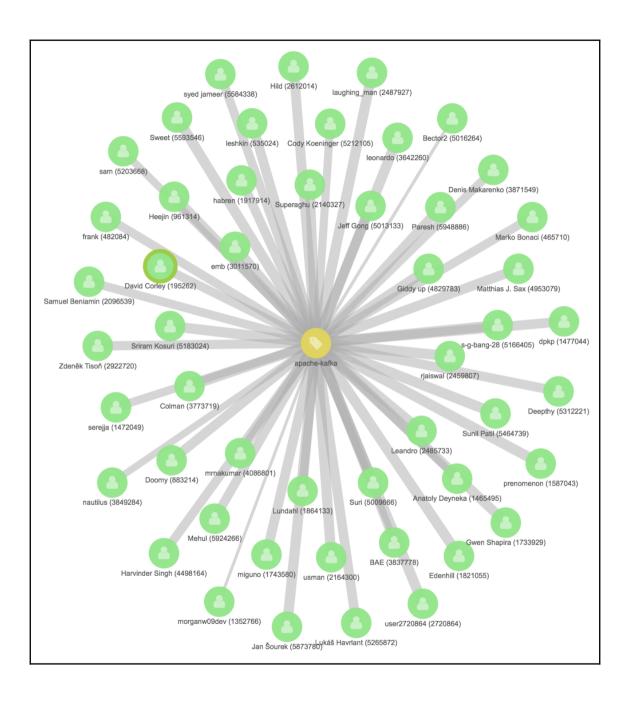
Sample size	2000
	Terms are identified from samples of the most relevant documents. Bigger is not necessarily better can be slower and less relevant.
	☐ Significant links
	Identify terms that are "significant" rather than simply popular
Certainty	3
	The min number of documents that are required as evidence before introducing a related term
Diversity field	[No diversification] 🕏
	To avoid document samples being dominated by a single voice, pick the field that helps identify the source of bias. This must be a single-term field or searches will be rejected with an error

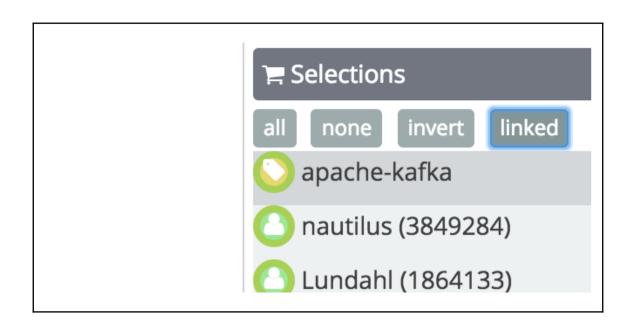


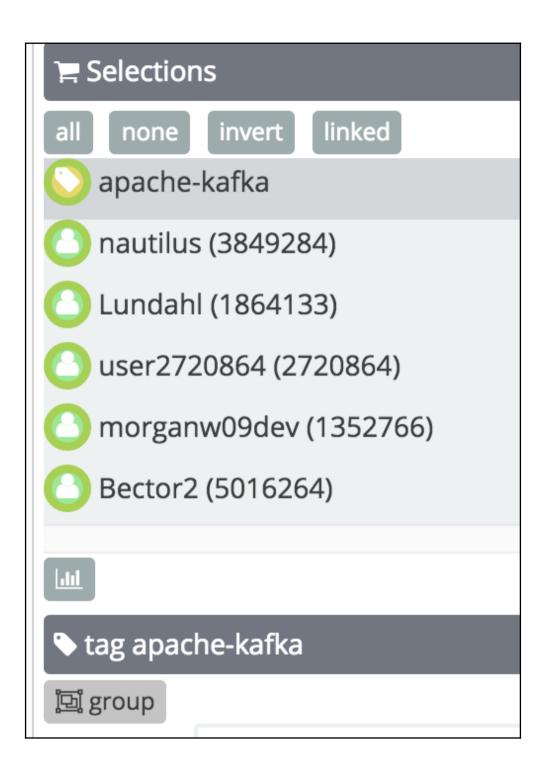






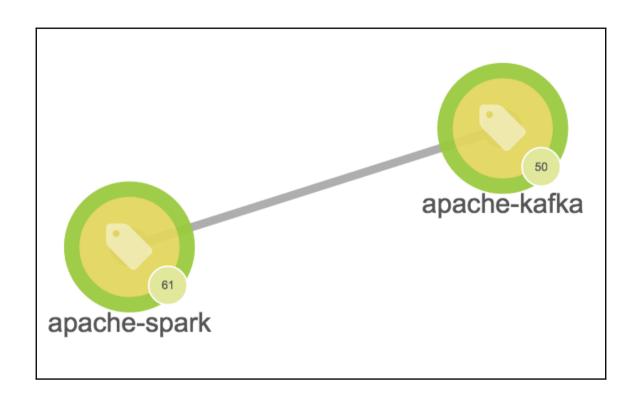


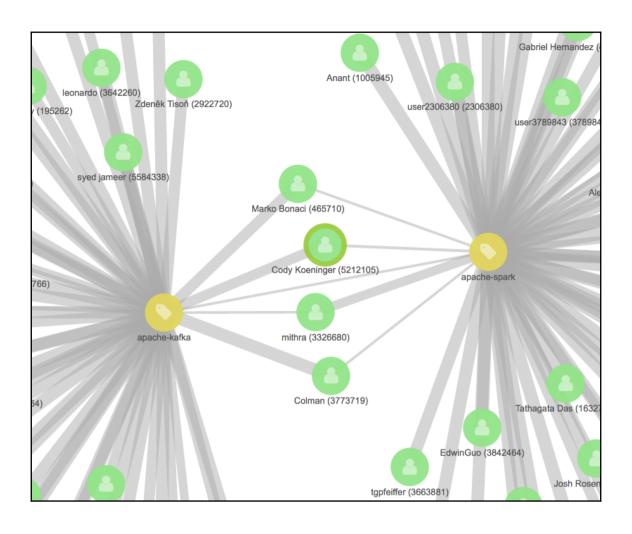


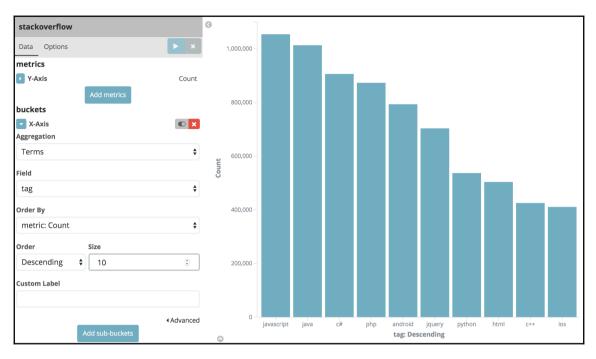




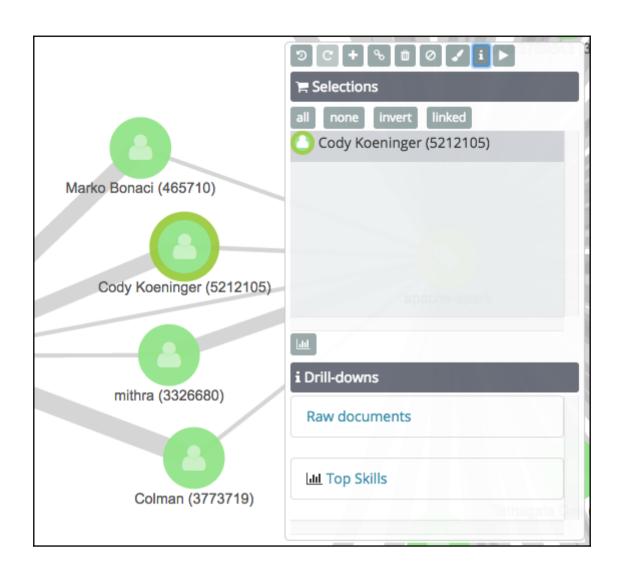


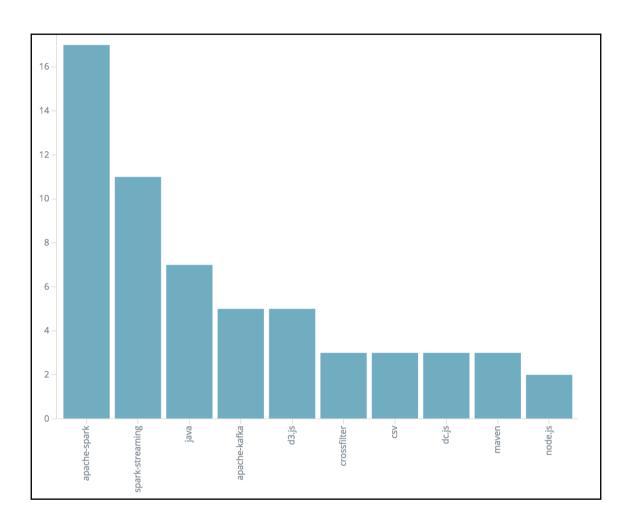




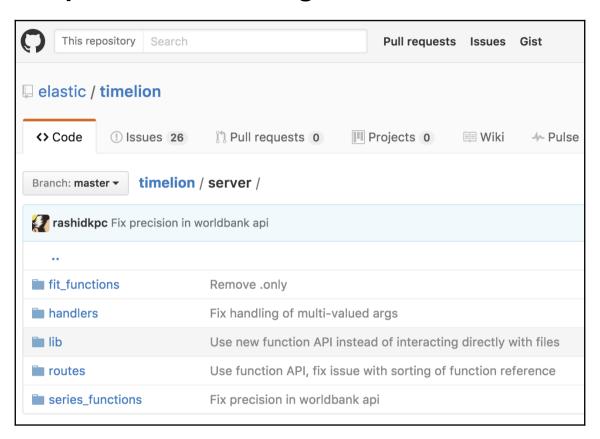


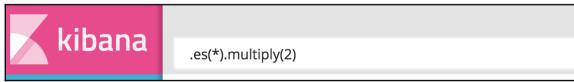


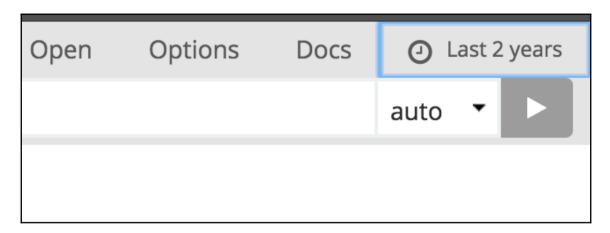




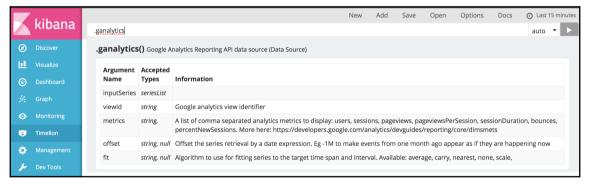
Chapter 7: Customizing Kibana 5.0 Timelion

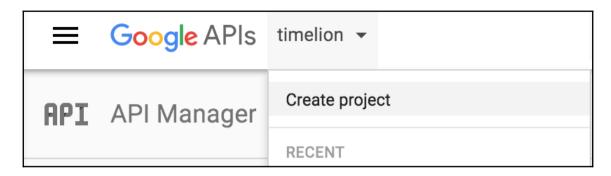


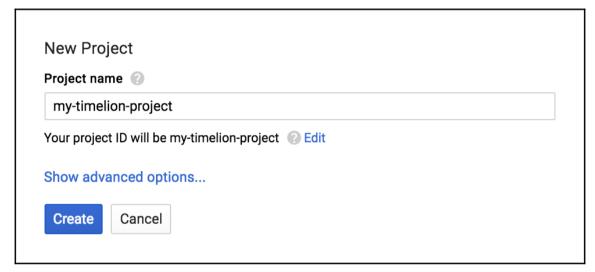


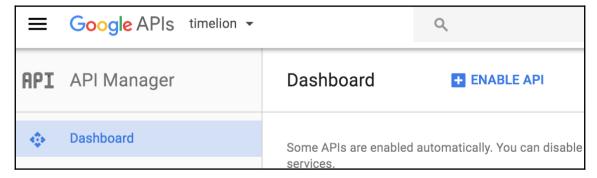


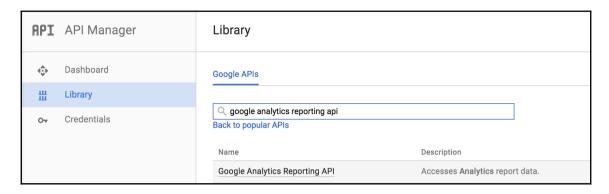








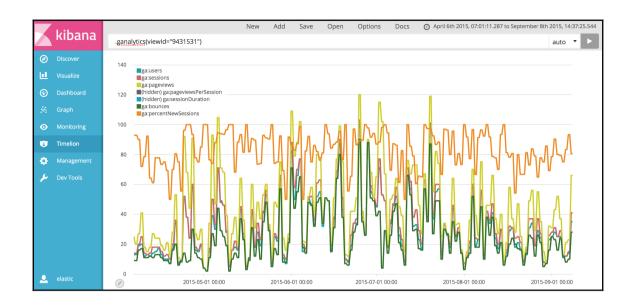


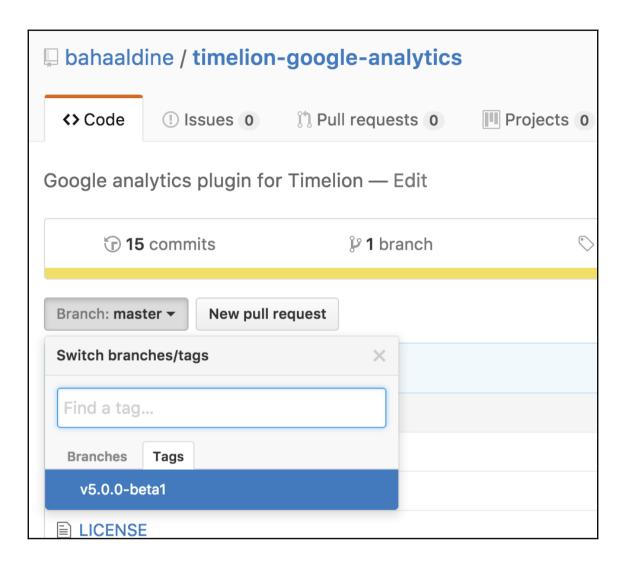


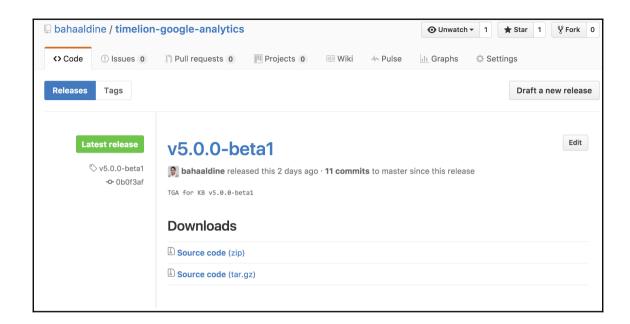




Service account name 🔞	Role ②				
my-service-account	Owner				
Service account ID					
my-service-account		G			
Furnish a new private key Downloads a file that contains the private key. Sto can't be recovered if lost.	ore the file securely beca	use this key			
Downloads a file that contains the private key. Sto		use this key			

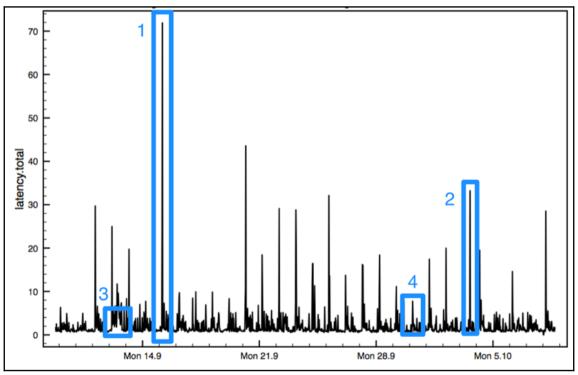


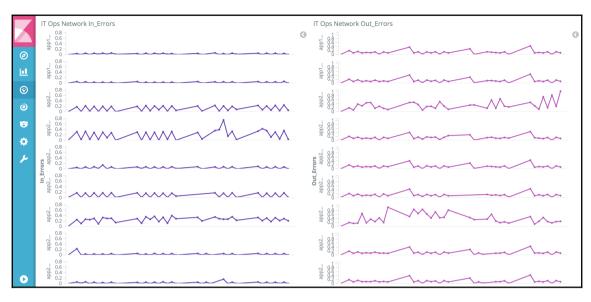


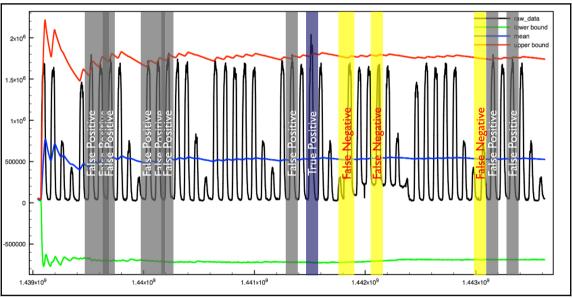


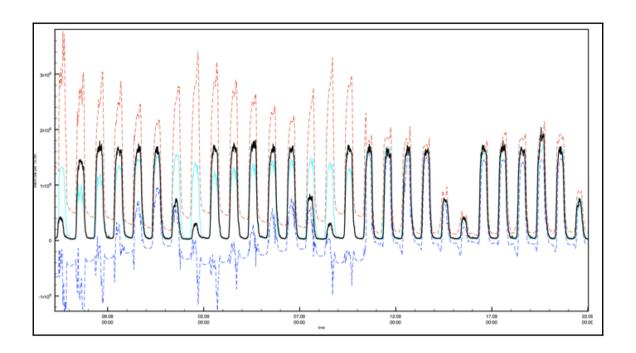
Chapter 8: Anomaly Detection in Kibana 5.0

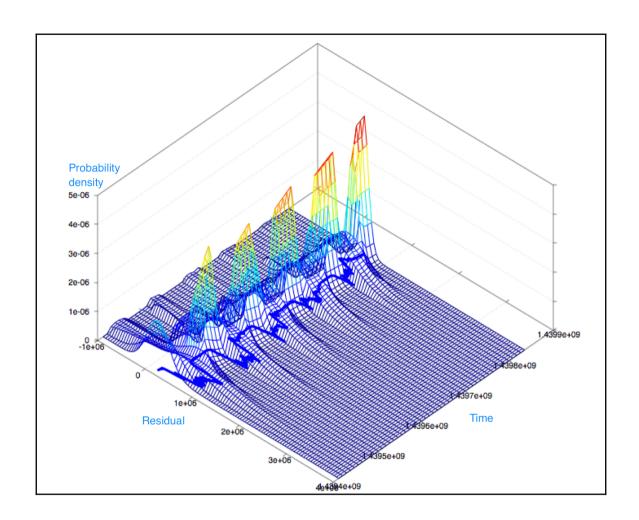


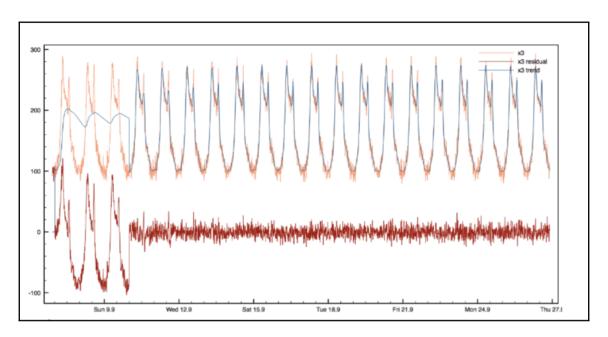


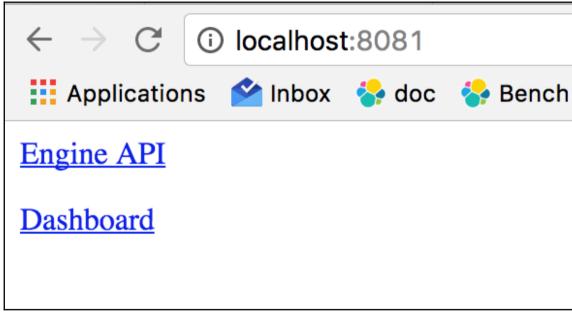












Prelert Engine API 2.1.2

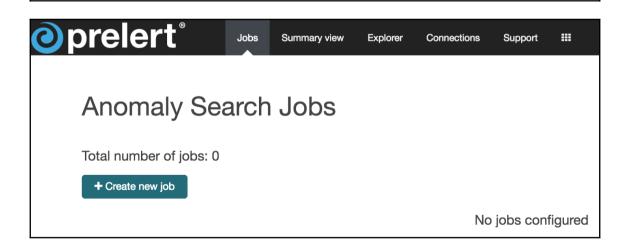
Analytics Version:

Model State Version 31 Quantile State Version 3

prelert_autodetect_api (64 bit): Version 6.3.1 (Build 77be586fe61a46) Copyright (c) Prelert Ltd 2006-2016

Hostname MacBook-Pro-de-Bahaaldine.local

OS Name Mac OS X
OS Version 10.12
Total Memory Size MB 16384
Total Disk MB 475928
Available Disk MB 100333



Create a new job

Choose a data source



Elasticsearch server

Specify the address of an Elasticsearch server.



File upload

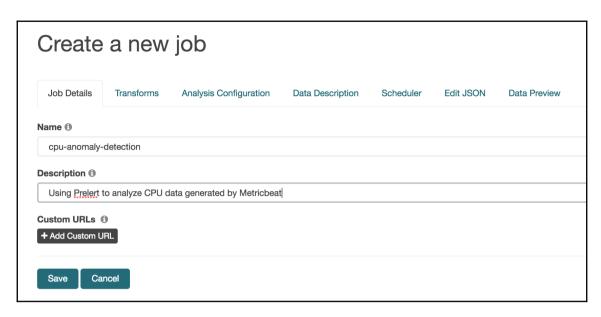
Upload a file containing a data set. Maximum size is 100MB.



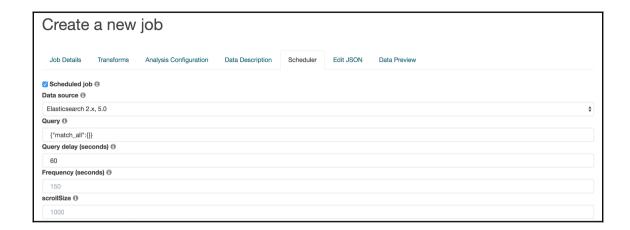
Other data source

Create a job without reference to source data. Specify fields manually and upload data later using the API.

Create a new job
Elasticsearch server address ①
http://localhost:9200
Authenticated 1
• Input index
Choose index from list
Index
metricbeat*
Types
☐ All types
default_
✓ metricsets
Time-field name
@timestamp
Time format
yyyy-MM-dd'T'HH:mm:ss.SSSX
e.g. 2016-03-24'T'16:20:24.611+0100
Back Next







Start scheduler for test

Search start time

Start at beginning of data

Start now

Specify start time

Search end time

No end time (Realtime search)

Specify end time

2016-12-05 12:07:00.487

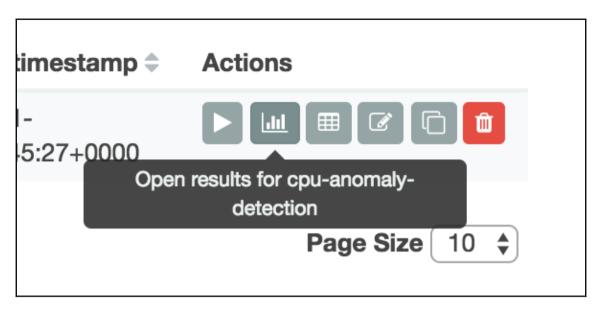
YYYY-MM-DD HH:mm:ss.SSS

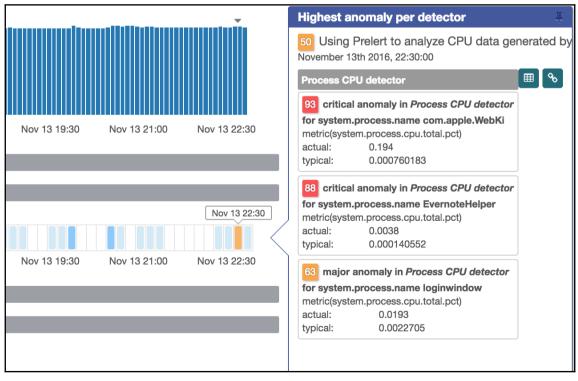
111111111111111111111111111111111111111						
December 2016					>	
Mon	Tue	Wed	Thu	Fri	Sat	
28	29	30	01	02	03	
05	06	07	08	09	10	
12	13	14	15	16	17	
19	20	21	22	23	24	
26	27	28	29	30	31	
02	03	04	05	06	07	
	Mon 28 05 12 19 26	Mon Tue 28 29 05 06 12 13 19 20 26 27	December Mon Tue Wed 28 29 30 05 06 07 12 13 14 19 20 21 26 27 28	December 2016 Mon Tue Wed Thu 28 29 30 01 05 06 07 08 12 13 14 15 19 20 21 22 26 27 28 29	December 2016 Mon Tue Wed Thu Fri 28 29 30 01 02 05 06 07 08 09 12 13 14 15 16 19 20 21 22 23 26 27 28 29 30	

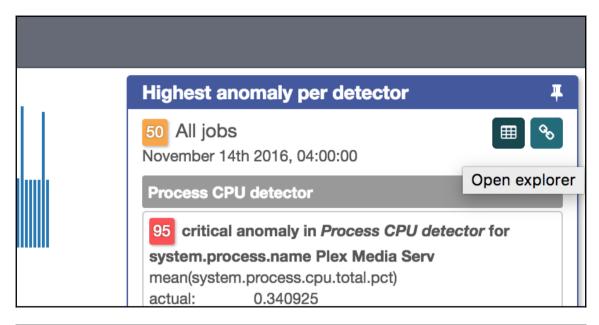
Start

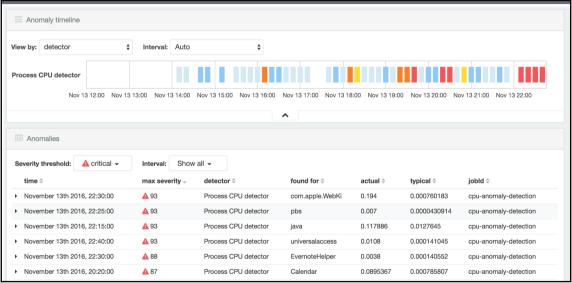
Cancel

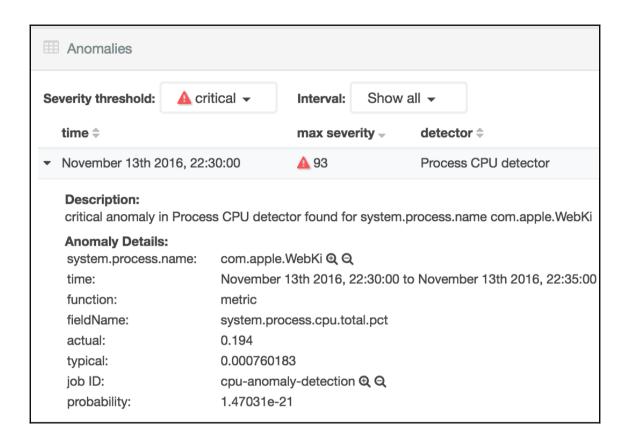
Search name \$	Description \$	Processed records \$	Memory status \$	Job status \$	Scheduler status \$	Latest timestamp \$	Actions
 cpu-anomaly- detection 	Using Prelert to analyze CPU data generated by Metricbeat	117,991	OK	RUNNING	STARTED	2016-11- 13T12:17:27+0000	

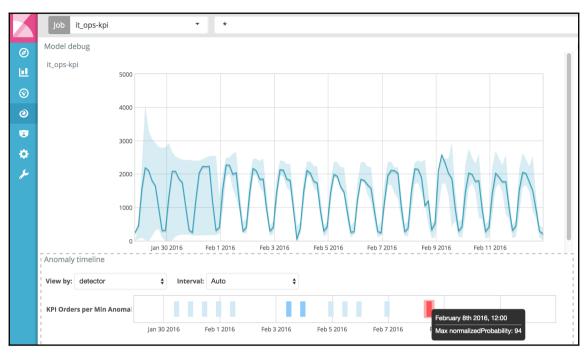


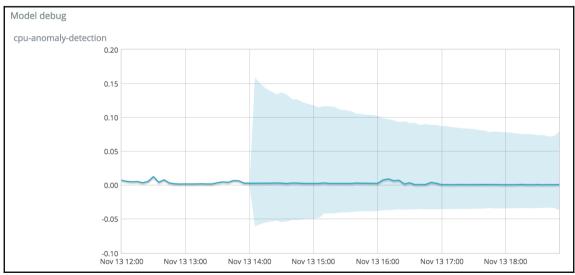


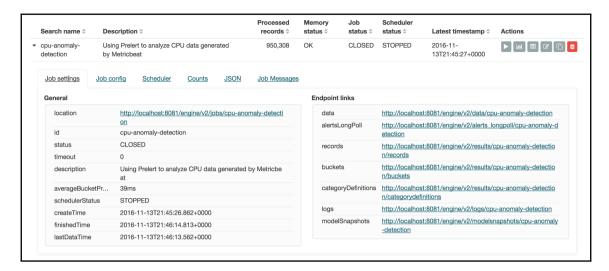


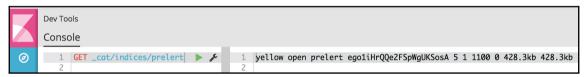


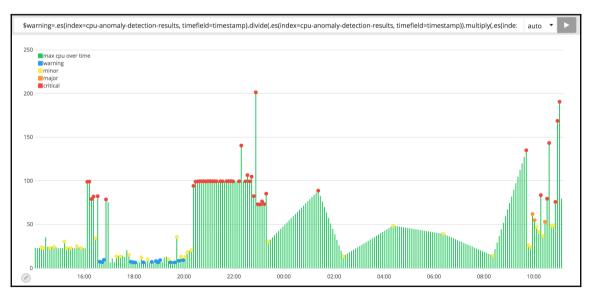










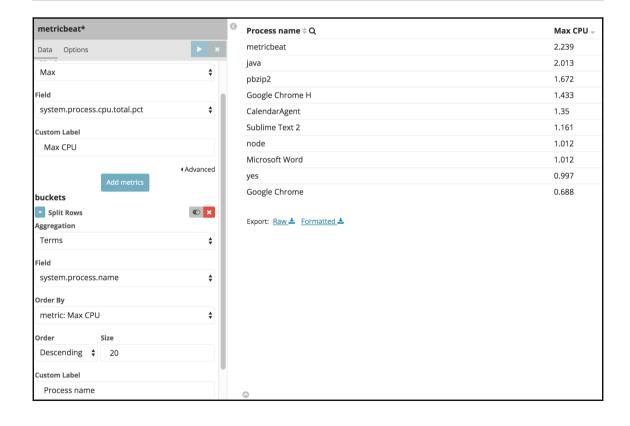


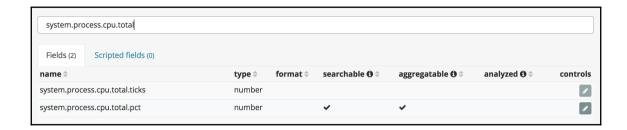
Save entire Timelion sheet

You want this option if you mostly use Timelion expressions from within the Timelion app and don't need to add Timelion charts to Kibana dashboards. You may also want this if you make use of references to other panels.

Save current expression as Kibana dashboard panel

Need to add a chart to a Kibana dashboard? We can do that! This option will save your currently selected expression as a panel that can be added to Kibana dashboards as you would add anything else. Note, if you use references to other panels you will need to remove the refences by copying the referenced expression directly into the expression you are saving. Click a chart to select a different expression to save.





metricbeat* system.process.cpu.total.pct

Type

number

Format (Default: Number)

✓ - default -

Url

Bytes

Duration

Number

Percentage

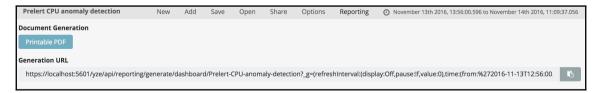
String

Color

Boolean







Management / Kibana

Index Patterns Saved Objects Reporting Advanced Settings

Generated Reports

Filter Reports: **⊘** Only show my reports

Document	Added
Prelert CPU anomaly detection dashboard	2016-11-14 @ 5:09 PM elastic
Prelert CPU anomaly detection dashboard	2016-11-14 @ 3:05 PM elastic

Chapter 9: Creating a Custom Plugin for Kibana 5.0

