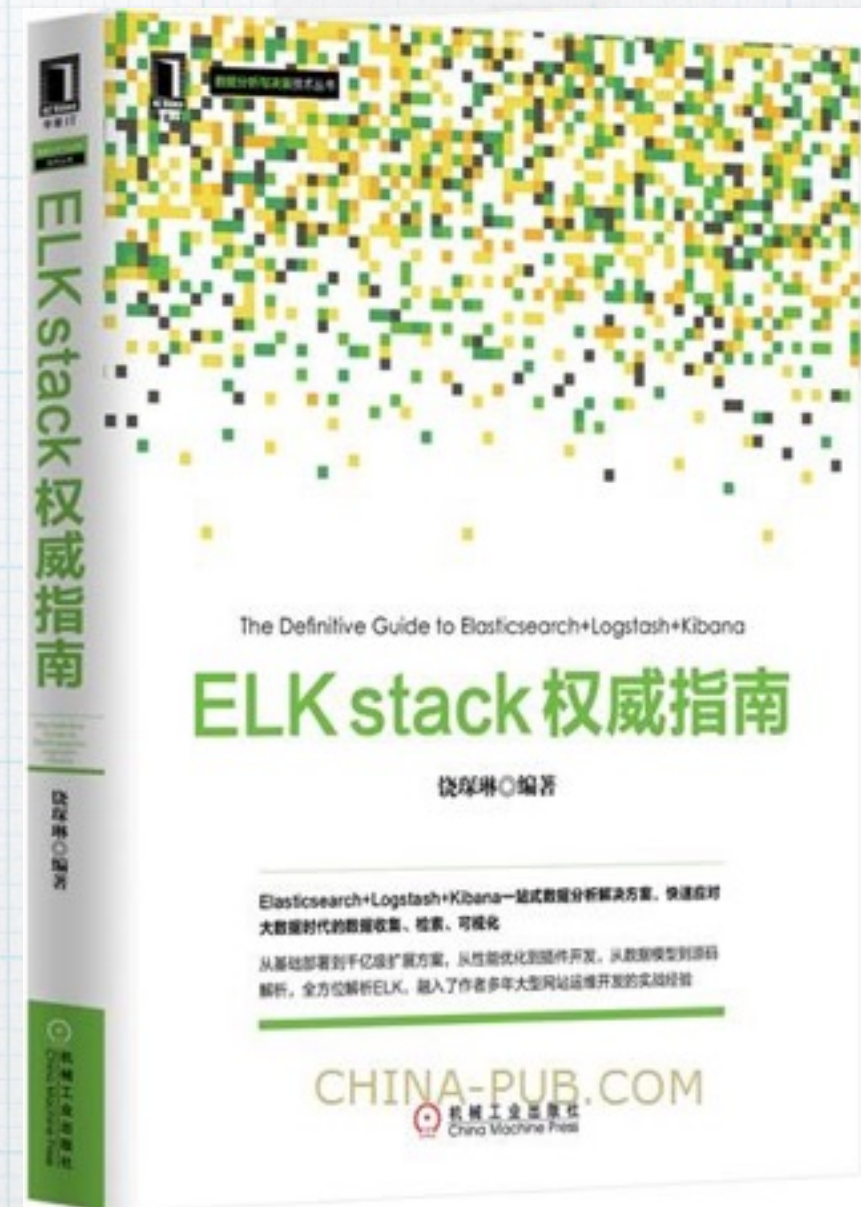


{{More}} Kibana4

@argv

Who am I

- * Perl Monger
- * Author of <网站运维技术与实践>, <ELK stack权威指南>
- * SRE Architect @weibo.com
- * weibo: @ARGV
- * github: <https://github.com/chenryn>
- * blog: <http://chenlinux.com>



ELK and I

- * Using ELK from 2012
- * <Logstash Intro> at slideshare.net had 24546 views
- * <Elasticsearch in DevOps life> at PerlConf 2013
- * <{{{More}}} Kibana> at ESCC 2014
- * <10 billion logs/day in ELK> at WOT 2015
- * <10 billion logs/day in ELK> at PHPCon 2015

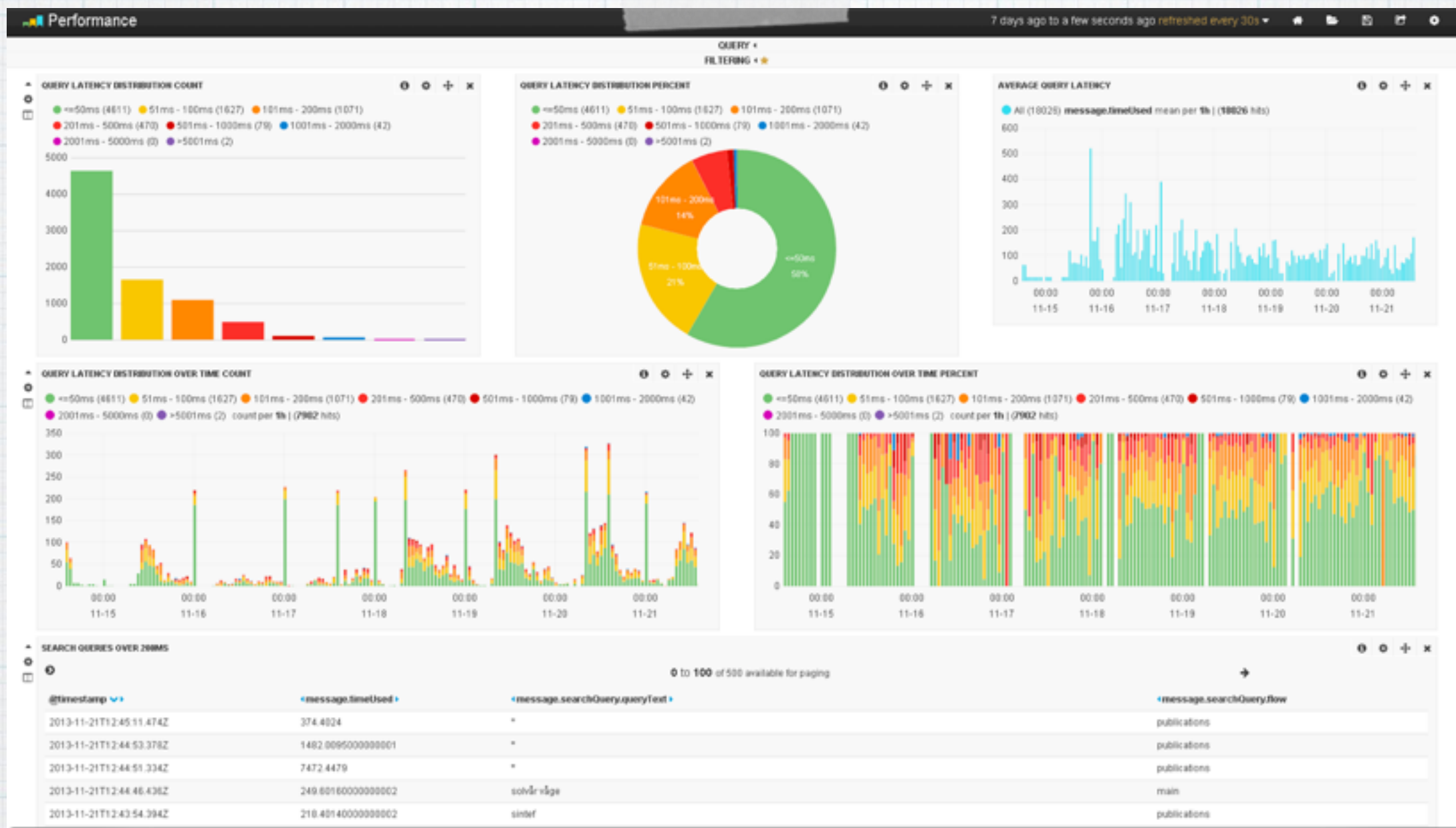


Kibana eki(木花駅)

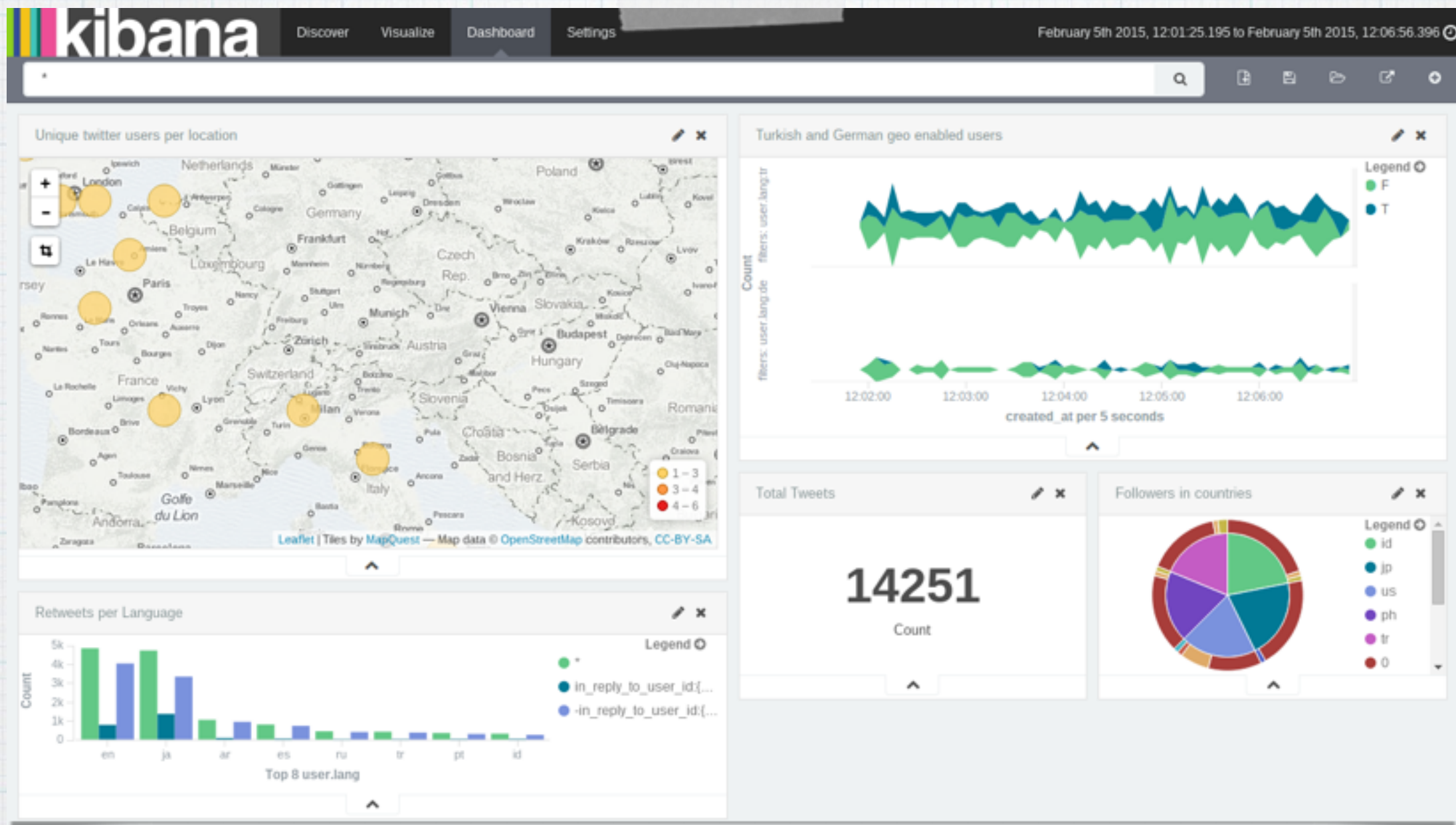
<https://en.wikipedia.org/wiki/Kibana_Station>



Kibana2



Kibana3



Kibana4

Kibana4 Intro

- * hapi.js(node.js framework) + angular.js(page framework) + d3.js(visualize) + elasticsearch.js(ORM)
- * plugin infrastructure
- * aggregations
- * scripted field

Kibana4 Usage

- * Discover
- * Visualize
- * Dashboard
- * Setting

Discover

kibana Discover Visualize Dashboard Settings

slow 搜索框

时间选择器 Last 15 minutes

命中数 2,471 hits

索引切换

- logstash-mweibo-YYYY.MM.DD
- logstash-mweibo-nginx-YYYY.MM.DD
- logstash-mweibo-vip-YYYY.MM.DD
- logstash-php-YYYY.MM.DD
- logstash-weibo-YYYY.MM.DD

Selected Fields

Available Fields

Popular

- connect_ms
- dns_ms
- @timestamp
- @version
- _id
- _index
- _type
- execute-starttransfer
- host
- id

Quick Count (500/500 records)

- 65.0%
- 29.2%
- 2.6%
- 1.8%
- 1.4%

Visualize

常用字段优先

自动高亮

单击跳转到可视化

单条日志链接

Link to /logstash-mweibo-2015.09.10/php-fpm/AU-1lMiyHkeo12qWUXYt

当前时间点

September 10th 2015, 12:33:13.330 - September 10th 2015, 12:48:13.330 - by 30 seconds

Count

@timestamp per 30 seconds

September 10th 2015, 12:47:56.898

message: [WARNING] [pool v5.weibo.cn] child 38304, script '/data1/v5.weibo.cn/code/public/index.php' (request: "POST /index.php//2/statuses/friends_timeline") executing too slow (3.435462 sec), logging @version: 1 @timestamp: September 10th 2015, 12:47:56.898 host: web221.mweibo.yf.sinanode.com type: php-fpm id: yf level: WARNING

information: [pool v5.weibo.cn] child 38304, script '/data1/v5.weibo.cn/code/public/index.php' (request: "POST /index.php//2/statuses/friends_timeline") executing too slow (3.435462 sec), logging _id: AU-1lQjzEO-19uwoMH0n _type: php-fpm _index: logstash-mweibo-2015.09.10 pretransfer - connect: 0 dns_ms: 0 starttransfer-pretran

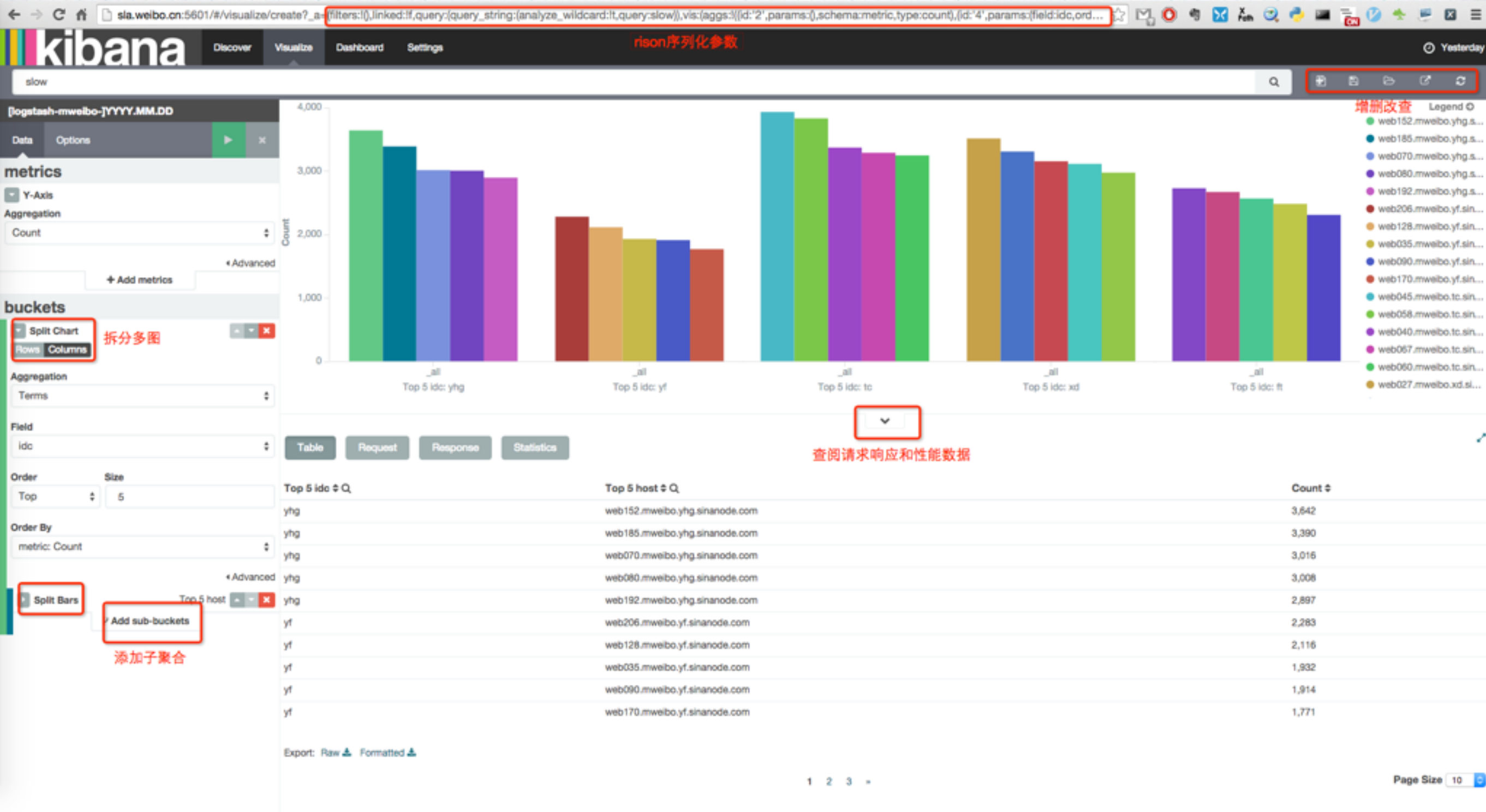
September 10th 2015, 12:47:51.000

message: [WARNING] [pool v5.weibo.cn] child 47625, script '/data1/v5.weibo.cn/code/public/index.php' (request: "GET /index.php//2/statuses/friends_timeline") executing too slow (3.020533 sec), logging @version: 1 @timestamp: September 10th 2015, 12:47:51.000 host: web058.mweibo.yf.sinanode.com type: php-fpm id: yf level: WARNING

information: [pool v5.weibo.cn] child 47625, script '/data1/v5.weibo.cn/code/public/index.php' (request: "GET /index.php//2/statuses/friends_timeline") executing too slow (3.020533 sec), logging _id: AU-1lMiyHkeo12qWUXYt _type: php-fpm _index: logstash-mweibo-2015.09.10 pretransfer - connect: 0 dns_ms: 0 starttransfer-pretran

Table	JSON
@timestamp	September 10th 2015, 12:47:51.000
@version	1
_id	AU-1lMiyHkeo12qWUXYt
_index	logstash-mweibo-2015.09.10
_type	php-fpm
connect_ms	0
dns_ms	0
execute-starttransfer	0
host	web058.mweibo.yf.sinanode.com

Visualize

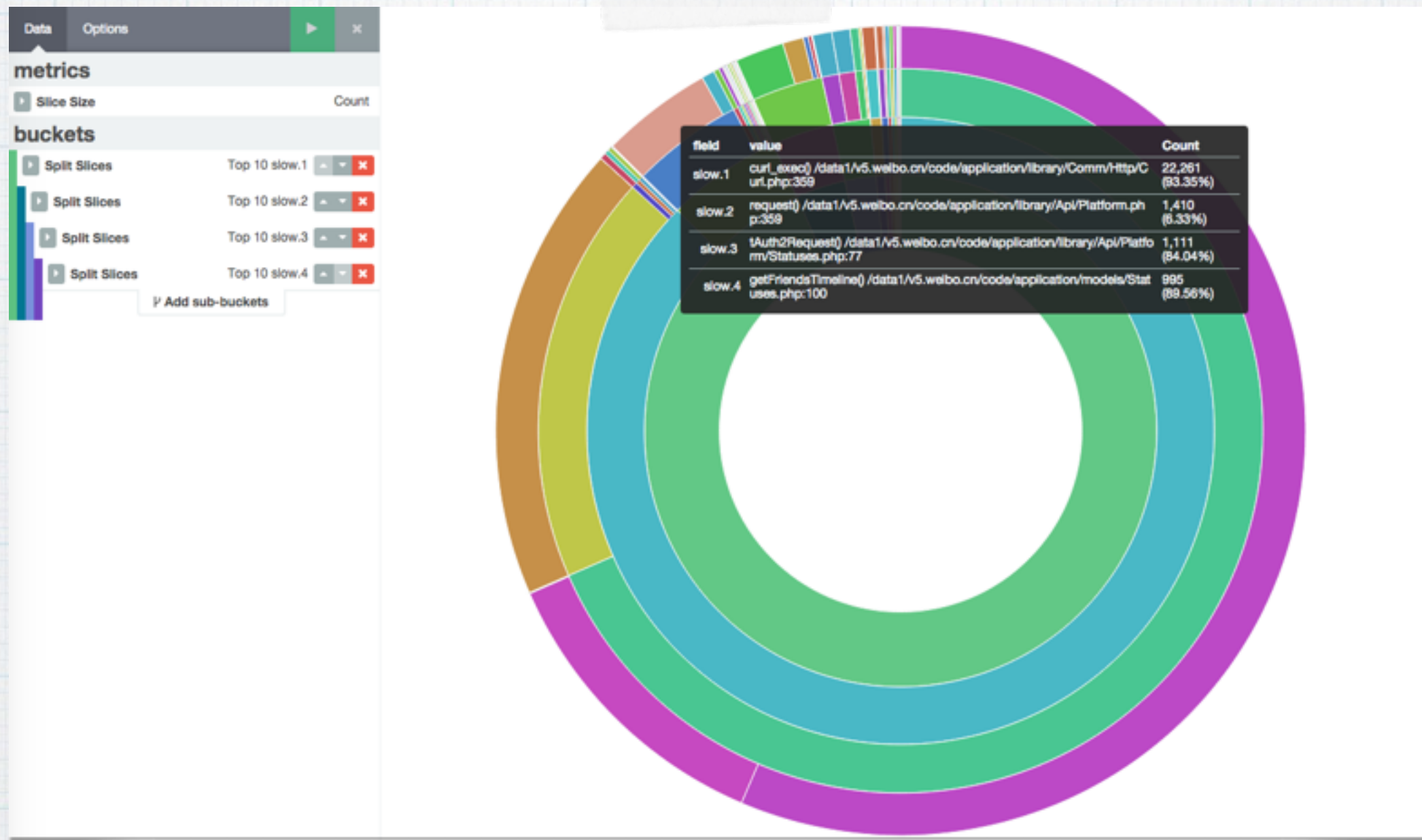


metric aggs

- * Count
- * Average
- * Max
- * Min
- * Sum
- * Percentile
- * Percentile_Rank
- * Uniq

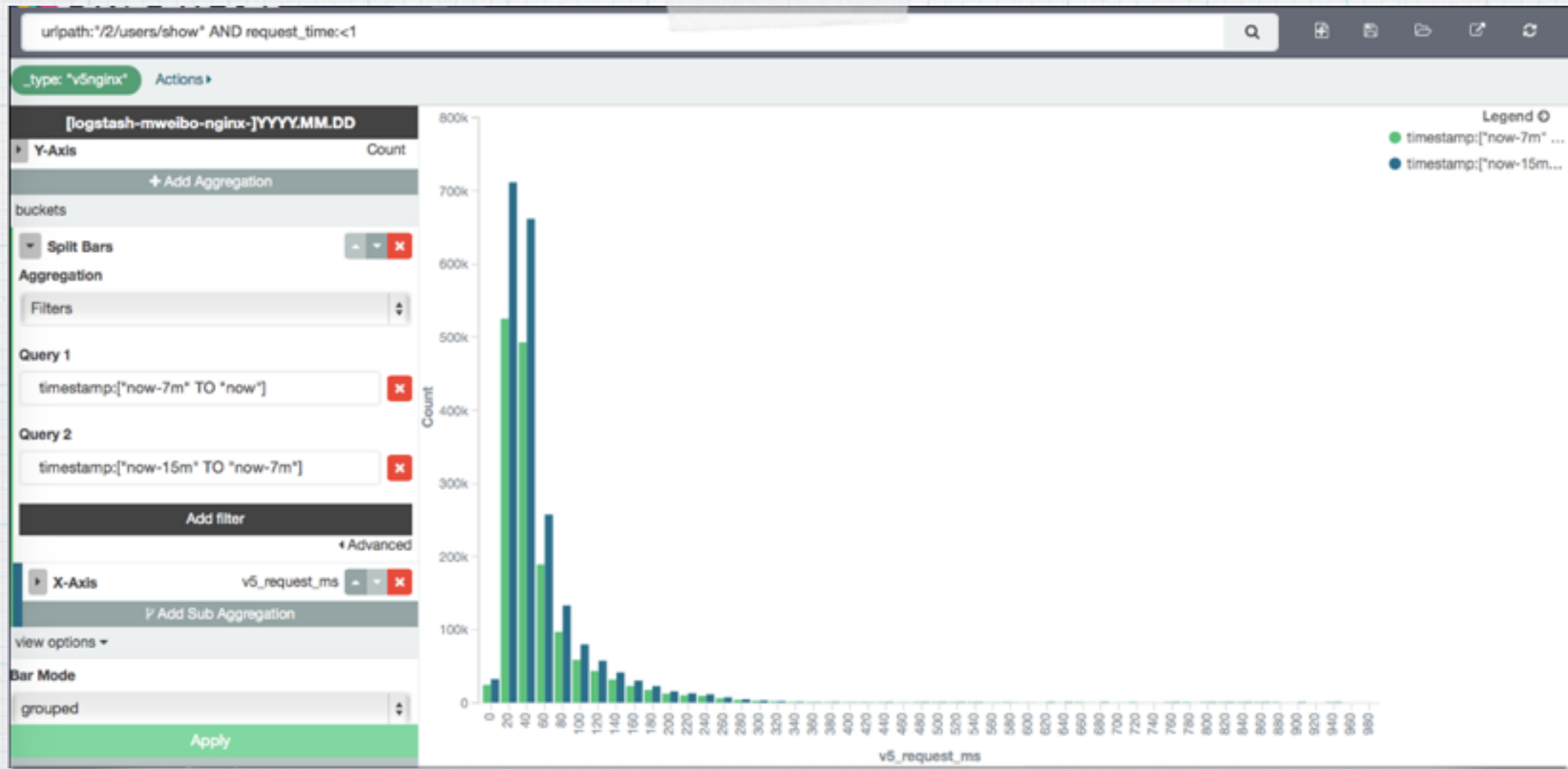
bucket aggs

- * date_histogram
- * histogram
- * terms
- * range
- * date_range
- * ip_range
- * filters
- * significant_terms



agg vs facet(1)

sub aggs



agg vs facet(2)

facet_filter vs filter agg

agg vs facet(3)

```
# curl -XGET 'http://127.0.0.1:9200/logstash-2015.09.08/_search?size=0' -  
d'{"facets":{"terms":{"terms":{"field":"_type"}}}}
```

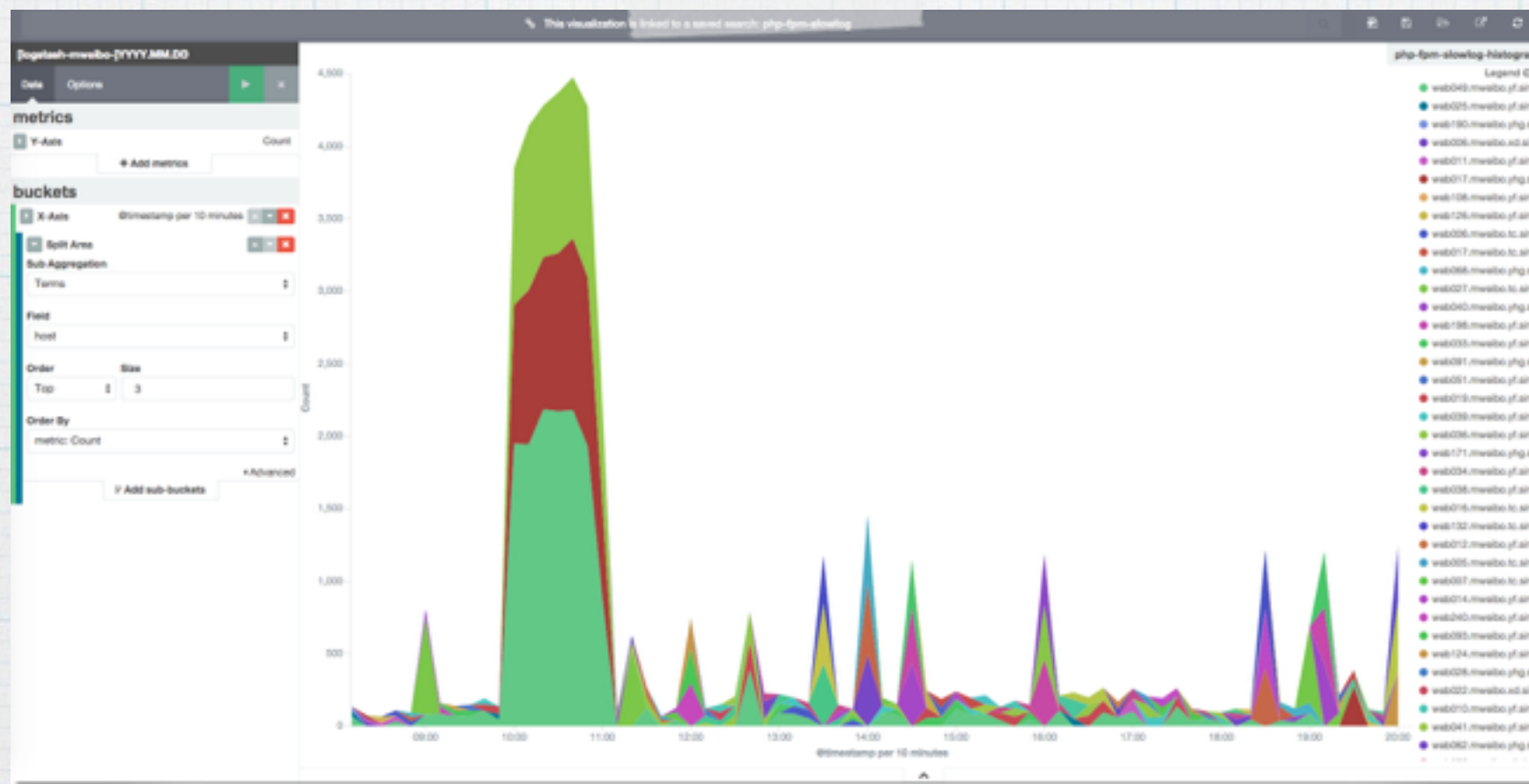
```
{"took":8896,"timed_out":false,"_shards":{"total":81,"successful":81,"failed":  
0},"hits":{"total":7081889358,"max_score":0.0,"hits":[1]},"facets":{"terms":  
{"_type":"terms","missing":0,"total":7081889358,"other":  
8589934592,"terms":[{"term":"v5access","count":-1508045234}1]}}
```

```
# curl -XGET 'http://127.0.0.1:9200/logstash-2015.09.08/_search?size=0' -  
d'{"aggs":{"terms":{"terms":{"field":"_type"}}}}
```

```
{"took":10896,"timed_out":false,"_shards":{"total":81,"successful":81,"failed":  
0},"hits":{"total":7081889358,"max_score":0.0,"hits":[1]},"aggregations":  
{"terms":{"doc_count_error_upper_bound":0,"sum_other_doc_count":  
0,"buckets":[{"key":"v5access","doc_count":7081889358}1]}}
```

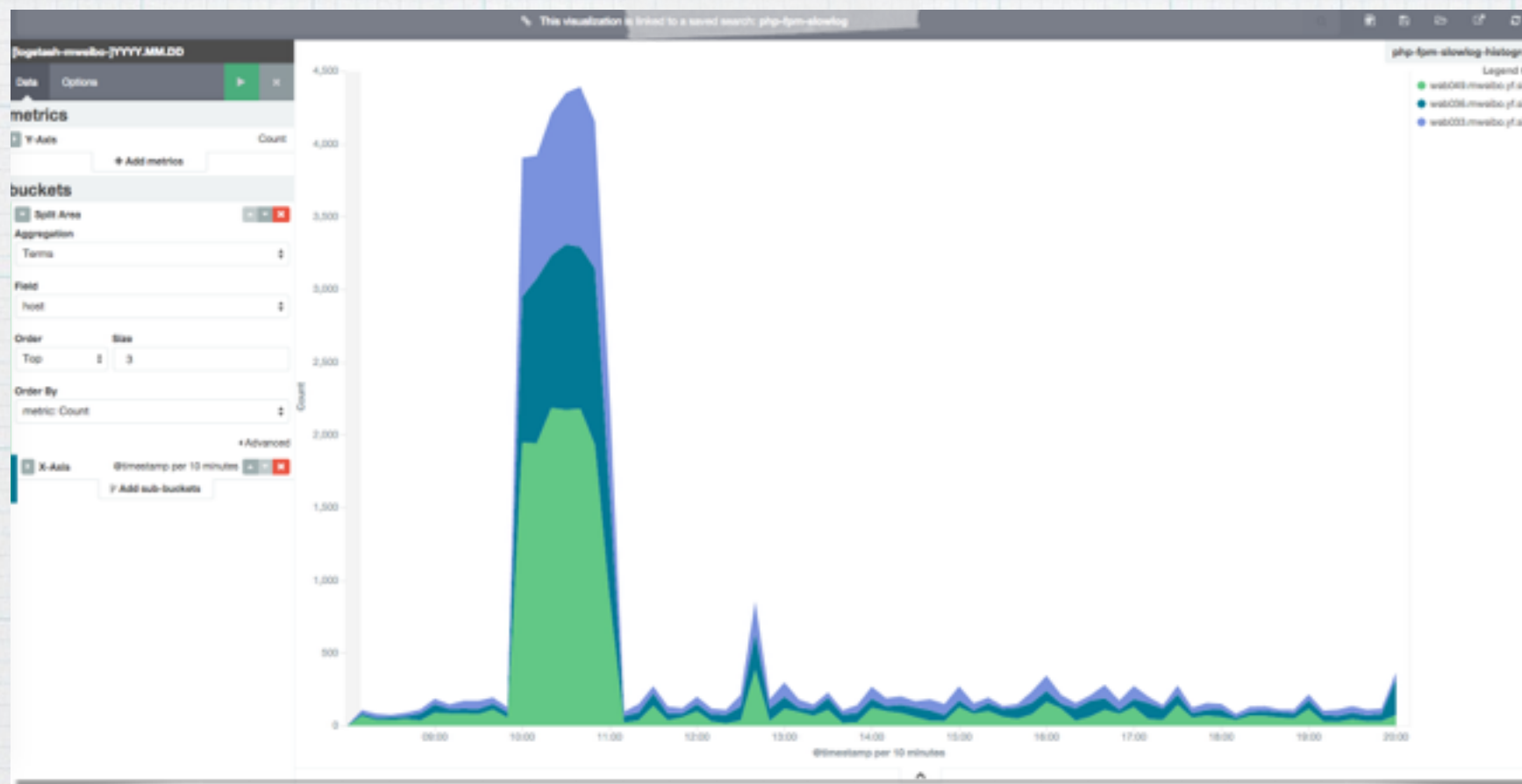

rison url

- * `http://k4domain:5601/#/visualize/edit/php-fpm-slowlog-histogram?_g=(refreshInterval:(display:Off,pause:!f,section:0,value:0),time:(from:now-12h,mode:quick,to:now))&_a=(filters:!([]),linked:!t,query:(query_string:(query:*)),vis:(aggs:!(id:'1',params:(),schema:metric,type:count),id:'2',params:(customInterval:'2h',extended_bounds:(),field:'@timestamp',interval:auto,min_doc_count:1),schema:segment,type:date_histogram),id:'3',params:(field:host,order:desc,orderBy:'1',size:3),schema:group,type:terms)),listeners:(),params:(addLegend:!t,addTimeMarker:!f,addTooltip:!t,defaultYExtents:!t,interpolate:linear,mode:stacked,scale:linear,setYExtents:!f,shareYAxis:!t,smoothLines:!f,times:!([]),yAxis:(),type:area))`



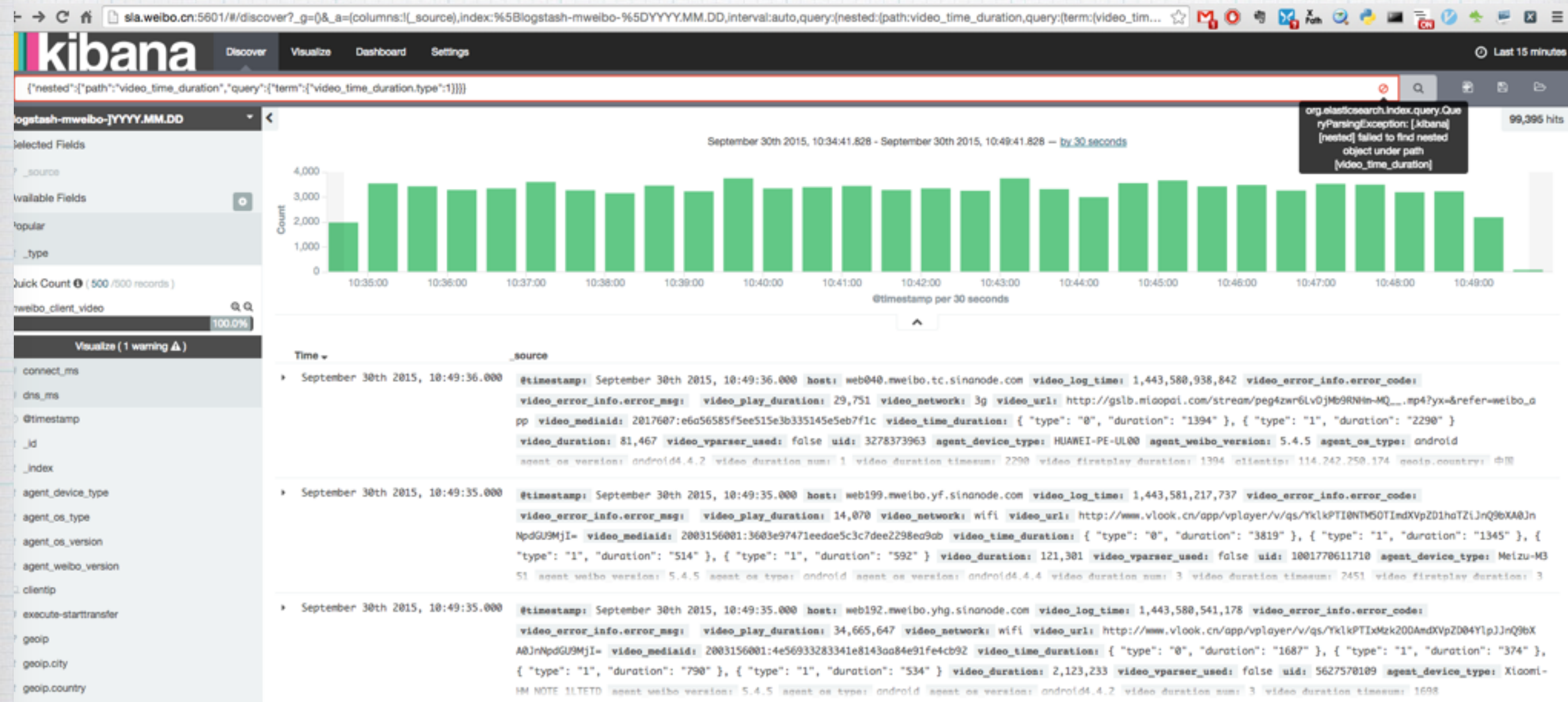
rison url

- * `http://k4domain:5601/#/visualize/edit/php-fpm-slowlog-histogram?_g=(refreshInterval:(display:Off,pause:!f,section:0,value:0),time:(from:now-1 2h,mode:quick,to:now))&_a=(filters:!(),linked:!t,query:(query_string:(query:'*')),vis:(aggs:!((id:'1',params:(),schema:metric,type:count),(id:'3',params:(field:host,order:desc,orderBy:'1',size:3),schema:group,type:terms),(id:'2',params:(customInterval:'2h',extended_bounds:(),field:@timestamp,interval:auto,min_doc_count:1),schema:segment,type:date_histogram)),listeners:(),params:(addLegend:!t,addTimeMarker:!f,addTooltip:!t,defaultYExtents:!t,interpolate:linear,mode:stacked,scale:linear,setYExtents:!f,shareYAxis:!t,smoothLines:!f,times:!(),yAxis:()),type:area))`



rison url

* `http://sla.weibo.cn:5601/#/discover?_g=()&_a=(columns:!(_source),index:%5Blogstash-mweibo-%5DYYYYY.MM.DD,interval:auto,query:(nested:(path:video_time_duration,query:(term:(video_time_duration.type:1))))),sort:!(@timestamp,desc))`



setting

* scripted fields for visualize













Fields (335)

Scripted fields (6)

Scripted fields

These scripted fields are computed on the fly from your data. They can be used in visualizations and displayed in your documents, however they can not be searched. You can manage them here and add new ones as you see fit, but be careful, scripts can be tricky!

+ Add Scripted Field

name ⇅	script ⇅	format ⇅	controls
connect_ms	1000*(doc["connect_time"].value-doc["namelookup_time"].value)		 
dns_ms	1000*doc["namelookup_time"].value		 
pretransfer - connect	1000*(doc["pretransfer_time"].value-doc["connect_time"].value)		 
starttransfer-pretransfer	1000*(doc["starttransfer_time"].value-doc["pretransfer_time"].value)		 
execute-starttransfer	1000*(doc["execute_time"].value-doc["starttransfer_time"].value)		 
total-execute	1000*(doc["total_time"].value-doc["execute_time"].value)		 

connect_ms

Type

number

Format (Default: Number)

Warning

Format Warning

Formatting allows you to control the way that specific values are displayed. It can also cause values to be completely changed and prevent highlighting in Discover from working.

- default -

Popularity

8

+

-

Script

```
1000*(doc["connect_time"].value-doc["namelookup_time"].value)
```

Proceed with caution

Please familiarize yourself with [script fields](#) and with [scripts in aggregations](#) before using scripted fields.

Scripted fields can be used to display and aggregate calculated values. As such, they can be very slow, and if done incorrectly, can cause Kibana to be unusable. There's no safety net here. If you make a typo, unexpected exceptions will be thrown all over the place!

Scripting Help

By default, Elasticsearch scripts use [Lucene Expressions](#), which is a lot like JavaScript, but limited to basic arithmetic, bitwise and comparison operations. We'll let you do some reading on [Lucene Expressions](#). To access values in the document use the following format:

```
doc['some_field'].value
```

There are a few limitations when using Lucene Expressions:

- Only numeric fields may be accessed
- Stored fields are not available
- If a field is sparse (only some documents contain a value), documents missing the field will have a value of 0

Here are all the operations available to scripted fields:

- Arithmetic operators: + - * / %
- Bitwise operators: | & ^ ~ << >> >>>
- Boolean operators (including the ternary operator): && || ! ?:
- Comparison operators: < <= == >= >
- Common mathematic functions: abs ceil exp floor ln log10 logn max min sqrt pow
- Trigonometric library functions: acosh acos asinh asin atanh atan atan2 cosh cos sinh sin tanh tan

Over?

groovy script

- * `curl http://127.0.0.1:9200/.kibana/index-pattern/[logstash-YYYY.MM.DD]/_source/fields`
- * **pre**-fetch field list from ES mapping, and scripted field defined as follow:
- * `{"name":"pretransfer - connect","type":"number","count":0,"scripted":true,"script":"1000*(doc[\"pretransfer_time\"][1].value-doc[\"connect_time\"][1].value)\",\"lang\":\"expression\",\"indexed\":false,\"analyzed\":false,\"doc_values\":false}`

Kibana Plugin

- * `app(appSwitcher,kibana,statusPage)`
- * `apps`
- * `visTypes(kbn_vislib_vis_types,markdown_vis,
metric_vis,table_vis)`
- * `fieldFormats`
- * `spyModes(devMode,spyMode)`
- * `bundle`

field formatter

response

Type

string

Format (Default: String)

⚠ Warning

Url

Type

Image

Url Template

ℹ Url Template Help

http://httpcats.herokuapp.com/{{value}}

Label Template

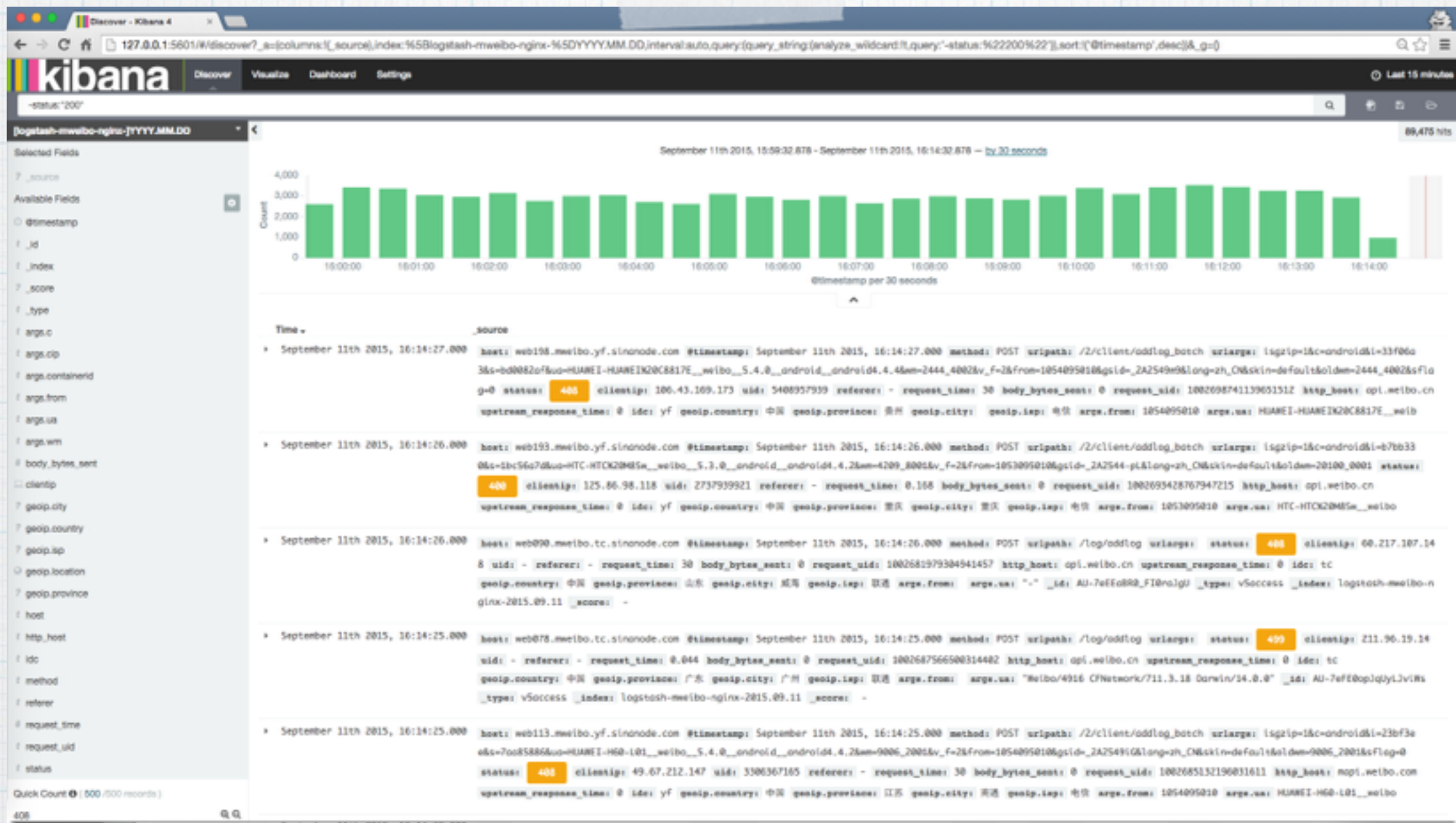
ℹ Label Template Help

{{value}}

- * <https://www.elastic.co/blog/kibana-custom-field-formatters>
- * for example:
 - * define CSS class with btn-info/btn-warning/btn-danger

HttpCode.js

```
define(function (require) {
  return function HttpCodeFormatProvider(Private) {
    var _ = require('lodash');
    var FieldFormat = Private(require('ui/index_patterns/_field_format/FieldFormat'));
    _.class(HttpCode).inherits(FieldFormat);
    function HttpCode(params) {
      HttpCode.Super.call(this, params);
    }
    HttpCode.id = 'httpcode';
    HttpCode.title = 'HttpCode';
    HttpCode.fieldType = ['string'];
    HttpCode.editor = require('ui/stringify/editors/httpcode.html');
    HttpCode.sampleInputs = ['200', '403', '503'];
    HttpCode.paramDefaults = {
      warning: 400,
      critical: 500,
    };
    HttpCode.prototype._convert = {
      text: _.escape,
      html: function (val) {
        var code = parseInt(_.escape(val));
        if (code < parseInt(this.param('warning'))) {
          return code;
        } else if (code < parseInt(this.param('critical'))) {
          return '<button type="button" class="btn btn-small btn-warning">' + code + '</button>';
        } else {
          return '<button type="button" class="btn btn-small btn-danger">' + code + '</button>';
        }
      }
    };
    return HttpCode;
  };
});
```

HttpCode formatter

sankey visualize

<<https://github.com/elastic/kibana/pull/4832>>

- * `src/plugins/kbn_vislib_vis_types/public/sankeyjs`
- * `src/plugins/kbn_vislib_vis_types/public/editors/sankey.html`
- * (register in `src/plugins/kbn_vislib_vis_types/public/kbn_vislib_vis_types.js`)
- * `src/ui/public/agg_response/sankey/sankeyjs`
- * (register in `src/ui/public/agg_response/index.js`)
- * `src/ui/public/vislib/lib/handler/types/sankeyjs`
- * (register in `src/ui/public/vislib/lib/handler/handler_types.js`)
- `src/ui/public/vislib/lib/layout/splits/sankey/sankey_splitjs`
- * `src/ui/public/vislib/lib/layout/types/sankey_layoutjs`
- * (register in `src/ui/public/vislib/lib/layout/layout_types.js`)
- * `src/ui/public/vislib/visualizations/sankey_chartjs`
- * (register in `src/ui/public/vislib/visualizations/vis_types.js`)

VislibVisType

- * editor

- * schemas

- * aggFilter

- * converter

- * hierarchical

- * point series

- * geo json

- * add `sankeyConverter` in
src/ui/public/
vislib_vis_type/
VislibVisType.js

```
1 +define(function (require) {
2 +  return function HistogramVisType(Private) {
3 +    var VislibVisType = Private(require('ui/vislib_vis_type/VislibVisType'));
4 +    var Schemas = Private(require('ui/Vis/Schemas'));
5 +    var sankeyBuilder = Private(require('ui/agg_response/sankey/sankey'));
6 +
7 +    return new VislibVisType({
8 +      name: 'sankey',
9 +      title: 'Sankey chart',
10 +      icon: 'fa-sankey-chart',
11 +      description: 'Sankey charts are ideal for displaying the parts of some whole. For example, sales percentages.',
12 +      'Pro Tip: Sankey charts are best used sparingly, and with no more than 7 slices per sankey.',
13 +      params: {
14 +        defaults: {
15 +          shareYAxis: false,
16 +          isDonut: false
17 +        },
18 +        editor: require('plugins/kbn_vislib_vis_types/editors/sankey.html')
19 +      },
20 +      sankeyConverter: sankeyBuilder,
21 +      hierarchicalData: false,
22 +      schemas: new Schemas([
23 +        {
24 +          group: 'metrics',
25 +          name: 'metric',
26 +          title: 'Slice Size',
27 +          min: 1,
28 +          aggFilter: ['sum', 'count', 'cardinality'],
29 +          defaults: [
30 +            { schema: 'metric', type: 'count' }
31 +          ]
32 +        },
33 +        {
34 +          group: 'buckets',
35 +          name: 'segment',
36 +          icon: 'fa fa-scissors',
37 +          title: 'Split Slices',
38 +          min: 0,
39 +          max: Infinity,
40 +          aggFilter: '!geohash_grid'
41 +        },
42 +        {
43 +          group: 'buckets',
44 +          name: 'split',
45 +          icon: 'fa fa-th',
46 +          title: 'Split Chart',
47 +          mustBeFirst: true,
48 +          min: 0,
49 +          max: 1,
50 +          aggFilter: '!geohash_grid'
51 +        }
52 +      ])
53 +    });
54 +  };
55 +});
```


agg_response

- * convert es resp into sankey data as follow:

- * {

- * "nodes":[{"name":""}]

- * "links":[{"source":1,"target":2,"value":3}]

- * }

```
1 +define(function (require) {
2 +   return function sankeyProvider(Private, Notifier) {
3 +     var _ = require('lodash');
4 +     var arrayToLinkedList = require('ui/agg_response/hierarchical/_array_to_linked_list');
5 +     var notify = new Notifier({
6 +       location: 'Sankey chart response converter'
7 +     });
8 +     var nodes = {};
9 +     var links = {};
10 +    var lastNode = -1;
11 +
12 +    function processEntry(aggConfig, aggData, prevNode) {
13 +      +    _.each(aggData.buckets, function (b) {
14 +        +      if (isNaN(nodes[b.key])) {
15 +        +        nodes[b.key] = lastNode + 1;
16 +        +        lastNode = _.max(_.values(nodes));
17 +        +      }
18 +        +      if (aggConfig._previous) {
19 +        +        var k = prevNode + 'sankeysplitchar' + nodes[b.key];
20 +        +        if (isNaN(links[k])) {
21 +        +          links[k] = b.doc_count;
22 +        +        } else {
23 +        +          links[k] += b.doc_count;
24 +        +        }
25 +        +      }
26 +        +      if (aggConfig._next) {
27 +        +        processEntry(aggConfig._next, b[aggConfig._next.id], nodes[b.key]);
28 +        +      }
29 +        +    });
30 +    }
31 +
32 +    return function (vis, resp) {
33 +
34 +      var buckets = vis.aggs.bySchemaGroup.buckets;
35 +      buckets = arrayToLinkedList(buckets);
36 +      if (!buckets) {
37 +        return {'slices':{'nodes':[],'links':[]}};
38 +      }
39 +
40 +      var firstAgg = buckets[0];
41 +      var aggData = resp.aggregations[firstAgg.id];
42 +
43 +      if (!firstAgg._next) {
44 +        notify.error('need more than one sub aggs');
45 +      }
46 +
47 +      processEntry(firstAgg, aggData, -1);
48 +
49 +      var invertNodes = _.invert(nodes);
50 +      var chart = {
51 +        'slices': {
52 +          'nodes' : _.map(_.keys(invertNodes), function (k) { return {'name':invertNodes[k]}; }),
53 +          'links' : _.map(_.keys(links), function (k) {
54 +            +      var s = k.split('sankeysplitchar');
55 +            +      return {'source': parseInt(s[0]), 'target': parseInt(s[1]), 'value': links[k]};
56 +          })
57 +        }
58 +      };
59 +
60 +      return chart;
61 +    }
62 +  }
63 +}
```



```

+define(function (require) {
+  return function SankeyChartFactory(Private) {
+    var d3 = require('d3');
+    var _ = require('lodash');
+    var $ = require('jquery');
+
+    var S = require('d3-plugins-sankey');
+    var formatNumber = d3.format(',.0f');
+    var format = function (d) { return formatNumber(d) + ' TWh'; };
+    var color = d3.scale.category20();
+
+    var Chart = Private(require('ui/vislib/visualizations/_chart'));
+    var errors = require('ui/errors');
+    _.class(SankeyChart).inherits(Chart);
+    function SankeyChart(handler, chartEl, chartData) {
+      if (!(this instanceof SankeyChart)) {
+        return new SankeyChart(handler, chartEl, chartData);
+      }
+      SankeyChart.Super.apply(this, arguments);
+
+      var charts = this.handler.data.getVisData();
+    }
  }
}

```

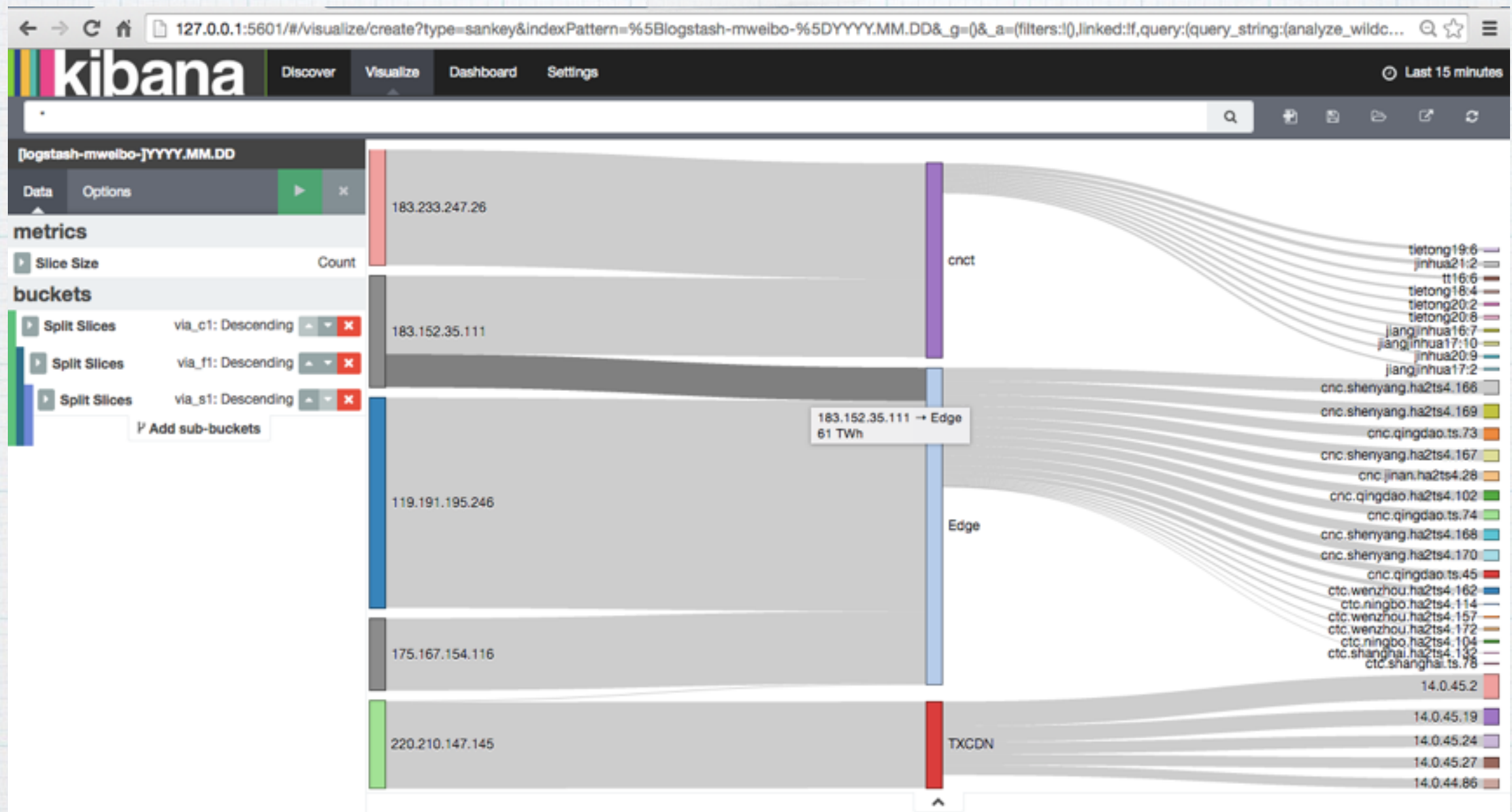
sankey chart(1)

1. require d3-plugins-sankey
2. inherits Chart

sankey chart(2)

1. svg.attr must use
 1. Chart._attr.width
 2. Chart._attr.height
2. selection came from `layout_split`;
3. svg data ops just like any sankey example.

```
SankeyChart.prototype.draw = function () {  
  var self = this;  
  var $elem = $(this.chartEl);  
  var margin = this._attr.margin;  
  var elWidth = this._attr.width = $elem.width();  
  var elHeight = this._attr.height = $elem.height();  
  var width;  
  var height;  
  var div;  
  var svg;  
  
  return function (selection) {  
    selection.each(function (data) {  
      var energy = data.slices;  
      div = d3.select(this);  
      width = elWidth - margin.left - margin.right;  
      height = elHeight - margin.top - margin.bottom;  
  
      if (!energy.nodes.length) return;  
  
      self._validateContainerSize(width, height);  
  
      svg = div.append('svg')  
        .attr('width', elWidth)  
        .attr('height', elHeight)  
        .append('g')  
        .attr('transform', 'translate(' + margin.left + ', ' + margin.top + ')');  
  
      var sankey = d3.sankey()  
        .nodeWidth(15)  
        .nodePadding(10)  
        .size([width, height]);  
  
      var path = sankey.link();  
  
      sankey  
        .nodes(energy.nodes)  
        .links(energy.links)  
        .layout(32);  
  
      var link = svg.append('g').selectAll('.link')  
        .data(energy.links)  
        .enter().append('path')  
        .attr('class', 'link')  
        .attr('d', path)  
        .style('stroke-width', function (d) { return Math.max(1, d.dy); })  
        .sort(function (a, b) { return b.dy - a.dy; });  
  
      link.append('title')  
        .text(function (d) { return d.source.name + ' → ' + d.target.name + '\n' + format(d.value); });  
  
      var node = svg.append('g').selectAll('.node')  
        .data(energy.nodes)  
        .enter().append('g')  
        .attr('class', 'node')  
        .attr('transform', function (d) { return 'translate(' + d.x + ', ' + d.y + ')'; })  
        .call(d3.behavior.drag());  
    });  
  };  
};
```

sankey visualize

karma testing

- * test `isSankey()` in src/ui/public/Vis/`__tests__`/_Vis.js
- * test `sankeyConverter` in src/ui/public/agg_response/sankey/`__tests__`/sankey.js
- * test `sankeyChart` in src/ui/public/vislib/`__tests__`/visualizations/sankey_chart.js

sankey test

1. fixtures/
fake_hierarchical_data
has a **threeTermBuckets**
data for pie chart
testing.
2. kibana-4.2.0 has 1949
tests, cost 30 min for
total running.

```
2 +var _ = require('lodash');
3 +var fixtures = require('fixtures/fake_hierarchical_data');
4 +var sinon = require('auto-release-sinon');
5 +var expect = require('expect.js');
6 +var ngMock = require('ngMock');
7 +
8 +var Vis;
9 +var Notifier;
10 +var AggConfigs;
11 +var indexPattern;
12 +var buildSankey;
13 +
14 +describe('sankey', function () {
15 +
16 +  beforeEach(ngMock.module('kibana'));
17 +  beforeEach(ngMock.inject(function (Private, $injector) {
18 +    Notifier = $injector.get('Notifier');
19 +    sinon.stub(Notifier.prototype, 'error');
20 +
21 +    Vis = Private(require('ui/Vis'));
22 +    AggConfigs = Private(require('ui/Vis/AggConfigs'));
23 +    indexPattern = Private(require('fixtures/stubbed_logstash_index_pattern'));
24 +    buildSankey = Private(require('ui/agg_response/sankey/sankey'));
25 +  }));
26 +
27 +  describe('threeTermBuckets', function () {
28 +    var vis;
29 +    var results;
30 +
31 +    + beforeEach(function () {
32 +      var id = 1;
33 +      vis = new Vis(indexPattern, {
34 +        type: 'sankey',
35 +        aggs: [
36 +          { type: 'count', schema: 'metric' },
37 +          { type: 'terms', schema: 'segment', params: { field: 'extension' } },
38 +          { type: 'terms', schema: 'segment', params: { field: 'machine.os' } },
39 +          { type: 'terms', schema: 'segment', params: { field: 'geo.src' } }
40 +        ]
41 +      });
42 +      // We need to set the aggs to a known value.
43 +      _.each(vis.aggs, function (agg) { agg.id = 'agg_' + id++; });
44 +      results = buildSankey(vis, fixtures.threeTermBuckets);
45 +    });
46 +
47 +    it('should have nodes and links attributes for the results', function () {
48 +      expect(results).to.have.property('slices');
49 +      expect(results.slices).to.have.property('nodes');
50 +      expect(results.slices).to.have.property('links');
51 +    });
52 +
53 +    it('should have name attributes for the nodes array', function () {
54 +      expect(results.slices.nodes).to.have.length(11);
55 +      _.each(results.slices.nodes, function (item) {
56 +        expect(item).to.have.property('name');
57 +      });
58 +      expect(results.slices.nodes[0].name).to.equal('png');
59 +    });
60 +
61 +    it('should have source, target and value attributes for the links array', functi
```


Future?

- * app switcher
 - * has plugin status app now.
 - * example app: <<https://github.com/rashidkpc/relay>>
 - * maybe logstash-2.0 configure app?
- * auth
 - * < <https://github.com/elastic/kibana/pull/4634> >
- * color
 - * < <https://github.com/elastic/kibana/pull/4894> >

Thank You!