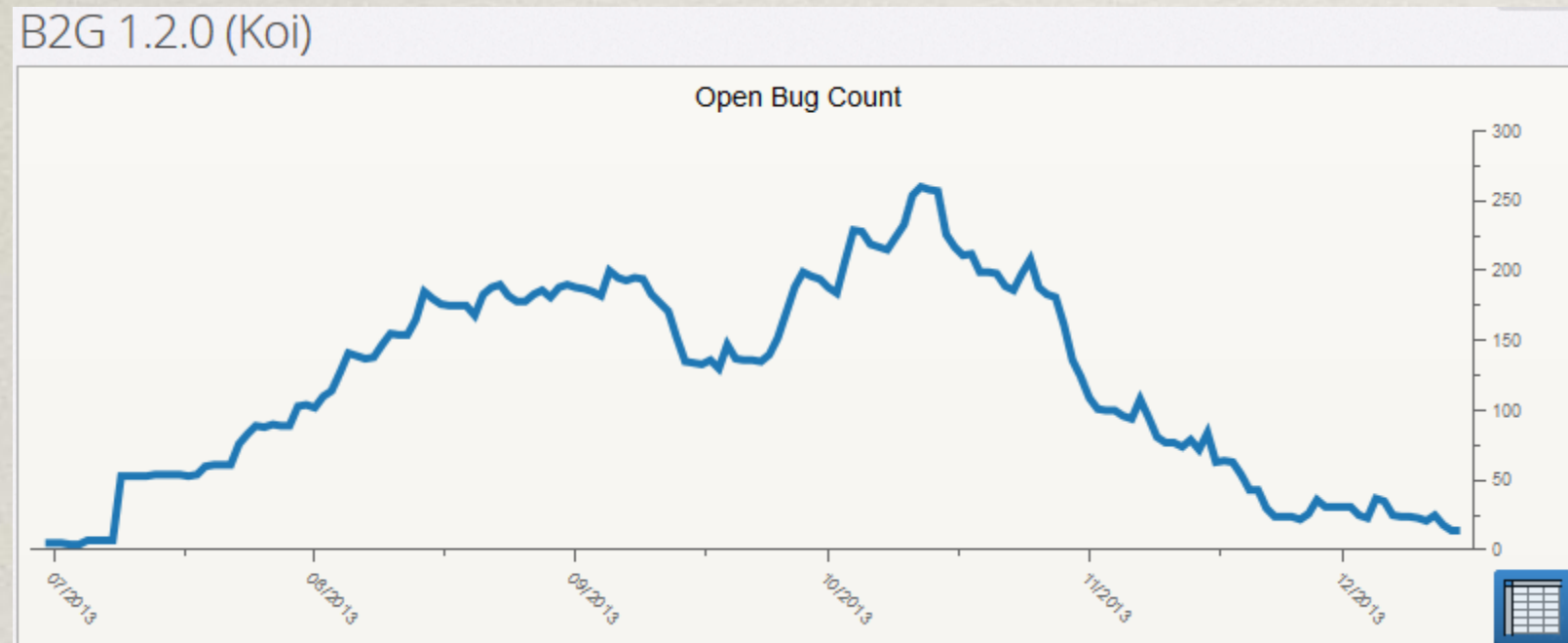


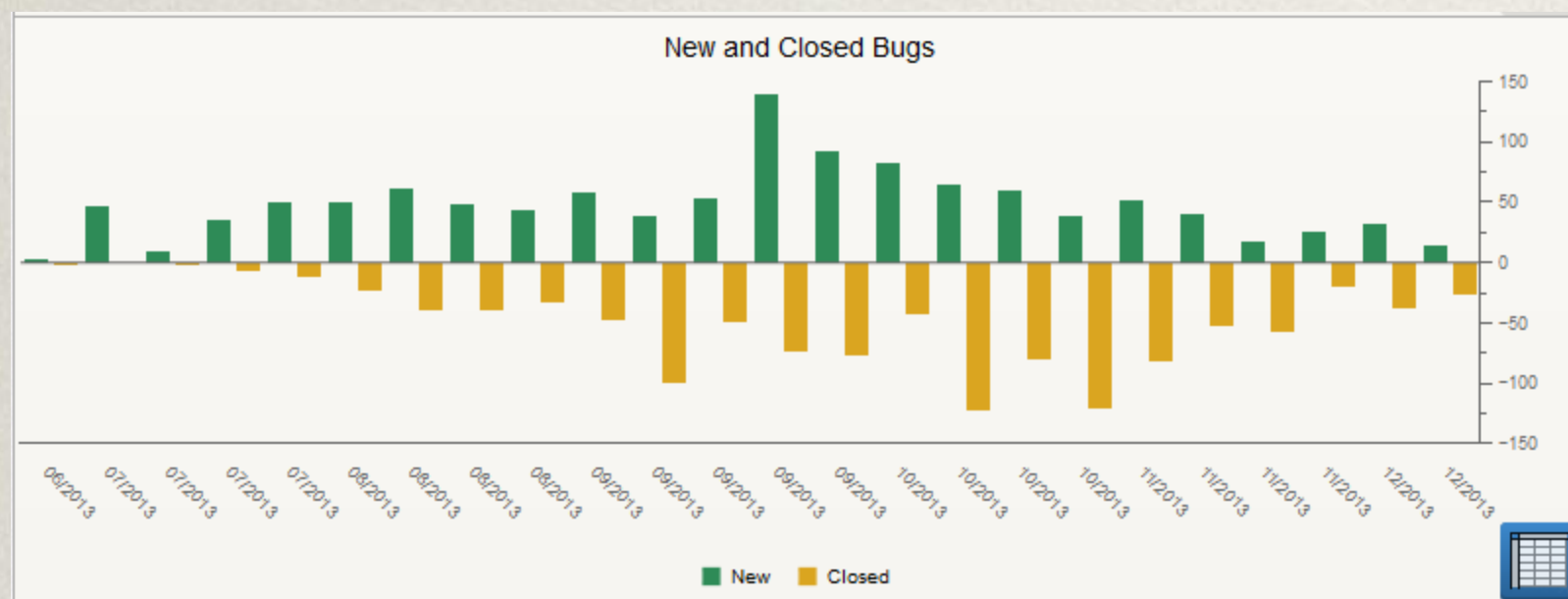
Search Bugs Fast with Elasticsearch

<https://github.com/klahnakoski/MoDevMetrics>

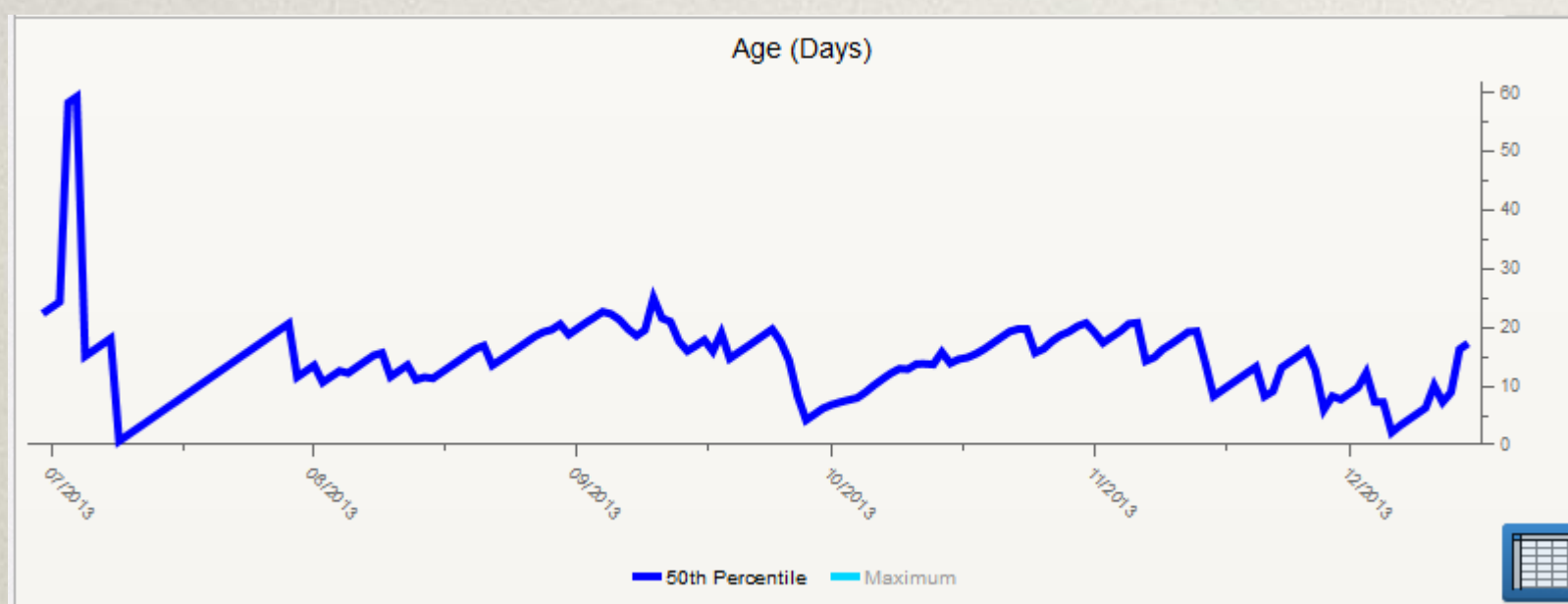
Past Work with Elasticsearch



Open Bug Counts

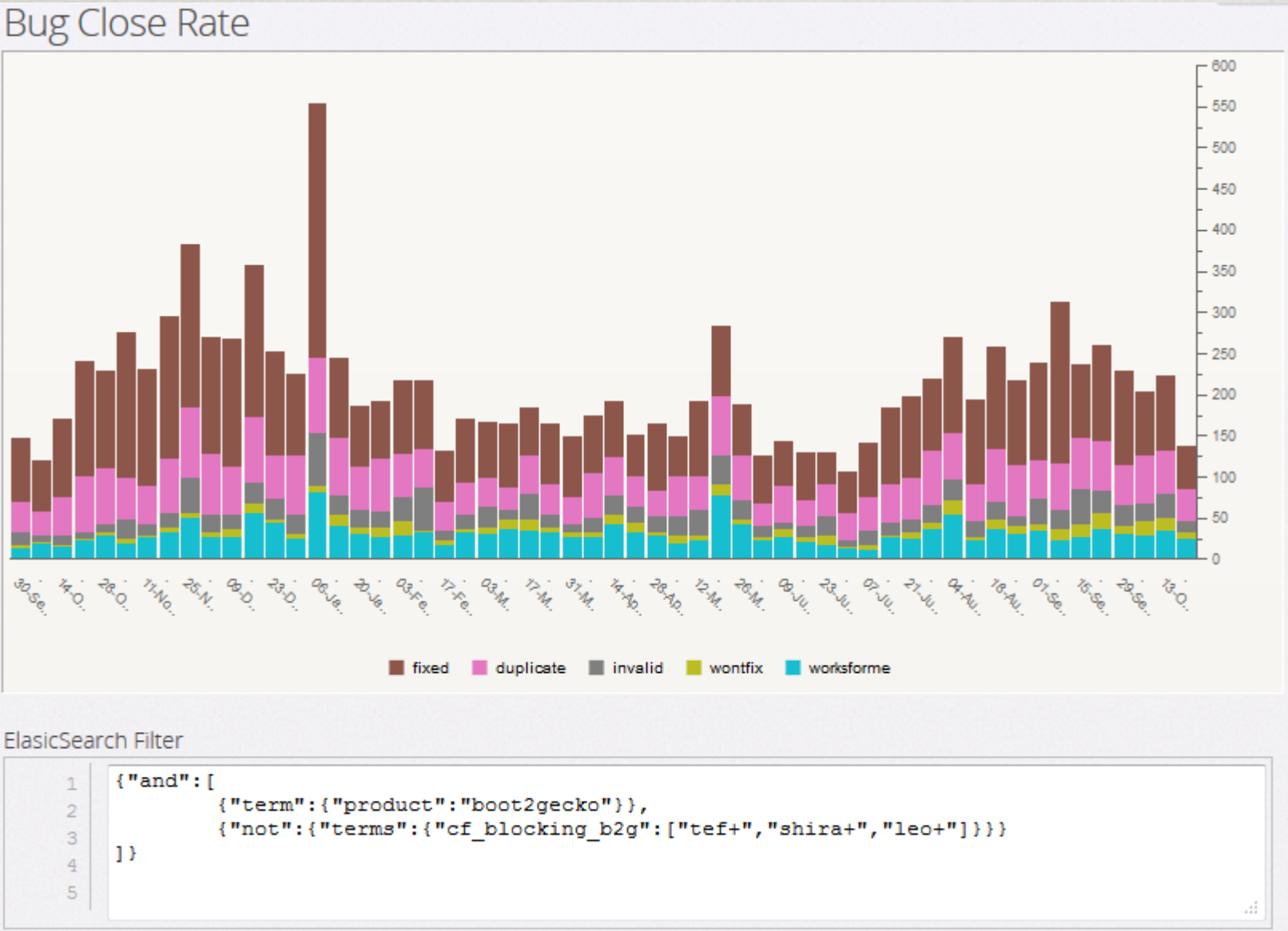


Open/Close Rates



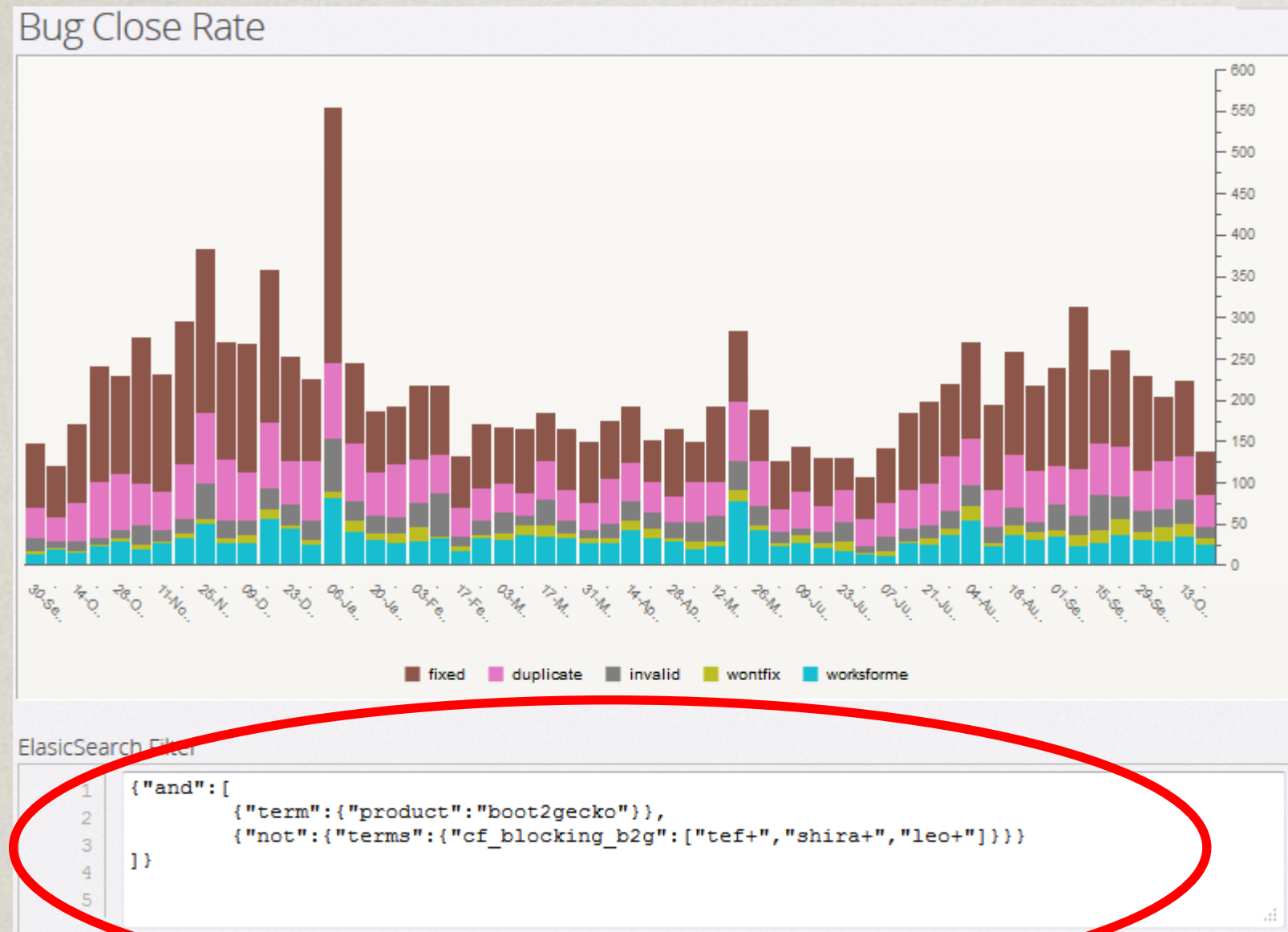
Age of Open Bugs

Past Work with Elasticsearch



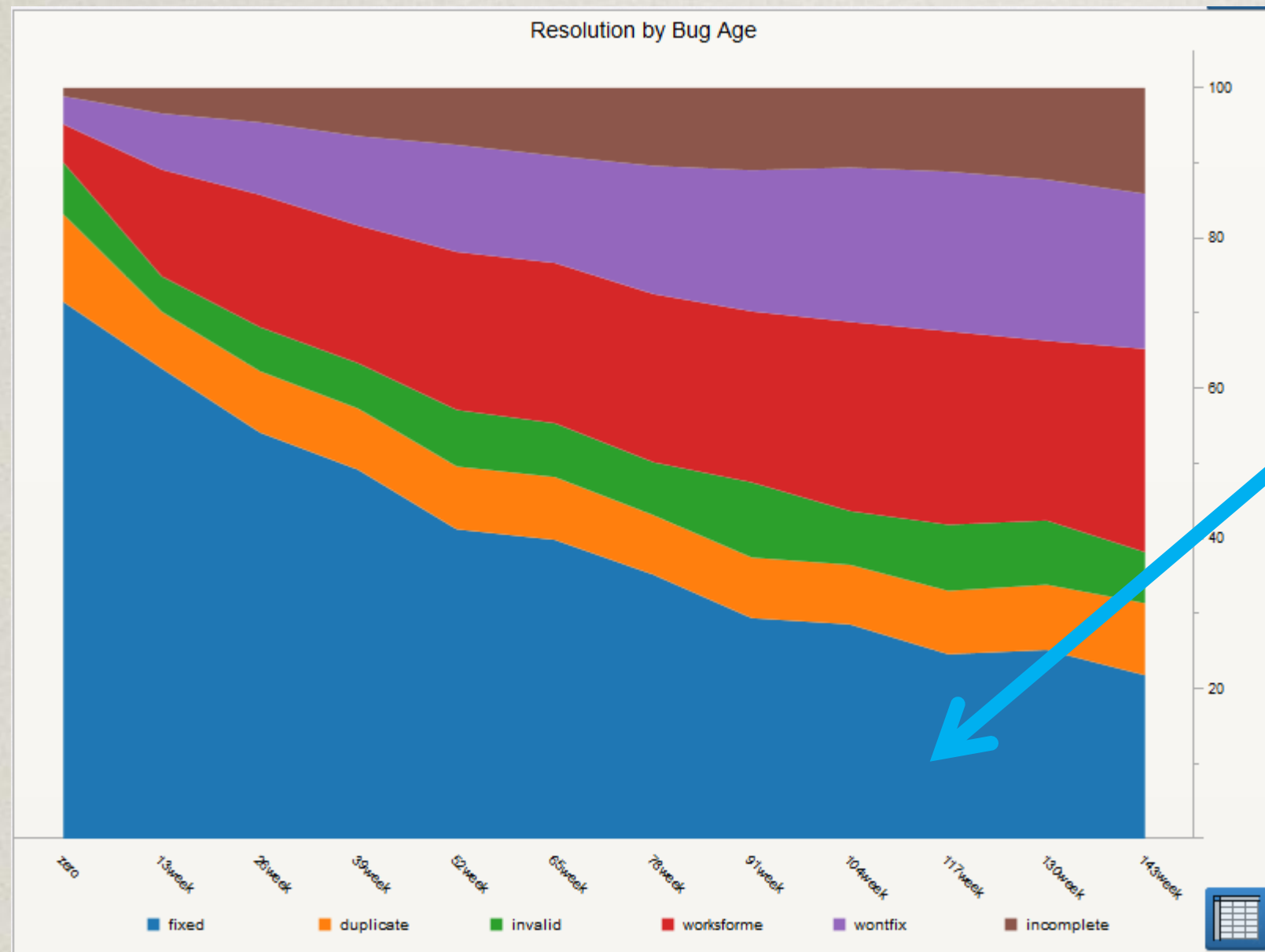
Close Rates by Resolution

Past Work with Elasticsearch



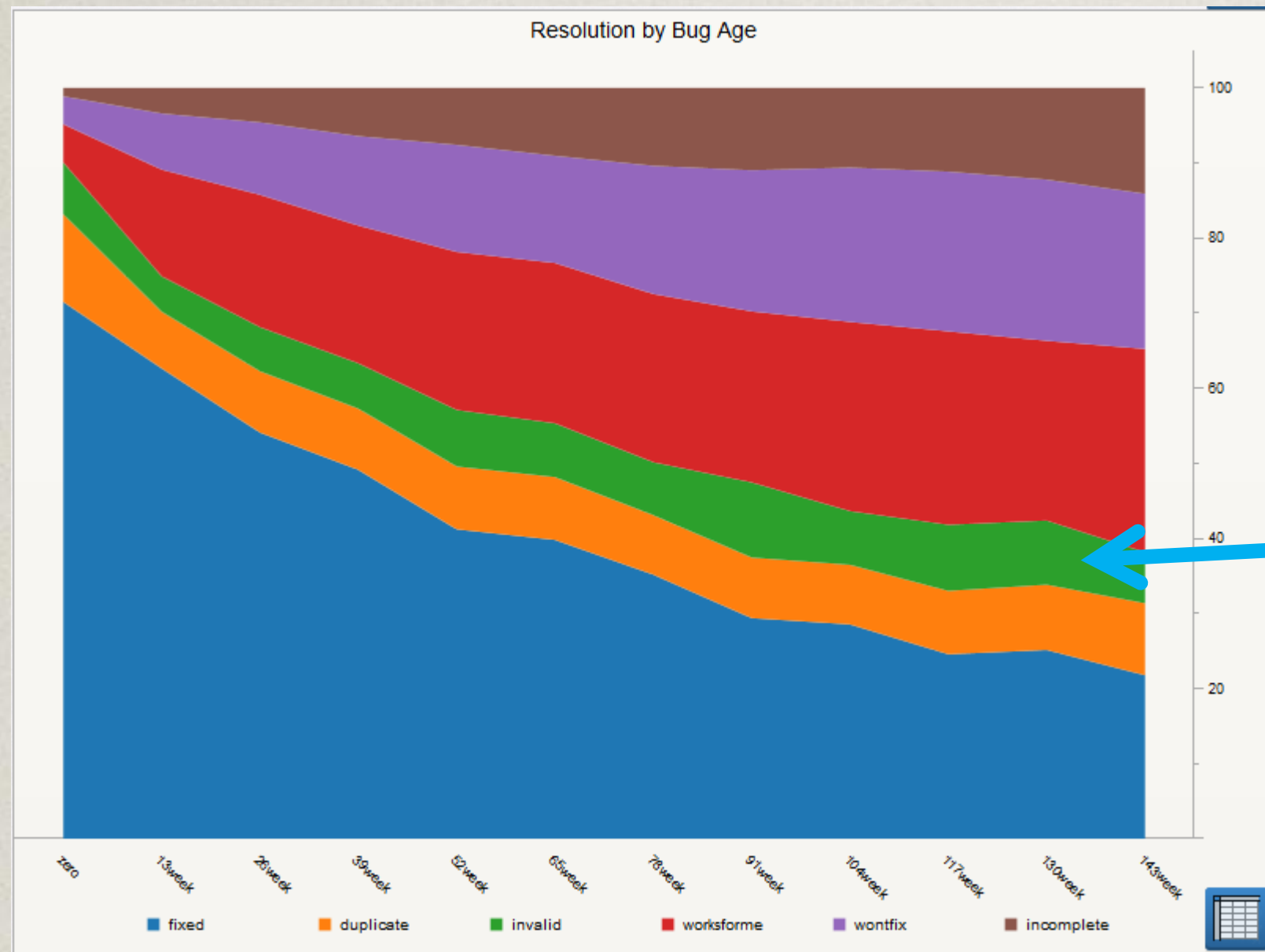
Boot2Gecko
product, outside the
B2G projects

Past Work with Elasticsearch



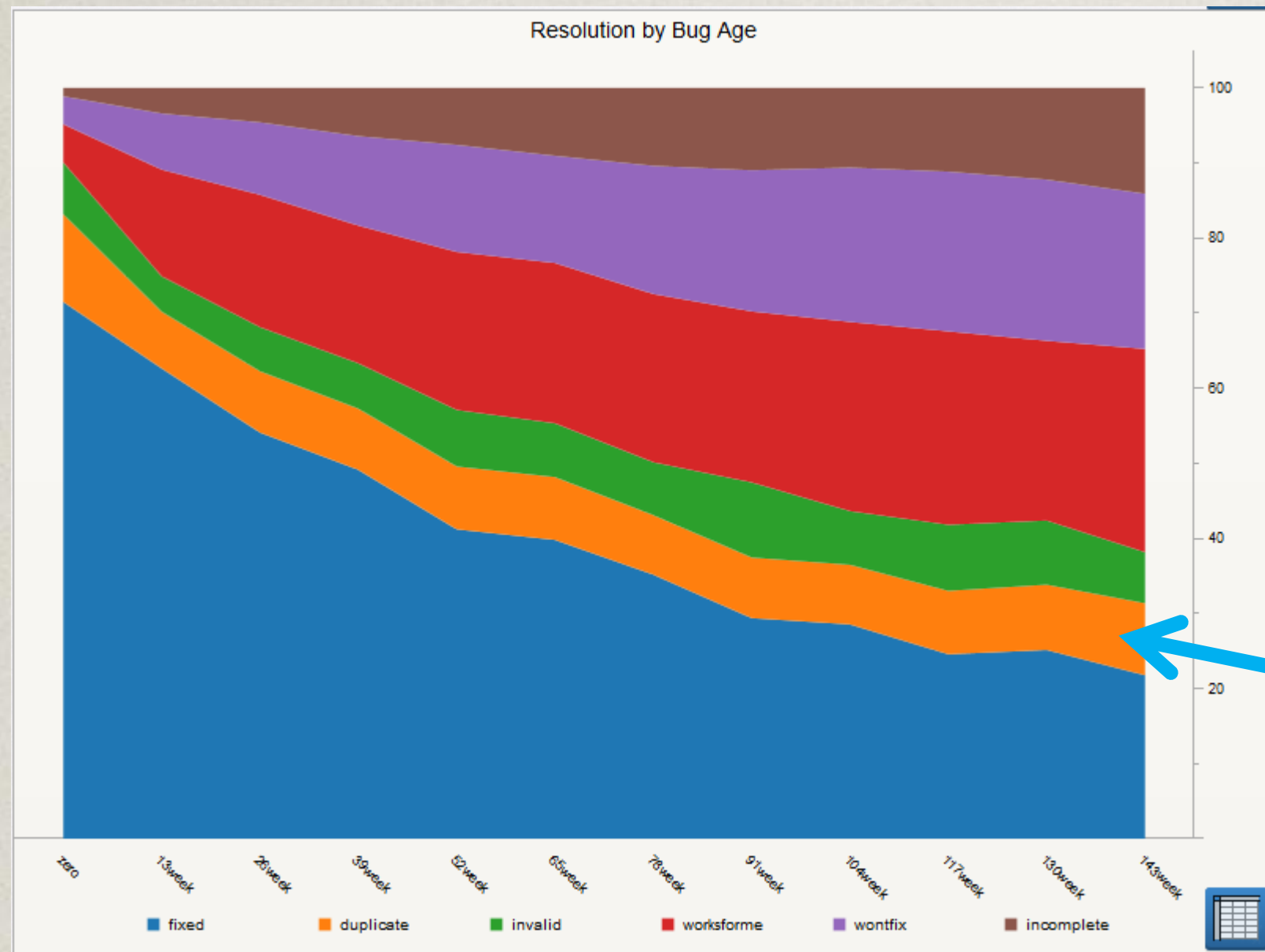
We expected older bugs to have less chance of being FIXED

Past Work with Elasticsearch



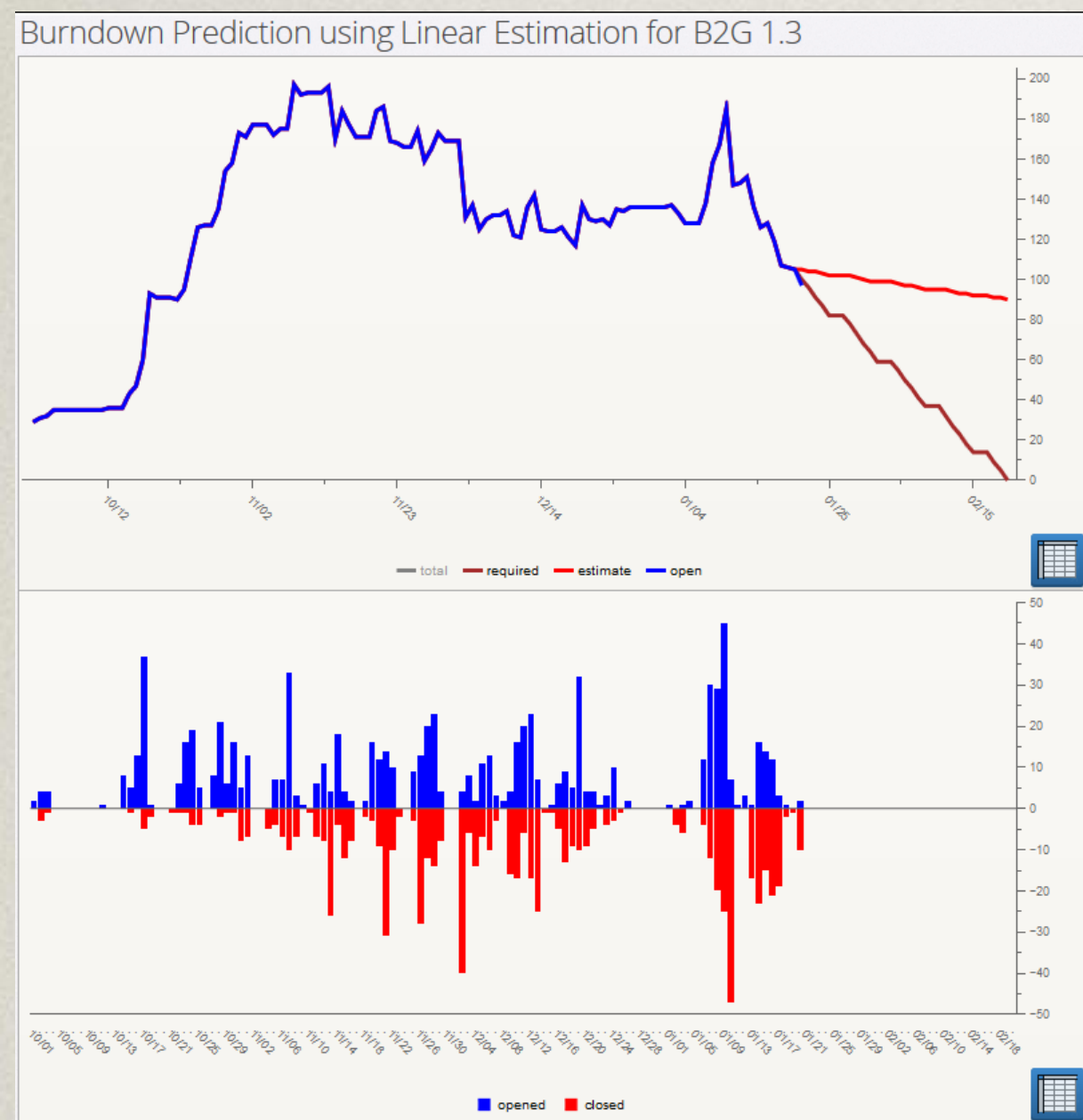
Invalid rate
almost constant!

Past Work with Elasticsearch



Dup rate almost constant too!

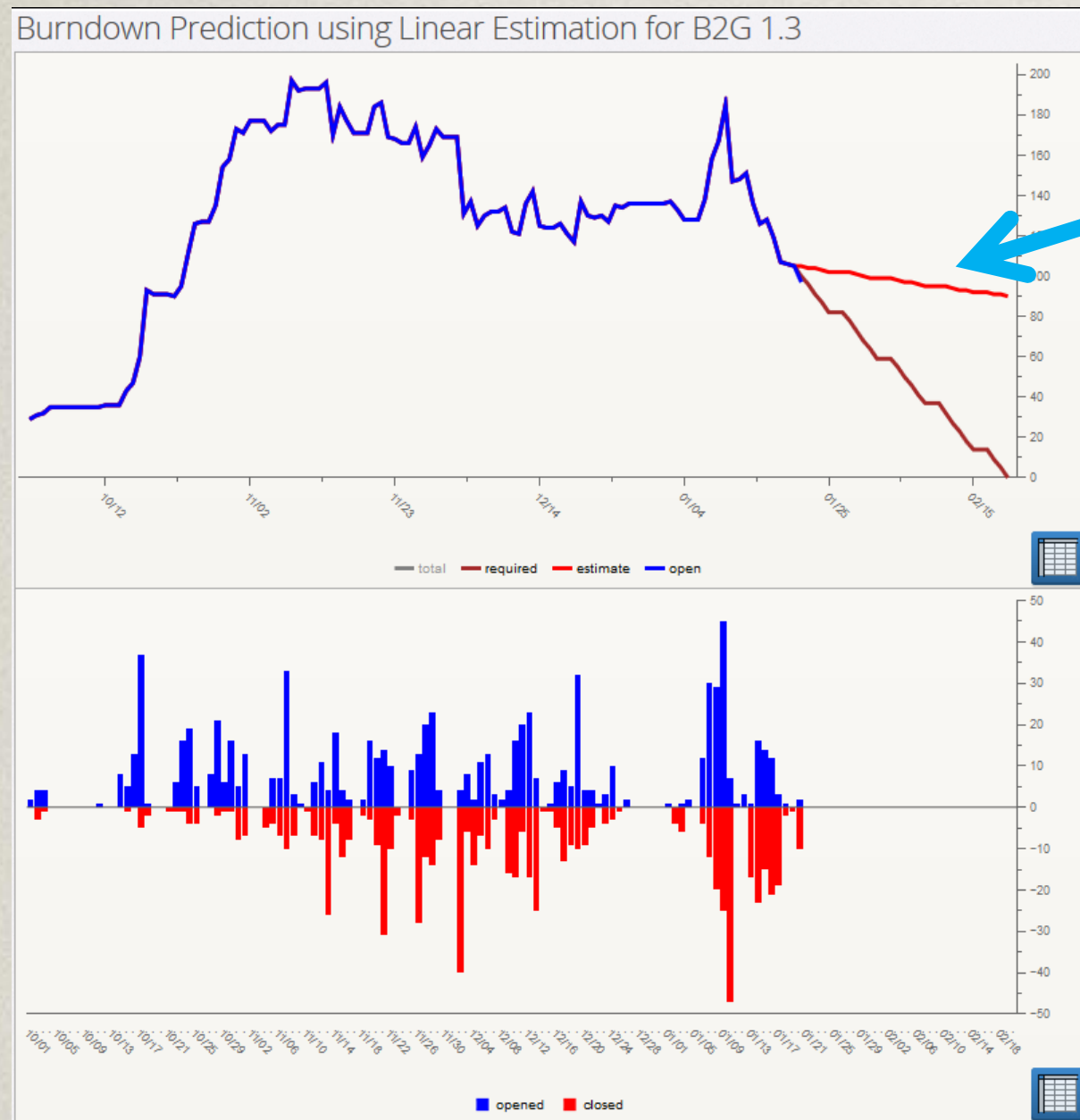
Past Work with Elasticsearch



Open Bug Count

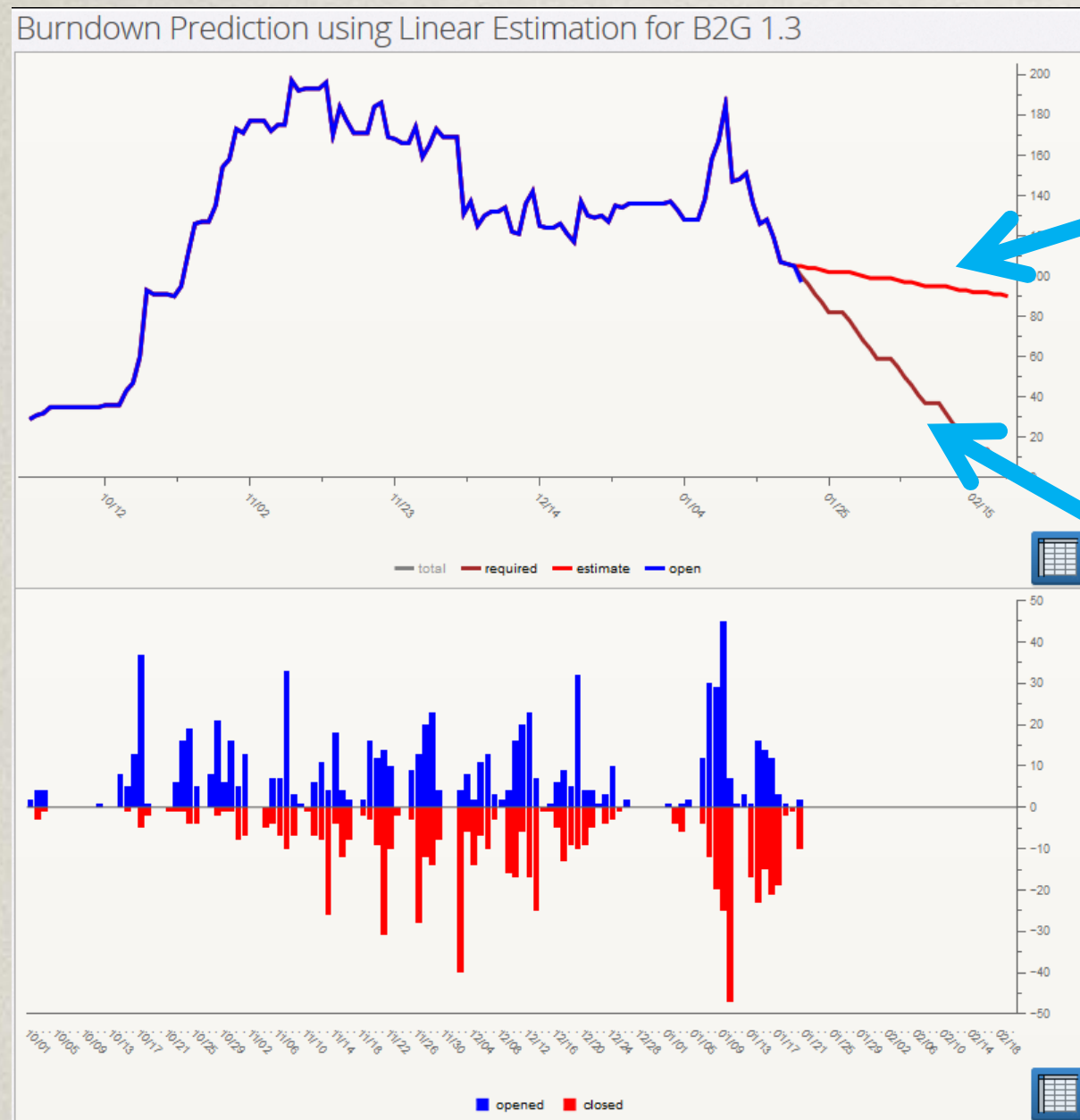
Open and Close rates

Past Work with Elasticsearch



Linear projection of burn-down based on past 6 weeks' data

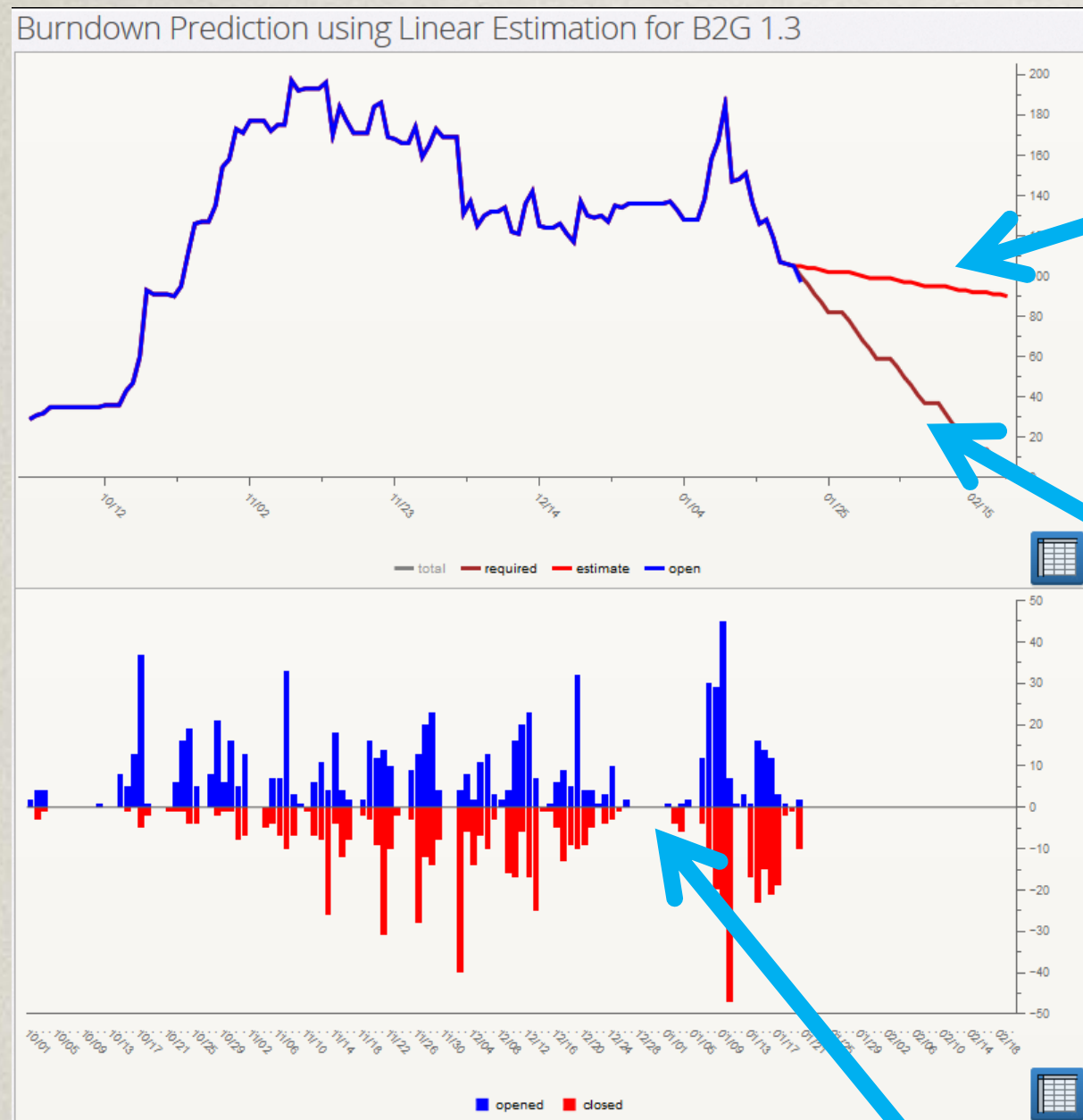
Past Work with Elasticsearch



Linear projection of burn-down based on past 6 weeks' data

Required to meet deadline

Past Work with Elasticsearch

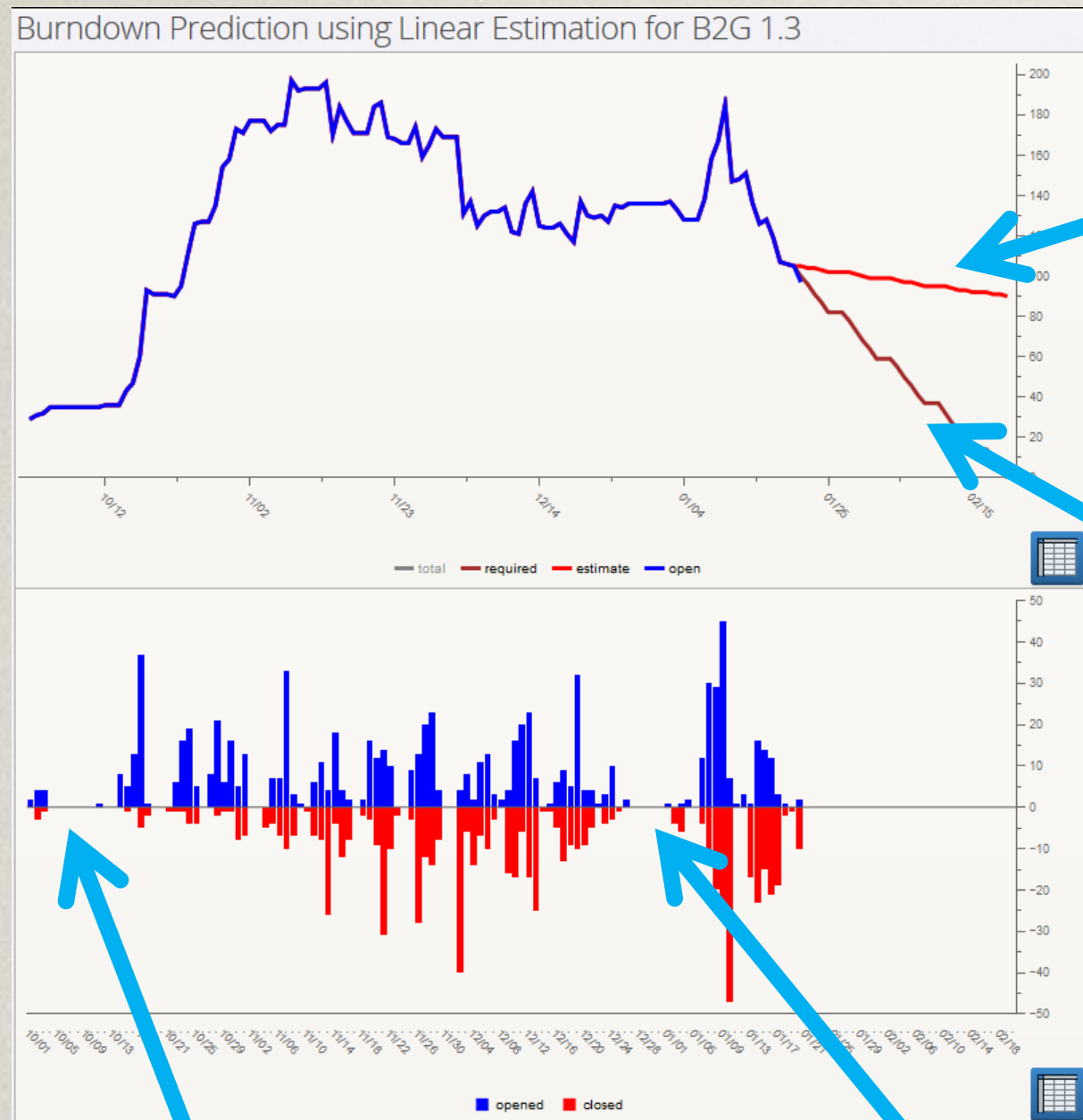


Linear projection of burn-down based on past 6 weeks' data

Required to meet deadline

Holiday

Past Work with Elasticsearch



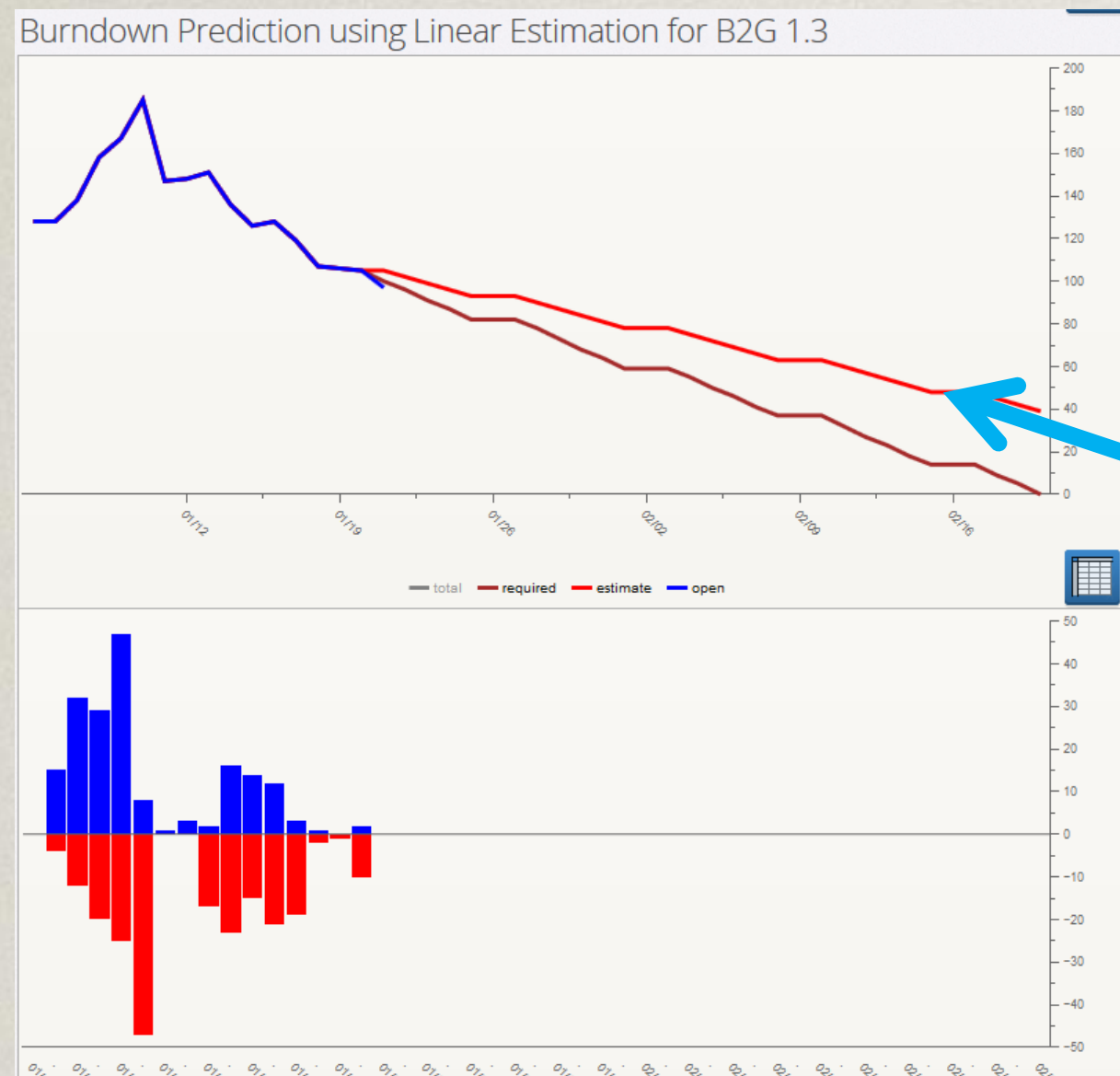
Linear projection of burn-down based on past 6 weeks' data

Required to meet deadline

Summit

Holiday

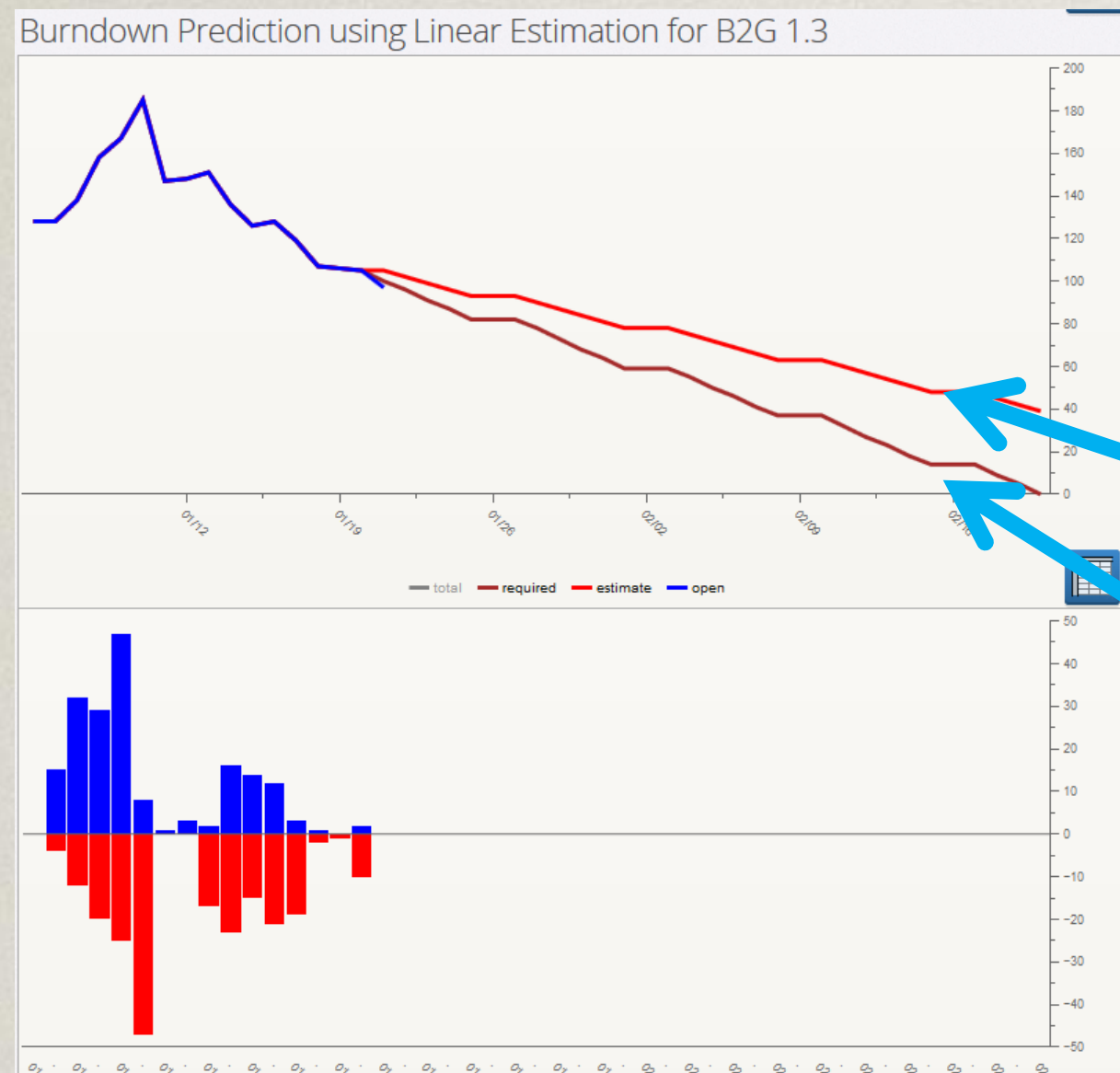
Past Work with Elasticsearch



Better to use past
2 weeks?

Current projection

Past Work with Elasticsearch

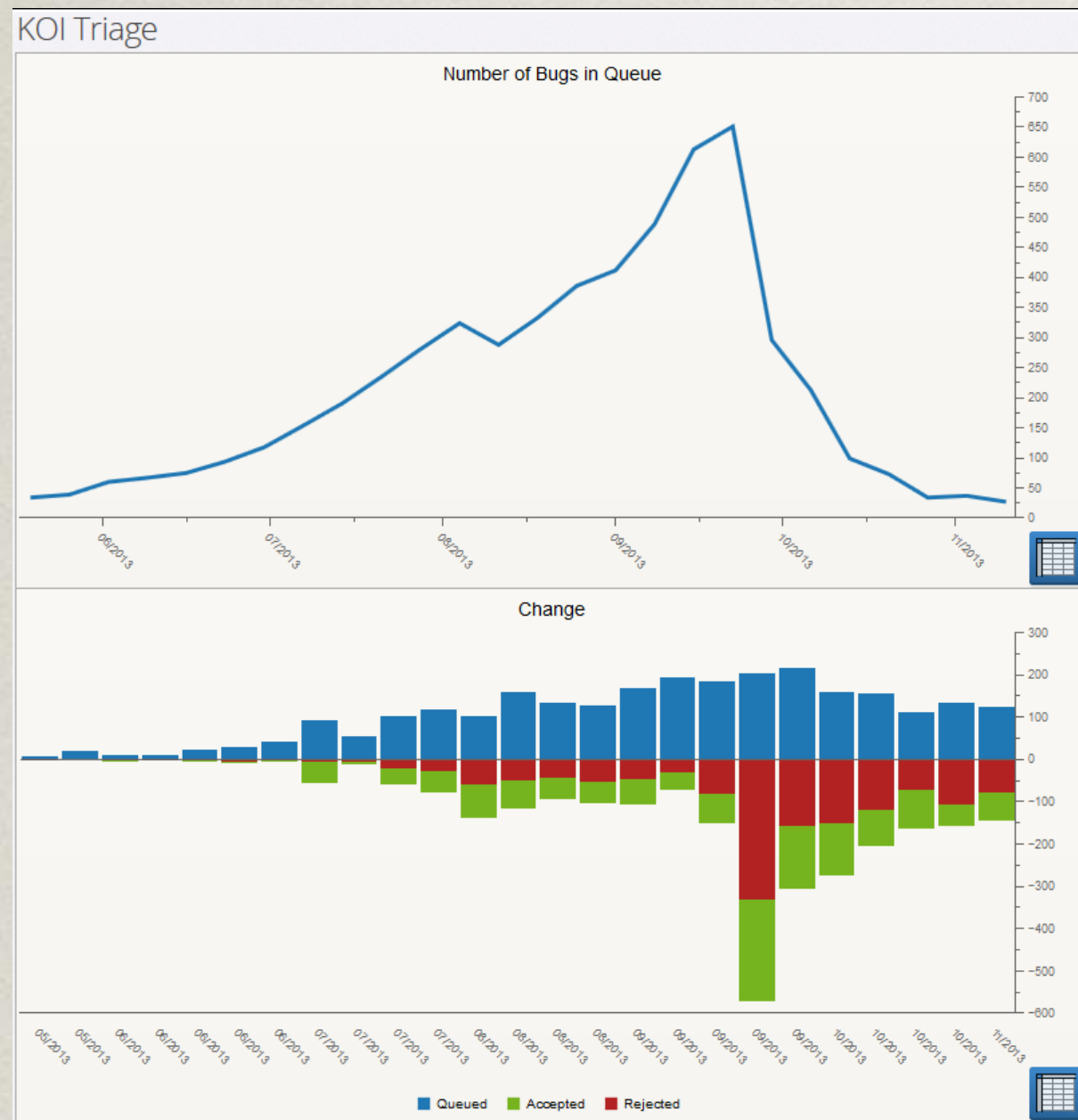


Better to use past
2 weeks?

Current projection

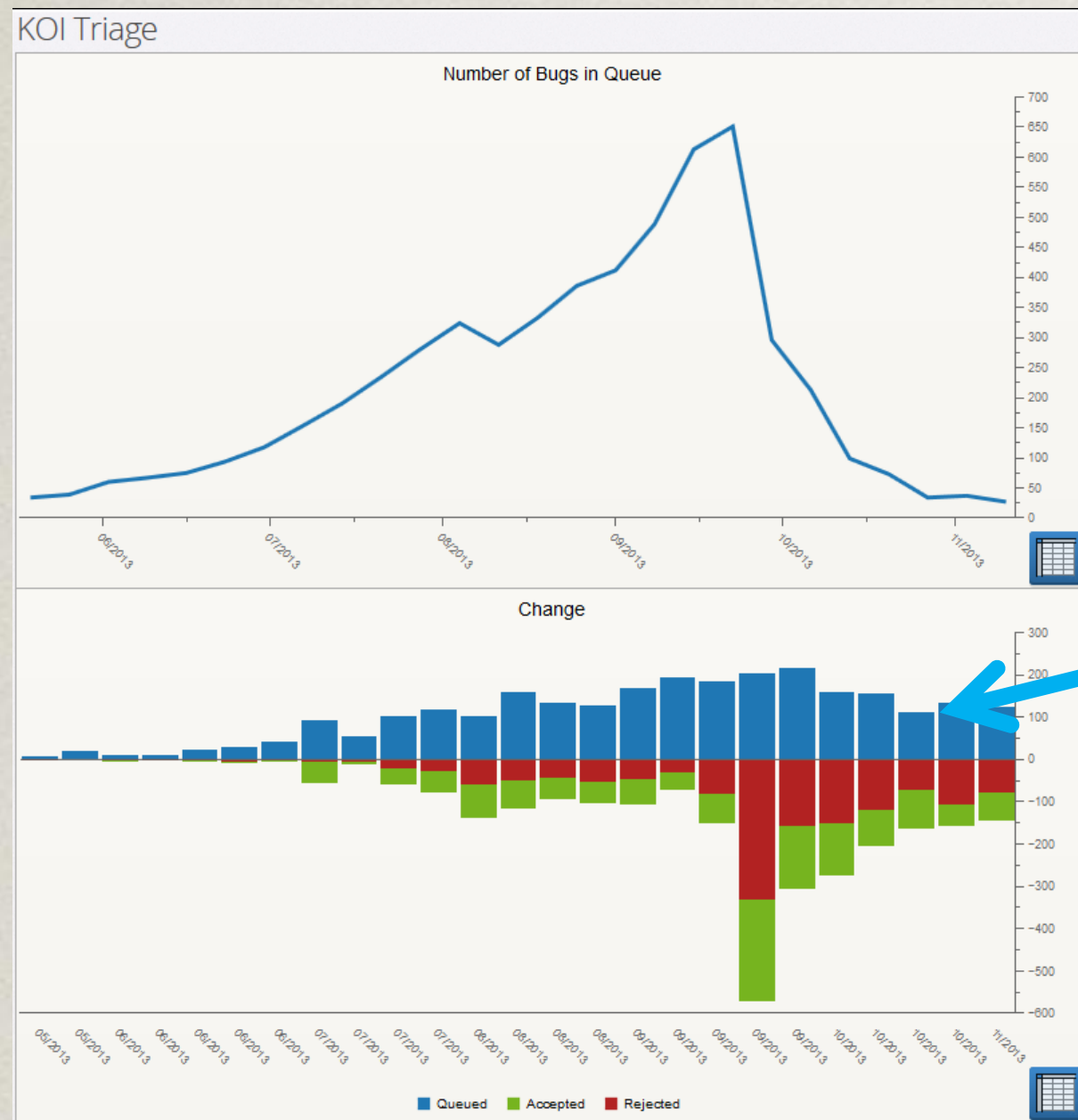
Required to meet deadline

Past Work with Elasticsearch



} Bugs in KOI? Triage

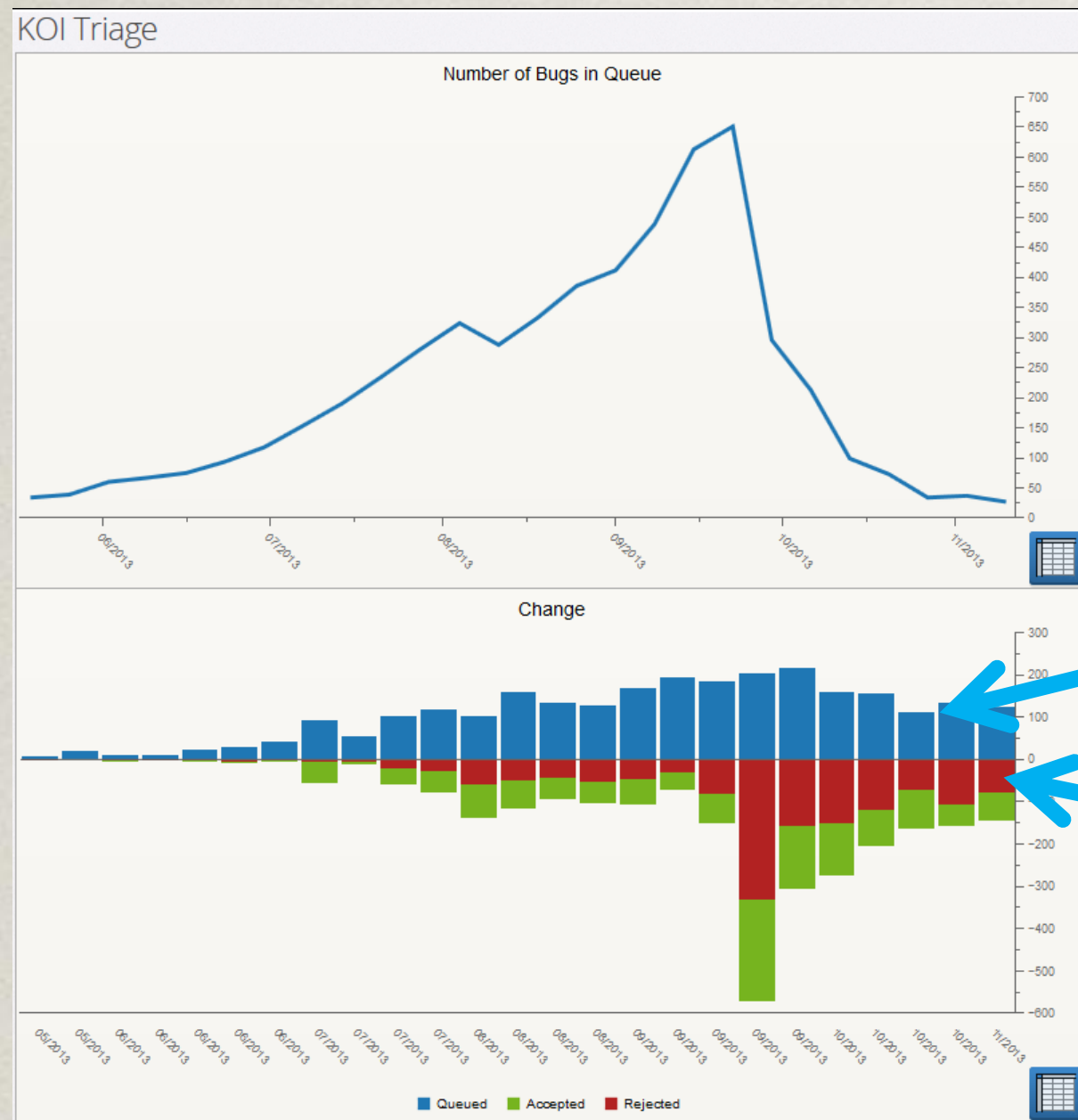
Past Work with Elasticsearch



Bugs in KOI? Triage

Added to Queue (?)

Past Work with Elasticsearch

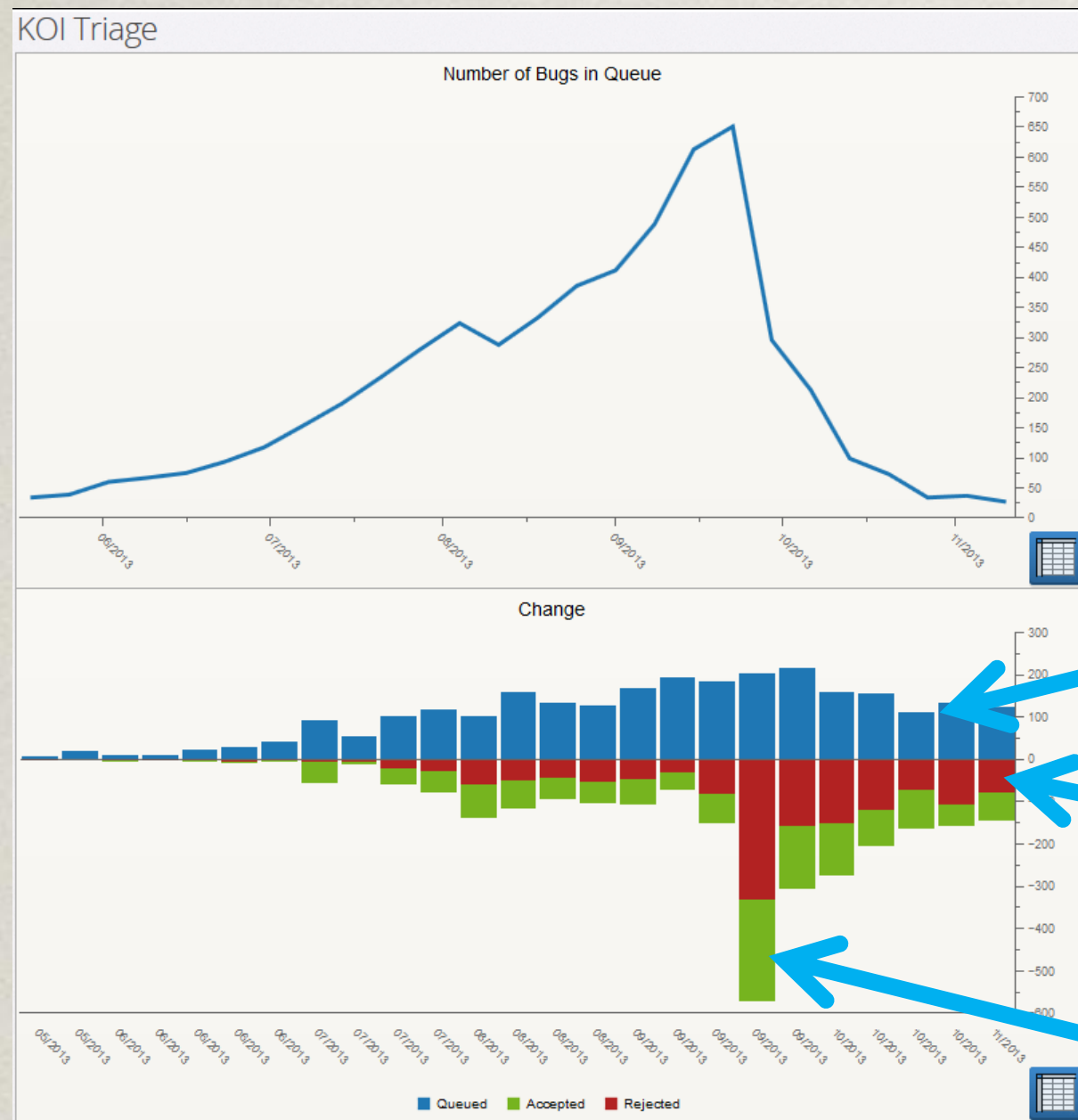


Bugs in KOI? Triage

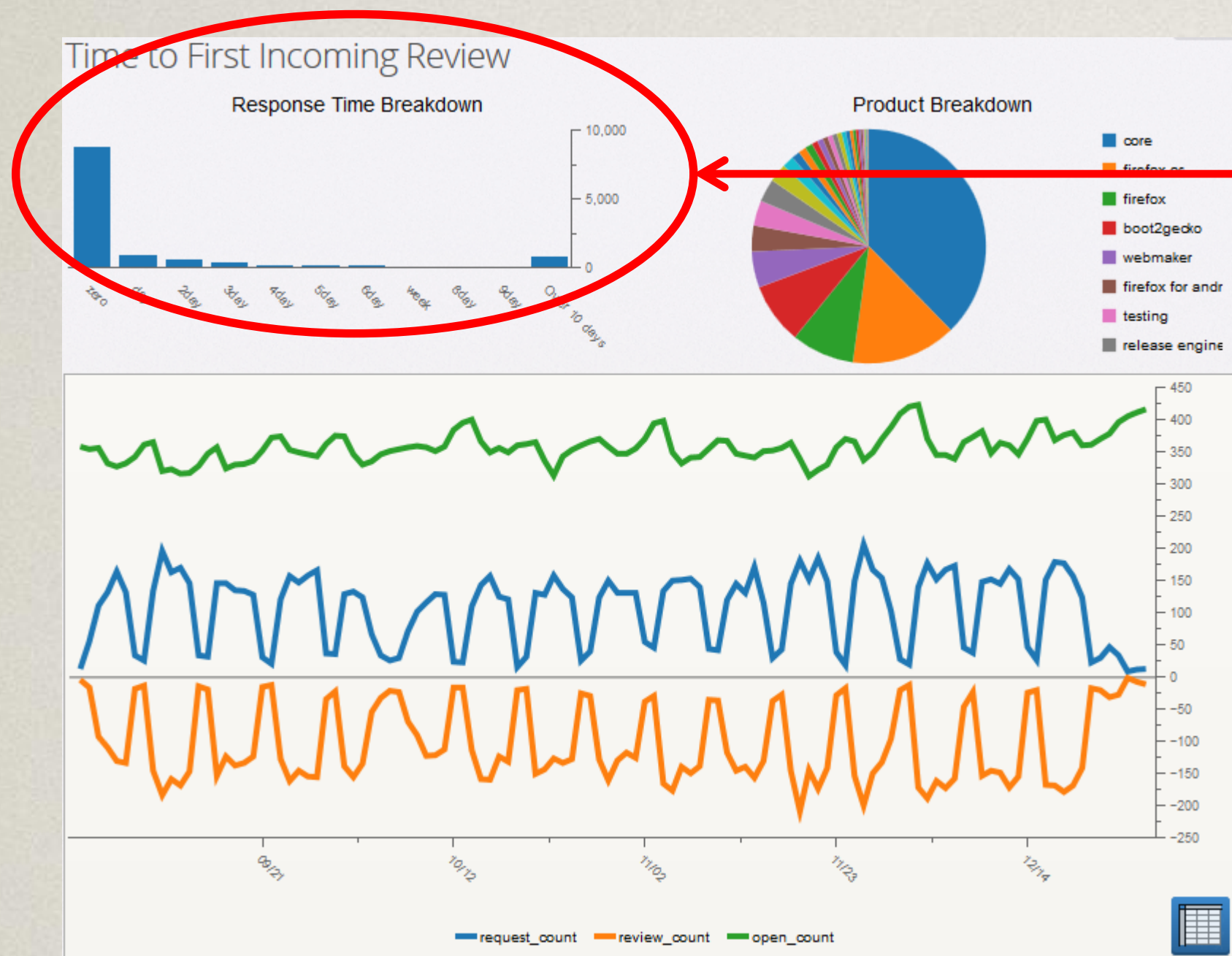
Added to Queue (?)

Rejected (-)

Past Work with Elasticsearch

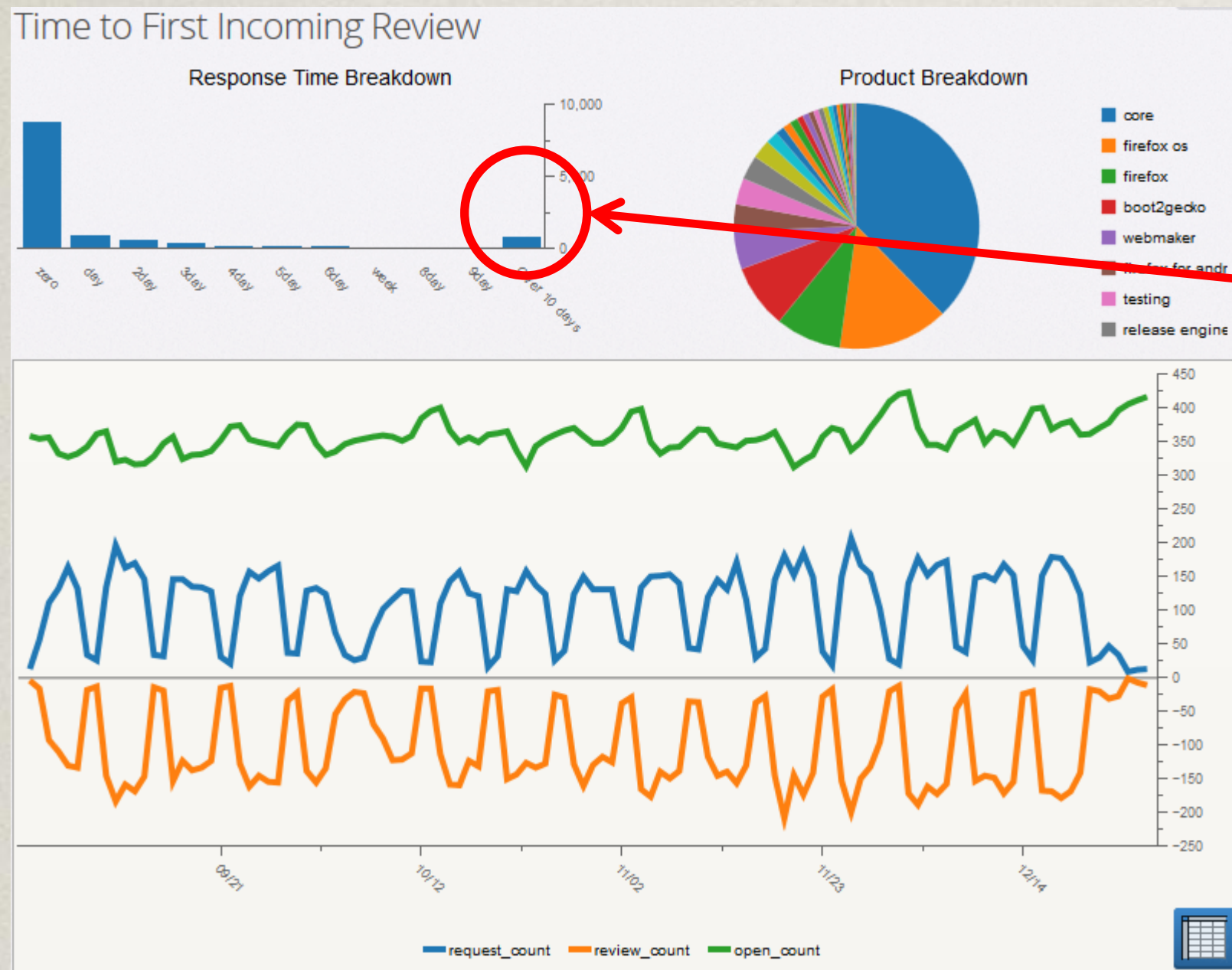


Past Work with Elasticsearch

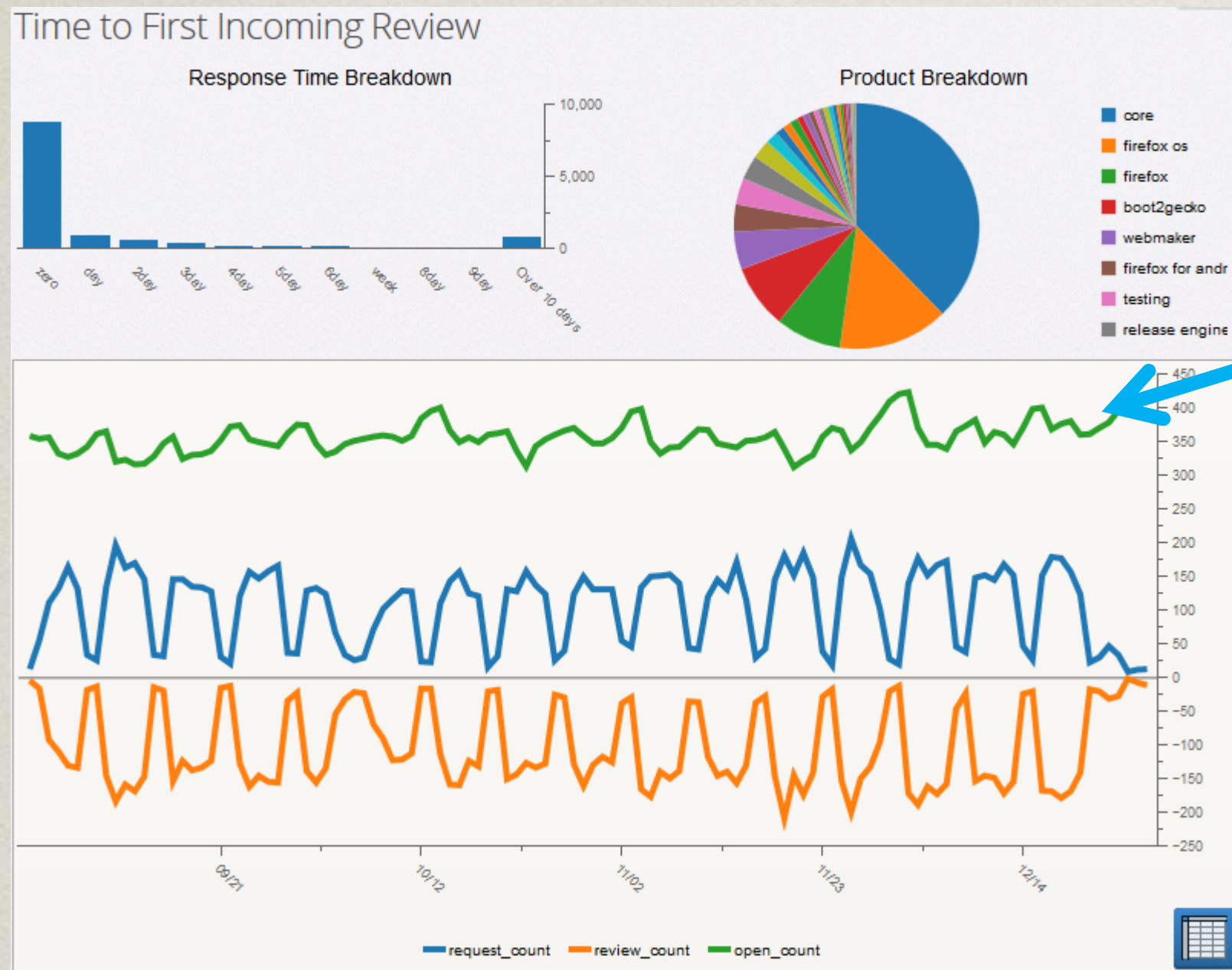


70% reviews done
in a day

Past Work with Elasticsearch

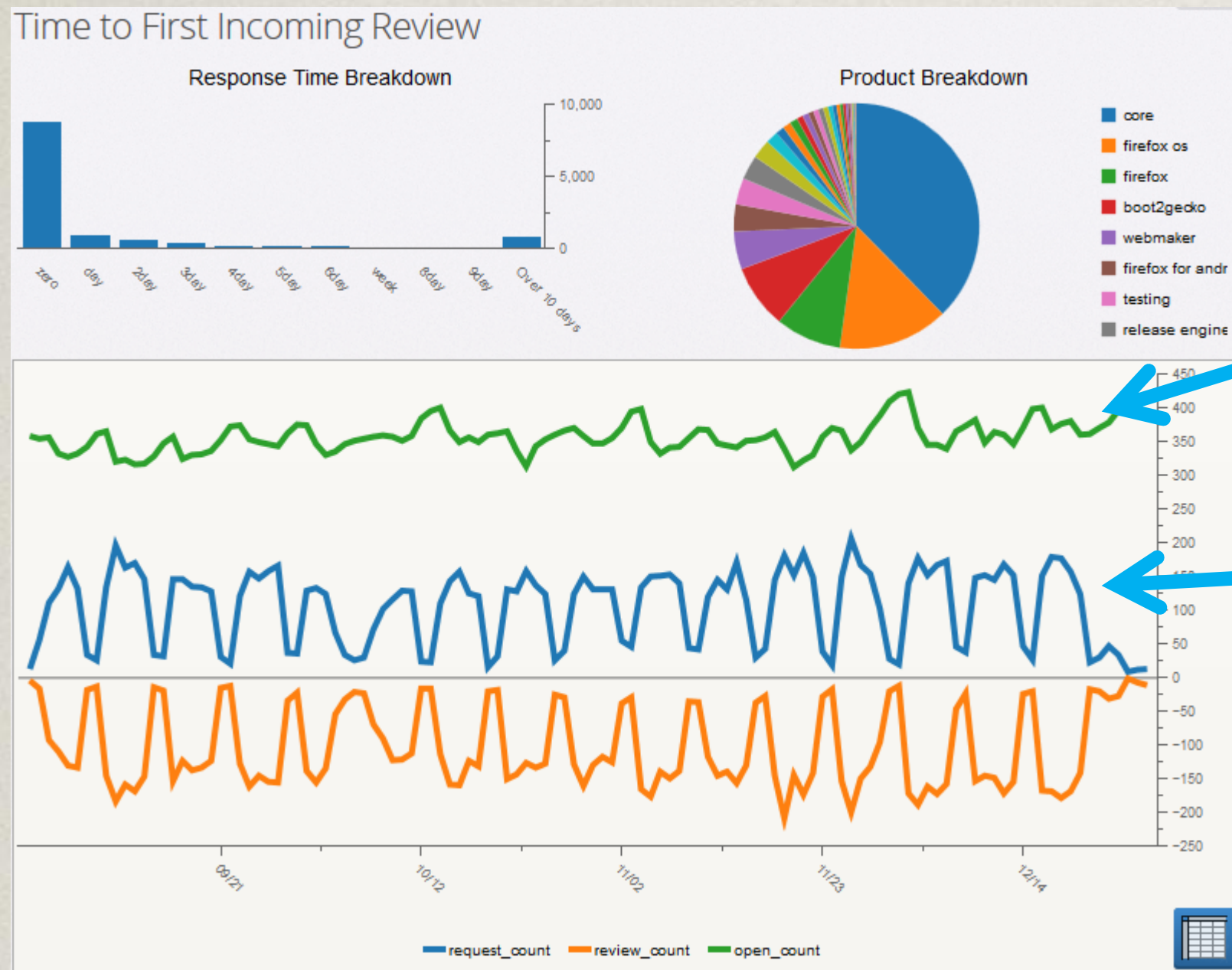


Past Work with Elasticsearch



Total reviews
waiting over a day

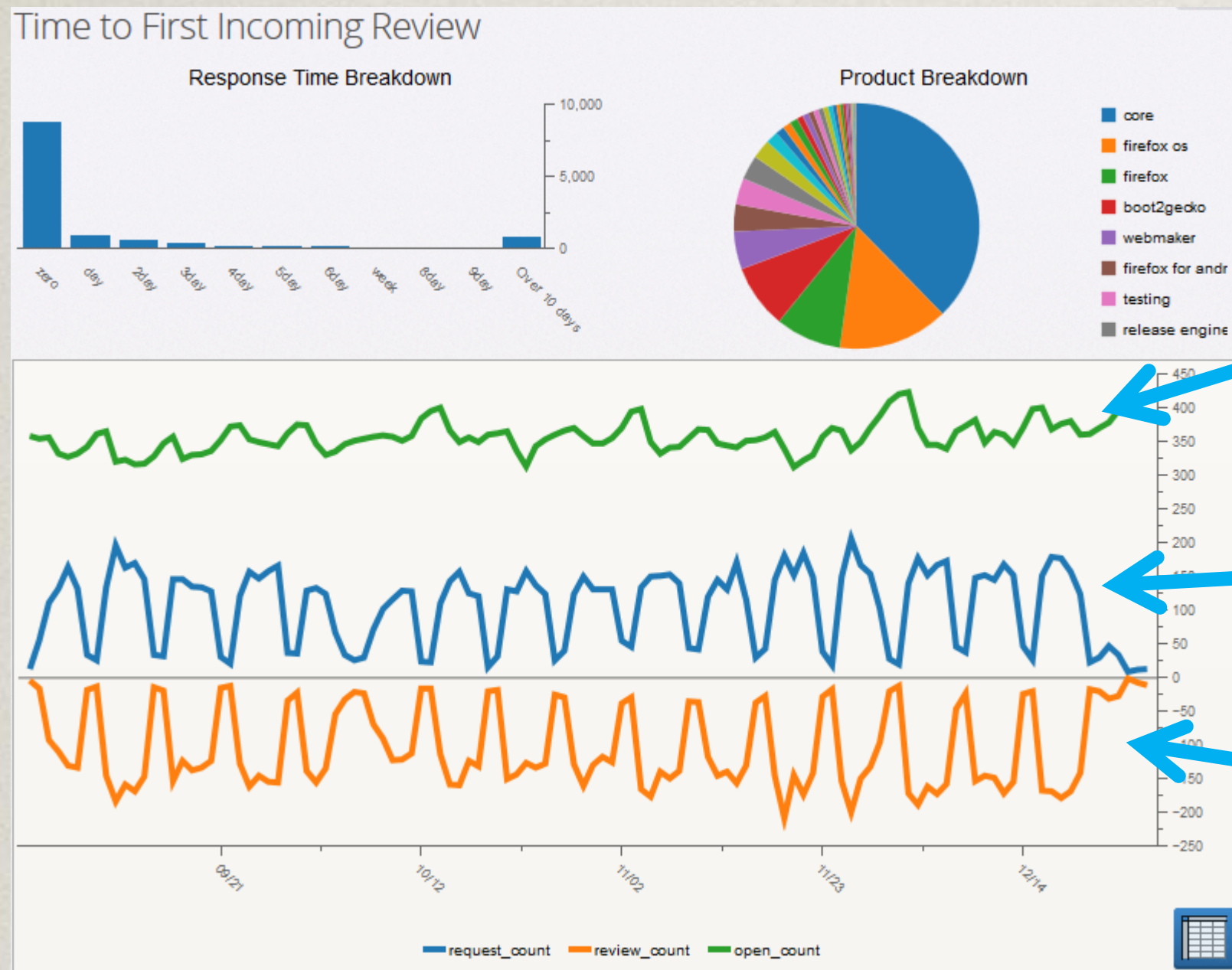
Past Work with Elasticsearch



Total reviews
waiting over a day

Reviews requested

Past Work with Elasticsearch



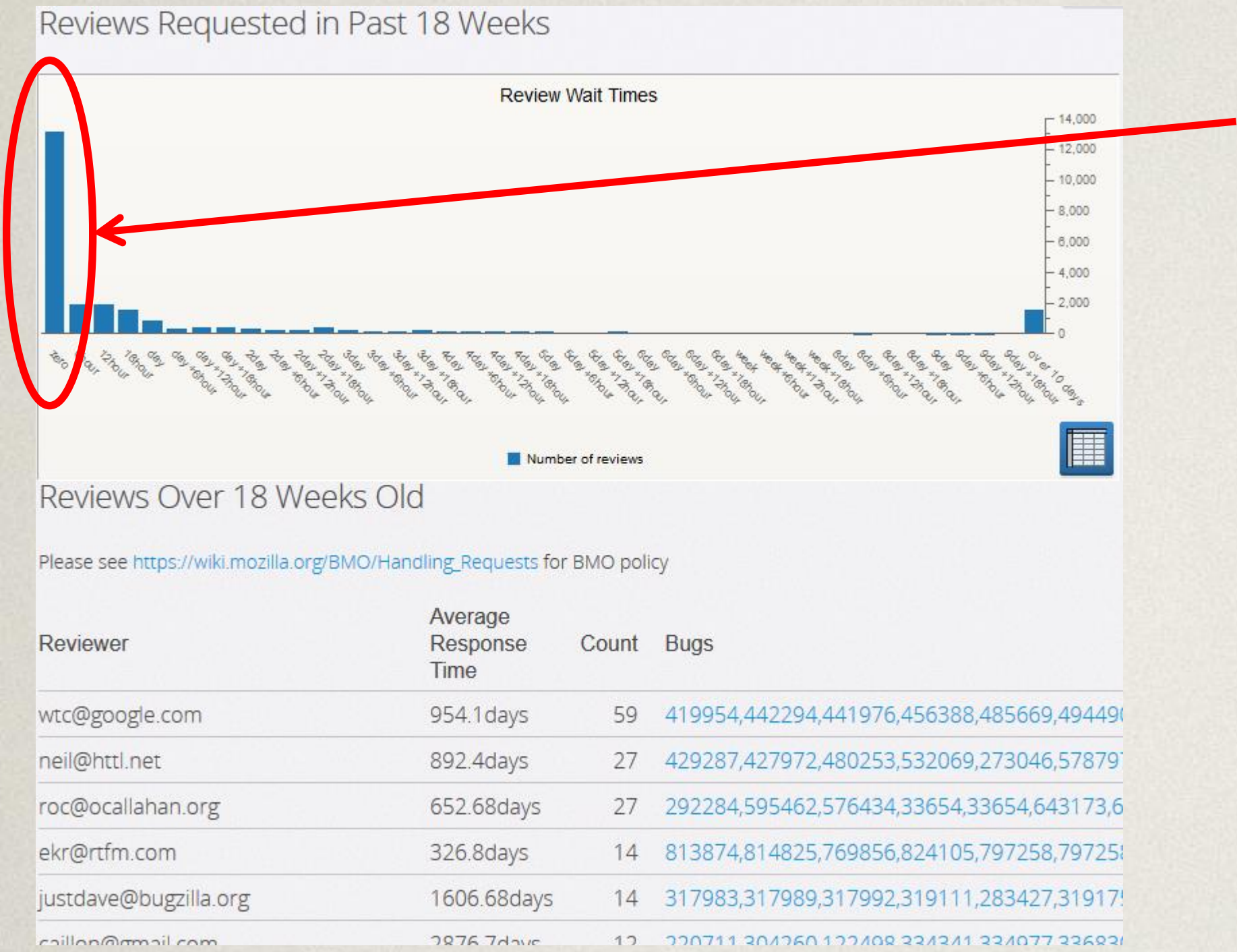
Total reviews
waiting over a day

Reviews requested

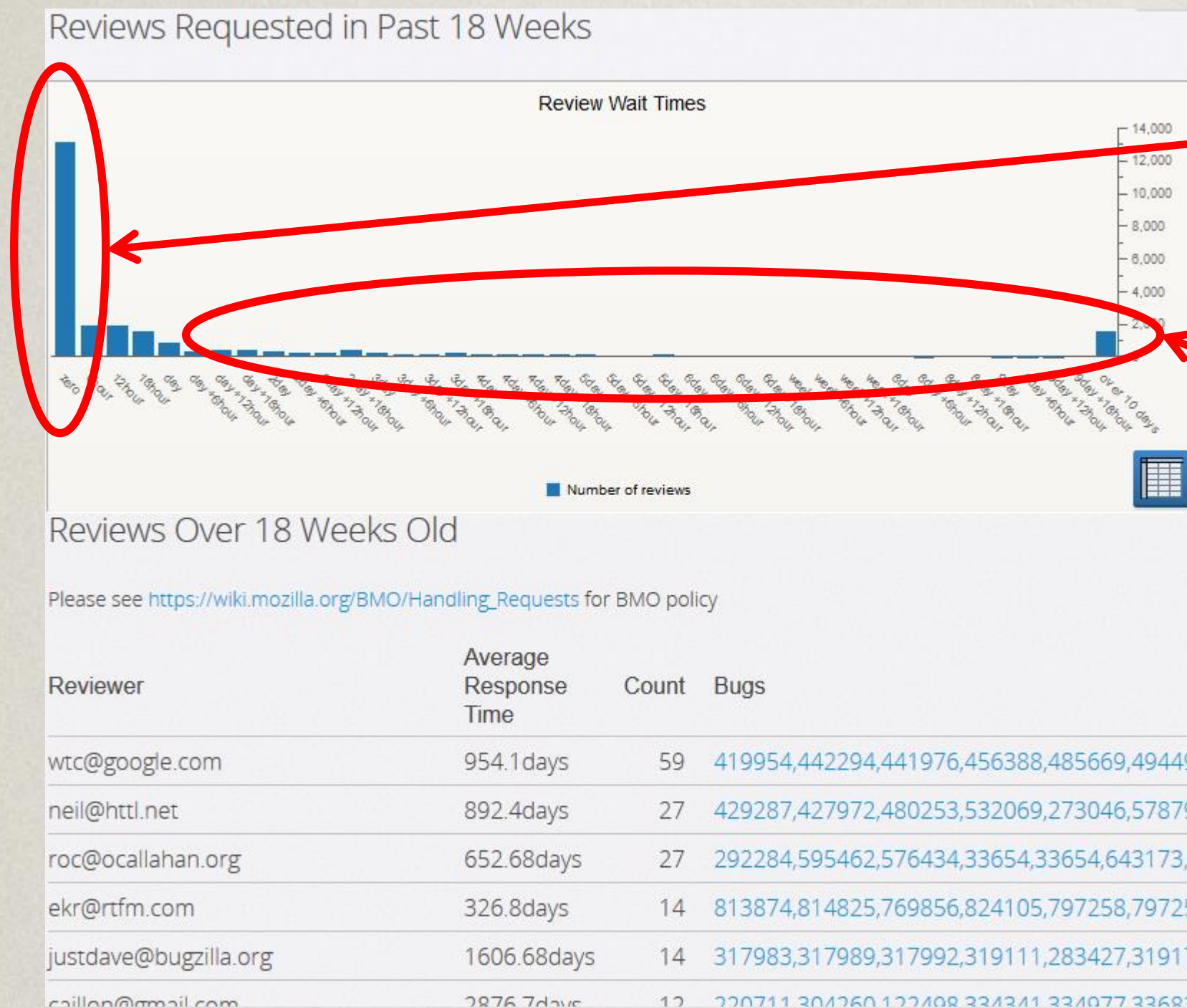
Reviews completed

Past Work with Elasticsearch

Most reviews done inside 6 hours!



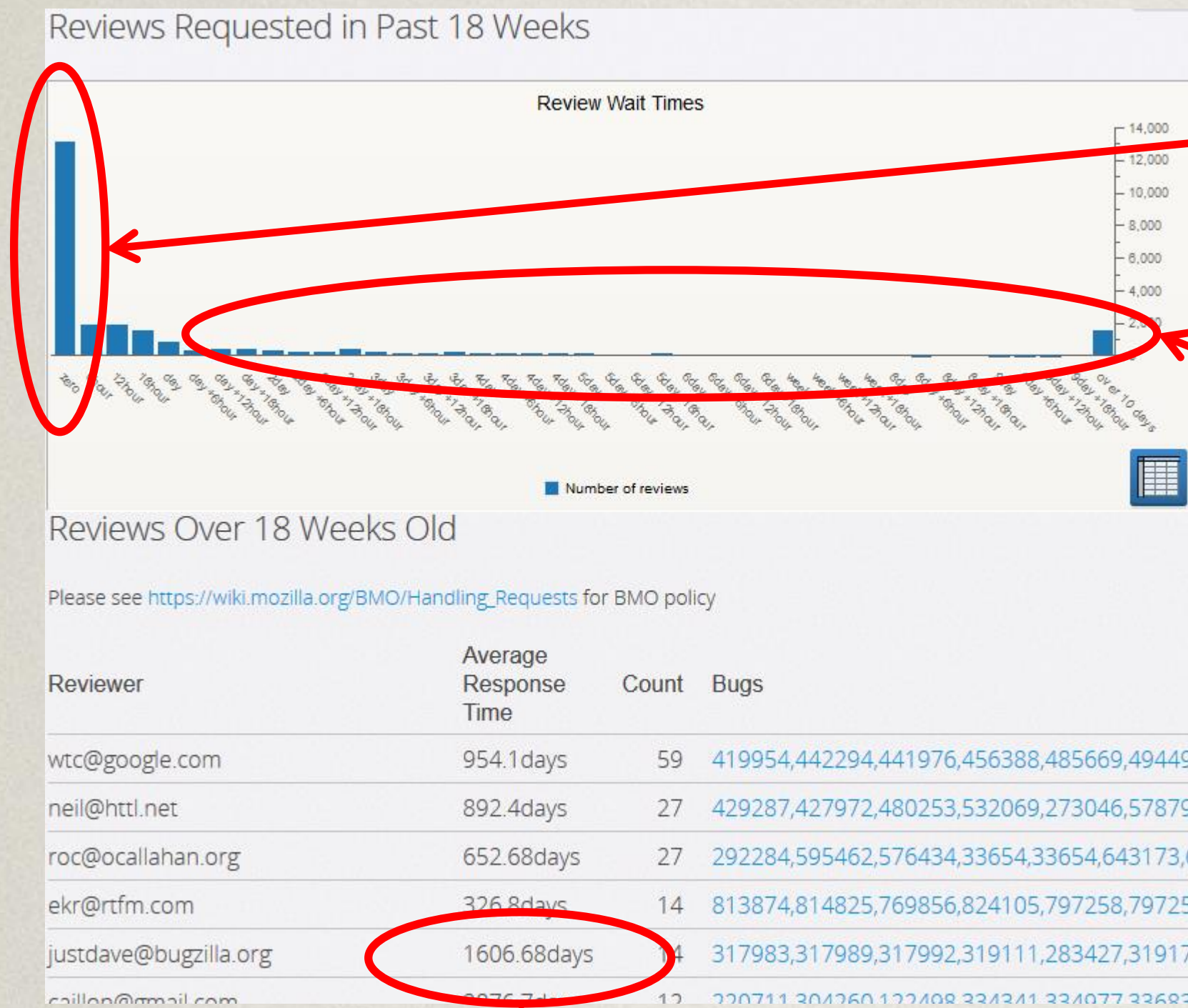
Past Work with Elasticsearch



Most reviews done inside 6 hours!

Very long tail

Past Work with Elasticsearch

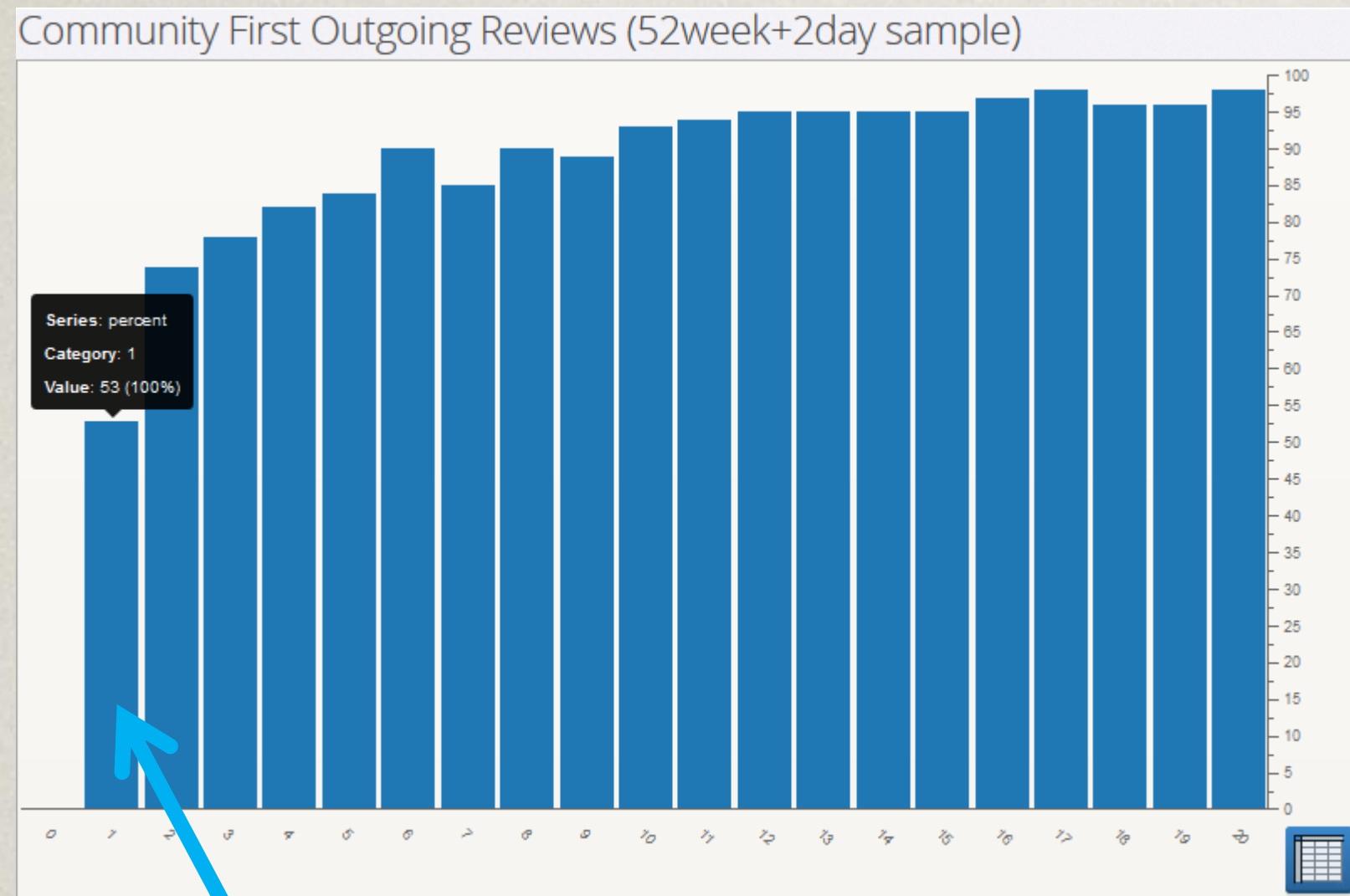


Most reviews done inside 6 hours!

Very long tail

Dear Me!

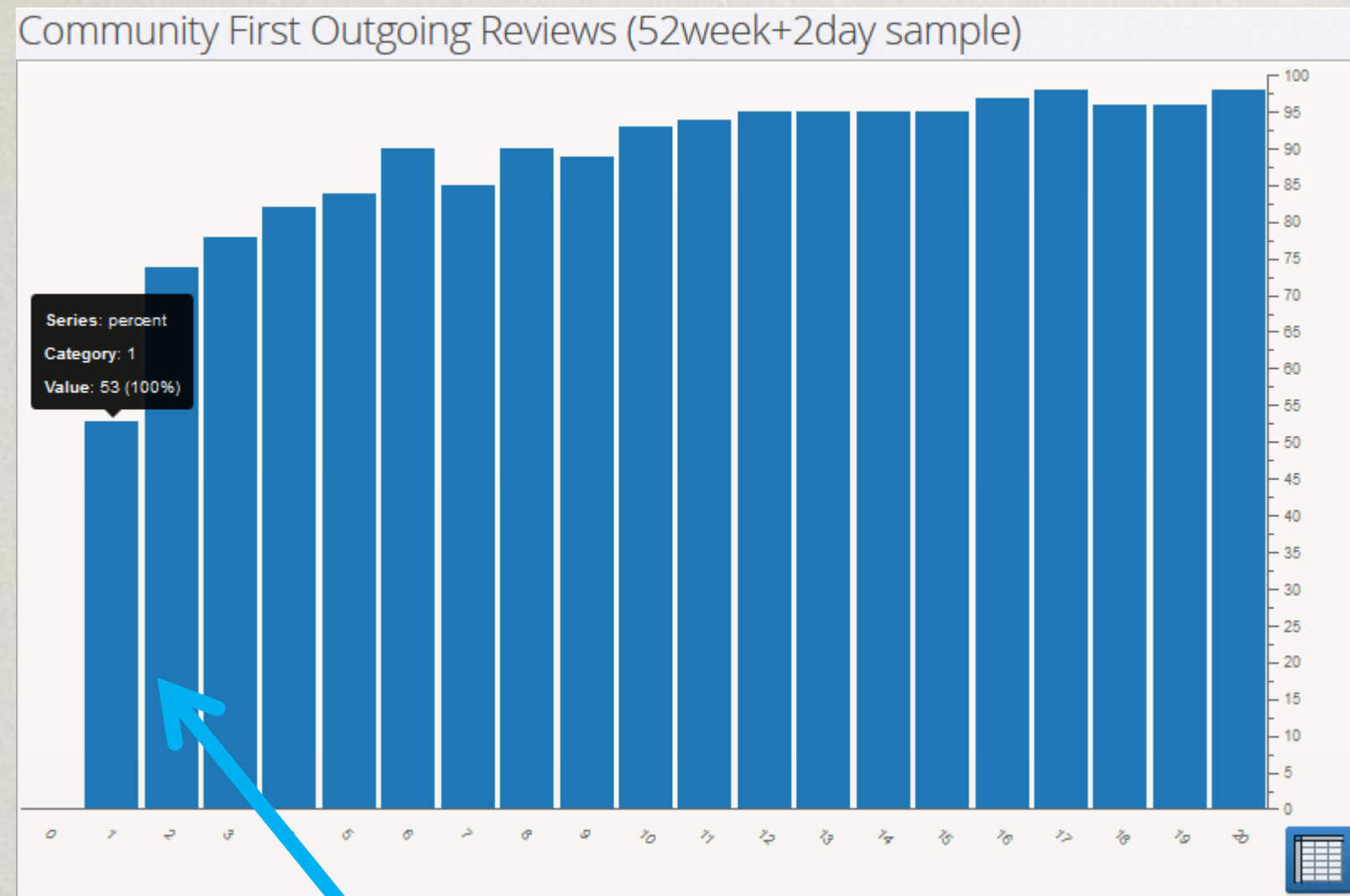
Past Work with Elasticsearch



More patches
means more likely
to continue

After first patch, 53% will
submit a second patch
(inside 3 months)

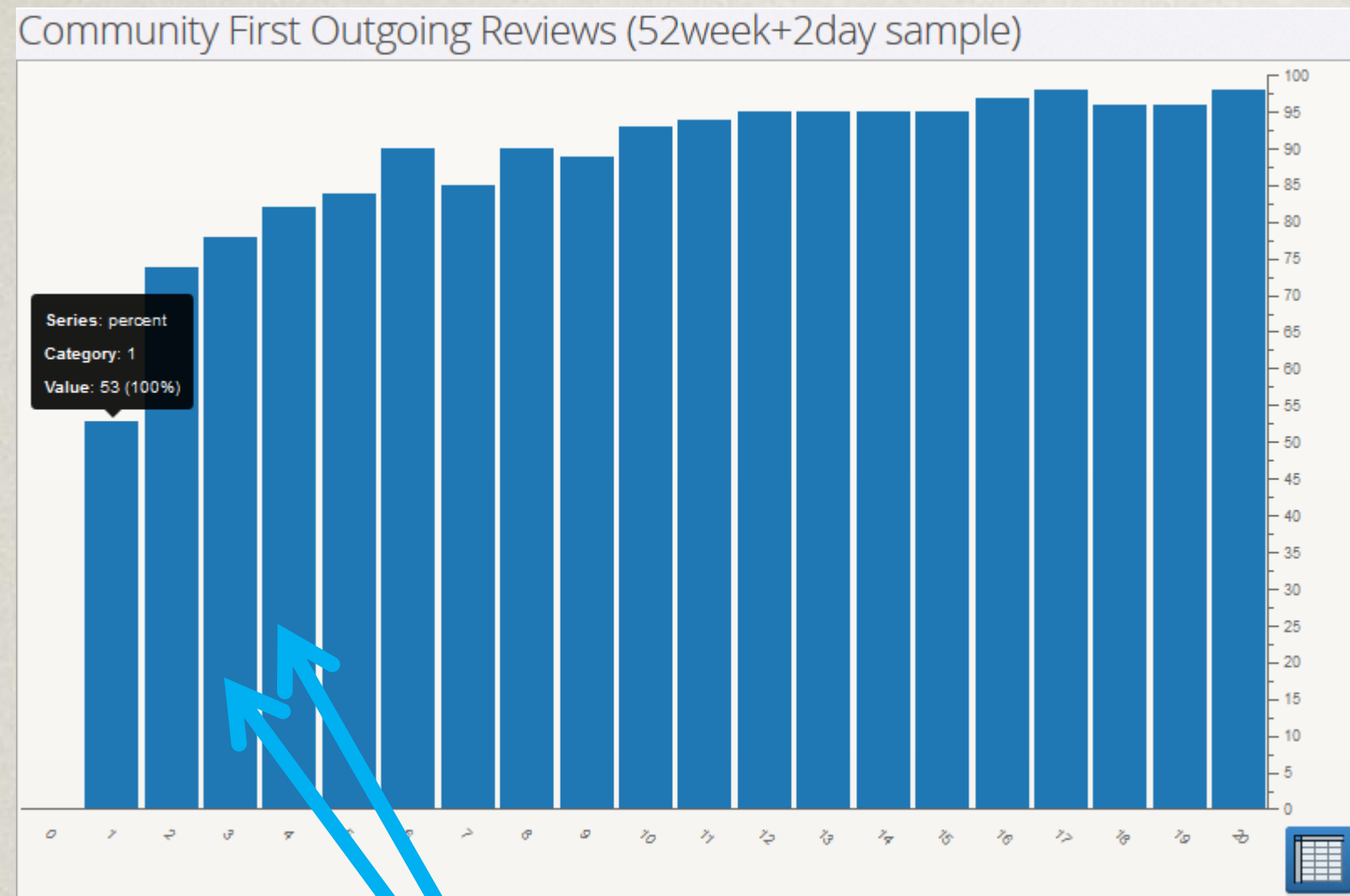
Past Work with Elasticsearch



More patches
means more likely
to continue

After the second patch,
74% will submit a third
(inside 3 months)

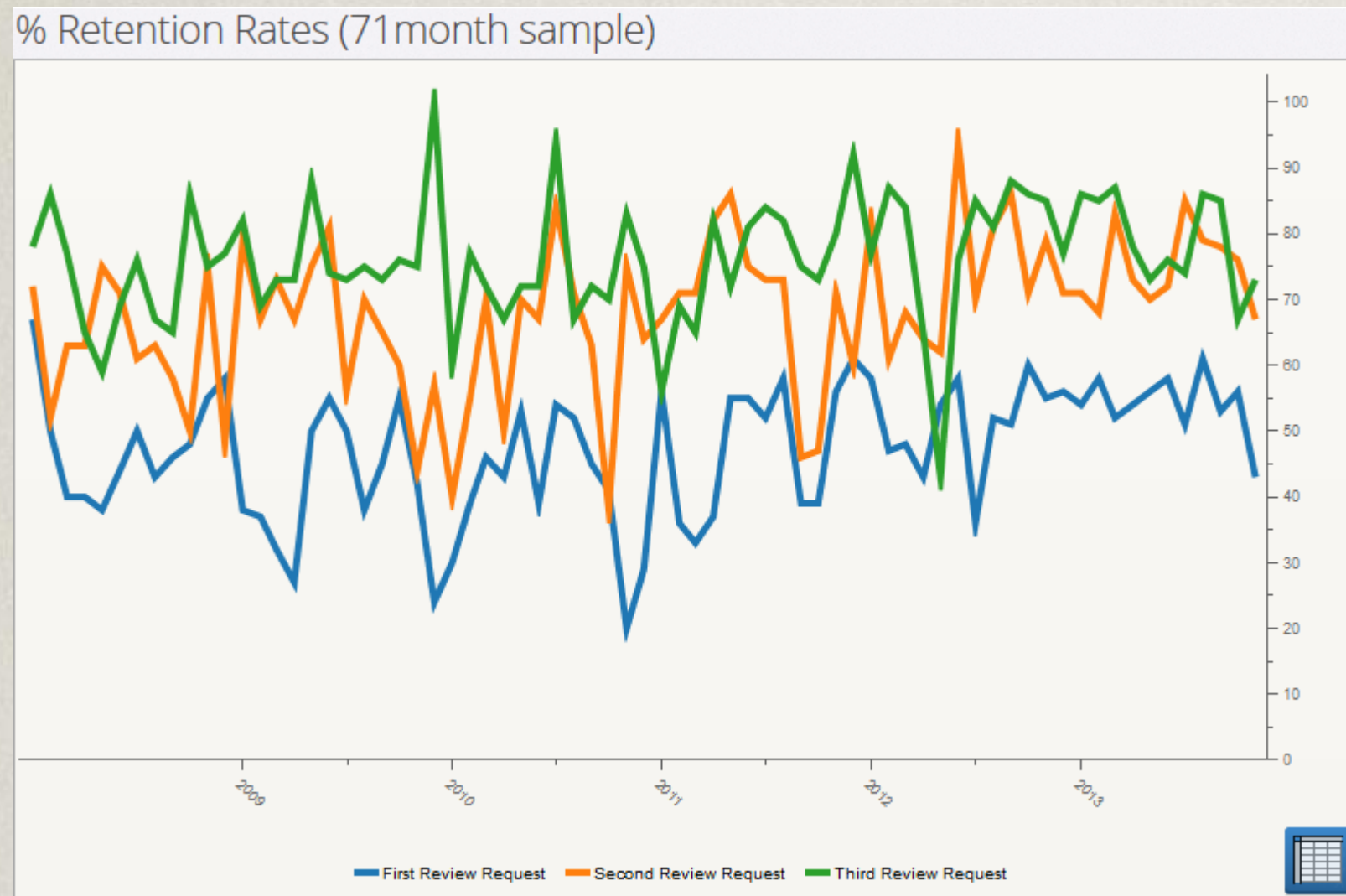
Past Work with Elasticsearch



More patches
means more likely
to continue

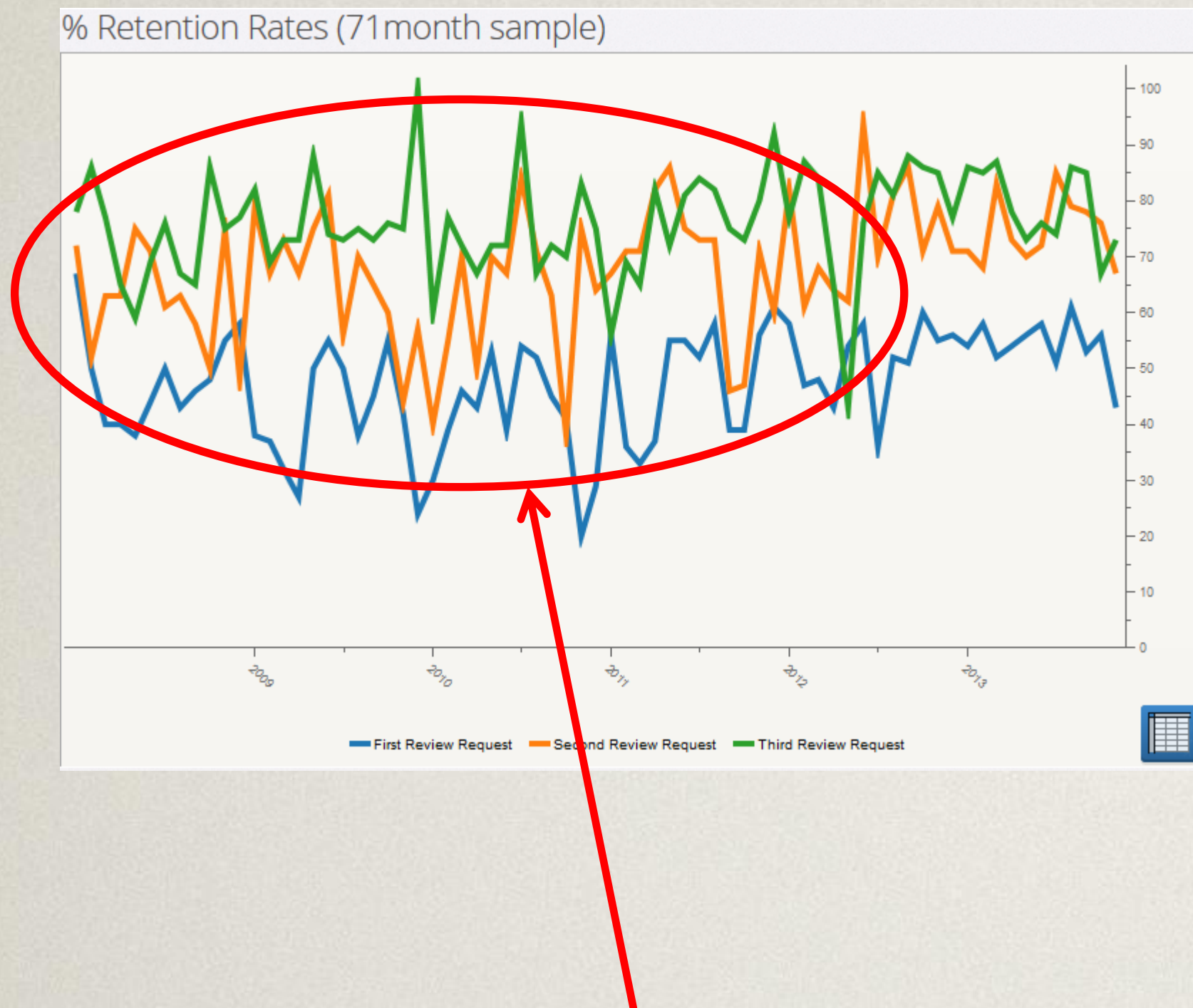
and so on...

Past Work with Elasticsearch



Looking at “retention”
over past 5 years

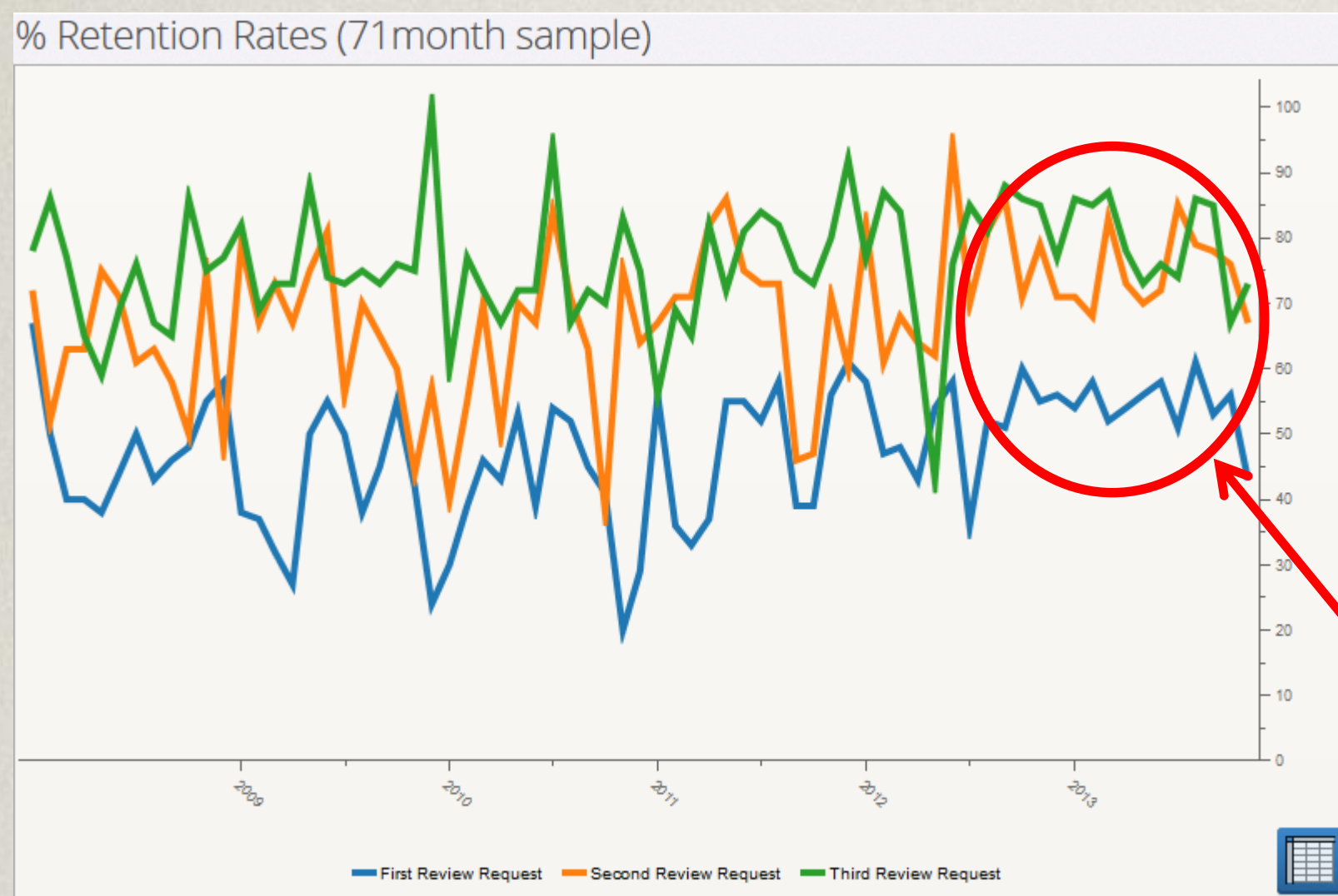
Past Work with Elasticsearch



Looking at “retention”
over past 5 years

Very noisy, maybe
there is a deeper
pattern?

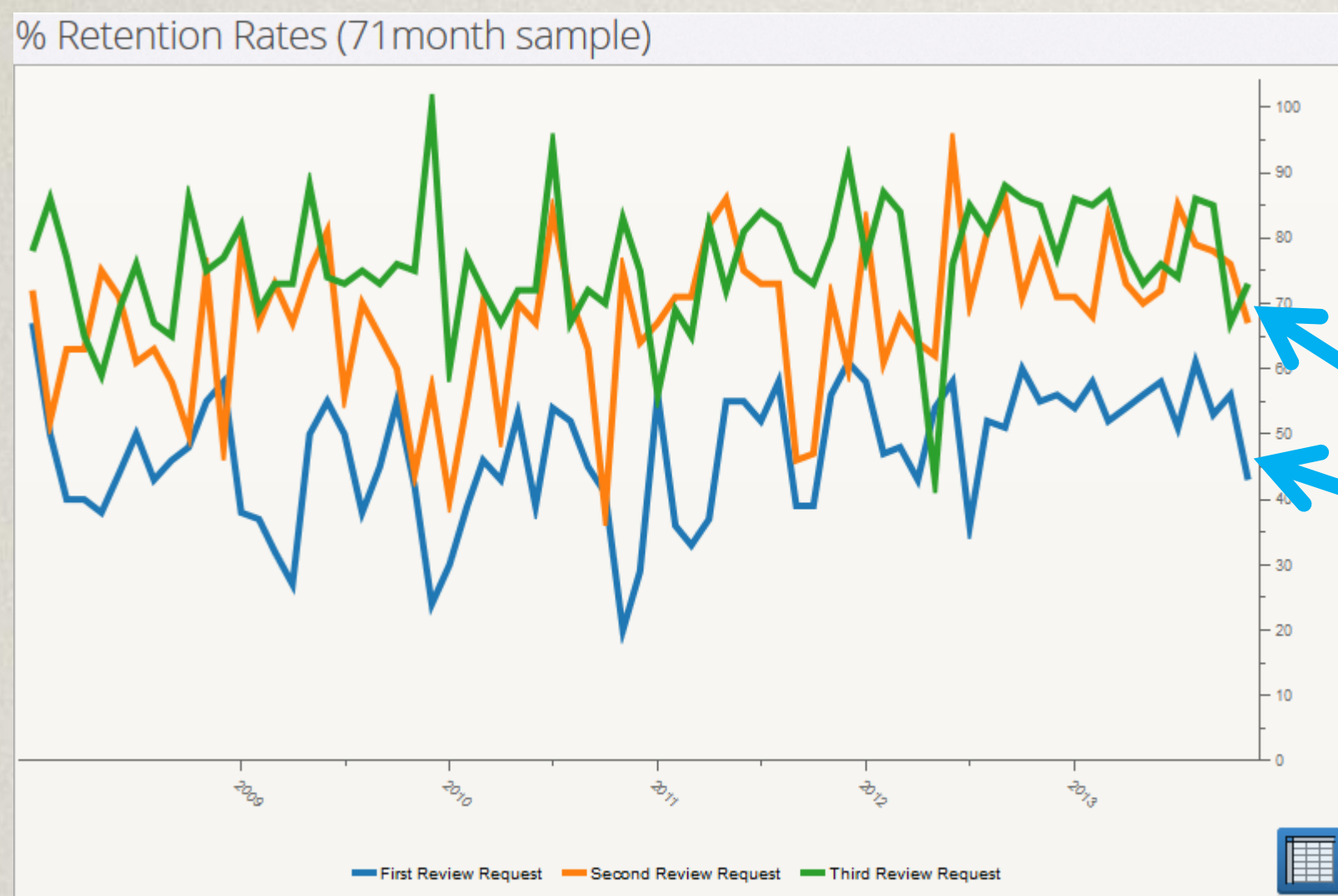
Past Work with Elasticsearch



Looking at “retention”
over past 5 years

Less noise, and higher
retention after late 2012

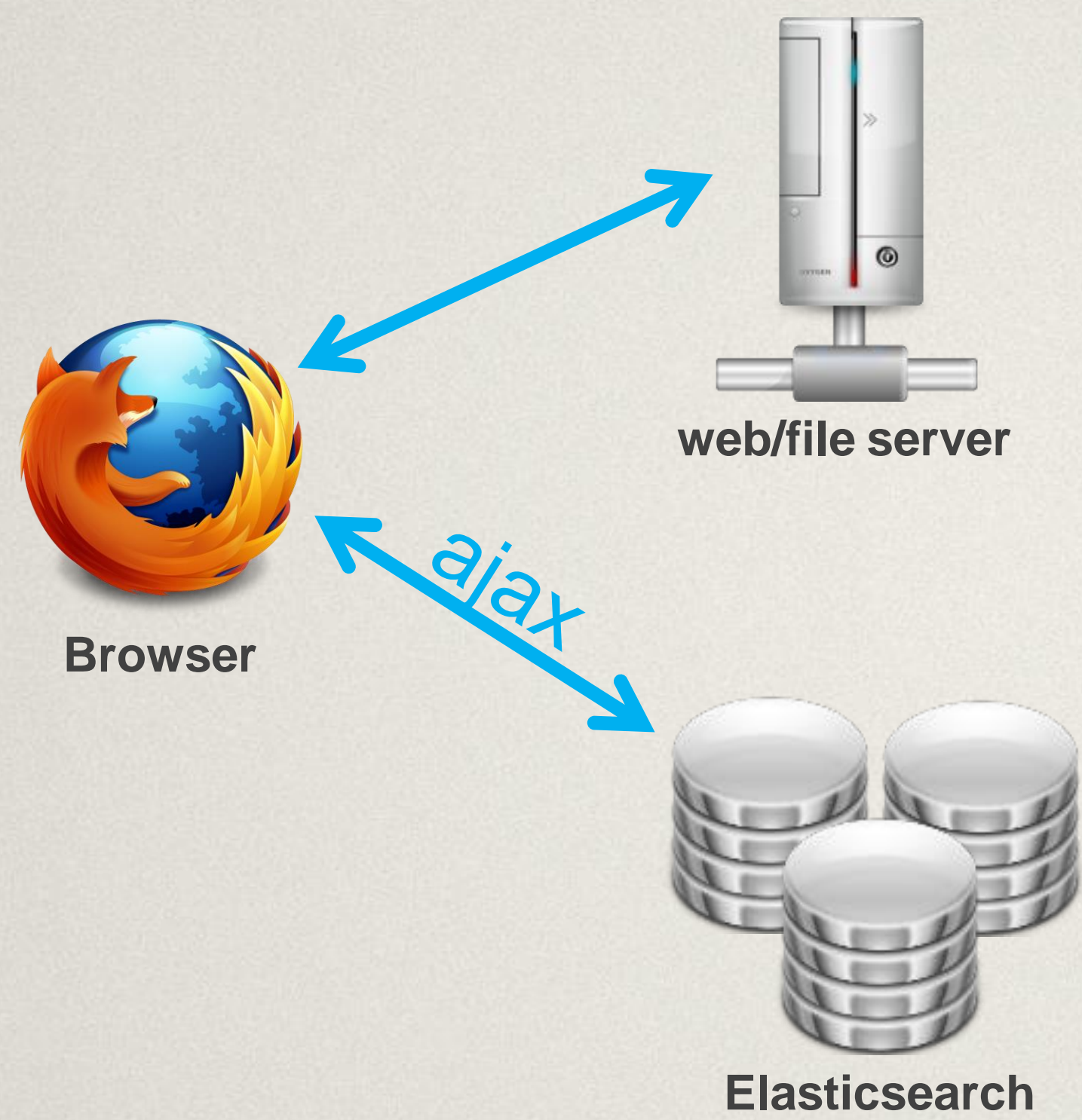
Past Work with Elasticsearch



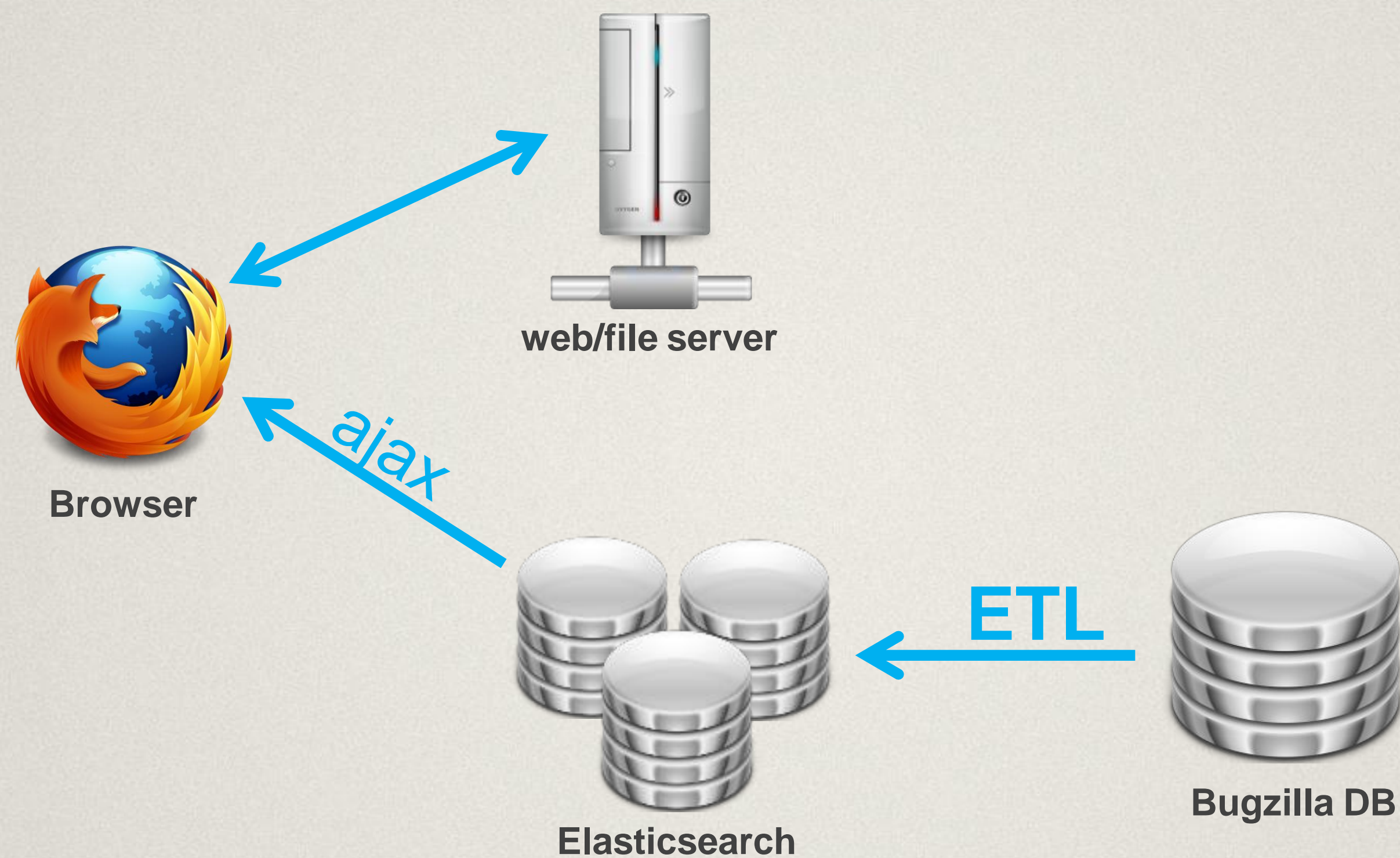
Looking at “retention”
over past 5 years

Edge effect: Not
enough time to see if
person will submit
another patch

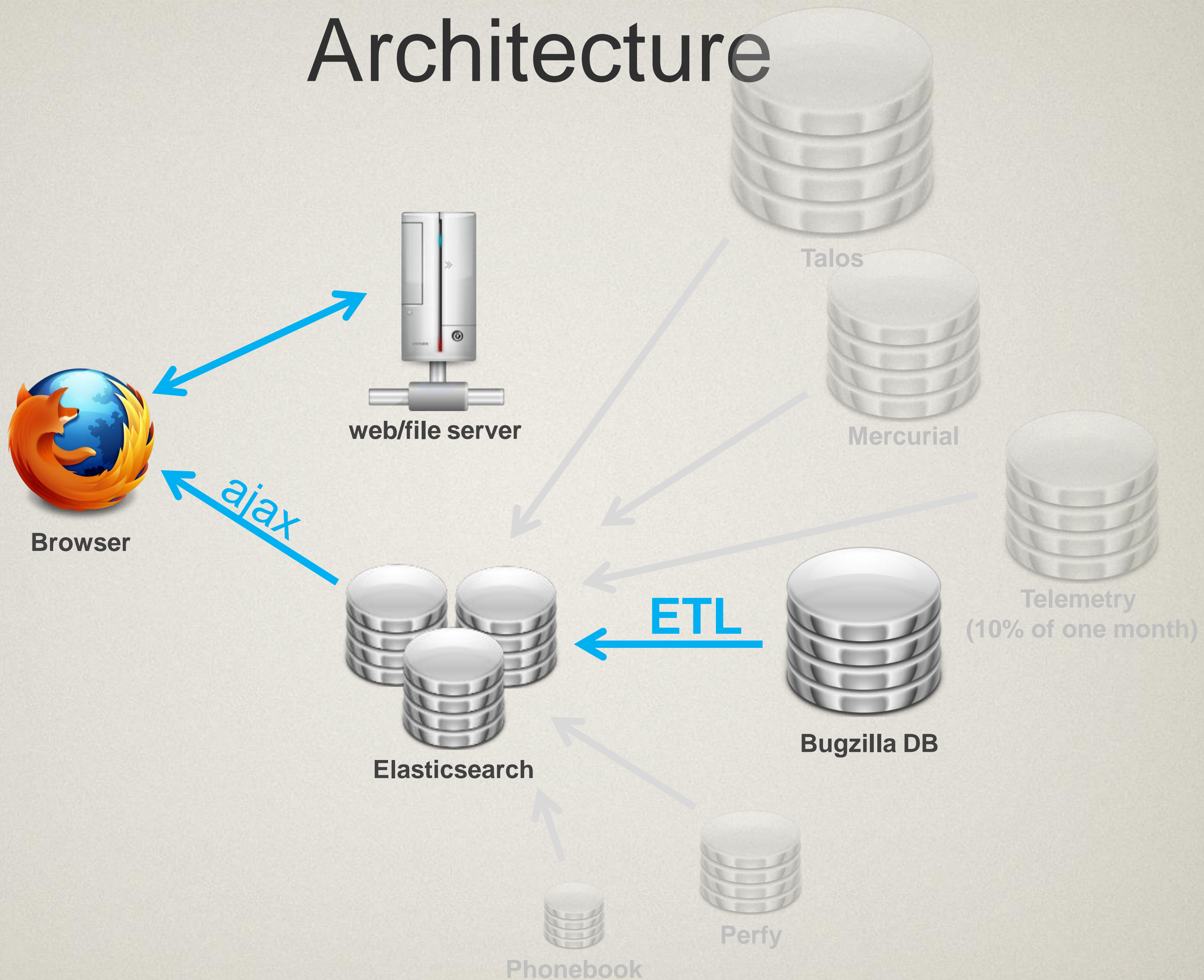
Architecture



Architecture



Architecture



Making a Dashboard

```

1 <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
2 <!-- This Source Code Form is subject to the terms of the Mozilla Public
3 - License, v. 2.0. If a copy of the MPL was not distributed with this
4 - file, You can obtain one at http://mozilla.org/MPL/2.0/. -->
5 <HTML>
6 <HEAD>
7   <script type="application/javascript;version=1.7" src="lib/jsImport/import.js"></script>
8 </HEAD>
9 <BODY>
10
11 <div id="sidebar">
12   <br>
13   <br>
14   <div style="height: 30px; text-align: center;vertical-align:middle;">
15     <span id="status" style="height:30px">Page Loading...</span><span class="loading"></span>
16   </div>
17
18   <hr>
19   <div id="description">Summarize number of of bugs over the sample given<br><br>
20     This is best used on a small number of bugs because details must be
21     brought to the client for further processing<br><br>
22   </div>
23   <hr>
24   <div id="testMessage"></div>
25   <hr>
26   <div id="stats"></div>
27   <hr>
28   <div id="parameters" class="parameters">
29   </div>
30   <div id="filters" class="menu"></div>
31 </div>
32
33 <div style="float:right;display: inline;">
34   <a href="http://people.mozilla.com/~khaenakoski/" class="button">HOME</a>
35 </div>
36 <div style="align:left;position:relative;float:left;width:800px;">
37   <h3 id="title"></h3>
38   <div id="chartCount" class="chart" style="float:none;width:800px;height:300px;"></div>
39   <div id="chartChurn" class="chart" style="float:none;width:800px;height:300px;"></div>
40   <div id="chart" class="chart" style="float:none;width:800px;height:300px;"></div>
41   <br><br>
42   <div id="info"></div>

```

```

<html>
  <head/>
  <body>
    content
    <script>
      code
    </script>
  </body>
</html>

```

```

191 Thread.run(function(){
192   var chart=yield ESQuery.run([
193     "name": "Open Bug Count",
194     "from": "bugs",
195     "select": {
196       "name": "num bug",
197       "value": "bug_id",
198       "aggregate": "count"
199     },
200   ],
201   "edges": [
202     { "name": "date",
203       "range": {
204         "min": "modified_ts",
205         "max": "expires_on"
206       },
207       "allowNulls": false,
208       "domain": {
209         "type": "time",
210         "min": sampleMin,
211         "max": sampleMax.add(sampleInterval),
212         "interval": sampleInterval
213       }
214     }
215   ],
216   "esfilter": mainFilter
217   ));
218
219   aChart.show({
220     "id": "chartCount",
221     "sheetDiv": "info",
222     "type": "line",
223     "stacked": false,
224     "cube": chart,
225     "height": "300",
226     "xAxisSize": 50,
227     "width": 800
228   });
229 });
230

```


Making a Dashboard

```
1 <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
2 <!-- This Source Code Form is subject to the terms of the Mozilla Public
3      - License, v. 2.0. If a copy of the MPL was not distributed with this
4      - file, You can obtain one at http://mozilla.org/MPL/2.0/. -->
5 <HTML>
6 <HEAD>
7   <script type="application/javascript;version=1.7" src="lib/jsImport/import.js"></script>
8 </HEAD>
9 <BODY>
10
11 <div id="sidebar">
12   <br>
13   <br>
14   <div style="height: 30px; text-align: center;vertical-align:middle;">
15     <span id="status" style="height:30px">Page Loading...</span><span class="loading"></span>
16   </div>
17
18   <hr>
19   <div id="description">Summarize number of of bugs over the sample given<br><br>
20     This is best used on a small number of bugs because details must be
21     brought to the client for further processing<br><br>
22   </div>
23   <hr>
24   <div id="testMessage"></div>
25   <hr>
26   <div id="stats"></div>
27   <hr>
28   <div id="parameters" class="parameters">
29   </div>
30   <div id="filters" class="menu"></div>
31 </div>
32
33 <div style="float:right;display: inline;">
34   <a href="http://people.mozilla.com/~kiahnakoski/" class="button">HOME</a>
35 </div>
36 <div style="align:left;position:relative;float:left;width:800px;">
37   <h3 id="title"></h3>
38   <div id="chartCount" class="chart" style="float:none;width:800px;height:300px;"></div>
39   <div id="chartChurn" class="chart" style="float:none;width:800px;height:300px;"></div>
40   <div id="chart" class="chart" style="float:none;width:800px;height:300px;"></div>
41   <br><br>
42   <div id="info"></div>
```

```
<html>
  <head/>
  <body>
    content
    <script>
    code
    </script>
  </body>
</html>
```

```
<script type="application/javascript;version=1.7">
```

```
191
192 Thread.run(function() {
193
194   // ...
195   "aggregate": "count"
196 },
197 "edges": [
198   { "name": "date",
199     "range": {
200       "min": "modified_ts",
201       "max": "expires_on"
202     },
203     "allowNulls": false,
204     "domain": {
205       "type": "time",
206       "min": sampleMin,
207       "max": sampleMax.add(sampleInterval),
208       "interval": sampleInterval
209     }
210   }
211 ],
212 "efilter": mainFilter
213 });
214
215 aChart.show({
216   "id": "chartCount",
217   "sheetDiv": "info",
218   "type": "line",
219   "stacked": false,
220   "cube": chart,
221   "height": "300",
222   "xAxisSize": 50,
223   "width": 800
224 });
225
226
227
228
229
230
```


Making a Dashboard

```
1 <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
2 <!-- This Source Code Form is subject to the terms of the Mozilla Public
3      - License, v. 2.0. If a copy of the MPL was not distributed with this
4      - file, You can obtain one at http://mozilla.org/MPL/2.0/. -->
5 <HTML>
6 <HEAD>
7   <script type="application/javascript;version=1.7" src="lib/jsImport/import.js"></script>
8 </HEAD>
9 <BODY>
10
11 <div id="sidebar">
12   <br>
13   <br>
14   <div style="height: 30px; text-align: center;vertical-align:middle;">
15     <span id="status" style="height:30px">Page Loading...</span><span class="loading"></span>
16   </div>
17
18   <hr>
19
20   <h3 id="title"></h3>
21
22   <div id="chartCount" class="chart" style="float:none;width:800px;height:300px;"></div>
23
24   <div id="chartChurn" class="chart" style="float:none;width:800px;height:300px;"></div>
25
26   </div>
27
28   <div id="filters" class="menu"></div>
29 </div>
30
31 <div style="float:right;display: inline;">
32   <a href="http://people.mozilla.com/~klahnakoski/" class="button">HOME</a>
33 </div>
34
35 <div style="align:left;position:relative;float:left;width:800px;">
36   <h3 id="title"></h3>
37
38   <div id="chartChurn" class="chart" style="float:none;width:800px;height:300px;"></div>
39
40   <br><br>
41   <div id="info"></div>
42
```

```
191 Thread.run(function(){
192   var chart=yield ESQuery.run([
193     "name": "Open Bug Count",
194     "from": "bugs",
195     "select": {
196       "name": "num bug",
197       "value": "bug_id",
198       "aggregate": "count"
199     },
200     "edges": [
201       { "name": "date",
202         "range": {
203           "min": "modified_ts",
204           "max": "expires_on"
205         },
206         "allowNulls": false,
207         "domain": {
208           "type": "time",
209           "min": sampleMin,
210           "max": sampleMax.add(sampleInterval),
211           "interval": sampleInterval
212         }
213       }
214     ],
215     "esfilter": mainFilter
216   ]);
217
218   aChart.show({
219     "id": "chartCount",
220     "sheetDiv": "info",
221     "type": "line",
222     "stacked": false,
223     "cube": chart,
224     "height": "300",
225     "xAxisSize": 50,
226     "width": 800
227   });
228
229 });
230
```


Making a Dashboard

```

1 <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
2 <!-- This Source Code Form is subject to the terms of the Mozilla Public
3 - License, v. 2.0. If a copy of the MPL was not distributed with this
4 - file, You can obtain one at http://mozilla.org/MPL/2.0/. -->
5 <HTML>
6 <HEAD>
7 <script type="application/javascript;version=1.7" src="lib/jsImport/import.js"></script>
8 </HEAD>
9 <BODY>
10
11 <div id="sidebar">
12 <br>
13 <br>
14 <div style="height: 30px; text-align: center;vertical-align:middle;">
15 <span id="status" style="height:30px">Page Loading...</span><span class="loading"></span>
16 </div>
17
18 <hr>
19 <div id="description">Summarize number of of bugs over the sample given<br><br>
20 | This is best used on a small number of bugs because details must be
21 | brought to the client for further processing<br><br>
22 </div>
23 <hr>
24 <div id="testMessage"></div>
25 <hr>
26 <div id="stats"></div>
27 <hr>
28 <div id="parameters" class="parameters">
29 </div>
30 <div id="filters" class="menu"></div>
31 </div>
32
33 <div style="float:right;display: inline;">
34 <a href="http://people.mozilla.com/~kiahnakoski/" class="button">HOME</a>
35 </div>
36 <div style="align:left;position:relative;float:left;width:800px;">
37 <h3 id="title"></h3>
38 <div id="chartCount" class="chart" style="float:none;width:800px;height:300px;"></div>
39 <div id="chartChurn" class="chart" style="float:none;width:800px;height:300px;"></div>
40 <div id="chart" class="chart" style="float:none;width:800px;height:300px;"></div>
41 <br><br>
42 <div id="info"></div>

```

```

var chart=yield (ESQuery.run({
  "name": "Open Bug Count",
  "from": "bugs",
  "select": {
    "name": "num_bug",
    "value": "bug_id",
    "aggregate": "count"
  },
  "edges": [
    { "name": "date",
      "range": {
        "min": "modified_ts",
        "max": "expires_on"
      },
      "allowNulls": false,
      "domain": {
        "type": "time",
        "min": sampleMin,
        "max": sampleMax.add(sampleInterval),
        "interval": sampleInterval
      }
    }
  ],
  "esfilter": mainFilter
}));

```

```

191 Thread.run(function() {
192   var chart=yield (ESQuery.run({
193     "name": "Open Bug Count",
194     "from": "bugs",
195     "select": {
196       "name": "num_bug",
197       "value": "bug_id",
198       "aggregate": "count"
199     },
200     "edges": [
201       { "name": "date",
202         "range": {
203           "min": "modified_ts",
204           "max": "expires_on"
205         },
206         "allowNulls": false,
207         "domain": {
208           "type": "time",
209           "min": sampleMin,
210           "max": sampleMax.add(sampleInterval),
211           "interval": sampleInterval
212         }
213       }
214     ],
215     "esfilter": mainFilter
216   }));
217
218   aChart.show({
219     "id": "chartCount",
220     "sheetDiv": "info",
221     "type": "line",
222     "stacked": false,
223     "cube": chart,
224     "height": "300",
225     "xAxisSize": 50,
226     "width": 800
227   });
228 });
229
230

```


Making a Dashboard

```

1 <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
2 <!-- This Source Code Form is subject to the terms of the Mozilla Public
3 - License, v. 2.0. If a copy of the MPL was not distributed with this
4 - file, You can obtain one at http://mozilla.org/MPL/2.0/. -->
5 <HTML>
6 <HEAD>
7 <script type="application/javascript;version=1.7" src="lib/jsImport/import.js"></script>
8 </HEAD>
9 <BODY>
10
11 <div id="sidebar">
12 <br>
13 <br>
14 <div style="height: 30px; text-align: center;vertical-align:middle;">
15 | <span id="status" style="height:30px">Page Loading...</span><span class="loading"></span>
16 </div>
17
18 <hr>
19 <div id="description">Summarize number of of bugs over the sample given<br><br>
20 | This is best used on a small number of bugs because details must be
21 | brought to the client for further processing<br><br>
22 </div>
23 <hr>
24 <div id="testMessage"></div>
25 <hr>
26 <div id="stats"></div>
27 <hr>
28 <div id="parameters" class="parameters">
29 </div>
30 <div id="filters" class="menu"></div>
31 </div>
32
33 <div style="float:right;display: inline;">
34 <a href="http://people.mozilla.com/~kiahnakoski/" class="button">HOME</a>
35 </div>
36 <div style="align:left;position:relative;float:left;width:800px;">
37 <h3 id="title"></h3>
38 <div id="chartCount" class="chart" style="float:none;width:800px;height:300px;"></div>
39 <div id="chartChurn" class="chart" style="float:none;width:800px;height:300px;"></div>
40 <div id="chart" class="chart" style="float:none;width:800px;height:300px;"></div>
41 <br><br>
42 <div id="info"></div>

```

```

aChart.show({
    "id": "chartCount",
    "sheetDiv": "info",
    "type": "line",
    "stacked": false,
    "cube": chart,
    "height": "300",
    xAxisSize: 50,
    "width": 800
});

```

```

191 Thread.run(function(){
192     var chart=yield ESQuery.run({
193         "name": "Open Bug Count",
194         "from": "bugs",
195         "select": {
196             "name": "num bug",
197             "value": "bug_id",
198             "aggregate": "count"
199         },
200         "edges": [
201             { "name": "date",
202               "range": {
203                 "min": "modified_ts",
204                 "max": "expires_on"
205               },
206             },
207             "allowNulls": false,
208             "domain": {
209                 "type": "time",
210                 "min": sampleMin,
211                 "max": sampleMax.add(sampleInterval),
212                 "interval": sampleInterval
213             }
214         ],
215         "efilter": "mainFilter"
216     });
217
218     aChart.show({
219         "id": "chartCount",
220         "sheetDiv": "info",
221         "type": "line",
222         "stacked": false,
223         "cube": chart,
224         "height": "300",
225         xAxisSize: 50,
226         "width": 800
227     });
228 }
229
230

```


Future Plans

- Use Elasticsearch for what it was meant: Searching text comments
- ES has a limited form of join
- Make a query service?

The End