Utah Distributed Systems Meetup and Reading Group - Metrics/Tracing

JT Olds

Space Monkey
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Outline

1 Introduction

2 Metrics

3 Tracing

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1 Introduction

2 Metrics

3 Tracing

Introduction

1 Introduction

The metrics system is Netflix's biggest cloud spend. "We're a monitoring platform that happens to stream movies." -@royrapoport #monitorama

– @dberkholz

Why metrics or tracing?

- Very hard to get a distributed system right first try.
- Traditional debugging approaches don't scale.
- Not knowing what your system is doing is flying blind or stabbing in the dark.
- Mental models can be great but can also be wrong.

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1 Introduction

2 Metrics

3 Tracing

Metrics

2 Metrics
- What?
- Instrumentation
- Graphite
- Graphite Replacements
- Graphite Extensions
- Graphite Helpers

Metrics

2 Metrics
- What?
- Instrumentation
- Graphite
- Graphite Replacements
- Graphite Extensions
- Graphite Helpers

What do I mean by metrics?

- Any kind of data collection about your system
- ...but usually time-series key/value, where the value is some number.
- Sometimes called telemetry.

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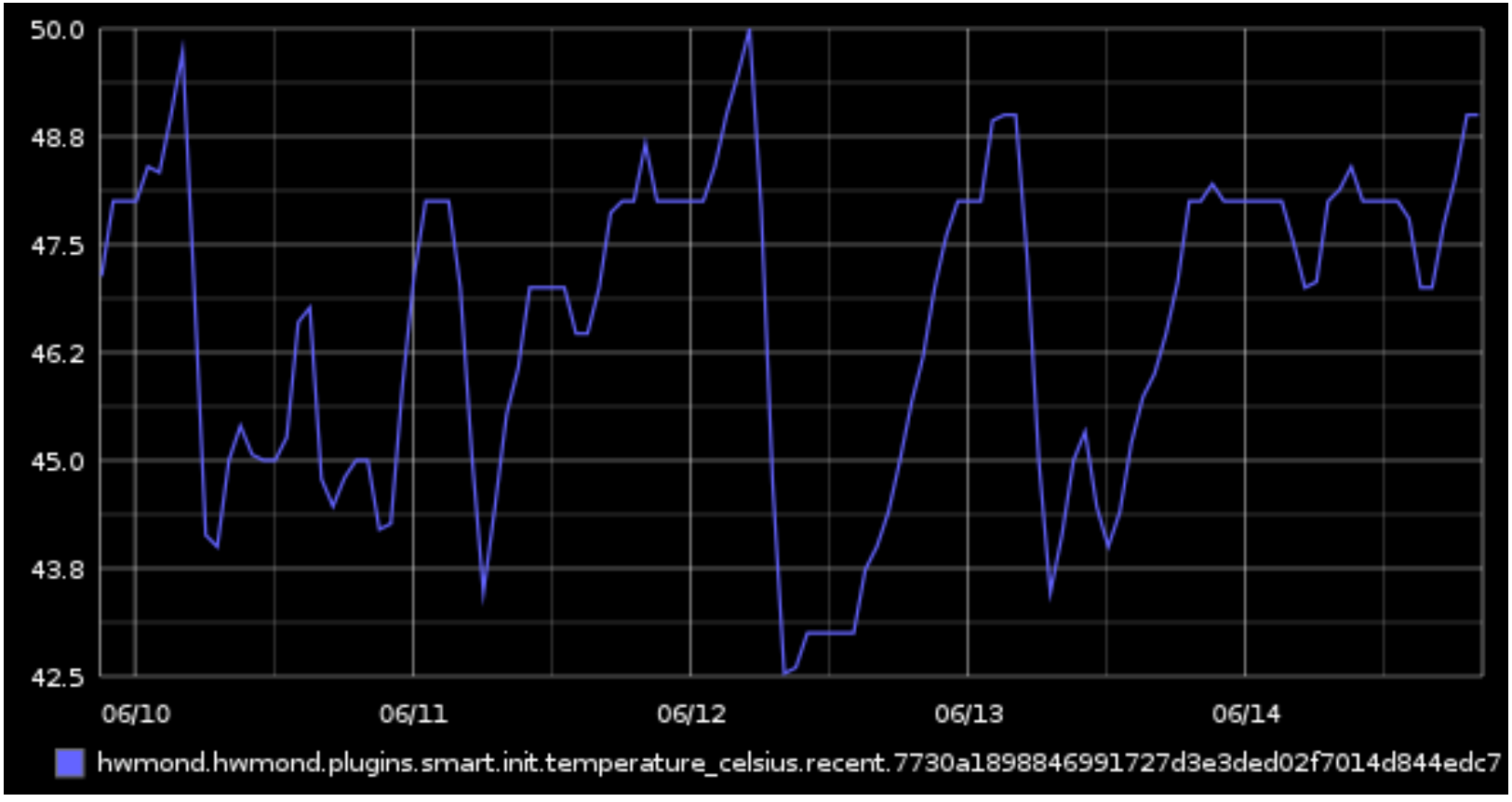
Example: Graphite wire format

```
smart.temp_cels.7730a 48.0 1434314640
smart.temp_cels.7730a 46.3 1434314848
smart.temp_cels.7730a 46.8 1434315040
```


50.0
48.8
47.5
46.2
45.0
43.8
42.5
06/10
06/11
06/12
06/13
06/14
hwmond.hwmond.plugins.smart.init.temperature_celsius.recent.7730a1898846991727d3e3ded02f7014d844edc7

Metrics

2 Metrics
- What?
- Instrumentation
- Graphite
- Graphite Replacements
- Graphite Extensions
- Graphite Helpers

Libraries

- Lots of library choices
- Protocol so simple, you can write your own!
- (We did - `gopkg.in/spacemonkeygo/monitor.v1`)

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Library commonalities

- Time measurement
- Event tracking
- Arbitrary value tracking
- Good ones let you measure quantiles

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- I'm mostly skipping how you get data cause there's so many ways.
- This means I'm also skipping monitoring systems, like Nagios or Zabbix or Ganglia or Munin or Monit or Zenoss or Cacti or Collectd or cAdvisor or Sensu or...

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The 800 pound Gorilla

Live demo

Metrics

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Full graphite replacements

- InfluxDB - `http://influxdb.com/`
- Prometheus - `http://prometheus.io/`
- OpenTSDB - `http://opentsdb.net/`
- Atlas - `https://github.com/Netflix/atlas`
- Blueflood `http://blueflood.io/`

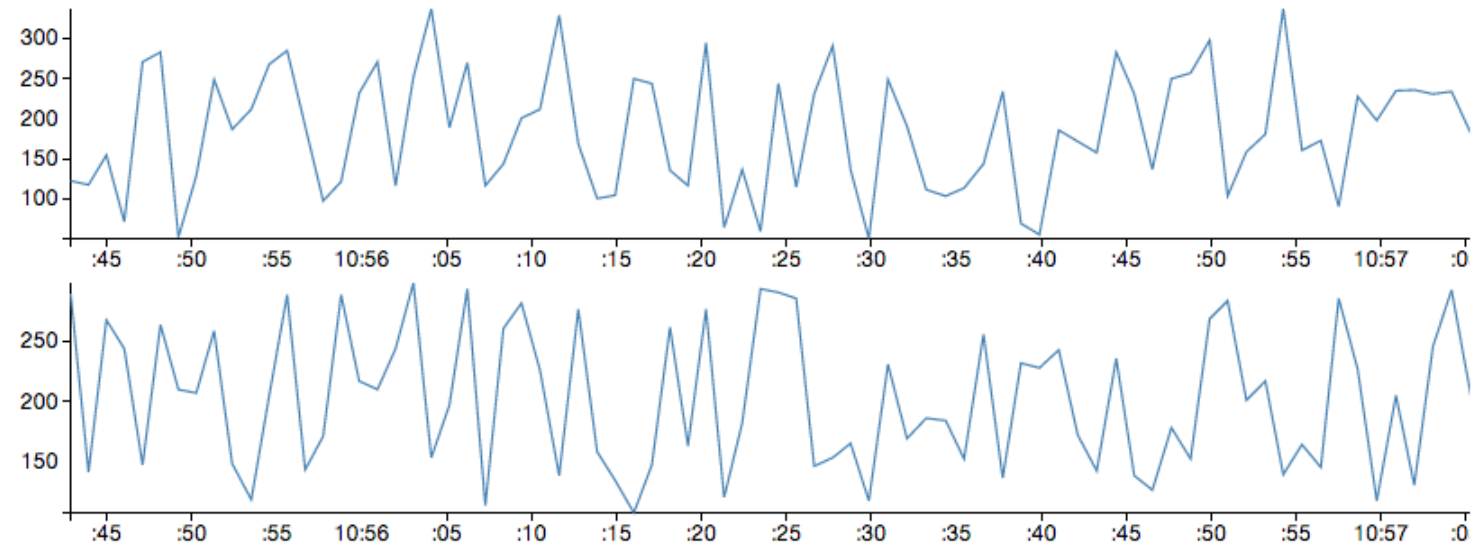
Read Points

Query

select foo, bar from data;

Execute Query

data



time	sequence_number	bar	foo
1384185425284	29696	182	205
1384185424149	29695	234	293
1384185423055	29694	231	246
1384185421955	29693	236	130
1384185420878	29692	235	205

Data Interface

Read Points

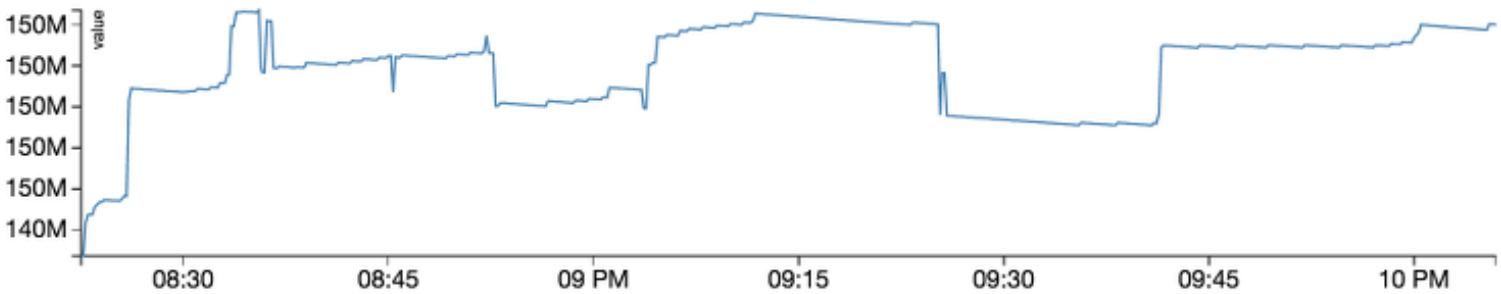
Query

select * from "influxdb/memory/memory-used"

InfluxDB features a SQL-like query language

Execute Query

influxdb/memory/memory-used



time	sequence_number	type_instance	dsname	dstype	value	host	plugin	plugin_instance	type
1432501561000	173150001	used	value	gauge	154021888	influxdb	memory		memory
1432501551000	172870001	used	value	gauge	154034176	influxdb	memory		memory

Data Interface

Read Points

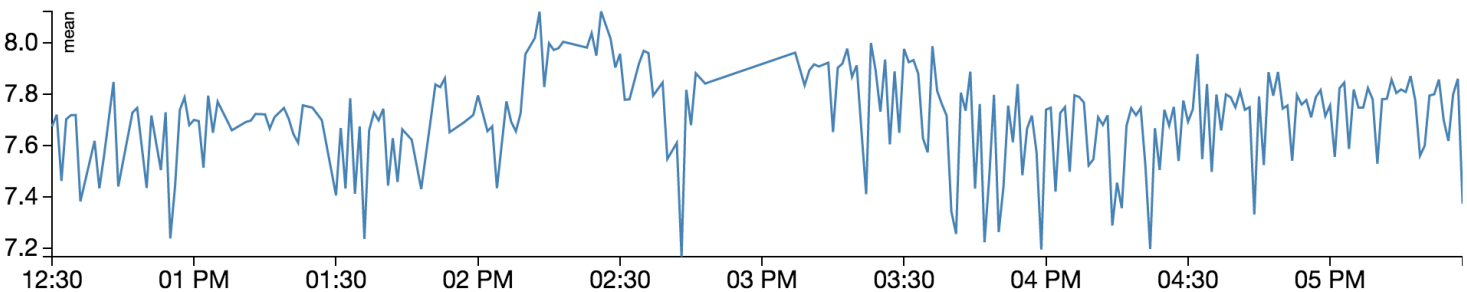
Query

select mean from ping.ams1.www_google_com.last_3h.group_1m where time > now()-5h

InfluxDB features a SQL-like query language

Execute Query

ping.ams1.www_google_com.last_3h.group_1m



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Prometheus

- Pull instead of push
- Alerting and precomputation rules built in

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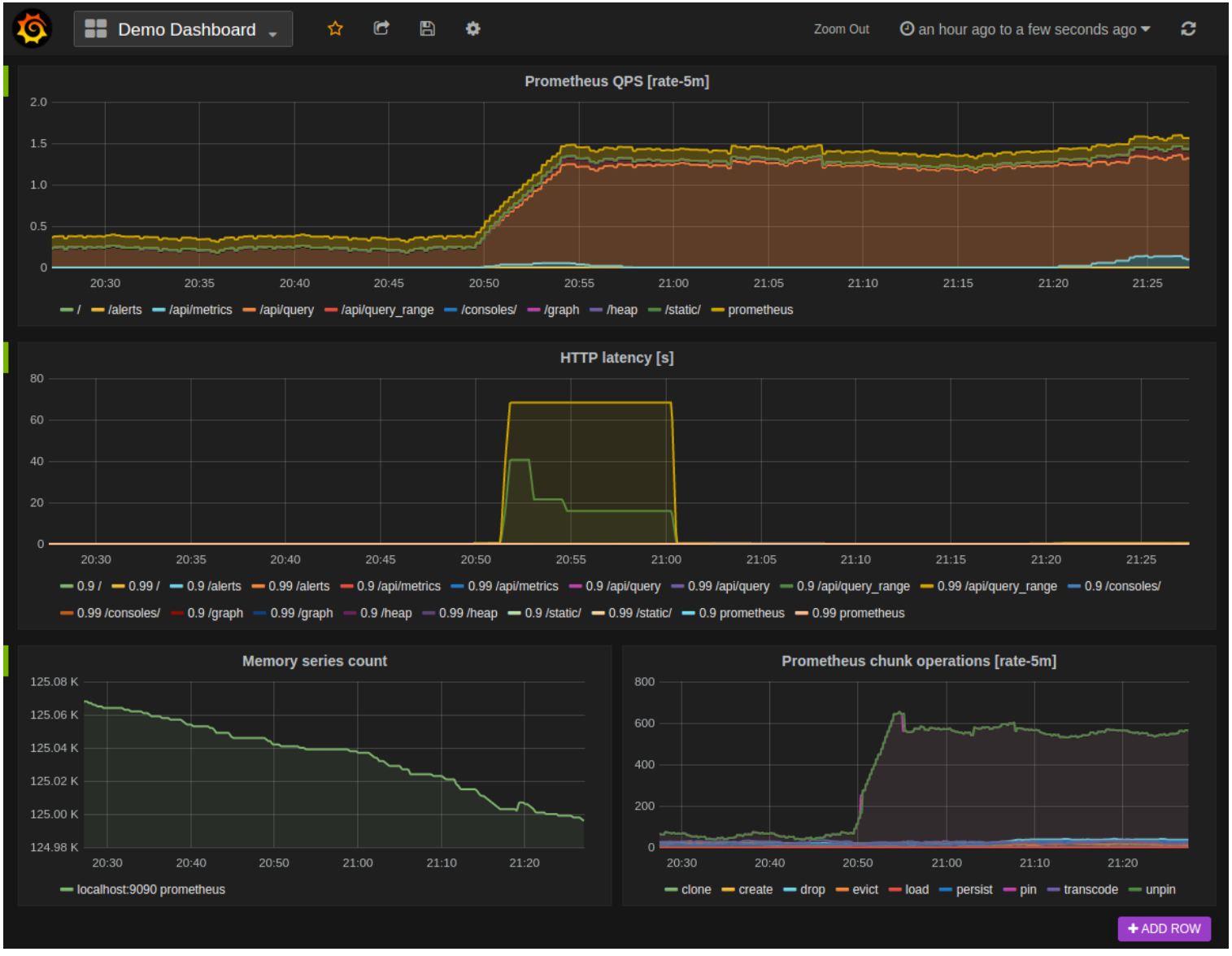
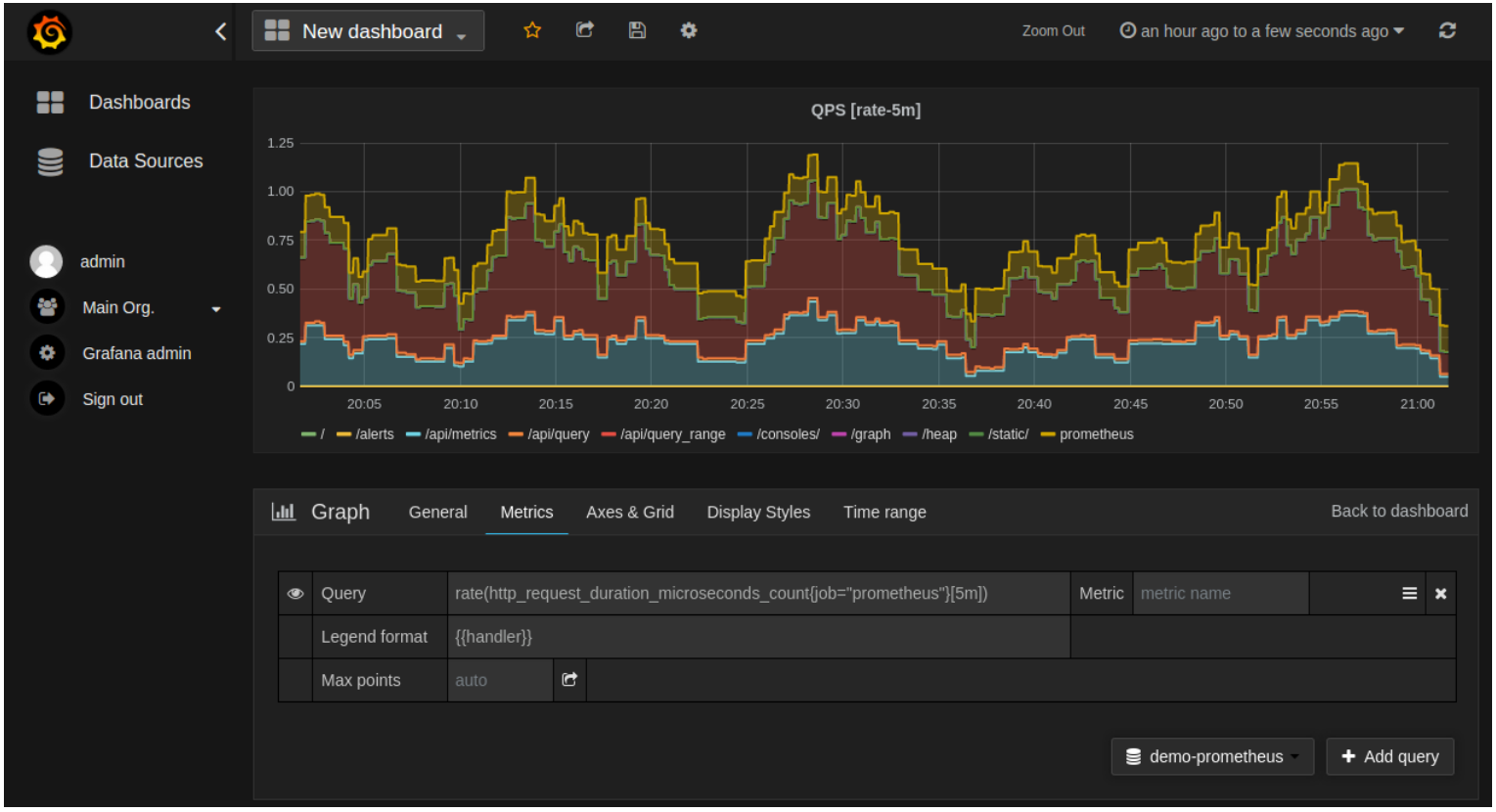
Prometheus
Alerts
Graph
Status
Help
topk(3, sum(rate(bazooka_instance_cpu_time_ns[5m])) by (app, proc))
Execute
Graph
Console
2h
Until
Res. (s)
stacked
120B
115B
110B
105B
100B
18:00
18:15
18:30
18:45
19:00
19:15
19:30
19:45
{app="curious-turtle",proc="api"}
{app="fast-bunny",proc="web"}
{app="lunatic-fox",proc="web"}


Demo Dashboard
Zoom Out
an hour ago to a few seconds ago
Prometheus QPS [rate-5m]
2.0
1.5
1.0
0.5
0
20:30
20:35
20:40
20:45
20:50
20:55
21:00
21:05
21:10
21:15
21:20
21:25
/
/alerts
/api/metrics
/api/query
/api/query_range
/consoles/
/graph
/heap
/static/
prometheus
HTTP latency [s]
80
60
40
20
0
0.9 /
0.99 /
0.9 /alerts
0.99 /alerts
0.9 /api/metrics
0.99 /api/metrics
0.9 /api/query
0.99 /api/query
0.9 /api/query_range
0.99 /api/query_range
0.9 /consoles/
0.99 /consoles/
0.9 /graph
0.99 /graph
0.9 /heap
0.99 /heap
0.9 /static/
0.99 /static/
0.9 prometheus
0.99 prometheus
Memory series count
125.08 K
125.06 K
125.04 K
125.02 K
125.00 K
124.98 K
20:30
20:40
20:50
21:00
21:10
21:20
localhost:9090 prometheus
Prometheus chunk operations [rate-5m]
800
600
400
200
0
20:30
20:40
20:50
21:00
21:10
21:20
clone
create
drop
evict
load
persist
pin
transcode
unpin
+ ADD ROW


New dashboard
Zoom Out
an hour ago to a few seconds ago
Dashboards
Data Sources
admin
Main Org.
Grafana admin
Sign out
QPS [rate-5m]
1.25
1.00
0.75
0.50
0.25
0
20:05
20:10
20:15
20:20
20:25
20:30
20:35
20:40
20:45
20:50
20:55
21:00
/ /alerts /api/metrics /api/query /api/query_range /consoles/ /graph /heap /static/ prometheus
Graph
General
Metrics
Axes & Grid
Display Styles
Time range
Back to dashboard
Query
rate(http_request_duration_microseconds_count{job="prometheus"}[5m])
Metric
metric name
Legend format
{{handler}}
Max points
auto
demo-prometheus
Add query

Full graphite replacements

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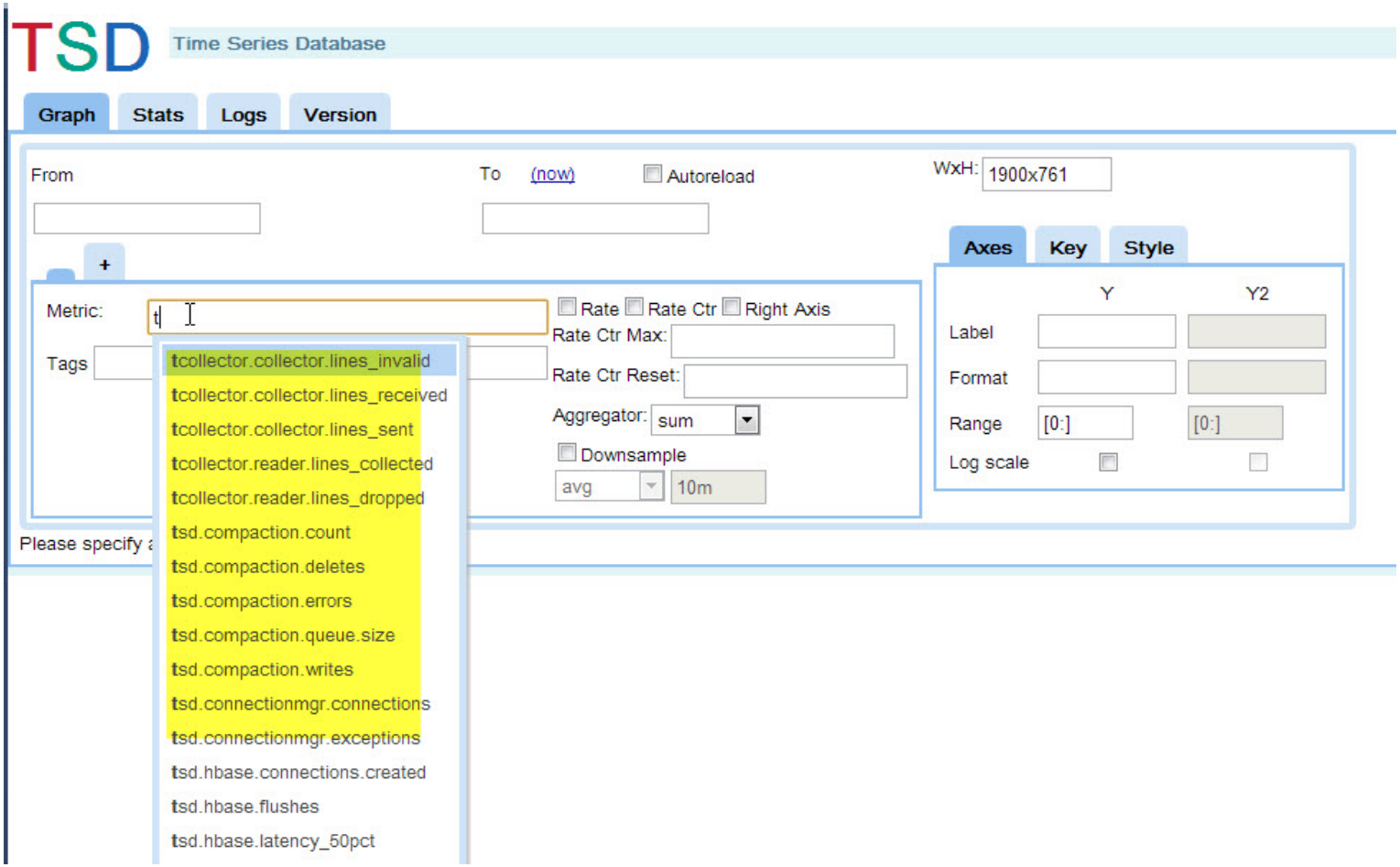

TSD
Time Series Database
Graph
Stats
Logs
Version
From
To
(now)
Autoreload
WxH:
1900x761
Axes
Key
Style
Y
Y2
Label
Format
Range
[0:]
[0:]
Log scale
Metric:
t
Rate
Rate Ctr
Right Axis
Rate Ctr Max:
Rate Ctr Reset:
Aggregator:
sum
Downsample
avg
10m
Tags
Please specify
tcollector.collector.lines_invalid
tcollector.collector.lines_received
tcollector.collector.lines_sent
tcollector.reader.lines_collected
tcollector.reader.lines_dropped
tsd.compaction.count
tsd.compaction.deletes
tsd.compaction.errors
tsd.compaction.queue.size
tsd.compaction.writes
tsd.connectionmgr.connections
tsd.connectionmgr.exceptions
tsd.hbase.connections.created
tsd.hbase.flushes
tsd.hbase.latency_50pct

TSD Time Series Database

Graph | Stats | Logs | Version

From 1h-ago To (now) Autoreload Every: 15 seconds WxH: 800x300

Axes | Key | Style

Smooth

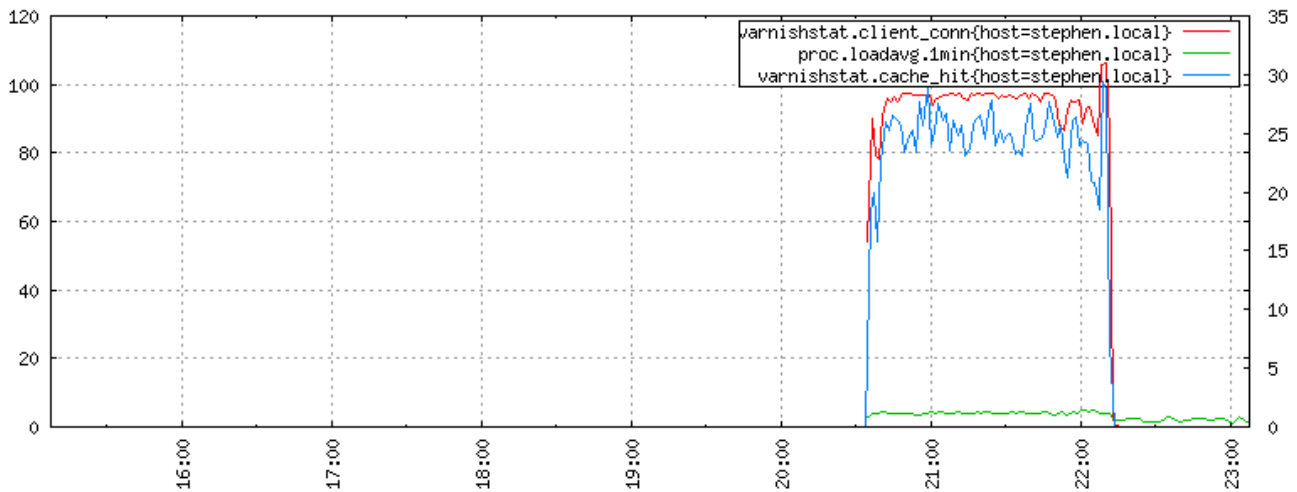
client_conn | 1min | cache_hit | +

Metric: varnishstat.cache_hit Rate Right Axis

Tags Aggregator: sum

Downsample avg 10m

4853 points retrieved, 841 points plotted in 37ms.



TSD
Time Series Database
Graph
Stats
Logs
Version
From
2014/09/28-10:00:00
To
(now)
Autoreload
2014/09/28-22:30:00
WxH:
835x400
Axes
Key
Style
Key location:
transfer_time
+
Metric:
curl.transfer_time
Rate
Rate Ctr
Right Axis
Rate Ctr Max:
Rate Ctr Reset:
Tags
node
ams1
x
host
www.akamai.com
Aggregator:
avg
Downsample
avg
1m
Horizontal layout
Box
No key (overrides others)
5656 points retrieved, 655 points plotted in 46ms.
curl.transfer_time{node=ams1, host=www.akamai.com}
1.2
1
0.8
0.6
0.4
0.2
0
10:00
12:00
14:00
16:00
18:00
20:00
22:00

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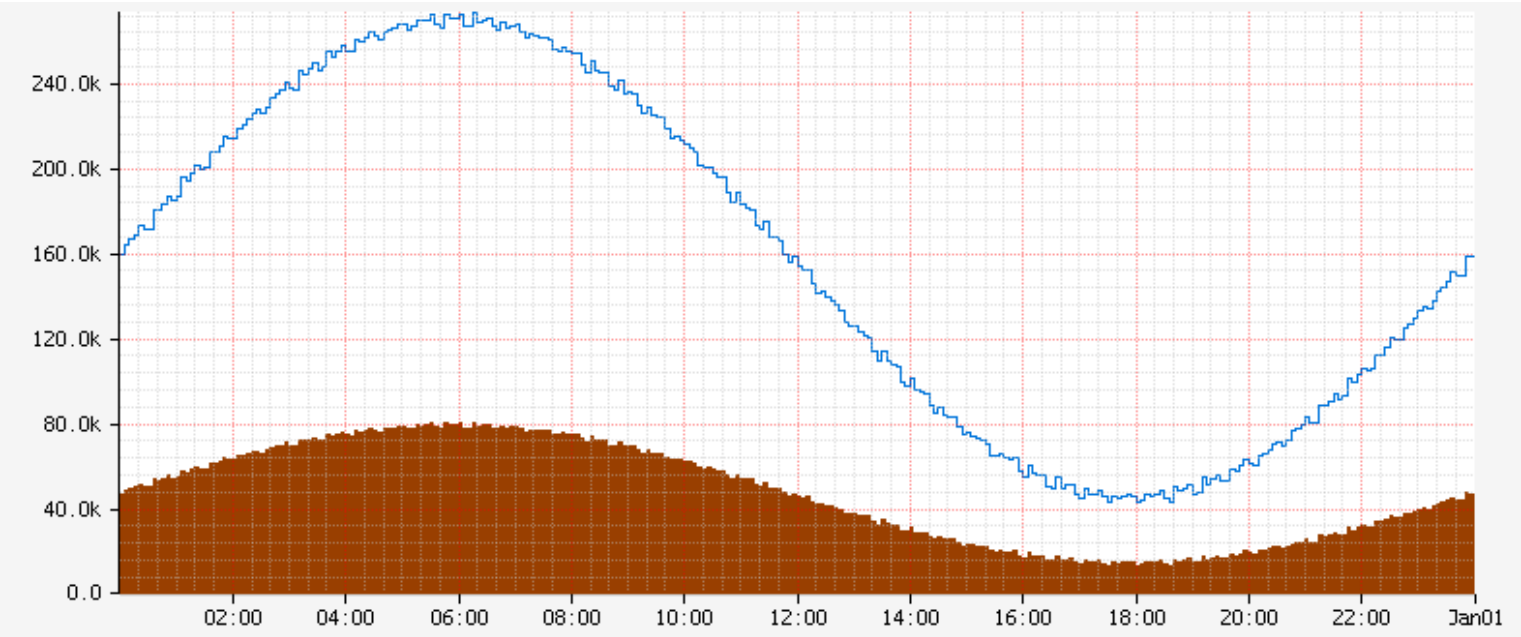
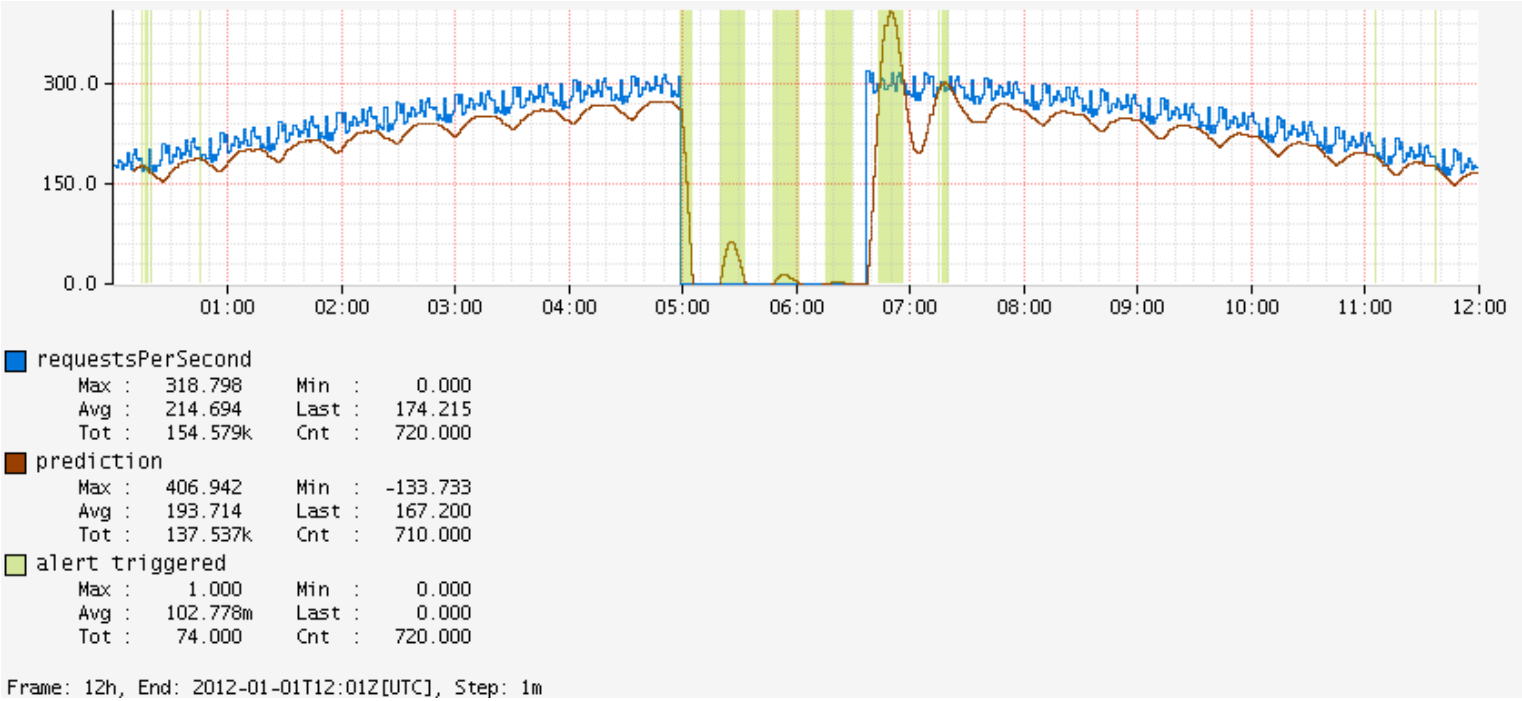
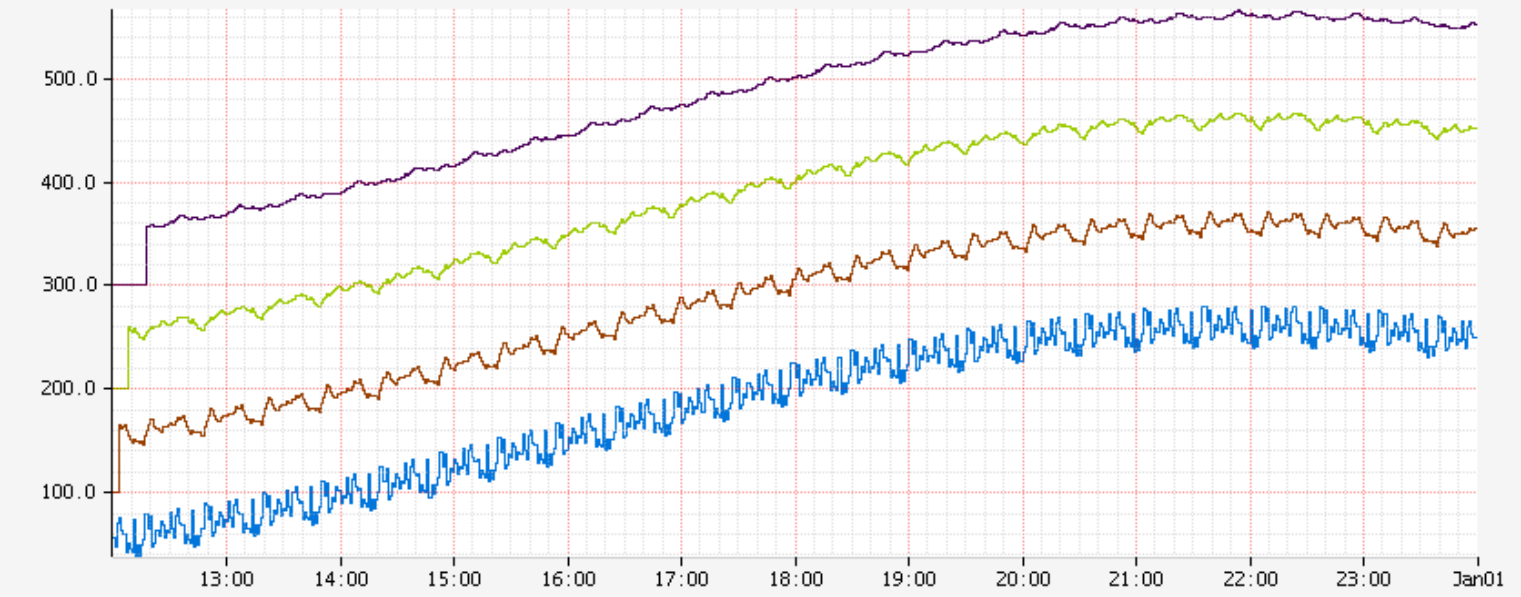

240.0k
200.0k
160.0k
120.0k
80.0k
40.0k
0.0
02:00
04:00
06:00
08:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Jan01
name=sps, nf.app=nccp, nf.asg=nccp-silverlight-v042, nf.cluster=nccp-silverlight
Max : 273.022k Min : 42.854k
Avg : 157.744k Last : 158.955k
Tot : 45.430M Cnt : 288.000
name=sps, nf.app=nccp, nf.asg=nccp-xbox-v042, nf.cluster=nccp-xbox
Max : 80.467k Min : 13.480k
Avg : 46.898k Last : 47.272k
Tot : 13.507M Cnt : 288.000
Frame: 1d, End: 2012-01-01T00:05Z[UTC], Step: 5m


300.0
150.0
0.0
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00
requestsPerSecond
Max : 318.798 Min : 0.000
Avg : 214.694 Last : 174.215
Tot : 154.579k Cnt : 720.000
prediction
Max : 406.942 Min : -133.733
Avg : 193.714 Last : 167.200
Tot : 137.537k Cnt : 710.000
alert triggered
Max : 1.000 Min : 0.000
Avg : 102.778m Last : 0.000
Tot : 74.000 Cnt : 720.000
Frame: 12h, End: 2012-01-01T12:01Z[UTC], Step: 1m



original line
Max : 280.461 Min : 38.051
Avg : 186.009 Last : 249.568
Tot : 133.927k Cnt : 720.000

5m trend
Max : 371.738 Min : 100.000
Avg : 285.236 Last : 355.523
Tot : 205.370k Cnt : 720.000

10m trend
Max : 466.194 Min : 200.000
Avg : 384.134 Last : 452.595
Tot : 276.577k Cnt : 720.000

20m trend
Max : 565.355 Min : 300.000
Avg : 482.017 Last : 552.229
Tot : 347.052k Cnt : 720.000

Frame: 12h, End: 2012-01-01T00:01-08:00[US/Pacific], Step: 1m

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Hosted services

- Stathat - `http://www.stathat.com/`
- Librato - `https://www.librato.com/`
- Hosted Graphite - `https://www.hostedgraphite.com/`
- Instrumental - `https://instrumentalapp.com/`
- Datadog - `https://www.datadoghq.com/`
- etc.

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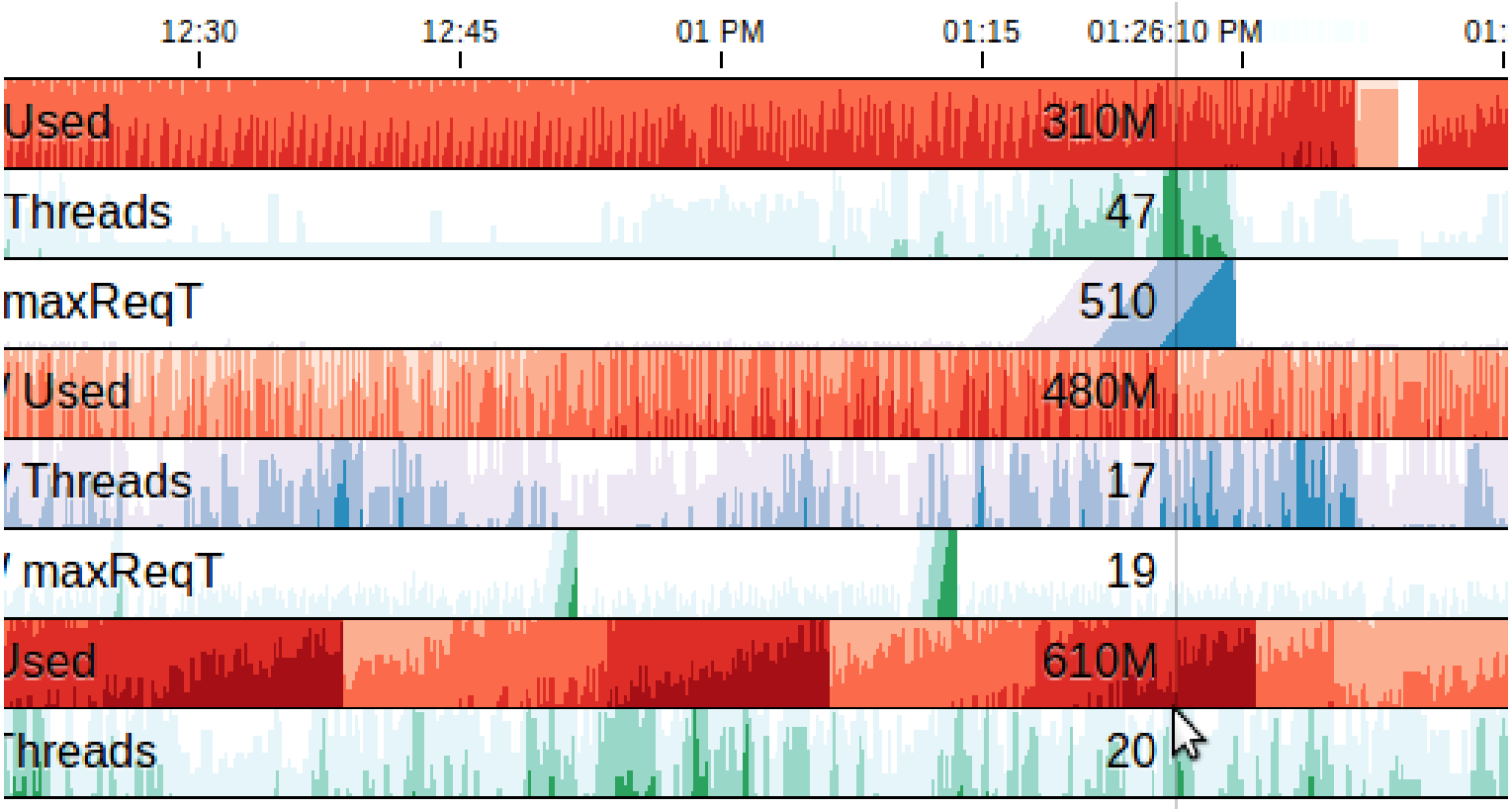
Different frontends

- Cubism.js - https://square.github.io/cubism/
- Dashing - https://shopify.github.io/dashing/
- Descartes - https://github.com/obfuscurity/descartes
- Gdash - https://github.com/ripienaar/gdash
- Grafana - http://grafana.org/
- Graphene - https://jondot.github.io/graphene/
- Graphsky - https://github.com/TMG-nl/graphsky
- Graph-explorer -https://vimeo.github.io/graph-explorer/
- Graphiti - https://github.com/paperlesspost/graphiti
- Leonardo - https://github.com/PrFalken/leonardo
- Tasseo - https://github.com/obfuscurity/tasseo


12:30
12:45
01 PM
01:15
01:26:10 PM
01:
Used
310M
Threads
47
maxReqT
510
Used
480M
Threads
17
maxReqT
19
Used
610M
Threads
20

Different frontends

- Cubism.js - https://square.github.io/cubism/
- Dashing - https://shopify.github.io/dashing/
- Descartes - https://github.com/obfuscurity/descartes
- Gdash - https://github.com/ripienaar/gdash
- Grafana - http://grafana.org/
- Graphene - https://jondot.github.io/graphene/
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- Tasseo - https://github.com/obfuscurity/tasseo

Github Repos
PHP53to54 4
gps-tracker 2
php-magazin 2
vagrant 2
pandoc-template 2
website 1
hendrix 1
# of watchers
GH Ephigenia Followers
16
Foursquare Checkins
457
Facebook Likes
57
Klout Score
23
Last updated at 18:30
Twitter Followers
45
ephigenia
"Suche #PHP Programmierer aus #Berlin für @foobugs bei Interesse bitte melden!"
Tweets mentioning foobugs

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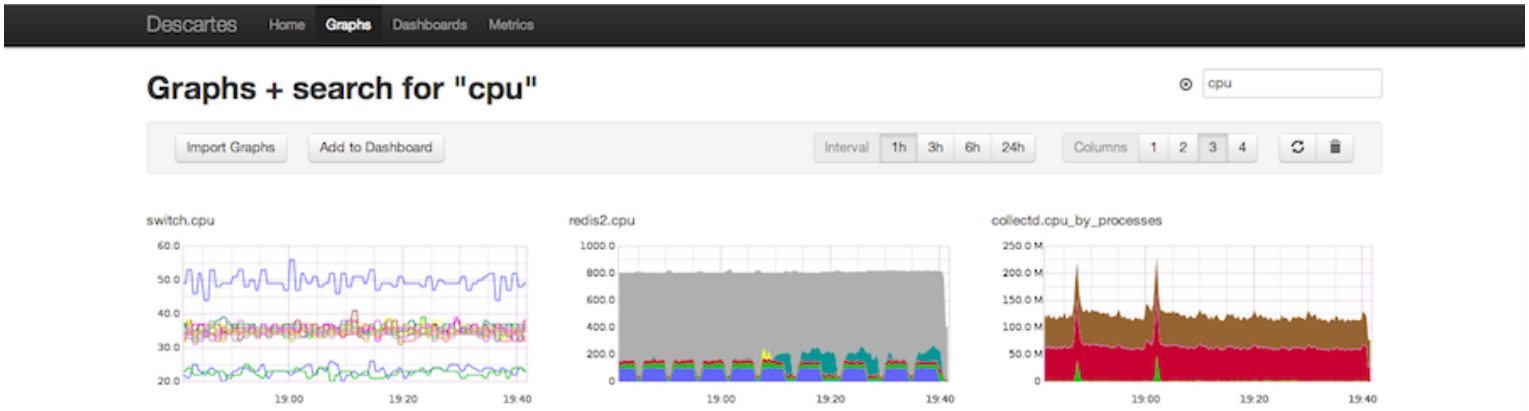
Descartes
Home
Graphs
Dashboards
Metrics
Graphs + search for "cpu"
cpu
Import Graphs
Add to Dashboard
Interval
1h
3h
6h
24h
Columns
1
2
3
4
switch.cpu
60.0
50.0
40.0
30.0
20.0
19:00
19:20
19:40
redis2.cpu
1000.0
800.0
600.0
400.0
200.0
0
19:00
19:20
19:40
collectd.cpu_by_processes
250.0 M
200.0 M
150.0 M
100.0 M
50.0 M
0
19:00
19:20
19:40

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My Dashboard
Dashboards
Data Browser
Email Metrics
Hourly metrics for the email system
Combined Load
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
20:50
21:00
21:10
21:20
21:30
21:40
Up
Combined Network Usage
6.0 M
5.0 M
4.0 M
3.0 M
2.0 M
1.0 M
0
bps
Up
Down
Combined CPU Usage
6.0
5.0
4.0
3.0
2.0
1.0
0.0
percent
System
User
Combined IO
150 K
125 K
100 K
75 K
50 K
25 K
0
blocks
Writes
Reads
UPDATED FRI OCT 07 21:41:43 +0100 2011

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Grafana - DevOps Dashboard
vi-devops-grafana1.lab.vi.local/#/dashboard/elasticsearch/DevOps%20Dashboard
Reader
ESX Utilization
% Utilized
R610 CPU Max: 49.68
R620 CPU Max: 39.13
R610 RAM Max: 71.33
R620 RAM Max: 62.94
devnull:/volume1
Used Current: 16.15 TiB
Free Current: 9.19 TiB
devnull:/volume2
Used Current: 12.80 TiB
Free Current: 19.78 TiB
Top VMs - CPU Usage
vi-dev-simsrv6 Max: 5.88 K
vi-devops-vc1 Max: 8.96 K
pa-ui-ga2 Max: 9.22 K
Top VMs - Network
Bytes/sec (Rx + Tx)
vi-jenkins-dev2_lab_vi_local
10.29 MiB @ 2014-08-08 06:00:00
vi-jenkins-dev-hd8-slave1_lab_vi_local Max: 4.92 MiB
vi-jenkins-dev-kiwi-slave6_lab_vi_local Max: 3.74 MiB
vi-jenkins-dev2_lab_vi_local Max: 10.29 MiB
Top VMs - Swapping
Swap Used
vi-jenkins-dev-slave2_lab_vi_local Current: 137.63 MiB
vi-jenkins-dev-slave4_lab_vi_local Current: 163.18 MiB
vi-dev-vertica1_lab_vi_local Current: 193.29 MiB
Web App Requests
HTTP Req/sec
eng-wiki2_lab_vi_local Max: 1.47
vi-packages1 Max: 2.17
vi-nexus2 Max: 31.10
Database
CPU % Avg: 0.72
Req / sec Avg: 11.34
Graphite
CPU %
CPU
Free Space
Jenkins Master
CPU %
CPU
RAM

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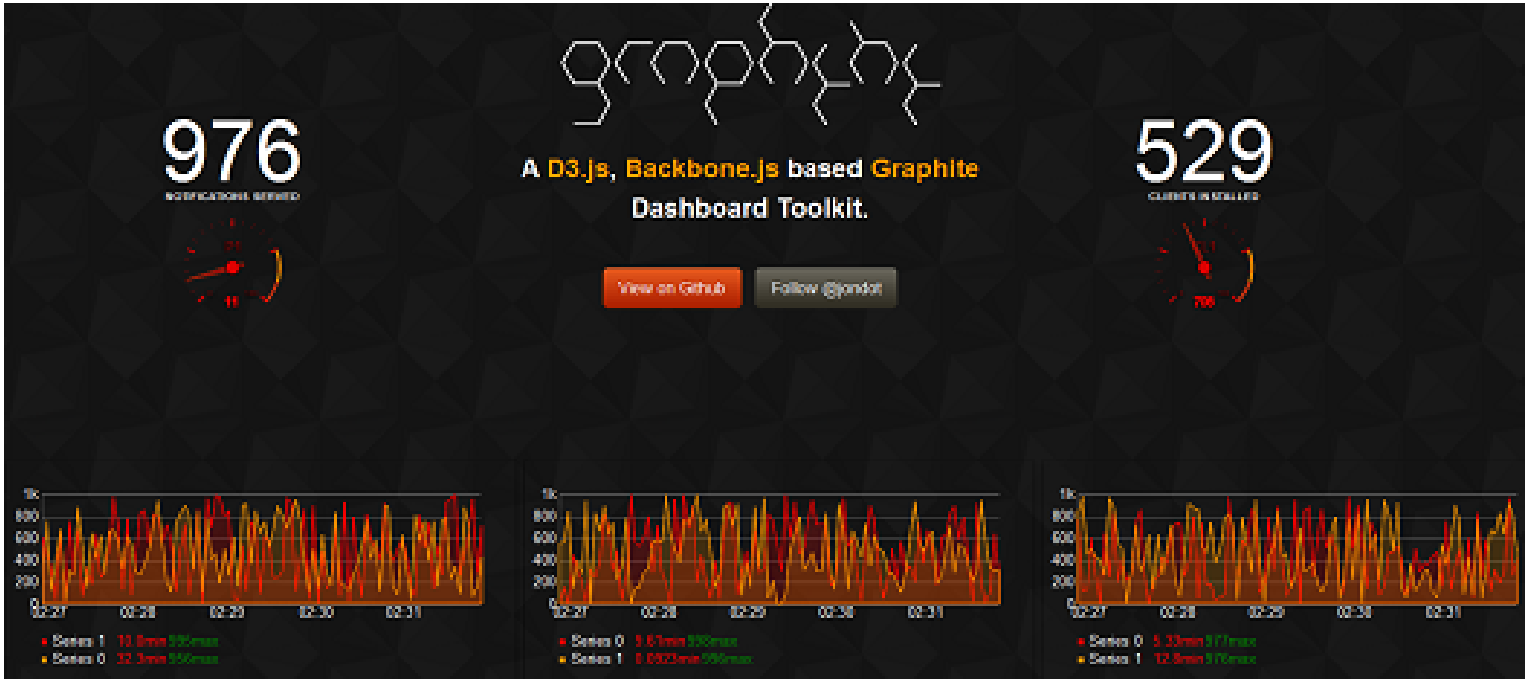
976
A D3.js, Backbone.js based Graphite
Dashboard Toolkit.
View on Github
Follow @jondot
529

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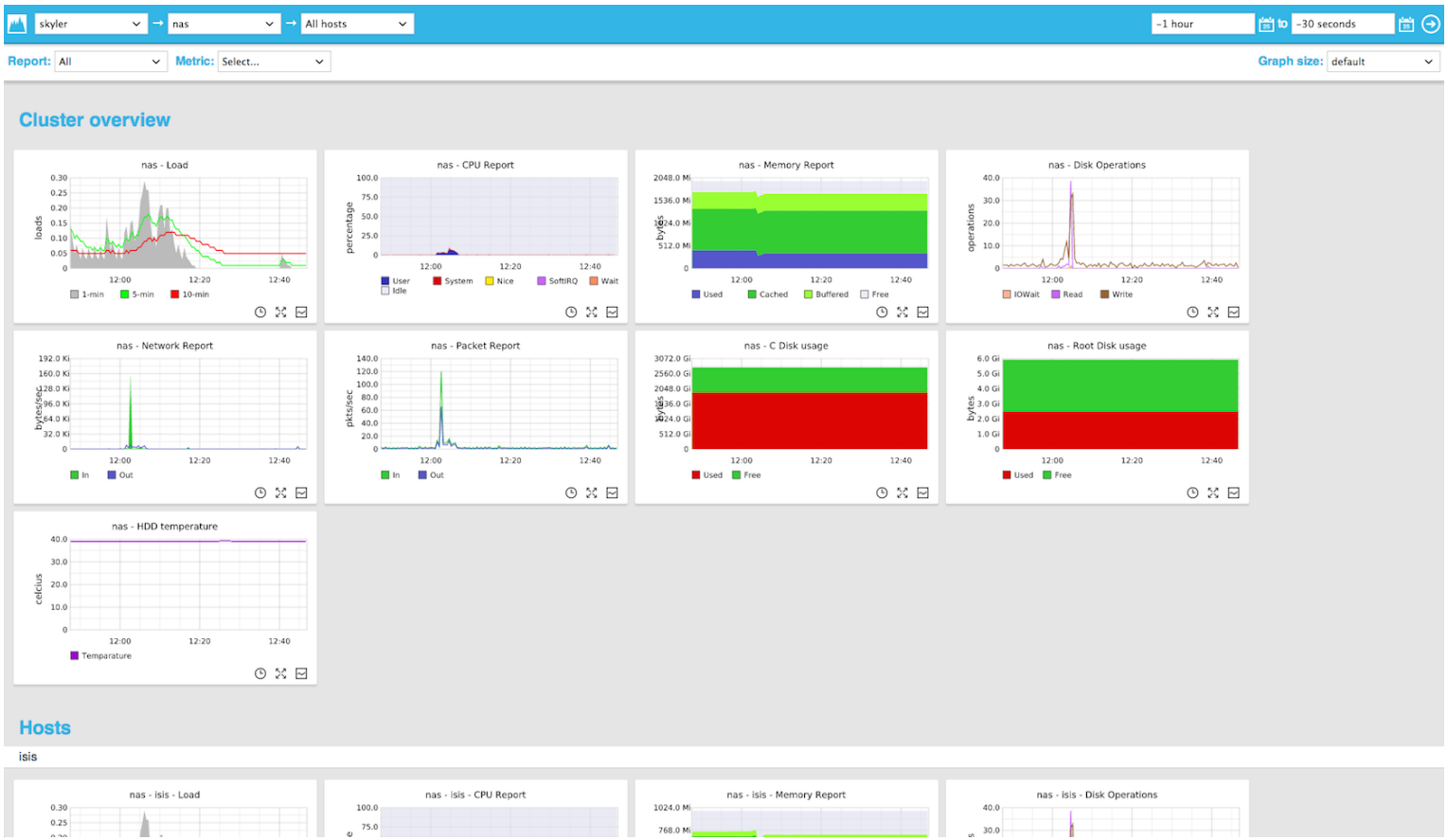
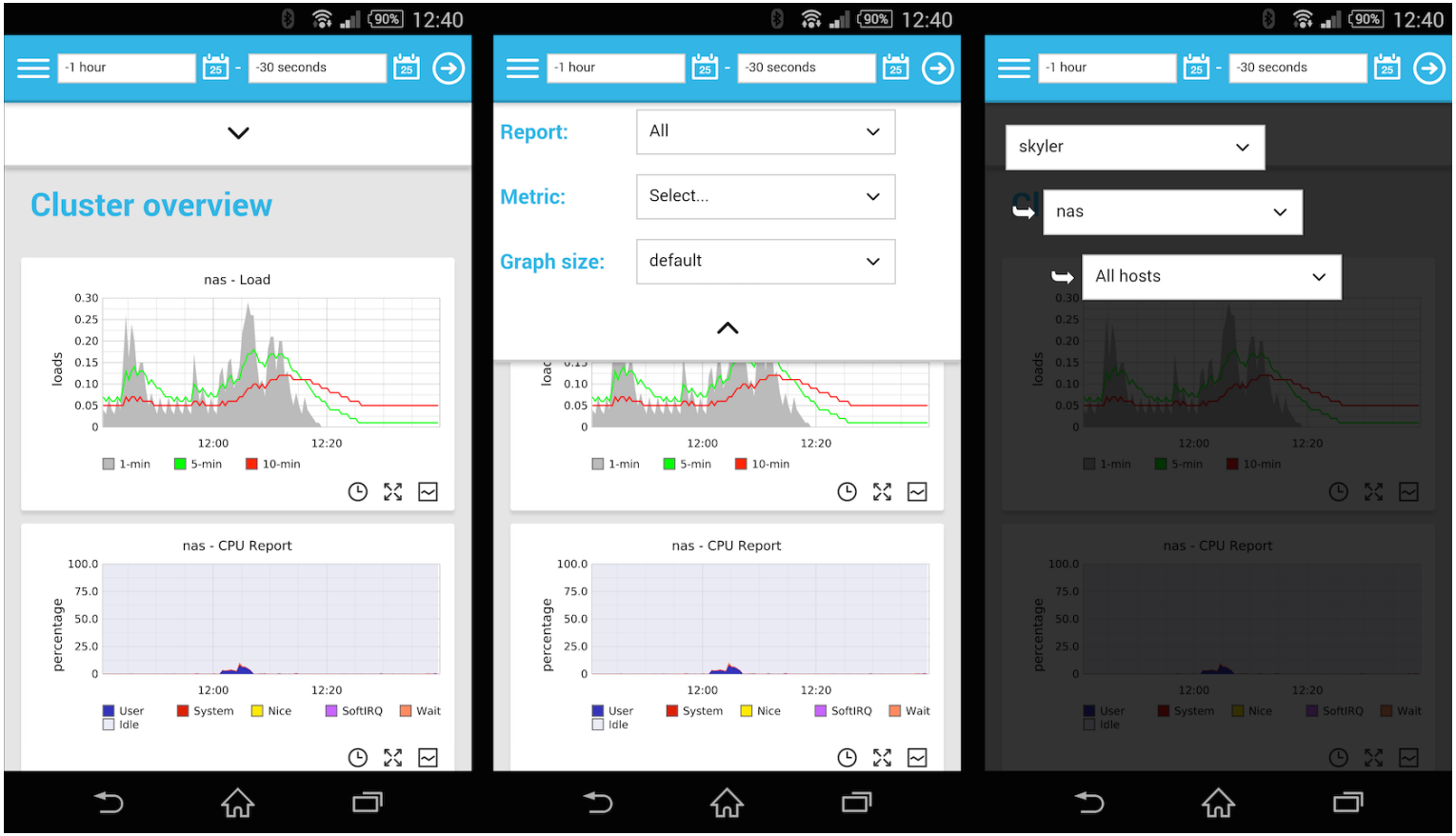

skyler
nas
All hosts
-1 hour
to
-30 seconds
Report:
All
Metric:
Select...
Graph size:
default
Cluster overview
nas - Load
loads
1-min
5-min
10-min
nas - CPU Report
percentage
User
System
Nice
SoftIRQ
Wait
Idle
nas - Memory Report
bytes
Used
Cached
Buffered
Free
nas - Disk Operations
operations
IOWait
Read
Write
nas - Network Report
bytes/sec
In
Out
nas - Packet Report
pkts/sec
In
Out
nas - C Disk usage
bytes
Used
Free
nas - Root Disk usage
bytes
Used
Free
nas - HDD temperature
celcius
Temparature
Hosts
isis
nas - isis - Load
nas - isis - CPU Report
nas - isis - Memory Report
nas - isis - Disk Operations


12:40
-1 hour
-30 seconds
Cluster overview
nas - Load
loads
0.30
0.25
0.20
0.15
0.10
0.05
0
12:00
12:20
1-min
5-min
10-min
nas - CPU Report
percentage
100.0
75.0
50.0
25.0
0
User
System
Nice
SoftIRQ
Wait
Idle
Report:
All
Metric:
Select...
Graph size:
default
skyler
nas
All hosts

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Graph explorer
Home
Dashboards
Help
HELP!
Getting started
Tutorial
GEQL reference
SUGGESTED QUERIES
example queries which may or may not work depending on whether you have the metrics
/var usage
/var usage, average of all servers
change in /var usage
read/write B/s
compare load across machines
network traffic
QUERY
stack network dfvimeodfs[1-4] bond unit=b/s from -1week avg over 1h sum by device group by type
Statement stack
Limit 500
Patterns target_type= unit= network dfvimeodfs[1-4] bond unit=b/s
Group by target_type= unit= type
Aggregation avg by none, sum by device
X-axis from -1week, to now
Y-axis min None, max None
Avg over 1 hours
Targets matching 16/181262
Graphs matching 0/10
Graphs from matchi... 2
Total graphs 2
Tag legend what type target_type device unit server plugin
bits rx rate b/s sumSeries (2 values) network
rx b/s
3 G
2 G
1 G
500 M
0
Sep 28
Sep 29
Sep 30
Oct 01
Oct 02
Oct 03
Oct 04
dfvimeodfs2
dfvimeodfs1
dfvimeodfs4
dfvimeodfs3
lines
stack
bits tx rate b/s sumSeries (2 values) network
tx b/s
4 G
3 G
2 G
1 G
500 M
0
Sep 28
Sep 29
Sep 30
Oct 01
Oct 02
Oct 03
Oct 04
dfvimeodfs2
dfvimeodfs1
dfvimeodfs4
dfvimeodfs3
lines
stack
Series: {"variables":{"server":"dfvimeodfs4"},"target":"movingAverage(sumSeries(servers.dfvimeodfs4.network.bond0.tx_bit,servers.dfvimeodfs4.network.bond1.t
"servers.dfvimeodfs4.network.bond0.tx_bit","servers.dfvimeodfs4.network.bond1.tx_bit")"}}
Local Time: Sun 29 Sep 2013 02:31:00 AM EDT
UTC Time: Sun, 29 Sep 2013 06:31:00 GMT)
Value: 1657436359.64

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Graphiti
Dashboards
Graphs
+ New Graph
Resque Job Complete
60 K
40 K
30 K
20 K
10 K
0
10/07 12AM
10/07 12PM
10/08 12AM
10/08 12PM
10/09 12AM
10/09 12PM
10/10 12AM
10/10 12PM
Graph
Update
Save New
Dashboards
Add to
Mikes
Save
Create New
Options
Metrics
Editor
{
"options": {
"title": "Resque Job Complete",
"from": "-5d",
"until": "-1d",
"bgcolor": "white",
"fgcolor": "black",
"thickness": 2
},

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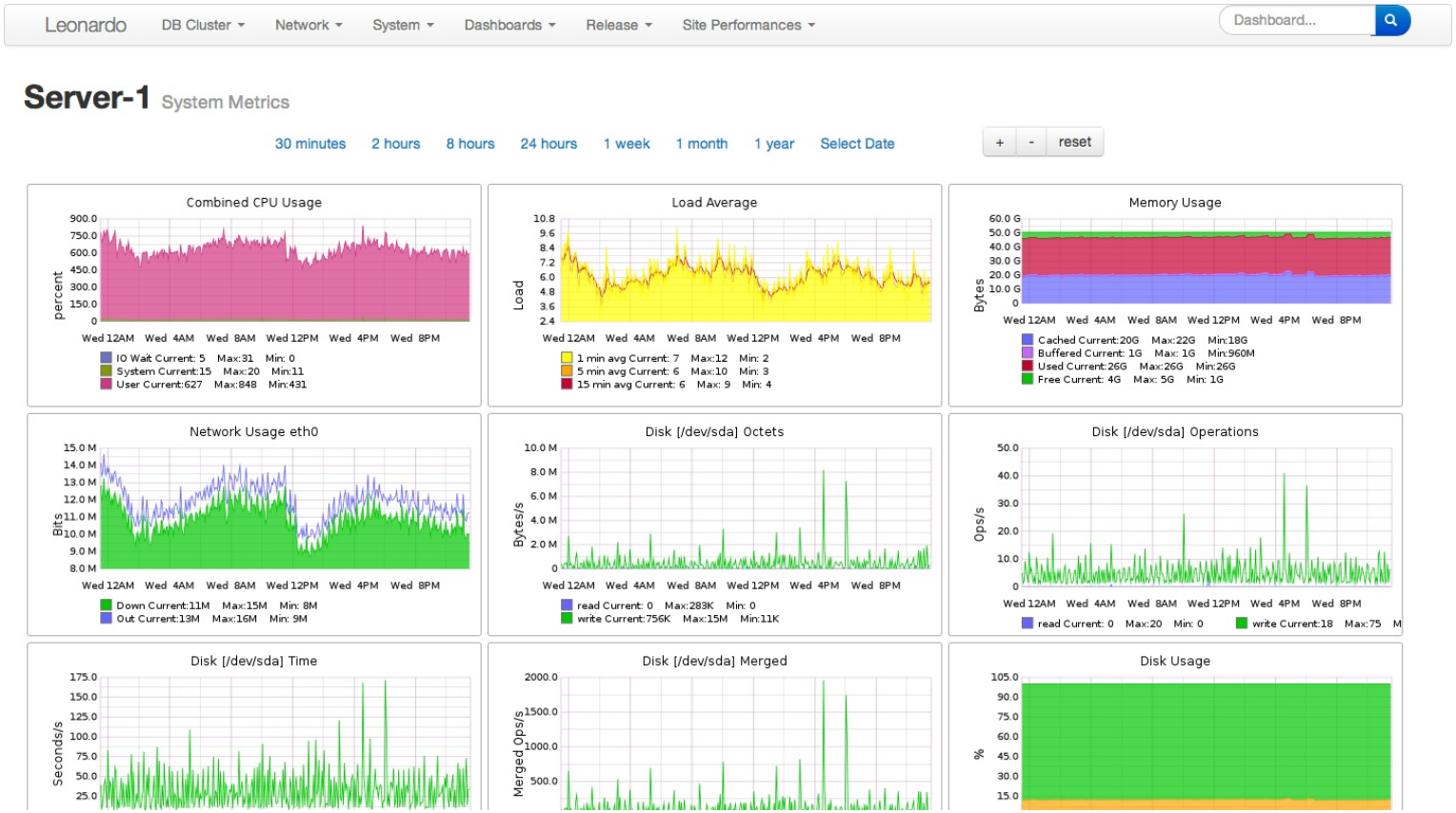
Leonardo
DB Cluster
Network
System
Dashboards
Release
Site Performances
Dashboard...
Server-1 System Metrics
30 minutes
2 hours
8 hours
24 hours
1 week
1 month
1 year
Select Date
+
-
reset
Combined CPU Usage
percent
900.0
750.0
600.0
450.0
300.0
150.0
0
Wed 12AM Wed 4AM Wed 8AM Wed 12PM Wed 4PM Wed 8PM
IO Wait Current: 5 Max:31 Min: 0
System Current:15 Max:20 Min:11
User Current:627 Max:848 Min:431
Load Average
Load
10.8
9.6
8.4
7.2
6.0
4.8
3.6
2.4
Wed 12AM Wed 4AM Wed 8AM Wed 12PM Wed 4PM Wed 8PM
1 min avg Current: 7 Max:12 Min: 2
5 min avg Current: 6 Max:10 Min: 3
15 min avg Current: 6 Max: 9 Min: 4
Memory Usage
Bytes
60.0 G
50.0 G
40.0 G
30.0 G
20.0 G
10.0 G
0
Wed 12AM Wed 4AM Wed 8AM Wed 12PM Wed 4PM Wed 8PM
Cached Current:20G Max:22G Min:18G
Buffered Current: 1G Max: 1G Min:960M
Used Current:26G Max:26G Min:26G
Free Current: 4G Max: 5G Min: 1G
Network Usage eth0
Bits
15.0 M
14.0 M
13.0 M
12.0 M
11.0 M
10.0 M
9.0 M
8.0 M
Wed 12AM Wed 4AM Wed 8AM Wed 12PM Wed 4PM Wed 8PM
Down Current:11M Max:15M Min: 8M
Out Current:13M Max:16M Min: 9M
Disk [/dev/sda] Octets
Bytes/s
10.0 M
8.0 M
6.0 M
4.0 M
2.0 M
0
Wed 12AM Wed 4AM Wed 8AM Wed 12PM Wed 4PM Wed 8PM
read Current: 0 Max:283K Min: 0
write Current:756K Max:15M Min:11K
Disk [/dev/sda] Operations
Ops/s
50.0
40.0
30.0
20.0
10.0
0
Wed 12AM Wed 4AM Wed 8AM Wed 12PM Wed 4PM Wed 8PM
read Current: 0 Max:20 Min: 0
write Current:18 Max:75
Disk [/dev/sda] Time
Seconds/s
175.0
150.0
125.0
100.0
75.0
50.0
25.0
Disk [/dev/sda] Merged
Merged Ops/s
2000.0
1500.0
1000.0
500.0
Disk Usage
%
105.0
90.0
75.0
60.0
45.0
30.0
15.0

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foobar-widgets-per-minute
11
foobar-econns-per-minute
218
foobar-lookups-per-minute
368777
foobar-errors-per-minute
25
foobar-f10-errors
198
foobar-f11-errors
1765
foobar-f12-errors
1969
foobar-f13-errors
155
foobar-f14-errors
454
foobar-f18-errors
203
foobar-f99-errors
24

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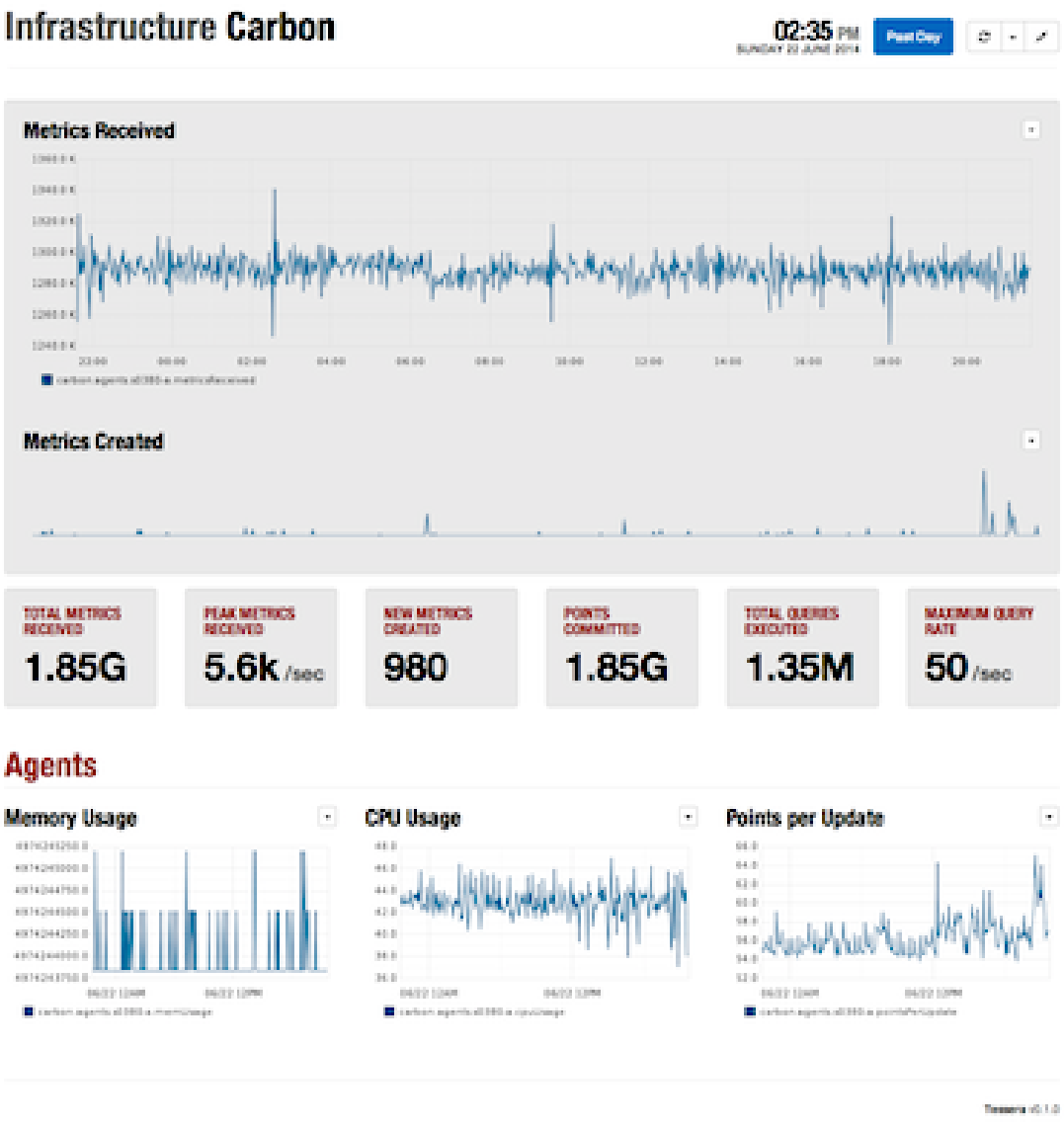
Infrastructure Carbon
02:35 PM
Metrics Received
Metrics Created
TOTAL METRICS RECEIVED
1.85G
PEAK METRICS RECEIVED
5.6k /sec
NEW METRICS CREATED
980
POINTS COMMITTED
1.85G
TOTAL QUERIES EXECUTED
1.35M
MAXIMUM QUERY RATE
50 /sec
Agents
Memory Usage
CPU Usage
Points per Update

Different backends

- Whisper → Ceres
- Cyanite (Cassandra-backed)
- KairosDB (Cassandra-backed, OpenTSDB rewrite)
- level-tsd (LevelDB-backed)
- Blueflood (Cassandra-backed)

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Metrics

2 Metrics
- What?
- Instrumentation
- Graphite
- Graphite Replacements
- Graphite Extensions
- Graphite Helpers

Collection services

- StatsD - `https://github.com/etsy/statsd/`
- Brubeck - `https://github.com/github/brubeck/`
- Heka - `https://hekad.readthedocs.org/`

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Tools to help analyze

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skyline
stats.browse_pages.filters.miss.ship_to
red line shows detected anomalous datapoint
holy anomaly!
1 hour:
name of anomalous metric
past hour
40
30
20
10
24 hours:
past 24 hours
30
20
10
metric name
anomalous datapoint
stats.browse_categories.feed 30
stats.browse_pages.cache.miss 36
timeseries datapoint that triggered detection
stats.browse_pages.filters.miss.ship_to 30
stats.region.suggested.code.KG 0
stats.shipping_labels.api.multi_labels.subsequent_package_purchase_duration.3 0
stats.shipping_labels.api.multi_labels.subsequent_package_purchase_duration.5 0
stats.shopstats.domain.ShopStatsRollup.etsy. 42
list of anomalous metrics
stats.shopstats.domain.ShopStatsRollup.etsy.activity 170
stats.timers.api.findAllReceiptTransactions.200.lower 166
stats.timers.api.findAllReceiptTransactions.200.mean 166
stats.timers.api.findAllReceiptTransactions.200.mean_90 166
stats.timers.api.findAllReceiptTransactions.200.median 166

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Etc

https://graphite.readthedocs.org/en/latest/tools.html

Outline

1 Introduction

2 Metrics

3 Tracing

Tracing

3 Tracing
- What?
- Services

Tracing

3 Tracing
- What?
- Services

What is distributed tracing?

- Basically, stack traces across services from production.
- Instrument your RPC code to automatically pass current context information through to other calls.
- `trace_id`, `span_id`, `parent_span_id`, `sampled`, `debug`
- Annotations - `start`, `end`, `errored`, URL, Status Code, others

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- Basically, stack traces across services from production.
- Instrument your RPC code to automatically pass current context information through to other calls.
- `trace_id`, `span_id`, `parent_span_id`, `sampled`, `debug`
- Annotations - `start`, `end`, `errored`, URL, Status Code, others

Tracing

3 Tracing
- What?
- Services

Tracing services

- Dapper - research.google.com/pubs/pub36356.html
- Zipkin - https://twitter.github.io/zipkin/
- Phosphor - https://github.com/mattheath/phosphor

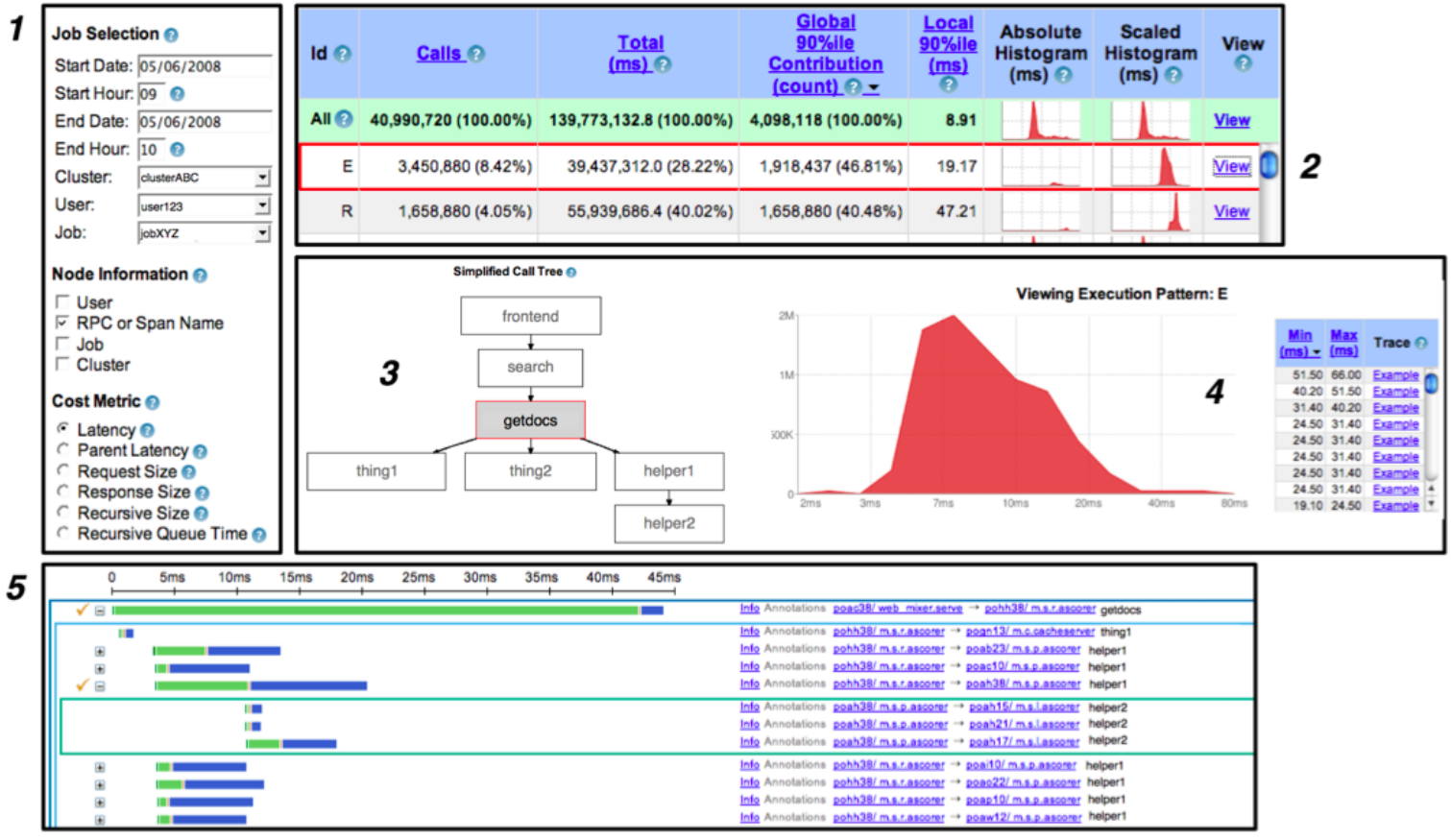

Figure 6: A typical user workflow in the general-purpose Dapper user interface.

Tracing services

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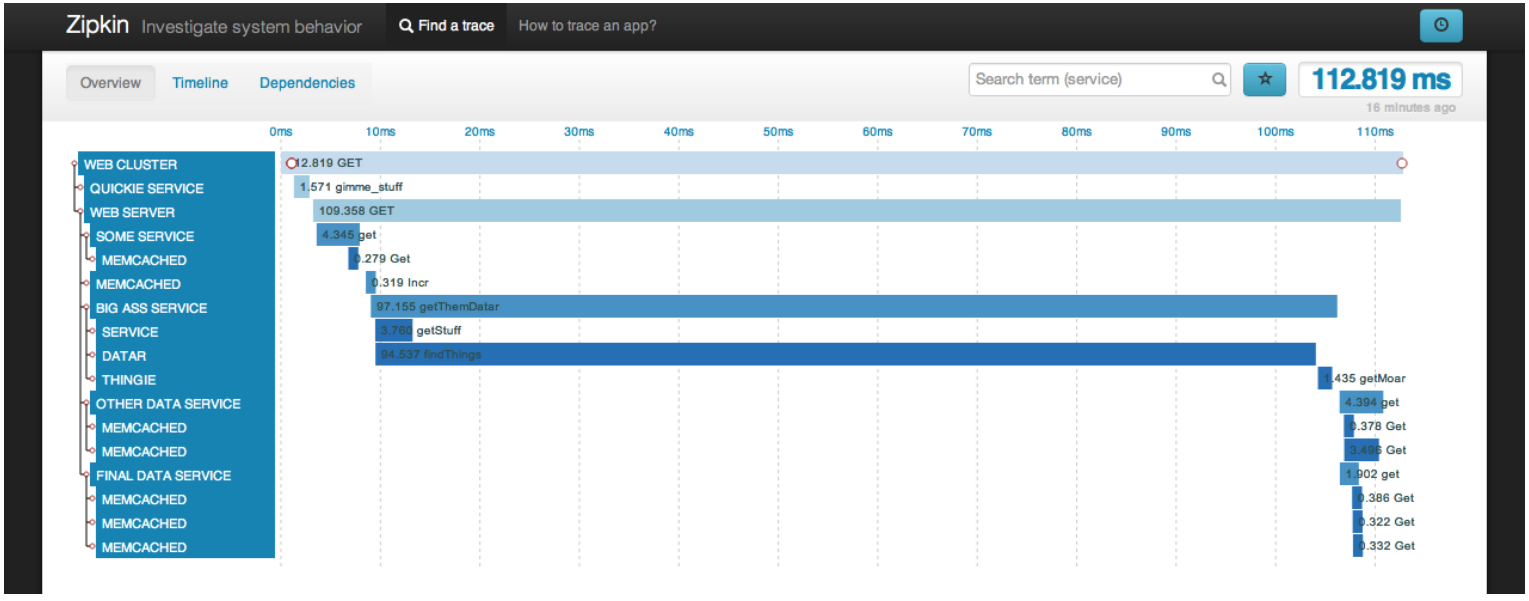
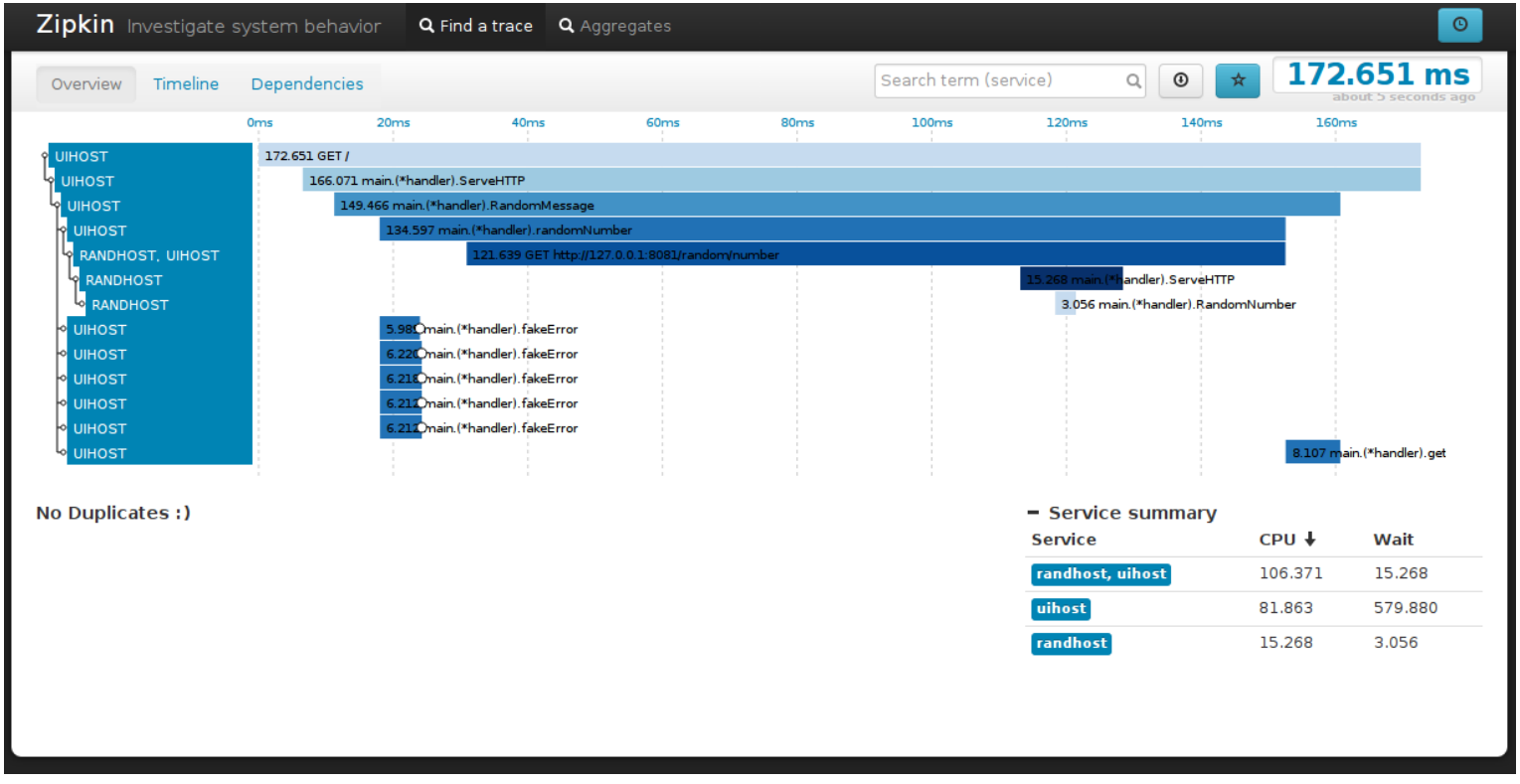
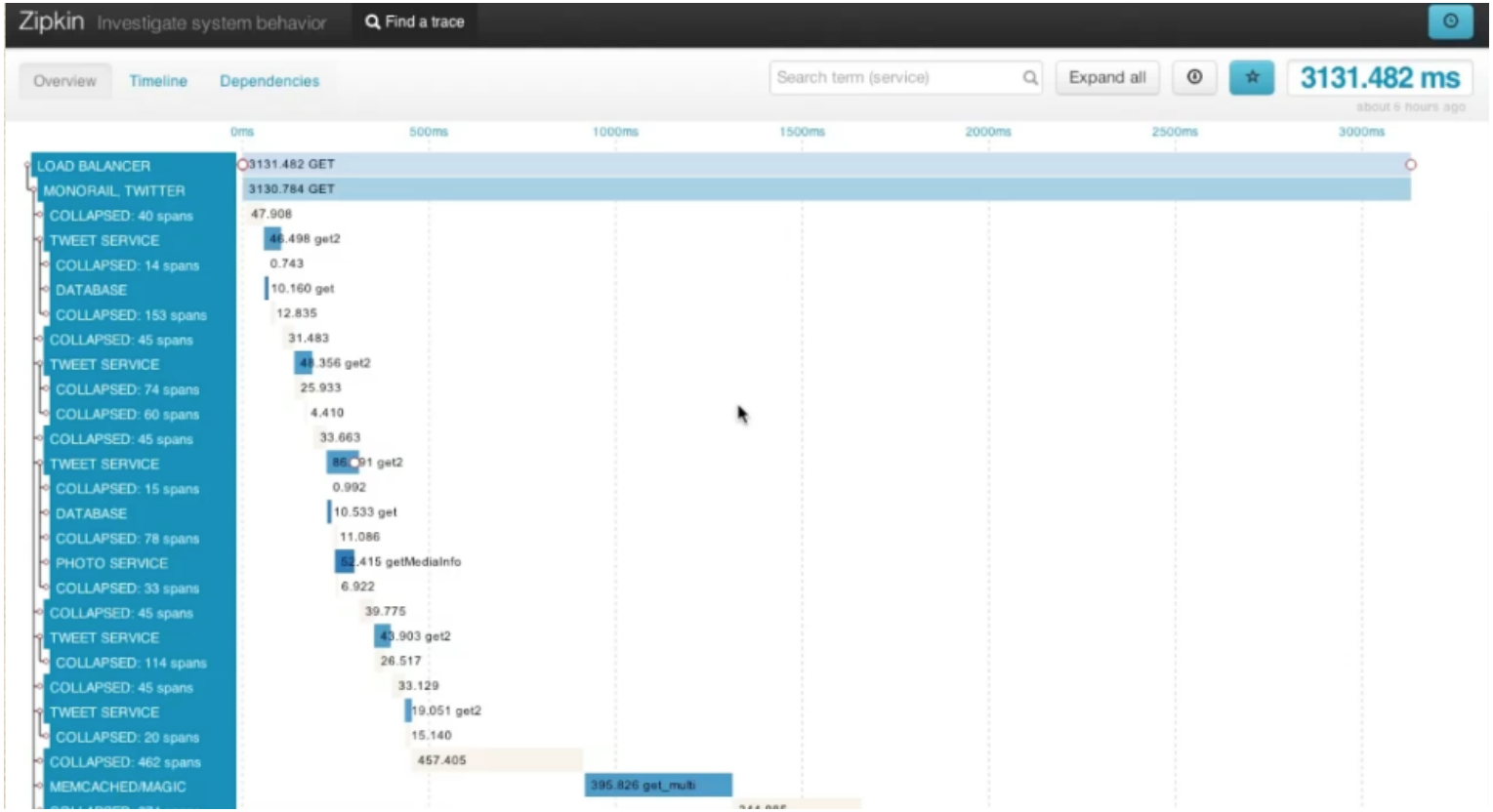

Zipkin
Investigate system behavior
Find a trace
How to trace an app?
Overview
Timeline
Dependencies
Search term (service)
112.819 ms
16 minutes ago
0ms
10ms
20ms
30ms
40ms
50ms
60ms
70ms
80ms
90ms
100ms
110ms
WEB CLUSTER
QUICKIE SERVICE
WEB SERVER
SOME SERVICE
MEMCACHED
MEMCACHED
BIG ASS SERVICE
SERVICE
DATAR
THINGIE
OTHER DATA SERVICE
MEMCACHED
MEMCACHED
FINAL DATA SERVICE
MEMCACHED
MEMCACHED
MEMCACHED
12.819 GET
1.571 gimme_stuff
109.358 GET
4.345 get
0.279 Get
0.319 Incr
97.155 getThemDatar
getStuff
94.537 findThings
1.435 getMoar
4.394 get
0.378 Get
1.902 get
0.386 Get
0.322 Get
0.332 Get


Zipkin
Investigate system behavior
Find a trace
Aggregates
Overview
Timeline
Dependencies
Search term (service)
172.651 ms
about 5 seconds ago
0ms
20ms
40ms
60ms
80ms
100ms
120ms
140ms
160ms
UIHOST
UIHOST
UIHOST
UIHOST
RANDHOST, UIHOST
RANDHOST
RANDHOST
UIHOST
UIHOST
UIHOST
UIHOST
UIHOST
UIHOST
172.651 GET /
166.071 main.(*handler).ServeHTTP
149.466 main.(*handler).RandomMessage
134.597 main.(*handler).randomNumber
121.639 GET http://127.0.0.1:8081/random/number
15.268 main.(*handler).ServeHTTP
3.056 main.(*handler).RandomNumber
main.(*handler).fakeError
main.(*handler).fakeError
main.(*handler).fakeError
main.(*handler).fakeError
main.(*handler).fakeError
8.107 main.(*handler).get
No Duplicates :)
Service summary
Service
CPU
Wait
randhost, uihost
106.371
15.268
uihost
81.863
579.880
randhost
15.268
3.056


Zipkin
Investigate system behavior
Find a trace
Overview
Timeline
Dependencies
Search term (service)
Expand all
3131.482 ms
about 6 hours ago
0ms
500ms
1000ms
1500ms
2000ms
2500ms
3000ms
LOAD BALANCER
MONORAIL, TWITTER
COLLAPSED: 40 spans
TWEET SERVICE
COLLAPSED: 14 spans
DATABASE
COLLAPSED: 153 spans
COLLAPSED: 45 spans
TWEET SERVICE
COLLAPSED: 74 spans
COLLAPSED: 60 spans
COLLAPSED: 45 spans
TWEET SERVICE
COLLAPSED: 15 spans
DATABASE
COLLAPSED: 78 spans
PHOTO SERVICE
COLLAPSED: 33 spans
COLLAPSED: 45 spans
TWEET SERVICE
COLLAPSED: 114 spans
COLLAPSED: 45 spans
TWEET SERVICE
COLLAPSED: 20 spans
COLLAPSED: 462 spans
MEMCACHED/MAGIC
3131.482 GET
3130.784 GET
47.908
0.743
10.160 get
12.835
31.483
25.933
4.410
33.663
0.992
10.533 get
11.086
6.922
39.775
26.517
33.129
15.140
457.405
395.826 get_multi

Tracing services

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Space
MONKEY

Space Monkey!

- Distributed Hash Tables
- Consensus algorithms
- Reed Solomon
- Monitoring and sooo much data
- Security and cryptography engineering

Space Monkey!

Come work with us!