

rethinking metrics:

metrics **2.0**



AN

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BELGIUM



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ALC. 5,4% VOL.



belgium no government

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589 days with no elected government: What happened in ...

www.washingtonpost.com/.../589-days-with-no-ele... ▾ The Washington Post ▾

Oct 1, 2013 - The world record for a democracy going without an elected **government** is held by **Belgium**, which went 589 days in 2010-11 because the ...

2010–11 Belgian government formation - Wikipedia, the free ...

en.wikipedia.org/.../2010-11_Belgian_government_formation ▾ Wikipedia ▾

A **government** coalition was named on 5 December 2011 and sworn in after a total of As a result of this crisis, **Belgium** had **no** budget for 2011 and continued ...

Background - Informateur De Wever - Pre-formateur Di Rupo

2007–2011 Belgian political crisis - Wikipedia

en.wikipedia.org/wiki/2007-11_Belgian_political_crisis ▾ Wikipedia ▾

That set a record as the longest **Belgian government** formation that has been ... Until 541 days after the elections, **no** agreement could be reached among the ...

How Belgium Survived 20 Months Without a Government ...

www.washingtonmonthly.com/.../how_belgium_su... ▾ Washington Monthly ▾

Oct 9, 2013 - **No** faction or party was willing to compromise, nor could any single ... So what happened to the crucial work of **Belgium's government**? Nothing ...

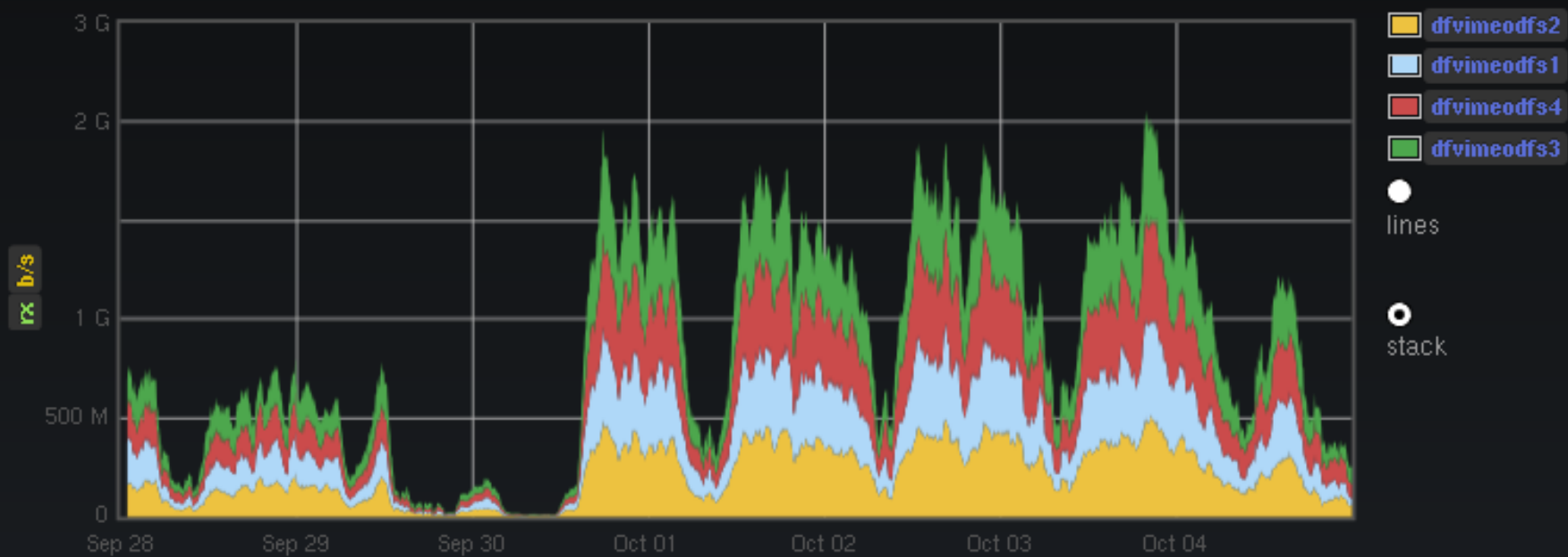




Portal: Terminal Velocity

from **Jason Craft** [PLUS](#) 1 year ago NOT YET RATED

bits rx rate b/s sumSeries (2 values) network



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**FTP** NEW!

Add videos using your favorite FTP client.

**Mobile apps**

Watch, shoot, edit, and upload from your phone.

**Desktop apps**

Upload to Vimeo from apps on your computer.

YOUR USAGE

Storage / 0B of 5GB used

Your weekly limit will reset on *Sun 7/1*

TIPS FOR GREAT VIDEOS

• Enhancer

Easily add music and looks to your videos on Vimeo — no editing software required.

• Compression Guidelines

We'll help you make sense of format, data rates, and resolutions so you can upload through the technical stuff and upload successfully.

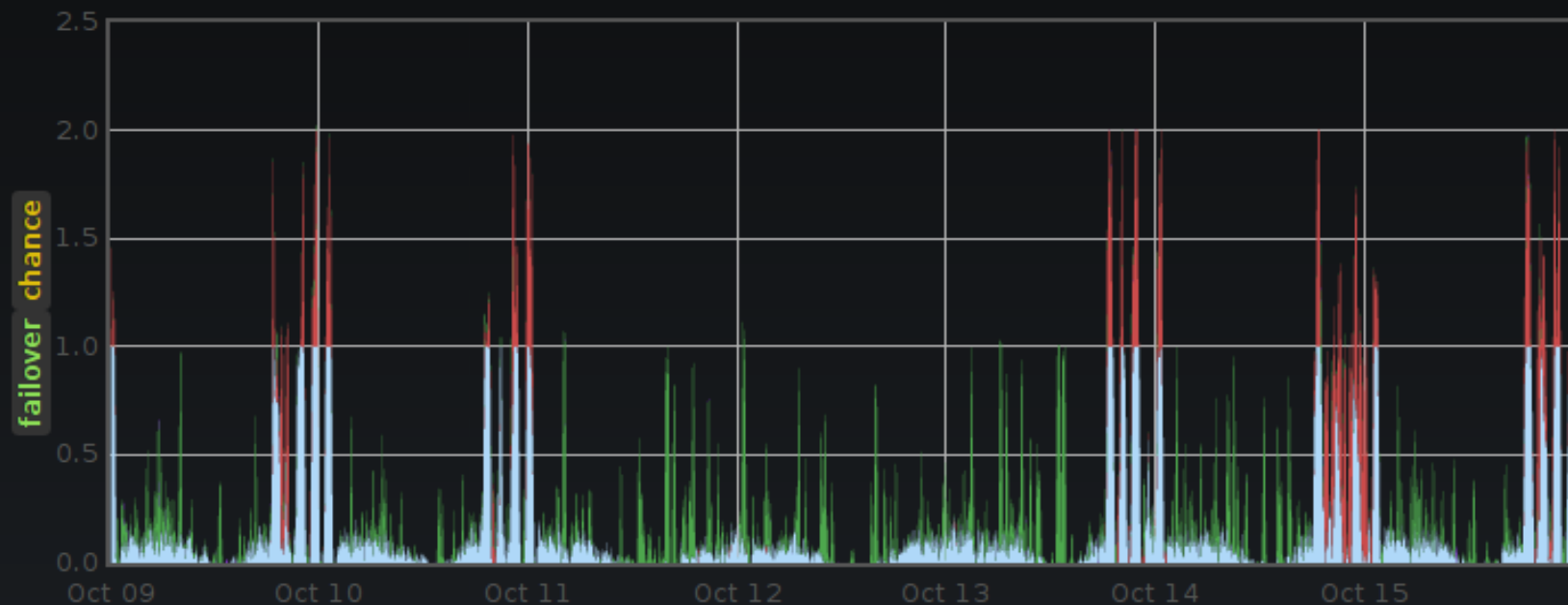
• Vimeo Video School

Learn how to make better videos at our one-stop shop that's home to less staff and video tutorials made by

NEED HELP?

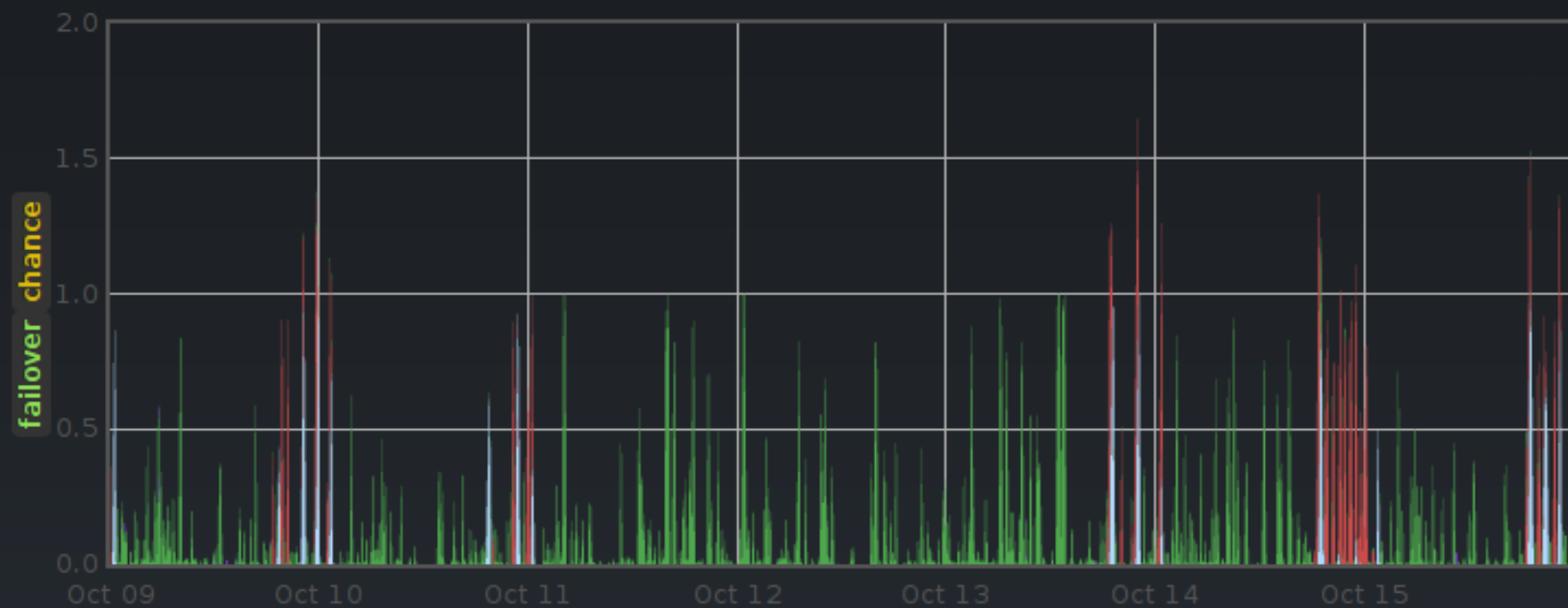
If you have questions about what's on here first: [Help](#) / [FAQ](#)

chance failover gauge vimeo-df basic vimeo_tc



- diskspace
- perf_basic
- perf_paid
- swift_upload_failrate
- swift_upload_time
- lines
- stack

chance failover gauge vimeo-df paid vimeo_tc



- diskspace
- perf_basic
- perf_paid
- swift_upload_failrate
- swift_upload_time
- lines
- stack

problems

Metrics 2.0 concepts

implementations

uses & ideas

Mostly
graphite

terminology

sync

(1234567890, 82)

(1234567900, 123)

(1234567910, 109)

(1234567920, 77)

db15.mysql.queries_running

host=db15 mysql.queries_running

Problems

Vimeo.com

pagerequests/s?

server X disk write?

```
stats.hits.vimeo_com
```

```
stats_counts.hits.vimeo_com
```

```
stats.*.vimeo_requests
```

```
collected.db.disk.sda1.disk_time.write
```

Understanding metrics

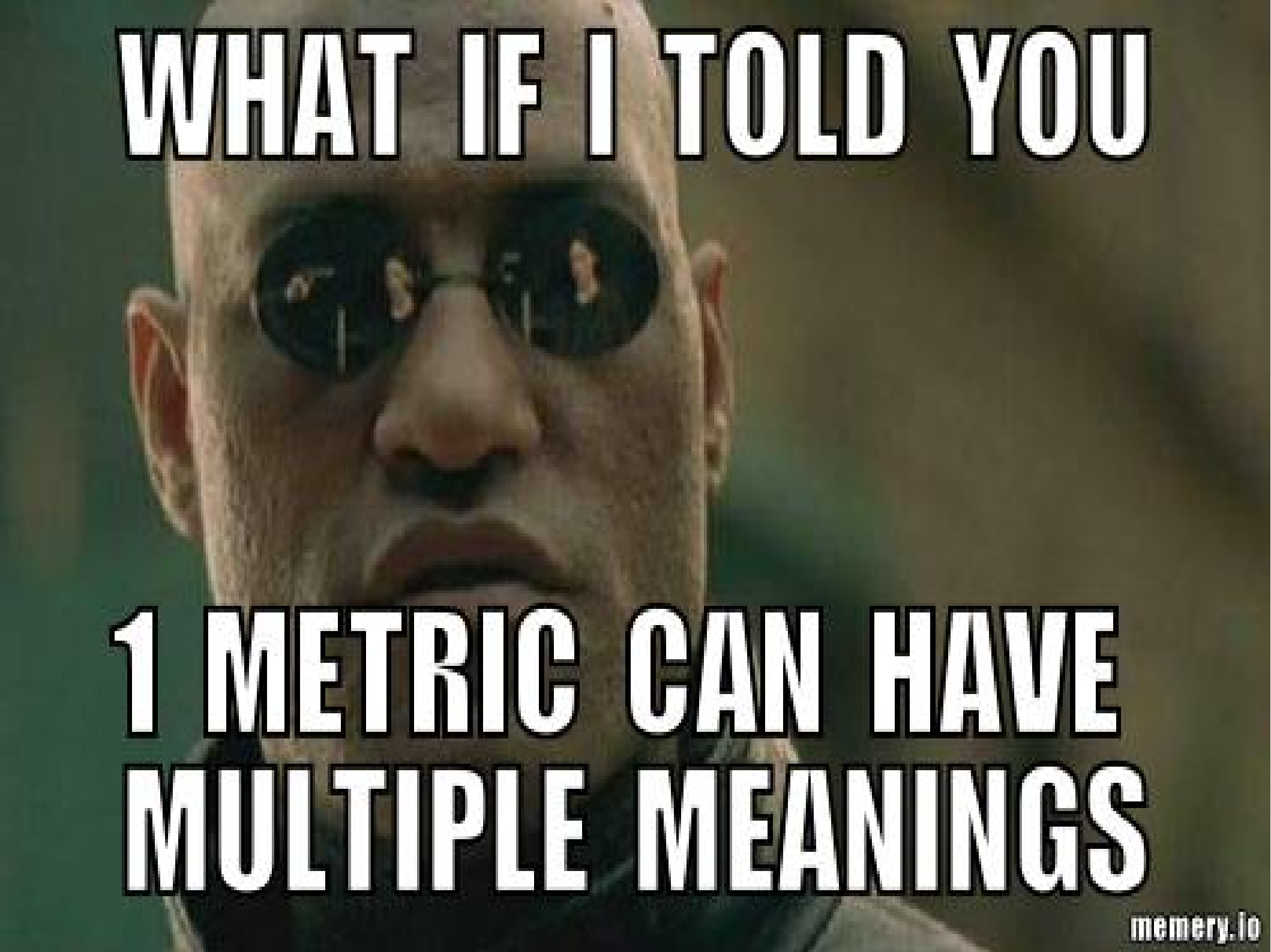
Terminology? Meaning?

Prefix?

Unit?

Aggregation?

Source?



WHAT IF I TOLD YOU

**1 METRIC CAN HAVE
MULTIPLE MEANINGS**

**Unclear, inconsistent
terminology, format
tightly coupled
lack information**



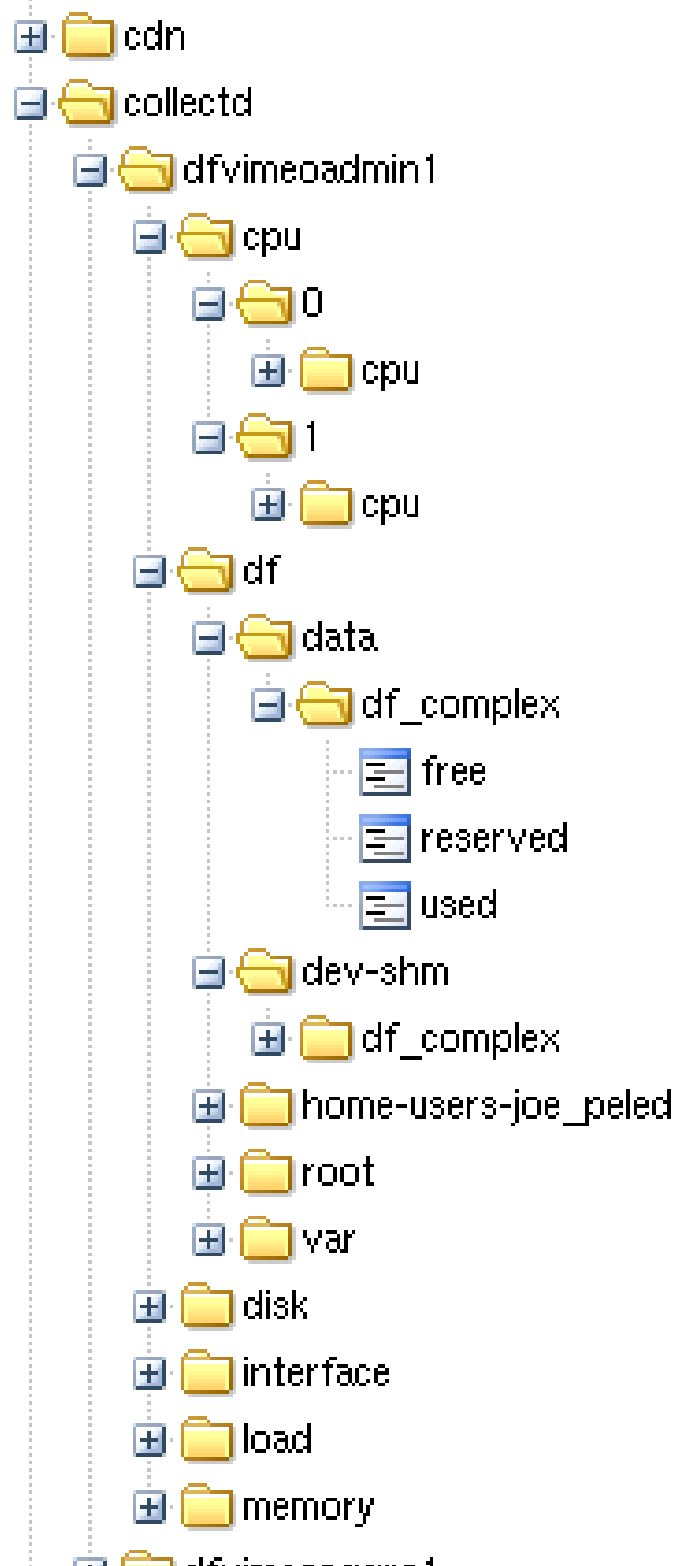
$$O(S * P * A * C)$$

S = # Sources

P = # People

A = # Aggregators

C = #Complexity



Graphs and
dashboards are a
huge **time sink**.

metrics 2.0

concepts

Self-describing

Standardized

Orthogonal dimensions

stats.timers.dfs5.

proxy-server.object.GET.200.

timing.upper_90

```
{  
    server: dfvimeodfsproxy5,  
    http_method: GET,  
    http_code: 200,  
    unit: ms,  
    metric_type: gauge,  
    stat: upper_90,  
    swift_type: object  
}
```

**MB/s Err/d
Req/h ...**

**B Err Warn Conn
File Req ...**

SI + IEC

allow more characters

unit: Req/s,

site: vimeo.com,

...

Metadata

```
meta: {  
    src: proxy.py:458,  
    from: diamond  
}
```

metrics20.org

**Immediate understanding
of metrics**

**Minimize time to graphs,
alerting, troubleshooting**

**compatibility & flexibility
in tooling**

Implementations

getting the data

```

class VimeoPlugin(Plugin):
    targets = [
        Plugin.rate(
            '^stats\.(?P<server>[^\.]+)\.requesthostport\.(?P<site>[^\.]+)\_(?P<port>[0-9]+)$',
            {'unit': 'Req/s', 'direction': 'in', 'service': 'webapp_php'}
        ),
        Plugin.rate('^stats\.(?P<server>[^\.]+)\.(?P<type>upload_console)_log_error\.(?P<code>[^\.]*)$',
            {'unit': 'Req/s', 'direction': 'in', 'service': 'webapp_php'}
        ),
        Plugin.rate('^stats\.(?P<server>[^\.]+)\.email_outbound\.(?P<type>[^\.]*)$', {'unit': 'Email/s', 'direction': 'out', 'service': 'webapp_php'}
        ),
        Plugin.gauge('^(?P<server>[^\.]+)\.(?P<service>memcache)\_(?P<type>response)time$', {'unit': 's', 'direction': 'in', 'service': 'webapp_php'}
    ]

    def sanitize(self, target):
        try:
            target['tags']['site'] = target['tags']['site'].lower().replace('_', '.').rstrip('.')
        except:
            pass

# vim: ts=4 et sw=4:

```

Source formats

...

```
service=foo instance=host unit=B 123  
1234567890
```

```
{s}foo.{i}host.{u}B 123 1234567890
```

```
<uuid> 125 1234567890 #seperate data
```

...

Carbon-tagger

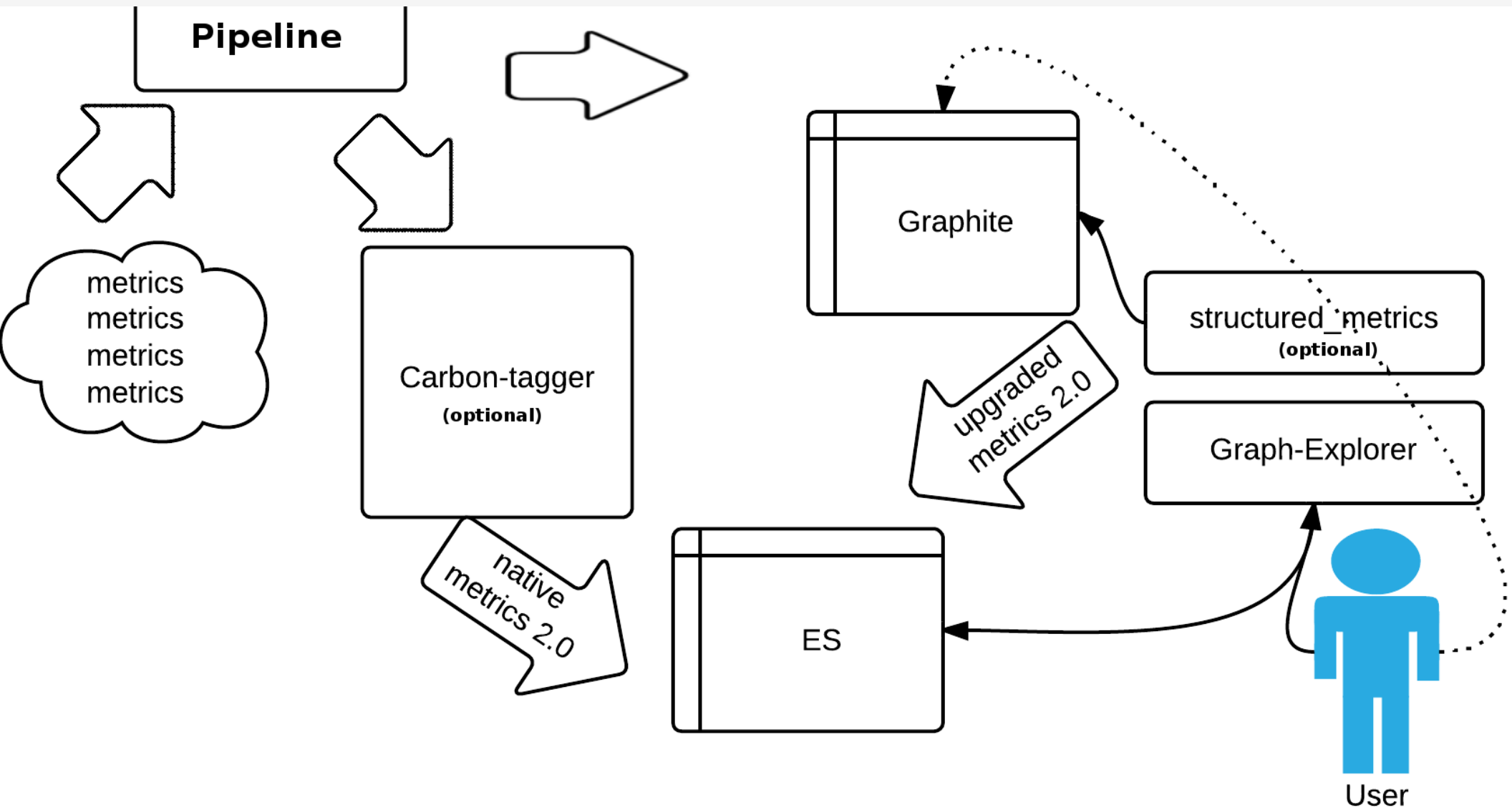
...

```
stats.gauges.host.foo 125 1234567890
```

```
service=foo instance=host
```

```
target_type=gauge unit=B 123 1234567890
```

...



Statsdaemon

`unit=B`

`unit=B`

`...`



`unit=B/s`

`unit=ms`

`unit=ms`

`...`



`unit=ms stat=mean`

`unit=ms stat=upper_90`

`...`

Keep metric
tags in *sync*
with data

Implementations

Graphing & dashboarding

Visualization

Alerting

Graphing & Dashboarding

Graph Explorer

QUERY



Empty query. Nothing to display.

Graph-Explorer queries 101

**proxy-server swift
server:regex unit=ms**

(AND)

QUERY  

proxy-server server:dfvimeodfsproxy unit=ms

Statement

graph

Patterns

target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by

unit target_type server

Aggregation

avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

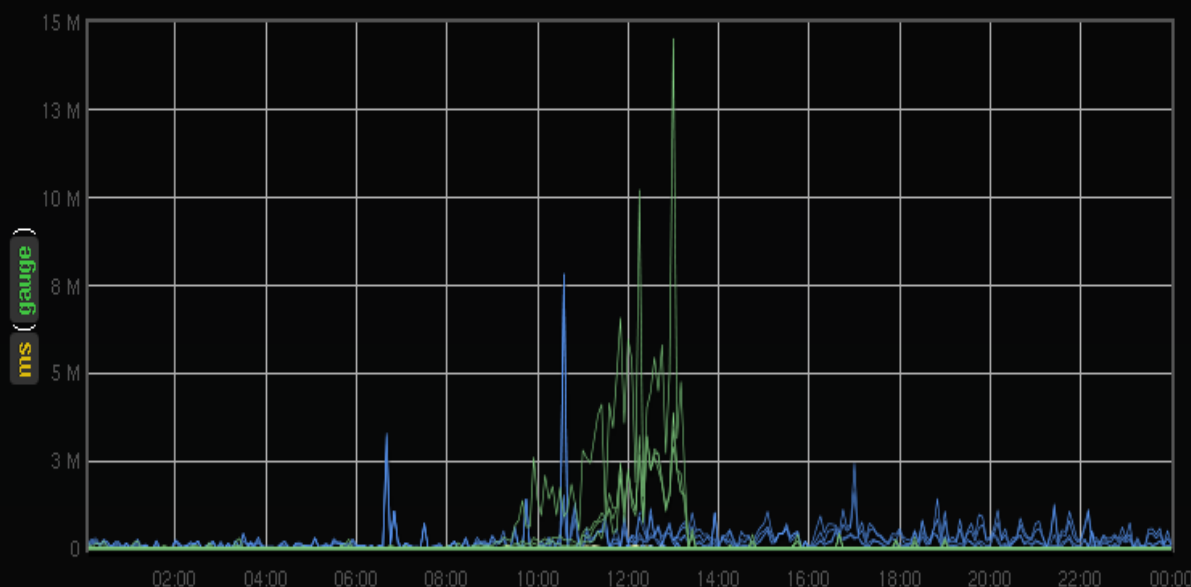
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



mean GET account 200
std GET account 200
sum GET account 200
sum_90 GET account 200
upper_90 GET account 200
lower GET account 503
mean_90 GET account 503
std GET account 503
upper GET account 503
upper_90 GET account 503
lower HEAD account 204
mean HEAD account 204
mean_90 HEAD account 204
sum_90 HEAD account 204
upper HEAD account 204
upper_90 HEAD account 204
mean HEAD account 503
mean_90 HEAD account 503
median HEAD account 503
std HEAD account 503
sum_90 HEAD account 503

QUERY  

proxy-server server:dfvimeodfsproxy unit=ms

Statement graph

Patterns target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by unit target_type server

Aggregation avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

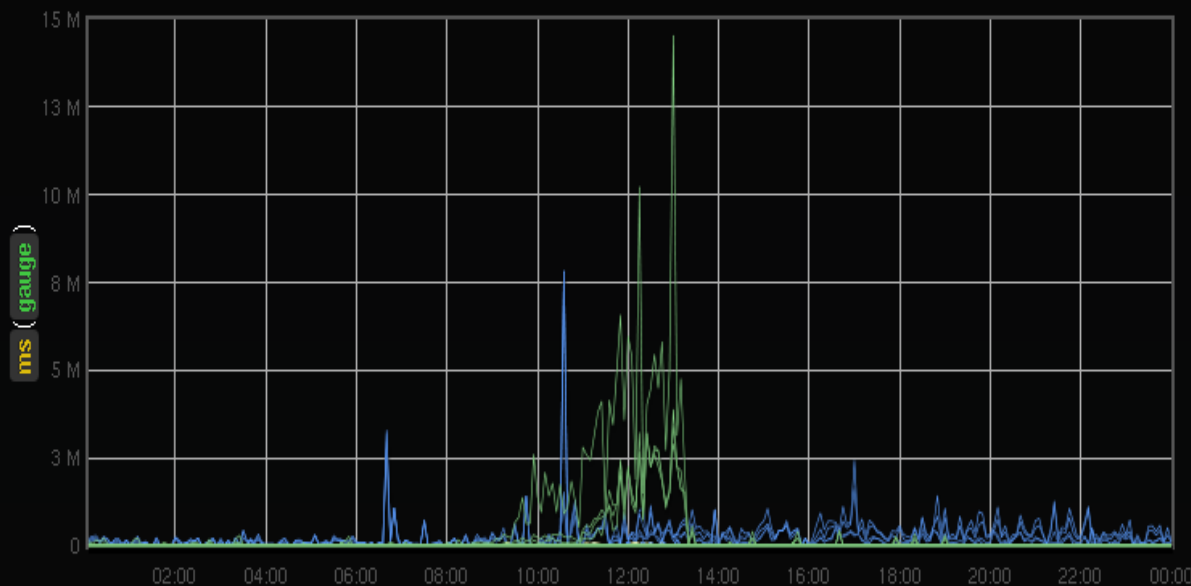
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



- mean GET account 200
- std GET account 200
- sum GET account 200
- sum_90 GET account 200
- upper_90 GET account 200
- lower GET account 503
- mean_90 GET account 503
- std GET account 503
- upper GET account 503
- upper_90 GET account 503
- lower HEAD account 204
- mean HEAD account 204
- mean_90 HEAD account 204
- sum_90 HEAD account 204
- upper HEAD account 204
- upper_90 HEAD account 204
- mean HEAD account 503
- mean_90 HEAD account 503
- median HEAD account 503
- std HEAD account 503
- sum_90 HEAD account 503

QUERY  

proxy-server server:dfvimeodfsproxy unit=ms

Statement graph

Patterns target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by unit target_type server

Aggregation avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

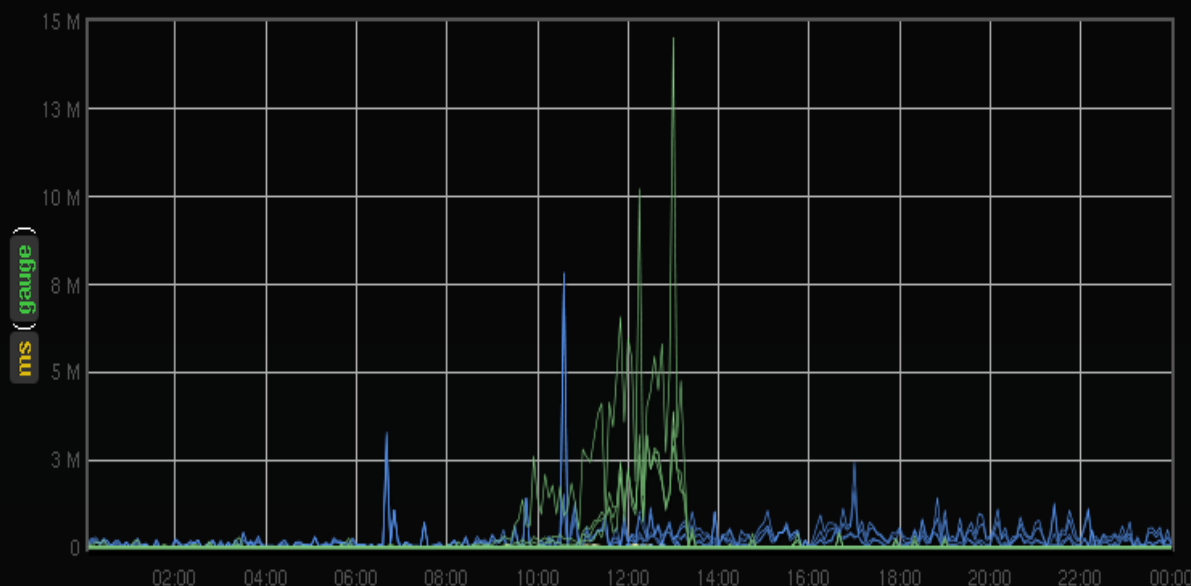
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



- mean GET account 200
- std GET account 200
- sum GET account 200
- sum_90 GET account 200
- upper_90 GET account 200
- lower GET account 503
- mean_90 GET account 503
- std GET account 503
- upper GET account 503
- upper_90 GET account 503
- lower HEAD account 204
- mean HEAD account 204
- mean_90 HEAD account 204
- sum_90 HEAD account 204
- upper HEAD account 204
- upper_90 HEAD account 204
- mean HEAD account 503
- mean_90 HEAD account 503
- median HEAD account 503
- std HEAD account 503
- sum_90 HEAD account 503

QUERY

proxy-server server:dfvimeodfsproxy unit=ms

Statement graph

Patterns target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by unit target_type server

Aggregation avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

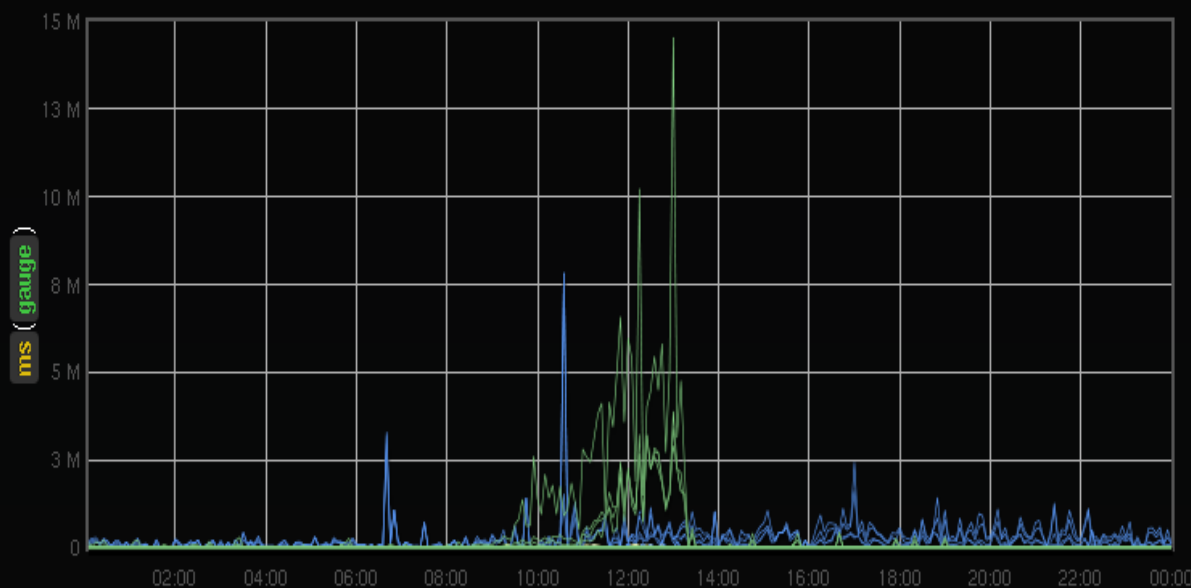
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



mean GET account 200
std GET account 200
sum GET account 200
sum_90 GET account 200
upper_90 GET account 200
lower GET account 503
mean_90 GET account 503
std GET account 503
upper GET account 503
upper_90 GET account 503
lower HEAD account 204
mean HEAD account 204
mean_90 HEAD account 204
sum_90 HEAD account 204
upper HEAD account 204
upper_90 HEAD account 204
mean HEAD account 503
mean_90 HEAD account 503
median HEAD account 503
std HEAD account 503
sum_90 HEAD account 503

QUERY

proxy-server server:dfvimeodfsproxy unit=ms

Statement graph

Patterns target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by unit target_type server

Aggregation avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

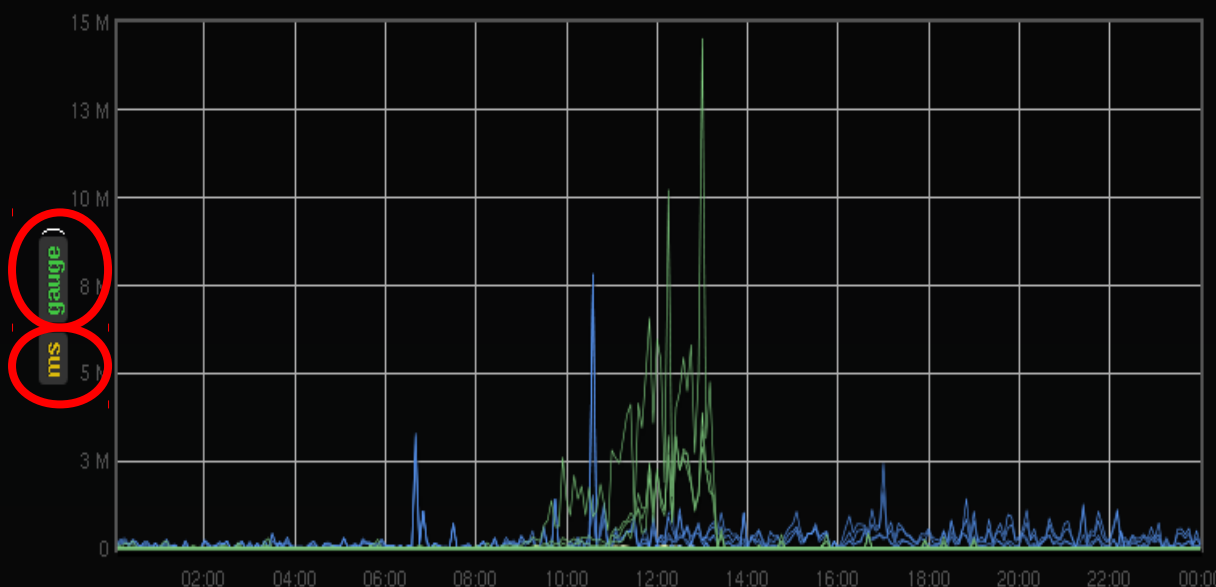
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



- mean GET account 200
- std GET account 200
- sum GET account 200
- sum_90 GET account 200
- upper_90 GET account 200
- lower GET account 503
- mean_90 GET account 503
- std GET account 503
- upper GET account 503
- upper_90 GET account 503
- lower HEAD account 204
- mean HEAD account 204
- mean_90 HEAD account 204
- sum_90 HEAD account 204
- upper HEAD account 204
- upper_90 HEAD account 204
- mean HEAD account 503
- mean_90 HEAD account 503
- median HEAD account 503
- std HEAD account 503
- sum_90 HEAD account 503

QUERY

proxy-server server:dfvimeodfsproxy unit=ms

Statement graph

Patterns target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by unit target_type server

Aggregation avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

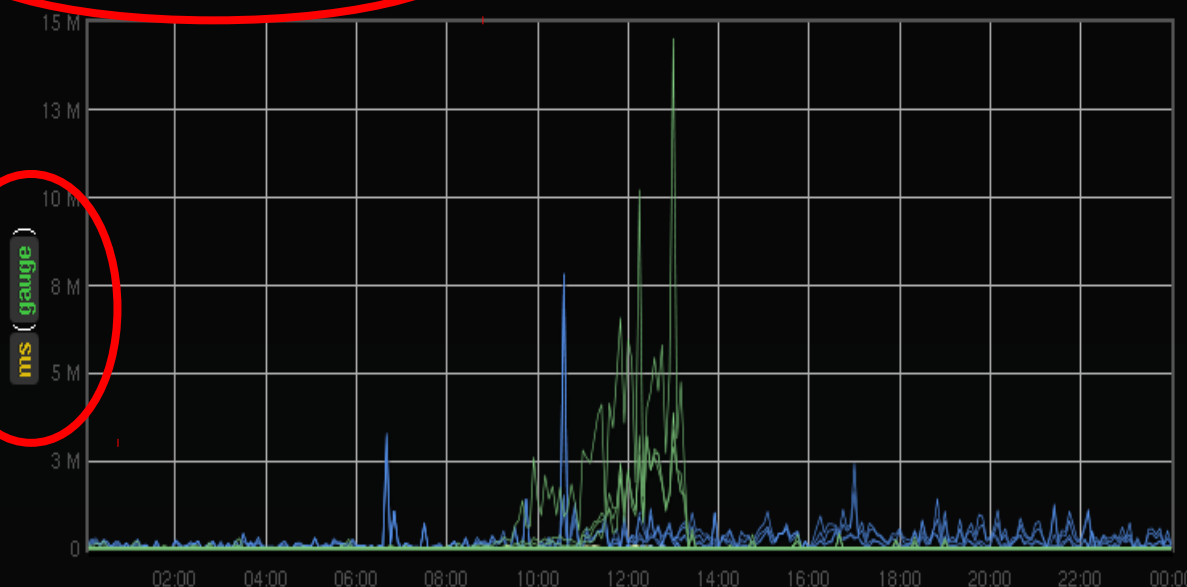
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



mean GET account 200
std GET account 200
sum GET account 200
sum_90 GET account 200
upper_90 GET account 200
lower GET account 503
mean_90 GET account 503
std GET account 503
upper GET account 503
upper_90 GET account 503
lower HEAD account 204
mean HEAD account 204
mean_90 HEAD account 204
sum_90 HEAD account 204
upper HEAD account 204
upper_90 HEAD account 204
mean HEAD account 503
mean_90 HEAD account 503
median HEAD account 503
std HEAD account 503
sum_90 HEAD account 503

QUERY  

proxy-server server:dfvimeodfsproxy unit=ms

Statement

graph

Patterns

target_type= unit= proxy-server

server:dfvimeodfsproxy unit=ms

Group by

unit target_type server

Aggregation

avg by none, sum by none

Events query

Limit 500

X-axis from -24h, to now

Y-axis min None, max None

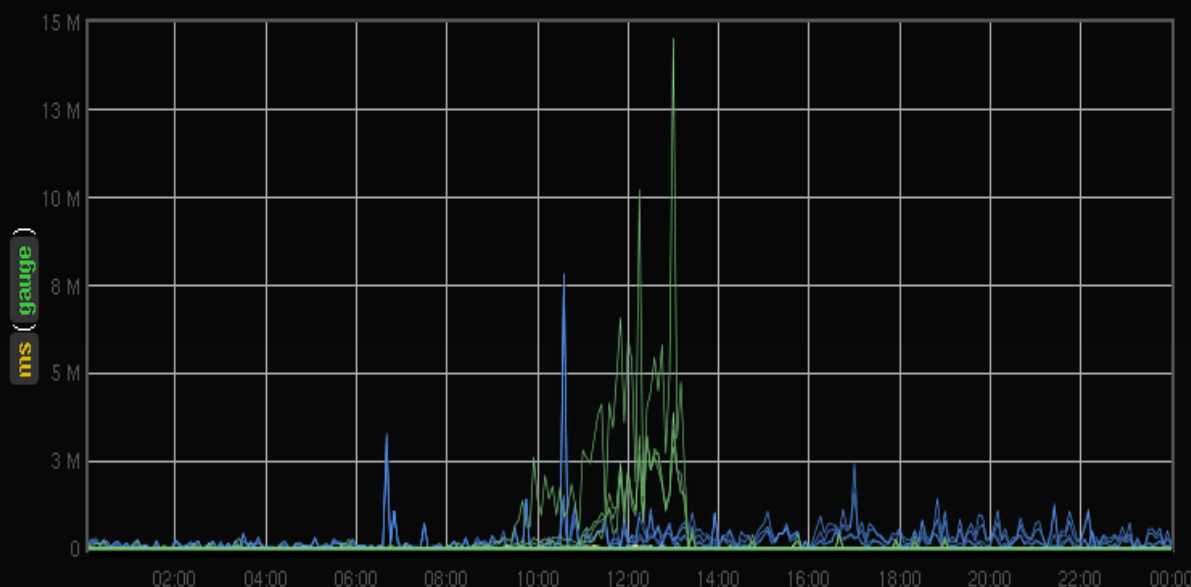
Targets matching 500/385

Graphs matching 0/0

Graphs from matchi... 4

Total graphs 4

proxy-server dfvimeodfsproxy1 openstack_swift



- mean GET account 200
- std GET account 200
- sum GET account 200
- sum_90 GET account 200
- upper_90 GET account 200
- lower GET account 503
- mean_90 GET account 503
- std GET account 503
- upper GET account 503
- upper_90 GET account 503
- lower HEAD account 204
- mean HEAD account 204
- mean_90 HEAD account 204
- sum_90 HEAD account 204
- upper HEAD account 204
- upper_90 HEAD account 204
- mean HEAD account 503
- mean_90 HEAD account 503
- median HEAD account 503
- std HEAD account 503
- sum_90 HEAD account 503

upper_90 (or **stat=upper_90**)

from <datetime>

to <datetime>

avg over <timespec>

(5M, 1h, 3d, ...)

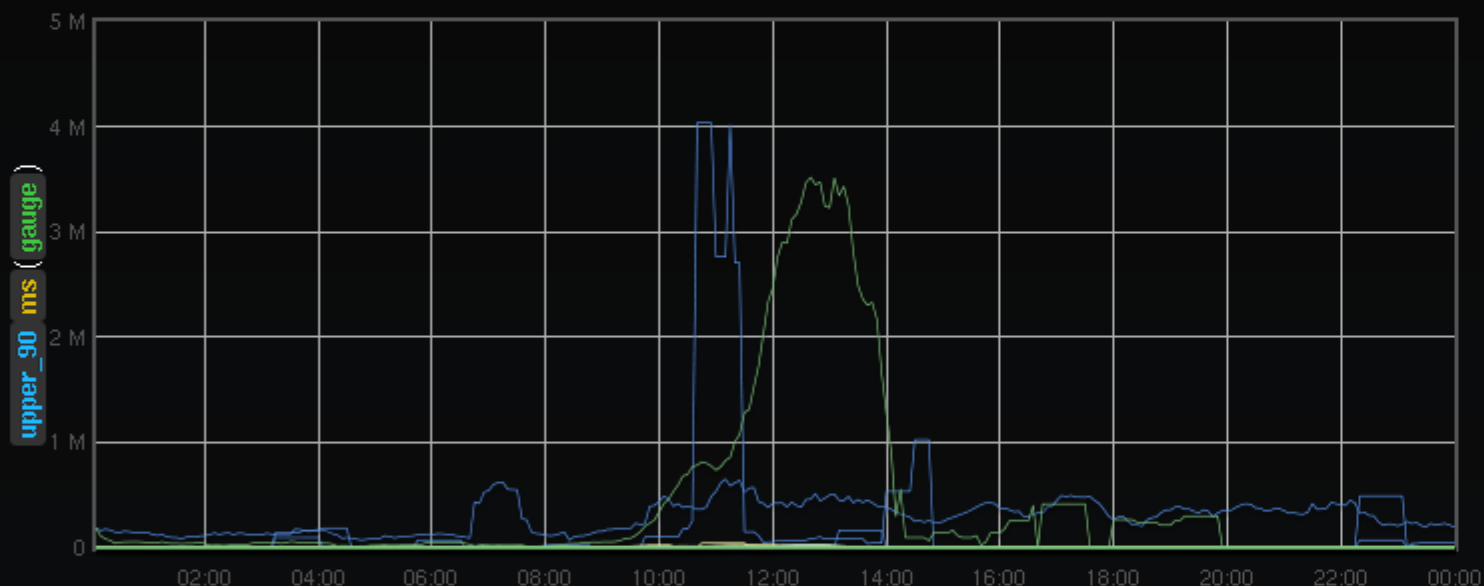
QUERY  

proxy-server swift server:dfvimeodfsproxy unit=ms upper_90 from 20130924 to 20130925 avg over 10M||

Statement graph
Patterns target_type= unit= proxy-server swift
server:dfvimeodfsproxy unit=ms upper_90
Group by unit target_type server
Aggregation avg by none, sum by none
Events query

Limit 500
X-axis from 20130924, to 20130925
Y-axis min None, max None
Avg over 10 minutes

proxy-server dfvimeodfsproxy1 openstack_swift



- GET account 200
- GET account 503
- HEAD account 204
- HEAD account 503
- DELETE container 204
- DELETE container 404
- DELETE container 409
- DELETE container 500
- GET container 200
- GET container 404
- GET container 499
- GET container 503
- HEAD container 204
- PUT container 201
- DELETE object 204
- DELETE object 404
- DELETE object 500
- DELETE object 503
- GET object 200
- GET object 206
- GET object 304

Compare object put/get

stack ...

http_method: (PUT | GET)

swift_type=object

avg by http_code, server



proxy-server server:dfvimeodfsproxy upper_90 unit=ms from 20130924 to 20130925 avg over 5M http_method:(PUT|GET) swift_type=object avg by http_code,server||

Statement

stack

Limit

500

Patterns

target_type= unit= proxy-server
server:dfvimeodfsproxy upper_90 unit=ms
http_method:(PUT|GET) swift_type=object

X-axis

from 20130924, to 20130925

Y-axis

min None, max None

Avg over

5 minutes

Events query

Group by

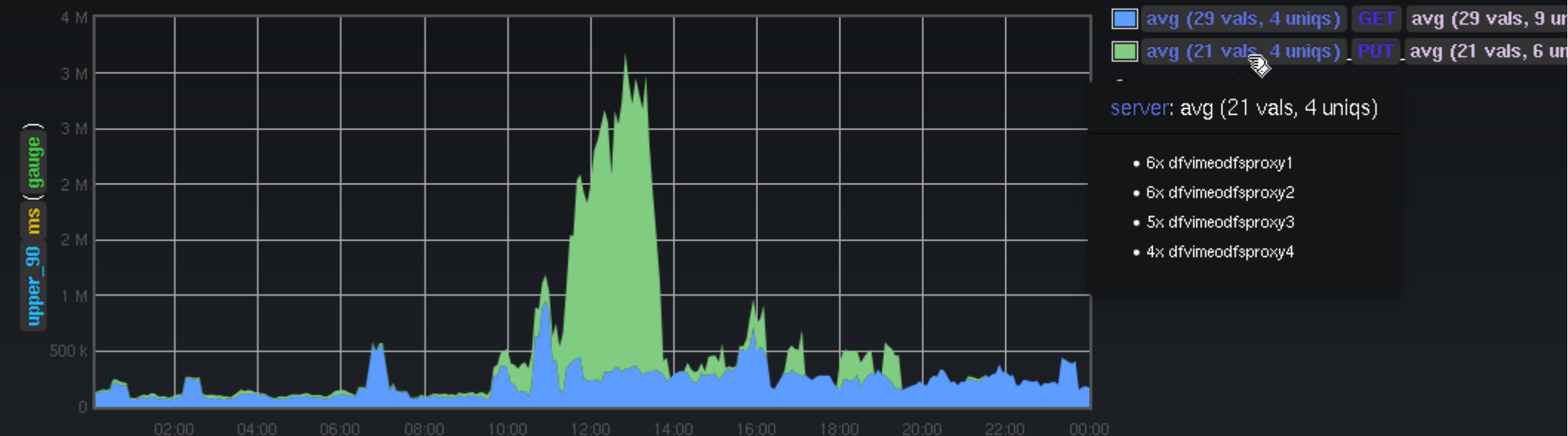
unit target_type

Aggregation

avg by http_code server , sum by none

Graph

proxy-server object openstack_swift



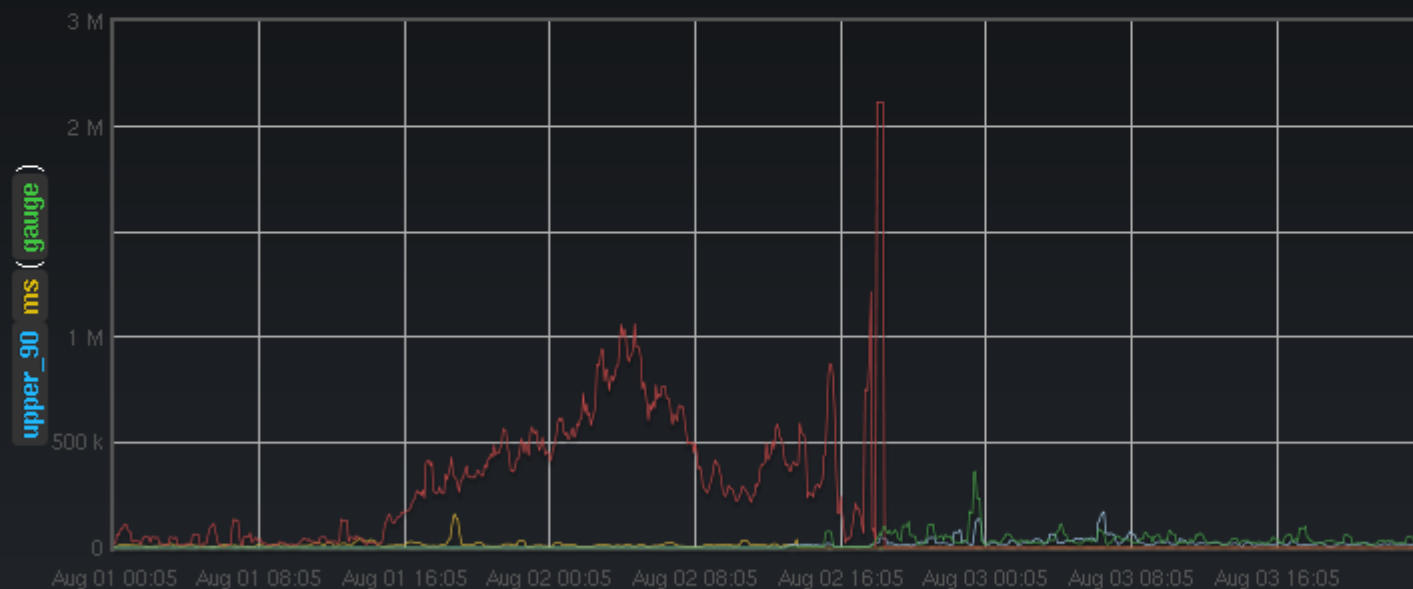
Comparing servers

```
http_method: (PUT | GET)  
group by unit, target_type  
avg by http_code,  
swift_type, http_method
```


Statement graph
Limit 500
Patterns `target_type=` `unit=` proxy-server `server:dfvimeodfsproxy`
`upper_90` `unit=ms` `http_method:(PUT|GET)`
Group by `none` `unit` `target_type`
Aggregation avg by `http_method` `http_code` `swift_type`, sum by none
X-axis from 20130801, to 20130804
Y-axis min None, max None
Avg over 5 minutes

Targets matching 76/376982 (limit 10000)
Graphs matching 0/10
Graphs from matchi... 1
Total graphs 1
Tag legend `unit` `target_type` `http_code` `http_method` `service` `stat`
`swift_type` `server` `plugin`

proxy-server openstack_swift



☐ lines

☐ stack

dfvimeodfsproxy4	avg (10 vals, 2 uniqs)	avg (10 vals, 3 uniqs)	avg (10 vals, 6 uniqs)
dfvimeodfsproxy1	avg (22 vals, 2 uniqs)	avg (22 vals, 3 uniqs)	avg (22 vals, 12 uniqs)
dfvimeodfsproxy3	avg (22 vals, 2 uniqs)	avg (22 vals, 3 uniqs)	avg (22 vals, 12 uniqs)
dfvimeodfsproxy2	avg (22 vals, 2 uniqs)	avg (22 vals, 3 uniqs)	avg (22 vals, 13 uniqs)

transcode unit=Job/s

avg over <time>

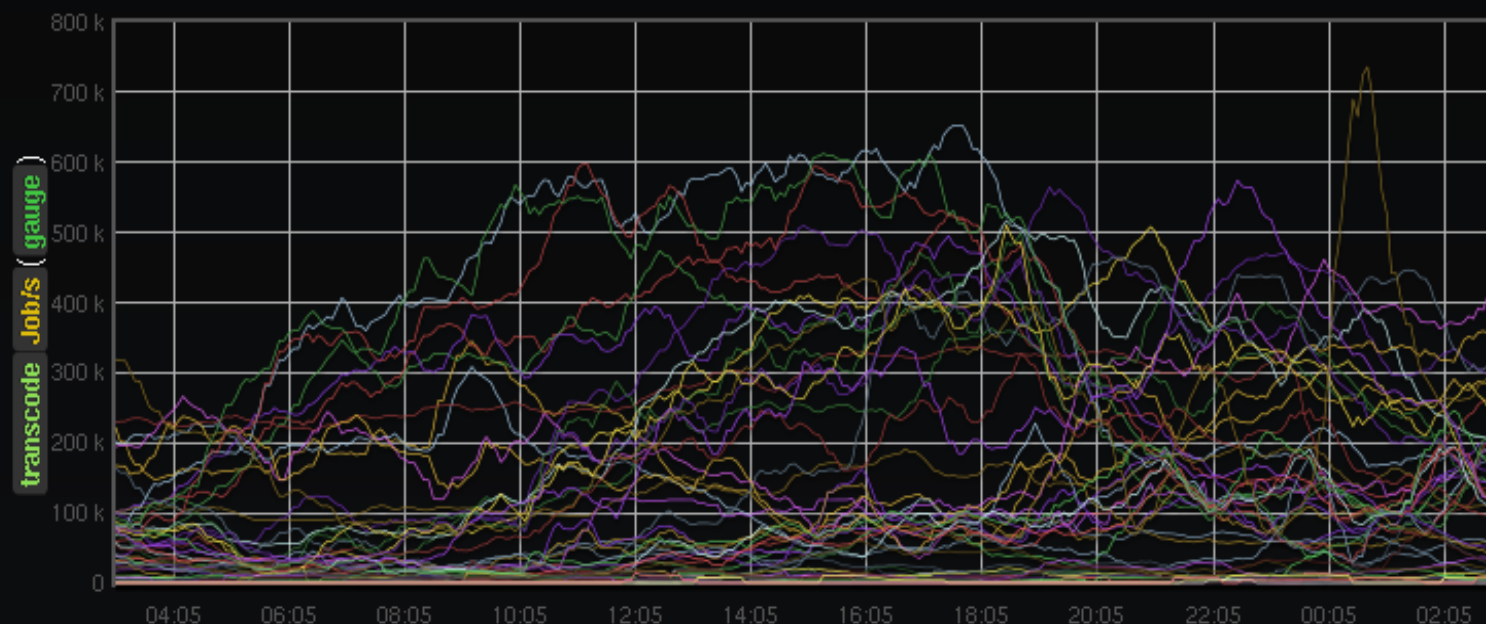
from <datetime> to <datetime>

transcode unit=Job/s avg over 10M from 20131020 to 20131021

Statement graph
 Limit 500
 Patterns `target_type= unit= transcode unit=Job/s`
 Group by `unit target_type server`
 Aggregation avg by none, sum by none
 X-axis from 20131020, to 20131021
 Y-axis min None, max None
 Avg over 10 minutes

Targets matching 118/358869 (limit 500)
 Graphs matching 0/10
 Graphs from matchi... 2
 Total graphs 2
 Tag legend `unit type target_type n1 priority state zone`

vimeo_tc



-  active ap-southeast-2a
-  active ap-southeast-2b
-  active eu-west-1a
-  active eu-west-1b
-  active eu-west-1c
-  active sa-east-1a
-  active sa-east-1b
-  active us-east-1
-  active us-east-1a
-  active us-east-1c
-  active us-east-1d
-  active us-east-1e
-  active us-west-2a
-  active us-west-2b
-  active us-west-2c
-  active vimeo-df-1a

Bucketing

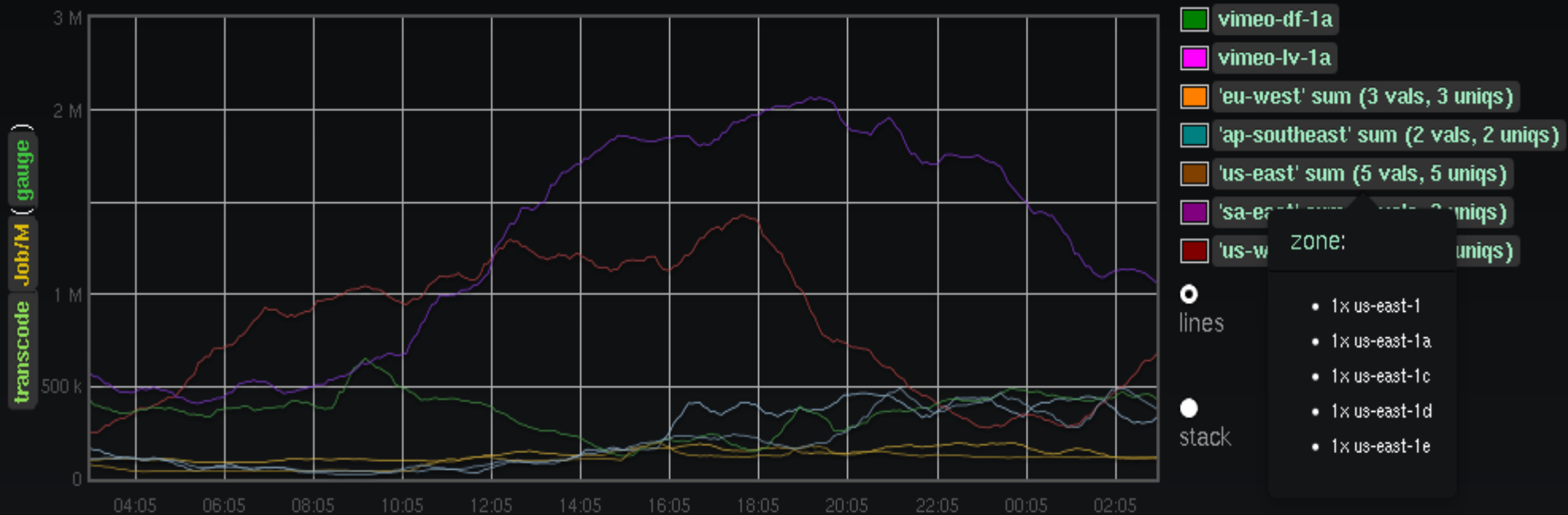
```
sum by zone:eu-west|us-  
east|ap-southeast|us-west|  
sa-east|vimeo-df|vimeo-lv  
group by state
```

transcode unit=Job/M !queue sum by zone:ap-southeast|eu-west|us-east|us-west|sa-east|vimeo-df|vimeo-lv group by state avg ov

Statement graph
 Limit 500
 Patterns `target_type=` `unit=` transcode `unit=Job/M` !queue
 Group by `state` `unit` `target_type`
 Aggregation avg by none, sum by `zone`
 X-axis from 20131020, to 20131021
 Y-axis min None, max None
 Avg over 10 minutes

Targets matching 68/358897 (limit 10000)
 Graphs matching 0/10
 Graphs from matchi... 4
 Total graphs 4
 Tag legend `unit` `type` `target_type` `state` `zone` `plugin`

active vimeo_tc



Compare job states per region

group by zone

transcode unit=Job/s !queue group by zone:(.....)|sum by zone avg over 10M from 20131020 to 20131025

Statement graph
 Limit 500
 Patterns `target_type= unit= transcode unit=Job/h !queue`
 Group by `unit zone target_type`
 Aggregation avg by none, sum by `zone`
 X-axis from 20131020, to 20131025
 Y-axis min None, max None
 Avg over 10 minutes

Targets matching 68/358796 (limit 10000)
 Graphs matching 0/10
 Graphs from matchi... 7
 Total graphs 7
 Tag legend `unit type target_type state zone plugin`

`sum (2 vals, 2 uniqs) vimeo_tc`

zone: sum (2 vals, 2 uniqs)

- 1x ap-southeast-2a
- 1x ap-southeast-2b



`sum (3 vals, 3 uniqs) vimeo_tc`

Unit conversion

unit=Mb/s network
server:regex
sum by server

QUERY



unit=Mb/s network dfvimeorpc sum by server| |

Statementgraph

Patterns

target_type=

unit=

unit=Mb/s

network

dfvimeorpc

Events query

Group by

unit

target_type

Aggregationavg by none, sum by server

Limit500

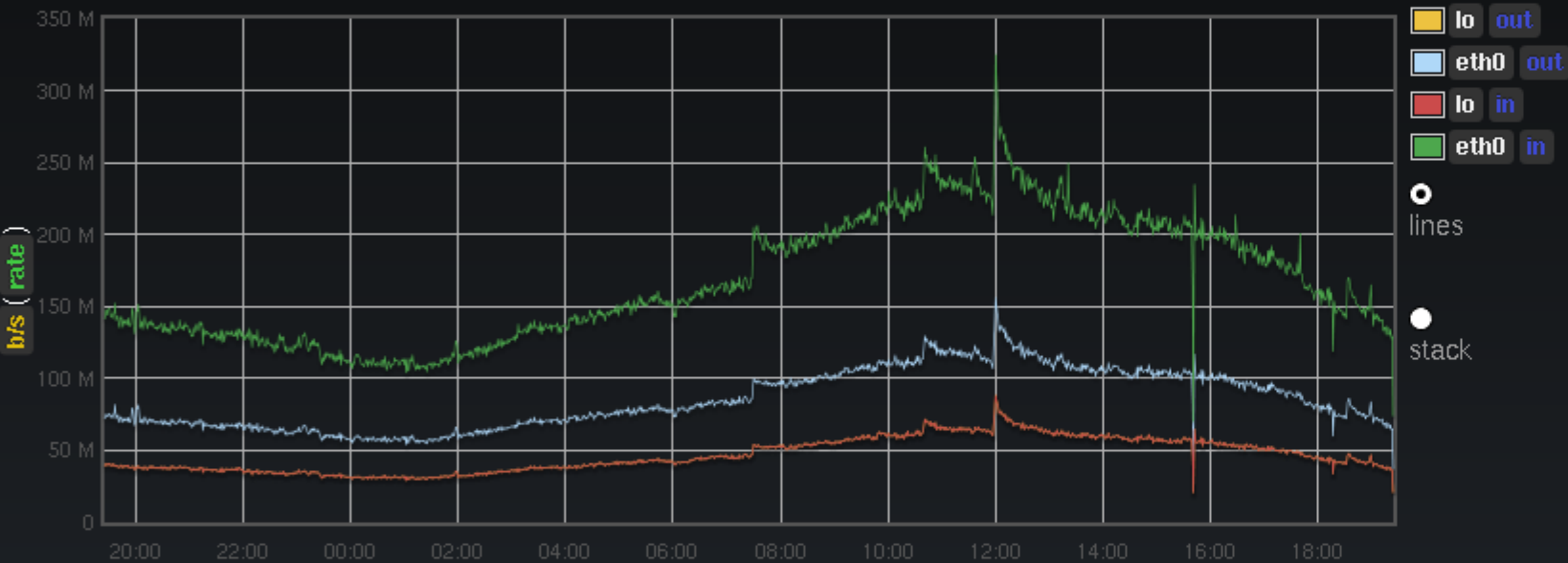
X-axisfrom -24hours, to now

Y-axismin None, max None

network

sum (13 vals, 13 uniqs)

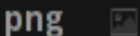
collectd



Targets

ID

collectd.dfvimeorpc1.interface.lo.if_octets.tx

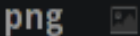


tags

collectd_plugin	network
device	lo
direction	out
plugin	collectd
server	dfvimeorpc1
target_type	rate
unit	B/s

ID

collectd.dfvimeorpc10.interface.lo.if_octets.tx



tags

collectd_plugin	network
device	lo
direction	out
plugin	collectd
server	dfvimeorpc10
target_type	rate
unit	B/s

Integration

Metric unit=B/s

Query unit=TB

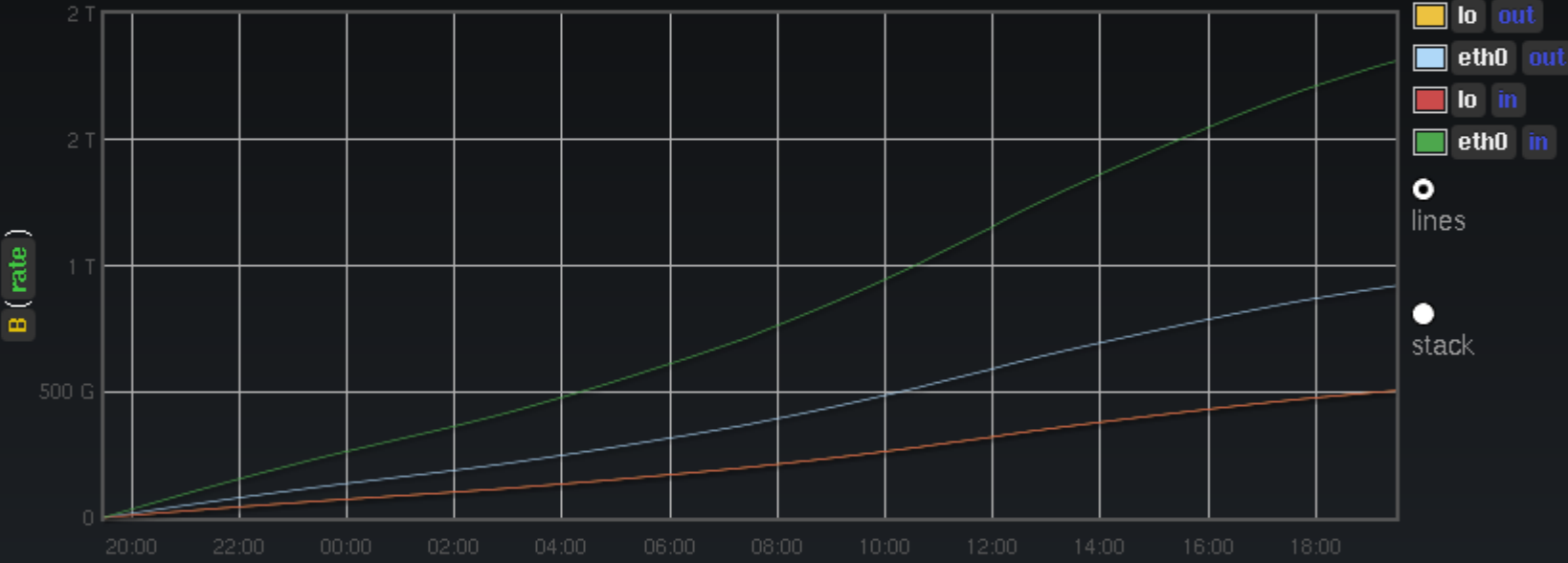
QUERY  

unit=TB network dfvimeorpc sum by server

Statement graph
Patterns target_type= unit= unit=TB network dfvimeorpc
Events query
Group by unit target_type
Aggregation avg by none, sum by server

Limit 500
X-axis from -24hours, to now
Y-axis min None, max None

network sum (13 vals, 13 uniqs) collectd



Deriving

Metric unit=B

Query unit=GB/d

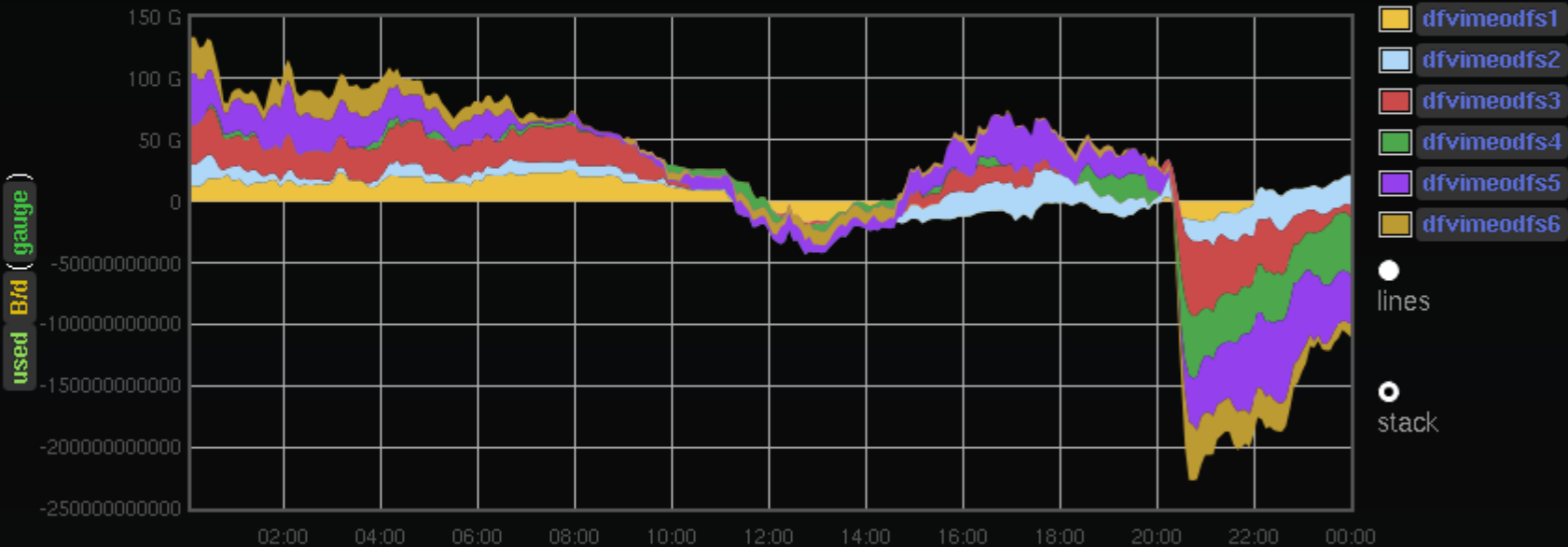
QUERY



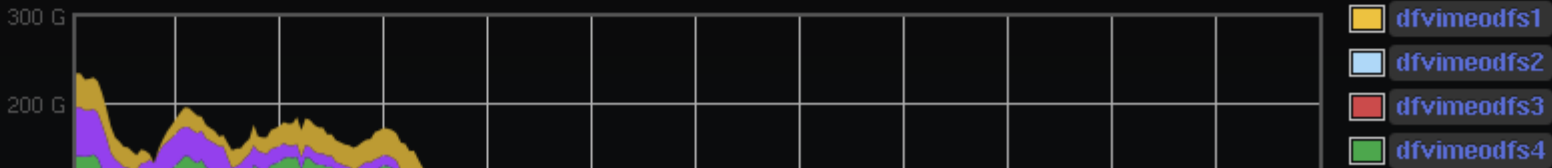
stack server:dfvimeodfs unit=GB/d type=used group by mountpoint srv node from 20131020 to 20131021 avg over 1h||

Statement	stack	Limit	500
Patterns	target_type= unit= server:dfvimeodfs unit=GB/d type=used srv node	X-axis	from 20131020, to 20131021
Events query		Y-axis	min None, max None
Group by	target_type mountpoint unit	Avg over	1 hours
Aggregation	avg by none, sum by none		

_srv_node_dfs10 diskspace



_srv_node_dfs11 diskspace



Highly extensible

Equal rights for
all tags

→ real world use
drives spec

Err/s **Anything/s**
MAnything/d

B Err Conn File Req
Anything

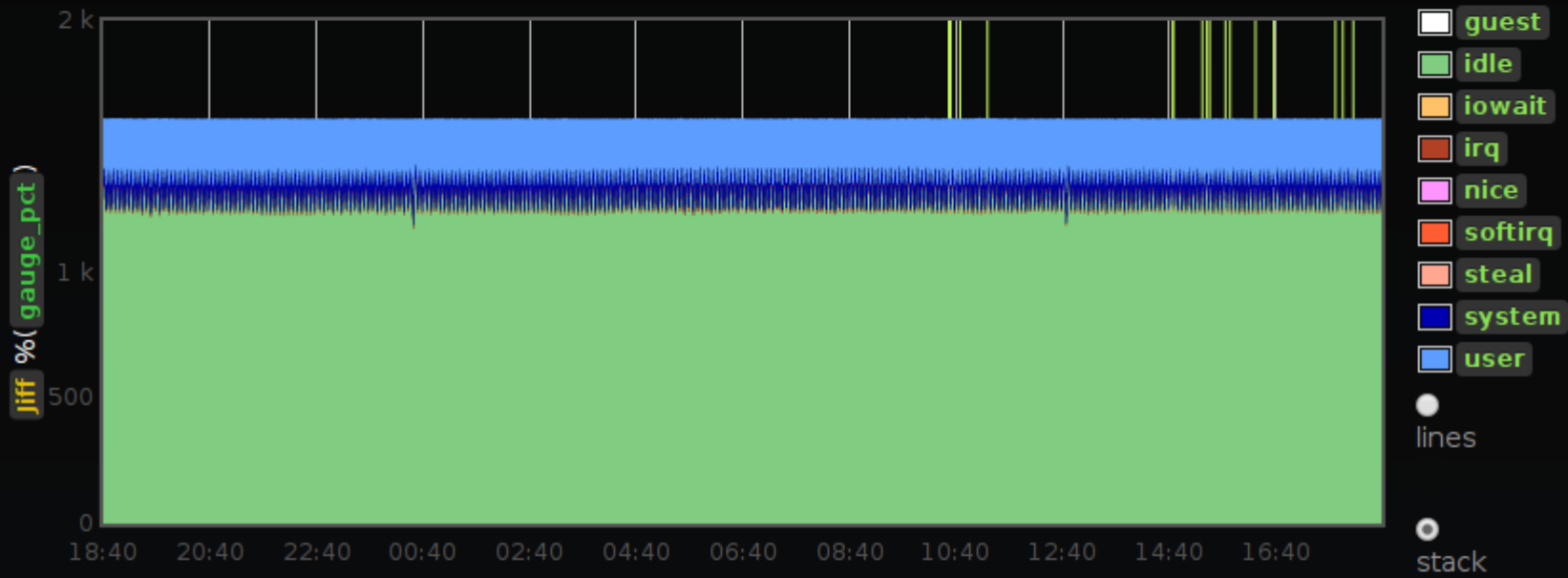
SI + IEC


```
rules_unique_tags = [  
    {  
        'what': 'cpu_usage',  
        {  
            'type': {  
                'idle': colors['green'][0],  
                'user': colors['blue'][0],  
                'system': colors['blue'][1],  
                'nice': colors['purple'][0],  
                'softirq': colors['red'][0],  
                'irq': colors['red'][1],  
                'iowait': colors['orange'][0],  
                'guest': colors['white'],  
                'guest_nice': colors['white'],  
                'steal': '#FFA791' # brighter red  
            }  
        }  
    ],  
    r
```

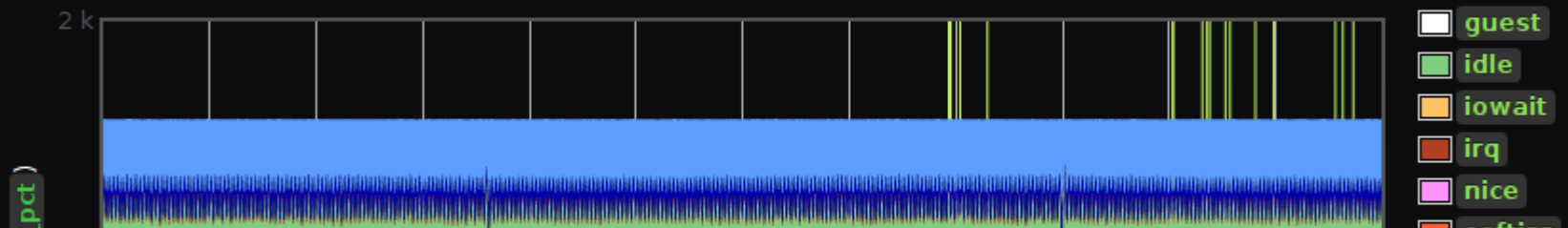
dfvimeodfs cpu avg over 4M sum by core

Statement	graph	Limit	500	Targets matching	1530/376982
Patterns	target_type= unit=	X-axis	from -24hours, to now		10000)
	dfvimeodfs cpu	Y-axis	min None, max None	Graphs matching	0/0
Group by	unit target_type	Avg over	4 minutes	Graphs from matchi...	10
	server			Total graphs	10
Aggregation	avg by none, sum by				
	core				

sum cpu_usage dfvimeodfs1 cpu



sum cpu_usage dfvimeodfs2 cpu



Statementgraph

Patterns

target_type=

unit=

dfvimeodfs

cpu

!guest

Group by

target_type

type

unit

Aggregationavg by none, sum by

core

Limit500

X-axisfrom -24hours, to now

Y-axismin None, max None

Avg over4 minutes

Targets matching1360/37

Graphs matching0/0

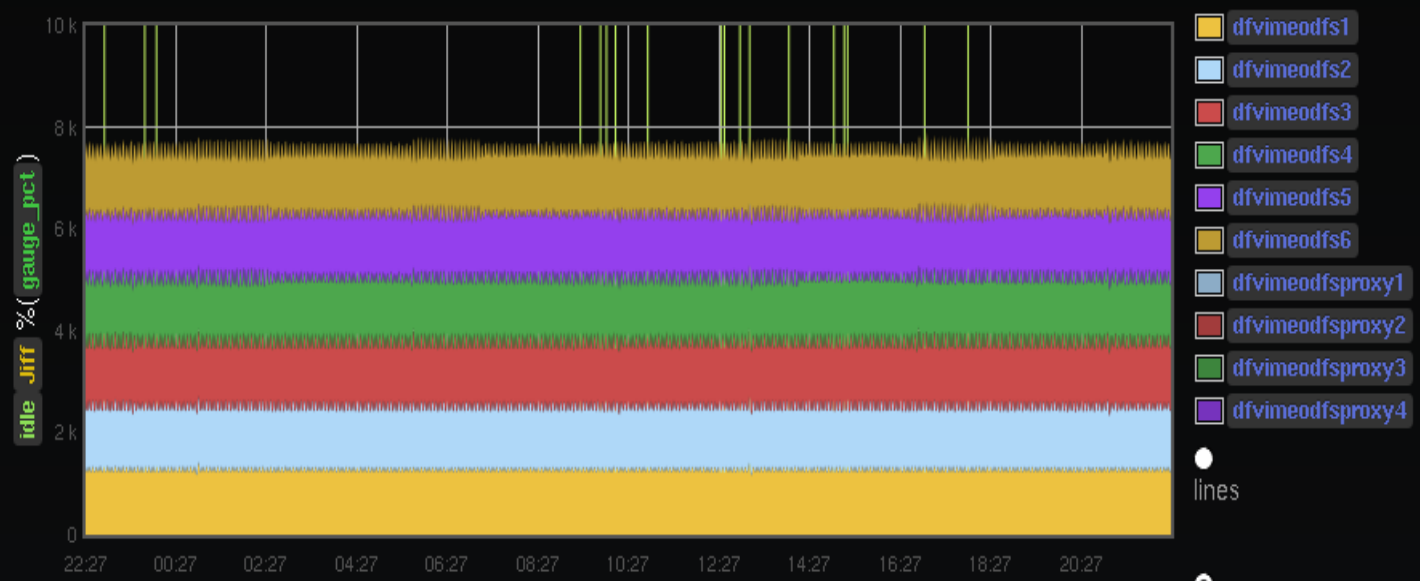
Graphs from matchi...8

Total graphs8

sum

cpu_usage

cpu

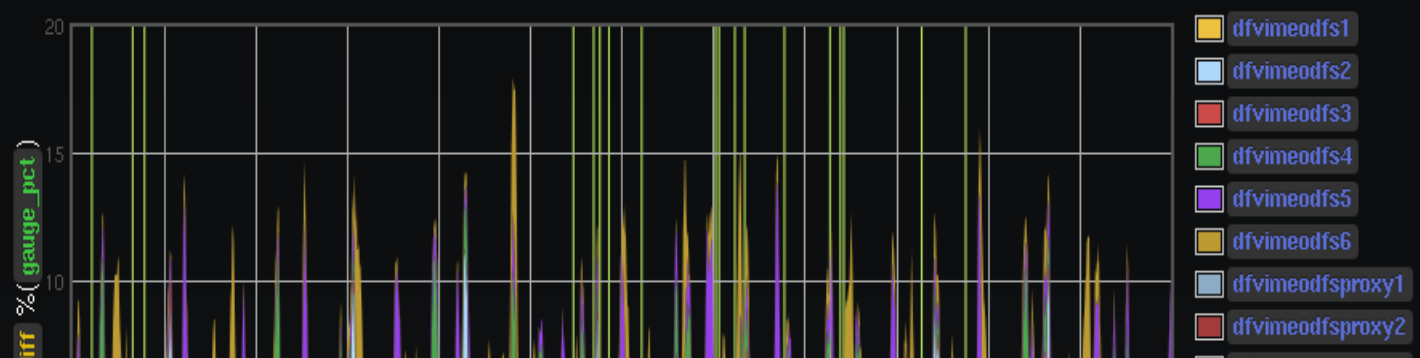


stack

sum

cpu_usage

cpu



Minimize time from
information need to
insights.

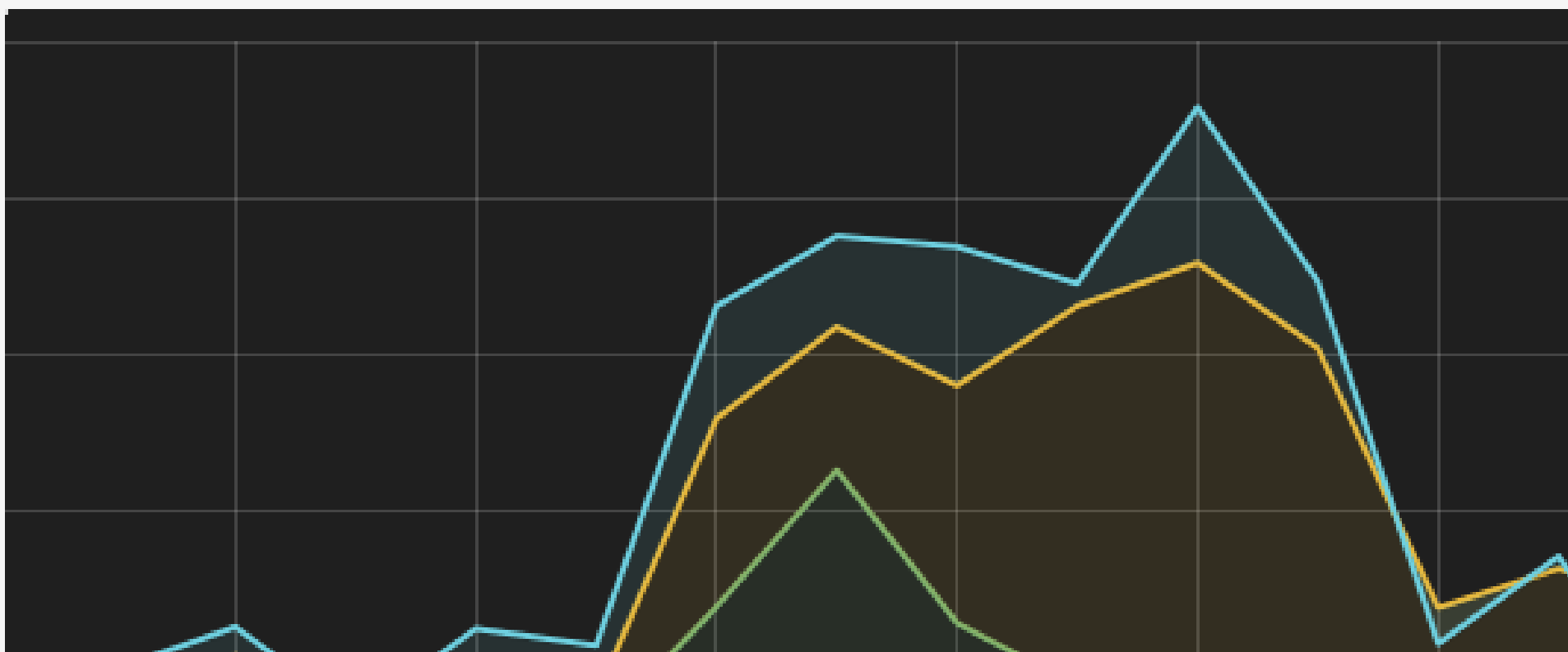
Future Work

Faced-based suggestions

Custom hierachies

Tag insights

- Storage aggregation rules
- graphite API functions such as **cumulative**, **summarize** and **smartSummarize**
- **consolidateBy** & Graph renderers





Minesweeper



Game Help

000

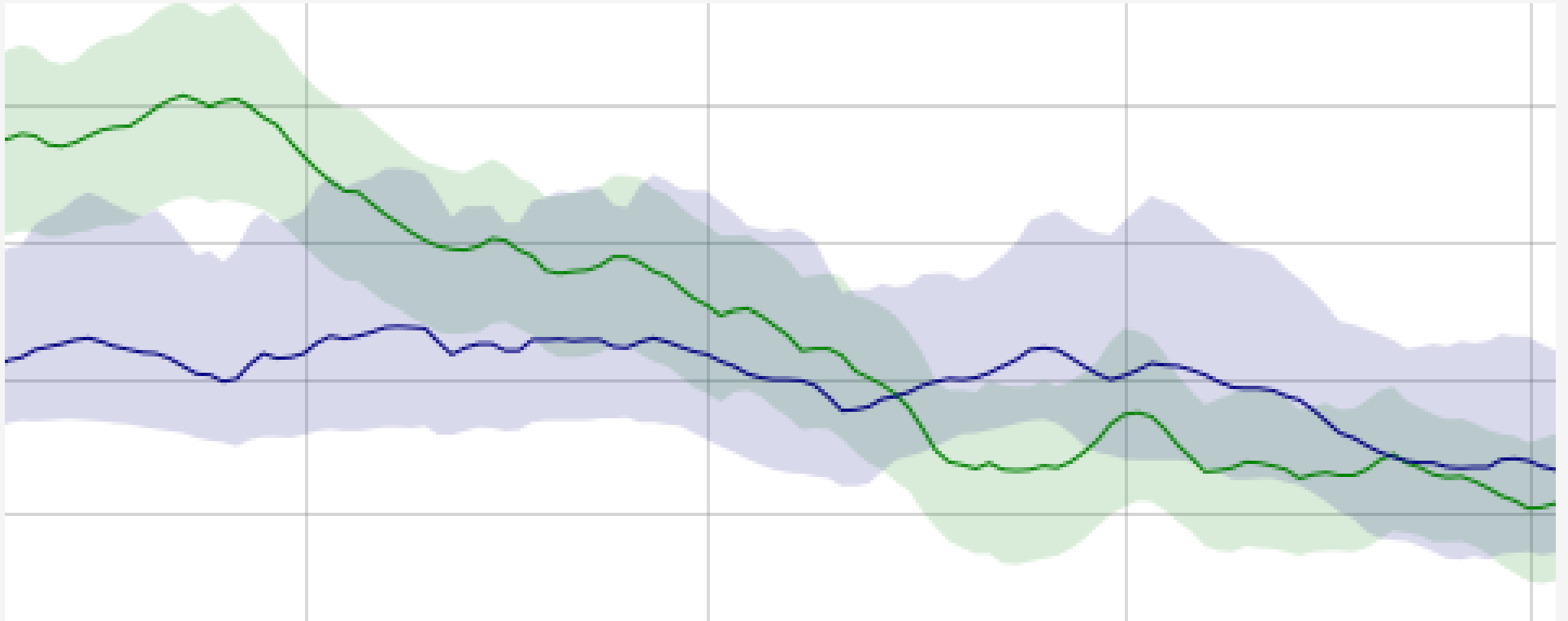


000

	1					1		
	●		●	1			●	●
1	2	●			1		3	2
	1	1	1	1	2	●	1	
1	1	1		1	●		1	
	●	1		1	1	1	1	1
1	1	1					1	●
							2	
							1	●

stat=upper/lower/mean/...
(assume avg otherwise)

Visualizations



bin=10

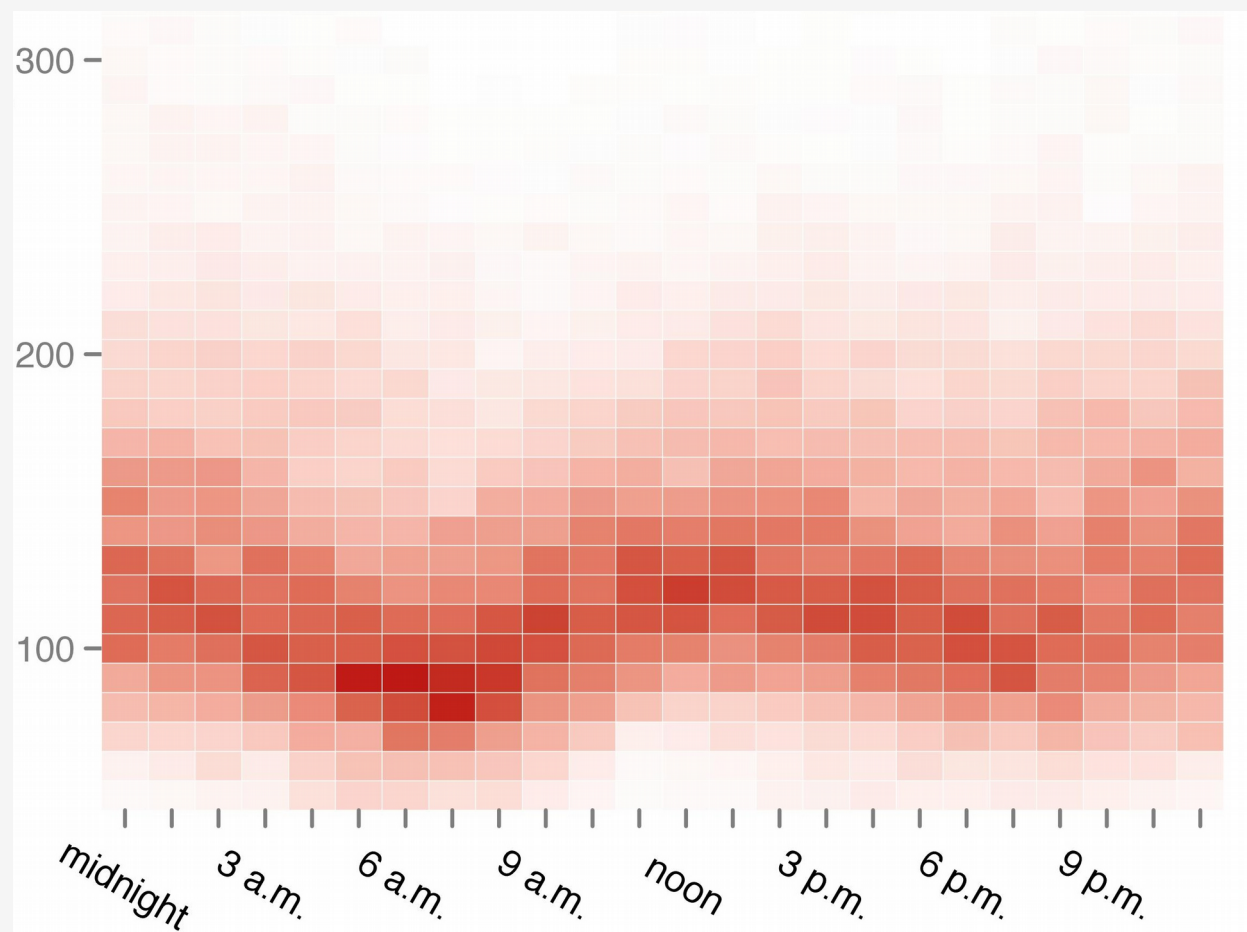
bin=20

bin=30

bin=40

bin=50

bin=100

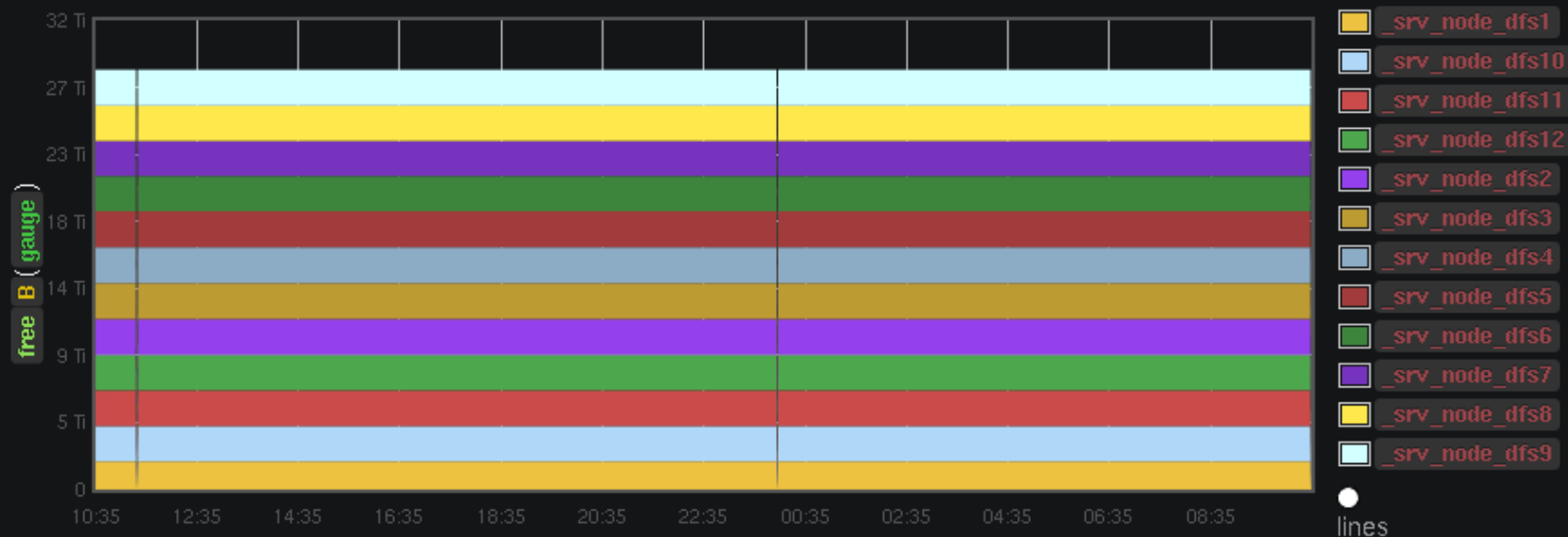


Alerting

Rule GB free on all dfvimeodfs sep mountpoints

ID 9
view 
Edit 
Alias GB free on all dfvimeodfs sep mountpoints
Expr `server:dfvimeodfs unit=GB type=free srv node`
Value warn 1000.0
Value crit 100.0
Destination dieter@vimeo.com
Active Y
Warn on null N

dfvimeodfs1 diskspace



$unit = Err/s$

Real-Time errors

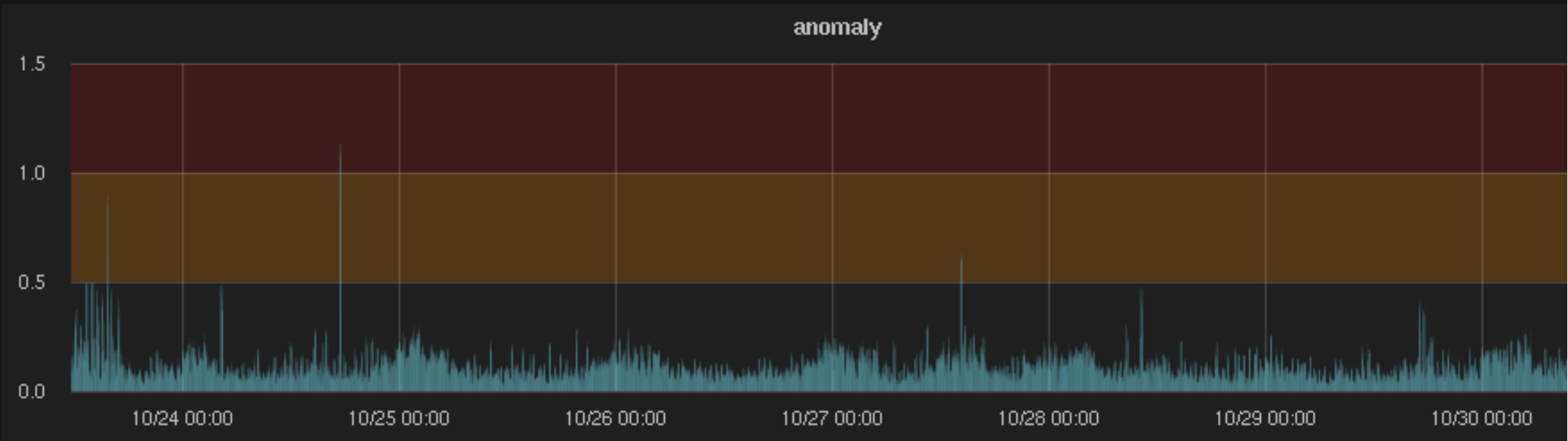
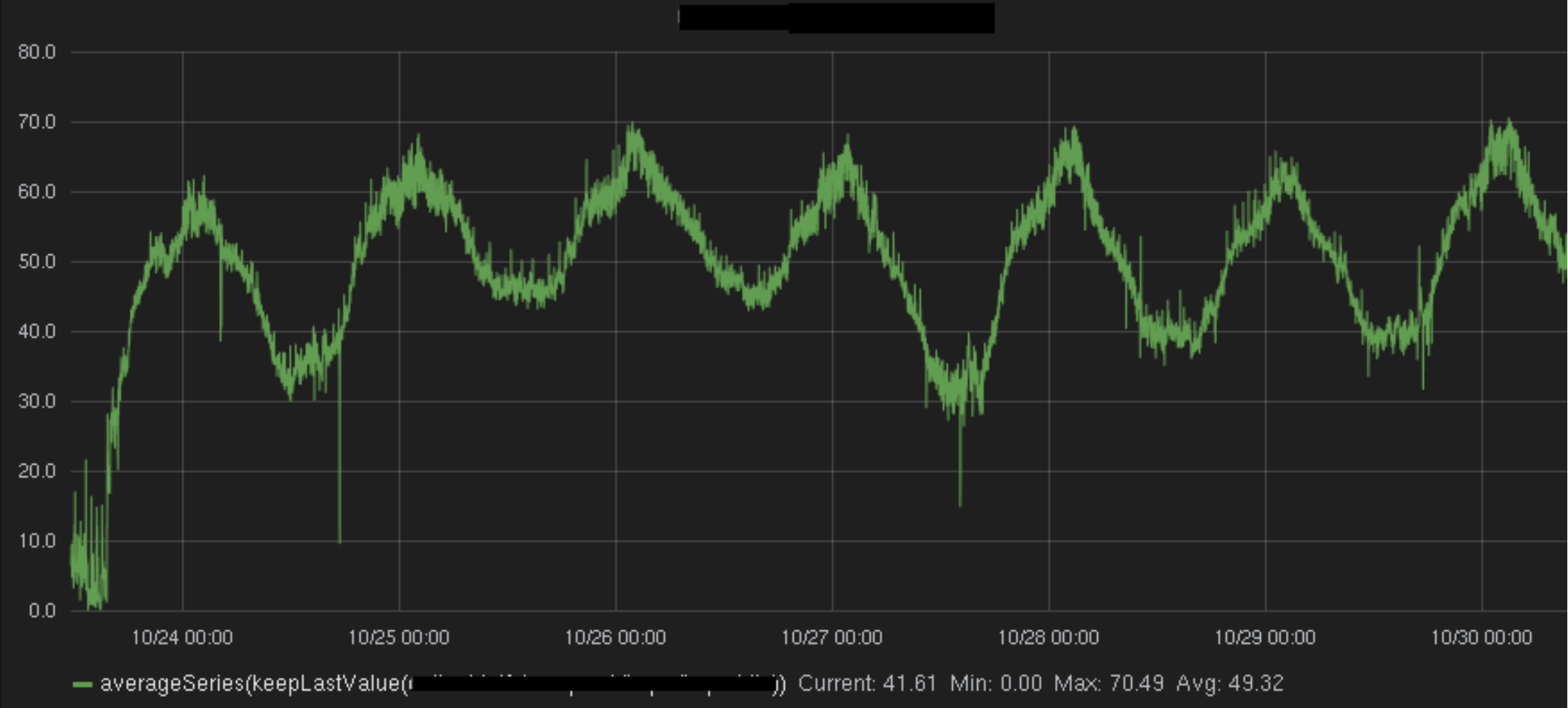
Metrics	NL	FR	DE	ES	EN
MYSQL Table full	5	0	0	6	4
Mysql storage engine error	52	80	0	0	0
Mysql timeout	480	595	25	857	57
Memcache timeout	91	1	19	62,256	19
PHP OOM	352	257	252	64	13
PHP error	485	623	27,988	512	408
PHP notice	289	755	651	793	810

Real-Time errors

Metrics	NL	FR	DE	ES	EN
MYSQL Table full	5	0	0	6	4
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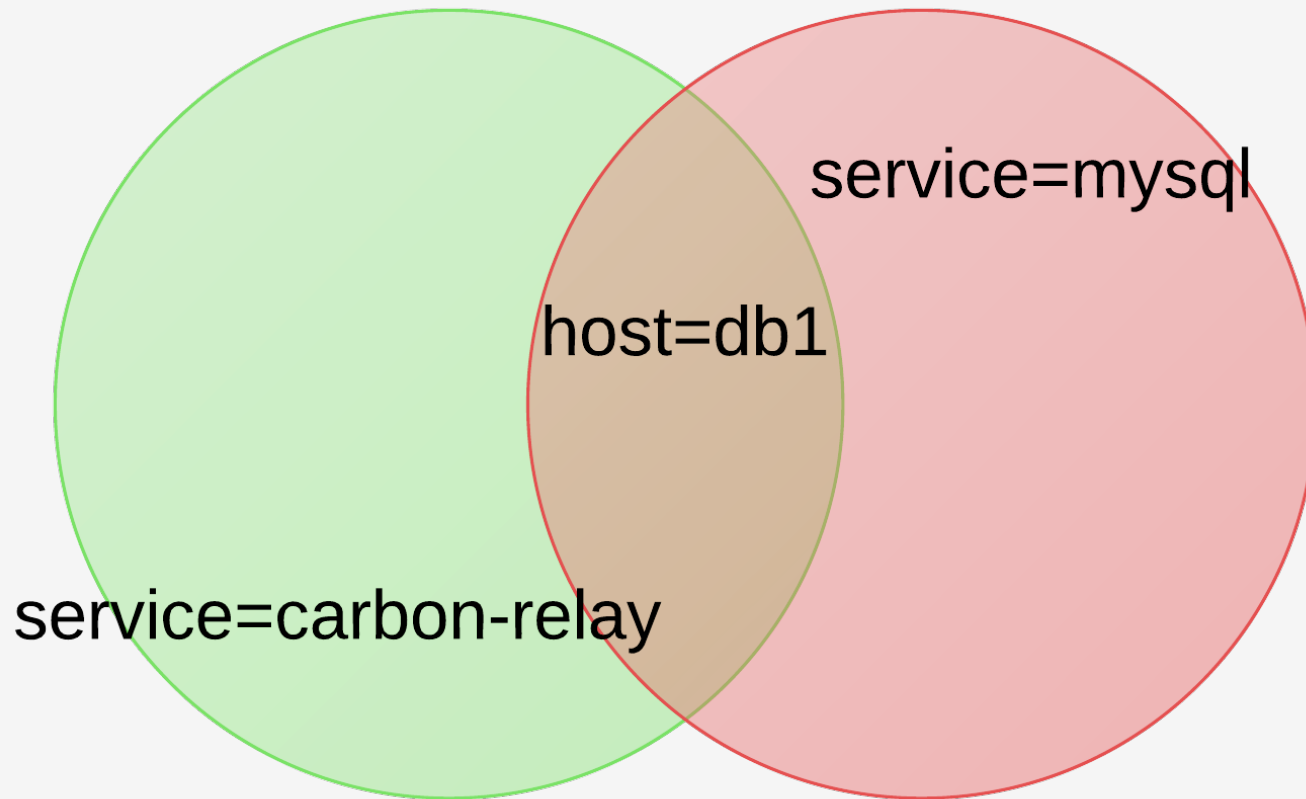
server
datacenter
service



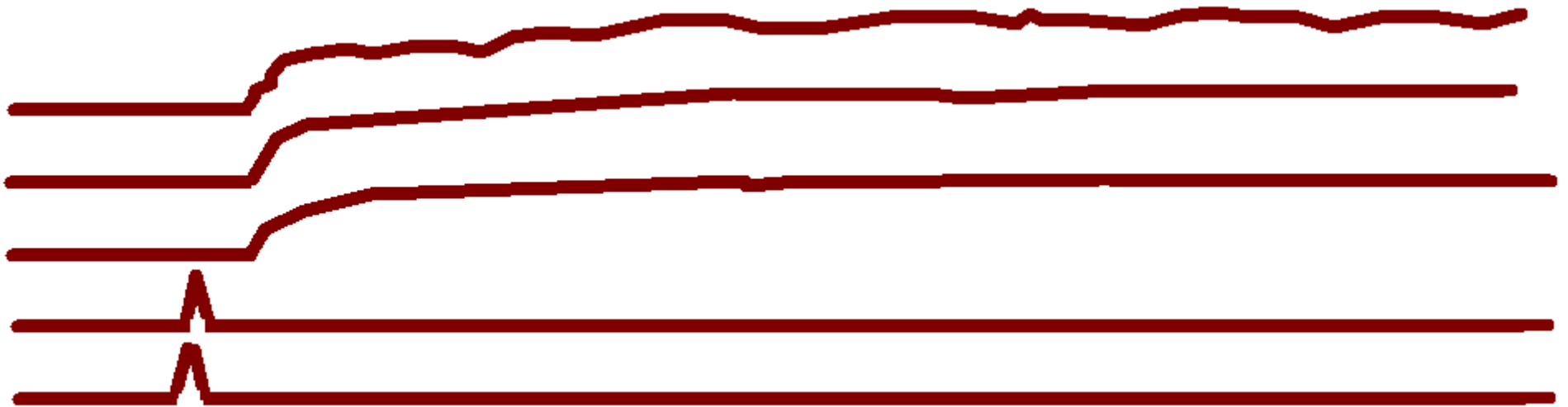


Good metrics

Bad metrics



Classifying clusters of cause & effect



Different algos
for different
metric categories

Alert criticality
& routing based
on tags

integrating
logs & metrics

ANTHRACITE EVENT MANAGER

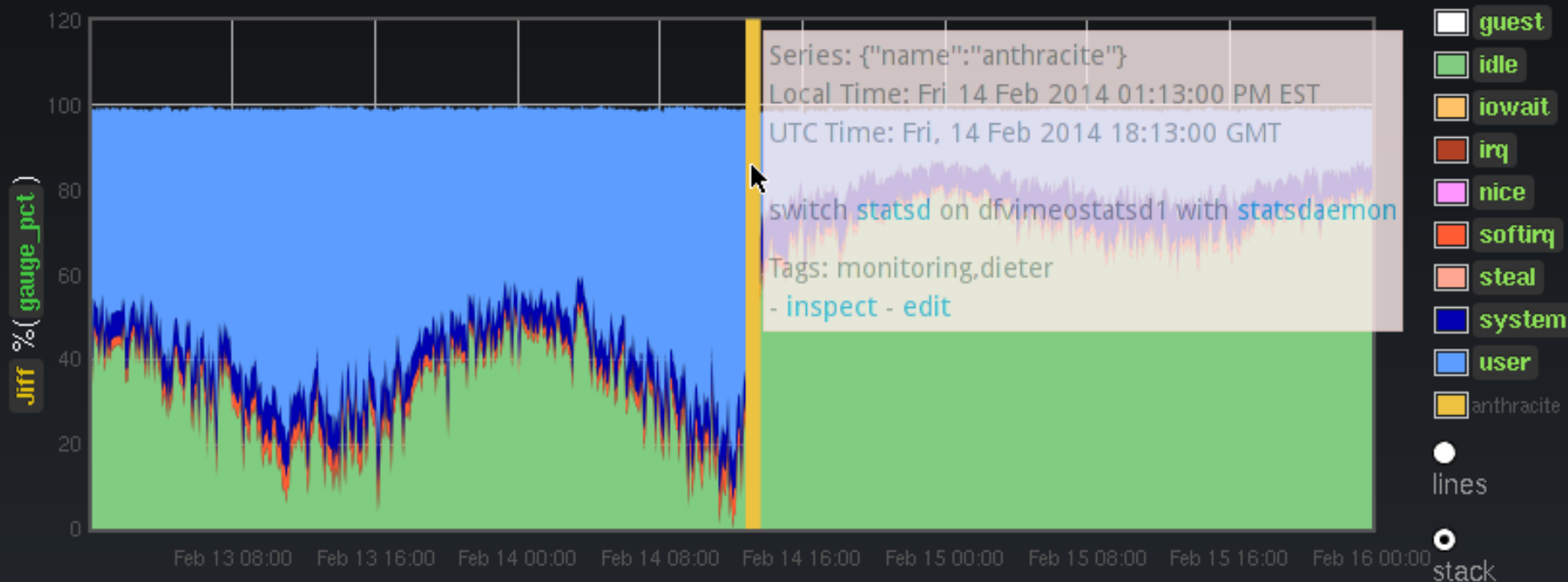
main	Date-Time	Description
add event operational report	2013-03-20 20:41:16	made some space on /var. dieter manual server=host123
EVENT VIEWS	2013-03-14 23:55:55	- bugfixes time for sleep by Dieter Plaetinck on 2013-03-15 03:32:53 -0400 - syntax fixes by Dieter Plaetinck on 2013-03-15 03:28:39 -0400 - move flot integration screenshot to integration section by Dieter Plaetinck on 2013-03-15 03:22:25 -0400 Dieterbe/anthracite/compare/0b5d20e...161f24 deploy app=anthracite test outage=test_outage resolved
table	2013-03-14 23:41:16	the issue seems to be foo bar. outage=test_outage detected
timeline	2013-03-14 23:35:00	support arbitrary tags by Dieter Plaetinck on 2013-03-14 23:28:54 -0400 Dieterbe/anthracite/compare/9e00473...0b5d20e deploy app=anthracite test outage=test_outage start
json	2013-03-14 22:57:22	do submission based on editable template file by Dieter Plaetinck on 2013-03-14 22:56:22 -0400
jsonp		
xml		
sqlite		

dfvimeostatsd1 cpu usage total from 20140213 to 20140216 ||statsd

Statement graph
 Patterns **target_type=** **unit=** dfvimeostatsd1 **cpu** **usage** **total**
 Events query statsd
 Group by **unit** **target_type** **server**
 Aggregation avg by none, sum by none

Limit 500
 X-axis from 20140213, to 20140216
 Y-axis min None, max None

sum **cpu_usage** dfvimeostatsd1 **cpu**



Algorithms
leverage both
logs and metrics

Conclusion

structured
self-describing
standardized
metrics = enabler

Conclusion

Concerns? Ideas? Advice?

Ready for early adopters!

Work with me on next-gen
telemetry!

Seen in this presentation:

metrics20.org

vimeo.github.io/graph-explorer

github.com/vimeo/timeserieswidget

github.com/vimeo/carbon-tagger

github.com/vimeo/statsdaemon

github.com/graphite-ng/carbon-relay-ng

github.com/Dieterbe/anthracite

You might also like:

github.com/vimeo/graphite-influxdb

github.com/vimeo/graphite-api-influxdb-docker

[Github.com/vimeo/whisper-to-influxdb](https://github.com/vimeo/whisper-to-influxdb)

github.com/Dieterbe/influx-cli

github.com/graphite-ng/graphite-ng

[Github.com/vimeo/smoketcp](https://github.com/vimeo/smoketcp)

[Github.com/vimeo/tailgate](https://github.com/vimeo/tailgate)

Stay in touch!

Metrics20 google group
it-telemetry google group

twitter.com/Dieter_be
dieter.plaetinck.be
dieter@plaetinck.be
dieter@vimeo.com

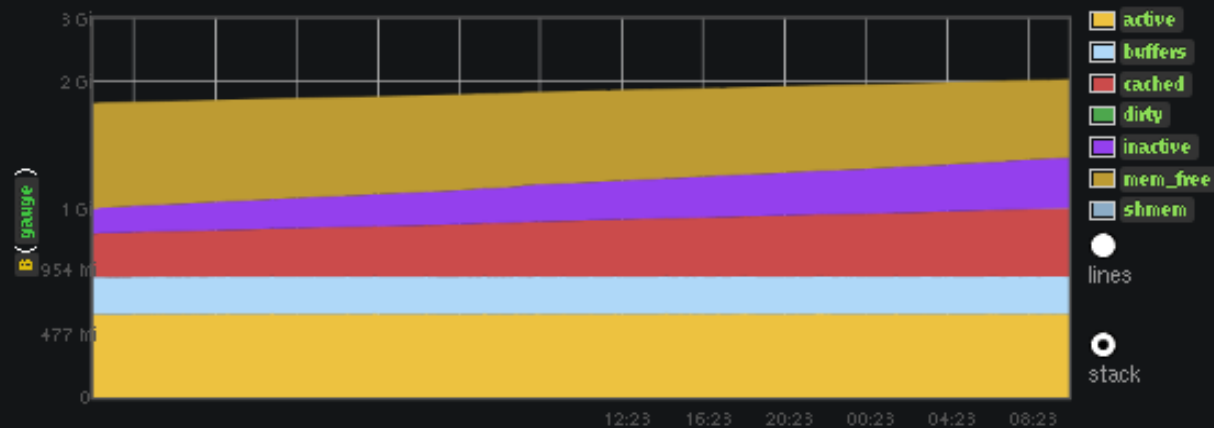
Lisa labs office hours after lunch

Q & A

Bonus round

Dashboard definition

```
queries = [  
    'cpu usage sum by core',  
    'mem unit=B !total group by type:swap',  
    'stack network unit=Mb/s',  
    'unit=B (free|used) group by =mountpoint'  
]
```

Apply to all: `server=dfvimeostatsd1 avg over``cpu sum by core server=dfvimeostatsd1 avg over 10M from -2days``sum cpu_usage dfvimeostatsd1 cpu``mem unit=B !total !vmalloc group by type:swap server=dfvimeostatsd1 avg over 10M f``system_memory dfvimeostatsd1 memory``system_memory dfvimeostatsd1 memory`

Catchall plugins

```
stats.dfvimcliapp2.twitter.error
{
  "n1": "dfvimcliapp2",
  "n2": "twitter",
  "n3": "error",
  "plugin": "catchall_statsd",
  "source": "statsd",
  "target_type": "rate",
  "unit": "unknown/s"
}
```

Equivalence

servers.host.cpu.total.iowait → “core” : “_sum_”

servers.host.cpu.<core-number>.iowait

servers.host.loadavg.15