Real-time-first metrics

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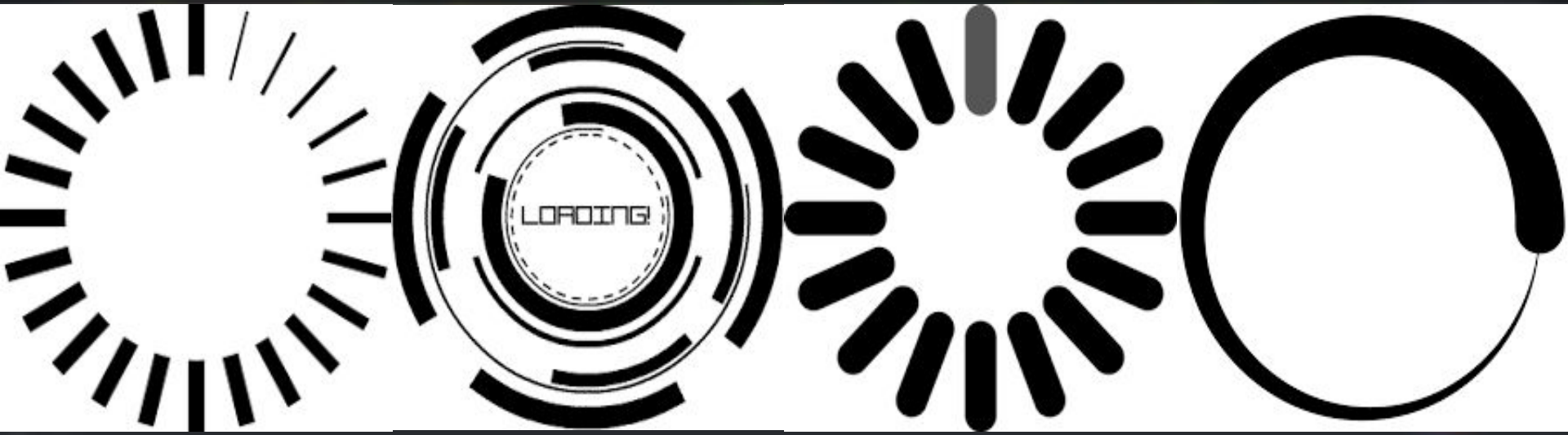
PGP public key rsa2048/**539B6203**
Key fingerprint = 130D C446 1F1A 2E50 D6E3
3DA8 3202 05E7 539B 6203

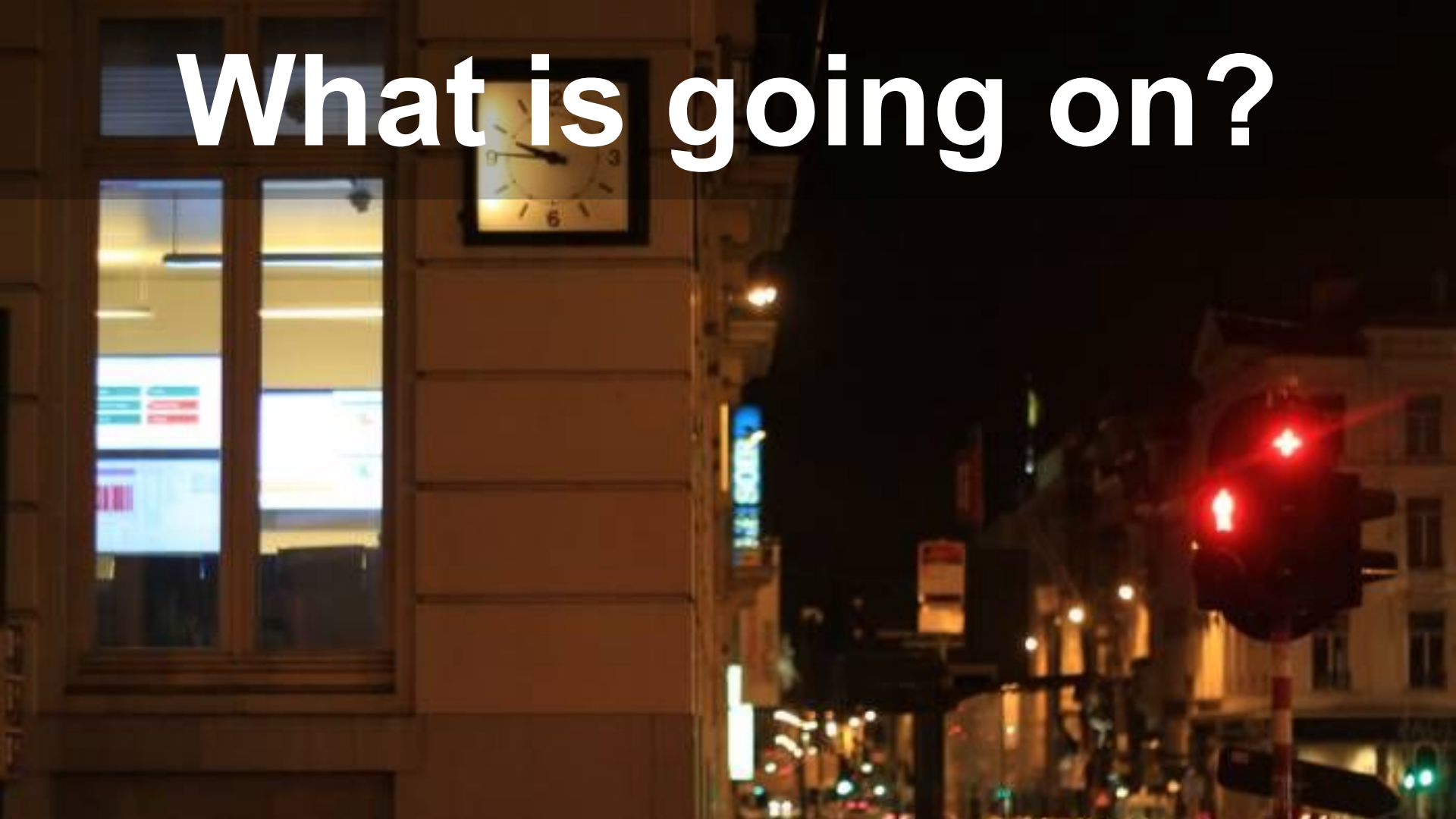
Real-time-first metrics

What is going on?



Until it is too late

What is going on?



Metrics can tell you

Metrics	Compromises choosing types of monitoring
Standard	Examples of tools to capture and store
Exotic	Examples of nonstandard ways to monitor

Metrics

Compromises choosing types of monitoring

Standard

Examples of tools to capture and store

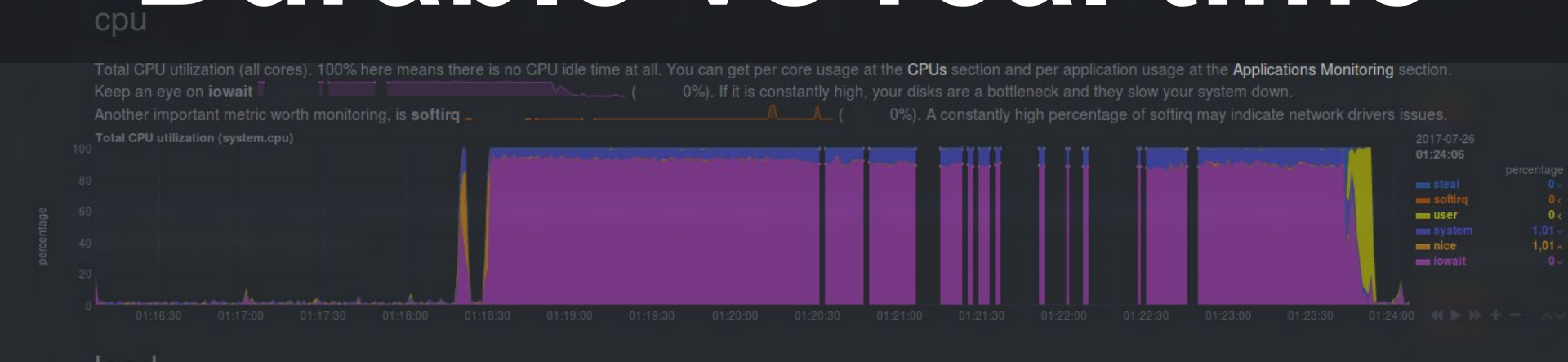
Exotic

Examples of nonstandard ways to monitor

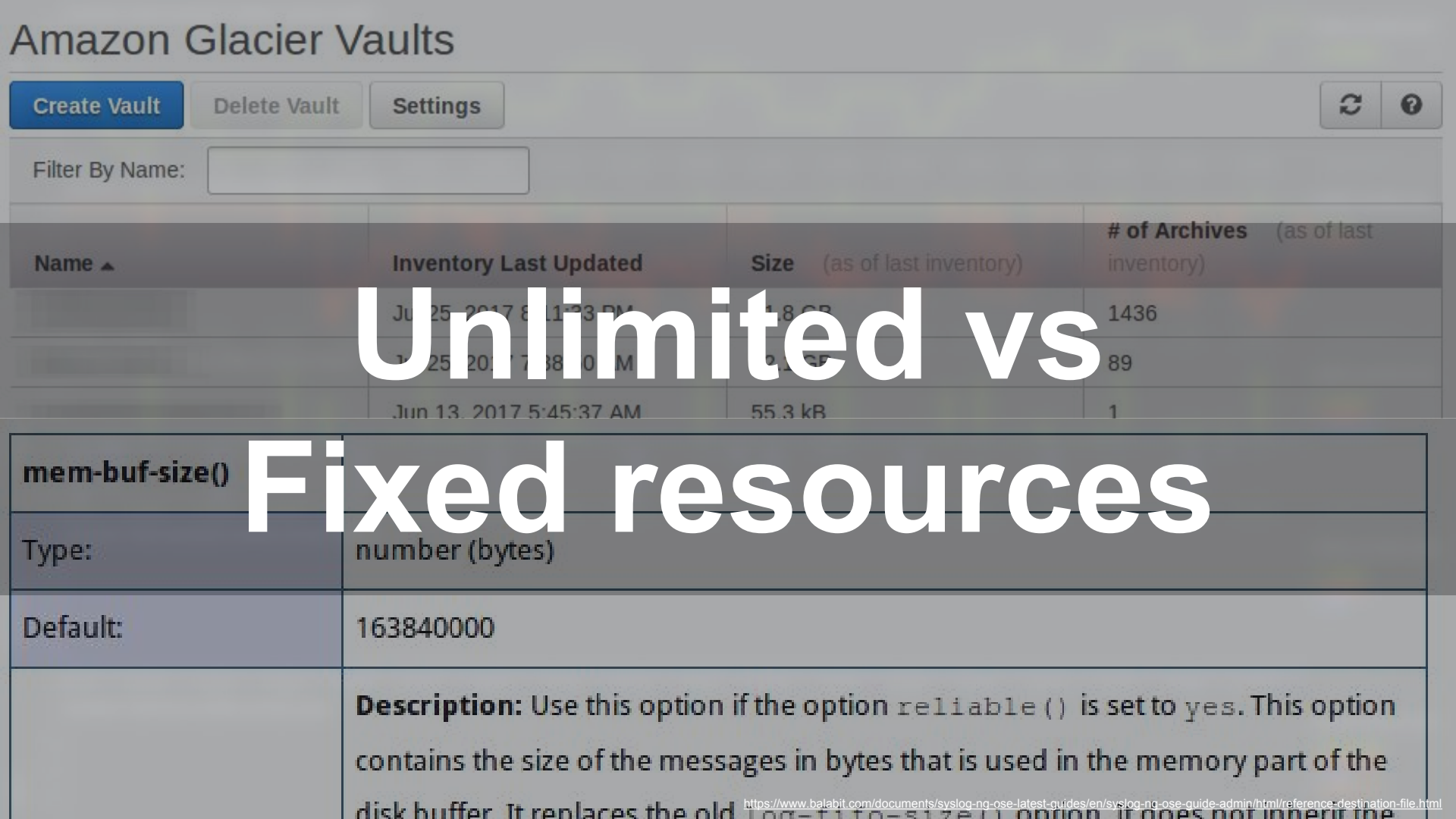
Logs vs metrics

SQS (Ohio)	✓	✓	✓	✓	✓	✓	✓
SQS (Oregon)	✓	✓	✓	✓	✓	✓	✓
S3 (Montreal)	✓	✓	✓	✓	✓	✓	✓
S3 (N. California)	✓	✓	✓	✓	✓	✓	✓
S3 (N. Virginia)	✓	✓	✓	✓	✓	✓	✓
S3 (Ohio)	✓	✓	✓	✓	✓	✓	✓
S3 (Or…on)	✓	✓	✓	✓	✓	✓	✓

Durable vs real time




nginx: Status codes
200
301
404
400
304
aurelijus.banelis.lt
auginte.com
nginx: Protocols
HTTP/1.1
HTTP/2.0
HTTP/1.0
-
aurelijus.banelis.lt
auginte.com
demo.auginte.com
nginx: Requests by ips
Count
time per 12 hours
nginx: Requests by ips by hosts
auginte.com
aurelijus.banelis.lt
www.auginte.com
demo.auginte.com
52.50.220.71
180.163.113.82
ec2-52-50-220-71.eu-...
es.auginte.com
time per 12 hours
Long term vs real time
cpu
Total CPU utilization (all cores). 100% here means there is no CPU idle time at all. You can get per core usage at the CPUs section and per application usage at the Applications Monitoring section.
Keep an eye on iowait
0%). If it is constantly high, your disks are a bottleneck and they slow your system down.
Another important metric worth monitoring, is softirq
0%). A constantly high percentage of softirq may indicate network drivers issues.
Total CPU utilization (system.cpu)
percentage
2017-07-26
01:24:06
steal
softirq
user
system
nice
iowait


Amazon Glacier Vaults
Create Vault
Delete Vault
Settings
Filter By Name:
Name
Inventory Last Updated
Size (as of last inventory)
# of Archives (as of last inventory)
1436
89
Jun 13, 2017 5:45:37 AM
55.3 kB
1
Unlimited vs
Fixed resources
mem-buf-size()
Type:
number (bytes)
Default:
163840000
Description: Use this option if the option reliable() is set to yes. This option contains the size of the messages in bytes that is used in the memory part of the
https://www.balabit.com/documents/syslog-ng-ose-latest-guides/en/syslog-ng-ose-guide-admin/html/reference-destination-file.html

Metrics

Details, aggregation, durability, price

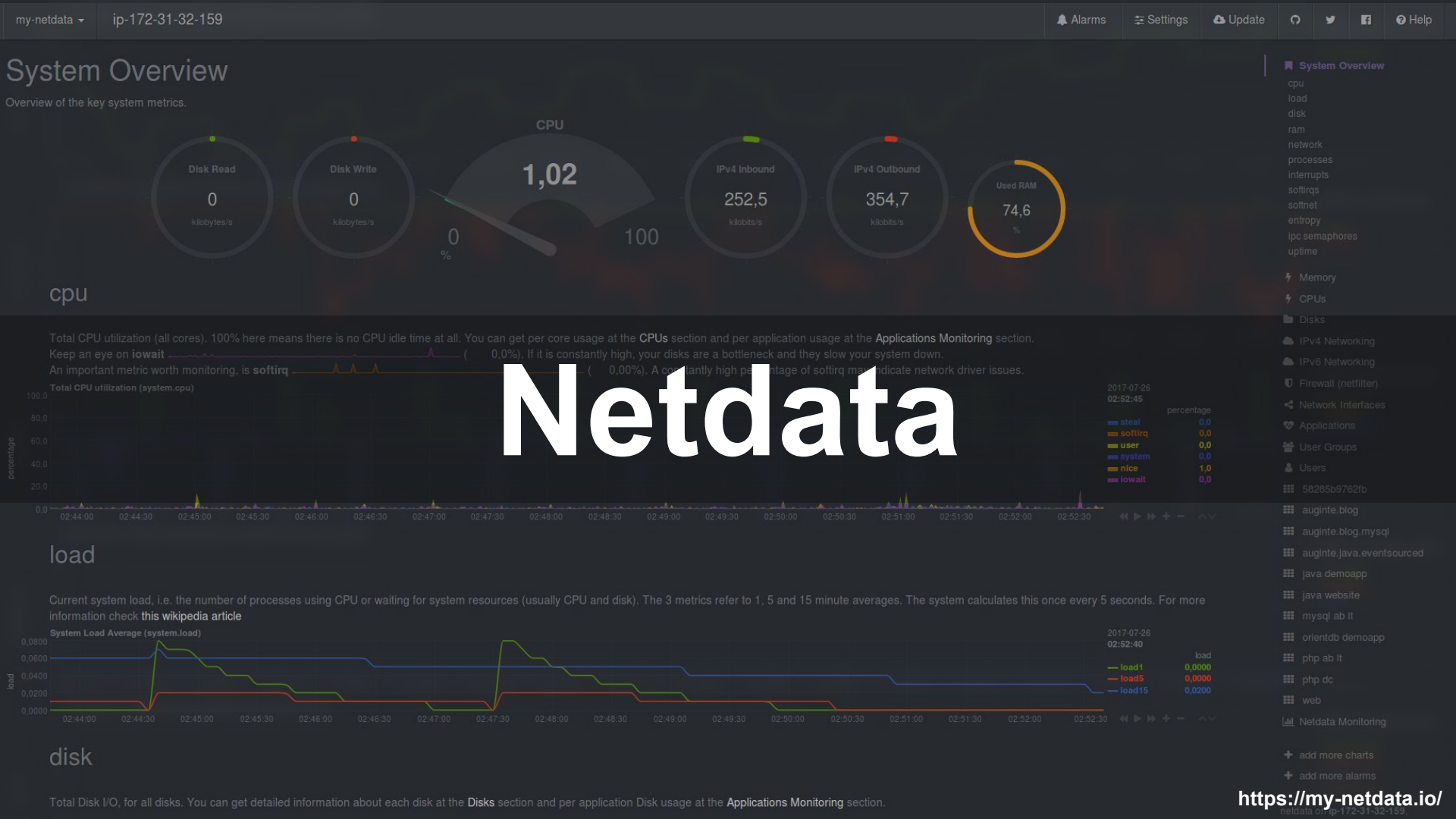
Standard

Examples of tools to capture and store

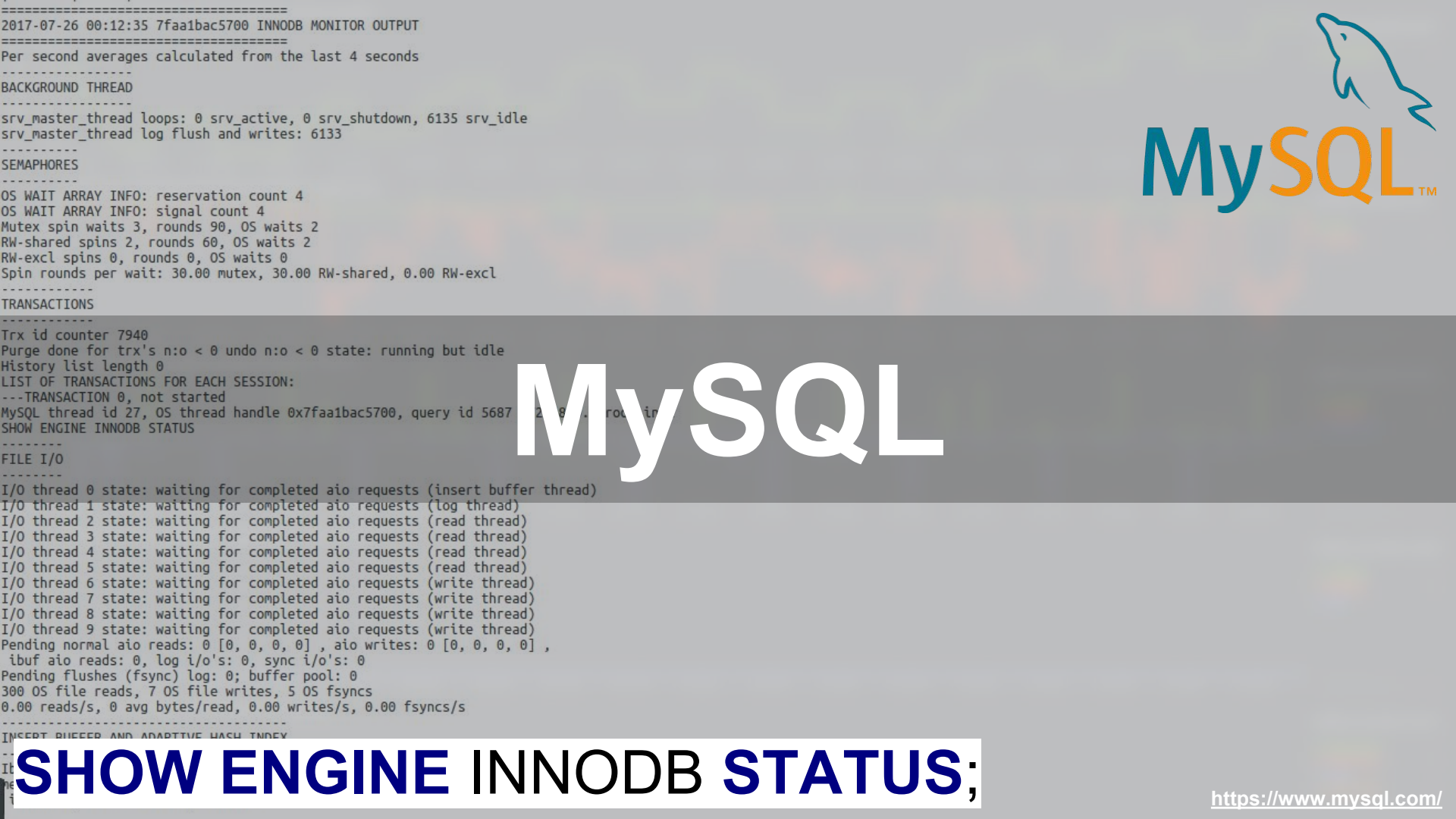
Exotic

Examples of nonstandard ways to monitor

Metrics	Details, aggregation, durability, price
Standard	Examples of tools to capture and store
Exotic	Examples of nonstandard ways to monitor


my-netdata
ip-172-31-32-159
Alarms
Settings
Update
Help
System Overview
Overview of the key system metrics.
CPU
Disk Read
0
kilobytes/s
Disk Write
0
kilobytes/s
1,02
0
%
100
IPv4 Inbound
252,5
kilobits/s
IPv4 Outbound
354,7
kilobits/s
Used RAM
74,6
%
cpu
Total CPU utilization (system.cpu)
load
System Load Average (system.load)
disk
Total Disk I/O, for all disks. You can get detailed information about each disk at the Disks section and per application Disk usage at the Applications Monitoring section.
Netdata
https://my-netdata.io/


kibana
Discover
Visualize
Dashboard
Settings
~ a year ago to ~ 10 months
Overview: Docker
Docker: CPU
time per 12 hours
Docker: Memory: Sum
time per 12 hours
Docker: Memory
time per 12 hours
Requests by GIt revision
Count
time per 12 hours
ElasticSearch + Kibana
https://www.elastic.co/



SHOW ENGINE INNODB STATUS;

https://www.mysql.com/

End user: badges

Metrics

Details, aggregation, durability, price

Standard

Netdata, ElasticSearch, syslog-ng, MySQL status

Exotic

Examples of nonstandard ways to monitor

Metrics

Details, aggregation, durability, price

Standard

Netdata, ElasticSearch, syslog-ng, MySQL status

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Examples of nonstandard ways to monitor

The Directed Graph Shell (DGSH)

build passing

The directed graph shell, *dgsh*, allows the expressive expression of efficient big data set and streams processing pipelines using existing Unix tools as well as custom-built components. It is a Unix-style shell allowing the specification of pipelines with non-linear scatter-gather operations. These form a directed acyclic process graph, which is typically executed by multiple processor cores, thus increasing the operation's processing throughput.

You can find a complete introduction, reference documentation, and illustrative examples in the project's website.

Split to I/O applications

https://github.com/dspinellis/dgsh

µWebSockets

µWS is one of the most lightweight, efficient & scalable WebSocket & HTTP server implementations available. It features an easy-to-use, fully async object-oriented interface and scales to millions of connections using only a fraction of memory compared to the competition. While performance and scalability are two of our top priorities, we consider security, stability and standards compliance paramount. License is zlib/libpng (very permissive & suits commercial applications).

- Autobahn test suite
- One million WebSockets require ~111mb of user space memory (104 bytes per WebSocket).
- Single-threaded throughput of up to 5 million HTTP req/sec or 20 million WebSocket echoes/sec.
- Linux, OS X, Windows & Node.js support.
- Runs with raw epoll, libuv or ASIO (C++17-ready).
- Valgrind & AddressSanitizer clean.
- Permessage-deflate, SSL/TLS support & integrates with foreign HTTP(S) servers.
- Multi-core friendly & optionally thread-safe via compiler flag UWS_THREADSAFE.

build passing

Real-time applications

https://github.com/uNetworking/uWebSockets

Metrics	Details, aggregation, durability, price
Standard	Netdata, ElasticSearch, syslog-ng, MySQL status
Exotic	**Using only I/O streams, fixed memory storage**

If debugging is hard

Consider monitoring differently

Metrics

Details, aggregation, durability, price

Standard

Netdata, ElasticSearch, syslog-ng, MySQL status

Questions?

Exotic

Examples of nonstandard ways to monitor

References

- https://my-netdata.io/
- https://www.elastic.co/
- https://www.elastic.co/