



MoodleMoot UK & Ireland 2017 - London 10th - 12th April

Monitoring at HQ

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Site Reliability Engineer

Who Am I?

Paul Greidanus

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Twitter: @paulgreidanus - But there's nothing there

DevOps for MoodleCloud and Moodle ICT

Built the monitoring systems described here for ICT systems



Why bother with monitoring?

- For administration
 - Predict problems in advance with metrics
 - CPU limits, Storage exhausted, Error thresholds
 - Flag and alert on suspicious log entries
- Forensics in case of failures (outage, performance, security)
- For the teachers and students
 - Is the service there to submit my assignment at any time?
 - Is it fast enough for my students to write their quiz in class?

Administrators need to know about problems before anyone else!



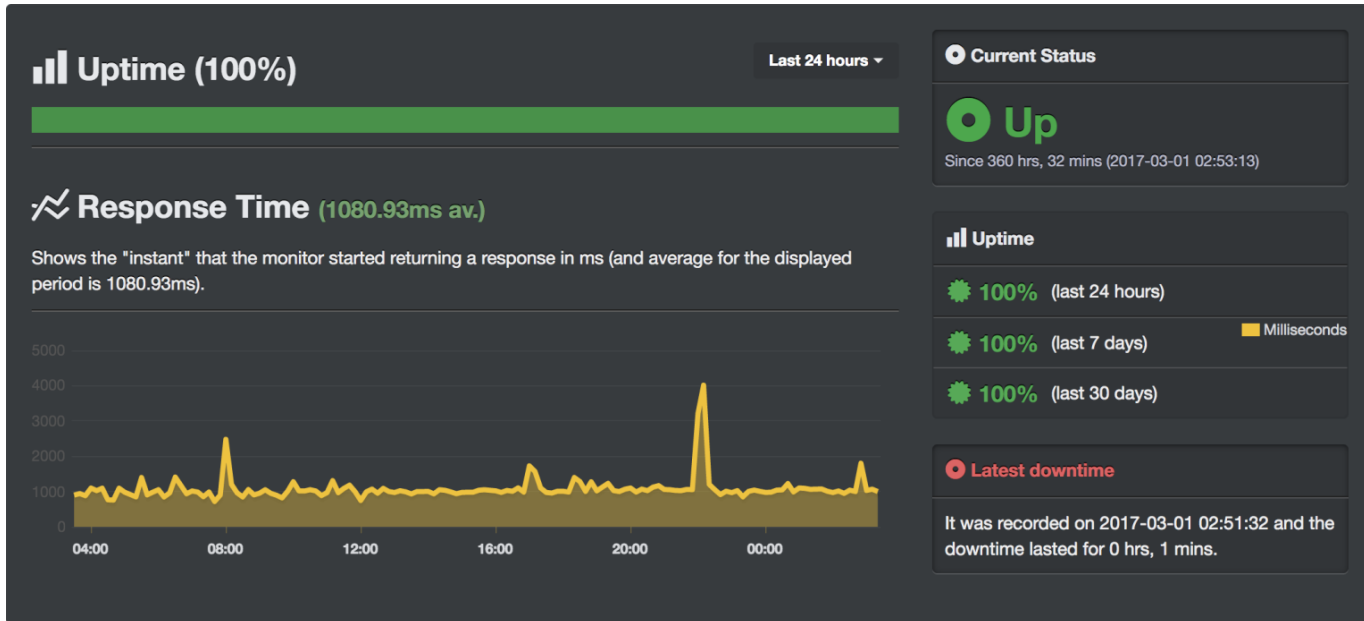
Monitoring Categories

- Availability
 - Is it up and running?
- Performance
 - How fast is my it?
- Historical Availability and Performance
 - What happened in the past from a structured data perspective
- Logs
 - Describe things that happened in the past in free form text

What does HQ use?

- UptimeRobot - <https://uptimerobot.com> (Freemium SaaS)
 - Runs a basic http(s) GET every minute, alerts if down
- Prometheus - <https://prometheus.io/> (Apache 2.0 License)
 - Polls services and instances for metrics
- GrayLog - <https://www.graylog.org/> (GPL v3.0)
 - Centralized log management
- Grafana - <https://grafana.com/> (Apache 2.0 License)
 - Beautiful dashboards and data visualization
- PagerDuty - <https://www.pagerduty.com/> (Paid SaaS)
 - Sends alerts to on-call staff

UptimeRobot



Prometheus

Prometheus scrapes metrics from applications and systems on your network regularly and stores them in its database

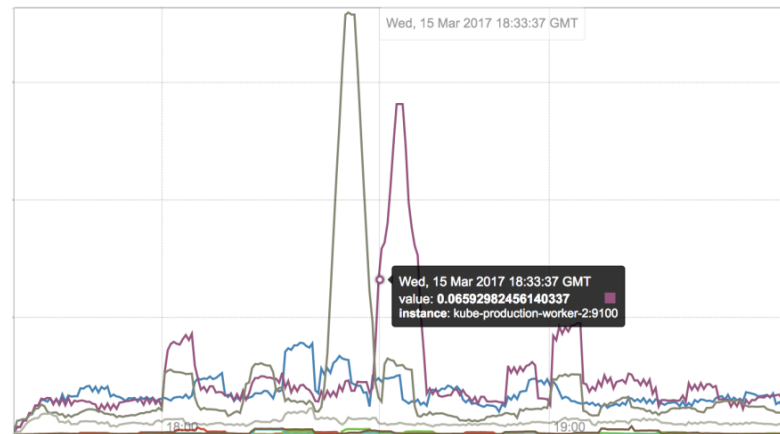
Flexible datastore with some visualization frontend

Very powerful query language to develop dashboards and alerting

Sends high priority messages to PagerDuty and less critical to Telegram

Example Query:

```
sum(
  rate(
    node_cpu{mode='iowait',job='production'}[5m]
  )
) BY (instance)
```



GrayLog

Centralized log store based on Elasticsearch

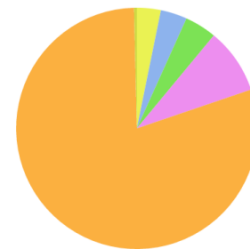
Collects logs from web servers, linux instances and any other service that emits logs

Allows for access control between different user classes

Has dashboards that can assist in analyzing the log data

Requests by status code

a few seconds ago



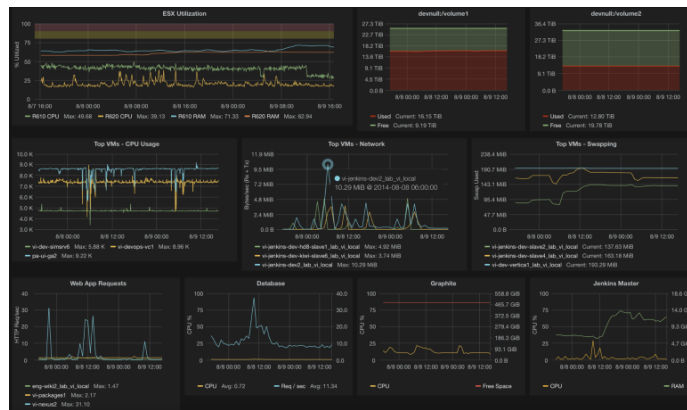
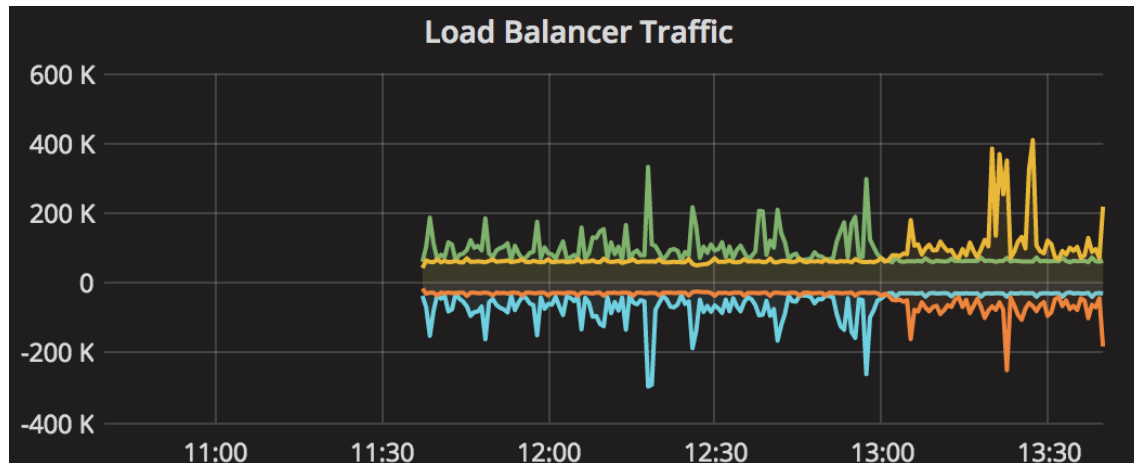
Value	%	Count
Top values		
200	79.84%	8,221
301	8.77%	903
404	4.26%	439
304	3.54%	365
303	3.20%	330

Grafana

Polls Prometheus and Graylog data on demand

Great for building dashboards with data from various sources

Allows non-technical users to easily see how the system is working and performing



PagerDuty

Software as a service offering that notified on-call staff of an outage

Critical to be able to manage incidents and response

Automatic on-call shift changes and escalation processes

Monitor is DOWN: learn.moodle.net

Today, 10:18 AM

Service: ICT - Uptime Robot

1 alert

#7918





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