Monitoring Microservices on DC/OS

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MICROSERVICES

- Componentized via services
- Organized around business capabilities
- Self-contained products
- Smart endpoints and dumb pipes
- Decentralized governance
- Decentralized data management
- Infrastructure automation
- Design for failure
- Evolutionary design

Source: https://martinfowler.com/articles/microservices.html

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MICROSERVICES

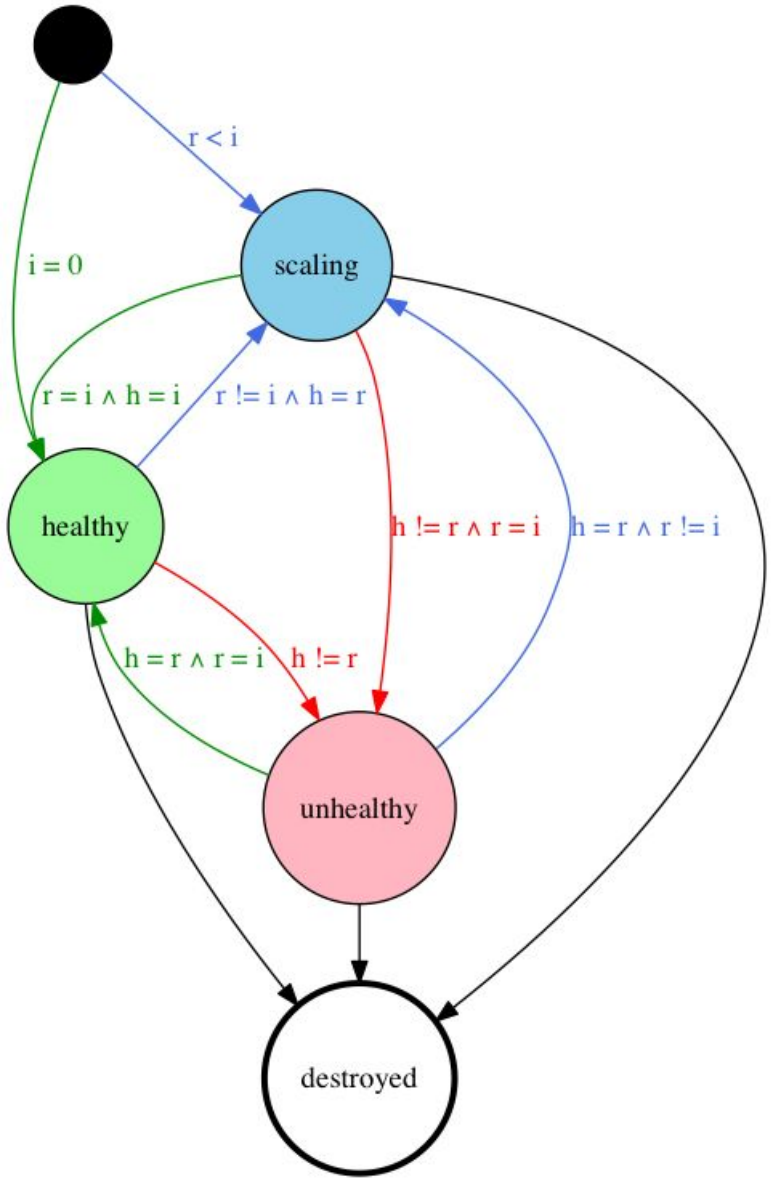
“Using orchestrators for production-ready applications is essential if your application is based on microservices”

Source: https://docs.microsoft.com/en-us/dotnet/standard/microservices...

MICROSERVICES [ON DC/OS]

- Container scheduling via **Mesos**
- Container orchestration via **Marathon**
- Internal service discovery with **Mesos-DNS**
- Load balancing with **Edge-LB**
- UIs and APIs for **logs** and **metrics**
- But no monitoring tooling out of the box

MARATHON [CHECKS]



Demo

MONITORING

Traditionally, we care about consistency of:

- Uptime
- Functionality
- Performance

Microservices make this a bit more complicated.

MONITORING [RESOURCES]

“For every resource, check utilization, saturation, and errors.”

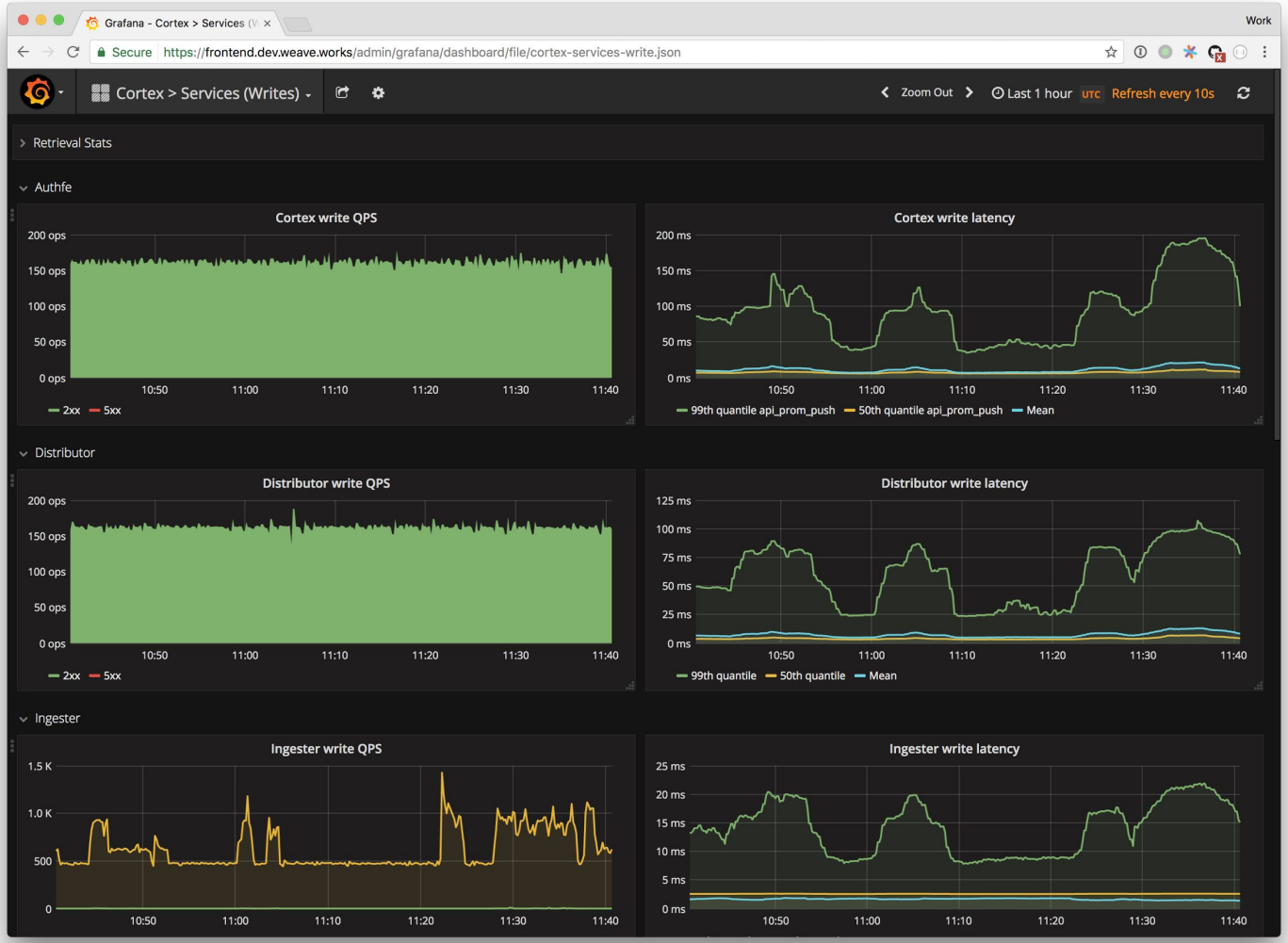
Source: http://www.brendangregg.com/usemethod.html

MONITORING [REQUESTS]

- Request **Rate** - the number of requests, per second, your services are serving
- Request **Errors** - the number of failed requests per second
- Request **Duration** - distributions of the amount of time each request takes

Source: https://www.weave.works/blog/the-red-method-key-metrics-for-microservices-architecture/

MONITORING [REQUESTS]



Source: https://www.weave.works/blog/the-red-method-key-metrics-for-microservices-architecture/

Demo

MONITORING [WHITE BOX]

“Whitebox monitoring gives you details about the *internal state of your application*, such as the total number of HTTP requests on your web server or the number of errors logged”

Source: https://insights.sei.cmu.edu/devops/2016/08/whitebox-monitoring-with-prometheus.html

MONITORING [WHITE BOX]

```
echo "count.up:1|c" | \
nc -w 1 -u \
$STATSD_UDP_HOST \
$STATSD_UDP_PORT
```

Demo

RESOURCES

DC/OS Metrics: https://github.com/dcos/dcos-metrics

Community Slack: https://dcos-community.slack.com#day2ops

Working Group: day-2-ops-wg@dcos.io

Healthchecks on Marathon: https://mesosphere.github.io/marathon...