DEVOPS 2015

9/1 DevOps企業實戰　9/2 DevOps技能精進　集思台大會議中心

DEVOPS 2015

開發敏捷與維運高效的IT新典範

9/1 DevOps企業實戰

DEVOPS2015

開發敏捷與維運高效的IT新典範

How Realtime Monitoring Works in…

Realtime Monitoring

經驗分享

葉秉哲

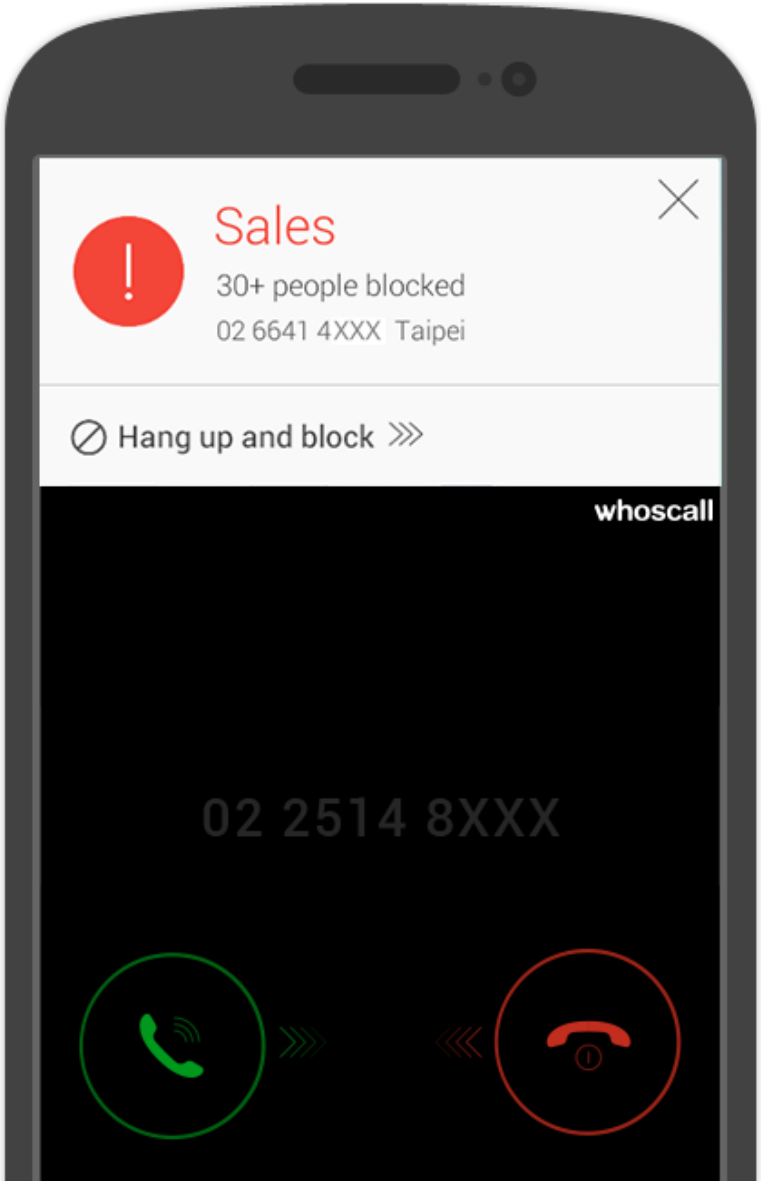
Architect @ Gogolook

DEVOPS 2015

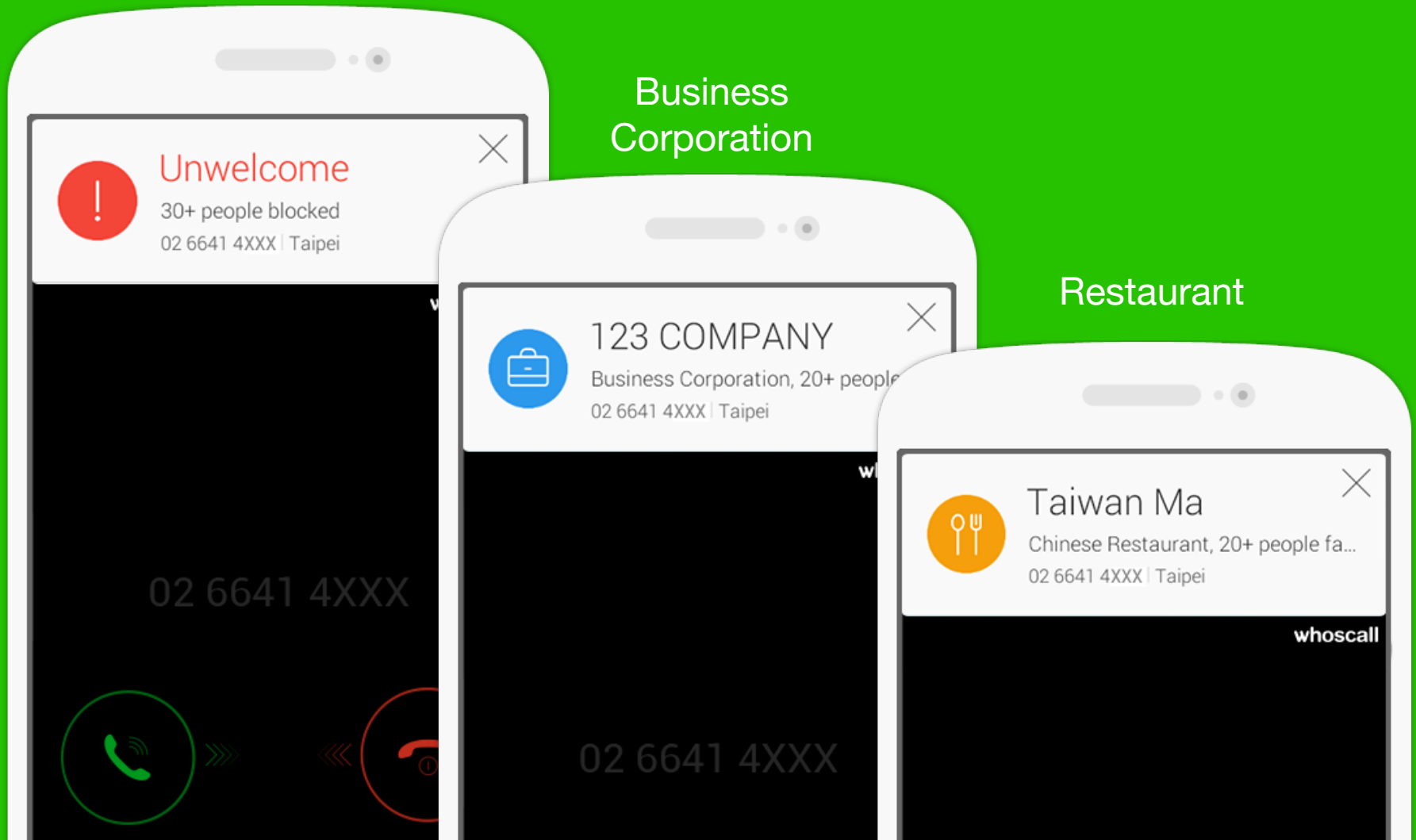

whos
call

★ Instant Caller Identification

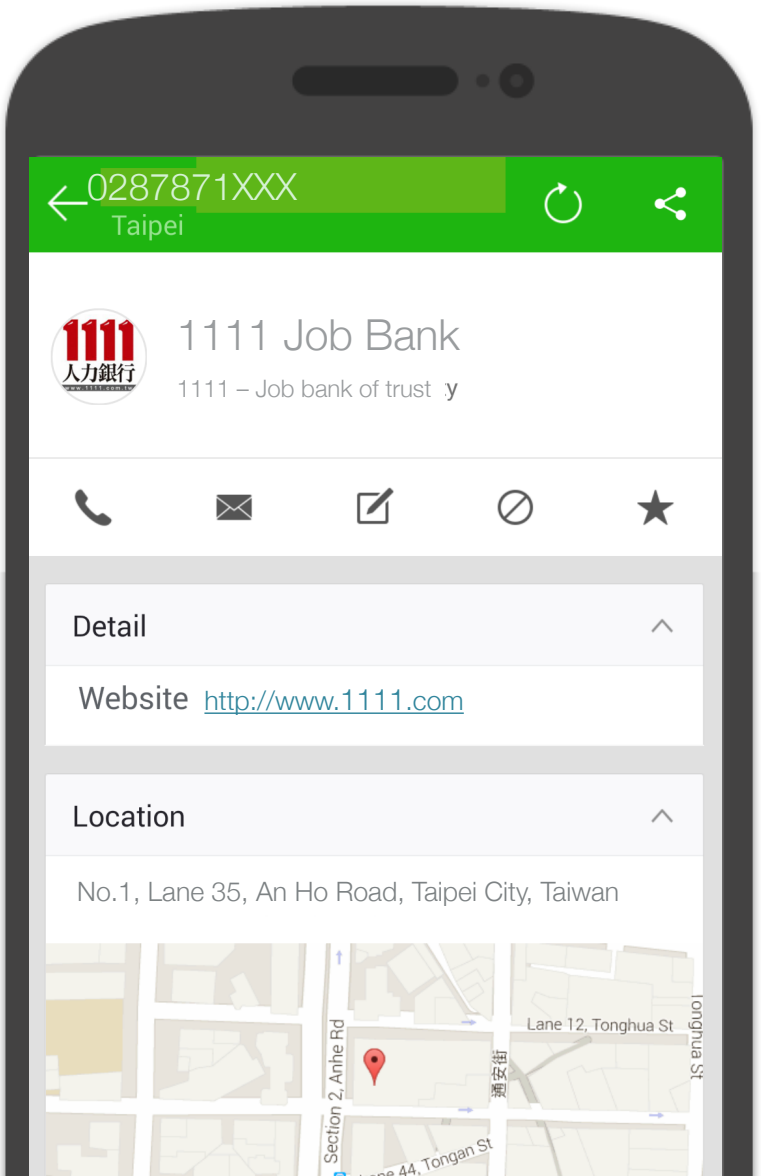
Whoscall identifies background information of incoming unknown calls in seconds through tags reported by other users, Internet search results, and our comprehensive global database.



Incoming Call Dialogue



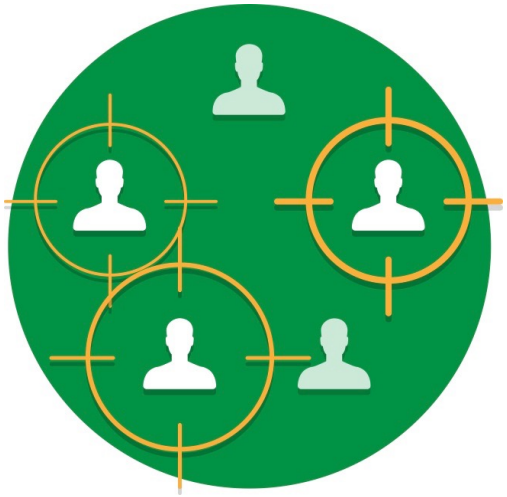
Database & Number Details



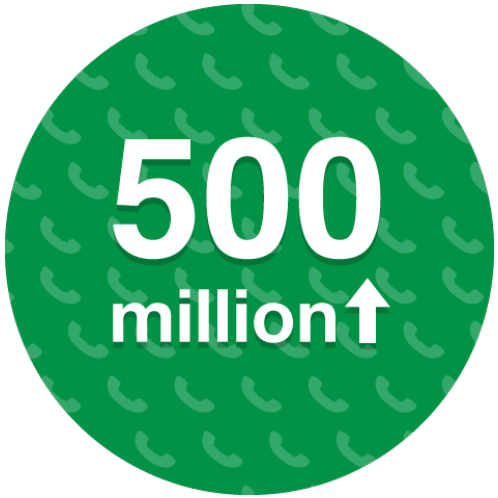
★ Database with over 700 Million Phone Numbers

Whoscall boasts an online database with over 700 million phone numbers. The database of Whoscall covers yellow pages, spammers, telemarketers, costumer services...,etc. with numerous community tags contributed by users and comments based on real users' experiences.

Number Identification



3 of every 5
strangers' calls
can be identified.



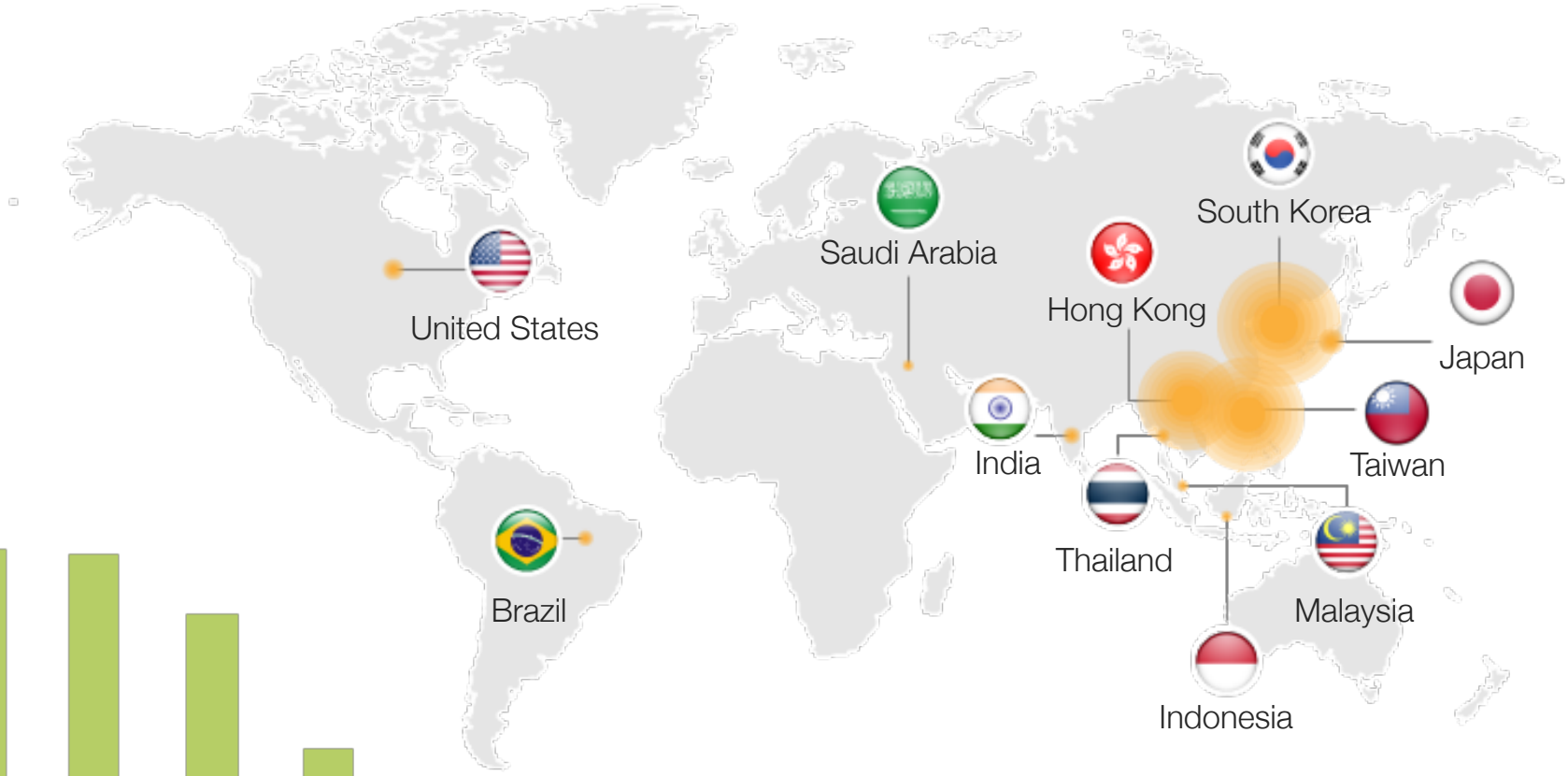
– 2015.03

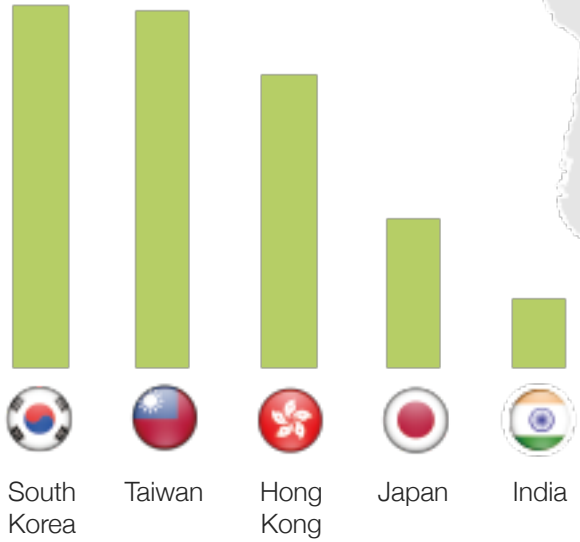
Over 500M phone calls
are identified
every month.

– 2015.03

3,000 spammer
numbers
are reported
by Whoscall users
every month in Taiwan.

Market





Top 5 countries of Whoscall users

Join us in creating a contact network of trust

A few words before we start…


1

PERIODIC TABLE

1 En O 12c																	2 Fm Aws Amazon Web Services
3 Os My MySQL	4 Os Gt Git											5 En Ch Chef	6 En Pu Puppet	7 Os An Ansible	8 En Sl Salt	9 Os Dk Docker	10 Pd Az Azure
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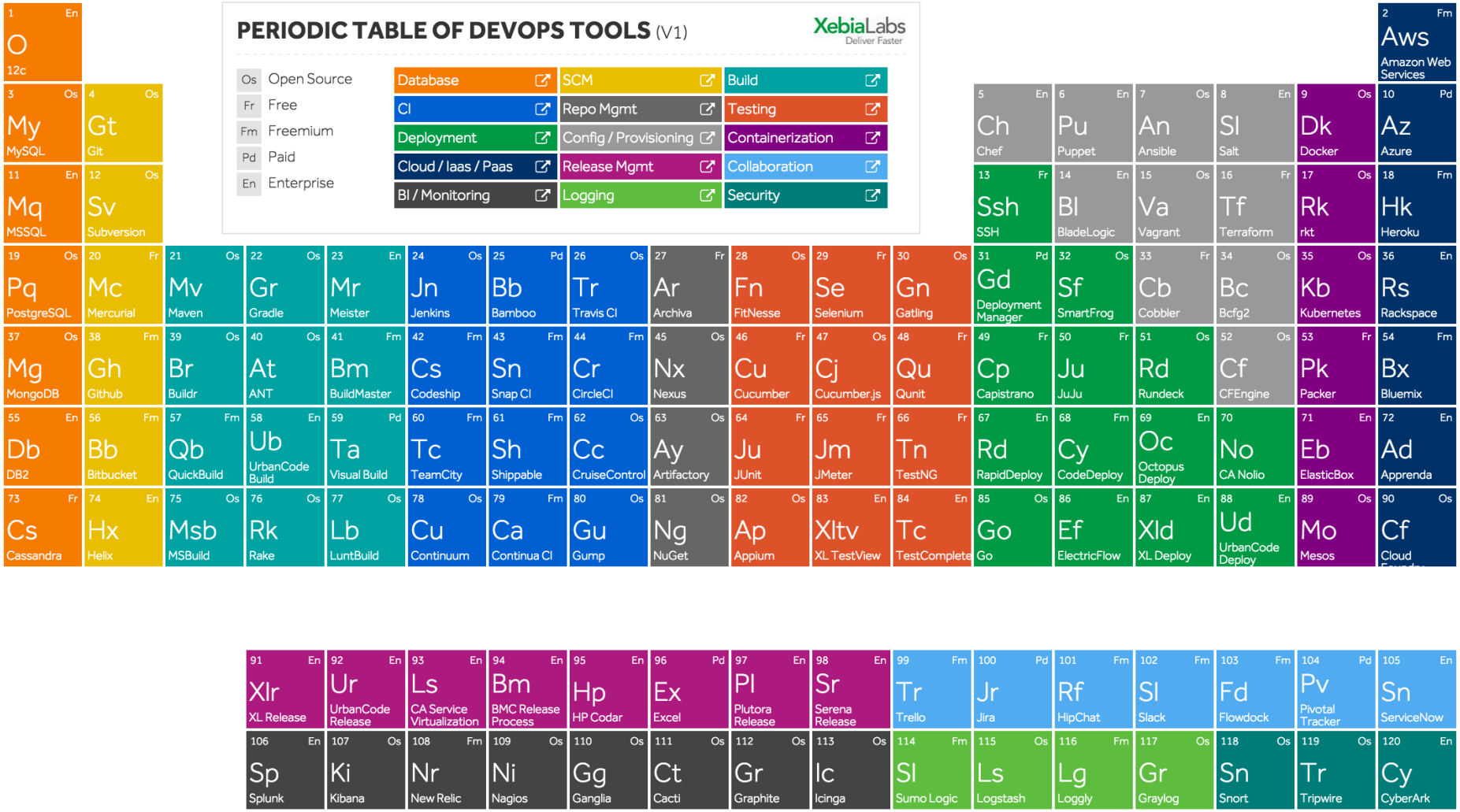
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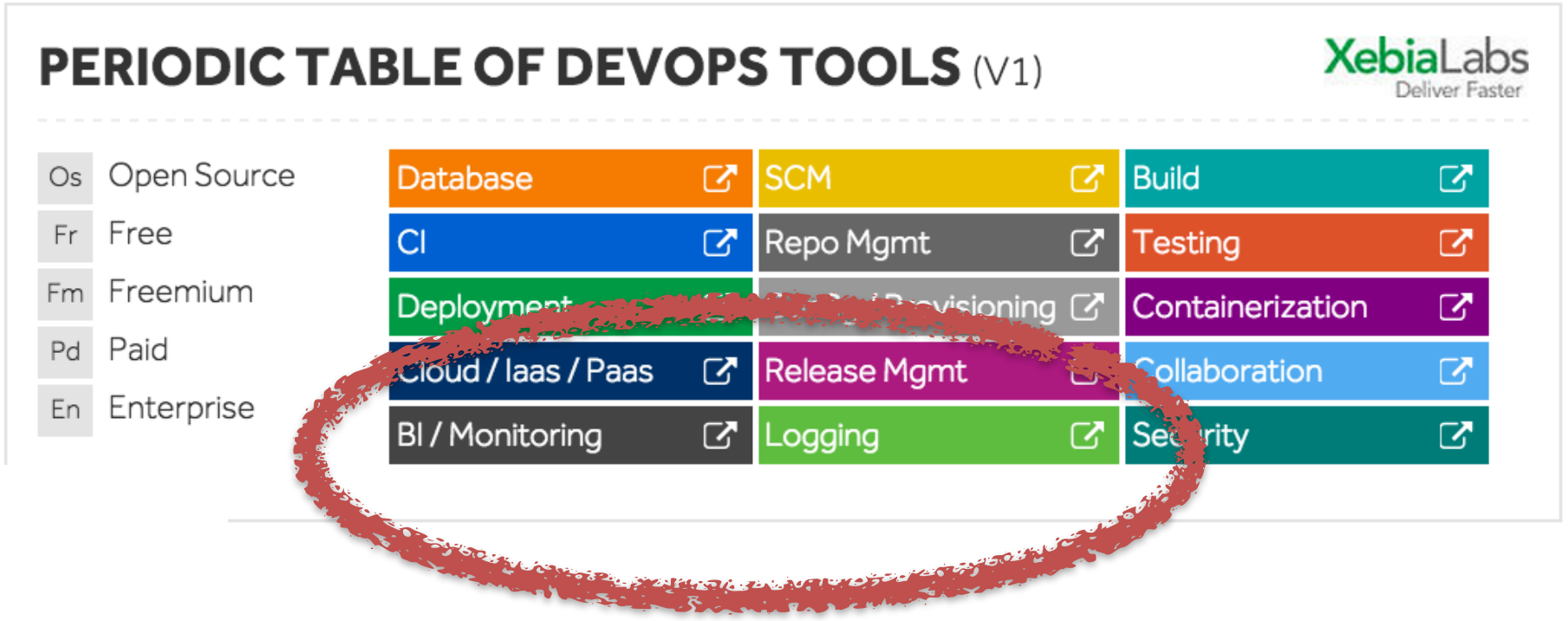
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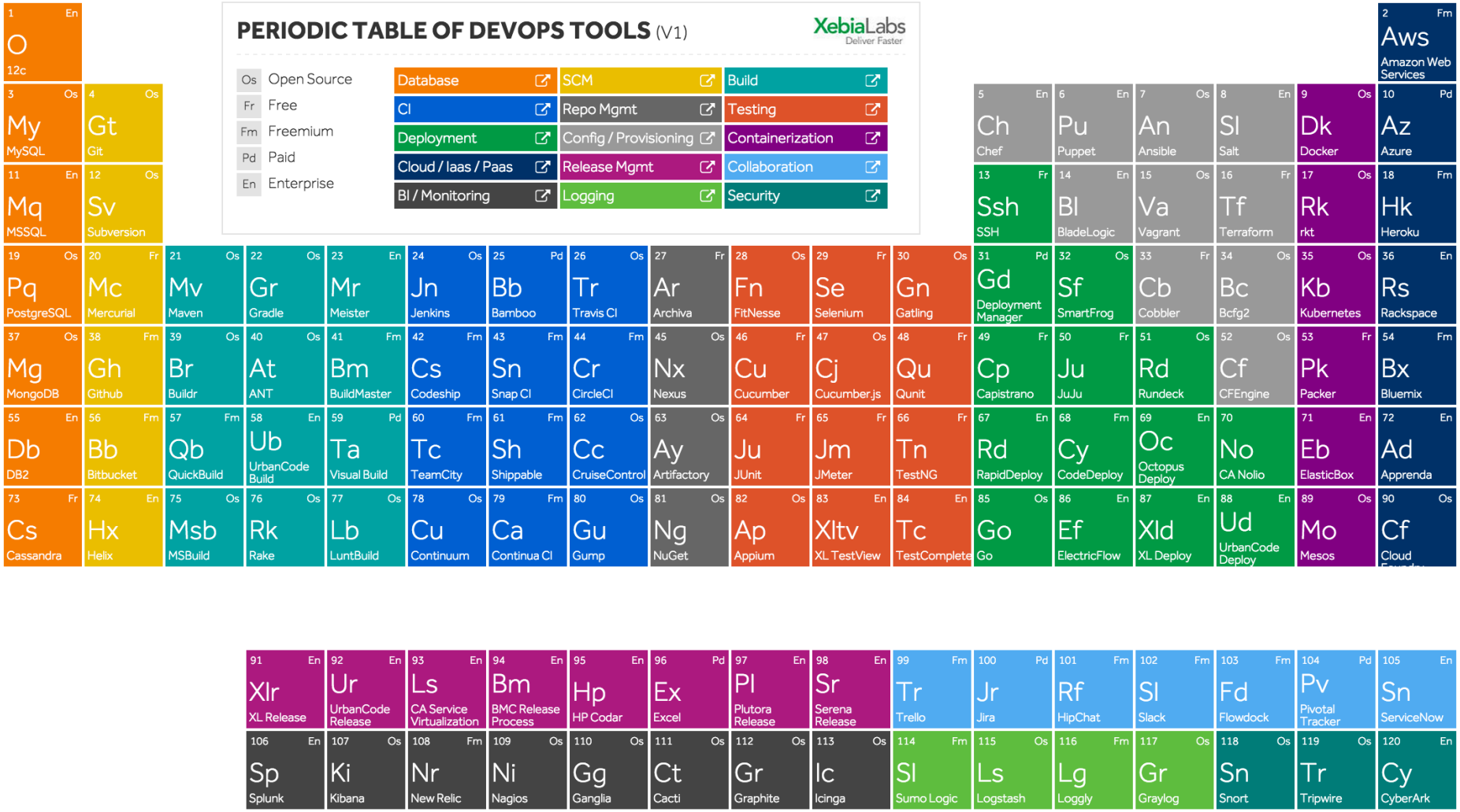
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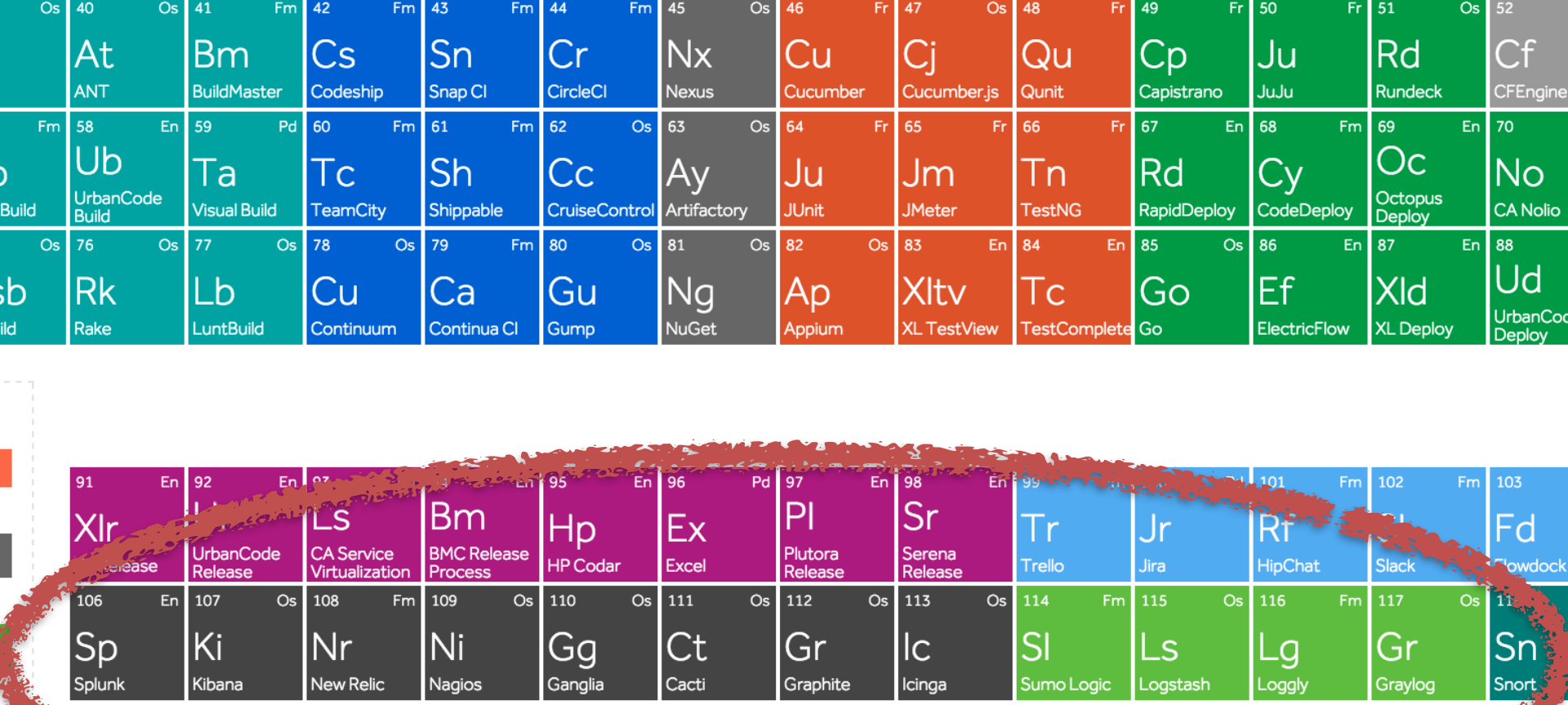
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114 Fm
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Logstash
116 Fm
Lg
Loggly
117 Os
Gr
Graylog
Sn
Snort


2

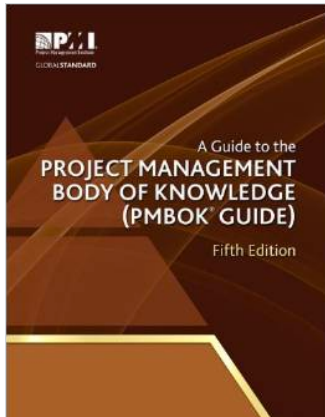

“Practice the philosophy of continuous improvement. Get a little bit better every single day. “ –Author unknown

Monitoring:

Why & What?

Risk management

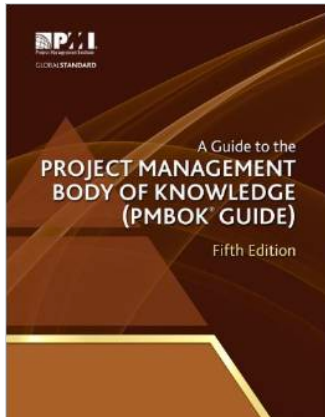
- Threats
  - avoid
  - transfer
  - mitigate



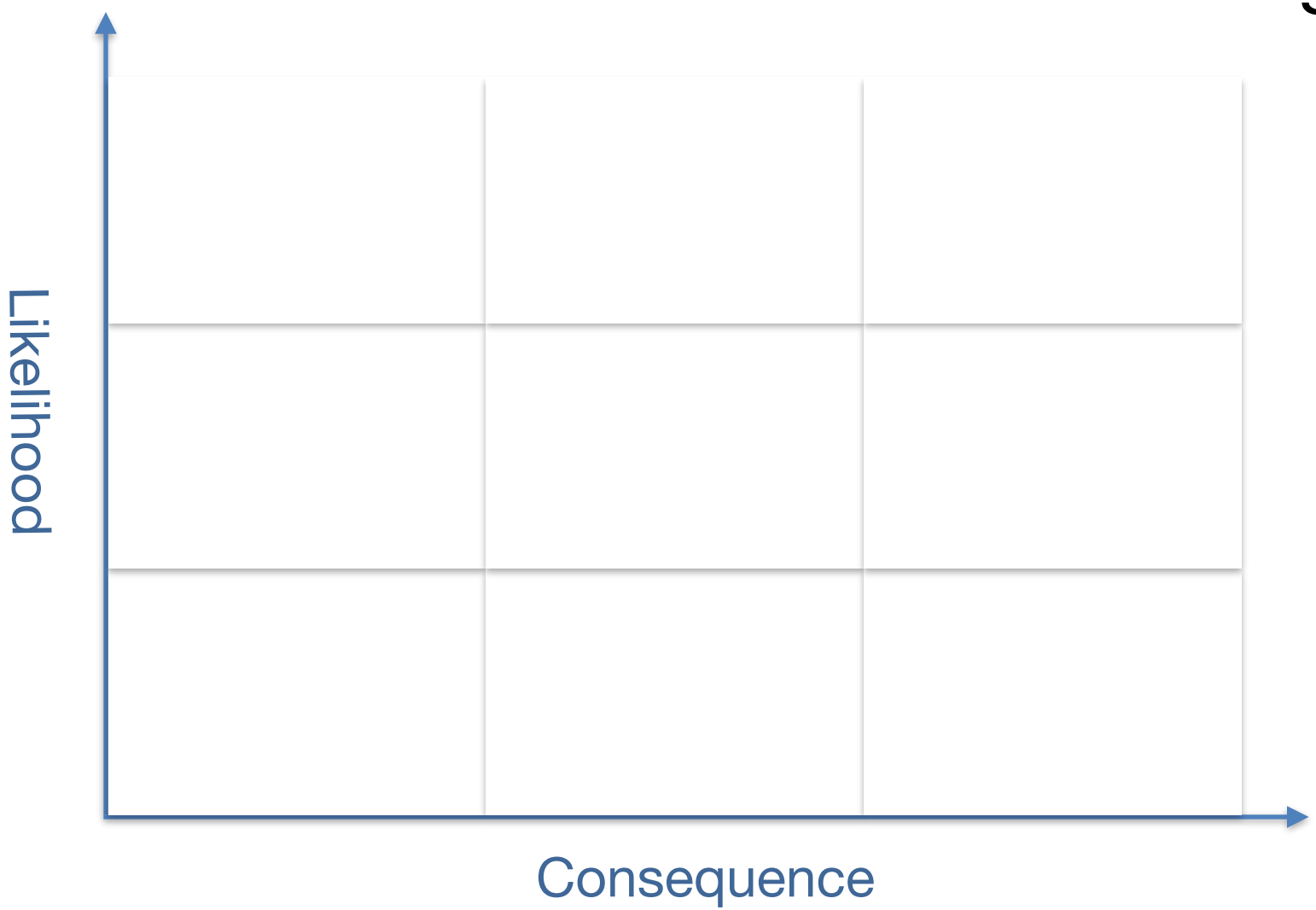
Risk management

- Threats
  - avoid
  - transfer
  - mitigate

- Opportunities
  - exploit
  - enhance
  - share



Risk register



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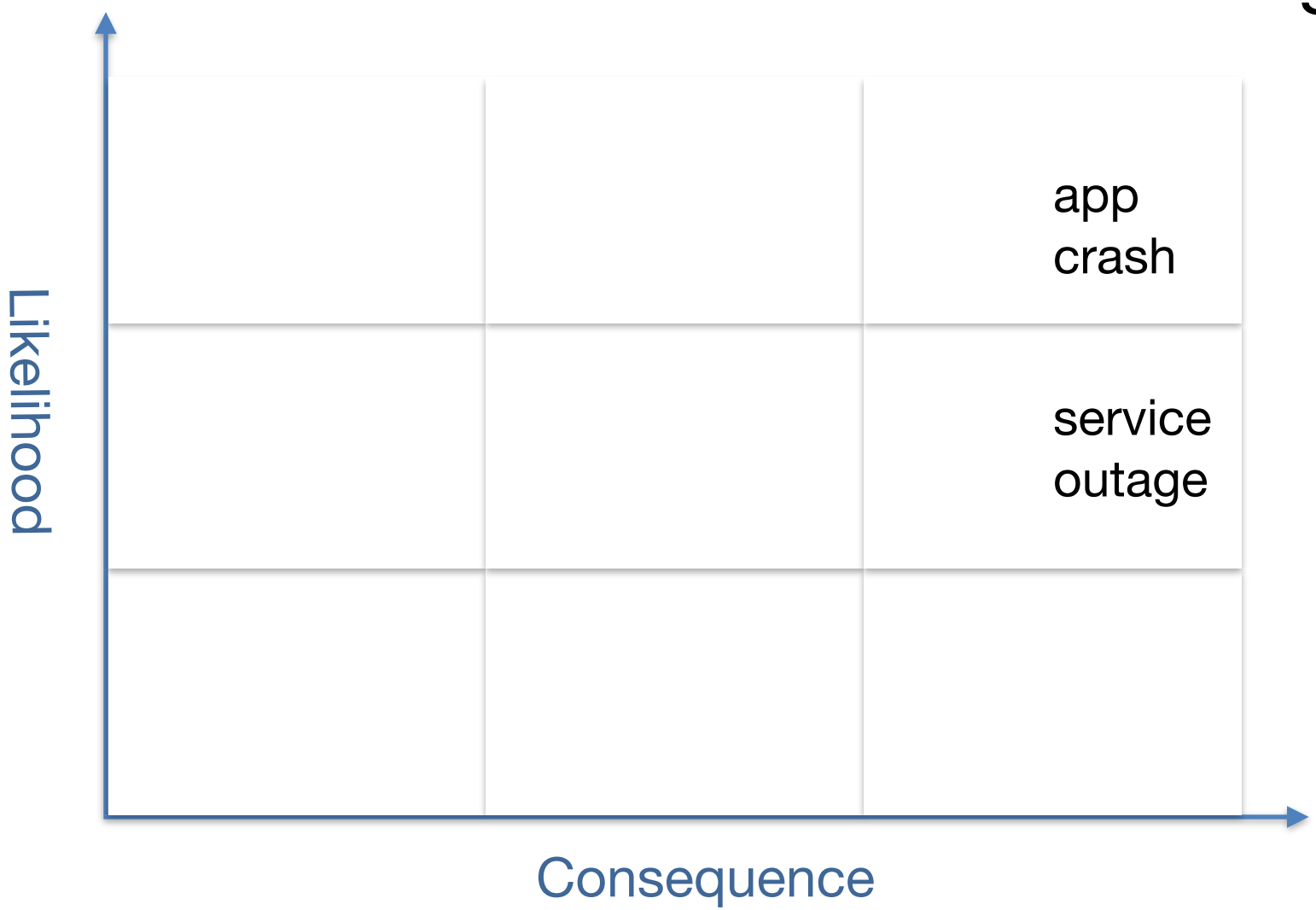

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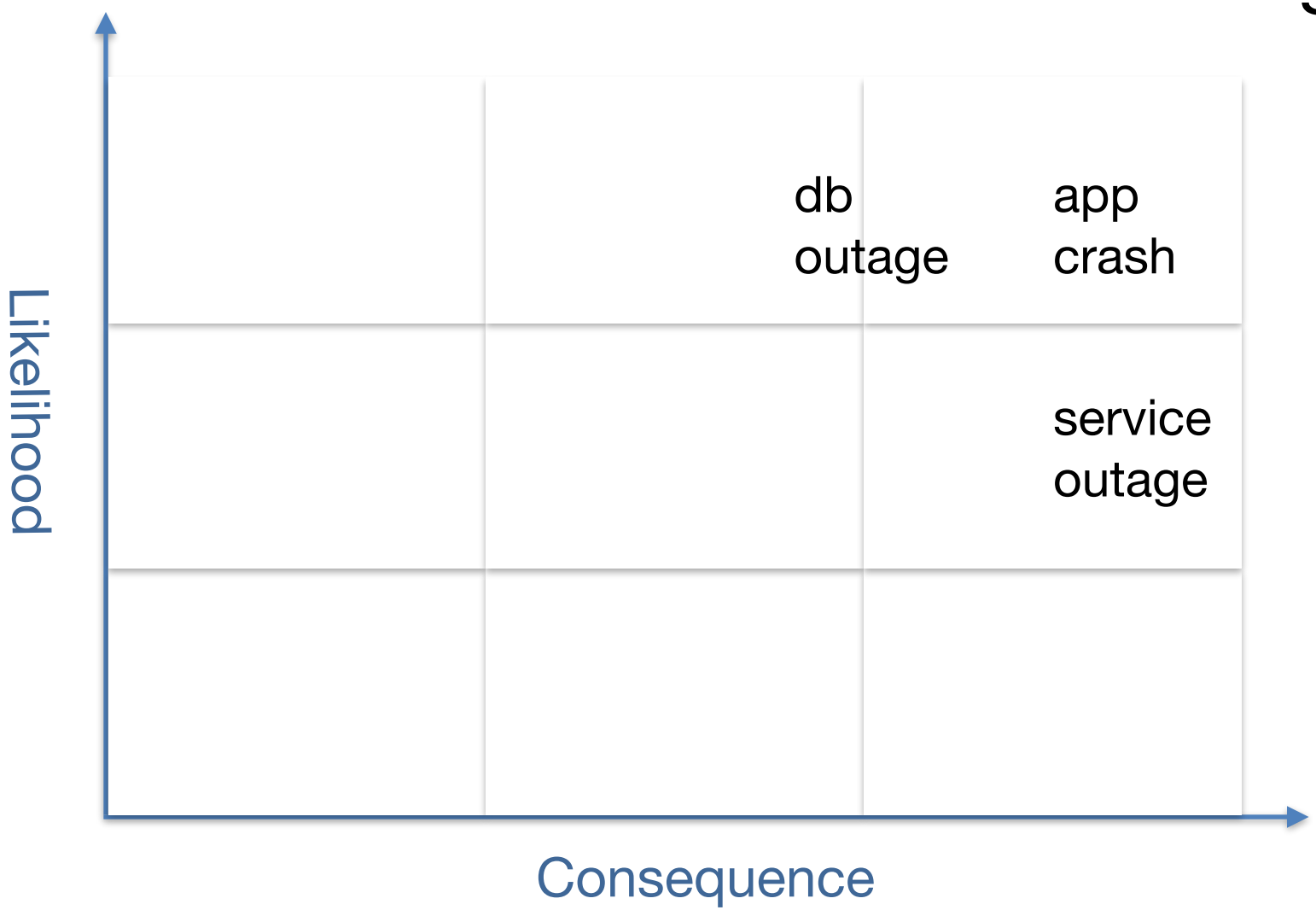

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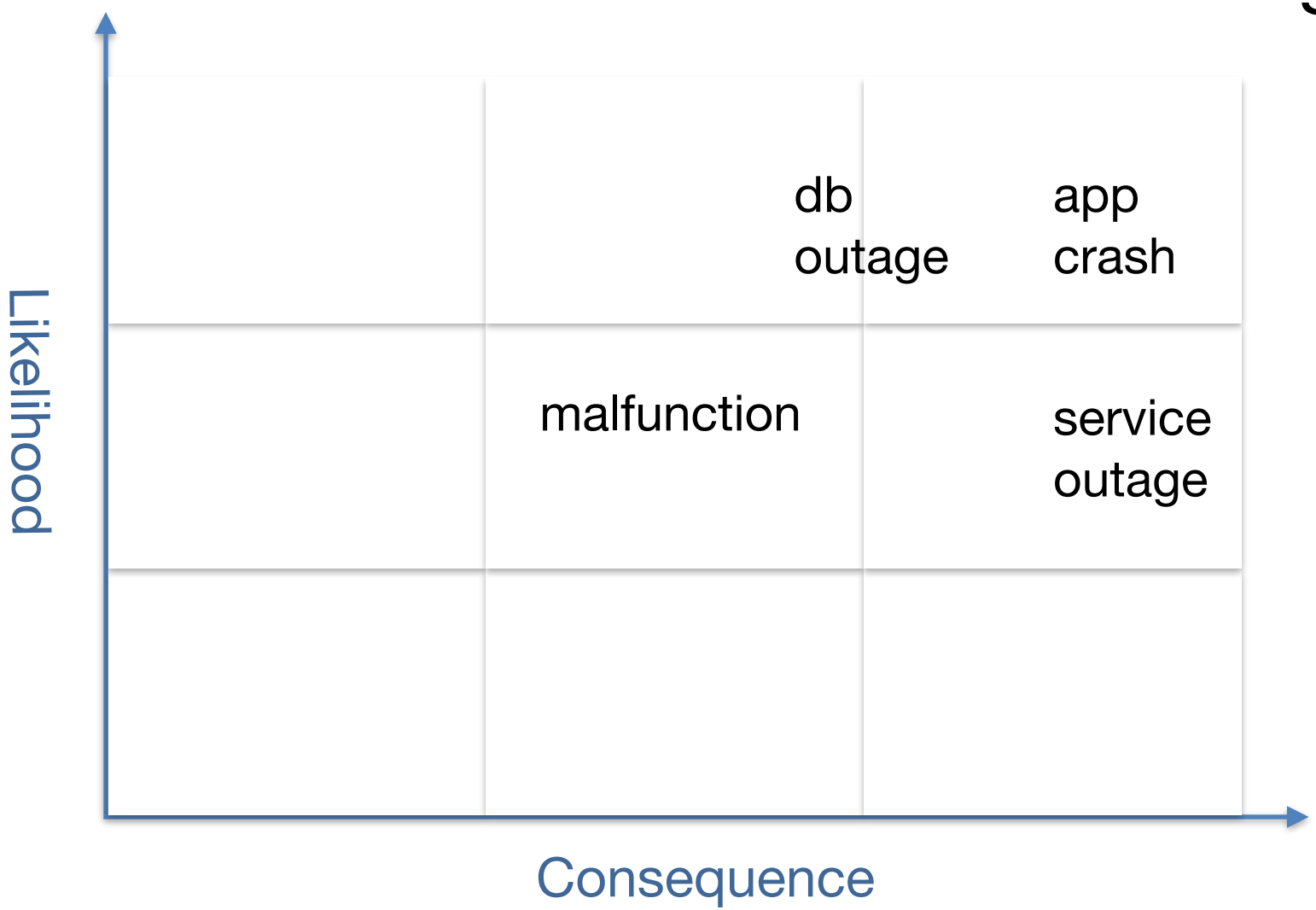

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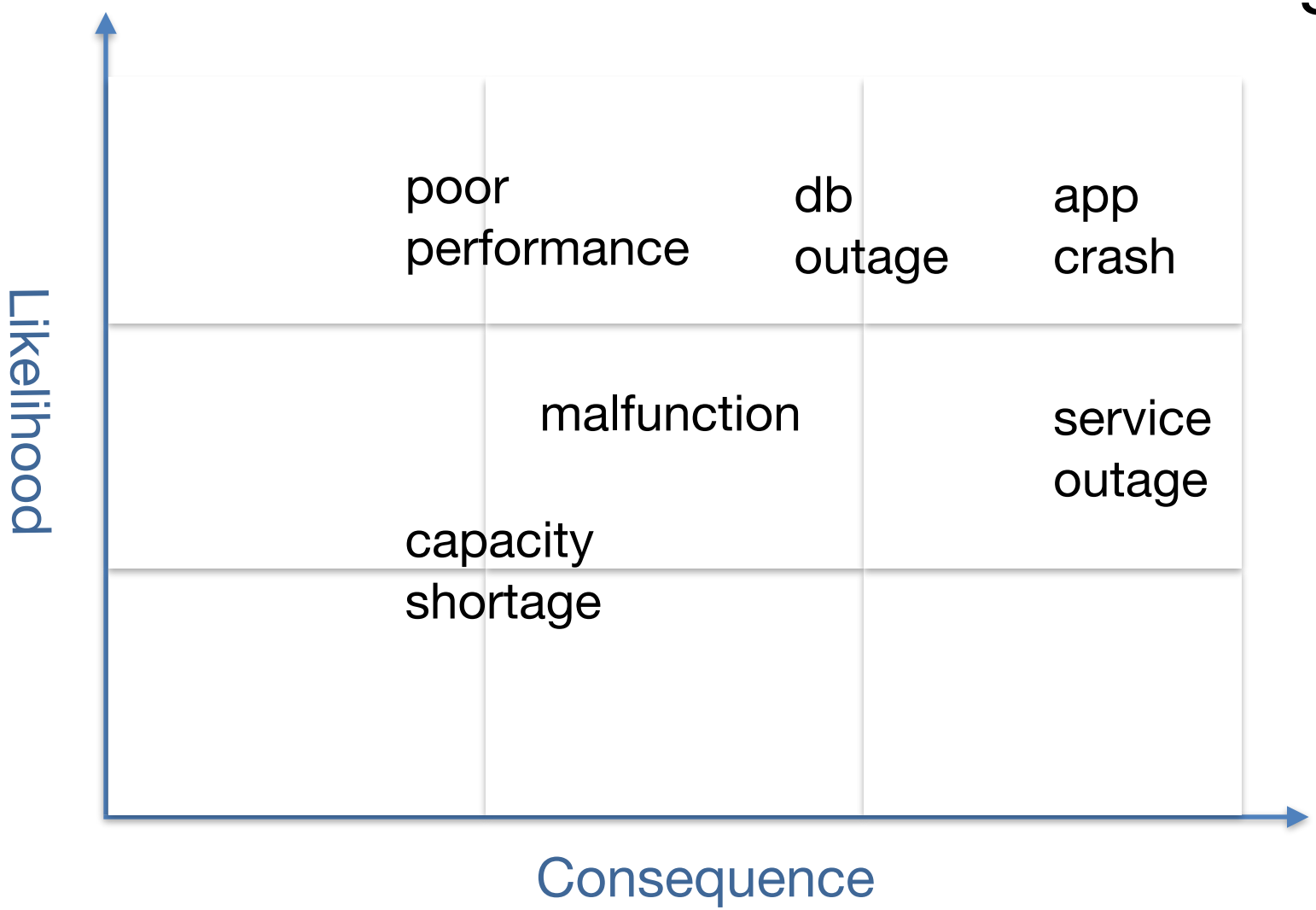

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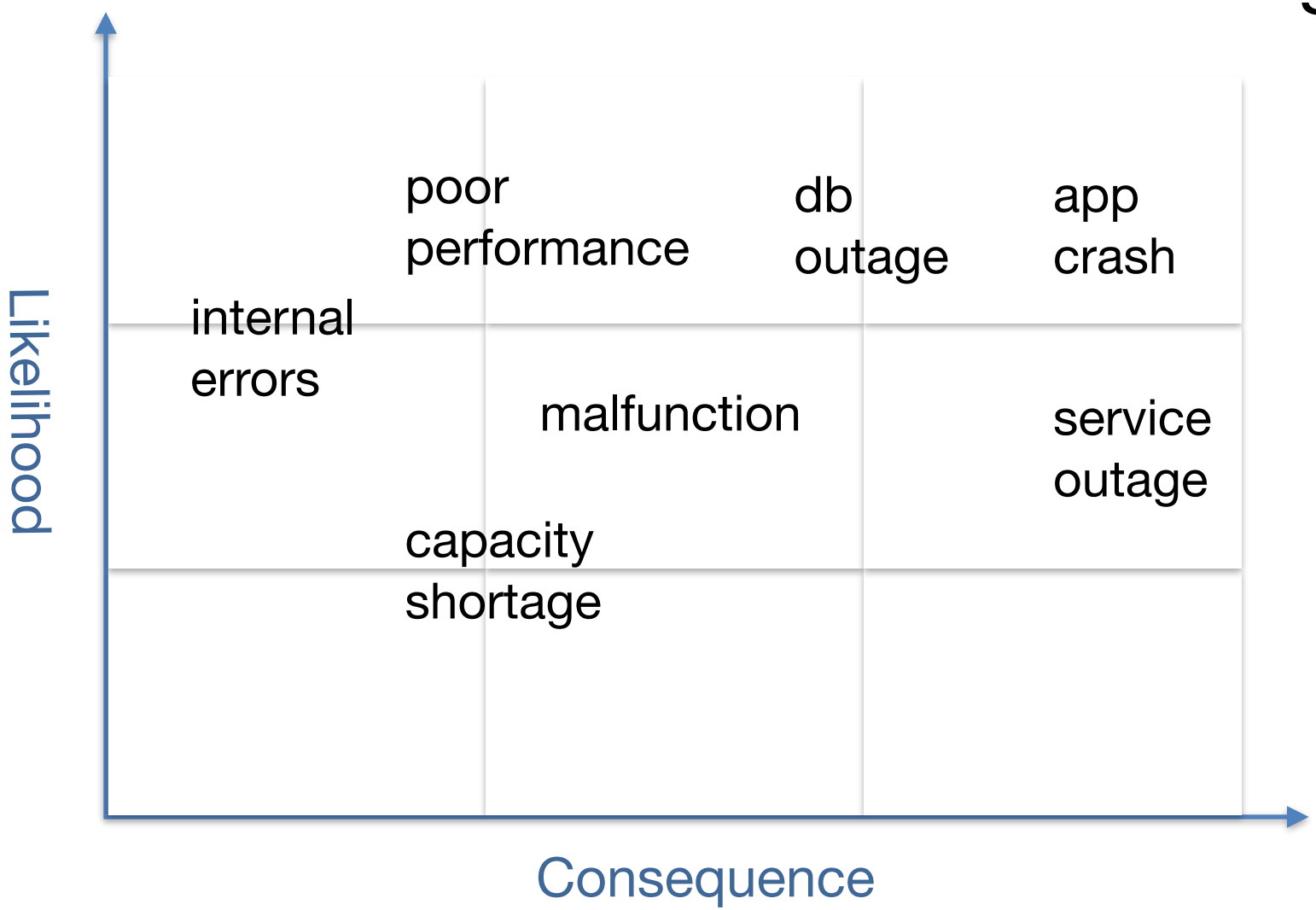

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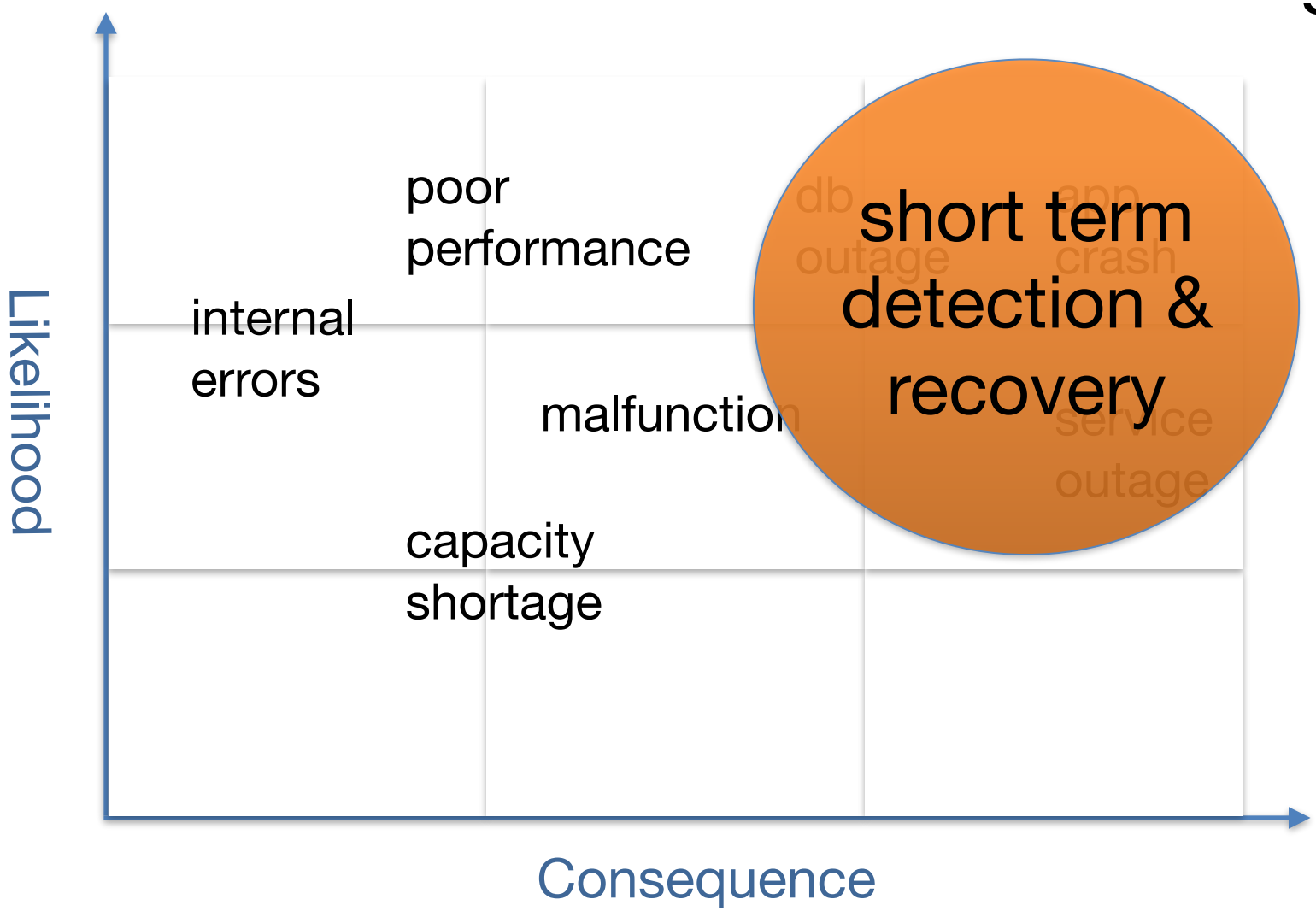

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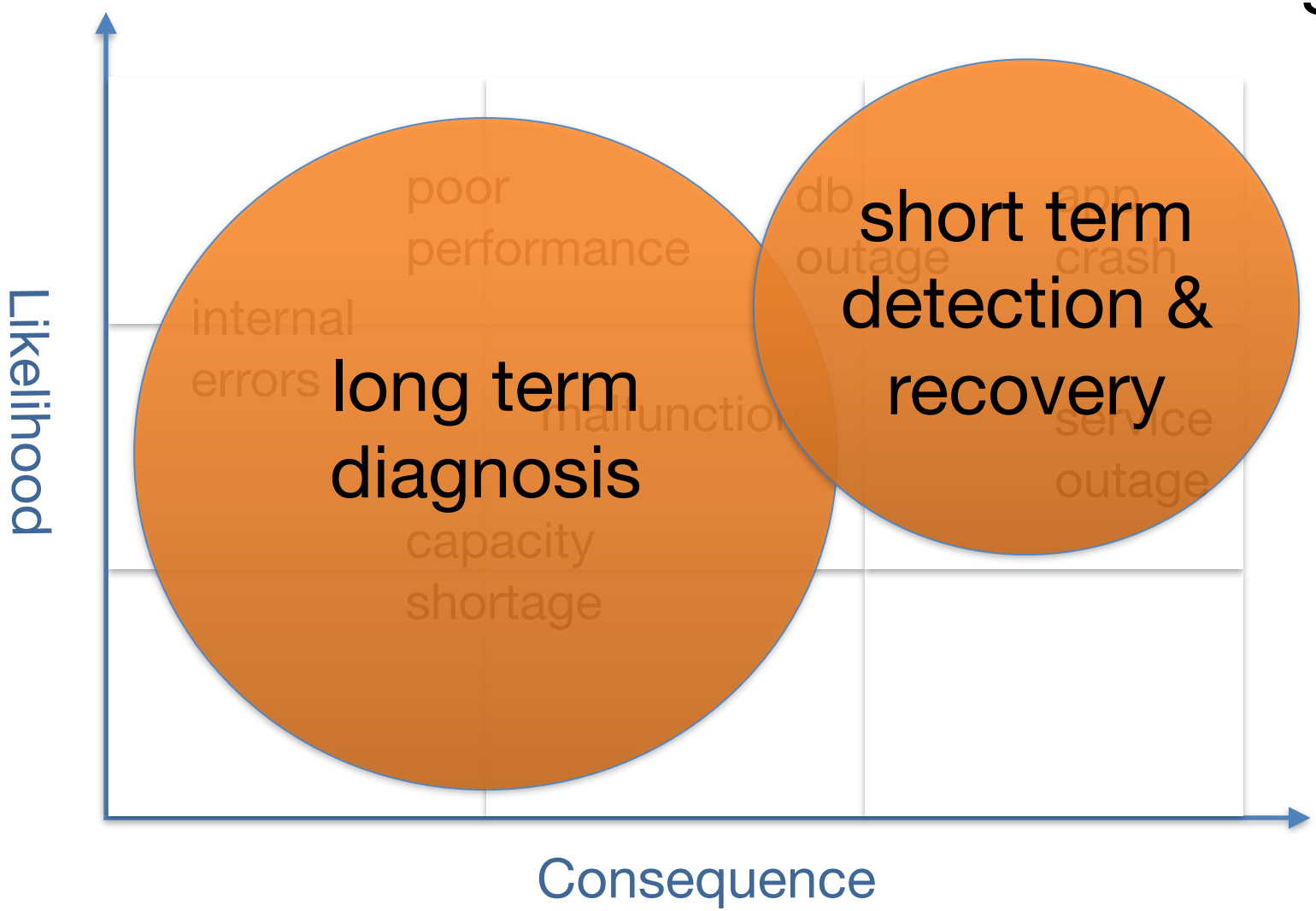


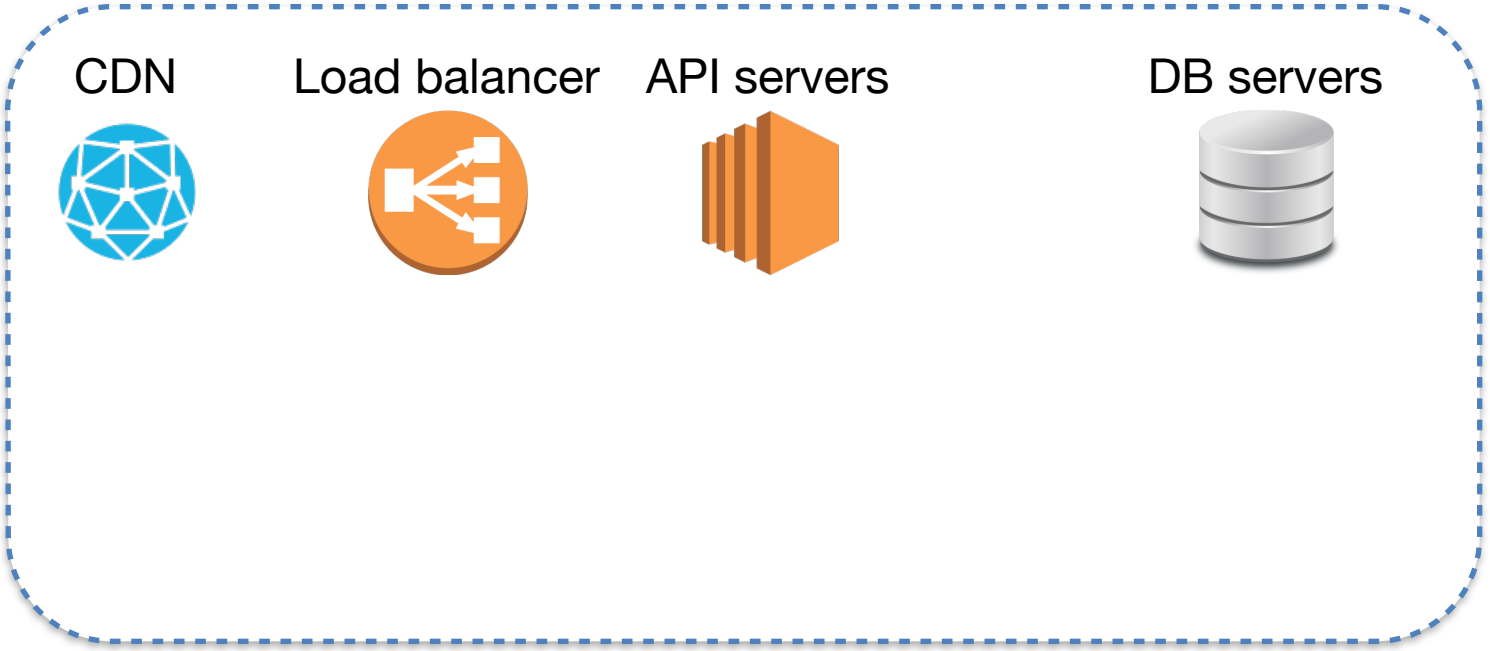
API servers

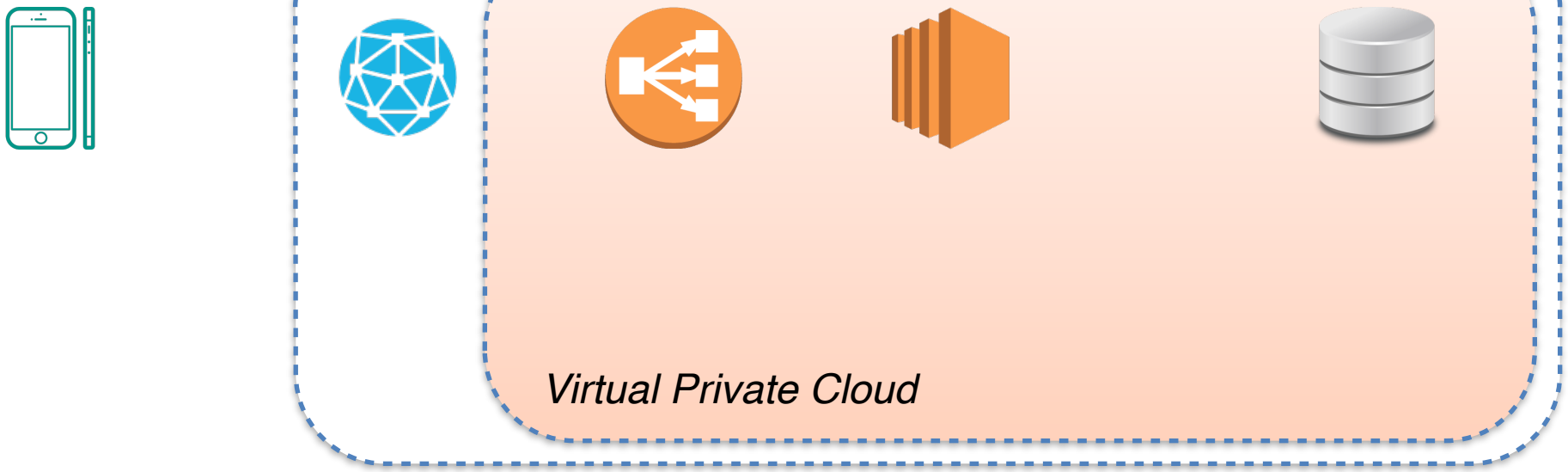
DB servers

Load balancer

API servers

DB servers


CDN
Load balancer
API servers
DB servers


CDN
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API servers
DB servers
Virtual Private Cloud

amazon web services™

CloudFront

ELB

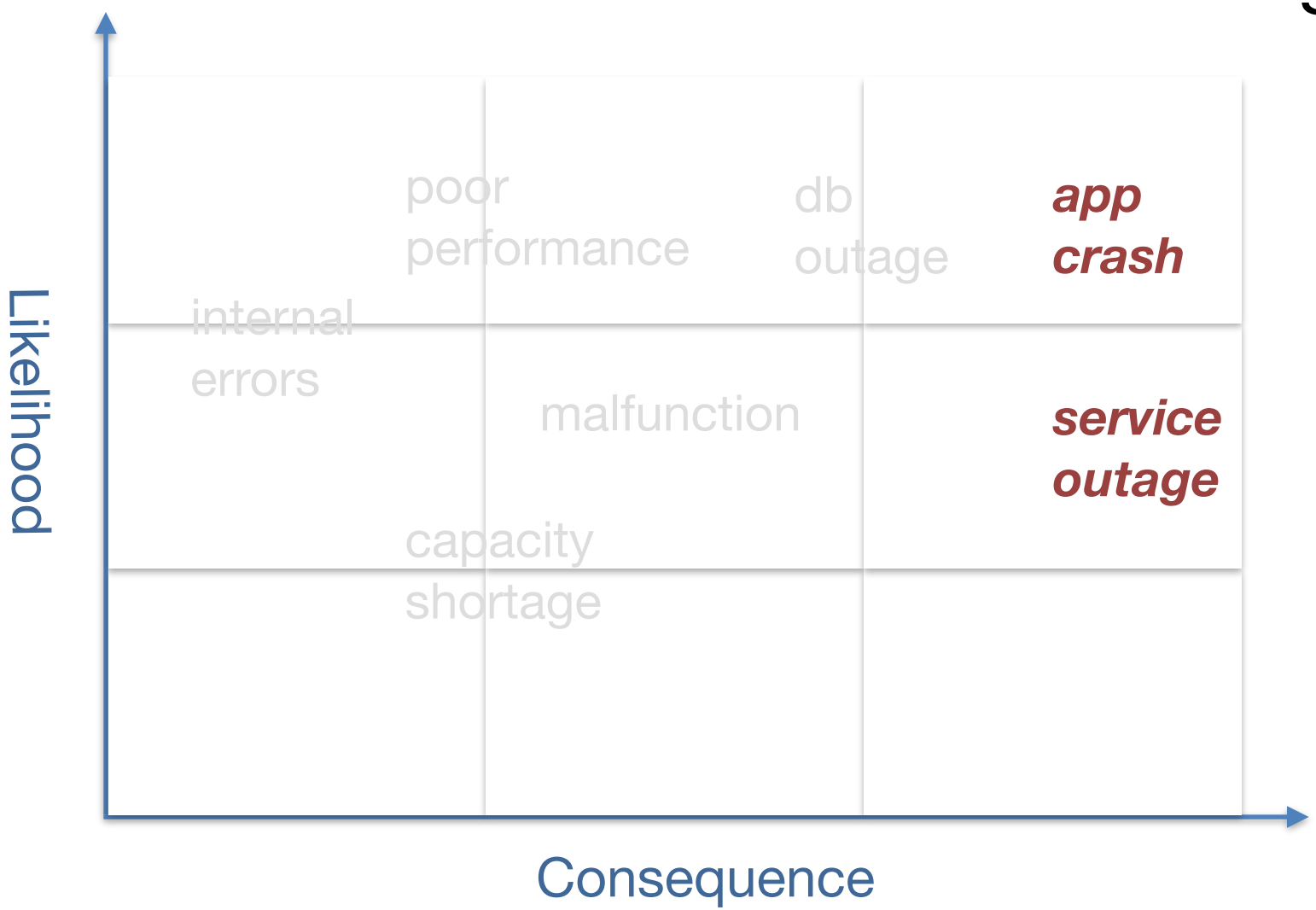
API servers

MongoDB

elasticsearch.

VPC

Risk register



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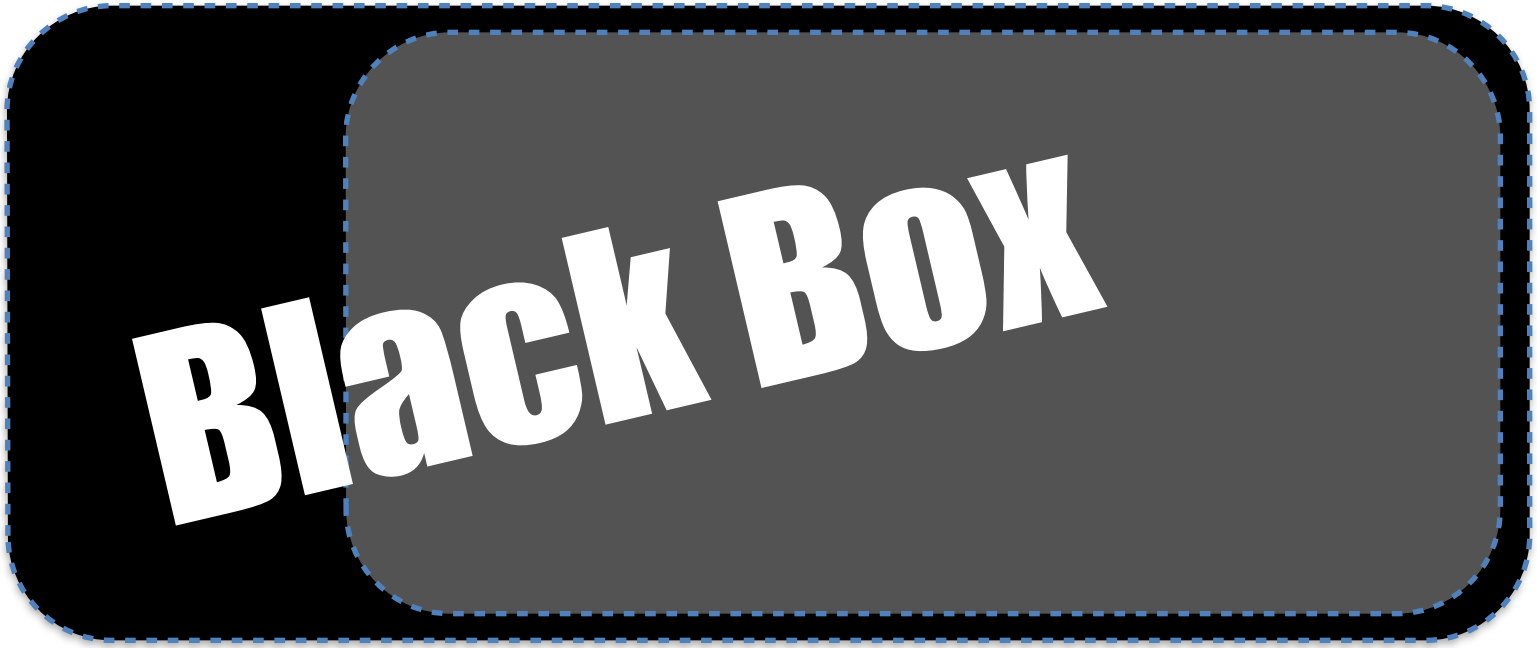
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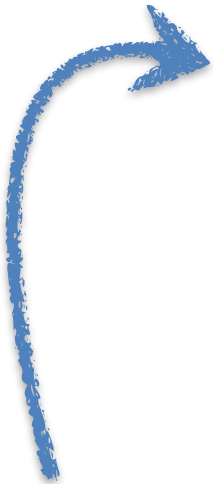

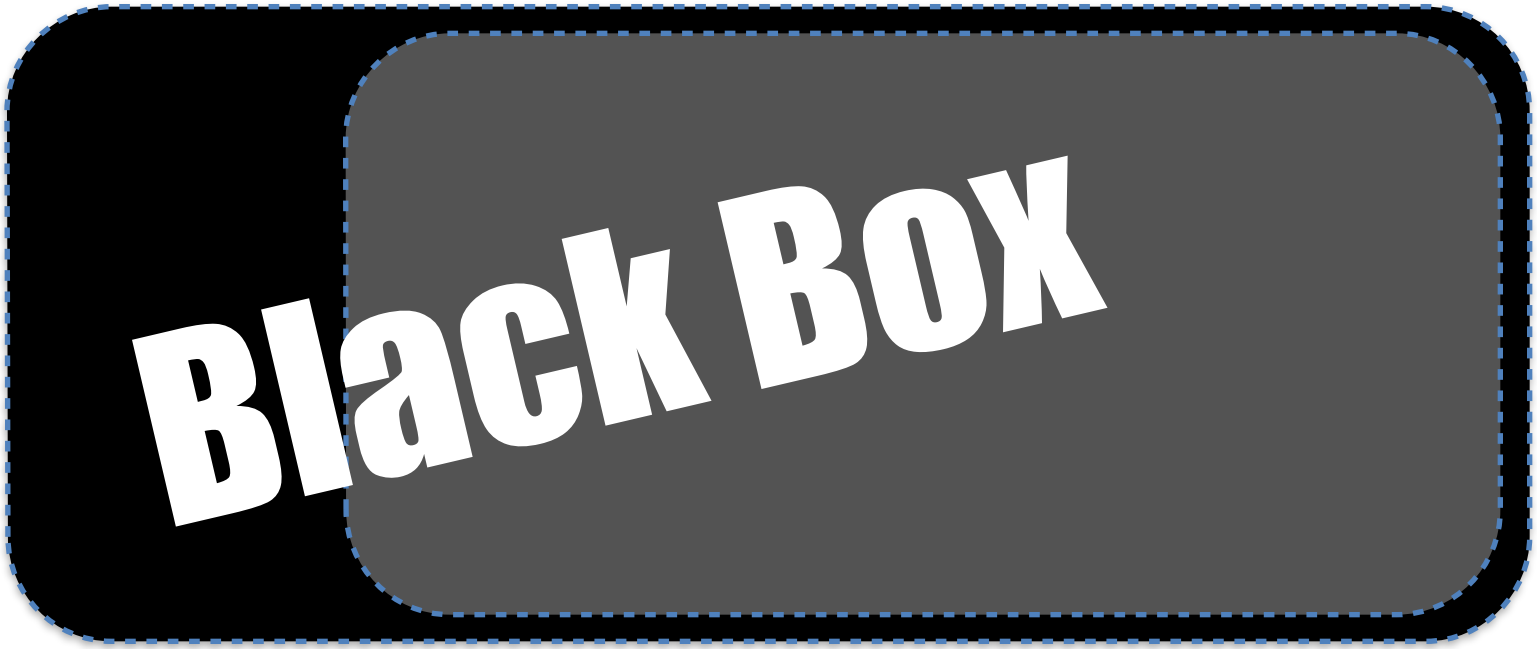
Black Box


amazon
web services™
Black Box
pingdom
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CLOUD
slack

pingdom

2015-08-30 10:30:51 (GMT +8:00)
The shown time zone is the same as yours

whoscall service (Jul 2015)

whoscall service | Recent | History

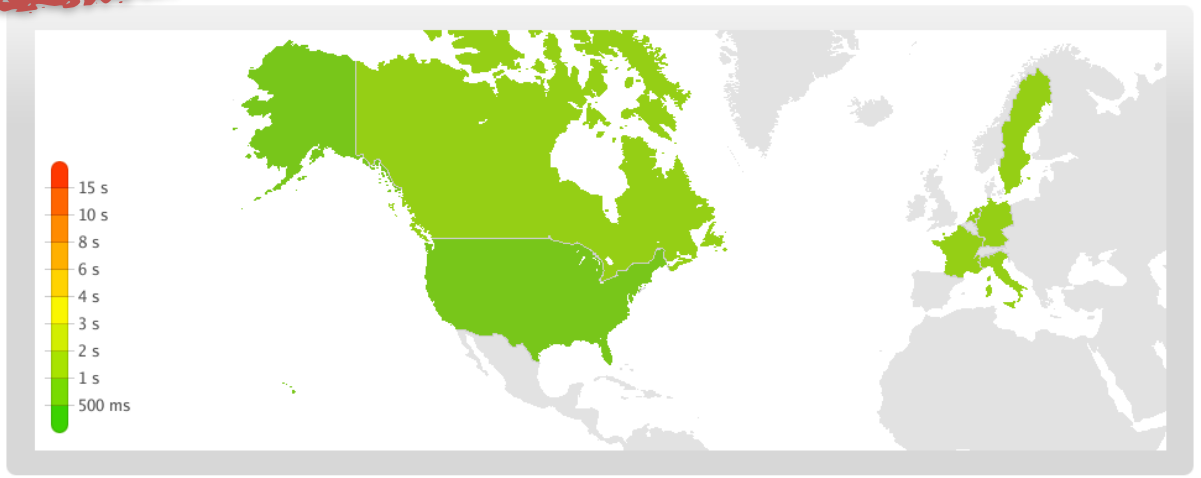
Uptime this month
99.82%

Avg. resp. time this month
546 ms

Check type: HTTP

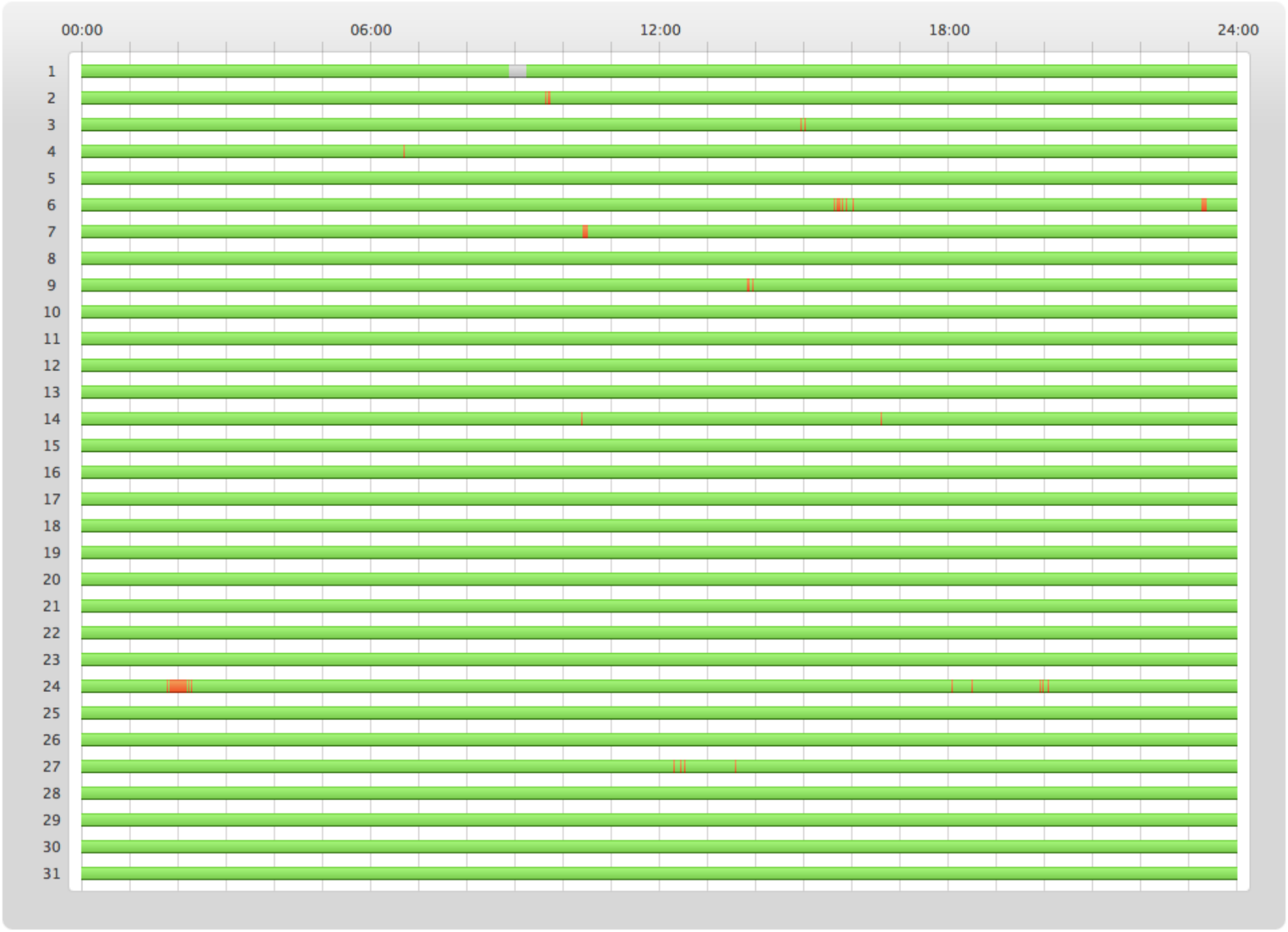
Check resolution: 1 minutes

Per Country



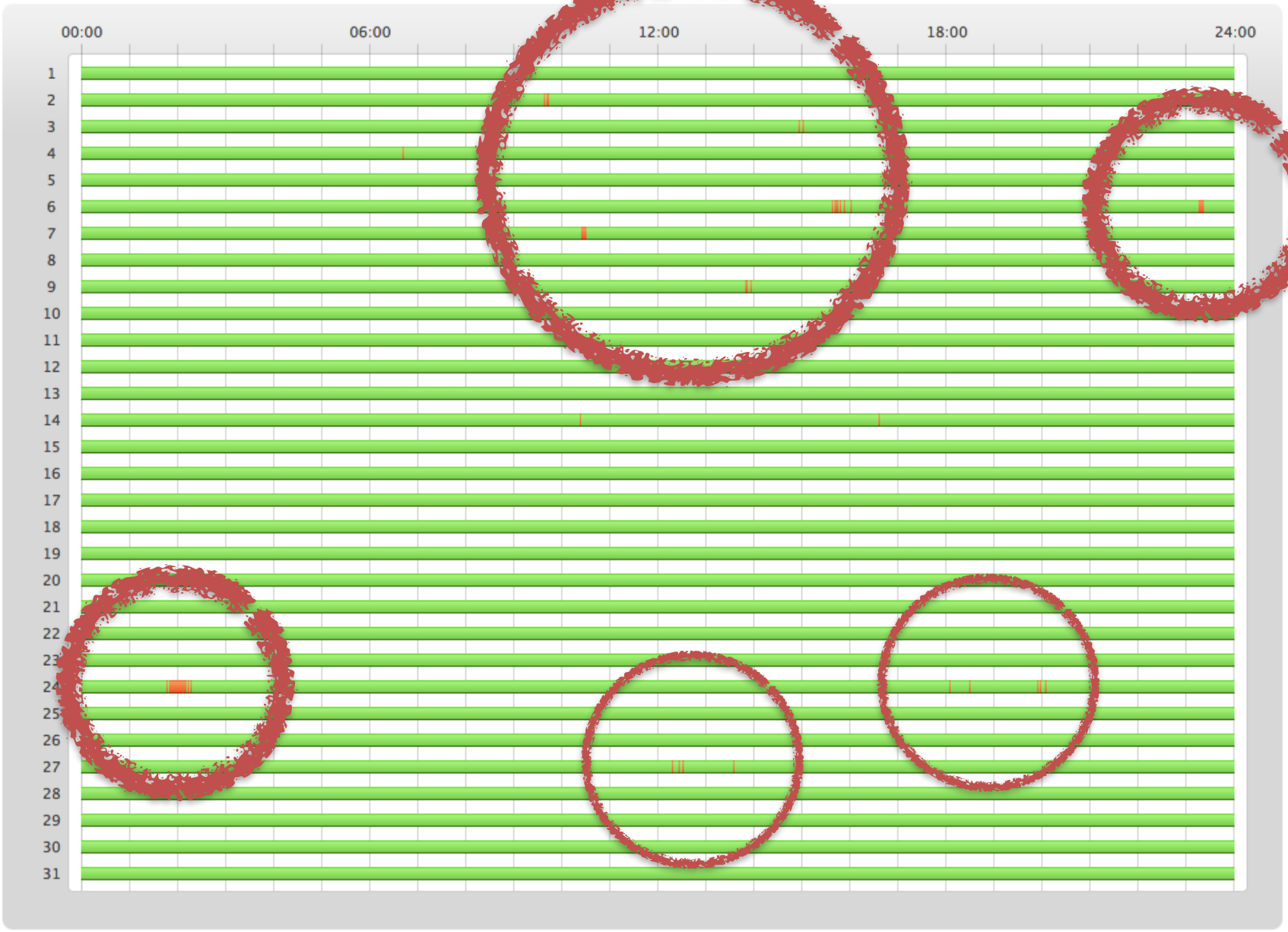
Average performance by country during the selected month. Monitoring is done from Europe and North America.

Uptime



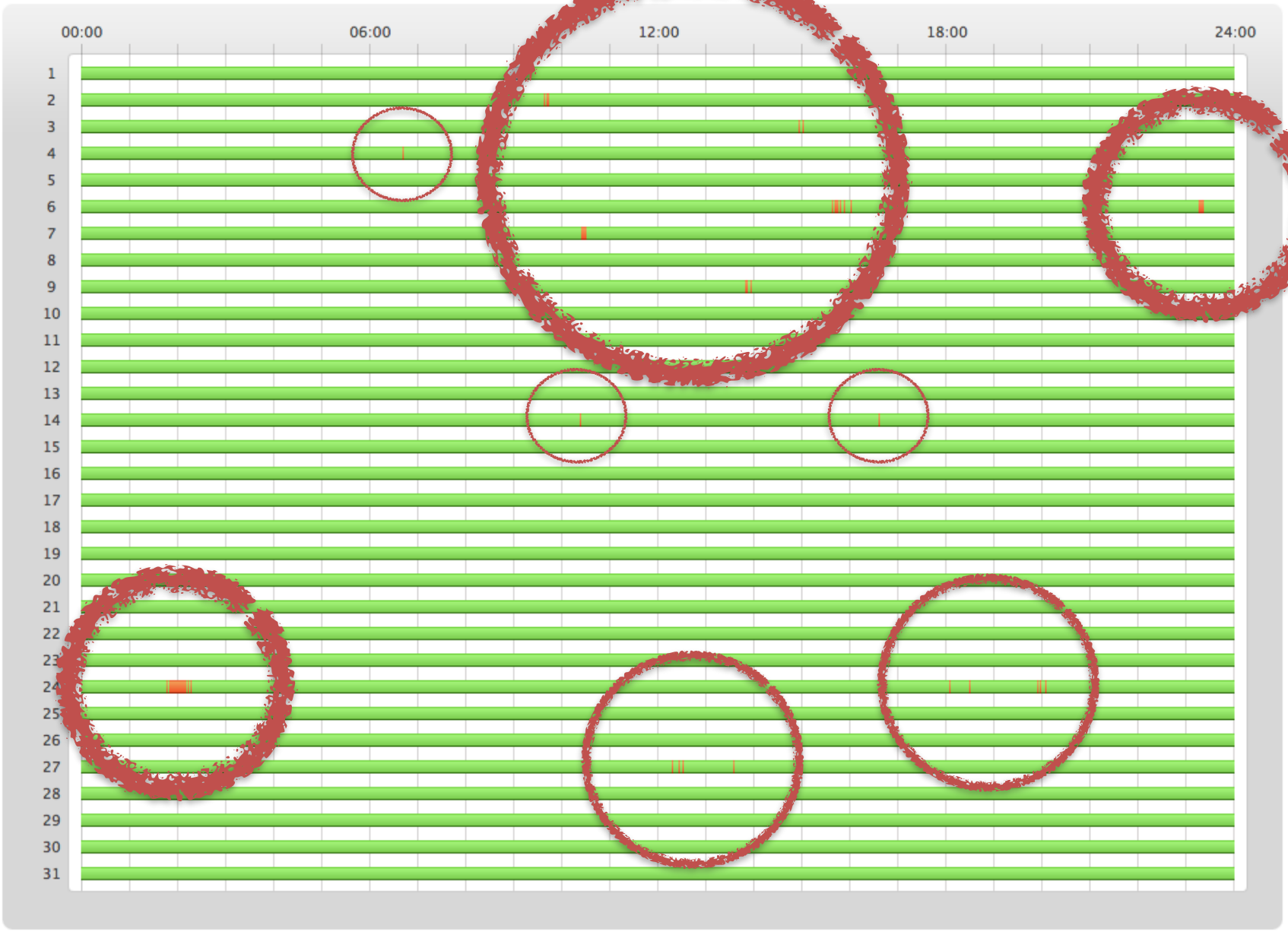
Day-by-day availability (uptime) for the selected month. Red sections indicate downtime. Hover mouse pointer over sections to get exact times.

Uptime



Day-by-day availability (uptime) for the selected month. Red sections indicate downtime. Hover mouse pointer over sections to get exact times.

Uptime



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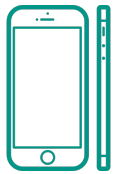
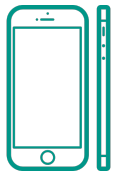


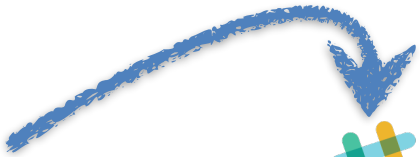
Crashlytics

Black Box

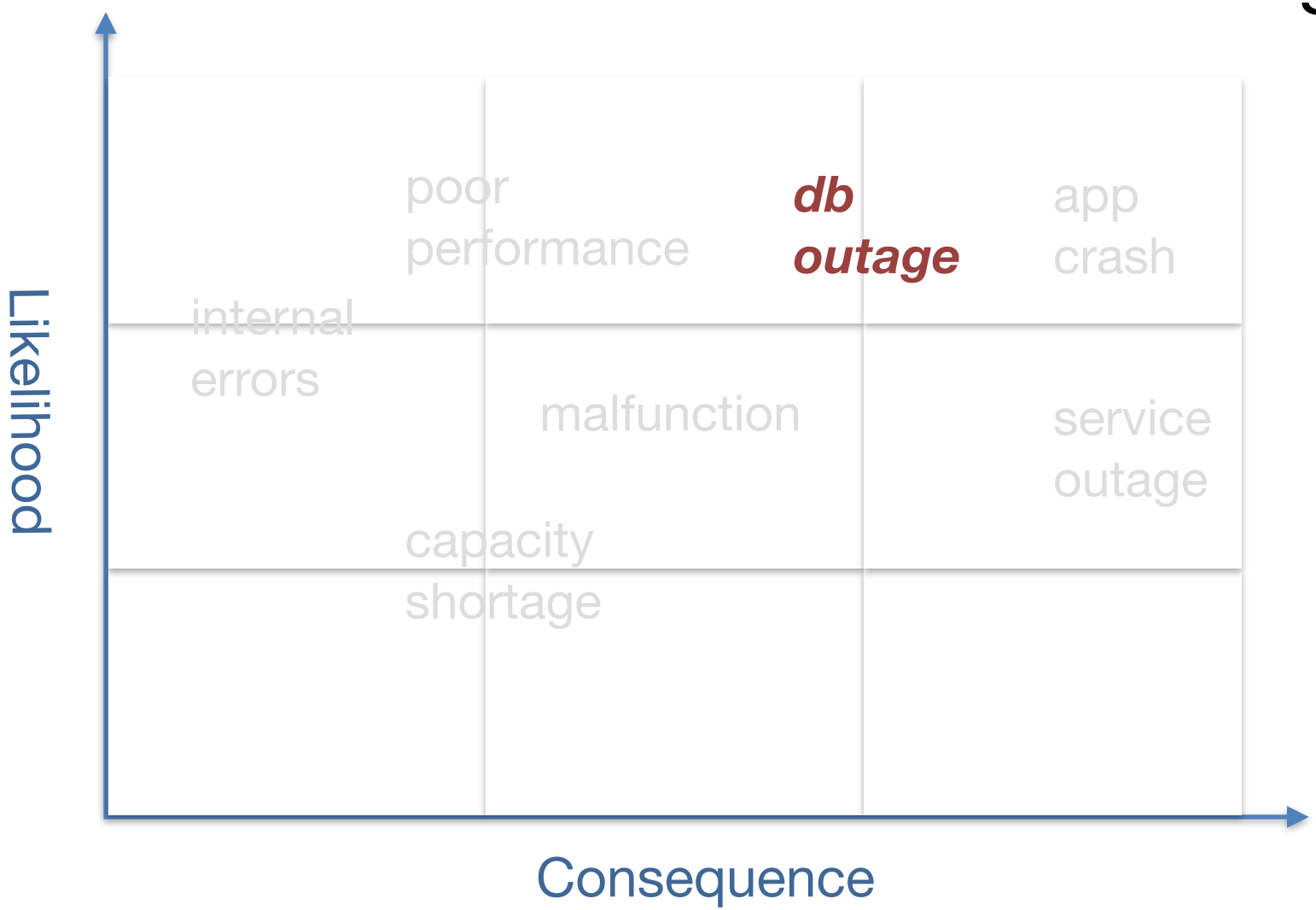


Black Box

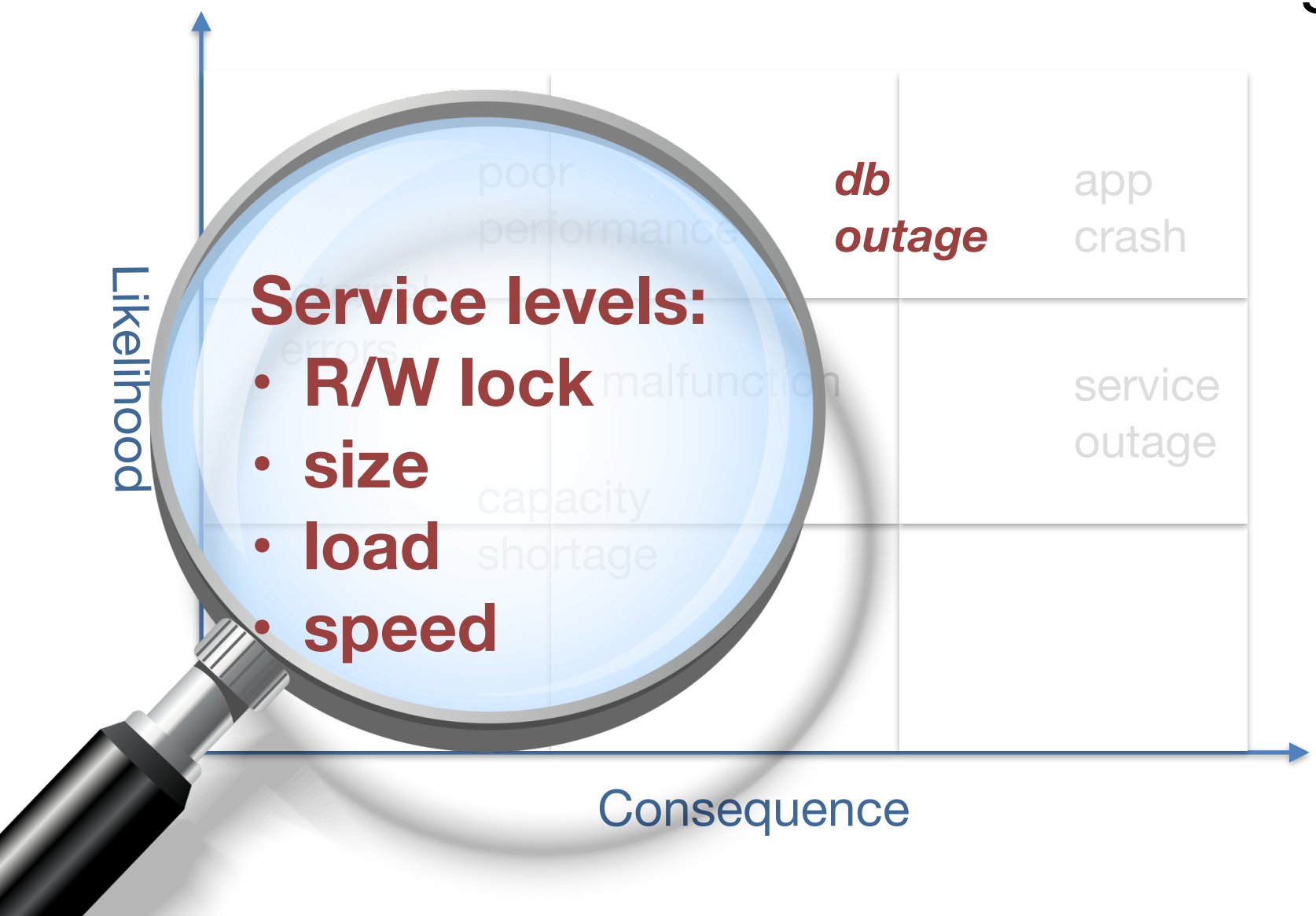
Crashlytics

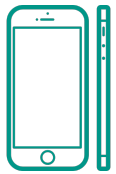


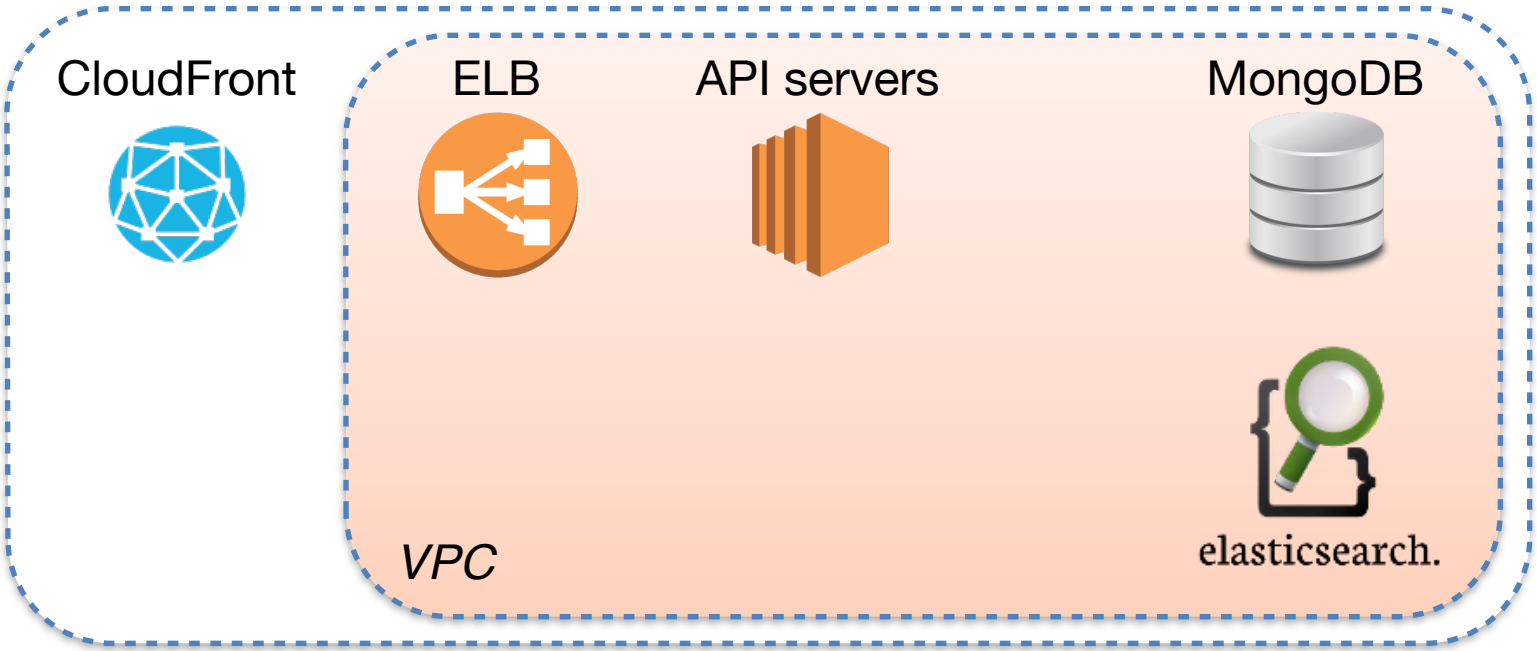
Risk register

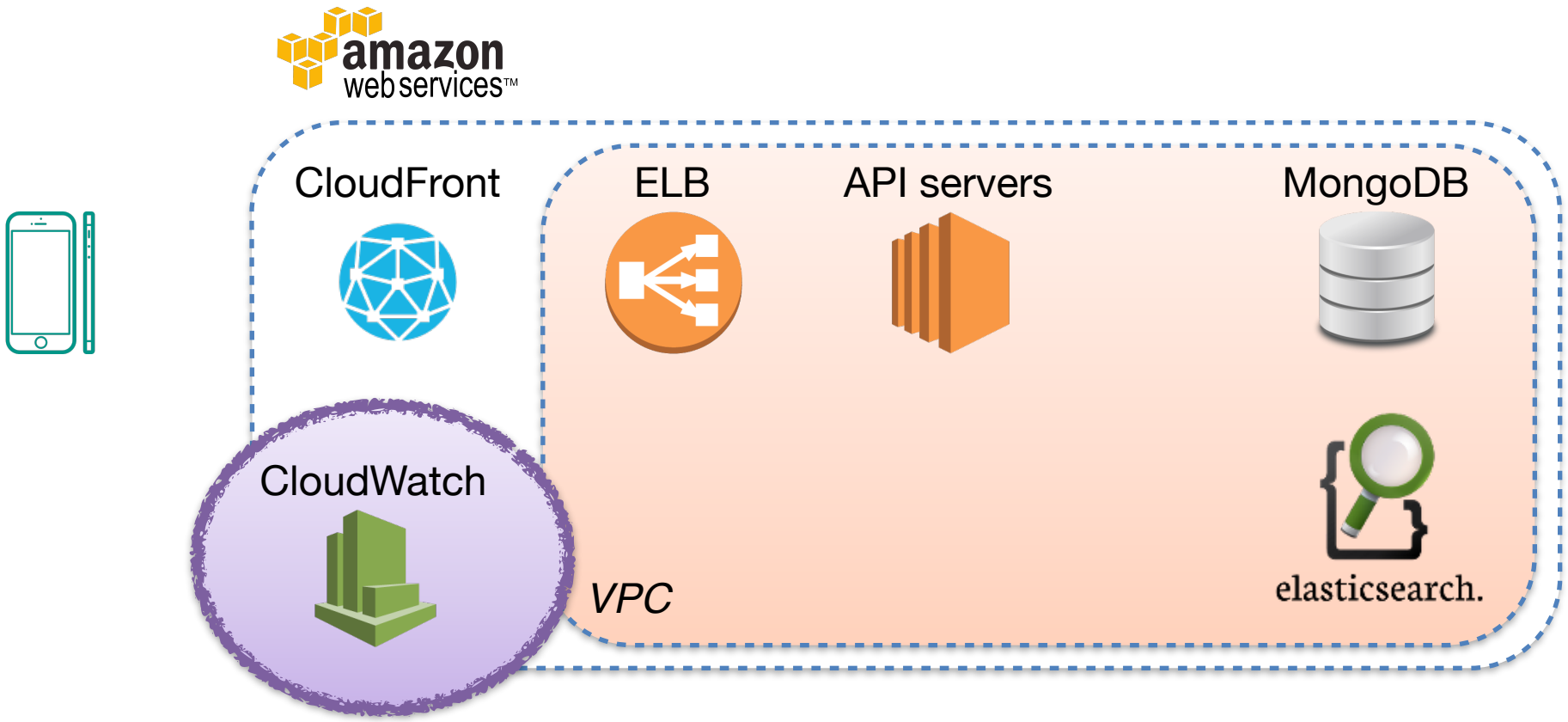


Risk register






amazon
web services™
CloudFront
ELB
API servers
MongoDB
VPC
elasticsearch.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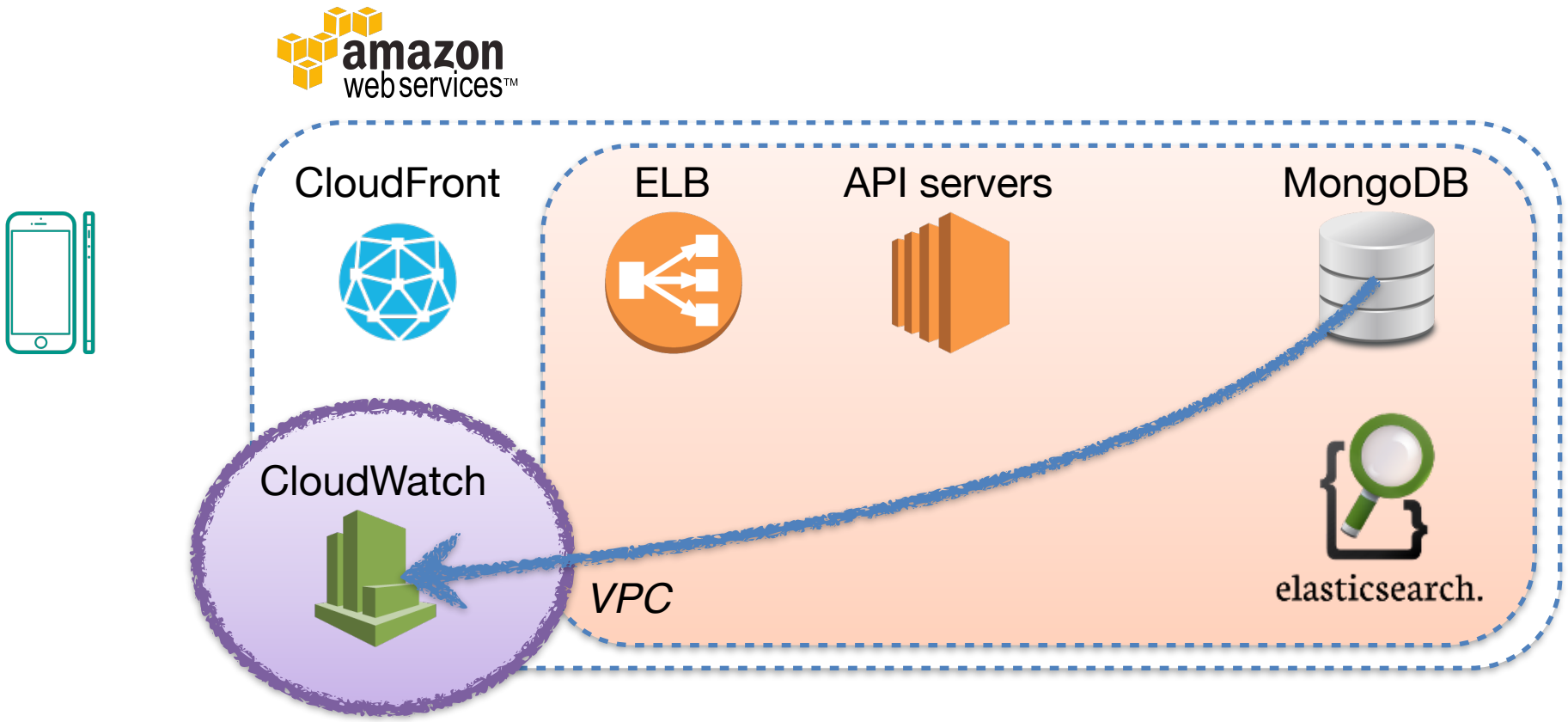
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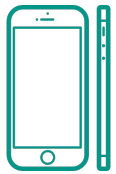

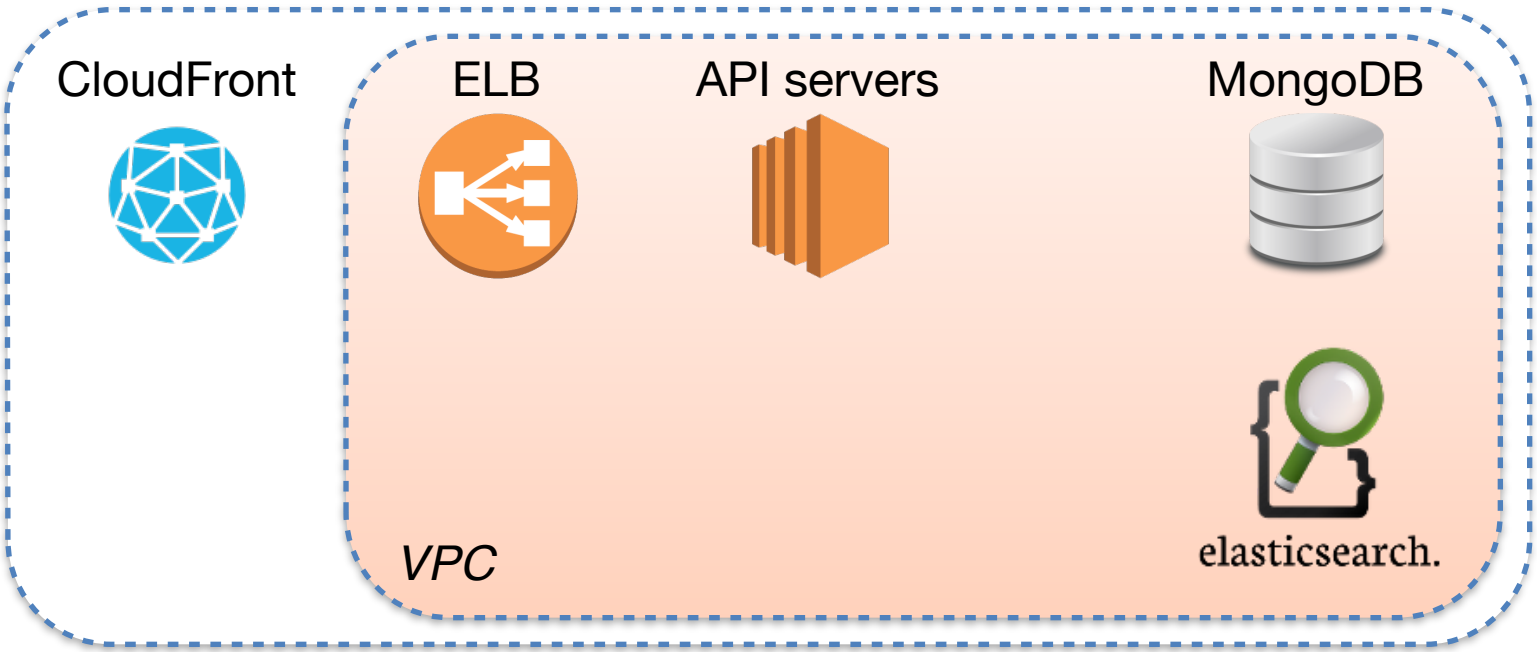
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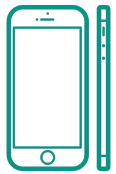
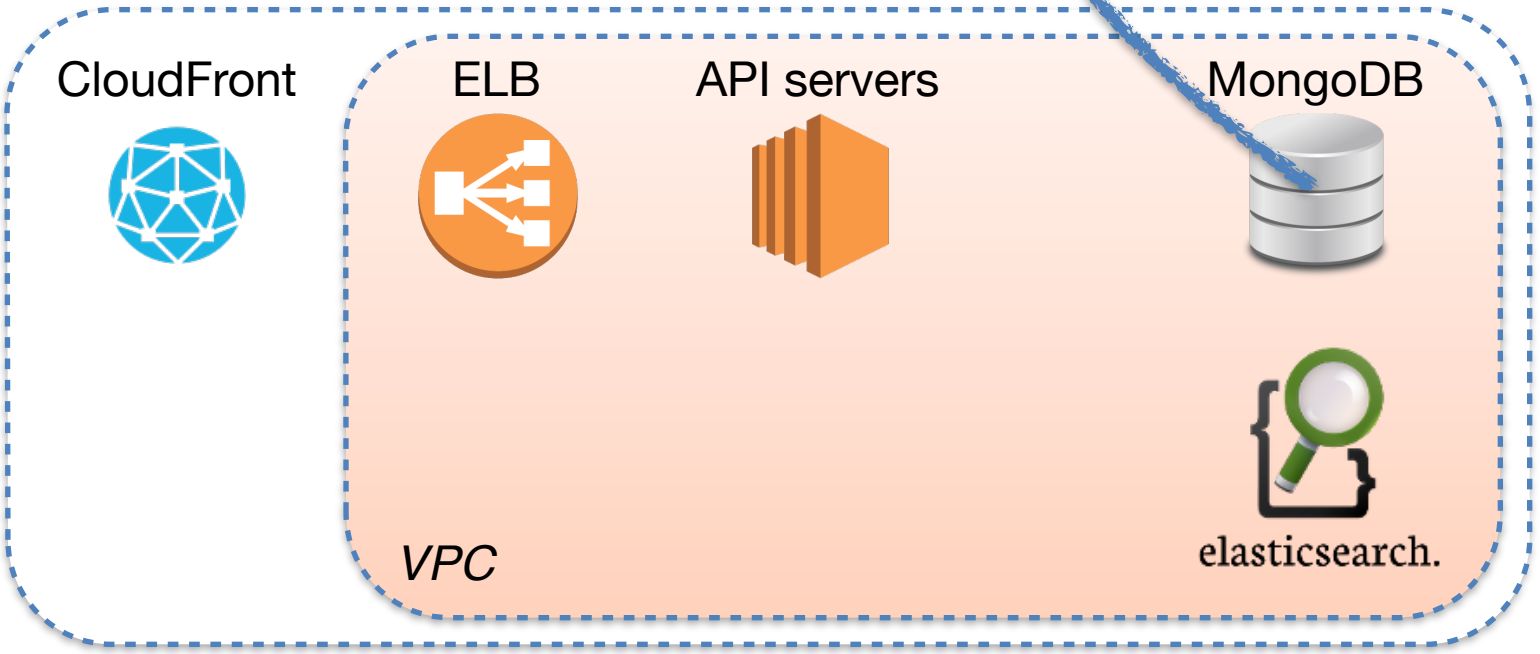



amazon
web services™


mongoDB
Cloud Manager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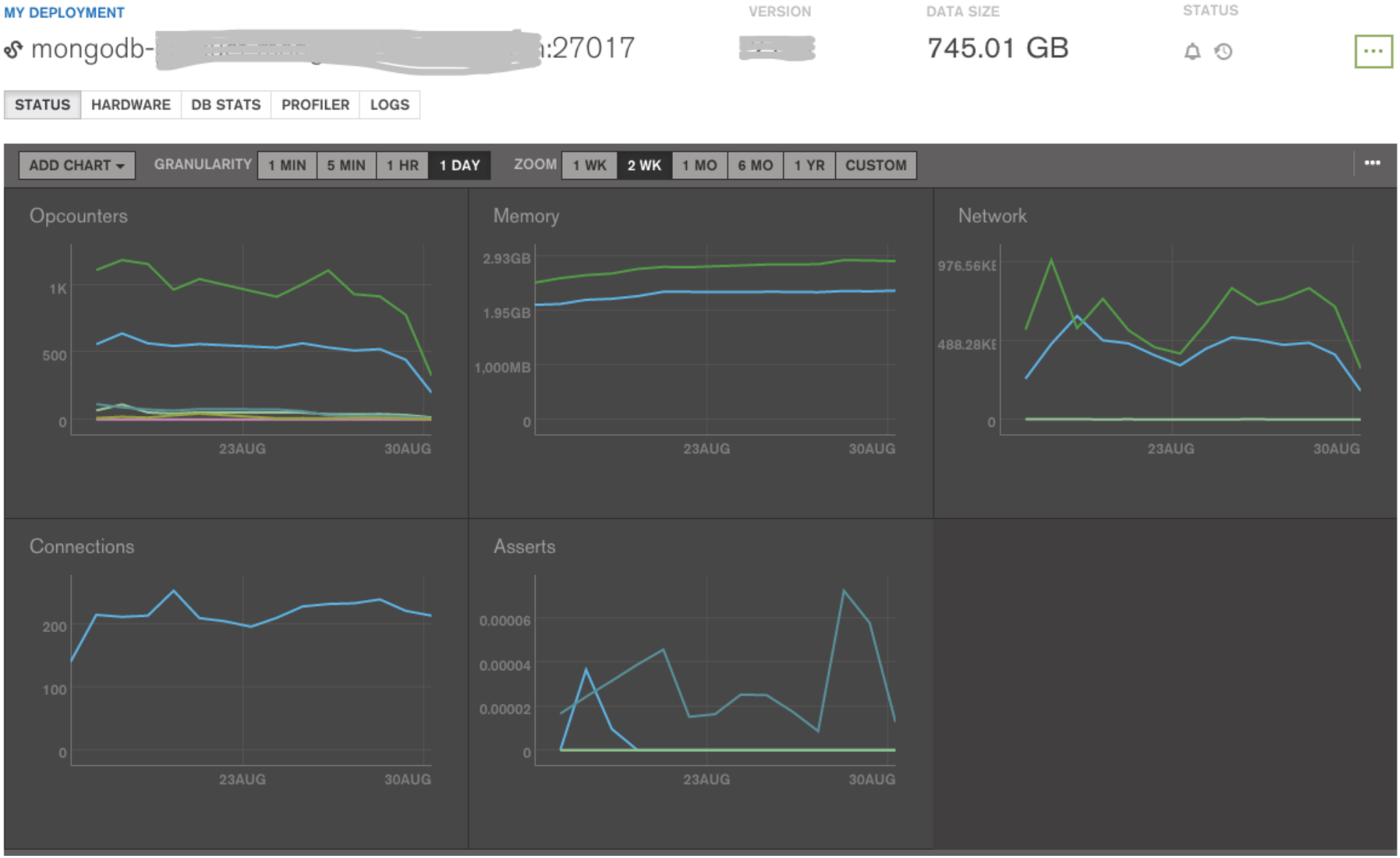
MY DEPLOYMENT
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DATA SIZE
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STATUS
HARDWARE
DB STATS
PROFILER
LOGS
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5 MIN
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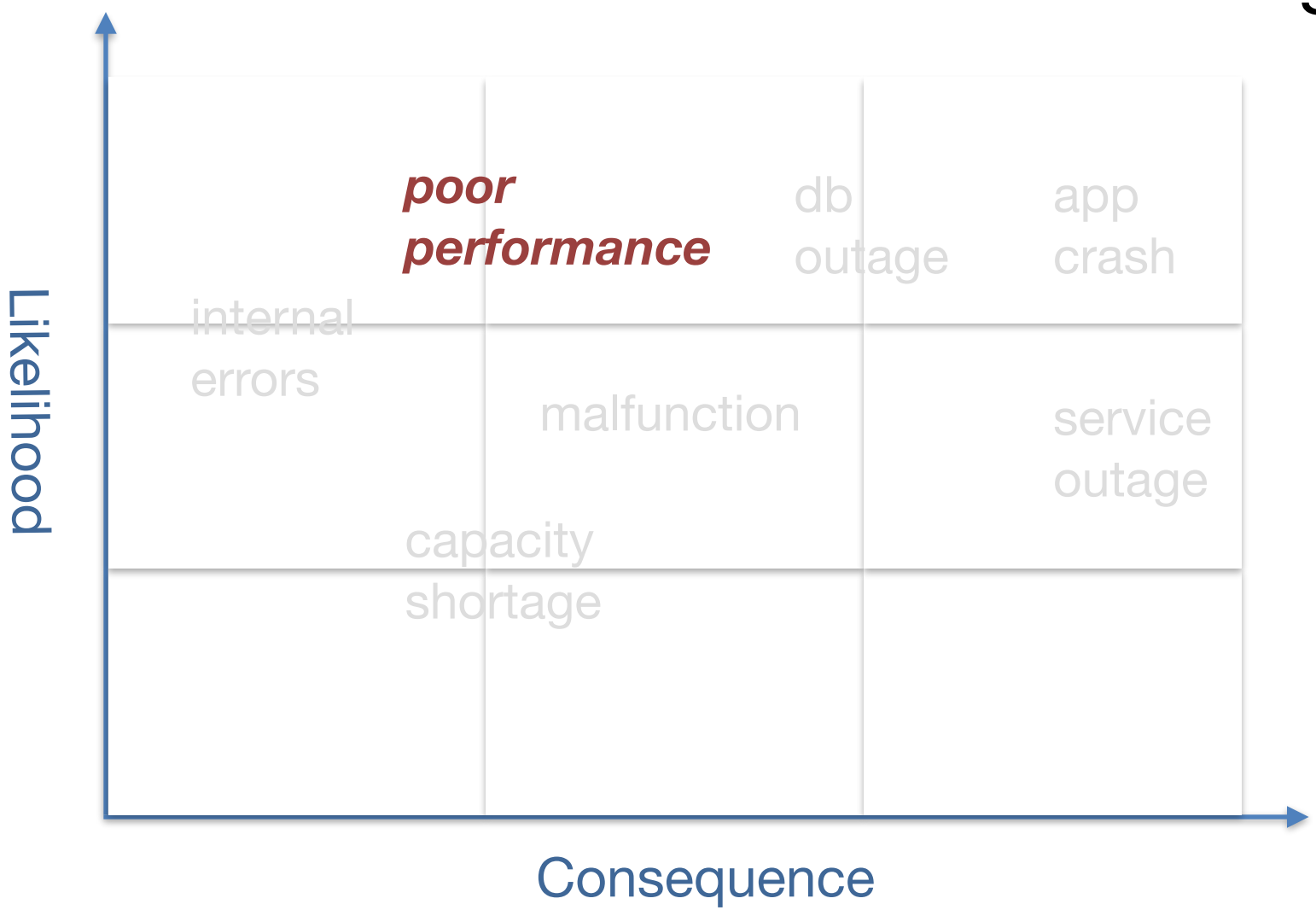
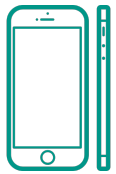
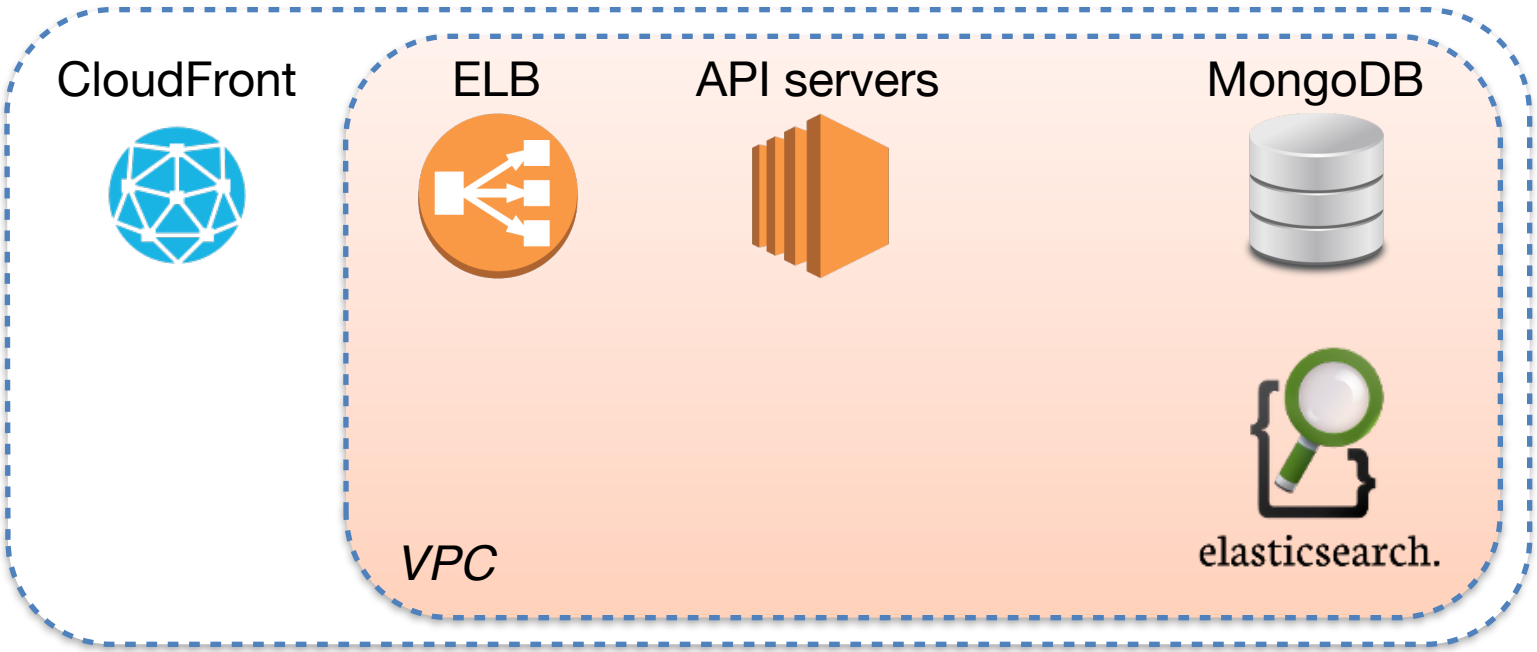
Risk register



Risk register




amazon
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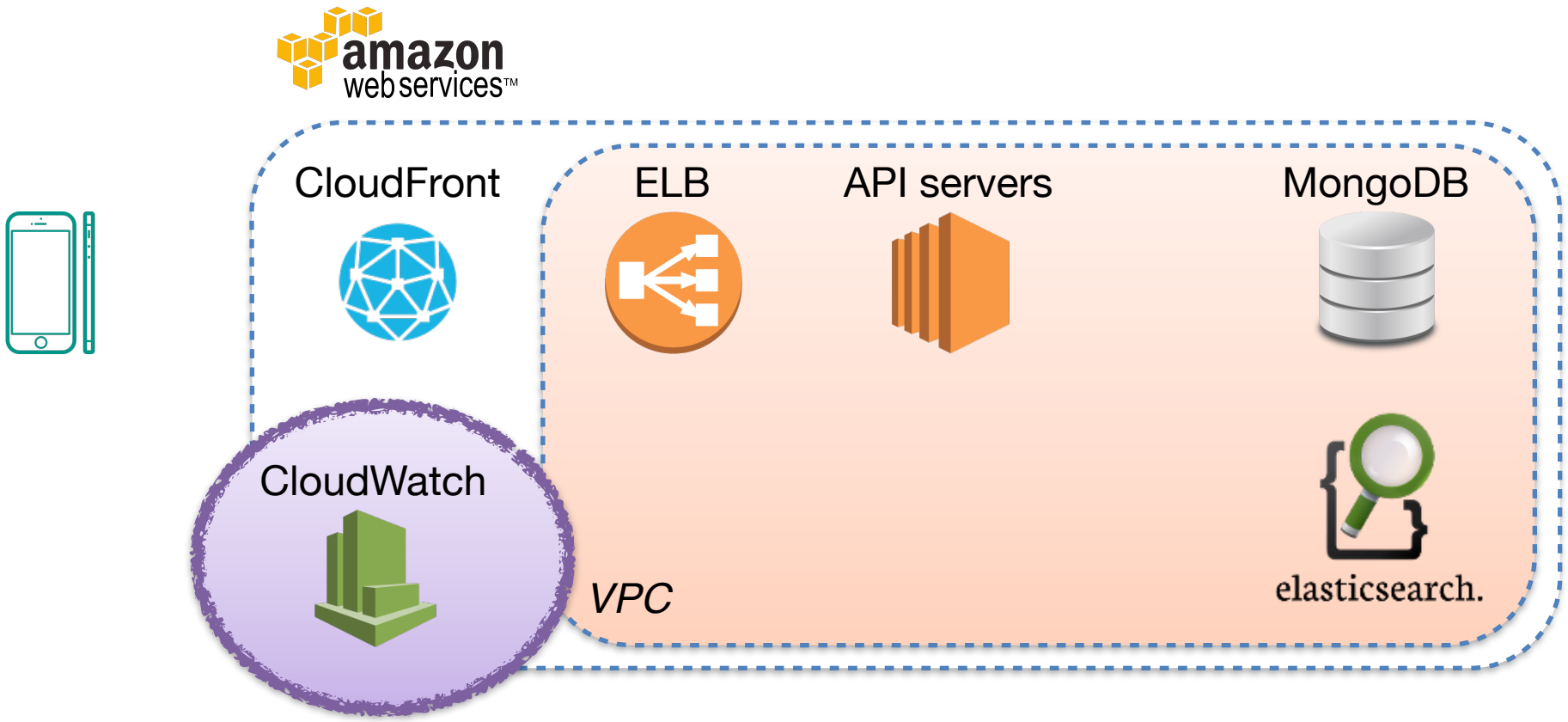
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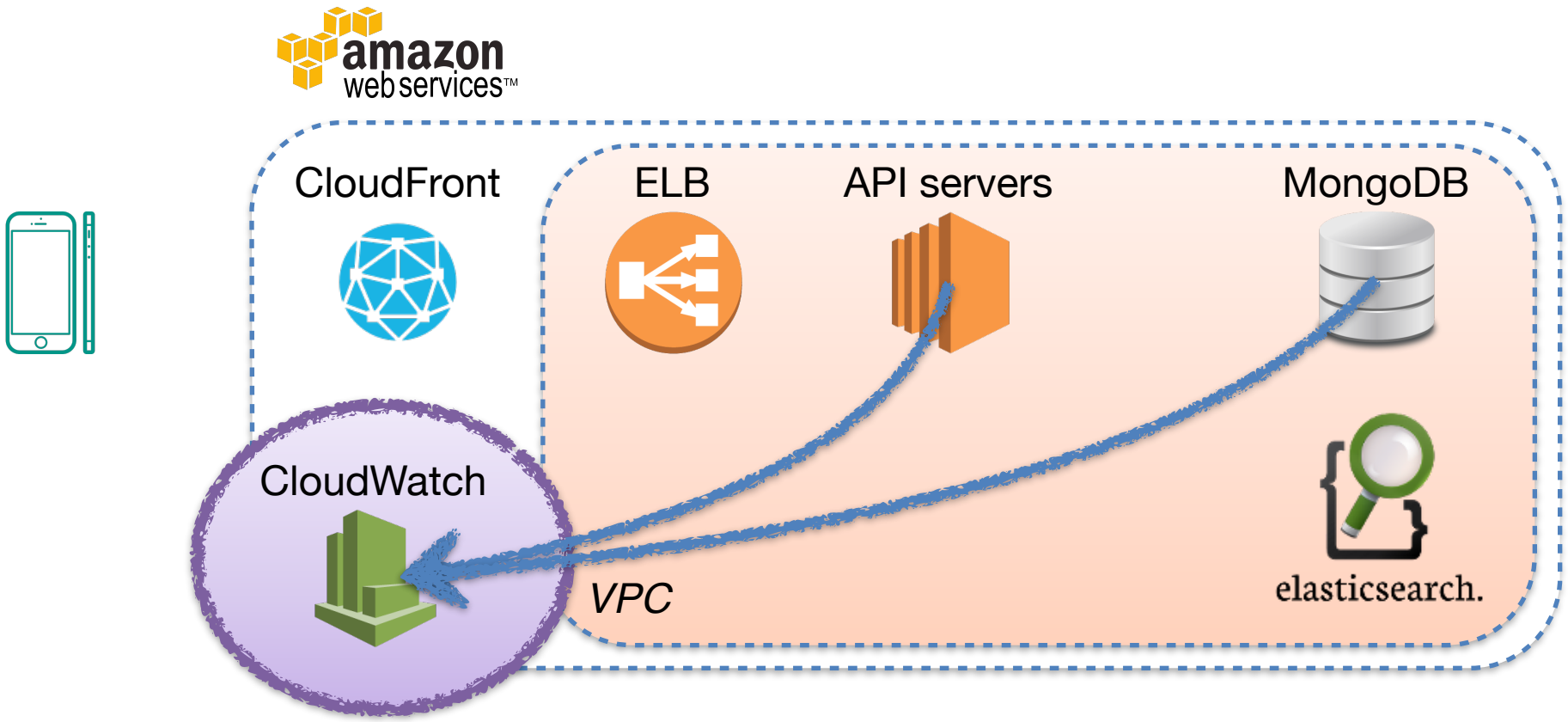
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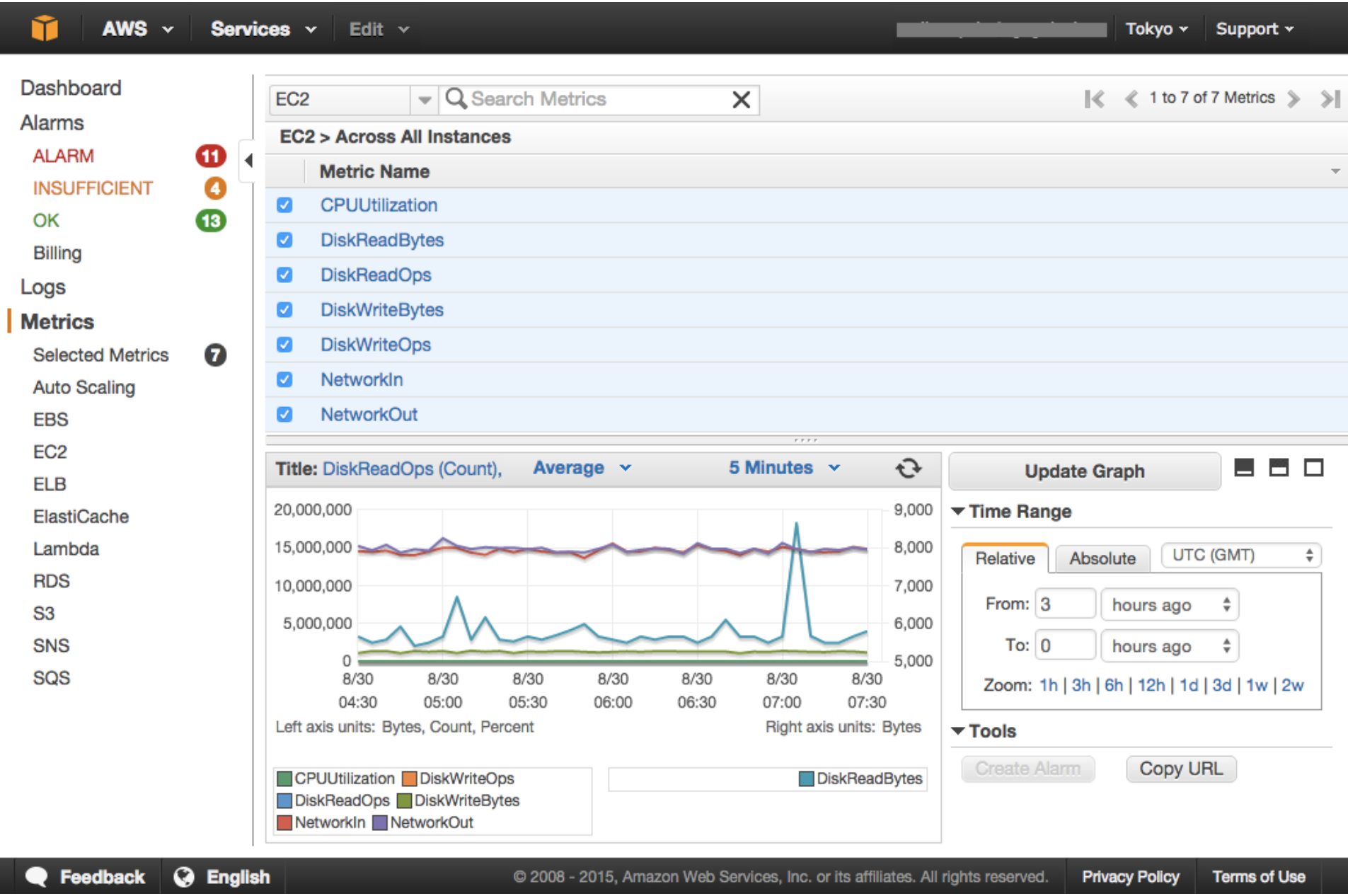
AWS
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Alarms
ALARM 11
INSUFFICIENT 4
OK 13
Billing
Logs
Metrics
Selected Metrics 7
Auto Scaling
EBS
EC2
ELB
ElastiCache
Lambda
RDS
S3
SNS
SQS
EC2
Search Metrics
1 to 7 of 7 Metrics
EC2 > Across All Instances
Metric Name
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DiskReadOps
DiskWriteBytes
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NetworkIn
NetworkOut
Title: DiskReadOps (Count),
Average
5 Minutes
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8/30 07:30
Left axis units: Bytes, Count, Percent
Right axis units: Bytes
CPUUtilization
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DiskReadOps
DiskWriteBytes
NetworkIn
NetworkOut
DiskReadBytes
Time Range
Relative
Absolute
UTC (GMT)
From: 3 hours ago
To: 0 hours ago
Zoom: 1h | 3h | 6h | 12h | 1d | 3d | 1w | 2w
Tools
Create Alarm
Copy URL
Feedback
English
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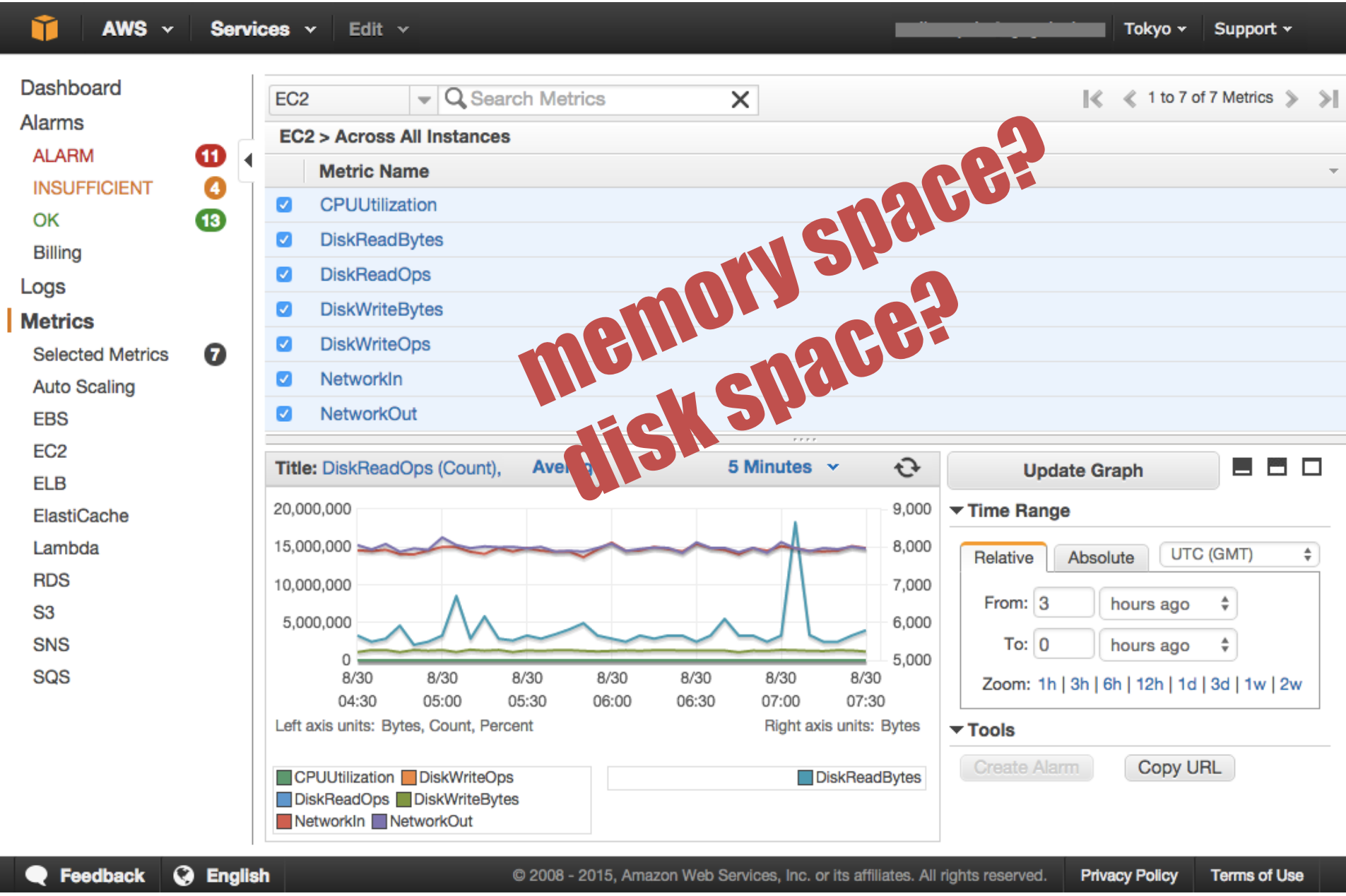
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SQS
EC2
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EC2 > Across All Instances
Metric Name
CPUUtilization
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DiskReadOps
DiskWriteBytes
DiskWriteOps
NetworkIn
NetworkOut
memory space?
disk space?
Title: DiskReadOps (Count),
5 Minutes
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Left axis units: Bytes, Count, Percent
Right axis units: Bytes
CPUUtilization
DiskWriteOps
DiskReadOps
DiskWriteBytes
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Time Range
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UTC (GMT)
From: 3 hours ago
To: 0 hours ago
Zoom: 1h | 3h | 6h | 12h | 1d | 3d | 1w | 2w
Tools
Create Alarm
Copy URL
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CloudWatch Limits

CloudWatch has the following limits:

- You get 10 CloudWatch metrics, 10 alarms, 1,000,000 API requests, and 1,000 Amazon SNS email notifications per customer per month for free.
- There is no limit on the number of custom metrics you can create.
- The maximum period you can specify is one day (86,400 seconds).
- You can assign up to 10 dimensions per metric.
- You can create up to 5000 alarms per AWS account.
- You can assign up to 5 actions per alarm.
- Metric data is kept for 2 weeks.

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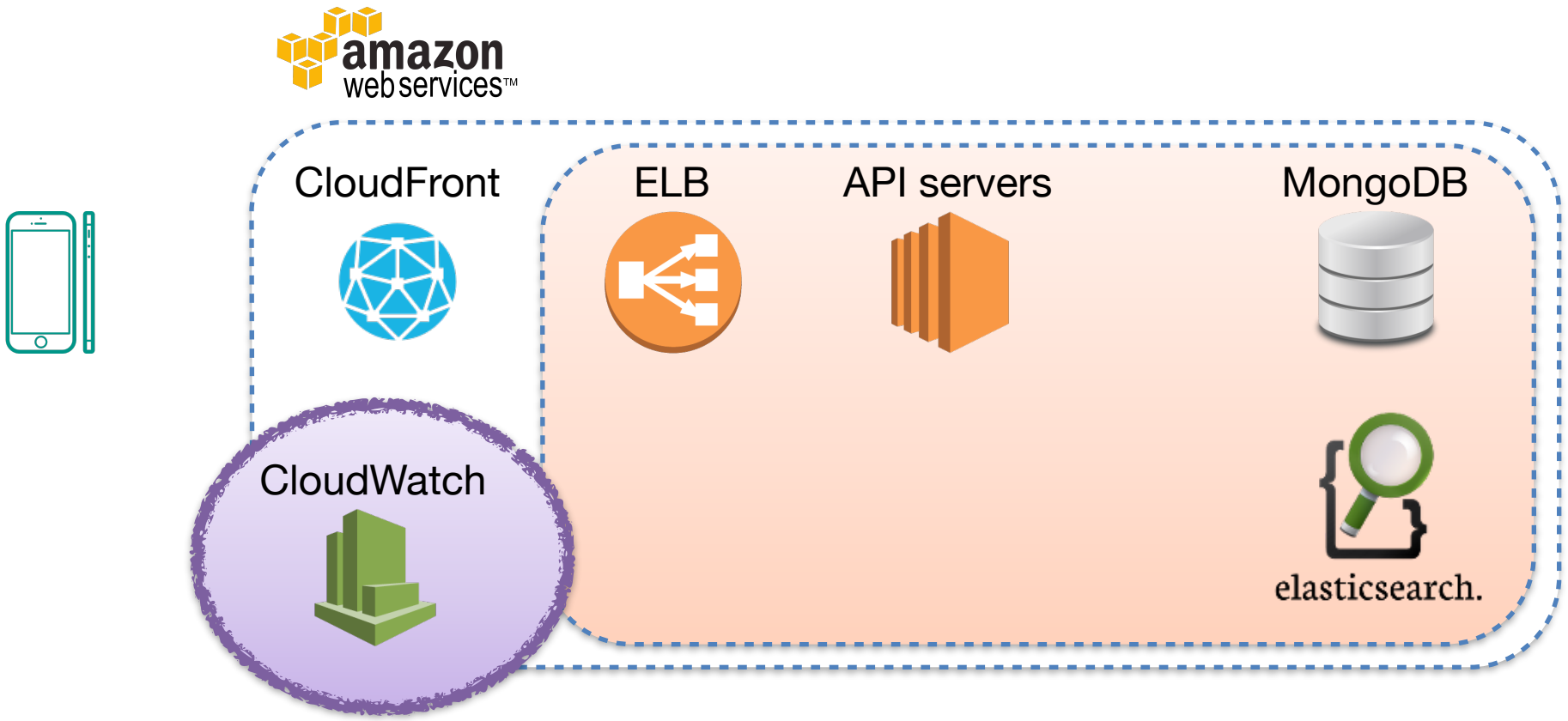
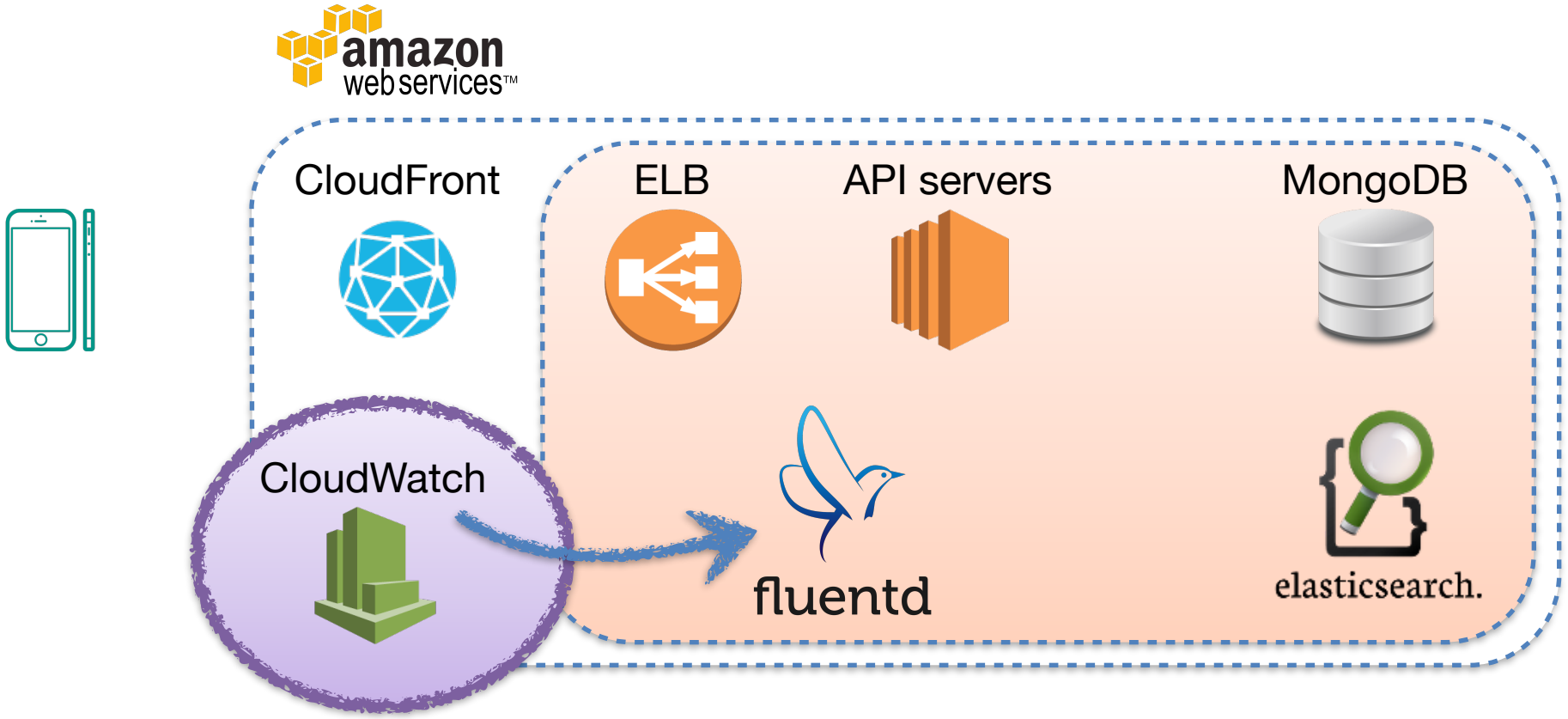
mnemonic?

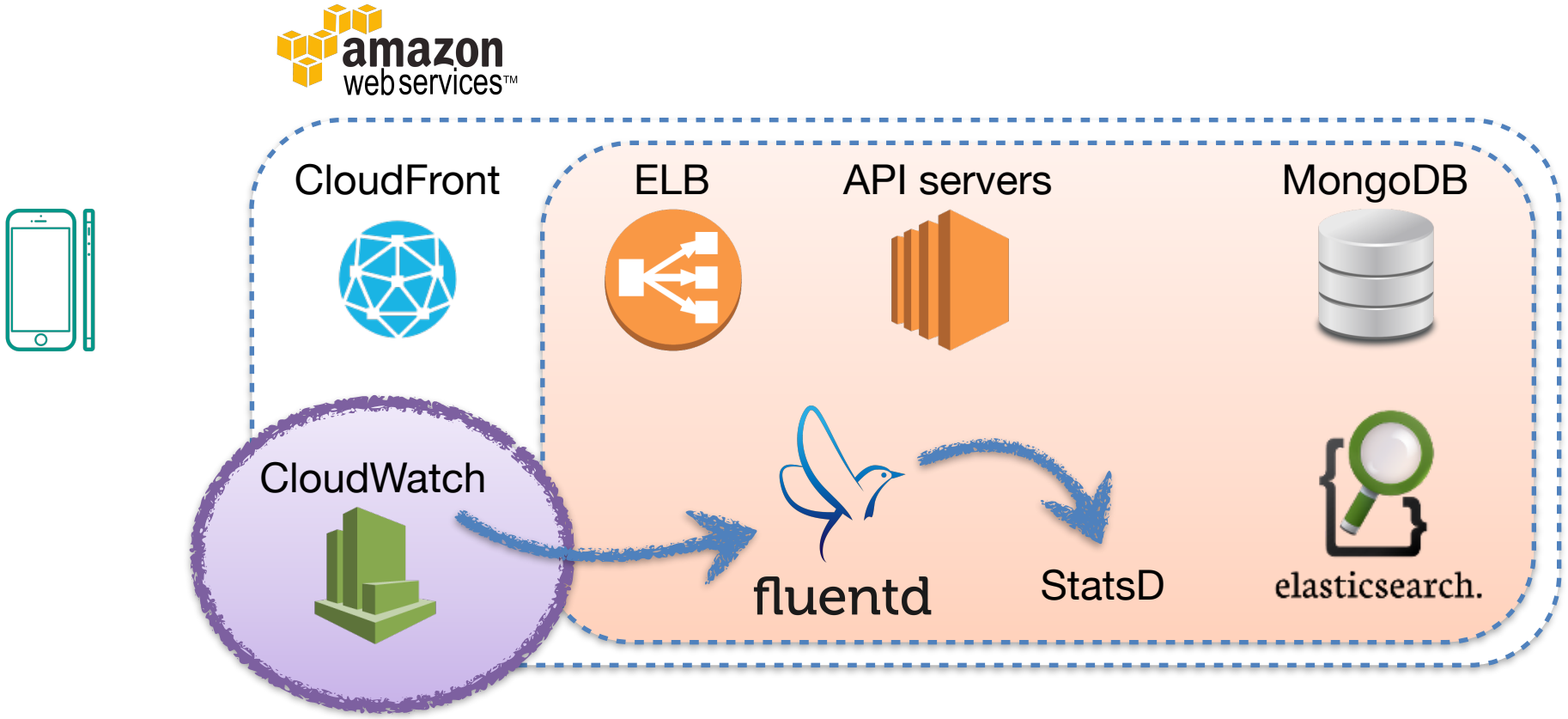
StatsD for long-term metrics

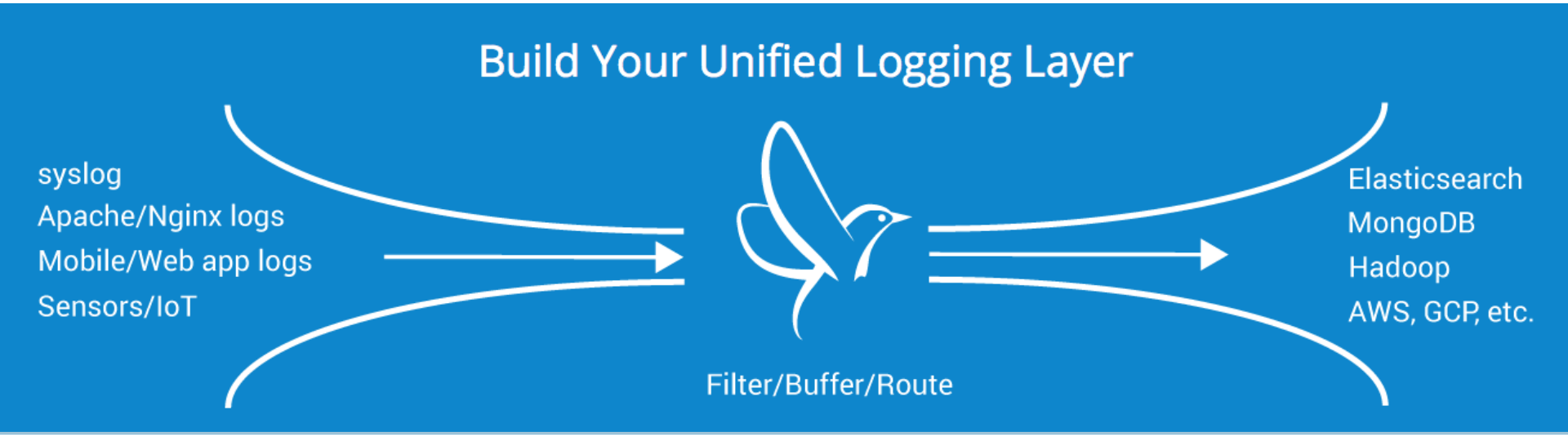


StatsD for long-term metrics



StatsD for long-term metrics



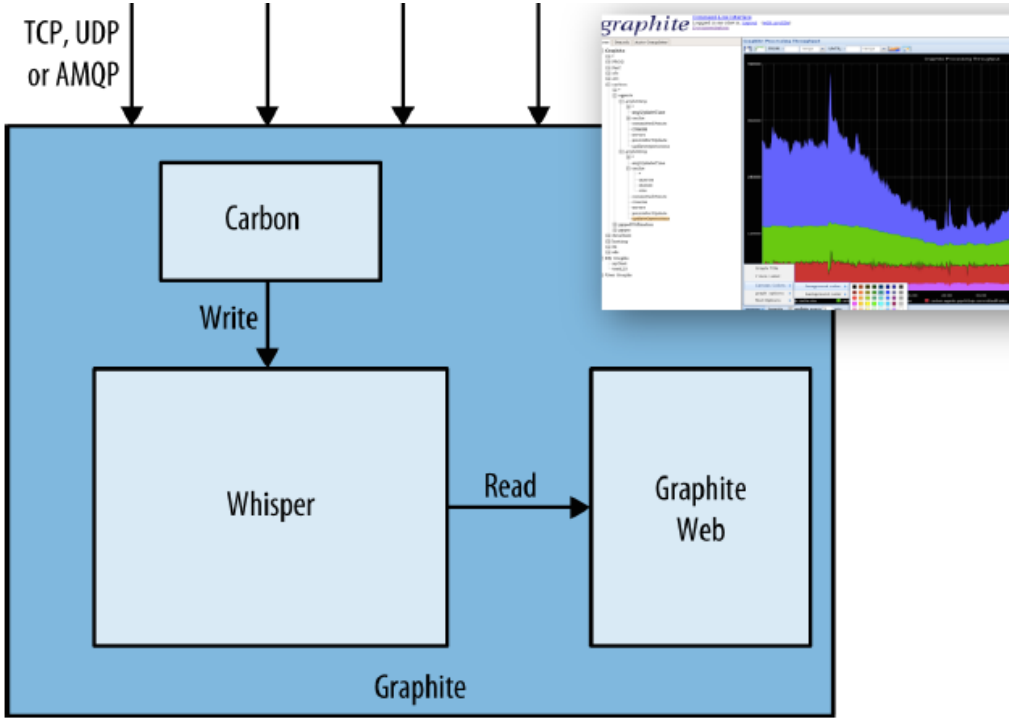


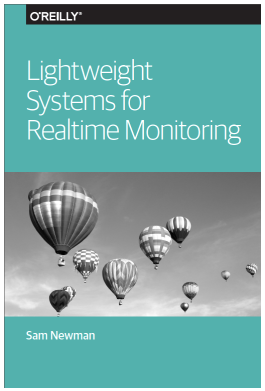
For more details:

Centralized logging and monitoring in Fluentd

曾書庭 @ Taipei.py — Feb 26, 2015

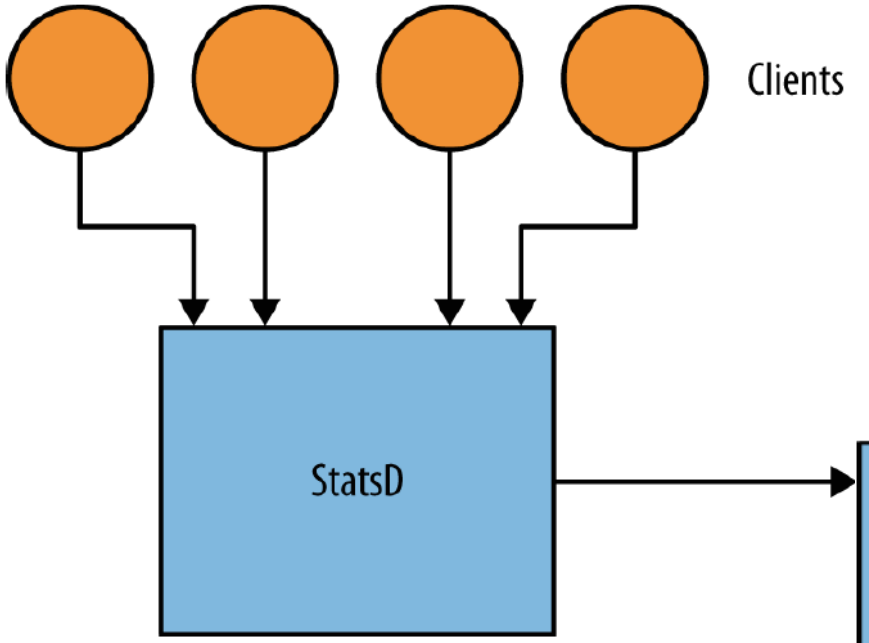
http://www.slideshare.net/suitingtseng/fluentd-49952996

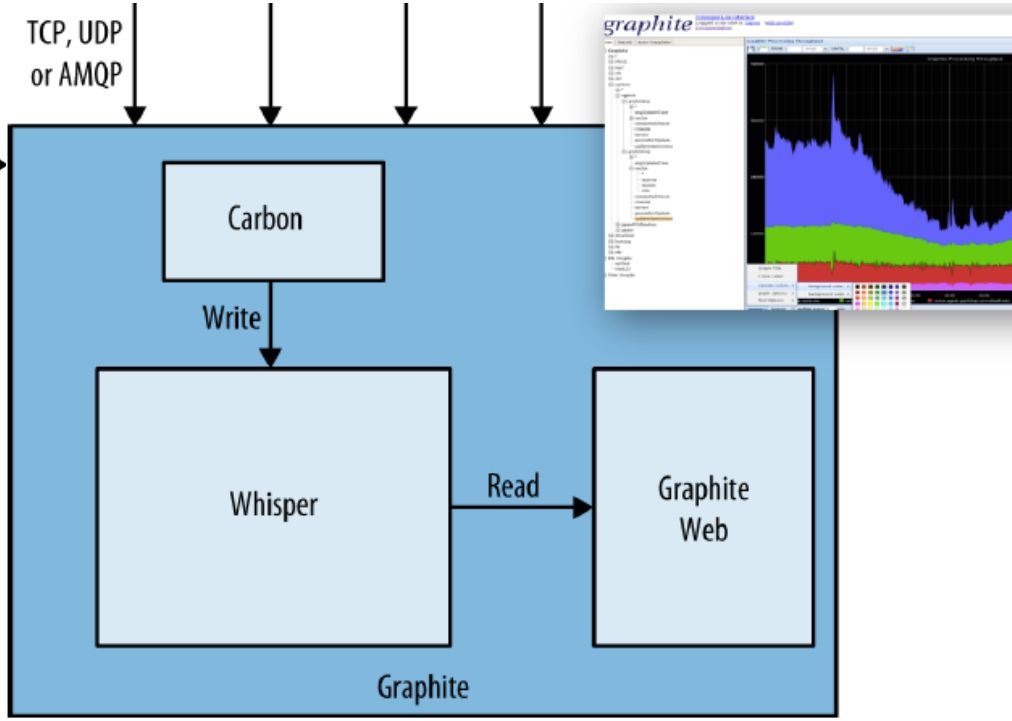


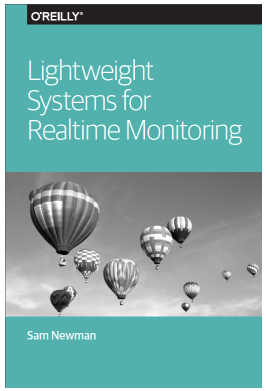


For more details:

http://www.oreilly.com/webops-perf/free/lightweight-systems.csp







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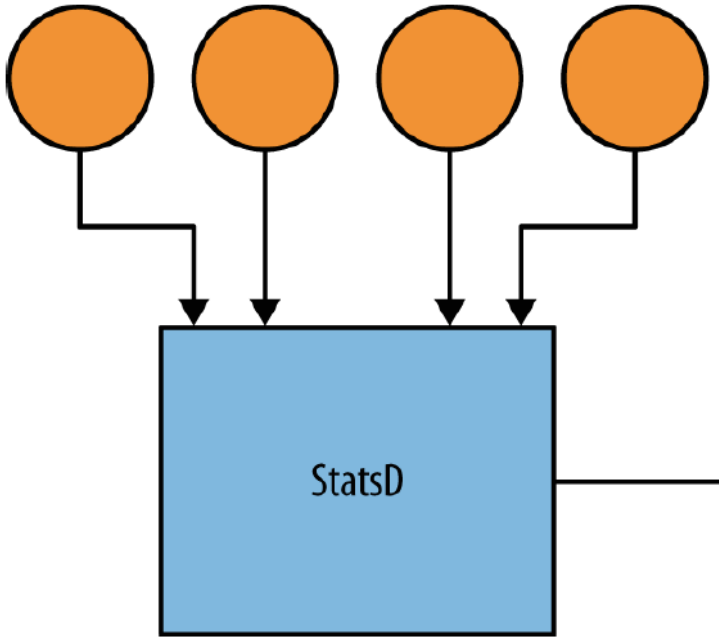

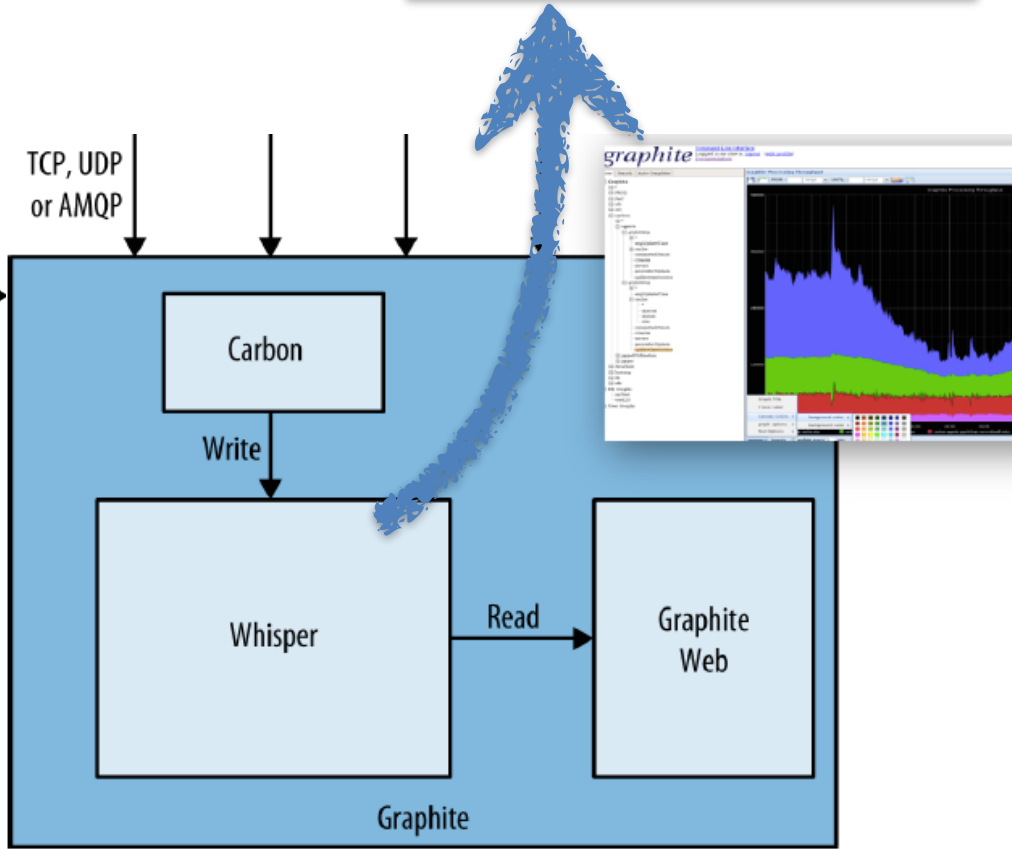

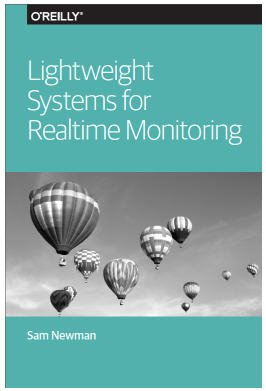

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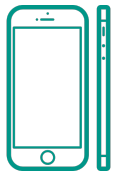
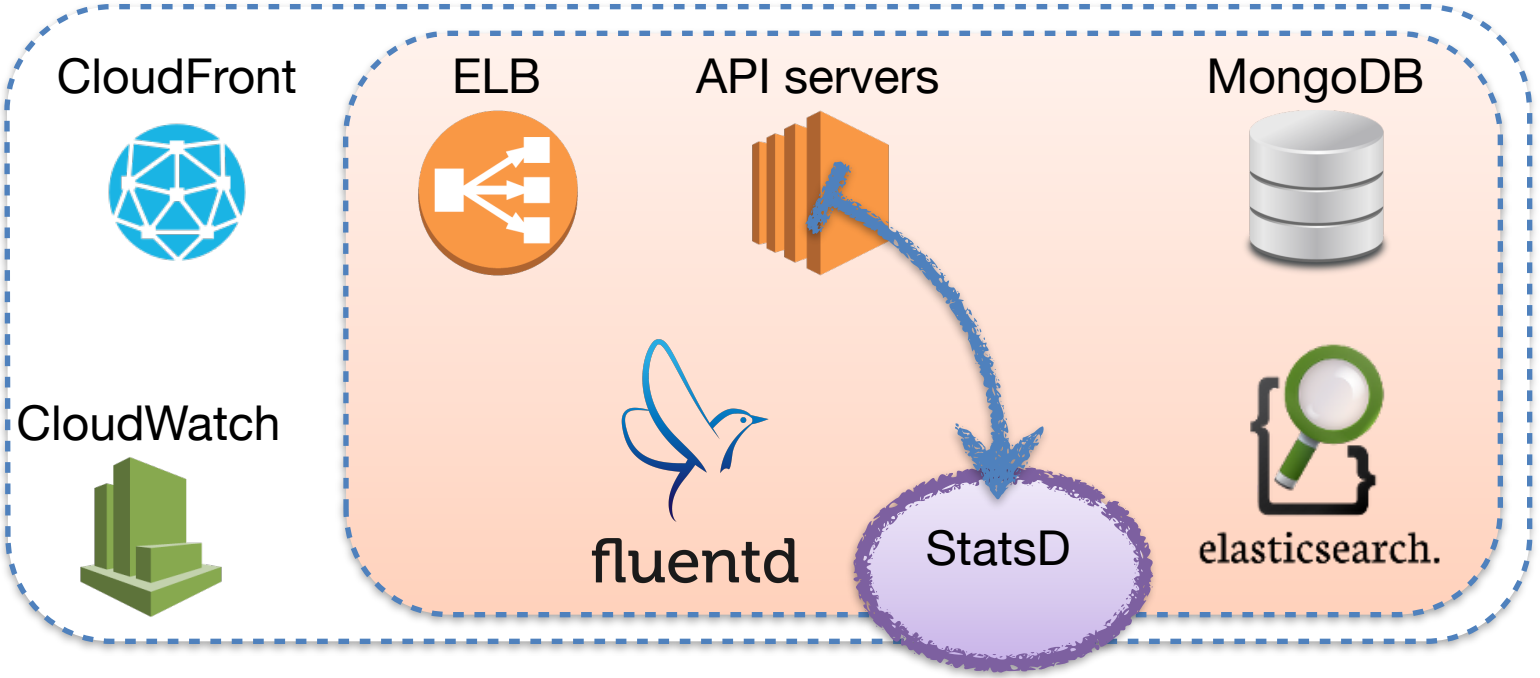
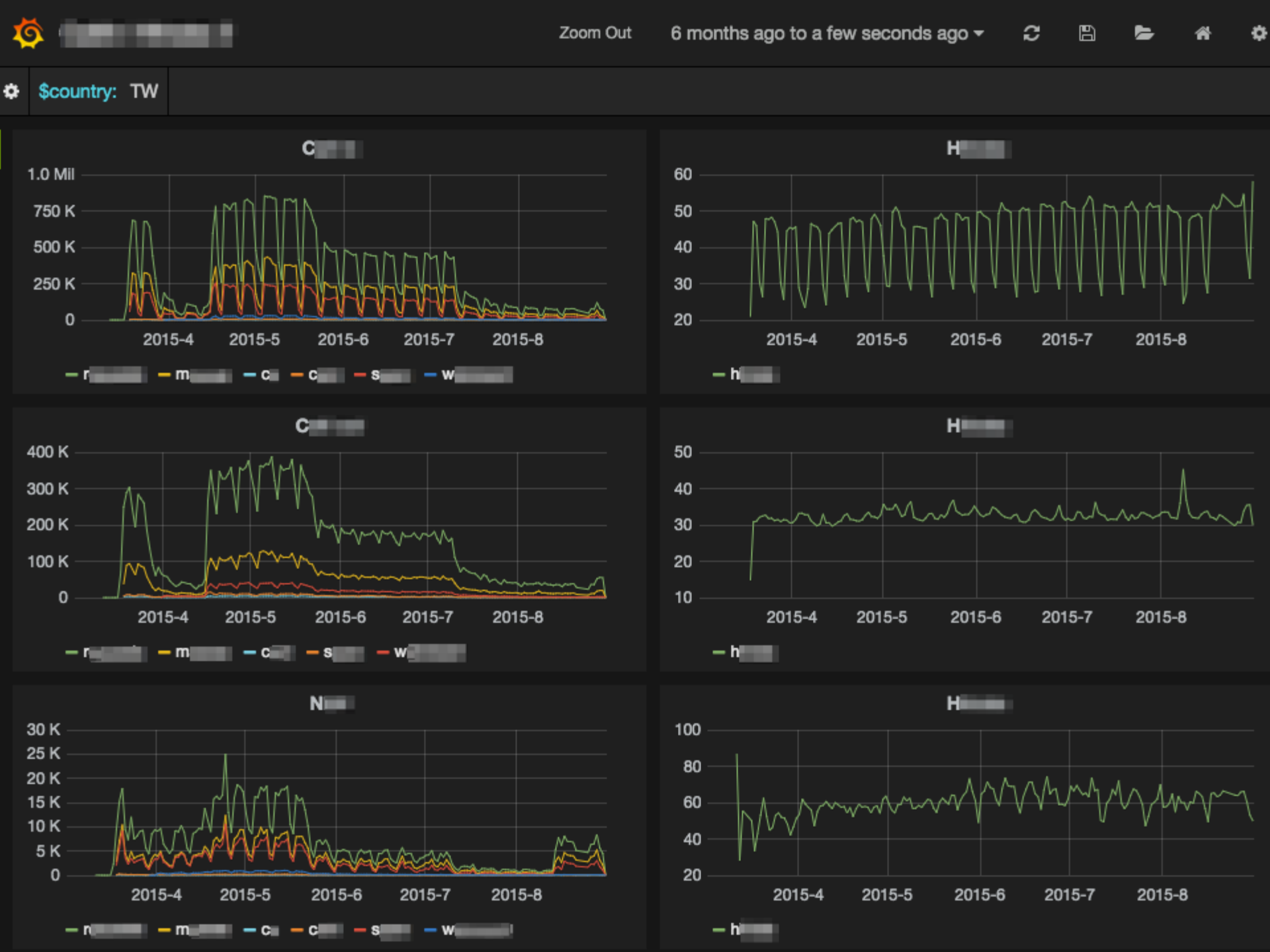
Application-specific metrics

- *gauges*
- *counters*
- *histograms*
- *meters & timers*






Zoom Out
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80

Metrics

首頁 議程 報名 贊助商 會場資訊 團隊 活動守則

Manage Servers On The Cloud with OpenSource Tools

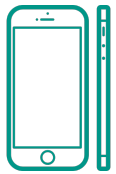
11:10 - 11:55

一個服務在功能完成上線後，另一個管理上的挑戰才開始，在這議程中，講者將講述幾個管理上線服務的挑戰，以及如何使用 OpenSource Tools 去管理 Server Log, 去記錄 API 的效率及呼叫狀況，及如何即時去覺異常狀況。

Tools used: logback, nosql, metrics, ganglia

Metrics

http://jcconf.tw/2014/manage-servers-on-the-cloud-with-opensource-tools.html



low-level metrics
profiling

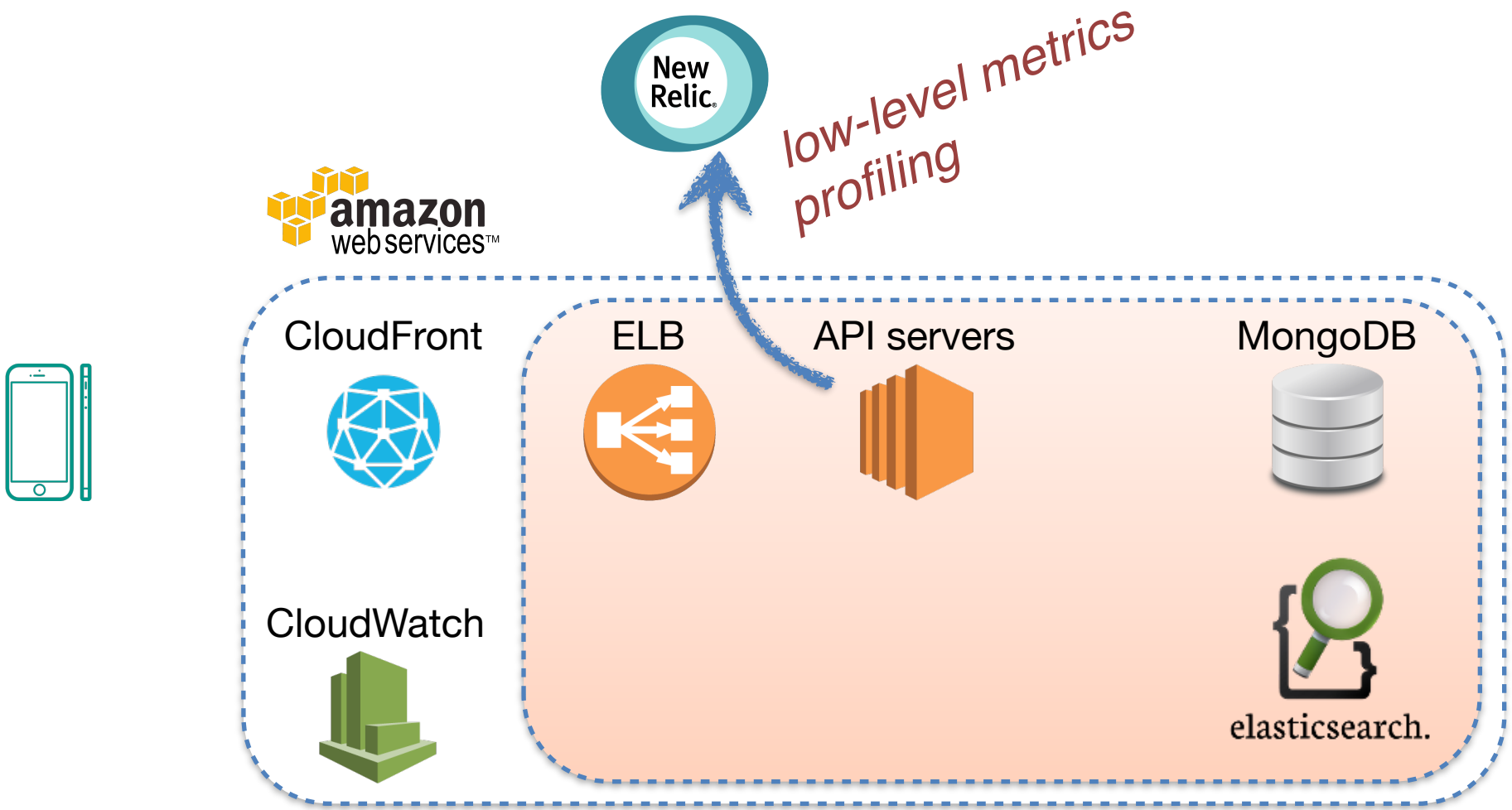
CloudFront

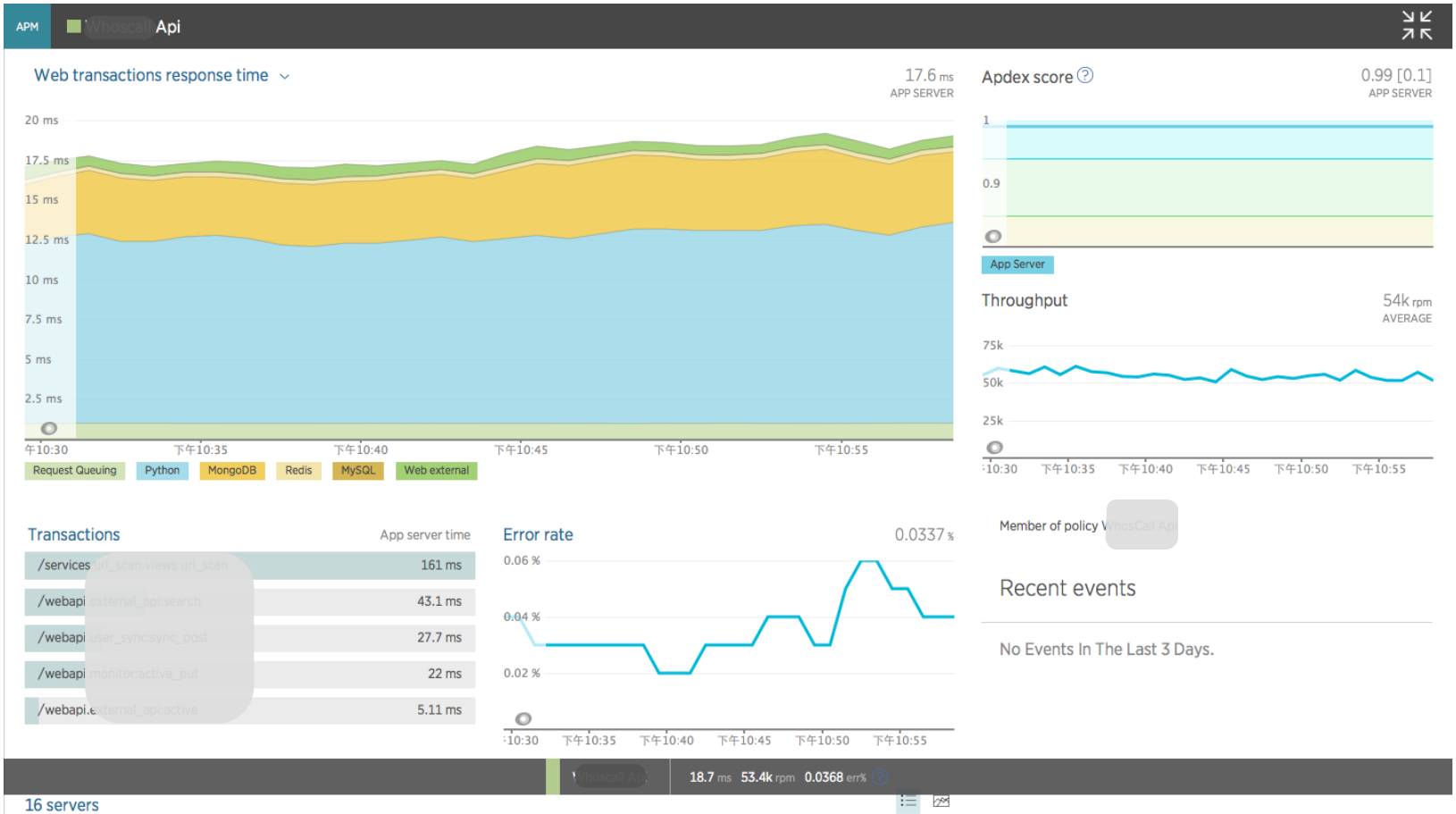
ELB

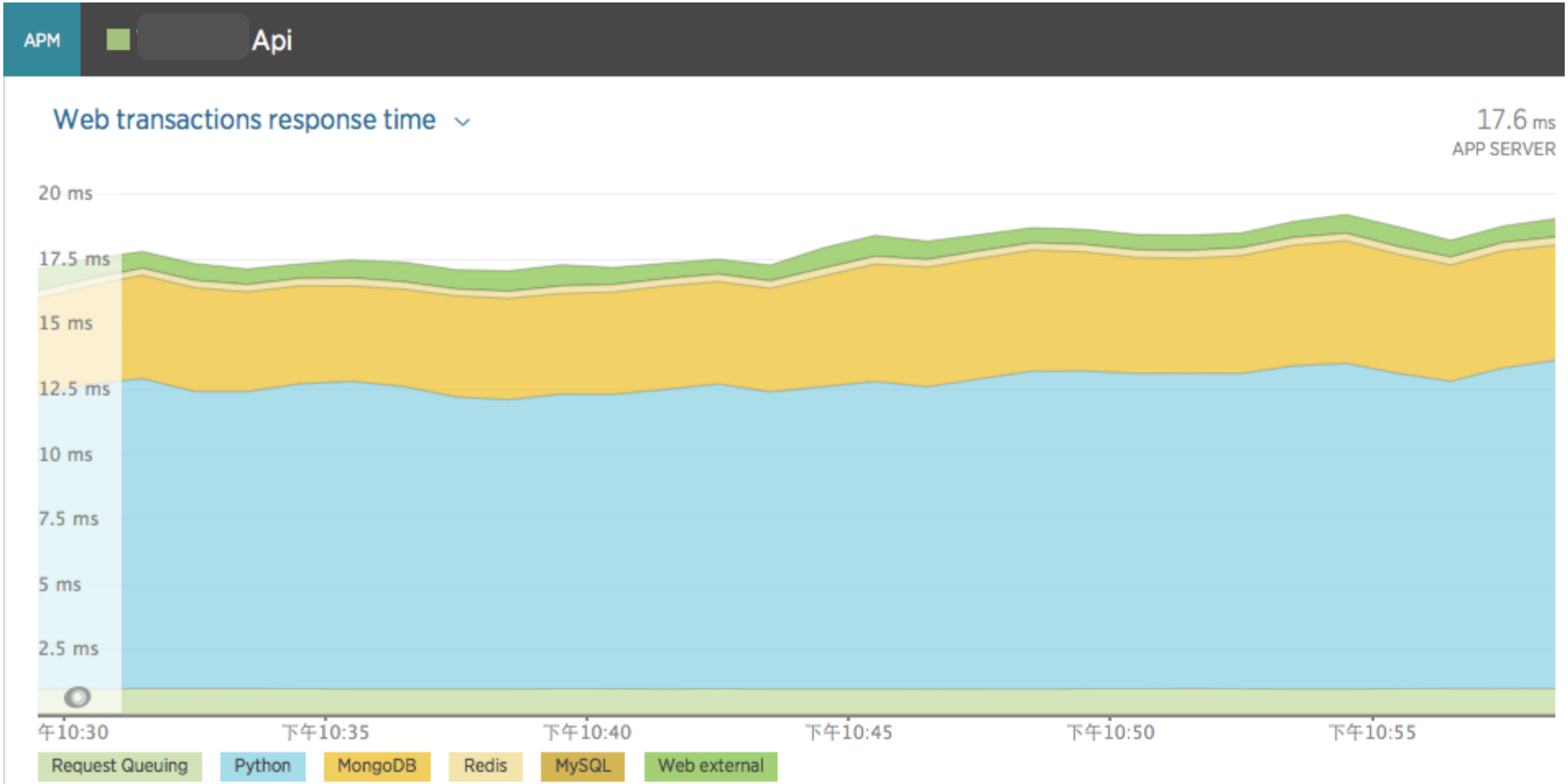
API servers

MongoDB

CloudWatch


New Relic.
low-level metrics
profiling
amazon
web services™
CloudFront
ELB
API servers
MongoDB
CloudWatch
elasticsearch.


APM
Api
Web transactions response time
17.6 ms
APP SERVER
20 ms
17.5 ms
15 ms
12.5 ms
10 ms
7.5 ms
5 ms
2.5 ms
下午10:30
下午10:35
下午10:40
下午10:45
下午10:50
下午10:55
Request Queuing
Python
MongoDB
Redis
MySQL
Web external
Apdex score
0.99 [0.1]
APP SERVER
1
0.9
App Server
Throughput
54k rpm
AVERAGE
75k
50k
25k
Transactions
App server time
/services
161 ms
/webapi
43.1 ms
/webapi
27.7 ms
/webapi
22 ms
/webapi.e
5.11 ms
Error rate
0.0337 %
0.06 %
0.04 %
0.02 %
Member of policy
Recent events
No Events In The Last 3 Days.
18.7 ms
53.4k rpm
0.0368 err%
16 servers
Server name
Apdex
Resp. time
Throughput
Error Rate
CPU usage
Memory
ip-10-0-30-153
2 app instances
0.99 0.1
18.1 ms
3,410 rpm
0.0323 %
41 %
430 MB
ip-10-0-37-149
2 app instances
0.99 0.1
16.8 ms
3,430 rpm
0.0370 %
44 %
420 MB
ip-10-0-37-150
2 app instances
0.99 0.1
17.4 ms
3,380 rpm
0.0365 %
39 %
410 MB
ip-10-0-37-151
2 app instances
1.00 0.1
16.1 ms
3,630 rpm
0.0414 %
42 %
420 MB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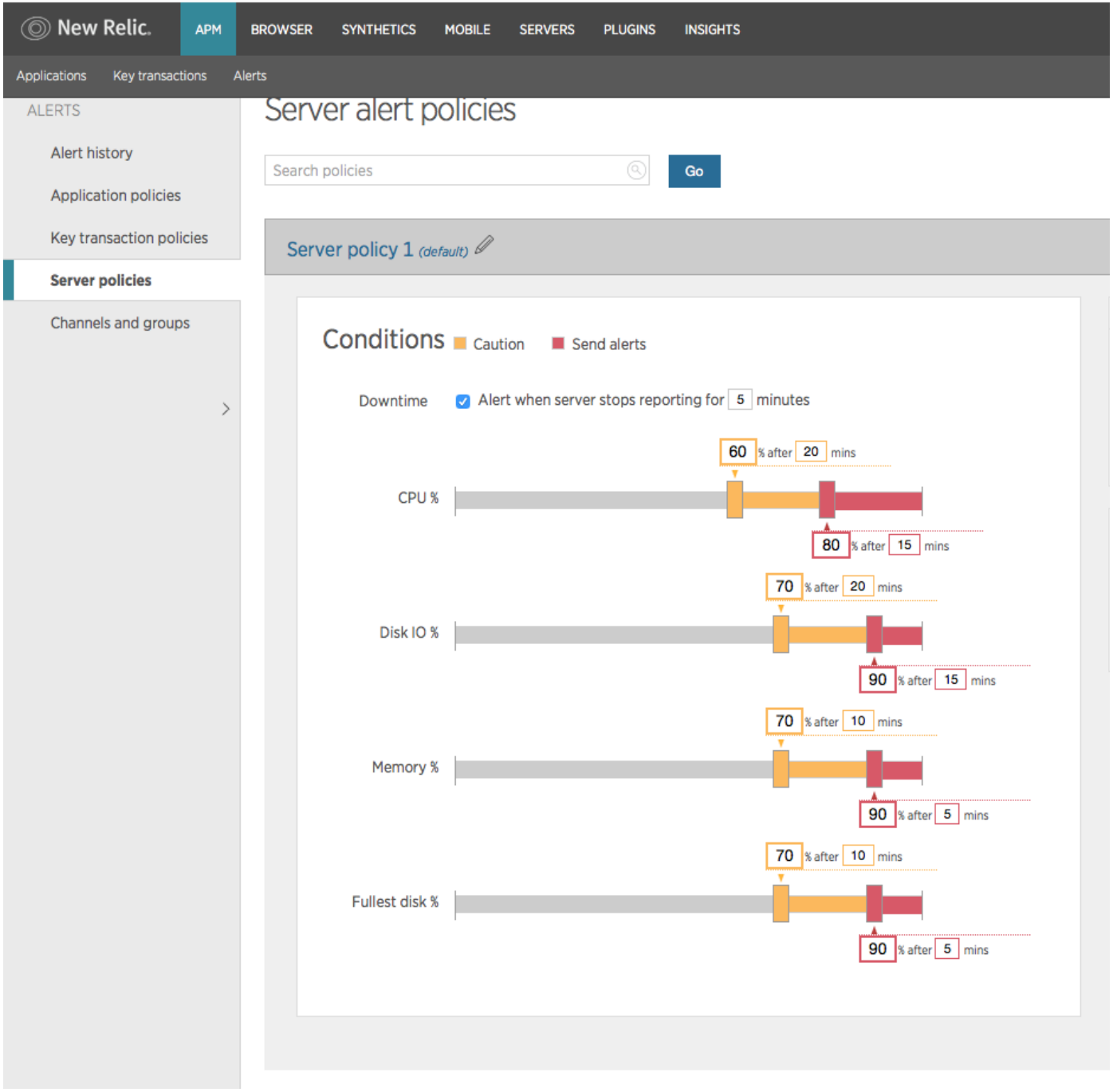
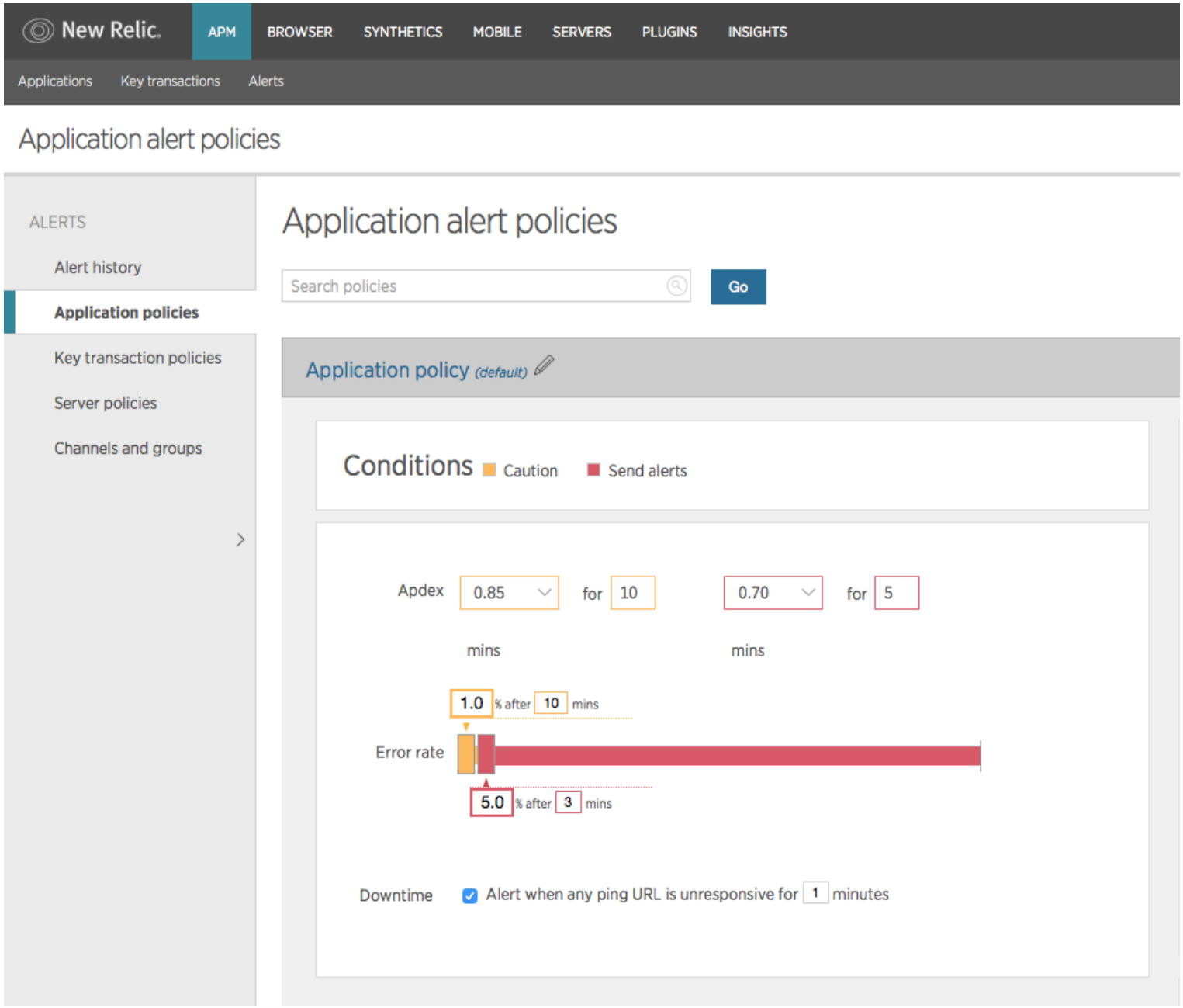

New Relic.
APM
BROWSER
SYNTHETICS
MOBILE
SERVERS
PLUGINS
INSIGHTS
Applications
Key transactions
Alerts
ALERTS
Alert history
Application policies
Key transaction policies
Server policies
Channels and groups
Server alert policies
Search policies
Go
Server policy 1 (default)
Conditions
Caution
Send alerts
Downtime
Alert when server stops reporting for 5 minutes
CPU %
60 % after 20 mins
80 % after 15 mins
Disk IO %
70 % after 20 mins
90 % after 15 mins
Memory %
70 % after 10 mins
90 % after 5 mins
Fullest disk %
70 % after 10 mins
90 % after 5 mins


New Relic.
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Application alert policies
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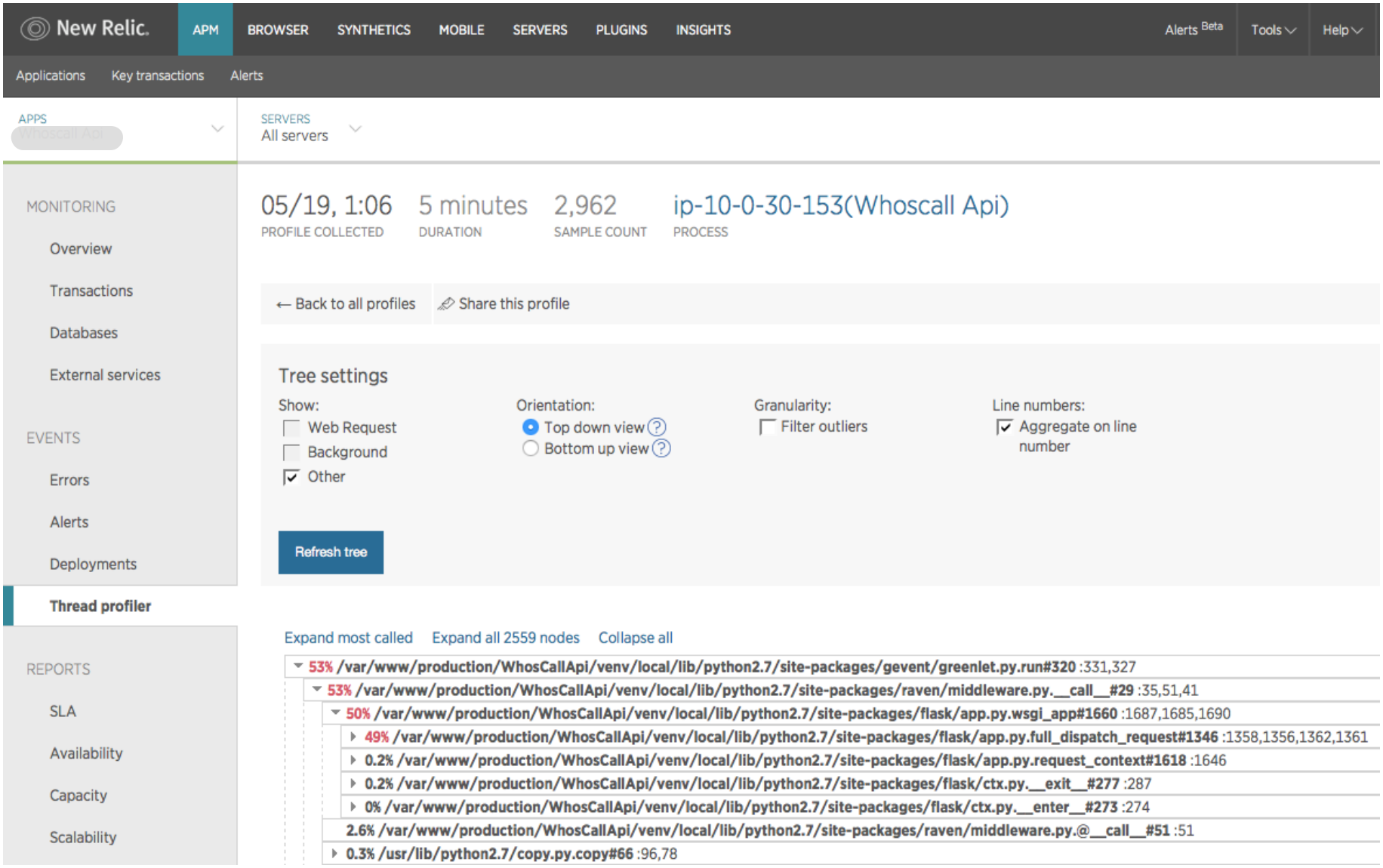
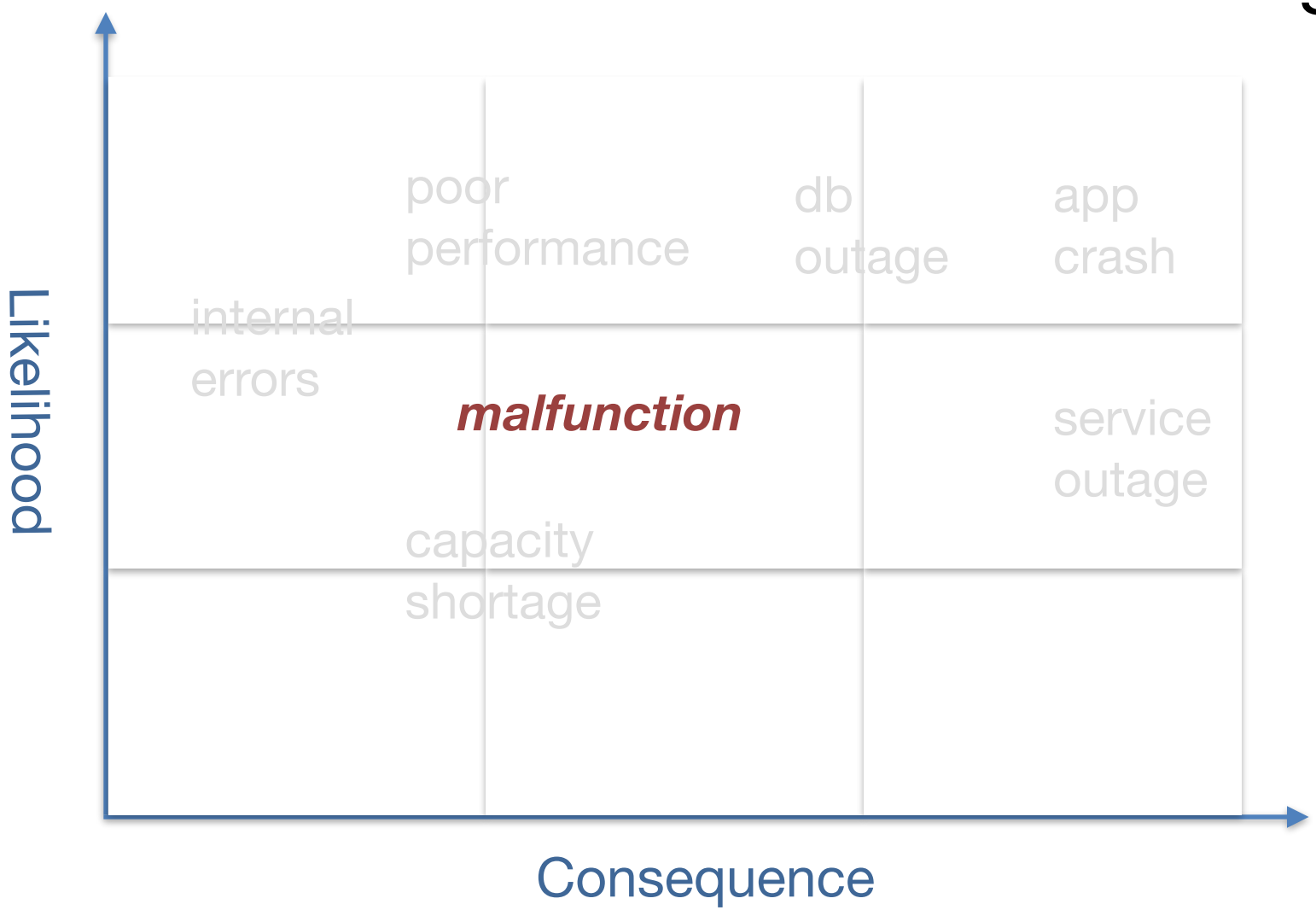
Alert history
Application policies
Key transaction policies
Server policies
Channels and groups
Application alert policies
Search policies
Go
Application policy (default)
Conditions
Caution
Send alerts
Apdex
0.85
for
10
mins
0.70
for
5
mins
1.0
% after
10
mins
Error rate
5.0
% after
3
mins
Downtime
Alert when any ping URL is unresponsive for
1
minutes


New Relic.
APM
BROWSER
SYNTHETICS
MOBILE
SERVERS
PLUGINS
INSIGHTS
Alerts Beta
Tools
Help
Applications
Key transactions
Alerts
APPS
SERVERS
All servers
MONITORING
Overview
Transactions
Databases
External services
EVENTS
Errors
Alerts
Deployments
Thread profiler
REPORTS
SLA
Availability
Capacity
Scalability
05/19, 1:06
PROFILE COLLECTED
5 minutes
DURATION
2,962
SAMPLE COUNT
ip-10-0-30-153(Whoscall Api)
PROCESS
← Back to all profiles
Share this profile
Tree settings
Show:
Web Request
Background
Other
Orientation:
Top down view
Bottom up view
Granularity:
Filter outliers
Line numbers:
Aggregate on line number
Refresh tree
Expand most called
Expand all 2559 nodes
Collapse all
53% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/gevent/greenlet.py.run#320 :331,327
53% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/raven/middleware.py.__call__#29 :35,51,41
50% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/flask/app.py.wsgi_app#1660 :1687,1685,1690
49% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/flask/app.py.full_dispatch_request#1346 :1358,1356,1362,1361
0.2% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/flask/app.py.request_context#1618 :1646
0.2% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/flask/ctx.py.__exit__#277 :287
0% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/flask/ctx.py.__enter__#273 :274
2.6% /var/www/production/WhosCallApi/venv/local/lib/python2.7/site-packages/raven/middleware.py.@__call__#51 :51
0.3% /usr/lib/python2.7/copy.py.copy#66 :96,78

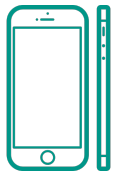
Risk register

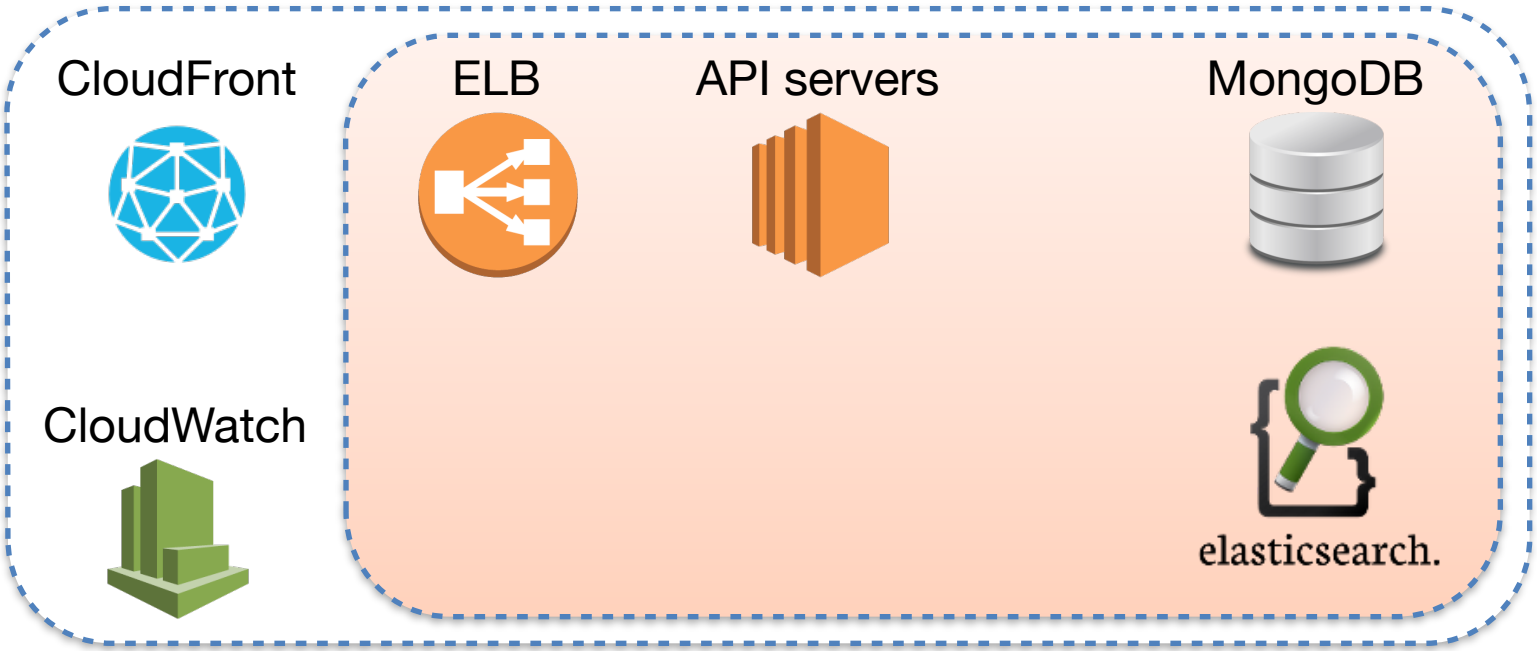


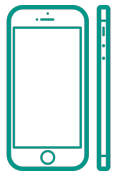
Risk register

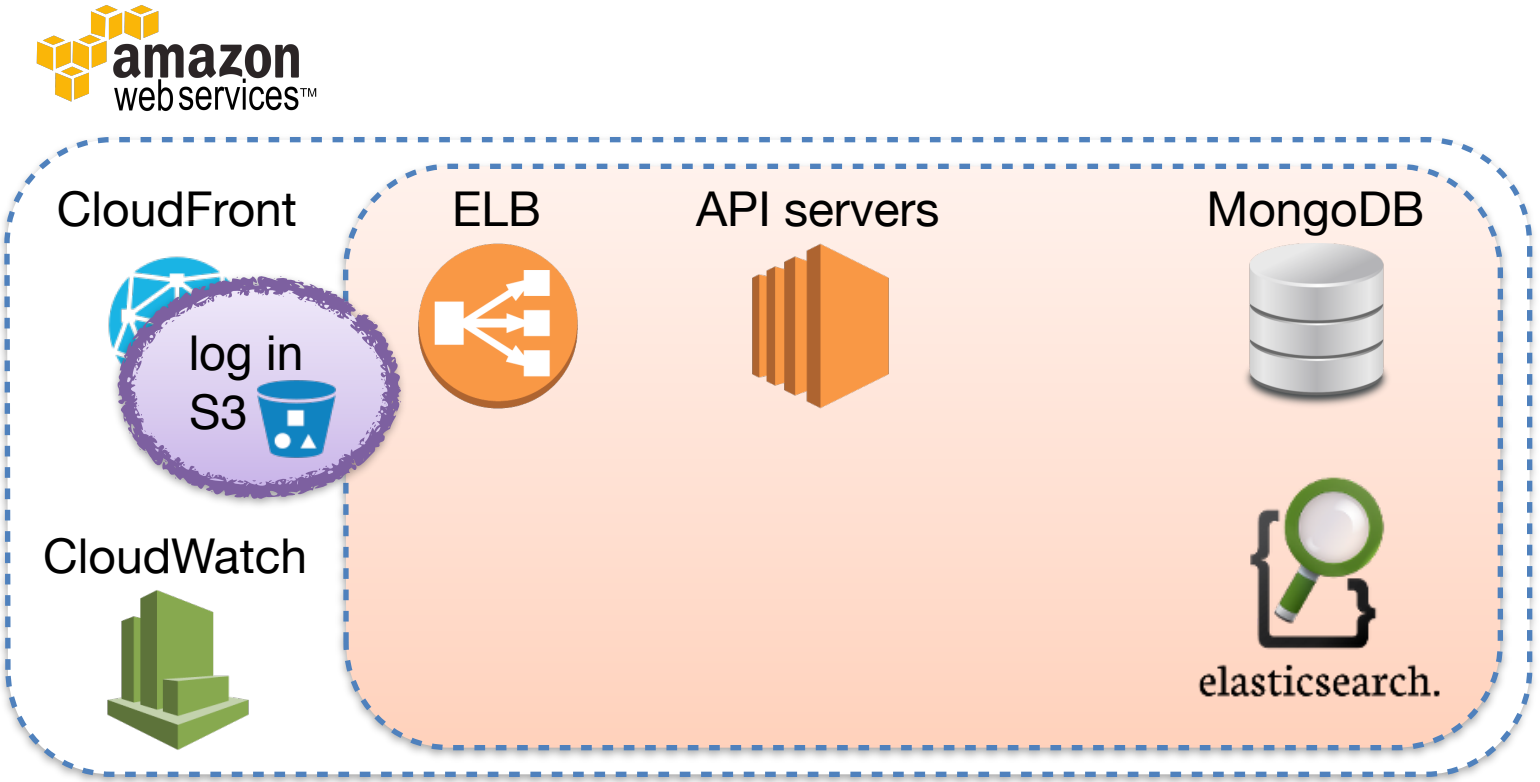
Diagnosis:

- logging
- patterns
- drill down analysis




amazon
web services™
CloudFront
ELB
API servers
MongoDB
CloudWatch
elasticsearch.




amazon
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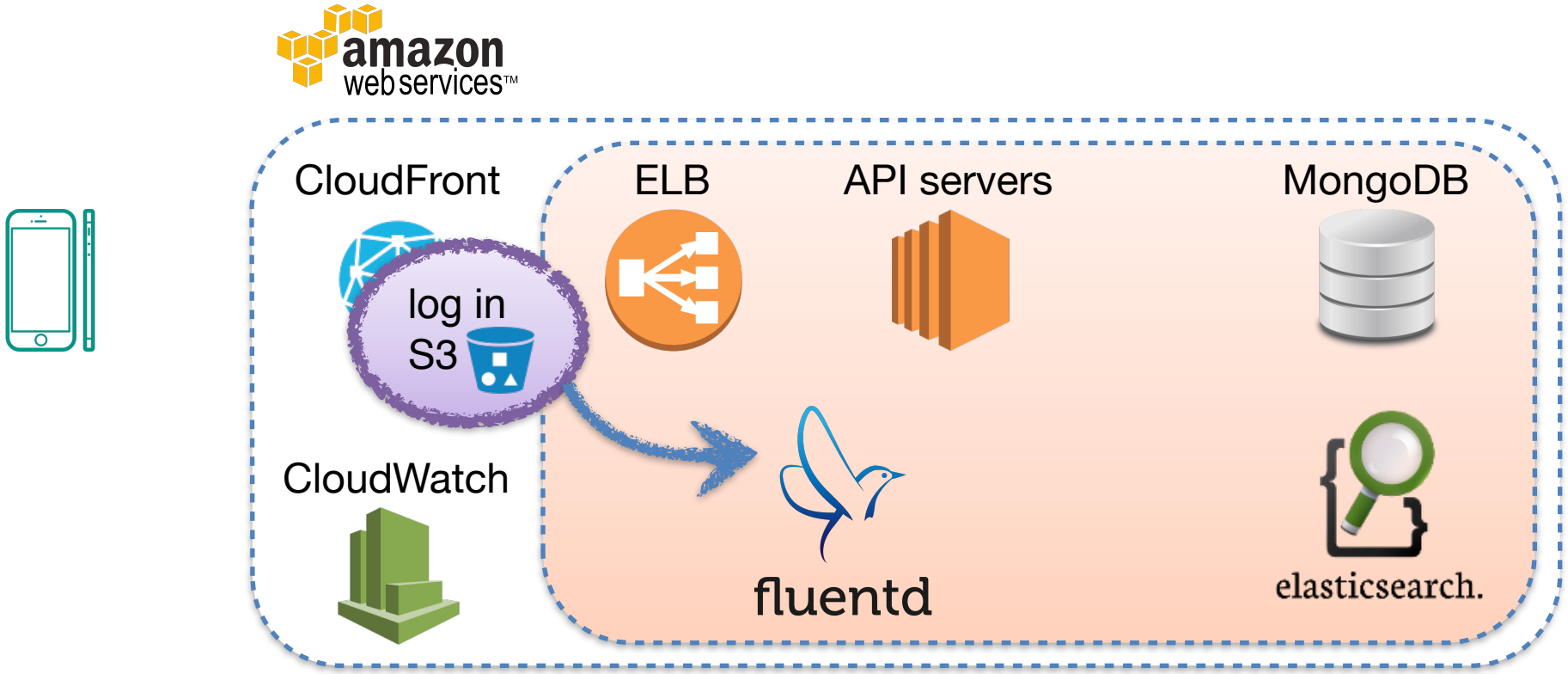
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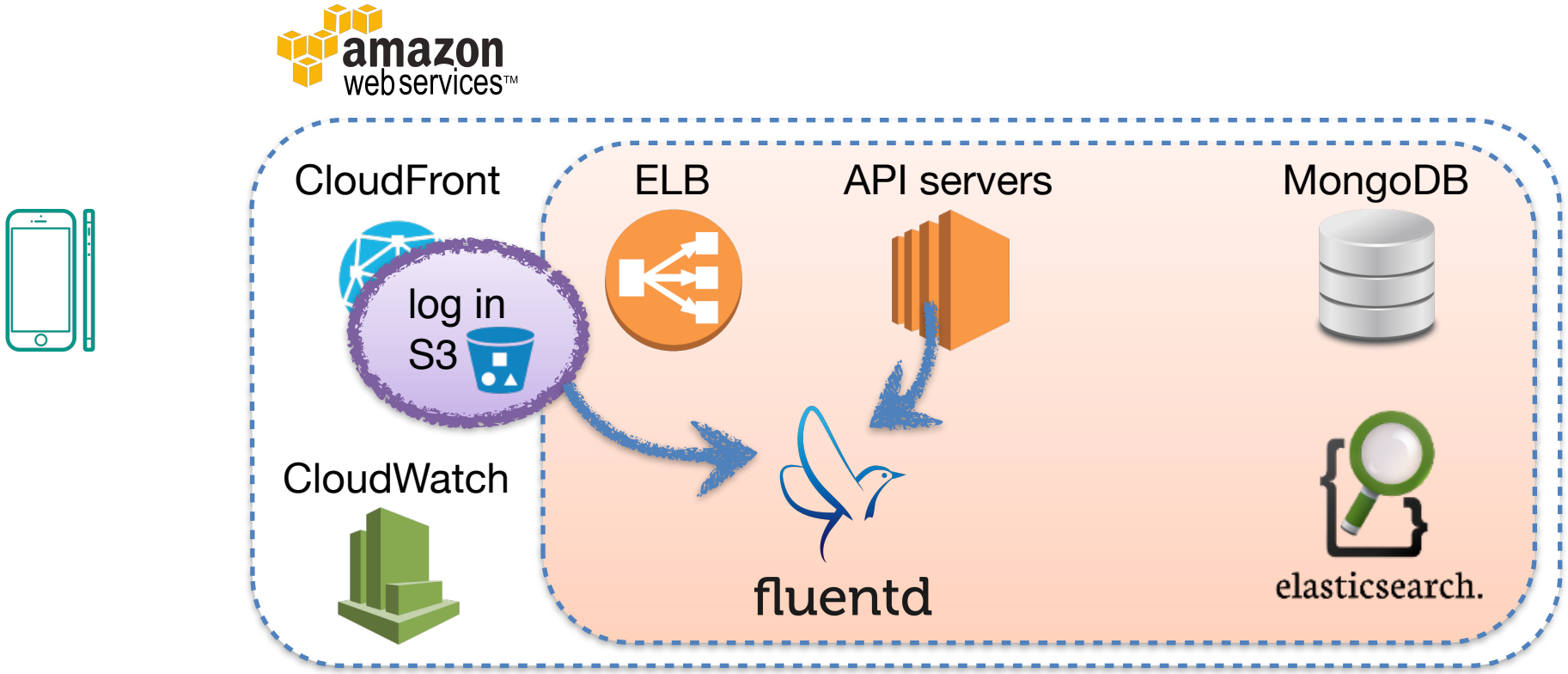
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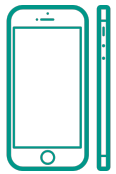

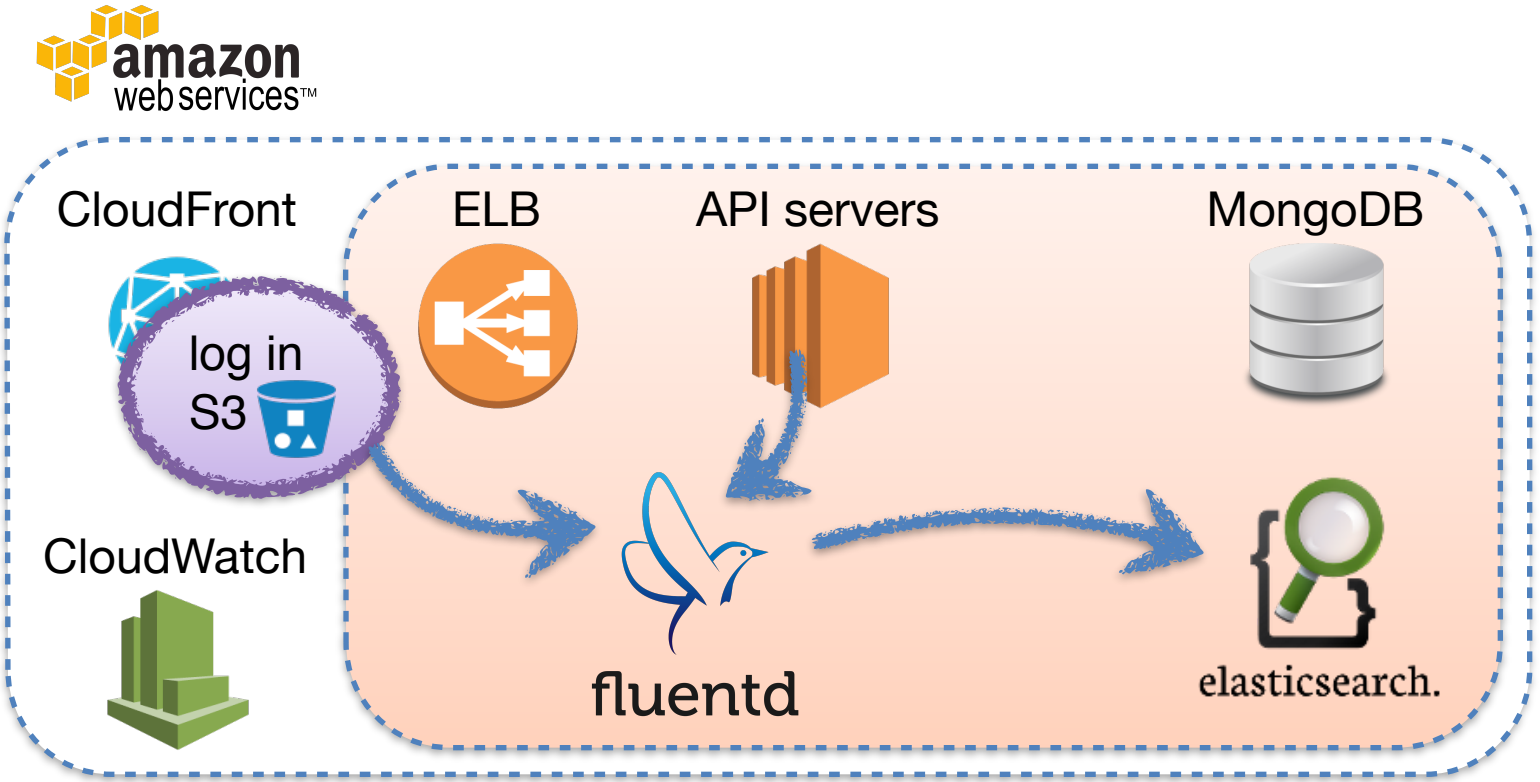
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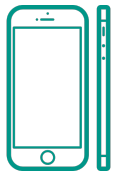

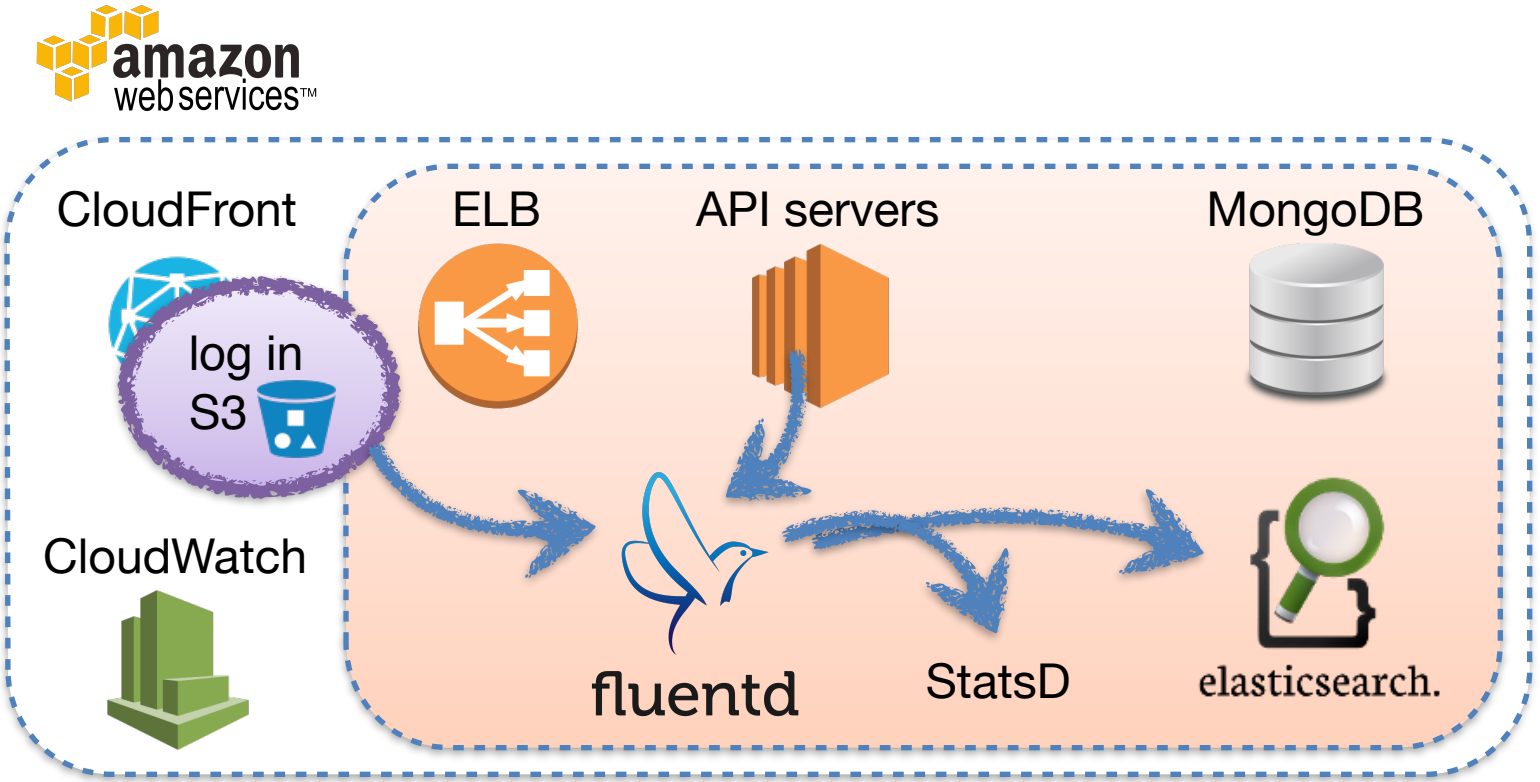
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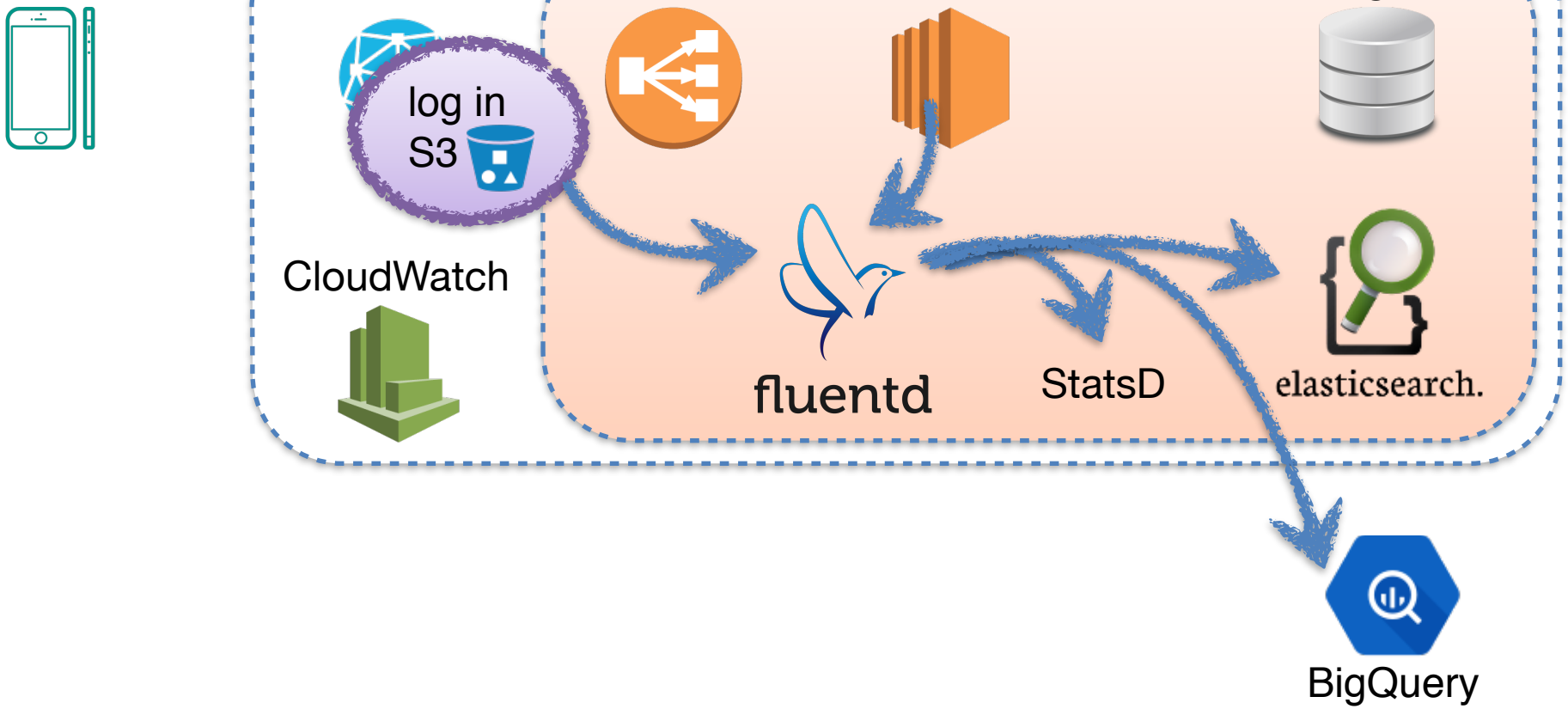
amazon
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log in
S3
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fluentd
StatsD
elasticsearch.
BigQuery

2015 台灣資料科學愛好者年會

Aug 23, 2015

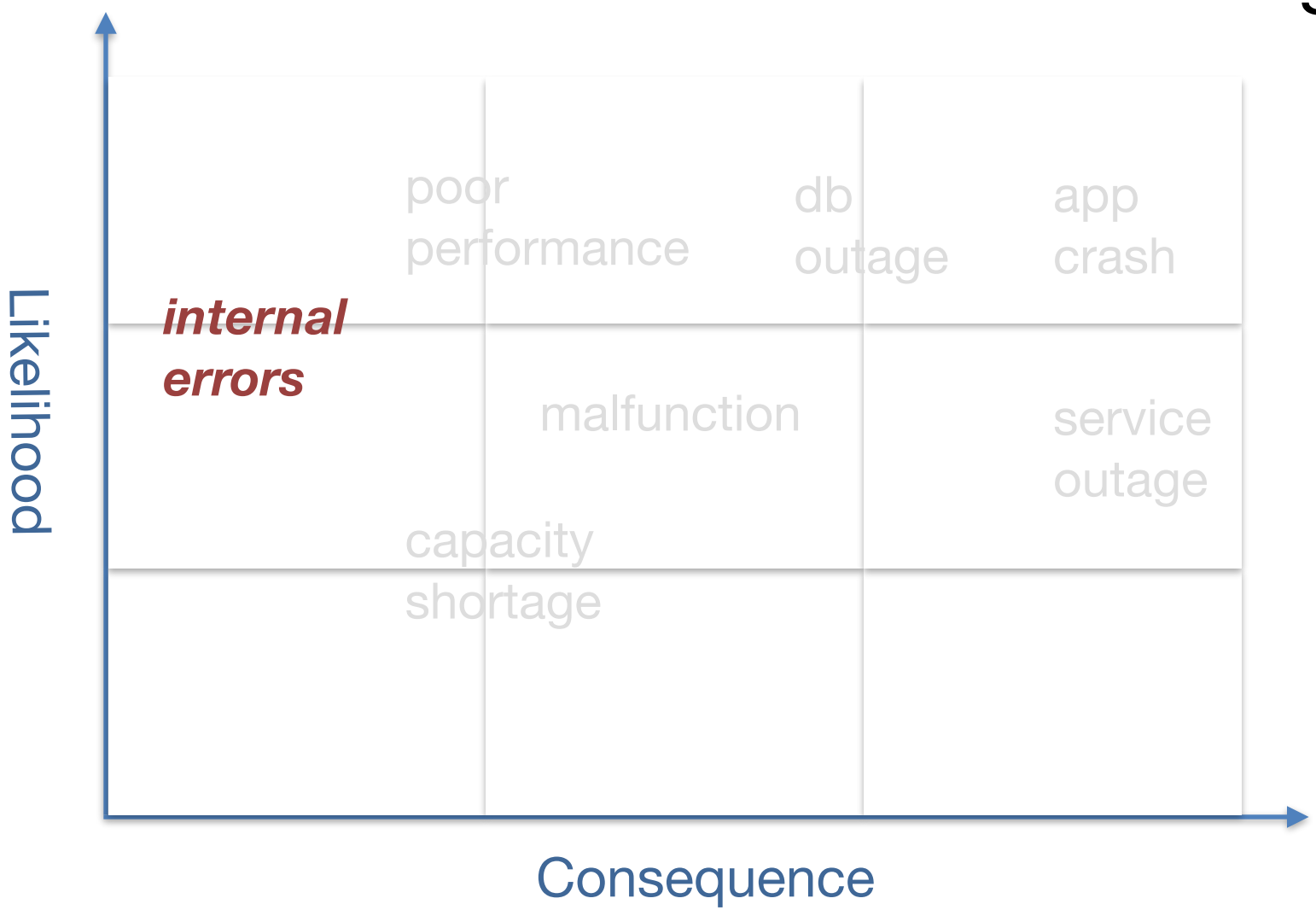
使用 Elasticsearch 及 Kibana 進行巨量資料搜尋及視覺化

場次主持: 趙國仁 / 東森科技、隆中網絡大數據顧問

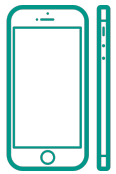
曾書庭 / Gogolook Data Engineer

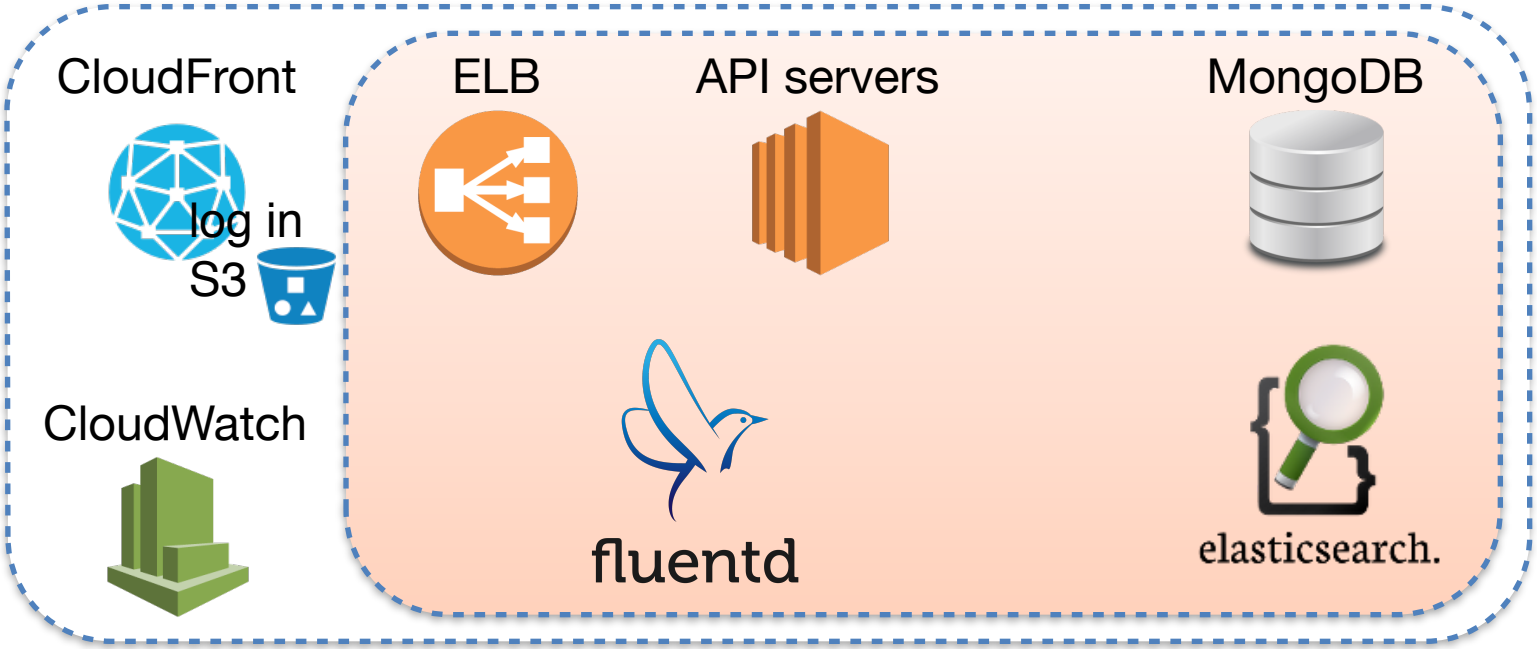
http://www.slideshare.net/tw_dsconf/elasticsearch-kibana

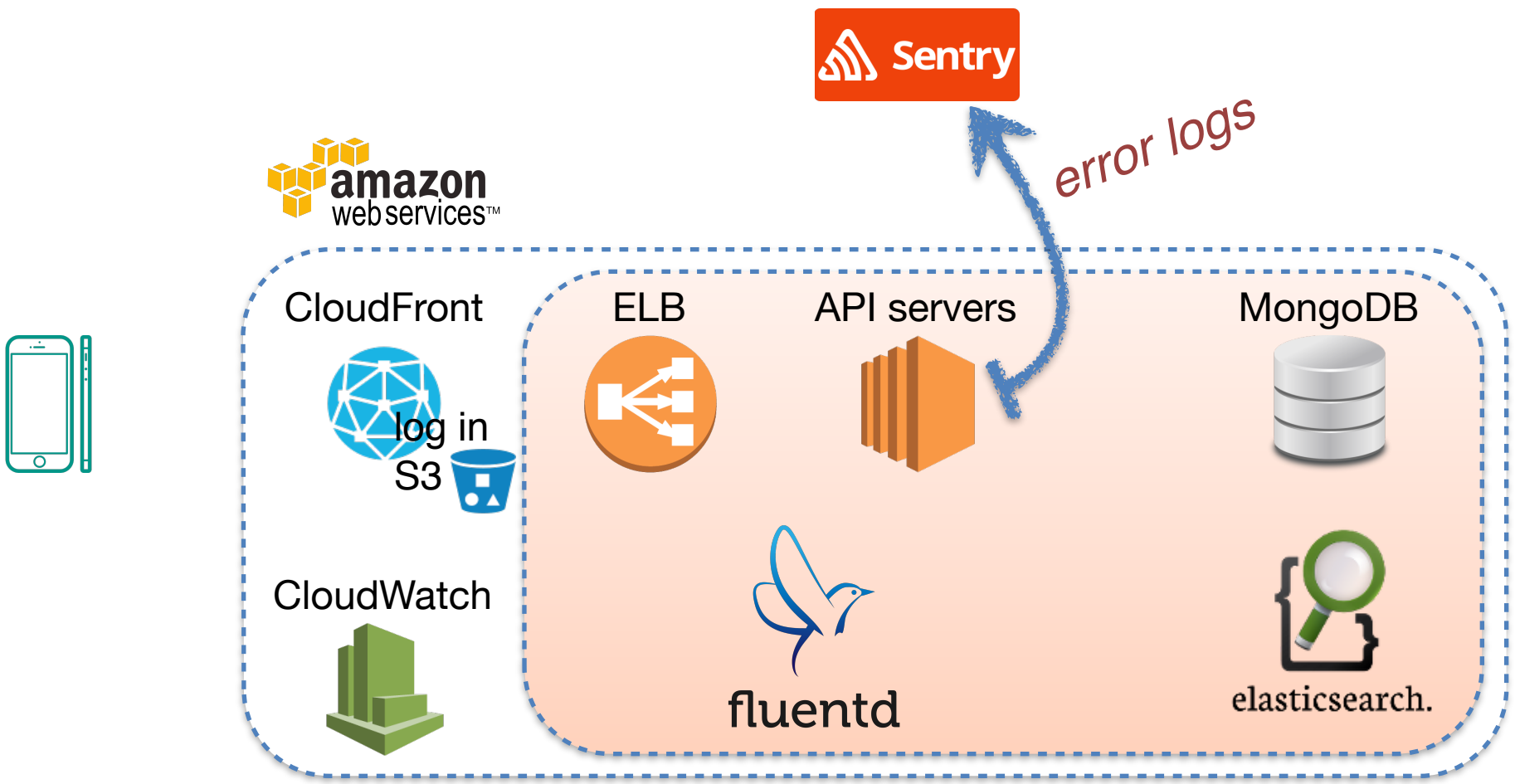
Risk register

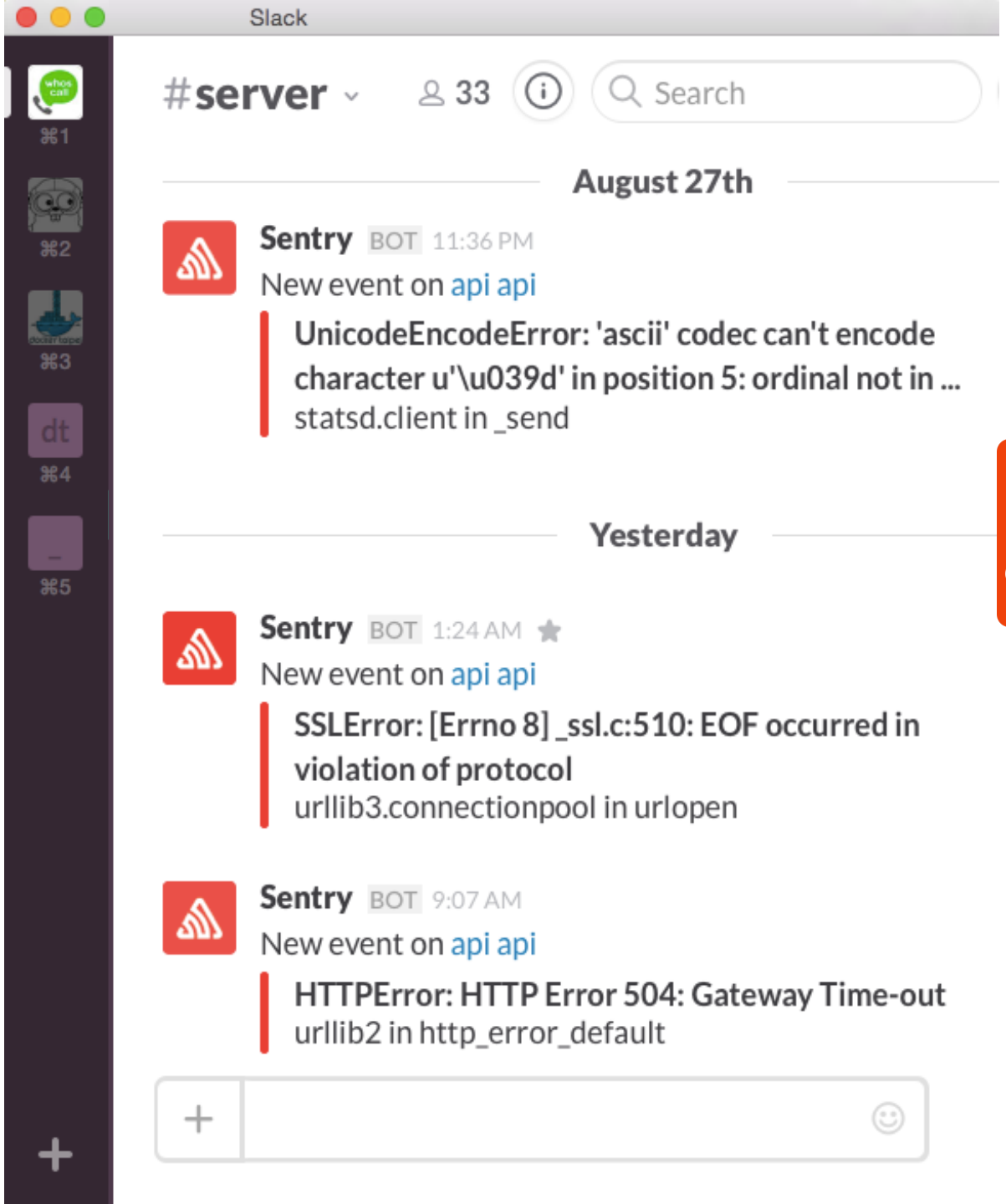


Risk register

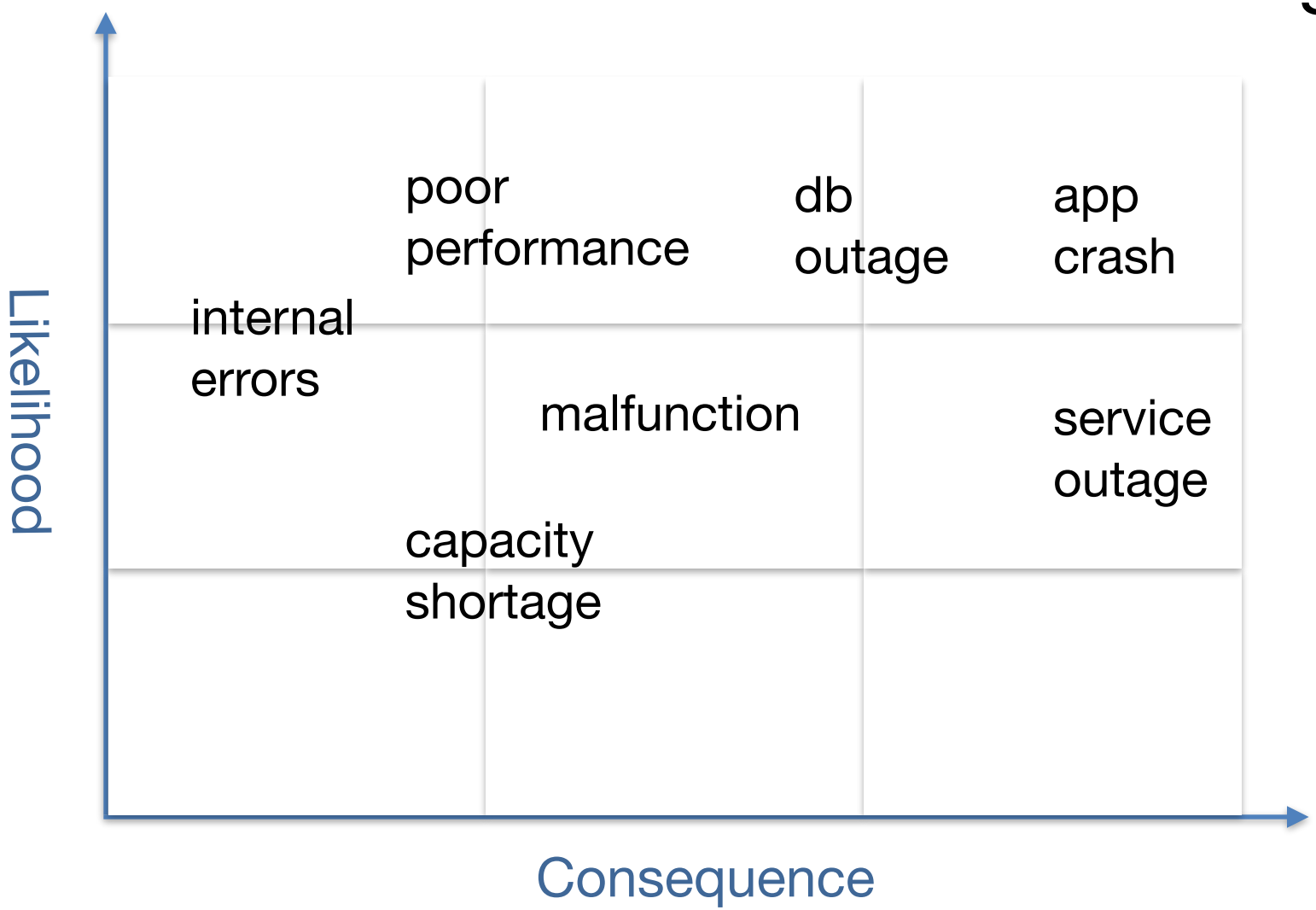



amazon
web services™
error logs
CloudFront
log in
S3
CloudWatch
ELB
API servers
MongoDB
fluentd
elasticsearch.


Sentry
error logs
amazon
web services™
CloudFront
log in
S3
CloudWatch
ELB
API servers
MongoDB
fluentd
elasticsearch.


Slack
#server
33
Search
August 27th
Sentry BOT 11:36 PM
New event on api api
UnicodeEncodeError: 'ascii' codec can't encode character u'\u039d' in position 5: ordinal not in ...
statsd.client in _send
Yesterday
Sentry BOT 1:24 AM
New event on api api
SSLError: [Errno 8] _ssl.c:510: EOF occurred in violation of protocol
urllib3.connectionpool in urlopen
Sentry BOT 9:07 AM
New event on api api
HTTPError: HTTP Error 504: Gateway Time-out
urllib2 in http_error_default

Risk register

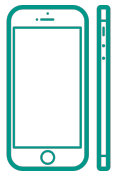


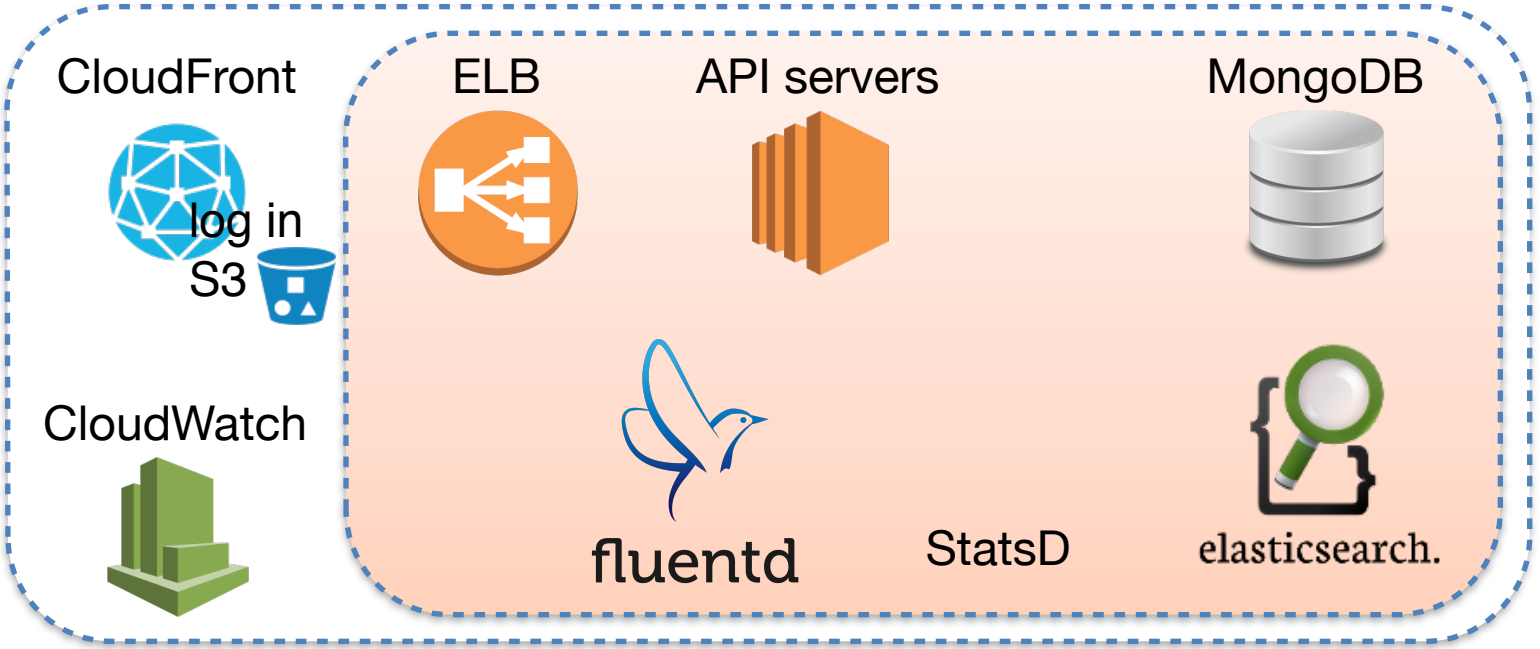

New
Relic.


Sentry


mongoDB
Cloud Manager

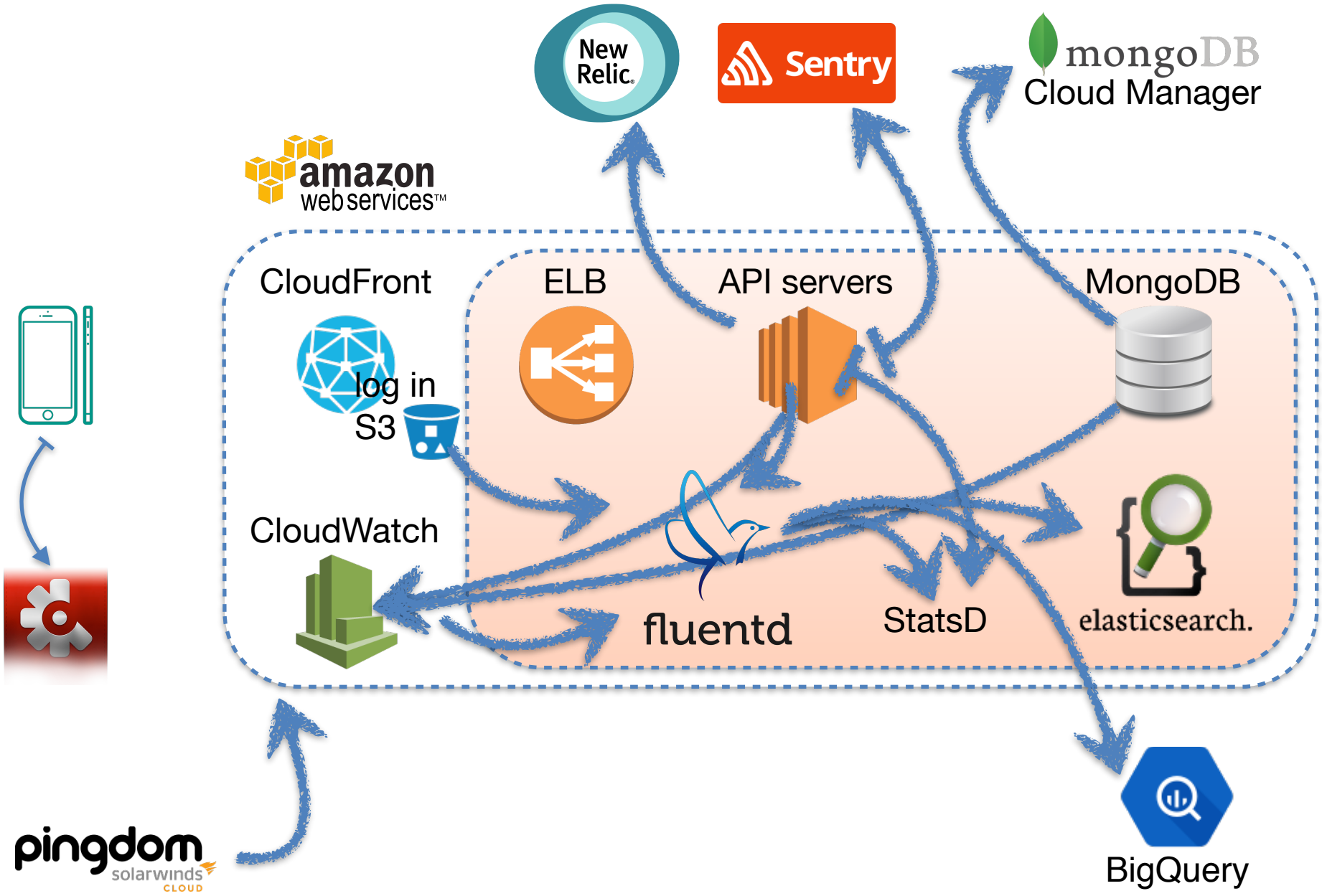

amazon
web services™




CloudFront
log in
S3
CloudWatch
ELB
API servers
MongoDB
fluentd
StatsD
elasticsearch.


BigQuery


pingdom
solarwinds
CLOUD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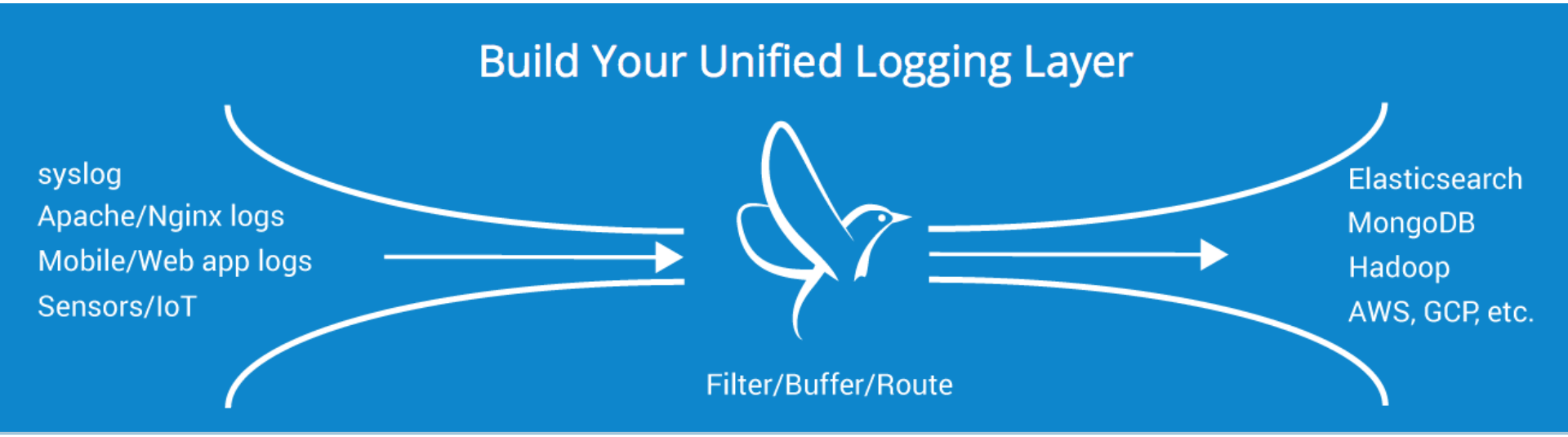
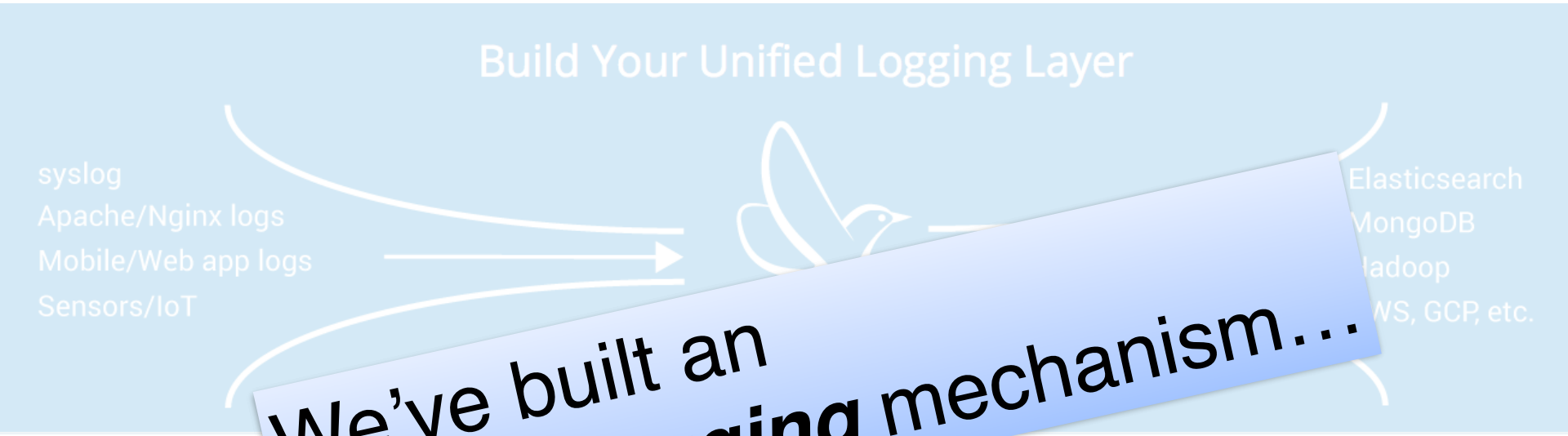


For more details:

Centralized logging and monitoring in Fluentd

Taipei.py — Feb 26, 2015

http://www.slideshare.net/suitingtseng/fluentd-49952996



We've built an
unified logging mechanism…

For more details:

Centralized logging and monitoring in Fluentd

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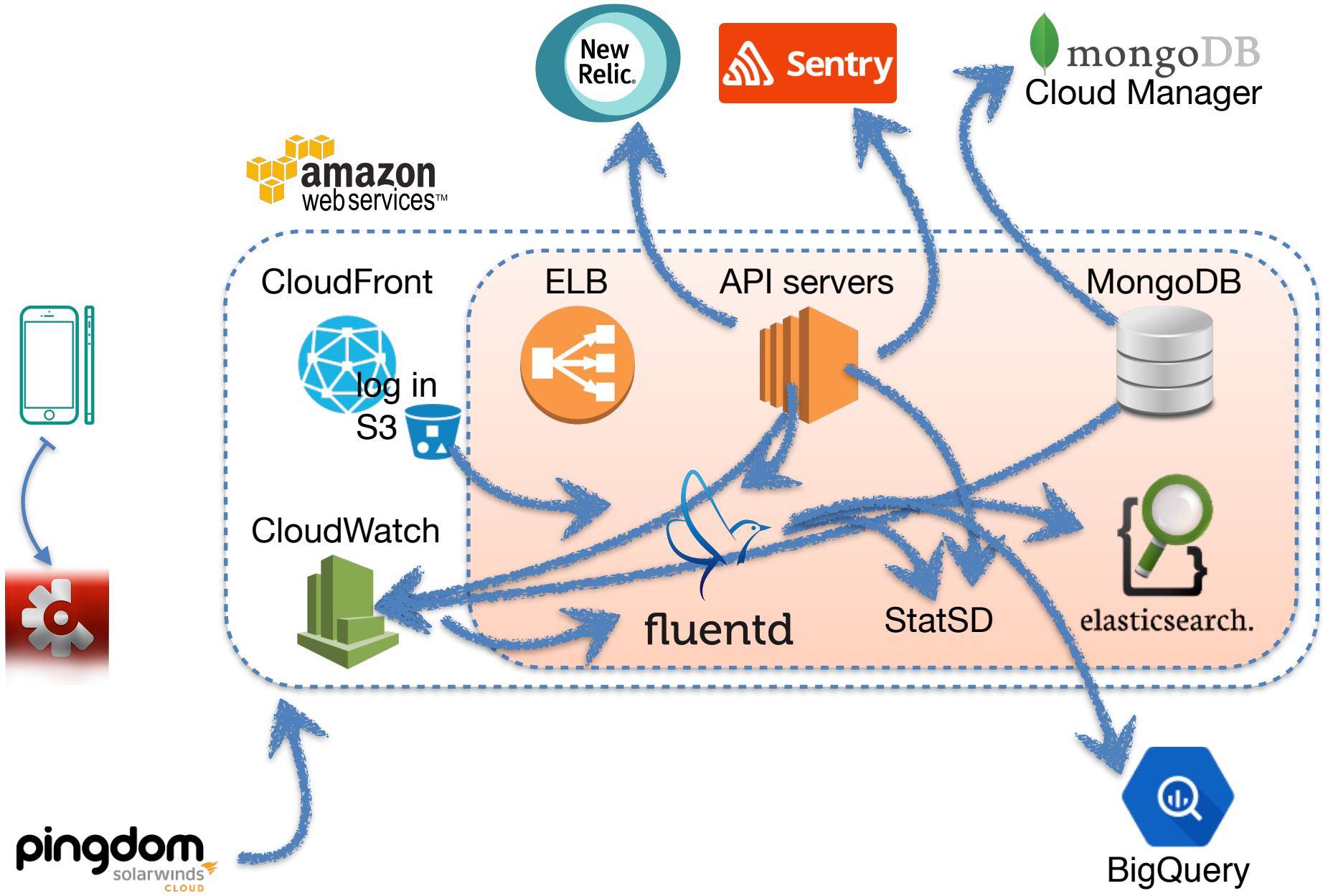
http://www.slideshare.net/suitingtseng/fluentd-49952996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Cloud Manager
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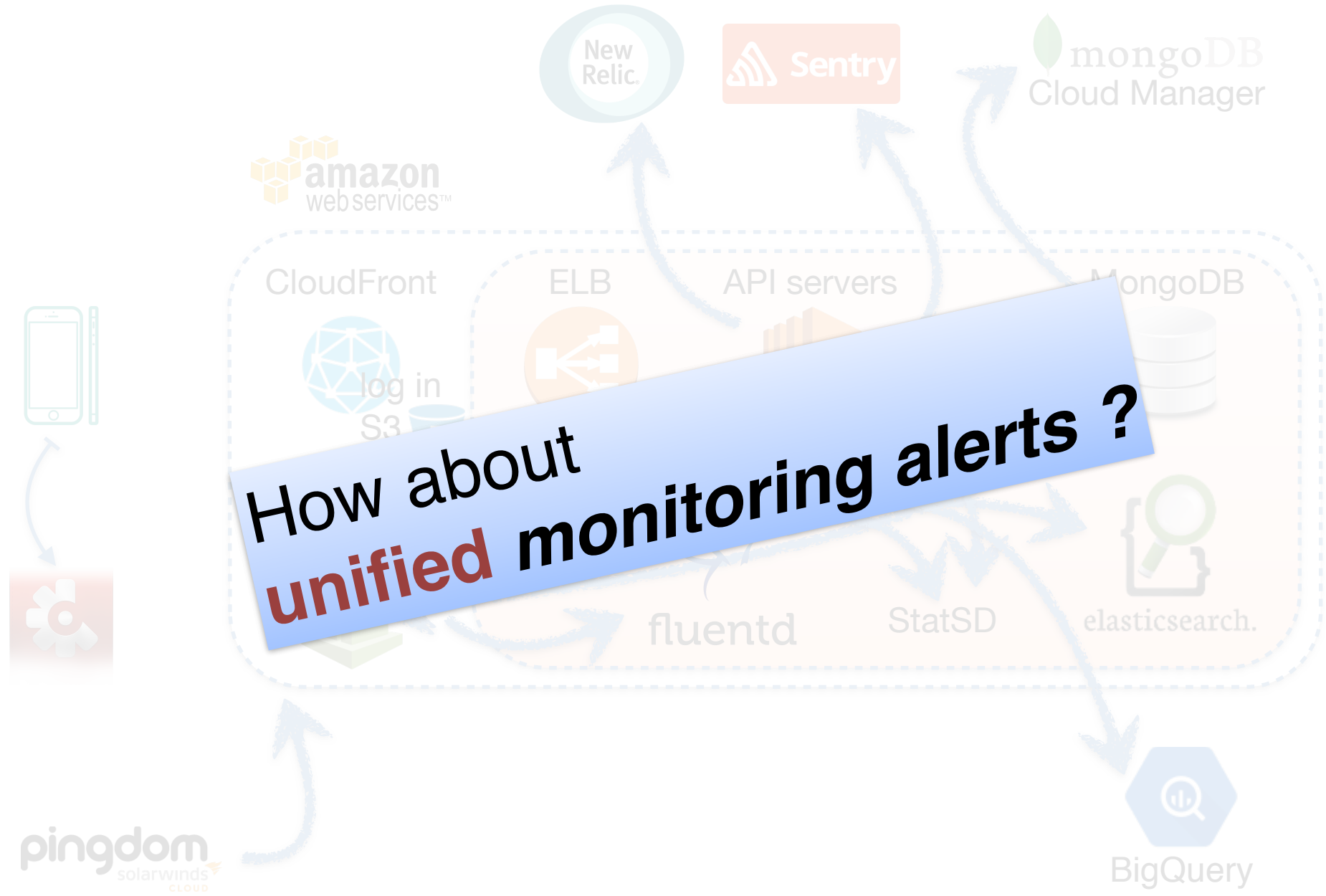

New Relic.
Sentry
mongoDB
Cloud Manager
amazon
web services™
CloudFront
ELB
API servers
MongoDB
log in
S3
How about
unified monitoring alerts ?
fluentd
StatSD
elasticsearch.
pingdom
solarwinds
CLOUD
BigQuery

Unified monitoring alerts

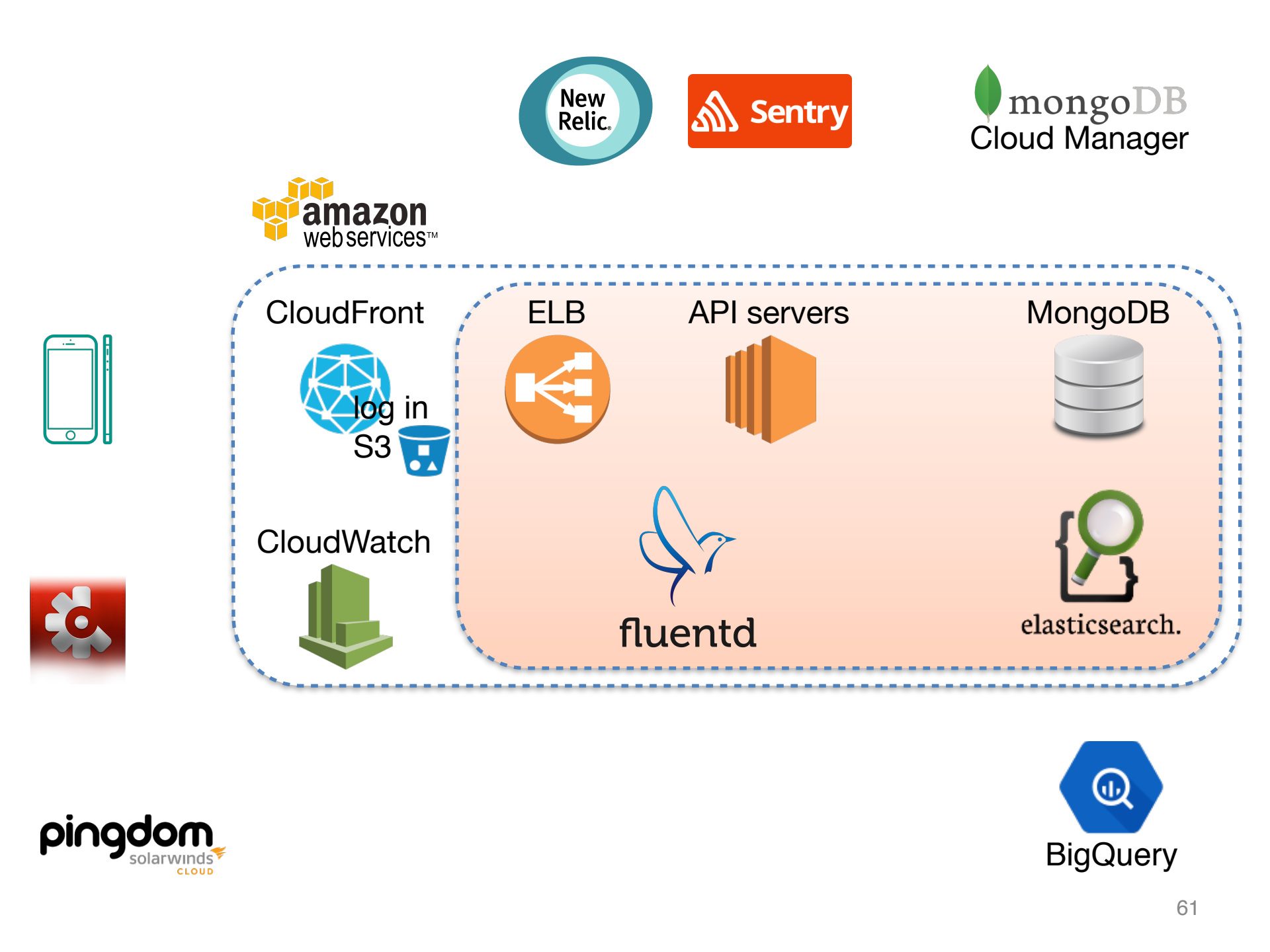
Unified monitoring alerts

- Complement to 3rd party SaaS solutions:
  - more flexible
  - more integral
  - more control

Unified monitoring alerts

- Complement to 3rd party SaaS solutions:
  - more flexible
  - more integral
  - more control

Q: Are we mature enough?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mongoDB
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solarwinds
CLOUD
BigQuery

CloudFront

CloudWatch

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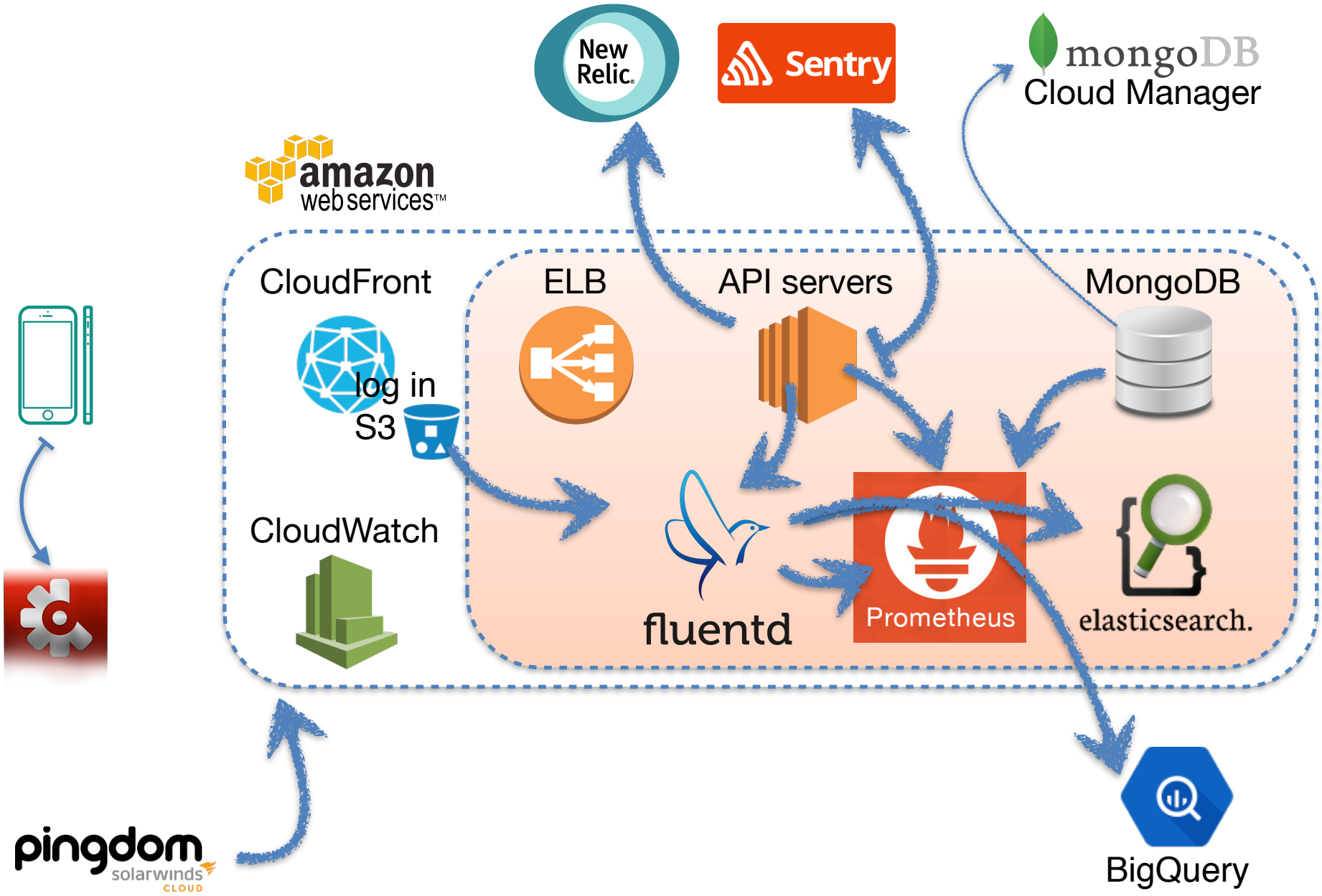
BigQuery


New Relic
Sentry
mongoDB
Cloud Manager
amazon
web services™
CloudFront
ELB
API servers
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log in
S3
CloudWatch
fluentd
Prometheus
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pingdom
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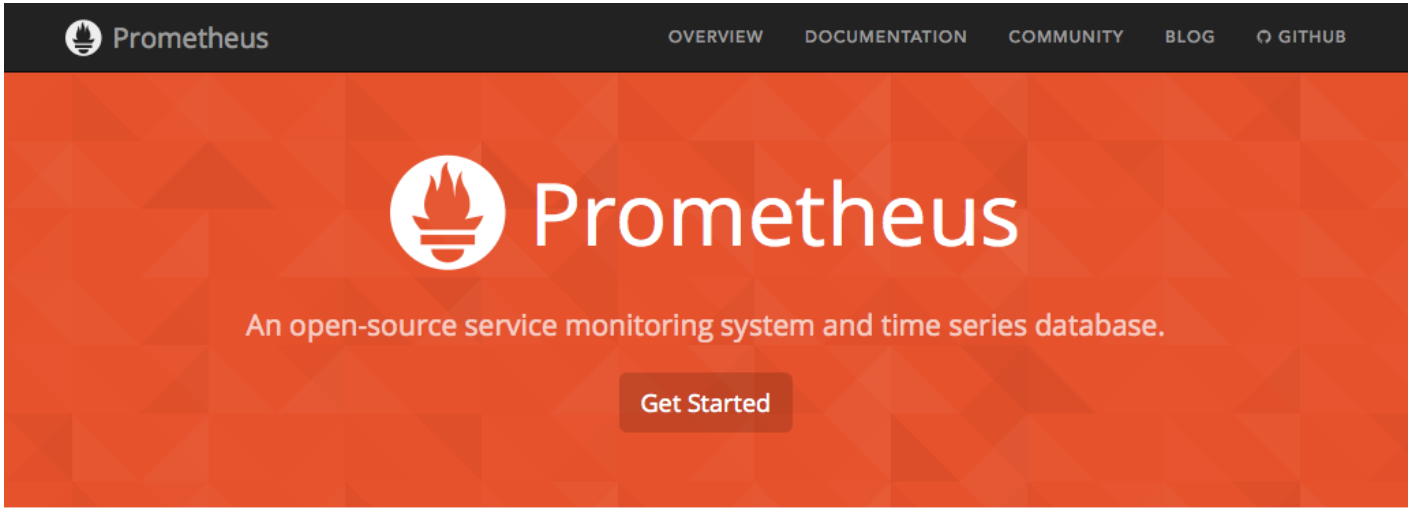

Data model

Prometheus implements a highly dimensional data model. Time series are identified by a metric name and a set of key-value pairs.

View details »

Query language

A flexible query language allows slicing and dicing of collected time series data in order to generate ad-hoc graphs, tables, and alerts.

View details »

Visualization

Prometheus has multiple modes for visualizing data: a built-in expression browser, a GUI-based dashboard builder, and a console template language.

View details »

Storage

Prometheus stores time series in memory and on local disk in an efficient custom format. Scaling is achieved by functional sharding and federation.

View details »

Operation

Each server is independent for reliability, relying only on local storage. Written in Go, all binaries are statically linked and easy to deploy.

View details »

Client libraries

Client libraries allow easy instrumentation of services. Currently, Go, Java, and Ruby are supported. Custom libraries are easy to implement.

View details »

Alerting

Alerts are defined based on Prometheus's flexible query language and maintain dimensional information. An alertmanager handles notifications and silencing.

View details »

Exporters

Existing exporters allow bridging of third-party data into Prometheus. Examples: system statistics, as well as Docker, HAProxy, StatsD, and JMX metrics.

View details »

Data model

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A flexible query language allows slicing and dicing of collected time series data in order to generate ad-hoc graphs, tables, and alerts.

Service instrumentation, monitoring, and alerting with Prometheus

Björn Rabenstein

SoundCloud

Björn Rabenstein is a production engineer at SoundCloud and one of the main authors of Prometheus. In his previous life, he was an SRE at Google for many years. In yet another previous life, he was a scientist working on macromolecular modeling.

Julius Volz

SoundCloud

Julius Volz is a production engineer at SoundCloud and co-founder of the Prometheus project. In the past, he worked as a site reliability engineer in Google's production offline storage team to back up the internet and more.

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(x) matters

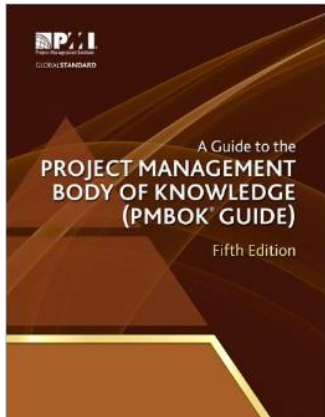
YOTTAA

Conclusion

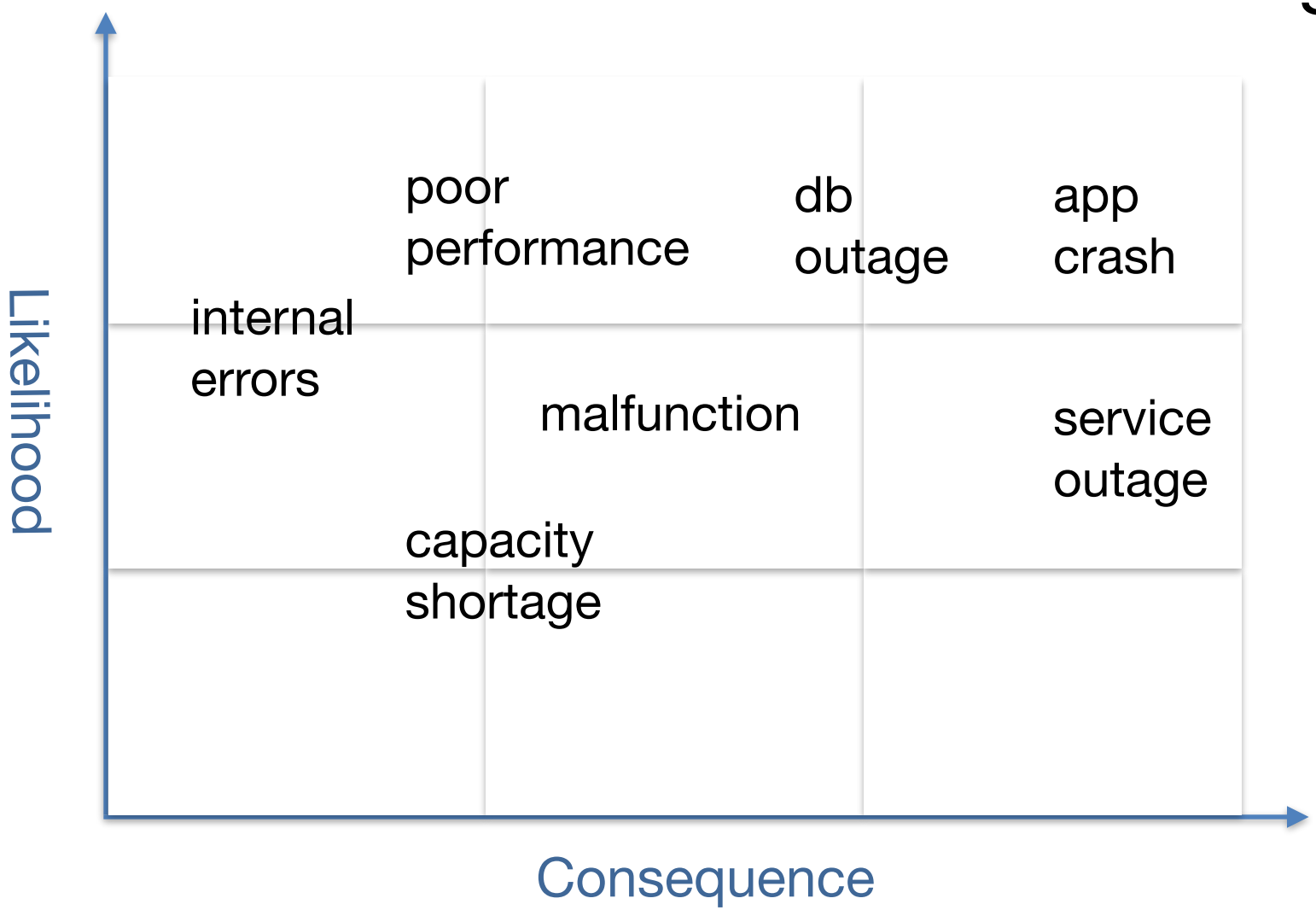
Risk management

- Threats
  - avoid
  - transfer
  - mitigate

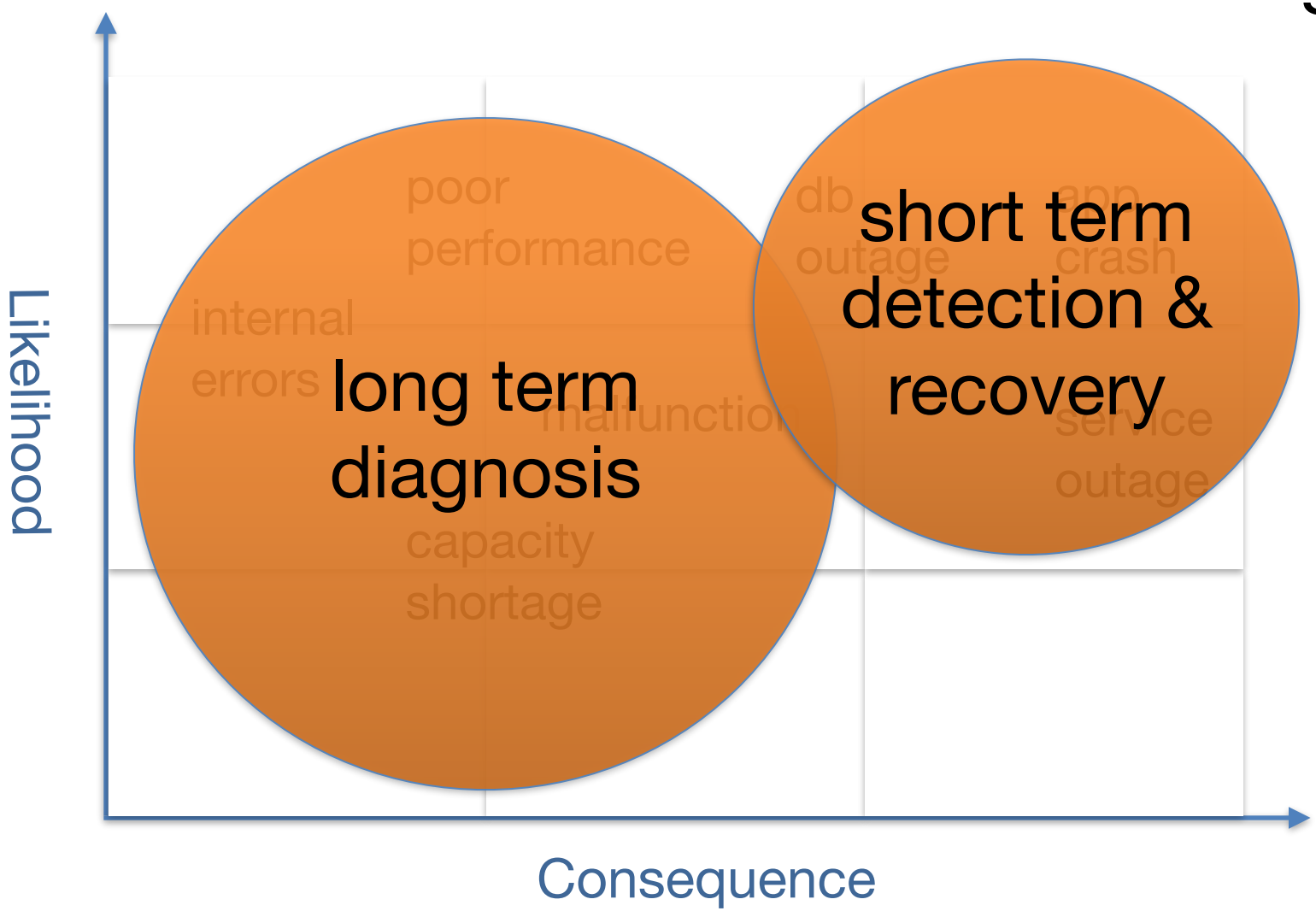
- Opportunities
  - exploit
  - enhance
  - share

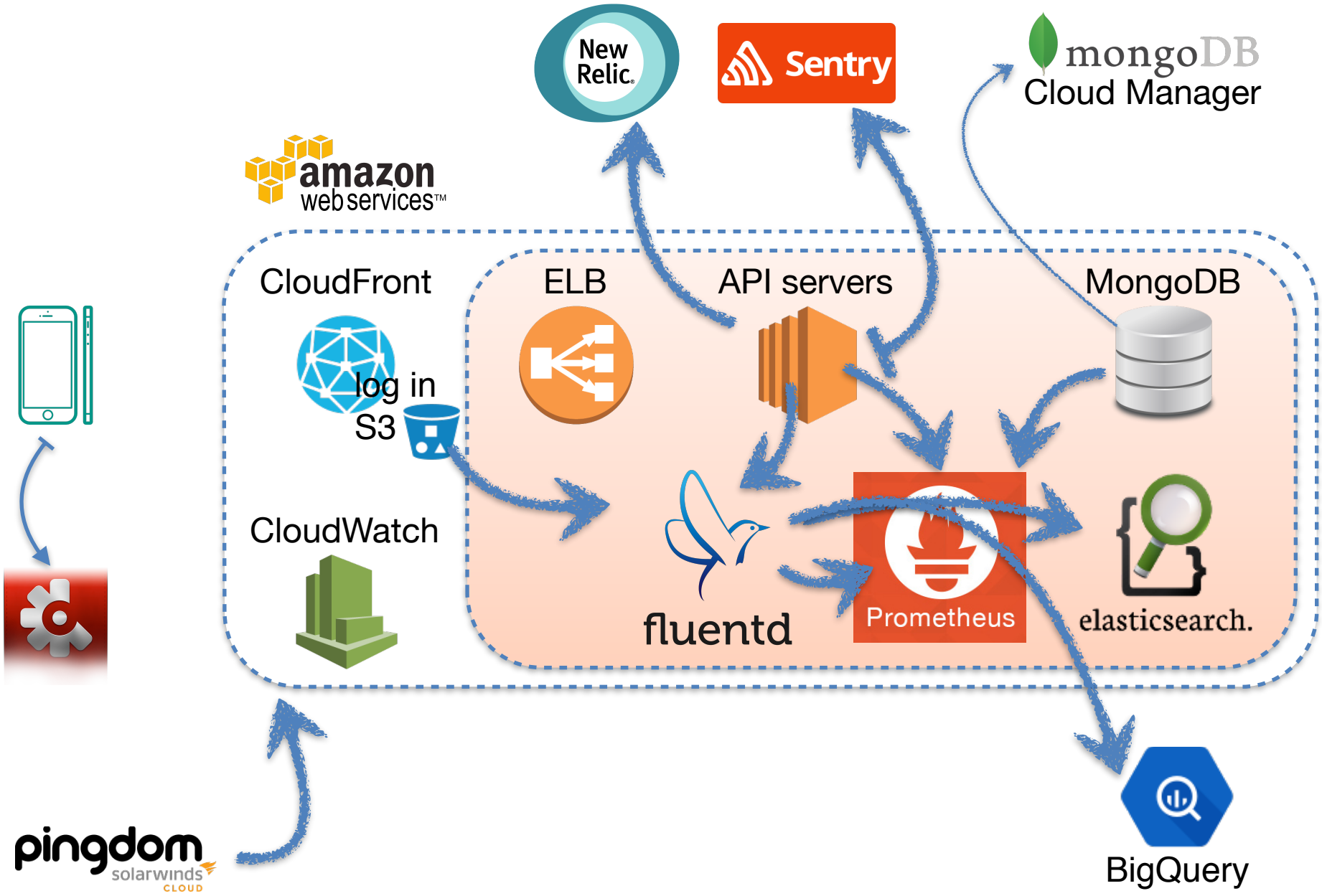


Risk register



Risk register

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“Practice the philosophy of continuous improvement. Get a little bit better every single day. “ –Author unknown

Questions?