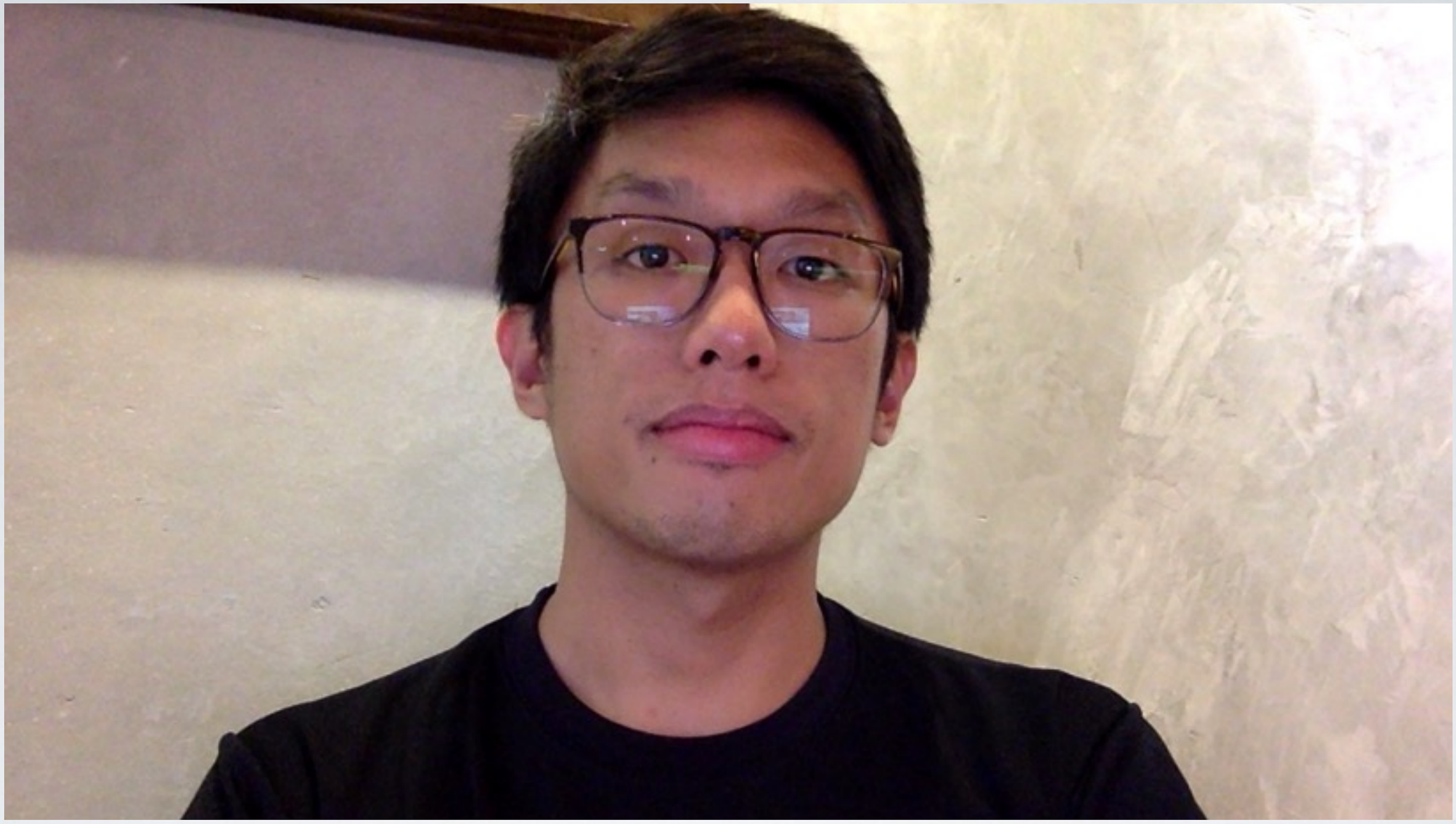
TIPS FOR APPLICATION PERFORMANCE

Chew Chee Ming, Head Geek



WHO AM I?

My Twitter page @cheeming says…

RUNS **INFINITE CODE** -
WE HELP YOU SHIP CODE
AND LAUNCH YOUR
STARTUP IDEAS.
PYTHONISTA. RUNNER.
LOVE OUTDOORS. KL BOY.
LIVED IN BEIJING.

We build custom web and mobile apps.

Backend: Python, Linux
Frontend: HTML+CSS+JS

RUNS INFINITE CODE - WE HELP YOU SHIP CODE AND LAUNCH YOUR STARTUP IDEAS. **PYTHONISTA**. RUNNER. LOVE

Using it professionally since 2006,
thanks to my gig in Beijing

RUNS INFINITE CODE - WE HELP YOU SHIP CODE AND LAUNCH YOUR STARTUP IDEAS. PYTHONISTA. **RUNNER**. **LOVE OUTDOORS**. KL BOY. LIVED IN BEIJING.

Trail runners are crazy…

VIETNAM MOUNTAIN MARATHON

70km Ultra Trail. Crazy MUDDY!

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Worked for 2.5 years

Learned a ton about software development

TIPS ON APPLICATION PERFORMANCE

Caveat: There is no one size fits all solution!
YMMV…

TIPS ON APPLICATION PERFORMANCE

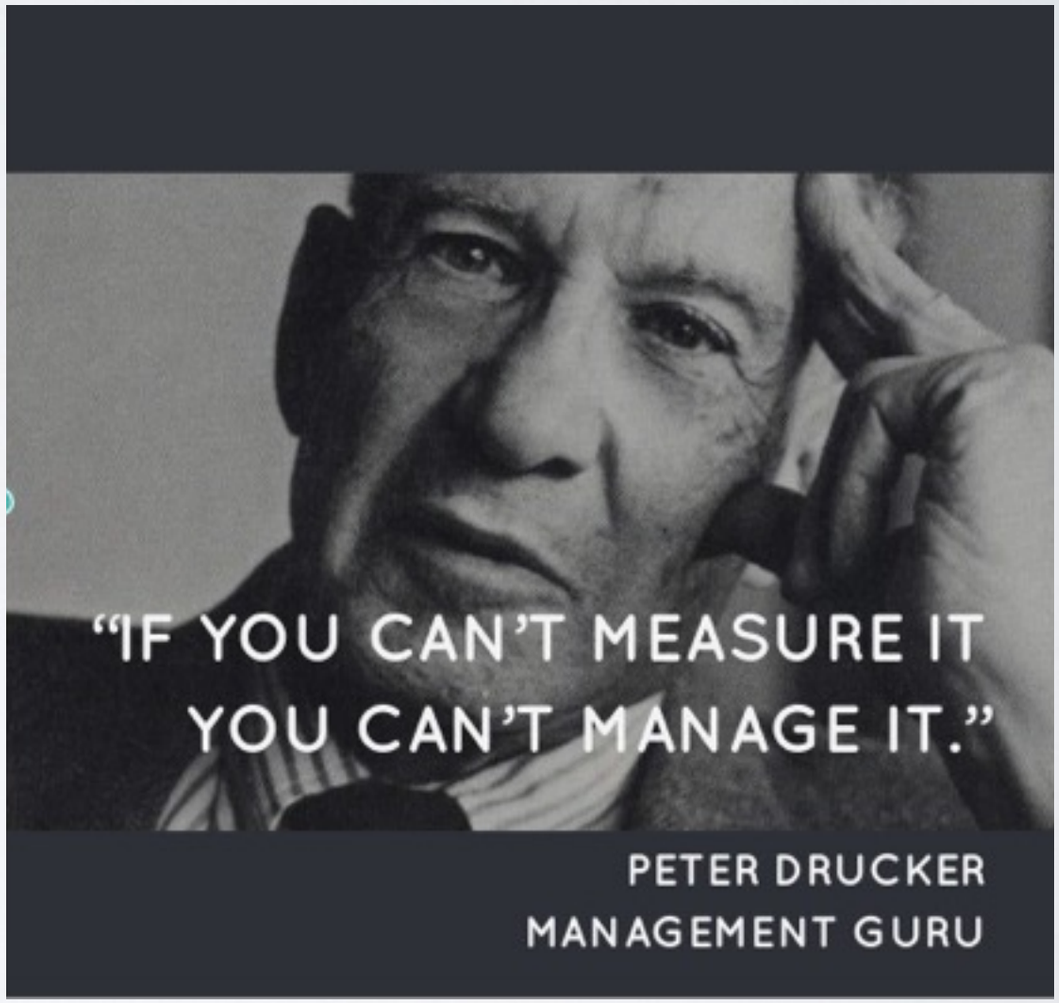
- MEASURE & PROFILE
- MONITORING
- COMPRESSION
- REDUCE LATENCY
- CACHING
- THROW MONEY AT THE PROBLEM
- REWRITE THE DAMN CODE

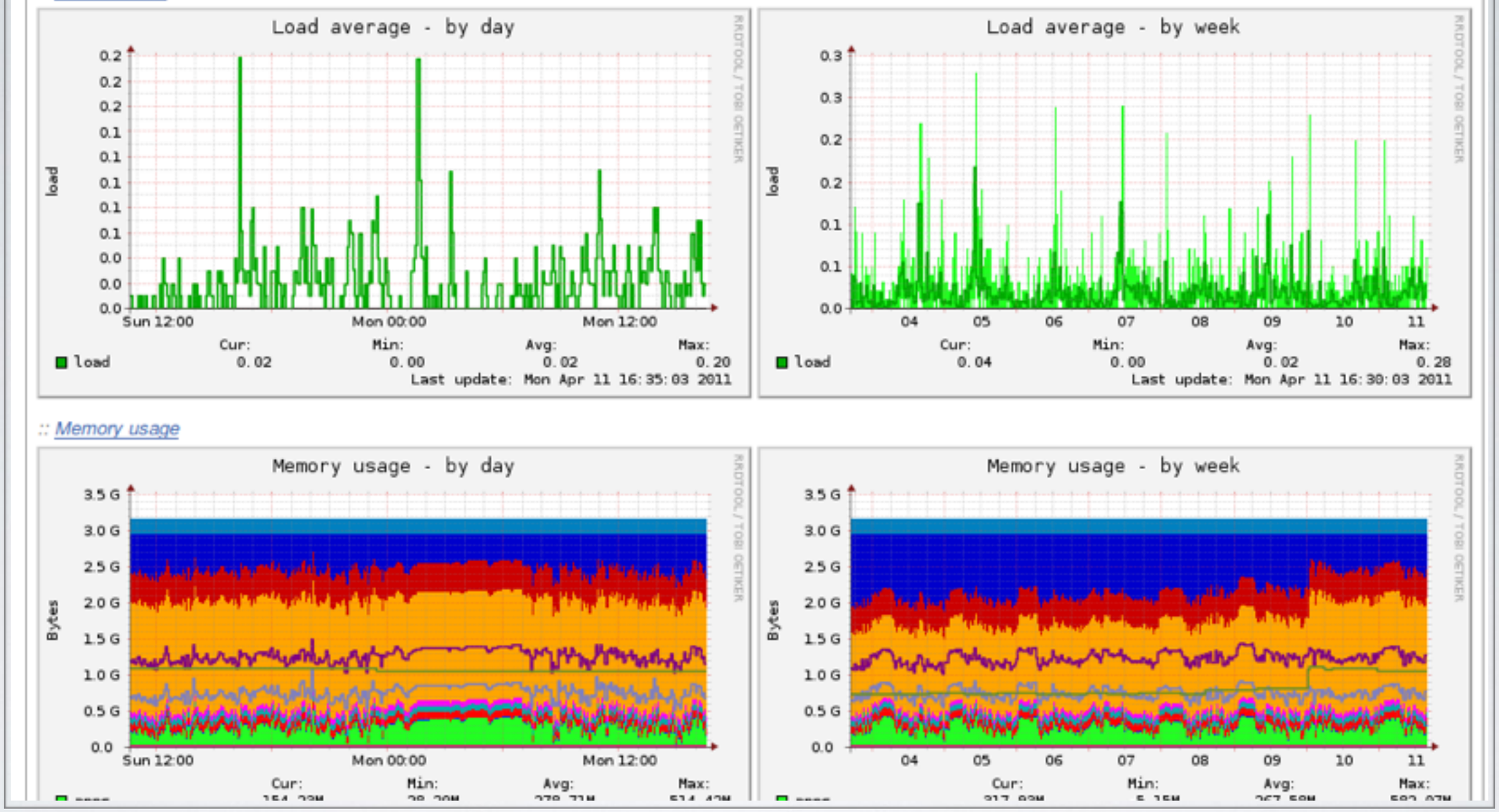
MEASURE & PROFILE

Most modern Web Browsers have decent developer tools that can help you profile your website. Also check out http://yslow.org/

MONITORING

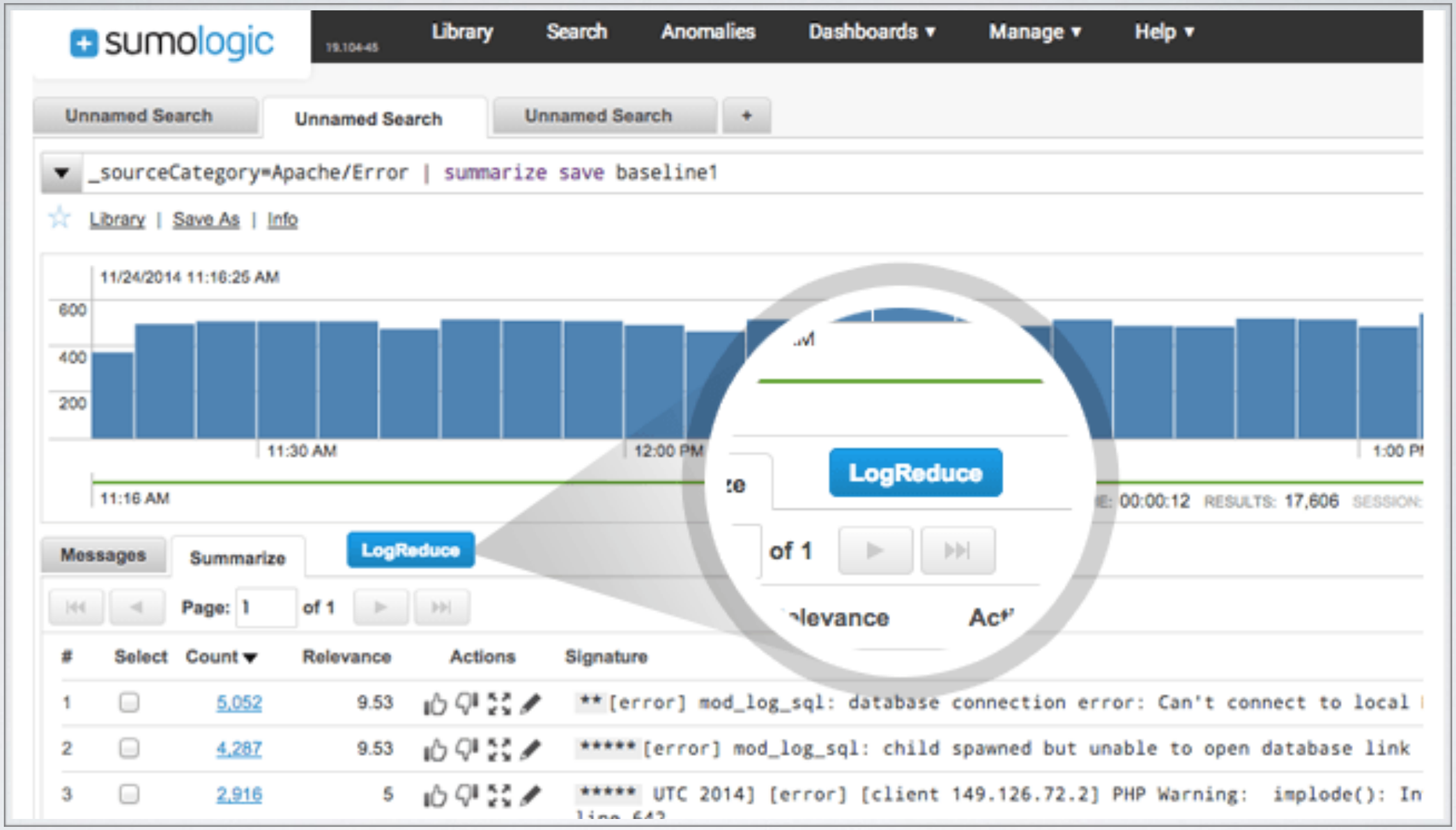
- Classic Tools
  - Nagios, Munin
- Cloud Based Log M'gmt
  - Sumo Logic
- Real Time Application Monitoring
  - New Relic





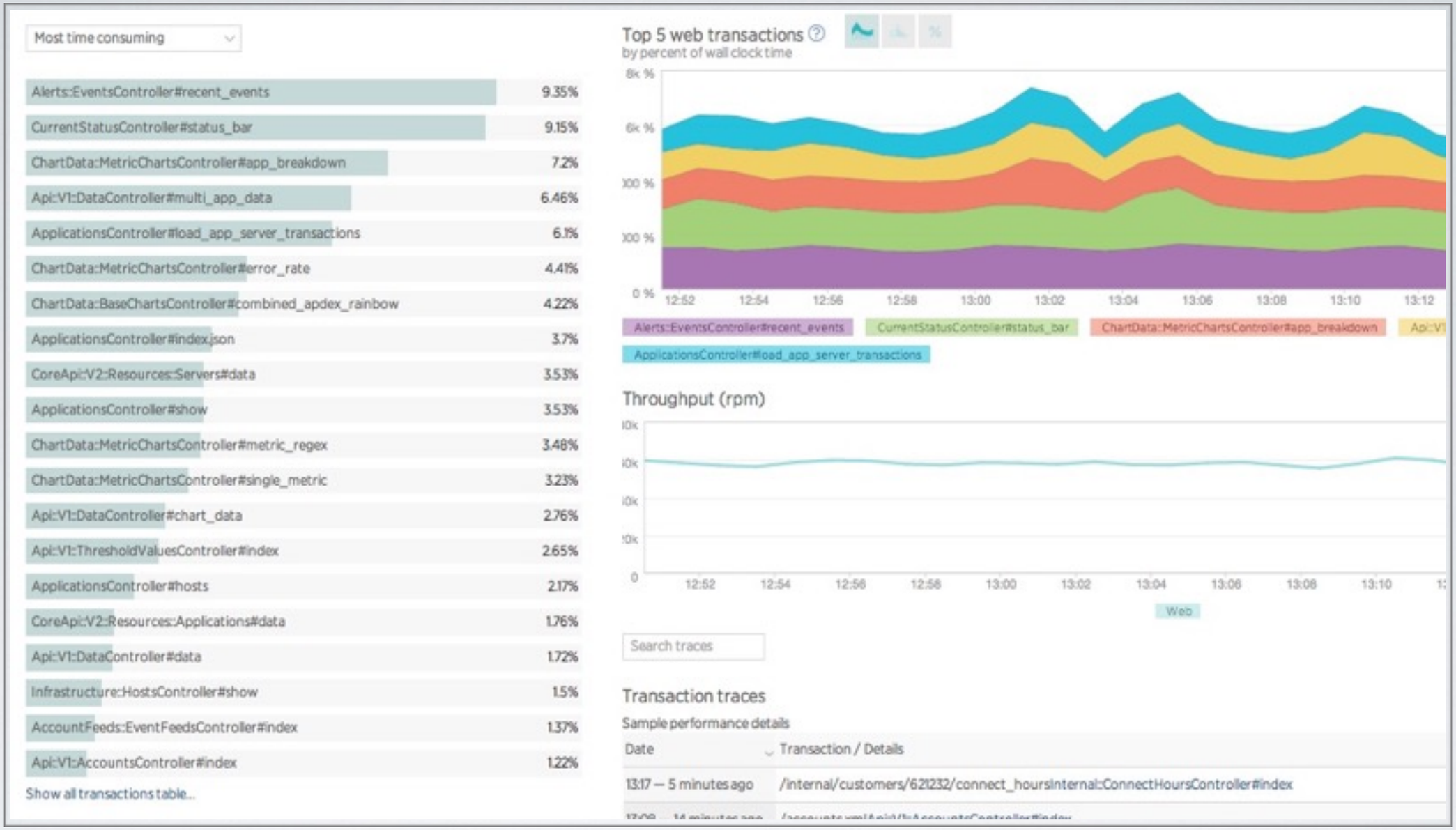
MUNIN

Pretty easy to write plugins to do anything you want, i.e. shell scripts



SUMO LOGIC

A lot of servers, means a lot of logs…
They have a FREE tier! Try it out!

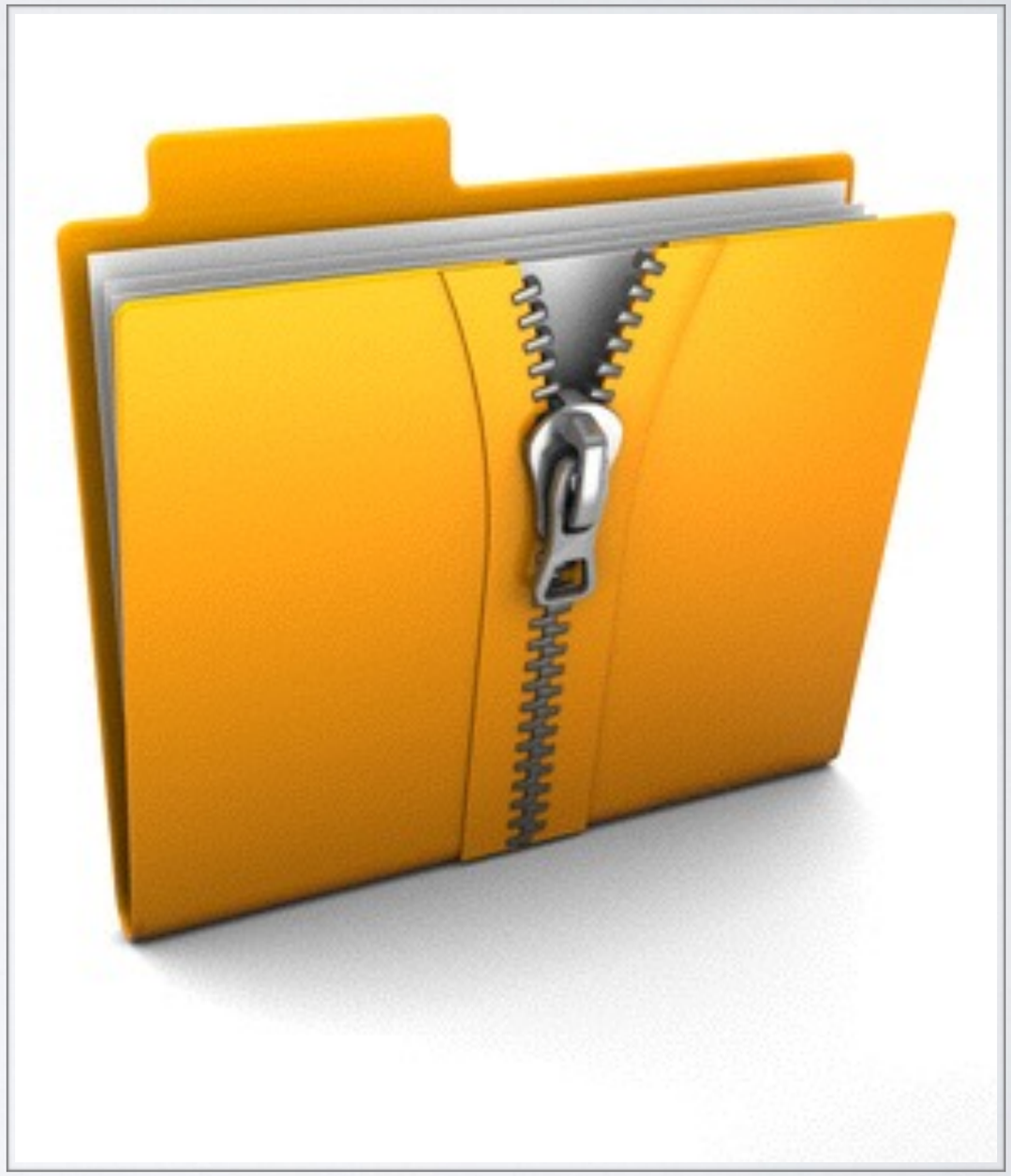


NEW RELIC

Deep integration with your code.
Not FREE though :(

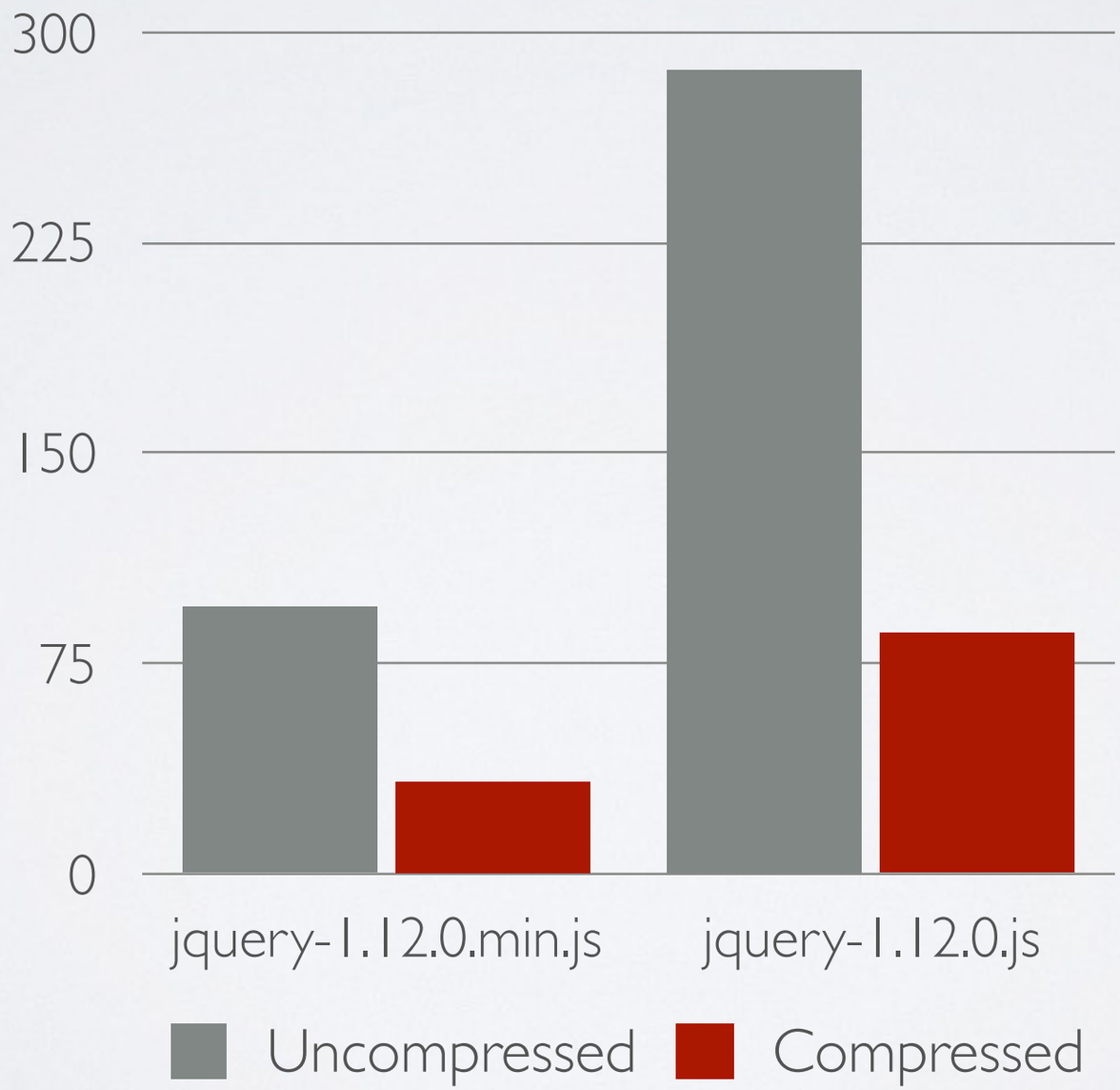
COMPRESSION

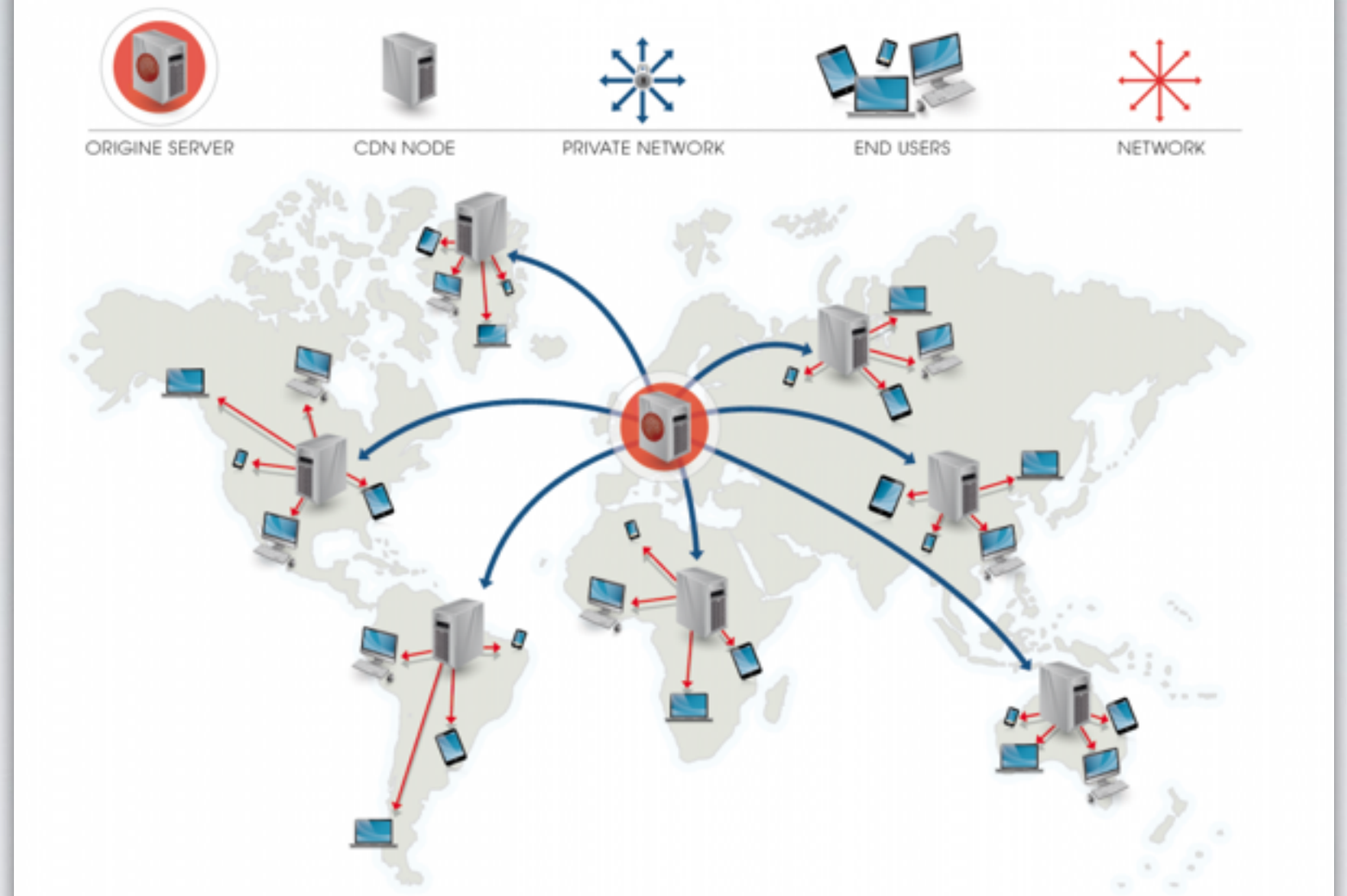
- Internet can be slow for many reasons.
- When you serve textual data from your web server, compress it!
- The most common is gzip or deflate.



COMPRESS JQUERY

The compressed minified file is 30% of than original!





REDUCE LATENCY

We might have broadband, but the Internet is still pretty slow… compared to the LAN

REDUCE LATENCY

- CDN
  - Move the files closer to the user
- Reduce requests/files per HTML page
- Maximum connections per hostname: 6 on average

Top Browsers

name	score	PerfTiming	Connections per Hostname ↓
IE 11 →	12/16	yes	13
IE 10 →	12/16	yes	8
Android 2.3 →	8/16	no	8
Blackberry 7 →	11/16	no	7
Chrome 32 →	12/16	yes	6
Firefox 26 →	11/16	yes	6
IE 9 →	12/16	yes	6
Safari 7.0.1 →	11/16	no	6
Chrome 34 →	12/16	yes	6
Firefox 27 →	11/16	yes	6
Android 4 →	13/16	yes	6
Chrome Mobile 18 →	12/16	yes	6
IEMobile 9 →	11/16	yes	6

CACHING

- HTTP Caching
  - Built in feature by web browser!
  - HTTP Cache-Control Header
  - Properly designed URLs
- Application Caching
  - Store pre-calculated results
  - Store in disk or memory (memcached)

TwoHardThings

Martin Fowler
14 July 2009

> *There are only two hard things in Computer Science: cache invalidation and naming things.*
>
> *-- Phil Karlton*

CACHE INVALIDATION

You might encounter some weird issues…

CACHE INVALIDATION

- HTTP Caching
  - Add a finger print in the URL
    - /style.0001.css # google
    - /style.css?t=20160126
- Application Caching
  - Lifespan of cache?
  - Management of your code
  - Need discipline to track changes to objects, and deal with cache invalidation

THROW MONEY AT THE PROBLEM

- In many cases, programmer time is more expensive than server time.
- So if you have the means, just buy a bigger/better server.

REWRITE THE DAMN CODE

Sometimes it is inevitable…

QUESTIONS?

Thanks for not snoring…

WE ARE ALWAYS LOOKING FOR GOOD PEOPLE TO WORK WITH

email: cheeming (at) infinite-code.com

INFINITECODE