Wikimedia TechOps quarterly review

August 2014

Looking back... 3-6 months

- Staffing: new hires
- Off-site meeting in Athens
- Process
- Projects
- Performance & availability metrics, incidents
- Goals

Staffing

- Backfilled 3 Operations Engineers
  - Chase Pettet, Giuseppe Lavagetto and Filippo Giunchedi
- Contracted a Dallas data center engineer
  - Papaul Tshibamba

- This quarter we’re missing Faidon :-(

Staffing

We’re hiring:

- Technical Project Manager
  - JD will be posted tomorrow
- Operations Security Engineer
  - Suitable candidates have proven hard to find
  - We may need to adjust our requirements & expectations
  - Train someone internally?
- Yuvi Panda joining TechOps (Labs)
  - Coming from Mobile Apps
  - ~October

Off-site meeting in Athens

- Team building! (that means drinks, right)
- Working together, face to face
- Meeting our new team members
- Hacking together (monitoring)
- Firefighting together (Heartbleed)
- Some planning, process changes
- **LOTS** of food

ORANGE
GROVE

Process: Liaisons

- Zero & Mobile: Brandon
- MediaWiki Core: Faidon, later Giuseppe
- Analytics: Andrew O
- Fundraising: Jeff
- Release Eng/QA: Andrew B
- Services: Faidon

Process: SoS, Phabricator

- Faidon and Andrew O have been attending the weekly Scrum of Scrums meetings
- Greatly improving awareness of cross team blockers & needs

- Plans to migrate to Phabricator (from RT) as much as possible

Projects - Operations driven

- ✓ Puppet 3 upgrade, (Hiera)
- ✓ Labs migration to eqiad (Ashburn)
- ✓ pmtpa (Tampa) reduction
- ✓ Data center RFP completion (CyrusOne)
- ✓ codfw (Dallas) physical buildout
- ✓ ulsfo (San Francisco) floor move
- ✓ Admin accounts Puppet revamp
- Data retention policy implementation

Projects - Operations driven

- OpenStreetMap databases
- MariaDB 10 upgrade
- ✓ HTTPS PFS
- X Virtualization for miscellaneous services
- X Monitoring revamp
- X HTTPS & IPsec

Projects - externally driven

- HHVM, application servers migration (HAT)
- Phabricator
- Hadoop infrastructure (Refinery)
- ✓ Toolserver migration to (Tool)Labs
- ElasticSearch support
- PDF rendering
- ContentTranslation Handler
- Mathoid
- ✓ Kafka for Varnish logging

Ongoing Operational responsibilities

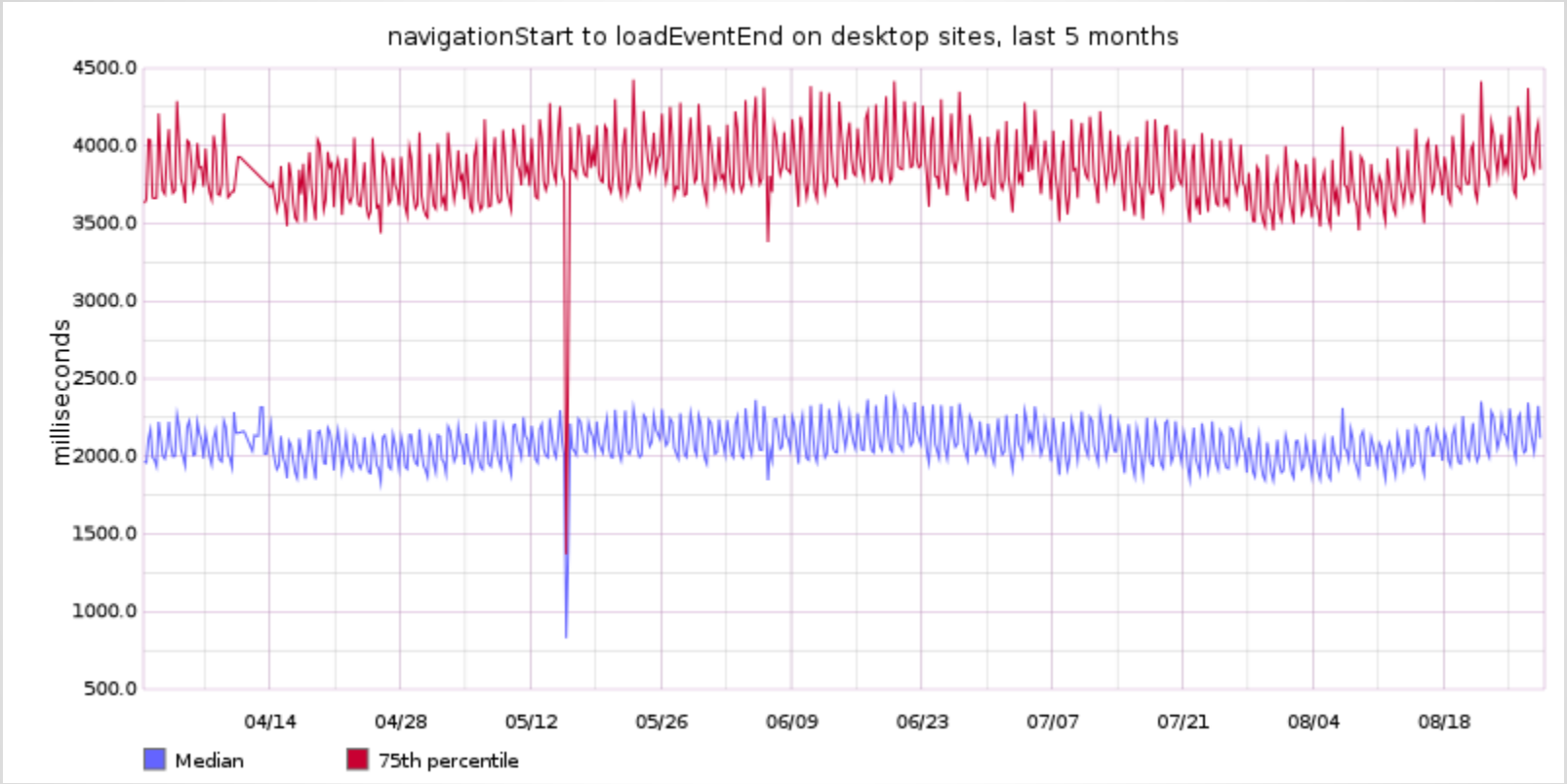
- server & service maintenance
- security upgrades
- incident response
- request tickets
- equipment procurement
- data center management
- capacity management
- Gerrit reviews
- service contract negotiations
- network migrations
- Puppet rework
- Labs user support
- access requests
- saying No :(

Project: Tampa/Dallas dc migration

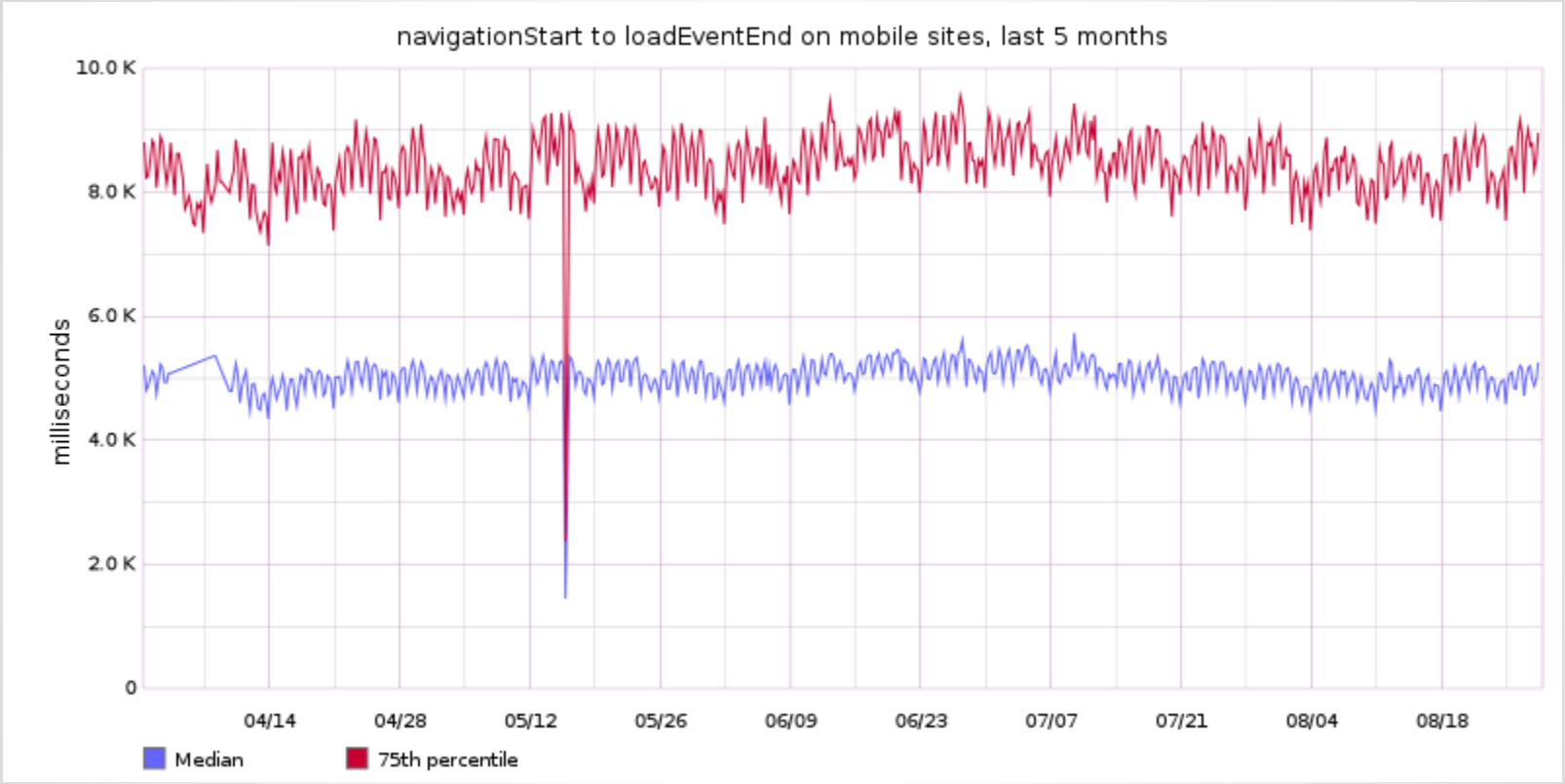
- First connectivity available since last week
- First server installs this week
  - Essential infrastructure coming online now
- Data migration starting next week
  - Database replication, Swift images, backups, etc…
- Plan to turn off all lights in Tampa end of September

Performance & uptime metrics

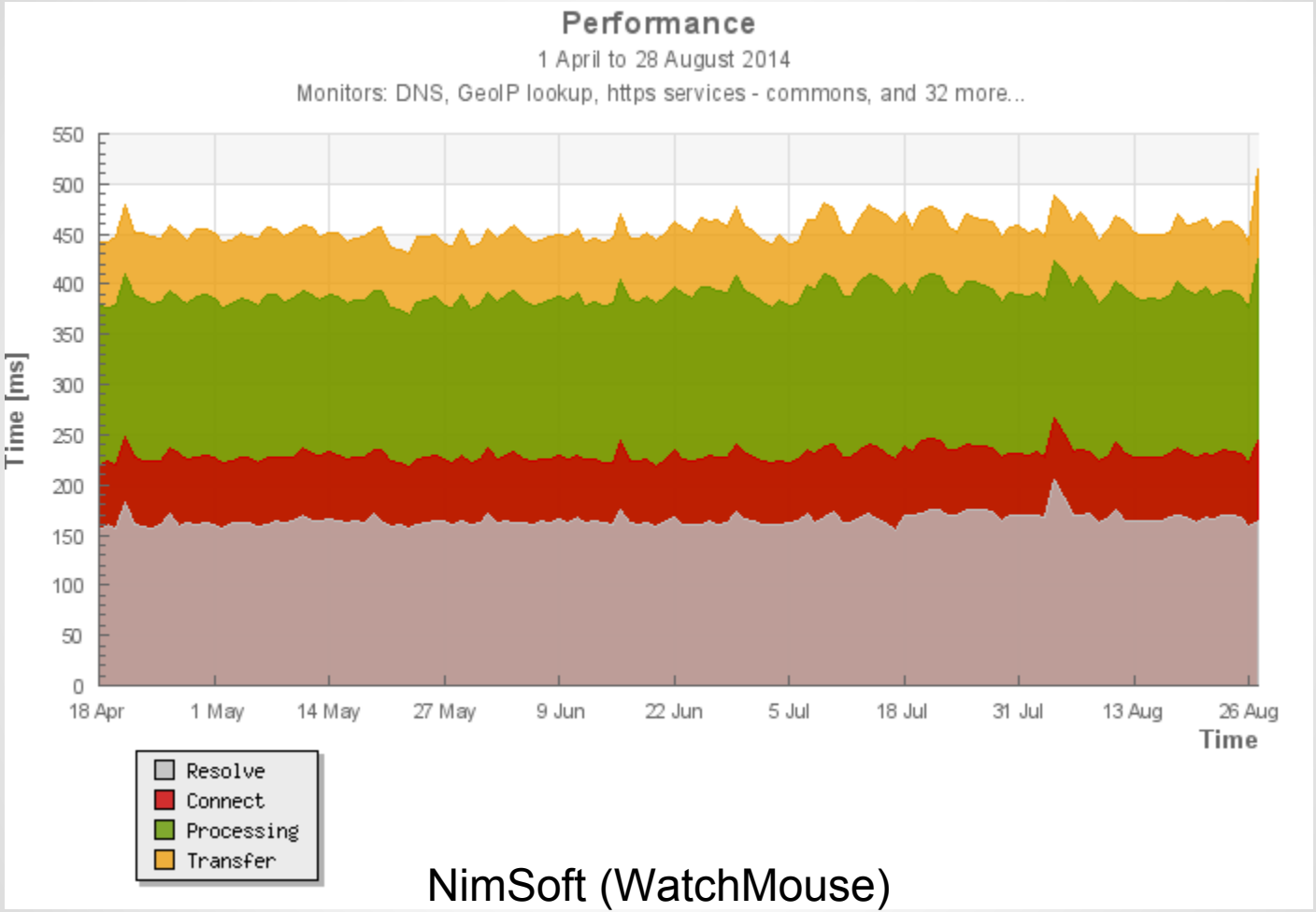
April 2014 - now



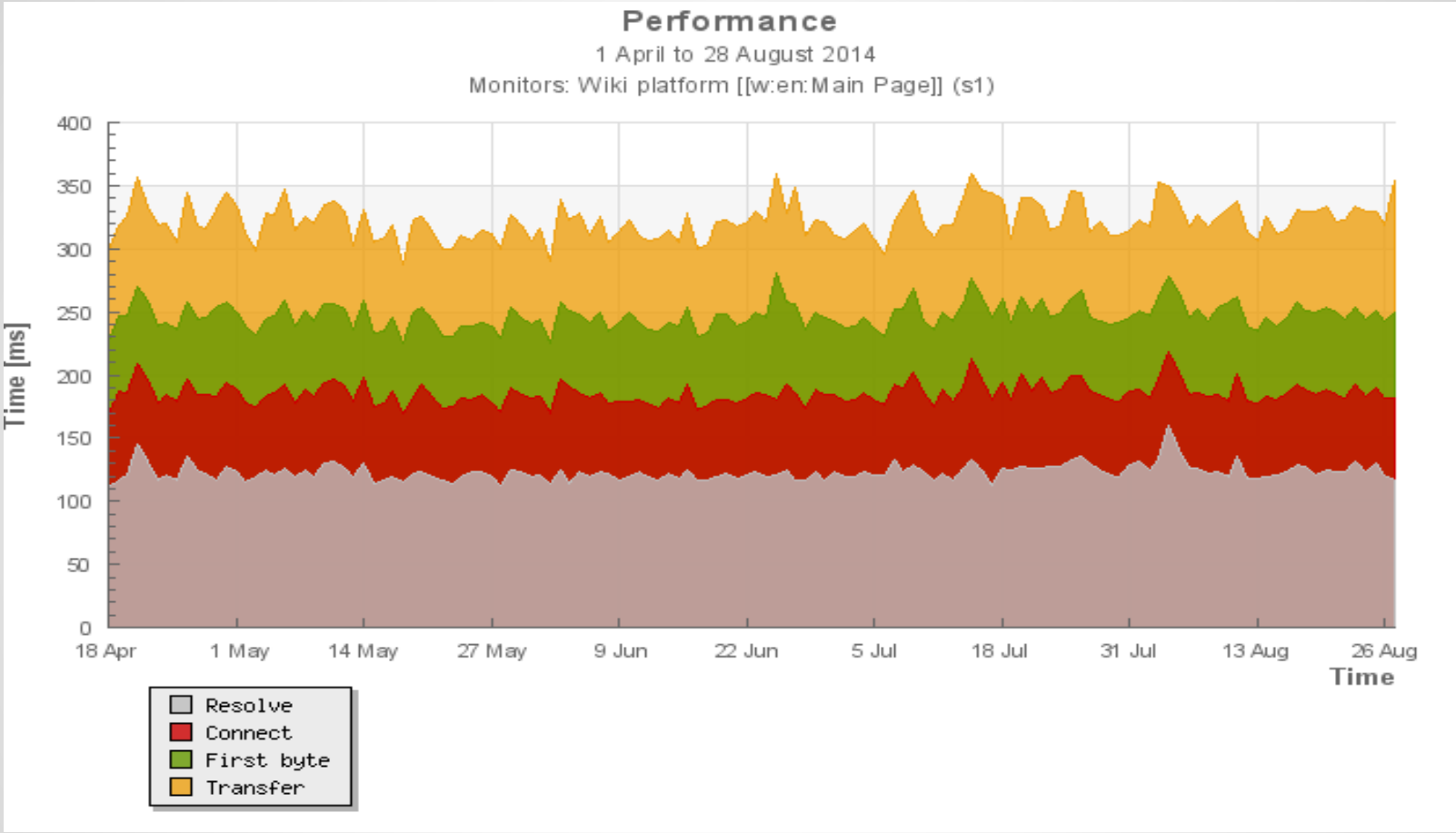
Navigation Timing desktop sites, http://gdash.wikimedia.org



Navigation Timing mobile sites, http://gdash.wikimedia.org



NimSoft (WatchMouse)



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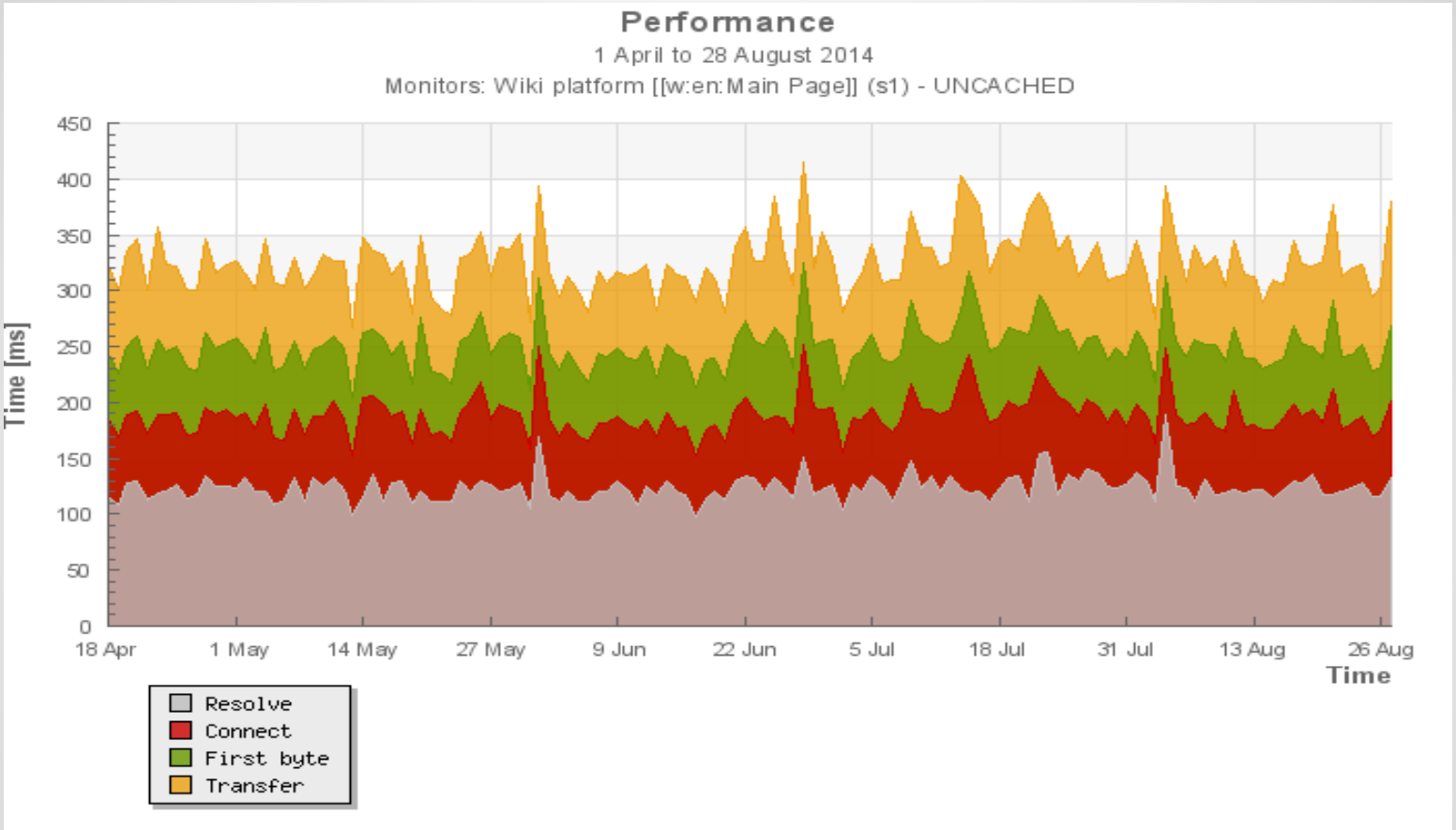

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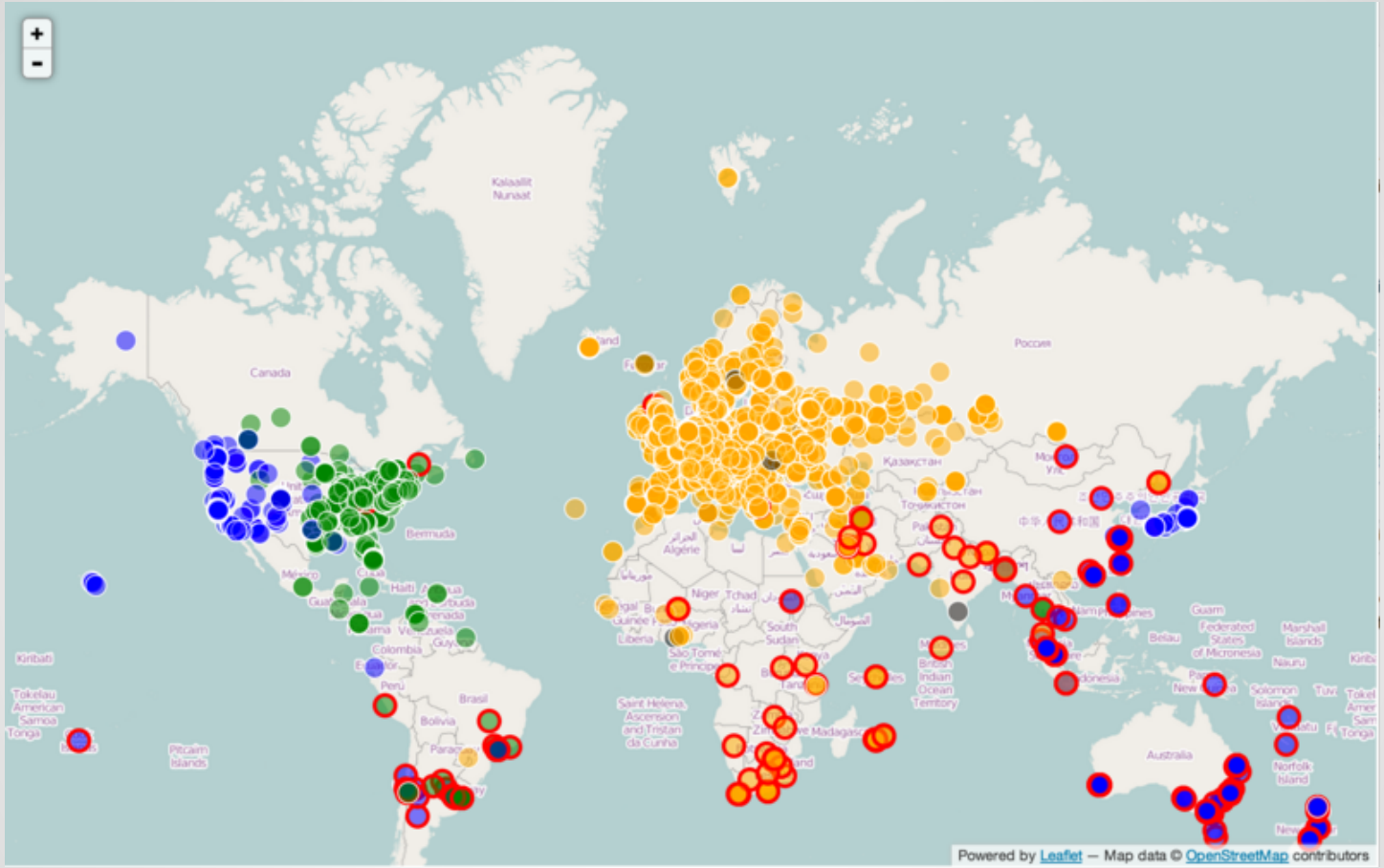
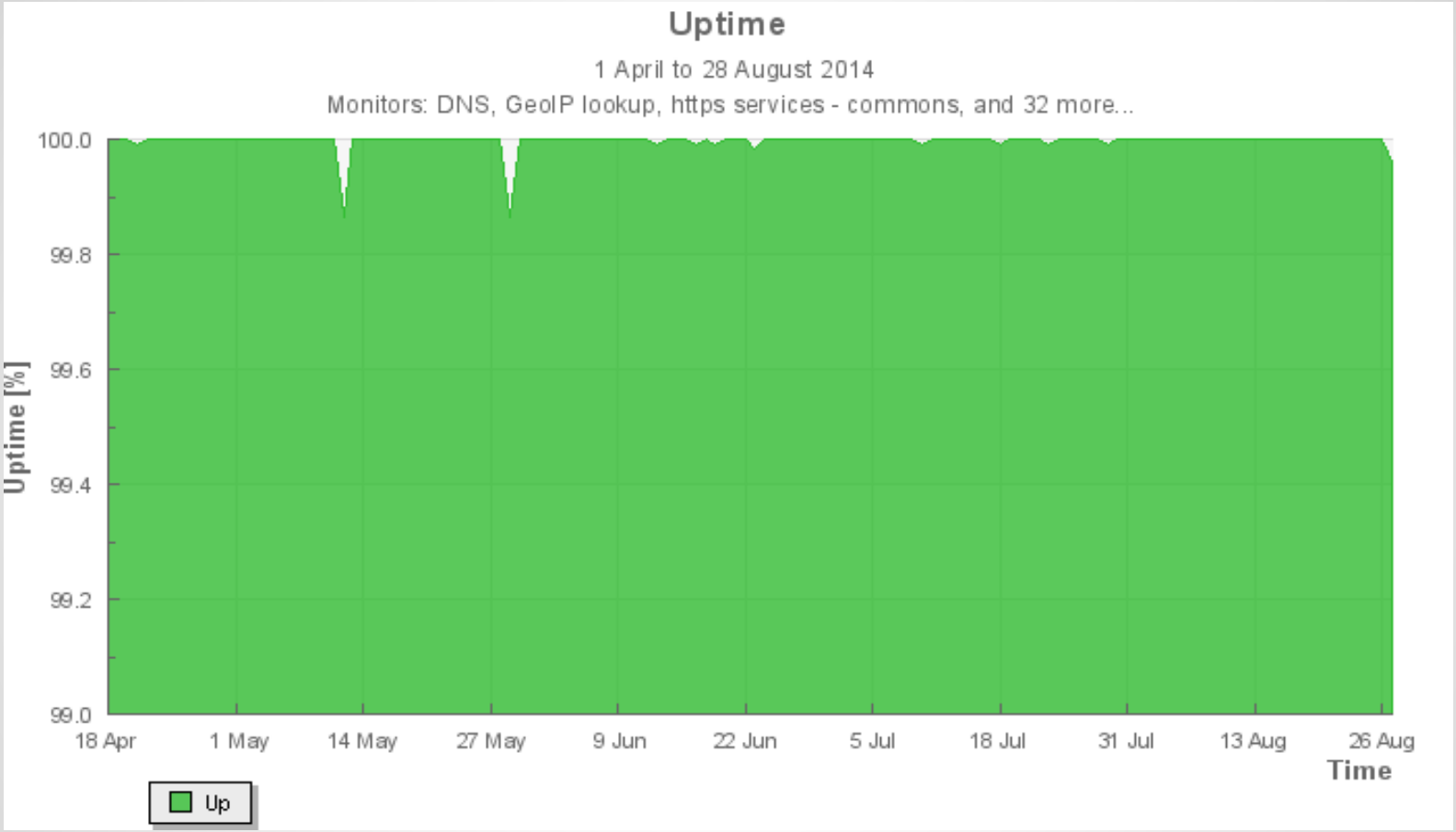


RIPE latency data to our data centers

http://blog.wikimedia.org/2014/07/09/how-ripe-atlas-helped-wikipedia-users/

Incidents & uptime

- From March 2014 - June 2014:
  - 17 incident reports
  - Discussed in a quarterly incident review meeting
- From July 2014 - now
  - 7 incident reports



NimSoft (WatchMouse)
Core site services aggregated (wikis & supportive infrastructure)

This quarter: Site Operations goals

- [x] Virtualization for miscellaneous servers at codfw
- [ ] Core data backups/replication at codfw
- [x] IPsec on cross-data centre links for private data
- [ ] Migrate application servers to Ubuntu 14.04 Trusty, and assist with HHVM

This quarter: Labs goals

- ✓ Reorganization/improvement of new-user & project documentation
- Storage capacity & redundancy expansion
- Process for user backups

Next quarter: Site Operations goals

- Core site services at codfw
- Test deployment of HTTP 2.0 / SPDY
- SSL with PFS (“done”)
  - We’ll work on IPsec and SSL infrastructure
- Varnish 4 in limited production
- codfw fundraising infrastructure
  - fully functional in time for the fundraiser

Next quarter: Labs goals

- Labs available in the new data centre (with Neutron/IPv6)
- Distributing tools, deployment-prep to both data centers (availability/redundancy)

Project: new data center (codfw)

- Phase 1
  - Essential infrastructure (now)
  - All data replicated & backed up (~end of Q1)
- Phase 2 (~Q2)
  - Ability to serve wikis from codfw
  - Labs availability zone
  - Fundraising replica
- Phase 3 (Q3, Q4)
  - Migration/duplication of remaining (misc) services

Involvement of the majority of the team

Q2 dependency: Platform

Project: metrics

- Clear need for better performance metrics
  - User perceived performance
  - Data driven decisions, A/B testing
- Metrics need to be consistently well defined across the infrastructure
- Requires robust & scalable metric infrastructure
  - Scalability work on Graphite has already started
  - Tie-in with Analytics infrastructure?
- Plus better third party monitoring
  - RIPE Anchors, NimSoft replacement

Dependencies: Platform, Analytics

Project: monitoring

- Graphite scaling
  - Graphite in Labs
  - Yuvi Panda working on this
- Incident monitoring
  - Our Icinga (Nagios) install is legacy
  - Configuration management not up to standards
  - Not a scalable setup
  - Research to possibly replace with Shinken (compatible)
  - Yuvi also looking into this (for Labs)