

TechOps Quarterly Review

Wikimedia Foundation - Q2 2014-15

Agenda

Team intro - 30 seconds

What we said we would do - 5 minutes

What we did - 5 minutes

What we learned - 5 minutes

Metrics and callouts - 3 minutes

What's next - 5 minutes

Asks - 3 minutes

Team and staffing numbers slide



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2013

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Q4

2014

■ ■ ■
Q1

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Q2

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Q3

■ ■ ■
Q4

2015

■ ■ ■ ■
Q1

What we said

Objective	Measure of success	Dependency	ETA	Status
Site Operations Q1 leftovers				
Migrate application servers to Ubuntu 14.04 Trusty, and assist with HHVM	All application servers on 14.04 Trusty, all user traffic served by HHVM	MediaWiki Core Team	2014-12-15	Completed
Encryption (IPsec) on cross-data center links for private data	All private data encrypted on cross-data center links		2015-01-30	Work finally started in November
Virtualization for miscellaneous servers at codfw	3+ miscellaneous servers migrated to the new cluster in production		2015-03-30	Stalled since Q1

Objective	Measure of success	Dependency	ETA	Status
Site Operations Q2				
Core site services (wikis) at codfw	A successful switchover of MediaWiki application traffic to codfw	HHVM complete, MediaWiki Core, procurement	2014-03-30	
Test deployment of HTTP/2 and/or SPDY	Ability to serve a small portion of traffic	(HTTP/2 WG)		
SSL with PFS	PFS enabled on production SSL cluster		2014-07-01	Completed
Varnish 4 in limited production	A small portion of Varnish 4 cache servers deployed			
codfw fundraising infrastructure fully functional in time for the fundraiser	Ability to failover all fundraising dependencies to codfw		2014-12-01	

Objective	Measure of success	Dependency	ETA	Status
Labs Q1				
Storage capacity & redundancy expansion	Removal of all SPOFs, availability of all data at codfw, disk space expanded for >=1yr of growth	Procurement of codfw hardware	2015-02	
Process for user backups	Ability for Labs users to restore old versions of files			
Labs Q2				
Labs available in codfw (with Neutron/IPv6)		Neutron support for our Labs (nova-network) network model		
Distributing tools, deployment-prep to both data centers (availability/redundancy)		Labs available in codfw		

What we did

Objective	Measure of success	Dependency	ETA	Status
Site Operations Q1 leftovers				
Migrate application servers to Ubuntu 14.04 Trusty, and assist with HHVM	All application servers on 14.04 Trusty, all user traffic served by HHVM	MediaWiki Core Team	2014-12-15	Completed (but exactly one quarter late)
IPsec on cross-data centre links for private data	All private data encrypted on cross-data center links		2015-02-30	At risk (~50% of the work completed)
Virtualization for miscellaneous servers at codfw	3+ miscellaneous servers migrated to the new cluster in production		2015-03-30	Initial stages, extend to Q3, (insufficient staff time)

Objective	Measure of success	Dependency	ETA	Status
Site Operations Q2				
Core site services (wikis) at codfw	successful switchover of MW traffic to codfw	HHVM, MW Core, procurement	2014-03-30	Deferred to Q3. HHVM just completed.
Test deployment of HTTP 2.0 / SPDY	Ability to serve wikis using SPDY and/or HTTP/2.0, no production traffic yet	HTTPS infrastructure tech debt reduction		Deferred. Insufficient staff time available.
SSL with PFS	PFS enabled on production SSL cluster		2014-07-01	Completed.
Varnish 4 in limited production	Small portion of Varnish 4 caches deployed serving site traffic	Development time		Deferred to next FY. Insufficient time and not enough gain.
codfw fundraising infrastructure fully functional in time for the fundraiser	Ability to failover all fundraising dependencies to codfw.	codfw readiness, procurement		At risk: 75% completed. When fundraiser started, work was deflected.

Objective	Measure of success	Dependency	ETA	Status
Labs Q1				
Storage capacity & redundancy expansion	Removal of all SPOFs, availability of all data at codfw, disk space expanded for ≥ 1 yr of growth	Procurement of codfw hardware	2015-02	Nearly ready. Replication is pending a migration step with long downtime.
Process for user backups	Ability for Labs users to restore old versions of files		2014-12	"Time travel" backups available to users.
Labs Q2				
Labs available in the codfw (with Neutron/IPv6)		Neutron support for our Labs (nova-network) network model		Neutron still doesn't support a "flat" network model.
Distributing tools, deployment-prep to both data centers (availability/redundancy)		Labs available in codfw		Not started yet due to Labs dependency.

Background:

- Q2 goals had not been adjusted for delays and changes occurred in Q1
- Significant reduction of available staff time due to ongoing commitments to *priority projects* and other teams
- Insufficient (project) management time
- Delays in procurement steps, approval processes
- In this team it's challenging to manage team goals on top of ongoing maintenance & response work
 - Constant (re)prioritization

What we did instead: Projects

- Migrated all remaining services from Tampa
- Decommissioned Tampa
- Introduced Hiera in Production and Labs
- Introduced Labs (Graphite) metrics monitoring
- Introduced Labs (Shinken) incident/uptime monitoring
- Audited Labs DB private data censoring
- Completed codfw essential infrastructure
- Completed data replication & backups at codfw
- Migrated from old PDF cluster to OCG
- Setup Mathoid
- Helped migrate away from Toolserver
- Assisted with Citoid deployment
- Supported CX deployments
- Migrated from OpenDJ to OpenLDAP for OIT's LDAP
- Assisted in MediaWiki VERP backend deployment
- Improved Swift Puppet modules & monitoring
- Expanded the ElasticSearch cluster, helped complete the migration
- Assisted Analytics in completing Hadoop cluster build
- Migrated from RT to Phabricator
- Assisted with RESTbase deployment
- Upgraded Salt
- Deployed RIPE Atlas servers
- Upgraded gdnssd for upcoming datacenter failovers
- Introduced misc db proxies

What we did instead: Projects

- Dealt with the POODLE SSLv3 vulnerability
- Reduced Tool Labs tech debt (grid engine, script rewrites)
- Initiated migration from Wikitech OSM to Horizon
- Migrated IP transit to new carriers
- Initiated LogStash scaling work
- Scaling Graphite for more metrics / Engineering priority project
- Upgraded Etherpad
- Reduced Ganglia tech debt
- Labs instance ssh keys in LDAP, reduce SPOF
- EventLogging/data ware house work with Analytics
- Expanded eqiad app server cluster with new machines
- Audited all network devices for support status & renewed
- Upgraded Labs OpenStack version to 'Icehouse'
- Upgraded Production Swift to 'Icehouse'
- Migrated the SSL cluster to local SSL and SNI
- Reduced technical debt in our caching, SSL, LVS, and DNS clusters
- Expanded Labs capacity
- Migrated many web services behind central misc web Varnish/SSL cluster

What we learned

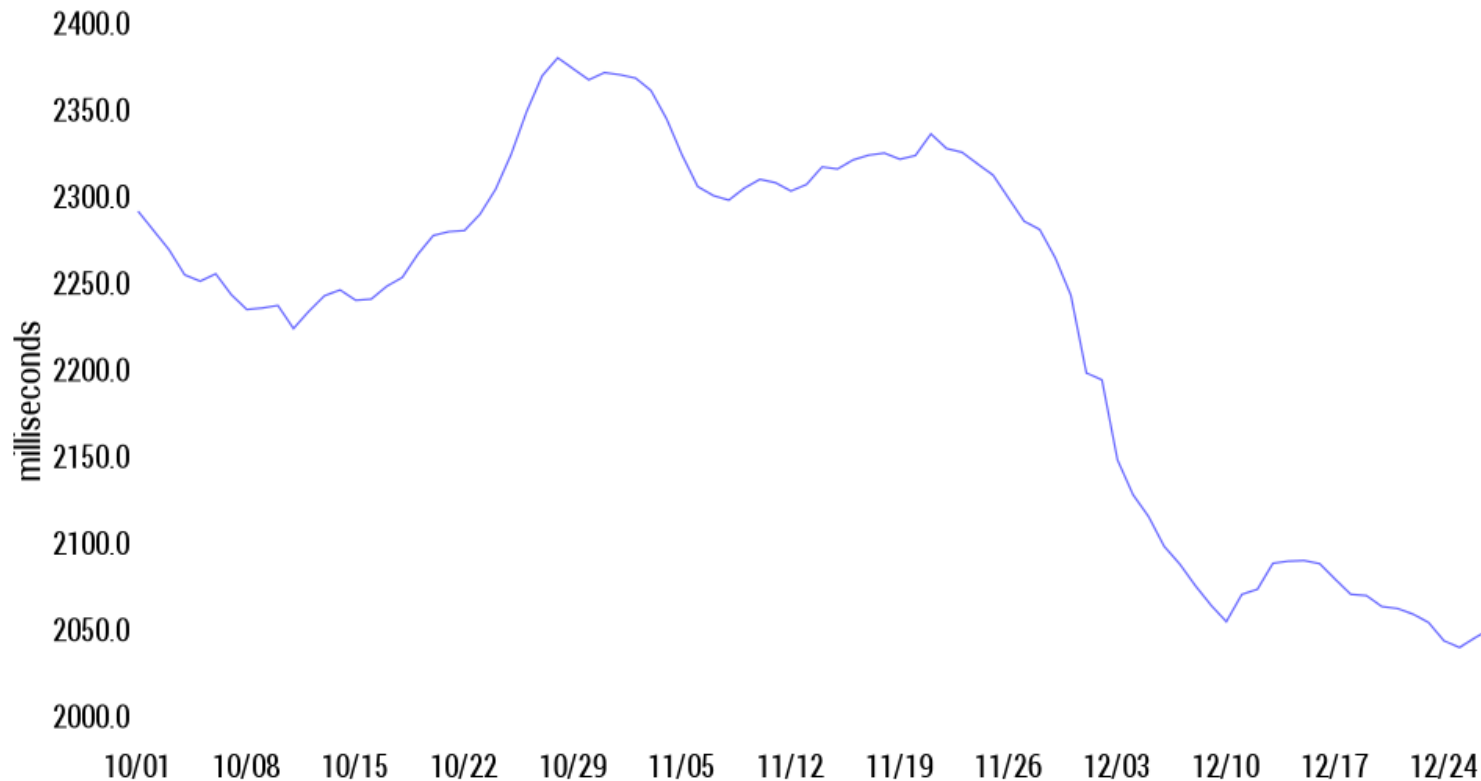
What we learned: About the process

- This goals process is still somewhat new for our team
 - We can improve it, but within limits due to the nature of our work
- Goals need to be redefined *each* quarter
 - with team discussion
- Priority projects and other team's asks often affect us greatly
 - needs to be taken into account before finalizing ours
 - should be used for explicit allocation of people

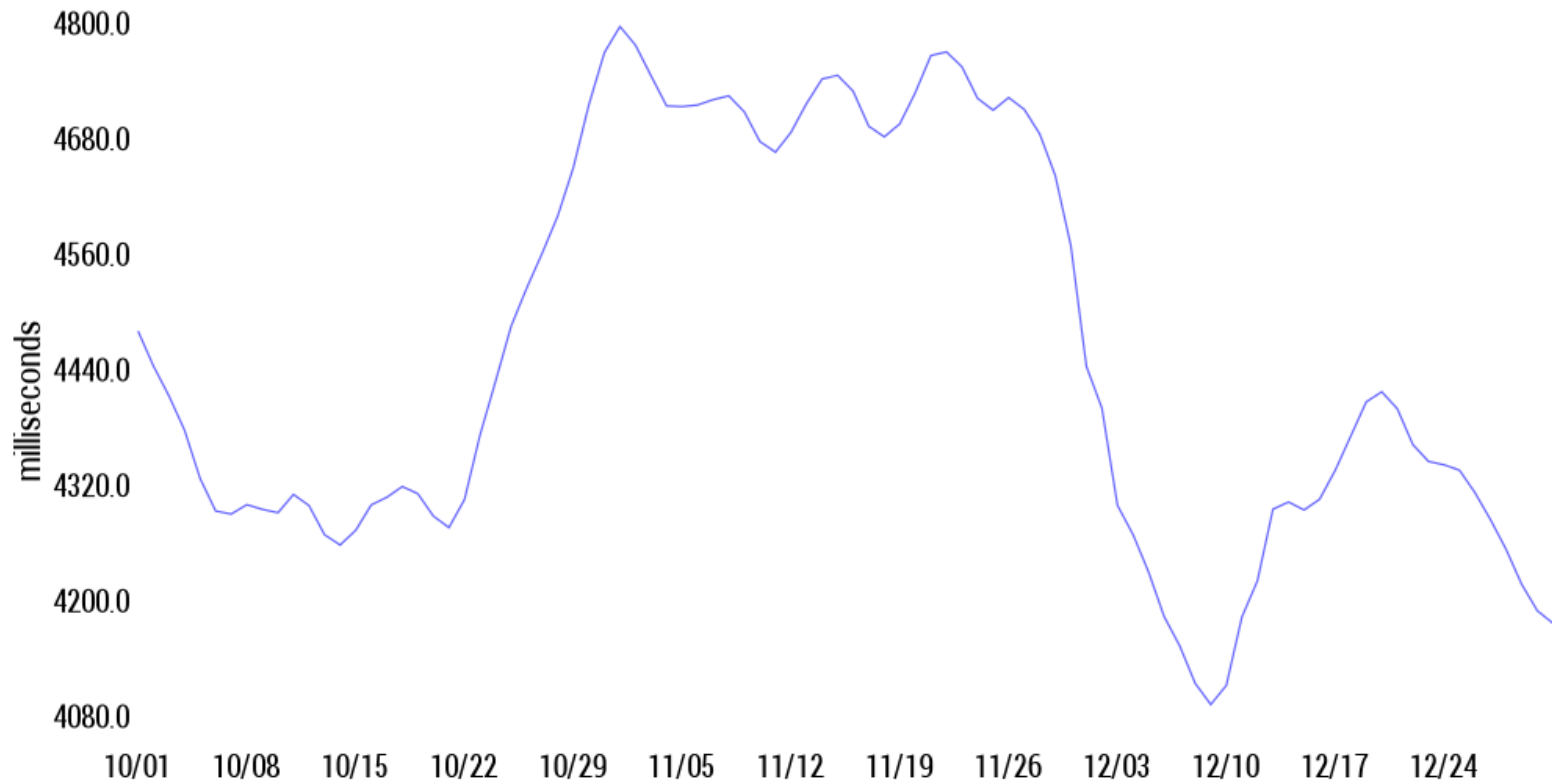
We're giving increased focus to goal-setting. Our Q3 goals are now under discussion, and will be finalized in our TechOps (SF) off-site meeting on January 20th.

Metrics and callouts

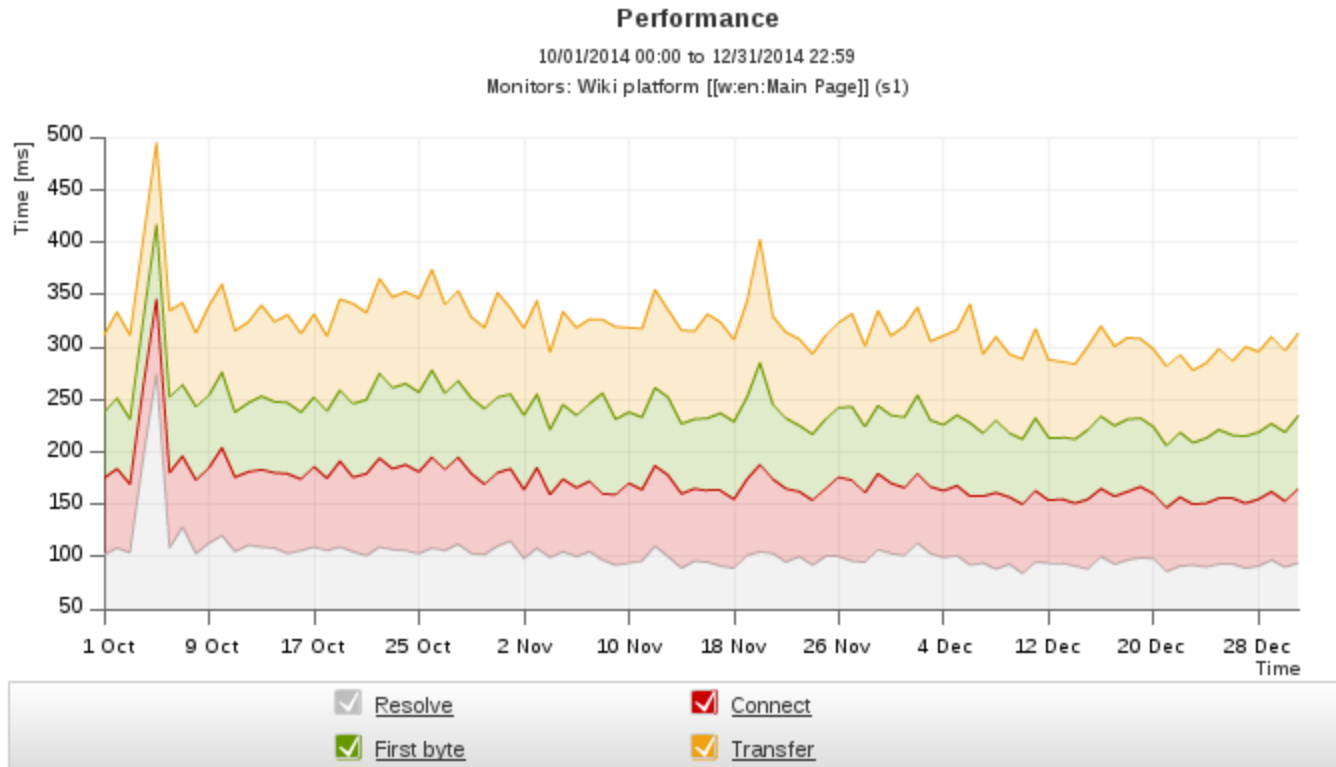
Metrics and callouts: page load time, desktop, median



Metrics and callouts: page load time, mobile, median



Metrics and callouts: Watchmouse, enwiki, performance



Metrics and callouts: Watchmouse, enwiki, availability



Metrics and callouts: Incidents, uptime, security

- From October - December 2014
 - 19 incident reports
 - Almost all fairly isolated, very few widely service affecting

What's next

Background

- SOA means we'll need to support many more individual services
 - More systems to maintain
 - Faster turnaround
 - Closer cooperation with developers
- The world moving to HTTPS in light of increasing regulation & surveillance
- A big push on metrics & monitoring
- Making use of our new data center for DR

DRAFT; to be finalized in our Ops off-site meeting Jan 20

Objective	Expected impact	Dependency	ETA	Status
Site Operations Q3				
Encryption (IPsec) on cross-data centre links for private data	Unhappy NSA	Analytics (nginx udp2log)	2015-02-30	50% complete
Core site services (wikis) at codfw	Increase failover/DR capability and capacity	Procurement, MediaWiki Core	2015-03-30	Procurement and initial installs have started
Virtualization for miscellaneous servers at codfw	Increased flexibility for misc services, reduced procurement turnaround time (SOA) and costs			Initial test setups have been built
Prepare HTTPS infrastructure to handle full traffic	Slight <i>increase</i> in page load time	Analytics (nginx udp2log), Wikipedia Zero	2015-03-30	Planning stage
Metrics and monitoring	Actual metrics in this review next quarter, scalable flexible monitoring in production			Prep work in Labs, RIPE Atlas

DRAFT; to be finalized in our Ops off-site meeting Jan 20

Objective	Expected impact	Dependency	ETA	Status
Labs Q3				
Labs domain in codfw for selected projects	Increased reliability/failover for Beta/Tool labs without additional complexity/overhead for users		2015-03-30	20% complete
Read-only Horizon dashboard available			2015-03-30	
(Assist ECT with Beta Labs (prio) project)		ECT team	2015-03-30	

Asks

Asks

We'd like to restart the conversation about the Technical Project Manager position.

- Focus it on a (high level) Procurement/Data Center Operations position