Quarterly review

Infrastructure / CTO

Q1 - 2015/16

Approximate Infrastructure size during this quarter: 35 FTE
Approximate CTO size during this quarter: 15.5 FTE

Agenda

ANALYTICS
RELEASE ENGINEERING
SERVICES
TECHNICAL OPERATIONS

DESIGN RESEARCH
RESEARCH & DATA
PERFORMANCE
SECURITY

Quarterly review

ANALYTICS

Q1 - 2015/16

Approximate team size during this quarter: **7 FTE**

*Time spent: strengthen **75%**, focus **25%***

Key performance indicator

Velocity	July: **151** (MoM -32%)	August: **145** (MoM -4%)	September: **388** (MoM 167%)

Q1 - Analytics

Objective: PAGEVIEW API

Objective	Measure of success	Status
Deploy an API for pageviews in production. *Team members involved:* ***5***	Analytics metrics will provide data on usage of the API by the community (for example, daily queries & visitors).	**Missed** The API has not been deployed yet.

Success:

- We evaluated several storage options and decided to use Cassandra.
- We sent a survey to the analytics list and collected a comprehensive set of use cases.
- All code is ready to deploy (hadoop, restbase and puppet).

Miss:

- Reaching consensus with the Services and the Operations teams on system topology and repository structure took longer than expected.

Q1 - Analytics

Objective: EVENTLOGGING AUDIT

Objective	Measure of success	Status
Complete an audit of EventLogging data. *Team members involved:* ***2***	All EL Schemas have been reviewed, documentation has been updated and new data purging/sanitizing has been automated.	**Missed** Part of data purging/sanitizing implementation is still in progress.

Success:

- Reviewed status and privacy of 137 schemas.
- Negotiated purging strategies with 28 schema owners.

Miss:

- We didn't get enough DBA cycles to complete the database purging/sanitizing.

Q1 - Analytics

Objective: PAGEVIEWS IN VITAL SIGNS

Objective	Measure of success	Status
Publish daily pageview counts per project in Vital Signs. *Team members involved:* ***3***	"Pageviews" metric is available in vital-signs.wmflabs.org, using new pageview definition and on a per-project basis.	**Met**

Success:

- Vital Signs graphs the new Pageview definition.
- It includes “Totals” - an aggregate of all wikis.

Q1 - Analytics

Objective: EL USING KAFKA

Objective	Measure of success	Status
Migrate EventLogging to use Kafka. *Team members involved:* ***3***	EventLogging's capacity increases by one order of magnitude (1k to 10K msg/s). Workers are parallelized.	**Met**

Success:

- Now, one single machine can process more than 7.5k msg/s.
- EventLogging capacity scales linearly: the more machines used, the more capacity.
- If an outage in EventLogging occurs, the data is queued in Kafka (it is not lost).

Q1 - Analytics

Success:

- We had no incidents in EventLogging [incident list].
- We assisted the Legal team collecting data for the NSA lawsuit [blog post].
- We trained 7 people to access Analytics' data using Hive [presentation] [documentation].
- We fixed 5 report-cards [1] [2] [3] [4] [5] that were having issues or displayed stale data.
- We improved Wikimetrics' user experience [Phab task].
- We enabled reading Wiki Dumps with Spark Streaming for the Research Team [Phab task].
- We developed a script to generate metrics on Phabricator workboards [github].

Miss:

- We had 2 Kafka outages, originated by an upstream bug [Phab task] [incident 1] [incident 2].
- Last-Access-Cookie did not yield Visitor Counts because we need better bot identification [Documentation]. Bot identification is a new project for the next quarter.

Q1 - Analytics

Core workflows and metrics

Category	Workflow	Comments	Type
Operational excellence	Hadoop cluster	Bug fixes, software installs / replacements / upgrades, monitoring, backfilling, etc.: 159pts - **23%**	M
	Other systems	EventLogging, Dashiki, Wikimetrics, Reportupdater, Aggregator, Limn, etc: 145pts - **21%**	M
Planned	Goal-related tasks	Includes any planned work directly or indirectly related to primary or secondary goals (new features, improvements, ops, documentation, etc.): 347pts - **51%**	N
Unplanned	Ad-hoc requests and team assistance	Data for NSA suit, support for VE: 23pts* - **3%**	R
	Incident resolution	2 Kafka incidents: 10pts* - **2%**	R

(*) Some tasks were not pointed or created in Phabricator therefore the workload is underestimated by roughly 5%.

Type: new, reactive, maintenance

Quarterly review

Release Engineering

Q1 - 2015/16

Approximate team size during this quarter: 6 FTE

Time spent: strengthen 13%, focus 31%, experiment 0%, maintenance/interrupt 56%

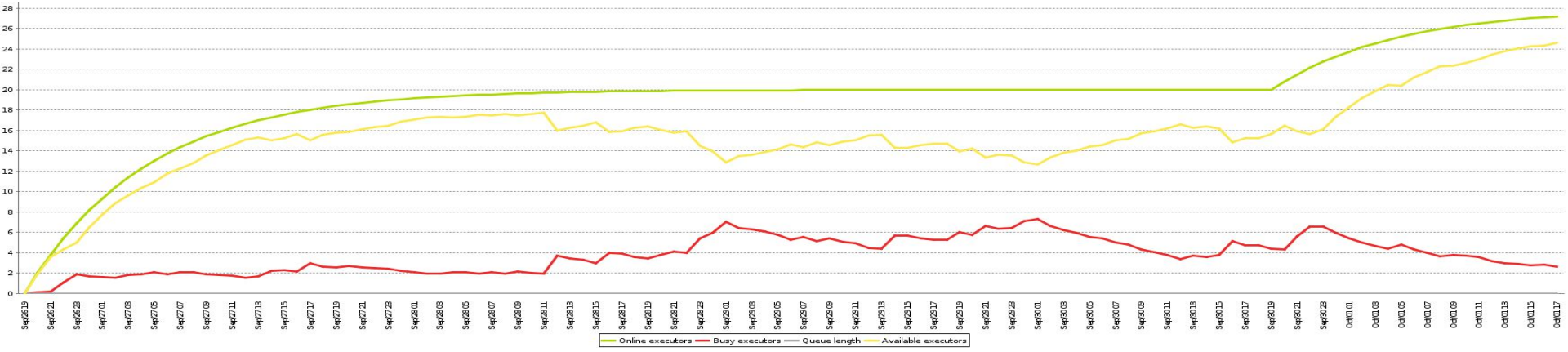
Key performance indicator

WMF Log Errors (open task count)	138	+31% from Q4 (105)	+202% YoY (68 on 2014-11-21)

Q1 - Release Engineering

Objective: Reduce CI wait time

Objective	Measure of success	Status
~~Isolate our Continuous Integration instances~~ Reduce CI wait time *Team members involved: 3 (~0.8 FTE)*	• Boot CI instances from OpenStack API - T109913	• CI Instances are booting automatically
	• Subset of CI jobs run in disposable instances - T109914	• Python CI jobs and the CI config repository itself are running on disposable instances



Q1 - Release Engineering

Objective: Reduce number of deploy tools

Objective	Measure of success	Status
~~Improve deployment tooling~~ Reduce number of deploy tools from 3 to 2 *Team members involved: 4 (~1.4 FTE)*	• Implement the needed features in scap for RESTBase deploys - T113119	• All needed features implemented or close to being merged (iow: in code-review). • Backwards compatible • Ready to use for Beta Cluster • Did not get RESTBase migrated by EOQ.

Q1 - Release Engineering

Objective: Retire Gerrit and Gitblit

Objective	Measure of success	Status
Migrate Gerrit to Differential *Team members involved: 2 (~0.45 FTE)*	• Allow repository cloning from Phabricator - T128	• Cloning over https done • via ssh still in-progress (working with Ops)
	• Prototype integration with our Continuous Integration infrastructure - T103127	• Conceptual work done • [scap3 work took priority over this]

Other successes

- De-siloing our team is going well
  - See: https://www.mediawiki.org/wiki/Wikimedia_Release_Engineering_Team/Skill_matrix
  - This is a direct action from our team offsite in late May
  - Call outs:
    - 4 people working closely on scap3
    - The number of intra-team pairings increased

Q1 - Release Engineering

Core workflows and metrics

Category	Workflow	Comments	Type
Continuous Integration / Test maintenance	CI Config changes	Changes to our CI configuration to enable/disable tests in a repository, etc • 311 config change requests closed by RelEng members in Q1 • 600 total	R
	MediaWiki Selenium (automated browser tests library)	6 releases in Q1 • https://rubygems.org/gems/mediawiki_selenium/versions	N
	Browser Test maintenance	Updating libraries, removing unused tests, etc	M

Type: new, reactive, maintenance

Q1 - Release Engineering

Core workflows and metrics

Category	Workflow	Comments	Type
Service maintenance	Phabricator maintenance	Phabricator upgrades (bi-weekly, as needed), and user account help	M
	MediaWiki + SWAT deployments	• Daily SWAT deployments • Weekly (spread over 3 days) production deploys of MW+Extensions	M

Type: new, reactive, maintenance

Quarterly review

SERVICES

Q1 - 2015/16

Approximate team size during this quarter: 4 FTE

Time spent: strengthen 40%, focus 35%, experiment 25%

Key performance indicator

REST API usage, mean req/s	216 req/s	mean 31% up from 165 req/s Q1

Q1 - Services

Strengthen: Mobile app service deployment and API

Objective	Measure of success	Status
Reduce app load times and duplicated development effort with an app API, providing content and metadata suitable for app consumption, backed by a service built by the app team. *Team members involved: 3*	- App service deployed in production. - Provide public REST API end points with documentation. - Integration with our CDN infrastructure.	- App service deployed in production. - Public REST API deployed and documented. - Full edge caching prepared, pending format finalization. - Android app is still testing this. Current ETA for switch is end of October. IOS app to follow.

- The content section API is also needed for progressive page loading in mobile web. We are working with the parsing and reading teams to generalize the API to work for both.

Q1 - Services

Focus: Scale RESTBase, replicate across datacenters

Objective	Measure of success	Status
Add the storage and throughput we'll need to store more types of content. Establish redundancy at the DC level for site availability and disaster recovery. *Team members involved: 3*	- Expand the existing cluster by at least three new nodes. - Set up a second RESTBase cluster in the Dallas datacenter. - Set up ongoing replication between the clusters.	- Eqiad cluster expanded from six to nine nodes. - Added multi-DC support in RESTBase. - Six-node codfw cluster operational, using larger HW. - Replication fully operational, incl. encryption for cross-DC traffic.

- Much of this work was done in cooperation with the operations team, especially Filippo Giunchedi. On the services side, this project was led by Eric Evans.
- Other Cassandra users (maps, analytics, possibly sessions) can reuse multi-DC support.

Q1 - Services

Objective: Make a plan for change / event propagation

Objective	Measure of success	Status
Changes to structured data and other events need to be propagated through storage and cache layers. ***Our current systems are not very reliable, exclusive to MediaWiki, and don't work across projects.*** *We aim to make change propagation more reliable, general, and manageable for developers.* *Team members involved: 3*	- Establish requirements. - Research solutions (both existing and possible development). - Establish a clear plan of action.	- Requirements worked out in several tasks: T102476, T88459. - Broad agreement on using Kafka in production. - Prototyped producer API, and established a plan for phased implementation: 1. Event bus providing common set of edit / change related events. 2. Simple change propagation between services. 3. (Q3) Complex change propagation and dependency tracking.

Q1 - Services

Workflow	Comments	Type
Mentor new service development	Assisted in the design, development or productization of these new services: - Mobile App Service - Maps service - Graphoid - Analytics Pageview service - Revision Scoring Approx effort: 0.75 FTE	N
Maintenance of existing third-party services	- Mentored Citoid development, supporting VisualEditor citation feature. - Worked with Moritz Schubotz towards a cleaner Math render mode. Approx effort: 0.2 FTE	M

Type: new, reactive, maintenance

Q1 - Services

Successes

- A new HTML save API provides an HTML-only edit workflow to all API users.
- API support for switching between wikitext and HTML edit modes enables a more integrated edit experience.
- Support for basic authentication in RESTBase enables private wikis like office wiki.
- 88+% test coverage combined with a staged deployment process let us make changes with confidence, and avoided deployment outages in production.
- A new SQLite table storage plugin provides a light-weight alternative to Cassandra. This backend is used by developers (Vagrant) and small installs. Petr Pchelko led this effort.
- The Node.js service support infrastructure developed in earlier quarters (service-template-node, metrics reporting, logging, puppet module) is now used by 7 services: graphoid, maps (x3), mathoid, citoid, mobile apps, restbase, analytics query service.

Misses

- One incident in July with elevated latency and error rates, caused by a combination of a software bug and overly large Cassandra instances. The bug is fixed, and Cassandra instance sizes are now limited by starting multiple instances per hardware node.

Quarterly review

TECHNICAL OPERATIONS

Q1 - 2015/16

Approximate team size during this quarter: 18 FTE

Time spent: strengthen 40%, focus 50%, experiment 10%

79% maintenance, 21% new

Key performance indicator

Availability	99.942%	-0.002% from Q4	

Q1 - TechOps

Objective: codfw

Objective	Measure of success	Status
Focus: Reduce missing cluster dependencies in codfw data center *Team members involved: 5, (+ 5 from other teams)*	Deploy HTTPS caches in codfw, complete successful failover of eqiad caching traffic; Deploy RESTbase with Cassandra replication; Deploy ElasticSearch cluster with replicated search indexes	codfw HTTPS caches deployed in production, successful failover of *all* eqiad cache traffic performed. RESTbase cluster in codfw set up successfully with Cassandra replication. ElasticSearch codfw cluster deployed and ready. Discovery is still finishing MediaWiki multi-DC search index support.

Delays in the establishment of the new equipment *leasing* process severely impacted our hardware procurement and pushed availability of hardware to the last two weeks of the quarter.

Learning: We should make more explicit agreements on ETAs (with buffer time) for dependent work.

Q1 - TechOps

Objective: Mail tech debt

Objective	Measure of success	Status
Strengthen: Update Wikimedia mail systems *Team members involved: 4*	Upgrade Mailman to version (2.1.18) on a supported distribution and new hardware; ~~Upgrade OTRS~~ Investigate OTRS upgrade to 4.0.9 and provide trial system for OTRS users; Enable TLS encryption for inbound and outbound e-mail	Objective was redefined early in the quarter around OTRS. A beta installation of version 4.0.13 was made available to OTRS users. Mailman was upgraded to 2.1.18 and migrated to a new VM. TLS has been enabled on all inbound and outbound e-mail.

Early on in the quarter we established that due to high amount of dependencies upon us, some changing circumstances (reduced DBA capacity) and shifting priorities (fr-tech), we would not be able to perform a full upgrade of OTRS this quarter. In collaboration with the CA team we decided to redefine the goal.

Learning: Migrations with a strong impact (change of functionality/use & feel) on users need more careful planning and coordination with liaison teams.

Q1 - TechOps

Objective: Security

Objective	Measure of success	Status
Focus: Reduce our security attack vectors *Team members involved: 1+10*	Implement organized package upgrades (debdeploy); >80% of hosts protected by firewalls, or explicitly assessed as unwanted and not needed	debdeploy has been successfully implemented and tested on a subset of cluster hosts, and we achieved 86% firewall coverage.

860 hosts now have firewalls, and 148 have been evaluated as explicitly not needing them. 1008 out of 1176 hosts/VMs are covered, amounting to 86%.

Q1 - TechOps

Objective: Labs reliability

Objective	Measure of success	Status
Strengthen: Improve reliability of Wikimedia Labs *Team members involved: 4*	Meet or exceed 99.5% uptime for each Labs infrastructure service; Remove Labs support host SPOFs; Migrate NFS to RAID10 with sharding; Audit Labs projects on NFS dependencies and support migrating off	Cumulative availability in Q1 was 99.742%. Redundant hosts have been set up for Labs NFS storage, networking, DNS and databases. NFS storage was migrated to RAID10 with 3 shards. 134/176 (76%) of Labs projects have been made independent of NFS storage.

Q1 - TechOps

Objective: Distributed Cluster Environment

Objective	Measure of success	Status
Experiment: Evaluate and test a new distributed cluster environment for Tool Labs *Team members involved: 2*	Establish evaluation criteria for cluster solutions and perform an evaluation; Set up the selected distributed cluster environment in ToolLabs to users to experiment with their web services	Criteria were established, and Apache Mesos and Kubernetes were evaluated. Kubernetes was selected and made available in ToolLabs, and two Tools were migrated onto it for testing.

Quarterly review

DESIGN RESEARCH

Q1 - 2015/16

Approximate team size during this quarter: 4 FTE

Time spent: strengthen 15%, focus 65%, experiment 20%

Key performance indicator

No one KPI due to challenges in quantifying qualitative research and dependencies on product teams for project work. Open to suggestions.			

Q1 - Design Research

Objective: Collaborate with Product Teams

Objective	Measure of success	Status
Support human centered product design and development by including Design Research in teams' product development process. *Team members involved: 4*	Design Research projects are completed and output is relied upon to generate and iterate workflows, tools and products.	**Completed 8 design research projects for 6 teams:** 4 Generative / Exploratory 1 Usability testing 3 heuristic evaluations

First time/New Editor discovery research informed design of new editor education for visual editor.

Workflow research informed understanding of user workflows to iterate workflow tools.

Mobile contribution research (31:11) is the start of informing us how to design / build for mobile contributions.

Link preview usability testing informed pre release iteration of link preview.

Q1 - Design Research

Objective: Mentoring

Objective	Measure of success	Status
Mentor non-design researchers to do design research to the standards of the Design Research team. *Team members involved: 1* **STRETCH**	Two non-designers researchers have done 2 or more usability tests to the standards of the Design Research team. *Non-designers learning to implement quality design research.*	Mentoring: ● May, visual designer ○ exploratory research on MW engineers' use of style guides ● Sherah, prototyper ○ usability study on link inspector ● Both projects met standards of Design Research team

Link preview usability testing informed iteration of link preview before release.

Exploratory research for UI Standardization: Conversation on wiki and interviews on the same topic at Wikimania and post Wikimania are informing UI Standardization

Q1 - Design Research

Objective: Personas

Objective	Measure of success	Status
Iterate pragmatic personas from information gathered in persona interviews. *Team members involved: 3*	12 persona interviews completed	• Interviewed 7 new editors • 5 failed to show up to scheduled interviews • Continuing to recruit to complete this set of interviews.

The interviews we have done so far are already informing our thinking on the new editor persona.

Q1 - Design Research

Objective: Participant Database

Objective	Measure of success	Status
Grow database of opted-in design research participants beyond 2000. *Team members involved: 3* **STRETCH**	Database now contains over 2000 participants.	New opted-in participants came from: • social media postings • Craigslist • outreach at Wikimania • other

Q1 - Design Research

Other achievements

- Contract Participant Recruiter, Samantha Becker (started mid-August).
- Support Visual Editor team in the release of the visual editor.
- Participated in the development of initial strawman product development process and its ongoing iterations.
- Initiated project involving UI Standardization, Communications, Product Management to evolve Voice and Tone on wiki projects.
- Collaborating with Edward Galvez to improve quality survey implementation WMF wide.

Misses

- Started and put on hold 3 design research projects because of product teams' reprioritization of projects.
- Prototypes and artifacts were not ready in time to do usability testing on some projects.

Q1 - Design Research

Core workflows and metrics

Category	Workflow	Comments	Type
	Participant recruitment	Implemented efficiencies to recruitment process (mass emailing tool, targeted recruiting script, participant database)	M
	Evolve product development process with individual teams	Strengthening communication and coordination between product teams and Design Research to implement design research at the right stages in product development. Support of TPG is integral to success.	M
	Further broadening our reach	Exploring external design research collaboration with University of Washington on projects potentially informing several WMF teams' work.	N
	Research consultations	Community Engagement & Zero: survey and question design Comms: early feedback on plan for design research collaboration with external researcher, and consultation and coordination with about the visual editor outreach / awareness strategy and coordinating on delivery of personas and other design research.	M

Type: new, reactive, maintenance

Quarterly review

RESEARCH AND DATA

Q1 - 2015/16

Approximate team size during this quarter:
4.5 FTE, 2 research fellows, 10 collaborators
Time spent: strengthen 20%, focus 30%, experiment 50%

Key performance indicator

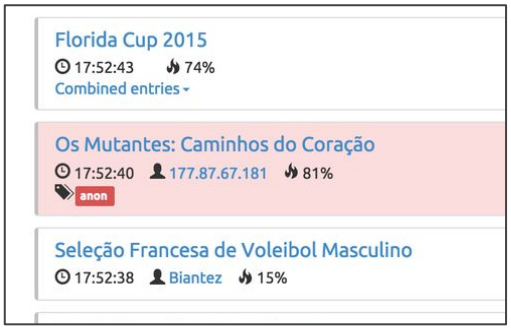
No one KPI due to the nature of the work			

Q1 - Research and Data

Objective: Revscoring productization

Objective	Measure of success	Status
Productize revscoring and wiki labels *Team members involved: 1* *Collaborators: 9*	Stable version of production-ready ORES service up and running on Labs	• scores cached in real time for all new revisions • 10M scores generated so far • Fast response: cache miss: 0.1-5s, hit: 0.05s

- *revscoring makes automated edit and article quality assessment available as a service to our contributors*
- at scale, revscoring can effectively reduce human curation effort by up to **93%**
- **4 models** in production (reverted, wp10, damaging, goodfaith), **6 languages** (en, es, fa, fr, pt, tr)
- Improved AUC for enwiki (.82 → **.90**)
- **early community adoption**: revscores now integrated into top semi-automated anti-vandal tool (Huggle)



https://meta.wikimedia.org/wiki/Research:Revision_scoring_as_a_service

Q1 - Research and Data

Objective: Article Recommendation tests

Objective	Measure of success	Status
Run controlled tests of article translation recommendations *Team members involved: 2* *Collaborators: 2*	• Complete WMF staff pilot • Complete and analyze the results of live tests on Wikipedia	• completed pilot and live test in French Wikipedia • analyzed/presented results • wrote and submitted paper

- Personalization is computationally expensive but matters: we can increase contributor activation rate by **82%** over control
- Recs boost article creation rate: **78%** with random recs and **220%** with personalized recs, over control

On average, personalized recommendations boost the article creation rate by 220%.

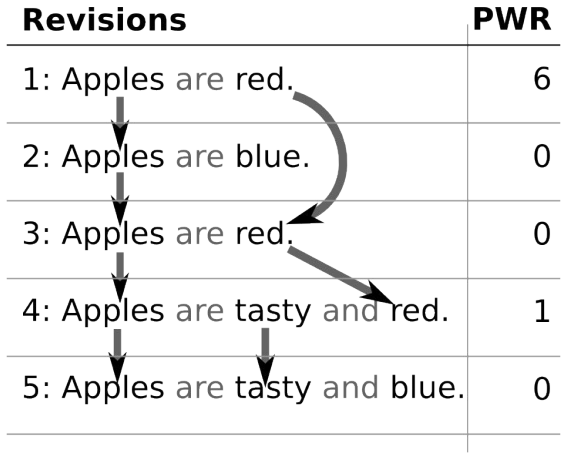
https://meta.wikimedia.org/wiki/Research:Increasing_article_coverage

Q1 - Research and Data

Objective: Value-added research

Objective	Measure of success	Status
Measuring value added *Team members involved: 1* *Collaborators: 1* **STRETCH**	• Perform historical analysis on who adds value to Wikipedia	Preliminary analysis in progress Full study deferred to Q2

- Survival of content has been measured.
- The basic quality of a contribution is evident after a few edits/hours.



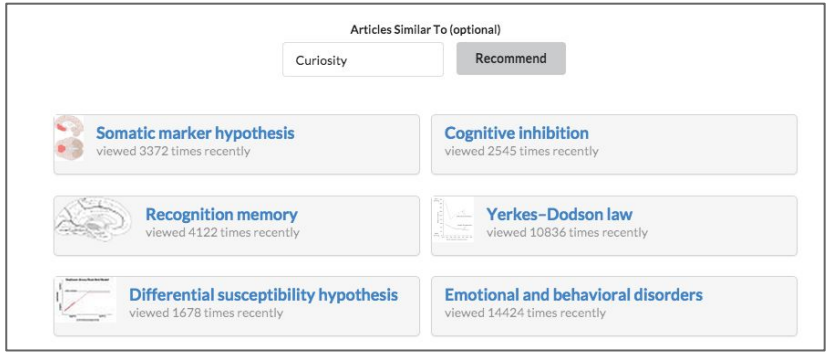
https://meta.wikimedia.org/wiki/Research:Measuring_value-added

Q1 - Research and Data

Objective: Article recs improvements

Objective	Measure of success	Status
Re-train and productize article recommendations *Team members involved: 2* *Collaborators: 2* **STRETCH**	• Improve algorithm based on user feedback • Integrate the algorithm in ContentTranslation	• Integration in CX paused • Pivoted to stand-alone API and client on Labs for rapid iteration • Work staged with Editing

- Set up a public API on Labs
- Developed an instance on Labs with article recommendation service offered for 11 language pairs.



https://meta.wikimedia.org/wiki/Research:Increasing_article_coverage

Q1 - Research and Data

Other achievements

- **Outreach**
  - presented our work at 3 conferences: OpenSym, Wikipedia Science Conference, Wikimania
- **Project documentation**
  - all projects documented on wiki and cross-linked on Phabricator
- **Formal collaboration process**
  - collaboration process documentation published on wiki
- Supported several teams with **ad hoc data analysis**
  - revenue projections for fundraising, HTTPS rollout analysis, data for the NSA lawsuit, editor trends, financial reporting

Misses

- **High cost of urgent data analysis requests**
  - 250 person-hours spent in Q1 for urgent requests for high priority data analysis coming from Legal, Comms, Finance, C-team
  - Half of these hours were provided by Research & Data (beyond team responsibilities)

Q1 - Research and Data

Core workflows and metrics

Category	Workflow	Comments	Type
	NDAs / endorsements	2 endorsements submitted, 2 new MOU collaboration, 2 NDA renewals	M
	Urgent DA requests	7 urgent, high priority data requests honored by several teams (250hrs), half of this effort provided by Research and Data.	R
	Showcases	2 research showcases and 4 presentations	M

Type: new, reactive, maintenance

Quarterly review

PERFORMANCE

Q1 - 2015/16

Approximate team size during this quarter: 4 FTE

Time spent: strengthen 40%, focus 40%, experiment 20%

Key performance indicator

Time to first paint	675ms	-49% from Q4	~ -55.73% YoY

Q1 - Performance

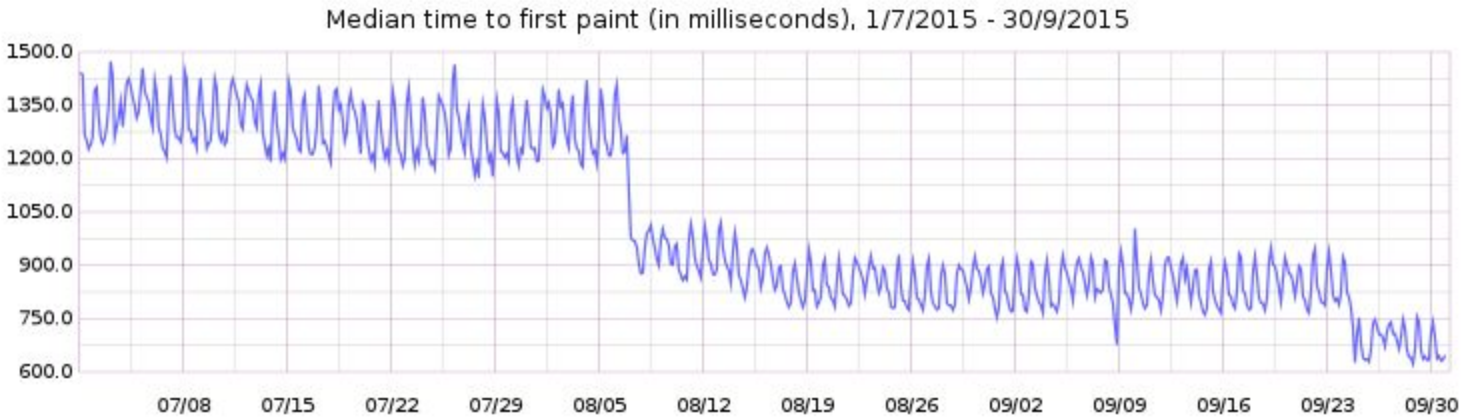
Objective: Subsecond page save time

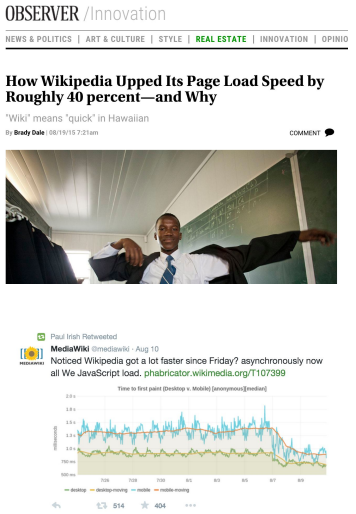
Objective	Measure of success	Status
Make editing Wikipedia fast.	Sub-second page save time.	**Miss**. We hit the goal in August, but a regression in September wiped out gains. -28% reduction in page save time.

Q1 - Performance

Objective: Sub-900ms first paint time

Objective	Measure of success	Status
Faster delivery of content to readers. (T105391)	Achieve sub-900ms median first paint time.	**Hit**. Median first paint is now 675ms, a 49% reduction.




OBSERVER /Innovation

NEWS & POLITICS | ART & CULTURE | STYLE | REAL ESTATE | INNOVATION | OPINIO

How Wikipedia Upped Its Page Load Speed by Roughly 40 percent—and Why

"Wiki" means "quick" in Hawaiian

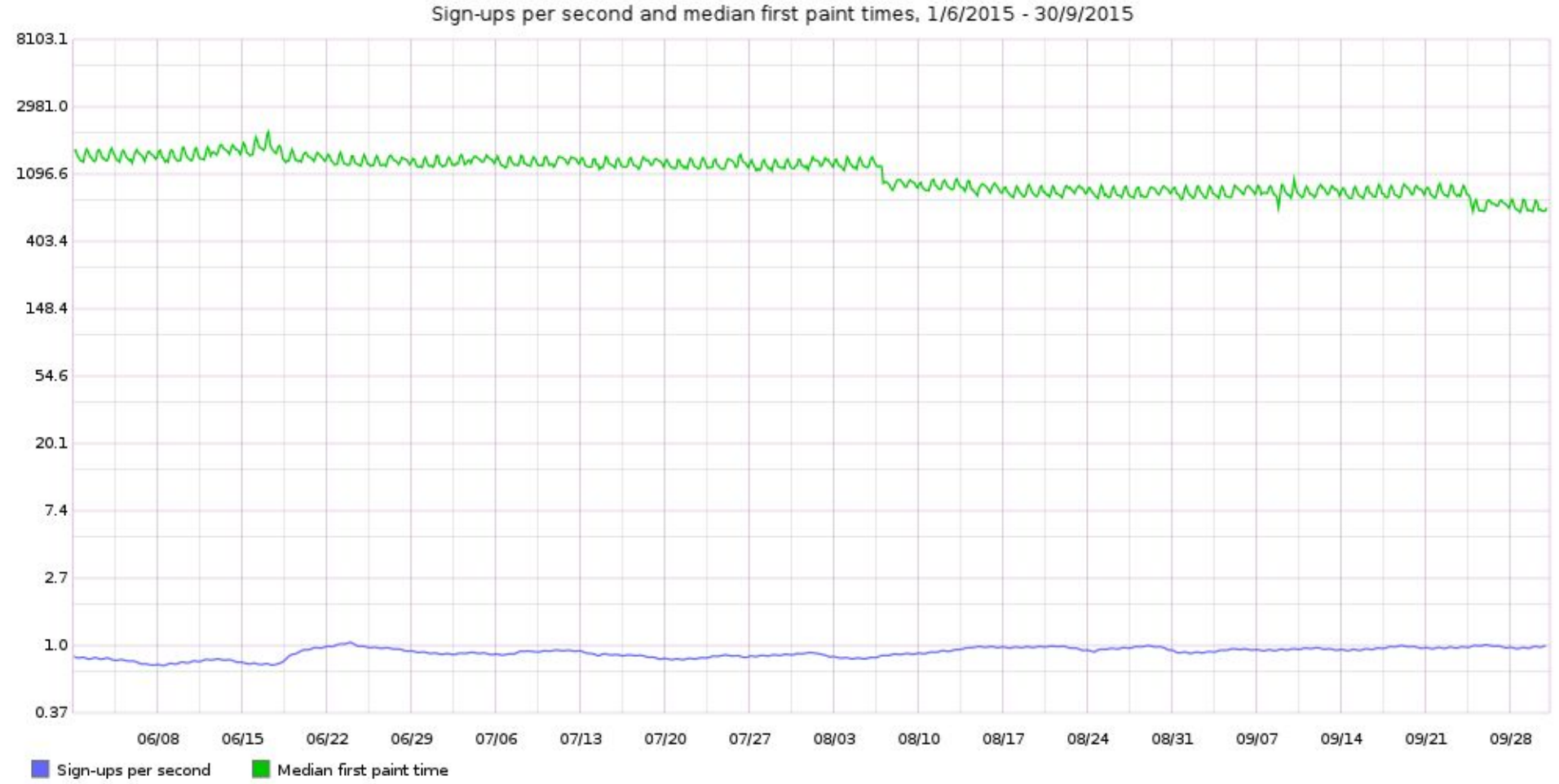
By Brady Dale | 08/19/15 7:21am

COMMENT

Paul Irish Retweeted

MediaWiki @mediawiki · Aug 10

Noticed Wikipedia got a lot faster since Friday? asynchronously now all We JavaScript load. phabricator.wikimedia.org/T107399


Sign-ups per second and median first paint times, 1/6/2015 - 30/9/2015
8103.1
2981.0
1096.6
403.4
148.4
54.6
20.1
7.4
2.7
1.0
0.37
06/08
06/15
06/22
06/29
07/06
07/13
07/20
07/27
08/03
08/10
08/17
08/24
08/31
09/07
09/14
09/21
09/28
Sign-ups per second
Median first paint time

Q1 - Performance

- Automated cross-browser performance testing and reporting: http://wpt.wmftest.org/ / https://wikitech.wikimedia.org/wiki/WebPageTest
- Three of the team's members jointly represent **one-fiftieth of the MediaWiki developer population** and **over one-third of all MediaWiki code commits**.
- MediaWiki availability project: RfC approval; biweekly check-in with TechOps → shared understanding of priorities, plans, architecture.

Quarterly review

SECURITY

Q1 - 2015/16

Approximate team size during this quarter: 2 FTE

Time spent: strengthen <10%, focus <10%, experiment 40%

Key performance indicator

Critical and High Priority Security Bugs		-66.6% / +15.9% from Q4 **	

Q1 - Security

Objective: Automated Dynamic Scanning

Objective	Measure of success	Status
Run dynamic security scanning tool against beta every week. *Team members involved: 1*	• Pick tool to implement • Configure weekly automated scanning from labs of beta • Record baseline scan results for core and one extension	Security team chose OWASP's ZAP for scanning. Weekly scans are running from scanner. security-tools.eqiad.wmflabs. Baseline measurements are recorded at [[mw:Wikimedia_Security_Team/ApplicationScanning]].

Q1 - Security

Objective: Metrics for Security Bugs

Objective	Measure of success	Status
Document and report initial metrics for security bug handling *Team members involved: 1*	• KPI metric chosen • Metrics tracked monthly	Until we can better understand the subtleties of our backlog, we will use the number of Critical and High priority security bugs as our KPI [[mw: Wikimedia_Security_Team/Metrics]]

Learning: The number of open bugs is a poor metric for overall health of an application, but is the most indicative metric that we can practically track at this time.

All metrics are tracked privately. Historically, the number of open security issues in mediawiki has been considered private to the organization.

Q1 - Security

Other Successes

- Assessment of Analytics cluster

Learnings

- Now that we are tracking security bugs as a metric, we are more aware that the number of security issues are growing rapidly (Appendix - Security). We have contracted with a volunteer developer for next quarter to more adequately address these.
- As part of our work with static analysis tooling next quarter, we hope to get a better approximation for our code base’s security than open bugs.

Q1 - Security

Core workflows and metrics

Category	Workflow	Comments	Type
MediaWiki Security	Security Bugs		R
	Security Reviews	18 reviews requested	R
	Secure Development Training	Secure Coding for MediaWiki: 32 attendees PCI mandated training for FrTech: 6 attendees	M
Privacy and Security Consulting	Architecture and design consultations	Legal - email encryption Analytics - eventlogging, uniques Reading - AuthManager FrTech - PCI	N
DFIR	Incident Response	HTTPS Redirect, T109478, Page Categorization, (others)	R

Type: new, reactive, maintenance

Appendices

Q1 - Analytics

Here is the survey in the Analytics mailing list to collect the set of API use cases: https://lists.wikimedia.org/pipermail/analytics/2015-September/004237.html

These are the phabricator tasks that correspond to the code that is ready to deploy:

- Hadoop: job that formats and inserts the data into cassandra. https://phabricator.wikimedia.org/T108174
- Restbase: actual API code serving the data. https://phabricator.wikimedia.org/T107053
- Puppet: configuration code to set up the system. https://phabricator.wikimedia.org/T107056

To read the current status of the schemas, browse to their corresponding Talk/Discussion page. The status box contains: Owner, Team, Project, Status and Purging strategy. Here's a list of all EventLogging schemas.

During the project, this spreadsheet has been used as the main reference for all schema related information. Also, Wikitech's documentation on purging strategies has been updated.

And here are the Phabricator tasks for the implementation of the data purging/sanitizing: [1] [2] [3].

Q1 - Analytics

Appendix <PAGEVIEWS IN VITAL SIGNS>

Browse https://vital-signs.wmflabs.org/ to see the Pageviews per project metric (default). Data starts in May, because that's the date when we started collecting data for the new pageview definition.

To see the aggregate of all projects, type "Totals" into the "add project or language" box, and select that same option from the drop down.

This Phabricator task includes all subtasks that were worked on.

Q1 - Analytics

You can find the test results in this Phabricator task.

Here is some documentation on the new EventLogging architecture.

This documentation explains how to access the data stored exclusively through Kafka.

Q1 - Release Engineering

Appendix

About us:

- Team page

Planning:

- Quarterly Goals for FY1516
- More detail for:
  - Q1
  - Q2

Phabricator workboards (relevant to this quarter's goals):

- Continuous-Integration-Scaling
- Scap3
- Gerrit-Migration

Q1 - TechOps

External monitoring availability metrics based on Catchpoint data.

Services audience	**Availability** cumulative average over 1 day interval	
	(last quarter)	Jul 1 - Sep 30 2015
(R)eaders	99.944%	**99.942%**
(C)ontent Contributors	99.942%	**99.935%**
(M)ovement Partners (volunteers, developers, etc.)	99.901%	**99.943%**
(E)xternal Partners	99.951%	**99.970%**
(D)onors	99.957%	**99.975%**

Q1 - TechOps

Appendix <User-facing incidents (1/3)>

Date	Time-frame	Summary	Impact
2015-07-02	10:18 - 10:26	Cassandra refusing connections due to timeout in executing queries	RESTbase unavailable, affecting all users (VisualEditor, OCG, CXServer)
2015-07-09	17:22 - 17:34	Wikimedia action API unavailable due to unforeseen dependency in scheduled maintenance	Unavailability for all uncached Action API user requests
2015-07-28 - 2015-07-29	16:54 - 15:29	HTTPS redirects disabled due to undetected problem in Varnish regex	23% of users logged in over HTTP
2015-08-16	20:29 - 20:45	Firewall change overflows conntrack table on Poolcounter server	Unavailability for all uncached Action API user requests
2015-08-12	22:00 - 23:25	Problems with RabbitMQ after Labs networking maintenance	Intermittent network unavailability for all Labs instances
2015-08-14	23:40 - 23:54	Removal of fss HHVM extension in production and a MediaWiki bug cause fatal errors	Full unavailability of all MediaWiki based services

Appendix <User-facing incidents (2/3)>

Date	Time-frame	Summary	Impact
2015-08-17 - 2015-08-18	16:17 - 08:36	GridEngine exec daemon fails to start after boot	Some ToolLabs Tools unavailable
2015-08-20	14:37 - 15:10	GlobalSign sending expired OCSP responses	Some browsers (e.g. Firefox) giving invalid certificate errors
2015-08-20	18:30 - 20:25	Privacy bug introduced in MediaWiki despite code review	Contributor IP address leak under certain circumstances due to MediaWiki change in page categorization
2015-08-25	00:00 - 08:37	ElasticSearch index freeze causes redis overflow	MediaWiki jobs pile up, OCG unavailable
2015-08-30	09:30 - 13:15	Linux kernel issue locks up NFS server	NFS unavailable for Labs instances that use it
2015-09-01	05:33 - 05:48	New firewall rules cause ElasticSearch cluster coordination issues	Some search requests failing for 10-15 minutes

Appendix <User-facing incidents (3/3)>

Date	Time-frame	Summary	Impact
2015-09-14	09:43 - 09:59	A long standing and overly complex set of Flow schema changes/software deployments result in a missing DB index	Flow unavailability until DB index restoration
2015-09-25	11:03 - 11:29	Primary Labs network node fails due to Linux kernel issue, Puppet manifest bug fails to page	Labs network unavailability
2015-09-29		Manual queries on enwiki DB cluster for an old Phabricator bug result in slave lag	English Wikipedia in read-only mode for 10 minutes

Q1 - TechOps

Appendix <other accomplishments>

- Implemented twice weekly Puppet SWAT process
- Expanded US network to new network PoPs Chicago and Dallas
- Finalized the codfw network (upgraded hardware/versions, set up management network)
- Expanded IP transit capacity in 4 locations
- Upgraded nginx SSL terminators to 1.9.4
- Upgraded LVS servers to Jessie
- Implemented a process for equipment leasing [with Finance]
- Deployed Wikidata Query Service [with Discovery]
- Implemented IPsec for all cross-DC Varnish-Varnish traffic
- Enabled gzip compression in Varnish for currently uncompressed objects
- Expand restbase cassandra cluster capacity in eqiad and codfw
- Deployed scb (second services cluster)
- Accounts passwords moved off bastion and into encrypted storage
- Joined new IXPs Equinix Dallas & Chicago
- Upgraded Labs to OpenStack Kilo
- Prepared a 5 year capital plan
- Deployed ORES in Labs [with Research]
- Deployed Nodepool in Labs for CI [with RelEng]
- Implemented firejail containment for services
- Renewed 18TB compressed page storage key-value store (“External Storage”)
- Merged bits.wikimedia.org into the Text caching cluster
- Consolidated all router/switches configurations and put them under the barebones of a configuration management system
- Cleaned up and automated fundraising firewalls configuration

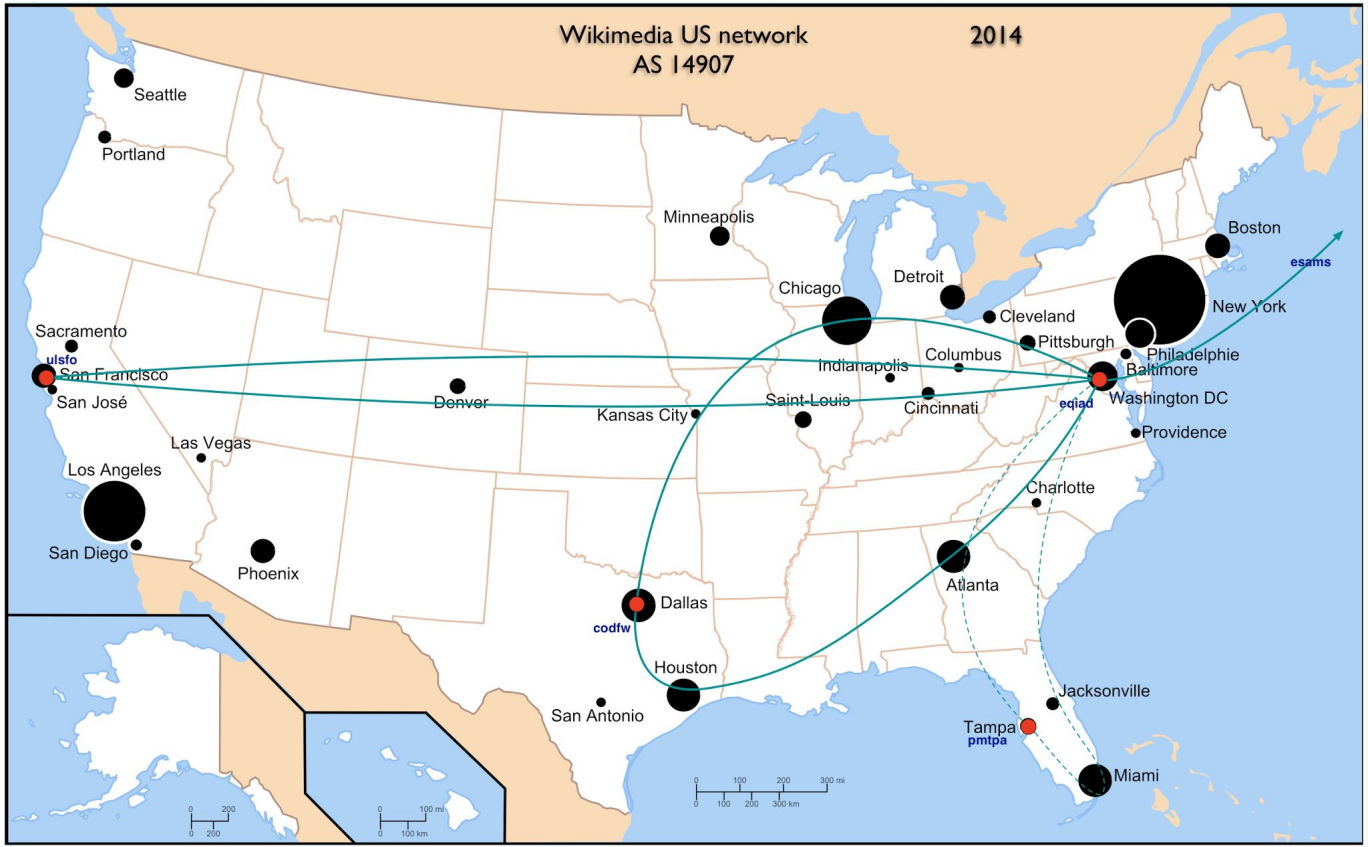
Q1 - TechOps

Appendix <other accomplishments>

- Improved PyBal with a new configuration engine, monitoring instrumentation, systemd support and code cleanups [with Performance]
- Migrated SNI SSL certs to one unified cert
- Decommissioned the last Ubuntu 10.04 server
- Database backups review, improved point in time recovery time
- Documented datacenter ports and set up processes for managing their lifecycle
- Migrated Ganglia to a centralized aggregator setup
- Deployed aptly for per-Labs-project package management
- Deployed the maps trial cluster [with Discovery]
- Migrated the MW Image Scalers and Video Scalers to HHVM
- Implemented request rate limiting on Varnish cache cluster
- Procured out-of-band management connectivity for both eqiad & codfw

Q1 - TechOps

Appendix <other accomplishments>

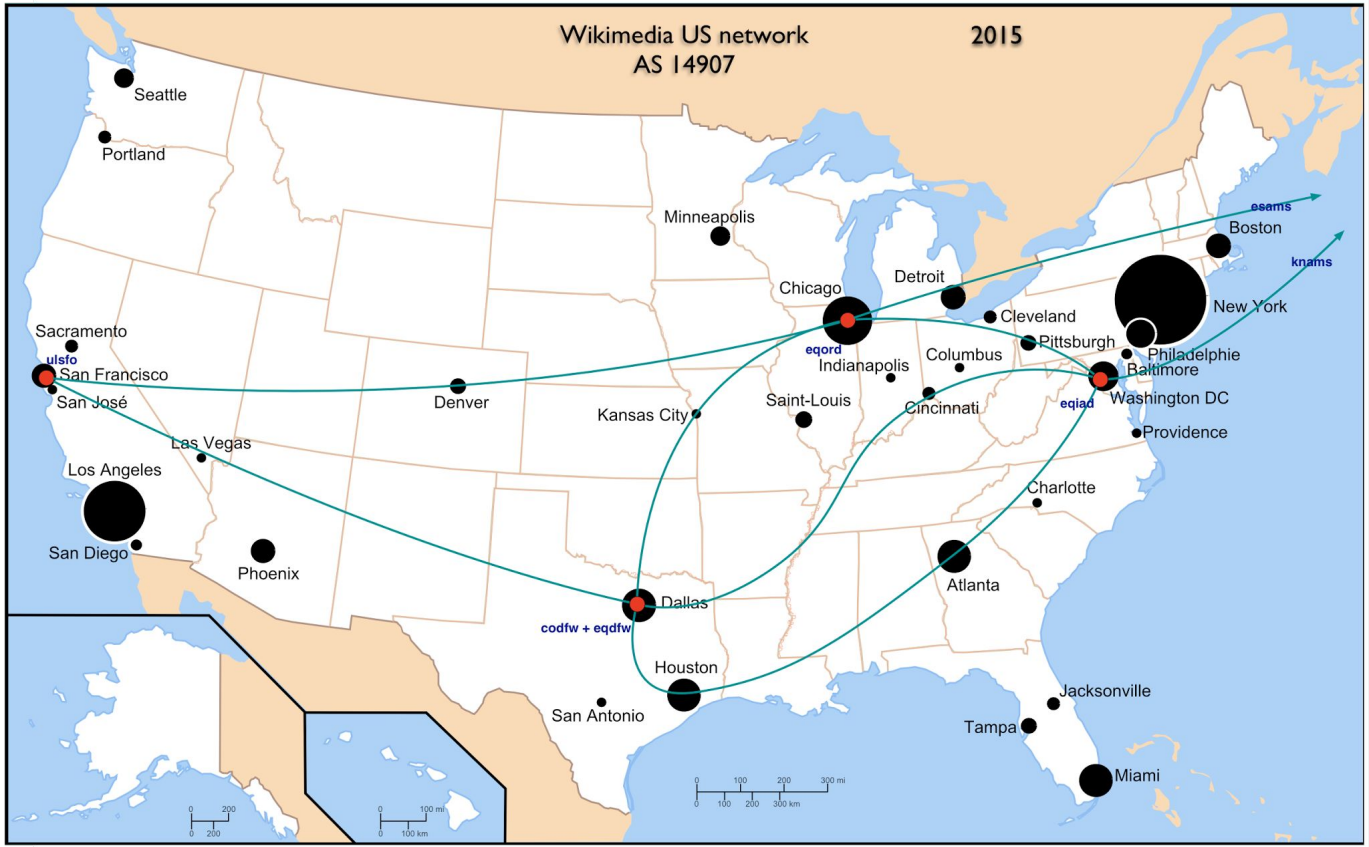


Migrated our US network topology from this...

Q1 - TechOps

Appendix <other accomplishments>

...to this more efficient, cost effective and redundant topology.



Victor Grigas shot photos of our new Dallas data center: https://commons.wikimedia.org/wiki/Category:Wikimedia_servers_in_Carrollton

Q1 - Design Research

Appendix

- **Design Research Page**
  - Processes and projects.
- **Goals for Q2 FY16**
  - What we are planning to do in the coming quarter
- **Phabricator workboard**
  - What we are currently doing

Q1 - Research and Data

Appendix

- **Research & Data team page**
  - Describing goals, processes and projects.
- **Goals for Q2 FY16**
  - What we are planning to do in the coming quarter
- **FY16 priorities**
  - Top priorities for the fiscal year
- **Phabricator workboard**
  - What we are currently doing

Q1 - Security

Appendix