



# Analytics Engineering



**WIKIMEDIA**  
FOUNDATION



**WIKIPEDIA**  
*La enciclopedia libre*

**We build analytics  
infrastructure**

[analytics@lists.wikimedia.org](mailto:analytics@lists.wikimedia.org)

The Analytics Team sees as its primary responsibility making **Wikimedia related data available** for querying and analysis to both **WMF** and the **different Wiki communities** and stakeholders. We develop infrastructure so all our users, both within the Foundation as within the different communities, can access data in a self-service fashion that is ***consistent with the values of the movement.***

We do not handle data  
requests (for the most  
part)

We try for (all) data to  
be public by default.

*The more accessible the data is, the more impact it can have.*

But we are not there  
Yet

# Public Data

**Data that is Useful for the  
world at large.**



**WIKIPEDIA**  
*La enciclopedia libre*

6th largest website [Alexa]

**Wikipedia reaches hundreds  
of millions of unique  
devices every month and, as  
such, are a good barometer  
of browser popularity.**

# The most popular browser

?

The most  
popular browser  
in April 2017

Was Chrome 56  
with 25% market  
share

<https://analytics.wikimedia.org/dashboards/browsers/#all-sites-by-browser>

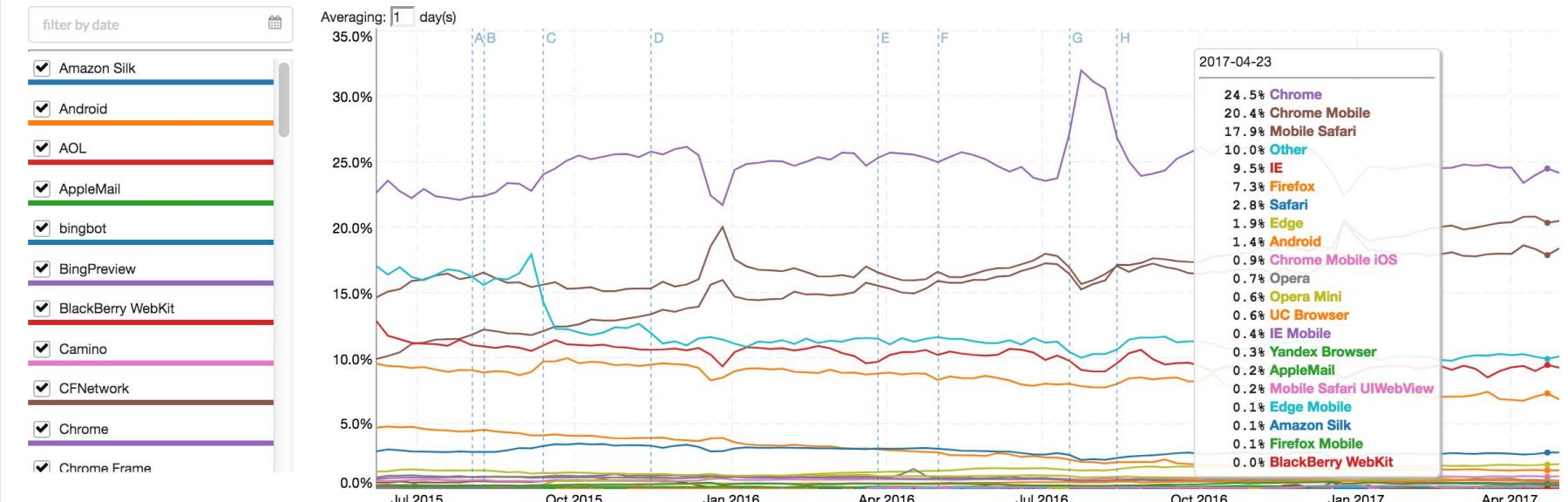
## User Agent Breakdowns Wikimedia Foundation

All Sites by OS ▾ All Sites by Browser ▾ All Sites by OS and Browser ▾ Mobile Site by OS ▾ Mobile Site by Browser ▾ Desktop Site by OS ▾

Browser Family Timeseries Browser Family and Major Hierarchical View Browser Family and Major Tabular View

Browser Family Timeseries

Showing data from 2015-06-01 to today



# Issues

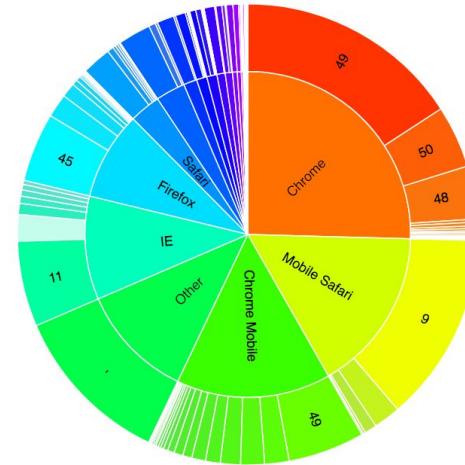
IE7 making a  
comeback... up  
more than 1%  
last year

2016-03-06 - 2016-05-11



7

• 1.8%



2017-03-06 - 2017-05-11



IE

7

2.8%

FROM  
2017-03-06TO  
2017-05-11

Apply

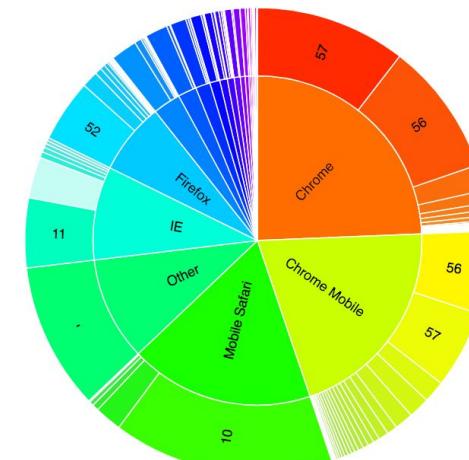
Cancel

← Mar 2017 →  
Su Mo Tu We Th Fr Sa

26	27	28	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

← May 2017 →  
Su Mo Tu We Th Fr Sa

30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3
4	5	6	7	8	9	10



**Bots ...**

**Data useful to WMF,  
Researchers and  
Community**

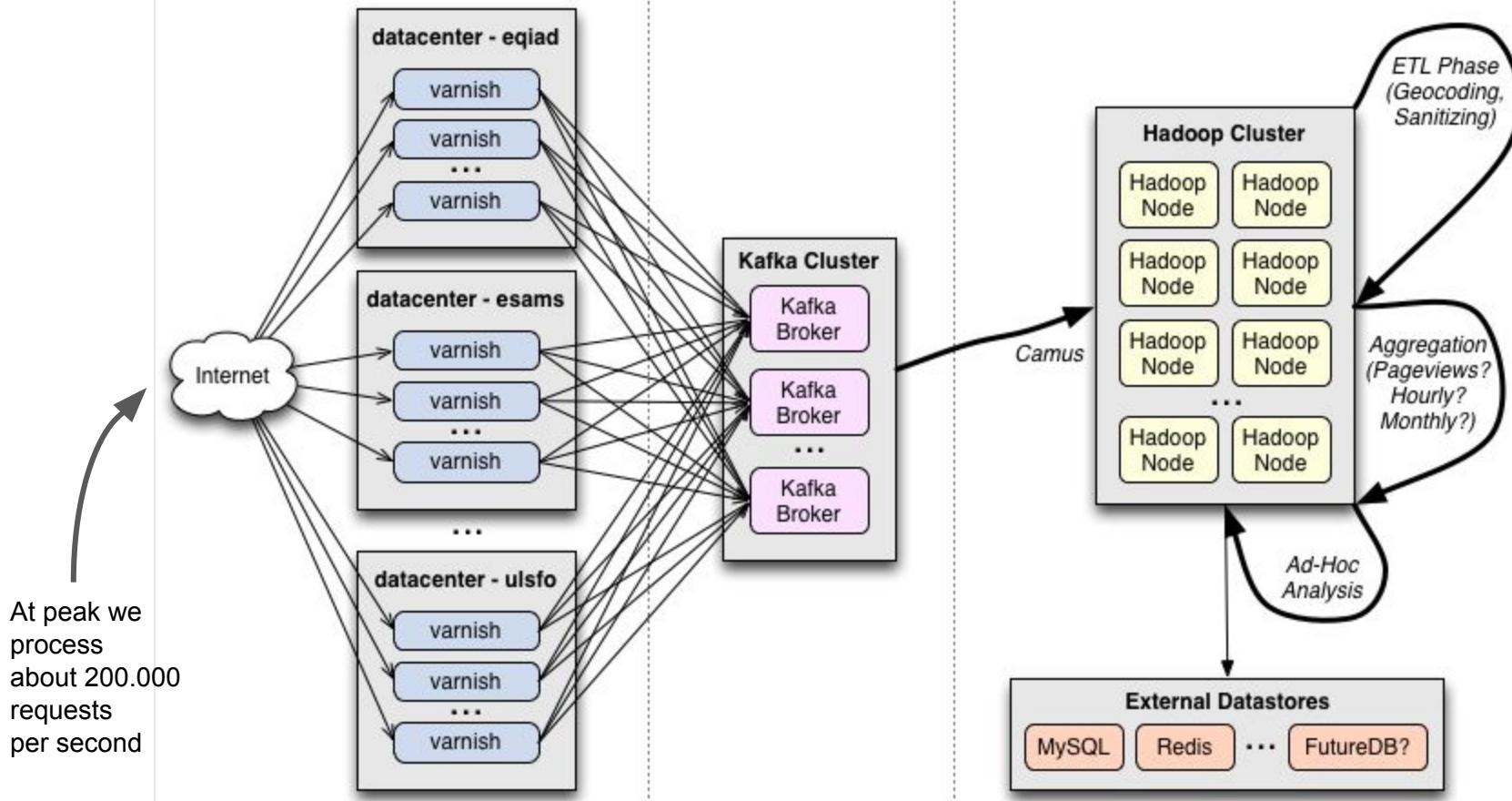
# Pageviews

We process about  
200,000 HTTP requests / second at peak

## Frontend Cache Web Servers

## Log Buffering

## Analytics Cluster



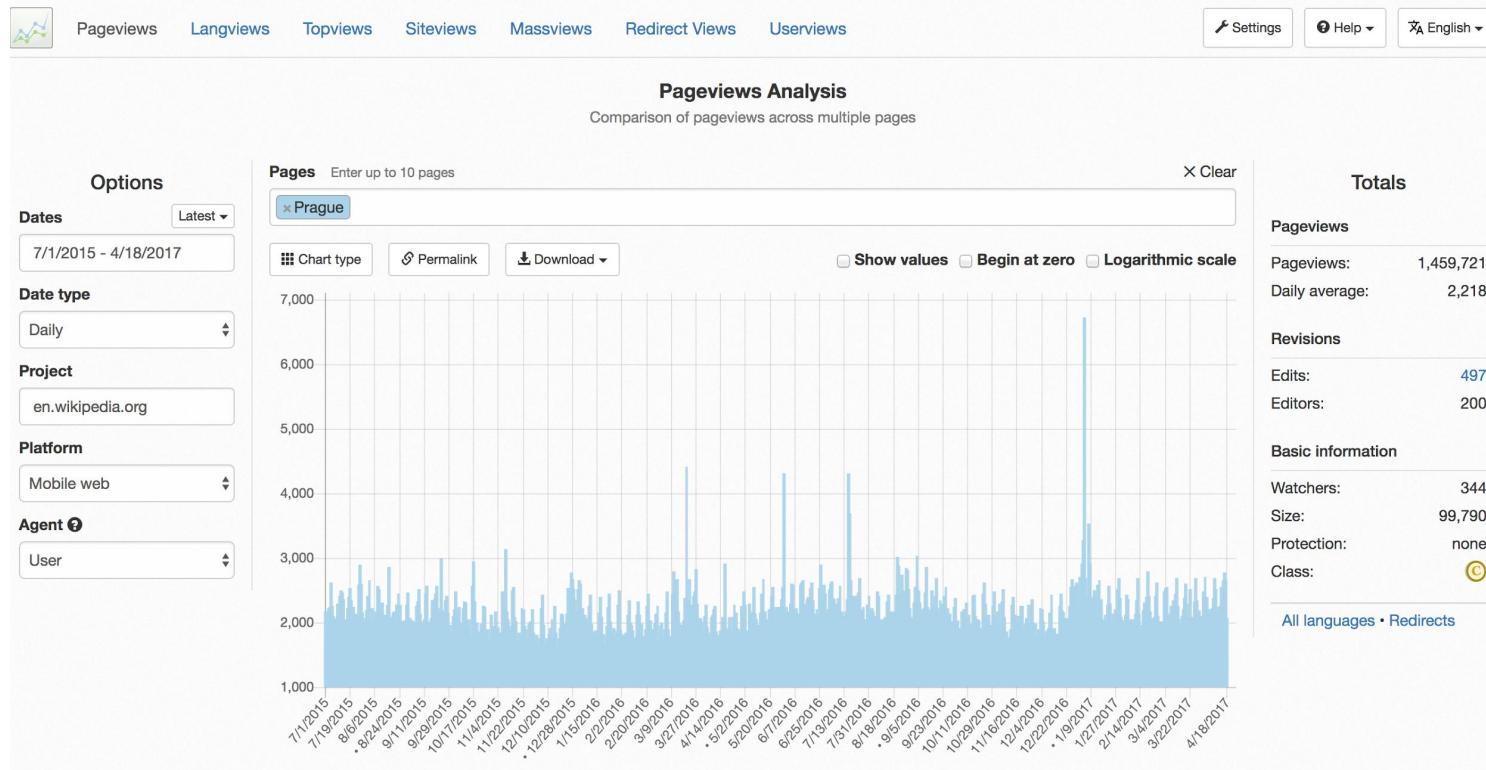
# Pageview API

<https://wikitech.wikimedia.org/wiki/Analytics/PageviewAPI>

Get a pageview count time series of en.wikipedia's article Albert Einstein for the month of October 2015:

[http://wikimedia.org/api/rest\\_v1/metrics/pageviews/per-article/en.wikipedia/all-access/all-agents/Albert\\_Einstein/daily/20151010/2015103100](http://wikimedia.org/api/rest_v1/metrics/pageviews/per-article/en.wikipedia/all-access/all-agents/Albert_Einstein/daily/20151010/2015103100)

<http://tools.wmflabs.org/pageviews/>



[Pageviews](#)[Langviews](#)[Topviews](#)[Siteviews](#)[Massviews](#)[Redirect Views](#)[Userviews](#)[Settings](#)[Help](#)[English](#)

## Siteviews Analysis

Comparison of total pageviews or unique devices across multiple projects

### Options

**Projects** Enter up to 10 projects[X Clear](#)**Dates**[Latest 20](#)

4/20/2017 - 5/10/2017

**Date type**

Daily

**Metric**

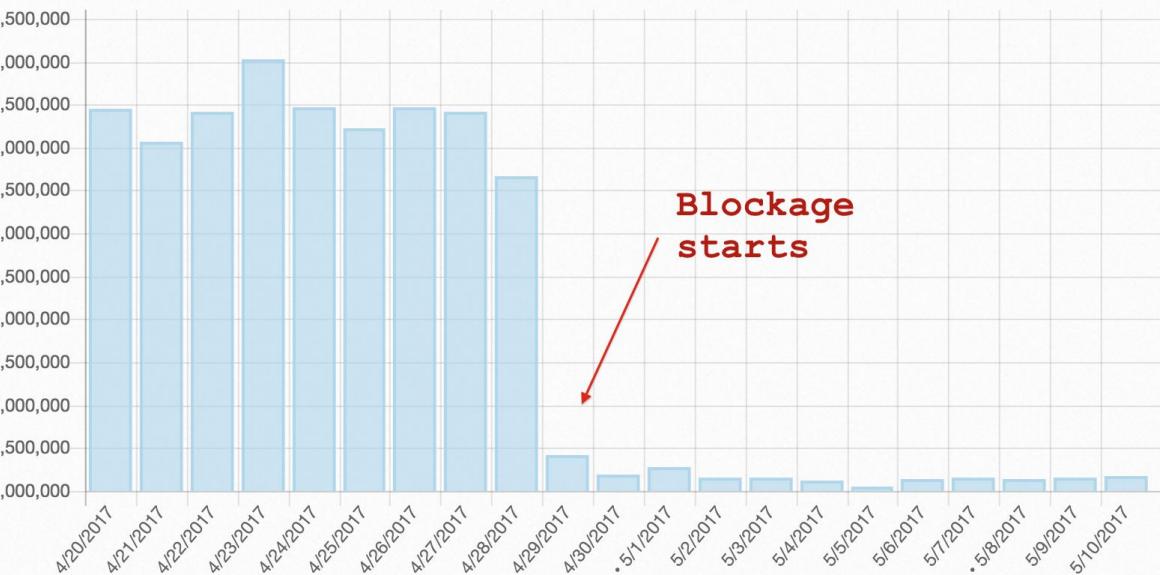
Pageviews

**Platform**

All

**Agent**

User

**Query for:** Individual projects All projects[Chart type](#)[Permalink](#)[Download](#) Show values Begin at zero Logarithmic scale

### Totals

**Pageviews**

Pageviews: 62,315,035

Daily average: 2,967,383

**Statistics (all time)**

Pages: 1,485,694

Articles: 292,224

Edits: 19,616,279

Images: 29,957

Users: 963,885

Active users: 2,760

Admins: 28

**Most viewed pages**

# Issues

**Bots, Bots, Bots**

# **Data useful to WMF (mostly)**

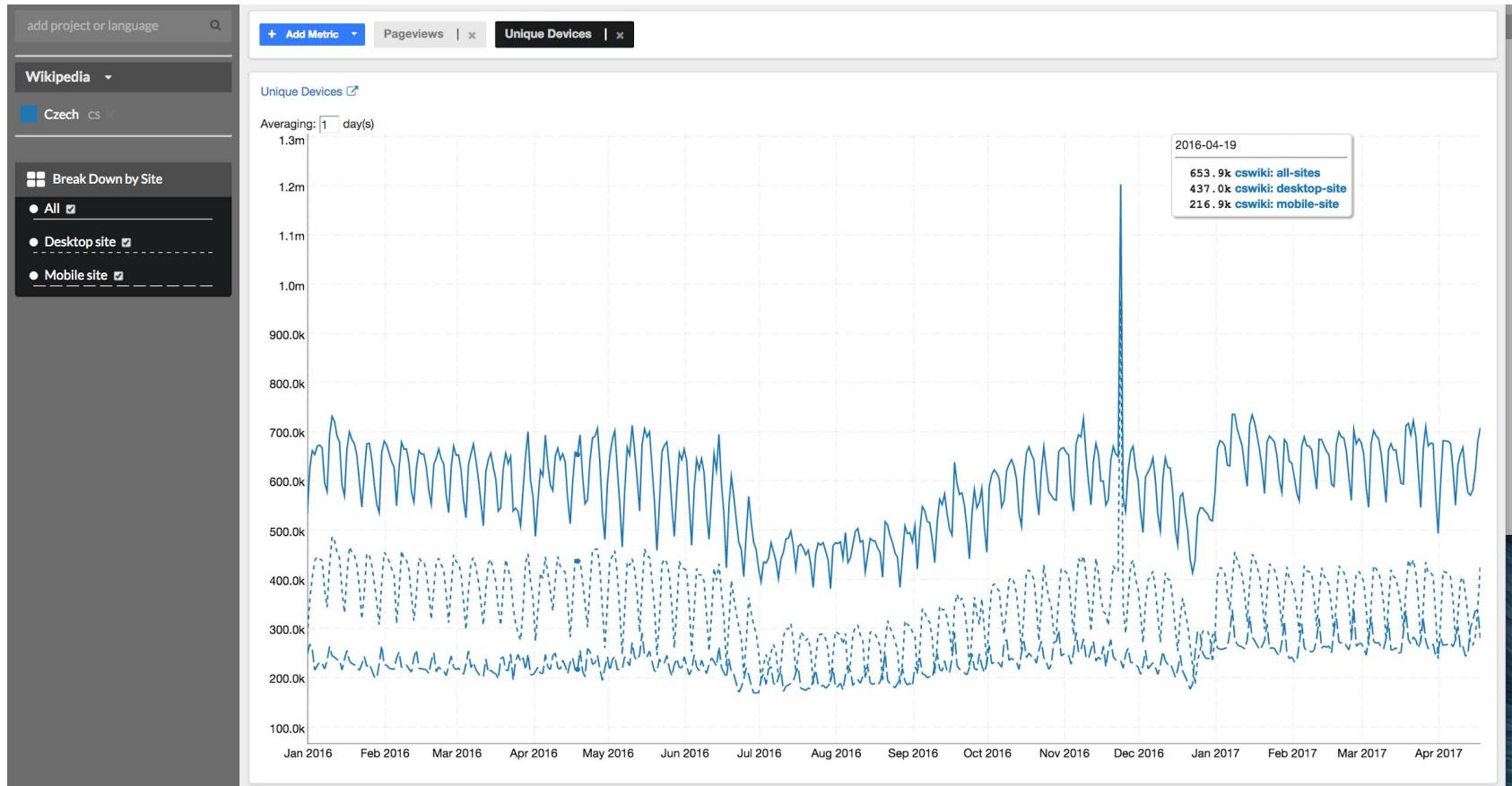
# Unique Devices

[https://wikitech.wikimedia.org/wiki/Analytics/AQS/Unique\\_Devices](https://wikitech.wikimedia.org/wiki/Analytics/AQS/Unique_Devices)

Get the monthly number of unique devices for the mobile version of cs.wikipedia.org for the month of January, February and March 2016:

[http://wikimedia.org/api/rest\\_v1/metrics/unique-devices/cs.wikipedia.org/mobile-site/monthly/20160101/20160301](http://wikimedia.org/api/rest_v1/metrics/unique-devices/cs.wikipedia.org/mobile-site/monthly/20160101/20160301)

<https://analytics.wikimedia.org/dashboards/vital-signs/#projects=cswiki/metrics=UniqueDevices>



**Data useful to Community  
(mostly)**

# Wikistats 2.0

<http://stats.wikimedia.org>

## May 2016: The major overhaul of Wikistats reports has entered a new phase.

First phase focused on migrating the traffic analysis reports to our new infrastructure. Those are operational now. The Analytics Team will now proceed to also migrate data collection and reporting about wiki content and contributors. First results are expected later this year.

More info at [this announcement](#)

You can still tell us which reports you want to see preserved, in this [survey](#).

## Wikipedias

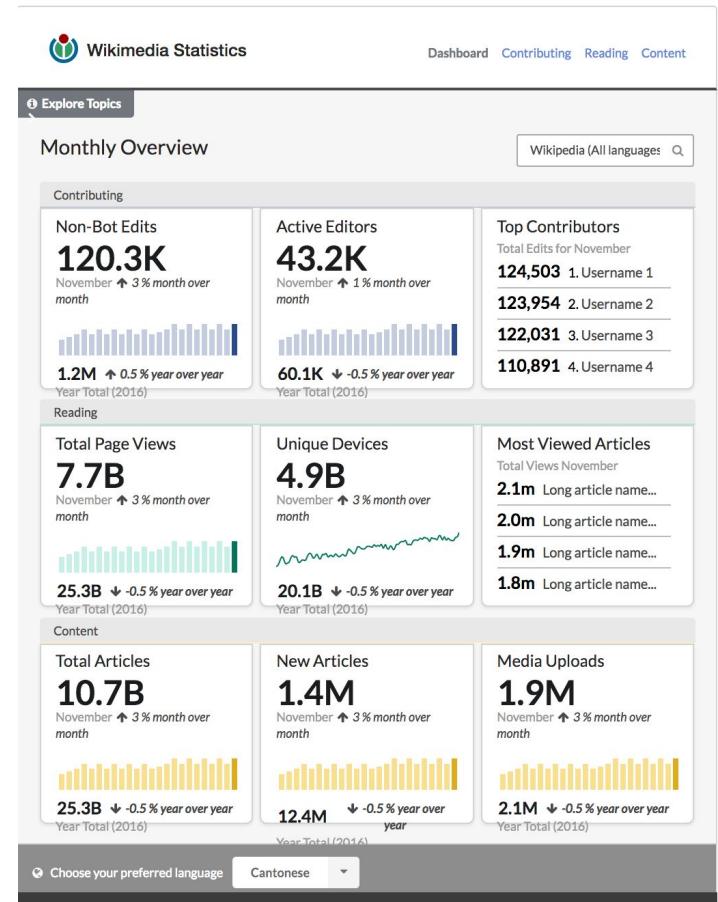
See bottom of page for language comparisons / other reports See also the expanded version of this report.

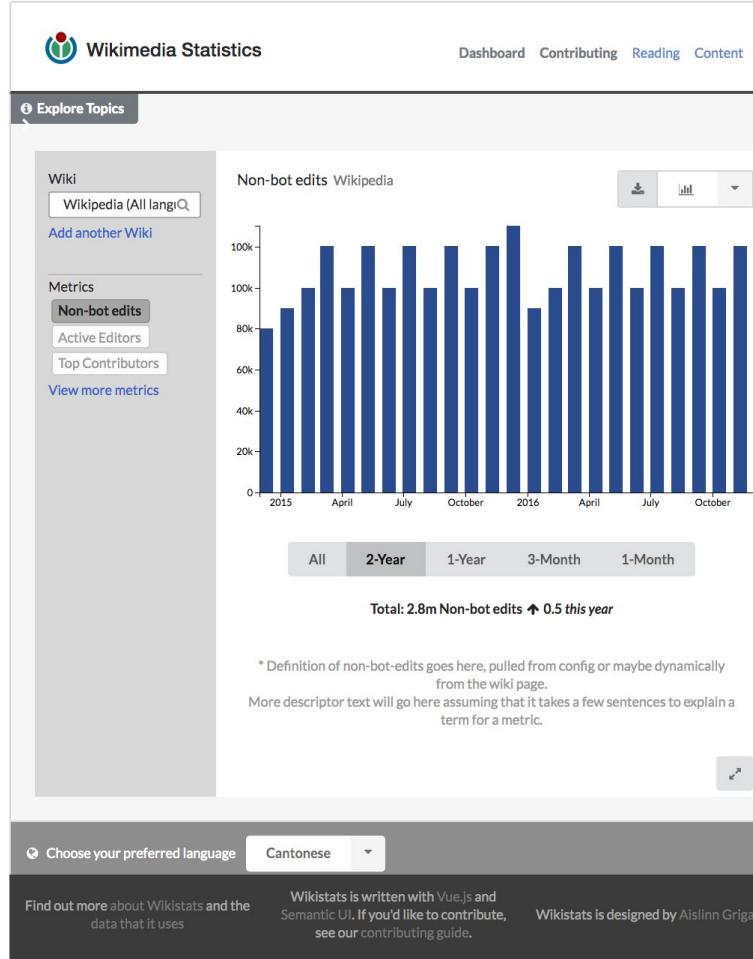
**Mar 2016 !New!** Extra columns added. Also, want to bookmark this page with default sort column? Now you can!  
 Add url argument 'sortcol=x' (where x is 4-6|8-17), add D for descending sort. E.g. 'Sitemap.htm?sortcol=13D'

Data	Languages				Regions	Participation				Active editors			Edits		Usage		Content
	Month	Code ⇒ Project Main Page	Language → Wikipedia article	Tables	Charts	Speakers in millions (log scale) (?)	Prim.+Sec. Speakers M=millions k=thousands	Editors (5+) per million speakers	5+ edits p/month (3m avg)	100+ edits p/month (3m avg)	Admins	Bots	Bot edits	Human edits by unreg. users	Views per hour		
				◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	
	Dec	Summary	Tables	Charts	simple	Simple English	AF AS EU NA OC	1500 M	0.1	98	15	17	31	40%	27%	8,799	122,060
	Dec	Summary	Tables	Charts	en	English	AF AS EU NA OC	1500 M	20	30171	3307	1276	312	9%	32%	5,971,962	5,321,306
	Dec	Summary	Tables	Charts	zh	Chinese	AS	1300 M	2	2221	302	83	108	20%	24%	298,263	918,069
	Dec	Summary	Tables	Charts	hi	Hindi	AS	550 M	0.2	93	15	6	82	47%	10%	6,941	117,586
	Dec	Summary	Tables	Charts	ar	Arabic	AF AS	530 M	1	664	100	34	34	49%	22%	78,110	455,628
	Dec	Summary	Tables	Charts	es	Spanish	AF AS EU NA SA	500 M	8	4060	545	71	36	19%	38%	606,243	1,305,779
	Dec	Summary	Tables	Charts	ms	Malay	AS	300 M	0.3	88	10	16	72	57%	21%	5,985	287,259
	Dec	Summary	Tables	Charts	pt	Portuguese	AF AS EU SA	290 M	5	1544	201	69	212	26%	36%	176,602	951,463
	Dec	Summary	Tables	Charts	ru	Russian	AS EU	278 M	12	3257	543	86	84	18%	26%	855,466	1,362,550
	Dec	Summary	Tables	Charts	id	Indonesian	AS	250 M	2	456	43	29	145	54%	23%	60,242	392,730
	Dec	Summary	Tables	Charts	bn	Bengali	AS	230 M	0.7	164	26	17	16	61%	9%	1,883	46,693
	Dec	Summary	Tables	Charts	fr	French	AF AS EU NA OC SA	200 M	22	4388	740	162	107	21%	22%	597,412	1,828,237
	Dec	Summary	Tables	Charts	de	German	EU	185 M	29	5332	871	198	374	11%	21%	841,233	2,015,094
	Dec	Summary	Tables	Charts	ja	Japanese	AS	132 M	32	4215	395	48	57	10%	41%	657,755	1,043,689
	Dec	Summary	Tables	Charts	fa	Persian	AS	107 M	7	787	78	34	166	56%	13%	48,868	518,111

*Wikistats exists to motivate our editor community.*

*In **Wikistats 2.0** we are not only updating the website interface but we are also providing new access to all our edit data in an analytics-friendly form. This much improves (and fundamentally changes) the way, time and resources it takes to calculate edit metrics, for WMF and community.*





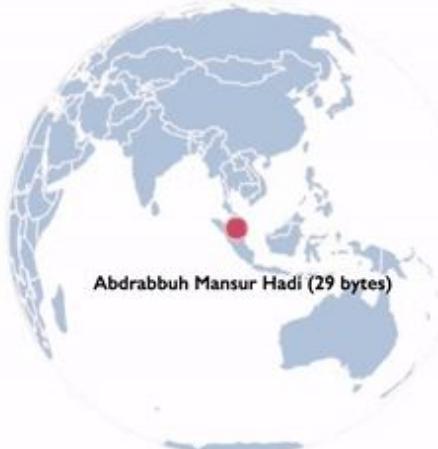
[https://www.mediawiki.org/wiki/Wikistats\\_2.0\\_Design\\_Project/RequestforFeedback/Round2](https://www.mediawiki.org/wiki/Wikistats_2.0_Design_Project/RequestforFeedback/Round2)

Please Chime in!

# Live Data

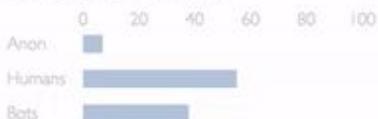
**EventStreams** is a web service  
that exposes continuous  
**streams** of structured **event**  
**data.** *Get live updates to Wikimedia projects.*

## WIKIPEDIA EDITS - A REAL-TIME ANALYSIS



### Comparisons

#### Percentage of Total Edits Made



#### Average Size Of An Edit (Bytes)



### Anonymous Edits

Edits so far:	87
Additions:	67%
Average Size:	64 bytes
Subtractions:	33%
Average Size:	380 bytes

### Registered Human Edits

Edits so far:	686
Additions:	79%
Average Size:	282 bytes
Subtractions:	21%
Average Size:	133 bytes

### Bot Edits

Edits so far:	472
Additions:	72%
Average Size:	523 bytes
Subtractions:	28%
Average Size:	51 bytes

### About

The globe is used to display a real-time random sample of anonymous edits (one every 5 seconds).

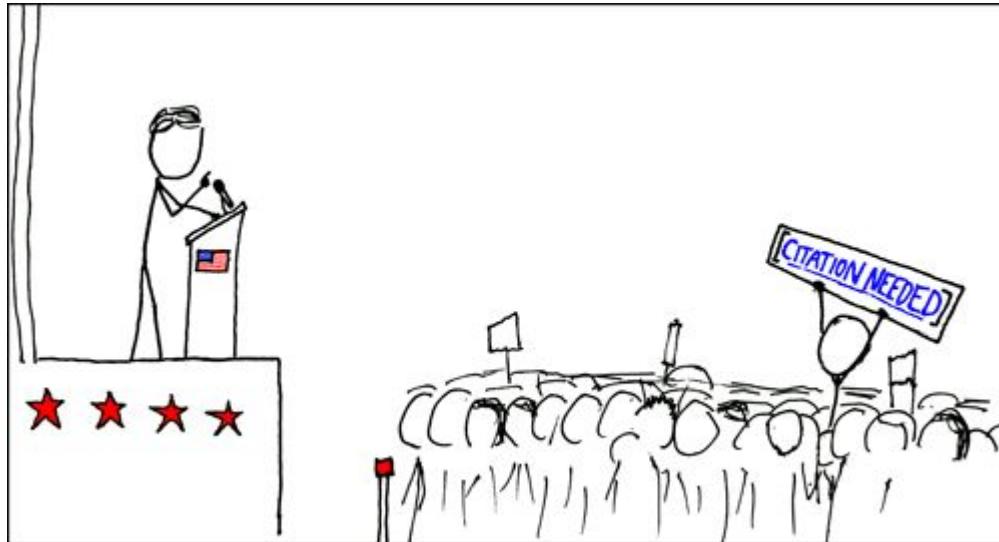
Purple circles represent net additions, red circles represent net subtractions.

The bigger the circle, the larger the edit (circle radius is proportional to the log of the size of the edit in bytes).

Why are only anonymous user edits displayed on the globe? Anonymous users are identified by their IP address, which can be converted to a geolocation. Registered humans and bots are identified by their usernames, which have no geolocation information attached.

Navigate to <http://wikimedia.org> in your browser and open the development console

```
// This is the EventStreams RecentChange stream endpoint
var url = 'https://stream.wikimedia.org/v2/stream/recentchange';
// Use EventSource (available in most browsers, or as an
// npm module: https://www.npmjs.com/package/eventsourcem)
// to subscribe to the stream.
var recentChangeStream = new EventSource(url);
// Print each event to the console
recentChangeStream.onmessage = function(message) {
    //Parse the message.data string as JSON.
    var event = JSON.parse(message.data);
    console.log(event);
};
```



<https://xkcd.com/285>

# Questions?

Most things documented at:

<https://wikitech.wikimedia.org/wiki/Analytics/>

