Overpass API

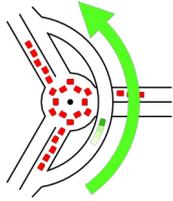**SotM-EU 2025**

Roland Olbricht
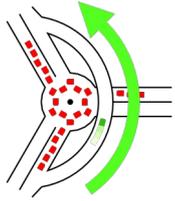
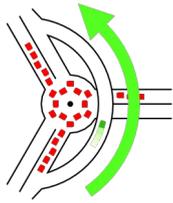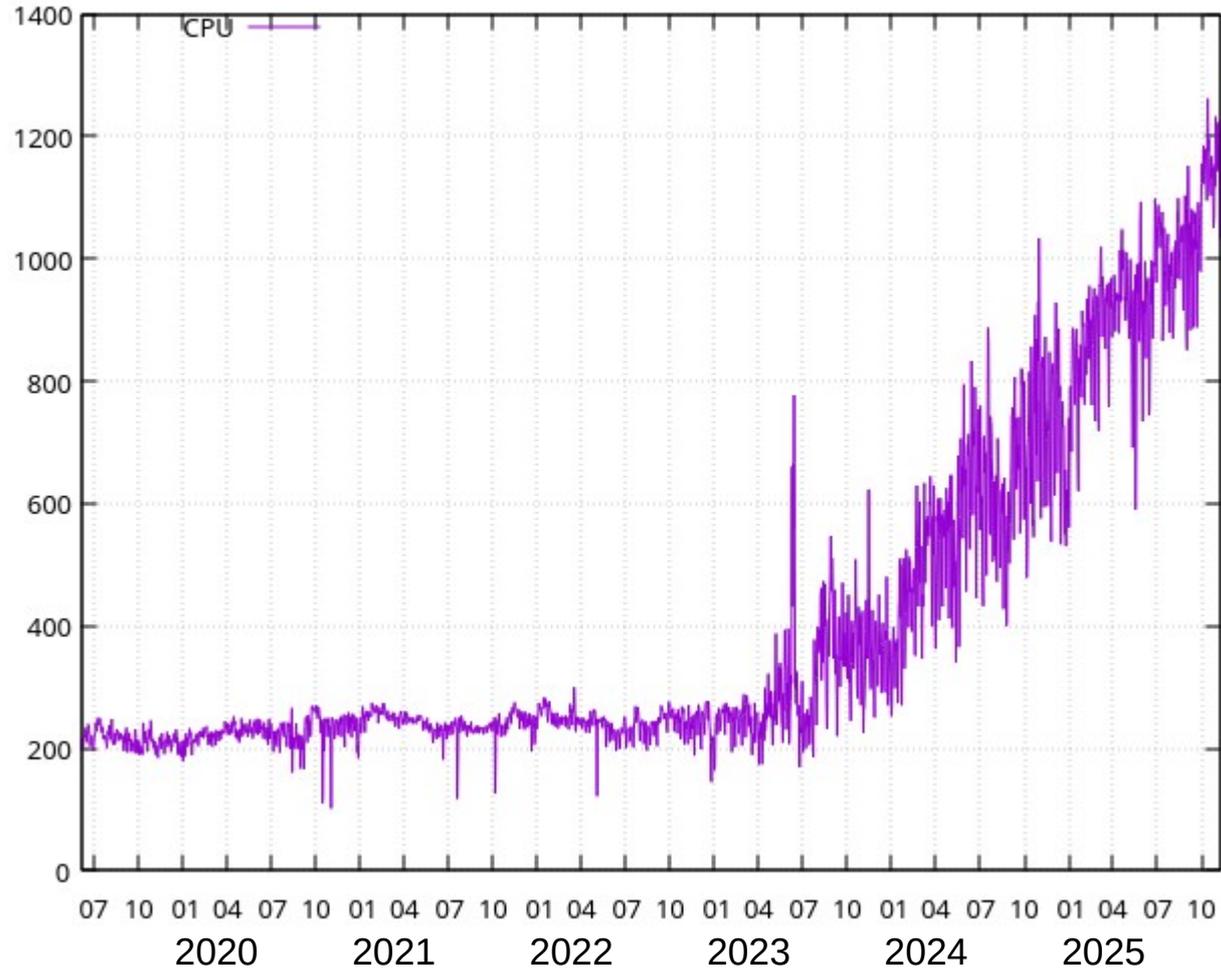# Overpass API

1. Quota System: Adaptions

2. Considered Features
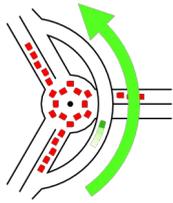
3. Housekeeping: File Sizes

4. Redaction: Adherence

Quota System: Adaptions

Quota System:
History of Overpass API Usage
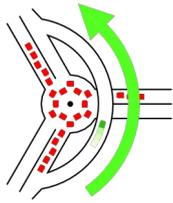
Quota System:
History of Overpass API Usage
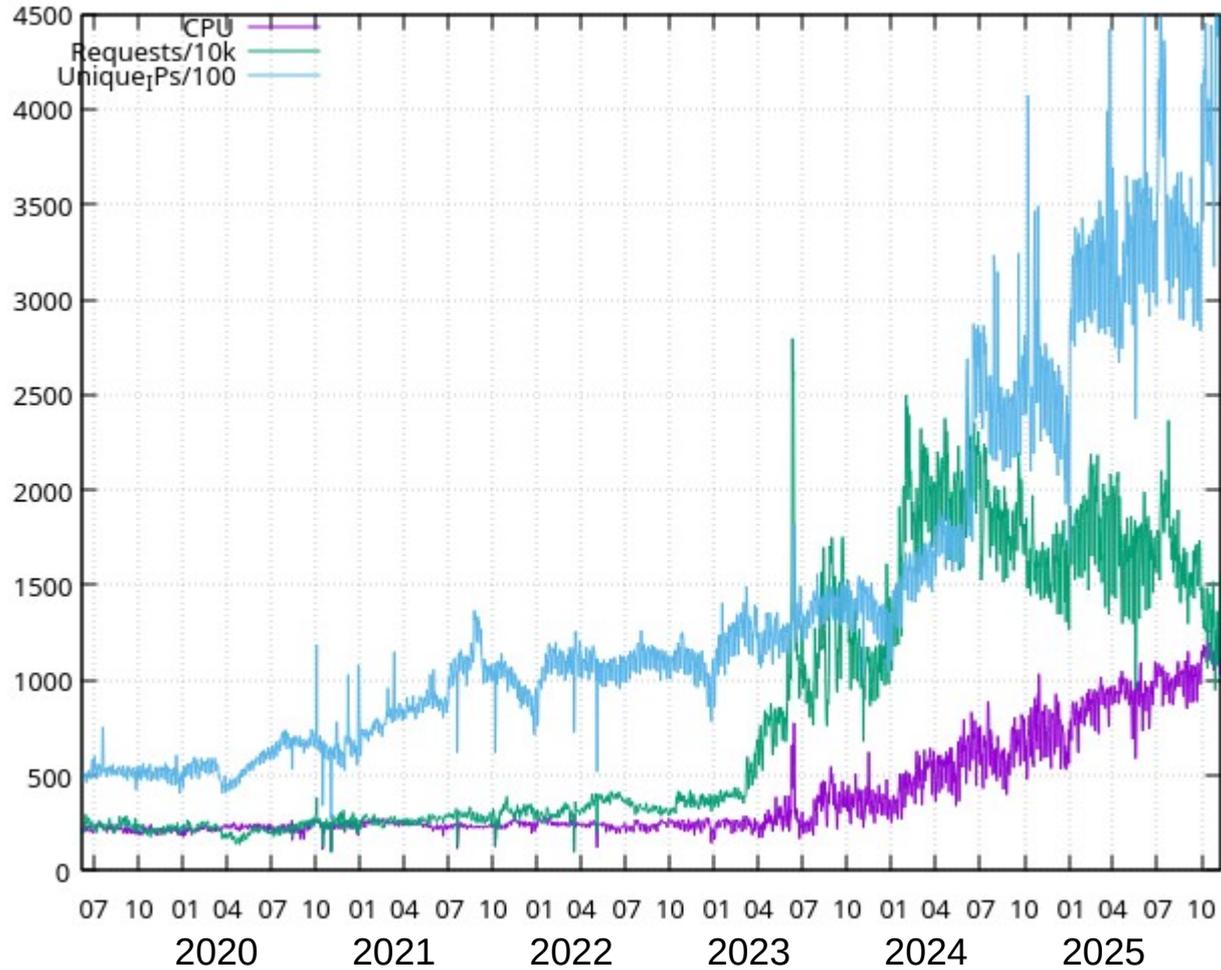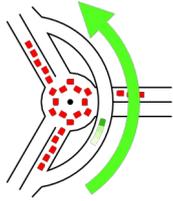
Quota System:
History of Overpass API Usage

Augmented Diffs

(and all other

cool stuff)

vs.

way(around:4,...);out;

("Speedometer")

node[natural=water](poly:...);

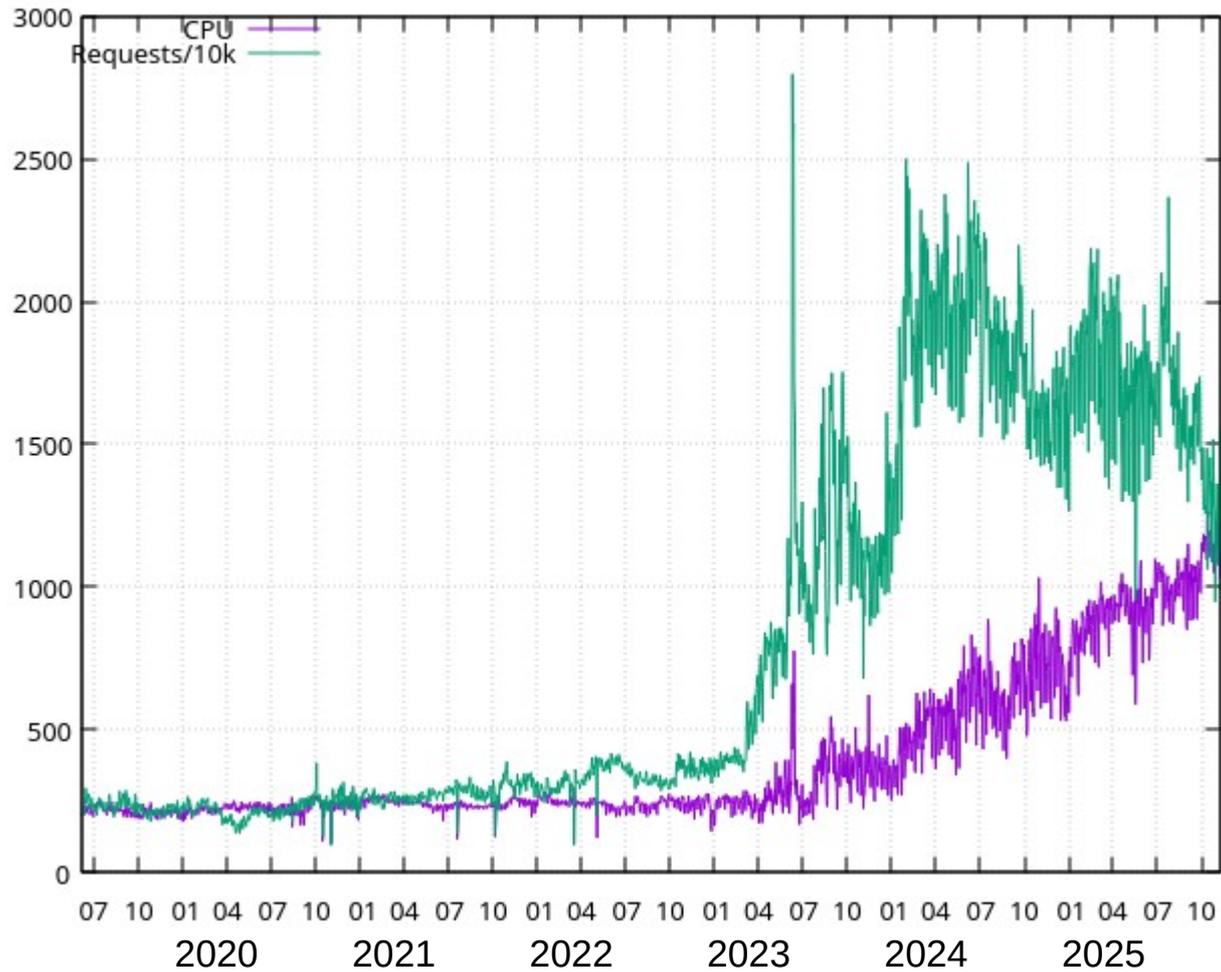„World's free ~~tile~~ provider"
CPU time

Quota System:
Any Source Spiking?

40.0.0.0/8 →
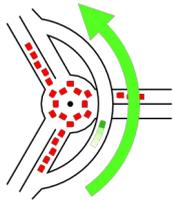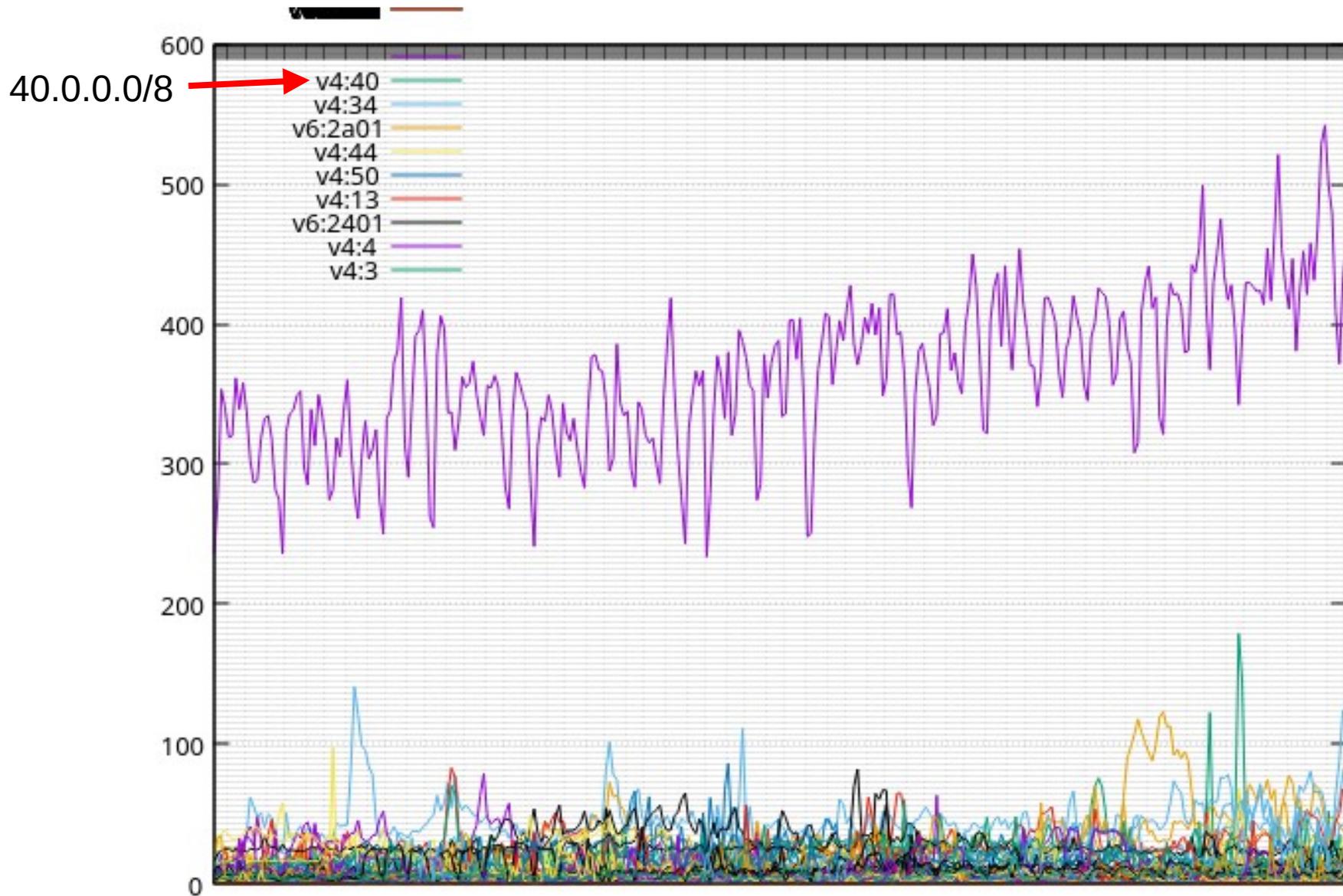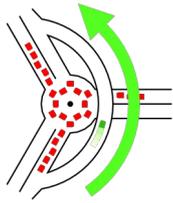
Quota System:
History of Overpass API Usage
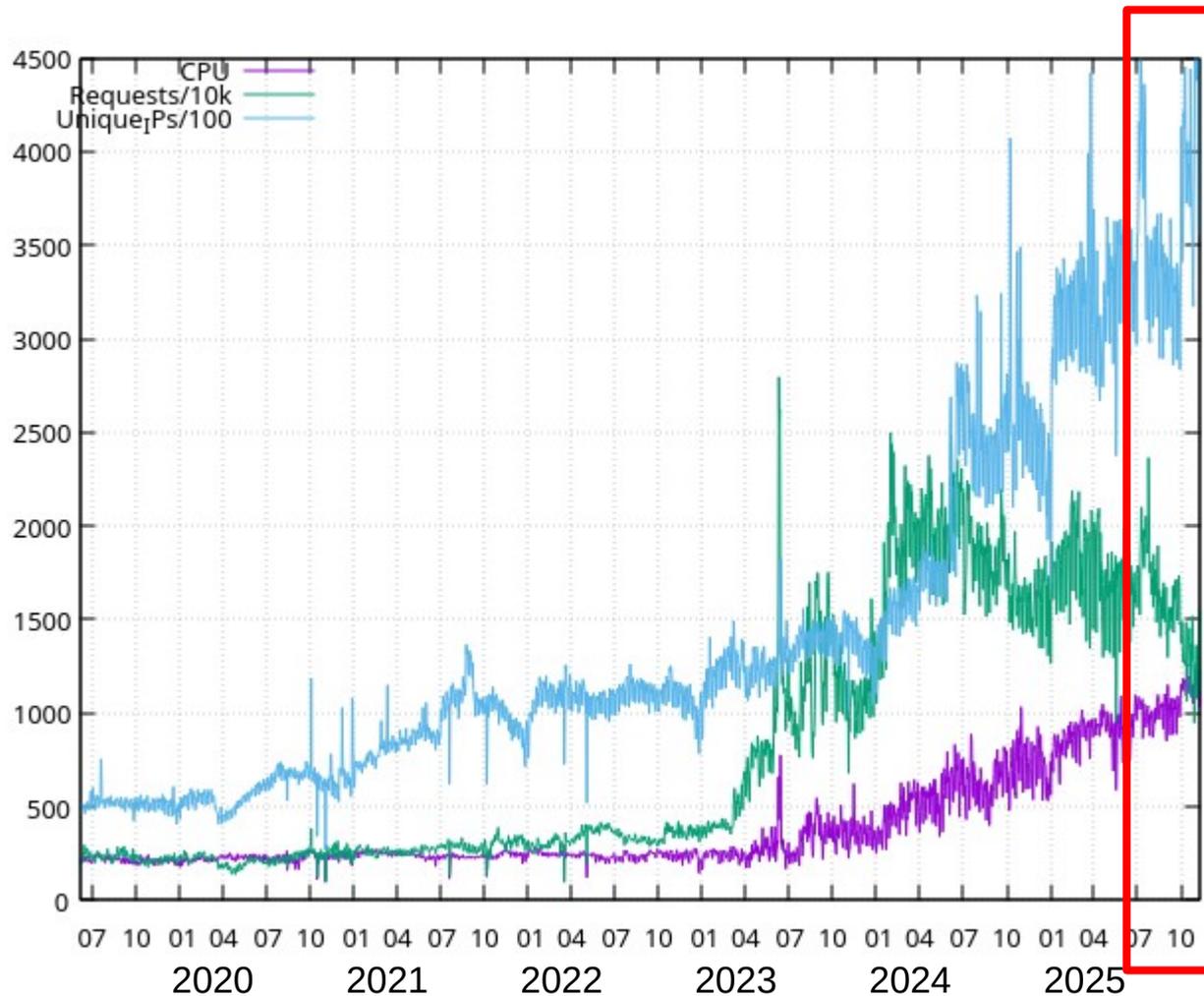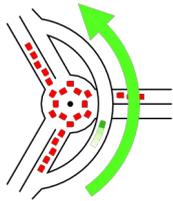
Quota System:
Any Source Spiking?
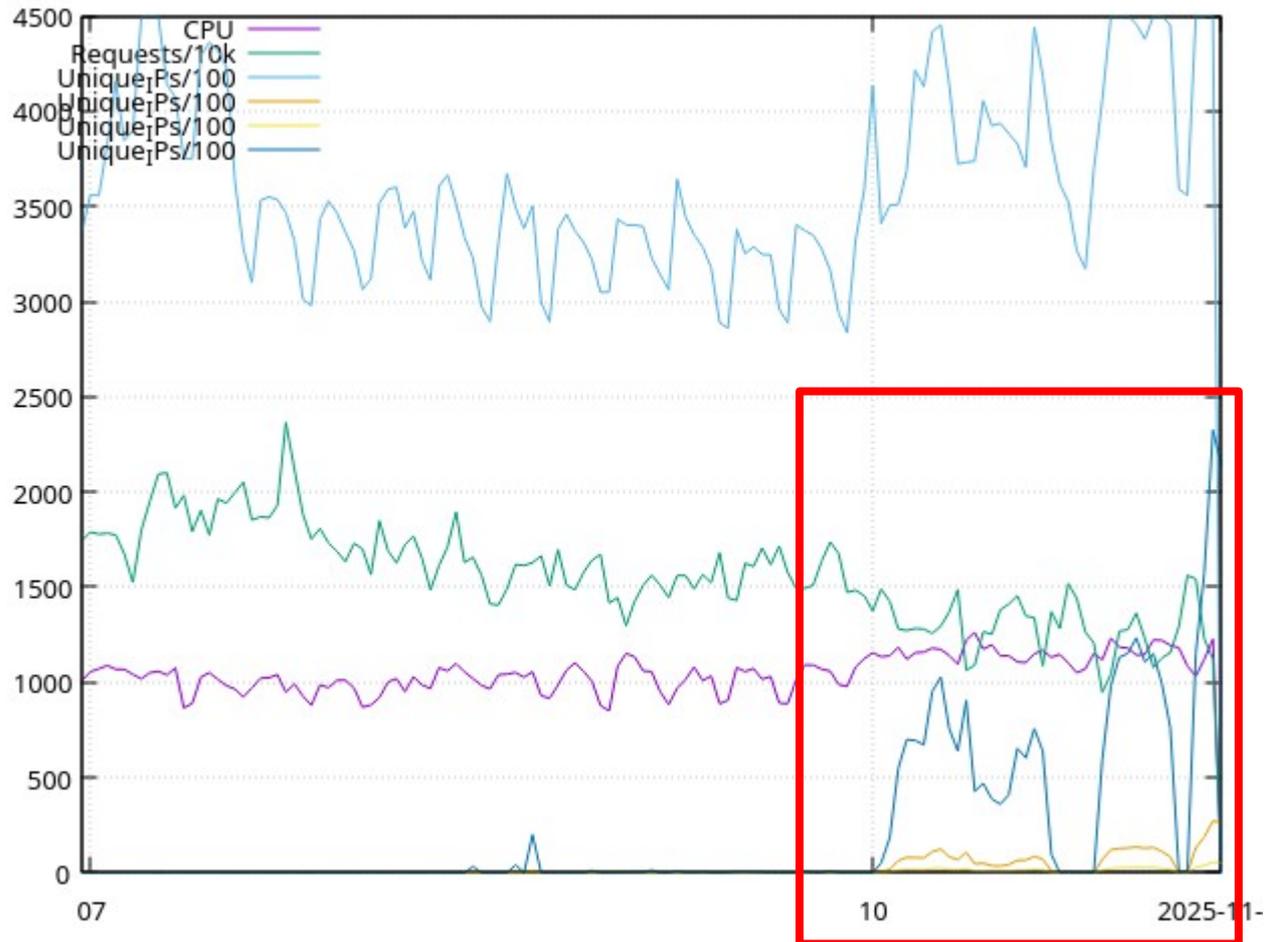
Pokemon-
Go-Cheaters

90k human users   vs. **180k from AWS/Azure**
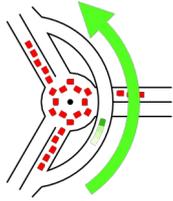
Quota System: Remedies

	IP addresses	User Agent	OSM account
Ensure contact is possible	**hardly**	**mostly**	**yes**
Fair resource sharing	**degraded**	**no**	**yes**
Enforcement	**automatic**	**manual**	**automatic**
Reuse for data protection	**no**	**no**	**yes**
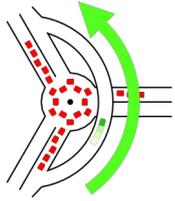
Considered Features
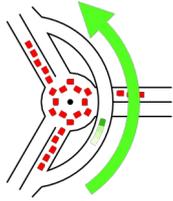
Considered Features:
Overview

Augmented Diffs:
little used

Achavi much more

June 2024 vandalism:
Heavy undo tool?

from community:
rather **Redaction**

„All Deleted Objects"?

User experience disaster:
Moved? Split? Retagged?
Moved-deleted? Repurposed?

rather:
Tag Timeline

Considered Features:
Tag Timeline

Has there ever been a ~~restaurant~~ in this Bbox? ice cream parlor

https://overpass-api.de/achavi/ ?changeset=169263937

delete node 3210023821		
timestamp	2024-08-18 21:33	2025-07-21 22:52
user	Der_Poet	drolbr
version	7	8
changeset	155431384	169263937
addr:city	Düsseldorf	
addr:country	DE	
addr:housenumber	305	
addr:postcode	40227	
addr:street	Oberbilker Allee	
amenity	cafe	
cuisine	ice_cream	
indoor_seating	yes	
name	Angelo Mio	
opening_hours	PH,Mo-Su 09:00-20:00	
outdoor_seating	yes	
website	https://www.angelo-mio.de/	
wheelchair	no	

```
[out:csv(timestamp,elements)];
timeline(tag_kv,"cuisine","ice_cream");
out;
```

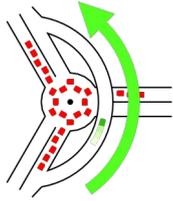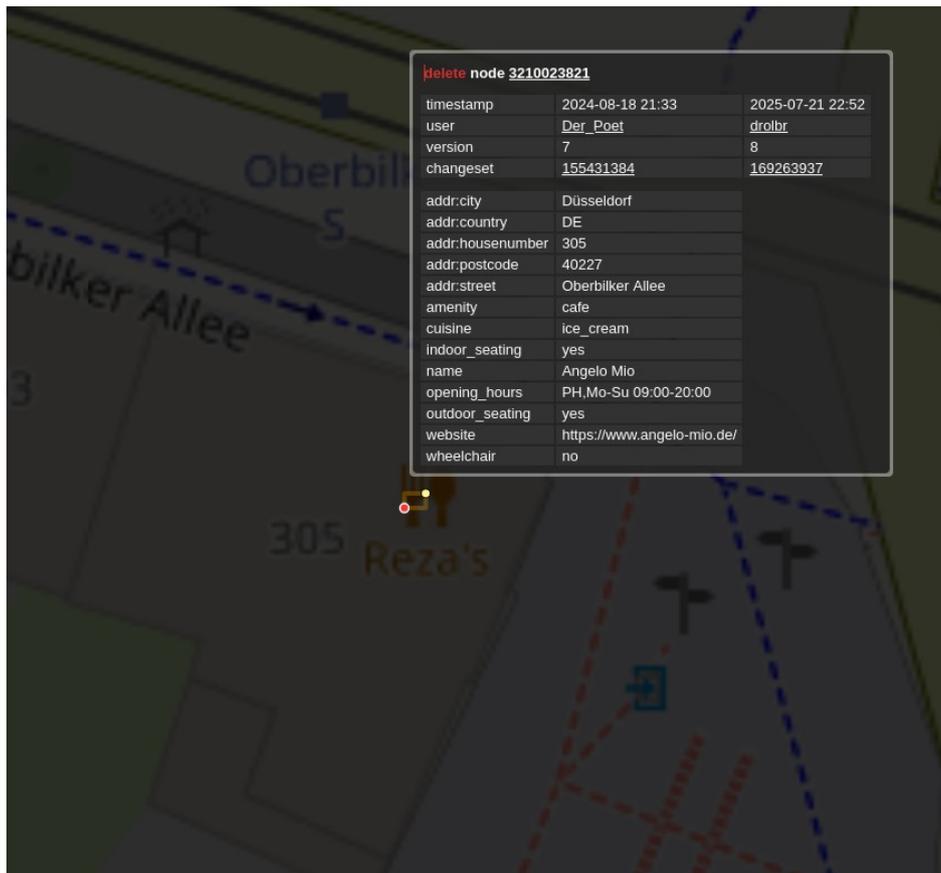| timestamp	elements
2014-11-28T23:38:38Z	
2017-12-26T14:24:10Z	
2019-07-13T16:14:46Z	
2019-07-21T08:18:50Z	n3210023821
2021-07-31T14:49:59Z	n3210023821
2023-02-09T08:12:51Z	n3210023821
2024-08-18T19:33:14Z	n3210023821
2025-07-21T20:52:13Z	

Solves also **splitting tracking**!
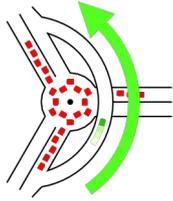
Housekeeping: File Sizes
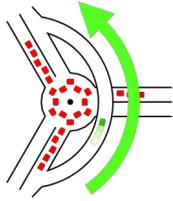
File Sizes:

OpenStreetMap context

planet...bz2	2012-11-09	24G	
planet...bz2	2025-11-08	156G	**6-fold**
history...bz2	2013-02-08	40G	
history...bz2	2025-11-08	240G	**6-fold**
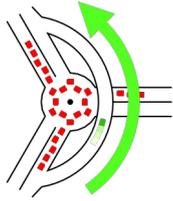
File Sizes:

Overpass API Database

652 GB
snapshot of
2025-11-08

842 GB
working set

ZeLonewolf's backup:
1. clone from dev.openstreetmap.de over network to disk
2. copy disk to backup disk to prepare for power outage
3. restore in case of power outage

Recovery time for 670 GB (with 50 MB/s): 13400 s ~ 4 hrs
  4 hrs x 3 passes

Cloning Trouble:
1. read from updating database
2. write to snapshot
3. read from snapshot for every download
Other things happen in parallel!
Result: cloning takes **more than 24 hours**
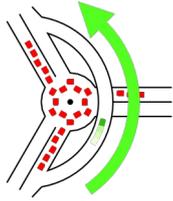
File Sizes: Breakdown

	nodes	ways	rels	sum	running
Geo data	95.4 GB	87.0 GB	1.7 GB	184.1 GB	184.1 GB
User data	77.9 GB	10.2 GB	0.2 GB	88.4 GB	272.4 GB
Attic data	77.0 GB	73.4 GB	8.3 GB	158.6 GB	431.1 GB
Speedup data	169.2 GB	48.9 GB	2.2 GB	220.6 GB	651.6 GB
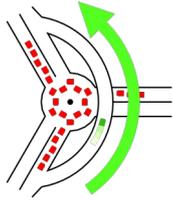
File Sizes: Breakdown

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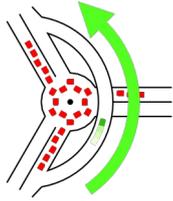
**File Sizes:
Improvements**

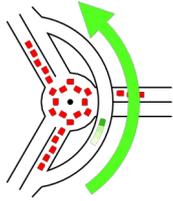Compress user data
via **Id and User Assumption**

In February: **629 GB ~> 544 GB**

Replicate instead of Clone
non-essential files

In February: **544 GB ~> 462 GB**
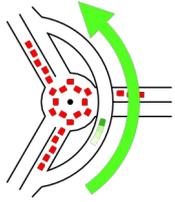
Redaction: Adherence

Redaction:
Contested Data

Peer review can result in one of the following outcomes:

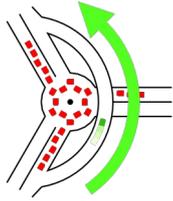| **Confirmed**	**Controversial**	**Hazardous**
invisible	altered	not visible
	"deleted"	at all
	visible on request	
	(old version)	

Redaction

Slur, sb.else's passwords, data breach, copyright infringes

Redaction:
Strategy for Overpass API, part 1

Redacted elements are
- **not visible through main API**
- but copies may exist at data consumers (e.g. snapshot export once a year)
- no (sincere) promise possible: rather **best effort**

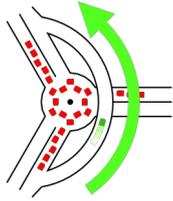OpenStreetMap shall not claim that this trap road exists.
Shall OpenStreetMap claim that it never claimed that trap road existed?

We are   able to not claim it   has been in the database   implies
We are unable to   claim it not has been in the database.

However:
- neither OpenStreetMap nor Overpass API wants to spread slur

~> Any documentation must set clear it is best effort

Redaction:
Strategy for Overpass API, part 2

**S/t redaction resulted in relations w/o members (late 2012)**

Strategic:
Declare **all attic** and meta **non-public** (i.e. project internal) **(done)**
Subsequently, no unredact feature is needed.

Tactic:
Overpass API will withhold output (and not the computation).
Access to redacted elements via setting "[redacted:yes]" possible,
OSM users only (maybe restrict even further).

Operational:
Redacted **element versions** are marked in the database.
The required redaction feed is created from screening full history file.
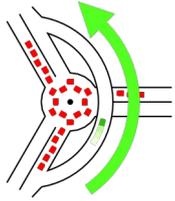
Summary

Quota via **OSM users**

Redaction via **OSM users** and feed

Size reduction is important housekeeping.

Hopefully resume feature dev at some point.