

RDAP in .CZ

APTLD 85 – Goa

Software

- Open source - <https://gitlab.nic.cz/fred/rdap/>
- Distributed as part of registry software FRED – <https://fred.nic.cz>
- Web application – Python3, Django framework
- Getting data from backend via GRPC interface
 - Theoretically can be connected with any source of data
- Installable as Docker container
 - Sample image for conformance tests with mock GRPC server - https://gitlab.nic.cz/fred/rdap/-/blob/master/docker/conformance/mock_grpc.py

Running sample server

```
jara@fedora:~$ git clone https://gitlab.nic.cz/fred/rdap/
Cloning into 'rdap'...
warning: redirecting to https://gitlab.nic.cz/fred/rdap.git/
remote: Enumerating objects: 2669, done.
remote: Counting objects: 100% (181/181), done.
remote: Compressing objects: 100% (151/151), done.
remote: Total 2669 (delta 91), reused 60 (delta 27), pack-reused 2488
Receiving objects: 100% (2669/2669), 472.05 KiB | 16.86 MiB/s, done.
Resolving deltas: 100% (1675/1675), done.
jara@fedora:~$ cd rdap/
jara@fedora:~/rdap$ sudo docker build -t rdap --pull --file docker/conformance/Dockerfile .
[+] Building 1.2s (11/11) FINISHED
=> [internal] load build definition from Dockerfile
=> => transferring dockerfile: 810B
=> [internal] load metadata for docker.io/library/python:3.11-slim
=> [internal] load .dockerignore
=> => transferring context: 234B
=> [1/6] FROM docker.io/library/python:3.11-slim@sha256:ce81dc539f0aedc9114cae640f8352fad83d37461c24a3615b01f081d0c0583a
=> => resolve docker.io/library/python:3.11-slim@sha256:ce81dc539f0aedc9114cae640f8352fad83d37461c24a3615b01f081d0c0583a
=> [internal] load build context
=> => transferring context: 145.49kB
=> CACHED [2/6] RUN apt-get update && apt-get install --yes --no-install-recommends build-essential && rm -rf /var/lib/apt/lists/*
=> CACHED [3/6] WORKDIR /app
=> CACHED [4/6] COPY . .
=> CACHED [5/6] RUN python3 -m venv /app/venv
=> CACHED [6/6] RUN pip install --no-cache-dir uwsgi
=> exporting to image
=> => exporting layers
=> => writing image sha256:020f85e9ff913dc3aa2f78b34e3ac43a62e2373d0eadeae8f3889700e3aae1f
=> => naming to docker.io/library/rdap
jara@fedora:~/rdap$ sudo docker run -d --name my_rdap -p8000:8000 rdap
b43e551e94abb991ec2313feb704afc6cae9e29ca9d7af0d0839233fae789ec3
jara@fedora:~/rdap$ curl -s localhost:8000/help | json_pp
{
  "notices" : [
    {
      "description" : [
        "See the API reference: https://fred.nic.cz/documentation/html/RDAPReference"
      ],
      "title" : "Help"
    }
  ],
  "rdapConformance" : [
    "rdap_level_0",
    "fred_version_0"
  ]
}
```

```
docker:default
0.0s
0.0s
0.9s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
0.0s
```

Features

- Supported queries
 - domain, entity, nameserver, fred_keyset, fred_nsset
- Objects fred_keyset and fred_nsset are our own extension
 - registered in IANA extension registry
- Object states based on RFC8056 status mapping

Drawbacks

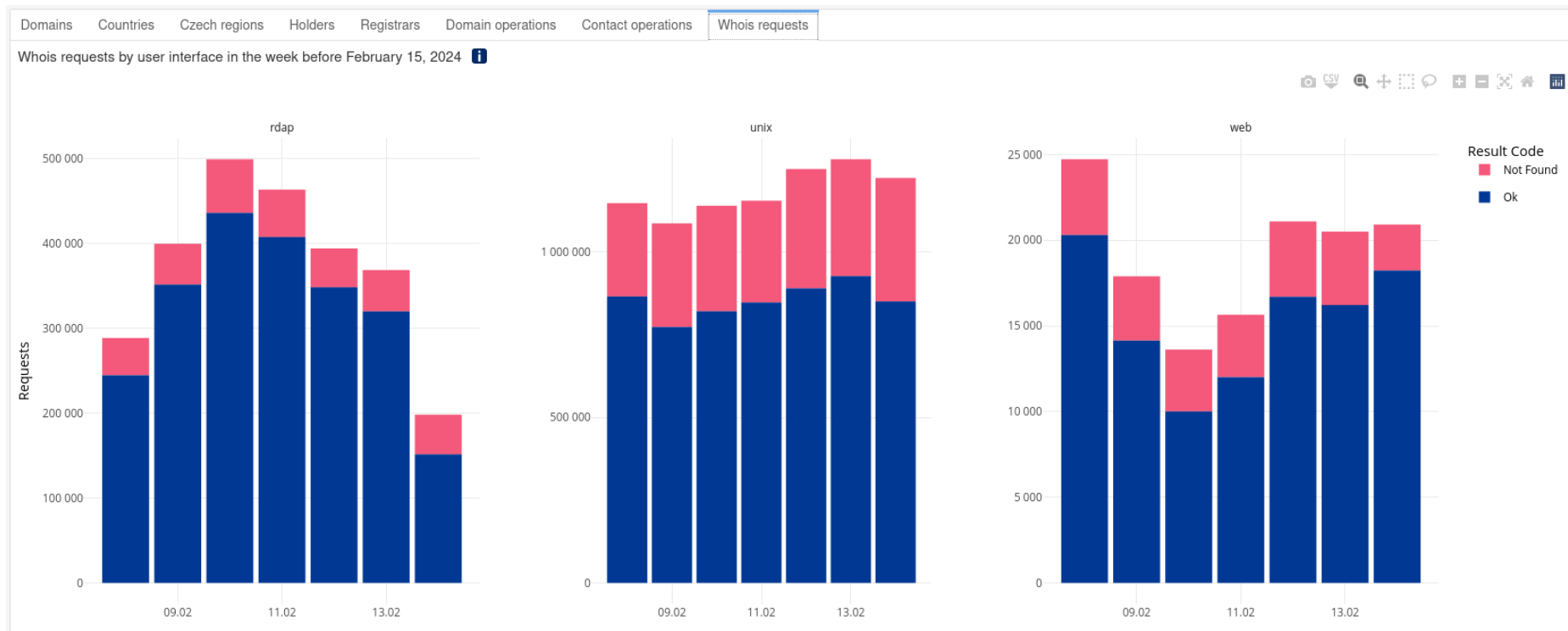
- Searches are not supported
- Registrars as entities
 - Possible collision with contacts in registry
 - Can be avoided by registration of contacts for each registrar
- Potential issue with redacted output
 - Field 'fn' mandatory in jCard specification

Deployments

- Deployed in .CZ in 2016
 - First TLD in IANA bootstrap registry
 - <https://rdap.nic.cz/domain/nic.cz>
- Other countries using FRED also published
 - .AR, .CR, .TZ

Stats

- Comparison with all WHOIS traffic – <https://stats.nic.cz>



Thank you for watching!