

Freifunk API Query Client

GSoC 2014

WCW 2014

Freifunk API

<http://api.freifunk.net>

- Machine readable community data
- Fields are defined via JSON schema
- A single JSON file with all data is generated

Freifunk API

JSON Schema

```
{ "schema" :  
  {  
    "type":"object",  
    "description": "Freifunk Community API 0.3.0",  
    "required":false,  
    "properties":{  
      "api": {  
        "title":"API",  
        "type":"string",  
        "description": "The Freifunk Community API version you use",  
        "enum" : ["0.1","0.2.0","0.2.1","0.3.0"],  
        "default" : "0.3.0",  
        "required":true  
      },  
      "name": {  
        "title":"Name",  
        "type":"string",  
        "description": "The name of your community",  
        "required":true  
      },  
      ...  
    }  
  }  
}
```

Freifunk API

Example

```
{
  "techDetails": {
    "firmware": {
      "url": "http://www.weimarnetz.de/freifunk/firmware"
    },
    "networks": {
      "ipv4": [
        {
          "netmask": 16,
          "network": "10.63.0.0"
        }
      ]
    },
    "splashpage": "captive portal",
    "topodata": "http://www.weimarnetz.de/freifunk/topology.dot",
    "vpn": "vtun without ssl and lzo"
  },
  "api": "0.1",
  "contact": {
    "facebook": "https://www.facebook.com/weimarnetz",
    "ml": "wireless-discuss@subsignal.org",
    "phone": "+493643544304"
  },
  "location": {
    "city": "Weimar",
    "address": {
      "Name": "Maschinenraum",
      "Street": "Marienstr. 18",
      "Zipcode": "99423"
    },
    "lat": 50.98953,
```

Freifunk API

Google Summer of Code 2014

- Make API data accessible for humans and machines alike
- Allow complex queries on the data
- Make query results machine readable

Freifunk API

Google Summer of Code 2014 - Goals

Part I

Web-based query interface that uses a SQL-like language presents pretty results or JSON. For human consumption.

Part II

Small server that answers queries via readable urls.

Freifunk API

Example Queries / Ideas

How many nodes exist in all communities?

SQL: `SELECT COUNT(nodecount) FROM communities`

REST `curl api.ff.net/communities/nodecount/sum`

All mailinglists from communities that use IPv6?

SQL:

`SELECT ml FROM communities WHERE network == "ipv6"`

REST:

`curl api.ff.net/communities/networks?filter=ipv6`

Freifunk API

Problems

- JSON-Schema can change (new fields, new structure...)
- JSON-File != SQL Database
- Is an REST inspired URL schema powerfull enough to answer all queries?

Freifunk API

Problems

Problems:

- JSON-Schema can change (new fields, new structure...)
- JSON-File != SQL Database
- Can all queries be answered by an expressive URL?

Freifunk API

Solutions!?

Solution: KISS!

- Simple Subset of SQL
- Key/Value search over JSON data
- URL-Schema generated from JSON file

Freifunk API

Code

Code: Will be announced on <http://blog.freifunk.net> (1-2 weeks)