



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

RIPE Atlas APIs

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Overview

- Learn about the available APIs
 - REST API
 - Realtime RIPE Atlas streaming
- Pointers to more information
- Ready-made tools for working with the APIs



REST API

- Core, comprehensive RIPE Atlas API
- Manual
 - <https://atlas.ripe.net/docs/api/v2/manual/>
- Reference
 - <https://atlas.ripe.net/docs/api/v2/reference/>
- Authentication with API keys linked to your RIPE Access account

JSON



```
GET /api/v2/measurements/1001/
```

```
HTTP 200 OK
```

```
Allow:
  GET, DELETE, HEAD, OPTIONS
Content-Type:
  application/json
Vary:
  Accept
```

```
{
  "af": 4,
  "creation_time": 1285891200,
  "description": null,
  "group": null,
  "group_id": null,
  "id": 1001,
  "in_wifi_group": false,
  "include_probe_id": null,
  "interval": 240,
  "is_all_scheduled": true,
  "is_oneoff": false,
  "is_public": true,
  "packet_interval": null,
  "packets": 3,
  "participant_count": null,
  "probes_requested": null,
  "probes_scheduled": null,
  "resolve_on_probe": false,
  "resolved_ips": null,
  "result": "https://atlas.ripe.net/api/v2/measurements/1001/results/",
  "size": null,
  "spread": null,
  "start_time": 1285891200,
  "status": {
    "id": 2,
    "name": "Ongoing"
  },
  "stop_time": 1577836800,
  "target": "k.root-servers.net",
  "target_asn": null,
  "target_ip": "193.0.14.129",
  "type": "ping"
}
```

API documentation



- More
 - <https://atlas.ripe.net/doc/credits>
 - <https://atlas.ripe.net/doc/udm>
 - https://labs.ripe.net/Members/suzanne_taylor_muzzin/new-ripe-atlas-apis



RIPE Atlas REST APIs

- List of scheduled measurements
 - <https://atlas.ripe.net/api/v2/measurements/>
 - <https://atlas.ripe.net/api/v2/measurements/{TYPE}/>
- Information about a specific measurement
 - <https://atlas.ripe.net/api/v2/measurements/{ID}/>
- Results of a specific measurement
 - <https://atlas.ripe.net/api/v2/measurements/{ID}/results>



RIPE Atlas REST APIs

- List of probes
 - <https://atlas.ripe.net/api/v2/probes/>
- Information about a specific probe
 - <https://atlas.ripe.net/api/v2/probes/{ID}>
- List of anchors
 - <https://atlas.ripe.net/api/v2/anchors/>
- Information about a specific anchor
 - <https://atlas.ripe.net/api/v2/anchors/{ID}>

RIPE Atlas REST APIs



- List of measurements targeted to an anchor
 - <https://atlas.ripe.net/api/v2/anchor-measurements/>
- Info about a specific anchor measurement
 - <https://atlas.ripe.net/api/v2/anchor-measurements/{ID}>

Reference: <https://atlas.ripe.net/docs/api/v2/reference/>

Manual: <https://atlas.ripe.net/docs/api/v2/manual/>

Using API to schedule a measurement



- Scripting with the API
 - <https://atlas.ripe.net/docs/measurement-creation-api/>
 - <https://atlas.ripe.net/keys/>
- You will need API keys
 - To create measurements without logging in
 - To securely share your measurement data



Creating API keys

- <https://atlas.ripe.net/keys/>
- Create a key and add permissions
- <https://atlas.ripe.net/docs/keys/>

<input type="checkbox"/>	Key	Created	Permission	Object	Label	Valid From	Valid To	Enabled
<input type="checkbox"/>	984a774c-33ce-4b97-9767-fb48efda6c12	2013-01-31 13:05 UTC	Download results of a user defined measurement	1002953 b.hosteddnsservice.com				✓
<input type="checkbox"/>	e5ba646b-abf1-4f01-8bf1-5267a9dd56ce	2013-01-31 12:52 UTC	Download results collected by a specific probe	13: k13				✓
<input type="checkbox"/>	9788b7e0-9d4b-4787-8a42-fce8f2f2e929	2013-01-11 14:53 UTC	Download results of a user defined measurement	1002676 www.google.com				✓



Creating a measurement

- Schedule a measurement using API
 - Use the “key” you just generated
 - Hint: copy and past API call syntax from the measurement generated by the GUI

```
$ curl -H "Content-Type: application/json" -H "Accept: application/json" -X POST  
-d '{ "definitions": [ { "target": "ping.xs4all.nl", "description": "My First API  
Measurement", "type": "ping", "af": 4 } ], "probes": [ { "requested": 10, "type":  
"country", "value": "RS" } ] }' https://atlas.ripe.net/api/v1/measurement/?  
key=YOUR\_API\_KEY
```

```
Terminal Shell Edit View Window Help  
becha — bash — 72x24  
air-becha:~ becha$ curl -H "Content-Type: application/json" -H "Accept:  
application/json" -X POST -d '{ "definitions": [ { "target": "ping.xs4al  
l.nl", "description": "My First Measurement", "type": "ping", "af": 4 }  
], "probes": [ { "requested": 10, "type": "country", "value": "RS" } ] }'  
' https://atlas.ripe.net/api/v1/measurement/?key=7b4c3441-4504-4d83-9ed7  
-fbf1a007d060  
{"measurements": [2421551]}air-becha:~ becha$
```



Shortcut!

- Use the website to set up measurement options
- Use JSON in “API Compatible Specification” as the basis for your scripts

Create a New Measurement

Step 1 Definitions

Please select the type of measurement you want to create

+ Ping + Traceroute + DNS + SSL + NTP

Step 2 Probe Selection

Worldwide 50 x

+ New Set - wizard + New Set - manual + IDs List + Reuse a set from a measurement

Step 3 Timing

This is a One-off:

Start time:

Stop time:

Measurement API Compatible Specification

```
curl --dump-header - -H "Content-Type: application/json" -H "Accept: application/json" -X POST -d '{
  "definitions": [
    {
      "target": "1.2.3.4",
      "af": 4,
      "packets": 3,
      "size": 48,
      "description": "Ping measurement to 1.2.3.4",
      "interval": 240,
      "resolve_on_probe": false,
      "skip_dns_check": false,
      "..."
    }
  ]
}'
```

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RIPE Atlas streaming

- **RIPE Atlas streaming** is an architecture that allows users to receive the measurement results as soon as they are sent by the probes - **in real time**
 - Publish/subscribe through web sockets, or fall back to polling (SocketIO)
- There are three types of data:
 - Measurement results
 - Probe connection status events
 - Measurements metadata



RIPE Atlas streaming

- Visualising network outages
 - <http://sg-pub.ripe.net/demo-area/atlas-stream/conn/>
- Real-time server and performance monitoring
- *Filtering and reusing measurement results*
- Documentation:
 - <https://atlas.ripe.net/docs/result-streaming/>



Libraries and tools

- You don't (always) have to reinvent the wheel!
- `ripe.atlas.cousteau`: Python API bindings
 - <https://github.com/RIPE-NCC/ripe-atlas-cousteau>
- `ripe.atlas.sagan`: Python result parsing
 - <https://github.com/RIPE-NCC/ripe.atlas.sagan>
- Community binding for other languages
 - <https://github.com/RIPE-Atlas-Community/ripe-atlas-community-contrib>
- Official command-line tools
 - <http://ripe-atlas-tools.readthedocs.org/en/latest/installation.html>