

# RIPE NCC Measurements and Tools Training Course

Solutions Booklet

March 2019

# Introduction

This course material and available updates can be found under [http://  
www.ripe.net/lir-services/training/courses](http://www.ripe.net/lir-services/training/courses)

## Exercise A: Querying for a Resource

### Tasks:

In this exercise, you are going to use RIPEstat to query for resources (IP address ranges, AS Numbers) and find out more details about them.

1. Go to the RIPEstat  
<https://stat.ripe.net>

2. What network announces 140.78.50.90? [140.78/16 from AS1205](#)

3. Is 83.68.16.27 routed? [Yes, announced by XS4ALL AS3265](#)

4. In which country is 185.97.40.0/22 used? [Germany](#)

5. What is its corresponding INETNUM object? [185.97.40.0/22](#)

6. What widget provides real-time routing status? [Looking-Glass](#)

7. By what percent did the number of prefixes announced within Greece increase over the last two years?

[2016-04-11 to 2018-04-10:](#)  
[ASN: 127 - 129 ~ 1,6%](#)  
[IPv4: 752 - 844 ~ 12,2%](#)  
[IPv6: 65 - 79 ~ 21,5%](#)

8. How would you share interesting network events with a colleague?

[After querying the resource in question, and setting the optimal zoom and/or timescale, use the “permalink” button on the result page or for an individual widget.](#)

## Exercise B: BGPlay

### Tasks:

In this exercise use the BGPlay widget to find the answers

Go to RIPEstat (<https://stat.ripe.net>), after querying you can find the BGPlay widget on the 'Routing' tab.

1. Find the up-stream provider for AS1205:

Remember that if you type an ASN in the query field of RIPEstat you don't get a BGPwidget in the results.

You only get a BGPlay widget in the results if you type a IP range in the query field.

So you cannot just go to [stat.ripe.net/bgplay](https://stat.ripe.net/bgplay) and enter AS1205 and expect a BGPlay widget for with results for AS1205.

What you should do is: go to [stat.ripe.net/bgplay](https://stat.ripe.net/bgplay) and enter AS1205, in the results, go to the "Routing" tab, specifically to the "Routing History" widget. Choose one of the prefixes that is originated by AS1205.

For example: 140.78.0.0/16

Click on it.

RIPEstat now opens a new window with a new query for 140.78.0.0/16 this time, instead of AS1205.

This time, since it is an IP prefix, you get a BGPlay widget as a result, and you can see that:

**Upstream is AS1853**

2. Is 69.36.157.0/24 originated by only one or more ASNs?

It is originated by several ASNs.

3. Check the IPv6 connectivity of your own network. Type in your IPv6 prefix and see if there are any networks connecting to your AS.

## Exercise C: RIPEstat Quiz

Do the RIPEstat kahoot

## Exercise X1 (Optional): Handling Abuse

### Tasks:

1. In this exercise, you are going to find who to contact in case of abuse (hacking.spamming etc)

2. Who is the abuse contact for 193.0.20.22 ?

`abuse@ripe.net`

3. Who is the abuse contact for the hotel network ?

look up the network you see for “Your network” if you go to [stat.ripe.net](http://stat.ripe.net) using the hotel network

4. Who is the abuse contact for your home network ?

look up an IP address from your prefix

5. Discussion: What can you do in these cases?

- No abuse contact found? find the webpage for the company that is holding this address space and try to find a contact there. With ripe-563 which makes having an abuse contact mandatory these cases are getting more rare but dealing with invalid abuse contacts or “getting no reply” cases are more frequent.
- No response on an abuse report? similar to the case before, finding the webpage of the company and trying other ways to contact the company. Some companies ignore emails sent to the abuse contact - this is a known problem.

## Exercise X2 (Optional): MyView

### Tasks:

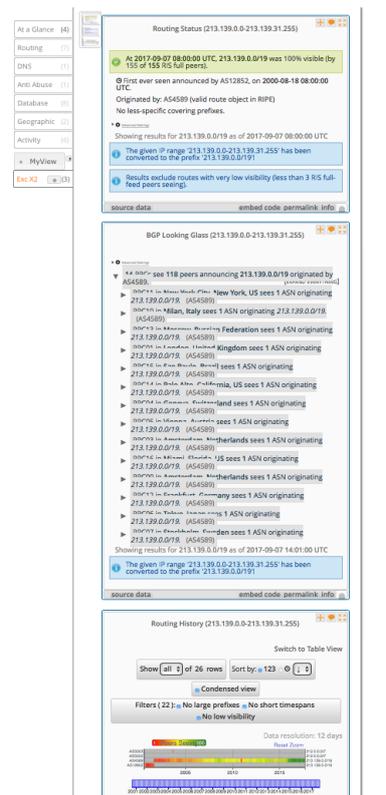
In this exercise, you are going to use the MyView feature of RIPEstat to select and arrange the widgets that you would like to have in your own personalised MyView tab.

1. Create a RIPE Access account (if you don't already have one) <https://access.ripe.net>

2. Create a MyView for a prefix containing the following widgets:

- Routing Status
- Looking Glass
- Routing History

Create a view and “drag’n’drop” the mentioned widgets (by their title) on the tab that represents the newly created view.



3. Create another MyView with at least two widgets and give it a meaningful name

## Exercise X3 (Optional): Comparing Results

### Tasks :

In this exercise you test features to compare results in RIPEstat.

1. No login required
2. Go to the 'Use Cases' > 'Compare Results' menu item at the top of the RIPEstat page.
3. Add widgets AND input query for each widget (ASN or IP or...).  
First select a widget from the drop down list, then enter a resource.  
By hovering over the input box for the resource, you will see what resources are supported.  
Click "Add" and the widget with the given resource will appear in the space below. The maximum of widgets to compare is 6.
4. You get a result page with widgets and query results
5. Share it via a permanent link  
Use the permalink button to create the permalink then just copy it.

## Exercise X4 (Optional): RIPEstat Use-Cases

### Tasks :

In this exercise we discuss common use-cases that network operators can encounter and try to solve them using RIPEstat.

Depending on discussed use-cases.

## Exercise D: Creating a Measurement

**Prerequisite:** You must have a RIPE NCC Account

You must have curl command installed

### Exercise:

Create a ping measurement:

- Involving ten probes
- To a target of your choice
- Source is your country
- Duration of two days.

**Task 1 : Warm-up: Create the measurement using the GUI**

**Task 2 : Create an API key** ( *Preparation for Task 3*)

**Task 3 : Create the measurement using API**

**Task 1 : Warm-up: Create the measurement using the GUI**

- a) log in to RIPE Atlas
- b) go to Measurements, Maps and Tools menu on the left > Measurements submenu
- c) Click on the green +Create Measurement button
- d) i): choose type=PING,  
ii) then choose target = (host name or IP)
- e) Click “Create My Measurement(s)”

## Task 2 : Create an API key ( *Preparation for Task 3* )

a) go to MyAtlas > API Keys

b) click on CreateAPIkey button

fill out:

-label (the name you give your key)

-valid from and valid to fields

(UTC time! Make sure your key is valid from this moment on)

-from a pull down menu select”

“Schedule a new measurement” permission

c) Don't click on “Add Grant”

e) Click on “Save”

f) You will need the UUID of the key for Task 3)

## Task 3 : Create an measurement using API

a) Create a measurement via the GUI as in Task1, but don't click on the “Create My Measurement(s)” button.

b) Click on the “Measurement API Compatible Specification” button

c) Copy all the text and paste it into a terminal window

d) Replace the placeholder at the end of the text with you key UUID

e) Enter!

f) Check if your measurement has been created.

## Exercise E: Using Streaming API

**Prerequisite:** Preconfigure web browser:

in Safari: Preferences > Advanced>Show Develop menu

Chrome or Firefox needs no reconfiguration.

**Scenario:** customers complain it takes a long time to reach your server

**Action:** -ping your server from 50 probes

- choose acceptable latency threshold

### Task 1:

-Use the existing ping measurement ID 19230504

-Choose which threshold (e.g. greater than 30ms)

-Impose threshold on “min” (the minimum result of the three ping attempts)

### Steps for Task1:

1) <http://atlas.ripe.net/webinar/streaming01.html>

Open it in the development console

(right click >“Inspect element” > “Console”)

2) Wait for results to arrive

3) Save the HTML file locally and **EDIT** the code

( Or save it as a text file, edit it, change extension to html)

4) Open edited html file in Web browser

(right click >“Inspect element” > “Console”)

### What to **EDIT** ? (step 3)

-In the “socket-emit” command add your threshold for the alarm:

-find parameter in doc for “**greater than**”: <https://atlas.ripe.net/docs/result-streaming/>

-express minimum of three ping attempts as: {min: value\_of\_threshold}

### Solution:

```
streaming01.html x
<!-- The following file is needed for the streaming -->
<script src="https://atlas-stream.ripe.net/socket.io.js"></script>
<script>
  // Create a connection
  var socket = io("https://atlas-stream.ripe.net", { path : "/stream/socket.io" });

  // Declare a callback to be executed when a measurement result is received
  socket.on("atlas_result", function(result){

    console.log("I received ", result); // Print the result in the console

  });

  // Subscribe to results coming from all the probes involved in the measurement 19230504
  socket.emit("atlas_subscribe", { stream_type: "result", msm: 19230504, greaterThan: {min:30}
    });
</script>
```

## Task 2:

-Same situation as in the exercise before, but you didn't schedule a measurement in advance, so

You don't have a measurement ID

-You want to get all the measurements reaching 216.58.212.227

-Now restrict the results to just include ping measurements

-Use documentation, to find correct syntax and parameters:

<https://atlas.ripe.net/docs/result-streaming/>

## Solution:

```
socket.emit("atlas_subscribe", {  
  stream_type: "result",  
  type: "ping",  
  destinationAddress: "216.58.212.227"  
});
```

## Exercise F: Using RIPEAtlas CLI

### Prerequisites and Preparation

You must have a RIPE NCC Access Account

You must have an API key

Installation: (UNIX/LINUX/OSX:)

Terminal:

```
sudo easy_install pip
```

```
sudo pip install ripe-atlas-tools
```

choose “Install” in pop-up

```
ripe-atlas configure --set authorisation.create=MY_API_KEY
```

WINDOWS: Tools in GIT repository

### Task :

Use the traceroute command to test the reachability of wikipedia.org on TCP port 443 from 20 probes in France

### Solution:

- **ripe-atlas measure traceroute --protocol TCP --target wikipedia.org --port 443 --probes 20 --from-country fr**