LIR and RIPE Database Training Course

Exercise Booklet

December 2016

Exercise 1: Being an LIR contact

Goal: Sort the tasks in the chronological order.

Storyline:

You have taken over the position of a 'LIR contact' in your company. Your company is already a long-established LIR. The 'LIR contact' is responsible for dealing with the RIPE NCC: requesting resources, maintaining the RIPE Database records and so on.

What should you do now?

Instructions:

Work in small groups. With your group, sort the steps below in the chronological order in which you would carry out the tasks.

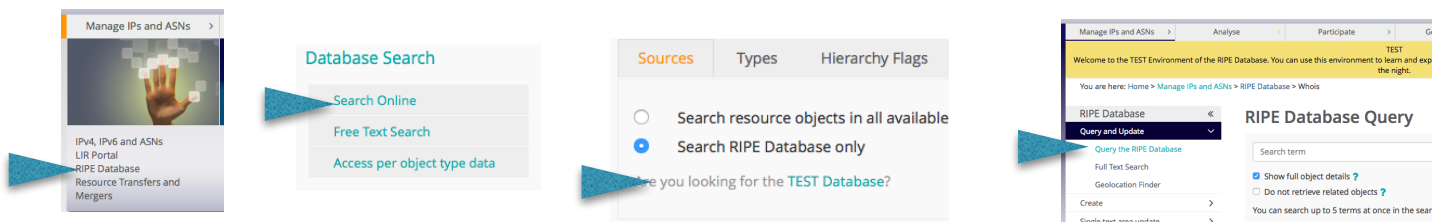| TASKS	ORDER
Check the RPKI Dashboard and make updates (if needed)	
Correct invalid and unused assignments in the RIPE Database	
Compare your internal assignment records with the RIPE Database	
Ask the RIPE NCC to update any out-dated LIR information you can't update yourself	
Add your person object to the LIR role object	
Create a RIPE NCC Access account, if you don't have one, and add it to your LIR Portal User Accounts	
Request resources if needed (and possible)	
Check the LIR account information and what resources you have	
Create your person object in the RIPE Database, if you don't have one	
Update the User Accounts list in the LIR Portal	
Get the Default LIR maintainer password or get your Access account associated with it	
Correct any out-dated LIR information in the LIR Portal	

Introduction to Database Exercises

Test Database

In the exercises, we will make use of the RIPE TEST Database. This is a public system that acts and responds in exactly the same way as the RIPE Database would do. It does **not** contain the same data as in the RIPE database and it is reset every night.

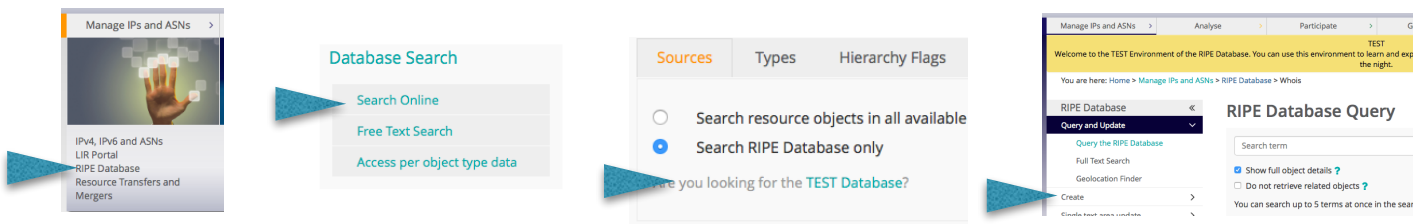You can access the TEST Database by selecting the correct source in the Webupdates or whois tools:

To Query and Edit objects in the Test Database:

Go to :   RIPE Database > Search Online > Test Database

To Create new objects in the Test Database:

Go to :   RIPE Database > Search Online > Test Database > Create

To Double Check if you are in the RIPE DB or Test DB:

RIPE Database: https://apps.db.ripe.net

TEST Database: https://apps-test.db.ripe.net

RIPE NCC Access Account

RIPE NCC Access enables you to sign into various RIPE NCC services using one password. It is also called SSO (Single Sign On).

You need to have a RIPE NCC Access Account if you want create or update objects in the RIPE Database and in the TEST Database.

Make sure you create a RIPE NCC Access Account (in case you don't have one yet) before doing the exercises.

https://access.ripe.net

Exercise 2: Querying the RIPE Database

In this exercise you are going to use the web interface to find information in the **TEST Database**.

2.1 Finding the Correct Contact Information

For the following IP address: **193.0.29.71,** find the correct contact persons in the **TEST Database.**

1. Find the inetnum object (assignment) in the TEST Database to which this IP address belongs:

    _____

2. Who is administratively responsible for this inetnum?

    _____

3. What is the covering allocation (less specific= larger inetnum) above it?:

    _____

4. Who should you contact in case of technical problems with the allocation?

    _____

5. List all their names and nic-hdls:

    _____

6. Who should you contact in case you got spammed or attacked from an IP address from this allocation? List all their names and nic-hdls.

    _____

7. List all the objects you had to query to get the answer in Question 6.

    _____

8. What email address should you write to in case you got spammed or attacked from an IP address from this allocation?

_____

2.2 Finding the Addresses belonging to an LIR

Given the IP address **193.0.26.19**, find all the allocations of the LIR to which that address belongs, in the **TEST Database**. The goal is to find all the address space if that LIR.

1. Is this IP address part of an assignment? Yes___/No___

2. What is the larger allocation above this assignment?

_____

3. What is the LIR's organisation object?

_____

4. List all the other allocations of this LIR:

_____

5. What was the RIPE DB query you had to type in order to find them?

_____

6. How can you be sure there are no additional allocations to the ones you have listed above?

_____

Exercise 3: Updating the RIPE Database

For your convenience we have **already created some objects in the RIPE TEST Database**. You will use these objects during the practical exercises today.

To identify your objects, please look up your number in the participants' list and substitute that in the placeholders. As an example, if your number on the list is **9**, your person object will be **TP9-TEST**.

We already have created the following objets (fill the ⬭ with your number):
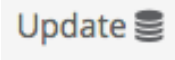
- Maintainer: CM⬭-MNT (*MD5 password: secret*⬭)

- Person: TP⬭-TEST

- Organisation: ORG-TCP⬭-TEST

- IPv4 allocation: 192.⬭.0.0 - 192.⬭.3.255
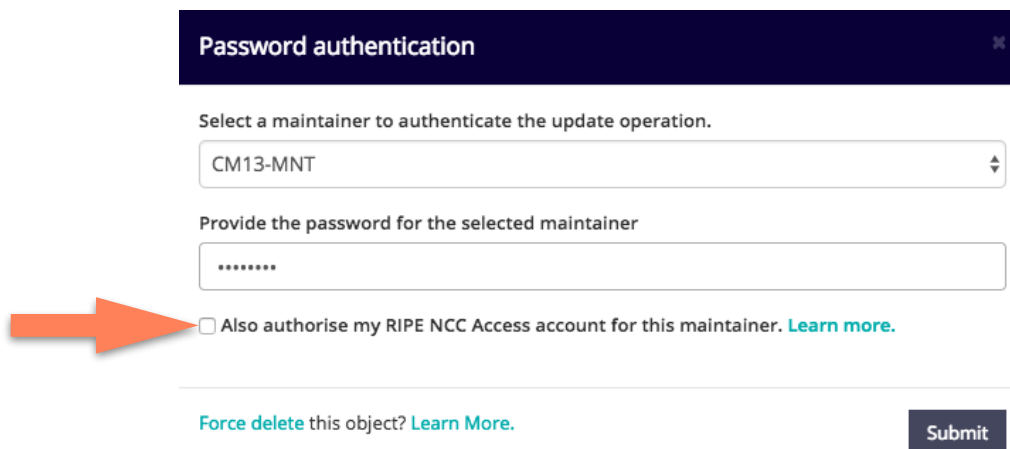
- IPv6 allocation: 2001:ff⬭::/32

At the end of this booklet you have detailed information about the TEST database and the object that are already created on it. Remember, **you don't have to create these object, they already exist**.
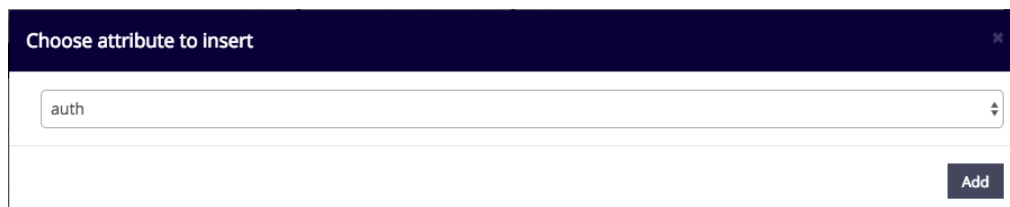
In this exercise you have to **update your maintainer object**, adding your RIPE Access account (SSO) as an authentication attribute.

1. Go to the RIPE NCC web portal and login with your Access account.

2. Search in the **TEST Database** your maintainer object (CM⬭-MNT). Write the authentication attributes you have found:

_____

3. Click in the Update icon Update 🗇

4. To be authorised you have to provide the MD5 password that protects the maintainer object (secret⬭). Uncheck the "Also authorise my RIPE NCC Access account for this maintainer" as we will do it manually.

Password authentication ✕

Select a maintainer to authenticate the update operation.

CM13-MNT ⬍

Provide the password for the selected maintainer

••••••••

☐ Also authorise my RIPE NCC Access account for this maintainer. **Learn more.**

Force delete this object? Learn More.   **Submit**

5. You can see the web interface to update the object. Click in the "Add any attribute" button ➕ and select **auth** as the type of attribute to insert and click on ADD.

Choose attribute to insert ✕

auth ⬍

Add

6. Fill the new attribute using SSO and the email address you used for your Access account. For example, if your access account uses participant@example.com, use "*SSO participant@example.com*". If everything went well you will see:

Your object has been successfully modified

Exercise 4: Creating Objects in RIPE Database

4.1 Create maintainer and person pair

In this exercise, you are going to **create a person and maintainer object pair**.

1. Go to "RIPE Database" > "Search Online" > "Test Database" > "Create" >"Create maintainer and person pair" tool.

2. Fill out all the fields. Choose a short name for your new mntner. Make sure it ends in "…-MNT". Fill out your name in the "person field".

3. Click on "Create"!

4. Check your new person and maintainer object pair.

5. Write down the following information:

   nic-hdl of your new person object: _____

   name of your new maintainer object: _____

4.2 Create a **role** Object

In this exercise, you are going to **create a role object** that will reference (or contain) two person objects: the person object that you have just created in Exercise 4.1, and the person object of your neighbour.

1. Go to "RIPE Database" > "Search Online" > "Test Database" > "Create" >"Create an object" tool .

2. Select "role" as object type and then click on "Create".

3. You will be prompted to enter the mntner that you want to use in the "mnt-by" field.

4. It will be pre-filled with the mntner that you created in the previous exercise, because it was associated with your Access Account. Accept it!

5. Add additional admin-c and tech-c lines with the "+" button.

6. Fill out the fields of the role object template.

7. Decide what is your company's name, and use that in the first line in the 'role' attribute.

8. Fill out the admin-c field with the nic-hdl of the person object you have just created (in Exercise 4.1)

9. Fill out the tech-c field with the nic-hdl of your neighbour

10. Write down the following information:

    nic-hdl of your new role object: _____

11. Which person(s) does this role object group together for the purpose of contact information?

    _____

    _____

Exercise 5: Making assignments

Goal: Calculate how much address space to assign to an End User

Storyline:

You work for the LIR: ORG-TCP⬭-TEST

You have a /22 IPv4 allocation and a /32 IPv6 allocation.

A new customer (End User) wants to use your services and needs address space from your registry.

What to do:

• Collect information about the End User's network by reading the email and asking questions to the End User

• Calculate how much IPv4 and IPv6 address space you will assign to the End User

• How would you document an assignment like this one?

Additional information:

• IPv4 assignment size: limited to the amount of IPv4 space you have

• IPv6 assignment size:

   • Between /64 and /48, no approval required

   • >/48 requires approval from the RIPE NCC

   • /64 = 1 subnet

   • /56 = 256 subnets

   • /48 = 65K subnets

TIP: Use the IPv4 and IPv6 CIDR charts!

End-User's email:

```
 From:    marc@laika.example.com
 To:      contact@lir.yourplace.com
Date:     Today

Dear Sir / Madam,

Our company is interested in moving from an IPv4-only platform to a
dual-stacked one, IPv4 and IPv6. It is important for us to be
reachable from anywhere in the world.

We are a start-up Web hosting company (moving on from the web design
business). We would like to get address space from you and then we
would hand back the address space we currently have to our soon to
be ex-ISP upstream provider TheOtherNet. We currently use the prefix
195.20.42.0/26.

Our network consists of three subnets.

1) We currently have 150 shared webhosting clients. We host 10
clients per IP.

2) Additionally we also have 7 SSL webhosting clients that need one
IP address each.

Our goal is to double the amount of clients every year.

3) For our supporting infrastructure we have 10 servers, which need
their own addresses. This subnet will not grow.

We would be interested in a two-year contract with you.

I hope to hear from you soon.

Regards,

  Marc Bromski
  MB54321-TEST
  Laika BV, Amsterdam
  http://www.laika.example.com
```

Exercise 6: Registering the Assignments

Goal: Register the Assignment in the TEST RIPE Database

Your task is to register the End User assignments from the previous exercise in the TEST RIPE Database.

Storyline:

You work for the LIR: ORG-TCP◯-TEST

You want to register the assignments from the previous exercise.

Preparations:

1. Find out the name and password of your maintainer object

2. Associate your Access account with your maintainer

3. Find your person object

4. Identify your IPv4 and IPv6 allocation objects

5. Choose the prefixes in your allocations for the assignments

Database Objects:

Remember that we have **already created some objects in the RIPE TEST Database.**

To identify your objects, please look up your number in the participants' list and substitute that in the placeholders. As an example, if your number on the list is **9**, your person object will be **TP9-TEST**.

We already have created the following objets (fill the ◯ with your number):

• Maintainer: CM◯-MNT (*MD5 password: secret*◯)

• Person: TP◯-TEST

• Organisation: ORG-TCP◯-TEST

• IPv4 allocation: 192.◯.0.0 - 192.◯.3.255

• IPv6 allocation: 2001:ff◯::/32

At the end of this booklet you have detailed information about the TEST database and the object that are already created on it. Remember, **you don't have to create these object, they already exist**.

Create the inetnum object:

1. Log in to your Access account (if not logged in)

2. Go to TEST Webupdates tool: https://apps-test.db.ripe.net/db-web-ui/

3. Select "inetnum" as the object type from the drop-down list

4. Fill in your maintainer: CM◯-MNT

   • If you did not associate your Access account with the maintainer, you will be asked to provide the maintainer password

5. Fill in the inetnum object template with:

   • An IP range from your IPv4 allocation

      Example: 192.◯.2.0 - 192.◯.2.111

   • The unique netname to identify the assignment

      Example: LAIKA-BV-NETWORK

   • The country code of the end user's country

      Example: NL

   • Use the customer person object as the admin-c

      See the customer's email from exercise 5

   • Use your person object as the tech-c

      See the list of pre-created objects

- Use the status ASSIGNED PA

6. Create the object. Was it successful?

Create the inet6num object:

1. Log in to your Access account (if not logged in)

2. Go to TEST Webupdates tool: https://apps-test.db.ripe.net/db-web-ui/

3. Select "inet6num" as the object type from the drop-down list

4. Fill in your maintainer: CM◯-MNT

   - If you did not associate your Access account with the maintainer, you will be asked to provide the maintainer password

5. Fill in the inet6num object template with:

   - An IPv6 prefix from your IPv6 allocation

     Example: 2001:ff30:1234::/48

   - The unique netname to identify the assignment

     Example: LAIKA-BV-NETWORK

   - The country code of the end user's country

     Example: NL

   - Use the customer person object as the admin-c

     See the customer's email from exercise 5

- Use your person object as the tech-c

    See the list of pre-created objects

- Use the status ASSIGNED

6. Create the object. Was it successful?

- Use your person object as the tech-c

Notes

Your database objects

For your convenience we have **already created some objects in the RIPE TEST Database**. You can use these objects during the practical exercises today. During the exercises, you can modify these or use them to update or create other objects.

We have created a maintainer, person, organisation and IPv4/IPv6 allocation objects for you. You can use these objects during the practical exercises today.

To identify your objects, please look up your number in the participants' list and substitute that in the placeholders. As an example, if your number on the list is **3**, your person object will be **TP3-TEST**.

On the next pages you will find the list of all your objects that are in the TEST Database.

Passwords

All your objects are protected by your own **maintainer** object. In order to modify any of them, you will need the password for this maintainer.

This password is "secret" + your number, so the password for attendee **1** will be **secret1**, the password for attendee **2** will be **secret2,** and so on.

All pre-created objects

Fill in all ⬭ placeholders with your number on the list

```
person:          Training Course Participant
remarks:         RIPE NCC training courses - Participant ⬭ Person
address:         Singel 258
address:         1016 AB Amsterdam
phone:           +312053544444
e-mail:          attendee@example.org
nic-hdl:         TP⬭-TEST
mnt-by:          CM⬭-MNT
created:         2002-04-08T12:43:46Z
last-modified:   2014-02-24T13:15:13Z
source:          TEST


mntner:          CM⬭-MNT
descr:           RIPE NCC training courses - Participant ⬭ Maintainer
admin-c:         TP⬭-TEST
mnt-by:          CM⬭-MNT
auth:            MD5-PW $1$BhgnmQ44$sgcdj40h6vYVjdzxkllgx.
upd-to:          participant@example.com
notify:          participant@example.com
created:         2002-04-08T12:43:46Z
last-modified:   2014-02-24T13:15:13Z
source:          TEST


organisation:    ORG-TCP⬭-TEST
org-name:        RIPE NCC training courses - Participant ⬭ Organisation
org-type:        LIR
address:         Singel 258, 1016 AB Amsterdam
e-mail:          training@example.com
admin-c:         TP⬭-TEST
tech-c:          TP⬭-TEST
ref-nfy:         notify@example.com
notify:          participant@example.com
mnt-ref:         TEST-NCC-HM-MNT
mnt-by:          TEST-NCC-HM-MNT
created:         2002-04-08T12:43:46Z
last-modified:   2014-02-24T13:15:13Z
source:          TEST
```

The following allocations are available for you to use in the exercise:

intenum:	**192.◯.0.0-192.◯.3.255**
netname:	NL-RIPENCC-TCP◯-20140626
org:	ORG-TCP◯-TEST
descr:	RIPE NCC training courses - Participant ◯ Allocation
country:	EU
admin-c:	TP◯-TEST
tech-c:	TP◯-TEST
status:	ALLOCATED PA
mnt-by:	TEST-NCC-HM-MNT
mnt-lower:	CM◯-MNT
mnt-routes:	CM◯-MNT
created:	2002-04-08T12:43:46Z
last-modified:	2014-02-24T13:15:13Z
source:	TEST

inte6num:	**2001:ff◯::/32**
netname:	NL-RIPENCC-TCP◯-20140626
org:	ORG-TCP◯-TEST
descr:	RIPE NCC training courses - Participant ◯ Allocation
country:	EU
admin-c:	TP◯-TEST
tech-c:	TP◯-TEST
status:	ALLOCATED-BY-RIR
mnt-by:	TEST-NCC-HM-MNT
mnt-lower:	CM◯-MNT
mnt-routes:	CM◯-MNT
created:	2002-04-08T12:43:46Z
last-modified:	2014-02-24T13:15:13Z
source:	TEST

NOTE: If your number on the list is between 1 and 9, please write the number in the IPv6 prefix with a leading zero.

Example: "1" == "01" == 2001:ff01::/32