

# RIPE Database

## Exam Guide

# How can you study for the exam?

## E-learning course

Taking our free online self-paced RIPE Database e-learning course in the RIPE NCC Academy is the best way to prepare yourself for the RIPE Database exam. The course consists of 18 modules and 15 activities and takes you about 16 hours to complete.

- ✔ Covers all exam knowledge and skills
- ✔ Available for free



Go to the RIPE NCC Academy

## Face-to-face training course

RIPE NCC members can attend an in-person LIR training course. We offer courses throughout our service region, and attending a course is a great way to learn directly from our trainers and your peers.

- ! Partially covers exam knowledge and skills
- ! Courses for members only



Register for a face-to-face course

## Webinars

We also offer several live online webinars on RIPE Database topics. Taking a webinar is an easy way to interact directly with our trainers and ask them your questions!

- ! Partially covers exam knowledge and skills
- ✔ Live webinars are available to all



Register for webinar

# RIPE Database Exam Guide

**The RIPE Database Exam is intended for individuals who have knowledge, skills and experience using the RIPE Database operationally, as well as knowledge on how policies and changes regarding the RIPE Database take place.**

## Recommended Knowledge:

It is recommended that candidates have at least six months of experience using the RIPE Database at an operational level and/or have participated in the RIPE Database training course, or followed RIPE Database webinars or have taken the RIPE Database e-learning course.

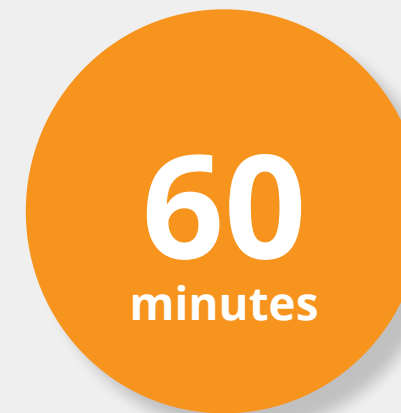
## The exam validates the ability to:

- Identify the purpose of the different objects registered in the RIPE Database
- Query the RIPE Database using different flags
- Interpret the data stored in RIPE Database objects
- Create different types of RIPE Database objects
- Describe routing policy using RPSL
- Set-up reverse delegation in the RIPE Database

## Exam Structure:



**Number of questions**



**Time limit**



**Passing score**

Each LIR receives three exam vouchers per year. Registered LIR contacts can claim these vouchers in the RIPE NCC Academy Dashboard.

# Types of Questions

## The exam contains different types of questions:

**Multiple choice:** Has one correct response and three incorrect responses.

**Multiple response:** Has two or more correct responses out of five or more alternatives.

**Matching:** Contains a list of items or statements that must be correctly matched to another list of items or statements

**Drag and drop:** Drag words or images into gaps in a paragraph of text, an image or a diagram.

**Unanswered questions are scored as incorrect.**

## Unscored Items:

The exam may contain items that are included in the exam to trial run new exam questions for other RIPE NCC certifications. These items are not identified and will not count towards your score. Only the scored items are worth 100% of your score.

## Exam Content Distribution:

Domain	Percent of Exam
Purpose, scope and structure of the RIPE Database	18%
Querying and data interpretation	38%
Updating and creating objects	44%

# Exam Outline:

**To pass the exam, you must possess the minimum level of knowledge, skills and abilities in understanding and performing the following:**

## 1. Introduction to the RIPE Database

### 1.1. Purpose, scope and structure of the RIPE Database

1.1.1 Understand the purpose of the objects registered in the RIPE Database

1.1.2 Identify the objects where certain information is registered

1.1.3 Identify the role and contribution of the RIPE community and working groups in the development of the RIPE Database

1.1.4 Identify the attributes of different objects

1.1.5 Identify the methods to interact with the RIPE Database

## 2. Querying and data interpretation

### 2.1. Relationship between objects

2.1.1 Understand the relationship between objects

2.1.2 Identify the objects that can be referenced in other objects

### 2.2. Data interpretation

2.2.1 Identify different types of address space, given the status of INETNUM or INET6NUM objects

2.2.2 Understand the data stored in specific objects

### 2.3. Querying

2.3.1 Find the correct contact information to solve a specific operational issue

2.3.2 Find the anti-abuse contact information from the holder of a specific IP address

2.3.3 Identify the correct handle to look for a specific contact in the RIPE Database

2.3.4 Identify the primary key to find an object in the RIPE Database

2.3.5 Look for the persons referenced as different types of contacts in different objects

2.3.6 Identify the purpose of a netname in INETNUM or INET6NUM objects

### 2.4. Inverse queries

2.4.1 Find RIPE Database objects using inverse query

2.4.2 Find all the allocations that belong to a specific organisation using the correct inverse search key

2.4.3 Find all objects in which a PERSON or ROLE object is referenced as different types of contact

2.4.4 Understand how to find contacts that reference maintainers in different ways

2.4.5 Identify the purpose of an inverse query

### 2.5 Different flags

2.5.1 Identify the different flags used to search for objects in the RIPE Database

# Exam Outline:

**2.5.2** Restrict the query to only show specific objects in the results

**2.5.3** Find all the more and/or less specific objects within an allocation

## 3. Update and create objects in the RIPE Database

### 3.1. Maintainers

**3.1.1** Identify the benefits of the different authentication mechanisms

**3.1.2** Choose which maintainer to use when creating RIPE Database objects (personal or shared)

**3.1.3** Identify the importance of enabling notifications on updates made to an object.

### 3.2. Authority delegation

**3.2.1** Identify the purpose of registering sub-allocations in the RIPE Database

**3.2.2** Create an IPv4 or IPv6 sub-allocation or assignment in the RIPE Database

**3.2.3** Describe when to use “mnt-domains:”, “mnt-routes:” or “mnt-lower:” attributes to create objects in the RIPE Database

### 3.3. Modify and delete objects

**3.3.1** Update objects to add/remove references to other objects

**3.3.2** Add a RIPE NCC Access account to a maintainer

**3.3.3** Identify the conditions for deleting objects

**3.3.4** Update objects by adding new attributes that do not refer to other objects

### 3.4. Registering assignments

**3.4.1** Create an IPv4 assignment (contiguous or non-contiguous block), given an IPv4 allocation with pre-existing assignments

**3.4.2** Create a new IPv6 assignment for one network, given an IPv6 allocation with pre-existing assignments

**3.4.3** Create a new IPv6 assignment for a pool of address blocks of the same size, given an IPv6 allocation with pre-existing assignments

### 3.5. Routing policy

**3.5.1** Describe the meaning of the “import:” and “export:” lines in an AUT-NUM object

**3.5.2** Describe the “import:” and “export:” attributes of an AUT-NUM object if an ASN is connected to another ASN(s), (e.g. upstream, downstream and/or peer)

**3.5.3** Identify the purpose of the AS-SET object in the RIPE Database

**3.5.4** Recognise the importance of registering ROUTE and ROUTE6 objects in the RIPE Database

### 3.6. Reverse DNS

**3.6.1** Identify the reverse DNS zone for IPv4 and IPv6 blocks

**3.6.2** Select the different IPv4 and IPv6 block sizes for which reverse delegation can be requested

**3.6.3** Create the DOMAIN object to set up reverse DNS for IPv4 and IPv6

**3.6.4** Identify the different steps required to create DOMAIN objects

**3.6.5** Describe why DOMAIN objects are used in the RIPE Database

# Learning Resources

## 1. Introduction to the RIPE Database

### 1.1. Purpose, scope and structure of the RIPE Database

	<b>RIPE NCC Academy</b> RIPE Database online course [16 hours]	<b>Training Course</b> RIPE Database Course [1 day]	<b>Webinar:</b> RIPE Database Basics [2 hours]	<b>Webinar:</b> RIPE Database Applications [2 hours]	<b>Webinar:</b> IPv6 in the RIPE Database [1 hour]
1.1.1 Understand the purpose of the objects registered in the RIPE Database	Module 1.1, 1.2	Yes	Yes		
1.1.2 Identify the objects where certain information is registered	Module 1.2 [Activity 1a]	Yes	Yes		
1.1.3 Identify the role and contribution of the RIPE community and working groups in the development of the RIPE Database	Module 1.1	Yes			
1.1.4 Identify the attributes of different objects	Module 1.3 [& modules on objects: 2.1, 3.1, 4.1, 6.1, 6.2, 7.2]	Yes	Partially		
1.1.5 Identify the methods to interact with the RIPE Database	Module 1.1	Partially	Yes		

## 2. Querying and data interpretation

### 2.1. Relationship between objects

2.1.1 Understand the relationship between objects	Module 1.4 [& modules on objects: 2.1, 3.1, 4.1, 6.1, 6.2, 7.2]	Partially	Partially		
2.1.2 Identify the objects that can be referenced in other objects	Module 1.4 [& modules on objects: 2.1, 3.1, 4.1, 6.1, 6.2, 7.2]	Partially	Partially		

### 2.2. Data interpretation

2.2.1 Identify different types of address space, given the status of INETNUM or INET6NUM objects	Module 4.1	Yes	Yes		Yes (IPv6)
2.2.2 Understand the data stored in specific objects	Modules 1.3, 1.4, 2.1, 3.1, 4.1, 6.1, 6.2, 7.2.	Partially	Partially		

# Learning Resources

## 2.3. Querying

	<b>RIPE NCC Academy</b> RIPE Database online course [16 hours]	<b>Training Course</b> RIPE Database Course [1 day]	<b>Webinar:</b> RIPE Database Basics [2 hours]	<b>Webinar:</b> RIPE Database Applications [2 hours]	<b>Webinar:</b> IPv6 in the RIPE Database [1 hour]
2.3.1 Find the correct contact information to solve a specific operational issue	Modules 5.1, 5.2, 5.3; Activities 5a, 5b	In theory only	In theory only		
2.3.2 Find the anti-abuse contact information from the holder of a specific IP address	Modules 3.1, 5.1, 5.2	In theory only	In theory only		
2.3.3 Identify the correct handle to look for a specific contact in the RIPE Database	Module 3.1, 5.1, 5.2	Partially	Partially		
2.3.4 Identify the primary key to find an object in the RIPE Database	Module 1.2 [& modules on objects: 2.1, 3.1, 4.1, 6.1, 6.2, 7.2]	Partially	Partially		
2.3.5 Look for the persons referenced as different types of contacts in different objects	Modules 3.1, 5.1, 5.3	Yes			
2.3.6 Identify the purpose of a netname in INETNUM or INET6NUM objects	Module 4.1	Yes		Yes	

## 2.4. Inverse queries

2.4.1 Find RIPE Database objects using inverse query	Module 5.3	Yes	In theory only
2.4.2 Find all the allocations that belong to a specific organisation using the correct inverse search key	Module 5.3	In theory only	In theory only
2.4.3 Find all objects in which a PERSON or ROLE object is referenced as different types of contact	Module 5.3	Yes	In theory only
2.4.4 Understand how to find contacts that reference maintainers in different ways	Module 5.3	In theory only	In theory only
2.4.5 Identify the purpose of an inverse query	Module 5.3	Yes	Yes

# Learning Resources

## 2.5. Different flags

	RIPE NCC Academy RIPE Database online course [16 hours]	Training Course RIPE Database Course [1 day]	Webinar: RIPE Database Basics [2 hours]	Webinar: RIPE Database Applications [2 hours]	Webinar: IPv6 in the RIPE Database [1 hour]
2.5.1 Identify the different flags used to search for objects in the RIPE Database	Modules 5.1, 5.2, 5.3, Activities 5a, 5b	Yes	Yes		
2.5.2 Restrict the query to only show specific objects in the results	Module 5.1, Activities 5a, 5b	Yes	Yes		
2.5.3 Find all the more and/or less specific objects within an allocation	Module 5.2, Activities 5a, 5b	Yes	Yes		

## 3. Updating and creating objects in the RIPE Database

### 3.1. Maintainers

3.1.1 Identify the benefits of the different authentication mechanisms	Modules 2.1, 2.2	Yes			
3.1.2 Choose which maintainer to use when creating RIPE Database objects (personal or shared)	Module 2.2, Activities 2b, 2c	Yes	Yes		
3.1.3 Identify the importance of enabling notifications on updates made to an object	Module 2.3, Activity 2d	Yes		Yes	

### 3.2. Authority delegation

3.2.1 Identify the purpose of registering sub-allocations in the RIPE Database	Module 4.3	Yes		Yes	
3.2.2 Create an IPv4 or IPv6 sub-allocation or assignment in the RIPE Database	Module 4.3, Activity 4c	Yes		As a demo	
3.2.3 Describe when to use "mnt-domains:", "mnt-routes:" or "mnt-lower:" attributes to create objects in the RIPE Database	Module 4.3	Partially		Partially	

# Learning Resources

## 3.3. Modify and delete objects

	<b>RIPE NCC Academy</b> RIPE Database online course [16 hours]	<b>Training Course</b> RIPE Database Course [1 day]	<b>Webinar:</b> RIPE Database Basics [2 hours]	<b>Webinar:</b> RIPE Database Applications [2 hours]	<b>Webinar:</b> IPv6 in the RIPE Database [1 hour]
3.3.1 Update objects to add/remove references to other objects	Modules 1.4, 3.1, Activity 3a	Yes	In theory only		
3.3.2 Add a RIPE NCC Access account to a maintainer	Module 2.1	Yes	In theory only		
3.3.3 Identify the conditions for deleting objects	Modules 1.4, 2.1, Activity 2a	Yes			
3.3.4 Update objects by adding new attributes that do not refer to other objects	Module 2.1, Activity 2d	Yes	In theory only		

## 3.4. Registering assignments

3.4.1 Create an IPv4 assignment (contiguous or non-contiguous block), given an IPv4 allocation with pre-existing assignments	Module 4.2, Activity 4a	Yes		As a demo
3.4.2 Create a new IPv6 assignment for one network, given an IPv6 allocation with pre-existing assignments	Module 4.2	Yes		In theory only
3.4.3 Create a new IPv6 assignment for a pool of address blocks of the same size, given an IPv6 allocation with pre-existing assignments	Module 4.2, Activity 4b			

# Learning Resources

## 3.5. Routing policy

	<b>RIPE NCC Academy</b> RIPE Database online course [16 hours]	<b>Training Course</b> RIPE Database Course [1 day]	<b>Webinar:</b> RIPE Database Basics [2 hours]	<b>Webinar:</b> RIPE Database Applications [2 hours]	<b>Webinar:</b> IPv6 in the RIPE Database [1 hour]
3.5.1 Describe the meaning of the “import:” and “export:” lines in an AUT-NUM object	Module 6.1	Yes		Yes	
3.5.2 Describe the “import:” and “export:” attributes of an AUT-NUM object if an ASN is connected to another ASN(s), (e.g. upstream, downstream and/or peer)	Module 6.1	Yes		Yes	
3.5.3 Identify the purpose of the AS-SET object in the RIPE Database	Module 6.2 [Activity 6c]	Yes		Yes	
3.5.4 Recognise the importance of registering ROUTE and ROUTE6 objects in the RIPE Database	Module 6.2 [Activities 6a, 6b]	Partially		Partially	

## 3.6. Reverse DNS

3.6.1 Identify the reverse DNS zone for IPv4 and IPv6 blocks	Modules 7.1, 7.2	Yes		Yes	Yes (IPv6)
3.6.2 Select the different IPv4 and IPv6 block sizes for which reverse delegation can be requested	Module 7.2	Yes		Yes	Yes (IPv6)
3.6.3 Create the DOMAIN object to set up reverse DNS for IPv4 and IPv6	Module 7.2, Activity 7a	In theory only		In theory only	
3.6.4 Identify the different steps required to create DOMAIN objects	Module 7.2 Activities 7a	Yes		Yes	
3.6.5 Describe why DOMAIN objects are used in the RIPE Database	Modules 7.1, 7.2	Yes		Yes	

## Support

If you have any questions regarding the exam, please send an email to **Exams Support**

## Schedule Your Exam

To schedule your exam, please visit:  
<https://exams.ripe.net/>