

BGP Security

Exam Guide

BGP Security Exam Guide

The BGP Security exam certifies the ability to choose the appropriate security measures to protect networks against common threats. They contribute to global routing security by making Internet routing more secure and reliable..

The exam validates the ability to:

- Identify the fundamental security vulnerabilities of the Border Gateway protocol.
- Identify the types and causes of BGP Incidents and their impact on the Internet.
- Choose the appropriate security measures for preventing accidental and intentional BGP routing incidents.
- Implement security measures to protect the BGP speaker and sessions.
- Choose the appropriate methods for implementing BGP filters.
- Define BGP filter recommendations based on routing relationships.
- Register your routing information and publish routing policies in the RIPE Database.
- Validate BGP announcements using RPKI information.

Recommended Knowledge

It is recommended that candidates have at least six months of experience with BGP Security at an operational level and/or have participated in the RIPE NCC BGP Security e-learning course, supplemented by BGP Security webinars or face-to-face training courses.

Exam Structure



50

Number of questions



60
minutes

Time limit



70

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
BGP Security Vulnerabilities	24%
BGP Security Measures	24%
Route Filtering and Internet Routing Registry	26%
Resource Public Key Infrastructure (RPKI)	26%

How can you study for the exam?

E-learning course

Taking our free online self-paced BGP Security e-learning course in the RIPE NCC Academy is the best way to prepare yourself for the BGP Security exam. The course consists of six modules and six lab activities and takes you about ten 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 BGP Security 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

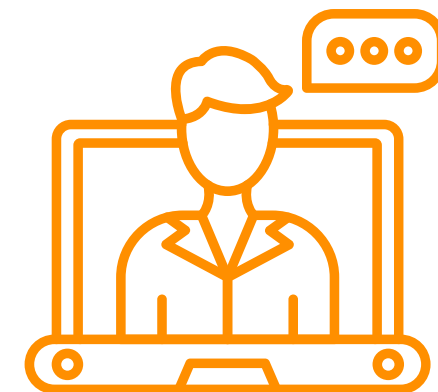


[Register for a face-to-face course](#)

Webinars

We also offer several live online webinars on BGP-related topics, such as RPKI and filtering. This 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 a webinar](#)

Learning Resources

1. BGP Security Vulnerabilities

1.1. The need for BGP security

	RIPE NCC Academy BGP Security [10 hours]	Training Course BGP Operations and Security [2 days]	Webinar BGP Security: IRR and Filtering [2 hours]	Webinar Deploying RPKI [2 hours]	Webinar Introduction to RPKI [1 hour]
1.1.1. Summarise how BGP routing works for inter-AS communication	Module 1.1	Yes			Yes
1.1.2. Identify the inherent vulnerabilities of BGP	Module 1.1	Yes		Yes	Yes

1.2 Analyse BGP threats and attacks to assess network vulnerabilities

1.2.1. Identify the causes of BGP incidents	Module 2.1	Partially	Partially		Partially
1.2.1. Identify the types of BGP incidents	Module 2.1	Partially	Partially		Partially
1.2.3. Identify the impact BGP incidents can have on affected networks	Module 2.1	Partially	Partially		Partially

2. BGP Security Measures

2.1. Mitigating BGP threats

2.1.1 Identify the recommended security measures for preventing accidental and intentional BGP routing incidents

Module 3.1

2.2. Protecting the BGP speaker

2.2.2. Choose suitable security measures related to the BGP speaker

Module 3.1

Learning Resources

2.3. Protecting BGP sessions

	RIPE NCC Academy BGP Security [10 hours]	Training Course BGP Operations and Security [2 days]	Webinar BGP Security: IRR and Filtering [2 hours]	Webinar Deploying RPKI [2 hours]	Webinar Introduction to RPKI [1 hour]
2.3.1. Choose suitable security measures related to BGP sessions	Module 3.1 Lab Activity 1				

2.4. Implementing route filtering

2.4.1. Identify the purpose of BGP filtering and how it can be used to improve BGP routing security	Module 3.2	Partially	Partially
2.4.2. Describe how available data sources can be used to create BGP filters	Module 3.2	Yes	Yes
2.4.3. Choose the appropriate methods for implementing BGP filters	Module 3.2	Partially	Partially
2.4.4. Define BGP filter recommendations based on routing relationships	Module 3.2		
2.4.5. Create BGP prefix filters to discard more specific prefixes	Lab Activity 2	Yes	Yes
2.4.6. Create consistent AS path filters to secure a BGP network	Lab Activity 2		

Learning Resources

2.5. Registering routing information

	RIPE NCC Academy BGP Security [10 hours]	Training Course BGP Operations and Security [2 days]	Webinar BGP Security: IRR and Filtering [2 hours]	Webinar Deploying RPKI [2 hours]	Webinar Introduction to RPKI [1 hour]
2.5.1. Identify the purpose of the Internet Routing Registry (IRR) and how it can be used to improve BGP routing security	Module 3.3	Partially	Partially		
2.5.2. Register routing information in the RIPE Database	Module 3.3	Yes	Yes		
2.5.3. Publish a routing policy in the RIPE Database	Module 3.3				
2.5.4. Generate a BGP prefix filter and AS path filter based on available IRR data	Lab Activity 4				
2.5.5. Identify the limitations of the IRR system	Module 3.3	Partially	Partially		

Learning Resources

2.6. Implementing Resource Public Key Infrastructure (RPKI)

	RIPE NCC Academy BGP Security [10 hours]	Training Course BGP Operations and Security [2 days]	Webinar BGP Security: IRR and Filtering [2 hours]	Webinar Deploying RPKI [2 hours]	Webinar Intro to RPKI [1 hour]
2.6.1. Identify the purpose of RPKI and how it can be used to improve BGP routing security	Module 3.4	Yes		Yes	Yes
2.6.2. Identify elements of the RPKI infrastructure	Module 3.4	Yes		Yes	Yes
2.6.3. Register routing information in the RPKI dashboard by creating a ROA	Module 3.4	Yes		Yes	
2.6.4. Identify differences between available RPKI deployment options	Module 3.4	Yes			Yes
2.6.5. Validate BGP announcements by using RPKI information (BGP OV)	Lab Activity 5	Yes		Yes	
2.6.6. Identify the differences between IRR system and RPKI	Module 3.4				Yes
2.6.7. Use RPKI data to discard BGP Invalids	Lab Activity 5	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/>