



RIPE NCC
RIPE NETWORK COORDINATION CENTER

Planning for Information Services 2025

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Objectives 2025

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- 4.4 Ensure security and compliance
- 3 Support Registry to improve accuracy and efficiency
- 3 Support the organisation to make decisions based on data
- 4.1 Keep costs within budget



LIR Portal



- The **LIR Portal** is our in-house tool for members to easily and securely manage their resources and related registration information.
- It is closely integrated with the RIPE Database, Registry software and our ticketing system.
- This activity also includes the operation of the **Registry backend** behind the Portal, as well as several internal tools to support our work for the Registry and the rest of the organisation, such as our **single sign-on (SSO)** and the software we use for various RIPE Meeting and General Meeting processes.

Main Objectives



Enhance security

Standardise the SSO protocol in RIPE NCC Access (OIDC)

Enable security-related features such as better protection against leaked credentials

Improve the security of our internal and external APIs

Improve Registry accuracy and efficiency

Automate processes, such as the way we measure the accuracy of Registry data

Improve the user experience in the LIR Portal in order to make updates to the Registry easier

Support the organisation in making decisions based on data

Implement data warehousing that can be used in different parts of the organisation, beginning in 2024 and continuing in 2025



Internet Infrastructure



- **RPKI** is a certification system that network operators can use to establish that they are the legitimate holders of specific IP resources.
- **RIPE Database** contains public information about the IP addresses and AS Numbers used by networks in our service region.
- **DNS** includes the provision of reverse DNS services for the address space we manage, and secondary DNS services to support the reliability of these reverse lookups.
 - We also operate **K-root**, one of the Internet's 13 root name servers.



ISAE 3000 Type 2 audit compliance

ISAE 3000 covers controls for data security, availability, processing integrity and confidentiality

Type 1 audit assesses whether controls are effectively operational

Type 2 over a specified period of time

NRO RPKI Programme

Provide a more consistent and uniformly secure, resilient, and reliable RPKI service across multiple RIRs

Improve the usability and functionality of the service

Enhanced ROA history insights

Support new RPKI object types such as ASPA

Improvements in ROA and ASPA operator support, e.g. by the use of near real-time BGP information



Enhance security

Phase out MD5 hashed passwords by mid-2025. These hashes have known security vulnerabilities.

We will replace these passwords with API keys.

Improve service resilience

Improved resistance to DDoS attacks

Modernise the deployment and management of our applications, including containerisation and the use of Kubernetes

Implement latest IETF standards

Improvements to RDAP and NRTMv4

This will help keep the RIPE Database service consistent with similar services from other RIRs.



Maintain solid and stable service

In 2024, we carried out awareness and outreach activities that led to an increase in our hosted K-root nodes and AuthDNS instances, and we will continue this effort in 2025.

Sunset ns.ripe.net service

Started process in mid-2024, after consulting with the community

This project will run through the remainder of the year, and we plan to decommission the service completely in January 2025.



Internet Measurements



- **RIPE Atlas** is a leading Internet measurement network that provides current and historical information about the connectivity of networks around the world.
- **RIPEstat** is a web-based application that provides current and historical information about IP addresses, AS Numbers and related information for hostnames and countries.
- **Routing Information Service (RIS)** provides a source of data about the state of the routing situation at any given moment, as well serving as a long-running record of routing development.



Increase value to members

Look into what data is already collected, and what still could be collected, to be able to give insights into the networks of RIPE NCC members

Display this information, for instance through integration with the LIR Portal

Implement known use cases

Evaluate how various use cases, like connectivity debugging or network monitoring, can be supported by RIPE Atlas, and create APIs and/or user interface components to support these



Improve the UI and UX

Based on our user research, we have decided to move to a single user interface for RIPEstat.

To achieve this, we will decommission the new UI, built in 2020, and focus our attention on improving the old one, built in 2013.

Restore historical data

Due to exiting the data centre, we will temporarily lose some of the historical data once migration is complete (before end of 2024).

Data is being restored on the new environment, and the process will continue into 2025.



Modernise RIS data storage

Ensure we have a more cost-effective solution for storing historical data

Focus on data quality

Continue our selective peering strategy where we look for peers from geographical areas that lack coverage and other relevant networks



IT Support



- **IT Engineering** provides the backend, infrastructure and network support for all of our internal and external services through a state-of-the-art, secure and redundant IT platform with 24/7 support.
- **IT Support** manages the operations of all of the RIPE NCC's internal systems, from our applications to our hardware and meeting room infrastructure, and provides technical support for RIPE Meetings.

Main Objectives



Enhance security and compliance

ISO 27001 certification
ISAE 3000 Type 2 audit

Modernise infrastructure

Containerise our applications
Replace old hardware with modern, more efficient models

Cost reduction

Reduce data centre footprint from 46 to 22 racks by the end of 2024 and to 10 racks by the end of 2025

This will allow a reduction from 850K in 2024 to 360K per year in 2025.

Higher cloud costs will offset some of these savings.



Budget



Information Services

Total budget 2024 12,000	2,350	1,550	700	850	1,350	550	900	3,750
	↑	↓	=	↑	↑	↑	↓	↓
Total budget 2025 12,200	2,700	1,150	700	1,050	1,550	600	850	3,600
	LIR Portal	RPKI	RIPE Database	DNS and K-Root	RIPE Atlas	RIPEstat	RIS	IT Support



Overview of Costs Per Activity	Budget 2024			Budget 2025			Bridging statement Budget Over Budget		
	FTEs	OPEX KEUR	CAPEX KEUR	FTEs	OPEX KEUR	CAPEX KEUR	FTEs	OPEX KEUR	CAPEX KEUR
Information Services / Tech	67,5	12.000	460	70,4	12.200	500	2,9	200	20
LIR Portal	16,9	2.350	0	18,9	2.700	0	2,0	350	0
RPKI	7,1	1.550	0	7,1	1.150	0	0,0	(400)	0
RIPE Database	5,1	700	0	5,1	700	0	0,0	0	0
DNS and K-Root	5,1	850	100	5,1	1.050	10	0,0	200	90
RIPE Atlas	7,9	1.350	0	7,9	1.550	0	-0,1	200	0
RIPEStat	4,1	550	0	4,1	600	0	0,0	50	0
RIS Live	5,1	900	60	5,1	850	90	0,0	(50)	30
IT Support	16,2	3.750	300	17,2	3.600	400	1,0	(150)	(100)
RIPE NCC	67,5	12.000	460	70,4	12.200	500	2,9	200	20

- Increase in 2 FTEs in LIR Portal and 1 in IT Support as a cost-neutral replacement for 3 long-term consultants
- Reduction of €400K in RPKI is due to consultancy costs for ISAE 3000 implementation no longer being necessary, and the service being very stable
- IT Support costs reduced due to data centre downsizing
 - RIPE Atlas costs increasing due to infrastructure costs moving from IT Support

Key Takeaways



- We are particularly looking at increased security in services like the LIR Portal, SSO and the RIPE Database.
 - Part of this involves ensuring that we comply with international security standards, which is a company-wide effort.
- We are also improving our work processes, such as by introducing more automation in the LIR Portal and in Registry procedures in order to increase efficiency.
- Focus on improving the user experience on several services, such as the LIR Portal and RIPEstat
- We will continue to modernise the data storage and infrastructure behind several of our services. This is a large project that we expect to lead to significant cost savings.



Questions & Comments



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