03:10ff198 b8:bf98:30 08::105 FOF 198.5



RIPE NCC Technical Services

Kaveh Ranjbar, Chief Information Officer

RIPE 70 | Amsterdam | 13 May 2015

- DNS services
- RIPEstat
- Research
- RIPE Atlas
- K-root expansion

Mostly global services, accessible by everyone

- In many cases, RIPE NCC members have an advantage



Jb8:ab 03:10ff 198. b8:bf98:3080 198.511 9 168:109 FOF 198.51 00

DNS Services



DNS Services

- Authoritative DNS service for in-addr.arpa and ip6.arpa for resources in RIPE NCC service region
- Secondary services for 77 ccTLDs
 - Selection criteria being discussed in DNS Working Group
- One provisioning site
 - Second provisioning site active this year
- Three anycast locations
 - Working on ideas to extend service locations
- Three different name server set-ups



RIPEstat, Diagnostics & Research

b8:al

D3:10ff198

b8:bf98:30

08::105

f0f 198.5



RIPEstat

- Routing, registry, abuse, bandwidth, geolocation and RIPE Atlas data
- Unique aggregation of information, including history
- Web-based interface and API
- Data grouped based on prefixes, ASNs, countries, hostnames
 - Regions, operators and other groupings being considered
- ~135M data requests/month
- Services based on RIPE Atlas
 - Global network monitoring and alerting
 - DNSMON as widely used TLD monitoring system



Network Diagnostics and Analysis

	Country Routing Statistics (Netherlands) 🎫	:	Countr	ry Resource List (NL)	• *
° mul	ti-resource	Date: 2015-05-05			
	Current data point resolution in graph: per 1 week	ASN IPv4 IPv6			
	o monitor I 🖉 zoom out 🛛 🖉 clear zoom 🔄 🕫 last 2 weeks		Show 10 \$ entries	Search:	
50	At 2015-05-04 00:00 ASNs 579		109.109.96.0/19		*
40	00 IPV4s 4141		109.200.192.0/19		
prefixes 0	00 IPV6s 713 seen for Netherlands		109.201.128.0/19		
Salara I	ASIA		109.202.96.0/20		
° 20 ₩	00		109.205.192.0/21		
10	00		109.232.224.0/21		
	0		109.232.40.0/21		
	2006 2008 2010 2012 2014		109.232.8.0/21		
	ASN - IPv4 IPv6 (Click legend item to toggle visibility of a series)		109.235.32.0/21		
	(once regene norm to roggio marchery of a series)		109.235.48.0/21		
2004	2006 2018 2010 2012 2014		Showing 1 to 10 of 2,724 entries		ಂ
		_	Showing results as of 2015-05-05 00:00:00 U	тс	

source data



embed code permalink info

Research

- Looking into interesting events and how they affect the Internet
 - BGP leaks
 - IPv4 runout and related policies
 - Massive power cuts, earthquakes, World Cup
- Looking into interesting trends and how they affect the Internet
 - IPv6 and DNSSEC uptake
 - Aggregation in routing table
- Working closely with researchers around the globe



Ib8:ab D3:10ff 198. b8:bf98:3080 198.511 e DCA 1b8::109 FOF 198.51 00

RIPE Atlas



Where We Are: Probes





Where We Are: Anchors





Where we are

- ~8,200 active probes and growing
- 120 active RIPE Atlas anchors
- Millions of measurements everyday
- ~76 billion measurements last year
 - Preserved history
- Current measurements: ping, traceroute, DNS, SSL
 - Working on HTTP(S) and WiFi measurements
- Data streaming
- Open APIs, many useful tools built on top of RIPE Atlas



- Aim to reach 10,000 active probes this year
 - Should provide a statistically relevant sample of the Internet
- New generation of probes
 - Support for optional WiFi measurements
- 20% reduction in 2015 budget; will continue same trend in 2016 and 2017
- But the project is not downsizing
 - More operational efficiency
 - Assistance from interested parties



K-root Expansion

b8:ab

D3:10ff 198.

b8:bf98:308

b8::109

FOF 198.51

9



K-root: Current Model





Current model

- Five "core" (global) nodes: Miami, Amsterdam, Frankfurt, Tokyo, London
- 12 "hosted" (local) nodes around the globe
 - High maintenance, mostly caused by peering management resource requirements
- Adding new nodes involved a lot of arrangements, with high demand on hosting and connectivity requirements
- Current "local" nodes are being migrated to the new model ("hosted nodes")



K-root: New Model

- Hosted nodes based on single-box solution
- Easy to set up, peering with one organisation
 - Host is free to decide on anycast announcing policies
- Full automation
 - Nodes will be taken out of the anycast network automatically if something is wrong, only three out of five core nodes are needed to handle peak K-root traffic
 - Almost all technical set-up and monitoring systems are automatically added on our side
- No expensive resource requirements for hosts
- Much less resource intensive on our side



K-root: Accepting Requests

- We will consider every request
 - Technical requirements published on k.root-servers.org
- We are particularly interested in:
 - Hosts that can improve K-root access globally, based on our measurements
 - Hosts in the RIPE NCC service region
- We don't expect a huge number of requests
 - But will consult membership about any potential changes to resources or budget should that happen



Questions?





Kaveh Ranjbar - RIPE 70 - 13/05/2015