

NLNOG Tools & Projects

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- NLNOG Ring https://ring.nlnog.net
- IRR explorer https://irrexplorer.nlnog.net
- BGP Filter Guide https://bgpfilterguide.nlnog.net
- NLNOG Looking Glass https://lg.ring.nlnog.net





Concept:

provide a shell server in your network, get access to shell servers all over the world.

And some cool tooling to use them as well!



NLNOG Ring





Some of the RING tools:

- ring-ping
- ring-curl
- ring-all
- ring-trace
- SQA

... and of course many Linux utilities



NLNOG Ring:ring-ping

Ping a destination from a random selection of RING nodes.

ssh -A bit@bit01.ring.nlnog.net	て#4
ring	¥1 +
bit@bit01:~\$ ring-ping -v -n 5 www.nlnog.net vellance01: 1.881 arcadiz01: 4.651 veloxserv01: 9.227 rgi01: 7.095 vocus01: 272.164	
5 servers: 59.00ms average 7.09ms median _bit@bit01:~\$ [



NLNOG Ring: ring-trace

	ssh -A bit@bit01.ring.nlnog.net	て第4
	ring	¥1 +
ring-trace v1.8.1 picked 5 hosts at	-trace –n 5 –a –b –B www.nlnog.net – written by Teun Vink <teun@teun.tv> random: utwente01 grifon01 amazon20 amazon07 digitalocean09 raceroutes towards www.nlnog.net from 5 ring hosts, ssh–timeout is</teun@teun.tv>	s 10 seconds.
Image uploaded to Done in 21.6 secon bit@bit01:~\$ []	https://paste.ring.nlnog.net/p/B06zPc2I3feqor93t1igfWyW nds.	



NLNOG Ring: ring-trace





ring-trace v1.8.1 to www.nlnog.net - https://ring.nlnog.net generated at 2022-09-14 19:15:14

NLNOG Ring: SQA

All nodes rapidly check each other. Alerts are sent when the number of nodes reachable significantly changes. Data is collected at https://sqa.ring.nlnog.net

This is an automated alert from the distributed partial outage monitoring system 'RING SQA'.

At 2022-09-07 00:22:10 UTC the following measurements were analysed as indicating that there is a high probability your NLNOG RING node cannot reach the entire internet. This could be down to your RING node, its local network, or disruption of peering and/or upstream networks (for example instability at an IXP or one of your transit providers).

The following 106 nodes previously were reachable, but became unreachable over the course of the last 3 minutes:

- silica01.ring.nlnog.net AR 2800:630:830:6::2 AS7049 - serversaustralia01.ring.nlnog.net 2400:8100:ffff:0:117:120:13:125 AS45671 AU - internode01.ring.nlnog.net 2001:44b8:60:12::147 AS4739 AU - hostuniversal04.ring.nlnog.net 2406:d501::93ec:5ad1 AS136557 AU - hostuniversal03.ring.nlnog.net 2404:f780:4:805::567:cde5 AS136557 AU – linode11.ring.nlnog.net 2400:8907::f03c:92ff:fe1f:cc3e AS63949 ALL - hostuniversal07.ring.nlnog.net 2404:f780:8:503::9d9:1b15 AS136557 AU - salkeld01.ring.nlnog.net 2001:df2:2e00:17::7 AS135421 AU – hostuniversal06.ring.nlnog.net 2406:d500:2::b167:ad4d AS136557 AU

4	min	ago	42	measurements	failed	(baseline	e)
3	min	ago	42	measurements	failed	(baseline	e)
2	min	ago	101	measurements	failed	(raised a	alarm)
1	min	ago	156	measurements	failed	(raised a	alarm)
0	min	ago	150	measurements	failed	(raised a	alarm)





- CLI tools require an SSH agent and agent forwarding
- Advice: use a dedicated SSH key for the RING
- Updating SSH keys: edit file "ssh-keys" on host manage.ring.nlnog.net
- Need help?
 - ring-admins@nlnog.net
 - #ring on IRCNet





Plans:

- Support Ubuntu 22.04 for new nodes
- Upgrade existing nodes to Ubuntu 22.04

This requires rewriting some of our Ansible playbooks.



IRR explorer



https://irrexplorer.nlnog.net



IRR explorer: Goal

For a prefix (or list of prefixes) present an overview of all IRR database registrations, RPKI ROAs and routing table entries, and suggest improvements and point out conflicts.

Results:

- 1) better reachability of prefixes
- 2) cleaner IRR databases



A GOOD routing beacon

IRR explorer: 2001	1:7fb:fd02::/48 × +									
$ \rightarrow$ C \oplus O A	https://irrexplorer.nln	og.net/prefix/2001:7	순 Q Search	\bigtriangledown	-}]	jii/	E F	1	8	» ≡
IRR 2	Prefix, IP, ASN or	AS-set	Search				🗆 Redu	iced c	olour	mode
Report for p		1:7fb:fd(02::/48							~
Explanation of differer	nt messages									\sim
Directly overlap	ping prefixes		-	PE \$	Advi	ce 🖨				
		BGP \$ RF	rKI≑ RI	PE ≑ 654 ⊘			ng looks g	ood		



A closer look at the output

Directly overlapping prefixes of 2001:7fb:fd02::/48



IRR Explorer: More errors

All overlaps of least specific match 1.1.1.0/24

Prefix 🗸	RIR \$	BGP 🖨	RPKI 🖨	APNIC \$	RADB 🖨	Advice 🗢
<u>1.1.1.0/24</u>	APNIC	<u>13335</u>	13335 ▶/24	<u>13335</u> ⊘		Severything looks good
<u>1.1.1.3/32</u>	APNIC				<u>2764</u> ⊗	 RPKI-invalid route objects found Expected route object in APNIC, but only found in other IRRs Route objects exist, but prefix not seen in DFZ
<u>1.1.1.15/32</u>	APNIC				<u>9942</u> ⊗	 RPKI-invalid route objects found Expected route object in APNIC, but only found in other IRRs Route objects exist, but prefix not seen in DFZ

Those /32's shouldn't be in RADB...



IRR Explorer: Use cases

- Improving routability of prefixes
- Doing housekeeping on IRR database entries
- Analysing routing problems
- Preparing prefix transfers between networks
- Monitoring your prefixes



BGP Filter Guide

- Provides guidance on how to build your BGP import filters
- Configuration examples for many router OS'es
- Improvement, additions and suggestions are welcome!
- https://bgpfilterguide.nlnog.net



- Recently moved from a server at XS4all to a virtual machine at BIT
- Switched from Bird to OpenBGPD
- About 140 IPv4 and 140 IPv6 sessions
 - mostly full table views
 - 87M IPv4 and 14M IPv6 prefixes



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NLNOG Looking Glass

Please enter an IP address or prefix to look up in our routing tables.

IP or prefix	192.0.2.0/24	Exact match 🗸	on	all peers	~	Show routes
		8 peers up, 30 down, 7 peers up, 40 down, 13		710 prefixes received 712 prefixes received		
The NLNOG Looki	ing Glass is provided by NLNOG. Hos	ting is sponsored by BIT. Que	estions	Please contact us at ring-admins	@nlnog.net.	

Prefix: 213.136.0.0/19 1

⊘ IRR Explorer	Q WHOIS
AS-Path	57866 12859 via next-hop 37.139.139.0
Validation state	valid
Origin	IGP
MED	0
Last update	2022-09-26 18:38:47 UTC (1d02h09m ago)
Communities	12859:3000 (originated by BIT) 12859:3666 (originated by BIT) 57866:200 (Public peer route) 65102:56393 (Route learned from Frys-I) 65103:1 (Route learned in Nikhef) 65104:31 (Route learned in The Neth)
Extended communities	ovs valid
Large	57866:101:200 (Public peer route) 57866:102:56393 (Route learned from Frys-I)
communities	57866:103:1 (Route learned in Nikhef) 57866:104:31 (Route learned in The Neth)



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- What we could use:
 - Additional peers
 - BGP Community descriptions for many networks
- Contact: ring-admins@nlnog.net
- Create a PR on Github
- Talk to me afterwards



Mailing list: http://mailman.nlnog.net/listinfo/nlnog

IRC channels:

- #nlnog on IRCNet
- #ring on IRCnet
- https://nlnog.net/irc





Questions: Stichting@nlnog.net

Source code and issue trackers:

https://github.com/NLNOG







