

10 years of



```
traceroute to 120.1.32.2 (120.1.32.2), 64 hops max, 52 byte packets
```

```
1 192.168.1.1 3.789 ms 6.587 ms 3.212 ms
2 * * *
3 81.210.148.202 12.184 ms 11.366 ms 15.141 ms
4 84.116.196.214 38.856 ms 12.593 ms 39.604 ms
5 84.116.197.33 25.803 ms 17.473 ms 16.937 ms
6 * 84.116.138.238 17.974 ms *
7 84.116.134.10 16.302 ms 15.197 ms 12.781 ms
8 219.158.42.233 15.708 ms 14.430 ms 15.483 ms
9 219.158.107.113 175.947 ms 176.655 ms 184.990 ms
10 219.158.3.29 178.588 ms 169.460 ms 166.381 ms
11 219.158.5.145 175.884 ms 181.967 ms 186.590 ms
12 219.158.11.66 177.992 ms
   219.158.9.170 168.102 ms
   219.158.11.94 177.283 ms
13 61.182.181.234 172.046 ms
   61.182.181.246 185.634 ms
   61.182.181.238 183.347 ms
14 * * *
15 * * *
16 * * *
```

```
PING 120.1.32.2 (120.1.32.2) 56(84) bytes of data.
```

```
^C
```

```
--- 120.1.32.2 ping statistics ---
```

```
3 packets transmitted, 0 received, 100% packet loss, time 2000ms
```

Once upon a time....

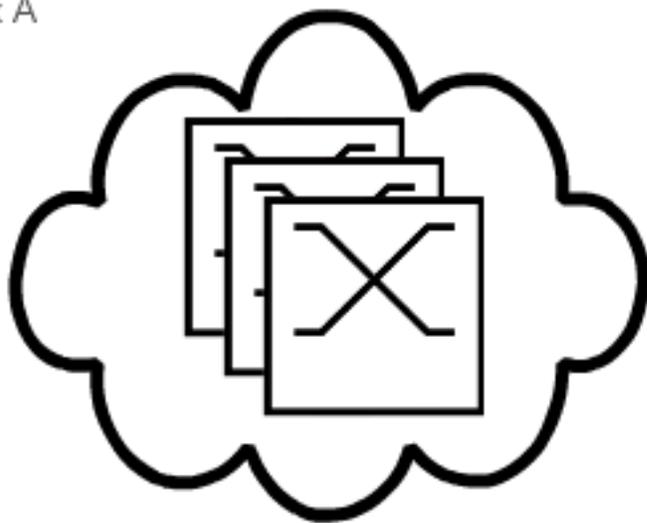
```
traceroute to 120.1.32.2 (120.1.32.2), 30 hops max, 60 byte packets
```

```
1 212.114.113.3 0.334 ms 0.355 ms 0.421 ms
2 213.136.1.110 22.323 ms 22.318 ms 22.306 ms
3 77.67.75.69 22.291 ms 22.265 ms 22.257 ms
4 141.136.110.81 40.408 ms 40.404 ms 141.136.110.101 36.485 ms
5 46.33.94.74 238.963 ms 238.987 ms 238.963 ms
6 219.158.99.61 270.407 ms 270.280 ms 270.251 ms
7 219.158.115.173 293.478 ms 295.393 ms 295.364 ms
8 219.158.97.30 271.077 ms 271.090 ms 271.111 ms
9 219.158.19.65 273.744 ms 273.598 ms 273.575 ms
10 219.158.115.78 275.551 ms 219.158.17.198 295.351 ms 219.158.100.118 278.932 ms
11 61.182.181.230 302.018 ms 304.020 ms 61.182.181.234 284.605 ms
12 * * *
13 * * *
14 * * *
```

Traceroute?



Network A



Network B



Network C



Network D

To nlnog@nlnog.net ★

---

Beste mannen en vrouwen,

Mij viel op dat veel Nederlandse network operators op vriendschappelijke basis met elkaar toegang tot servers uitwisselen om traceroutes en pings te kunnen uitvoeren vanaf 'buiten je netwerk'.

Afgelopen december heb ik met een aantal mensen uit de community een concept opgezet genaamd "NLNOG RING". Het idee van deze ring is om op een georganiseerde manier shell access met elkaar uit te wisselen om netwerk problemen sneller te kunnen lokaliseren en op te lossen. De deal is simpel: "stel een machine beschikbaar aan de ring, en krijg toegang tot alle servers op de ring".

Dit voorbeeld laat zien hoe ik de ring gebruik om een traceroute te doen vanaf tien verschillende autonomous systems: <http://paste.pocoo.org/show/322928/>

Meer informatie is te vinden op de website van het NLNOG RING Project: <http://ring.nlnog.net/>

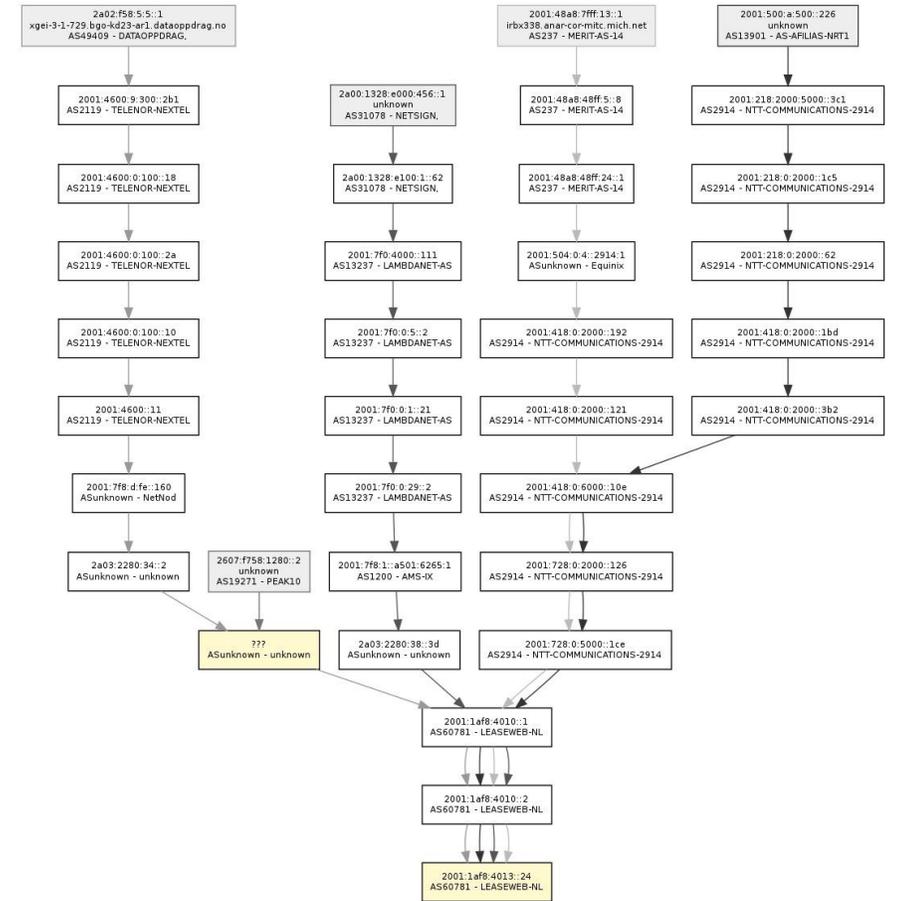
Organisaties die geïnteresseerd zijn kunnen met mij contact opnemen om te participeren.

Met vriendelijke groeten,

Job Snijders

# The early days...

- 10 participants/nodes
- 1 Puppet master server
- First tools (ring-ping, ring-trace)
- IRC-channel, mailing-list



ring-trace v1.8.1 to ring.nlbg.net - <https://ring.nlbg.net> generated at 2017-06-10 09:14:06

To ring-users@mailman.ring.nlnog.net ☆

Dear All,

We would like to share the supercalifragilisticexpialidocious results of our fund-raising effort with you!

Some background: In February 2012 we started a fundraiser to ensure the RING will have ample processing power for the next phase. Over the last 1.5 years the RING has grown to over one hundred nodes, and this was reaching the limitations of the current support systems. We are happy to announce these scalability problems are now a thing of the past!

We have raised a total of EUR 2200, brought together by the following generous organisations (listed in alphabetical order):

A2B Internet BV (NL)  
amazon.com (IE)  
Association tetaneutral.net (FR)  
BIT BV (NL)  
Duocast BV (NL)  
LCHost (UK)  
Nedzone Internet BV (NL)  
PCExtreme BV (NL)  
Previder BV (NL)  
Snijders IT (NL)  
Solido Networks ApS (DK)  
Triple IT BV (NL)

In addition, the following participants made significant non-monetary donations (listed in alphabetical order):

Amazon (2 high-end virtual machines + storage, IE)  
Atrato IP Networks (1 dedicated server, DE).  
BIT (colocation, NL)  
Ebay Classifieds Group (hardware: 2 servers, NL)  
Leaseweb (1 dedicated server, NL)  
PCExtreme (colocation, NL)

This brings us to a total of 5 servers dedicated to management, staging and other services, and two additional (virtual) servers for data crunching!

During the next couple of weeks we will be using the donated funds to purchase hardware, and/or upgrade the donated servers. We will report back to this list on how the different donations were put to use.

We expect the first new master server to go online before the end of this month!

We would like to express our gratitude to all parties that have made donations, and are helping us to make the RING a continued success.



**ig01: show route for 185.107.224.30/32 all**

DNS: [www.nlnog.net](http://www.nlnog.net) => [185.107.224.30](http://185.107.224.30)

```
185.107.224.0/23
[MYTHICBEASTS01 2021-08-17 from 176.126.240.44] * (100/-) [AS48635i]
  Type: BGP unicast univ
  BGP.origin: IGP
  BGP.as_path: 44684 48635
  BGP.next_hop: 176.126.240.44
  BGP.local_pref: 100
  BGP.ext_community: (RPKI Origin Validation State: not-found)
  BGP.large_community: (44684, 0, 700) (44684, 1, 4) (44684, 2,

[APERNET_HKG 04:23:35 from 103.152.35.254] (100/-) [AS48635i]
  Type: BGP unicast univ
  BGP.origin: IGP
  BGP.as_path: 38008 138997 6939 48635
  BGP.next_hop: 103.152.35.254
  BGP.local_pref: 100
  BGP.community: (38008,103) (65521,20)
  BGP.ext_community: (RPKI Origin Validation State: not-found)

[ALARIG2 22:37:35 from 45.91.126.249] (100/-) [AS48635i]
  Type: BGP unicast univ
  BGP.origin: IGP
  BGP.as_path: 208627 43350 48635
  BGP.next_hop: 45.91.126.249
  BGP.local_pref: 100
  BGP.ext_community: (RPKI Origin Validation State: not-found)
  BGP.large_community: (208627, 0, 43350) (208627, 100, 100)

[TFISK01 22:32:33 from 46.28.243.194] (100/-) [AS48635i]
  Type: BGP unicast univ
  BGP.origin: IGP
  BGP.as_path: 49420 8374 6830 48635
  BGP.next_hop: 46.28.243.194
  BGP.local_pref: 100
  BGP.community: (8374,1144)
  BGP.ext_community: (RPKI Origin Validation State: not-found)
```

## ring-curl

ring-curl is a wrapper around the libcurl API and ring-all. It can be used to run HTTP requests on multiple RING nodes. This is particularly useful for debugging CDN problems.

sqa.ring.nlnog.net

SQA Collector lookup service

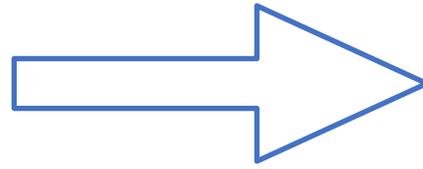
Home

# SQA Collector lookup service

Welcome to the SQA Collector lookup service, below are the latest SQA alerts. Times all in UTC.

major_event	timestamp	contributors
5504	2021-08-20 06:41:54	Unknown
5503	2021-08-19 22:26:07	asn:2914 (50%), asn:18200 (50%),
5502	2021-08-19 17:13:43	Unknown
5501	2021-08-19 15:29:55	asn:2914 (20%), asn:8881 (20%), netname:NON-RIPE-NCC-MANAGED-ADDRESS-BLOCK (20%)
5500	2021-08-18 23:26:13	Unknown
5499	2021-08-18 01:26:38	asn:6939 (100%),
5498	2021-08-18 01:20:16	asn:6939 (60%), asn:174 (40%),
5497	2021-08-17 18:01:26	asn:174 (100%),
5496	2021-08-17 13:42:25	asn:6939 (46%), asn:719 (7%), asn:42708 (7%),
5495	2021-08-17 00:32:57	asn:174 (100%),

2012 - 2015



ANSIBLE

From Me <ring-admins@nlno.org>★  
 Subject **NLNOG RING Ansible report**  
 To Me <ring-admins@nlno.org>★

```
Nodes:           452
Active:          420 (0 new)
Inactive:        32 (1 new)
Failed:          6
```

New nodes seen:

New missing nodes:

- surfnet02.ring.nlnog.net

Failed ansible runs:

- nautile01.ring.nlnog.net
- as250net01.ring.nlnog.net
- grnet01.ring.nlnog.net
- luna01.ring.nlnog.net
- telus01.ring.nlnog.net
- cloudvps01.ring.nlnog.net

0 nodes activated.  
 1 nodes deactivated.

Code Issues 3 Pull requests 1 Projects 0 Wiki Settings Insights

## Let Ansible remove puppet #15

Merged rodecker merged 1 commit into NLNOG:master from pieterlexis:remove-puppet on Dec 7, 2016

Conversation 0 Commits 1 Files changed 2 +34 -0

Commits on Dec 7, 2016

**Let Ansible remove puppet**  
 pieterlexis committed on Dec 7, 2016

More details on [nlno.org/lekker-weer-nlnog-2017](http://nlno.org/lekker-weer-nlnog-2017)

To ring-users@nlno.net ★

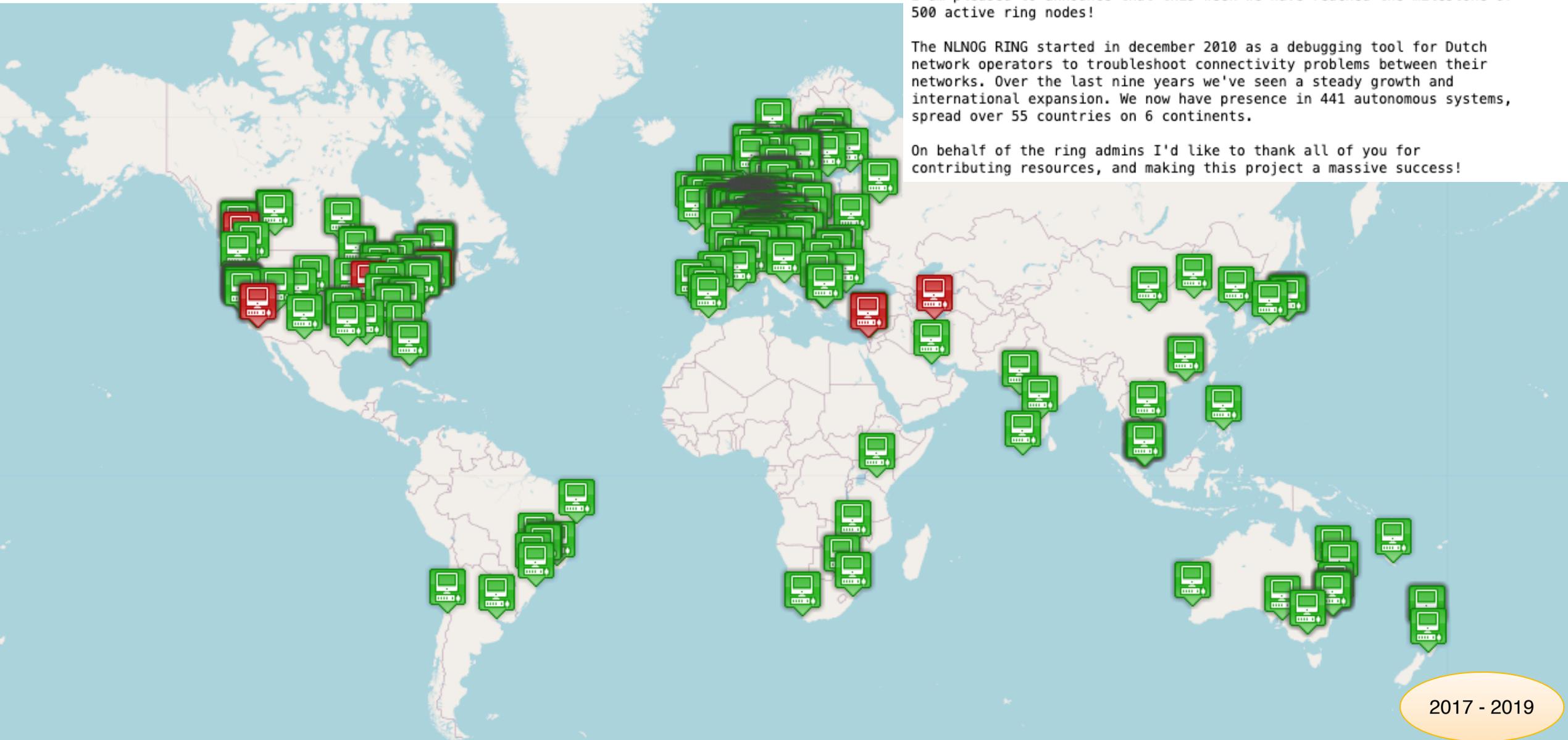
Cc ring-admins@nlno.net ★

Dear ring users,

I am pleased to announce that this week we have reached the milestone of 500 active ring nodes!

The NLNOG RING started in december 2010 as a debugging tool for Dutch network operators to troubleshoot connectivity problems between their networks. Over the last nine years we've seen a steady growth and international expansion. We now have presence in 441 autonomous systems, spread over 55 countries on 6 continents.

On behalf of the ring admins I'd like to thank all of you for contributing resources, and making this project a massive success!



```
{
  "info": {
    "ubuntu_release": "18.04",
    "virtualization": "xen",
    "success": false,
    "last_check": "2021-08-20T08:03:28.868264"
  },
  "health": {
    "mountstatus_root": true,
    "diskspace_root": true,
    "ipv6_addresses": true,
    "ipv6_gateway": false,
    "ipv6_reachability": false,
    "ipv4_addresses": true,
    "ipv4_gateway": true,
    "ipv4_reachability": true,
    "dns_config": true,
    "dns_resolvers": true,
    "ntp_status": true,
    "sshd_status": true,
    "https_github": true,
    "http_aptrepo_bit": true,
    "http_aptrepo_ring": true,
    "ansible_cron": true,
    "ansible_run": true,
    "ipv4_ringapi": true,
    "ipv6_ringapi": false
  },
  "descriptions": {
    "mountstatus_root": "The root filesystem is in read/write status",
    "diskspace_root": "The root filesystem has enough free disk space",
    "ipv6_addresses": "The IPv6 address of the node matches the ring database",
    "ipv6_gateway": "The IPv6 gateway is reachable",
    "ipv6_reachability": "There is IPv6 connectivity beyond the gateway",
    "ipv4_addresses": "The IPv4 address of the node matches the ring database",
    "ipv4_gateway": "The IPv4 gateway is reachable",
    "ipv4_reachability": "There is IPv4 connectivity beyond the gateway",
    "dns_config": "The local host is configured as DNS resolver",
    "dns_resolvers": "The configured DNS resolvers are functioning",
    "ntp_status": "NTP is running and the clock is synchronized",
    "sshd_status": "The SSH daemon is running",
    "https_github": "A webrequest for 'https://github.com/' succeeded",
    "http_aptrepo_bit": "A webrequest for 'http://ftp.bit.nl/ubuntu' succeeded",
    "http_aptrepo_ring": "A webrequest for 'http://apt.ring.nlnog.net/deb/dists/ring/Release' succeeded",
    "ansible_cron": "The ansible cron job is correctly configured",
    "ansible_run": "Ansible has recently run",
    "ipv4_ringapi": "Pushing this health report to the IPv4 ring API (https://95.211.149.25/) succeeded",
    "ipv6_ringapi": "Pushing this health report to the IPv6 ring API (https://[2001:laf8:4013::25]/) succeeded"
  }
}
```

Dear Participant

It appears the node you made available to the NLNOG RING project is no longer online on IPv6. Can you please investigate and let us know whether you could remedy this situation?

This concerns the machine with hostname "participant01.ring.nlnog.net"

For details on the problem, please see:  
<http://participant01.ring.nlnog.net/status.json>

Kind regards,

NLNOG RING Admins



## Introduction

### Motivation

I've noticed that there are a lot of friendly 'shell access' exchange deals between network operators. This makes it easier for parties to debug network issues and troubleshoot 'from the outside'. A point of view outside your network is absolutely essential, seeing what others see is a useful thing with a variety of network problems. Well known examples are 'it works for even numbered ip address, but not for odd numbered ip address via this and this route'.

To encourage and provide a streamlined way of cooperating I introduce the "NLNOG RING". In essence the deal is very simple: you make a (virtual) machine available to the RING, and you gain access on all servers which are part of the project, hence the name "RING".

A great example would be to launch a traceroute from 80 servers in different networks and quickly get the results instead of waiting till somebody has the time to run some tests for you.

### Participation

Participation is open to everybody who meets the following requirements:

- You are a network operator
- The organisation you work for has BGP routers connected to the "Default Free Zone" and maybe even IXP's.
- Your organisation has its own ASN, IPv4 and IPv6 prefix(es).
- You have enable or configure rights on those routers.
- You are involved in the networkers community.
- You have permission from your organisation to become involved in the NLNOG RING.

### Applying for the RING

Admission to the project is discretionary and judged by perceived value for the RING as a whole. If your application is for an additional machine in a covered ASN, please contact us first.

*If you would like to join, please fill out the [application form](#).*

# Happy users!

Subject Many thanks for the hard work

30/06/2021, 14:54

To ring-admins@nlhog.net★

Dear nlhog ring admins,

I just wanted to thank you for this project.

It is a simple, but very useful feature to have servers around the world when debugging network.

We suddenly couldn't deliver mail to some organisation. Mail was not delivered with the error: `dane="Failed (Secure TLSA RRs found; TLS unavailable)"`. And indeed, when connecting from our network, this mail server did not offer STARTTLS. Hence, mail delivery fails if you also publish a DANE record.

Using the RING, I was able to confirm that this organization was singling us out, rejecting TLS only to our networks, not to any other networks.

## Research papers

- The Art of Detecting Forwarding Detours  
DOI: 10.1109/TNSM.2021.3062151
- Scalable, self-healing, and self-optimizing routing overlays  
DOI: 10.1109/IFIPNetworking.2016.7497209

Subject Re: NLNOG Ring

29/08/2011, 23:28

To Martin Pels <martin@rodecker.nl>★

Cc <ring-admins@ring.nlhog.net> <ring-admins@ring.nlhog.net>★

Hoi Martin,

On May 6, 2011, at 2:02 PM, Martin Pels wrote:

Jammer om te horen dat jullie nog geen IPv6 beschikbaar hebben. Zodra dit wel het geval is zijn jullie uiteraard van harte welkom.

Nou, bij deze dan

ring.nlhog.net/post/ring-success-the-ipv4-255-problem/



News Introduction Participants Security  
User Guide Toolbox Contact Patrons

## RING success - the IPv4 .255 problem

*This is an example one of the RING participants (BelWü) wanted to share with all RING participants.*

Some days ago a customer of us encountered problems with connecting from another ISPs (via DSL) to his VPN concentrator in his head-office network which is connected through us.

# Demo

[bit.ly/nlnog-ring-demo](http://bit.ly/nlnog-ring-demo)

# Thank you!

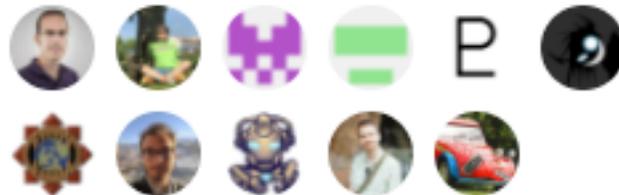
## Participants

- Organisations: **469**
- RING nodes: **592**
- ASNs: **479**
- Countries: **55**

[ring.nlnog.net/participants](http://ring.nlnog.net/participants)

## Code contributors

Contributors 54



+ 43 contributors

## Infrastructure providers



# Questions?

[ring.nlnog.net](http://ring.nlnog.net)

[github.com/NLNOG/ring-ansible](https://github.com/NLNOG/ring-ansible)

[ring-admins@nlnog.net](mailto:ring-admins@nlnog.net)

