The NLNOG RING

network troubleshooting on steroids

NLNOG RING

But what is it?

- Powerful debugging tool

- More advanced than a BGP looking glass

- Shell access to 26 Autonomous Systems (and counting..)

- Flexible: script your own troubleshooting tasks

How it started

.... In December 2010 a friend of mine had some awkward (IP related) problems ...

Current participants (April '11)

Guidelines

- closed group
    - only participants have access

- based on mutual trust:

    *"I trust the participants with access to my machine,
    as they trust me with access to their machines"*

Abuse of the resources provided by the RING is absolutely forbidden, and we apply a 'zero tolerance' policy.

How it works

Using the RING (you):

- Everything must go through SSH (w/ sshkeys)
- we've created some useful example scripts
- The rest is up to you!

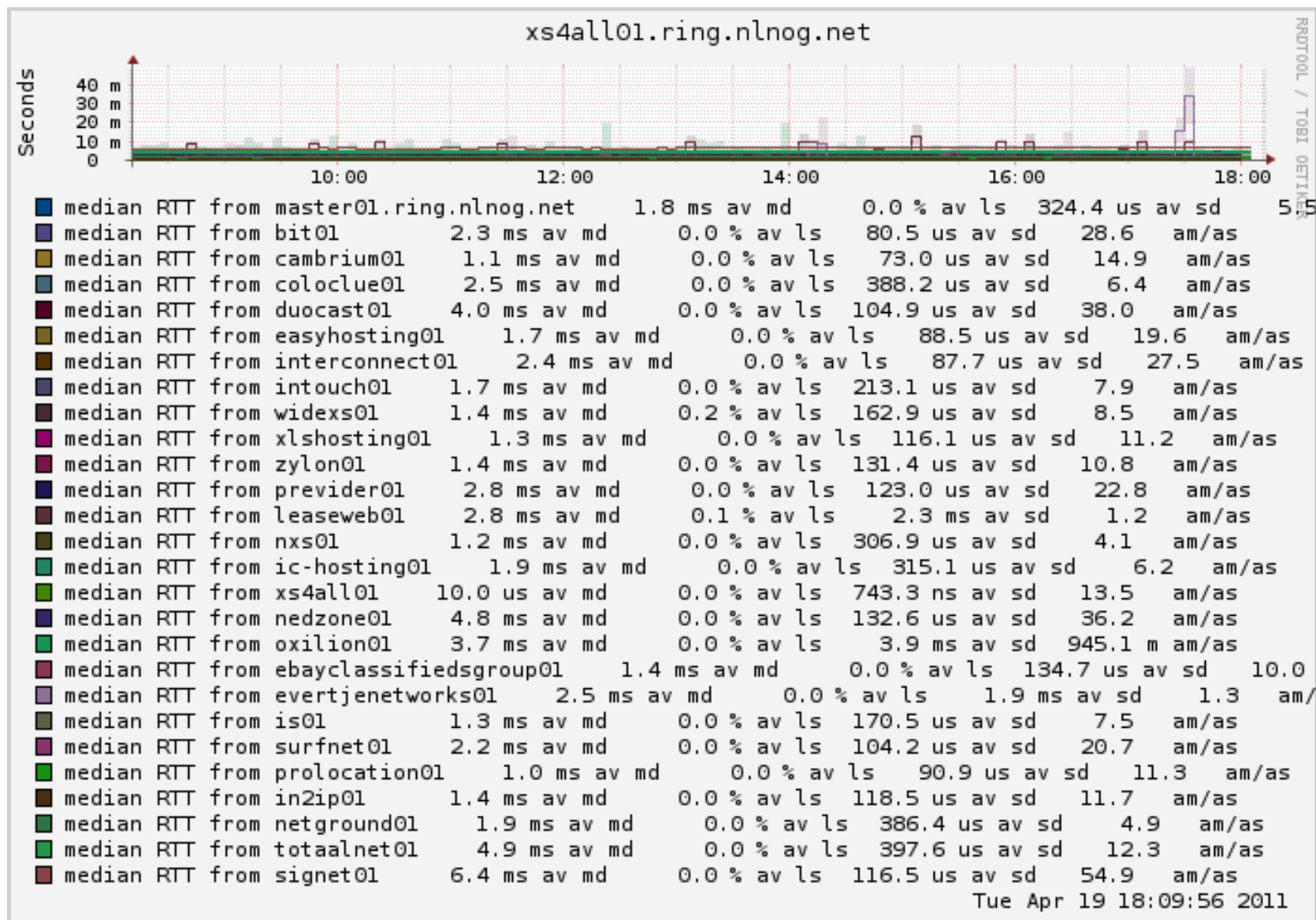Maintaining the RING (ring-admins):
- The ring-admins (currently me and 3 friends) update, configure, maintain, secure, check and audit the ring servers
- We use puppet and some homebrew stuff
- The participant does not have to worry about anything

Example - ping

```
Feanor:~ job$ ring-ping -v -6 www.ripe.net
widexs01:                    1.715
coloclue01:                  2.205
cambrium01:                  1.910
interconnect01:              2.267
duocast01:                   3.866
easyhosting01:               3.373
xlshosting01:                3.778
zylon01:                     4.611
intouch01:                   0.702
bit01:                       2.820
nxs01:                       0.983
ic-hosting01:                4.560
previder01:                  2.988
nedzone01:                   6.017
xs4all01:                    1.439
ebayclassifiedsgroup01:      2.576
is01:                        1.367
oxilion01:                   9.190
prolocation01:               3.593
netground01:                 2.948
in2ip01:                     2.852
surfnet01:                   2.307
totaalnet01:                 4.239
signet01:                    5.915
leaseweb01:                  3.271
```

Example - smokeping

xs4all01.ring.nlnog.net

RRDTOOL / TOBI OETIKER

Seconds

40 m
30 m
20 m
10 m
0

10:00   12:00   14:00   16:00   18:00

■ median RTT from master01.ring.nlnog.net   1.8 ms av md   0.0 % av ls   324.4 us av sd   5.5
■ median RTT from bit01   2.3 ms av md   0.0 % av ls   80.5 us av sd   28.6   am/as
■ median RTT from cambrium01   1.1 ms av md   0.0 % av ls   73.0 us av sd   14.9   am/as
■ median RTT from coloclue01   2.5 ms av md   0.0 % av ls   388.2 us av sd   6.4   am/as
■ median RTT from duocast01   4.0 ms av md   0.0 % av ls   104.9 us av sd   38.0   am/as
■ median RTT from easyhosting01   1.7 ms av md   0.0 % av ls   88.5 us av sd   19.6   am/as
■ median RTT from interconnect01   2.4 ms av md   0.0 % av ls   87.7 us av sd   27.5   am/as
■ median RTT from intouch01   1.7 ms av md   0.0 % av ls   213.1 us av sd   7.9   am/as
■ median RTT from widexs01   1.4 ms av md   0.2 % av ls   162.9 us av sd   8.5   am/as
■ median RTT from xlshosting01   1.3 ms av md   0.0 % av ls   116.1 us av sd   11.2   am/as
■ median RTT from zylon01   1.4 ms av md   0.0 % av ls   131.4 us av sd   10.8   am/as
■ median RTT from previder01   2.8 ms av md   0.0 % av ls   123.0 us av sd   22.8   am/as
■ median RTT from leaseweb01   2.8 ms av md   0.1 % av ls   2.3 ms av sd   1.2   am/as
■ median RTT from nxs01   1.2 ms av md   0.0 % av ls   306.9 us av sd   4.1   am/as
■ median RTT from ic-hosting01   1.9 ms av md   0.0 % av ls   315.1 us av sd   6.2   am/as
■ median RTT from xs4all01   10.0 us av md   0.0 % av ls   743.3 ns av sd   13.5   am/as
■ median RTT from nedzone01   4.8 ms av md   0.0 % av ls   132.6 us av sd   36.2   am/as
■ median RTT from oxilion01   3.7 ms av md   0.0 % av ls   3.9 ms av sd   945.1 m am/as
■ median RTT from ebayclassifiedsgroup01   1.4 ms av md   0.0 % av ls   134.7 us av sd   10.0
■ median RTT from evertjenetworks01   2.5 ms av md   0.0 % av ls   1.9 ms av sd   1.3   am/
■ median RTT from is01   1.3 ms av md   0.0 % av ls   170.5 us av sd   7.5   am/as
■ median RTT from surfnet01   2.2 ms av md   0.0 % av ls   104.2 us av sd   20.7   am/as
■ median RTT from prolocation01   1.0 ms av md   0.0 % av ls   90.9 us av sd   11.3   am/as
■ median RTT from in2ip01   1.4 ms av md   0.0 % av ls   118.5 us av sd   11.7   am/as
■ median RTT from netground01   1.9 ms av md   0.0 % av ls   386.4 us av sd   4.9   am/as
■ median RTT from totaalnet01   4.9 ms av md   0.0 % av ls   397.6 us av sd   12.3   am/as
■ median RTT from signet01   6.4 ms av md   0.0 % av ls   116.5 us av sd   54.9   am/as

Tue Apr 19 18:09:56 2011

Example - traceroute

The traceroute example did not fit in a slide...

Please go to the following URL to see the output:

http://bit.ly/uknofdemo

Other things you can do

- use dig to check your nameservers from 26 networks

- MTU testing between you and the ring with iperf

- portscanning

- debug layer2 loadbalancing on IXPs

- basically anything, as long as it's troubleshooting related

Future plans

- we are setting up a legal entity to oversee the RING
  - non profit foundation: "GlobalNOG"

- the RING will stay free of charge

- participants can join or leave any time

- participants will sign a 'common sense' agreement

Probable Future features

- Webinterface for administration

- API for simple monitoring
  - "monitor host X for the next 15 minutes with script Y"

- Alerting of some kind

- Feedback/ideas are welcome!

Please join the ring!

All it takes is the following:

- 1 machine (virtual is fine!)
- 1 IPv4 and 1 IPv6 address
- 1 CPU / 10~20 GB disk / 512 MB RAM
- fresh install of Ubuntu 10.10 (64bit)

- Your company has its own ASN and is present in the DFZ

  If you want to join, email: ring-admins@globalnog.net

Concerns, questions...

The RING is a community effort, built by and for us, network engineers. If you have any questions, or would like to discuss concerns your company might have with the RING, please contact us!

ring-admins@globalnog.net

For more information see:

Current main website:
   http://ring.nlnog.net/

Thoughts on security:
   http://ring.nlnog.net/security/

Distributed smokeping:
   http://master.ring.nlnog.net/smokeping/smokeping.cgi

Traceroute example:
   http://bit.ly/uknofdemo

Mailinglist for participants:
   http://mailman.ring.nlnog.net/