8 things network engineers do with Snabb

From quick & dirty to production

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Snabb: User-space network functions

Open source network functions, bypassing Linux kernel

Target 5-50 Gbps/core depending on workload

```
$ git clone \
    https://github.com/snabbco/snabb
$ cd snabb
$ make
$ ./src/snabb
```

How are people using it?

1: Simple, scalable load generation

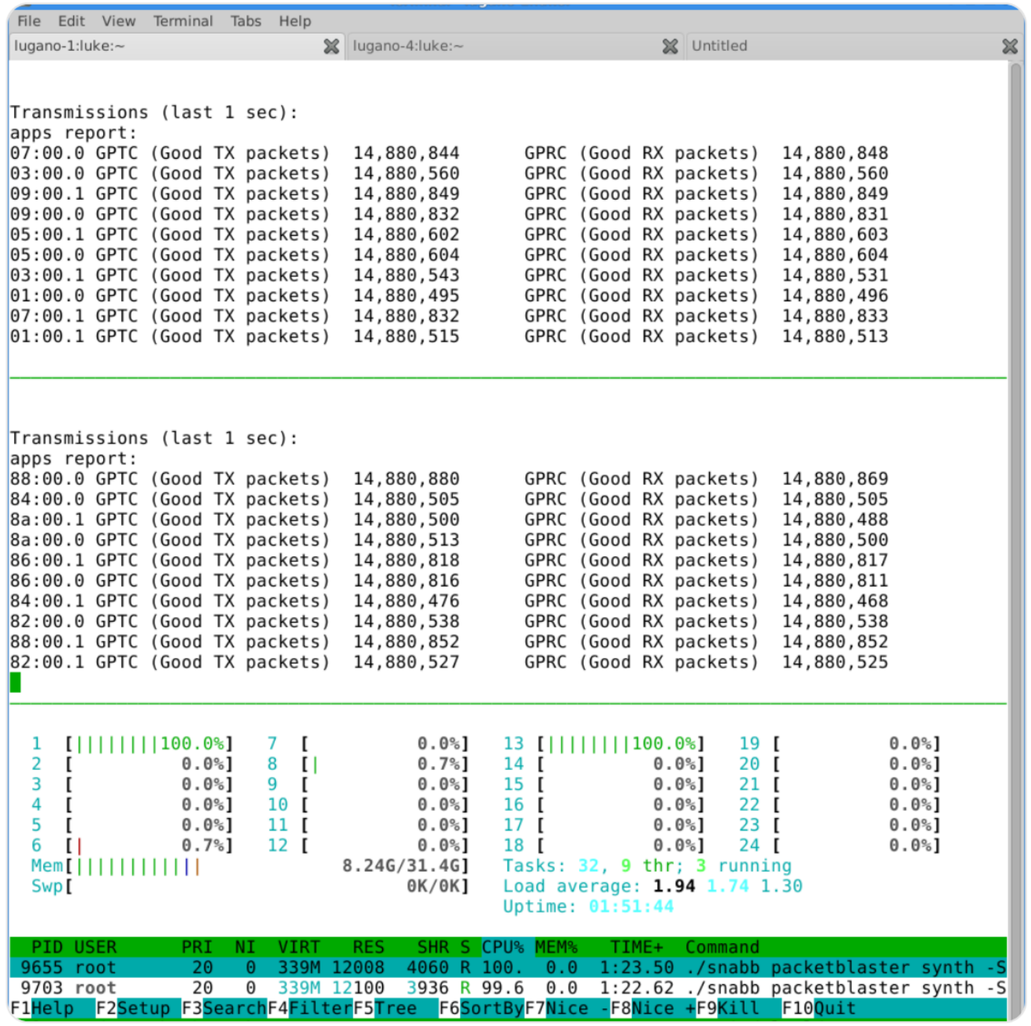
```
$ snabb \
   packetblaster replay foo.pcap 82:00.1
```

Fills NIC TX descriptors with packets, makes NIC transmit them in a loop: no CPU/PCIe usage

Luke Gorrie
@lukego

Following

Just a fun screenshot: Generating 200Gbps of 64-byte packets with two CPU cores (one per numa) and 20x10G ports.



3:36 PM - 17 Apr 2016

2: Find no-drop rate on a network function

```
$ snabb \
   loadtest find-limit foo.pcap 82:00.1
```

Bisection between 0 and max bitrate of NIC, determine point at which packets drop

Can shell out to script to signal pass/fail

3: Generate replayable test traffic

```
$ snabb \
   packetblaster lwaftr --help # many opts
```

Ad-hoc workload-specific packet generation, save to pcap file. Like scapy

Can also generate workload-specific packets and send directly over the wire

4: Layer 2 VPN

```
$ snabb l2vpn l2vpn.conf
```

RFC 4664 layer 2 learning bridge over IPv6

Built by SWITCH network engineer Alexander Gall because what he needed wasn't on offer

In production linking academic sites in Switzerland

`l2vpn` branch, `https://github.com/alexandergall/snabb`

5: IPSec VPN

Vita: `https://github.com/inters/vita`

Secure VPN between sites, IPSec, 1-10 Gbps/core

Funded by NLnet Foundation

Author (Max Rottenkolber, `@eugeneia_`) is here!!

(interlude)

Reminder: it’s all open source!

Use it for free, modify it freely

Need help? A number of consultancies do Snabb work

6: Network monitoring

```
$ snabb ipfix probe 82:00.0 82:00.1
```

Unsampled IPFIX export

Modifiable: one user added multi-core scaling via custom RSS; fixes headed upstream

Configurable per-flow data collection (e.g. src/dst AS)

7: Border router tunnel endpoint

```
$ snabb lwaftr run lwaftr.conf
```

Lightweight 4-over-6 AFTR: processes all IPv4 traffic for a network

YANG-enabled, runtime reconfigurable

Multi-process: one instance can manage many NICs in a machine

See K. Zorbadelos (OTE) at RIPE76: `https://ripe76.ripe.net/archives/video/30/`

8: L7 DPI and firewall

```
$ snabb wall spy pci 02:00.0
```

https://snabbwall.org/

Uses nDPI library

N+1: Your use case!

`https://github.com/snabbco/snabb`

Really easy to prototype in Snabb (written in Lua)

Want to learn more? See Open Source track on Thursday, 16h-17h30

Happy hacking!