

## How to measure the packet rate performance?

### Model

N/A

### Software

Sniffer10G v3/v2, Myri10GE

### Operating System:

Supports both Linux and Windows Operating Systems.

### Information:

To measure the packet rate performance of the Sniffer10Gv2 software, you can run **snf\_pktgen.c** on the “server” host system to generate the packets for injection and run **snf\_simple\_recv.v** on the “client” host system to receive the packets.

On the Linux test system insure that `/opt/snf/bin/tests/` has been added to the current **\$PATH** variable.

On the “server” host system, open a command window and type the following command to generate 1 billion 60 byte packets:

```
$ snf_pktgen -s 60 -n 1000000000
```

On the “client” host system, open a command window and type the following command:

```
$ snf_simple_recv -t
```

And the following output will appear:

```
14843291 pkts (890597460B) in 1.001 secs (14827884 pps), Avg Pkt: 60, BW (Gbps): 7.117
14843663 pkts (890619780B) in 1.001 secs (14828242 pps), Avg Pkt: 60, BW (Gbps): 7.118
14841101 pkts (890466060B) in 1.001 secs (14825697 pps), Avg Pkt: 60, BW (Gbps): 7.116
14845703 pkts (890742180B) in 1.001 secs (14830250 pps), Avg Pkt: 60, BW (Gbps): 7.119
14842322 pkts (890539320B) in 1.001 secs (14826946 pps), Avg Pkt: 60, BW (Gbps): 7.117
14842292 pkts (890537520B) in 1.001 secs (14826902 pps), Avg Pkt: 60, BW (Gbps): 7.117
14843007 pkts (890580420B) in 1.001 secs (14827601 pps), Avg Pkt: 60, BW (Gbps): 7.117
14842392 pkts (890543520B) in 1.001 secs (14826942 pps), Avg Pkt: 60, BW (Gbps): 7.117
```

The execution of this test will report for each second the packet rate (pps). The packet rate is 14.8 Mpps, or line rate for 60-byte packets.

### **Important Notes:**

Always start the **snf\_simple\_recv** process before you start running the packet generator (**snf\_pktgen**).

Always stop the packet generator (**snf\_pktgen**) before you stop the **snf\_simple\_recv** process.

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Otherwise, if the packet generator is sending packets, but **snf\_simple\_recv** is not running, then you will see the overflow counter (**Net overflow dop** in the **myri\_counters** output) increasing. This situation occurs because there is no Sniffer10G program consuming the packets through the Sniffer10G API, and the packets are instead being delivered to the Ethernet portion of the driver, which will attempt to drop them as fast as possible, but will not be able to sustain the packet rate.

You cannot run **snf\_pktgen** traffic through a router/switch. **Snf\_pktgen** is a toy packet generator to demonstrate the use of Sniffer10G inject functionally. It sends packets comprised of all zeroes, which will be dropped by a router or switch.

This test assumes that port 0(if using a 2-port adapter) of “client” and “server” are connected point-to-point.

### What is the maximum packet rate Sniffer10G v3 and v2 can support?

14.88 million Packets per second.

Sniffer10G v3/v2 has been designed to support the worst case scenario where all packets are at the minimum 10-Gigabit Ethernet packet size, 64 bytes. Including the 7-byte preamble, the start byte, and the 12-byte inter-packet gap, a minimum size packet of 64 bytes requires 84 bytes to be transmitted on the wire.

Under a constant stream of minimum packet sizes, a packet arrives at every 67.2 nanoseconds, corresponding to a maximum packet rate of 14.88 Mpps.

Sniffer10G can also successfully capture all packet sizes, including small packet that are not aligned on neat boundaries.

### What is the maximum packet rate Myri10GE can support?

Using our standard Ethernet firmware/driver (Myri10GE), maximum packet rates are 1.6Mpps (1 queue, without RSS) and 1.2 Mpps-1.4 Mpps (with RSS). When RSS is enabled, packet rates drop because of hashing calculations.

<u>Revision</u>	<u>Date</u>	<u>Change</u>
1	6/30/2016	Initial Change
2	8/18/2016	Feedback Edit

