Sample and benchmark scripts for pktgen (packet generator)

This directory contains some pktgen sample and benchmark scripts, that can easily be copied and adjusted for your own use-case.

General doc is located in kernel: Documentation/networking/pktgen.rst

Helper include files

This directory contains two helper shell files, that can be "included" by shell source'ing. Namely "functions.sh" and "parameters.sh".

Common parameters

The parameters.sh file support easy and consistant parameter parsing across the sample scripts. Usage example is printed on errors:

```
Usage: ./pktgen_sample01_simple.sh [-vx] -i ethX
 -i : ($DEV)       output interface/device (required)
 -s : ($PKT_SIZE)  packet size
 -d : ($DEST_IP)   destination IP. CIDR (e.g. 198.18.0.0/15) is also allowed
 -m : ($DST_MAC)   destination MAC-addr
 -p : ($DST_PORT)  destination PORT range (e.g. 433-444) is also allowed
 -t : ($THREADS)   threads to start
 -f : ($F_THREAD)  index of first thread (zero indexed CPU number)
 -c : ($SKB_CLONE) SKB clones send before alloc new SKB
 -n : ($COUNT)     num messages to send per thread, 0 means indefinitely
 -b : ($BURST)     HW level bursting of SKBs
 -v : ($VERBOSE)   verbose
 -x : ($DEBUG)     debug
 -6 : ($IP6)       IPv6
 -w : ($DELAY)     Tx Delay value (ns)
 -a : ($APPEND)    Script will not reset generator's state, but will append its config
```

The global variable being set is also listed. E.g. the required interface/device parameter "-i" sets variable $DEV.

"-a" parameter may be used to create different flows simultaneously. In this mode script will keep the existing config, will append its settings. In this mode you'll have to manually run traffic with "pg_ctrl start".

For example you may use:

source ./samples/pktgen/functions.sh pg_ctrl reset # add first device
./pktgen_sample06_numa_awared_queue_irq_affinity.sh -a -i ens1f0 -m 34:80:0d:a3:fc:c9 -t 8 # add second device
./pktgen_sample06_numa_awared_queue_irq_affinity.sh -a -i ens1f1 -m 34:80:0d:a3:fc:c9 -t 8 # run joint traffic on two devs pg_ctrl start

Common functions

The functions.sh file provides; Three different shell functions for configuring the different components of pktgen: pg_ctrl(), pg_thread() and pg_set().

These functions correspond to pktgens different components.
- pg_ctrl() control "pgctrl" (/proc/net/pktgen/pgctrl)
- pg_thread() control the kernel threads and binding to devices
- pg_set() control setup of individual devices

See sample scripts for usage examples.