

L50 - Useful Tips For Debug

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1 Host configuration fragility

The lab hosts use a rather unusual configuration of hard for the testing; the result is we use a more reliable (older) version of operating-system, kernel, patches, applications, and so forth.

Please resist the temptation to update or upgrade anything as there is a high risk you will disable a different lab configuration or subsystem.

2 ifconfig

`ifconfig` provides network interfaces information.

`ifconfig` will display all the interfaces that are up, and their configuration.

`ifconfig -a` will display all the recognized interfaces. If an interface appears when using `-a` but not without it, then it is down.

`ifconfig <interface name>` will display all the information for a specified interface.

`ifconfig <interface name> <IP address> up/down` will configure an interface to a given IP address, and will set it up/down.

`ifconfig` is also useful to monitor traffic - for each interface, it presents the number of packets sent and received. You can use it to make sure that packets are sent through the correct port, and to check if traffic is arriving on the expected interface.

3 Fibres and transceivers

There are many reasons why things may go wrong when using fibres and transceivers. Some useful things to check:

- Make sure that the fibres and transceivers are fully inserted.
- On some NICs, the green led will turn on if link is up.
- Try swapping fibres/transceivers.

- Conduct a visual inspection of the fibre - does it appear to be broken?
- When using an Intel NIC, make sure to run:
`modprobe ixgbe allow_unsupported_sfp=1`

4 Tapping

When using the optical tap, the same guidelines apply as with fibers and transceivers. In addition, you should check that Tx and Rx are not swapped, and that the input to the DAG card is using Rx on both ports.

5 OSNT

The best source for information on OSNT is <https://github.com/NetFPGA/OSNT-Public/wiki>. In addition:

- When programming the board for the first time, or after power up, a reset (init 6 / reboot) is required. After the reset, you need to reprogramme the board.
- Check if OSNT is recognized by the motherboard by running `lspci -vvx | grep Xi1`. The expect result will show an entry stating Xilinx and a value (typically 7038).
- Check that OSNT-SUME-live repo is cloned under `/root/` and that make was run as detailed in <https://github.com/NetFPGA/OSNT-Public/wiki/OSNT-SUME-Getting-Started-Guide>.
- Check that the leds are on for connected interfaces.