

7.5.9 Performance problems

At the time of writing, we were aware of two specific problems that impact OSA performance.

- If frames larger than expected are used, an excessive number of frames might be dropped (causing a retransmission). This might not be noticed unless careful measurements or comparisons are made. We believe this problem is resolved by including the `systcl` parameter that is now recommended:

```
net.core.rmem_max=1048576
```

- If newer Linux kernels are installed, there might be a drastic slowdown of OSA performance that would be immediately obvious. This is due to Linux attempting to offload various functions into the adapter, which is not acceptable to the current `awsOSA` implementation. One or more of the following commands, intended to disable the Linux offloading of IP functions, might improve the situation:

```
# ethtool -K eth0 rx off      (disable RX checksumming offload)
# ethtool -K eth0 tso off     (disable TCP segmentation offload)
# ethtool -K eth0 gso off     (disable generic segmentation offload)
# ethtool -K eth0 gro off     (disable generic RX offload)
# ethtool -K eth0 lro off     (disable large RX offload)
# ethtool -K eth0 rxvlan off  (if you are using VLANs)

# ethtool -k eth0             (display status of NIC)
# ethtool -S eth0             (display statistics)
# ethtool -K em1 rx off       (newer style of NIC naming)
# ethtool -K enp0s25 rx off   (newer style of NIC naming)
```

You might need to experiment with these commands. One user found the following combination most effective for his system.

```
# ethtool -K eth0 rx
# ethtool -K eth0 gso off
# ethtool -K eth0 rxvlan off
```

Unfortunately, such commands must be entered after each Linux boot. We suspect that effective combinations of these options differ with various Linux levels and with various NIC adapters.

IBM has not published performance specifications for OSA. When working correctly, informal observation indicates that FTP throughput might be in the 5 - 8 MBps (megabytes/second) range, assuming an unconstrained network in a dedicated environment. If your performance is much worse than this, consider experimenting with the `ethtool` commands described here.

7.6 Wireless connections

Wireless connections can be used by Linux TCP/IP or by OSA. Consider the following details:

- Linux typically sees a wireless connection as device `ath0`, `wlan0`, or `eth0`. The `find_io` command lists a wireless interface along with Ethernet interfaces and associates a CHPID with it. (The CHPID address for a wireless adapter is normally F8.) You can then use this CHPID number as the path parameter for defining an `awsosa` interface.
- We cannot provide a cookbook for activating your wireless link for Linux, but you need to have stable Linux wireless operation before trying to extend it to zPDT usage.
- We have noticed that the more recent Linux distributions provide much more convenient wireless setup than earlier Linux distributions.