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| BDS / R&D |
| **BullSequana SH Linux**  **Mellanox ConnectX-5/6 Tuning Guide** |

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# LN-1 : Mellanox CNX5 Network Tuning

Impacted component: Linux network performance

Impacted team: validation, support, customers

## Description

You want to maximize the network performance for throughput (NFS Read for example) and are using Mellanox network cards on a Linux operating system.

## Recommendation

The recommendation varies slightly depending on your operating system. Please see the proper instructions for your operating system below

### SUSE Linux Enterprise Server 15 SP4

Status: Tested on a single active network interface (ConnectX-6 100 Gbps)

1. Make sure you have configured all the network interfaces you want to apply the tuning on.
   1. You can check this by running **ls /etc/sysconfig/network**
   2. You should see a list of files named ifcfg-[interface-name]. There should be one file per interface, if not you will need to configure the additional interfaces before continuing.
2. Do ***not*** install the RPM used for BullSequana S series computers. It can cause performance reduction in certain configurations.
3. It is highly recommended on SLES15 to run the in-box drivers as they provide better overall performance.
4. Install the sysctl config file:

**sudo cp 90-eviden-mlnx-SH.conf /etc/sysctl.d**

1. It is recommended to reboot following the installation of the sysctl, but you may skip the reboot by executing the following command.

**sudo sysctl --load=/etc/sysctl.d/90-atos-mlnx.conf**

1. You need to set the MTU manually to match your network configuration. This is usually 9000 bytes.
   1. Edit the /etc/sysconfig/network/ifcfg-[interfacename] file and edit or add the line: **MTU=’9000’**
   2. Or manually set it for the current boot only:

**sudo ip link set <my interface name> mtu 9000**

1. Optionally, for benchmarking or a low security environment disable the firewall. This varies from a Linux to another:

**sudo systemctl disable firewalld**

or

**sudo /sbin/SuSEfirewall2 off**

1. Edit the file /etc/default/grub and add any of the following values which might be missing on the line which starts: GRUB\_CMDLINE\_LINUX\_DEFAULT=”
   1. console=ttyS0,115200
   2. tsc=reliable
   3. loglevel=7
   4. watchdog\_thresh=30
   5. pci=nobar
   6. mitigations=auto

Here is an example:

GRUB\_CMDLINE\_LINUX\_DEFAULT="console=ttyS0,115200 tsc=reliable watchdog\_thresh=30 noefi mitigations=auto"

1. x
2. x

# List of changes

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1. Title