



TECHNICAL BULLETIN

CODEX DIGITAL LAB

CONFIGURATION FOR
MYRICOM 10GbE NETWORK ADAPTOR

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Codex Configuration Guide for Myricom 10GbE Network Adaptor

This is a guide to installing and configuring a Myricom 10GbE Network Adaptor card in a Codex Digital Lab system. The recommended card is a Myricom 10G-PCIE-8B-S with a 10G-SFP-SR optical transceiver.

Go here <http://www.codexdigital.com/software/downloads/myri10ge-1.5.1.tgz> to download the Myricom driver.

Where a # is used in the guide it is to indicate the command prompt, and therefore only the characters following the # should be typed.

1. Setting standard Gigabit network ports with fixed hardware addresses

The two Gigabit network ports should have their hardware addresses set – if this is not done then the system may confuse the order of these and the Myricom card when it is installed. Before the Myricom card is installed, to find out the hardware addresses of the Gigabit ports enter the command:

```
# ifconfig
```

This will print out something like this:

```
eth0      Link encap:Ethernet  HWaddr 00:25:90:05:19:08
          inet addr:192.168.1.150 Bcast:192.168.1.255 Mask:255.255.255.0
          UP BROADCAST MULTICAST MTU:1500 Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b) TX bytes:0 (0.0 b)

eth1      Link encap:Ethernet  HWaddr 00:25:90:05:19:09
          inet addr:10.82.95.32 Bcast:10.82.95.255 Mask:255.255.255.0
          inet6 addr: fe80::225:90ff:fe05:1909/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:167451 errors:0 dropped:0 overruns:0 frame:0
          TX packets:85597 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:28637671 (27.3 MiB) TX bytes:56251045 (53.6 MiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING MTU:16436 Metric:1
          RX packets:139846 errors:0 dropped:0 overruns:0 frame:0
          TX packets:139846 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:55724136 (53.1 MiB) TX bytes:55724136 (53.1 MiB)
```

Note: The two character sequences are highlighted in green. These are the hardware addresses that need to be set. To edit the configuration file for the first network port (eth0) enter:

```
# vi /etc/sysconfig/network-scripts/ifcfg-eth0
```

Press 'i' to enter Insert mode and then add this line (substituting the correct hardware address for your machine) to the bottom of the file:

```
HWADDR=00:25:90:05:19:08
```

Then press ESC to leave Insert mode, and hold the 'Shift' key and press 'Z' twice to save and exit.

Repeat this for the second network port (eth1) by running the command:

```
# vi /etc/sysconfig/network-scripts/ifcfg-eth1
```

Then add a similar line to the file for the correct HWADDR.

Now run these two commands to refresh the Gigabit ports with the new settings:

```
# ifdown eth0; ifup eth0
# ifdown eth1; ifup eth1
```

2. Installation of Myricom Network Adaptor

Shut down the Digital Lab, then detach rear cabling, remove the computer part from any rack mounting, and remove the lid. The card should be installed in a PCI-e slot on the motherboard of the Digital Lab – either a x8 or x16 slot is appropriate. The card automatically adjusts to the widest available mode supported by the slot. Refit and re-cable and then boot the Digital Lab.

3. Software installation for the Codex

The Myricom driver software should be copied to the /tmp directory of the Digital Lab, in a console window;

Login as user = root, password = codex.

Copy myri10ge-1.5.1.tgz into /tmp.

Run the following commands:

```
# telinit 3
# cd /tmp
# tar xzf myri10ge-1.5.1.tgz
# cd myri10ge-1.5.1
# ./install
# reboot
```

After reboot return to a console window and login:

```
# vi /etc/sysconfig/network-scripts/ifcfg-eth2
```

Press 'i' to edit this file to read (the IPADDR should be set for your network):

```
DEVICE=eth2
BOOTPROTO=None
ONBOOT=yes
IPADDR=192.168.99.100
MTU=9000
```

Hold 'Shift' and press 'Z' twice to save and exit. Then enter:

```
# ifdown eth2; ifup eth2
# ifconfig
```

This should confirm the settings have been altered. Now enter:

```
# vi /etc/sysconfig/iptables
```

Add the following line to this file:

```
-A RH-Firewall-1-INPUT -i eth2 -j ACCEPT
```

Save and exit. Then enter:

```
# /etc/init.d/iptables restart
```

This should update the settings. Now enter:

```
# vi /etc/sysctl.conf
```

Insert the below text into this file.

```
net.core.rmem_max = 16777216
net.core.wmem_max = 16777216
net.ipv4.tcp_rmem = 4096 87380 16777216
net.ipv4.tcp_wmem = 4096 65536 16777216
net.core.netdev_max_backlog = 250000
```

Save and exit. Then enter:

```
# sysctl -p /etc/sysctl.conf
```

This should enable these settings and print them to the screen. Finally enter:

```
# reboot
```

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