

ethernet lab

ese3014

Part One: Connections

1. Connect your serial debug (3.3-V FTDI) cable to your PC and your Beaglebone
2. Boot your PC and launch minicom

```
$ sudo minicom
```

3. Connect your Beaglebone to the 5-V/2-A power adapter
4. Connect your Beaglebone's ethernet port to a router via an ethernet patch cable

- at the Linux prompt of each system (host and embedded platform), check on the status of your connections:

```
$ ifconfig
```

from the man pages:

“Ifconfig is used to configure the kernel-resident network interfaces. It is used at boot time to set up interfaces as necessary. After that, it is usually only needed when debugging or when system tuning is needed.

If no arguments are given, ifconfig displays the status of the currently active interfaces. If a single interface argument is given, it displays the status of the given interface only; if a single -a argument is given, it displays the status of all interfaces, even those that are down. Otherwise, it configures an interface.”

Part Two: identifying your connections

1. Identify the name and IP address of your host machine's main ethernet connection
2. Identify the name and IP address of your embedded system's main ethernet port (Q: is the IP address local or global? Explain.)
3. Attempt to ping the connection of each machine from the other; use

\$ man ping

for more information on the exact use of ping

4. Verify that you are able to connect to Internet from your embedded system. Using a GUI Linux interface, can you open a web page?
5. Using SSH, login to your embedded system from your host machine using the embedded platform's IP address

Part Three: “crossover connection”

BONUS POINTS

It should be possible to establish a direct connection from your Linux host machine to your Beaglebone using an ethernet patch cable; in older systems, the ethernet cable had to be a “crossover” type to allow a direct link, however, modern systems can work with a conventional patch cable.

Investigate this type of connection, and see if you are able to do it! Name your sources in your discussion. This part is strictly for bonus points.