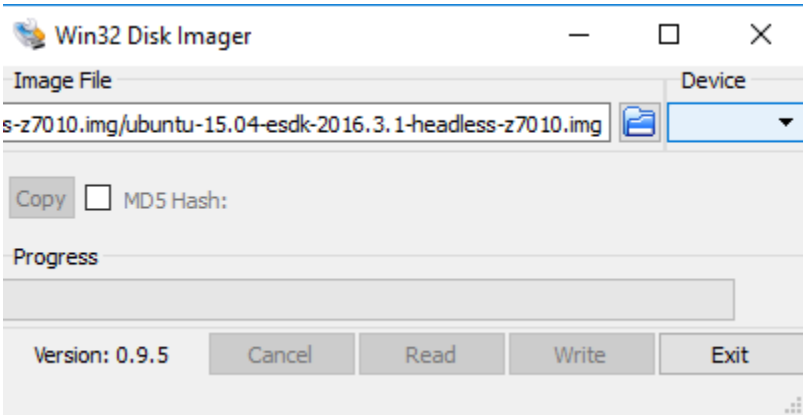
CEG4136 Parallella Setup Guide

Formatting SD card

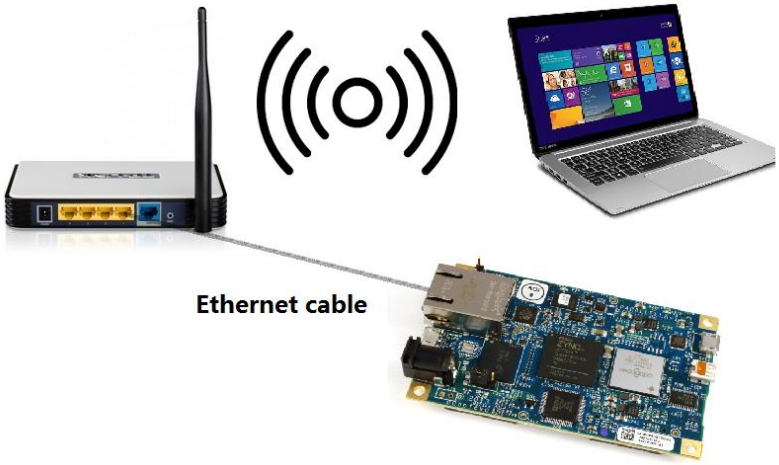
The SD card will be used to house the operating system of our Parallella board. In order to set up our board, we will need to format the SD card and burn an operating system image in. The image will allow us to get a set of desired software onto our system relatively quickly. The official image is provided here. http://www.parallella.org/create-sdcard/

1) Download the latest image from the website and install Win32 Disk Imager(https://sourceforge.net/projects/win32diskimager/postdownload?source=dlp)
2) Insert SD card into your laptop reader slot. Use the SD card adapter if your laptop doesn't have a reader.
3) Make sure that your SD card is empty.
4) Next open the Win32 Disk Imager program. Select the SD card as our device and select the image we downloaded as the image file.
5) Click Write and wait the progress to be finished.
6) Safely eject the SD card drive after the process.



Set up SSH Connection (Using WIFI)

Overview



This tutorial allows you to access Parallella board using an SSH connection. This is a very common way to run programs and transfer files between a PC and a Parallella board.

Checklist for setting up SSH

- ✓ A Parallella board with the latest image already installed
- ✓ an Ethernet cable
- ✓ Putty on the PC (only if the PC is running windows)

Find the IP address of the Parallella

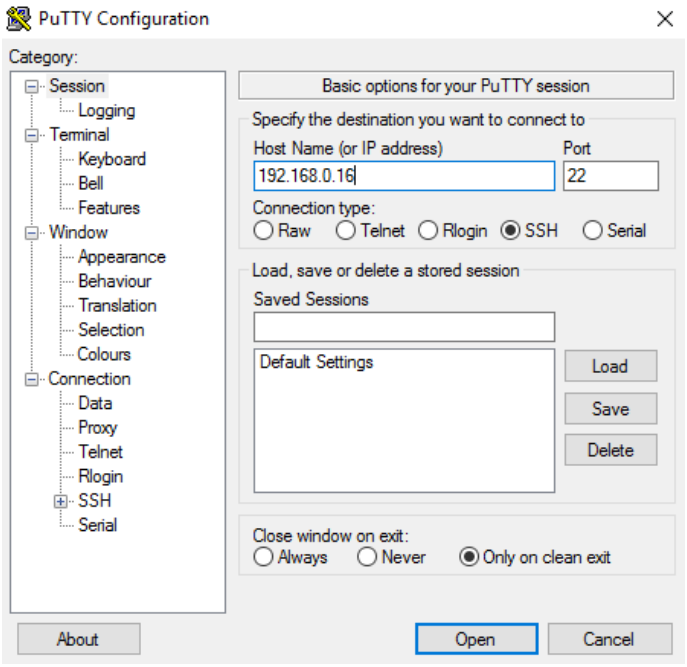
1) Connect the Parallella board to the LAN switch via a Ethernet cable
2) Connect the power of Parallella to boot it up.
3) Using IP address finding application like “Fing” to locate the allocated IP address for the Parallella.
4) Write down the IP address

Connecting to Parallella with Putty (Windows)

You can find putty.exe and psftp.exe on
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Since Windows OS does not have built in ssh, we use the Putty program to connect to the board using the SSH protocol.

1) Navigate to your Putty install and double-click on putty.exe.
2) Type in the IP address for Parallella and select connection type as SSH.
3) Click “Open”



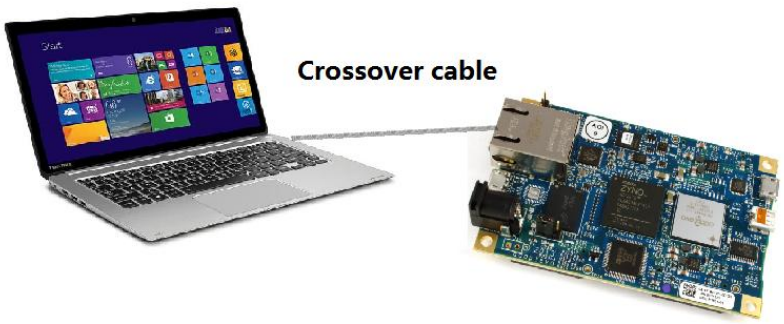
Login Parallella

Once the SSH connection is set up, and opened. A Linux shell will appear and this is where we control Parallella in headless configuration.

User: parallella

Password: parallella

Set up SSH Connection (Using Crossover cable)



Configure the Parallella with a static IP

In order to connect Parallella board directly to your laptop, you will need a crossover Ethernet cable (normal Ethernet cable with a crossover adapter could also work).

In this case we will need to configure the Parallella board with a static IP address.

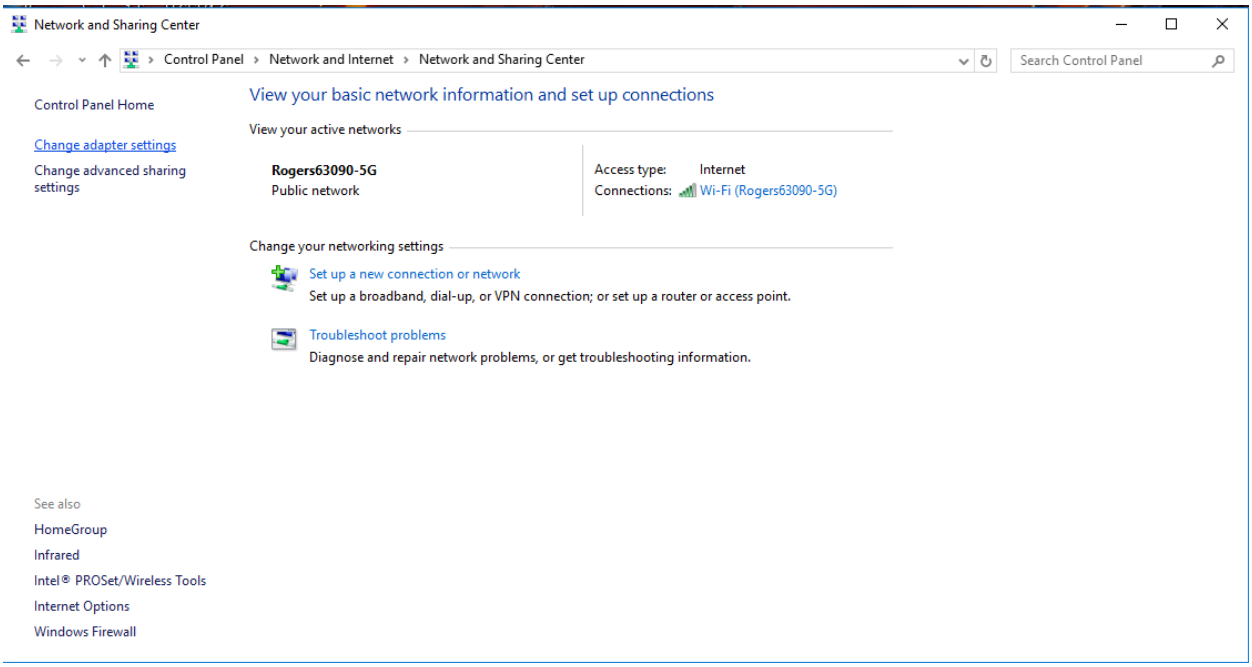
1) Boot up the Parallella board with using SSH connection or HDMI display and pull up a terminal.
2) Edit the file "/etc/network/interfaces" so that it contains the following lines: (you may need "sudo vi" command)

```
auto eth0
iface eth0 inet static
        address 10.0.0.3/8
up route add 10.0.0.2 dev eth0
```

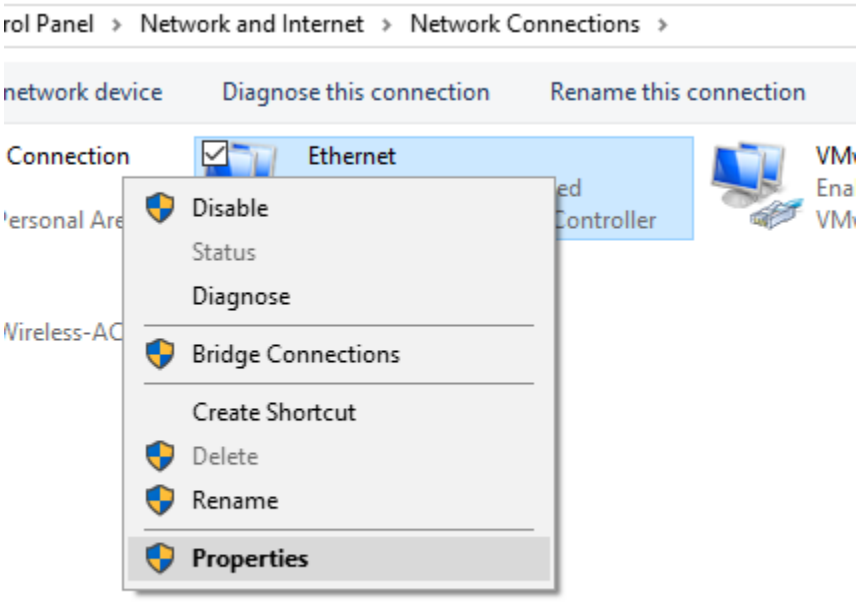
3) Reboot the board using "sudo shutdown -r now" to allow OS to process the change we just made.

Configure your personal computer with a static IP

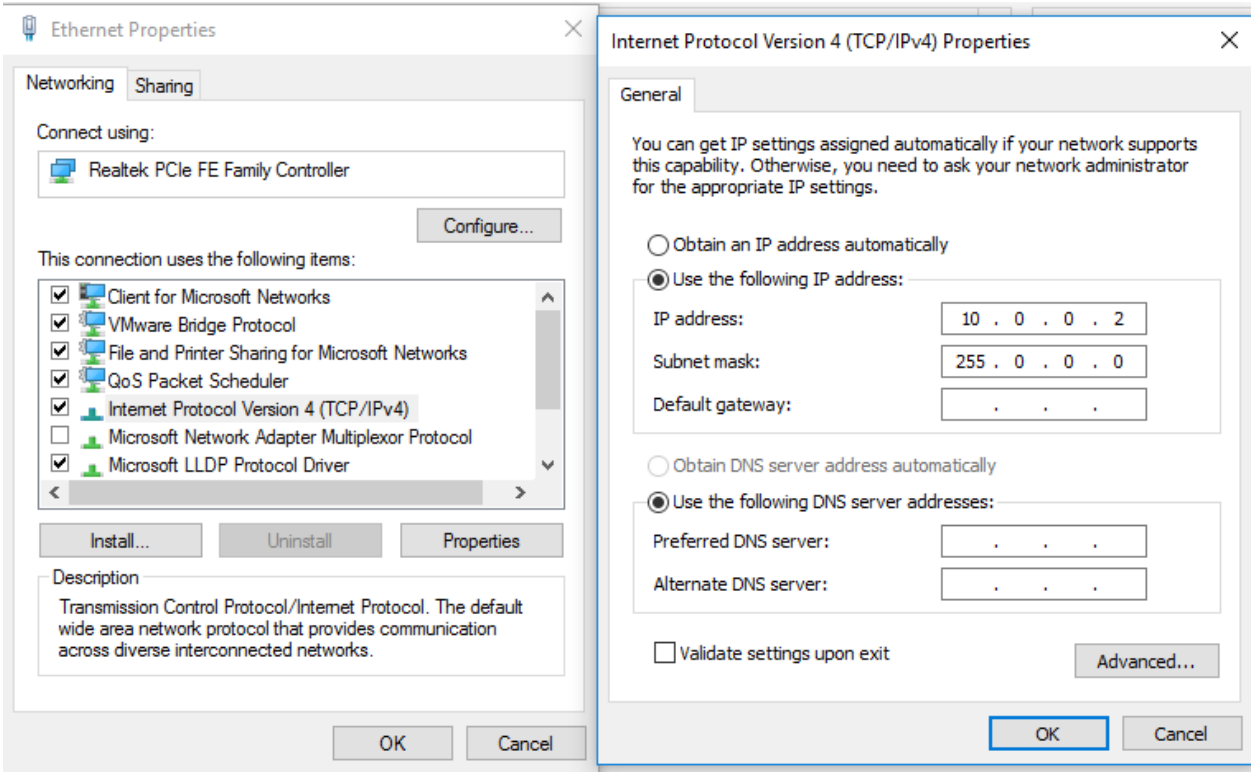
We will now update our Network adapter settings on our Windows machine to enable us to use a static IP address when using a crossover cable. (You have to plug the Crossover Ethernet cable into your PC to continue)



Find your Ethernet connection and right click into properties



Change the settings in Internet Protocol version 4(TCP/IP v4) so it looks like:



Click OK to save the changes and exit. Now your personal computer is configured with an IP address of 10.0.0.2 and will be able to establish a connection with Parallella board.

Connecting to Parallella with Putty (Windows)

Same as the way we set up SSH in WIFI configuration, we use putty.exe to set up SSH

1) Navigate to your Putty install and double-click on putty.exe.
2) Type in the IP address (which is 10.0.0.3) for Parallella and select connection type as SSH.
3) Click “Open”

Login Parallella

Once the SSH connection is set up, and opened. A linux shell will appear and this is where we control parallella in headless configuration.

User: parallella (all lowercase)

Password: parallella (all lowercase)