Installation Documentation:

<https://www.raspberrypi.org/documentation/installation/installing-images/README.md>

## **Basic Process**

**pinode-0:**

1. Boot master node (pinode-0) with WiFi dongle
2. 'sudo raspi-config' -> expand file system; restart
   1. After selecting the expand file system option, it should return an OK

GUI version

* 1. Menu -> Preferences -> Raspberry Pi Configuration-> Localisation
  2. Set the Locale, Timezone and the Keyboard and then OK
     1. Country & Variant
  3. Reboot

1. Configure wlan0
   1. *Terminal: Desktop Icon or Menu->Accessories->Terminal*
   2. **ssh-keygen** to generate the RSA key pair
      1. Enter for “Enter the file in which to save the key”
      2. Enter for the “Enter passphrase”
2. Clone this repo to home directory
   1. **git clone** [**https://github.com/sdsc/sandbox-cluster-guide.git**](https://github.com/sdsc/sandbox-cluster-guide.git) -> CTRL + C from the github site
   2. **cd sandbox-cluster-guide**
   3. **git checkout beta-workshop** -> Copy the entire repository
   4. **ls** -> to check if you got the files
   5. **cd config**
3. Deploy configuration (./deploy.sh <node number>)
   1. **./deploy.sh 0** -> calls the deploy script from this directory and the 0 is the parameter to tell them which node this is
      1. This command may take a few minutes to finish
      2. It is fine if you see “sudo: unable to resolve host raspberrypi”
   2. Verify that the hostname is set:
      1. **more /etc/hosts**
   3. passwd
      1. By default, the current password = raspberry
      2. Enter the new password twice
4. Reboot
5. Boot remaining nodes
   1. Boot another raspberry pi
   2. **arp -a** -> Master is running a DCHP server.
   3. ping the various IP addresses to find which one is the IP assigned by the pinode-0
      1. **sudo ping -c 4 <ip address>**
      2. The successful ping would say that the packets were sent
   4. **ssh 10.0.1.12** -> yes -> enter the default pi password
   5. **sudo raspi-config** -> go back and expand the filesystem (step 2)
   6. **cd /etc/network** 
      1. **sudo iptables-restore < /etc/network/iptables** (one time)
         1. (The pre-up might need to be changed to post-up)
   7. Clone the repository from github again (step 4)
   8. Run step 5 with **./deploy.sh 1**
      1. Do not need to change the password of all the other nodes so skip that step
6. On each node, deploy (git clone git@github.com:sdsc/sandbox-cluster-guide.git) and reboot
7. ~~Shutdown DHCP server on pinode-0 (service isc-dhcp-server stop; update-rc.d isc-dhcp-server disable)~~

**Verification that the node was set up correctly:**

ssh pinode-#

should allow you connect to the pinode and should not require that you input a password

**Create hostname file**

Create a new file and insert the pinode names and how many times you want it referenced

mpiexec -n 4 -hostfile host python ./cpi.py

## **Manual Steps**

* Configure wlan0
* On pinode-0 generate RSA key pair for cluster (ssh-keygen with no passphrase)
* Shutdown DHCP server after other nodes are up

*Issue with pinode-0 using either both of the networks to access/communicate with the other nodes*