Raspberry Pi Cluster Computer

10/18/16

* Supplies arrive!
* Parts received:
  + Samsung 32GB Evo Plus UHS-1 microSDHC x 9
  + Sabrent 60W 10-port USB Fast Charger x 1
  + Netgear ProSAFE 16-Port 10/100 Desktop Switch (Model no. FS116) x1
  + Sabrent USB 2.0 A Male to Micro B Cables (6 pack) x 2
  + Raspberry Pi 3, Model B, 1GB RAM x 9
* All microSD cards are formatted in FAT32 file format upon arrival
* We will be loading Raspbarian Jessie Lite onto one, setting up a pi with it and then cloning that image onto the other SD cards
* Hooked up first raspberry pi, ran *sudo raspi-config*
  + Ran expand filesystem
  + Boot options set to boot to command line, automatically logged in as “pi” user
  + Wait for network at boot set to false
  + Internationalization options:
    - Local: en\_US.UTF-8 UTF-8
      * Default local for the system environment: none
    - Timezone: America > Chicago
    - Keyboard: English (US)
    - Wifi country: US
  + Enable camera: no
  + Advanced options > hostname changed to ubXX (based on IP address)
  + Advanced options > SSH enabled
* Reboot
* We will be assigning static IPs to the pis. Our IP addresses to use are: 141.224.33.111, .112, .113, .114, .115, .116, .117, .119, .120
  + The head node will use 141.224.33.120
* Having trouble getting network connection with switch working, finally got connected to internet with Alan’s computer through switch in server case. No luck with ports on wall, seem not to work. Also had difficulty with old, faulty Ethernet cables.
* Finally got online! Ran *sudo apt-get update* and *sudo* *apt-get upgrade*
* Setup ssh-key:
  + Type: ssh-keygen -t rsa -C pi@ub<pi number>
  + When prompted for a location, press enter to save to the default (/home/pi/.ssh/id\_rsa)
  + When prompted for a passphrase press enter twice
* On the head pi, setup /etc/hosts file, should look as follows:
* 127.0.0.1 localhost
* ::1 localhost ip6-localhost ip6-loopback
* fe00::0 ip6-localnet
* ff00::0 ip6-mcastprefix
* ff02::1 ip6-allnodes
* ff02::2 ip6-allrouters
* 127.0.1.1 rpi0
* 192.168.1.173 rpi0 rpi0.local rpi0.lan
* 192.168.1.177 rpi1 rpi1.local rpi1.lan
* 192.168.1.178 rpi2 rpi2.local rpi2.lan
* 192.168.1.180 rpi3 rpi3.local rpi3.lan
* Replace rpi# with pi name, replace ip with ip from the corresponding pi.
* Setup ssh connection with key (allows passwordless access to the cluster):
  + On the head pi, enter the following command in the terminal: cat ~/.ssh/id\_rsa.pub | pi@<pi name> ‘cat >> .ssh/authorized\_keys’
  + Answer yes to the question.
  + Password: raspberry
  + This needs to be done for each pi.