John Bannen 4-17-2008 Rocks cluster install for Dr. Millers Cyberinfrastructure Laboratory

These are the steps I took in installing the two 9 node rocks clusters, hopefully useful to anyone having to reinstall or repair.

Install the Head Nodes

- Shut both head nodes and all compute nodes down.
- Boot the Head node 1 with Rocks DVD in.
- Press <F11> for boot menu.
- Select "boot from CD"
- When Black and white screen with large "frontend" appears, type frontend. Type it within 10 seconds or it defaults to a client install and you need to start again. If "looking for eth0" appears on blue screen, you missed it, reboot
- Enter the following parameters : Note : For yankees vs. celtics, both parameters are shown as (one | the other) . If you take too long entering the ip addresses, it restarts the install.

  eth1 ip : (128.205.44.149 | 128.205.44.140)
  (yankees.cse.buffalo.edu | celtics.cse.buffalo.edu)
  netmask : 255.255.255.192
  gateway : 128.205.44.129
  primary name server : 128.205.32.8 (???)

  eth0 ip : (10.1.1.1 | 10.1.1.128)
  mask : 255.0.0.0
  time zone : America/New York
  NTP server : pool.ntp.org
  partition : autopartition
  CA passphrase : passphrase
  Passphrase : (blank)
- Wait until the install completes, the DVD ejects, the login prompt appears.

You can proceed with the 2nd head node install while running the 1st cluster compute nodes install. However, you should not run insert-ethers on two head nodes simultaneously if they are on the same internal network.

Install the compute nodes

You must run the insert-ethers command on the head node twice. Once to detect the Dell switch if it is being used, then again to detect the compute nodes. (4-16-2008 : The Dell 6248 switch is not detected by the insert-ethers command with rocks version 4.3. I connected the Dell 3xxx series switch from the condor flock for the cluster setup, then reconnected the 6248 once it was installed. You could connect to the 6248 from a p.c. with a serial cable and remove the fancy features to remedy this, I did not try it.)

- Login to the head node. Do not "startx" – use the command line only for this step.
- Run the insert ethers command for yankees :

  insert-ethers --rack=2 --baseip=10.1.1.2 --inc=1

  or for celtics

  insert-ethers --rack=3 --baseip=10.1.1.129 --inc=1
- Select the install ethernet switches option. Wait 10 minutes. Exit using <F10> or <F11>.
- Repeat the same insert-ethers command and select "compute devices". The head node is now broadcasting PXE boot information and should discover the compute nodes.

- Boot a single compute node and press <F12> during startup to select PXE boot.
- Watch for the node to start a rocks install and the head node to display the machine address it has found. If it does not, there is a communications problem.
- Start up nodes in order. Press <F12> during boot. Wait 20 seconds. Proceed to next node. This will cause the nodes to be discovered in the order you boot them so they will be named (for rack=2) compute-2-0, compute-2-1, compute-2-2, compute-2-3, … The head node monitoring screen will display the names, so if they are in order and a node is down it is easier to locate.
- Once all nodes install and reach a boot prompt, stop the insert-ethers on the head node. Proceed with insert ethers on the 2nd cluster.
- On the head node type startx to start x-windows.
- Go to internet site http://localhost and select the cluster status option. You should see all the compute nodes you installed, and none of the other clusters nodes. Select edit->Preferences then select Use current page to set the home page to the cluster status page.

Internal Network you have created :

Yankees		Celtics	
(head node)	10.1.1.1	(head node)	10.1.1.128
compute-2-0	10.1.1.3	compute-3-0	10.1.1.130
compute-2-1	10.1.1.4	compute-3-1	10.1.1.131
compute-2-2	10.1.1.5	compute-3-2	10.1.1.132
compute-2-3	10.1.1.6	compute-3-3	10.1.1.133
compute-2-4	10.1.1.7	compute-3-4	10.1.1.134
compute-2-5	10.1.1.8	compute-3-5	10.1.1.135
compute-2-6	10.1.1.9	compute-3-6	10.1.1.136
compute-2-7	10.1.1.10	compute-3-7	10.1.1.137