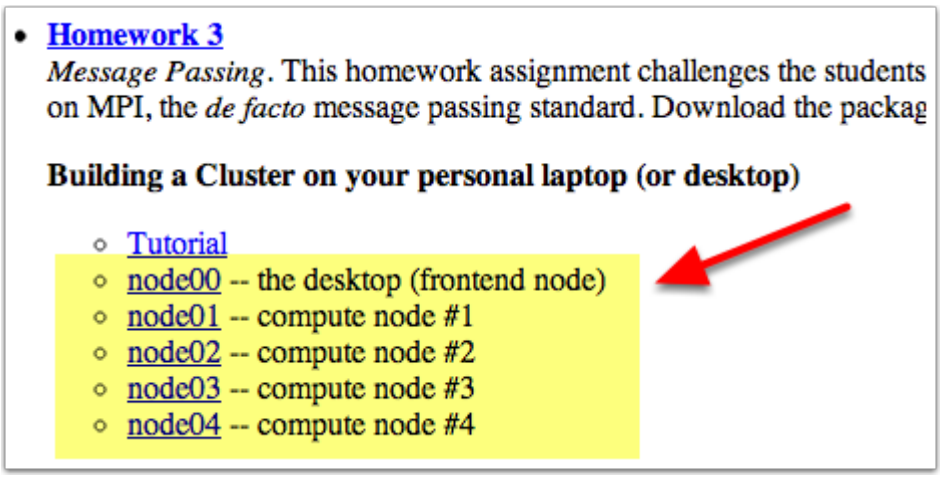
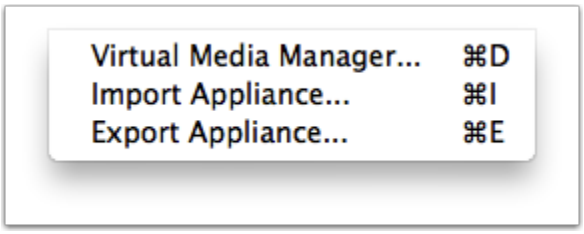
Building an MPI Cluster on your Laptop

Download the Appliances from the Website

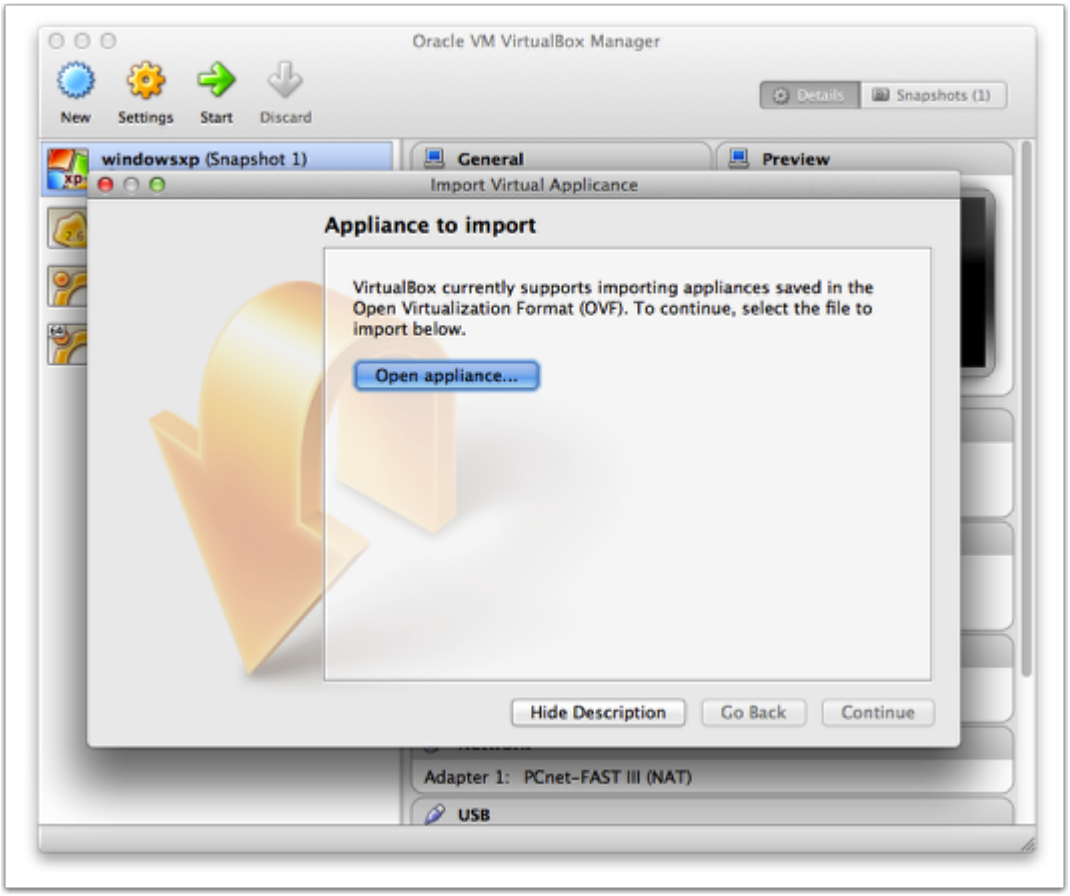


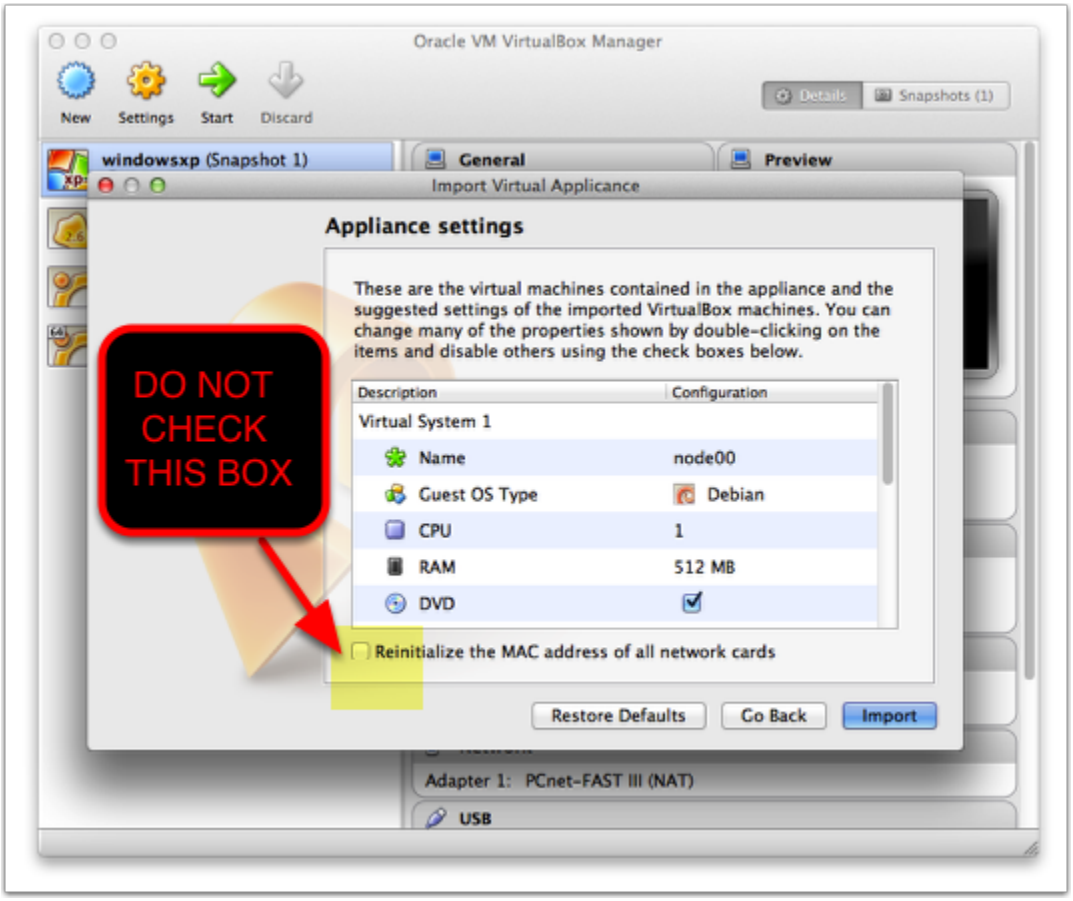
From the class' website download the virtualbox appliances for all five nodes.

Import the Appliance into VirtualBox

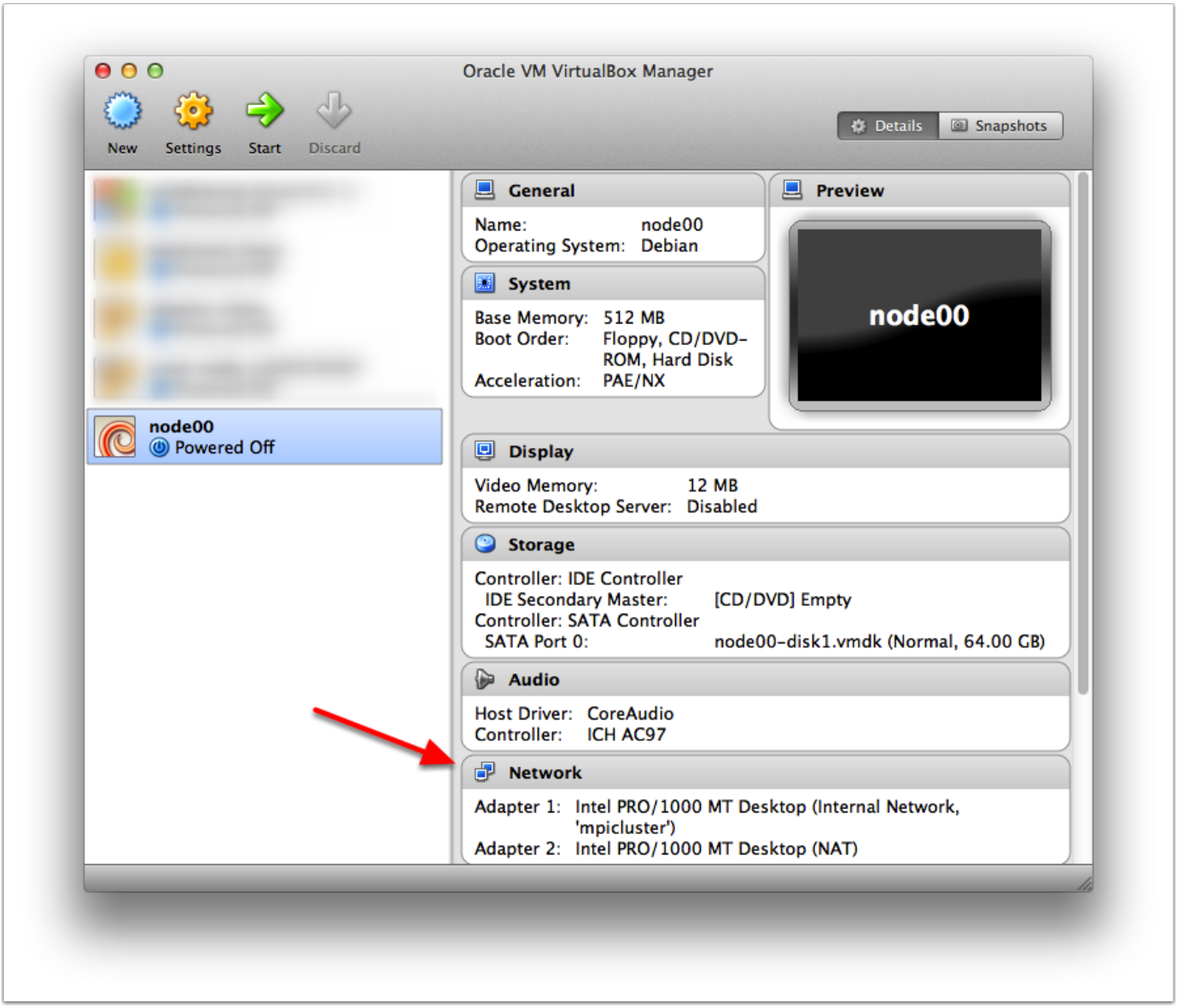


From the File menu select Import Appliance

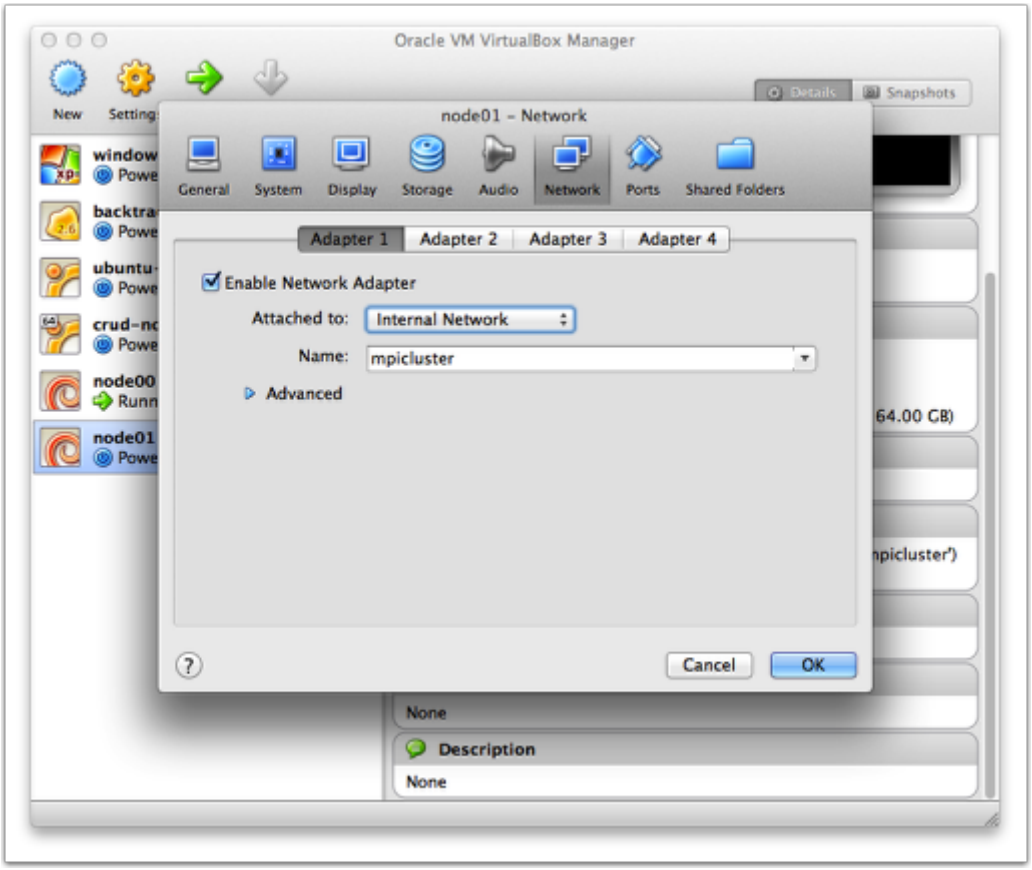

Oracle VM VirtualBox Manager
New
Settings
Start
Discard
Details
Snapshots (1)
windowsxp (Snapshot 1)
General
Preview
Import Virtual Applicance
Appliance to import
VirtualBox currently supports importing appliances saved in the Open Virtualization Format (OVF). To continue, select the file to import below.
Open appliance...
Hide Description
Go Back
Continue
Adapter 1: PCnet-FAST III (NAT)
USB

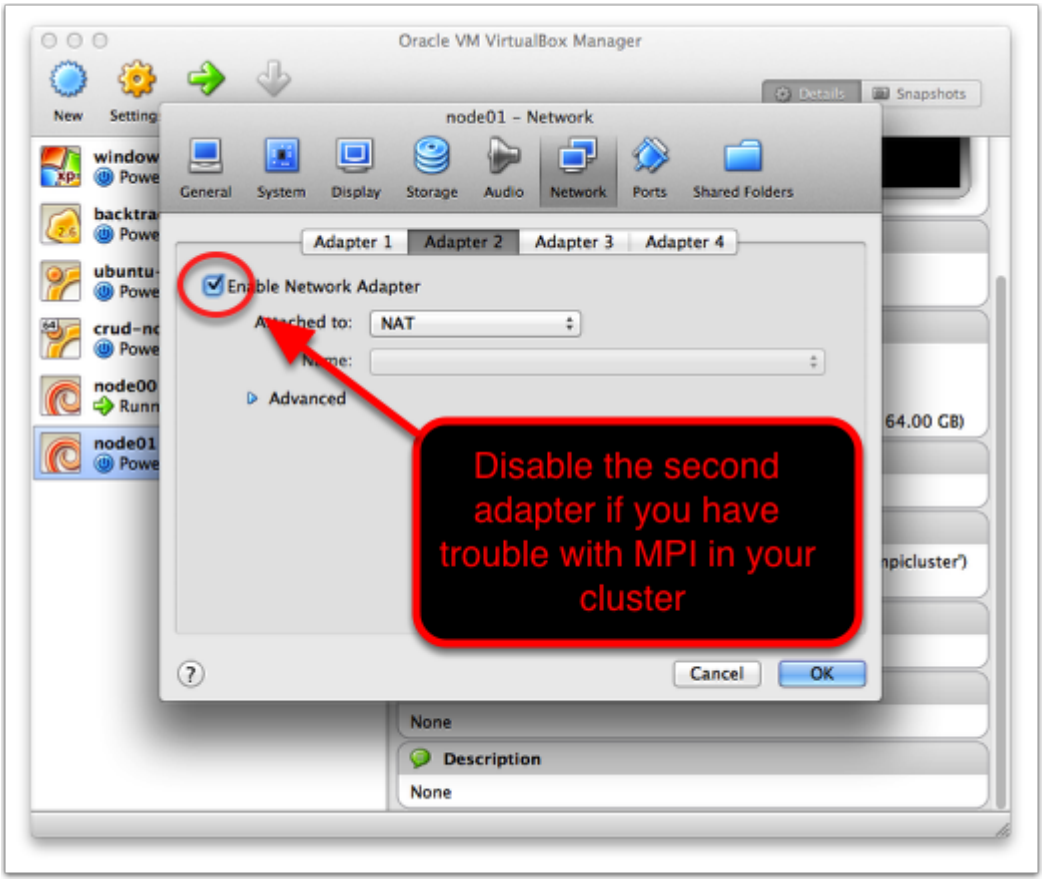

Oracle VM VirtualBox Manager
New
Settings
Start
Discard
Details
Snapshots (1)
windowsxp (Snapshot 1)
General
Preview
Import Virtual Applicance
Appliance settings
These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.
DO NOT CHECK THIS BOX
Description
Configuration
Virtual System 1
Name
node00
Guest OS Type
Debian
CPU
1
RAM
512 MB
DVD
Reinitialize the MAC address of all network cards
Restore Defaults
Go Back
Import
Adapter 1: PCnet-FAST III (NAT)
USB

Verify your network settings

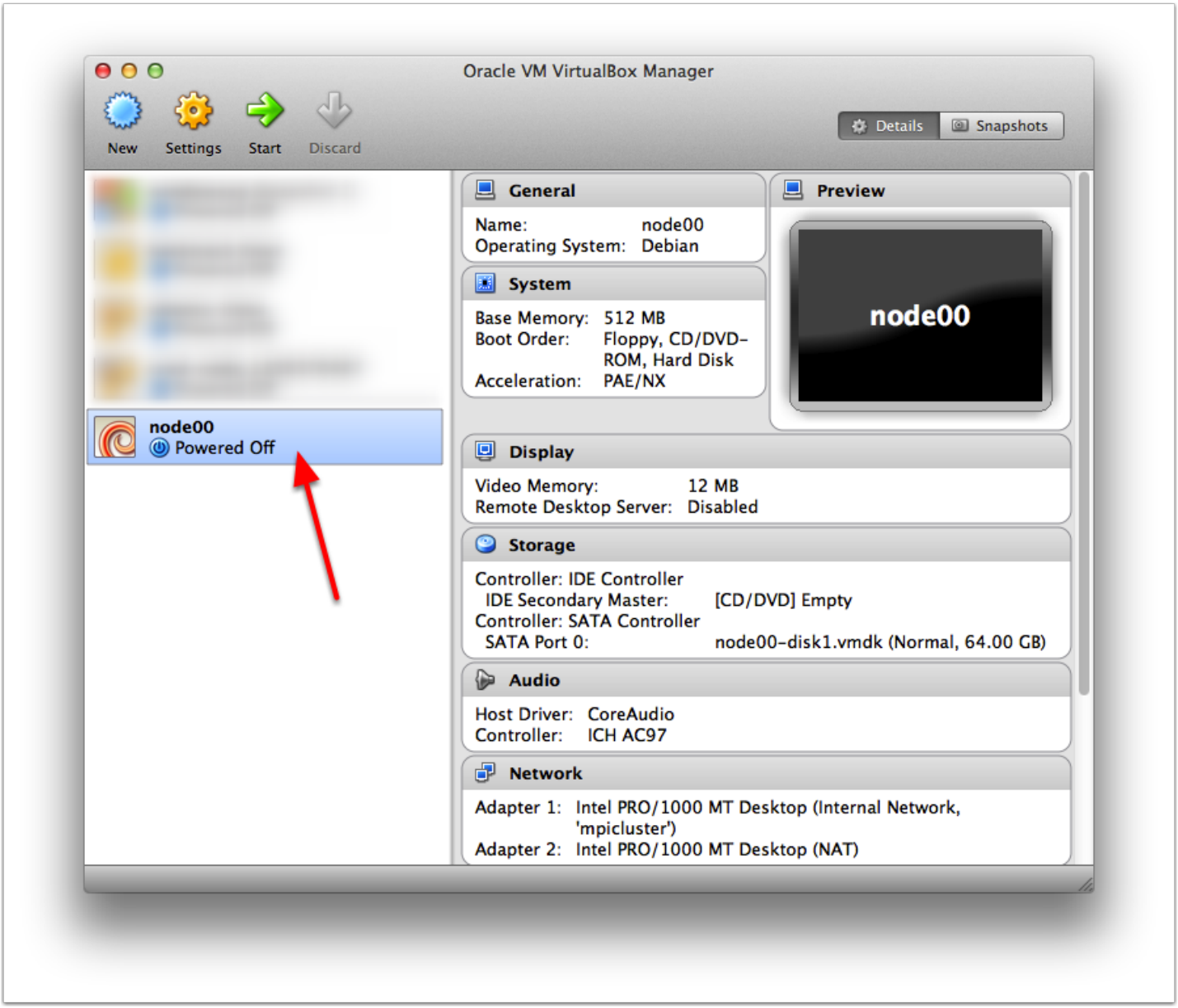


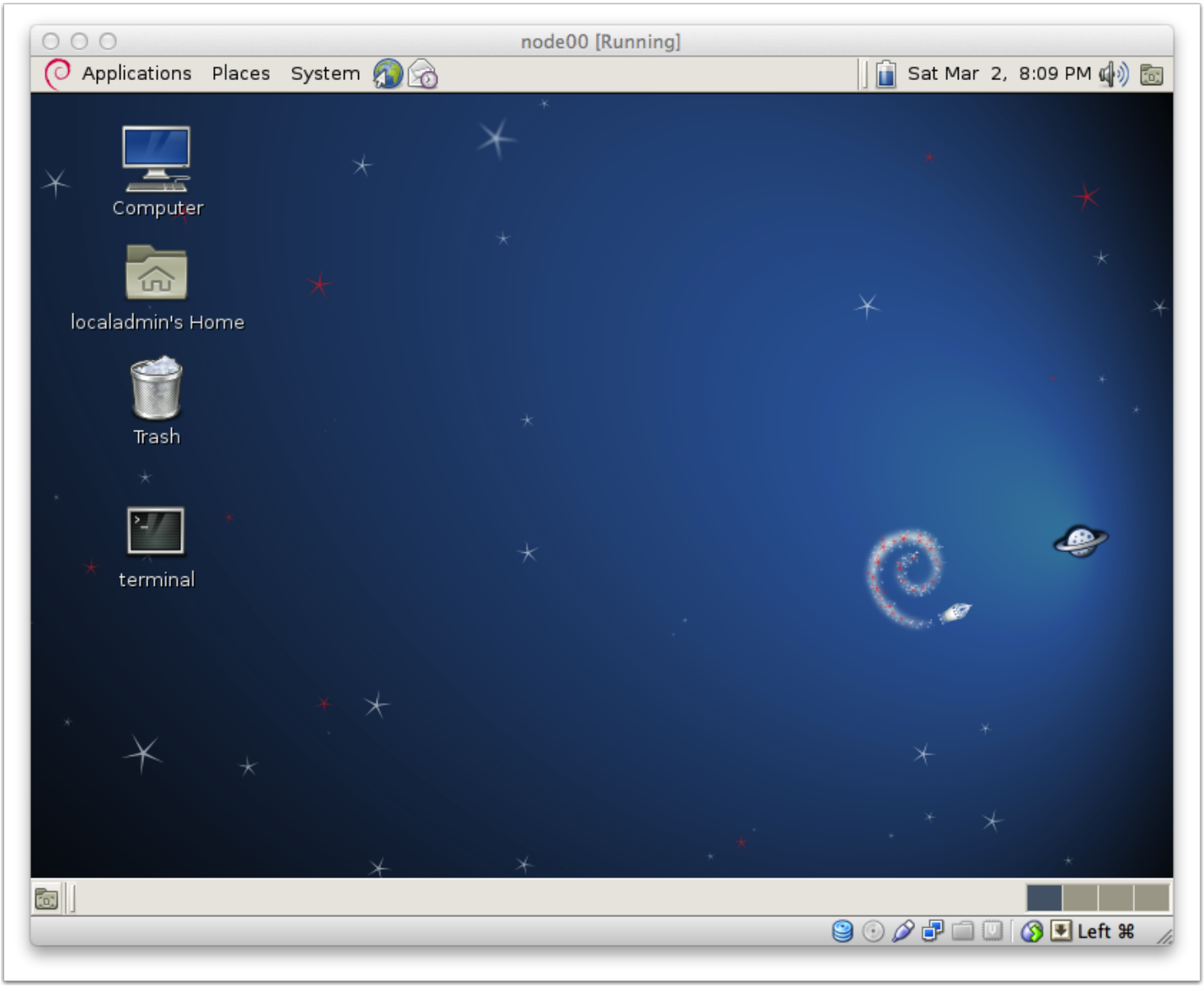
Click on the network link


Oracle VM VirtualBox Manager
node01 - Network
General
System
Display
Storage
Audio
Network
Ports
Shared Folders
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
mpicluster
Advanced
Cancel
OK
None
Description
None

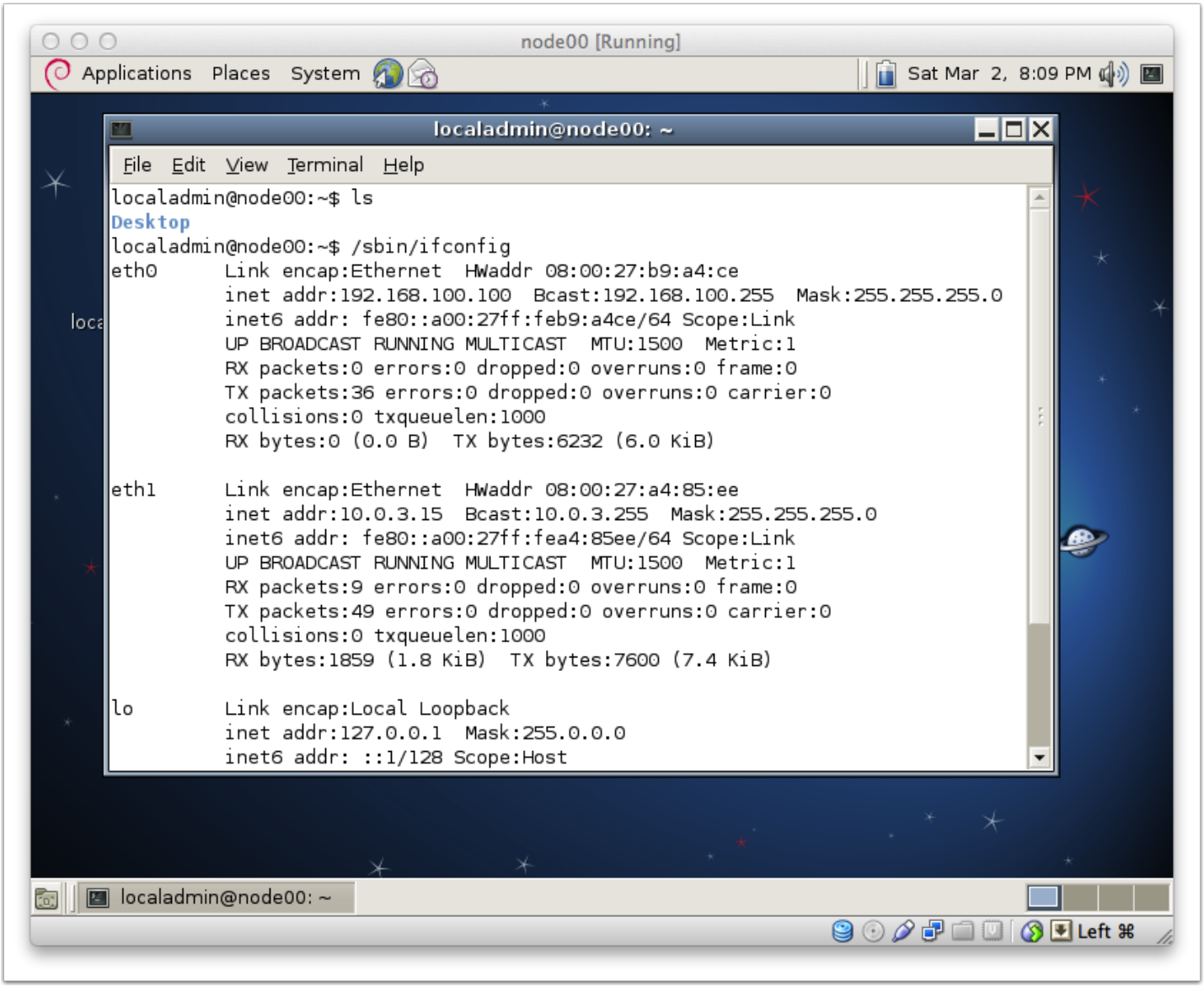

Oracle VM VirtualBox Manager
node01 - Network
General
System
Display
Storage
Audio
Network
Ports
Shared Folders
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
NAT
Advanced
Disable the second adapter if you have trouble with MPI in your cluster
Cancel
OK
None
Description
None

Boot your Desktop (frontend) node





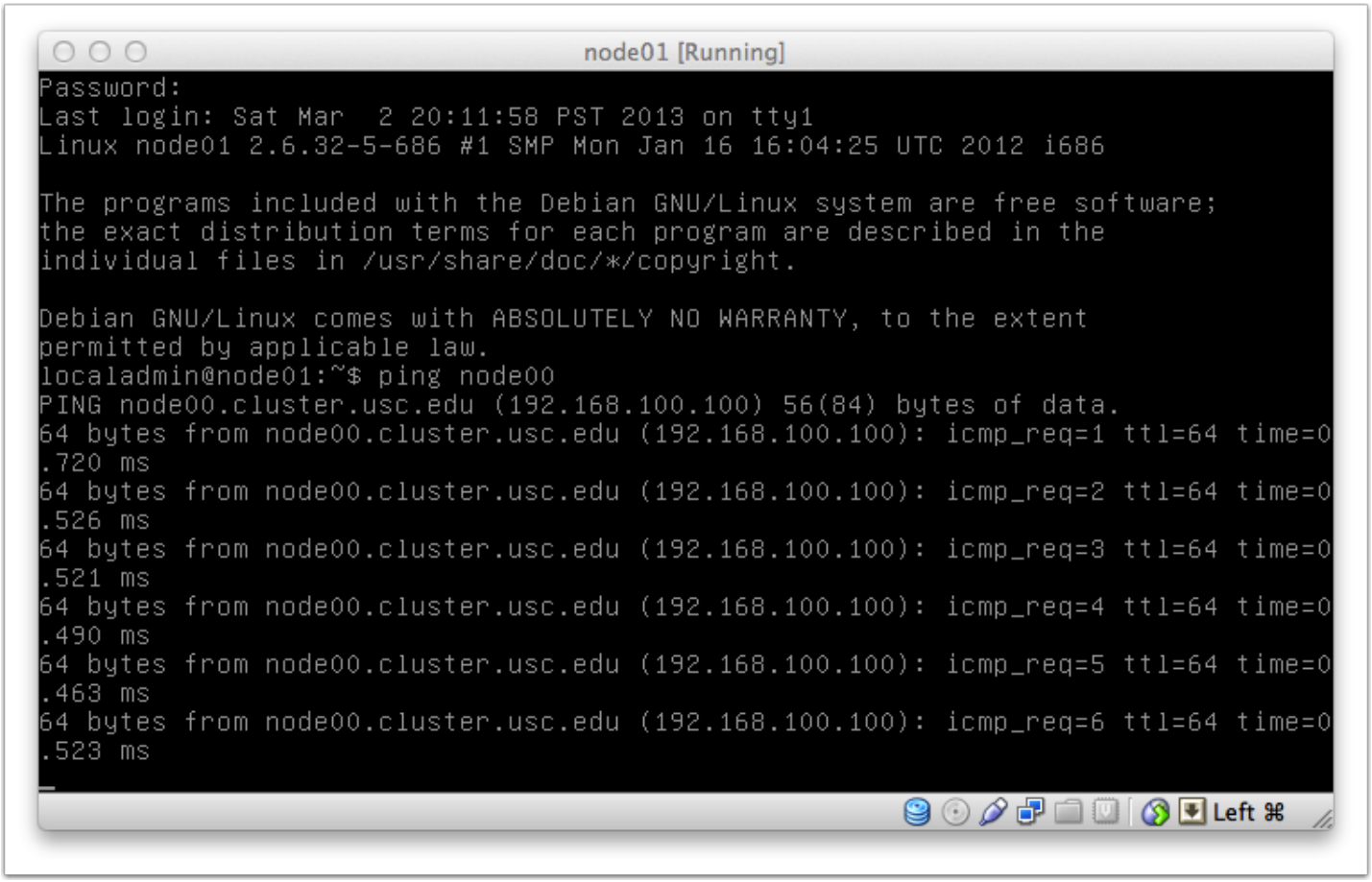
You should see this desktop when it finishes booting up. Depending on the speed of your machine the process can take anywhere from 20 seconds to several minutes.



Bring up the terminal and verify your network connection by typing **/sbin/ifconfig**. Your network setting should be similar to the above. If it's not, you need to shutdown the machine and make sure that you have two network interfaces. One is on the internal network and the other one is NAT.

If everything goes well, repeat the process for node01, node02, node03, and node04.

Pinging the node00 (master node) from node01 (compute #1)



The login for all the nodes are:

username: **localadmin**
password: **password**

If all goes well you should be able to ping the master node from node01. You should also be able to ssh between the nodes. Note that 99% of the time you do not need admin priviledge for doing the assignment. However, should you need admininstrator's access:

username: **root**
password: **password**