Virtual Cluster over OpenNebula (Progress Report)

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26/07/2011

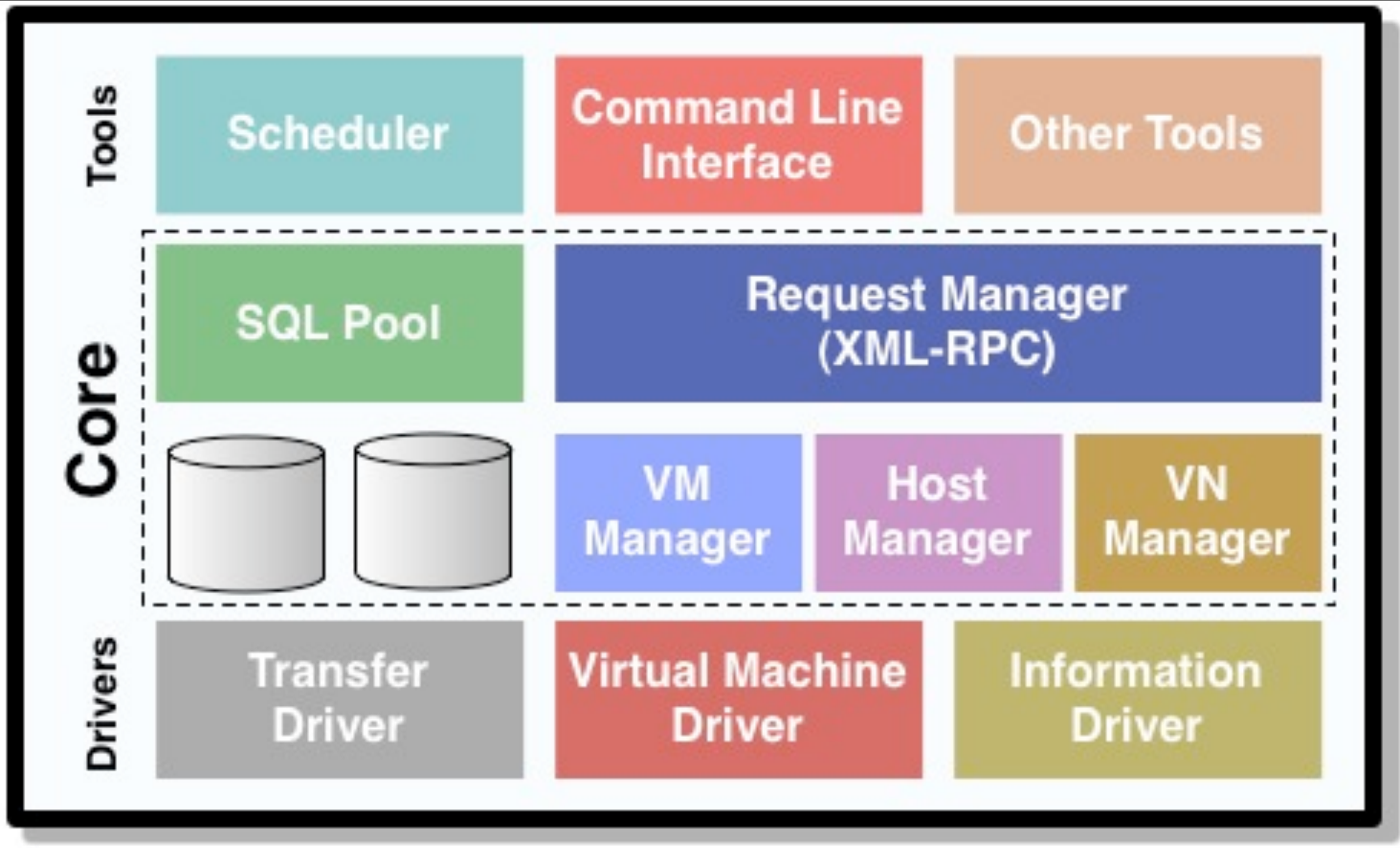
Agenda

1. OpenNebula Installation

2. Progress

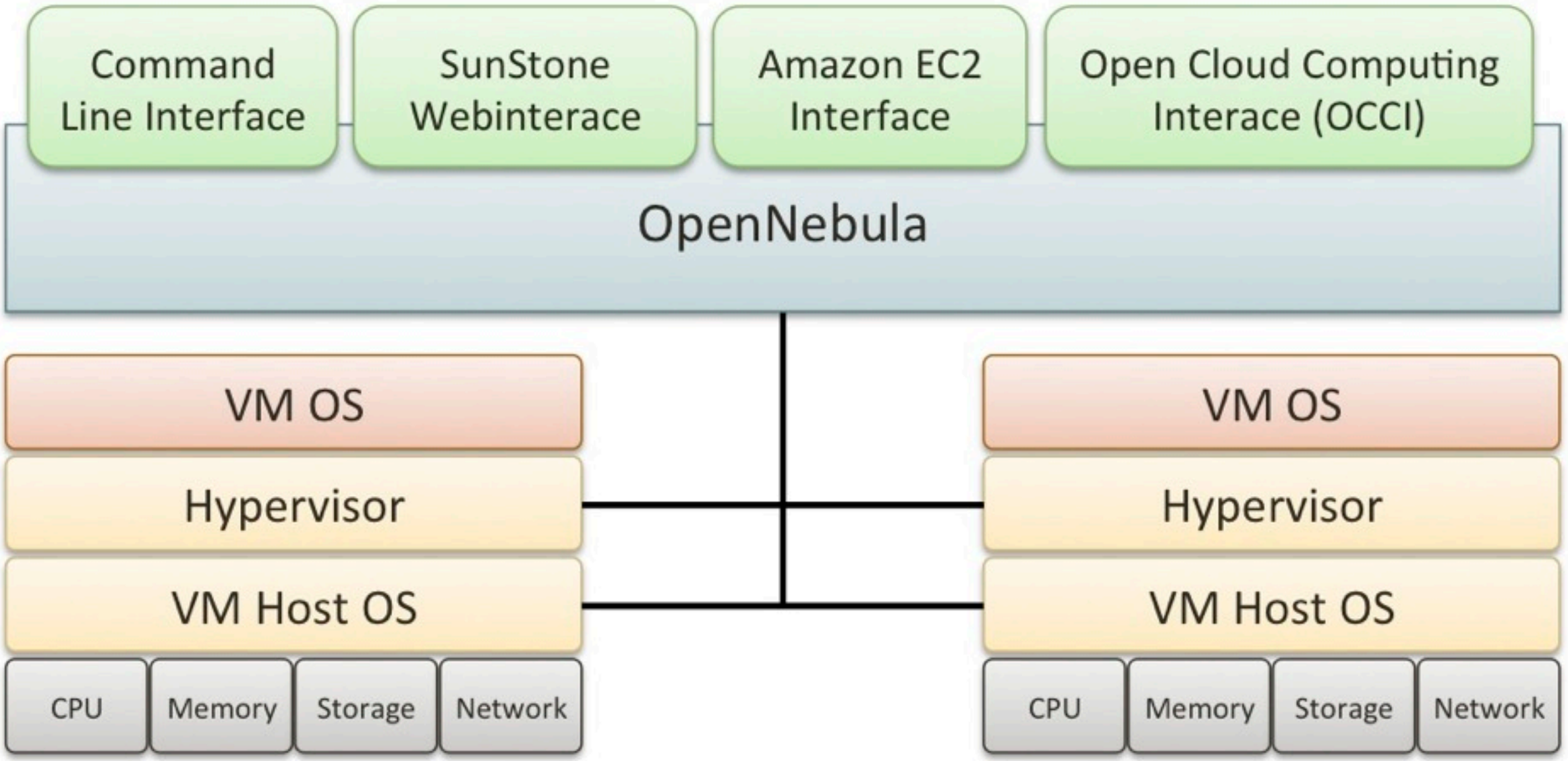
3. Issues & Problems

1. OpenNebula Installation



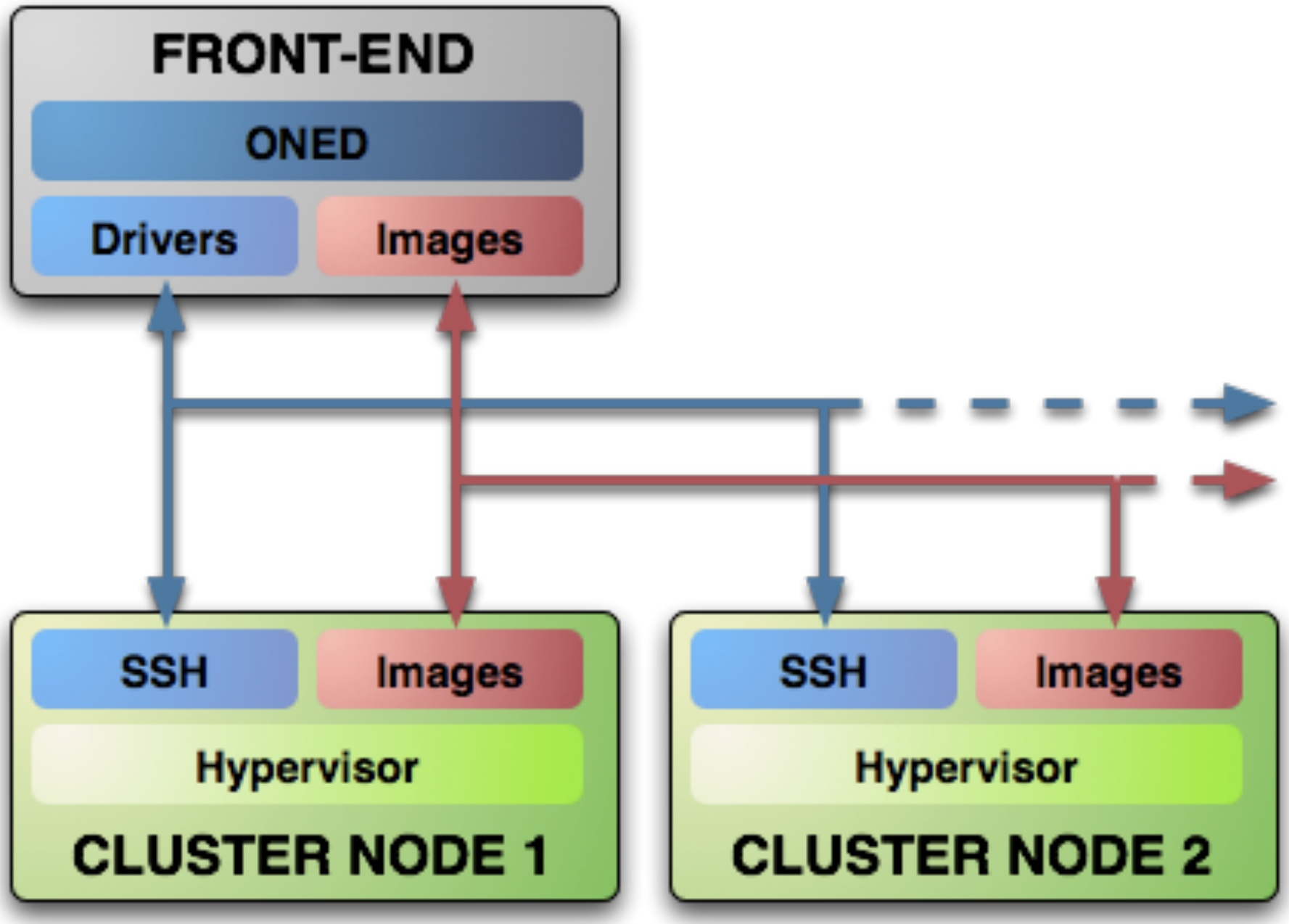
Architecture (1/3)

Internal



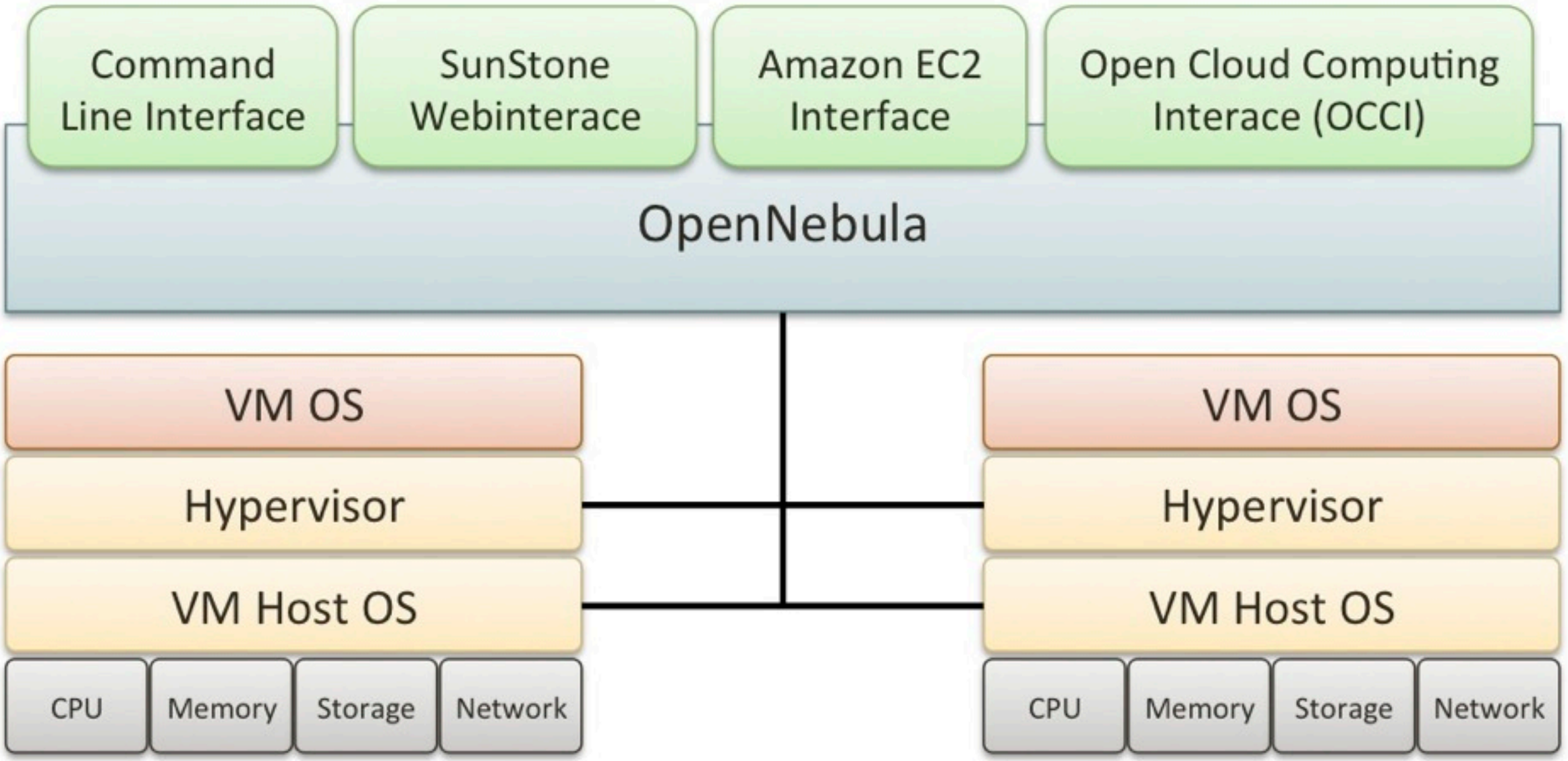
Architecture (2/3)

External



Architecture (3/3)

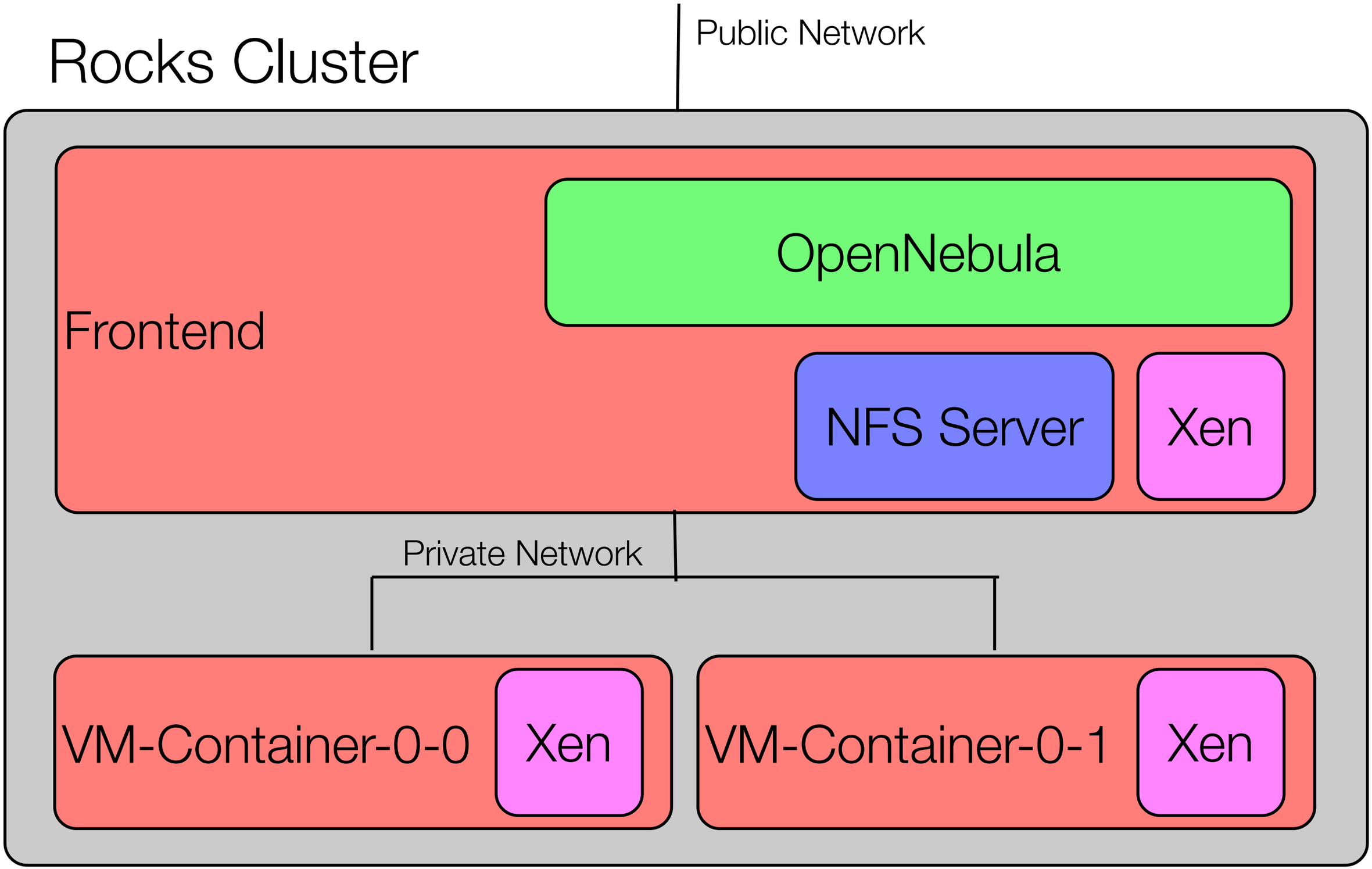
Installation



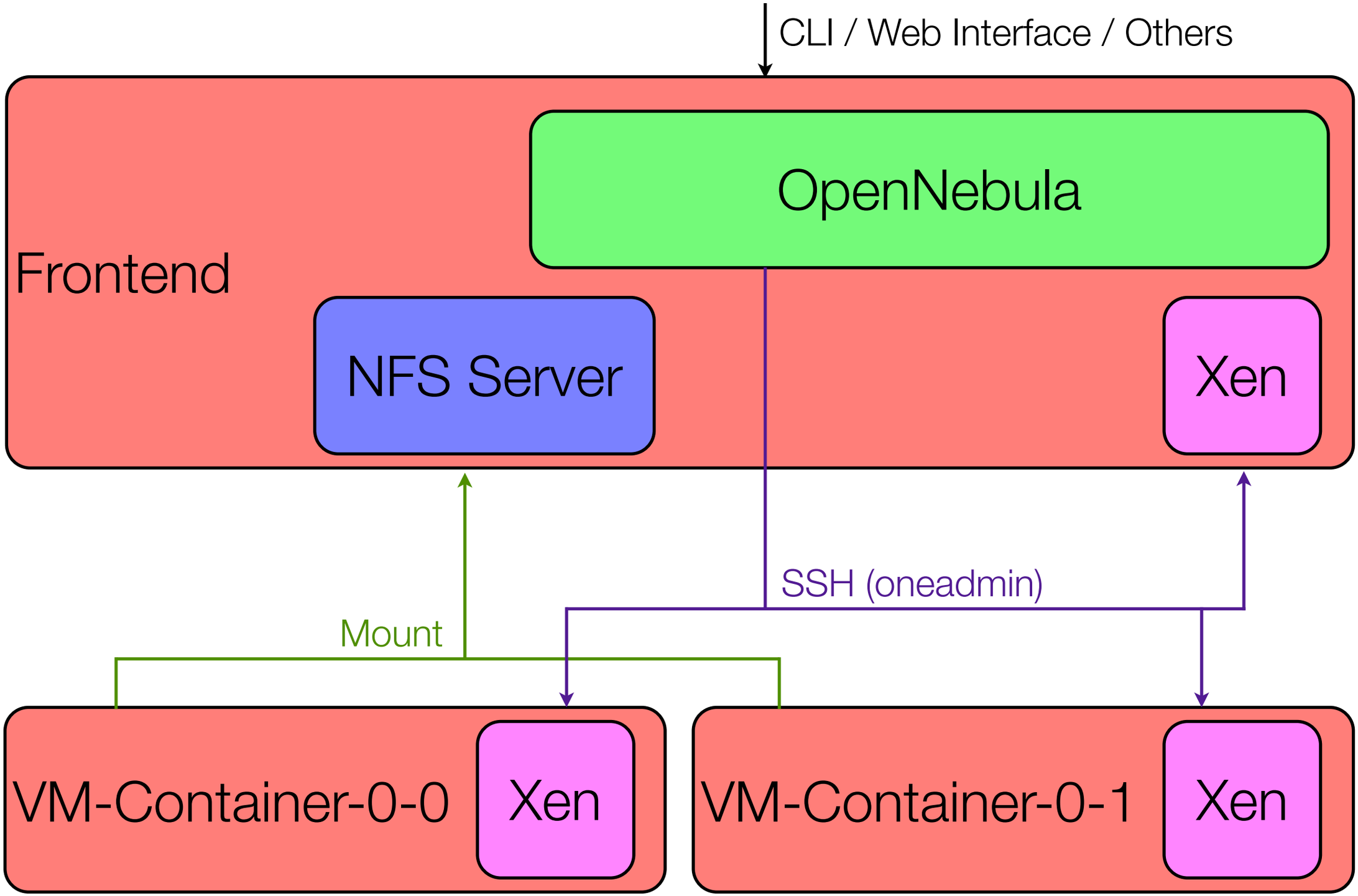
Architecture

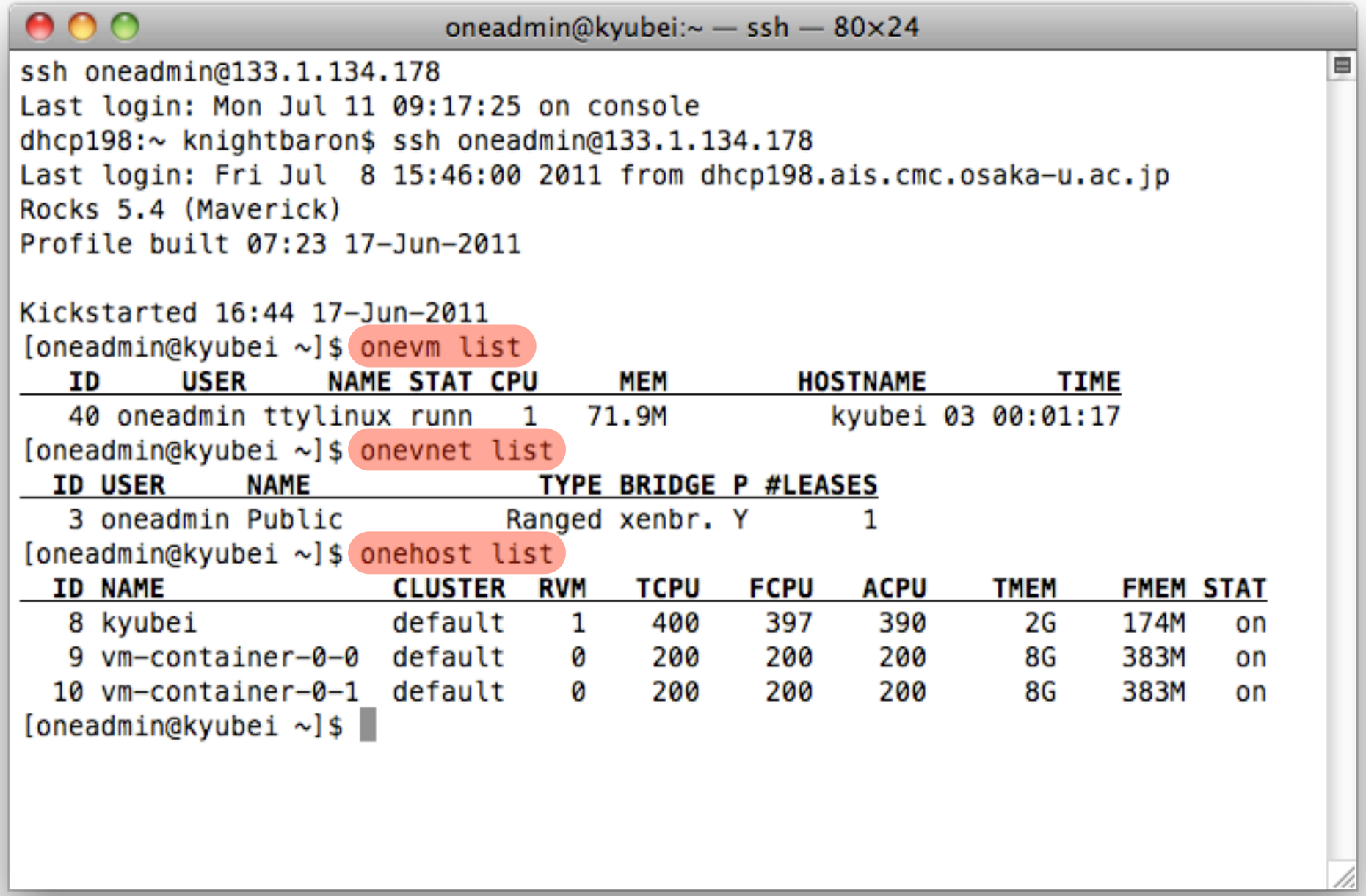
External

My Installation (1/2)

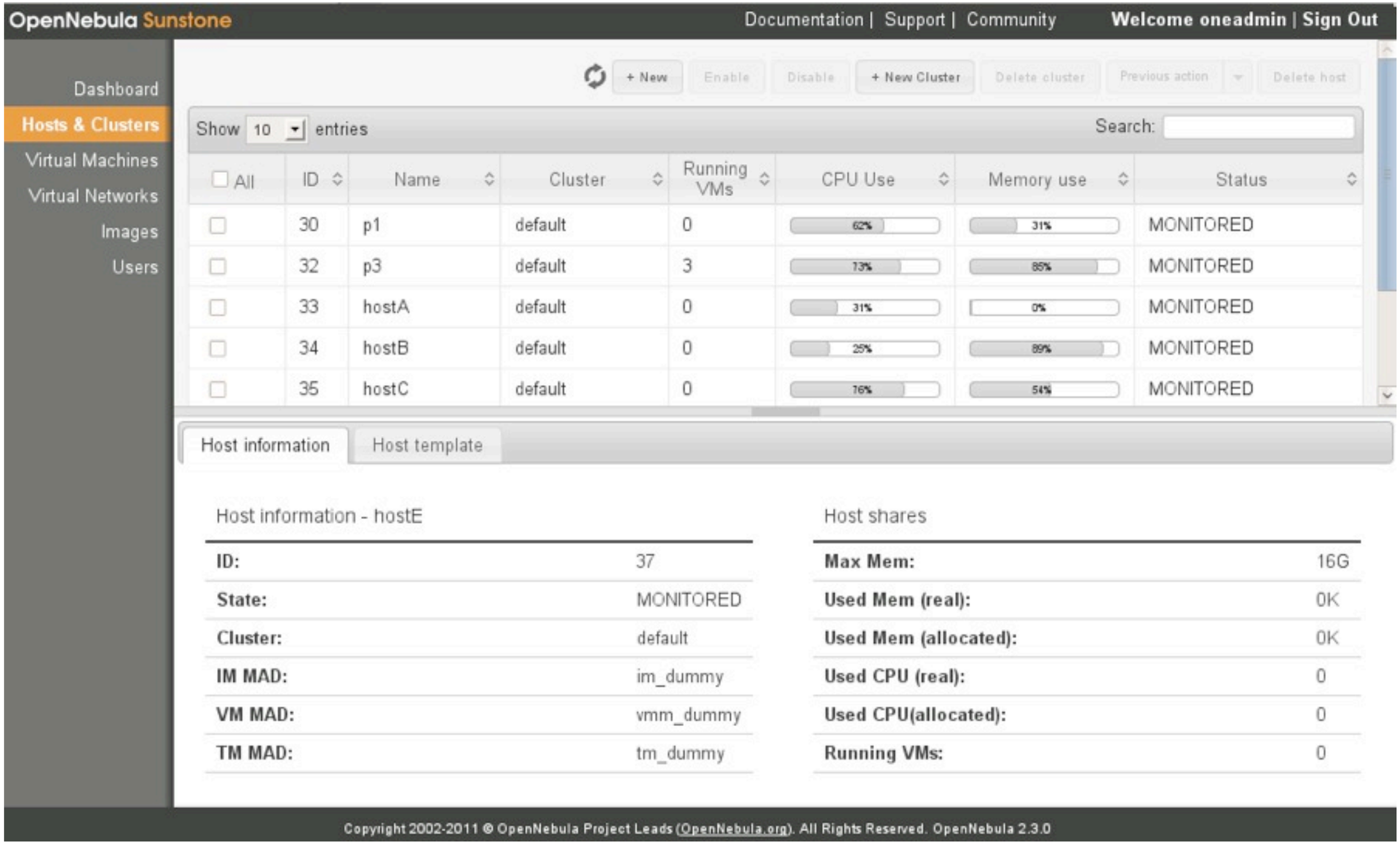


My Installation (2/2)



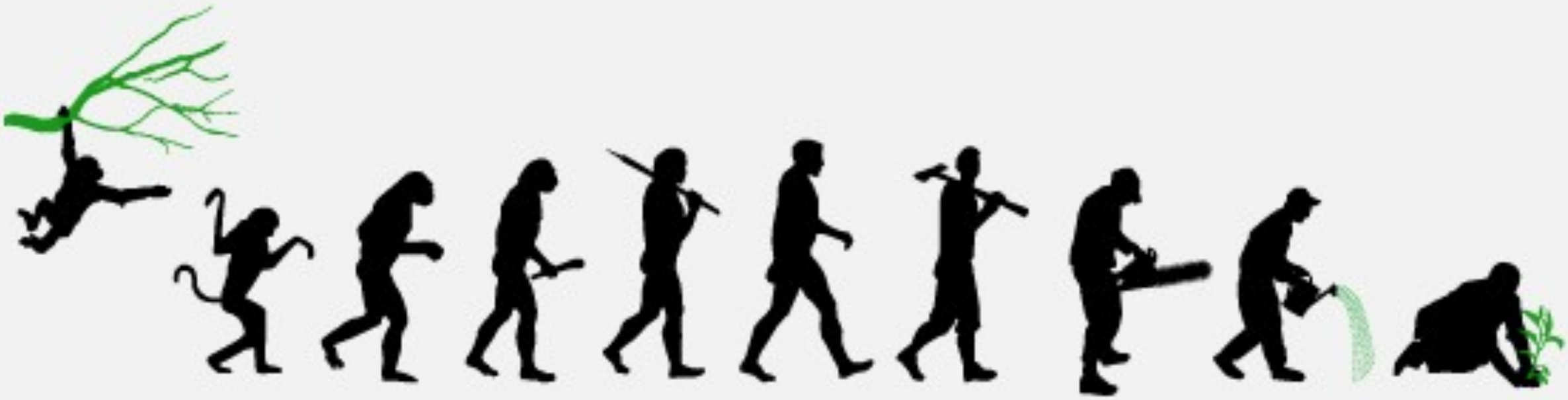


Command-line Interface



Web Interface

OpenNebula Sunstone



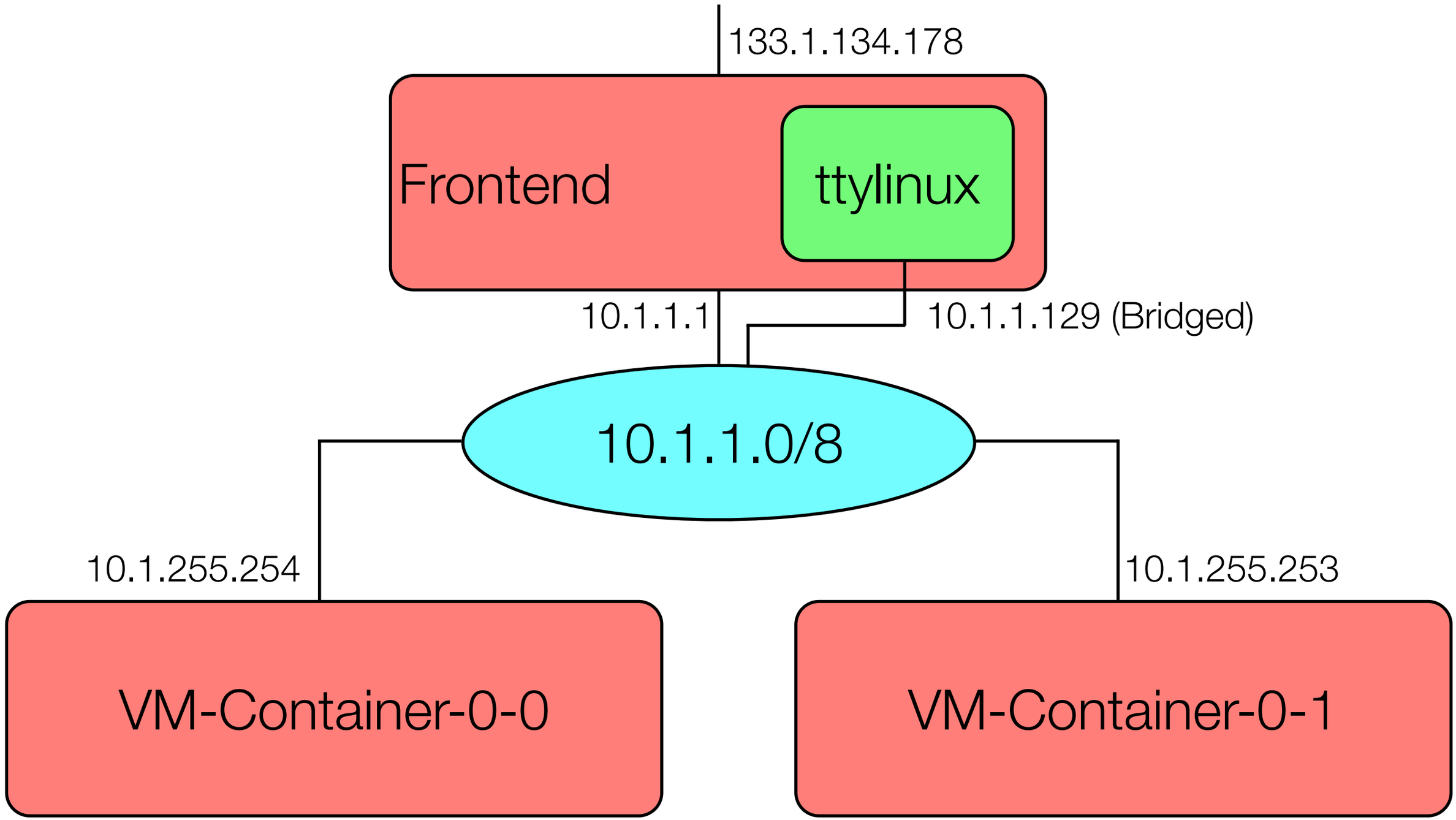
THE MARCH OF PROGRESS

2. Progress

What I have done

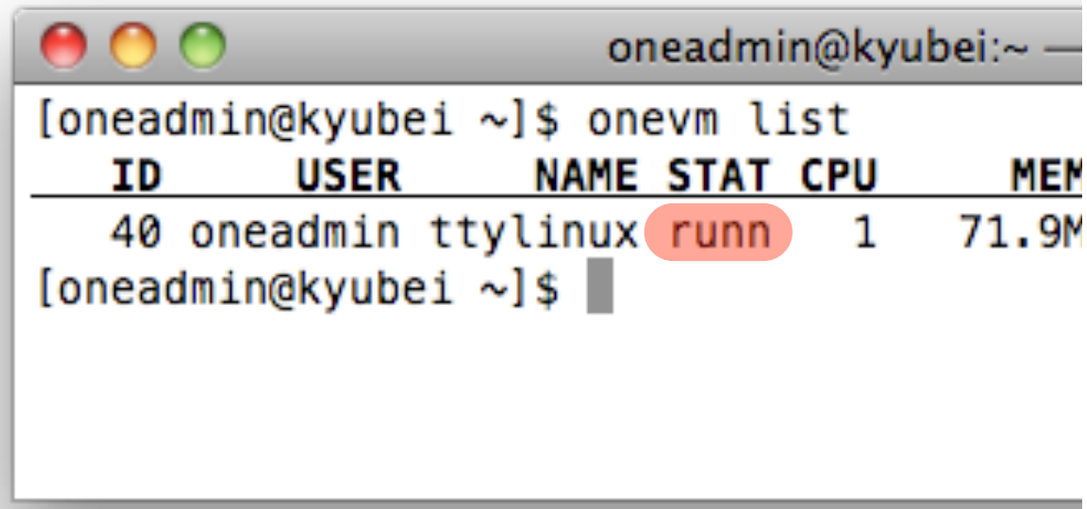
- Booted OpenNebula sample image (ttylinux) in *Fully Virtualized* mode with networking
- Researched on how OpenNebula handle Networking and Virtual Network
- Found a way to create OS image for OpenNebula
- Created OpenNebula-compatible CentOS (OS) image
    - Haven’t successfully booted it yet so I can’t verify the result

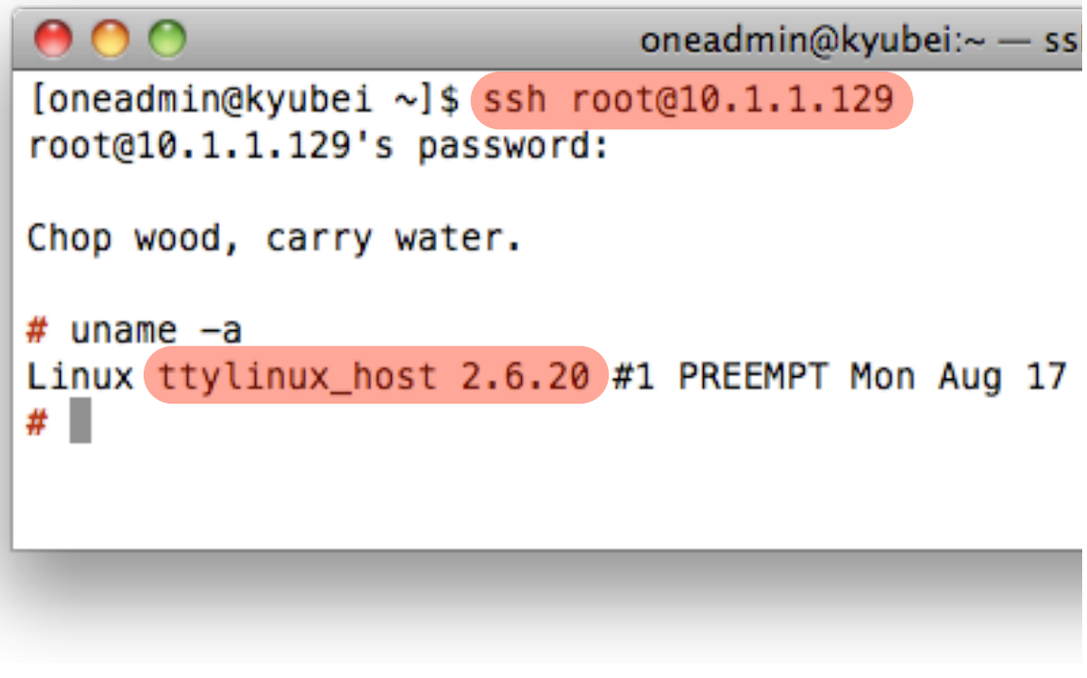
Current Setup



```
VIRTUAL MACHINE MONITORING
NET_TX          : 0
NET_RX          : 0
USED MEMORY     : 73604
USED CPU        : 1

VIRTUAL MACHINE TEMPLATE
CPU=0.1
DISK=[
  CLONE=YES,
  DISK_ID=0,
  IMAGE=ttylinux,
  IMAGE_ID=0,
  READONLY=NO,
  SAVE=NO,
  SOURCE=/share/apps/cloud/one/var//images/8625d
  TARGET=hda,
  TYPE=DISK ]
FEATURES=[
  ACPI=no ]
GRAPHICS=[
  LISTEN=0.0.0.0,
  PORT=5930,
  TYPE=vnc ]
MEMORY=64
NAME=one-40
NIC=[
  BRIDGE=xenbr.eth0,
  IP=10.1.1.129,
  MAC=02:00:0a:01:01:81,
  NETWORK=Public,
```





What I have been doing

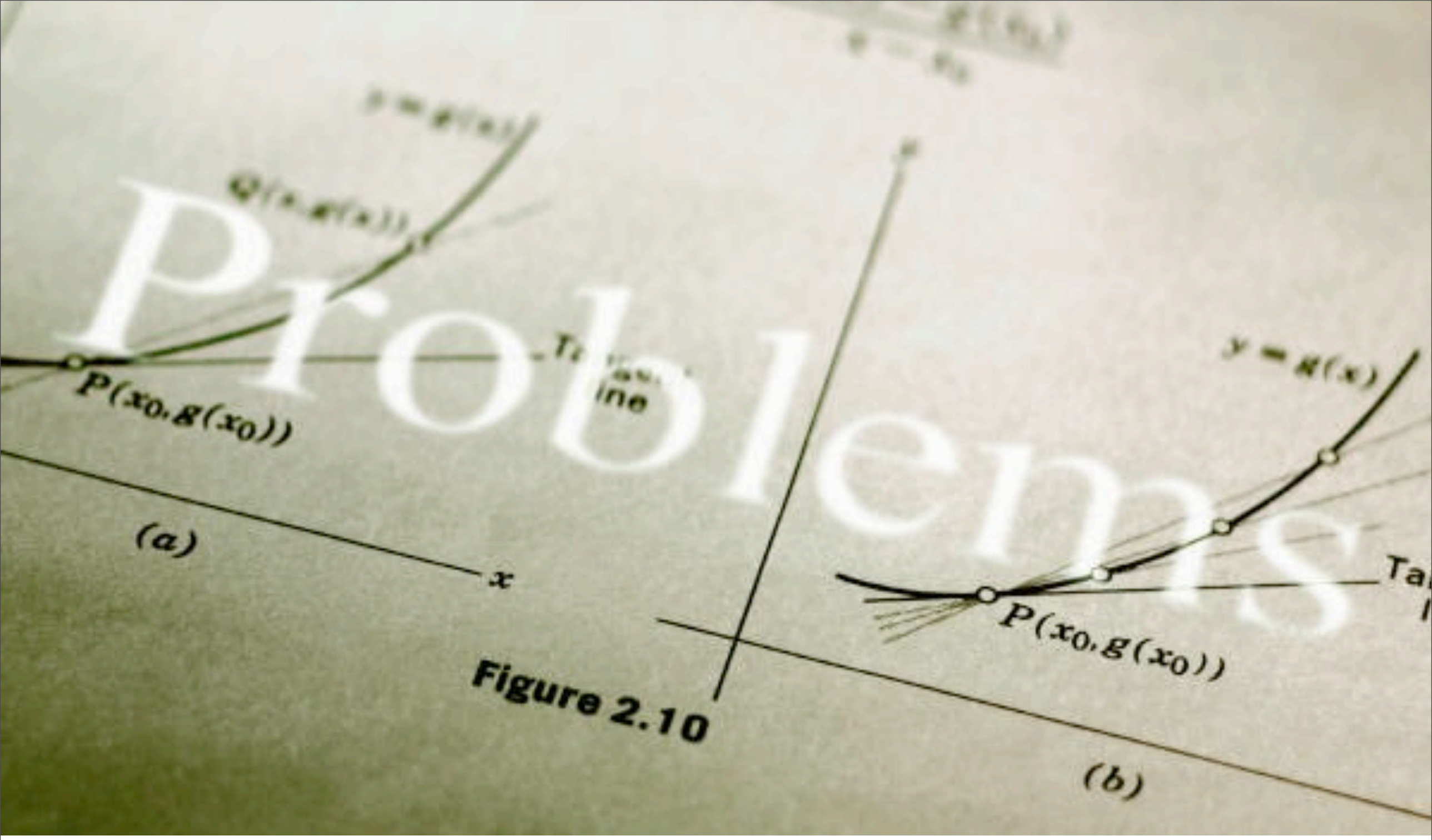
- Try to boot CentOS with OpenNebula
    - Tweaking configurations

What I am going to do

- Connecting multiple VMs together in the same virtual network
    - Start with multiple VMs in the same machine
    - Then in the same cluster
- For cross-site virtual network, I may need to manually set up overlay network

What I am planning to do

- Install Rocks Cluster in *Fully-virtualized* mode



3. Issues & Problems

Problems

- Automatic VNC port generation of OpenNebula doesn't play well with Xen
    - At least, VNC is working so I'll leave it at that that for now
- 2 out of 3 machines in my testbed do not support *CPU Virtualization*
    - Can work only in *Para-virtualized* mode
    - I'll use Bevis' machines after he finish with his work
- 1 machine that worked have only 2 GB of RAM
    - Extra RAM given to me by Ichikawa-sensei isn't work :-(

Issues

- Not many documentation on how to use OpenNebula with Xen.
- Not many OpenNebula user to talk to
- Kind of busy with exam an trip preparation
  - All exams will be finished by this Thursday (7/28)
- **Lab trip (8/11 - 8/12) overlap with Comic Market (8/12 - 8/14) :-(**

Conclusion

1.OpenNebula Installation

2.Progress

3.Issues & Problems

Questions?

My Questions

ありがとうございました

References

- http://opennebula.org/