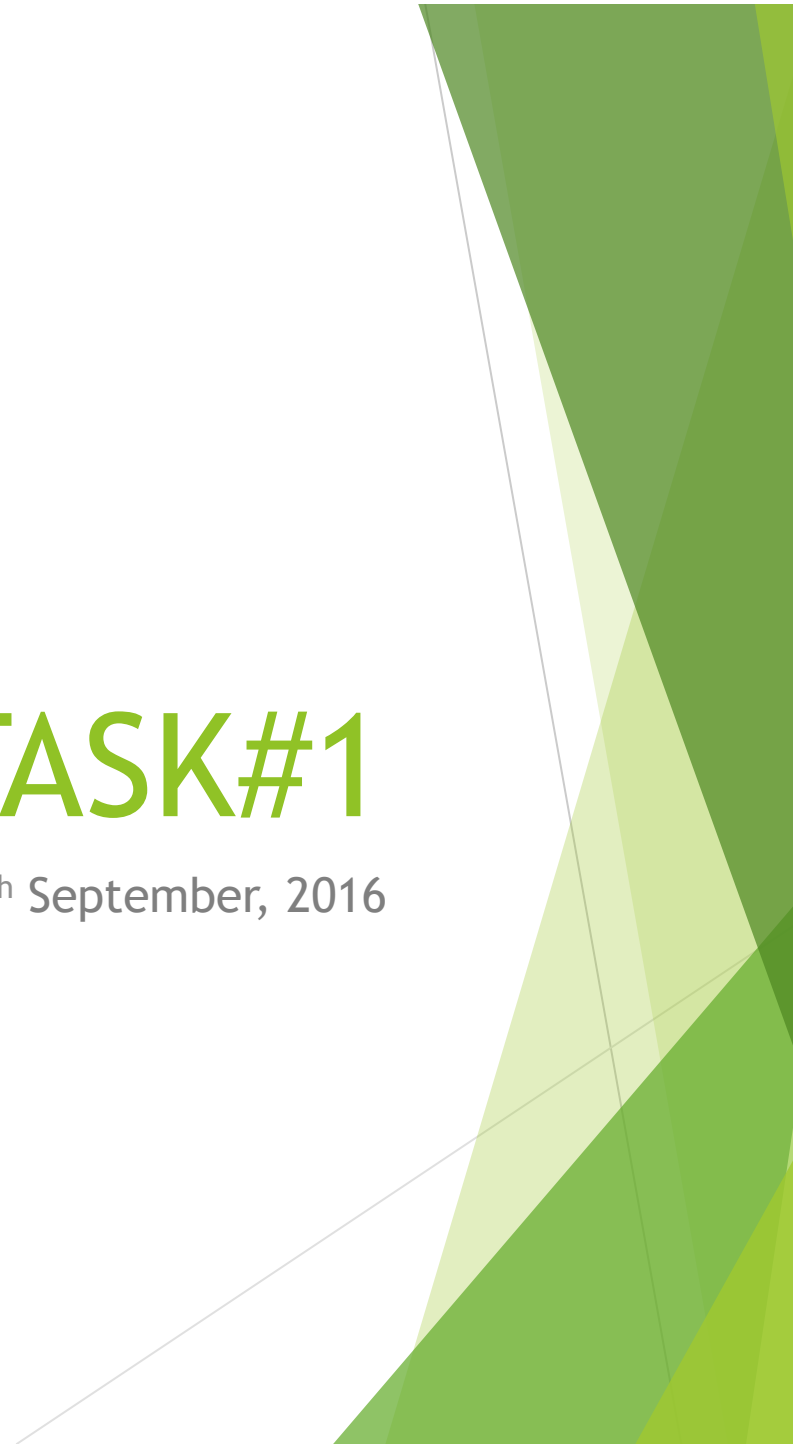


PRAGMA31 TASK#1

Student Hackathon 5th - 6th September, 2016

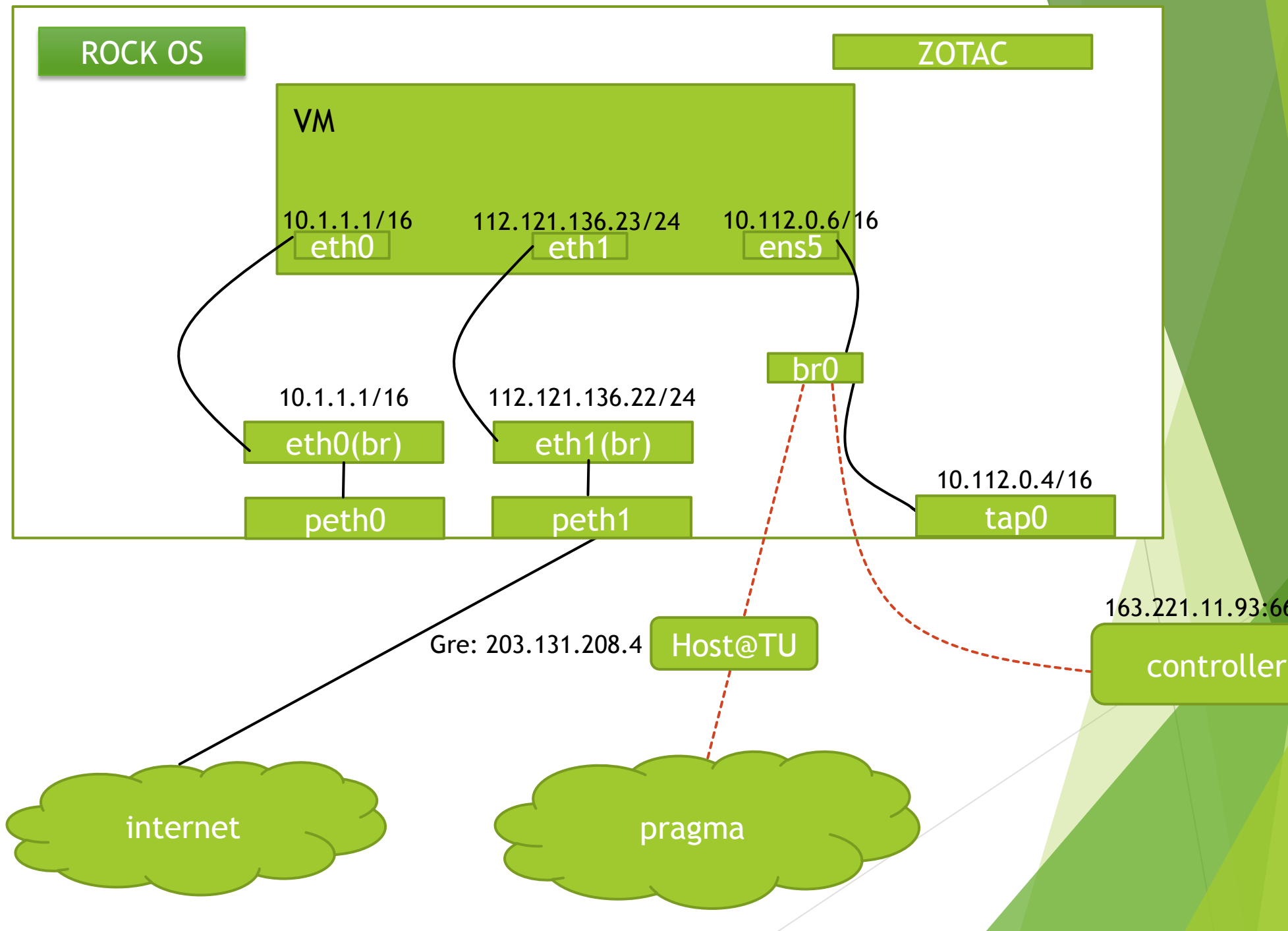


beginning of “us” for pragma31



Proof of Success





ROCK OS

ZOTAC

10.1.1.1/16

eth0(br)

peth0

112.121.136.22/24

eth1(br)

peth1

internet

The diagram illustrates a network setup on a ZOTAC device. It features two bridge interfaces, eth0(br) and eth1(br), each connected to a physical port, peth0 and peth1 respectively. The eth0(br) interface is associated with the IP address 10.1.1.1/16, and the eth1(br) interface is associated with 112.121.136.22/24. A line connects the peth1 port to a cloud labeled 'internet', indicating an external network connection.

. Rock Cluster Frontend

```
[root@pragma01 ~]# rocks list roll
```

NAME	VERSION	ARCH	ENABLED
ganglia:	6.2	x86_64	yes
kernel:	6.2	x86_64	yes
hpc:	6.2	x86_64	yes
web-server:	6.2	x86_64	yes
python:	6.2	x86_64	yes
os:	6.2	x86_64	yes
base:	6.2	x86_64	yes
perl:	6.2	x86_64	yes
area51:	6.2	x86_64	yes
kvm:	6.2	x86_64	yes

ROCK OS

ZOTAC

VM

10.1.1.1/16

eth0

112.121.136.23/24

eth1

10.1.1.1/16

eth0(br)

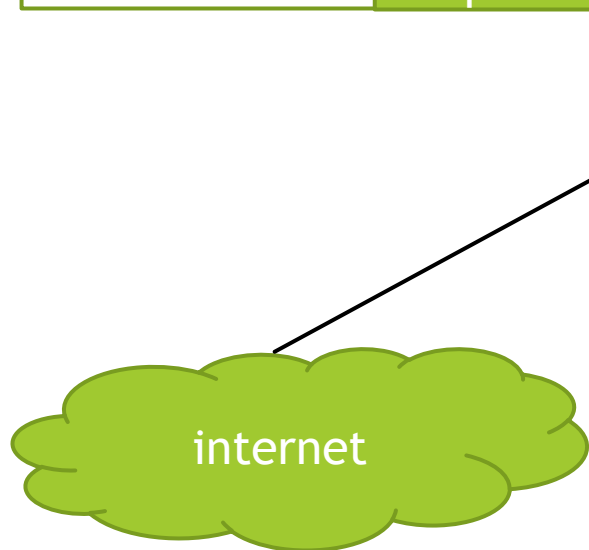
112.121.136.22/24

eth1(br)

peth0

peth1

internet



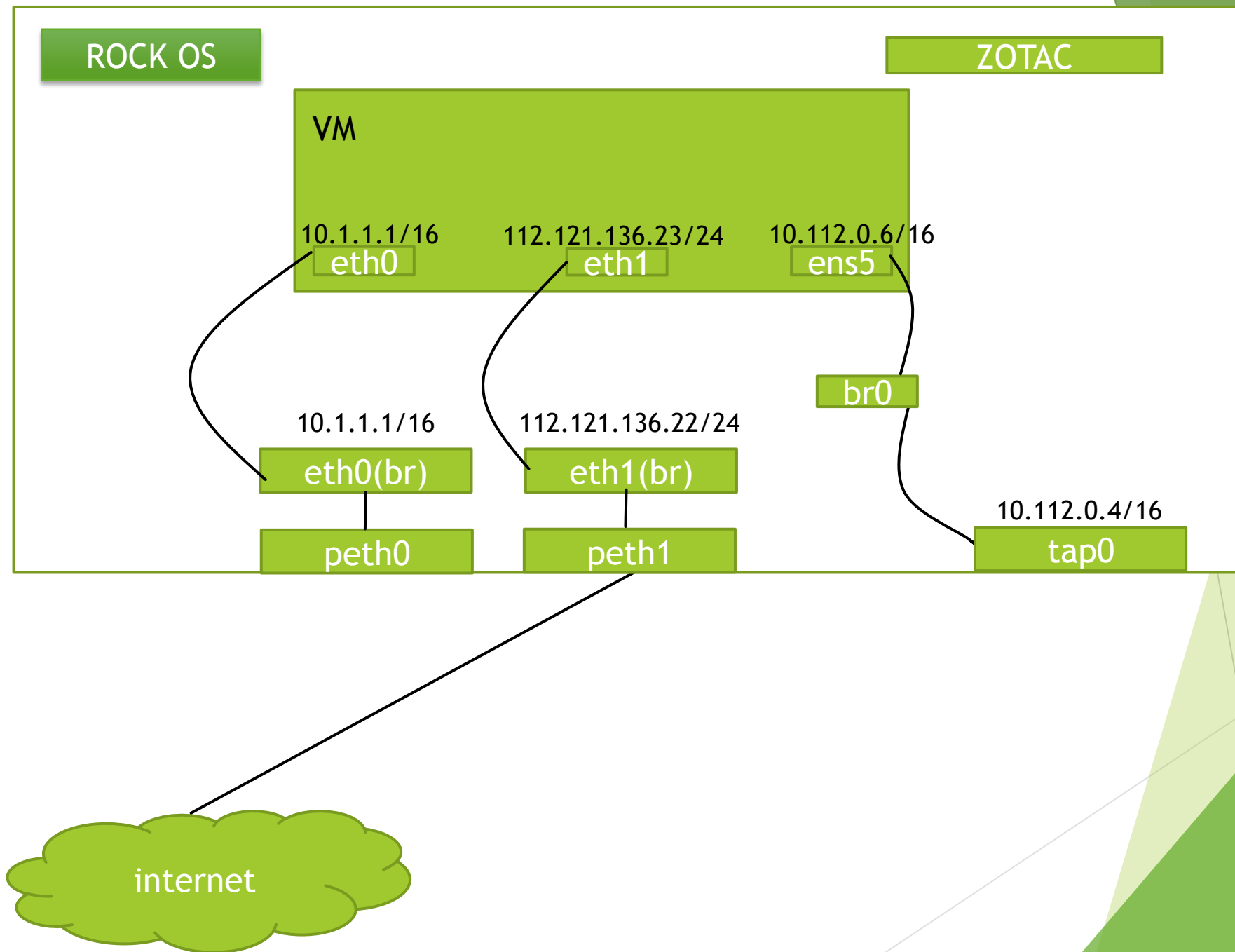
. PRAGMA Boot

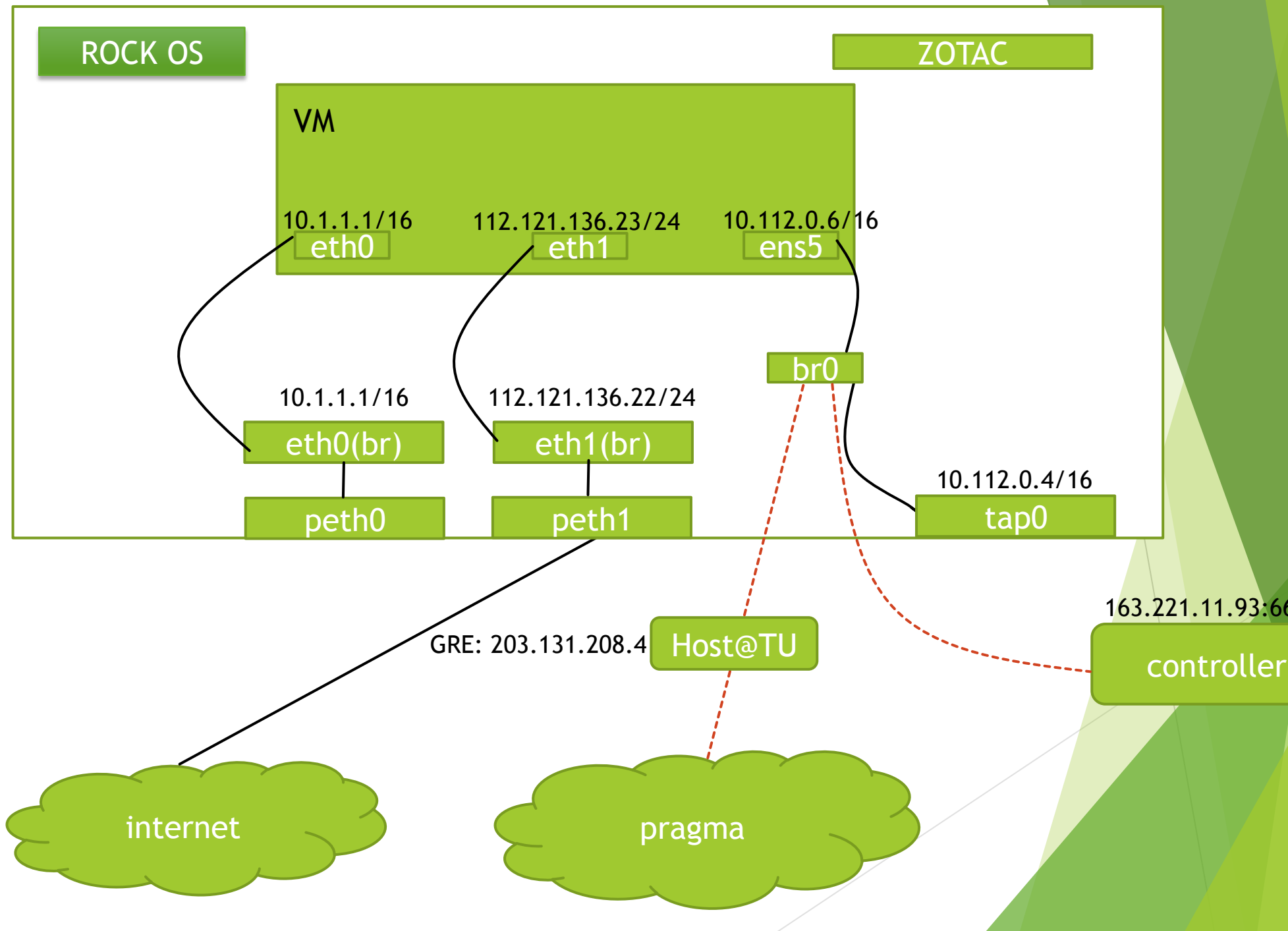
1. Checkout the repository

- ▶ Check the contents of files `site_conf.conf` and `kvm_rocks.conf`

2. Check the configuration

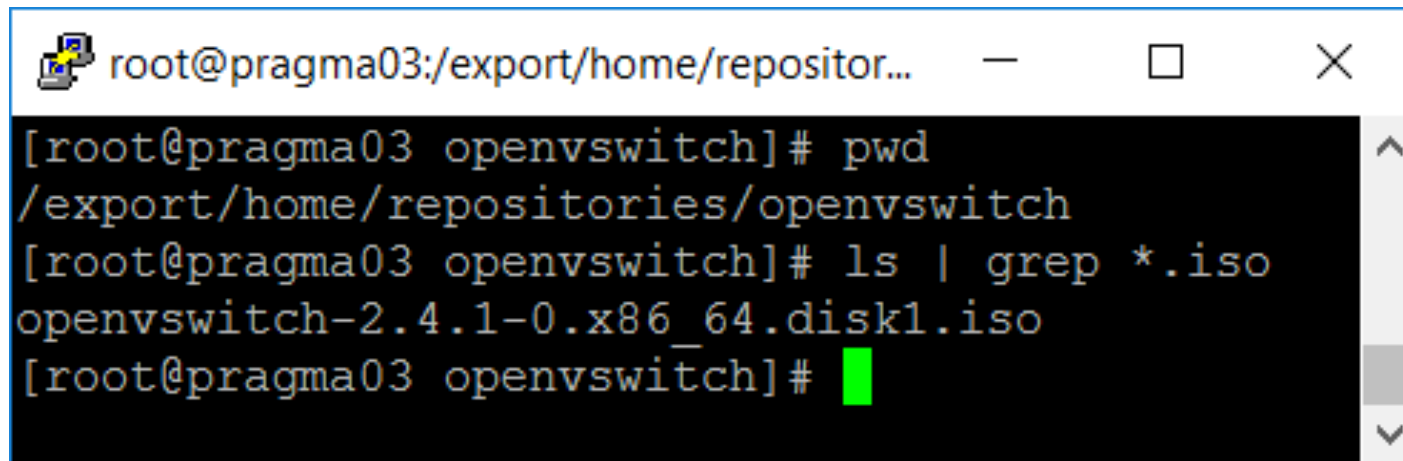
- ▶ Try using command “`pragma boot hku_biolinux 0 loglevel=DEBUG`”
- ▶ Check the log at `/var/log/pragma_boot/`





. Open vSwitch

1. Checkout the roll file



```
root@pragma03:/export/home/repositor...  
[root@pragma03 openvswitch]# pwd  
/export/home/repositories/openvswitch  
[root@pragma03 openvswitch]# ls | grep *.iso  
openvswitch-2.4.1-0.x86_64.disk1.iso  
[root@pragma03 openvswitch]#
```

Open vSwitch

2. Create the Open vSwitch repository

```
root@pragma03:/export/home/repositories/openvswitch
[root@pragma03 openvswitch]# vi /tmp/add-openvswitch-roll
#!/bin/sh
yum clean all
yum install kmod-openvswitch
[ $? -ne 0 ] && \
echo "# YUM failed - trying with RPM" && \
rpm -Uvh --force --nodeps http://pragma03.cs.tu.ac.th/install/rocks-dist/x86_64/RedHat/RPMS/kmod-openvswitch-2.4.1-1.el6.x86_64.rpm

yum install openvswitch
[ $? -ne 0 ] && \
echo "# YUM failed - trying with RPM" && \
rpm -Uvh --force --nodeps http://pragma03.cs.tu.ac.th/install/rocks-dist/x86_64/RedHat/RPMS/openvswitch-2.4.1-1.x86_64.rpm

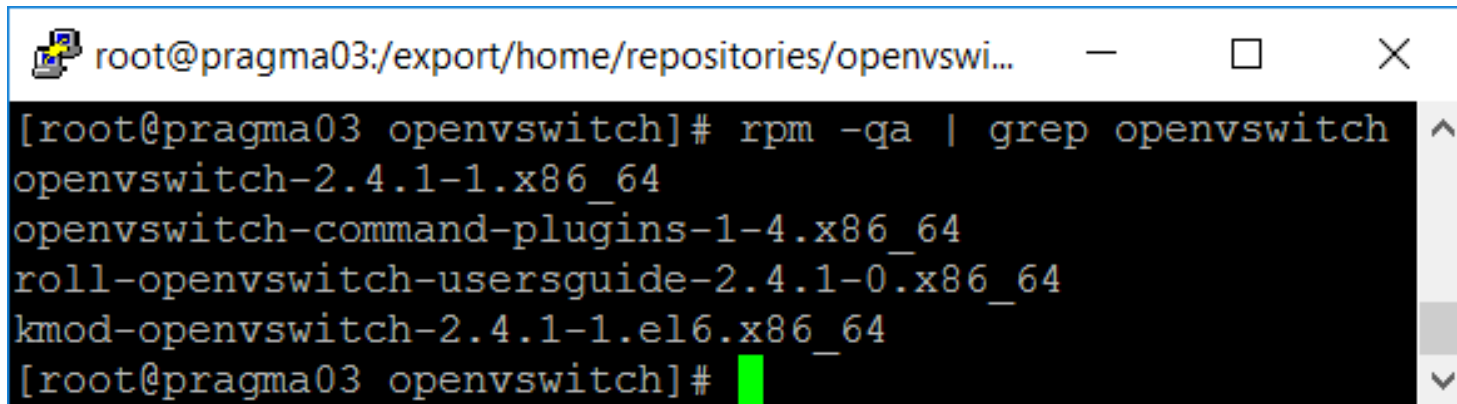
yum install openvswitch-command-plugins
[ $? -ne 0 ] && \
echo "# YUM failed - trying with RPM" && \
rpm -Uvh --force --nodeps http://pragma03.cs.tu.ac.th/install/rocks-dist/x86_64/RedHat/RPMS/openvswitch-command-plugins-1-4.x86_64.rpm

yum install roll-openvswitch-usersguide
[ $? -ne 0 ] && \
echo "# YUM failed - trying with RPM" && \
rpm -Uvh --force --nodeps http://pragma03.cs.tu.ac.th/install/rocks-dist/x86_64/RedHat/RPMS/roll-openvswitch-usersguide-2.4.1-0.x86_64.rpm

cat > /tmp/tmpgUxg5Y << 'ROCKS-KS-POST'
#!/bin/bash
```

. Open vSwitch

2. Install Open vSwitch

A terminal window with a blue title bar. The title bar text is 'root@pragma03:/export/home/repositories/openvswi...'. The terminal content shows a command 'rpm -qa | grep openvswitch' and its output listing four RPM packages: 'openvswitch-2.4.1-1.x86_64', 'openvswitch-command-plugins-1-4.x86_64', 'roll-openvswitch-usersguide-2.4.1-0.x86_64', and 'kmod-openvswitch-2.4.1-1.el6.x86_64'. The prompt is '[root@pragma03 openvswitch]#'.

```
root@pragma03:/export/home/repositories/openvswi...  
[root@pragma03 openvswitch]# rpm -qa | grep openvswitch  
openvswitch-2.4.1-1.x86_64  
openvswitch-command-plugins-1-4.x86_64  
roll-openvswitch-usersguide-2.4.1-0.x86_64  
kmod-openvswitch-2.4.1-1.el6.x86_64  
[root@pragma03 openvswitch]#
```

Open vSwitch

3. Configure the Open vSwitch

```
pragma03:/export/home/repositories/openvswitch
pragma03 openvswitch]# rocks list network
SUBNET      NETMASK      MTU    DNSZONE    SERVEDNS
192.168.0.0  255.255.255.0 1500   openflow   False
10.1.0.0     255.255.0.0   1500   local      True
112.121.136.0 255.255.255.0 1500   cs.tu.ac.th False
pragma03 openvswitch]#
```

```
pragma03:/export/home/repositories/openvswitch
pragma03 openvswitch]# rocks list host interface
E MAC      IP      NETMASK      MODULE    NAME    VL
-----
ppp-112: 16:88:79:80:00:00 10.1.255.254 255.255.0.0 ----- ppp-112 4
-----
ppp-112: public eth1 16:88:79:80:00:01 112.121.136.23 255.255.255.0 ----- ppp-112 0
-----
ppp-112: openflow ovs 16:88:79:80:00:02 ----- 255.255.255.0 ----- ppp-112 --
-----
pragma03: private eth0 00:01:2E:6B:9B:FE 10.1.1.1 255.255.0.0 ----- pragma03 --
-----
pragma03: public eth1 00:01:2E:6B:9B:FF 112.121.136.22 255.255.255.0 ----- pragma03 --
-----
pragma03: private vlan4 -----
-----
pragma03: openflow br0 ----- 255.255.255.0 ovs-bridge pragma03 --
--mode $DEVICE secure -- set bridge $DEVICE protocol=OpenFlow10 -- set-controller $DEVICE tcp:1
3:6653 -----
[root@pragma03 openvswitch]#
```

. Open vSwitch

4. Setup GRE

- ▶ Sanity check (ping 112.121.136.22)
- ▶ ping Tap0 (ping 10.112.0.4)

5. Configure virtual cluster

- ▶ Sanity check (ping 10.112.0.6)
- ▶ ping Tap0 (10.112.0.4)
- ▶ ping physical host (ping 112.121.136.22)



Registering to Cloud Scheduler

Status Available
Sort Order 0 [Edit](#)

Contact (no contact information)

[Additional Attributes Edit](#)

Pragma_boot path: Pragma_boot version: Python path: Temporary directory: Username: Available CPUs: Available Gb Memory: Deployment type: ENT-enabled:

No Image Assigned
[Add Image](#)
Status Available
Sort Order 0 [Edit](#)

Resource Details

Name Lightning Green [Rename](#) | [Delete](#)

Location (no location set) [Edit](#)

Resource Type (no resource type set) [Edit](#)

Schedule Default [Move](#)

Contact (no contact information)

Description PRAGMA Student Hackathon from Kasetsart University [Edit](#)

Notes (no notes) [Edit](#)

Resource Administrator PRAGMA 31 students [Edit](#)

[Allow Subscriptions to this Calendar](#)

[Additional Attributes Edit](#)

Pragma_boot path: /opt/pragma_boot Pragma_boot version: 2 Python path: /usr/bin/python Temporary directory: /tmp Username: root Available CPUs: 2 Available Gb Memc
Longitude: 100.568660

No Image Assigned
[Add Image](#)
Status Available
Sort Order 0 [Edit](#)

Resource Details

Name Thammasat University [Rename](#) | [Delete](#)

Location 14.0745361,100.6024501 [Edit](#)

Resource Type (no resource type set) [Edit](#)

Schedule Default [Move](#)

Contact (no contact information)

Description (no description) [Edit](#)

Notes (no notes) [Edit](#)

Resource Administrator PRAGMA 31 students [Edit](#)

[Allow Subscriptions to this Calendar](#)

[Additional Attributes Edit](#)

Pragma_boot path: /opt/pragma_boot Pragma_boot version: 2 Python path: /usr/bin/python Temporary directory: /tmp Username: root Available CPUs: 2 Available Gb Memc
Longitude: 100.6024501

Rows: 1 - 4 (4)
Page: 1

he Most Challenging Part(s)

Manual partitioning of Rocks Cluster

Physical link of the Open vSwitch



The Easiest Part

Rocks Cluster installation



ur Impression

Instructions is clear and easy to follow
Every steps have a proof of success

No instruction about manual partitioning



An abstract graphic on the right side of the slide, composed of several overlapping triangles in various shades of green (from light lime to dark forest green). A thin, light gray line extends diagonally from the bottom left towards the top right, passing through the green shapes.

Q&A

Thank you

