VMware Roll for Rocks 5

Takahiro Hirofuchi

t.hirofuchi _at_ aist.go.jp

May 2008

Features

- VMware Server Support for Rocks 5
  - VMware Server is free, stable, and full virtualization.
- License Management
- VLAN Support
- Flexible virtual networking configuration
- Multiple virtual clusters on one Rocks cluster
- No reinstallation for new settings
- Many operating systems on virtual clusters
- Everything is done in rocks commands!

Rocks Commands

add host vmware
remove host vmware

create host vmware
destroy host vmware

add host vlan
remove host vlan
list host vlan
config host vlan

add host vmware interface
remove host vmware interface
list host vmware interface

add host vmwarenet
remove host vmwarenet
list host vmwarenet
config host vmwarenet

add vmwarekey
set host vmwarekey
remove host vmwarekey
list vmwarekey
config host vmwarekey

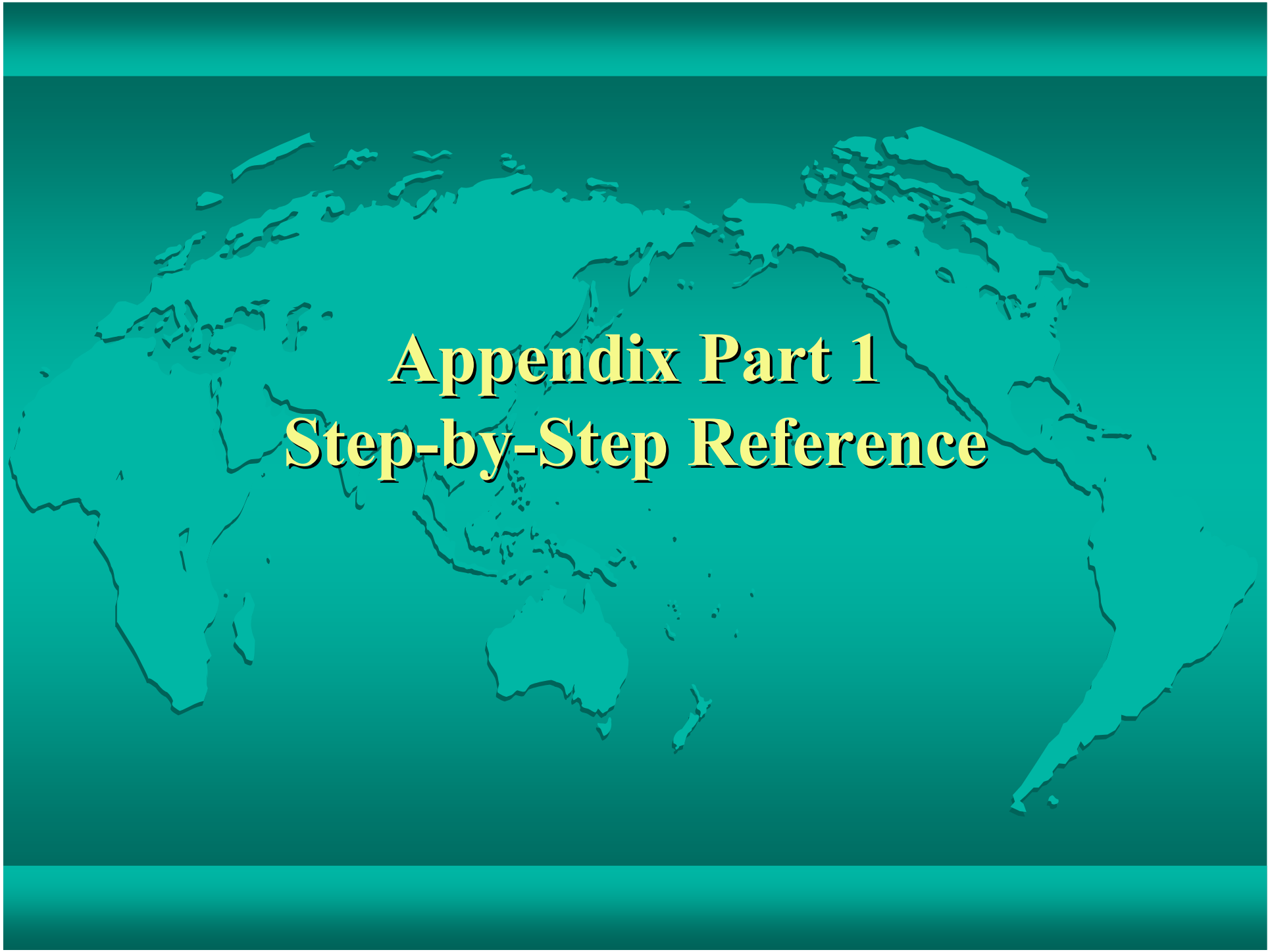
start host vmware
stop host vmware
reboot host vmware
list host vmware

suspend host vmware
resume host vmware

plugins for removing host

Information

- Project Page
  - http://code.google.com/p/grivon/wiki/VMwareRollRocks5
  - More information is available.
- Contact
  - Takahiro Hirofuchi <t.hirofuchi _at_ aist.go.jp>


Appendix Part 1
Step-by-Step Reference


Build your VMware Roll

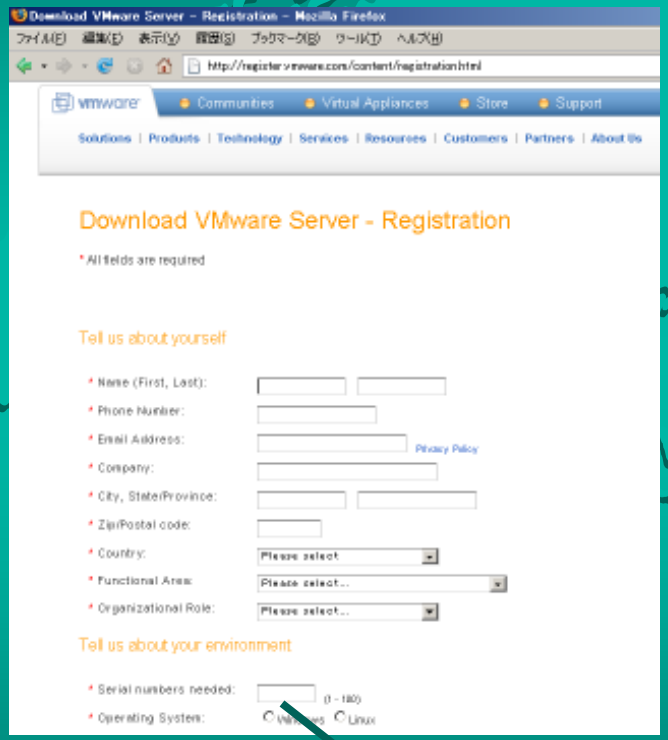
VMware Server EULA

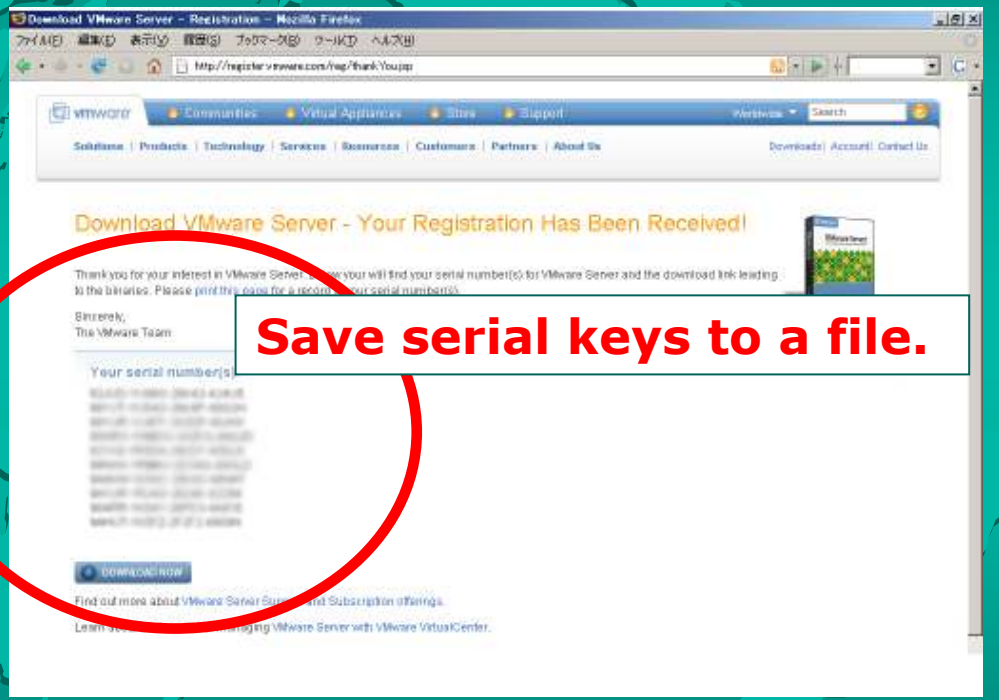
9.1(b)

use the Software solely for your own internal information processing services and computing needs in connection with permitted uses of the Software, including the hosting of computer application-based services from a Virtual Machine and provision of such services via an internal or external network, provided such services may not consist of services to a third party that provide primarily computing or processing power (such as *utility computing or grid computing*) or any computer application-based service that is traded, rented, leased or sold on a Virtual Machine basis;


Download VMware Server, free VMware, virtual server - VMware - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 履歴(S) ブックマーク(B) ツール(T) ヘルプ(H)
http://www.vmware.com/download/server/
1. Go http://www.vmware.com/download/server/
Solutions | Products | Technology | Services | Resources | Customers | Partners | About Us
Home > Downloads > Server Virtualization Products > VMware Server
VMware
Server
Download VM
2. Get Free Serial Numbers!
To use the versions below, you will need to register for your free serial number(s).
Looking for the Server 2.0 (Beta)? Download Here
VMware Server 1.0.5
Latest Version: 1.0.5 | 3/14/
Download Now
3. Download VMware Server & Console binary of Linux RPM
Version History
Drivers & Tools
Open Source
VMware Server 1.0.4
Version: 1.0.4 | 9/18/07 | Build: 56528
Download | Release Notes

Get Free VMware Serials





Download VMware Server - Registration - Mozilla Firefox

ファイル(F) 編集(E) 表示(V) 履歴(S) ブックマーク(B) ツール(T) ヘルプ(H)

http://register.vmware.com/reg/thankYou.jsp

vmware Communities Virtual Appliances Store Support Worldwide Search

Solutions | Products | Technology | Services | Resources | Customers | Partners | About Us

Downloads | Account | Contact Us

Download VMware Server - Your Registration Has Been Received!

Thank you for your interest in VMware Server. Below your will find your serial number(s) for VMware Server and the download link leading to the binaries. Please print this page for a record of your serial number(s).

Sincerely,
The VMware Team

Your serial number(s):

[redacted]

Save serial keys to a file.

DOWNLOAD NOW

Find out more about VMware Server Support and Subscription offerings.

Learn about the benefits of managing VMware Server with VMware VirtualCenter.

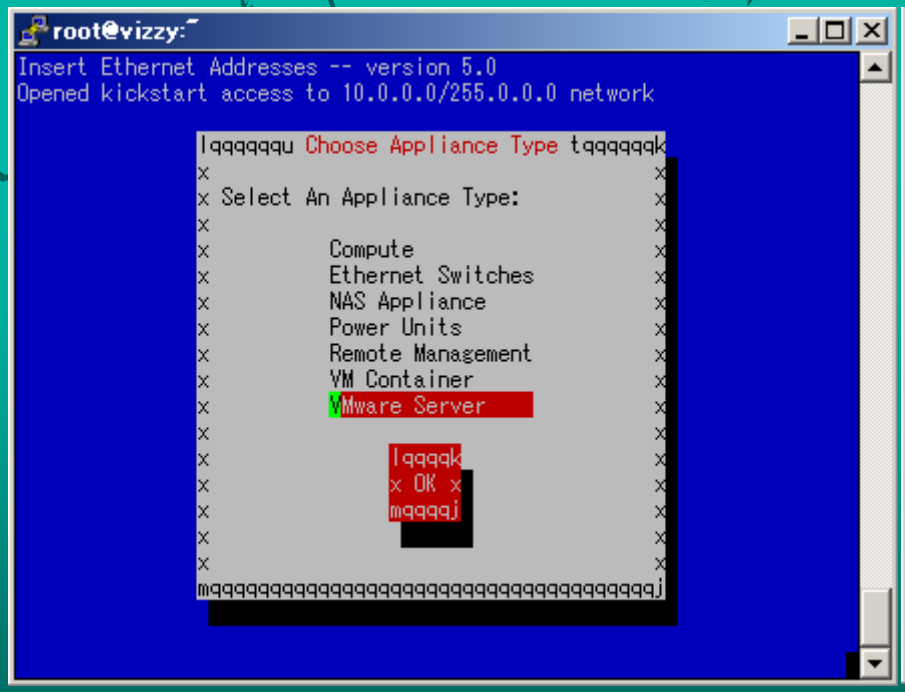
Installation

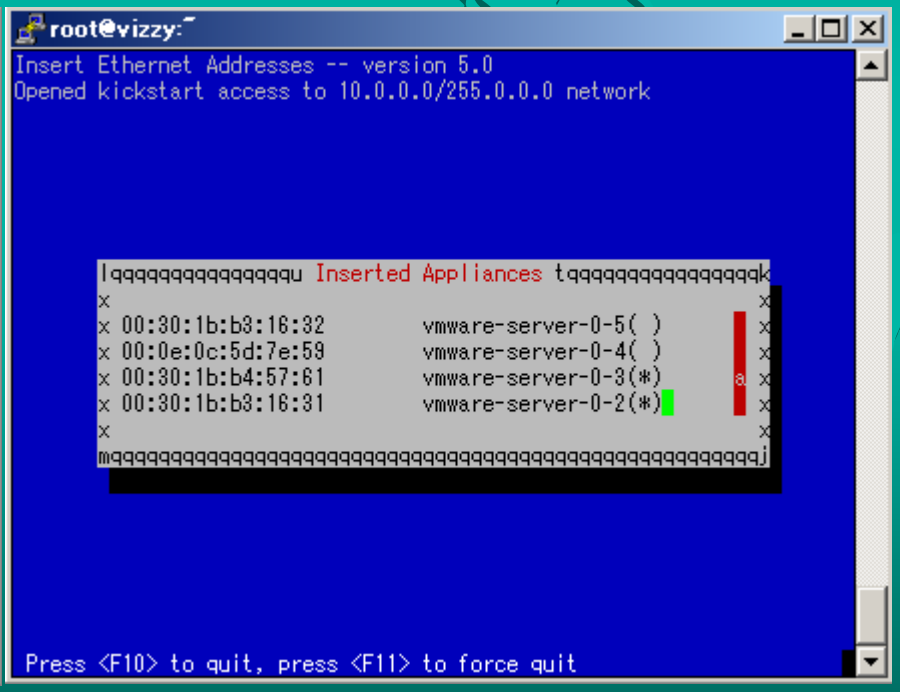
- Download a VMware Roll source.
  - http://code.google.com/p/grivon/wiki/VMwareRollRocks5
  - Extract it into somewhere
- Download VMware binary RPMs.
  - VMware-server-${ver}.rpm
  - VMware-server-console-${ver}.rpm
  - Copy them into ${vmware-roll-root}/RPMS/i386/
- Do “make roll”
  - If succeed, you get VMware-5.0-0.i386.disk1.iso. Congratulation!
- Use the iso image when you install a frontend.
- See also the project wiki about how to add the VMware roll into the running fronted.
  - http://code.google.com/p/grivon/wiki/VMwareRollRocks5


License Key Management

Add VMware-Server Nodes

- Do “insert-ethers”





Add Serials to Key Pool

```
vizzy:# rocks add vmwarekey $(cat vmware-serials.txt)
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
added “XXXXX-XXXXX-XXXXX-XXXXX" to serial number pool
serial numbers: total 10, used 0
```

Assign Serial Keys to VMware Server Nodes

```
vizzy:# rocks set host vmwarekey vmware-server-0-0

vizzy:# rocks list vmwarekey
SERIAL                      HOST
XXXXX-XXXXX-XXXXX-XXXXX: vmware-server-0-0
XXXXX-XXXXX-XXXXX-XXXXX: ------------------
XXXXX-XXXXX-XXXXX-XXXXX: ------------------
XXXXX-XXXXX-XXXXX-XXXXX: ------------------
XXXXX-XXXXX-XXXXX-XXXXX: ------------------
```

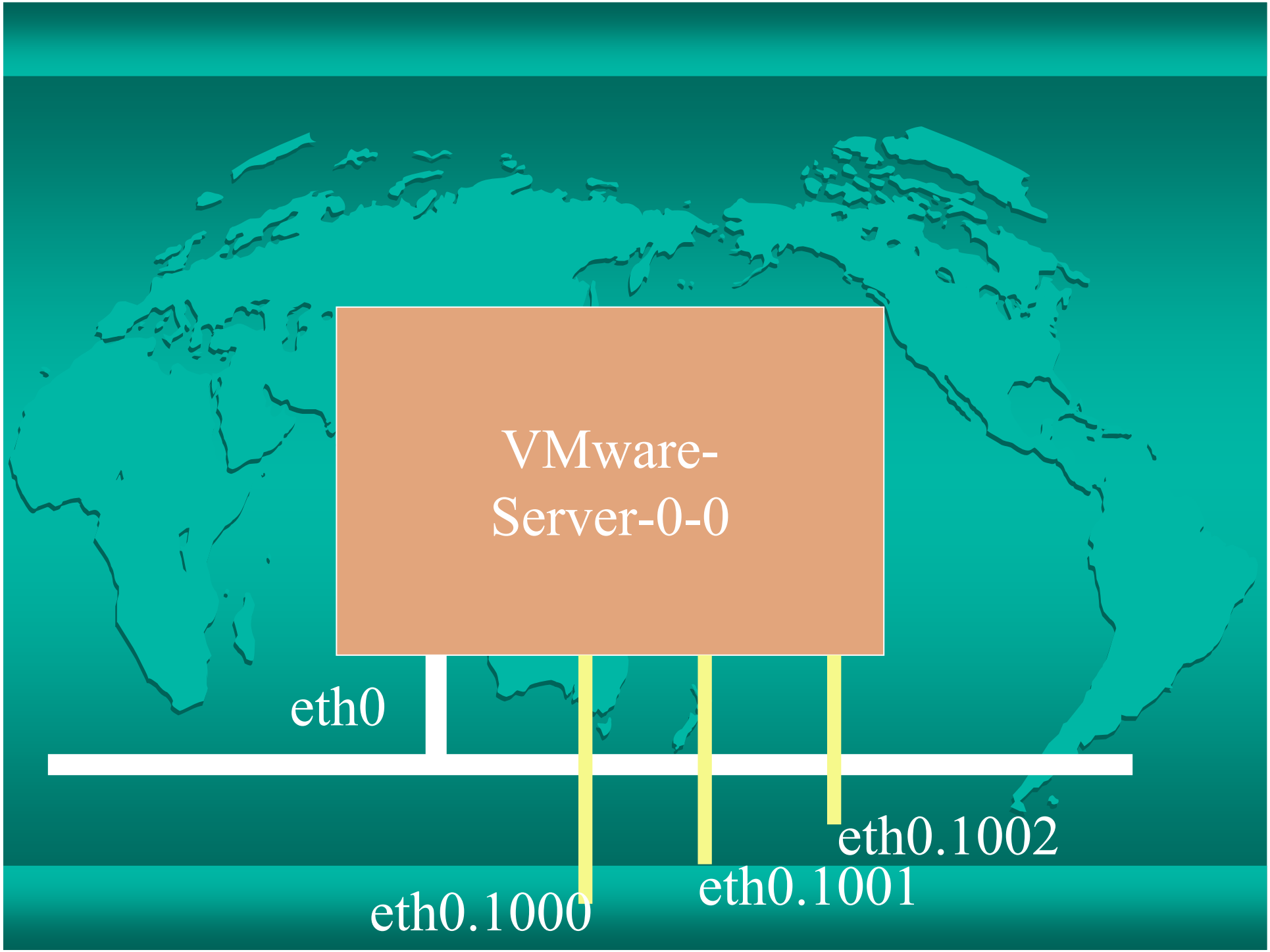
* The assigned serial key is now active.
The next reinstallation also sets the serial key to the host automatically.
* If arg. is “vmware-server”, assign all nodes at once.


Configure VLAN

Add VLAN interfaces

```
vizzy:# rocks add host vlan vmware-server-0-0 viface=eth0.1000
Added VLAN with VID == 1000 to IF -:eth0:-

vizzy:# rocks add host vlan vmware-server-0-0 viface=eth0.1001
Added VLAN with VID == 1001 to IF -:eth0:-

vizzy:# rocks add host vlan vmware-server-0-0 viface=eth0.1002
Added VLAN with VID == 1002 to IF -:eth0:-

* The added VLAN interfaces are now active.
The next reinstallation also sets the interfaces automatically.
```

```
vizzy:# rocks list host interface vmware-server-0-0
SUBNET  IFACE     MAC               IP             NETMASK   GATEWAY MODULE NAME
private eth0      00:30:1b:b3:24:72 10.255.255.254 255.0.0.0 ------- tg3    vmware-server-0-0
------- eth0.1000 ----------------- -------------- --------- ------- ------ -----------------
------- eth0.1001 ----------------- -------------- --------- ------- ------ -----------------
------- eth0.1002 ----------------- -------------- --------- ------- ------ -----------------
```


VMware-
Server-0-0
eth0
eth0.1000
eth0.1001
eth0.1002

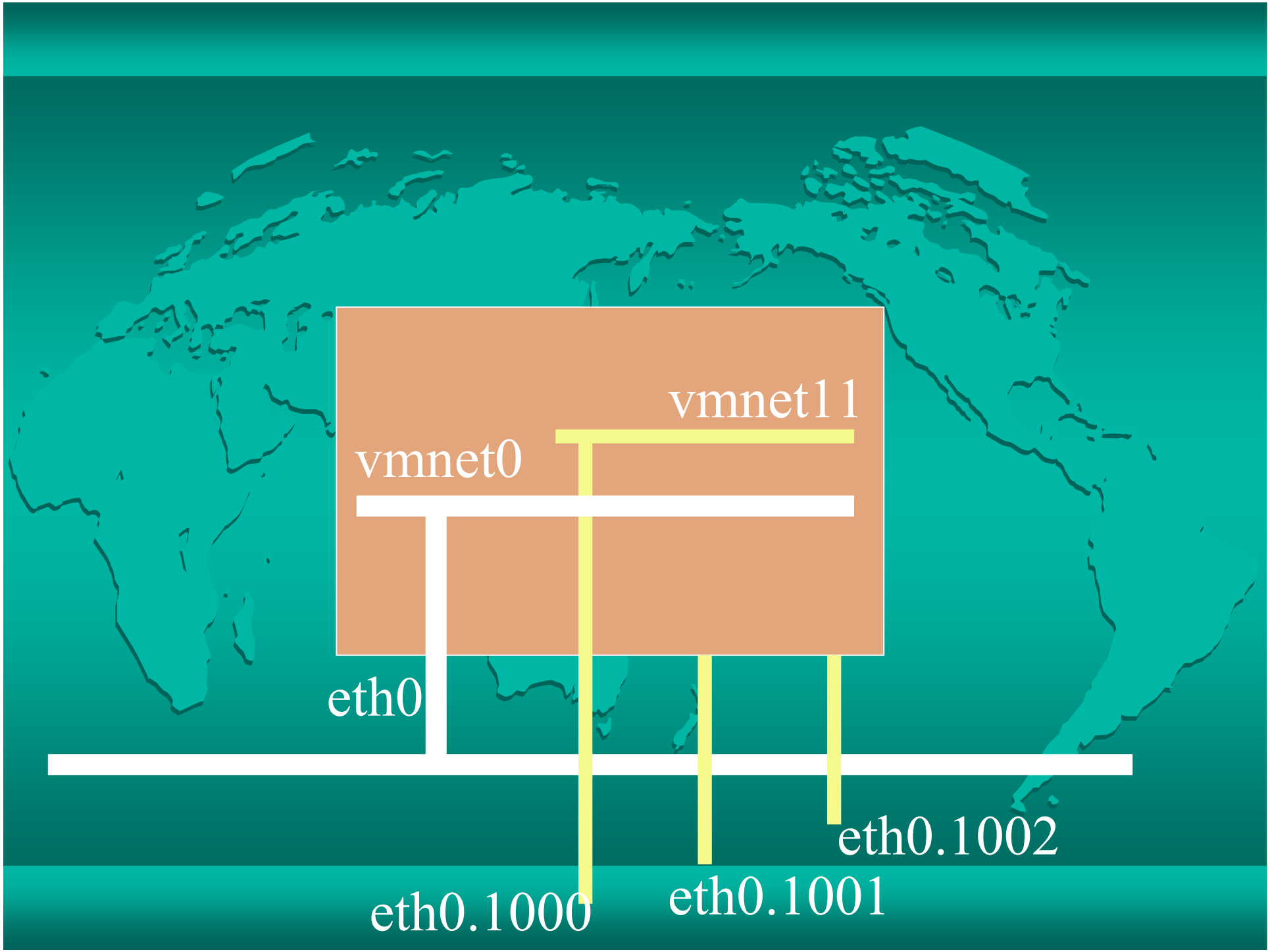

Set up VMware Network

Add VMware Network Settings

```
vizzy:# rocks add host vmwarenet vmware-server-0-0
iface=eth0 type=bridge

vizzy:# rocks add host vmwarenet vmware-server-0-0
iface=eth0.1000 type=bridge

vizzy:# rocks list host vmwarenet
VMNET   TYPE   DEVICE     HOSTADDR NETMASK
vmnet0  bridge eth0       -------- -------
vmnet11 bridge eth0.1000  -------- -------
```

* The added VMware network settings are now active.
The next reinstallation also sets the VMware network settings automatically.

* It supports "bridge", "NAT", and "host-only" network settings for each physical network interface. "bridge" is already implemented.

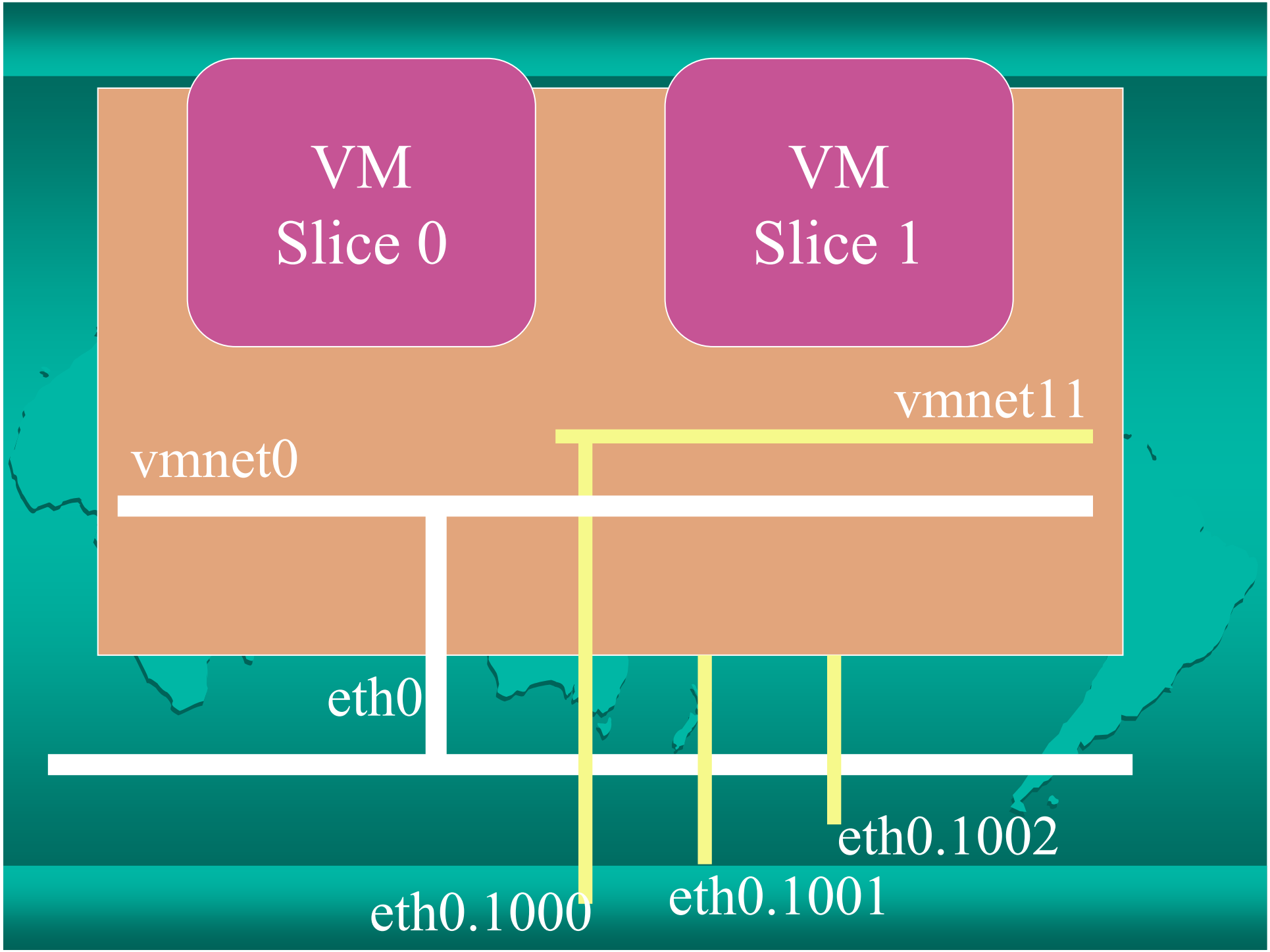

vmnet11
vmnet0
eth0
eth0.1000
eth0.1001
eth0.1002


Create Virtual Machines

Add Virtual Machines

```
vizzy:# rocks add host vmware vmware-server-0-0 cpus=1
mem=768 disksize=20
added VM on node "vmware-server-0-0" slice "0“

vizzy:# rocks add host vmware vmware-server-0-0 cpus=1
mem=768 disksize=20
added VM on node "vmware-server-0-0" slice "1“
```

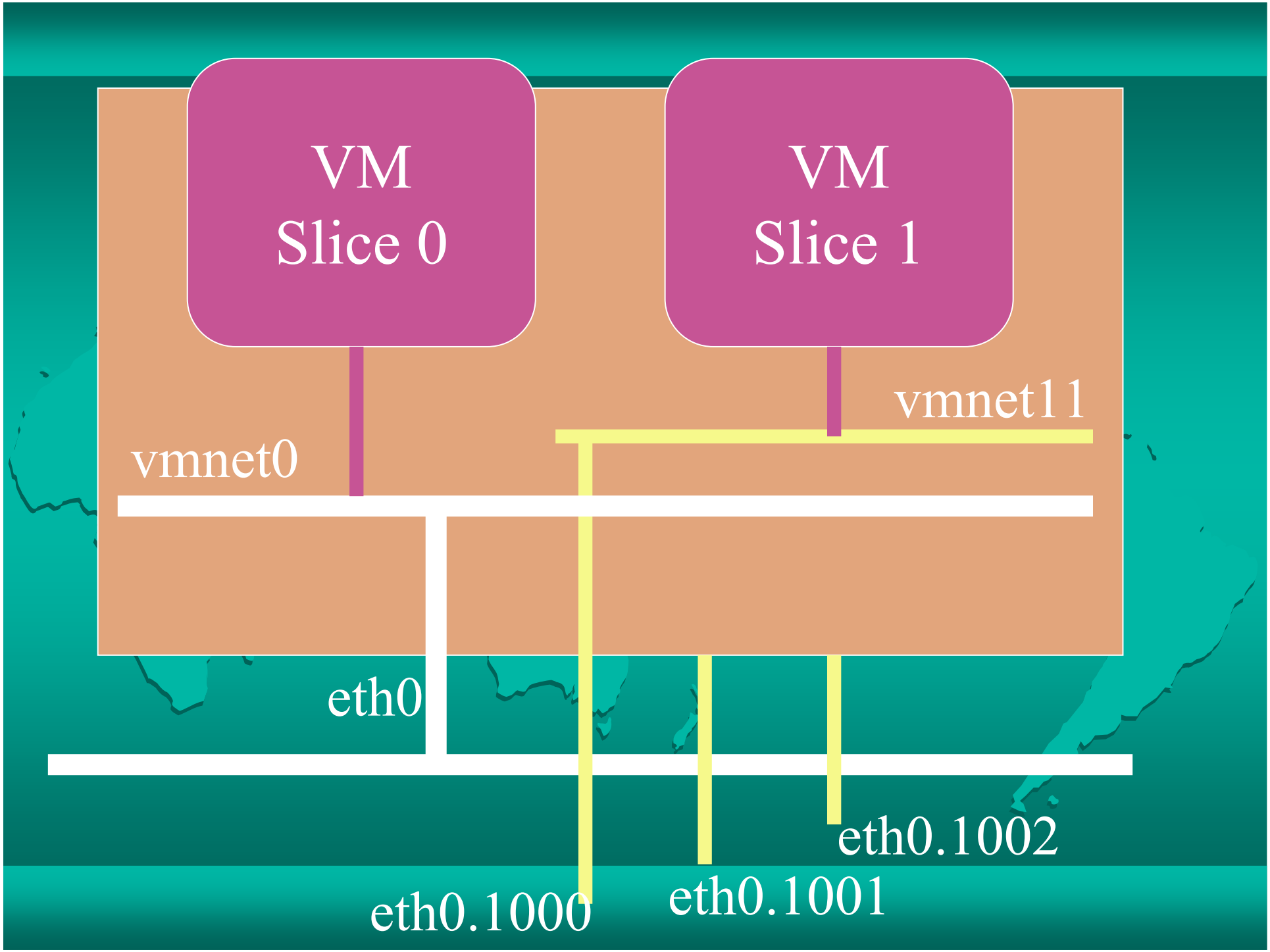
* These commands only add VM entries into the DB.


VM
Slice 0
VM
Slice 1
vmnet11
vmnet0
eth0
eth0.1002
eth0.1000
eth0.1001

Add VMs' Network Interfaces

```
vizzy:# rocks add host vmware interface vmware-server-0-0
slice=0 vmnet=vmnet0
adding vmware interface to 1 slices
add 00:50:56:00:00:01 to slice0@vmware-server-0-0
(vmnodeid 22) as ifindex 0; bound to vmnet0

vizzy:# rocks add host vmware interface vmware-server-0-0
slice=1 vmnet=vmnet11
adding vmware interface to 1 slices
add 00:50:56:00:00:02 to slice1@vmware-server-0-0
(vmnodeid 23) as ifindex 0; bound to vmnet11
```

* These commands only add VM entries into the DB.


VM
Slice 0
VM
Slice 1
vmnet11
vmnet0
eth0
eth0.1002
eth0.1000
eth0.1001

Create VMs in Nodes

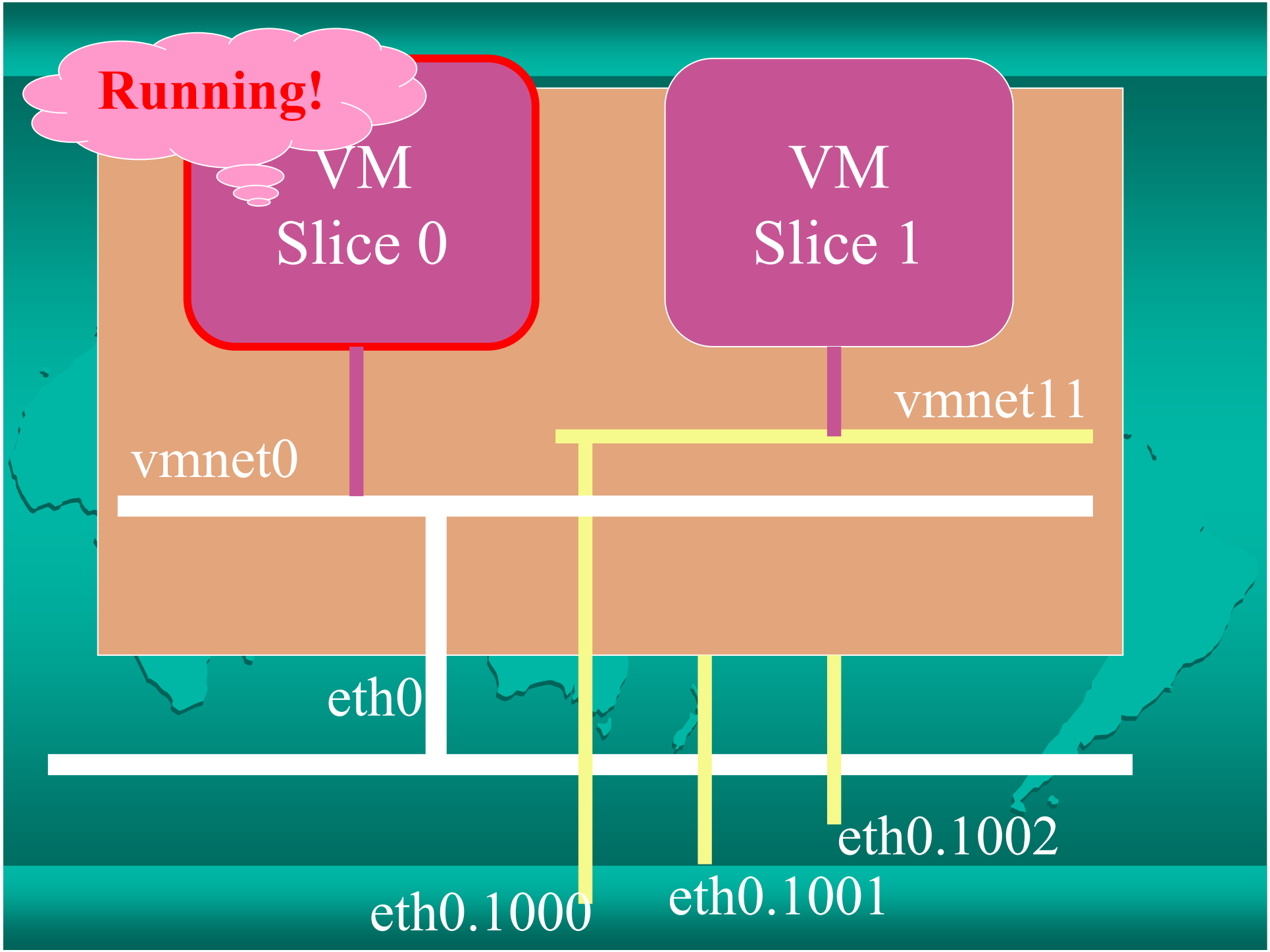
```
vizzy:# rocks create host vmware vmware-server-0-0 slice=0
# creating slice0@vmware-server-0-0
ssh -x vmware-server-0-0 vmware-vdiskmanager -c -a
lsilogic -s 20Gb -t 0
/state/partition1/vmware/disks/0.scsi0:0.vmdk
Using log file /tmp/vmware-root/vdiskmanager.log
Creating a monolithic growable disk
'/state/partition1/vmware/disks/0.scsi0:0.vmdk'
Virtual disk creation successful.
ssh -x vmware-server-0-0 vmware-cmd -s register
/state/partition1/vmware/0/0.vmx
register(/state/partition1/vmware/0/0.vmx) = 1
```


Start Virtual Machines

Start VM

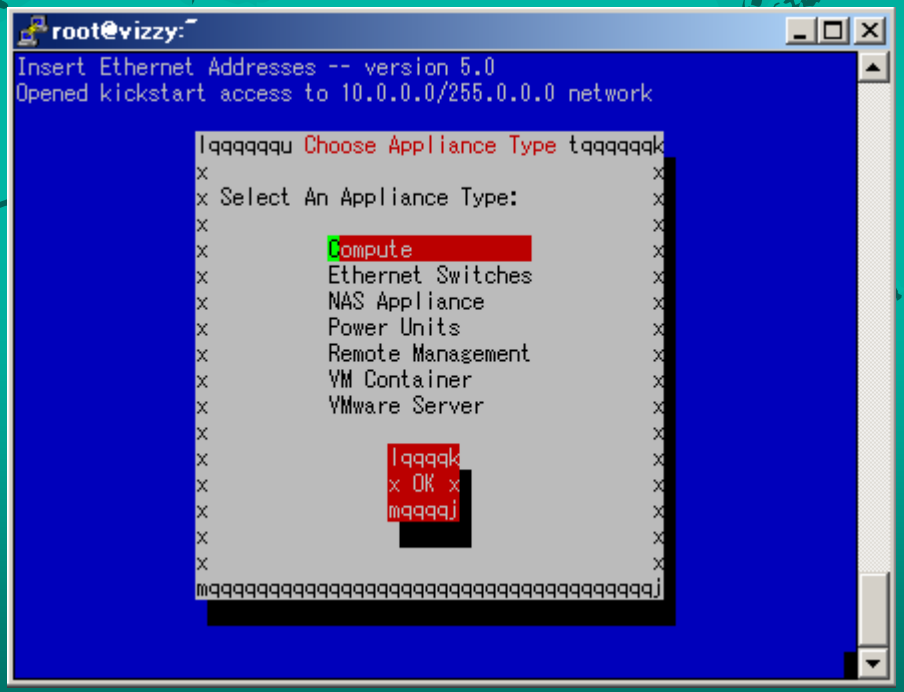
```
vizzy:# rocks start host vmware vmware-server-0-0 slice=0
ssh -x vmware-server-0-0 vmware-cmd
/state/partition1/vmware/0/0.vmx start
start() = 1


vizzy:# rocks list host vmware
VMNODE                          #CPU MEM  #NIC #DISKS STATE
slice0@vmware-server-0-0: 1     768  1    1      on
slice1@vmware-server-0-0: 1     768  1    1      none

vizzy:# vmware-server-console -h vmware-server-0-0 &
vizzy:# vncviewer vmware-server-0-0:5900 &
```

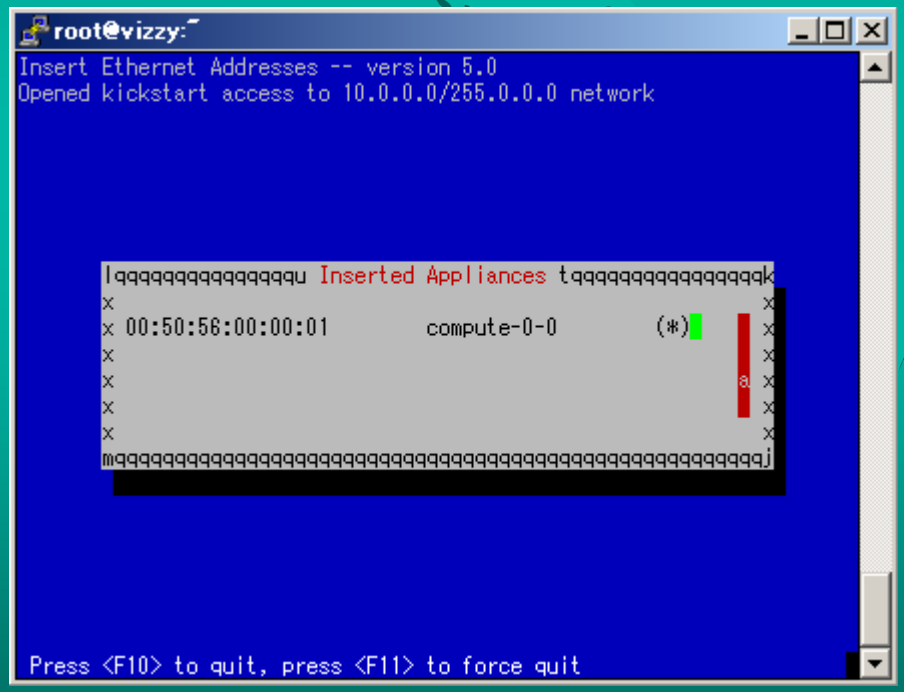
* VNC port number is "5900 + slice".


Running!
VM
Slice 0
VM
Slice 1
vmnet11
vmnet0
eth0
eth0.1002
eth0.1000
eth0.1001

insert-ethers for VM nodes

In another console, do “insert-ethers” in a frontend.
And, “rocks reboot host vmware vmware-server-0-0.






Suspend/Resume
Virtual Machines

Suspend VM

```
vizzy:# rocks suspend host vmware vmware-server-0-0 slice=1
ssh -x vmware-server-0-0 "vmware-cmd
/state/partition1/vmware/0/0.vmx suspend hard"
suspend(hard) = 1


vizzy:# rocks list host vmware
VMNODE                        #CPU MEM  #NIC #DISKS STATE
slice0@vmware-server-0-0: 1    768  1    1      suspended
slice1@vmware-server-0-0: 1    768  1    1      none
```

Resume VM

```
vizzy:# rocks resume host vmware vmware-server-0-0 slice=0
ssh -x vmware-server-0-0 vmware-cmd
/state/partition1/vmware/0/0.vmx start
start() = 1

vizzy:# rocks list host vmware
VMNODE                        #CPU MEM  #NIC #DISKS STATE
slice0@vmware-server-0-0: 1    768  1    1      on
slice1@vmware-server-0-0: 1    768  1    1      none
```


Stop/Destroy Virtual Machines

Stop VM

```
vizzy:# rocks stop host vmware vmware-server-0-0 slice=0
ssh -x vmware-server-0-0 "vmware-cmd
/state/partition1/vmware/0/0.vmx stop hard"
stop(hard) = 1


vizzy:# rocks list host vmware
VMNODE                      #CPU MEM  #NIC #DISKS STATE
slice0@vmware-server-0-0: 1    768  1    1      off
slice1@vmware-server-0-0: 1    768  1    1      none
```

Destroy VM

```
vizzy:# rocks destroy host vmware vmware-server-0-0 slice=0
# destroy slice0@vmware-server-0-0
ssh -x vmware-server-0-0 vmware-cmd -s unregister
/state/partition1/vmware/0/0.vmx
unregister(/state/partition1/vmware/0/0.vmx) = 1
ssh -x vmware-server-0-0 rm -f
/state/partition1/vmware/disks/0.scsi0:0.vmdk
/state/partition1/vmware/disks/0.scsi0:0.vmdk.WRITELOCK
ssh -x vmware-server-0-0 rm -Rf /state/partition1/vmware/0

vizzy:# rocks list host vmware
VMNODE                        #CPU MEM  #NIC #DISKS STATE
slice0@vmware-server-0-0: 1    768  1    1      none
slice1@vmware-server-0-0: 1    768  1    1      none
```


Summary

Rocks Commands

add host vmware
remove host vmware

create host vmware
destroy host vmware

add host vlan
remove host vlan
list host vlan
config host vlan

add host vmware interface
remove host vmware interface
list host vmware interface

add host vmwarenet
remove host vmwarenet
list host vmwarenet
config host vmwarenet

add vmwarekey
set host vmwarekey
remove host vmwarekey
list vmwarekey
config host vmwarekey

start host vmware
stop host vmware
reboot host vmware
list host vmware

suspend host vmware
resume host vmware

plugins for removing host

Database Tables

- vmware_nodes
  - Remove Node Colum
    - The node inside a VM may be registered to another frontend.
- vmware_macs
  - add IfIndex Colum
    - its interface number inside a VM (e.g., eth0, eth1 …)
- vmware_disks
- vmware_vmnets
- vmware_vmnet_members
- vmware_serials

Reference

- Project Page
  - http://code.google.com/p/grivon/wiki/VMwareRollRocks5
  - More information is available.