

How to connect two guests with a bridge

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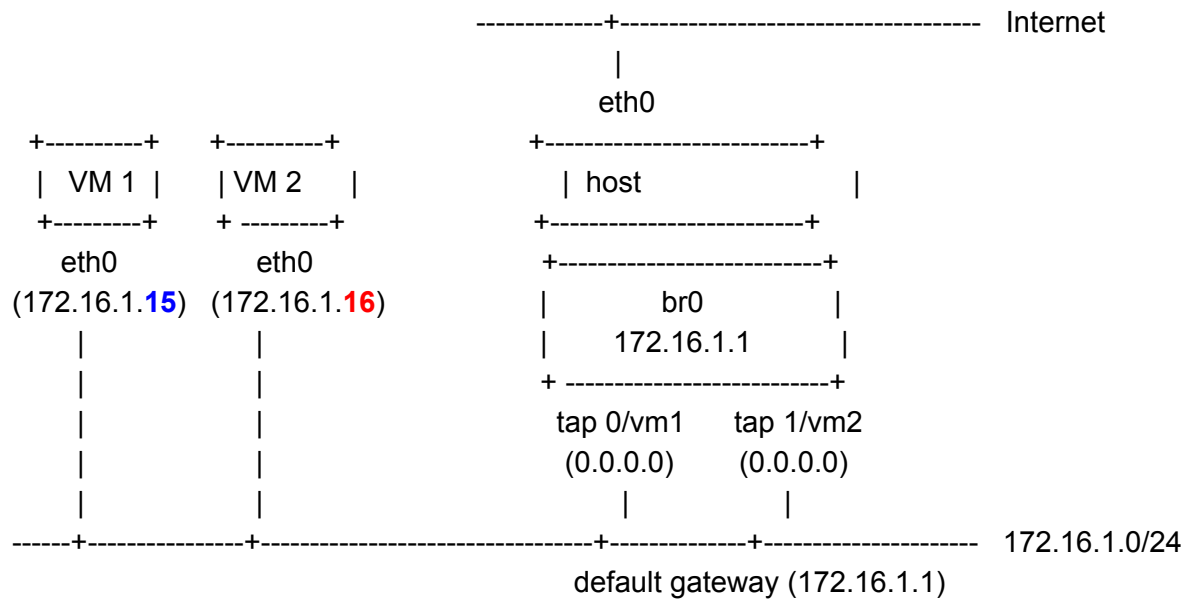
ip: subnet

gateway:

ipforward

Q: guest use host's subnet?

Network Topology



debug

```
sudo brctl show br0
```

arp -n

Preinstall

- `sudo apt-get install qemu` # for kvm, brctl, etc ...
- `sudo apt-get install uml-utilities` # for tuncctl

Host Quick: on HOST

```
sudo brctl addbr br0;sudo ifconfig br0 172.16.1.1 netmask 255.255.255.0 up

sudo sysctl -w net.ipv4.ip_forward=1;sudo iptables -t nat -A POSTROUTING -o eth0 -s
172.16.1.0/24 -j MASQUERADE
```

VM Quick: on HOST

```
// vm1 -> br0 with tap0
sudo tuncctl -t tap0;sudo brctl addif br0 tap0; sudo ifconfig tap0 up
// call vm1
sudo kvm vlan-clone1.qcow2 -net nic,macaddr=96:83:DA:A0:06:34 -net
tap,ifname=tap0,script=no,downscript=no

// vm 2 -> br0 with tap1
sudo tuncctl -t tap1;sudo brctl addif br0 tap1;sudo ifconfig tap1 up
// call vm2
sudo kvm vlan-clone2.qcow2 -net nic,macaddr=96:83:DA:A0:06:35 -net
tap,ifname=tap1,script=no,downscript=no
```

VM1 guest network setup: on Guest 1

/etc/network/interfaces

```
auto eth0
iface eth0 inet static
address 172.16.1.15
netmask 255.255.255.0
gateway 172.16.1.1
dns-nameservers 168.95.1.1
```

VM2 guest network setup: on Guest 2

/etc/network/interfaces

```
auto eth0
iface eth0 inet static
address 172.16.1.16
netmask 255.255.255.0
gateway 172.16.1.1
dns-nameservers 168.95.1.1
```

Restart network

[Guest] sudo /etc/init.d/networking restart

Detail

Step 1: Create a Bridge

[Host] sudo **brctl** addbr **br0**

[Host] sudo **ifconfig** **br0** **172.16.1.1** netmask 255.255.255.0 up

Step 2: Setup NAT for your guest

[Host] **sudo sysctl -w net.ipv4.ip_forward=1** *# enable ip_forward*

Enable the NAT function for your subnet (sudo **iptables** -t nat -L -n)

[Host] \$ sudo **iptables** -t nat -A POSTROUTING -o **eth0** -s **172.16.1.0/24** -j MASQUERADE

Step 3: Connect the VM to the bridge

// vm1 -> br0 with tap0

[Host] sudo **tunctl** -t **tap0** *# create an TUN/TAP device*

[Host] sudo **brctl** addif **br0** **tap0** *# add tap0 to br0*

[Host] sudo **ifconfig** **tap0** up

[Host] sudo **kvm** **vlan-clone1.qcow2** -net nic,macaddr=96:83:DA:A0:06:34 -net tap,ifname=**tap0**,script=no,downscript=no

// vm 2 -> br0 with tap1

[Host] sudo **tunctl** -t **tap1** *# create an TUN/TAP device*

[Host] sudo **brctl** addif **br0** **tap1** *# add tap1 to br0*

[Host] sudo **ifconfig** **tap1** up

[Host] sudo **kvm** **vlan-clone2.qcow2** -net nic,macaddr=96:83:DA:A0:06:35 -net tap,ifname=**tap1**,script=no,downscript=no

VM1 Internet Setup

IP, Gateway, DNS

detail:

[[host](#), ip, gateway, dns] How to setup the ip, gateway and dns for your machine ([view](#))

/etc/network/interfaces

```
auto eth0
iface eth0 inet static
```

```
address 172.16.1.15
netmask 255.255.255.0
gateway 172.16.1.1
dns-nameservers 168.95.1.1
```

Restart network

[Guest] sudo /etc/init.d/networking restart

VM2 Internet Setup

/etc/network/interfaces

```
auto eth0
iface eth0 inet static
address 172.16.1.16
netmask 255.255.255.0
gateway 172.16.1.1
dns-nameservers 168.95.1.1
```

Restart network

[Guest] sudo /etc/init.d/networking restart

Test

```
jing@ubuntu:~$ ping 172.16.1.15
PING 172.16.1.15 (172.16.1.15) 56(84) bytes of data.
64 bytes from 172.16.1.15: icmp_req=1 ttl=64 time=1.94 ms
64 bytes from 172.16.1.15: icmp_req=2 ttl=64 time=3.52 ms
64 bytes from 172.16.1.15: icmp_req=3 ttl=64 time=3.32 ms
64 bytes from 172.16.1.15: icmp_req=4 ttl=64 time=3.60 ms
64 bytes from 172.16.1.15: icmp_req=5 ttl=64 time=3.39 ms
64 bytes from 172.16.1.15: icmp_req=6 ttl=64 time=3.60 ms
64 bytes from 172.16.1.15: icmp_req=7 ttl=64 time=3.56 ms
64 bytes from 172.16.1.15: icmp_req=8 ttl=64 time=3.44 ms
64 bytes from 172.16.1.15: icmp_req=9 ttl=64 time=3.81 ms
64 bytes from 172.16.1.15: icmp_req=10 ttl=64 time=3.71 ms
64 bytes from 172.16.1.15: icmp_req=11 ttl=64 time=3.70 ms
64 bytes from 172.16.1.15: icmp_req=12 ttl=64 time=3.45 ms
```

Further Reading

- <http://tobala.net/x/Cloud2010/CloudTech-ADV02-201101.html>