

SOME NETWORKING TIPS\ STATIC ROUTING

1) ssh console error: port 22 permission denied:

```
#sudo apt-get install openssh-server  
#sudo ufw allow 22
```

2) modify and restart interfaces:

```
#sudo vim /etc/network/interfaces  
#sudo /etc/init.d/networking restart
```

```
#sudo service network-manager restart
```

3) static routing:

	a.2 – net 10.1.0.0/16	b.1.1.1
net 10.2.0.0/16	net 10.3.0.0/16	
c.2	d.2	

current routing table:

```
#route
```

track frames from a.2 to c.2:

```
#sudo apt-get install traceroute  
#traceroute 10.2.0.2
```

3a) temporary:

A:

```
#sudo route add -net 10.2.0.0 netmask 255.255.0.0 gw 10.1.0.1 dev ethA  
#sudo route add -net 10.3.0.0 netmask 255.255.0.0 gw 10.1.0.1 dev ethA
```

C:

```
#sudo route add -net 10.1.0.0 netmask 255.255.0.0 gw 10.2.0.1 dev ethC
```

D:

```
#sudo route add -net 10.1.0.0 netmask 255.255.0.0 gw 10.3.0.1 dev ethD
```

3b) permanently – add lines:

```
#sudo vim /etc/network/interfaces
```

A:

```
up route add -net 10.2.0.0/16 gw 10.1.0.1 dev ethA  
up route add -net 10.3.0.0/16 gw 10.1.0.1 dev ethA
```

C:

```
up route add -net 10.1.0.0/16 gw 10.2.0.1 dev ethC
```

D:

```
up route add -net 10.1.0.0/16 gw 10.3.0.1 dev ethD
```

4) enable ip forwarding:

check:

```
#cat /proc/sys/net/ipv4/ip_forward
```

modify:

```
#sudo vim /etc/sysctl.conf  
net.ipv4.ip_forward
```

restart:

```
#sudo sysctl -p /etc/sysctl.conf
```

5) static ip refresh without restart:

```
#sudo ip addr flush NetInterfaceName && sudo systemctl restart networking.service &&  
sudo service networking restart && sudo service network-manager restart
```

6) firewall blocking outgoing data:

```
#sudo ufw default allow outgoing
```

7) netplan static configuration:

```
#sudo vi /etc/netplan/XX-network-manager-all.yaml
```

network:

```
version: 2
renderer: networkd
ethernets:
  enpXX:
    dhcp4: no
    addresses: [192.168.0.XX/24]
    gateway4: 192.168.0.1
    nameservers:
      addresses: [8.8.4.4,8.8.8.8]
#sudo netplan --debug apply
```