Config ip

```
allan@rpi1:~ $ ifconfig
eth0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.1.1  netmask 255.255.255.0  broadcast 0.0.0.0
        ether b8:27:eb:0c:47:b7  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
allan@rpi2:~ $ sudo ip address add 192.168.1.11/24 dev eth0
allan@rpi2:~ $ sudo ip route add default via 192.168.1.1
allan@rpi2:~ $ ifconfig
eth0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.1.11  netmask 255.255.255.0  broadcast 0.0.0.0
        ether b8:27:eb:ce:13:a9  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
allan@rpi3:~ $ sudo ip address add 192.168.1.12/24 dev eth0
allan@rpi3:~ $ ip route add default via 192.168.1.1
RTNETLINK answers: Operation not permitted
allan@rpi3:~ $ sudo ip route add default via 192.168.1.1
allan@rpi3:~ $ ifconfig
eth0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.1.12  netmask 255.255.255.0  broadcast 0.0.0.0
        ether b8:27:eb:14:98:a0  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
allan@rpi4:~ $ ifconfig
eth0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 192.168.1.13  netmask 255.255.255.0  broadcast 0.0.0.0
        ether b8:27:eb:41:af:fe  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

route table default

```
allan@rpi3:~ $ route
Kernel IP routing table
Destination     Gateway         Genmask         Flags Metric Ref    Use Iface
default         192.168.1.1     0.0.0.0         UG    0      0        0 eth0
link-local      0.0.0.0         255.255.0.0     U     202    0        0 eth0
192.168.1.0     0.0.0.0         255.255.255.0   U     0      0        0 eth0
192.168.86.0    0.0.0.0         255.255.255.0   U     303    0        0 wlan0
```

switch ip config - ip address vlan 1 (Vlan 99 other purpose)

```
Allan_Switch_1(config)#do sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
Vlan1                  192.168.1.2     YES manual up                    up
Vlan99                 192.168.86.241  YES NVRAM  up                    up
Vlan225                unassigned      YES NVRAM  down                  down
GigabitEthernet1/0/1   unassigned      YES unset  up                    up
GigabitEthernet1/0/2   unassigned      YES unset  up                    up
GigabitEthernet1/0/3   unassigned      YES unset  up                    up
GigabitEthernet1/0/4   unassigned      YES unset  up                    up
GigabitEthernet1/0/5   unassigned      YES unset  down                  down
GigabitEthernet1/0/6   unassigned      YES unset  down                  down
GigabitEthernet1/0/7   unassigned      YES unset  down                  down
GigabitEthernet1/0/8   unassigned      YES unset  down                  down
GigabitEthernet1/0/9   unassigned      YES unset  down                  down
GigabitEthernet1/0/10  unassigned      YES unset  down                  down
GigabitEthernet1/0/11  unassigned      YES unset  down                  down
GigabitEthernet1/0/12  unassigned      YES unset  down                  down
GigabitEthernet1/0/13  unassigned      YES unset  down                  down
GigabitEthernet1/0/14  unassigned      YES unset  down                  down
GigabitEthernet1/0/15  unassigned      YES unset  down                  down
GigabitEthernet1/0/16  unassigned      YES unset  down                  down
GigabitEthernet1/0/17  unassigned      YES unset  down                  down
GigabitEthernet1/0/18  unassigned      YES unset  down                  down
GigabitEthernet1/0/19  unassigned      YES unset  down                  down
 --More--
```

Check ping from R1 to all 3 servers

```
allan@rpi1:~ $ ping 192.168.1.11
PING 192.168.1.11 (192.168.1.11) 56(84) bytes of data.
64 bytes from 192.168.1.11: icmp_seq=1 ttl=64 time=1.35 ms
64 bytes from 192.168.1.11: icmp_seq=2 ttl=64 time=0.631 ms
64 bytes from 192.168.1.11: icmp_seq=3 ttl=64 time=0.606 ms
64 bytes from 192.168.1.11: icmp_seq=4 ttl=64 time=0.558 ms
64 bytes from 192.168.1.11: icmp_seq=5 ttl=64 time=0.573 ms
64 bytes from 192.168.1.11: icmp_seq=6 ttl=64 time=0.602 ms
^C
--- 192.168.1.11 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5126ms
rtt min/avg/max/mdev = 0.558/0.719/1.349/0.282 ms
allan@rpi1:~ $ ping 192.168.1.12
PING 192.168.1.12 (192.168.1.12) 56(84) bytes of data.
64 bytes from 192.168.1.12: icmp_seq=1 ttl=64 time=1.36 ms
64 bytes from 192.168.1.12: icmp_seq=2 ttl=64 time=0.613 ms
64 bytes from 192.168.1.12: icmp_seq=3 ttl=64 time=0.635 ms
^C
--- 192.168.1.12 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2032ms
rtt min/avg/max/mdev = 0.613/0.868/1.356/0.345 ms
allan@rpi1:~ $ ping 192.168.1.13
PING 192.168.1.13 (192.168.1.13) 56(84) bytes of data.
64 bytes from 192.168.1.13: icmp_seq=1 ttl=64 time=1.37 ms
64 bytes from 192.168.1.13: icmp_seq=2 ttl=64 time=0.610 ms
^C
--- 192.168.1.13 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1002ms
rtt min/avg/max/mdev = 0.610/0.991/1.372/0.381 ms
```

Generating unknown unicast from R1

First verify switch mac address table