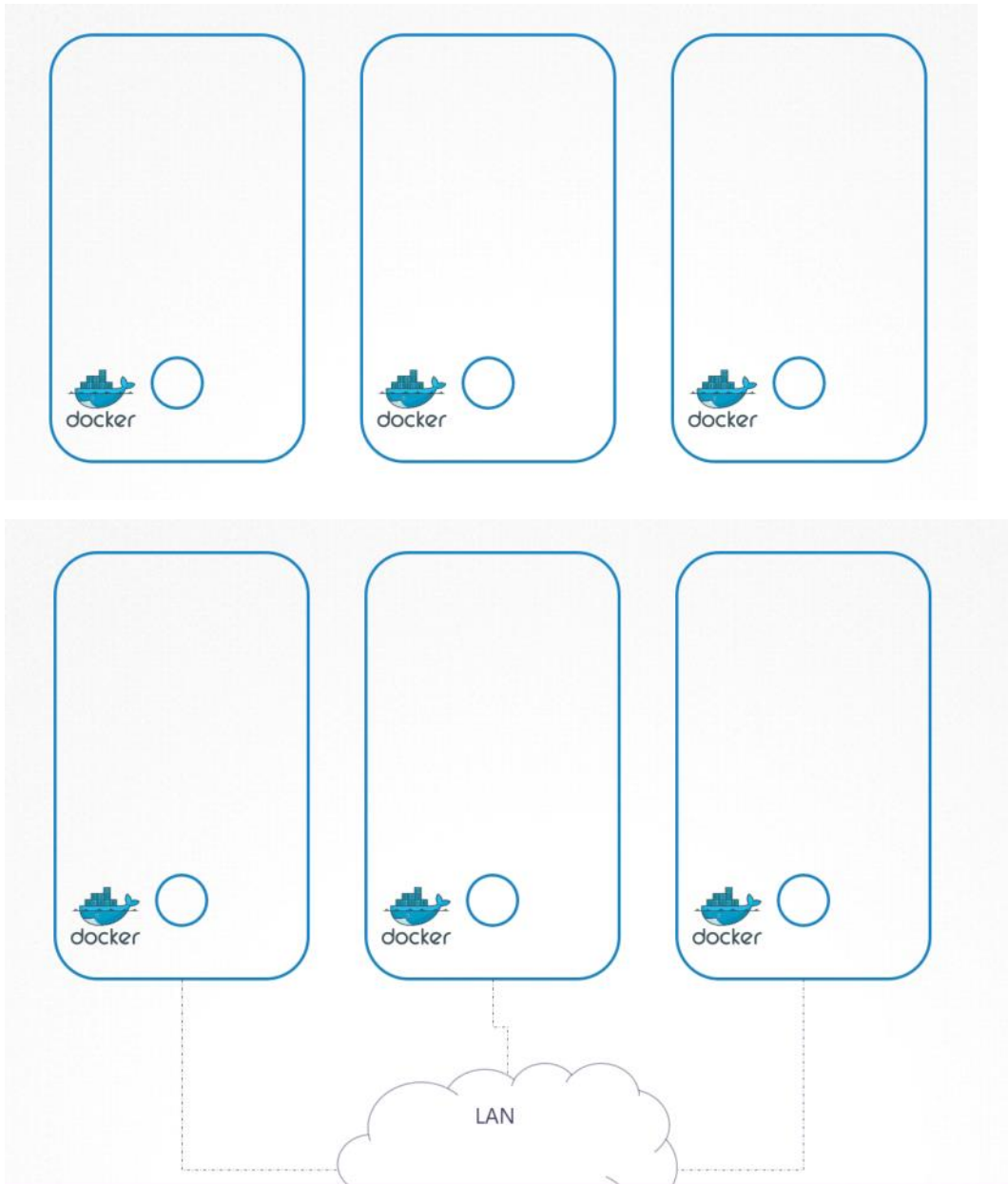
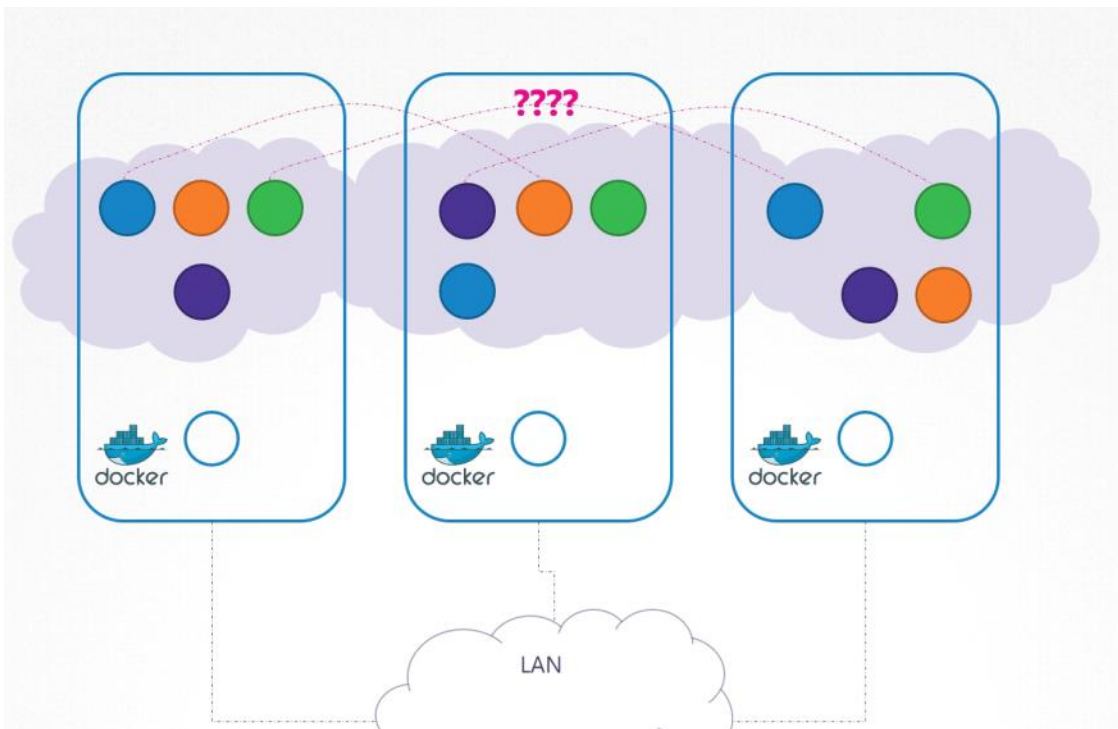


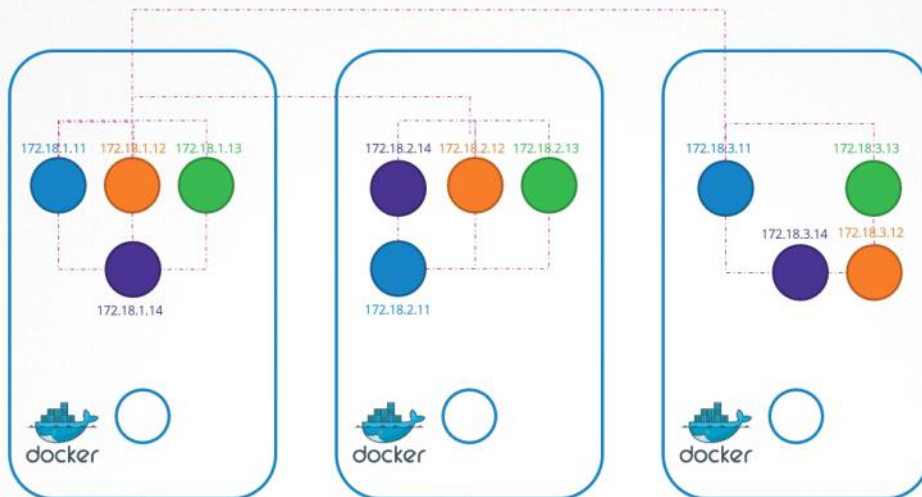
POD Networking Concepts





Networking Model

- ☐ Every POD should have an IP Address
- ☐ Every POD should be able to communicate with every other POD in the same node.
- ☐ Every POD should be able to communicate with every other POD on other nodes without NAT.



OCI



```
ip link add v-net-0 type bridge
```

```
ip link set dev v-net-0 up
```

uld have an IP Address

```
ip addr add 192.168.15.5/24 dev v-net-0
```

uld be able to communicate with every other POD on other nodes without NAT.

```
ip link add veth-red type veth peer name veth-red-br
```

```
ip link set veth-red netns red
```

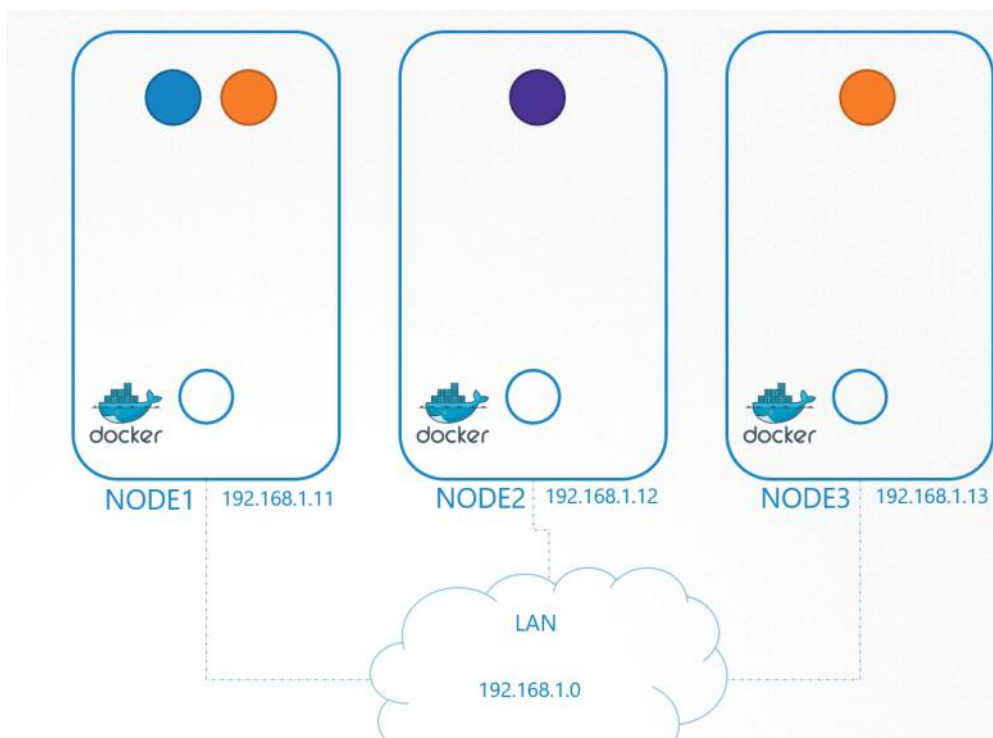
```
ip -n red addr add 192.168.15.1 dev veth-red
```

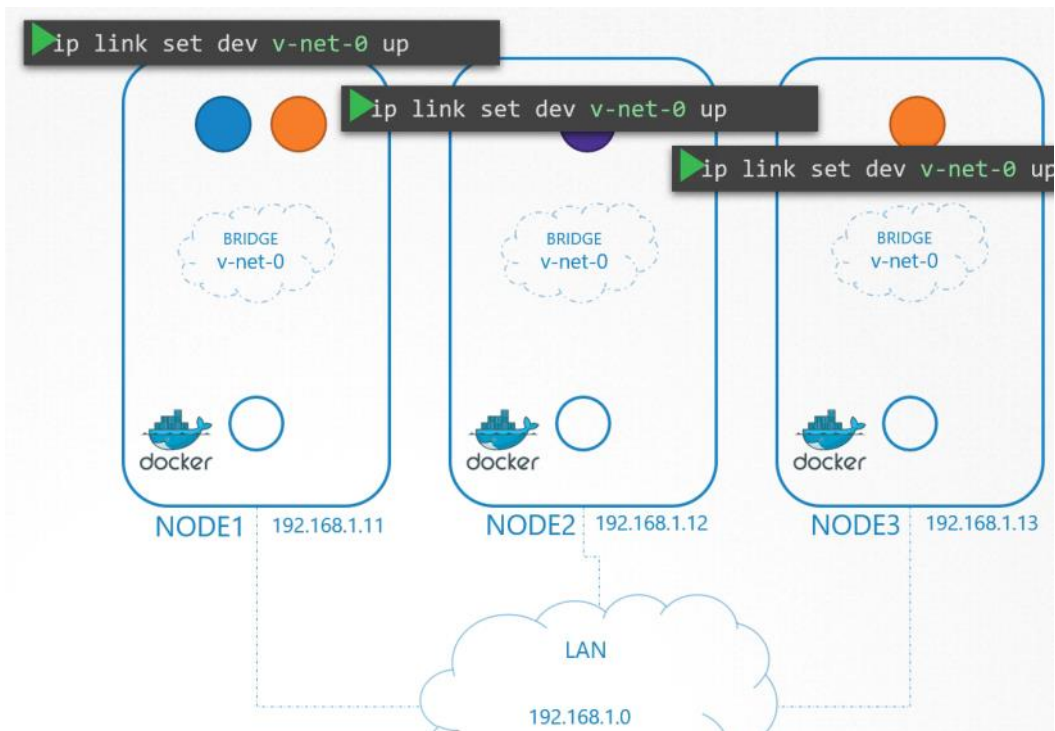
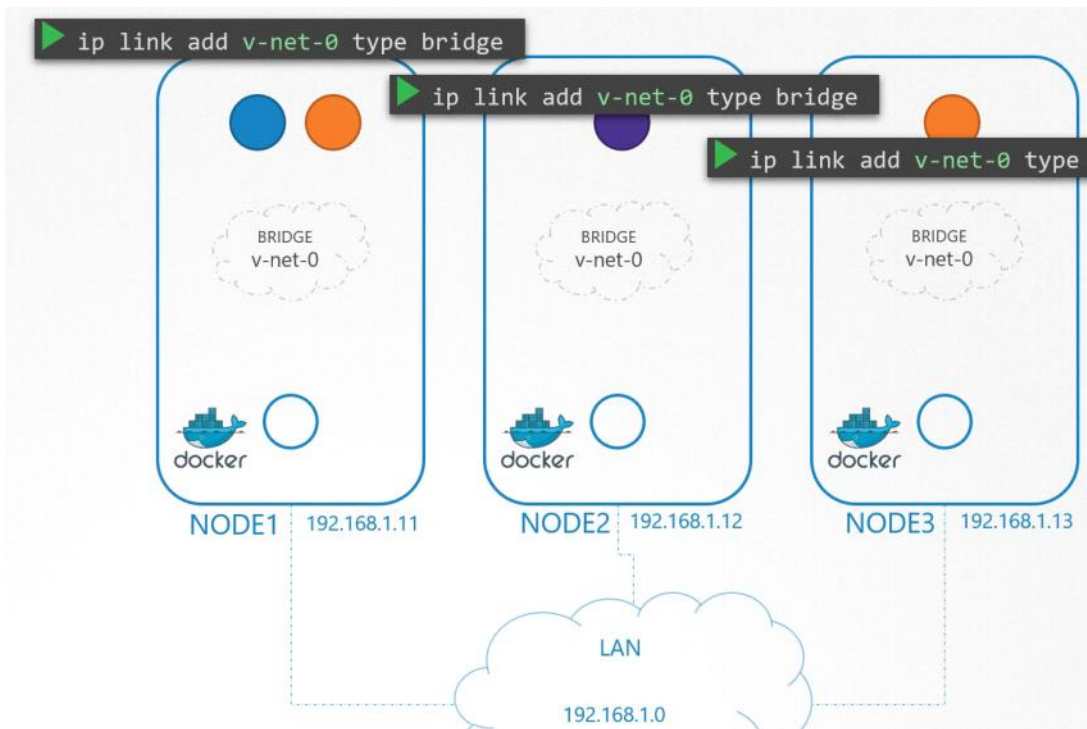
```
ip -n red link set veth-red up
```

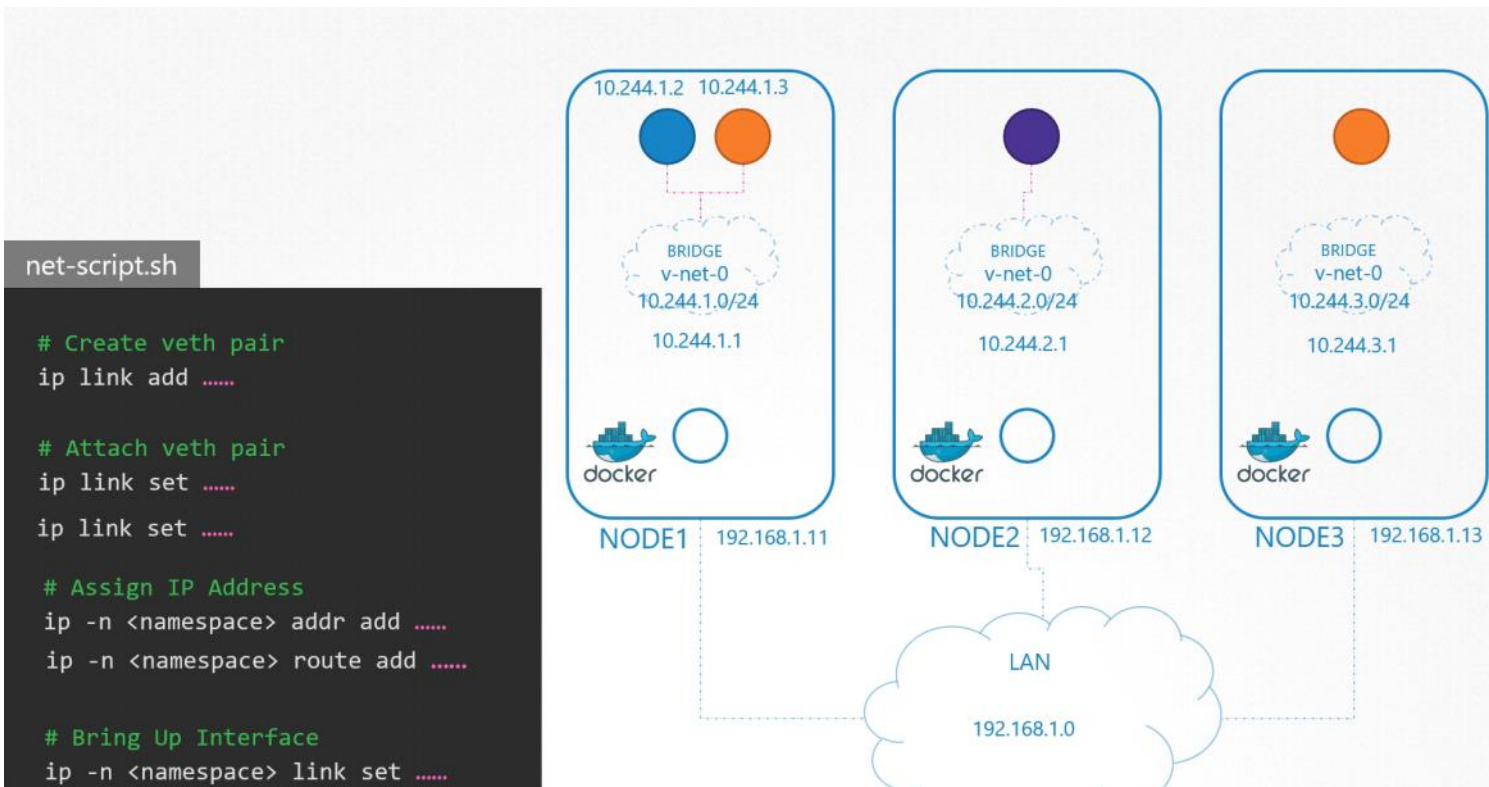
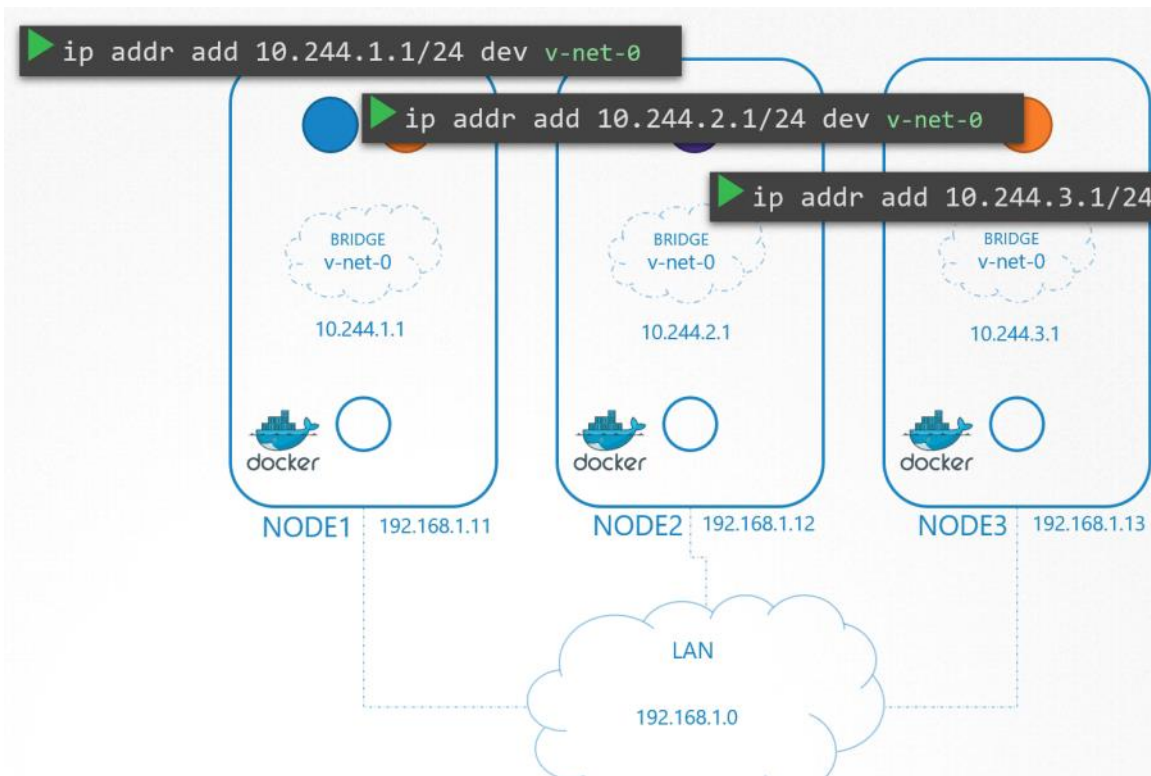
```
ip link set veth-red-br master v-net-0
```

```
ip netns exec blue ip route add 192.168.1.0/24 via 192.168.15.5
```

```
iptables -t nat -A POSTROUTING -s 192.168.15.0/24 -j MASQUERADE
```







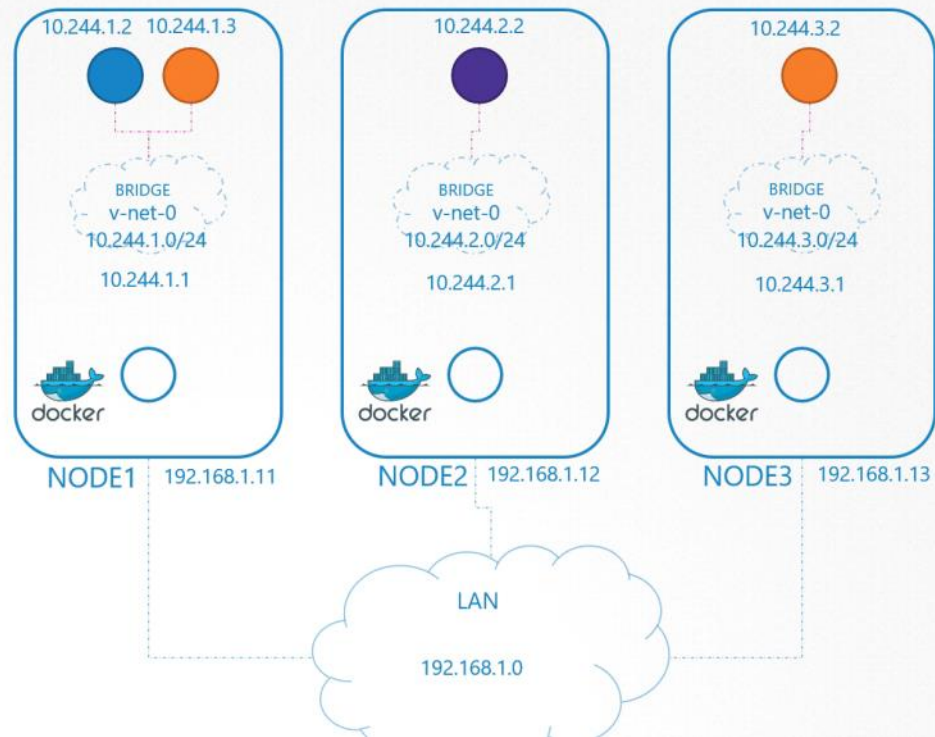
net-script.sh

```
# Create veth pair
ip link add .....

# Attach veth pair
ip link set .....
ip link set .....

# Assign IP Address
ip -n <namespace> addr add .....
ip -n <namespace> route add .....

# Bring Up Interface
ip -n <namespace> link set .....
```



```
bluepod$ ping 10.244.2.2
```

Connect: Network is unreachable

```
node1$ ip route add 10.244.2.2 via 192.168.1.12
```

```
bluepod$ ping 10.244.2.2
```

```
64 bytes from 8.8.8.8: icmp_seq=1 ttl=63 time=0.587 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=63 time=0.466 ms
```

```
bluepod$ ping 10.244.2.2
```

```
64 bytes from 8.8.8.8: icmp_seq=1 ttl=63 time=0.587 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=63 time=0.466 ms
```

```
node1$ ip route add 10.244.2.2 via 192.168.1.12
```

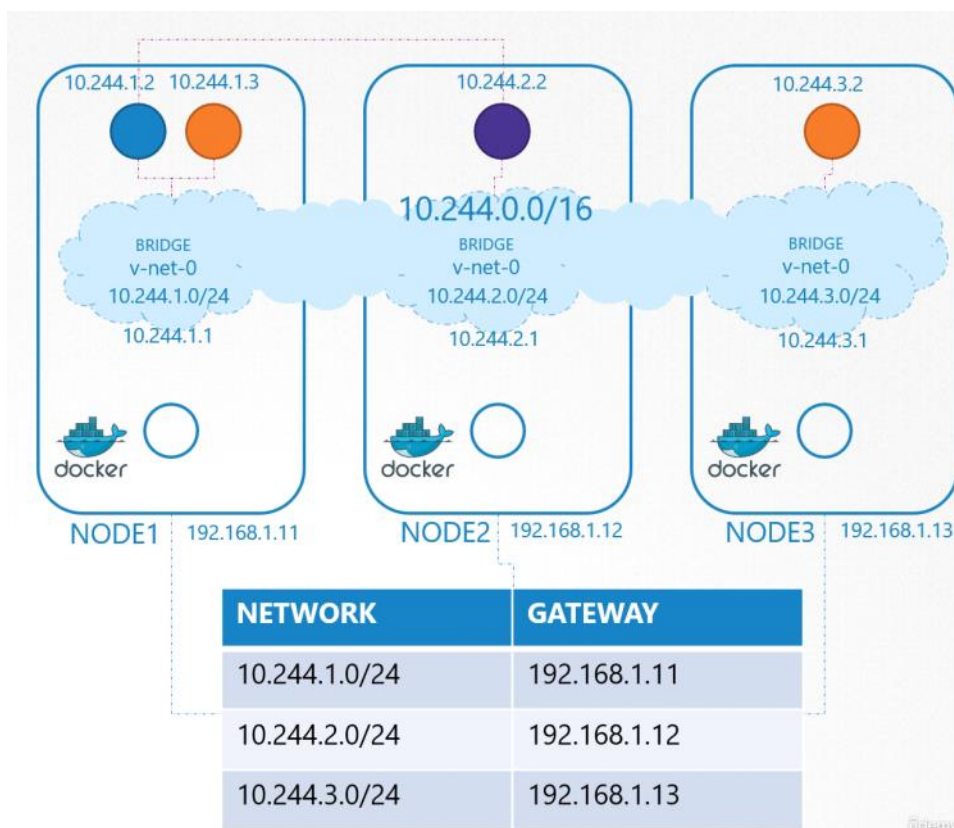
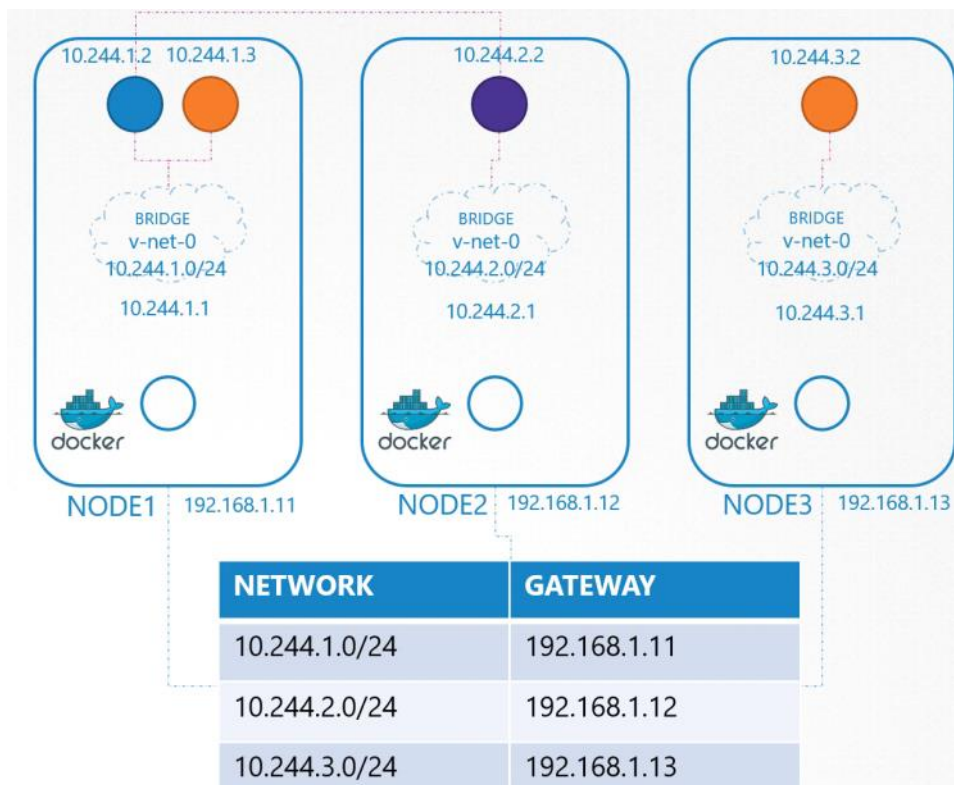
```
node1$ ip route add 10.244.3.2 via 192.168.1.13
```

```
node2$ ip route add 10.244.1.2 via 192.168.1.11
```

```
node2$ ip route add 10.244.3.2 via 192.168.1.13
```

```
node3$ ip route add 10.244.1.2 via 192.168.1.11
```

```
node3$ ip route add 10.244.2.2 via 192.168.1.12
```





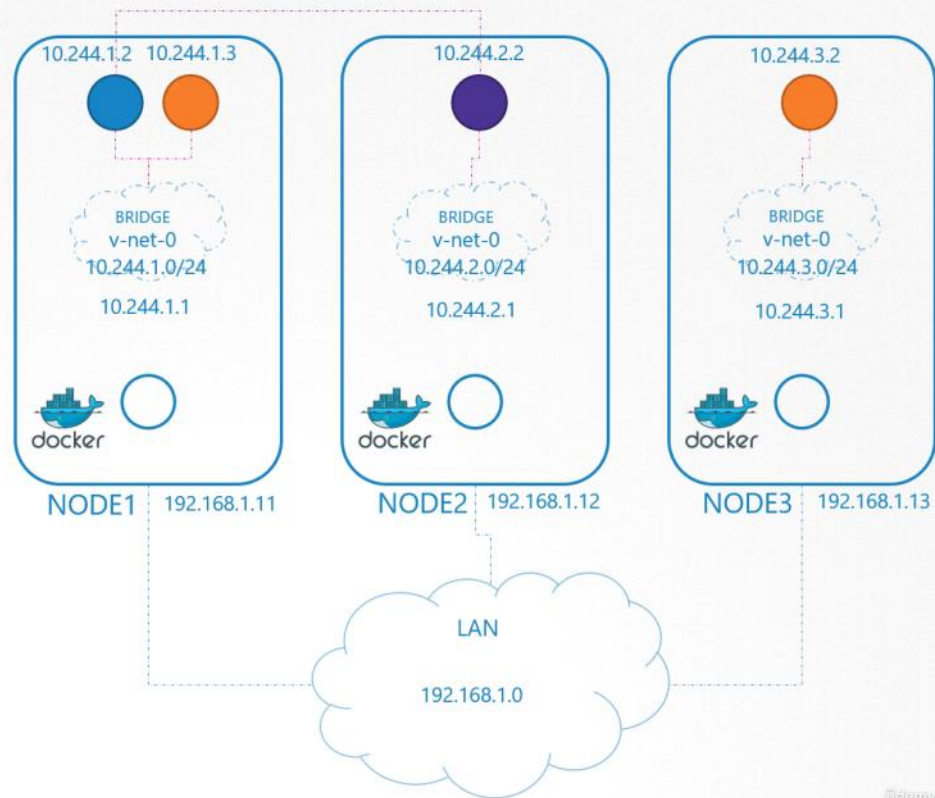
CONTAINER NETWORK INTERFACE (CNI)

net-script.sh

```
# Create veth pair
ip link add .....

# Attach veth pair
ip link set .....
ip link set .....

# Assign IP Address
ip -n <namespace> addr add .....
ip -n <namespace> route add .....
```



net-script.sh

```
ADD)
# Create veth pair
# Attach veth pair
# Assign IP Address
# Bring Up Interface
ip -n <namespace> link set .....
DEL)

# Delete veth pair
ip link del .....
```