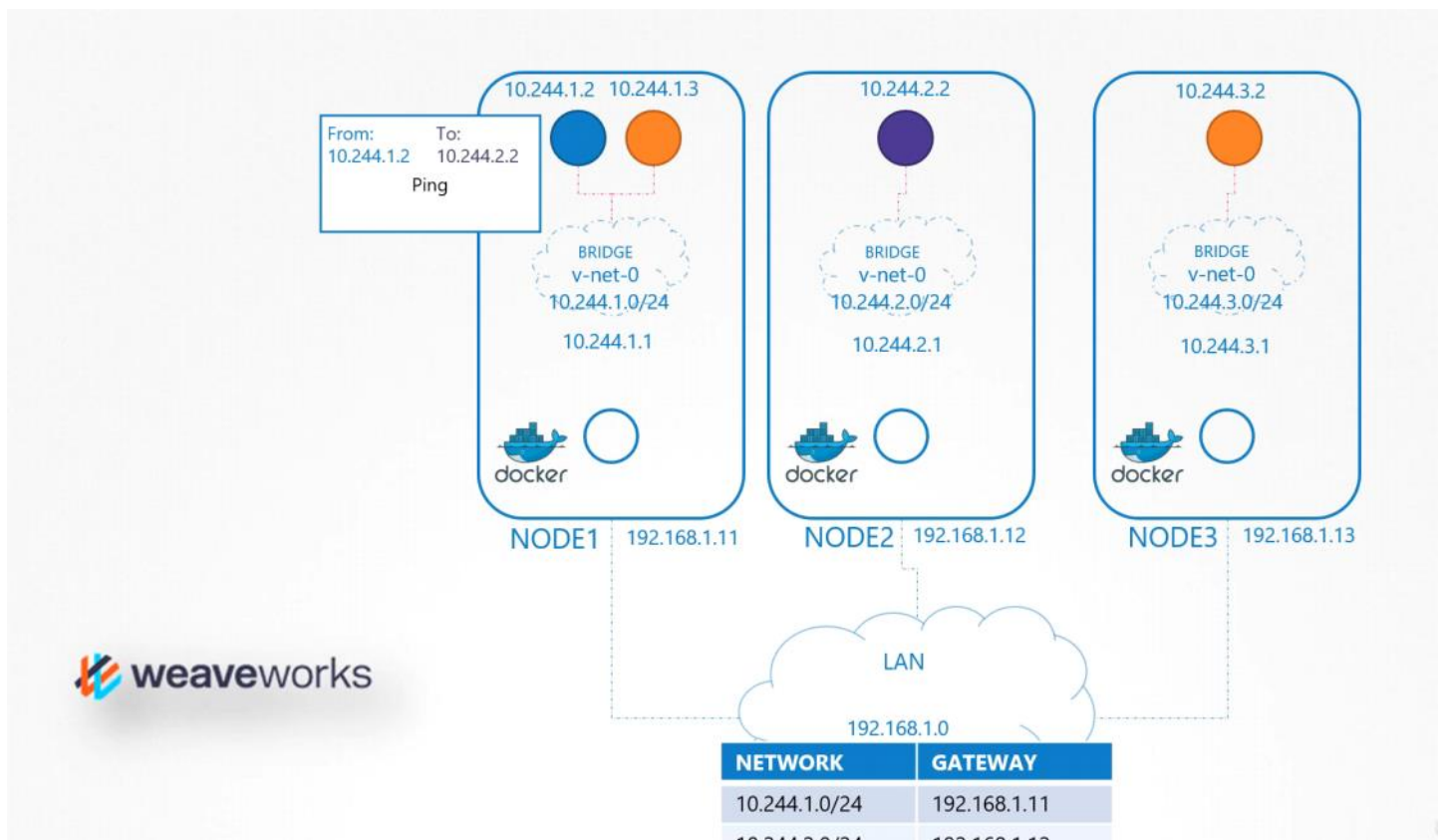
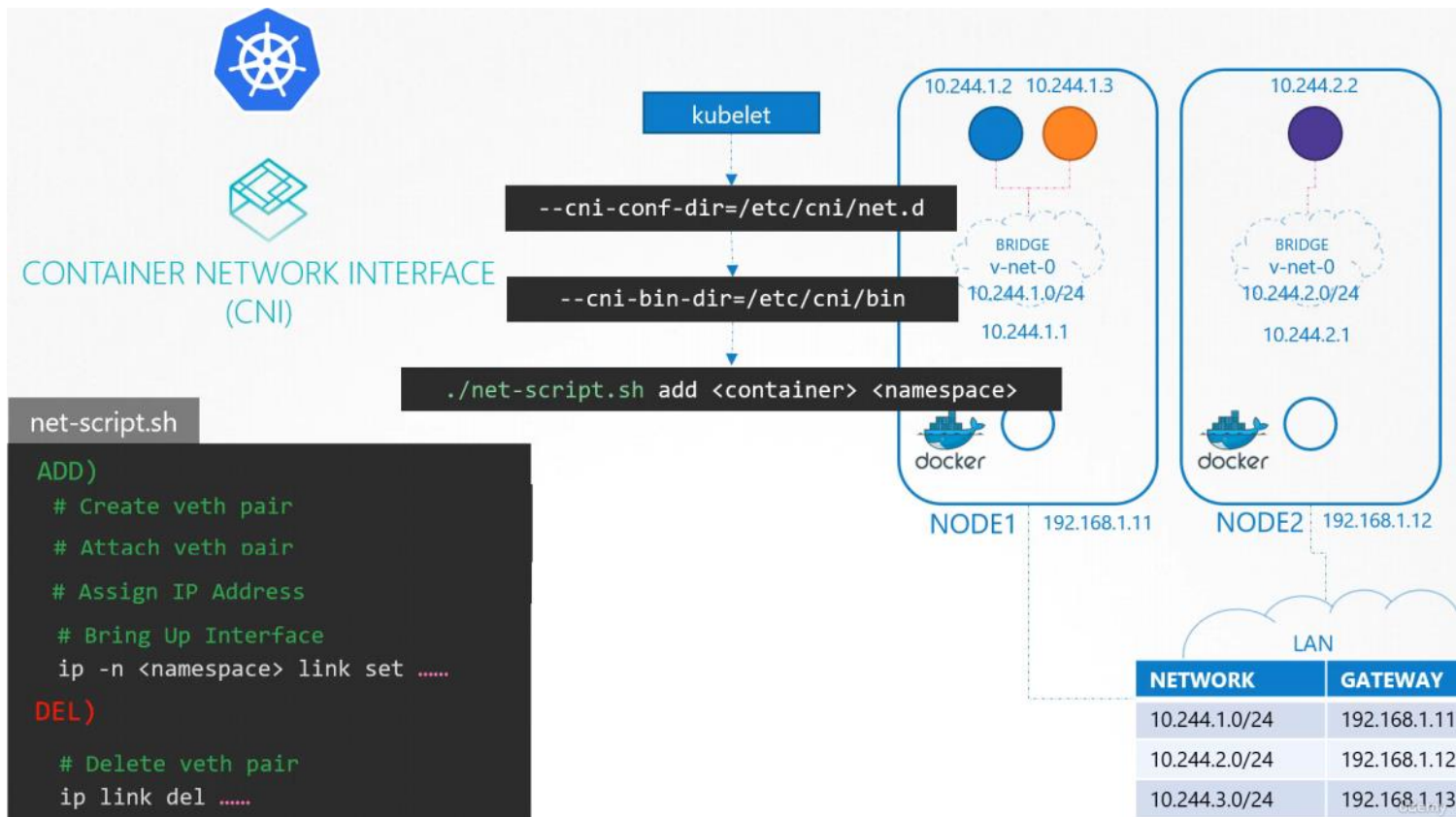
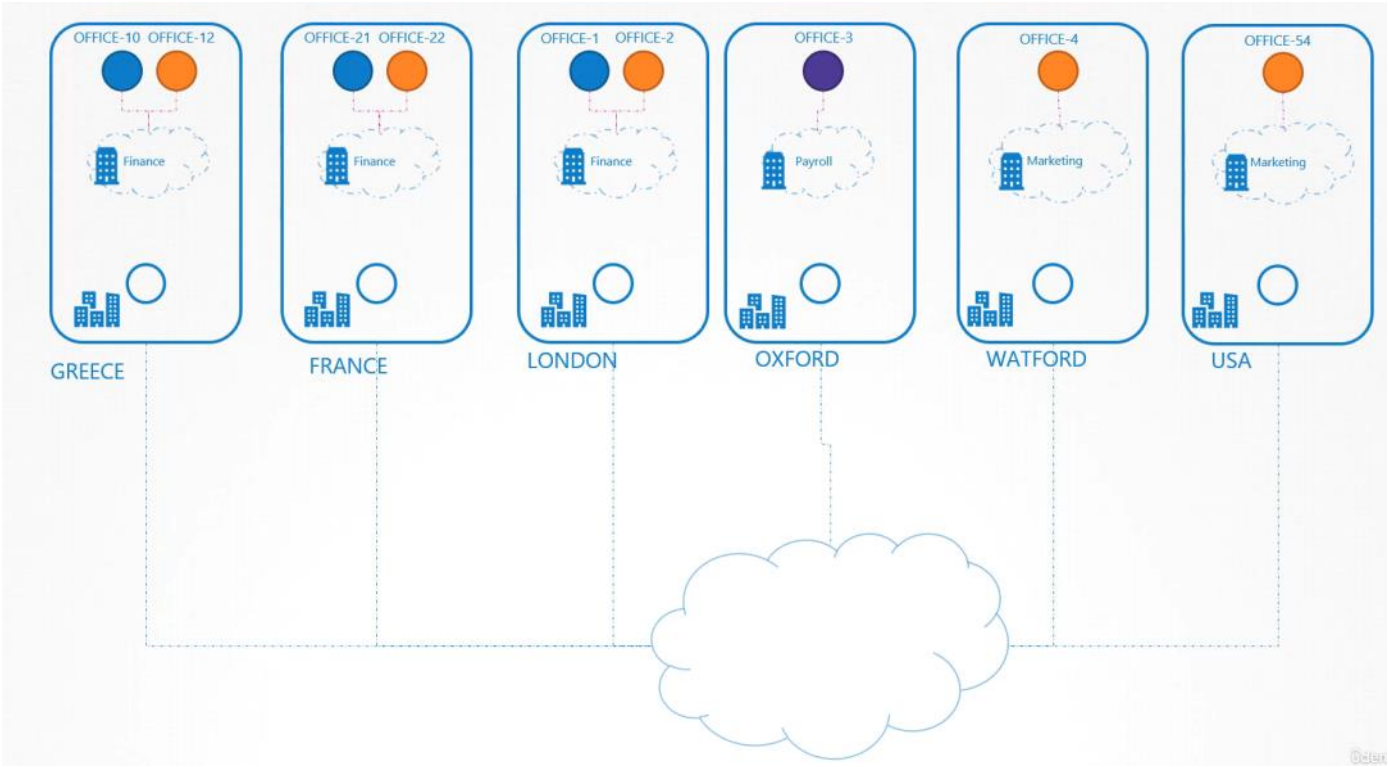
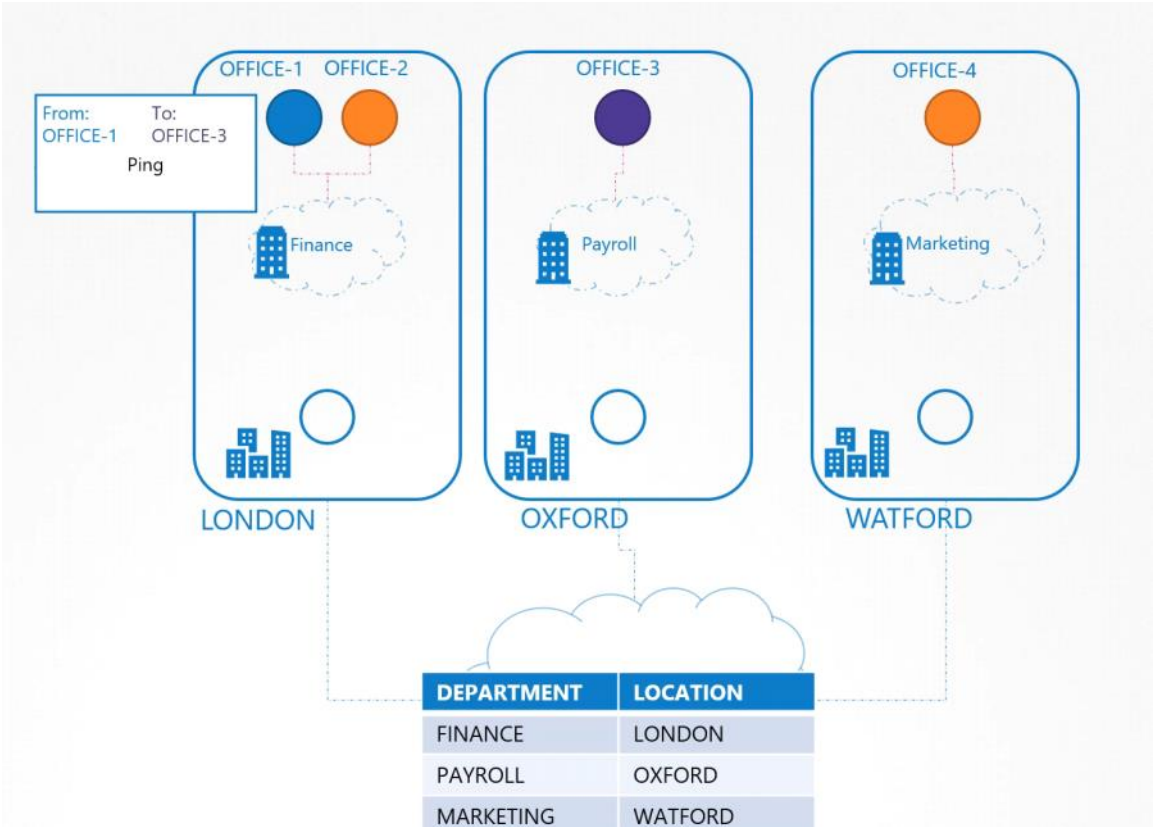
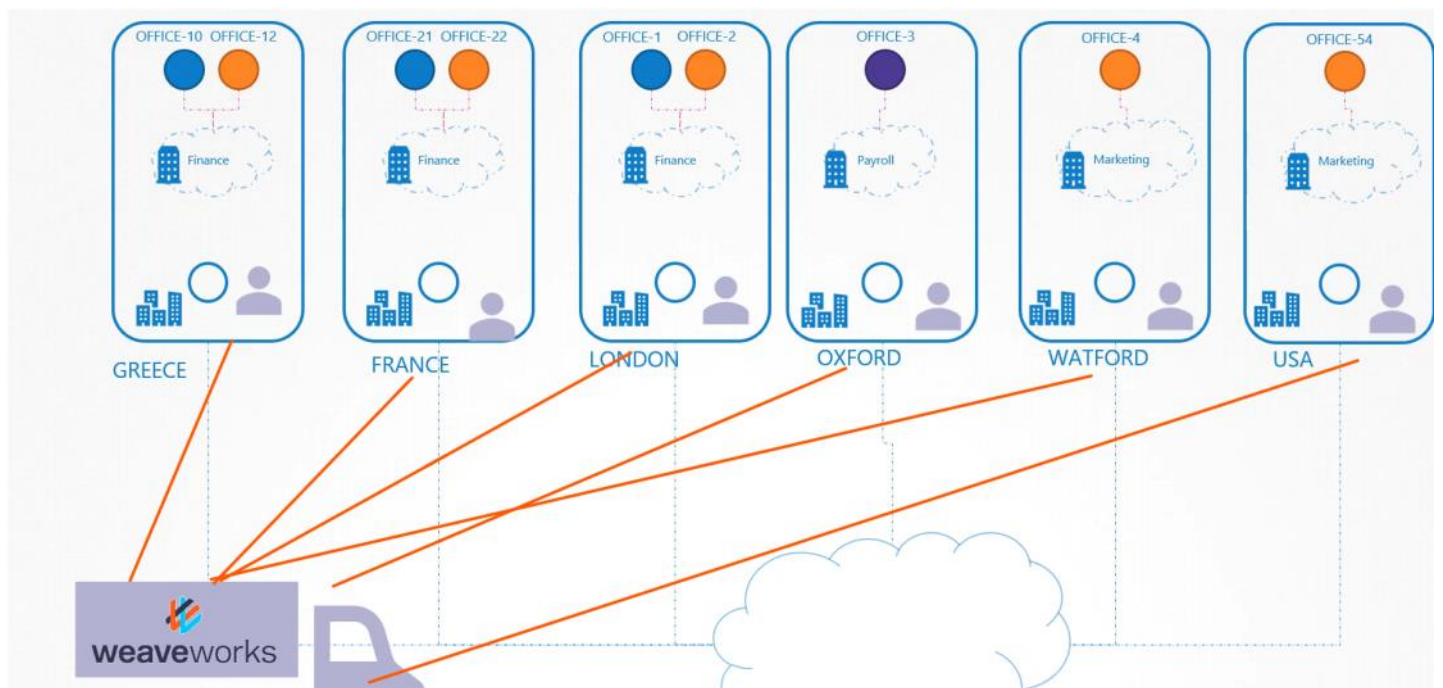
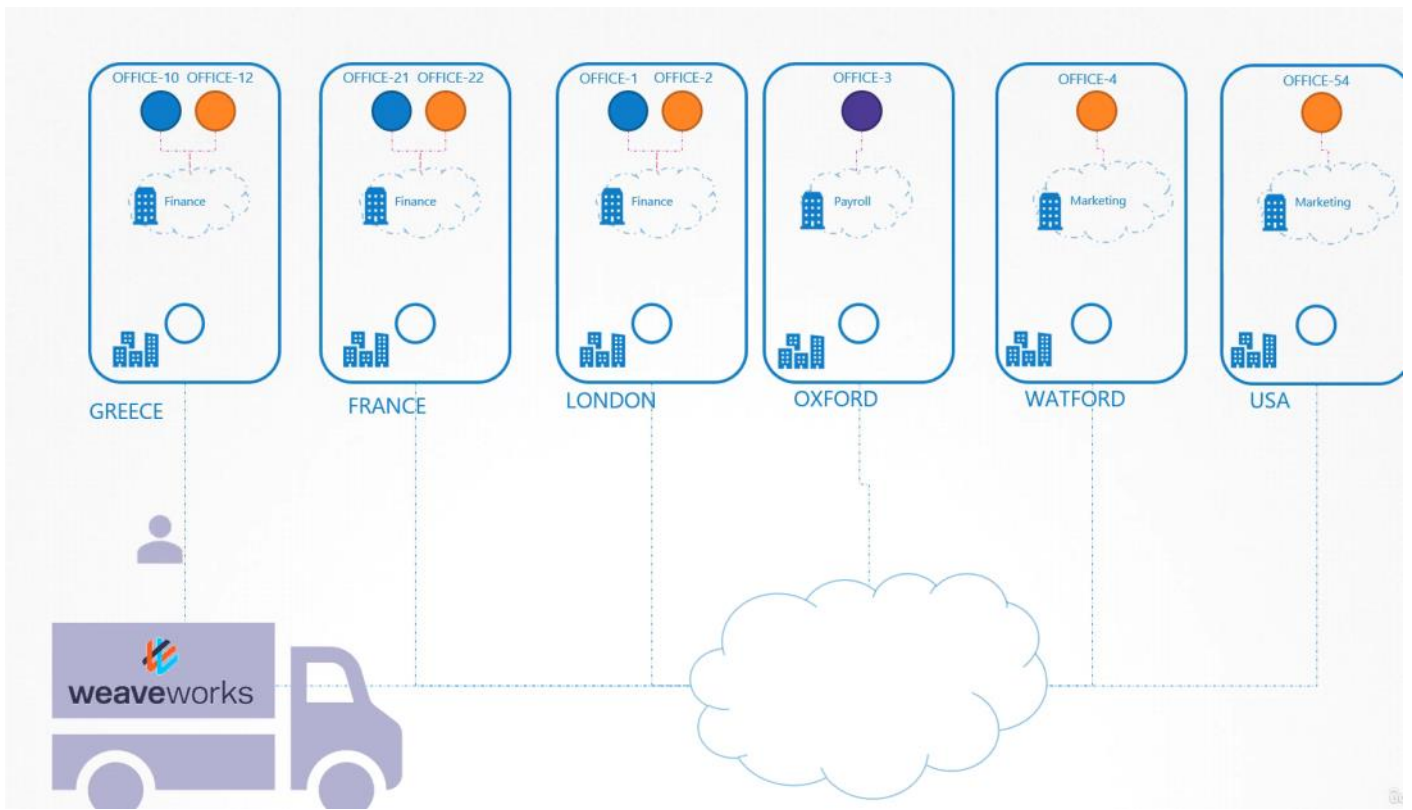
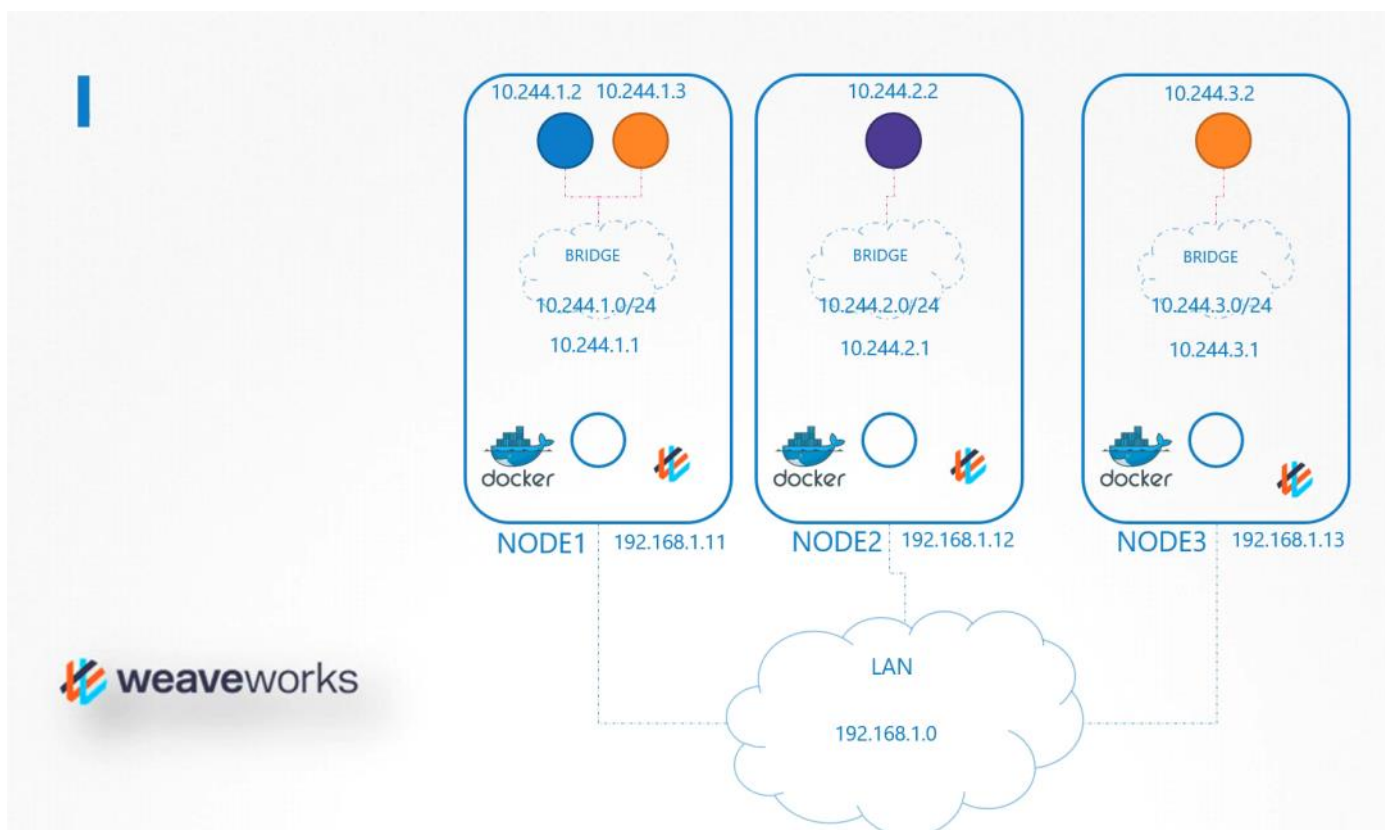
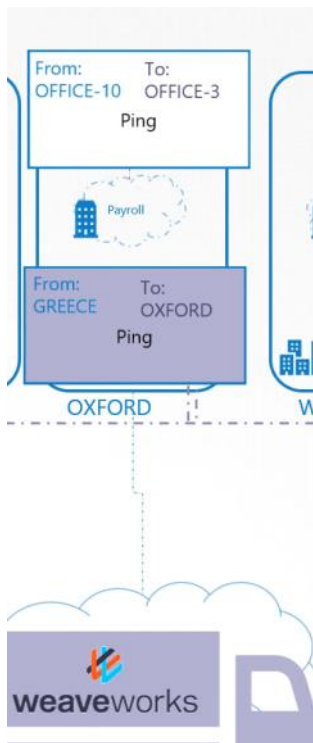
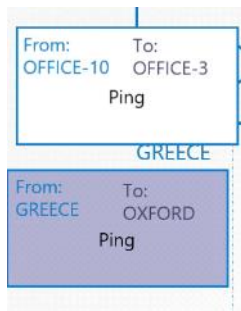


# WeaveWorks (CNI)

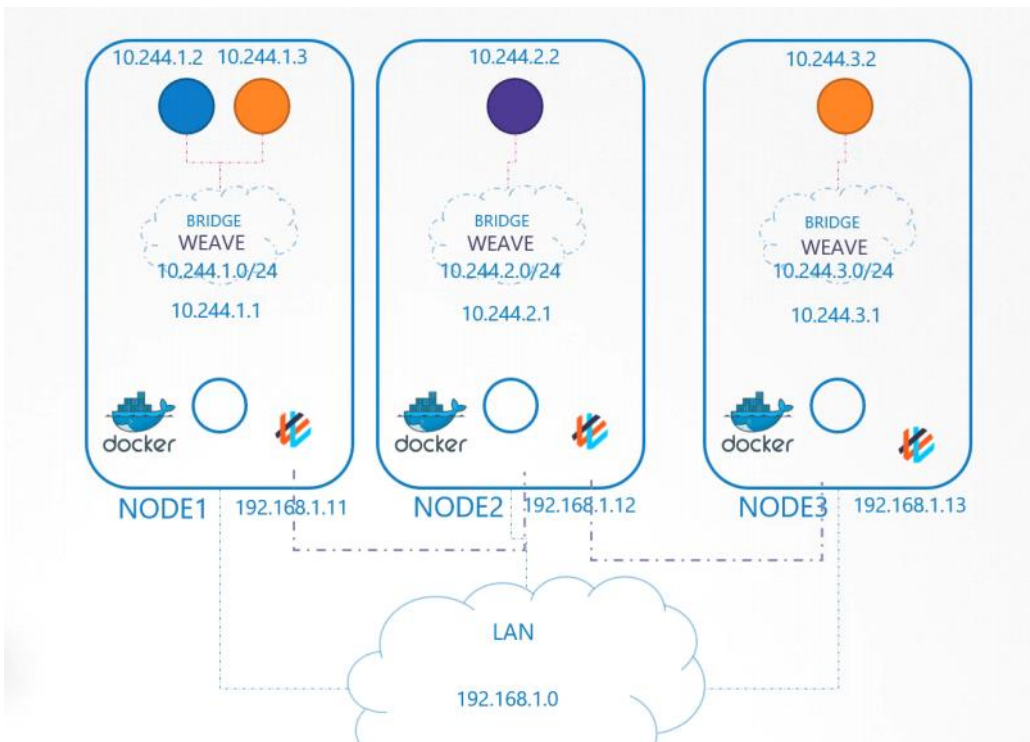












```
kubectl exec busybox ip route
default via 10.244.1.1 dev eth0
```

## Deploy Weave

```
kubectl apply -f "https://cloud.weave.works/k8s/net?k8s-version=$(kubectl version | base64 | tr -d '\n')"
```

serviceaccount/weave-net created  
clusterrole.rbac.authorization.k8s.io/weave-net created  
clusterrolebinding.rbac.authorization.k8s.io/weave-net created  
role.rbac.authorization.k8s.io/weave-net created  
rolebinding.rbac.authorization.k8s.io/weave-net created  
daemonset.extensions/weave-net created

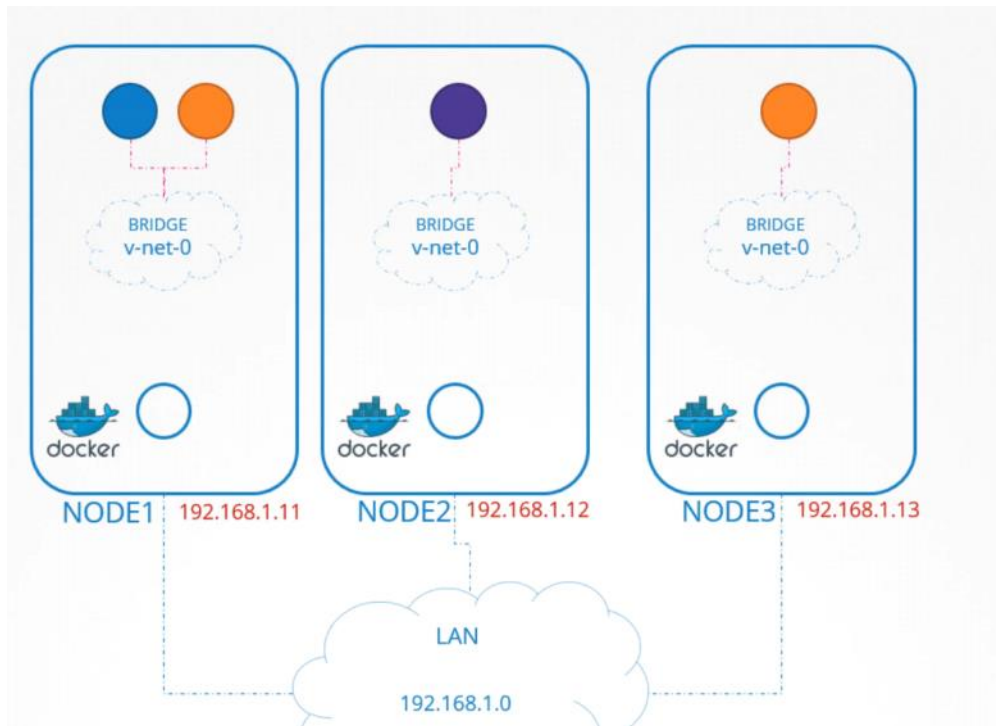
```
kubectl get pods -n kube-system
```

NAME	READY	STATUS	RESTARTS	AGE	IP	NODE	
NOMINATED NODE							
coredns-78fcd6894-99khw	1/1	Running	0	19m	10.44.0.2	master	<none>
coredns-78fcd6894-p7dpj	1/1	Running	0	19m	10.44.0.1	master	<none>
etcd-master	1/1	Running	0	18m	172.17.0.11	master	<none>
kube-apiserver-master	1/1	Running	0	18m	172.17.0.11	master	<none>
kube-scheduler-master	1/1	Running	0	17m	172.17.0.11	master	<none>
weave-net-5gcmb	2/2	Running	1	19m	172.17.0.30	node02	<none>
weave-net-fr9n9	2/2	Running	1	19m	172.17.0.11	master	<none>
weave-net-mc6s2	2/2	Running	1	19m	172.17.0.23	node01	<none>
weave-net-tbzyz	2/2	Running	1	19m	172.17.0.52	node03	<none>

```
kubectl logs weave-net-5gcmb weave -n kube-system
```

```
INFO: 2019/03/03 03:41:08.643858 Command line options: map[status-addr:0.0.0.0:6782 http-addr:172.17.0.1:6784 ipalloc-range:10.32.0.0/12 name:9e:96:c8:09:bf:c4 nickname:node02 conn-limit:30 datapath:datapath db-prefix:/weavedb/hostname:net host-root:/host port:6783 docker-api: expect-npc:true ipalloc-init:consensus=4 no-dns:true]
INFO: 2019/03/03 03:41:08.643980 weave 2.2.1
INFO: 2019/03/03 03:41:08.751508 Bridge type is bridged_fastdp
INFO: 2019/03/03 03:41:08.751526 Communication between peers is unencrypted.
INFO: 2019/03/03 03:41:08.753583 Our name is 9e:96:c8:09:bf:c4(node02)
INFO: 2019/03/03 03:41:08.753615 Launch detected - using supplied peer list: [172.17.0.11 172.17.0.23 172.17.0.30 172.17.0.52]
INFO: 2019/03/03 03:41:08.753632 Checking for pre-existing addresses on weave bridge
INFO: 2019/03/03 03:41:08.756183 [allocator 9e:96:c8:09:bf:c4] No valid persisted data
INFO: 2019/03/03 03:41:08.761033 [allocator 9e:96:c8:09:bf:c4] Initialising via deferred consensus
INFO: 2019/03/03 03:41:08.761091 Sniffing traffic on datapath (via ODP)
INFO: 2019/03/03 03:41:08.761659 ->[172.17.0.23:6783] attempting connection
INFO: 2019/03/03 03:41:08.817477 overlay_switch ->[8a:31:f6:b1:38:3f(node03)] using fastdp
INFO: 2019/03/03 03:41:08.819493 sleave ->[172.17.0.52:6783]8a:31:f6:b1:38:3f(node03)]: Effective MTU verified at 1438
INFO: 2019/03/03 03:41:09.107287 Weave version 2.5.1 is available; please update at https://github.com/weaveworks/weave/releases/download/v2.5.1/weave
INFO: 2019/03/03 03:41:09.204907 Discovered remote MAC 8a:dd:b5:14:8f:a3 at 8a:dd:b5:14:8f:a3(node01)
INFO: 2019/03/03 03:41:09.331952 Discovered remote MAC 8a:31:f6:b1:38:3f at 8a:31:f6:b1:38:3f(node03)
INFO: 2019/03/03 03:41:09.355976 Discovered remote MAC 8a:59:c2:d2:86:1f at 8a:31:f6:b1:38:3f(node03)
```

# IPAM (CNI)



CONTAINER NETWORK INTERFACE  
(CNI)

## CNI Plugin Responsibilities:

- ✓ Must support arguments ADD/DEL/CHECK
- ✓ Must support parameters container id, network ns etc..
- ✓ **Must manage IP Address assignment to PODs**
- ✓ Must Return results in a specific format

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 .....
```

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

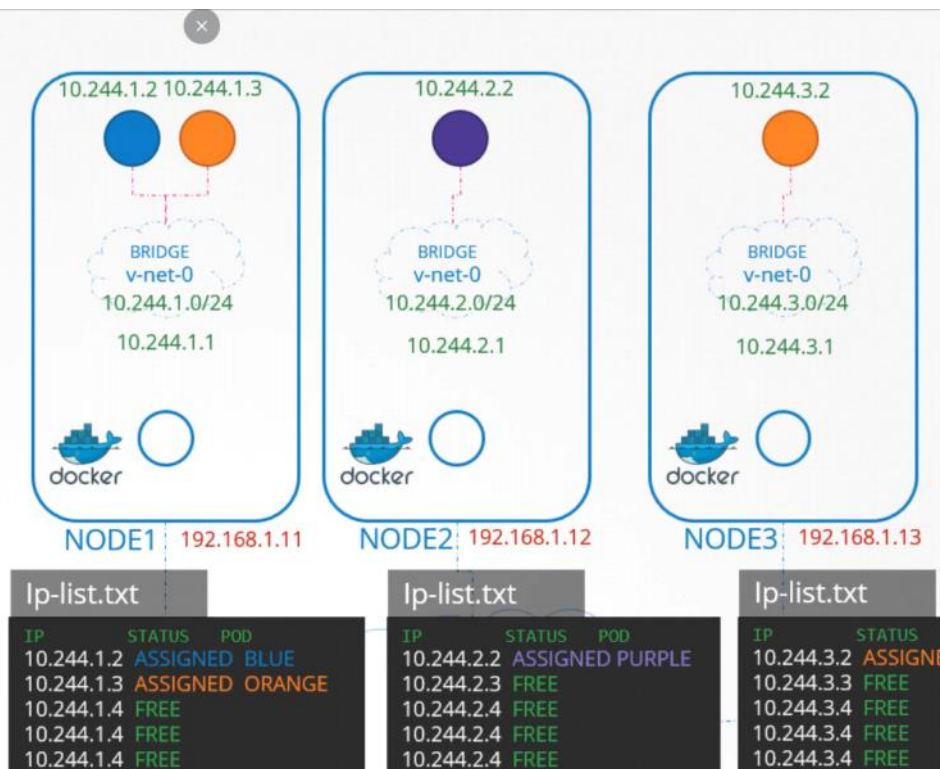
Ip-list.txt

```
IP      STATUS  POD
10.244.1.2 ASSIGNED BLUE
10.244.1.3 ASSIGNED ORANGE
10.244.1.4 FREE
10.244.1.4 FREE
10.244.1.4 FREE
```

```
# Retrieve Free IP from file
ip = get_free_ip_from_file()
```



```
# Retrieve Free IP from file
ip = get_free_ip_from_file()
# Assign IP Address
ip -n <namespace> addr add .....
ip -n <namespace> route add .....
```



DHCP

host-local

```
# Invoke IPAM host-local plugin
ip = get_free_ip_from_host_local()
# Assign IP Address
ip -n <namespace> addr add .....
ip -n <namespace> route add .....
```

```

cat /etc/cni/net.d/net-script.conf

{
  "cniVersion": "0.2.0",
  "name": "mynet",
  "type": "net-script",
  "bridge": "cni0",
  "isGateway": true,
  "ipMasq": true,
  "ipam": {
    "type": "host-local",
    "subnet": "10.244.0.0/16",
    "routes": [
      { "dst": "0.0.0.0/0" }
    ]
  }
}

```

**10.32.0.0/12**

10.32.0.1 > 10.47.255.254

**1,048,574 !!!!!**

