## 1. Servicio Kubelet

```
un 25 12:29:13 kuber-master kubelet[18772]: 10625 12:29:13.167864
                                                                                                                                                                                                                                                                                                                                                            18772 reconciler.go:224] operationExecutor.VerifyControllerAttachedVolume started for volum...e54d0be
    The state of the s
      un 25 12:29:13 kuber-master kubelet[18772]: 10625 12:29:13.168149 18772 reconciler.go:157] Reconciler: start to sync state int: Some lines were ellipsized, use -l to show in full.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ⊕ 🔌 🥦
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             🔞 非 🥒
   root@kuber-master ~] # systemctl status kubelet
kubelet.service - kubelet: The Kubernetes Node Agent
Loaded: loaded (/usr/lib/systemd/system/kubelet.service; enabled; vendor preset: disabled)
Drop-In: /usr/lib/systemd/system/kubelet.service.d
__10-kubeadm.conf
Active: active (running) since Thu 2020-06-25 15:26:11 -04; @min ago
Docs: https://kubernetes.io/docs/
Main PID: 18410 (kubelet)
Tasks: 19
Memory: 34.7M
CGroup: /system.slice/kubelet.service
                                                    34./M
/system.slice/kubelet.service
L18410 /usr/bin/kubelet --bootstrap-kubeconfig=/etc/kubernetes/bootstrap-kubelet.conf --kubeconfig=/etc/kubernetes/kubelet.conf --config=/var/lib/ku..
              25 15:34:24 kuber-master kubelet[18410]: E0625 15:34:24.616488
25 15:34:26 kuber-master kubelet[18410]: W0625 15:34:26.627714
25 15:34:29 kuber-master kubelet[18410]: W0625 15:34:26.627714
25 15:34:31 kuber-master kubelet[18410]: W0625 15:34:29.639175
25 15:34:34 kuber-master kubelet[18410]: E0625 15:34:36.80391
25 15:34:36 kuber-master kubelet[18410]: E0625 15:34:34.662507
25 15:34:36 kuber-master kubelet[18410]: E0625 15:34:39.685803
25 15:34:41 kuber-master kubelet[18410]: E0625 15:34:39.685803
25 15:34:44 kuber-master kubelet[18410]: E0625 15:34:46.628031
25 15:34:46 kuber-master kubelet[18410]: E0625 15:34:46.628031
26 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
27 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not ready: NetworkReady=false rea...itialized
28 18410 kubelet.go:2187] Container runtime network not rea
                                          me lines were ellipsized, use -1 to show in full
                                kuber-master ~] # journalct1 -xeu kubelet
11:48:56 kuber-master kubelet[3156]: E0622 11:48:56.667437
11:48:56 kuber-master kubelet[3156]: E0622 11:48:56.667437
11:48:56 kuber-master kubelet[3156]: E0622 11:48:56.867918
11:48:56 kuber-master kubelet[3156]: E0622 11:48:56.867918
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.070418
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.7709418
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.770915
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.371167
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.371167
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.772615
11:48:57 kuber-master kubelet[3156]: E0622 11:48:57.772616
11:48:58 kuber-master kubelet[3156]: E0622 11:48:58.77313
11:48:58 kuber-master kubelet[3156]: E0622 11:48:58.77313
11:48:58 kuber-master kubelet[3156]: E0622 11:48:58.77313
        Sotexuser marker 17 3, which is a source of the source of 
         Active: activating (auto-restart) (Result: exit-code) since Thu 2020-06-25 12:24:45 -04; 3s ago
Docs: https://kubernetes.io/docs/
Process: 16606 ExecStart=/usr/bin/kubelet $KUBELET_KUBECONFIG_ARGS $KUBELET_CONFIG_ARGS $KUBELET_KUBEADM_ARGS $KUBELET_EXTRA_ARGS (code=
ain PID: 16606 (code=exited, status=255)
                            12:24:45 kuber-master systemd[1]: Unit kubelet.service entered failed state. 12:24:45 kuber-master systemd[1]: kubelet.service failed.
    -10-Kubeadm.com
Active: activating (auto-restart) (Result: exit-code) since Mon 2020-06-22 16:54:02 -04; 9s ago
Docs: https://kubernetes.io/docs/
Process: 20850 ExecStart=/usr/bin/kubelet $KUBELET_KUBECONFIG_ARGS $KUBELET_CONFIG_ARGS $KUBELET_KUBEADM_ARGS $KUBELET_EXTRA_ARGS (code=exited, status=255)
Main PID: 20850 (code=exited, status=255)
```

un 22 16:54:02 kuber-master systemd[1]: Unit kubelet.service entered failed state. un 22 16:54:02 kuber-master systemd[1]: kubelet.service failed. root@kuber-master  $^{1}$  [

```
[root@kuber-master ~] # cat /usr/lib/systemd/system/kubelet.service
[Unit]
Description=kubelet: The Kubernetes Node Agent
Documentation=https://kubernetes.io/docs/
Wants=network-online.target
After=network-online.target

[Service]
ExecStart=/usr/bin/kubelet
Restart=always
StartLimitInterval=0
RestartSec=10
[Install]
WantedBy=multi-user.target
[root@kuber-master ~] # []
```

## 2. Seguridad kubernetes

```
root@kuber-master ~] # kubeadm token list
                                                                                                                                EXPIRES
                                                                                                                                                                                                                                 USAGES
                                                                                                                                                                                                                                                                                                                      DESCRIPTION
        EXTRA GROUPS
                                                                                                                                2020-06-23T17:03:03-04:00
                                                                                                                                                                                                                                authentication, signing
                                                                                                                                                                                                                                                                                                                      The default bootstrap token generate
        \verb|system:bootstrappers:kubeadm:default-node-token|\\
  root@kuber-master ~]#
        ot@kuber-master ~] # grep 'client-certificate-data' /etc/kubernetes/admin.conf | head -n 1 | awk '{print $2}' | base64 -d >> kubecf
 .xMKa3ViZXJuZXRlczAeFw0yMDA2MjMxOTQ2NTNaFw0yMTA2MjMxOTQ2NThaMDQx
zAVBgNVBAoTDnN5c3RlbTptYXN0ZXJzMRkwFwYDVQQDExBrdWJlcm5ldGVzLWFk
  ac4V3FeDBBj2kltsaxYV3TscWepsfvs9XAPsOs0mu58jE6JwzCsNepFwS0UKg5vE
{o3GNIgvBRPaNT1aQrm3JNJ2bDrTpKwFpaaw771XxqsF04lXyEzMeZrcU7sP82YY
Wog9NHVO/jafceZFL4wN6cstYsIXZHaKz1lhbR26TR0FrphMUwA9E9kg0o8JIJi
  wogsMHVO/Jafce2rLeWNccstrsixcHarZiInbRzeTROFTpNRUWA9eSkgOOSJJJi
beeSJ/xKMbED+YXMteubIUJIXXFRShcebyaX4bltApvjgyj6VCOPuGReS 8173hoj
AZ 2QwIDAQABoycwJTAOBgNVHQ8BAf8EBAMCBaAwEwYDVR01BAwwCgYIKwYBBQUH
wWwDDYJKoZIhvcNAQELBQADggEBAAPe319tNgq+KJ8+33mLeyTJJOKb5vybd4+e
bopuw8+kfpih+iYqHwcjRvRL2GNyZ13PsVqHmLKrl1VuB3BUDq41SUtDrNV7uaFlA
qqJmDu6OOQqgvM/d2990j04i/D25KhfShv5bMNisog8M5CcUPPq8MOukcIw4aH
dyhbzjk7VunKXHNYOijA7C1991V6WarKIQPoNI91hbssv8g9W8SbCVOVHWYkQFQ
   673pqvqtP1t2Uctc3TPQkgSOkwmsDDBSzgjnGgX7vegxV+yd3evUaBAJavOpGZc
9ug8qIdAkJu4Ng49JMWhvSCha9Z5G3AOOCb5PCBAORkomkQA6c=
----END CERTIFICATE----
 RbIAhtW/BXmMvfYrelaDJXUueeer+C66ac4V3FeDBBj2kltsaxYvJTscWepsfvs9
XAPsoSomus5jEfbwzceNepFwS0UKgSvEY03GNIgVBRPANTIACym3JNJ2DbTTpKyF
paaw771XxqsF041XyEzMEZcUTsP82YY0Mog9NHV0/jafca2FL4wW6cstYsIXZHa
KzilhRaf2ffOFphphuNa9P9Kgoo8JJ1ioee5.7xfMbED+YXuteublU1JXFRShc4
byaX4bltApvjgVj6VcOPu6Re38IY3hoj6A2ZQwIDAQABAoIBAOCP91IzXGx6MtM0
IdA888Yvcxj5OPv5Jt2EJdFaIQ99jMSMcEipb6Vv9Gi1JDLLtcsyDcZ63Y+LWODm
hJSohB4BmRdKCWDLXnlif+F0Wockutdxb9ELMR7seKEA2e+xqhcFXC6A7FeXQc43
rIYOVWiVIWmxCl8AkvsRLrjsLcvqJNxDDU97the62zv3o5ItVOzh7dOWjwjhudMnE
twGW7/147hd9e6vg4sp8tU9NTGT1ruffcv3Sfzsc392C13Xe6x7+x8k0+FMX97J
/51bqdFwBTrPru76wIvsIetoDm5Jc4zY0asPfsbCH+RngcH31E3XUrXNlTnLUSt
V7daa+nJAoGBANklGzCWHebi9op/E+1EjvgChxoiT05Ns1gjeOppq0f2OhAU9fEb
Czv2ZUTVJ+wxxDIHVZCL4BV6nPBCrhBPGHJOOipOe11VtM9X3z5HgXM66b9dZewu
AUU+AbZLfrB1khmAsR7y3IFa+LFNOxtc5B3FpDd4+gtNy96hYEP6bwPAoGBANWP
647pzJ1yQkdqA0/ZktL1GRx/INXUJB8**KiUDP3vksPBdLyRNzkmyCro31Nvktd
rULRcbB78HAIoowx90DrF8Zfd6FixblaGc0stP80T2ZRm3cjdZRt+ytcu1Ir5ko4
93TVUKZAkkYNt46bijaftjczf+NpVTxq1UPHauNAoGANNkrtof1frPb3dF04
q95R6R8Uj26jfDrAubSWTBj7dKr5pjN+TmMAtuqqYslMv2f7ZKL2Gu64HRJSOTV5
4jpfJ7o0t3:It7FHEBuIXEUMToitbf+Y4qnY7ofBHSNnoH4iWNDuzX79JJCRW
hgNoMYvDhSDzcaKAUCgYAKGffy3b5/GuC74af5k710hiaUBheAaty3N8
bu4daeOFFgmce0vFc/ic9Ao53qpBkJHZdxZIqXSi+mzihjoCk1ikU6UEH2ev4VD
v2+tTXya6ctwzPpsin5gov8f7MpK7v2+7tXLSIGM/qpa22latfroBuYBbV7c
ogwkU0KBgC2qO+noilEcPR398ZH1d8KFf+thD+ZchksJHUnHB9uZukF+tJaPA5GW
lcfmOpelpfpilbRtl31V6HiUYf+v1+1c3m6zQv7/WMK4esuf5mGf8RxJPWysOsMn
mlBWUU8Fg0VtTp+chV3dTdkdj8t4dnXkqg@XCX+TiMwEqcg2ut0
-----END RSA PRIVATE KEY-----
[root@kuber-master ~] # ||
  root@kuber-master ~] # openssl pkcs12 -export -clcerts -inkey kubecfg.key -in kubecfg.crt -out kubecfg.p12 -name "kubernetes-client"
Enter Export Password:
  erifying - Enter Export Password:
  root@kuber-master ~]#
```

```
t@kuber-master ~] # kubectl -n kube-system get
attachdetach-controller-token-45rlg
                                                                                      kubernetes.io/service-account-token
                                                                                                                                                                      13m
 ootstrap-signer-token-4s18v
ootstrap-token-01ps3t
                                                                                     kubernetes.io/service-account-token
bootstrap.kubernetes.io/token
                                                                                                                                                                      13m
ertificate-controller-token-5j8k5
:lusterrole-aggregation-controller-token-rf6fl
                                                                                      kubernetes.io/service-account-token
kubernetes.io/service-account-token
                                                                                                                                                                      13m
13m
coredns-token-dhjr4
cronjob-controller-token-m15x9
daemon-set-controller-token-sx4lm
default-token-jf14w
                                                                                      kubernetes.io/service-account-token
kubernetes.io/service-account-token
                                                                                                                                                                      13m
                                                                                     kubernetes.io/service-account-token kubernetes.io/service-account-token
                                                                                                                                                                      13m
                                                                                      kubernetes.io/service-account-token
                                                                                                                                                                      13m
disruption-controller-token-gkjrk
endpoint-controller-token-xslf6
                                                                                      kubernetes.io/service-account-token
                                                                                                                                                                      13m
endpointslice-controller-token-6vnht
expand-controller-token-f6577
                                                                                      kubernetes.io/service-account-token
kubernetes.io/service-account-token
                                                                                                                                                                      13m
wagand-controller-token-1637,
generic-garbage-collector-token-wxwgv
norizontal-pod-autoscaler-token-7xd5z
job-controller-token-4vxx2
cube-proxy-token-wtxmx
                                                                                      kubernetes.io/service-account-token
kubernetes.io/service-account-token
                                                                                                                                                                      13m
                                                                                      kubernetes.io/service-account-token
kubernetes.io/service-account-token
                                                                                                                                                                      13m
namespace-controller-token-z5brx
                                                                                      kubernetes.io/service-account-token kubernetes.io/service-account-token
                                                                                                                                                                      1.3m
                                                                                      kubernetes.io/service-account-token kubernetes.io/service-account-token kubernetes.io/service-account-token
ersistent-volume-binder-token-g4nsp
                                                                                                                                                                      13m
ood-garbage-collector-token-cpm9t
ov-protection-controller-token-w5r8s
                                                                                                                                                                      13m
replicaset-controller-token-gczt7
                                                                                     kubernetes.io/service-account-token
                                                                                                                                                                     13m
replication-controller-token-rf7fw
resourcequota-controller-token-12147
                                                                                      kubernetes.io/service-account-token
kubernetes.io/service-account-token
                                                                                                                                                                       13m
ervice-account-controller-token-26xrh
ervice-controller-token-t7w9g
                                                                                      kubernetes.io/service-account-token kubernetes.io/service-account-token
statefulset-controller-token-rqjvk
token-cleaner-token-9gpsq
                                                                                      kubernetes.io/service-account-token kubernetes.io/service-account-token
                                                                                                                                                                      1.3m
tl-controller-token-r5wrc
```

kubectl -n kubernetes-dashboard describe secret \$(kubectl -n kubernetes-dashboard get secret | grep admin-user | awk '{print \$1}')

## 3. Gestion de Cluster y errores

```
| Rubeadm init --pod-network-cidr=164.96.96.0/24 --v=5 | 14792 initconfiguration.go:103| detected and using CRI socket: /var/run/dockershim.sock | 14792 interface.go:400| Looking for default routes with IPv4 addresses | 14792 interface.go:405| Default route transits interface "ens160" | 14792 interface.go:208| Interface ens160 is up | 14792 interface.go:228| Interface "ens160" has 2 addresses :[164.96.96.87/24 fe80::21:8d22:b6a9:8aae/64]. | 14792 interface.go:223| Checking addr 164.96.96.87/24. | 14792 interface.go:223| Checking addr 164.96.96.87/24. | 14792 interface.go:223| IP found 164.96.96.87 | 14792 interface.go:262| Found valid IPv4 address 164.96.96.87 for interface "ens160". | 14792 interface.go:411| Found active IP 164.96.96.87 | 14792 version.go:183| fetching Kubernetes version from URL: https://dl.k8s.io/release/stable-1.txt | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.configs.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.configs.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot validate component configs for API groups [kubelet.configs.k8s]. | 14792 configset.go:202| WARNING: kubeadm cannot vali
0622 12:18:08.93240 14792 configset.go:202] WARNING: kubeadm cannot validate component configs for API groups [kubelet.config.k8s ok kubeproxy.config.k8s.io]
init] Using Kubernetes version: v1.18.4
preflight] Running pre-flight checks
0622 12:18:08.91314 14792 checks.go:577] validating Kubernetes and kubeadm version
0622 12:18:08.913124 14792 checks.go:577] validating if the firewall is enabled and active
0622 12:18:08.932131 14792 checks.go:2010 validating availability of port 6443
0622 12:18:08.932548 14792 checks.go:2011 validating availability of port 10259
0622 12:18:08.932548 14792 checks.go:2011 validating availability of port 10257
0622 12:18:08.932548 14792 checks.go:2011 validating availability of port 10257
0622 12:18:08.932800 14792 checks.go:2081 validating the existence of file /etc/kubernetes/manifests/kube-apiserver.yaml
0622 12:18:08.932800 14792 checks.go:2861 validating the existence of file /etc/kubernetes/manifests/kube-controller-manager.yaml
0622 12:18:08.932800 14792 checks.go:2861 validating the existence of file /etc/kubernetes/manifests/kube-controller-manager.yaml
0622 12:18:08.932800 14792 checks.go:2861 validating the existence of file /etc/kubernetes/manifests/kube-controller-manager.yaml
0622 12:18:08.932800 14792 checks.go:2861 validating the existence of file /etc/kubernetes/manifests/kube-controller-manager.yaml
0622 12:18:08.932801 14792 checks.go:2861 validating the existence of file /etc/kubernetes/manifests/etcd.yaml
0622 12:18:08.9329301 14792 checks.go:4712 validating if the connectivity type is via proxy or direct
0622 12:18:08.933168 14792 checks.go:4712 validating the existence of file /etc/kubernetes/manifests/etcd.yaml
0622 12:18:08.93325325 14792 checks.go:4712 validating the existence of file /etc/kubernetes/manifests/etcd.yaml
0622 12:18:08.93325325 14792 checks.go:4712 validating the existence of file /etc/kubernetes/manifests/etcd.yaml
0622 12:18:08.93325325 14792 checks.go:6062 12:18:08.09325 14792 checks.go:6062 12:18:08.09325 14792 checks.go:6062 12:18:08.09
   does not look like a TLS handshake
 To see the stack trace of this error execute with --v=5 or higher [root0kuber-master ~] \sharp [
   root@kuber-master ~] # export no proxy="164.96.96.87"
 root@kuber-master ~]# export No_proxy= 164.98.90.97
root@kuber-master ~]# kubectl get nodes
AME STATUS ROLES AGE VERSION
uber-master Ready master 19h v1.18.4
uber-nodo1 NotReady <none> 19h v1.18.4
```

[root@kuber-master ~]# export KUBERNETES\_MASTER=http://164.96.96.87:8080 [root@kuber-master ~]# env | grep KUBER KUBERNETES\_MASTER=http://164.96.96.87:8080 [root@kuber-master ~]# [

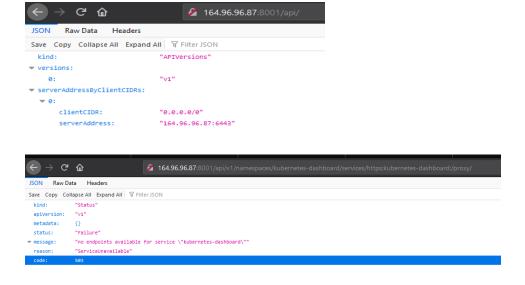
```
root@kuber-master ~] kubectl cluster-info
  ubernetes master is running at https://164.96.96.87:6443
  ubeDNS is running at https://164.96.96.87:6443/api/v1/namespaces/kube-system/services/kube-dns:dns/pro
To further debug and diagnose cluster problems, use 'kubectl cluster-info dump'.
[root@kuber-master ~] # kubectl get nodes

NAME STATUS ROLES AGE VERSION
kuber-master Ready master 177m v1.18.4
[root@kuber-master ~] # kubectl get pods

No resources found in default names
No resources found in default namespace.
[root@kuber-master ~]# [
 root@kuber-master ~]# kubectl -n kube-system -l=k8s-app=kube-dns
NAME
                                      READY STATUS
                                                                              RESTARTS
                                                                                             AGE
coredns-66bff467f8-ddpgc
coredns-66bff467f8-gq8t<u>r</u>
                                                 ContainerCreating
                                                                                             20h
                                      0/1
                                                                                             20h
 [root@kuber-master ~]# 🗌
      reset process does not clean your kubeconfig files and you must remove them manually. so, check the contents of the \theta. kube/config file. tt@kuber-master \theta
 root@kuber-master ~] # rm -rf .kube/
 root@kuber-master ~] # rm -rf /etc/kubernetes/
 [root@kuber-master ~] # rm -rf /var/lib/kubelet/
[root@kuber-master ~] # rm -rf /var/lib/etcd
[root@kuber-master ~]#
```

### 3.1. Verificacion de Cluster - Dashboard

kubectl proxy --address 0.0.0.0 --accept-hosts '.\*'



```
\leftarrow \rightarrow {\bf C} \odot No es seguro | 164.96.96.87:6443
```

https://github.com/kubernetes/dashboard/blob/master/aio/deploy/recommended/00 dashboard-namespace.yaml

http://164.96.96.87:8001/api/v1/namespaces/kubernetes-dashboard/services/https:kubernetes-dashboard:/proxy/

http://164.96.96.97:8001/api/v1/namespaces/kube-system/services/https:kubernetes-dashboard:/proxy/

https://164.96.96.97:6443/apis/coordination.k8s.io/v1/namespaces/kube-node-lease/leases/kuber-master?timeout=10s

kubectl proxy --address='164.96.96.87' --accept-hosts='^localhost\$,^127\.0\.0\.1\$,^\[::1\],,^164\.96\.96\.1\$,^164\.96\.98\.1\$'

Starting to serve on 164.96.96.87:8001

```
[root@kuber-master ~] # kubectl proxy --address='164.96.96.87' --port=8002 --accept-hosts='^localhost$,^127\.0\.0\.1$,^\[::1
164\.96\.96\.1$,^164\.96\.98\.1$'
Starting to serve on 164.96.96.87:8002
```

--accept-hosts='^localhost\$,^127\.0\.0\.1\$,^\[::1\]\$': Regular expression for hosts that the proxy should accept.



```
JSON Raw Data Headers

Save Copy Collapse All Expand All Filter JSON

kind:

"APIVersions"

Versions:

9:

"v1"

* serverAddressByClientCIDRs:

9:

clientCIDR:

"0.0.0.0/0"

serverAddress:

"164.96.96.87:6443"
```

### 3.2. Errores de Cluster

## 4. Kubectl - Servicios y Pods

```
-06-23 17:22:57.641160 I | mvcc: finished scheduled compaction at 168092 (took 4.004009ms)
 root@kuber-master ~]#
 root@kuber-master ~]# kubectl get pods --all-namespaces
NAMESPACE
                                                                         READY
                                                                                  STATUS
                                                                                                        RESTARTS
                                                                                                                    AGE
                        NAME
                        coredns-66bff467f8-ddpgc
coredns-66bff467f8-gq8tr
etcd-kuber-master
                                                                                                                    20h
20h
 ube-system
                                                                                  ContainerCreating
 ube-system
 ube-system
                        kube-apiserver-kuber-master
kube-controller-manager-kuber-master
                                                                                  Running
                                                                                                                    20h
kube-proxy-16gjv
kube-proxy-mgg14
                                                                                  Running
ContainerCreating
 ube-system
                                                                                                                    20h
                               | embed: advertise client URLs = https://164.96.96.87:2379
| etcdserver: starting member 3c487a8b0baf1011 in cluster e0f84e45bb83fa54
```

## 4.1. Edición de servicio

```
[root@kuber-master ~] # kubectl -n kube-system edit service kubernetes-dashboard service/kubernetes-dashboard edited [root@kuber-master ~] # []
```

```
resourceVersion: "7636"
selfLink: | /api/v1/namespaces/kube-system/services/kubernetes-dashboard
uid: db2cd371-3409-42e4-b6f9-1d8fc5cf911a
spec:
clusterIP: 10.111.192.89
externalTrafficPolicy: Cluster
ports:
- nodePort: 31038
port: 443
protocol: TCP
targetPort: 8443
selector:
k8-app: kubernetes-dashboard
sessionAffinity: None
type: | NodePort
status:
| loadBalancer: {}
```

```
[root@kube
NAMESPACE
                                                                                                                                               EXTERNAL-IP
                                         NAME
                                                                                                                                                                         53/UDP,53/TCP,9153/TCP
8000/TCP
                                                                                            ClusterIP
ClusterIP
                                                                                                                   10.96.0.10
10.109.93.229
kube-system
kubernetes-dashboard
                                         kube-dns
dashboard-metrics-scraper
                                                                                                                                                                                                                       108m
 cubernetes-dashboard kubernetes-dashboard Cluste
[root@kuber-master ~]# kubectl get pods --all-namespaces
 NAMESPACE
kube-system
kube-system
                                                                                                                                                                                                  AGE
107m
                                                                                                                                          Completed Completed
                                         coredns-66bff467f8-9mhpw
                                       coredns-660146/10-Jmmpw
etcd-kuber-master
kube-apiserver-kuber-master
kube-controller-manager-kuber-master
kube-proxy-c5d6w
kube-scheduler-kuber-master
 kube-system
kube-system
                                                                                                                                          Running
Running
                                                                                                                                                                                                   108m
108m
                                                                                                                                                                                                   108m
107m
 cube-system
cube-system
                                                                                                                                          Running
 cubernetes-dashboard dashboard-metrics-scraper-6b4884c9d5-tibxf 0/1 ContainerCreating 0 cubernetes-dashboard kubernetes-dashboard-7f99b75bf4-r9kgg 0/1 ContainerCreating 0
[root@kuber-master ~]# kubectl delete deployment kubernetes-dashboard --namespace=kubernetes-dashboard deployment.apps "kubernetes-dashboard" deleted [root@kuber-master ~]# kubectl delete deployment dashboard-metrics-scraper --namespace=kubernetes-dashboard deployment.apps "dashboard-metrics-scraper" deleted [root@kuber-master ~]# kubectl get pods --all-namespaces
                                                                                                                                          STATUS
Completed
NAMESPACE
                                         NAME
                                                                                                                           READY
                                                                                                                                                                    RESTARTS
 cube-system
                                         coredns-66bff467f8-2g5r9
                                                                                                                                                                                        109m
 kube-system
kube-system
kube-system
                                         coredns-66bff467f8-9mhpw
etcd-kuber-master
                                                                                                                                          Completed
Running
                                                                                                                                                                                        109m
109m
                                         kube-apiserver-kuber-master
                                         kube-controller-manager-kuber-master
kube-proxy-c5d6w
kube-scheduler-kuber-master
 cube-system
cube-system
                                                                                                                                          Running
                                                                                                                                                                                        109m
                                                                                                                                          Running
 cubernetes-dashboard dashboard-metrics-scraper-6b4884c9d5-tfbxf 0/1
                                                                                                                                        Terminating 0 20m
 root@kuber-master ~]# kubectl get pods --all-namespaces
                     NAME
 NAMESPACE
                                                                                                READY
                                                                                                                                     RESTARTS
                        coredns-66bff467f8-2g5r9
coredns-66bff467f8-9mhpw
etcd-kuber-master
  ube-system
 kube system
kube-system
kube-system
kube-system
kube-system
                                                                                                              Completed
Running
                                                                                                                                                         109m
                        kube-apiserver-kuber-master
kube-controller-manager-kuber-master
                                                                                                                                                         109m
109m
                                                                                                               Running
                        kube-proxy-c5d6w
 cube-system kube-scheduler-kuber-master
[root@kuber-master ~] # []
                                                                                                               Running
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
kube-system	coredns-66bff467f8-2g5r9	0/1	Completed		107m
kube-system	coredns-66bff467f8-9mhpw	0/1	Completed		107m
kube-system	etcd-kuber-master	1/1	Running		108m
kube-system	kube-apiserver-kuber-master	1/1	Running		108m
kube-system	kube-controller-manager-kuber-master	1/1	Running		108m
kube-system	kube-proxy-c5d6w	1/1	Running		107m
kube-system	kube-scheduler-kuber-master	1/1	Running		108m
kubernetes-dashboard	dashboard-metrics-scraper-6b4884c9d5-tfbxf	0/1	ContainerCreating		19m
kubernetes-dashboard	kubernetes-dashboard-7f99b75bf4-r9kqq	0/1	ContainerCreating	0	19m
[root@kuber-master ~]#	kubectl delete deployment kubernetes-dashbo	ardnar	mespace=kubernetes-da	ashboard	
deployment.apps "kuber	netes-dashboard" deleted				
[root@kuber-master ~]#					

[root@kuber-master ~]# kubectl get podsall-namespaces								
NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE			
kube-system	coredns-66bff467f8-2g5r9	0/1	Completed		23m			
kube-system	coredns-66bff467f8-9mhpw	0/1	Completed		23m			
kube-system	etcd-kuber-master	1/1	Running		24m			
kube-system	kube-apiserver-kuber-master	1/1	Running		24m			
kube-system	kube-controller-manager-kuber-master	1/1	Running		24m			
kube-system	kube-proxy-c5d6w	1/1	Running		23m			
kube-system	kube-scheduler-kuber-master	1/1	Running	1	24m			

[root@kuber-m	naster ~]# kul	oectl get sei	rvicesall-	namespaces	-	
NAMESPACE	NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
default	kubernetes	ClusterIP	10.96.0.1	<none></none>	443/TCP	24m
kube-system	kube-dns	ClusterIP	10.96.0.10	<none></none>	53/UDP,53/TCP,9153/TCP	24m
[root@kuber-m	naster ~]#					

## 5. Nodeport con Kubectl

```
NAME
kubernetes
                                                                         TYPE
ClusterIP
                                                                                                                    EXTERNAL-IP
                                                                                                                                        PORT(S)
443/TCP
 default
                                                                                                                                                                            178m
 rube-system
rubernetes-dashboard
                                kube-dns
dashboard-metrics-scraper
                                                                        ClusterIP 10.96.0.10
ClusterIP 10.103.62.214
                                                                                                                                                                            178m
154m

    Rubernetes dashboard
    kubernetes-dashboard

    (root@kuber-master ~] # netstat -natp| grep 30896

    tcp
    0 0.0.0.0:30896

                                                                        NodePort
                                                                                                                                       443:30896/TCP
 cop 0 0.0.0.0:30896 0.0.0.0:*
[root@kuber-master ~]# kubectl get service -n kubernetes-dashboard
 AMME TYPE CLUSTER-IP
dashboard-metrics-scraper ClusterIP 10.103.62.214
kubernetes-dashboard NodePort 10.103.100.159
                                                                                  EXTERNAL-IP
 NAME 10.103.100.159 <none> 8000.770

NAME READY STATUS RESTARTS AGE
READY STATUS RESTARTS AGE
RUBernetes-dashboard-7f99b75bf4-7tqjj 1/1 Running 2 159m
                                                                                                    8000/TCP 157m
443:30896/TCP 157m
art cancerred, no changes made.
root@kuber-master ~] # kubectl -n kube-system get services
VAME
                                                            CLUSTER-IP
                                                                                         EXTERNAL-IP
                                                                                                                   PORT(S)
53/UDP.53/TCP.9153/TCP
                                                                                                                                                                AGE
ube-dns
                                                                                          <none>
 ubernetes-dashboard
                                       NodePort
                                                             10.111.192.89
                                                                                                                 443:31038/TCP
root@kuber-master ~]#
NAME
                                                                  CLUSTER-IP
                                                                                                EXTERNAL-TP
                                                                                                                           PORT (S)
                                                                                                                                                                          AGE
                                                                                                                           53/UDP,53/TCP,9153/TCP
443:31038/TCP
kube-dns
                                           ClusterIP
                                          NodePort
                                                                  10.111.192.89
 ubernetes-dashboard
                                                                                                                                                                          37m
 root@kuber-master ~]#
                  C 心
                                                    164.96.96.87:30896
 Client sent an HTTP request to an HTTPS server.
AMESPACE
lefault
                                NAME
kubernetes
                                                                       TYPE
ClusterIP
                                                                                                                 EXTERNAL-IP
                                                                                        10.96.0.1
10.96.0.10
                                                                                                                                     53/UDP,53/TCP,9153/TCP
 ube-system
ubernetes-dashboard
                              kube-dns
dashboard-metrics-scraper
                                                                       ClusterIP
ClusterIP
                                                                                                                                     8000/TCP
443:30896/TCP
                             kubernetes-dashboard
 ubernetes-dashboard kubernetes-dashboard root@kuber-master ~] # netstat -natp| grep 30896 cp 0 0 0.0.0.0.0.30896 0.0.0
                                                                       NodePort
                                                                                         10.103.100.159
                                                                                                                 4495/kube-proxy
                                        TYPE
ClusterIP
                                                            CLUSTER-IP
10.96.0.10
                                                                                                                PORT(S)
53/UDP.53/TCP.9153/TCP
NAME
                                                                                                                                                            AGE
 kube-dns
                                                                                        <none>
                                                                                                                                                            54m
                                                                                                                443:<mark>31038</mark>/TCP
 kubernetes-dashboard
                                                            10.111.192.89
                                                                                                                                                            30m
                                                                                        <none>
  [root@kuber-master ~]# lsof -i tcp:31038
COMMAND PID USER FD TYPE DEVICE
kube-prox 30761 root 11u IPv4 61349156
                                                            DEVICE SIZE/OFF NODE NAME
 kube-prox 30761 root 1
[root@kuber-master ~]#
                                                                                 0t0 TCP *:31038 (LISTEN)
  root@kuber-nodo2 ~] # nmap 164.96.96.87
Starting Nmap 6.40 (http://nmap.org) at 2020-06-23 16:49 -04 Nmap scan report for kuber-master (164.96.96.87)
Host is up (0.00018s latency).
Not shown: 995 closed ports
PORT STATE SERVICE
22/tcp open ssh
111/tcp open rpcbind
3011/tcp open trusted-web
8001/tcp open vcom-tunnel
31038/tcp filtered unknown
 31038/tcp filtered unknown
MAC Address: 00:50:56:9B:20:3F (VMware)
  root@kuber-nodo2 ~]#
```

```
| Tootekuber-master -]# systemctl status docker | docker.service - Docker Application Container Engine | Loaded: loaded (/usr/ib/systemd/system/docker.service; enabled; vendor preset: disabled) | Drop-In: /ect/systemd/system/docker.service | disabled; vendor preset: disabled | Drop-In: /ect/systemd/system/docker.service | disabled | Container | disabled | Drop-In: /ect/systemd/system/docker.service | disabled | Container | disabled | Drop-In: /ect/systemd/system/docker.service | disabled | Drop-In: /ect/systemd/system/docker.com | Drop-In: /ect/systemd/system/docs.docker.com | Drop-In: /ect/systemd/sistemd/system/docs.docker.com | Drop-In: /ect/systemd/sistemd/systemd/socker.service | Drop-In: /ect/systems/sistemd/systemd/socker.service | Drop-In: /ect/systems/sistemd/systemd/socker.service | disabled | Drop-In: /ect/systemd/systemd/socker.service | disabled | Drop-In: /ect/systemd/sistemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/socker.service | Drop-In: /ect/systemd/sistemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/systemd/socker.service | Drop-In: /ect/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/systemd/syst
```

```
Init Binary: docker-init
containerd version: 7adl84331fa3e55e52b890ea95e65ba581ae3429
runc version: dc9208a3303feef5b3839f4323d9beb36df0a9dd
init version: fec3683
Security Options:
seccomp
Profile: default
Kernel Version: 3.10.0-1127.10.1.e17.x86_64
Operating System: CentOS Linux 7 (Core)
OSType: linux
Architecture: x86_64
CPUs: 4
Total Memory: 15.51GiB
Name: kuber-master
ID: XKPD:2NMC:6HI5:F6FP:UQZR:AFNG:D774:L5IF:YSUA:XRDI:TOZL:YZOG
Docker Root Dir: /var/ib/docker
Debug Mode: false
HTTP Proxy: http://164.96.27.12:8080/
Registry: https://index.docker.io/v1/
Labels:
Experimental: false
Insecure Registries:
127.0.0.0/8
Live Restore Enabled: false
```

## Instalación de Dashboard

```
[root@kuber-master ~]# firewall-cmd ~-reload
success
```

```
root@kuber-master ~] # kubectl get services --all-namespaces
NAMESPACE
                      NAME
                                                                CLUSTER-IP
                                                                                EXTERNAL-IP
lefault
                       kubernetes
ube-system
                      kube-dns
                                                                                               53/UDP,53/TCP,9153/TCP
ube-system
                      kubernetes-dashboard
                                                                                <none>
cubernetes-dashboard
                     dashboard-metrics-scraper
                                                   ClusterIP
                                                                10.99.138.127
                                                                                              8000/TCP
                                                                                <none>
cubernetes-dashboard
                      kubernetes-dashboard
                                                   ClusterIP
                                                                10.96.56.111
                                                                                                                        42m
                                                                                <none>
```

```
[root@kuber-master ~]# kubectl -n kube-system get services
NAME
                                    CLUSTER-IP
                                                     EXTERNAL-IP
                                                                    PORT(S)
                       ClusterIP
kube-dns
                                    10.96.0.10
                                                     <none>
                                                                    53/UDP,53/TCP,9153/TCP
                                                                                              46m
                                    10.111.192.89
kubernetes-dashboard
                                                                   443/TCP
                                                                                              22m
                                                     <none>
```

 $[root@kuber-master ~] \# grep 'client-certificate-data' / etc/kubernetes/admin.conf \mid head -n 1 \mid awk '\{print \$2\}' \mid base64 -d >> kubecfg.crt \\ [root@kuber-master ~] \# cat kubecfg.crt$ 

 $[root@kuber-master \sim] \# grep 'client-key-data' / etc/kubernetes/admin.conf | head -n 1 | awk '\{print $2\}' | base64 -d >> kubecfg.key [root@kuber-master \sim] \# cat kubecfg.key$ 

[root@kuber-master ~]# openssl pkcs12 -export -clcerts -inkey kubecfg,key -in kubecfg,crt -out kubecfg.p12 -name "kubernetes-client"
Enter Export Password:

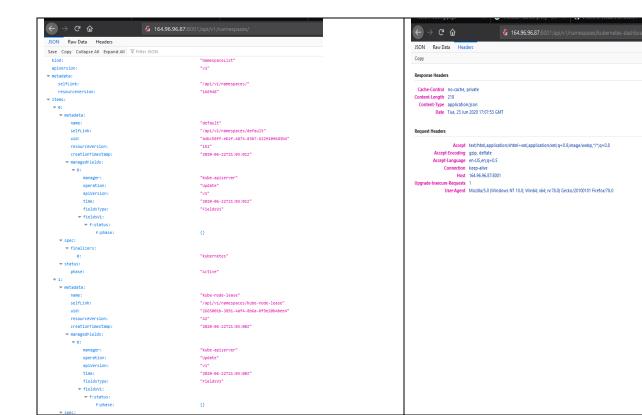
Verifying - Enter Export Password:

```
docker pull k8s.gcr.io/kube-apiserver:v1.18.4
docker pull k8s.gcr.io/kube-controller-manager:v1.18.4
docker pull k8s.gcr.io/kube-scheduler:v1.18.4
docker pull k8s.gcr.io/kube-proxy:v1.18.4
docker pull k8s.gcr.io/pause:3.2
docker pull k8s.gcr.io/etcd:3.4.3-0
docker pull k8s.gcr.io/pause:3.2
docker pull k8s.gcr.io/etcd:3.4.3-0
docker pull k8s.gcr.io/kube-controller-manager:v1.18.4
our Kubernetes control-plane has initialized successfully!
To start using your cluster, you need to run the following as a regular user:
 mkdir -p $HOMF/.kube
 sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
 sudo chown $(id -u):$(id -g) $HOME/.kube/config
You should now deploy a pod network to the cluster
Run "kubectl apply -f [podnetwork].yaml" with one of the options listed at:
 https://kubernetes.io/docs/concepts/cluster-administration/addons
You can now join any number of control-plane nodes by copying certificate authorities
and service account keys on each node and then running the following as root:
 kubeadm join 164.96.96.87:6443 --token 0lps3t.kfwjfjwzp0ylx8xp \
  Then you can join any number of worker nodes by running the following on each as root:
kubeadm join 164,96,96,87;6443 --token 0lps3t,kfwifiwzp0vlx8xp \
   -discovery-token-ca-cert-hash sha256:82767eb6ec8cdc3be61d92331fa9a220547685e49475c23d3e6d8c3471492a65
```

#### token:

eyjhbGciOijSUz11NilsImtpZClGiklmWklDR0xKa0ZoWHRMOVhnb29iUXNsdzUwTm83bUdoQ1RKTXVqOVRTNm8ifQ.eyjpc3MiOijrdWJlcm5ldGVzL3NlcnZpY2VhY2NvdW50liwia3ViZXjuZXRlcy5pby9zZXj2aWNIYWNjb3VudC9uYW11c3BhY2UiO
ijrdWJlLXN5c3Rlb5lsImt1YmVybmV0ZXMuaW8vc2VydmljZWFjY291bnQvc2VjcmV0Lm5hbWUiOijyZXBsaWNhc2V0LWNvbnRyb2xsZXltdG9rZW4tZ2N6dDciLCJrdWJlcm5ldGVzLmlvL3NlcnZpY2VhY2NvdW50L3NlcnZpY2UtYWNjb3VudC5uY
W11ljoicmVwbGijYXNldC1jb250cm9sbGVyliwia3ViZXJuzXRlcy5pby9zZXJ2aWNIYWNjb3VudC9zZXJ2aWNILWFY291bnQudWlkjjoiNGU1MGMwMzktYWZhryvg0VTQ2LWizYzEtMjkyNzlyOTFKMmFkliwic3Viljoic3lzdGVtOnNlcnZpY2VhY2NvdW5
00mt1YmUtc3lzdGVtOnJlcGsyY2FzZXQtY29udHjvbGxlcij9.ozjaJ1vuXqibjlyxa1i-8psGr4vii-66f1;cqC07xAte8p1ZhEUUFveCxkc2njj4PWfdT\_p2pnhisFDjzWF0lZgeWkXiNJjiXAl0Zz4YP08j1DlqroKHXPjcc88XvXVT4gWY1s1S1Wg5ToU65FHXcoUP2-qTmaeeaFq50KO/SLG336WdMVLQlhxOjiWEcTq6cai-HF4J2KE06p7wTUJLopXnyRqkLMMHZD\_ovZtOJ4oY13rrzWOKUpTKFQy5LzivPc3\_0iRdR3l5yfVjlLw6YPSVD6soK5ZqHlYdJ46gZd5cQPpl15WESmvkZ5xt-JSLgR0u3sbRgwpCHHWJw

[root@kuber-master ~]#



```
→ G ®
                                        2 164.96.96.87:8001
ISON Raw Data Headers
Save Copy Collapse All Expand All | Trilter JSON

▼ paths:
           "/api/v1"
    2:
           "/apis"
           "/apis/"
           "/apis/admissionregistration.k8s.io"
           "/apis/admissionregistration.k8s.io/v1"
           "/apis/admissionregistration.k8s.io/v1beta1"
           "/apis/apiextensions.k8s.io"
           "/apis/apiextensions.k8s.io/v1"
           "/anis/aniextensions.k8s.io/v1beta1"
    10:
           "/apis/apiregistration.k8s.io"
           "/apis/apiregistration.k8s.io/v1
    11:
           "/apis/apiregistration.k8s.io/v1beta1"
    13:
           "/apis/apps"
    14:
           "/apis/apps/v1"
           "/apis/authentication.k8s.io"
    15:
           "/apis/authentication.k8s.io/v1"
    17:
           "/anis/authentication.k8s.io/v1heta1"
    18:
           "/apis/authorization.k8s.io"
           "/apis/authorization.k8s.io/v1"
           "/apis/authorization.k8s.io/v1beta1"
    21:
           "/apis/autoscaling"
    22:
           "/apis/autoscaling/v1"
    23:
           "/apis/autoscaling/v2beta1"
           "/apis/autoscaling/v2beta2"
           "/apis/batch"
           "/anis/hatch/v1
```

#### kubectl apply -f https://raw.githubusercontent.com/kubernetes/dashboard/v2.0.0/aio/deploy/recommended.yaml

```
[root@kuber-master ~]# kubectl get nodes --server=https://164.96.96.87:6443
Please enter Username: admin
Please enter Password: Unable to connect to the server: x509: certificate signed by unknown authority
[root@kuber-master ~]# []
```

## **ERRORES DE NODO**

root@kuber-nodo2 ~]# systemctl start docker.service

 $[root@kuber-nodo2~] \# \ kubeadm \ join \ 164.96.96.87:6443 --token \ ynn8t2.uxa965p7skrll9cb \\ --discovery-token-ca-cert-hash \ ynn8t2.uxa96p7skrll9cb \\ --discovery$ 

sha256:8057e1db21296a2c402d763bac8a26dc89fc2bdc053861049d7e762ccadfc2dd

W0622 17:58:55.818843 60285 join.go:346] [preflight] WARNING: JoinControlPane.controlPlane settings will be ignored when control-plane flag is not set. [preflight] Running pre-flight checks

[WARNING IsDockerSystemdCheck]: detected "cgroupfs" as the Docker cgroup driver. The recommended driver is "systemd". Please follow the guide at https://kubernetes.io/docs/setup/cri/

#### **PROBLEMAS KUBERNETES**

```
[root@kuber-master ~]# kubectl get nodes
Unable to connect to the server: proxyconnect tcp: tls: first record does not look like a TLS handshake
[root@kuber-master ~]# []
```

#### kubeadm init --pod-network-cidr=164.96.96.0/24

#### kubeadm reset

```
[root@kuber-master ~]#
[root@kuber-master ~]# rm /var/lib/etcd/ -Rf
[root@kuber-master ~]# rm $HOME/.kube/config
rm: remove regular file '/root/.kube/config'? y
```

```
[certs] Generating "sa" key and public key
[kubeconfig] Using kubeconfig folder "/etc/kubernetes"
[kubeconfig] Writing "admin.conf" kubeconfig file
[kubeconfig] Writing "kubelet.conf" kubeconfig file
[kubeconfig] Writing "controller-manager.conf" kubeconfig file
[kubeconfig] Writing "scheduler.conf" kubeconfig file
[control-plane] Using manifest folder "/etc/kubernetes/manifests"
[control-plane] Creating static Pod manifest for "kube-apiserver"
[control-plane] Creating static Pod manifest for "kube-controller-manager"
[wo622 11:48:42.983237 2875 manifests.go:225] the default kube-apiserver authorization-mode is "Node,RBAC"; using "Node,RBAC"
[control-plane] Creating static Pod manifest for "kube-controller"
[wo622 11:48:42.985694 2875 manifests.go:225] the default kube-apiserver authorization-mode is "Node,RBAC"; using "Node,RBAC"
[etcd] Creating static Pod manifest for "kube-scheduler"
[wo622 11:48:42.985694 2875 manifests.go:225] the default kube-apiserver authorization-mode is "Node,RBAC"; using "Node,RBAC"
[etcd] Creating static Pod manifest for local etcd in "/etc/kubernetes/manifests"
[wait-control-plane] Waiting for the kubelet to boot up the control plane as static Pods from directory "/etc/kubernetes/manifests". 'I his can take up to demonstrate the subset of 40s passed.

[Initial timeout of 40s passed.]
```

•

```
3156 event.go:260] Server rejected event '&vl.Event(TypeMeta:vl.T
3156 controller.go:136] failed to ensure node lease exists, will
3156 controller.go:136] failed to ensure node lease exists, will
3156 event.go:260] Server rejected event '&vl.Event(TypeMeta:vl.T
3156 event.go:260] Server rejected event '&vl.Event(TypeMeta:vl.T
3156 event.go:260] Server rejected event '&vl.Event(TypeMeta:vl.T
              11:48:59 kuber-master kubelet[3156]: E0622
11:48:59 kuber-master kubelet[3156]: E0622
11:48:59 kuber-master kubelet[3156]: I0622
11:48:59 kuber-master kubelet[3156]: E0622
                               kuber-master kubelet[3156]
 [root@kuber-nodo1
     Cootekuber-nodol ~]# systemctl status kubelet
kubelet.service - kubelet: The Kubernetes Node Agent
Loaded: loaded (/usr/lib/systemd/system/kubelet.service; disabled; vendor preset: disabled)
Drop-In: /usr/lib/systemd/system/kubelet.service.d
—10-kubeadm.conf
       Active: activating (auto-restart) (Result: exit-code) since Mon 2020-06-22 11:58:47 EDT; 4s ago
     Process: 24170 ExecStart=/usr/bin/kubelet $KUBELET_KUBECONFIG_ARGS $KUBELET_CONFIG_ARGS $KUBELET_KUBEA
   Main PID: 24170 (code=exited, status=255)
  Jun 22 11:58:47 kuber-nodo1 systemd[1]: Unit kubelet.service entered failed state.
Jun 22 11:58:47 kuber-nodo1 systemd[1]: kubelet.service failed.
[root@kuber-nodo1 ~]# []
   root@kuber-master ~] # rm /var/lib/docker -Rf
m: cannot remove '/var/lib/docker/containers/c27575ca337f5c6d4463ddcfa8e610b0c3ca5b2bfe241ffaf0c2209ca7bcc726/mounts/shm': Device
  esource busy
m: cannot remove '/var/lib/docker/containers/d748ca054827e11f487ff6ad6384830d903c9c20a131d192c36787a563767ea3/mounts/shm': Device
  esource busy
m: cannot remove \/var/lib/docker/containers/6736633350ca98a7733e5ce0882c2eb5f93fc4cfbbaeb967e20f6b13f2c4d3af/mounts/shm': Device
  m: cannot remove \var/lib/docker/containers/89fe90aa71d9d70271f62f6c201f076d1819ae194eea3507ac5bbe27865f9295/mounts/shm': Device

m: cannot remove \var/lib/docker/containers/99fe90aa71d9d70271f62f6c201f076d1819ae194eea3507ac5bbe27865f9295/mounts/shm': Device
  esource busy
  m: cannot remove \var/lib/docker/overlay2/ce37ec9e0c4730aa92ce4221fdd3c755ee8dc13e163061278c00a1ad0bfca039/merged': Device or res
   e busy
m: cannot remove '/var/lib/docker/overlay2/ab7adac3838dc16b566f8477f5ea2b88c894ca0a9fd52d916ae5814e33881e2a/merged': Device or res
       cannot remove \var/lib/docker/overlay2/7332c8d8702b21510b91ebd2d78e181ca550b17b098a21317b4f2f498d3b0696/merged': Device or res
      busy: cannot remove '/var/lib/docker/overlay2/a73d2aab5fd0dbb16400ee4e12601ab9e0b1683210c992666849de82ae50906e/merged': Device or reso
  e busy
m: cannot remove '/var/lib/docker/overlay2/4bab178df88a33d6bf9e9cfc262ebd256d4eaca441efa46bef59cb6048a2304d/merged': Device or reso
  e busy
m: cannot remove \/var/lib/docker/overlay2/1f43ee2372a726e90caa2c2e24db9aa5d2927d05d3397eb096c761d229795656/merged': Device or resonant
m: cannot remove \/var/lib/docker/overlay2/1f43ee2372a726e90caa2c2e24db9aa5d2927d05d3397eb096c761d229795656/merged': Device or resonant
      busy: cannot remove '/var/lib/docker/overlay2/7e4a356bcd936f43873518b2d416e5df1901d738cc823c1ef016abf60ffa3bb8/merged': Device or res
 root@kuber-master ~] # rm /etc/kubernetes -Rf
[root@kuber-master ~]#
 bc28db383d34 c663567f869e "kube-scheduler --au..." 4 minutes ago Up 4 minutes k8s kube-scheduler kube-scheduler-kuber-master kube-system 44753c06d528d4f67be4ffb2fdecdbfe_0 (p4 minutes ago Up 4 minutes k8s_kube-controller-manager-kuber-master kube-system_d6e26ef4310923506d4e656e72f9feb9_0 (p4 minutes ago Up 4 mi
      k8s_etcd_etcd-kuber-master_kube-system_0481f034ed8db009945f6395ed006ca4_0
pot@kuber-master ~] #
 [root@kuber-master ~]# docker images -a
                                                 TAG
                                                                                                            IMAGE ID
REPOSITORY
                                                                                                                                                                   CREATED
[root@kuber-master ~]# docker ps -a | grep kube | grep -v pause [root@kuber-master ~]# docker system prune -a | WARNING! This will remove:
     - all stopped containers
     - all images without at least one container associated to them
     - all build cache
Are you sure you want to continue? [y/N] y
```

Fotal reclaimed space: 0B
[root@kuber-master ~]#

```
14792 checks.go:201] validating availability of port 2379
14792 checks.go:201] validating availability of port 2380
14792 checks.go:249] validating the existence and emptine:
                  12:18:09.824186
12:18:09.824266
.com/spf13/copra/command.go:826
8.io/kubernetes/vendor/github.com/spf13/cobra.(*Command).ExecuteC
/workspace/anago-v1.18.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/vendor/
.com/spf13/cobra/command.go:914
8s.io/kubernetes/vendor/github.com/spf13/cobra.(*Command).Execute
/workspace/anago-v1.18.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/vendor/
.com/spf13/cobra/command.go:864
8s.io/kubernetes/workspace/anago-v1.88.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/vendor/
     s.io/kubernetes/cmd/kubeadm/app.Run
/workspace/anago-v1.18.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/cmd/ku
 app/kubeadm.go:50
                          ...
_output/dockerized/go/src/k8s.io/kubernetes/cmd/kubeadm/kubeadm.go:25
   untime.main
                         /usr/local/go/src/runtime/proc.go:203
  untime.goexit
     /usr/local/go/src/runtime/asm_amd64.s:1357
                 2 12:20:05.078653 15030 checks.go:249] validating the existence and emptiness of directory /var/lib/etcd
   [preflight] Pulling images required for setting up a Kubernetes cluster [preflight] This might take a minute or two, depending on the speed of your internet connection [preflight] This might take a minute or two, depending on the speed of your internet connection [preflight] You can also perform this action in beforehand using 'kubeadm config images pull' 10622 12:20:05.218845 15030 checks.go:844] pulling k8s.gcr.io/kube-apiserver:v1.18.4 10622 12:20:23.940931 15030 checks.go:844] pulling k8s.gcr.io/kube-controller-manager:v1.18.4 10622 12:20:40.747871 15030 checks.go:844] pulling k8s.gcr.io/kube-scheduler:v1.18.4 10622 12:20:58.131238 15030 checks.go:844] pulling k8s.gcr.io/kube-proxy:v1.18.4 10622 12:21:15.960390 15030 checks.go:844] pulling k8s.gcr.io/pause:3.2
                                                                             15030 checks.go:844] pulling k8s.gcr.io/pause:3.2
15030 checks.go:844] pulling k8s.gcr.io/etcd:3.4.3-0
15030 checks.go:844] pulling k8s.gcr.io/coredns:1.6.7
  [PROR ImagePull]: failed to pull image k8s.gcr.io/kube-apiserver:v1.18.4: output: v1.18.4: Pulling from kube-apiserver 33b4483280e5: Pulling fs layer 31b4483280e5: Pulling fs layer 31b601831789: Pulling fs layer 31contage apiserver 31contage apis
       error: exit status 1
[ERROR ImagePull]: failed to pull image k8s.gcr.io/kube-controller-manager:v1.18.4; output: v1.18.4; Pulling from kube-control
  [ERRON image.u...]

1354483280e5: Pulling fs layer

1354483280e5: Pulling fs layer
```

```
coabefeeduck. Furting is layer

d7928a1765f: Waiting

d7939a529ef3: Waiting

c0abefeeducd: Waiting

open /var/lib/docker/tmp/GetImageBlob429745777: no such file or directory

, error: axit status 1

[ERROR ImagePull]: failed to pull image k8s.gcr.io/pause:3.2: output: 3.2: Pulling from pause

c74f8866df09: Pulling fs layer

open /var/lib/docker/tmp/GetImageBlob742007824: no such file or directory

, error: axit status 1

[ERROR ImagePull]: failed to pull image k8s.gcr.io/etcd:3.4.3-0: output: 3.4.3-0: Pulling from etcd

39fafcu5754: Pulling is layer

3736elei15b8: Pulling fs layer

79de6if5b92e: Pulling fs layer

open /var/lib/docker/tmp/GetImageBlob139279288: no such file or directory

, error: exit status 1

[ERROR ImagePull]: failed to pull image k8s.gcr.io/coredns:1.6.7: output: 1.6.7: Pulling from coredns

c656d217a00: Pulling fs layer

open /var/lib/docker/tmp/GetImageBlob755271776: no such file or directory

, error: exit status 1

[preflight] If you know what you are doing, you can make a check non-fatal with `--ignore-preflight-errors=...`

error execution phase preflight

k8s.io/kubernetes/cmd/kubeadm/app/cmd/phases/workflow.(*Runner).Run.func1

/workspace/anago-v1.18.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/

88s.io/kubernetes/cmd/kubeadm/app/cmd/phases/workflow.(*Runner).visitAll

/workspace/anago-v1.18.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/

second/phases/workflow/runner.go:235

k8s.io/kubernetes/cmd/kubeadm/app/cmd/phases/workflow.(*Runner).visitAll

/workspace/anago-v1.18.4-rc.0.49+d809d9abe5cle3/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io/kubernetes/_output/dockerized/go/src/k8s.io
```

```
[root@kuber-master docker]# rm -rf /var/lib/docker/tmp
[root@kuber-master docker]# systemctl restart docker
[root@kuber-master docker]# cd /var/lib/docker/tmp
[root@kuber-master tmp]# ls
[root@kuber-master tmp]# |
```

```
tcp6 0 0 164.96.96.87:6443 164.96.96.87:58486 ESTABLISHED 19633/kube-apiserve
[root@kuber-master tmp]# kubeadm reset
[reset] Reading configuration from the cluster...
[reset] FYI: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -oyaml'
```

### kubectl -n kube-system get cm kubeadm-config -oyaml

```
rm -rf .kuhe/
rm -rf /etc/kubernetes/
rm -rf /var/lib/kubelet/
rm -rf /var/lib/docker/
rm -rf /var/lib/etcd/
  kubeadm init --pod-network-cidr=164.96.96.0/24
rm /var/lib/etcd/ -Rf
[addons] Applied essential addon: kube-proxy
  kubeadm reset
 rm /var/lib/etcd/ -Rf
 netstat -natp
kubeadm reset
rm /var/lib/docker -Rf
rm /etc/kubernetes -Rf
kubect1 apply -f https://raw.githubusercontent.com/coreos/flannel/master/Documentation/kube-flannel.yml
        kubeadm init --pod-network-cidr=164.96.96.0/24
          kUDe3dom Init --pownetwork can -ast-solotor.
mkdir -p SHOME/ kube
cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
chown $(id -u).$(id -g) $HOME/.kube/config
kubectl apply -f https://raw.githubusercontent.com/coreos/flannel/master/Documentation/kube-flannel.yml
  757
   759
   760
   761
          kubectl get nodes
kubectl get pods --all-namespaces
```

```
# env | grep -i _proxy
HTTP_PROXY=http://192.168.42.214:3128
https_proxy=http://192.168.42.214:3128
https_proxy=http://192.168.42.214:3128
no_proxy=localhost, 127.0.0.1, localaddress,.localdomain.com,.localdomain.local,192.168.0.0/16,10.96.0.0/12,172.25.50.21,172.25.50.22,172.25.50.24
NO_PROXY=localhost, 127.0.0.1, localaddress,.localdomain.com,.localdomain.local,192.168.0.0/16,10.96.0.0/12,172.25.50.21,172.25.50.22,172.25.50.23,172.25.50.24
HTTPS_PROXY=http://192.168.42.214:3128

1. SWap
2. DNS and hostnames
3. set correctly NO_PROXY
4. check situation with docker, proxy setting might be needed to be adjusted there as well.

docker info | grep -i cgroup cat /etc/system/kubelet.service.d/10-kubeadm.conf
```

```
[root@kuber-master ~]# history | egrep 'no_proxy|proxy' 675 export https_proxy=http://164.96.27.12:8080 676 export http_proxy=http://164.96.27.12:8080 677 export no_proxy=164.96.96.87 678 export no_proxy=164.96.96.87,127.0.0.1 860 export https_proxy=http://164.96.27.12:8080 861 export http_proxy=http://164.96.27.12:8080 862 export no_proxy=164.96.96.87 863 export no_proxy=164.96.96.87,127.0.0.1 971 kubectl proxy 1027 export https_proxy="http://164.96.27.12:8080" 1304 kubectl proxy --port=8080
```

```
[root@kuber-master ~] # mkdir -p /etc/systemd/system/docker.service.d [root@kuber-master ~] # systemctl daemon-reload [root@kuber-master ~] # systemctl restart docker
```

```
[root@kuber-master ~] # kubectl proxy --port=8080
Starting to serve on 127.0.0.1:8080
```

```
[root@kuber-master ~] # kubectl version
Client Version: version.Info(Major:"1", Minor:"18", GitVersion:"v1.18.4", GitCommit:"c96aede7b5205121079932896c4ad89bb93260af", GitTreeState:"clean", BuildDate:"2020
ton:"g01.13.9", Compiler:"gc", Platform:"linux/amd64")
The connection to the server 164.96.96.87:8080 was refused - did you specify the right host or port?
[root@kuber-master ~] # []
```

```
root@kuber-master ~]# docker info | grep -i cgroup

Cgroup Driver: systemd

root@kuber-master ~]# [
```

Netne

kubeadm init --apiserver-advertise-address=164.96.96.97 --pod-network-cidr=164.96.96.0/24

kubeadm init -pod-network-cidr=164.96.96.0/24 rm /wa/lib/tectd/-Rf [addons] Applied essential addon: kube-proxy kubeadm reset rm -rf \$HOME/kube/ rm /war/lib/tectd/-Rf netstat -natp

kubeadm reset rm /var/lib/docker -Rf rm /etc/kubernetes -Rf

kubeadm config images pull
kubeadm config view -v=5
941 kubeadm init --pod-network-cidr=164.96.96.0/24
942 mkdir -p \$HOME/.kube
943 cp -i /etc/kubernetes/admin.conf \$HOME/.kube/config
944 chown \$(id -u):\$(id -g) \$HOME/.kube/config
945 kubectl apply -f https://raw.githubusercontent.com/coreos/flannel/master/Documentation/kube-flannel.yml
946 kubectl get nodes
947 kubectl get pods --all-namespaces kubeadm config view --v=5
60 export https\_proxy=http://164.96.27.12:8080
861 export http\_proxy=http://164.96.27.12:8080

```
84 cat cat /etc/systemd/system/kubelet.service.d/10-kubeadm.conf
685 cat /etc/systemd/system/kubelet.service.d/10-kubeadm.conf
847 history | grep init
 848 kubeadm init --pod-network-cidr=164.96.96.0/24
 849 rm /var/lib/etcd/ -Rf
850 kubeadm reset
 851 $HOME/.kube/config file.
 852 rm -rf $HOME/.kube/
 853 netstat -natp
 854 history
855 rm /var/lib/etcd/ -Rf
 856 kubeadm init --pod-network-cidr=164.96.96.0/24
 857 swapoff -a
858 kubeadm init
859 rm /var/lib/etcd/ -Rf
1 kubeadm init
812 iptables -L
 813 firewall-cmd --permanent --add-port=6443/tcp
814 firewall-cmd --reload
 815 modprobe br_netfilter
 816 echo '1' > /proc/sys/net/bridge/bridge-nf-call-iptables
817 history | grep reset
 818 kubeadm reset
 819 rm -rf $HOME/.kube/config
 820 history | grep init
 821 kubeadm init --apiserver-advertise-address=164.96.96.87 --pod-network-cidr=164.96.96.0/24
 822 yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
 823 kubeadm reset
 824 rm -rf $HOME/.kube/config
 825 kubeadm reset
 826 history | grep init
827 kubeadm init --pod-network-cidr=164.96.96.0/24
 828 rm /var/lib/etcd/ -Rf
 829 kubeadm reset
830 $HOME/.kube/config file.
 831 rm -rf $HOME/.kube/
 832 netstat -natp
833 history
 834 rm /var/lib/etcd/ -Rf
835\ kubeadminit --pod-network-cidr=164.96.96.0/24
 836 swapoff -a
 837 kubeadm init
838 rm /var/lib/etcd/ -Rf
 839 kubeadm init
 840 docker info | grep -i cgroup
 841 kubectl get pods --all-namespaces
 842 kubectl get nodes
 843 cat /etc/systemd/system/kubelet.service.d/10-kubeadm.conf
 844 systemctl daemon-reload
 845 systemctl restart kubelet
 846 kubectl create service nodeport nginx --tcp=80:80
 847 rm /var/lib/docker -Rf
 848 rm /etc/kubernetes -Rf
 849 systemctl stop docker
 850 rm /var/lib/docker -Rf
 851 kubeadm version
 852 ./kubeadm init
 853 kubeadm init
 854 kubeadm version
 855 kubeadm init
 856 qsystemctl status kubelet
 857 systemctl status kubelet
 858 journalctl -xeu kubelet
 859 env
 860 export https_proxy=http://164.96.27.12:8080
```

861 export http\_proxy=http://164.96.27.12:8080

862 export no\_proxy=164.96.96.87

--More--

### **Seaplicaciones multi-contenedores**

#### **Docker Compose**

- Contenedores
- Imágenes
- Volumenes
- Redes



# Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to <u>nginx.org</u>. Commercial support is available at <u>nginx.com</u>.

Thank you for using nginx.

```
[tomcatj8@RVM-JAVA-ZEKE docker-compose]$ docker-compose down
Stopping nginx1 ... done
Removing nginx1 ... done
Removing network docker-compose_default
[tomcatj8@RVM-JAVA-ZEKE docker-compose]$
```

```
tomcatj88RVM-JAVA-ZEKE docker-compose]$ docker-compose up -d
Treating network "docker-compose_default" with the default driver
ulling web (mysql:5.7)...
...?: Pulling from library/mysql
559a3le96f4: Already exists
151celc2e575: Pull complete
2344adc4858: Pull complete
653ceff18f6: Pull complete
6630c3865b: Pull complete
905d1797e97: Pull complete
185174a87144: Pull complete
185174a87144: Pull complete
4ad33703fa8: Pull complete
4ad33703fa8: Pull complete
dcd2a278b4a: Pull complete
dcd2a278b4a: Pull complete
dcd2a278b4a: Pull complete
18518c4887144: Downloaded newer image for mysql:5.7
Treating mysql1 ... done
```

```
[tomcatj8@RVM-JAVA-ZEKE docker-compose]
[
```

```
Foot81750e75db009:/# mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with; or \g.
Your MySQL connection id is 2
Server version: 5.7.30 MySQL Community Server (GPL)
(Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

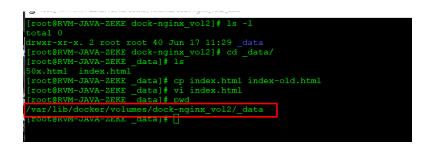
Oracle is a registered trademark of Oracle Corporation and/or its affiliates. Other names may be trademarks of their respective owners.

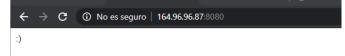
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> [
```

```
[tomcatj8@RVM-JAVA-ZEKE ~]$ docker info| grep Dir

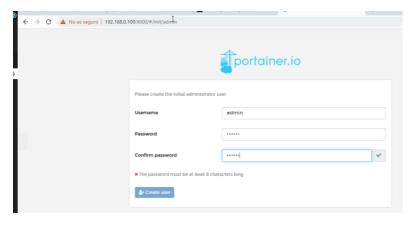
Rescuration of the control of
```

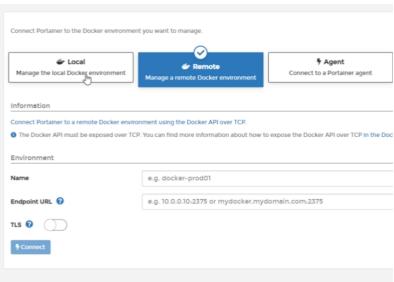






independiente (eiecutando Windows Containers): la nota dehe ser





```
P root@okd:~/docker-com
version: '3'
services:
     image: mysql:5.7
     environment:
        MYSQL ROOT PASSWORD: master
        MYSQL_DATABASE: test
        MYSQL_USER: user01
MYSQL_PASSWORD: master
     ports:
         - "3306:3306"
  web:
     image: php:7.2.2-apache
     container name: php_web
     depends on:
     volumes:
        - ./php/:/var/www/html/
        - "810<mark>0</mark>:80"
     stdin_open: true
     tty: true
[root@okd docker-compose] # docker-compose ps
                                                                      State
                                                                                  Ports
         Name
                                          Command
docker-compose_db_1 docker-entrypoint.sh mysqld docker-php-entrypoint apac ...
                                                                      Exit 0
php_web docker-php-entrypoint apac
[root@okd docker-compose] # docker-compose start
                                                                      Exit 0
Starting db ... done
Starting web ... done
[root@okd docker-compose] # docker-compose ps
                                                                      State
                                                                                                  Ports
docker-compose_db_1 docker-entrypoint.sh mysqld docker-php-entrypoint apac ...
        Name
                                         Command
                                                                                 0.0.0.0:3306->3306/tcp, 33060/tcp
php_web docker-php-entrypoint apr
[root@okd docker-compose] # docker-compose down
                                                                                 0.0.0.0:80->80/tcp
                                                                      Up
Stopping php_web ... done Stopping docker-compose_db_1 ... done
Removing php web ... done
Removing docker-compose db_1 ... done
Removing network docker-compose_default
[root@okd docker-compose] # docker-compose ps
Name Command State Ports
 [root@okd docker-compose]#
```

```
yum -y install yum-utils vim
yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
yum install -y docker-ce docker-ce-cli containerd.io
mkdir /etc/docker /etc/containers
#Disabling selinux.
sed -i 's/enforcing/disabled/g' /etc/selinux/config
setenforce 0
cat << EOF >/etc/docker/daemon.json
 "insecure-registries": [
 "172.30.0.0/16"
 ]
EOF
cat << EOF > /etc/containers/registries.conf
[registries.insecure]
registries = ['172.30.0.0/16']
sudo systemctl daemon-reload
sudo systemctl restart docker
```

-----......sudo systemctl enable docker------....

```
[root@devops CentosAnsible] # ansible-playbook -C playbook.yml -i inventory
ok: [servera]
: ok=3 changed=2 unreachable=0
                      failed=0 skipped=0
ued=0
  ignored=0
[root@devops CentosAnsible] # vim playbook.yml
[root@devops CentosAnsible] # ansible-playbook --syntax-check playbook.yml -i inventory
playbook: playbook.yml
[root@devops CentosAnsible]# ansible-playbook playbook.yml -i inventory
ok: [servera]
```

#### Doc

```
- hosts: servers
tasks:
- name: "Instalar apache"
yum:
    name: httpd
    state: latest
- name: "Levantar apache"
service:
    name: httpd
    state: started
```