



```
req_extensions      = kube-work-4_req_extensions
```

```
[kube-work-4_req_extensions]
```

```
basicConstraints    = CA:FALSE
```

```
extendedKeyUsage    = clientAuth, serverAuth
```

```
keyUsage            = critical, digitalSignature, keyEncipherment
```

```
nsCertType          = client
```

```
nsComment           = "kube-work-4 Certificate"
```

```
subjectAltName      = DNS:kube-work-4, IP:10.138.117.7 # IP воркера
```

```
subjectKeyIdentifier = hash
```

```
[kube-work-4_distinguished_name]
```

```
CN = system:node:kube-work-4
```

```
O  = system:nodes
```

```
C  = US
```

```
ST = Washington
```

```
L  = Seattle
```

```
[default_req_extensions]
```

```
basicConstraints    = CA:FALSE
```

```
extendedKeyUsage    = clientAuth
```

```
keyUsage            = critical, digitalSignature, keyEncipherment
```

```
nsCertType          = client
```

```
nsComment           = "Admin Client Certificate"
```

```
subjectKeyIdentifier = hash
```

```
###
```

```
for host in kube-work-4; do
```

```
    openssl genrsa -out "${host}.key" 4096
```

```
    openssl req -new -key "${host}.key" -sha256 \
```

```
        -config "ca.conf" -section ${host} \
```

```
        -out "${host}.csr"
```

```
    openssl x509 -req -days 3653 -in "${host}.csr" \
```

```
        -copy_extensions copyall \
```

```
        -sha256 -CA "ca.crt" \
```

```
        -CAkey "ca.key" \
```

```
-CAcreateserial \  
-out "${host}.crt"
```

```
kubectl config set-cluster kubernetes-the-hard-way \  
--certificate-authority=ca.crt \  
--embed-certs=true \  
--server=https://10.138.117.204:6443 \  
--kubeconfig=${host}.kubeconfig
```

done

###

```
root@kube-ctrl:~/add-manually-worker# cat kube-work-4.kubeconfig
```

```
apiVersion: v1
```

```
clusters:
```

```
- cluster:
```

```
  certificate-authority-data: `cat ca.crt | base64 -w0`
```

```
  server: https://10.138.117.204:6443
```

```
  name: kubernetes-the-hard-way
```

```
contexts:
```

```
- context:
```

```
  cluster: kubernetes-the-hard-way
```

```
  namespace: default
```

```
  user: system:node:kube-work-4
```

```
  name: default-context
```

```
current-context: default-context
```

```
kind: Config
```

```
preferences: {}
```

```
users:
```

```
- name: system:node:kube-work-4
```

```
  user:
```

```
    client-certificate-data: `cat crt | base64 -w0`
```

```
    client-key-data: `cat key | base64 -w0`
```

###

```
root@kube-ctrl:~/add-manually-worker# kubectl --kubeconfig kube-work-4.kubeconfig get no
```

NAME	STATUS	ROLES	AGE	VERSION
kube-work-1	Ready	<none>	85d	v1.30.3+k0s
kube-work-2	Ready	shits	15h	v1.30.6+k0s

```
kube-work-3   Ready    <none>   14h   v1.30.5+k0s
```

```
###
```

```
root@kube-work-4:~# cat down
```

```
https://github.com/containernetworking/plugins/releases/download/v1.3.0/cni-plugins-linux-amd64-v1.3.0.tgz
```

```
https://storage.googleapis.com/kubernetes-release/release/v1.30.1/bin/linux/amd64/kube-proxy
```

```
https://storage.googleapis.com/kubernetes-release/release/v1.30.1/bin/linux/amd64/kubelet
```

```
root@kube-work-4:~# wget -q --show-progress --https-only --timestamping -P downloads -i down
```

```
cni-plugins-linux-amd64-v1.3.0.tgz
```

```
100%[=====]  
=====>] 43.24M 21.5MB/s in 2.0s
```

```
kube-proxy
```

```
100%[=====]  
=====>] 54.91M 17.3MB/s in 3.2s
```

```
kubelet
```

```
100%[=====]  
=====>] 95.46M 22.5MB/s in 5.0s
```

```
apt install containerd -y
```

```
###
```

```
root@kube-work-4:~# systemctl cat kube.service
```

```
# /etc/systemd/system/kube.service
```

```
[Unit]
```

```
Description=Kubernetes Kubelet
```

```
Documentation=https://github.com/kubernetes/kubernetes
```

```
After=containerd.service
```

```
Requires=containerd.service
```

```
[Service]
```

```
ExecStart=/usr/local/bin/kubelet \
```

```
--config=/var/lib/kubelet/kubelet-config.yaml \
```

```
--kubeconfig=/var/lib/kubelet/kubeconfig \
```

```
--register-node=true \
```

```
--v=2
```

```
Restart=on-failure
```

RestartSec=5

[Install]

WantedBy=multi-user.target

###

```
root@kube-work-4:~# cat /var/lib/kubelet/kubelet-config.yaml
```

```
kind: KubeletConfiguration
```

```
apiVersion: kubelet.config.k8s.io/v1beta1
```

```
authentication:
```

```
  anonymous:
```

```
    enabled: false
```

```
  webhook:
```

```
    enabled: true
```

```
  x509:
```

```
    clientCAFile: "/var/lib/kubelet/ca.crt"
```

```
authorization:
```

```
  mode: Webhook
```

```
clusterDomain: "cluster.local"
```

```
clusterDNS:
```

```
  - "10.32.0.10"
```

```
cgroupDriver: systemd
```

```
containerRuntimeEndpoint: "unix:///var/run/containerd/containerd.sock"
```

```
podCIDR: "100.64.32.0/24"
```

```
resolvConf: "/etc/resolv.conf"
```

```
runtimeRequestTimeout: "15m"
```

```
tlsCertFile: "/var/lib/kubelet/kubelet.crt"
```

```
tlsPrivateKeyFile: "/var/lib/kubelet/kubelet.key"
```

###

```
kube-worker-4.{crt,key}->/var/lib/kubelet/kubelet.{crt,key}
```

###

```
root@kube-work-4:~# cat /var/lib/kubelet/kubeconfig
```

```
apiVersion: v1
```

```
clusters:
```

```
- cluster:
```

```
  certificate-authority-data: # ca base64
```

```
server: https://10.138.117.204:6443
name: kubernetes-the-hard-way
contexts:
- context:
  cluster: kubernetes-the-hard-way
  namespace: default
  user: system:node:kube-work-4
  name: default-context
current-context: default-context
kind: Config
preferences: {}
users:
- name: system:node:kube-work-4
  user:
    client-certificate-data: # base64
    client-key-data: # base64
```

###

```
systemctl start kube.service
```

```
root@kube-ctrl:~# kubectl get no -o wide
```

NAME	STATUS	ROLES	AGE	VERSION	INTERNAL-IP	EXTERNAL-IP	OS-
IMAGE				KERNEL-VERSION		CONTAINER-RUNTIME	
kube-work-1	Ready	<none>	85d	v1.30.3+k0s	10.138.117.150	<none>	Debian
GNU/Linux 12 (bookworm)		6.1.0-23-amd64				containerd://1.7.20	
kube-work-2	Ready	shits	16h	v1.30.6+k0s	10.13.37.3	<none>	Rocky Linux
9.4 (Blue Onyx)		5.14.0-427.42.1.el9_4.x86_64				containerd://1.7.22	
kube-work-3	Ready	<none>	14h	v1.30.5+k0s	10.138.117.79	<none>	AlmaLinux
9.4 (Seafoam Ocelot)		5.14.0-427.42.1.el9_4.x86_64				containerd://1.7.22	
kube-work-4	Ready	<none>	35s	v1.30.1	10.138.117.7	<none>	Ubuntu
20.04.6 LTS		5.4.0-200-generic				containerd://1.7.12	

Revision #2

Created 9 November 2024 12:42:55 by Ivan

Updated 9 November 2024 15:20:56 by Ivan