

????

 `/etc/pve/lxc/<lxc-id>.conf`  **LXC**

K3s **/dev/kmsg** **LXC**

```
chmod +x /etc/rc.local
reboot
```

??K3s

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```
apt install -y curl iptables openssh-server git
```

■■■■■■■

```
curl -sL https://get.k3s.io | sh -
```

```
root@k3s:~# curl -sL https://get.k3s.io | sh -
[INFO] Finding release for channel stable
[INFO] Using v1.33.6+k3s1 as release
[INFO] Downloading hash https://github.com/k3s-
io/k3s/releases/download/v1.33.6+k3s1/sha256sum-amd64.txt
[INFO] Downloading binary https://github.com/k3s-io/k3s/releases/download/v1.33.6+k3s1/k3s
[INFO] Verifying binary download
[INFO] Installing k3s to /usr/local/bin/k3s
[INFO] Skipping installation of SELinux RPM
[INFO] Creating /usr/local/bin/kubectl symlink to k3s
[INFO] Creating /usr/local/bin/crictl symlink to k3s
[INFO] Creating /usr/local/bin/ctr symlink to k3s
[INFO] Creating killall script /usr/local/bin/k3s-killall.sh
[INFO] Creating uninstall script /usr/local/bin/k3s-uninstall.sh
[INFO] env: Creating environment file /etc/systemd/system/k3s.service.env
[INFO] systemd: Creating service file /etc/systemd/system/k3s.service
[INFO] systemd: Enabling k3s unit
Created symlink /etc/systemd/system/multi-user.target.wants/k3s.service ->
/etc/systemd/system/k3s.service.
[INFO] systemd: Starting k3s
```

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```
root@k3s:~# systemctl status k3s
* k3s.service - Lightweight Kubernetes
   Loaded: loaded (/etc/systemd/system/k3s.service; enabled; preset: enabled)
   Active: active (running) since Wed 2025-11-26 12:36:28 UTC; 1min 20s ago
     Docs: https://k3s.io
   Process: 1405 ExecStartPre=/sbin/modprobe br_netfilter (code=exited, status=1/FAILURE)
   Process: 1406 ExecStartPre=/sbin/modprobe overlay (code=exited, status=1/FAILURE)
  Main PID: 1407 (k3s-server)
     Tasks: 87
```

```
Memory: 1.5G
CPU: 1min 21.016s
CGroup: /system.slice/k3s.service
|-1407 "/usr/local/bin/k3s server"
```

❏ pod❏❏❏

```
root@k3s:~# kubectl get po -A
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
kube-system	coredns-6d668d687-6lsqc	1/1	Running	0	5m28s
kube-system	helm-install-traefik-crd-z52b6	0/1	Completed	0	5m29s
kube-system	helm-install-traefik-hlr6m	0/1	Completed	1	5m29s
kube-system	local-path-provisioner-869c44bfbd-72lvm	1/1	Running	0	5m28s
kube-system	metrics-server-7bfffcd44-w4nkl	1/1	Running	0	5m28s
kube-system	svclb-traefik-bd95e7b9-bd7z4	2/2	Running	0	4m40s
kube-system	traefik-865bd56545-6q8z9	1/1	Running	0	4m40s

```
root@k3s:~# kubectl get nodes
```

NAME	STATUS	ROLES	AGE	VERSION
k3s	Ready	control-plane,master	6m44s	v1.33.6+k3s1

?? Helm

```
curl https://raw.githubusercontent.com/helm/helm/main/scripts/get-helm-4 | bash
```

❏ helm❏ K3s❏ kubeconfig

```
export KUBECONFIG=/etc/rancher/k3s/k3s.yaml
```

?? Rancher

❏ Cert-Manager ❏ Rancher❏ Chart Repository

```
helm repo add jetstack https://charts.jetstack.io
```

```
helm repo add rancher-stable https://releases.rancher.com/server-charts/stable
```

```
helm repo update
```

☐ **Cert-Manager**

```
helm install cert-manager jetstack/cert-manager --namespace cert-manager --create-namespace --  
version v1.13.1
```

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