

# Kubernetes on DigitalOcean

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# Run Kubernetes Command via Local Computer

## Prepare Environment

```
sudo snap install kubectl --classic  
sudo snap install helm --classic
```

Download Kubernetes config file from DigitalOcean and export it into `KUBECONFIG`.

```
export KUBECONFIG=/www/wwwroot/k8s/kube-config.yaml
```

## Install Cert-Manager

Rancher requires Cert-Manager for managing certificates. Add the Cert-Manager Helm repository:

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

Running result:

```
Hang tight while we grab the latest from your chart repositories...  
...Successfully got an update from the "jetstack" chart repository  
Update Complete. 🎉 Happy Helming!🎉
```

Install Cert-Manager in your cluster:

```
kubectl create namespace cert-manager  
helm install cert-manager jetstack/cert-manager \\  
  --namespace cert-manager \\  
  --version v1.12.3 \\  
  --set installCRDs=true
```

## Running result:

```
NAME: cert-manager
LAST DEPLOYED: Sun Dec  1 10:06:17 2024
NAMESPACE: cert-manager
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
cert-manager v1.12.3 has been deployed successfully!
```

In order to begin issuing certificates, you will need to set up a ClusterIssuer or Issuer resource (for example, by creating a 'letsencrypt-staging' issuer).

More information on the different types of issuers and how to configure them can be found in our documentation:

<https://cert-manager.io/docs/configuration/>

For information on how to configure cert-manager to automatically provision Certificates for Ingress resources, take a look at the `ingress-shim` documentation:

<https://cert-manager.io/docs/usage/ingress/>

## Verify the Cert-Manager pods are running:

```
kubectl get pods --namespace cert-manager
```

# Add the Rancher Helm Chart Repository

## Add Rancher's Helm repository:

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

# Install Rancher

Choose a namespace for Rancher (commonly `cattle-system`):

```
kubectl create namespace cattle-system
```

Install Rancher with Helm:

```
helm install rancher rancher-latest/rancher \
  --namespace cattle-system \
  --set hostname=<YOUR_RANCHER_DOMAIN>
```

# Setup Kubeconfig on a Droplet

## Download Kubeconfig

1. Open from menu **Manage > Kubernetes**.
2. Click your target Kubernetes cluster.
3. From **Overview**, click **Download Config File**.

k8s-download-kubeconfig.PNG

## Upload Kubeconfig via SSH

## Setup Kubeconfig

Run this following commands:

```
mkdir -p ~/.kube  
cp ~/k8s/kubeconfig.yaml ~/.kube/config
```