

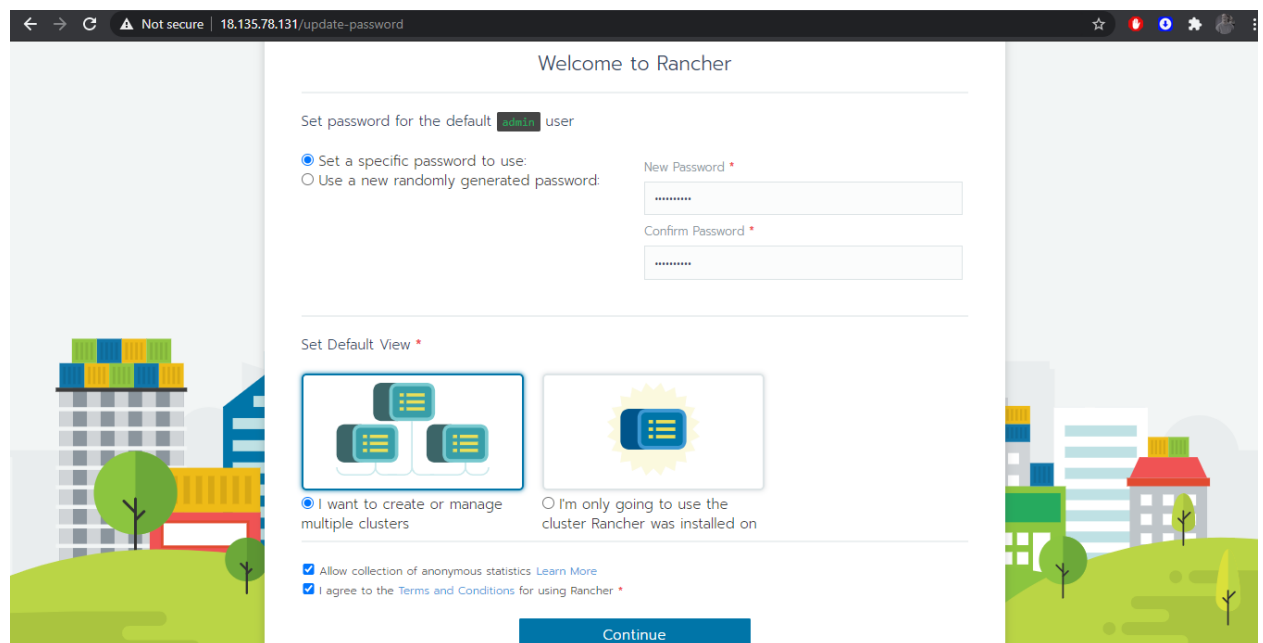
# Create a k8s cluster using rancher

## 1. Run this command on the master machine

```
sudo docker run --privileged -d --restart=unless-stopped -p 80:80 -p 443:443 rancher/rancher
```

```
ubuntu@RancherMaster:~$ sudo docker run --privileged -d --restart=unless-stopped -p 80:80 -p 443:443 rancher/rancher
Unable to find image 'rancher/rancher:latest' locally
latest: Pulling from rancher/rancher
f22ccc0b8772: Pull complete
3cf8fb62ba5f: Pull complete
e80c964ece6a: Pull complete
177bd5a25689: Pull complete
5ef514666185: Pull complete
9f884f75efba: Pull complete
d8a8a5ffce76: Pull complete
cfe7056f2841: Pull complete
f6d1920bc49d: Pull complete
f2e351c1c82e: Pull complete
c064b742b19f: Pull complete
d579b1c0565a: Pull complete
da4b2066f9a5: Pull complete
5c4756ef132d: Pull complete
b23d13f73f55: Pull complete
a48189cc9c45: Pull complete
2eaa76006605: Pull complete
87ebe97e8a3c: Pull complete
1793d4f21083: Pull complete
2e9b10fe3352: Pull complete
Digest: sha256:961980e4d64e2c9b4c6830f61b0a75b6b86695516303a2fc5e053d642e91e958
Status: Downloaded newer image for rancher/rancher:latest
aae3ebae6094cb1ea356a3e563d57823cb11fc7759129ea84563009775503742
```

## 2. To access the Rancher server UI, open a browser and go to the hostname or address



Enter a new password and accept terms and conditions then press continue

3. Enter a domain name or an ip which is accessible to all nodes and press save URL

### Rancher Server URL

What URL should be used for this Rancher installation? All the nodes in your clusters will need to be able to reach this.


URL

https://


18.135.78.131

Save URL

4. Click add Cluster



Global ▾ Clusters Apps Settings Security ▾ Tools ▾



Clusters

Add Cluster

☐ State ▾ Cluster Name ▾ Provider ▾ Nodes ▾ CPU ▾ RAM ▾

☐ Active

local

K3s  
v1.18.8+k3s1

1

0.1/2 Cores  
5%

0.1/7.7 GiB  
1%

Explorer

<input type="checkbox"/> State ▾	Cluster Name ▾	Provider ▾	Nodes ▾	CPU ▾	RAM ▾	
<input type="checkbox"/> Active	local	K3s v1.18.8+k3s1	1	0.1/2 Cores 5%	0.1/7.7 GiB 1%	Explorer

## 5. Choose existing node

The screenshot shows the 'Add Cluster - Select Cluster Type' page in the AWS IAM console. The navigation bar at the top includes 'Global', 'Clusters', 'Apps', 'Settings', 'Security', and 'Tools'. The main heading is 'Add Cluster - Select Cluster Type'. Below this, there's a section 'Register an existing Kubernetes cluster' with two buttons: 'Amazon EKS' and 'Other Cluster'. A second section, 'Create a new Kubernetes cluster', includes the text 'With RKE and existing bare-metal servers or virtual machines.' and a button labeled 'Existing nodes' which is circled in red.

## 6. Enter a name for the cluster then choose calico as a network provider then click next

The screenshot shows the cluster configuration page. The 'Cluster Name' field, containing 'cluster1', is circled in red. Below it are sections for 'Member Roles' and 'Labels & Annotations'. The 'Cluster Options' section has an 'Edit as YAML' button. The 'Kubernetes Options' section is expanded, showing 'Kubernetes Version' set to 'v119.7-rancher1-1'. The 'Network Provider' dropdown is set to 'Calico' and is circled in red. To the right, 'Windows Support' and 'Project Network Isolation' are both set to 'Disabled'.

## 7. Select all node roles and then copy the command and press ok

## Cluster Options

Customize Node Run Command

Editing node options will update the command you will run on your existing machines

1

Node Options

Choose what roles the node will have in the cluster

Node Role

☒ etcd

☒ Control Plane

☒ Worker

Show advanced options

2

Run this command on one or more existing machines already running a supported version of Docker.

```
sudo docker run -d --privileged --restart=unless-stopped --net=host -v /etc/kubernetes:/etc/kubernetes -v /var/run:/var/run rancher/rancher-agent:v2.5.5 --server https://18.135.78.131 --token knn7cmn6dv8t7q2lh8rxr9sgmn4c84cjrmlj69pq4jpdtrbz7xxs7b --ca-checksum 8d6e3c55e6f7de157e85a211f834f302b5169d3546528c9e1333105ced1d40d3 --etcd --controlplane --worker
```

## 8. Run the command on the master machine

```
ubuntu@RancherMaster:~$ sudo docker run -d --privileged --restart=unless-stopped --net=host -v /etc/kubernetes:/etc/kubernetes -v /var/run:/var/run rancher/rancher-agent:v2.5.5 --server https://18.135.78.131 --token knn7cmn6dv8t7q2lh8rxr9sgmn4c84cjrmlj69pq4jpdtrbz7xxs7b --ca-checksum 8d6e3c55e6f7de157e85a211f834f302b5169d3546528c9e1333105ced1d40d3 --etcd --controlplane --worker
Unable to find image 'rancher/rancher-agent:v2.5.5' locally
v2.5.5: Pulling from rancher/rancher-agent
f22ccc0b8772: Already exists
3cf8fb62ba5f: Already exists
e80c964ece6a: Already exists
7816fb346a72: Pull complete
21cb0c143369: Pull complete
8173306faca: Pull complete
1a3a23fd9454: Pull complete
b1f7053ffffa: Pull complete
9c095fcb9451: Pull complete
0562c17cea34: Pull complete
Digest: sha256:ddba352d8b1389741ed0b768b85c6fbc921889d350d7c54364c87b4d5849481b
Status: Downloaded newer image for rancher/rancher-agent:v2.5.5
4059ccfb646f39e04875e5e5f9df121737d34702a707495396a18385396a3d98
```

## You should notice that the node is registering

cluster1

Cluster Nodes Storage Projects/Namespaces Members Tools

This cluster is currently **Provisioning**, areas that interact directly with it will not be available until the API is ready.

[network] Deploying port listener containers

Nodes

Edit Cluster

Delete	State	Name	Roles	Version	CPU	RAM	Pods
<input type="checkbox"/>	Registering	RancherMaster 172.31.14.46	AK	n/a	n/a	n/a	n/a

Waiting to register with Kubernetes

## Wait until it finishes

cluster1

Cluster Nodes Storage Projects/Namespaces Members Tools

Cluster Explorer

Nodes

Edit Cluster

Cordon

Drain

Delete

State	Name	Roles	Version	CPU	RAM	Pods	
<input type="checkbox"/>	Active	ranchermaster 172.31.14.46	AK	v1.19.7 20.10.3	0.4/2 Cores	0.1/7.6 GiB	12/110

## 9. Now we need to register slaves to the cluster

Click on edit cluster and copy the command with role worker only

1

Node Options

Choose what roles the node will have in the cluster

Node Role

☐ etcd

☐ Control Plane

☒ Worker

Show advanced options

2

Run this command on one or more existing machines already running a supported version of Docker.

```
sudo docker run -d --privileged --restart=unless-stopped --net=host -v /etc/kubernetes:/etc/kubernetes -v /var/run:/var/run rancher/rancher-agent:v2.5.5 --server https://18.135.78.131 --token knn7cmn6dv8t7q2lh8rxr9sgmn4c84cjrmlj69pq4jpdtrbz7xxs7b --ca-checksum 8d6e3c55e6f7de157e85a211f834f302b5169d3546528c9e1333105ced1d40d3 --worker
```

## Run the command on slave machines

```
ubuntu@RancherSlave1:~$ sudo docker run -d --privileged --restart=unless-stopped --net=host -v /etc/kubernetes:/etc/kubernetes -v /var/run:/var/run rancher/rancher-agent:v2.5.5 --server https://18.135.78.131 --token knn7cmn6dv8t7q2lh8rxr9sgmn4c84cjrmlj69pq4jpdtrbz7xxs7b --ca-checksum 8d6e3c55e6f7de157e85a211f834f302b5169d3546528c9e1333105ced1d40d3 --worker
Unable to find image 'rancher/rancher-agent:v2.5.5' locally
v2.5.5: Pulling from rancher/rancher-agent
f22ccc0b8772: Pull complete
3cf8fb62ba5f: Pull complete
e80c964ecea6: Pull complete
7816fb346a72: Pull complete
21cb0c143369: Pull complete
8173306faca: Pull complete
1a3a23fd9454: Pull complete
b1f7053ffffa: Pull complete
9c095fcb9451: Pull complete
0562c17cea34: Pull complete
Digest: sha256:ddb352d8b1389741ed0b768b85c6fbc921889d350d7c54364c87b4d5849481b
Status: Downloaded newer image for rancher/rancher-agent:v2.5.5
159b4820028e762cd263cae5e388391e7481cecf1f295941dd9b4da3dc0b02bf
```

## Wait until all nodes is ready

cluster1

Cluster Nodes Storage Projects/Namespaces Members Tools

Cluster Explorer

Nodes

Cordon Drain Delete

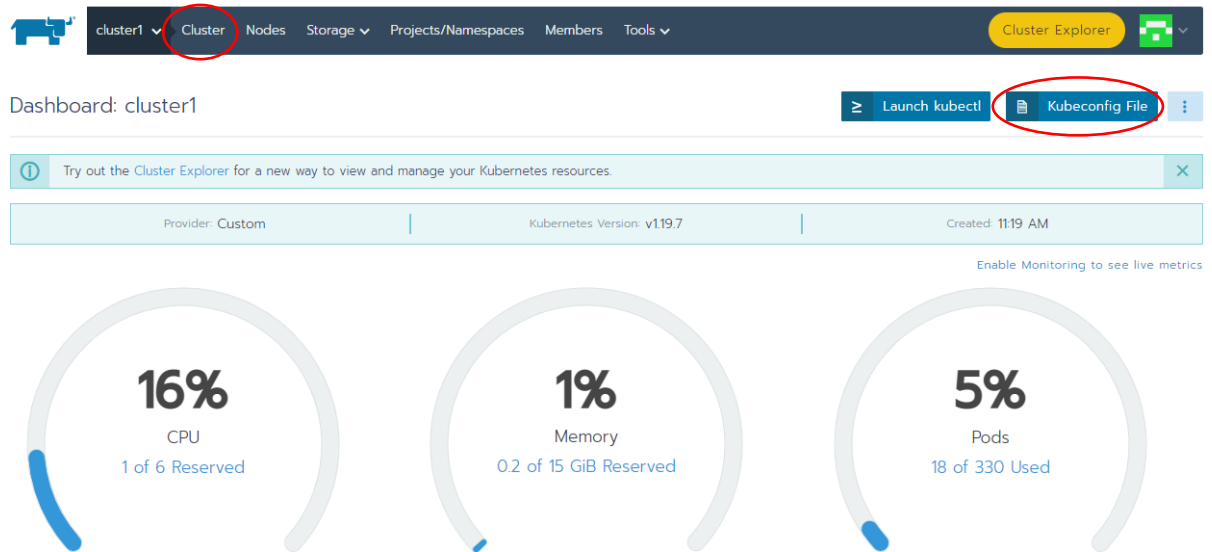
Search

State	Name	Roles	Version	CPU	RAM	Pods
<input type="checkbox"/> Active	ranchermaster 172.31.14.46	All	v1.19.7 20.10.3	0.4/2 Cores	0.1/7.6 GiB	11/110
<input type="checkbox"/> Active	rancherslave1 172.31.10.133	Worker	v1.19.7 20.10.3	0.4/2 Cores	0.1/3.7 GiB	4/110
<input type="checkbox"/> Active	rancherslave2 172.31.8.231	Worker	v1.19.7 20.10.3	0.3/2 Cores	0/3.7 GiB	3/110

## 10. Now we need to be able to run kubectl on all nodes

Make sure that kubectl is installed [installation guide](#)

In cluster tab click kubeconfig files



Copy the content to a new file `~/.kube/config`

```
GNU nano 4.8 /home/ubuntu/.kube/config Modified
1FKSVpKZ1k1RGZyUjFja05FbGppazNKcU9XL0pdkxPdXJETS9JcmJQRlZIMjVMMHF3d2ky5Fkrd\
TVNUE15eHhUeTVYOHpseDI1Wgp3bzkvRUZCZWxGLZFyWkNrWC9KQ3NZRTN2V1cKRWRrMHk4YkE5T\
WtHOExXmLIE LNDbmFTT1ZqTGZYaXZwN1FRTDg5VTIwOV80MFZYU2gxbzRTVDfVRGtmU4egpiR\
G90eGZ0WnR6TUNBd0VBQWFnak1DRXdEZ1LEVLiWUEFRSC9CQVFEQWdLa01BOEdBMVVkRXdfQ9i93U\
UZnQU1CCKFmOHdEUVLKS29aSwH2Y05BUUMQlFBRGdnRUJB5FdhcnV1NkwraJvOT3pkVHJFN0R1U\
GxkS1BBUms2QVc3cnYkOXZiOHRYc3JrV1dESlJ6QnglWgpRWdHdWtNaQ3ZtRWwCUFBmU09jb2tnc\
G41bTEweVh1U2lmYkdtOXBxbTMwVWpNdWJmYlpaTk5kb0MxXWQeW05UktQSjJzdE50aUg1ek9ra\
zk1Nm0xWmRPTVF2OHJnZTBPeitxcWVab3pBcjJqCLRESXNCS1B5NkIyVWprNETxQ3RuQU1wT3lmc\
UQpTVRVS2FOEdKZThpTi9xK21JVVN1cFhWl04WndYRddnamgKckRyYzVzblUvaHlhdGNCdm9mQ\
WFLeeZHOEiXUDZ2RG4vVURiVW5WeGpYVvKFRaFNwTW9NNU1hcjhhEgyakF4dgpR0o0VG1jHnZxQ\
i9zSEVCc2Z1OGZlVmdQcLhPZW1MbGREB6xqRWpmVWNVbFh1VFJmVLU9C10tLS0tRUSIEENFULRJ\
kLDQVRFLS0tLS0K"

users:
- name: "cluster1"
  user:
    token: "kubecfg-user-znsjs.c-27fs6:c6mjs7zxc597pt6w28r7hqn4dp77p76c85xhj7lm4dXlm27jjdh9x"

contexts:
- name: "cluster1"
  context:
    user: "cluster1"
    cluster: "cluster1"
- name: "cluster1-RancherMaster"
  context:
    user: "cluster1"
    cluster: "cluster1-RancherMaster"

current-context: "cluster1"

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^U Undo ^M Mark Text ^N To Bracket
^X Exit ^R Read File ^_ Replace ^V Paste Text ^T To Spell ^G Go To Line ^E Redo ^_ Copy Text ^Q Where Was
```

11. Finally make sure that everything is ok

```
ubuntu@RancherMaster:~$ kubectl get node
NAME                STATUS    ROLES                                AGE   VERSION
ranchermaster       Ready    controlplane,etcd,worker            19m   v1.19.7
rancherslave1       Ready    worker                              12m   v1.19.7
rancherslave2       Ready    worker                              10m   v1.19.7
```