1. First, we will Launch two t2.micro instances (Master and Worker) with the following security groups.

**Master Node Security Group Settings**

| **PROTOCOL** | **PORT** | **SOURCE** | **DESCRIPTION** |
| --- | --- | --- | --- |
| TCP | 6443 | K3s agent nodes | Kubernetes API Server |
| UDP | 8472 | K3s server and agent nodes | Required only for Flannel VXLAN |
| UDP | 51820 | K3s server and agent nodes | Required only for Flannel Wireguard backend |
| UDP | 51821 | K3s server and agent nodes | Required only for Flannel Wireguard backend with IPv6 |
| TCP | 10250 | K3s server and agent nodes | Kubelet metrics |
| TCP | 2379-2380 | K3s server nodes | Required only for HA with embedded etcd |
| SSH | 22 | SSH port |  |

Typically all outbound traffic is allowed.

**Master Node Security Group Settings**

| **PROTOCOL** | **PORT** | **SOURCE** | **DESCRIPTION** |
| --- | --- | --- | --- |
| TCP | 6443 | K3s agent nodes | Kubernetes API Server |
| SSH | 22 | SSH Port | Required only for Flannel VXLAN |

Typically all outbound traffic is allowed.

1. Update hostnames on instances

**sudo hostnamectl set-hostname master**

**bash**

**sudo hostnamectl set-hostname worker**

**bash**

1. Install K3s on **Master** **node**

**curl -sfL https://get.k3s.io | sh -**

1. To check if the service was installed successfully, we can use:

**systemctl status k3s.service**

1. You can check if the **master node** is working by

**sudo kubectl get nodes -o wide**

1. Get a TOKEN from **Master node**

**sudo cat /var/lib/rancher/k3s/server/node-token**

1. Get **Master node** private IP address
   1. Install Net-tools

**sudo apt install net-tools**

* 1. run

**ifconfig**

ens5: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 9001

inet 172.31.82.204 netmask 255.255.240.0 broadcast 172.31.95.255

inet6 fe80::1093:70ff:fe0c:e79d prefixlen 64 scopeid 0x20<link>

ether 12:93:70:0c:e7:9d txqueuelen 1000 (Ethernet)

RX packets 161066 bytes 302360271 (302.3 MB)

RX errors 0 dropped 0 overruns 0 frame 0

TX packets 11531 bytes 1875565 (1.8 MB)

TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

1. Add TOKEN and Master\_IP address to the following code and Run command in Worker Node (replace the TOKEN and Master\_Private IPv4 addresses in the below command)

**curl -sfL https://get.k3s.io | K3S\_URL=https://<Master\_Private IPv4 addresses>:6443 K3S\_TOKEN=<TOKEN FROM MASTER NODE> sh -**

1. Check nodes on **Master Node**

**sudo kubectl get nodes -o wide**