How to install Docker in CentOS

What is Docker?

Docker is to create lightweight and portable containers for software applications that can run on any machine with Docker installed, regardless of the operating system that the machine has underneath, thus also facilitating deployments.

1. We need to be the root user and execute the following line on the command line:

**yum install -y yum-utils device-mapper-persistent-data lvm2**

The -**y** indicates to the yum installer to answer “yes” for any prompts that require the user to proceed the installation.

1. The safest way to complete the process is through the official Docker repositories. To do this, you need to run this command line:

**yum-config-manager --add-repo** [**https://download.docker.com/linux/centos/docker-ce.repo**](https://download.docker.com/linux/centos/docker-ce.repo)

1. After this, we can install Docker on CentOS by running the following command:

**yum install docker-ce**

1. However, it is still not running. To enable and start Docker, run the following commands:

**systemctl enable docker**

**systemctl start docker**

1. Finally, you can check the status of the service to check that everything has gone well:

**systemctl status docker**

As a result, we should see a green line indicating that Docker is up and running.

How to Install Kubernetes in Centos

1. Kubernetes packages are not available in the official CentOS. Enter the following command to retrieve the Kubernetes repositories.

**cat <<EOF > /etc/yum.repos.d/kubernetes.repo**

**[kubernetes]**

**name=Kubernetes**

**baseurl=https://packages.cloud.google.com/yum/repos/kubernetes-el7-x86\_64**

**enabled=1**

**gpgcheck=1**

**repo\_gpgcheck=1**

**gpgkey=https://packages.cloud.google.com/yum/doc/yum-key.gpg https://packages.cloud.google.com/yum/doc/rpm-package-key.gpg**

**EOF**

1. Install kubelet, kubeadm and kubectl

These 3 basic packages are required in order to use Kubernetes. Install the following packages on each node

**sudo yum install -y kubelet kubeadm kubectl**

1. Set hostname on nodes

To give each of your nodes a unique hostname, use this command:

**sudo hostnamectl set-hostname master-node**

**sudo hostnamectl set-hostname worker-node**

In this example, the master node is now called the master node, while a worker node is called worker-node

1. Configure your Firewall

Nodes, containers, and pods must be able to communicate across the cluster to perform their functions. Firewalld is enabled in CentOS by default on the front end. Add the following ports by entering the listed commands.

**firewall-cmd --permanent --add-port=6443/tcp**

**firewall-cmd --permanent --add-port=2379-2380/tcp**

**firewall-cmd --permanent --add-port=10250/tcp**

**firewall-cmd --permanent --add-port=10251/tcp**

**firewall-cmd --permanent --add-port=10252/tcp**

**firewall-cmd --permanent --add-port=10255/tcp**

**firewall-cmd –reload**

1. disable SELinux

Containers need to access the host's file system. SELinux needs to be configured in permissive mode, which effectively disables its security features.

Use the following commands to disable SElinux:

**sudo setenforce 0**

**sudo sed -i ‘s / ^ SELINUX = enforcing $ / SELINUX = permissive /’ / etc / selinux / config**

1. disable SWAP

Lastly, we need to disable SWAP to allow the kubelet to work properly:

**sudo sed -i '/ swap / d' / etc / fstab**

**sudo swapoff -a**

Ansible on Centos

1. The first thing we will need is access to the Epel repo:

**yum install epel-release**

1. To perform the installation, we launch the following command:

**yum install ansible**

1. Once installed, we check the version:

**ansible --version**

Minikube on CentOS

1. First, we have to download Minikube binary package from the URL command.

**curl -Lo minikube** [**https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64**](https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64)

1. Once completed, we have to set the execution permission to the downloaded package

**chmod +x minikube**

1. Install Minikube by running the following command :

**install minikube /usr/local/bin/**

1. To start Minikube use the following command:

**minikube start --driver=none**

1. To verify the status, of the Kubernetes cluster

**minikube status**

Docker on Ubuntu

1. First, update your existing package list:

**sudo apt update**

1. Next, install some prerequisite packages that allow apt to use packages over HTTPS:

**sudo apt install apt-transport-https ca-certificates curl software-properties-common**

1. Then add the GPG key for the official Docker repository on your system:

**curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -**

1. Add the Docker repository to APT sources:

**sudo add-apt-repository "deb [arch = amd64] https://download.docker.com/linux/ubuntu focal stable"**

1. Next, update the database package with the Docker packages from the newly added repository:

**sudo apt update**

1. Make sure you are about to install from the Docker repository instead of the default Ubuntu repository:

**apt-cache policy docker-ce**

1. Lastly, install Docker:

**sudo apt install docker-ce**

1. With this, Docker will be installed, the daemon will start, and the process will be enabled to run on startup. Check it out:

**sudo systemctl status docker**

Kubernetes On Ubuntu

1. First install https package, which will allow us to use http and https in Ubuntu's repositories

**sudo apt install apt-transport-https curl**

1. First we must add and install the package repository key that contains the necessary components for Kubernetes

**curl -s https://packages.cloud.google.com/apt/doc/apt-key.gpg**

1. Then we have to add the repository url to our source file

**deb http://apt.kubernetes.io/ kubernetes-xenial main**

1. Now we can install Kubernetes:

**sudo apt install kubeadm kubelet kubectl kubernetes-cni**

**MiniKube on Ubuntu**

1. To begin we must update the system:

**sudo apt-get update -y**

**sudo apt-get upgrade -y**

1. For VirtualBox users, install VirtualBox using:

**sudo apt install virtualbox virtualbox-ext-pack**

1. Then download minikube binary and set it to your desire path, then give it execution permission and install it.

**wget https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64**

**chmod +x minikube-linux-amd64**

**sudo mv minikube-linux-amd64 /usr/local/bin/minikube**

1. To verify the version, type the following command :

**minikube version**