

Step 1: Install minikube on local system with Docker.

To install Minikube on Ubuntu using Docker as the driver, follow these detailed steps:

1. Update Your System: Begin by updating your system's package index:

`sudo apt update`

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

sparx@DESKTOP-0N62A4P:~$ sudo apt-get update
[sudo] password for sparx:
Hit:1 http://archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1500 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:7 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [257 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [1910 kB]
Get:9 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [324 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [857 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [165 kB]
Get:12 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16.8 kB]
Get:13 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [37.2 kB]
Get:14 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [7588 B]
Get:15 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [260 B]
Get:16 http://archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:18 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:19 http://archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:20 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:21 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1712 kB]
Get:22 http://archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [316 kB]
Get:23 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [1966 kB]
91% [23 Packages 1711 kB/1966 kB 87%] 181 kB/s 11s
```

2. Upgrade system :

`sudo apt upgrade`

```
sparx@DESKTOP-0N62A4P:~$ sudo apt-get upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  python3-update-manager ubuntu-advantage-tools ubuntu-pro-client-l10n update-manager-core
The following packages will be upgraded:
  apt apt-utils base-files bash bind9-dnsutils bind9-host bind9-libs binutils binutils-common binutils-x86-64-linux-gnu bsdxtrautils bsduutils
  coreutils cpio curl distro-info distro-info-data dpkg eject git git-man iptables irqbalance less libapt-pkg6.0 libbinutils libblkid1 libc-bin
  libc6 libcryptsetup12 libctf-nobfd0 libctf0 libcurl3-gnutls libcurl4 libexpat1 libglb2.0-0 libglb2.0-bin libglb2.0-data libgnutls30 libip4tc2
  libip6tc2 libldap-2.5-0 libldap-common libmount1 libnftables2 libnss-systemd libpam-modules libpam-modules-bin libpam-runtime libpam-systemd
  libpam0g libperl5.34 libpython3.10 libpython3.10-minimal libpython3.10-stdlib libsmartcols1 libsqlite3-0 libssh-4 libssl3 libsystemd0 libudev1
  libuuid1 libuv1 libxml2 libxtables12 locales login motd-news-config mount openssl-client openssl-passwd perl perl-base perl-modules-5.34
  python3-apt-common python3-apt python3-cryptography python3-distro-info python3-distupgrade python3-software-properties python3.10
  python3.10-minimal snapd software-properties-common systemd systemd-hwe-hwdb systemd-sysv systemd-timesyncd tar tcpdump tzdata
  ubuntu-release-upgrader-core udev util-linux uuid-runtime vim vim-common vim-runtime vim-tiny xxd
101 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
Need to get 97.6 MB of archives.
After this operation, 1308 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 motd-news-config all 12ubuntu4.6 [4352 B]
Get:2 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 libc6 amd64 2.35-0ubuntu3.8 [3235 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 base-files amd64 12ubuntu4.6 [62.5 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bash amd64 5.1-6ubuntu1.1 [769 kB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 bsduutils amd64 1:2.37.2-4ubuntu3.4 [80.9 kB]
4% [5 bsduutils 1168 B/80.9 kB 1%] 104 kB/s 14min 59s
```

3. **Install Docker:** If Docker is not already installed, install it by running:

```
sudo apt install -y docker.io
```

Add your user to the docker group to manage Docker as a non-root user (Optional) :

```
sudo usermod -aG docker $USER
```

```
sparx@DESKTOP-0N62A4P:~$ sudo apt-get install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools btrfs-progs cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 4 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2~22.04.1 [8405 kB]
Get:4 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2~22.04.1 [37.8 MB]
Get:5 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702-ubuntu0.22.04.1 [5136 B]
```

```
sparx@DESKTOP-0N62A4P:~$ docker version
Client:
 Version:      24.0.7
 API version:  1.43
 Go version:   go1.21.1
 Git commit:   24.0.7-0ubuntu2~22.04.1
 Built:        Wed Mar 13 20:23:54 2024
 OS/Arch:      linux/amd64
 Context:      default
permission denied while trying to connect to the Docker daemon socket at unix:///var/run/docker.sock: Get "http://%2Fvar%2Frun%2Fdocker.sock/v1.24/v
ersion": dial unix /var/run/docker.sock: connect: permission denied
sparx@DESKTOP-0N62A4P:~$ exit
logout
```

After installation logout and reboot for loading configuration.

4. **Install Minikube:** Download the latest Minikube binary with curl:

```
curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
```

The screenshot shows the Minikube installation page. The 'Installation' section is active, displaying instructions to click on buttons that describe the target platform. The buttons are organized as follows:

- Operating system:** Linux (selected), macOS, Windows
- Architecture:** x86-64 (selected), ARM64, ARMv7, ppc64, S390x
- Release type:** Stable (selected)
- Installer type:** Binary download (selected), Debian package, RPM package

Below the buttons, the instructions state: "To install the latest minikube stable release on x86-64 Linux using binary download:"

```
curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
sudo install minikube-linux-amd64 /usr/local/bin/minikube && rm minikube-linux-amd64
```

Navigate to url: [minikube start | minikube \(k8s.io\)](https://minikube.github.io/minikube/start/)

Copy command to get binary.

```
sparx@DESKTOP-0N62A4P:~$ curl -LO https://storage.googleapis.com/minikube/releases/latest/minikube-linux-amd64
sudo install minikube-linux-amd64 /usr/local/bin/minikube && rm minikube-linux-amd64
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left  Speed
   3  91.1M    3 3226k    0     0  26989      0  0:59:02  0:02:02  0:57:00    0
curl: (56) OpenSSL SSL_read: Connection reset by peer, errno 104
[sudo] password for sparx: |
```

5. **Start Minikube:** Start Minikube with Docker as the driver:

minikube start

```
sparx@DESKTOP-0N62A4P:~$ minikube start
🐳 minikube v1.33.1 on Ubuntu 22.04 (amd64)
🔧 Using the docker driver based on existing profile
👉 Starting "minikube" primary control-plane node in "minikube" cluster
📡 Pulling base image v0.0.44 ...
🔄 Updating the running docker "minikube" container ...
🌐 Preparing Kubernetes v1.30.0 on Docker 26.1.1 ...
🔍 Verifying Kubernetes components...
   ▪ Using image gcr.io/k8s-minikube/storage-provisioner:v5
🌟 Enabled addons: default-storageclass, storage-provisioner
💡 kubectl not found. If you need it, try: 'minikube kubectl -- get pods -A'
🏁 Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
```

This command sets up a Minikube cluster using Docker.

Install kubectl

```
sparx@DESKTOP-0N62A4P:~$ sudo snap install kubectl --classic
[sudo] password for sparx:
kubectl 1.29.5 from Canonical✓ installed
```

6. **Verify Installation:** Check that Minikube is properly installed by checking its version:

minikube version

```
sparx@DESKTOP-0N62A4P:~$ minikube version
minikube version: v1.33.1
commit: 5883c09216182566a63dff4c326a6fc9ed2982ff
```

7. **Interact with Your Cluster:** Use kubectl to interact with your cluster:

kubectl get po -A

```
sparx@DESKTOP-0N62A4P:~$ minikube kubectl -- get pods -A
```

NAMESPACE	NAME	READY	STATUS	RESTARTS	AGE
kube-system	coredns-7db6d8ff4d-985sj	1/1	Running	1 (2m48s ago)	5m51s
kube-system	etcd-minikube	1/1	Running	2 (2m53s ago)	6m5s
kube-system	kube-apiserver-minikube	1/1	Running	2 (2m42s ago)	6m2s
kube-system	kube-controller-manager-minikube	1/1	Running	2 (2m53s ago)	6m5s
kube-system	kube-proxy-n6lwd	1/1	Running	2 (2m53s ago)	5m51s
kube-system	kube-scheduler-minikube	1/1	Running	2 (2m53s ago)	6m4s
kube-system	storage-provisioner	1/1	Running	3 (2m32s ago)	5m59s