Get Docker CE for Debian

Estimated reading time: 12 minutes

To get started with Docker CE on Debian, make sure you meet the prerequisites, then install Docker.

Prerequisites

Docker EE customers

Docker EE is not supported on Debian. For a list of supported operating systems and distributions for different Docker editions, see Docker variants.

OS requirements

To install Docker CE, you need the 64-bit version of one of these Debian or Raspbian versions:

- Stretch (stable) / Raspbian Stretch
- Jessie 8.0 (LTS) / Raspbian Jessie
- Wheezy 7.7 (LTS)

Docker CE is supported on both `x86_64` (or `amd64`) and `armhf` architectures for Jessie and Stretch.

Uninstall old versions

Older versions of Docker were called `docker` or `docker-engine`. If these are installed, uninstall them:

```
$ sudo apt-get remove docker docker-engine docker.io
```

It's OK if `apt-get` reports that none of these packages are installed.

The contents of `/var/lib/docker/`, including images, containers, volumes, and networks, are preserved. The Docker CE package is now called `docker-ce`.

Extra steps for Wheezy 7.7

- You need at least version 3.10 of the Linux kernel. Debian Wheezy ships with version 3.2, so you may need to update the kernel. To check your kernel version:
- Enable the `backports` repository. See the Debian documentation.

Install Docker CE

You can install Docker CE in different ways, depending on your needs:

- Most users set up Docker's repositories and install from them, for ease of installation and upgrade tasks. This is the recommended approach, except for Raspbian.
- Some users download the DEB package and install it manually and manage upgrades completely manually. This is useful in situations such as installing Docker on air-gapped systems with no access to the internet.
- In testing and development environments, some users choose to use automated convenience scripts to install Docker. This is currently the only approach for Raspbian.

Install using the repository

Before you install Docker CE for the first time on a new host machine, you need to set up the Docker repository. Afterward, you can install and update

Docker from the repository.

> **Raspbian users cannot use this method!**
>
> For Raspbian, installing using the repository is not yet supported. You must instead use the convenience script.

Set up the repository

1. Update the `apt` package index:

   ```
   $ sudo apt-get update
   ```

2. Install packages to allow `apt` to use a repository over HTTPS:

   Jessie or Stretch:

   ```
   $ sudo apt-get install \
        apt-transport-https \
        ca-certificates \
        curl \
        gnupg2 \
        software-properties-common
   ```

   Wheezy:

   ```
   $ sudo apt-get install \
        apt-transport-https \
        ca-certificates \
        curl \
        python-software-properties
   ```

3. Add Docker's official GPG key:

   ```
   $ curl -fsSL https://download.docker.com/linux/$(. /etc/os-release; ec
   ```

Verify that you now have the key with the fingerprint `9DC8 5822 9FC7 DD38 854A E2D8 8D81 803C 0EBF CD88`, by searching for the last 8 characters of the fingerprint.

```
$ sudo apt-key fingerprint 0EBFCD88

pub   4096R/0EBFCD88 2017-02-22
      Key fingerprint = 9DC8 5822 9FC7 DD38 854A  E2D8 8D81 803C 0EBF (
uid                  Docker Release (CE deb) <docker@docker.com>
sub   4096R/F273FCD8 2017-02-22
```

4. Use the following command to set up the **stable** repository. You always need the **stable** repository, even if you want to install builds from the **edge** or **test** repositories as well. To add the **edge** or **test** repository, add the word `edge` or `test` (or both) after the word `stable` in the commands below.

   > **Note**: The `lsb_release -cs` sub-command below returns the name of your Debian distribution, such as `jessie`.

   To also add the **edge** repository, add `edge` after `stable` on the last line of the command.

   x86_64:

   ```
   $ sudo add-apt-repository \
      "deb [arch=amd64] https://download.docker.com/linux/$(. /etc/os-rel
      $(lsb_release -cs) \
      stable"
   ```

   armhf:

   ```
   $ echo "deb [arch=armhf] https://download.docker.com/linux/$(. /etc/os-
        $(lsb_release -cs) stable" | \
       sudo tee /etc/apt/sources.list.d/docker.list
   ```

5. **Wheezy only**: The version of `add-apt-repository` on Wheezy adds a `deb-src` repository that does not exist. You need to comment out this repository or running `apt-get update` will fail. Edit `/etc/apt/sources.list`. Find the line like the following, and comment it out or remove it:

   ```
   deb-src [arch=amd64] https://download.docker.com/linux/debian wheezy s
   ```

   Save and exit the file.

   > **Note**: Starting with Docker 17.06, stable releases are also pushed to the **edge** and **test** repositories.

   Learn about **stable** and **edge** channels.

Install Docker CE

> **Note**: This procedure works for Debian on `x86_64` / `amd64`, Debian ARM, or Raspbian.

1. Update the `apt` package index.

   ```
   $ sudo apt-get update
   ```

2. Install the latest version of Docker CE, or go to the next step to install a specific version. Any existing installation of Docker is replaced.

   ```
   $ sudo apt-get install docker-ce
   ```

   > **Got multiple Docker repositories?**
   >
   > If you have multiple Docker repositories enabled, installing or updating without specifying a version in the `apt-get install` or `apt-get update` command will always install the highest possible

> version, which may not be appropriate for your stability needs.

3. On production systems, you should install a specific version of Docker CE instead of always using the latest. This output is truncated. List the available versions:

```
$ apt-cache madison docker-ce

docker-ce | 17.09.0~ce-0~debian | https://download.docker.com/linux/del
```

The contents of the list depend upon which repositories are enabled. Choose a specific version to install. The second column is the version string. The third column is the repository name, which indicates which repository the package is from and by extension its stability level. To install a specific version, append the version string to the package name and separate them by an equals sign (=):

```
$ sudo apt-get install docker-ce=<VERSION_STRING>
```

The Docker daemon starts automatically.

4. Verify that Docker CE is installed correctly by running the `hello-world` image.

x86_64:

```
$ sudo docker run hello-world
```

armhf:

```
$ sudo docker run armhf/hello-world
```

This command downloads a test image and runs it in a container.

When the container runs, it prints an informational message and exits.

Docker CE is installed and running. You need to use `sudo` to run Docker commands. Continue to Linux postinstall to allow non-privileged users to run Docker commands and for other optional configuration steps. For Raspbian, you can optionally install Docker Compose for Raspbian.

Upgrade Docker CE

To upgrade Docker CE, first run `sudo apt-get update`, then follow the installation instructions, choosing the new version you want to install.

Install from a package

If you cannot use Docker's repository to install Docker CE, you can download the `.deb` file for your release and install it manually. You will need to download a new file each time you want to upgrade Docker.

1. Go to https://download.docker.com/linux/$(. /etc/os-release; echo "$ID")/dists//dists/), choose your Debian version, browse to `pool/stable/`, choose either `amd64` or `armhf`, and download the `.deb` file for the Docker CE version you want to install.

   > **Note**: To install an **edge** package, change the word `stable` in the URL to `edge`. Learn about **stable** and **edge** channels.

2. Install Docker CE, changing the path below to the path where you downloaded the Docker package.

   ```
   $ sudo dpkg -i /path/to/package.deb
   ```

   The Docker daemon starts automatically.

3. Verify that Docker CE is installed correctly by running the `hello-`

`world` image.

```
$ sudo docker run hello-world
```

This command downloads a test image and runs it in a container. When the container runs, it prints an informational message and exits.

Docker CE is installed and running. You need to use `sudo` to run Docker commands. Continue to Post-installation steps for Linux to allow non-privileged users to run Docker commands and for other optional configuration steps. For Raspbian, you can optionally install Docker Compose for Raspbian.

Upgrade Docker CE

To upgrade Docker, download the newer package file and repeat the installation procedure, pointing to the new file.

Install using the convenience script

Docker provides convenience scripts at get.docker.com and test.docker.com for installing stable and testing versions of Docker CE into development environments quickly and non-interactively. The source code for the scripts is in the `docker-install` repository. **Using these scripts is not recommended for production environments**, and you should understand the potential risks before you use them:

- The scripts require `root` or `sudo` privileges in order to run. Therefore, you should carefully examine and audit the scripts before running them.
- The scripts attempt to detect your Linux distribution and version and configure your package management system for you. In addition, the scripts do not allow you to customize any installation parameters. This

may lead to an unsupported configuration, either from Docker's point of view or from your own organization's guidelines and standards.
- The scripts install all dependencies and recommendations of the package manager without asking for confirmation. This may install a large number of packages, depending on the current configuration of your host machine.
- Do not use the convenience script if Docker has already been installed on the host machine using another mechanism.

This example uses the script at get.docker.com to install the latest stable release of Docker CE on Linux. To install the latest testing version, use test.docker.com instead. In each of the commands below, replace each occurrence of `get` with `test`.

> **Warning:**
>
> Always examine scripts downloaded from the internet before running them locally.

```
$ curl -fsSL get.docker.com -o get-docker.sh
$ sudo sh get-docker.sh

<output truncated>

If you would like to use Docker as a non-root user, you should now consider
adding your user to the "docker" group with something like:

  sudo usermod -aG docker your-user

Remember that you will have to log out and back in for this to take effect!

WARNING: Adding a user to the "docker" group will grant the ability to run
         containers which can be used to obtain root privileges on the
         docker host.
         Refer to https://docs.docker.com/engine/security/security/#docker-
         for more information.
```

Docker CE is installed. It starts automatically on DEB-based distributions.

On RPM-based distributions, you need to start it manually using the appropriate `systemctl` or `service` command. As the message indicates, non-root users are not able to run Docker commands by default.

Upgrade Docker after using the convenience script

If you installed Docker using the convenience script, you should upgrade Docker using your package manager directly. There is no advantage to re-running the convenience script, and it can cause issues if it attempts to re-add repositories which have already been added to the host machine.

Install Docker Compose for Raspbian

You can install Docker Compose using `pip`:

```
$ sudo pip install docker-compose
```

Hypriot provides a static binary of `docker-compose` for Raspbian. It may not always be up to date, but if space is at a premium, you may find it useful. To use it, first follow Hypriot's instructions for setting up the repository, then run the following command:

```
sudo apt-get install docker-compose
```

Uninstall Docker CE

1. Uninstall the Docker CE package:

   ```
   $ sudo apt-get purge docker-ce
   ```

2. Images, containers, volumes, or customized configuration files on your host are not automatically removed. To delete all images, containers, and volumes:

```
$ sudo rm -rf /var/lib/docker
```

You must delete any edited configuration files manually.

Next steps

- Continue to Post-installation steps for Linux
- Continue with the User Guide.

requirements, apt, installation, debian, install, uninstall, upgrade, update