

# Docker Installation & Configuration

## Steps to install Docker Desktop on a Windows machine:

### Prerequisites:

1. Windows 10 (64-bit) Pro, Enterprise, or Education (Build 1903 or later) or Windows 11.
2. Windows Subsystem for Linux (WSL) 2 enabled (recommended).
3. Virtualization enabled in BIOS.

### Installation:

1. Visit the official Docker website: [Docker Desktop for Windows](#).
2. Download the Docker Desktop Installer .exe file.
3. Run the Installer
4. Double-click the .exe file to launch the Docker Desktop Installer.
5. Follow the on-screen instructions to proceed with the installation.
6. Enable Required Features
7. When prompted, select "Install required Windows components for WSL 2."
8. Docker Desktop will automatically enable WSL 2 and Hyper-V if they are not already enabled.
9. Select WSL 2 as the Default Backend (Optional)
10. WSL 2 is the recommended backend as it provides better performance.
11. If Docker Desktop doesn't automatically configure it, you can enable it by:
  - a) Opening Docker Desktop.
  - b) Going to Settings > General.
  - c) Ensuring that "Use the WSL 2 based engine" is checked.
  - d) Complete Installation and Start Docker Desktop
12. After installation, restart your system if prompted.
13. Open Docker Desktop from the Start menu.
14. Docker Desktop will take a few moments to start. Once it's ready, you'll see the Docker whale icon in your system tray.
15. Verify Installation: Open Command Prompt or PowerShell and run: `docker --version`
16. You should see the Docker version output, confirming that Docker Desktop is successfully installed.
17. Run the hello world docker container using below command. (make sure docker desktop is running in your windows machine): `docker run hello-world`

### Additional Configuration (Optional):

1. Integrate with WSL 2 Linux Distributions:
2. Go to Settings > Resources > WSL Integration in Docker Desktop.
3. Select the Linux distributions you want to enable Docker support for.
4. Configure Docker Compose:
5. Docker Compose is included with Docker Desktop, and you can verify it by running:
6. `docker-compose --version`

### Troubleshooting Tips:

1. Ensure virtualization is enabled in your BIOS settings.
  2. If Docker Desktop fails to start, check Hyper-V and WSL 2 installations.
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# Docker Installation & Configuration

To install Docker on Ubuntu 24.04, follow these steps:

*Prerequisites:*

1. Deploy an Ubuntu 24.04 server instance.
2. Access the server using SSH as a non-root user with sudo privileges.
3. Update the server.

1. Install all required dependency packages.

```
$ sudo apt install apt-transport-https ca-certificates curl software-properties-common -y
```

2. Add the Docker GPG key to your server's keyring.

```
$ sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc
```

3. Add the latest Docker repository to your APT sources.

```
$ echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu $(. /etc/os-release && echo "${VERSION_CODENAME}") stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
```

4. Update the server package index.

```
$ sudo apt update
```

5. Install Docker.

```
$ sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
```

6. The above command installs the latest Docker version with the following plugins:

**docker-ce** : The Docker engine community edition package.

**docker-ce-cli** : Enables the Docker command line interface (CLI).

**containerd.io** : A container runtime that monitors the lifecycle of Docker containers.

**docker-buildx-plugin** : Improves Docker's image-building capabilities for multi-platform builds.

**docker-compose-plugin** : Enables the management of multi-container applications using YAML.

7. View the installed Docker version on your server.

```
$ sudo docker --version
```

8. Start & enable the Docker system service to start automatically at boot time.

```
$ sudo systemctl enable --now docker
```

9. View the Docker service status and verify that it's running.

```
$ sudo systemctl status docker
```

10. Run the following command to stop Docker.

```
$ sudo systemctl stop docker
```

11. Restart the Docker service.

```
$ sudo systemctl restart docker
```

12. Run the hello-world container to confirm that Docker is installed correctly:

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

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# Docker Installation & Configuration

To install Docker on a Macintosh (macOS), follow these steps:

## Prerequisites:

1. macOS 10.15 or later (Catalina or newer) is required.
2. A 64-bit processor (Intel or Apple Silicon/M1 chip).

## Installation:

1. Download Docker Desktop for Mac:
2. Visit the official Docker website: [Docker Desktop for Mac](#).
3. Select the version that suits your Mac's architecture (Apple Silicon or Intel-based).
4. Install Docker Desktop:
5. Once the download is complete, open the .dmg file.
6. Drag the Docker application into the Applications folder.
7. This will install Docker Desktop.
8. Start Docker Desktop:
9. Go to your Applications folder and double-click on Docker to launch the application.
10. Docker Desktop will start, and you'll see the Docker icon appear in the macOS menu bar.
11. Configure Docker Desktop (optional):
12. On the first run, you might be prompted to grant Docker necessary permissions, including allowing privileged access to your system. Follow the on-screen instructions.
13. You might also need to enter your macOS admin password.
14. Verify Installation: Open a terminal and type the following command to check Docker's version:  
`docker --version`
15. Test Docker: Run a simple Docker container to verify that everything is working:  
`docker run hello-world`

## Troubleshooting:

1. If you encounter issues starting Docker, ensure that your system supports virtualization and that it is enabled.
  2. For Apple Silicon (M1/M2), Docker Desktop includes support for ARM-based architecture, so ensure you're downloading the correct version for your chipset.
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