



## TSA6213 GROUP 1 Debian OS

### TSA6213 - SYSTEM ADMINISTRATION AND MAINTENANCE



**TSA6213  
SYSTEM ADMINISTRATION AND MAINTENANCE TRIMESTER OCTOBER/NOVEMBER  
SESSION 2024  
TERM 2430 PROJECT REPORT**

GROUP NAME: GROUP 33

Student ID	Student Name	Major	Lecture	Lab
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1211112319	MUHAMMAD FARIS AIDEL BIN DAHLAN	DCN	SAM1	1A
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## Task Distribution Form

No.	Student ID	Student Name	Tasks Completed
1	1211112228	MUHAMMAD EUSOFF AMINURRASHID BIN SHUKRI	Installation and configuration of CMS, Wiki, find commands, formatting of wiki
2	1211112319	MUHAMMAD FARIS AIDEL BIN DAHLAN	Create and Delete users, find commands
3	1211112299	MEGAT NUR HASANAL PUTERA BIN NORRASIDI	Installation and configuration of Debian 12.9.0, formatting of wiki
4	1211112300	MUHAMMAD SAHIL QAYYUM BIN MOHD YAHYA	Installation and configuration of Internet Server, FTP Server, SSH Server

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tasks.txt · Last modified: 2025/01/19 04:31 by 1211112228



## Introduction to Debian

Debian is a free and open-source operating system ([OS](https://www.debian.org)) that is widely used for its stability, security, and extensive software repositories. It is the foundation for many other popular Linux distributions, such as Ubuntu.

## Overview

Debian [<https://www.debian.org>] is a community-driven project that provides a complete operating system, including the Linux kernel, GNU tools, and thousands of precompiled software packages. It is known for its strict adherence to free software principles and its robust package management system.

## Key Features

- **Stability:** Debian is renowned for its rock-solid stability, making it a popular choice for servers and production environments.
- **Security:** Regular updates and a dedicated security team ensure that Debian remains secure.
- **Package Management:** Debian uses the Advanced Package Tool (APT) for easy software installation, updates, and dependency management.
- **Wide Hardware Support:** Debian supports a wide range of hardware architectures, including x86, ARM, and more.
- **Large Software Repository:** Debian offers over 59,000 software packages, covering almost every need.

## Requirements for Debian

Debian is a versatile operating system that can run on a wide range of hardware, from older machines to modern systems. Below are the minimum and recommended requirements for installing and running Debian.

General Requirements		
	Minimum	Recommended
Processor (CPU)	1 GHz or faster (x86, AMD64, ARM, or other supported architectures).	2 GHz or faster for better performance, especially in graphical environments.
RAM (Memory)	512 MB (for text-based installation)	2 GB or more (for graphical installation and desktop environments)

Storage (Disk Space)	10 <u>GB</u> (for a minimal installation)	20 <u>GB</u> or more (for a full desktop environment and additional software)
Graphics	Any graphics card supported by the Linux kernel	A modern graphics card for better performance in graphical environments
Network	An internet connection is recommended for downloading updates and additional software during installation.	

## Requirements for Specific Use Cases

Requirements for Specific Use Cases		
	Minimum	Recommended
Server Installation:		
RAM (Memory)	512 <u>MB</u>	1 <u>GB</u> or more
Storage (Disk Space)	5 <u>GB</u>	10 <u>GB</u> or more
Graphics	No graphical environment is required for server installations.	
Desktop Installation:		
RAM (Memory)	1 <u>GB</u>	2 <u>GB</u> or more
Storage (Disk Space)	10 <u>GB</u>	20 <u>GB</u> or more
Graphics	A graphical environment (e.g., GNOME, KDE, Xfce) will require additional resources.	
Older Hardware:		
Debian can run on older hardware with limited resources. Consider using a lightweight desktop environment like Xfce or LXDE.		

## Architecture-Specific Requirements

Debian supports a wide range of hardware architectures. Below are the minimum requirements for some of the most common architectures:

Architecture-Specific Requirements		
	Minimum	Recommended
x86 (32-bit):		
RAM (Memory)	512 <u>MB</u>	1 <u>GB</u> or more
Storage (Disk Space)	5 <u>GB</u>	10 <u>GB</u> or more
AMD64 (64-bit):		
RAM (Memory)	1 <u>GB</u>	2 <u>GB</u> or more
Storage (Disk Space)	10 <u>GB</u>	20 <u>GB</u> or more
ARM:		
RAM (Memory)	512 <u>MB</u>	1 <u>GB</u> or more
Storage (Disk Space)	5 <u>GB</u>	10 <u>GB</u> or more

## Additional Considerations

- Installation Media:** You will need a USB drive or DVD to create bootable installation media.

- **Firmware:** Some hardware may require non-free firmware for full functionality. Ensure you have access to the necessary firmware files if needed.
- **Network Installation:** For a minimal installation, you can use the Debian netinst (network install) image, which requires less disk space and downloads packages during installation.

## Notes

- These are **minimum requirements**. For better performance, especially in graphical environments, higher specifications are recommended.
- If you are using Debian on older hardware, consider using a lightweight desktop environment like **Xfce** or **LXDE**.
- For server installations, you can use the **Debian netinst** (network install) image, which requires less disk space and downloads packages during installation.

## Install Debian OS on a Virtual Machine

- How to Install Debian on a Virtual Machine [<https://wiki.amengsz.com/doku.php?id=installation>]

## External Links

- Official Debian Installation Guide [<https://www.debian.org/releases/stable/installmanual>]

# Quick Access Tools

Quick Access Tools		
Cover Page	 Debian	Browser
Part 1: Installation	VirtualBox	Curl
Part 2: Create and Delete Users	WordPress	Tasksel
Part 3: Install and Configure Internet Server	DokuWiki	Root & Superuser
Part 4: Install and Configure Content Management System	CMS and Wiki	User Management
Part 5: Install and Configure Wiki System	Directory and File Management	Add Sudo
References	File Permissions and Ownership	Networking
Task Distribution	Shell Scripting	System Monitoring and Processes
	Backup and Archiving	Package Management
	Service Management	Miscellaneous



## Part 1: How to Install and Setup Debian on a Virtual Machine

This page will get you started on installing Debian OS using VirtualBox and let you install and switch to a desktop environment of your choosing.

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### Installation

This section will show you how to install Debian OS on a VirtualBox Virtual Machine.

---

**Note: The version we will be using is Debian 12.9.0 codenamed Bookworm.**

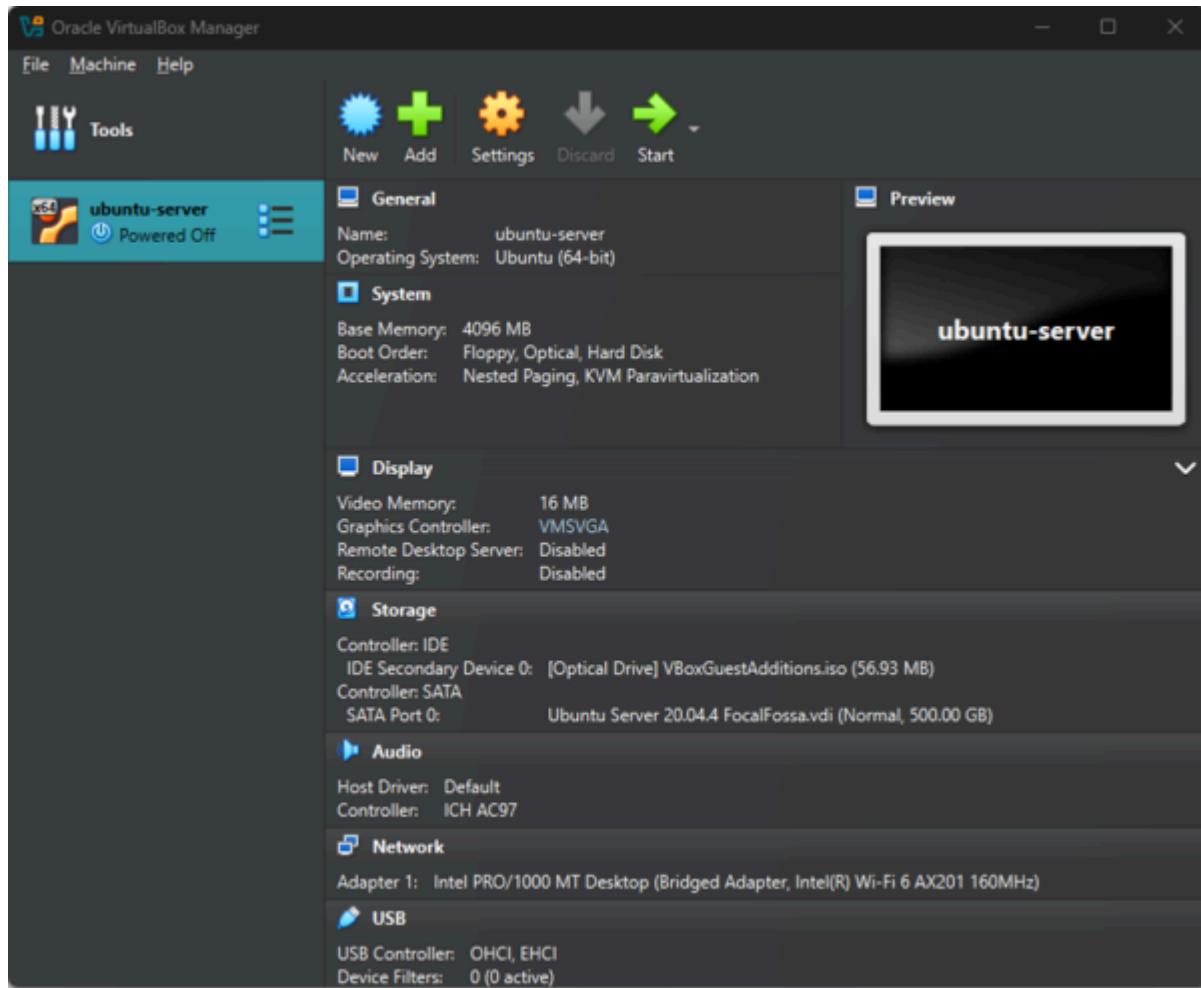
1. Install Debian version 12.9.0 .iso file from the website [www.debian.org](http://www.debian.org) [<http://www.debian.org>].

#### THE OPERATING SYSTEM

Debian is a complete Free Operating System!



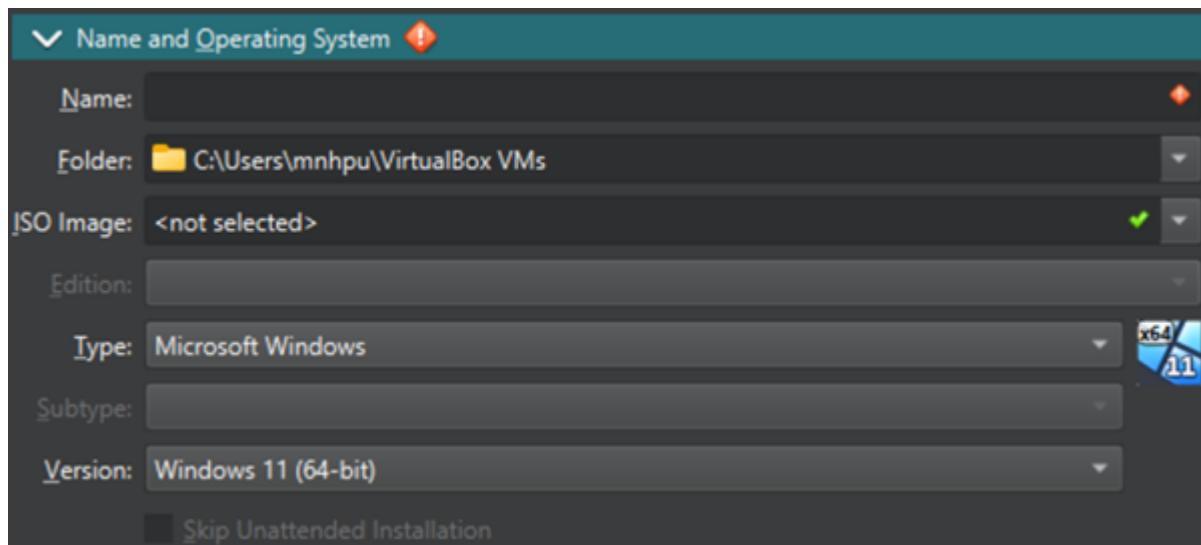
2. Open Oracle VirtualBox.



3. Click on New.



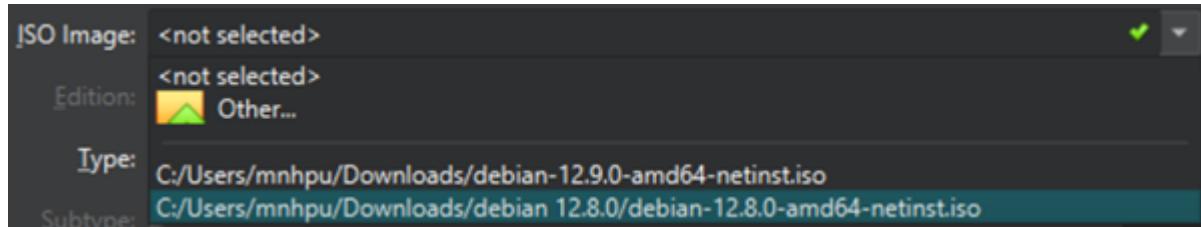
4. Go under the Name and Operating System tab.



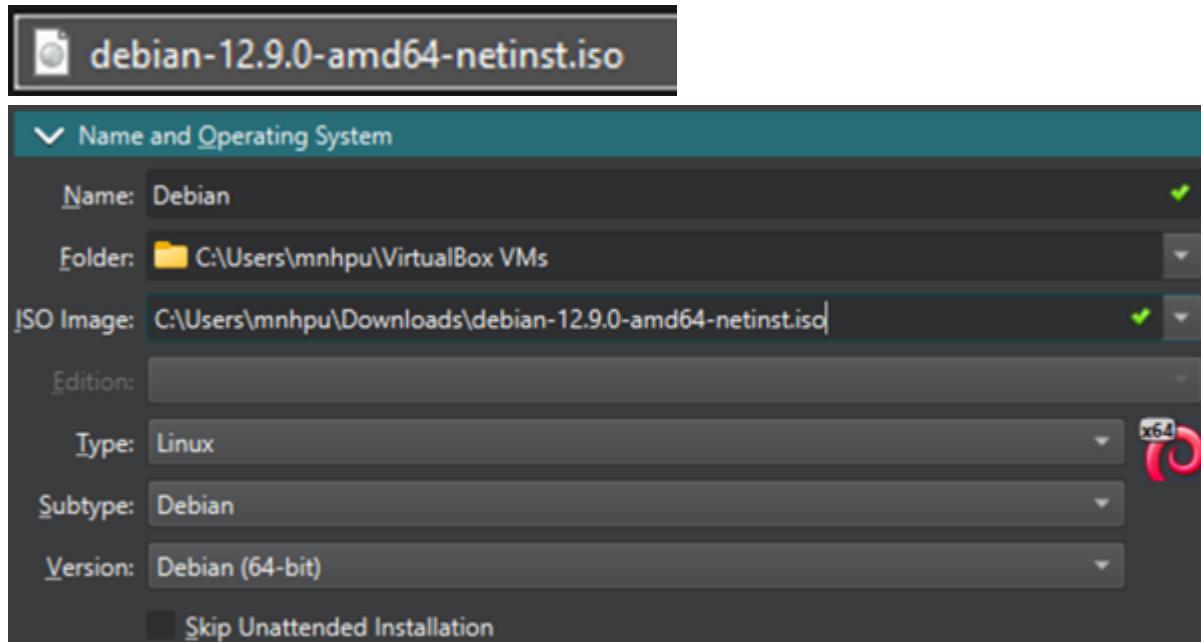
5. Type in the name of the QS which is Debian.

Name: **Debian**

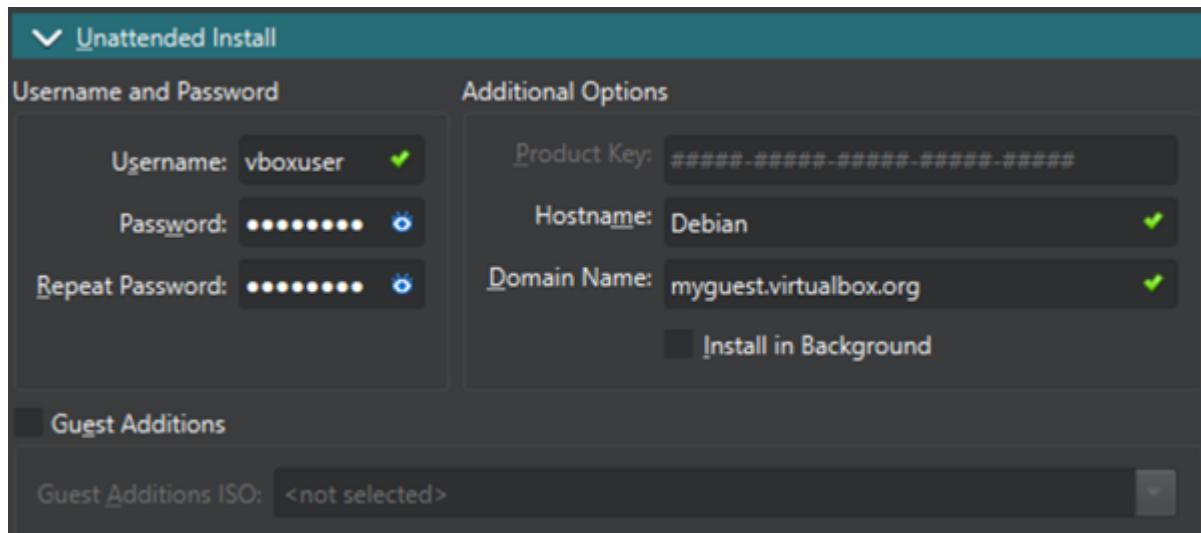
6. At ISO Image, click the drop down menu and click Other.



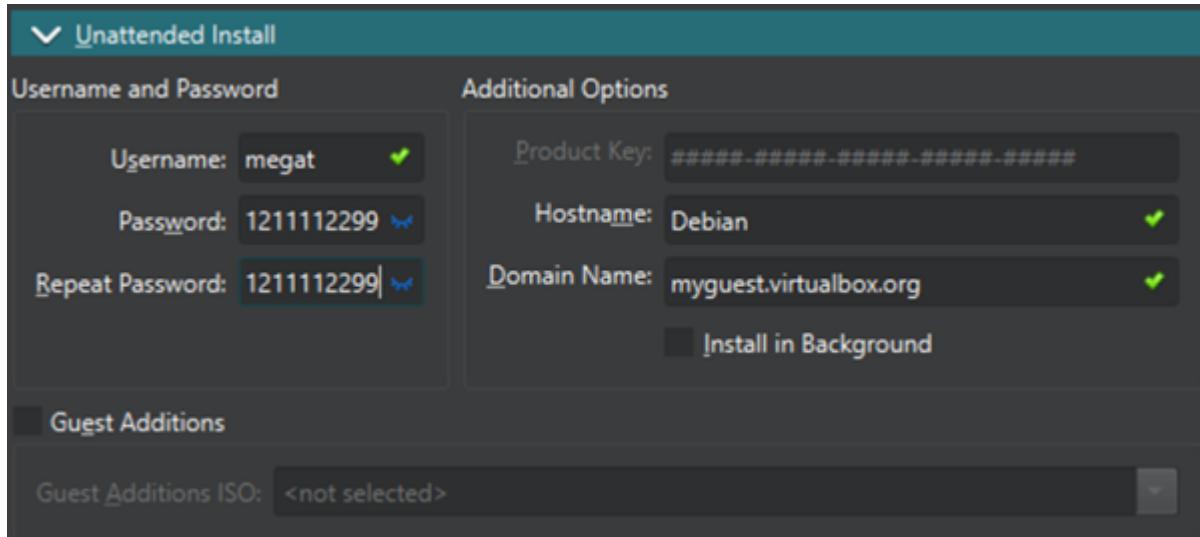
7. Choose the downloaded Debian .iso file.



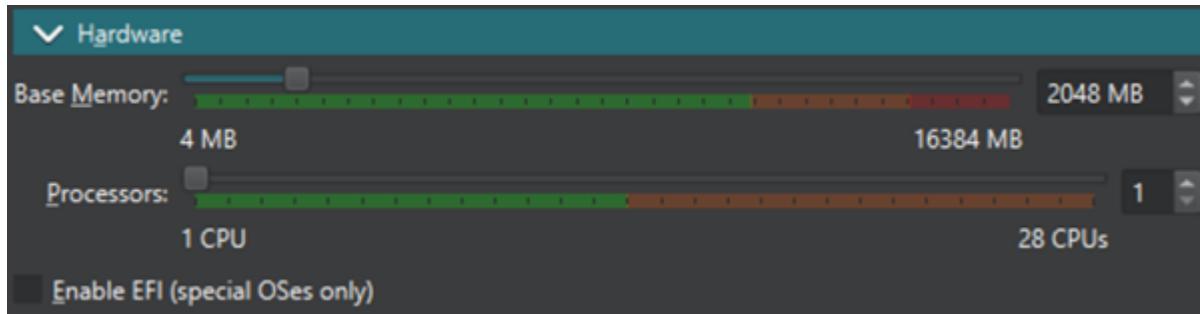
8. Go under the Unattended Install tab.



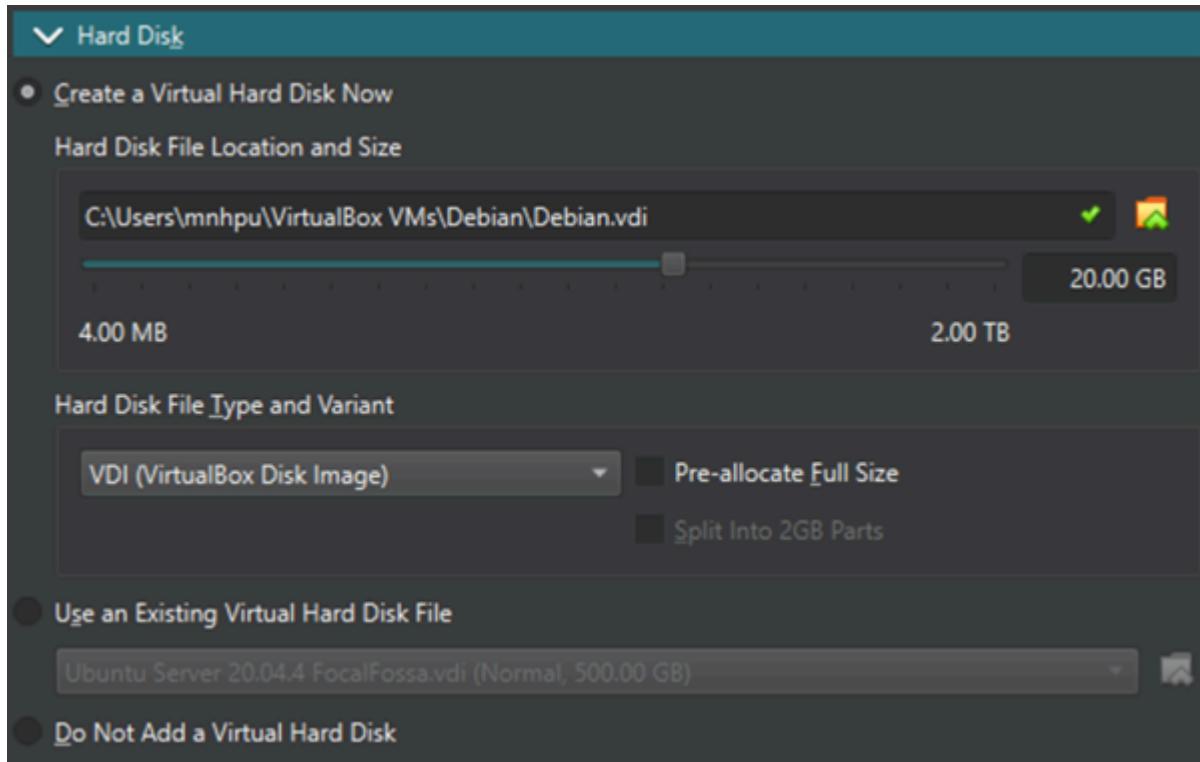
9. Change the username and password to your liking.



10. Go under the Hardware tab. You can change the Base Memory and Processors according to your liking. We will keep it as is.



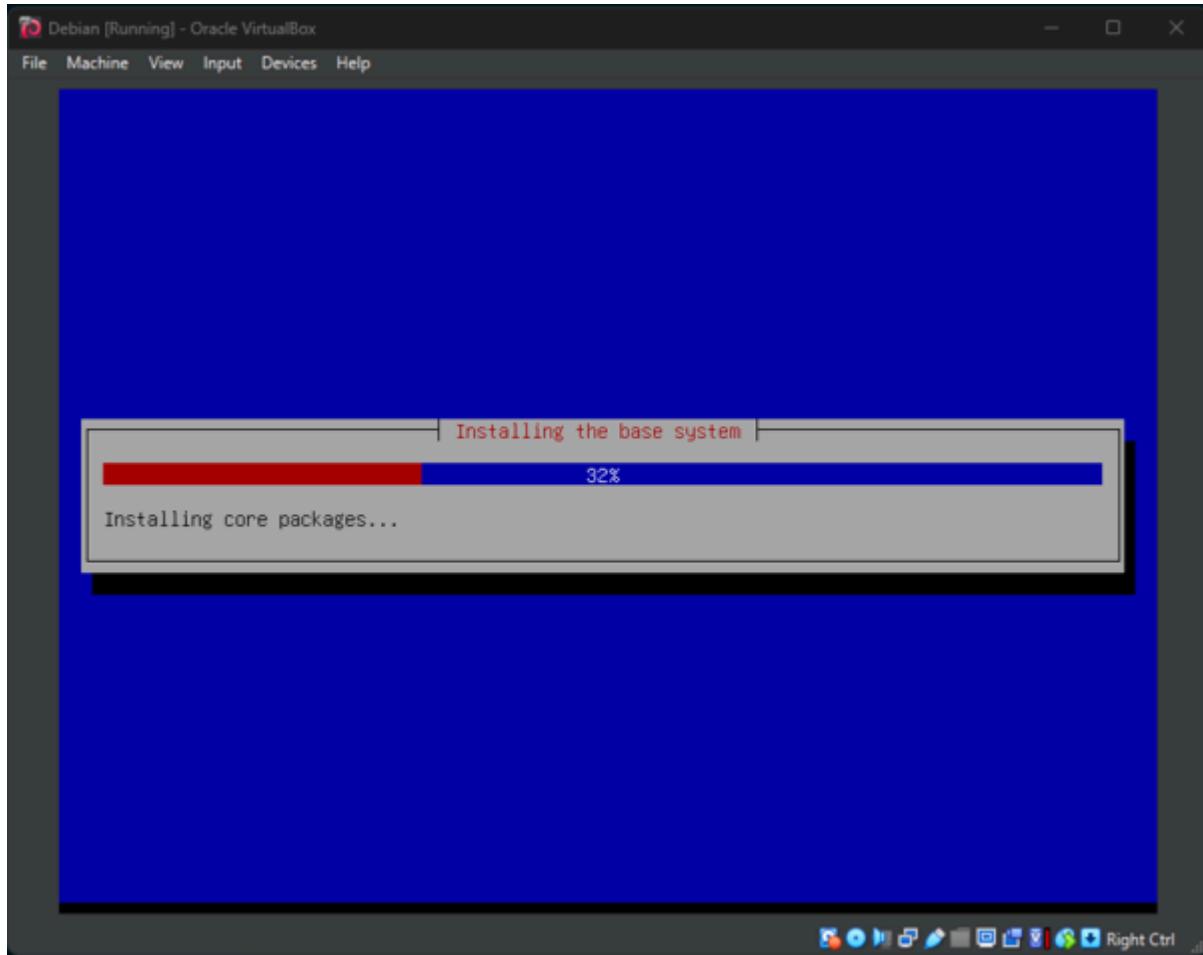
11. Go under the Hard Disk tab. You can change the hard disk space and other settings. We will keep it as is.



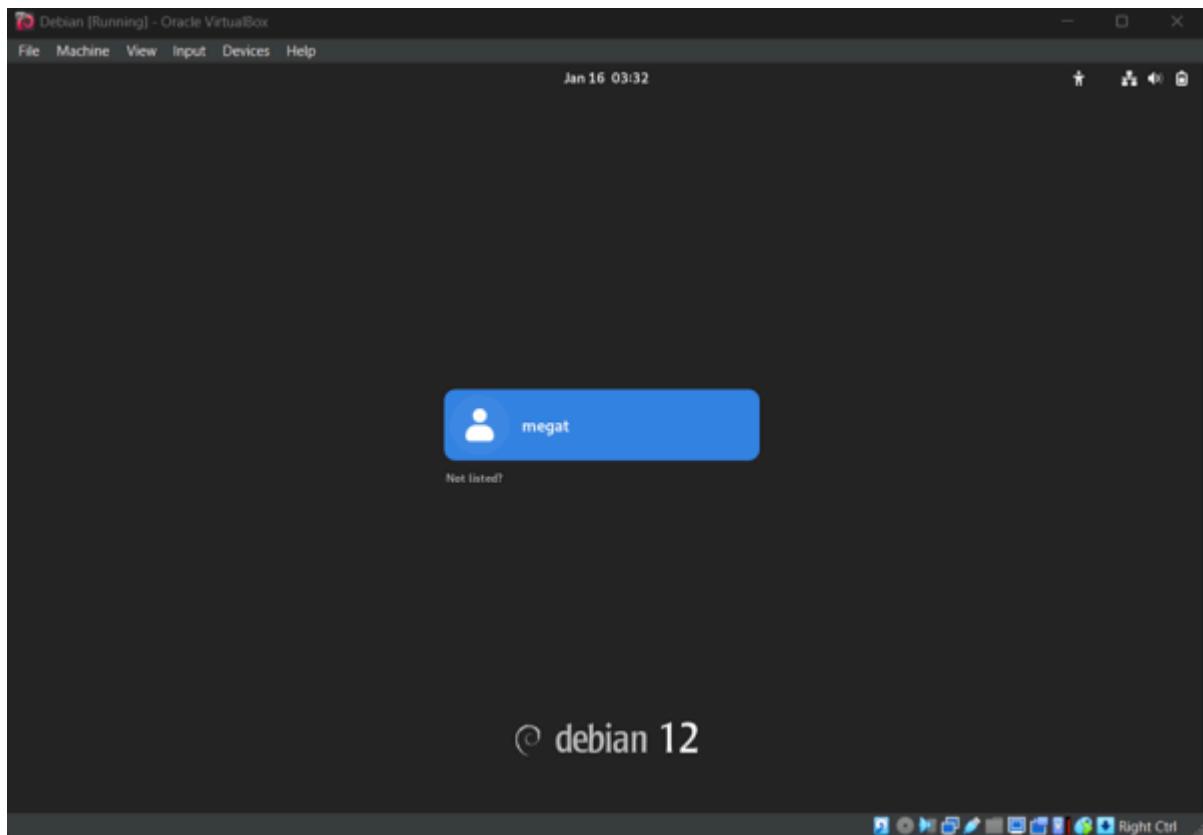
12. Click Finish.

**Finish**

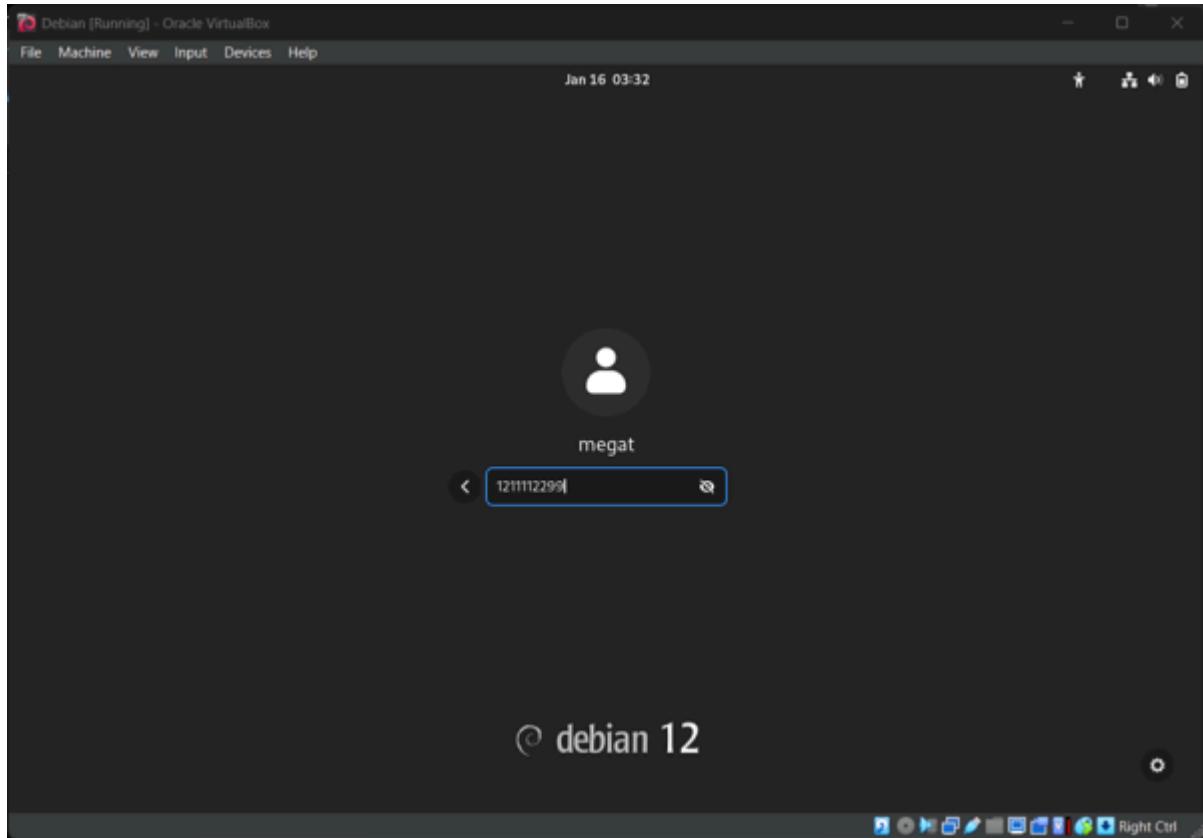
13. Wait for the installation to finish.



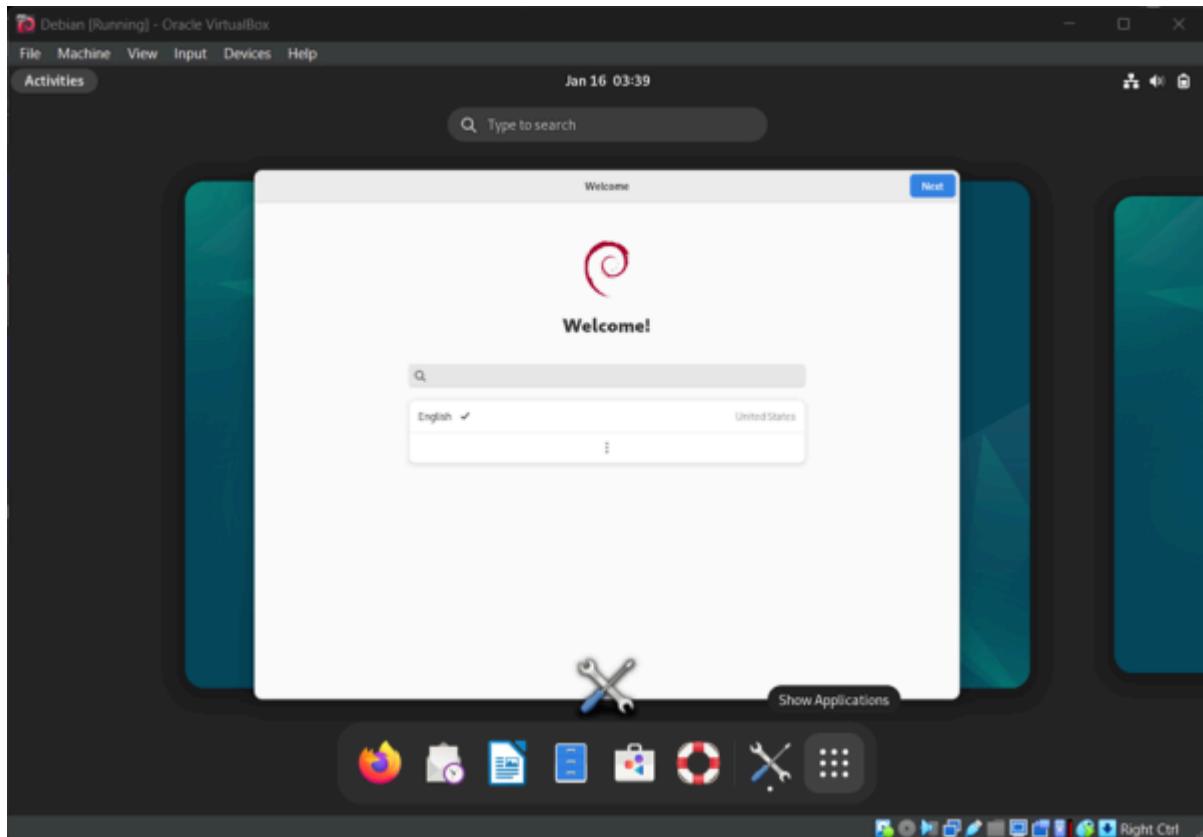
14. After installation, it should look like this.



15. Click the username and sign in using the password you set before.



16. Debian OS is now installed successfully!



## Installing Windows Manager

The following steps will show you how to install another desktop environment. We will be utilizing [tasksel](#).

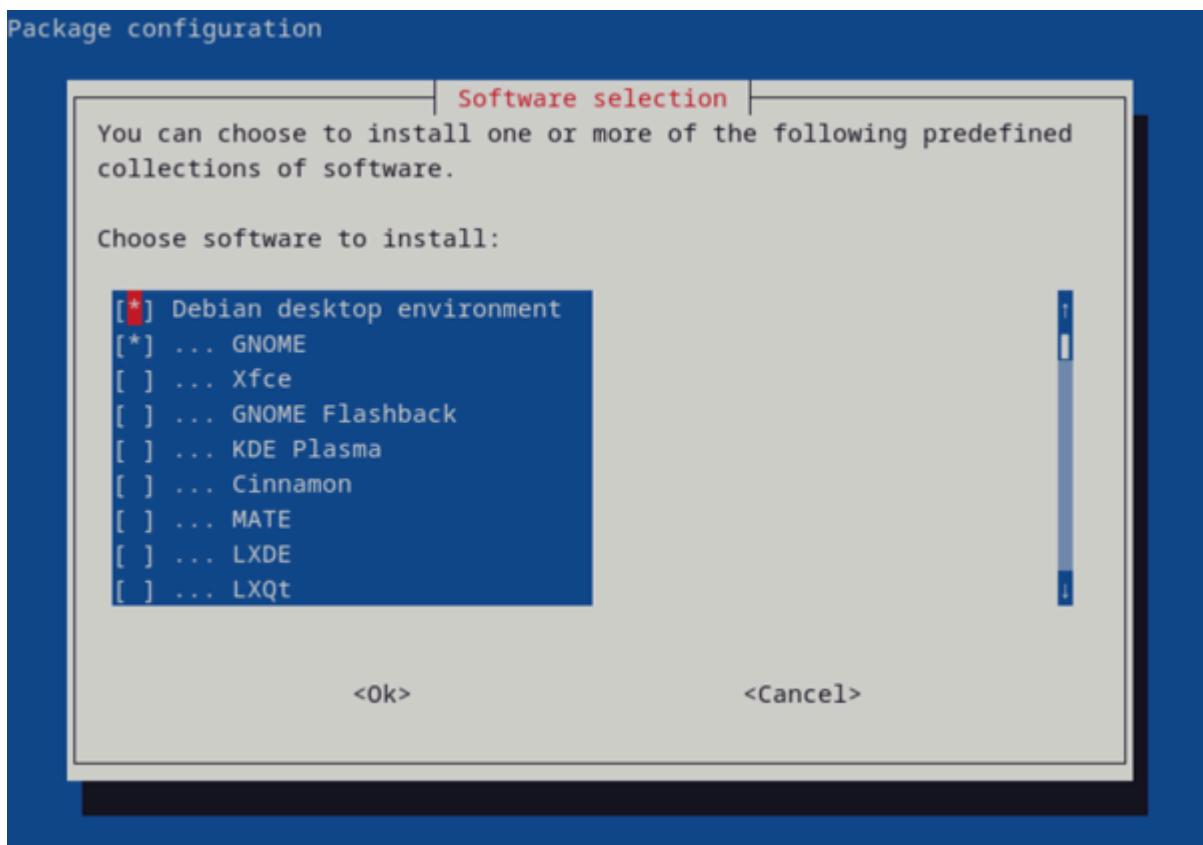
**Note:** Debian 12.9.0 comes preinstalled with GNOME desktop environment.

1. In the terminal, type:

```
sudo tasksel
```

|megat@vbox:~\$ sudo tasksel|

Notice that the terminal will look like this.

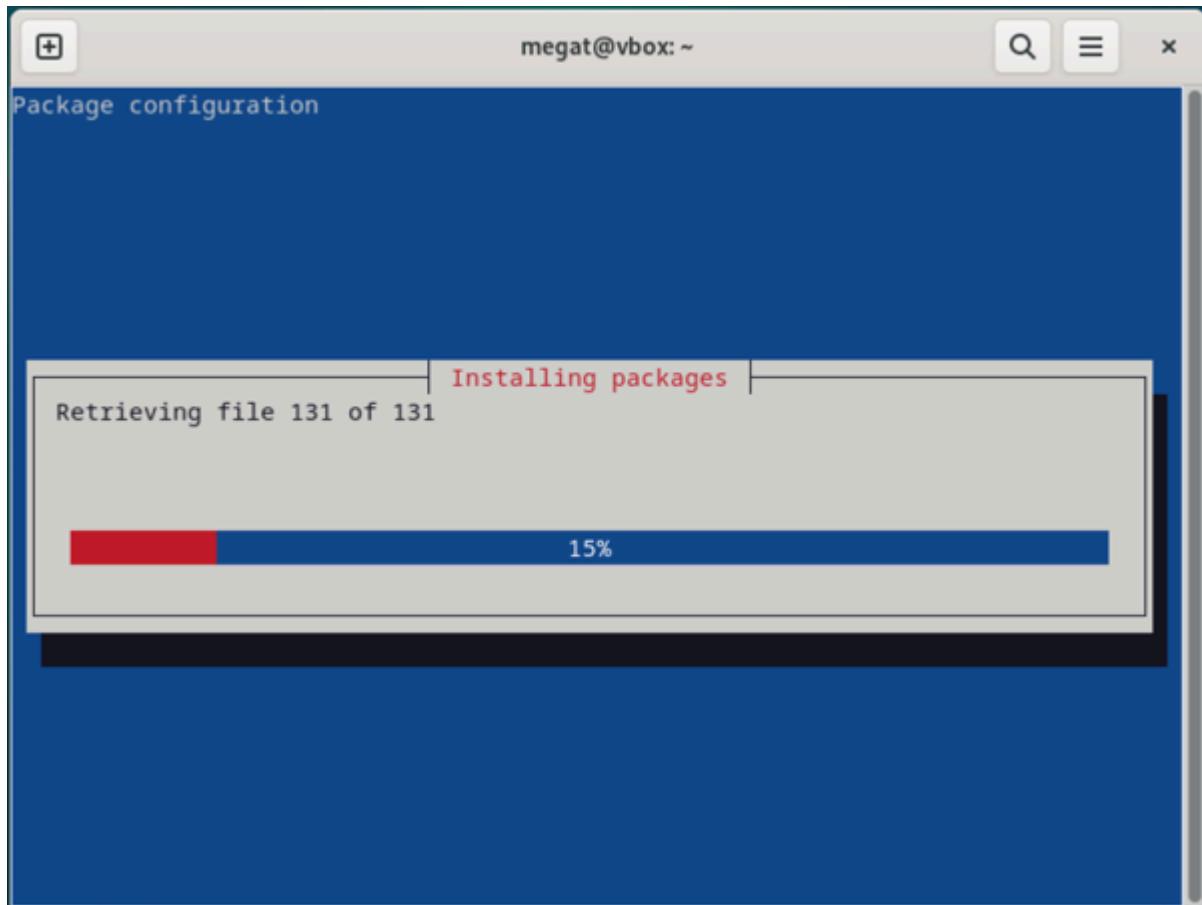


**Note:** If you are unable to run sudo commands, follow the instructions on [this link](#).

2. We want to install the Xfce desktop environment. Navigate the menu using up and down key. Press space to mark Xfce for installation. Make sure there is the (\*) symbol. |[\*] ... Xfce|

3. Press Tab until Ok button is highlighted. |<Ok>| Press Enter.

4. Wait for the installation to finish.



5. Once the installation finish, we will try and switch to the Xfce desktop environment. Click the top right button on the screen.



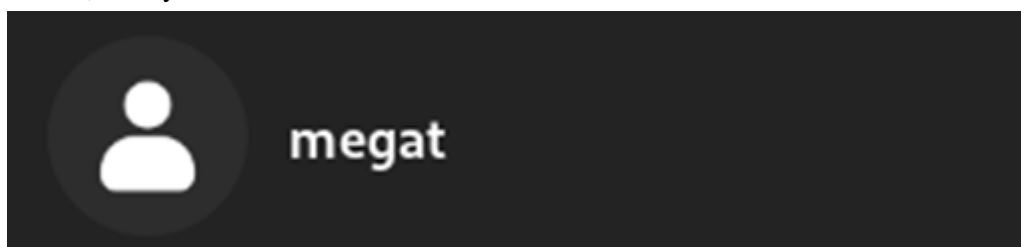
6. Click the power button.



7. Click Log Out...



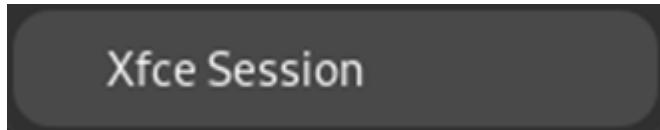
8. Now, click your user.



9. Click the Gear icon on the bottom right corner.

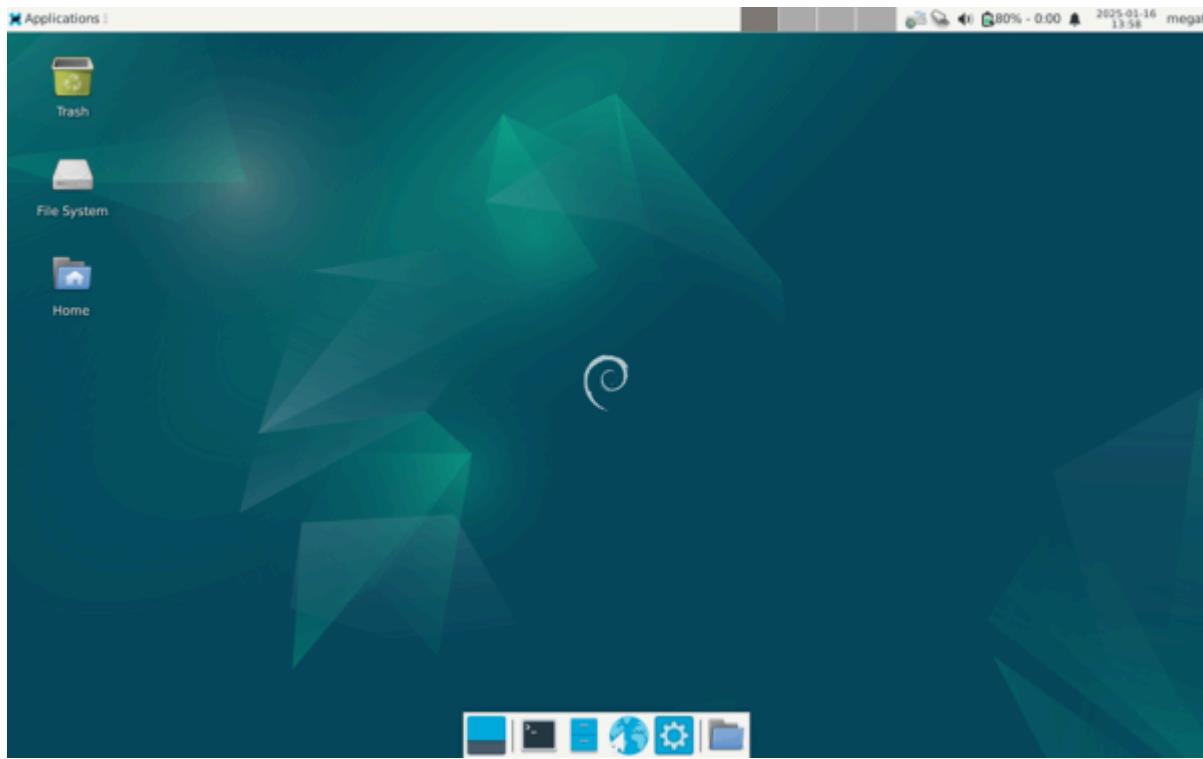


10. Click Xfce Session.



11. Login as usual.

12. Notice that your desktop looks different. You have successfully changed your desktop environment!



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Now you are all set and ready to explore your very own Debian OS!

---

installation.txt · Last modified: 2025/01/18 09:21 by 1211112299



## Part 2: How to Create and Delete Users

This page will show you how to create and delete users.

**Note:** Make sure to enable root and superusers before you proceed to avoid any errors.

---

### How to create a user

This section will show you how to create a user. We will be creating three users: **yourself, John Doe and Will Smith**.

---

- **First User: Yourself**

1. Make sure your account is a sudoer or use a root account to perform `sudo` command.

2. Then use the following command:

```
sudo adduser aidel
```

3. Insert your password. In my case, I use *aidel* as the password.

4. Then, insert the details of the user such as full name, group and phone number.

5. The system will ask whether the information is correct or not. If yes, then press `Enter`.

```
root@vbox:/home/vboxuser# sudo adduser aidel
Adding user 'aidel' ...
Adding new group 'aidel' (1001) ...
Adding new user 'aidel' (1001) with group 'aidel (1001)' ...
Creating home directory '/home/aidel' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully

Retype new password:
passwd: password updated successfully
Changing the user information for aidel
Enter the new value, or press ENTER for the default
    Full Name []: Faris Aidel
    Room Number []: SAM1
    Work Phone []:
    Home Phone []: 0112456789
    Other []:
Is the information correct? [Y/n]
```

```
Is the information correct? [Y/n] y
Adding new user 'aidel' to supplemental / extra groups 'users' ...
Adding user 'aidel' to group 'users' ...
root@vbox:/home/vboxuser#
```

## Adding user to sudo group

Add user **aidel** to sudo group using

```
sudo adduser username sudo
```

```
Adding user 'aidel' to group 'users' ...
root@vbox:/home/vboxuser# sudo adduser aidel sudo
Adding user 'aidel' to group 'sudo' ...
Done.
root@vbox:/home/vboxuser#
```

Note: This method may not work in Debian, you can use [this method instead](#).

- **Second User: John Doe**

1. Type the following command:

```
sudo adduser jdoe
```

2. Then, insert the password. In this case, I inserted **sysadmin#1** as the password.

3. Then, insert the details of the user such as full name, group and phone number.

4. Press Enter if all is done.

```
root@vbox:/home/vboxuser# sudo adduser jdoe
Adding user 'jdoe' ...
Adding new group 'jdoe' (1002) ...
Adding new user 'jdoe' (1002) with group 'jdoe (1002)' ...
Creating home directory '/home/jdoe' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
Changing the user information for jdoe
Enter the new value, or press ENTER for the default
    Full Name []: John Doe
    Room Number []: SAM1
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
Adding new user 'jdoe' to supplemental / extra groups 'users' ...
Adding user 'jdoe' to group 'users' ...
root@vbox:/home/vboxuser#
```

- **Third User: Will Smith**

1. Type the following command:

```
sudo adduser wsmith
```

2. Then, insert the password. In this case, I inserted **sysadmin#2** as the password.

3. The, insert the details of the user such as full name, group and phone number.

4. Press Enter if all is done.

```
root@vbox:/home/vboxuser# sudo adduser wsmith
Adding user 'wsmith' ...
Adding new group 'wsmith' (1003) ...
Adding new user 'wsmith' (1003) with group 'wsmith (1003)' ...
Creating home directory '/home/wsmith' ...
Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully

Changing the user information for wsmith
Enter the new value, or press ENTER for the default
      Full Name []: Will Smith
      Room Number []: SAM1
      Work Phone []:
      Home Phone []:
      Other []:
Is the information correct? [Y/n] y
Adding new user 'wsmith' to supplemental / extra groups 'users' ...
Adding user 'wsmith' to group 'users' ...
root@vbox:/home/vboxuser#
```

- Checking the users

1. Type the following command:

```
cat /etc/passwd
```

2. It will show the name and details of the users.

```
login:x:0:0::/root:/bin/false
gnome-initial-setup:x:112:65534::/run/gnome-initial-setup/:/bin/false
Debian-gdm:x:113:122:Gnome Display Manager:/var/lib/gdm3:/bin/false
vboxuser:x:1000:1000:vboxuser,,,:/home/vboxuser:/bin/bash
aidel:x:1001:1001:Faris Aidel,SAM1,,0112456789:/home/aidel:/bin/bash
jdoe:x:1002:1002:John Doe,SAM1,,,:/home/jdoe:/bin/bash
wsmith:x:1003:1003:Will Smith,SAM1,,,:/home/wsmith:/bin/bash
root@vbox:/home/vboxuser#
```

## How to delete user

This section will show you how to delete users.

1. Type the following command to delete user.

```
sudo userdel username
```

2. In this case, we type the following command to delete user *aidel*

```
sudo userdel aidel
```

3. Type the following to check again the list of users.

```
cat /etc/passwd
```

Notice that the user *aidel* no longer exists.

```
root@vbox:/home/vboxuser# sudo userdel aidel
root@vbox:/home/vboxuser# cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
gnome-initial-setup:x:112:65534::/run/gnome-initial-setup/:/bin/false
Debian-gdm:x:113:122:Gnome Display Manager:/var/lib/gdm3:/bin/false
vboxuser:x:1000:1000:vboxuser,,,:/home/vboxuser:/bin/bash
jdoe:x:1002:1002:John Doe,SAM1,,,:/home/jdoe:/bin/bash
wsmith:x:1003:1003:Will Smith,SAM1,,,:/home/wsmith:/bin/bash
root@vbox:/home/vboxuser#
```

- **Delete User and Home Directory**

Recursively removes the user's home directory and mail spool.

```
sudo userdel -r username
```

Done.

```
root@vbox:/home/vboxuser# sudo userdel -r aidel
userdel: aidel mail spool (/var/mail/aidel) not found
root@vbox:/home/vboxuser#
```

- **Force Deletion**

Forces the removal of the user account, kills processes, and deletes files.

```
sudo userdel -f username
```

```
root@vbox:/home/vboxuser# sudo userdel -f aidel
root@vbox:/home/vboxuser#
```

- **Lock User Before Deleting**

Locks the user's account to ensure no one logs in during the process before deletion.

```
passwd -l username
```

---

## Flags for userdel command

```
Options:
-f, --force          force some actions that would fail otherwise
                     e.g. removal of user still logged in
                     or files, even if not owned by the user
-h, --help           display this help message and exit
-i, --remove         remove home directory and mail spool
-R, --root CHROOT_DIR directory to chroot into
-P, --prefix PREFIX_DIR prefix directory where are located the /etc/* files
-Z, --selinux-user  remove any SELinux user mapping for the user
```

```
root@vbox:/home/vboxuser#
```

You have learned how to create and delete users! Click this [link](#) to further know how to manage user accounts.

---

user.txt · Last modified: 2025/01/18 08:46 by 1211112299



## Part 3: Install and Configure Internet Server

This page will show how to install and configure your very own Internet Server using the LAMP server package.

**Note: LAMP stands for Linux, Apache, MySQL/MariaDB, PHP/Python**

---

### Installation of LAMP Server

Login As Root

- Use `su --login` then update and upgrade Debian using command `apt update && apt upgrade`

```
su --login
apt update && apt upgrade
```

```
vboxuser@vbox:~$ su --login
Password:
root@vbox:~# apt update && apt upgrade
Hit:1 http://deb.debian.org/debian bookworm InRelease
Hit:2 http://security.debian.org/debian-security bookworm-security InRelease
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
2 packages can be upgraded. Run 'apt list --upgradable' to see them.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
  linux-image-6.1.0-30-amd64
The following packages will be upgraded:
  linux-image-amd64 rsync
2 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 0 B/69.4 MB of archives.
After this operation, 409 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Reading changelogs... Done
(Reading database ... 155977 files and directories currently installed.)
```

Next, we are going to install a database. Here we going to install maria database.

```
sudo apt install mariadb-server mariadb-client
```

```
vboxuser@vbox:~$ sudo apt install mariadb-server mariadb-client
[sudo] password for vboxuser:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
mariadb-server is already the newest version (1:10.11.6-0+deb12u1).
mariadb-client is already the newest version (1:10.11.6-0+deb12u1).
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

Next, we have to install apache2 web server

```
sudo apt install apache2 apache2-doc
```

```
vboxuser@vbox:~$ sudo apt install apache2 apache2-doc
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.62-1~deb12u2).
apache2-doc is already the newest version (2.4.62-1~deb12u2).
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

After doing the installation, we need to enable its module

```
sudo a2enmod userdir
```

```
vboxuser@vbox:~$ sudo a2enmod userdir
Module userdir already enabled
```

Then configure apache module in /etc/apache2/mods-enabled/userdir.conf to the following configuration:

```
sudo nano /etc/apache2/mods-enabled/userdir.conf
```

```
GNU nano 7.2          /etc/apache2/mods-enabled/userdir.conf
UserDir public_html
UserDir disabled root

<Directory /home/*/*public_html>
    AllowOverride FileInfo AuthConfig Limit Indexes
    Options MultiViews Indexes SymLinksIfOwnerMatch IncludesNoExec
    <Limit GET POST OPTIONS>
        Require all granted
    </Limit>
    <LimitExcept GET POST OPTIONS>
        Require all denied
    </LimitExcept>
</Directory>
```

Go to /etc/apache2/mods-available and looking for php8.2.conf (seek for your own php version, maybe different)

- Use cd /etc/apache2/mods-available then, in the /etc/apache2/mods-available directory, type ls to view all files available.

autoindex.load	log_forensic.load	setenvif.conf
brotli.load	lua.load	setenvif.load
buffer.load	macro.load	slotmem_plain.load
cache_disk.conf	md.load	slotmem_shm.load
cache_disk.load	mime.conf	socache_dbm.load
cache.load	mime.load	socache_memcache.load
cache_socache.load	mime_magic.conf	socache_redis.load
cern_meta.load	mime_magic.load	socache_shmcb.load
cgid.conf	mpm_event.conf	speling.load
cgid.load	mpm_event.load	ssl.conf
cgi.load	mpm_prefork.conf	ssl.load
charset_lite.load	mpm_prefork.load	status.conf
data.load	mpm_worker.conf	status.load
dav_fs.conf	mpm_worker.load	substitute.load
dav_fs.load	negotiation.conf	suexec.load
dav.load	negotiation.load	unique_id.load
dav_lock.load	php8.2.conf	userdir.conf
dbd.load	php8.2.load	userdir.load
deflate.conf	proxy_ajp.load	usertrack.load
deflate.load	proxy_balancer.conf	vhost_alias.load
dialup.load	proxy_balancer.load	
dir.conf	proxy.conf	
dir.load	proxy_connect.load	

- Type this command to check the content in php8.2.conf:

```
sudo nano php8.2.conf
```

```

GNU nano 7.2                                     php8.2.conf *
# Using (?i:pattern) instead of [pattern] is a small optimization that
# avoid capturing the matching pattern (as $1) which isn't used here
<FilesMatch ".+\.php(?:i|p|t|ml)$">
    SetHandler application/x-httpd-php
</FileMatch>
<FilesMatch ".+\.phps$">
    SetHandler application/x-httpd-php-source
    # Deny access to raw php sources by default
    # To re-enable it's recommended to enable access to the files
    # only in specific virtual host or directory
    Require all denied
</FileMatch>
# Deny access to files without filename (e.g. '.php')
<FilesMatch "^\.php(?:i|p|ps|tml)$">
    Require all denied
</FileMatch>

# Running PHP scripts in user directories is disabled by default
#
# To re-enable PHP in user directories comment the following lines
# (from <IfModule ...> to </IfModule>.) Do NOT set it to On as it
# prevents .htaccess files from disabling it.
<IfModule mod_userdir.c>
    <Directory /home/*public_html>
        php_admin_flag engine Off
    </Directory>
</IfModule>

```

Next, Install the php-mysql

```
sudo apt install php php-mysql
```

```

vboxuser@vbox:~$ sudo apt install php php-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
php is already the newest version (2:8.2+93).
php-mysql is already the newest version (2:8.2+93).
The following package was automatically installed and is no longer required:
    linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.

```

Next create directory public\_html. Use `mkdir /home/(user)/public_html`. Then change group and restart the web server. Use `sudo chgrp www-data /home/(username)/public_html`. Restart apache2 using `sudo systemctl restart apache2.service`

## Test the LAMP Server Installation

Install Chromium browser.

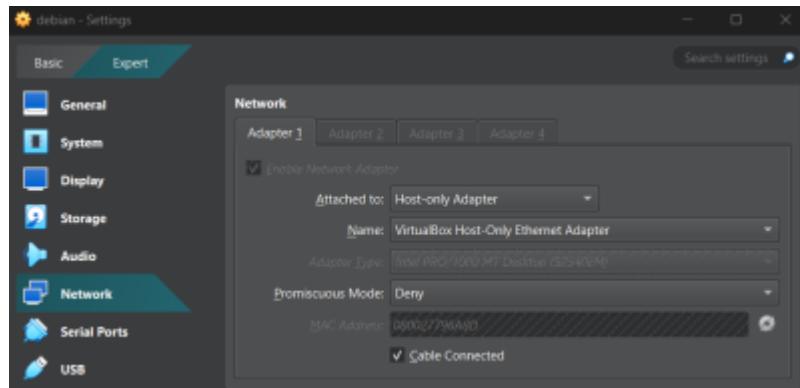
```
sudo apt install chromium
```

```

vboxuser@vbox:~$ sudo apt install chromium
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
    linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
    avahi-utils chromium-common chromium-sandbox fonts-liberation libdouble-conversion3
    libharfbuzz-subset8 libminizip1 libxnvctrl8 system-config-printer
Suggested packages:
    chromium-l10n chromium-shell chromium-driver
The following NEW packages will be installed:
    avahi-utils chromium chromium-common chromium-sandbox fonts-liberation
    libdouble-conversion3 libharfbuzz-subset8 libminizip1 libxnvctrl8 system-config-printer
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 87.4 MB/101 MB of archives.
After this operation, 335 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://security.debian.org/debian-security bookworm-security/main amd64 chromium amd64 132.0.6834.83-1~deb12u1 [87.3 MB]
Get:2 http://security.debian.org/debian-security bookworm-security/main amd64 chromium-sandb ox amd64 132.0.6834.83-1~deb12u1 [99.0 kB]

```

## Change network settings to Host-Only Adapter



## Test Apache Installation

In the browser, type your ipaddress (10.0.2.15) to test the apache installation.



## Test PHP Installation

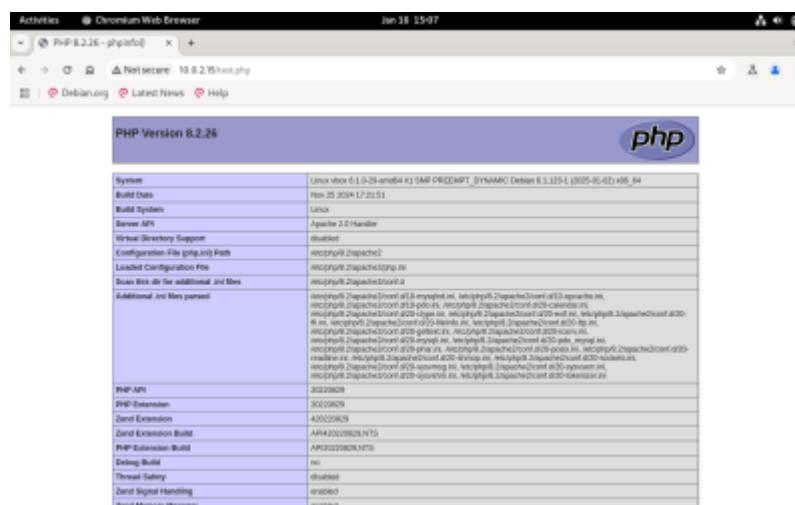
Go to /var/www/html directory

- Use cd /var/www/html. Type sudo nano /var/www/html/test.php to create test.php. Write <?php phpinfo(); ?> in the file test.php file

```
vboxuser@vbox:/var/www/html$ sudo nano /var/www/html/test.php
GNU nano 7.2                               /var/www/html/test.php
<?php phpinfo(); ?>
```

Open chromium and type ipaddress/test.php

- 10.0.2.15/test.php



## Test Apache and PHP Configuration

Change directory to /var/www/html using cd /var/www/html and create hello.html file using sudo nano hello.html

```
vboxuser@vbox:~$ cd /var/www/html
vboxuser@vbox:/var/www/html$ sudo nano hello.html
GNU nano 7.2                                     hello.html
<html>
<h1> Hello </h1>
</html>
```

Open chromium and search for ipaddress/hello.html.

- 10.0.2.15/hello.html



## Installation of SSH Server

Install SSH server using

```
sudo apt-get install openssh-server
```

```
vboxuser@vbox:~$ sudo apt-get install openssh-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  openssh-sftp-server runit-helper
Suggested packages:
  molly-guard monkeysphere ssh-askpass ufw
The following NEW packages will be installed:
  openssh-server openssh-sftp-server runit-helper
0 upgraded, 3 newly installed, 0 to remove and 1 not upgraded.
Need to get 529 kB of archives.
After this operation, 2,218 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bookworm/main amd64 openssh-sftp-server amd64 1:9.2pi-2+deb12u4 [65.9 kB]
Get:2 http://deb.debian.org/debian bookworm/main amd64 runit-helper all 2.15.2 [6,520 B]
Get:3 http://deb.debian.org/debian bookworm/main amd64 openssh-server amd64 1:9.2pi-2+deb12u4 [456 kB]
```

Deleting old ssh keys using

```
sudo /bin/rm -v /etc/ssh/ssh_host_*
```

```
vboxuser@vbox:~$ sudo /bin/rm -v /etc/ssh/ssh_host_*
removed '/etc/ssh/ssh_host_ecdsa_key'
removed '/etc/ssh/ssh_host_ecdsa_key.pub'
removed '/etc/ssh/ssh_host_ed25519_key'
removed '/etc/ssh/ssh_host_ed25519_key.pub'
removed '/etc/ssh/ssh_host_rsa_key'
removed '/etc/ssh/ssh_host_rsa_key.pub'
```

Regenerate openssh host key using

```
sudo dpkg-reconfigure openssh-server
```

```
vboxuser@vbox:~$ sudo dpkg-reconfigure openssh-server
Creating SSH2 RSA key; this may take some time ...
3072 SHA256:ROCIICjonYQcYfBj6zWIRo+46cMYJNka5j+sEuPgcM+U root@vbox (RSA)
Creating SSH2 ECDSA key; this may take some time ...
256 SHA256:6625gizVrxQlm6g5tul0h89vQCUHq86fc1Rl0KwNps root@vbox (ECDSA)
Creating SSH2 ED25519 key; this may take some time ...
256 SHA256:XXU69w4ztmPAzeYfzUU09yf5vN88omExeh7eIIt02WM root@vbox (ED25519)
rescue-ssh.target is a disabled or a static unit not running, not starting it.
ssh.socket is a disabled or a static unit not running, not starting it.
```

Restart the ssh server using

```
sudo systemctl restart ssh
```

```
vboxuser@vbox:~$ sudo systemctl restart ssh
```

Remove the host fingerprint using

```
ssh-keygen -R localhost
```

```
vboxuser@vbox:~$ ssh-keygen -R localhost
# Host localhost found: line 1
# Host localhost found: line 2
# Host localhost found: line 3
/home/vboxuser/.ssh/known_hosts updated.
Original contents retained as /home/vboxuser/.ssh/known_hosts.old
```

Then, Log in to SSH using

```
ssh vboxuser@localhost
```

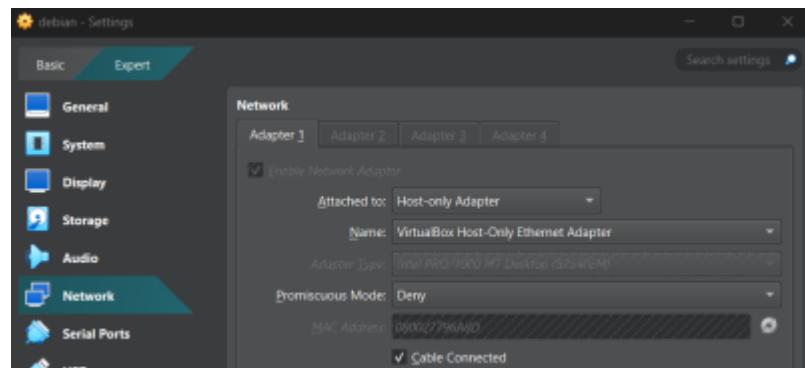
```
vboxuser@vbox:~$ ssh vboxuser@localhost
The authenticity of host 'localhost (::1)' can't be established.
ED25519 key fingerprint is SHA256:XXU69w4ztmPAzeYfzUU09yf5vN88omExeh7eIIt02WM.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.
vboxuser@localhost's password:
Linux vbox 6.1.0-30-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.124-1 (2025-01-12) x86_6
4

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sat Jan 18 08:19:30 2025 from ::1
```

## Test the SSH Server

Change to host only adapter and check for host ip address using hostname -I



```
vboxuser@vbox:~$ hostname -I
192.168.56.102
```

Next, try to generate key using rsa using

```
ssh-keygen -t rsa
```

```
vboxuser@vbox:~$ ssh-keygen -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/vboxuser/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/vboxuser/.ssh/id_rsa
Your public key has been saved in /home/vboxuser/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:Zxfqu8NtHlcTbqKdDP2R5WUzat2iewzLEI0Mr8JwsQ4 vboxuser@vbox
The key's randomart image is:
+---[RSA 3072]----+
| |
| |
| o + o. |
| E o =.o..oo|
| * S o+. * o o+|
| + o++ . X o+ ..|
| . *.X X . |
| . *.o o |
| o+.o |
+---[SHA256]-----+
```

Then copy the key using

```
ssh-copy-id vboxuser@192.168.56.102
```

```
vboxuser@vbox:~$ ssh-copy-id vboxuser@192.168.56.102
The authenticity of host "192.168.56.102" (192.168.56.102) can't be established.
ED25519 key fingerprint is SHA256:XXU69W4ztmPAzeYfzUU09yfSvN88omExeh7eII02WM.
This host key is known by the following other names/addresses:
    ~/.ssh/known_hosts:1: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter
out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompt
ed now it is to install the new keys
vboxuser@192.168.56.102's password:

Number of key(s) added: 1

Now try logging into the machine, with:  "ssh 'vboxuser@192.168.56.102'"
and check to make sure that only the key(s) you wanted were added.
```

Now we are able to log in to ssh server without any password requirement.

- Try using ssh vboxuser@192.168.56.102 and ssh vboxuser@localhost

```
vboxuser@vbox:~$ ssh vboxuser@192.168.56.102
Linux vbox 6.1.0-30- amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.124-1 (2025-01-12) x
86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sat Jan 18 01:23:29 2025 from 192.168.56.1
vboxuser@vbox:~$ ssh vboxuser@localhost
Linux vbox 6.1.0-30- amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.124-1 (2025-01-12) x
86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sat Jan 18 01:28:34 2025 from 192.168.56.102
```

## Installation of FTP Server

Install the FTP Server

```
sudo apt-get install proftpd-basic
```

```
vboxuser@vbox:/var/www/html$ sudo apt-get install proftpd-basic
[sudo] password for vboxuser:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libhashkit2 libhiredis0.14 libmemcached11 libmemcachedutil2 libpcre2-posix3 proftpd-core
  proftpd-doc proftpd-mod-crypto proftpd-mod-wrap
Suggested packages:
  openbsd-inetd | inet-superset proftpd-mod-ldap proftpd-mod-mysql proftpd-mod-odbc
  proftpd-mod-pgsql proftpd-mod-sqlite proftpd-mod-geoip proftpd-mod-snmp
The following NEW packages will be installed:
  libhashkit2 libhiredis0.14 libmemcached11 libmemcachedutil2 libpcre2-posix3
  proftpd-basic proftpd-core proftpd-doc proftpd-mod-crypto proftpd-mod-wrap
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 5,378 kB of archives.
After this operation, 10.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bookworm/main amd64 libhiredis0.14 amd64 0.14.1-3 [35.9 kB]
```

Install ftp to be able to use ftp command

```
sudo apt-get install ftp
```

```
vboxuser@vbox:~$ sudo apt-get install ftp
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  tnftp
The following NEW packages will be installed:
  ftp tnftp
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 166 kB of archives.
After this operation, 319 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://deb.debian.org/debian bookworm/main amd64 tnftp amd64 20210827-4+b1 [128 kB]
Get:2 http://deb.debian.org/debian bookworm/main amd64 ftp all 20210827-4 [37.9 kB]
Fetched 166 kB in 8s (924 kB/s)
Selecting previously unselected package tnftp.
(Reading database ... 161454 files and directories currently installed.)
Preparing to unpack .../tnftp_20210827-4+b1_amd64.deb ...
Unpacking tnftp (20210827-4+b1) ...
```

Test the installation by typing ftp ipaddress

```
ftp 192.168.56.102
```

```
vboxuser@vbox:~$ ftp 192.168.56.102
Connected to 192.168.56.102.
220 ProFTPD Server (Debian) [:ffff:192.168.56.102]
Name (192.168.56.102:vboxuser): vboxuser
331 Password required for vboxuser
Password:
230 User vboxuser logged in
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> █
```

Next, Install GUI FTP

- Search for FileZilla

The screenshot shows the official FileZilla website at <https://filezilla-project.org>. The main navigation menu includes Home, FileZilla, Features, Screenshots, Download, Documentation, FileZilla Pro, RemoteDrive, FileZilla Server, Download, Community, General, FAQ, Source, Contact, License, Privacy Policy, Trademarks Policy, Development, Source code, Highly builds, Translations, Version history, ChangeLog, Issue tracker, and Other projects. The 'FileZilla Server' section is currently selected. The 'Overview' section contains a brief introduction, links to support, and a note about the open-source nature of the software. It features two prominent download buttons: 'Download FileZilla Client' and 'Download FileZilla Server'. Below these buttons, there's a news item about the release of FileZilla Server 1.9.6. A sidebar on the right displays the FileZilla logo.

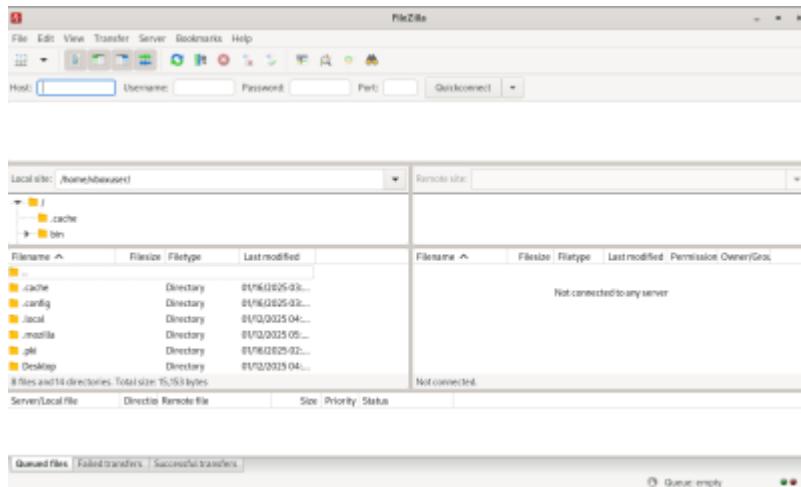
- Select Download FileZilla for Server

The screenshot shows the 'Download FileZilla Server for Linux' page. The left sidebar is identical to the homepage. The main content area is titled 'Download FileZilla Server for Linux (64bit x86)' and states that the latest stable version is 1.9.6. It asks the user to select the appropriate file for their platform. A large green button labeled 'Download FileZilla Server' is highlighted. Below it, there are links for 'More download options' (including other platforms like Windows and Mac) and a link to 'View additional download options'.

- Then, install it using command on terminal. `sudo apt-get install FileZilla`

```
vboxuser@vbox:~$ sudo apt-get install filezilla
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-image-6.1.0-27-amd64
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  filezilla-common libfilezilla-common libfilezilla34 libpcre2-32-0 libpugixml1v5
  libwxbase3.2-1 libwxgtk3.2-1
The following NEW packages will be installed:
  filezilla filezilla-common libfilezilla-common libfilezilla34 libpcre2-32-0
  libpugixml1v5 libwxbase3.2-1 libwxgtk3.2-1
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 10.5 MB of archives.
After this operation, 42.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://deb.debian.org/debian bookworm/main amd64 filezilla-common all 3.63.0-1+deb12u3
[2,321 kB]
Get:2 http://deb.debian.org/debian bookworm/main amd64 libfilezilla-common all 0.41.0-2 [72.5 kB]
Get:3 http://deb.debian.org/debian bookworm/main amd64 libfilezilla34 amd64 0.41.0-2 [263 kB]
```

- Try open the FileZilla



## Enabling Chroot Jail

```
sudo nano /etc/proftpd/proftpd.conf
```

Uncomment #DefaultRoot~

```
GNU nano 7.2                               /etc/proftpd/proftpd.conf *

DisplayLogin welcome.msg
DisplayChdir .message true
ListOptions "+l"

DenyFilter \*.*/

# Use this to jail all users in their homes
# DefaultRoot ~

# Users require a valid shell listed in /etc/shells to login.
# Use this directive to release that constrain.
# RequireValidShell off

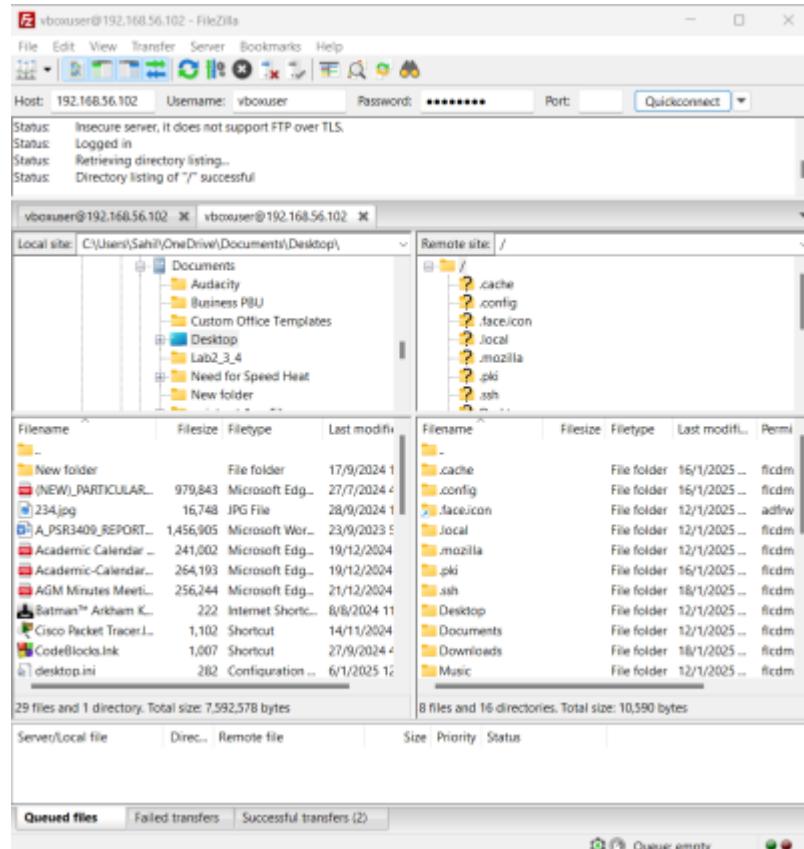
# Port 21 is the standard FTP port.
Port 21

# In some cases you have to specify passive ports range to by-pass
# firewall limitations. Ephemeral ports can be used for that, but
```

## Test the FTP Server

On windows, open file zilla and connect with host ip address, username, password

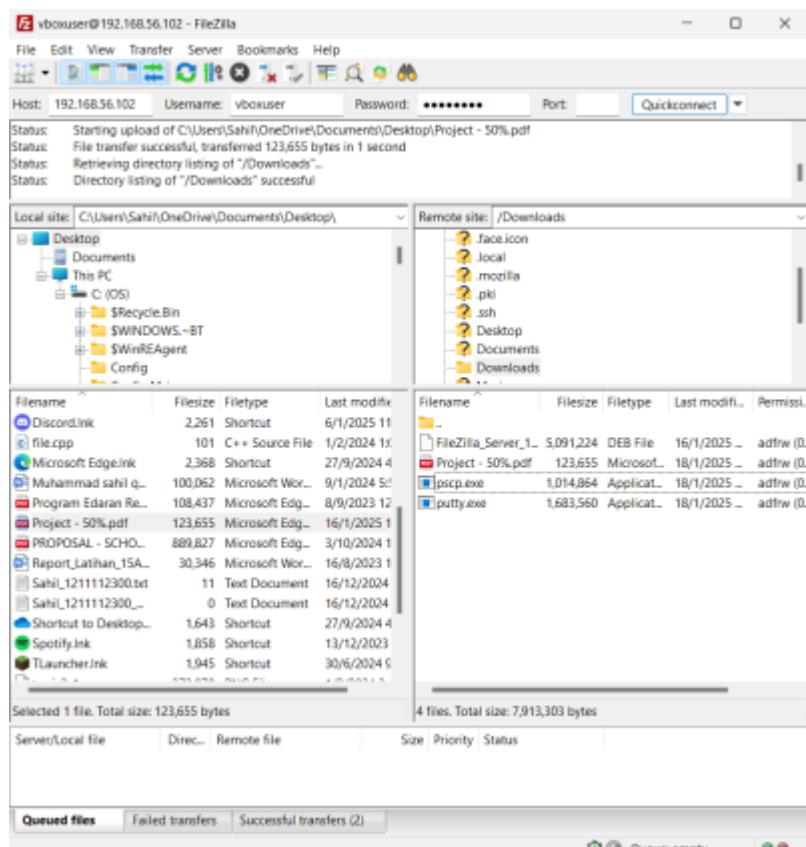
- ipaddress:192.168.56.102,username:vboxuser,password:changeme



Check Downloads directory on Debian

```
vboxuser@vbox:~/Downloads$ ls
FileZilla_Server_1.9.4_x86_64-linux-gnu.deb  pscp.exe  putty.exe
vboxuser@vbox:~/Downloads$
```

Then, try transfer a file from windows



Here, I transfer projec 50%.pdf to debian

Lastly, check Downloads directory on Debian

```
vboxuser@vbox:~/Downloads$ ls
FileZilla_Server_1.9.4_x86_64-linux-gnu.deb    pscp.exe
'Project - 50%.pdf'                            putty.exe
vboxuser@vbox:~/Downloads$
```

The project 50% already on Downloads directory

---

internet\_server.txt · Last modified: 2025/01/19 03:49 by 1211112228



## Part 4: Install and Configure Content Management System

This page will show how to install the WordPress Content Management System.

**Note: This is a guide on how to install and configure CMS on localhost.**

---

To install WordPress on Debian, we would need to set up a LAMP stack (Linux, Apache, MySQL, PHP).

Below is a step-by-step guide on how to install WordPress through the command line.

1. Before starting, ensure your Debian system is up to date.

```
sudo apt update  
sudo apt upgrade
```

```
eusoff@vbox:~$ sudo apt update  
Hit:1 http://deb.debian.org/debian bookworm InRelease  
Hit:2 http://security.debian.org/debian-security bookworm-security InRelease  
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
All packages are up to date.  
eusoff@vbox:~$ sudo apt upgrade  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
Calculating upgrade... Done  
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

2. WordPress requires a web server (Apache), a database (MySQL/MariaDB), and PHP.

Let's install **Apache** first.

```
sudo apt install apache2
```

Press y and Enter to continue.

```
eusoff@vbox:~$ sudo apt install apache2  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  apache2-data apache2-utils  
Suggested packages:  
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom  
The following NEW packages will be installed:  
  apache2 apache2-data apache2-utils  
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.  
Need to get 593 kB of archives.  
After this operation, 1,905 kB of additional disk space will be used.  
Do you want to continue? [Y/n] y
```

To start and enable Apache, use command:

```
sudo systemctl start apache2  
sudo systemctl enable apache2
```

```
eusoff@vbox:~$ sudo systemctl start apache2
eusoff@vbox:~$ sudo systemctl enable apache2
Synchronizing state of apache2.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable apache2
```

### 3. Install MySQL (MariaDB)

```
sudo apt install mariadb-server
```

Press y and Enter to continue.

```
eusoff@vbox:~$ sudo apt install mariadb-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
galera-4 gawk libcgi-fast-perl libcgi-pm-perl libconfig-inifiles-perl
libdaxctl1 libdbd-mariadb-perl libdbi-perl libfcgi-bin libfcgi-perl
libfcgi0ldbl libhtml-template-perl libmariadb3 libndctl6 libpmem1
libsigsegv2 libterm-readkey-perl liburing2 mariadb-client
mariadb-client-core mariadb-common mariadb-plugin-provider-bzip2
mariadb-plugin-provider-lz4 mariadb-plugin-provider-lzma
mariadb-plugin-provider-lzo mariadb-plugin-provider-snappy
mariadb-server-core mysql-common pv rsync socat
```

```
sudo mysql_secure_installation
```

```
eusoff@vbox:~$ sudo mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer 'n'.

Switch to unix_socket authentication [Y/n] n

Remove anonymous users? [Y/n] y
... Success!

Normally, root should only be allowed to connect from 'localhost'. This
ensures that someone cannot guess at the root password from the network.

Disallow root login remotely? [Y/n] n
... skipping.

By default, MariaDB comes with a database named 'test' that anyone can
access. This is also intended only for testing, and should be removed
before moving into a production environment.

Remove test database and access to it? [Y/n] n
... skipping.

Reloading the privilege tables will ensure that all changes made so far
will take effect immediately.

Reload privilege tables now? [Y/n] y
... Success!

Cleaning up...

All done! If you've completed all of the above steps, your MariaDB
installation should now be secure.
```

### 4. Install PHP

```
sudo apt install php libapache2-mod-php php-mysql php-curl php-gd php-mbstring php-xml php-xmlrpc php-soap php-intl php-zip
```

Press y and Enter to continue.

```
eusoff@vbox:~$ sudo apt install php libapache2-mod-php php-mysql php-curl php-gd php-mbstring php-xml php-xmlrpc php-soap php-intl php-zip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libapache2-mod-php8.2 libxmlrpc-epi0 libzip4 php-common php8.2 php8.2-cli
php8.2-common php8.2-curl php8.2-gd php8.2-intl php8.2-mbstring
php8.2-mysql php8.2-opcache php8.2-readline php8.2-soap php8.2-xml
php8.2-xmlrpc php8.2-zip
Suggested packages:
php-pear
The following NEW packages will be installed:
libapache2-mod-php libapache2-mod-php8.2 libxmlrpc-epi0 libzip4 php
php-common php-curl php-gd php-intl php-mbstring php-mysql php-soap php-xml
php-xmlrpc php-zip php8.2 php8.2-cli php8.2-common php8.2-curl php8.2-gd
php8.2-intl php8.2-mbstring php8.2-mysql php8.2-opcache php8.2-readline
```

5. Restart Apache

```
sudo systemctl restart apache2
```

```
eusoff@vbox:~$ sudo systemctl restart apache2
```

6. Create a MySQL Database for WordPress.

Log into MySQL.

```
sudo mysql -u root -p
```

The password should be your root password.

```
eusoff@vbox:~$ sudo mysql -u root -p
Enter password:
```

Once you are in, you will be greeted with this menu.

```
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 35
Server version: 10.11.6-MariaDB-0+deb12u1 Debian 12

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> 
```

Now, create a database and user for WordPress.

```
CREATE DATABASE wordpress;
CREATE USER 'eusoff'@'localhost' IDENTIFIED BY 'eusoff*A';
GRANT ALL PRIVILEGES ON wordpress_db.* TO 'eusoff'@'localhost';
FLUSH PRIVILEGES;
EXIT;
```

```
MariaDB [(none)]> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.001 sec)
MariaDB [(none)]> CREATE USER 'eusoff'@'localhost' IDENTIFIED BY 'eusoff*A';
Query OK, 0 rows affected (0.004 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON wordpress.* TO 'eusoff'@'localhost';
Query OK, 0 rows affected (0.005 sec)

MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.001 sec)
```

7. Download and configure WordPress.

```
sudo wget https://wordpress.org/latest.tar.gz
```

```
eusoff@vbox:~$ sudo wget https://wordpress.org/latest.tar.gz
--2025-01-17 21:44:10-- https://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org)|198.143.164.252|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 26931653 (26M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz      100%[=====] 25.68M 8.05MB/s    in 4.1s

2025-01-17 21:44:15 (6.19 MB/s) - 'latest.tar.gz' saved [26931653/26931653]
```

Unzip using this command:

```
sudo tar -xvzf latest.tar.gz
```

```
eusoff@vbox:~$ sudo tar -xvzf latest.tar.gz
```

Now move the files to the web root directory.

```
sudo mv wordpress /var/www/html/wordpress
```

```
eusoff@vbox:~$ sudo mv wordpress /var/www/html/
```

Set the correct permissions

```
sudo chown -R www-data:www-data /var/www/html/wordpress
sudo chmod -R 755 /var/www/html/wordpress
```

```
eusoff@vbox:~$ sudo chown -R www-data:www-data /var/www/html/wordpress
eusoff@vbox:~$ sudo chmod -R 755 /var/www/html/wordpress
```

8. Create a new Apache configuration file for WordPress.

```
sudo nano /etc/apache2/sites-available/wordpress.conf
```

```
eusoff@vbox:~$ sudo nano /etc/apache2/sites-available/wordpress.conf
```

Add the following configuration:

```
<VirtualHost *:80>
  DocumentRoot /var/www/html/wordpress
  ServerName localhost

  <Directory /var/www/html/wordpress>
    AllowOverride All
  </Directory>

  ErrorLog ${APACHE_LOG_DIR}/error.log
  CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

Press Ctrl + X, y, and Enter to save.

```
File Edit View Terminal Tabs Help
GNU nano 7.2          /etc/apache2/sites-enabled/wordpress.conf *
<VirtualHost *:80>
    DocumentRoot /var/www/html/wordpress
    ServerName localhost

    <Directory /var/www/html/wordpress>
        AllowOverride All
    </Directory>

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>

[ Read 11 lines ]
^G Help      ^O Write Out   ^W Where Is   ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File   ^V Replace    ^U Paste     ^J Justify   ^/ Go To L:
```

```
sudo a2ensite wordpress.conf
sudo a2enmod rewrite
```

```
eusoff@vbox:~$ sudo a2ensite wordpress.conf
Enabling site wordpress.
To activate the new configuration, you need to run:
    systemctl reload apache2
eusoff@vbox:~$ sudo a2enmod rewrite
Enabling module rewrite.
To activate the new configuration, you need to run:
    systemctl restart apache2
```

```
sudo systemctl restart apache2
```

```
eusoff@vbox:~$ sudo systemctl restart apache2
```

```
sudo nano /var/www/html/wordpress/wp-config.php
```

Make sure your wp-config.php have the contents.

```
GNU nano 7.2          /var/www/html/wordpress/wp-config.php

<?php
// Database settings //
define('DB_NAME', 'wordpress');
define('DB_USER', 'eusoff');
define('DB_PASSWORD', 'eusoff*A');
define('DB_HOST', 'localhost');
define('DB_CHARSET', 'utf8mb4');
define('DB_COLLATE', '');

// Authentication unique keys and salts //
define('AUTH_KEY',         'X|gZ-+$UwR}i|6V>#[k8^917n2p5o0y1i3u4e5r6t7y8u9i0o');
define('SECURE_AUTH_KEY',   '12p5o0y1i3u4e5r6t7y8u9i0oX|gZ-+$UwR}i|6V>#[k8^917n');
define('LOGGED_IN_KEY',     'i3u4e5r6t7y8u9i0oX|gZ-+$UwR}i|6V>#[k8^917n2p5o0y1');
define('NONCE_KEY',         '6V>#[k8^917n2p5o0y1i3u4e5r6t7y8u9i0oX|gZ-+$UwR}i|');
define('AUTH_SALT',         'y8u9i0oX|gZ-+$UwR}i|6V>#[k8^917n2p5o0y1i3u4e5r6t7');
define('SECURE_AUTH_SALT',  'i|6V>#[k8^917n2p5o0y1i3u4e5r6t7y8u9i0oX|gZ-+$UwR}');
define('LOGGED_IN_SALT',    '7n2p5o0y1i3u4e5r6t7y8u9i0oX|gZ-+$UwR}i|6V>#[k8^91');
define('NONCE_SALT',        '0y1i3u4e5r6t7y8u9i0oX|gZ-+$UwR}i|6V>#[k8^917n2p5o');

[ Read 32 lines ]
```

```
sudo chmod 644 /var/www/html/wordpress/wp-config.php
sudo chown www-data:www-data /var/www/html/wordpress/wp-config.php
```

Make sure the permission is accessible.

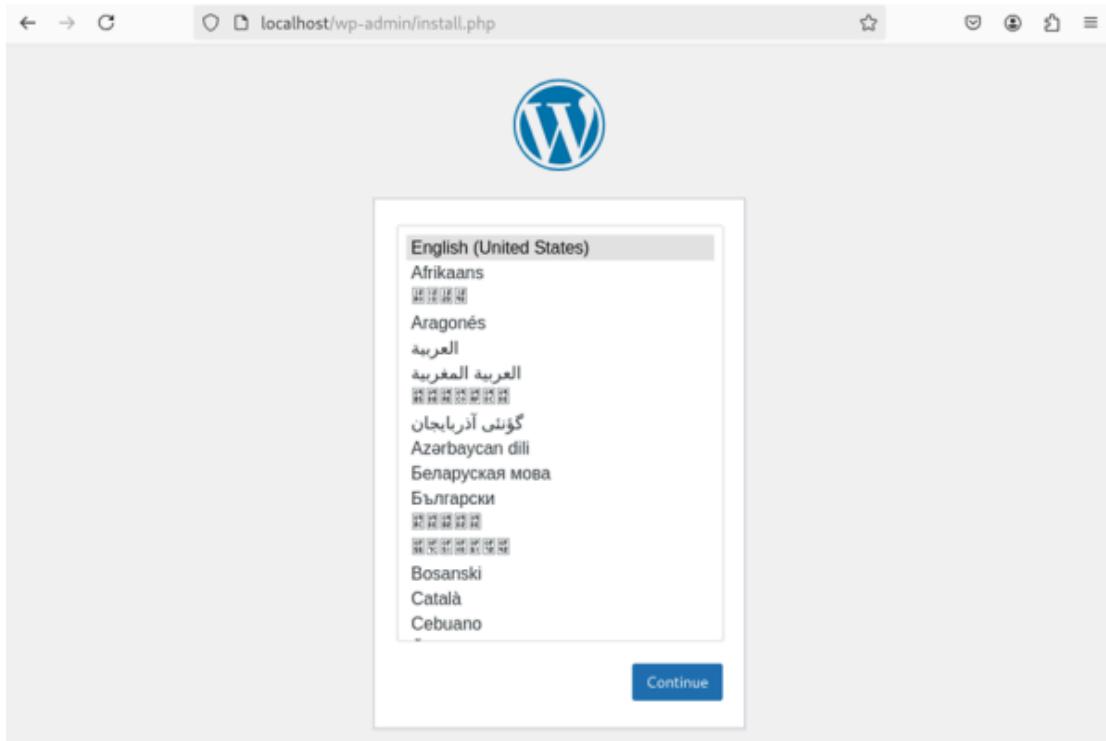
```
eusoff@vbox:~$ sudo chmod 644 /var/www/html/wordpress/wp-config.php
eusoff@vbox:~$ sudo chown www-data:www-data /var/www/html/wordpress/wp-config.php
```

Restart Apache2

```
sudo systemctl restart apache2
```

```
eusoff@vbox:~$ sudo systemctl restart apache2
```

9. Go to localhost on the browser and now we have the option to Install WordPress.



Fill up every information needed.

Welcome

Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world.

### Information needed

Please provide the following information. Do not worry, you can always change these settings later.

**Site Title**

**Username**   
Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

**Password**  5JFs )SQ3QJfxA( lk0K ( Hide)  
Strong

**Your Email**   
Double-check your email address before continuing.

**Search engine visibility**  Discourage search engines from indexing this site  
It is up to search engines to honor this request.

localhost/wp-admin/install.php?step=1

be on your way to using the most extendable and powerful personal publishing platform in the world.

### Information needed

Please provide the following information. Do not worry, you can always change these settings later.

**Site Title**  wordpress by eusoff

**Username**  eusoff  
Usernames can have only alphanumeric characters, spaces, underscores, hyphens, periods, and the @ symbol.

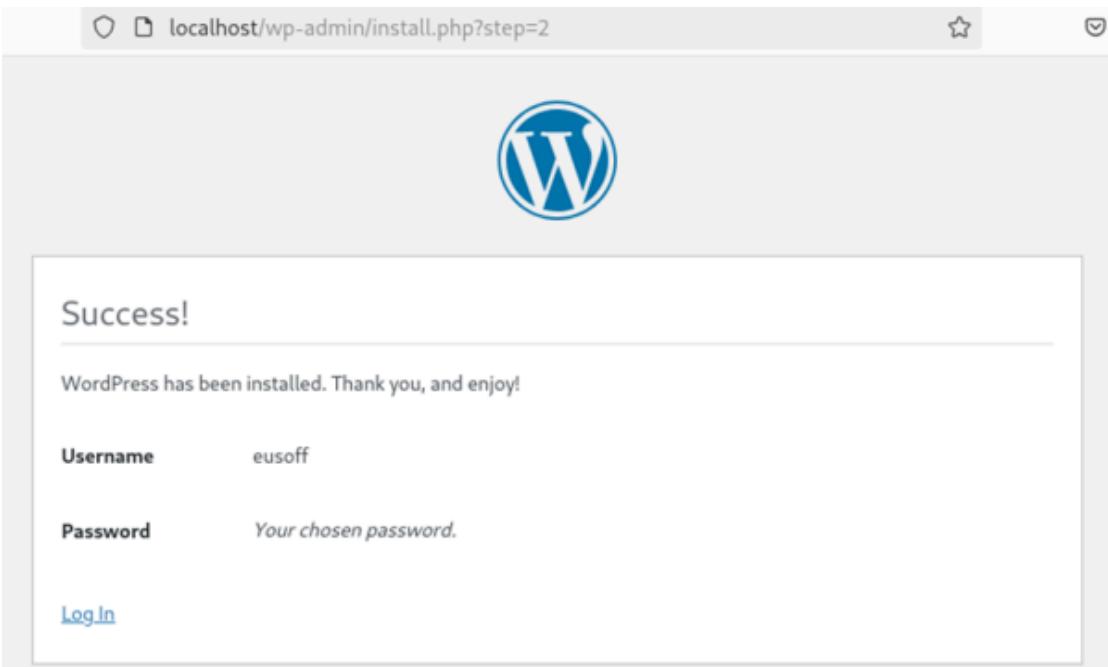
**Password**  N8 .hwsv9q:d?yJx ( Hide)  
Strong

**Your Email**  1211112228@student.mmu.edu.my  
Double-check your email address before continuing.

**Search engine visibility**  Discourage search engines from indexing this site  
It is up to search engines to honor this request.

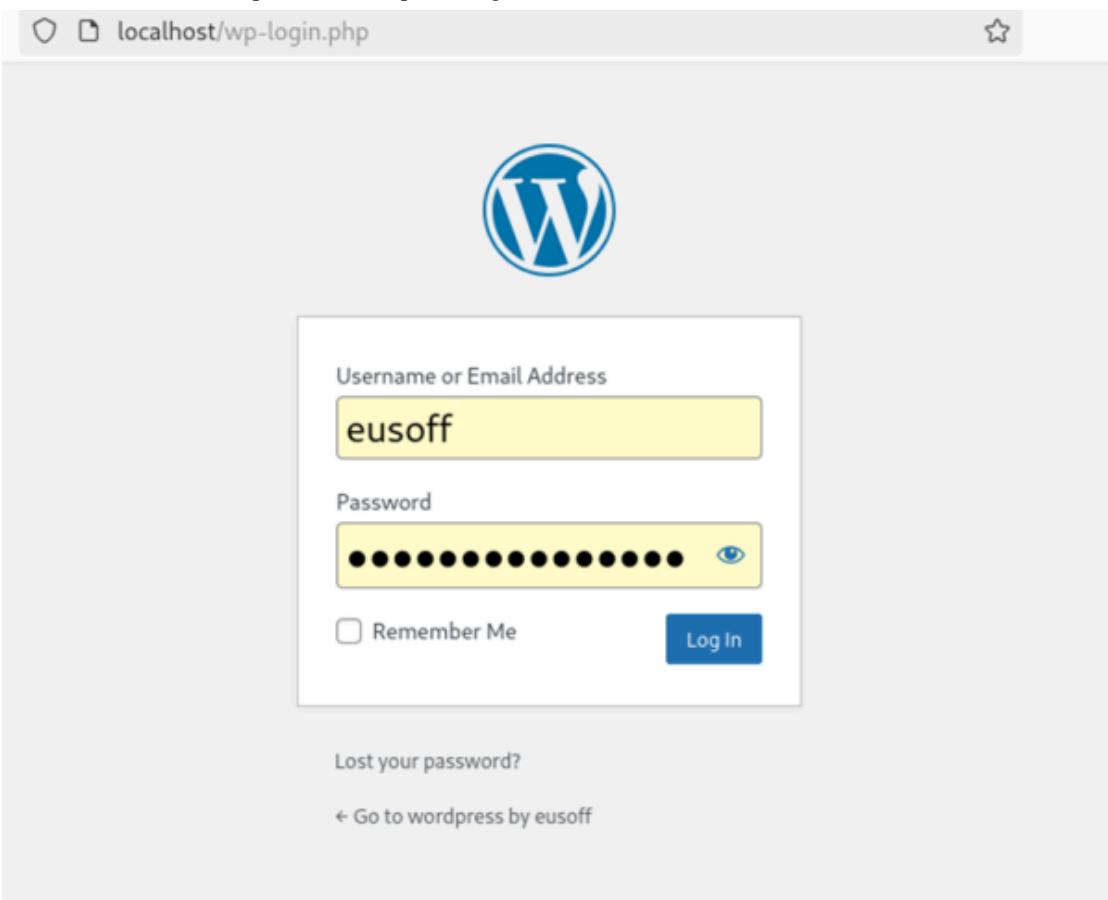
**Install WordPress**

And bam! We now have WordPress working.



Press the [Log In](#) to log in to WordPress Dashboard.

Enter the username and password and press Log In.



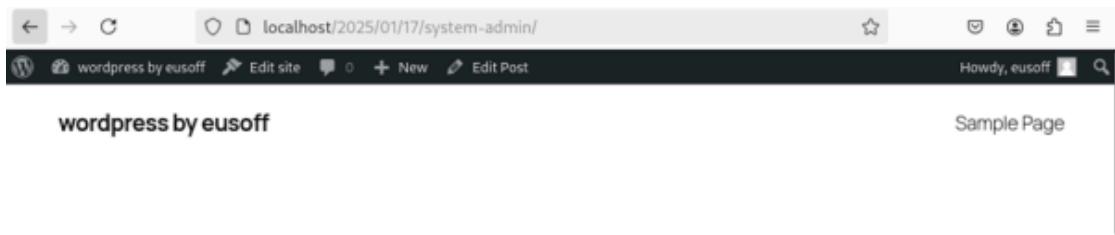
The screenshot shows the WordPress dashboard at [localhost/wp-admin/](http://localhost/wp-admin/). The left sidebar includes links for Home, Updates, Posts, Media, Pages, Comments, Appearance, Plugins, Users, Tools, and Settings. A collapse menu option is also present. The main area features a large "Welcome to WordPress!" message with a "Dismiss" button. Below it, three sections are displayed: "Author rich content with blocks and patterns", "Customize your entire site with block themes", and "Switch up your site's look & feel with Styles". Each section contains descriptive text and a link to "Edit styles".

localhost/wp-admin/upload.php Health Status Quick Draft

Let's say we want to publish something.  
Edit some texts and description. Once done, click publish.

The screenshot shows the WordPress post editor at [localhost/wp-admin/post-new.php](http://localhost/wp-admin/post-new.php). The title "SYSTEM ADMIN" is entered. The rich text editor toolbar includes icons for bold, italic, underline, and other styling options. The right-hand sidebar displays the Block Editor interface, showing the "Post" tab selected. It includes sections for Paragraph (with a description of starting with the basic building block of narrative), Styles (with options for Default, Display, Subtitle, and Annotation), Color (with Text and Background options), and Typography (with size settings from S to XXL). The status bar at the bottom indicates "SYSTEM ADMIN · Post" and "Ctrl+K we draft".

A sample of published post.



## SYSTEM ADMIN

Written by [eusoff](#) in [Uncategorized](#)

success install wordpress.

check out this website everyday for updates!

The post we had posted just now is now in the main WordPress home page.

A screenshot of a web browser displaying the main WordPress homepage. The address bar shows 'localhost'. The header includes the WordPress logo, user info 'Howdy, eusoff', and navigation links like 'Edit site', 'New', and 'Edit Post'. The main content area shows a post titled 'Blog' by 'eusoff'. The post content is: 'SYSTEM ADMIN  
success install wordpress.  
check out this website everyday for updates!  
January 11, 2025'. Below this, there is another post titled 'Hello world!' by 'eusoff'. The post content is: 'Welcome to WordPress. This is your first post. Edit or delete it, then start writing!  
January 11, 2025'. At the bottom, there is a footer with the text 'wordpress by eusoff' and a navigation menu with links like 'Blog', 'About', 'FAQs', 'Authors', 'Events', 'Shop', 'Patterns', and 'Themes'.

Congratulations! You have created your very own CMS using WordPress.

cms.txt · Last modified: 2025/01/18 08:46 by 1211112299



## Part 5: Install and Configure Wiki System

This page will show how to install and configure DokuWiki.

**Note:** This is a guide on how to install and configure Wiki on localhost.

---

Below is a step-by-step guide on how to install Dokuwiki through the command line.

1. Before starting, ensure your Debian system is up to date.

```
sudo apt update
```

```
eusoff@vbox:~$ sudo apt update
```

2. If you have not installed Apache and PHP, use the following commands:

```
sudo apt install apache2  
sudo apt install php libapache2-mod-php php-cli php-xml
```

```
eusoff@vbox:~$ sudo apt install apache2
```

```
eusoff@vbox:~$ sudo apt install php libapache2-mod-php php-cli php-xml
```

3. Navigate to web server's root directory

```
cd /var/www/html  
ls
```

```
eusoff@vbox:~$ cd /var/www/html
```

```
eusoff@vbox:/var/www/html$ ls  
index.html  wordpress  wp-config.php
```

4. Get the dokuwiki file from the website.

```
sudo wget https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz  
ls
```

```
eusoff@vbox:/var/www/html$ sudo wget https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
--2025-01-18 10:13:00-- https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
Resolving download.dokuwiki.org (download.dokuwiki.org)... 138.201.137.132, 2a01:4f8:172:3483::2
Connecting to download.dokuwiki.org (download.dokuwiki.org)|138.201.137.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4206676 (4.0M) [application/octet-stream]
Saving to: 'dokuwiki-stable.tgz'

dokuwiki-stable.tgz      100%[=====] 4.01M 1.89MB/s   in 2.1s

2025-01-18 10:13:03 (1.89 MB/s) - 'dokuwiki-stable.tgz' saved [4206676/4206676]
```

```
eusoff@vbox:/var/www/html$ ls
dokuwiki-stable.tgz  index.html  wordpress  wp-config.php
```

5. Extract the downloaded file.

```
sudo tar -xvzf dokuwiki-stable.tgz
ls
```

```
eusoff@vbox:/var/www/html$ sudo tar -xvzf dokuwiki-stable.tgz
eusoff@vbox:/var/www/html$ ls
dokuwiki-2024-02-06b  dokuwiki-stable.tgz  index.html  wordpress  wp-config.php
```

6. Rename the file for quicker access.

```
sudo mv dokuwiki-2024-02-06b dokuwiki
ls
```

```
eusoff@vbox:/var/www/html$ sudo mv dokuwiki-2024-02-06b dokuwiki
eusoff@vbox:/var/www/html$ ls
dokuwiki  dokuwiki-stable.tgz  index.html  wordpress  wp-config.php
```

7. Set the correct permissions:

```
sudo chown -R www-data:www-data /var/www/html/dokuwiki
sudo chmod -R 755 /var/www/html/dokuwiki
```

```
eusoff@vbox:/var/www/html$ sudo chown -R www-data:www-data /var/www/html/dokuwiki
eusoff@vbox:/var/www/html$ sudo chmod -R 755 /var/www/html/dokuwiki
```

8. Configure Apache for DokuWiki

```
sudo nano /etc/apache2/sites-available/dokuwiki.conf
```

```
eusoff@vbox:/var/www/html$ sudo nano /etc/apache2/sites-available/dokuwiki.conf
```

Add the following content to the file:

```
<VirtualHost *:80>
    DocumentRoot /var/www/html/dokuwiki
    <Directory /var/www/html/dokuwiki>
        Options FollowSymLinks
        AllowOverride All
        Require all granted
    </Directory>
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

```
GNU nano 7.2          /etc/apache2/sites-available/dokuwiki.conf *
<VirtualHost *:80>
    DocumentRoot /var/www/html/dokuwiki

    <Directory /var/www/html/dokuwiki>
        Options FollowSymLinks
        AllowOverride All
        Require all granted
    </Directory>

    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

Press Ctrl + X, y, Enter to save.

9. Enable the site and rewrite module:

```
sudo a2ensite dokuwiki.conf
sudo a2enmod rewrite
```

```
eusoff@vbox:/var/www/html$ sudo a2ensite dokuwiki.conf
Enabling site dokuwiki.
To activate the new configuration, you need to run:
    systemctl reload apache2
eusoff@vbox:/var/www/html$ sudo a2enmod rewrite
Module rewrite already enabled
```

10. Restart Apache to apply the changes

```
sudo systemctl restart apache2
```

```
eusoff@vbox:~$ sudo systemctl restart apache2
```

11. Go to localhost and it should be there.

The screenshot shows a DokuWiki interface. At the top, there's a header with a logo, a search bar, and links for 'Recent Changes', 'Media Manager', and 'Sitemap'. Below the header, a 'Trace' link points to 'start'. The main content area displays the message 'This topic does not exist yet' in bold. A note below it says, 'You've followed a link to a topic that doesn't exist yet. If permissions allow, you may create it by clicking on [Create this page](#)'. On the right side, there are icons for edit, history, and navigation. At the bottom, a footer mentions a CC Attribution-Noncommercial-Share Alike 4.0 International license and provides links for 'SYNCHRONIZE', 'DOCUMENTS', 'PHP POWERED', 'W3C HTML5', 'W3C CSS', and 'DOKUWIKI'.

To edit the wiki, go to the pencil and plus icon to edit wiki.

The screenshot shows a DokuWiki edit page for the topic 'TSA6213 - SYSTEM ADMINISTRATION AND MAINTENANCE'. The page title is at the top. Below it, a note says, 'Edit the page and hit Save. See [syntax](#) for Wiki syntax. Please edit the page only if you can [improve](#) it. If you want to test some things, learn to make your first steps on the [playground](#)'. The main content area contains a table with student information:

Student ID	Student Name	Major	Lecture	Lab
1211112228	MUHAMMAD EUSOFF AMINURRASHID BIN SHUKRI	ST	SAM1	1A
1211112319	MUHAMMAD FARIS AIDEL BIN DAHLAN	DCN	SAM1	1A
1211112299	MEGAT NUR HASANAL PUTERA BIN NORRASIDI	DCN	SAM1	1A
1211112300	MUHAMMAD SAHIL QAYYUM BIN MOHD YAHYA	DCN	SAM1	1F

Below the table, a note says, 'Faculty of Information Science and Technology (FIST)'. At the bottom of the edit page, there are buttons for 'Save', 'Preview', and 'Cancel', and a 'Edit summary' field containing '[TSA6213 - SYSTEM ADMINISTRATION AND MAINTENANCE]'. There are also navigation icons for back, forward, and search.

The screenshot shows the final version of the DokuWiki page. The title 'TSA6213 - SYSTEM ADMINISTRATION AND MAINTENANCE' is at the top. Below it, a note says, 'GROUP NAME: GROUP 33'. The main content area displays the same table as the edit page:

Student ID	Student Name	Major	Lecture	Lab
1211112228	MUHAMMAD EUSOFF AMINURRASHID BIN SHUKRI	ST	SAM1	1A
1211112319	MUHAMMAD FARIS AIDEL BIN DAHLAN	DCN	SAM1	1A
1211112299	MEGAT NUR HASANAL PUTERA BIN NORRASIDI	DCN	SAM1	1A
1211112300	MUHAMMAD SAHIL QAYYUM BIN MOHD YAHYA	DCN	SAM1	1F

Below the table, a note says, 'Faculty of Information Science and Technology (FIST)'. At the bottom right, there is an 'Edit' button.

Once everything in the report is done, click **Ctrl + P** to save it as PDF.

The screenshot shows a Microsoft Word document titled "TSA6213 GROUP 1 Debian OS". The document header includes the university logo of Multimedia University (MMU) and the title "TSA6213 - SYSTEM ADMINISTRATION AND MAINTENANCE". Below the title, there is a table of student information:

Student ID	Student Name	Major	Lecture	Lab
1211112228	MUHAMMAD EUSOFF AMINURRAHID BIN SHEKRI	ST	SAMI	1A
1211112319	MUHAMMAD FARIS AIDEL BIN DAHLAN	DCN	SAMI	1A
1211112299	MEGAT NUR HASANAL PUTERA BIN NORRASIDI	DCN	SAMI	1A
1211112300	MUHAMMAD SAHIL QAYYUM BIN MOHD YAHYA	DCN	SAMI	1F

At the bottom of the document, it says "Faculty of Information Science and Technology (FIST)".

The right side of the image shows the "Print" dialog box with the following settings:

- Print**: 1 page
- Destination**: Save as PDF
- Pages**: All
- Layout**: Portrait
- More settings** (dropdown menu)
- Save** and **Cancel** buttons

Now, you can have your own Wiki page to help other users navigate your OS.

wiki.txt · Last modified: 2025/01/18 10:29 by 1211112228



## How to Install Browser

Usually on Linux, there is not much browsers we can install.

In this guide, here is how to install supported browser such as Brave on Debian.

1. Go to preferred browser. If the browser support Linux, it will show the command with installation.  
If you do not have curl installed, check out curl

The screenshot shows the Brave browser's Linux installation page. At the top, there's a navigation bar with links for 'Browser', 'Brave Search', 'Why Brave', 'Search API', and 'Advertise'. On the right side of the header, there are buttons for 'Get Brave' and 'Search the Web'. The main content area has a large purple header with the text 'Installing Brave on Linux'. Below this, there's a section titled 'Install with one command' with a copy-and-paste button. A terminal window shows the command: 'curl -fsS https://dl.brave.com/install.sh | sh'. Below the command, there are links for 'Verify signature' and 'View source', and a URL 'https://laptop-updates.brave.com/download/BRV030'.

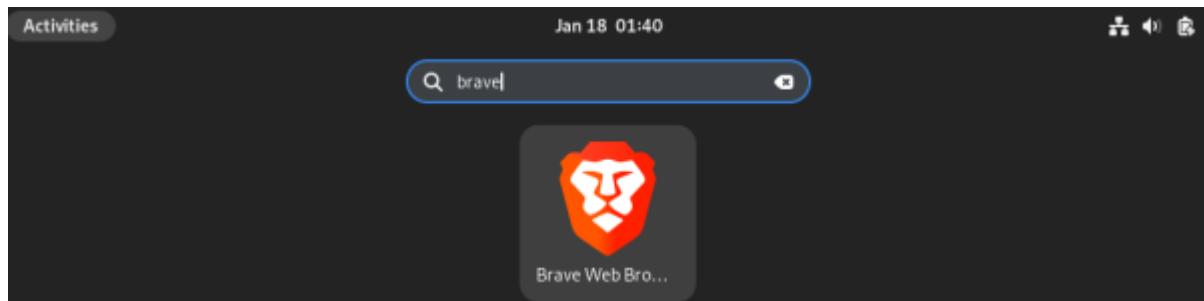
2. Copy and paste the command to terminal.

```
eusoff@vbox:~$ curl -fsS https://dl.brave.com/install.sh | sh
```

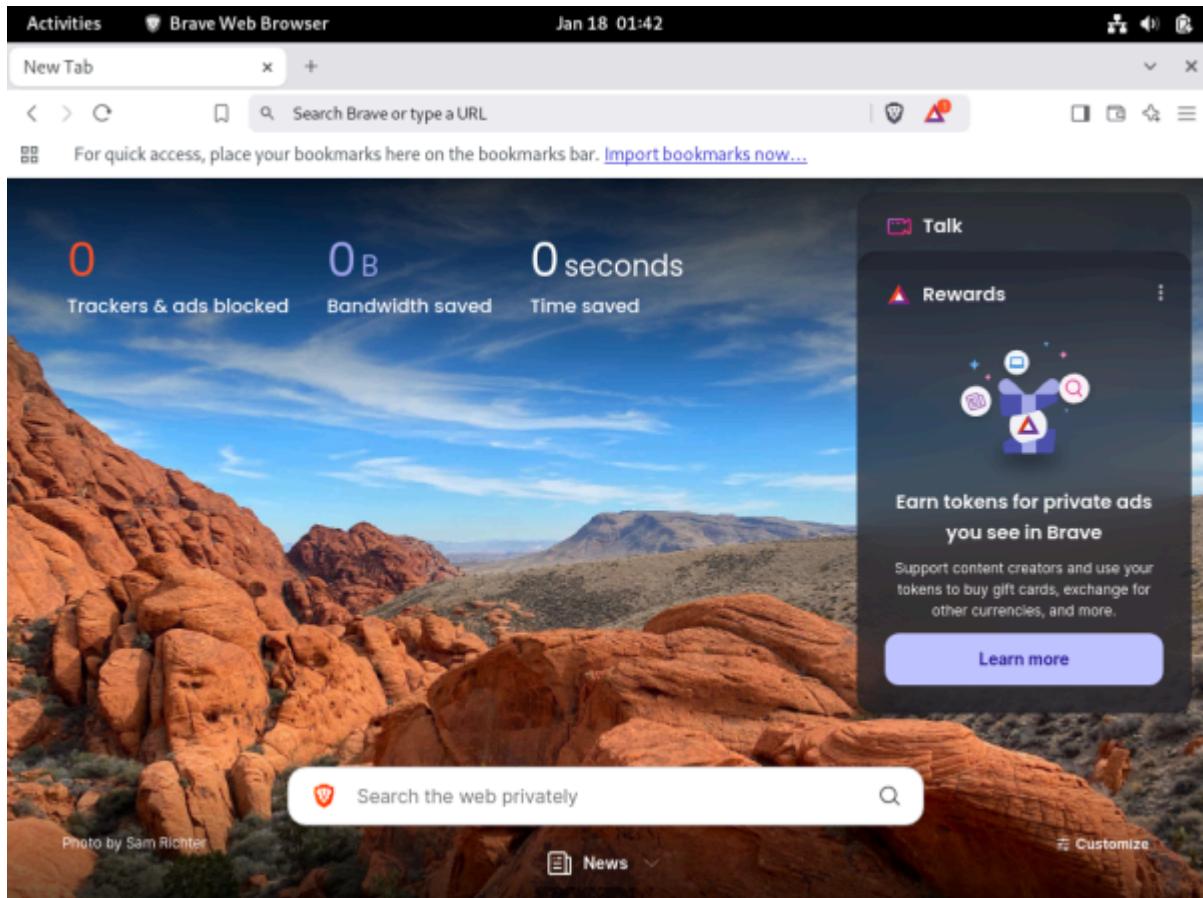
### 3. It will begin installing.

```
eusoff@vbox:~$ curl -fsS https://dl.brave.com/install.sh | sh
+ sudo mkdir -p --mode=0755 /usr/share/keyrings
[sudo] password for eusoff:
+ sudo tee /usr/share/keyrings/brave-browser-archive-keyring.gpg
+ curl -fsS https://brave-browser-apt-release.s3.brave.com/brave-browser-archive-keyring.gpg
+ sudo chmod a+r /usr/share/keyrings/brave-browser-archive-keyring.gpg
+ + sudo tee /etc/apt/sources.list.d/brave-browser-release.list
echo deb [signed-by=/usr/share/keyrings/brave-browser-archive-keyring.gpg] https://brave-browser-apt
-release.s3.brave.com/ stable main
+ sudo apt-get update
Hit:1 http://security.debian.org/debian-security bookworm-security InRelease
Hit:2 http://deb.debian.org/debian bookworm InRelease
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease
Get:4 https://brave-browser-apt-release.s3.brave.com stable InRelease [7,547 B]
Get:5 https://brave-browser-apt-release.s3.brave.com stable/main amd64 Packages [18.3 kB]
Fetched 25.9 kB in 1s (23.9 kB/s)
Reading package lists... Done
+ sudo apt-get install -y brave-browser
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  brave-keyring fonts-liberation
The following NEW packages will be installed:
  brave-browser brave-keyring fonts-liberation
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 121 MB of archives.
After this operation, 389 MB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bookworm/main amd64 fonts-liberation all 1:1.07.4-11 [828 kB]
```

### 4. Once done, we can just search for the browser



5. Ta daa. You can now use the browser.



---

browser.txt · Last modified: 2025/01/17 17:44 by 1211112228



## Curl Command

curl (short for **Client URL**) is a **command-line tool** and **library** used to transfer data to or from a server using various network protocols. It is one of the most widely used tools for interacting with web services, APIs, and other network resources. curl supports a wide range of protocols, including HTTP, HTTPS, FTP, FTPS, SCP, SFTP, and more.

---

How to install curl on Debian:

1. Make sure everything is updated

```
sudo apt update
```

2. Install curl

```
sudo apt install curl -y
```

3. Verify the installation

```
curl --version
```

Here is how it will look like after finishing the installation of curl.

```
eusoff@vbox:~$ sudo apt install curl -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  curl
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 315 kB of archives.
After this operation, 500 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian bookworm/main amd64 curl amd64 7.88.1-10+deb12u8 [315 kB]
Fetched 315 kB in 0s (2,868 kB/s)
Selecting previously unselected package curl.
(Reading database ... 183830 files and directories currently installed.)
Preparing to unpack .../curl_7.88.1-10+deb12u8_amd64.deb ...
Unpacking curl (7.88.1-10+deb12u8) ...
Setting up curl (7.88.1-10+deb12u8) ...
Processing triggers for man-db (2.11.2-2) ...
eusoff@vbox:~$ curl --version
curl 7.88.1 (x86_64-pc-linux-gnu) libcurl/7.88.1 OpenSSL/3.0.15 zlib/1.2.13 brotli/1.0.9 zstd/1.5.4
libidn2/2.3.3 libpsl/0.21.2 (+libidn2/2.3.3) libssh2/1.10.0 nghttp2/1.52.0 librtmp/2.3 OpenLDAP/2.5.
13
Release-Date: 2023-02-20, security patched: 7.88.1-10+deb12u8
Protocols: dict file ftp ftps gopher gophers http https imap imaps ldap ldaps mqtt pop3 pop3s rtmp rtsp scp sftp smb smbs smtp smtps telnet tftp
Features: alt-svc AsynchDNS brotli GSS-API HSTS HTTP2 HTTPS-proxy IDN IPv6 Kerberos Largefile libz NTLM NTLM_WB PSL SPNEGO SSL threadsafe TLS-SRP UnixSockets zstd
```

---

If you no longer need curl, you can remove it with:

```
sudo apt remove curl -y
```



## Tasksel

Tasksel is a Debian/Ubuntu tool that installs multiple related packages as a co-ordinated “task” onto your system.

This function is similar to that of meta-packages, and, in fact, most of the tasks available from tasksel are also available as meta-packages from the Ubuntu package managers (such as Synaptic Package Manager or KPackageKit).

This page shows useful information about tasksel.

---

### Installing tasksel

In case your Debian does not come installed with tasksel. Generally, Debian has tasksel preinstalled.

---

1. Open your terminal.
2. Type this command to install tasksel:

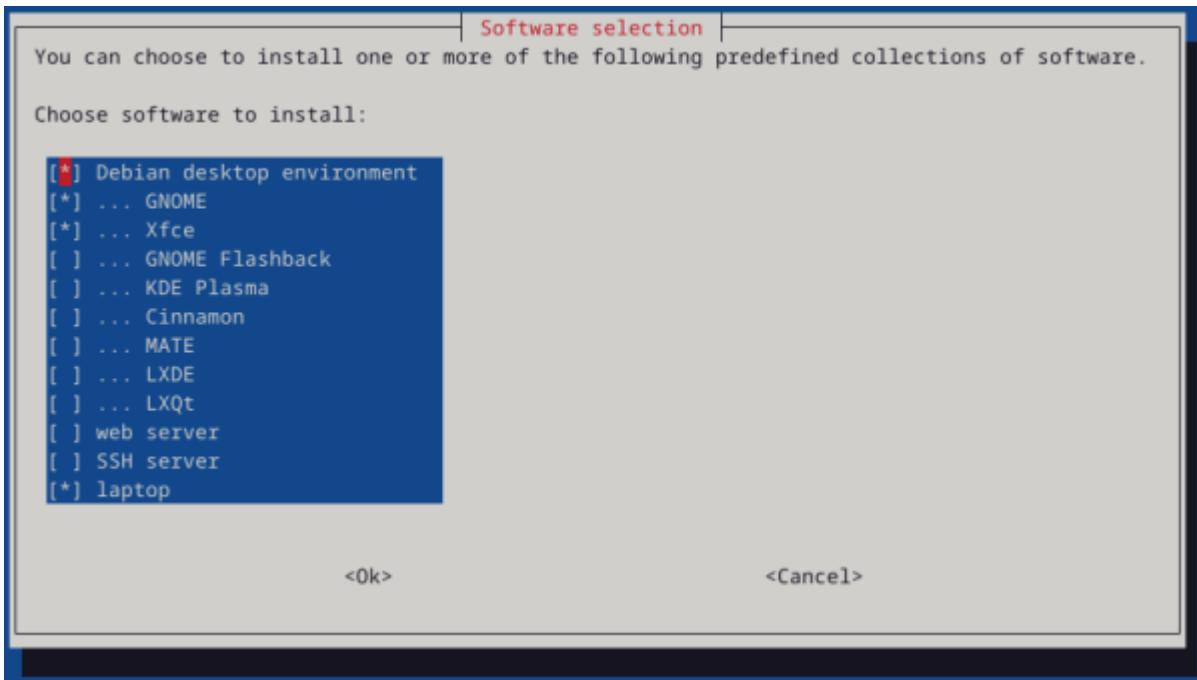
```
sudo apt install tasksel
```

```
megat@vbox:~$ sudo apt install tasksel
[sudo] password for megat:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
tasksel is already the newest version (3.73).
```

tasksel is already installed with the newest version on my Debian.

3. Once installed, you can open up the menu using the command:

```
sudo tasksel
```



## tasksel Commands

Commands that may help you with using tasksel.

- List available tasks. *i* prefixes installed tasks, *u* prefixes uninstalled tasks.

```
tasksel --list-task
```

```
megat@vbox:~$ tasksel --list-task
i desktop      Debian desktop environment
i gnome-desktop GNOME
i xfce-desktop Xfce
u gnome-flashback-desktop   GNOME Flashback
u kde-desktop   KDE Plasma
u cinnamon-desktop   Cinnamon
u mate-desktop   MATE
u lxde-desktop   LXDE
u lxqt-desktop   LXQt
u web-server     web server
u ssh-server     SSH server
i laptop        laptop
```

- Inspect packages in a task.

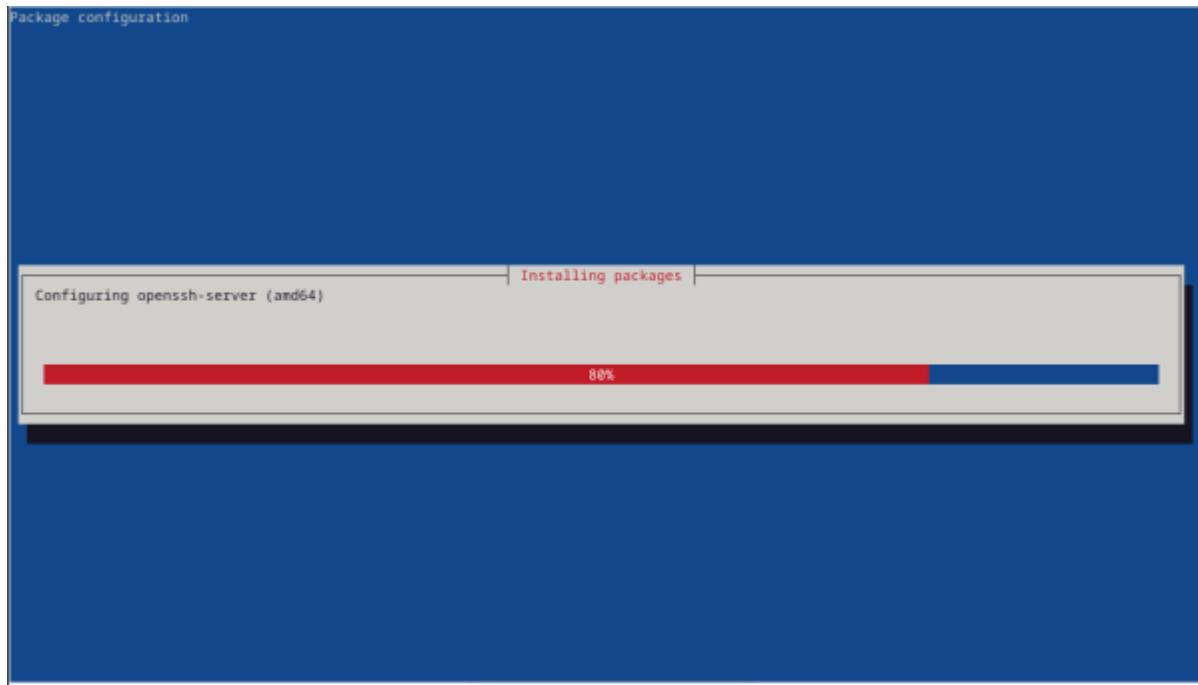
```
tasksel --task-packages ssh-server
```

```
megat@vbox:~$ tasksel --task-packages ssh-server
task-ssh-server
```

- Install tasks using terminal instead of going through menu.

```
sudo tasksel install ssh-server
```

```
megat@vbox:~$ sudo tasksel install ssh-server
```



---

Now you have the basic knowledge of using tasksel. Click this [link](#) to see an example of using tasksel to install a new desktop environment.

---

tasksel.txt · Last modified: 2025/01/18 09:20 by 1211112299

# Root and Superuser

## Enabling root and superuser on Debian

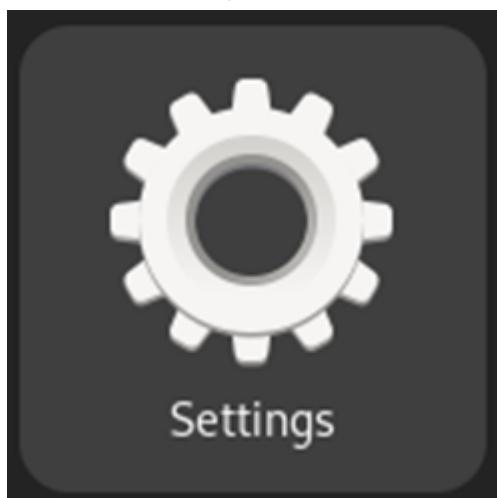
This section will show you how to enable root account and superuser on Debian.

---

1. Click on Activities on the top left corner of the screen. You can also press the Windows key as a shortcut.



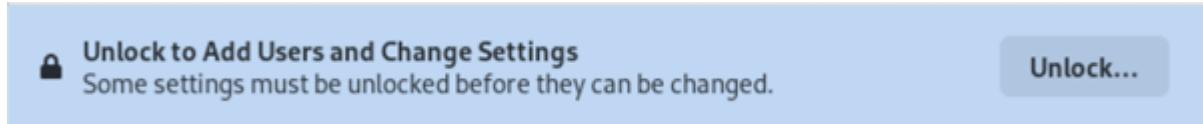
2. Search for Settings and click on it.



3. On the left pane, scroll down or search for Users and click on it.



4. On the blue bar at the top of the page, click Unlock.



5. Then, enter your user password as the Administrator's password. In my case, it is 1211112299. Once that is done, you should notice that the blue bar is gone.
- 

You have successfully enabled root and superusers on your Debian! Click this [link](#) to know how to add your accounts to sudo group.



## User Management

User management in Linux is a critical aspect of system administration. It involves creating, modifying, and managing user accounts and groups to ensure proper access control, system security, and resource allocation. Each user is assigned a unique identity, along with permissions and restrictions.

---

Add user:

```
adduser
```

Delete user:

```
deluser
```

Add group:

```
groupadd
```

Delete group:

```
groupdel
```

Change user password:

```
passwd
```

Lock/unlock user password:

```
passwd -l  
passwd -u
```

Switch user:

```
su
```

Show user information:

```
id
```

---

- **Change user password**

1. Type this command to change user password.

```
sudo passwd username
```

2. Enter new password. Then, you will be ask to retype your new password.

3. Your password is changed successfully.

```
root@vbox:/home/vboxuser# sudo passwd aidel
New password:
Retype new password:
passwd: password updated successfully
root@vbox:/home/vboxuser#
```

- Manage password aging and expiration

The `sudo chage` command is used in Linux to manage password aging and expiration policies for a user. It allows administrators to define and control how long a user's password remains valid, enforce password expiration, and specify warnings before password expiration.

The syntax is: `sudo chage [option] username`

1. Displays the current password aging information.

```
sudo chage -l username
```

```
root@vbox:/home/vboxuser# sudo chage -l aidel
Last password change : Jan 16, 2025
Password expires     : never
Password inactive   : never
Account expires      : never
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires: 7
root@vbox:/home/vboxuser#
```

2. Set the account expiration date.

```
sudo chage -E 2025-12-31 username
```

```
root@vbox:/home/vboxuser# sudo chage -E 2025-1-17 aidel
root@vbox:/home/vboxuser# sudo chage -l aidel
Last password change : Jan 16, 2025
Password expires     : never
Password inactive   : never
Account expires      : Jan 17, 2025
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires: 7
root@vbox:/home/vboxuser#
```

The account will be disabled after this 2025-12-31. To set account expiration to **never**:

```
sudo chage -E -1 username
```

3. Set a warning to the user 7 days before the password expires.

```
sudo chage -W 7 username
```

```
root@vbox:/home/vboxuser# sudo chage -E 2025-1-17 aidel
root@vbox:/home/vboxuser# sudo chage -l aidel
Last password change : Jan 16, 2025
Password expires     : never
Password inactive    : never
Account expires       : Jan 17, 2025
Minimum number of days between password change : 0
Maximum number of days between password change : 99999
Number of days of warning before password expires : 7
root@vbox:/home/vboxuser#
```

---

Good user management is essential to make sure your system stay secure from unknown intruders.

---

usermanagement.txt · Last modified: 2025/01/19 03:31 by 1211112228



# Install and Configure Content Management System & Wiki System

This page will show how to install the WordPress Content Management System.

**Note: This is a guide on how to install and configure CMS and Wiki System on localhost.**

---

To install and configure WordPress and DokuWiki on a Debian system, each with its own directory (localhost/wordpress and localhost/dokuwiki), follow these steps:

1. Before starting, ensure your Debian system is up to date.

```
sudo apt update  
sudo apt upgrade
```

```
eusoff@vbox:~$ sudo apt update  
Hit:1 http://security.debian.org/debian-security bookworm-security InRelease  
Hit:2 http://deb.debian.org/debian bookworm InRelease  
Hit:3 http://deb.debian.org/debian bookworm-updates InRelease  
Hit:4 https://brave-browser-apt-release.s3.brave.com stable InRelease  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
All packages are up to date.  
eusoff@vbox:~$ sudo apt upgrade  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
Calculating upgrade... Done  
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

2. Install packages needed for both CMS and Wiki.

```
sudo apt install apache2 mariadb-server php php-mysql php-xml php-gd php-mbstring php-curl unzip -y
```

```
eusoff@vbox:~$ sudo apt install apache2 mariadb-server php php-mysql php-xml php-gd php-mbstring php-curl unzip -y  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
unzip is already the newest version (6.0-28).  
unzip set to manually installed.  
The following additional packages will be installed:  
apache2-data apache2-utils galera-4 gawk libapache2-mod-php8.2 libcgi-fast-perl libcgi-pm-perl libconfig-inifiles-perl  
libdaxctl1 libdbd-mariadb-perl libdbi-perl libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-template-perl libmariadb3  
libndctl6 libpmem1 libsigsegv2 libtrem-readkey-perl liburing2 mariadb-client mariadb-client-core mariadb-common  
mariadb-plugin-provider-bz2 mariadb-plugin-provider-lz4 mariadb-plugin-provider-lzma mariadb-plugin-provider-lzo  
mariadb-plugin-provider-snappy mariadb-server-core mysql-common php-common php8.2 php8.2-cli php8.2-common php8.2-curl  
php8.2-gd php8.2-mbstring php8.2-mysql php8.2-ocache php8.2-readline php8.2-xml pv rsync socat  
Suggested packages:  
apache2-doc apache2-suexec-pristine | apache2-suexec-custom gawk-doc php-pear liblmbm-perl libnet-daemon-perl  
libsql-statement-perl libipc-sharedcache-perl mailx mariadb-test netcat-openbsd doc-base python3-braceexpand  
The following NEW packages will be installed:  
apache2 apache2-data apache2-utils galera-4 gawk libapache2-mod-php8.2 libcgi-fast-perl libcgi-pm-perl
```

- **Apache:** Web server.
- **MariaDB:** Database server.
- **PHP:** Scripting language for WordPress and DokuWiki.

- **unzip**: To extract WordPress and DokuWiki files.

### 3. Secure your MariaDB installation and create databases for WordPress and DokuWiki.

```
sudo mysql_secure_installation
```

Follow the prompts to set a root password and secure the database.

```
eusoff@vbox:~$ sudo mysql_secure_installation
```

```
NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY!
```

```
In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.
```

```
Enter current password for root (enter for none):
OK, successfully used password, moving on...
```

```
Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.
```

### 4. Log in to MariaDB.

```
sudo mysql -u root -p
```

```
eusoff@vbox:~$ sudo mysql -u root -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 34
Server version: 10.11.6-MariaDB-0+deb12u1 Debian 12

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]>
```

### 5. Create database and users:

```
CREATE DATABASE wordpress;
CREATE DATABASE dokuwiki;

CREATE USER 'eusoffwp'@'localhost' IDENTIFIED BY 'eusoff*A';
CREATE USER 'eusoffdw'@'localhost' IDENTIFIED BY 'eusoff*A';

GRANT ALL PRIVILEGES ON wordpress.* TO 'eusoffwp'@'localhost';
GRANT ALL PRIVILEGES ON dokuwiki.* TO 'eusoffdw'@'localhost';

FLUSH PRIVILEGES;
EXIT;
```

```
MariaDB [(none)]> CREATE DATABASE wordpress;
Query OK, 1 row affected (0.000 sec)

MariaDB [(none)]> CREATE DATABASE dokuwiki;
Query OK, 1 row affected (0.000 sec)

MariaDB [(none)]> CREATE USER 'eusoffwp'@'localhost' IDENTIFIED BY 'eusoff*A';
Query OK, 0 rows affected (0.004 sec)

MariaDB [(none)]> CREATE USER 'eusoffdw'@'localhost' IDENTIFIED BY 'eusoff*A';
Query OK, 0 rows affected (0.004 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON wordpress.* TO 'eusoffwp'@'localhost';
Query OK, 0 rows affected (0.005 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON dokuwiki.* TO 'eusoffdw'@'localhost';
Query OK, 0 rows affected (0.004 sec)

MariaDB [(none)]> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.000 sec)

MariaDB [(none)]> EXIT;
Bye
```

## WordPress

### 6. Download WordPress.

```
cd /var/www/html
sudo wget https://wordpress.org/latest.tar.gz
```

```
eusoff@vbox:~$ cd /var/www/html
```

```
eusoff@vbox:/var/www/html$ sudo wget https://wordpress.org/latest.tar.gz
--2025-01-18 19:56:56-- https://wordpress.org/latest.tar.gz
Resolving wordpress.org (wordpress.org)... 198.143.164.252
Connecting to wordpress.org (wordpress.org)|198.143.164.252|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 26931653 (26M) [application/octet-stream]
Saving to: 'latest.tar.gz'

latest.tar.gz          100%[=====] 25.68M  7.19MB/s    in 5.2s

2025-01-18 19:57:03 (4.92 MB/s) - 'latest.tar.gz' saved [26931653/26931653]
```

### 7. Extract WordPress.

```
sudo tar -xvzf latest.tar.gz
```

```
eusoff@vbox:/var/www/html$ sudo tar -xvzf latest.tar.gz
wordpress/
wordpress/xmlrpc.php
wordpress/wp-blog-header.php
wordpress/readme.html
wordpress/wp-signup.php
wordpress/index.php
wordpress/wp-cron.php
wordpress/wp-config-sample.php
wordpress/wp-login.php
```

8. Remove the .tar file.

```
sudo rm latest.tar.gz
```

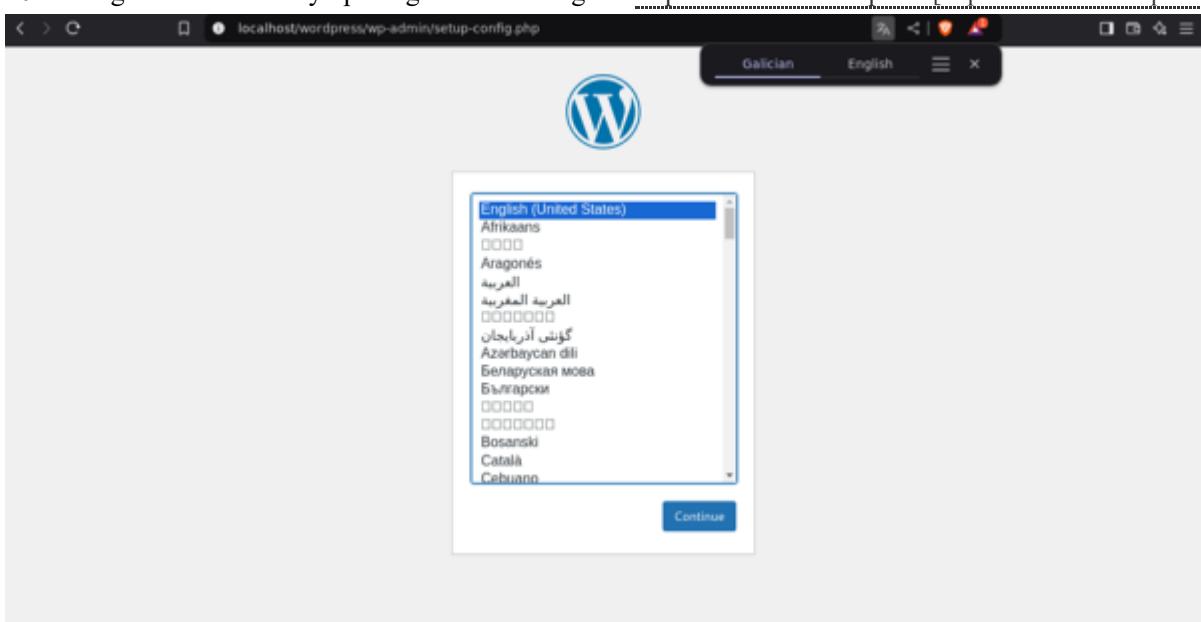
```
eusoff@vbox:/var/www/html$ sudo rm latest.tar.gz
```

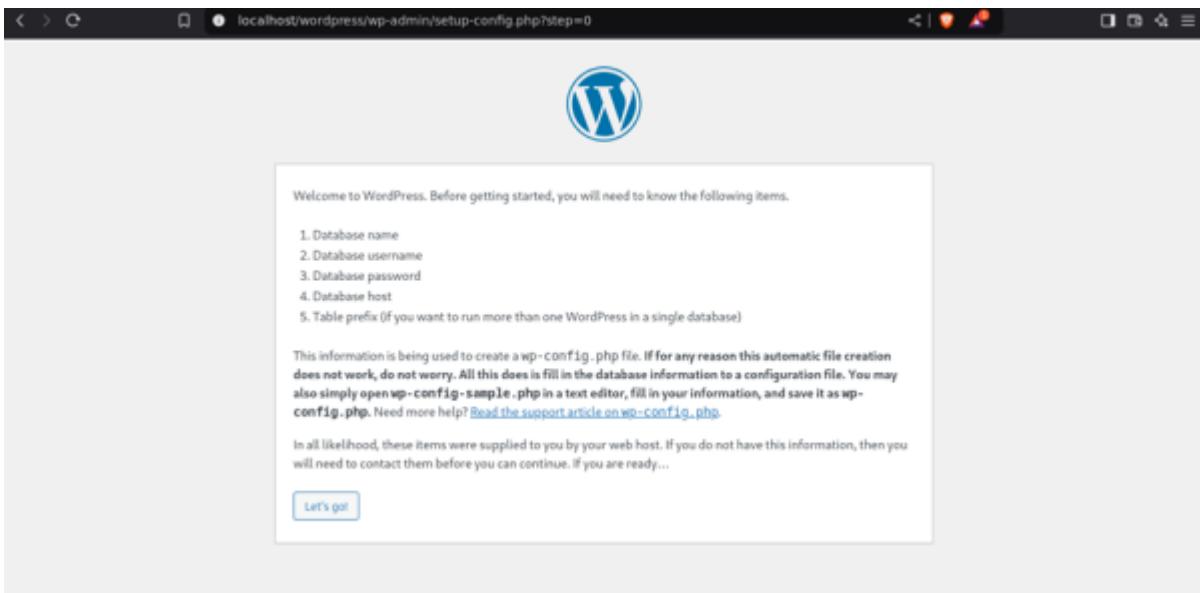
9. Set permissions of WordPress directory

```
sudo chown -R www-data:www-data /var/www/html/wordpress
sudo chmod -R 755 /var/www/html/wordpress
```

```
eusoff@vbox:/var/www/html$ sudo chown -R www-data:www-data /var/www/html/wordpress
eusoff@vbox:/var/www/html$ sudo chmod -R 755 /var/www/html/wordpress
```

10. Configure WordPress by opening browser and go to <http://localhost/wordpress> [<http://localhost/wordpress>].





## 11. Follow the WordPress installation wizard.

- Database Name: **wordpress**
- Username: **eusoffwp**
- Password: **eusoff\*A**
- Database Host: **localhost**
- Table Prefix: **wp\_**

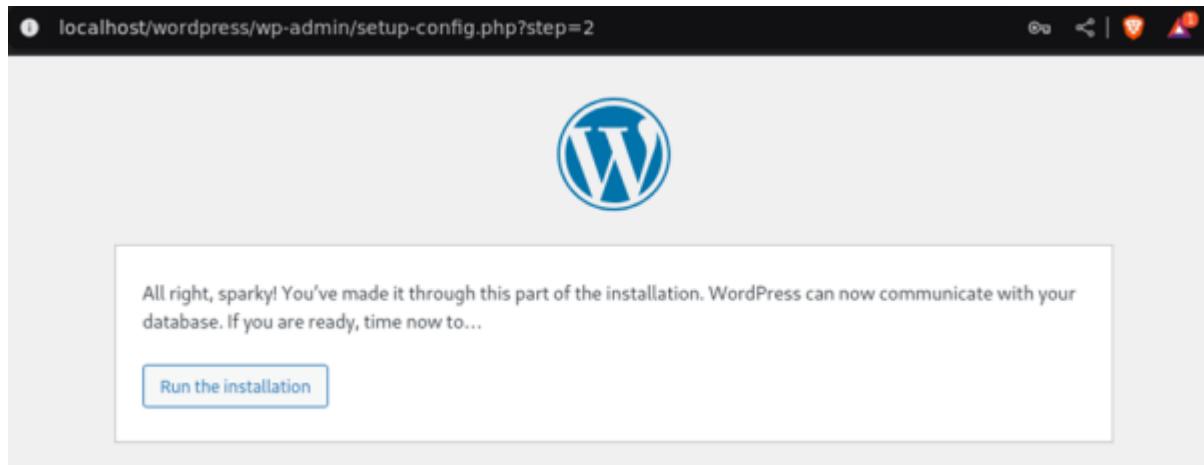
Click Submit

A screenshot of a web browser showing the "Database Connection Details" step of the WordPress setup wizard. The URL in the address bar is "localhost/wordpress/wp-admin/setup-config.php?step=1". The page has a large blue "W" logo. A message says: "Below you should enter your database connection details. If you are not sure about these, contact your host." It lists five fields with their current values:

- Database Name:**  (Note: The placeholder "The name of the database you want to use with WordPress." is visible behind the input field.)
- Username:**  (Note: The placeholder "Your database username." is visible behind the input field.)
- Password:**  (Note: The placeholder "Your database password." is visible behind the input field. A "Show" link is next to the input field.)
- Database Host:**  (Note: The placeholder "You should be able to get this info from your web host, if localhost does not work." is visible behind the input field.)
- Table Prefix:**  (Note: The placeholder "If you want to run multiple WordPress installations in a single database, change this." is visible behind the input field.)

A "Submit" button is at the bottom left.

12. Run the Installation.



13. Fill up information needed.

The screenshot shows a browser window with the URL `localhost/wordpress/wp-admin/install.php?language=en_US`. The title bar says "Welcome to the famous five-minute WordPress installation process! Just fill in the information below and you'll be on your way to using the most extendable and powerful personal publishing platform in the world." Below this, a section titled "Information needed" asks for site information. The fields filled in are:

Site Title	WordPress on Debian
Username	eusoffwp
Password	eusoff*A1211112228
Your Email	1211112228@student.mmu.edu.my
Search engine visibility	<input type="checkbox"/> Discourage search engines from indexing this site It is up to search engines to honor this request.

A green bar at the bottom of the password field indicates it is "Strong". An "Install WordPress" button is at the bottom left. The browser's address bar and various icons are at the top.

Once done, Install WordPress.

Once it is installed, it will show success. Press Log In.

localhost/wordpress/wp-admin/install.php?step=2

|



**Success!**

---

WordPress has been installed. Thank you, and enjoy!

**Username** eusoffwp

**Password** *Your chosen password.*

[Log In](#)

14. Enter the username and password setup-ed in step 13 and press Log In.

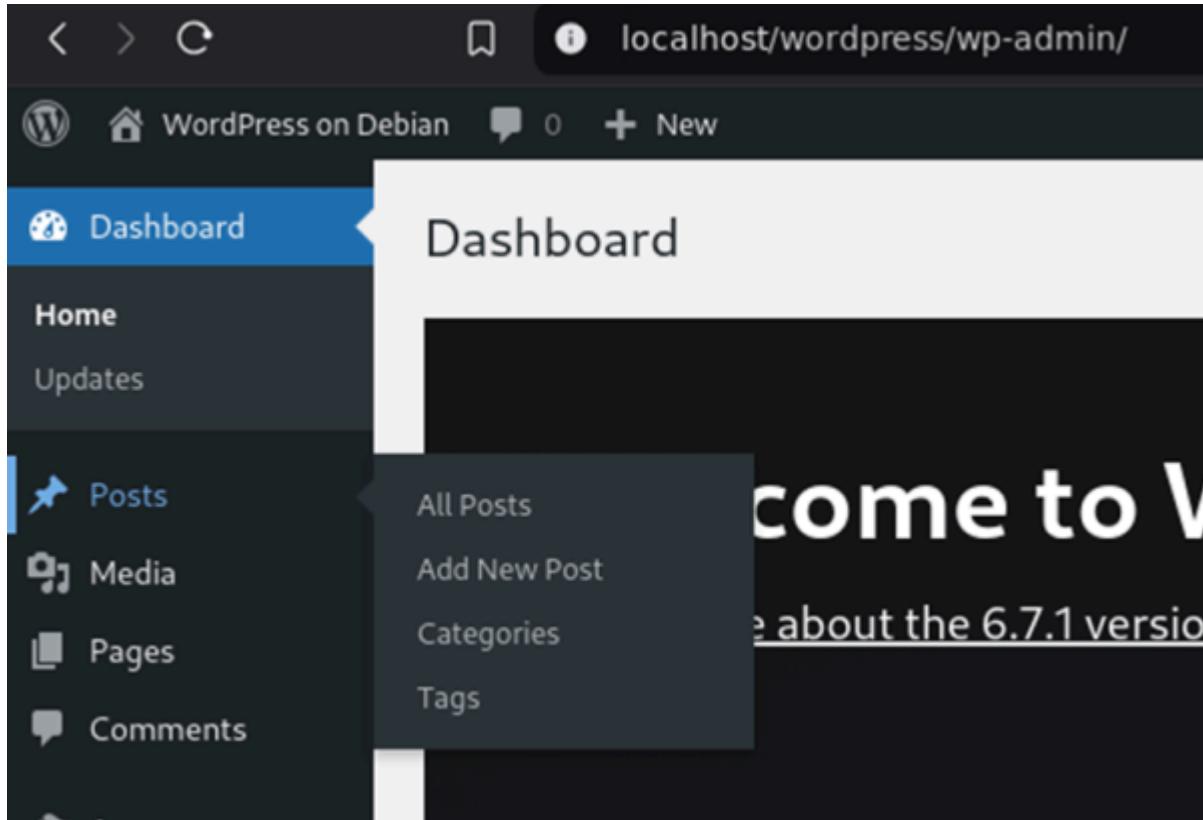


Username or Email Address

Password

Remember Me

15. Go to Posts and Add New Post.



Click Publish.

A screenshot of the 'post-new.php' editor screen. The title field contains 'WordPress on Debian?'. The content area has a rich text editor toolbar and the text 'by 1211112228, Eusoff'. On the right, there's a block editor panel with tabs for 'Post' (selected) and 'Block'. Under 'Post', there's a 'Paragraph' block with a description: 'Start with the basic building block of all narrative.' Under 'Block', there are sections for 'Styles' (Default, Display, Subtitle, Annotation), 'Color' (Text, Background), and 'Typography' (size S, M, L, XL, XXL).



WordPress on Debian

Sample Page

## Blog

### WordPress on Debian?

System Admin and Maintenance

by 1211112228, Eusoff.

January 18, 2025

It will now be displayed on localhost/wordpress main page.

```
sudo wget https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
--2025-01-18 20:06:46-- https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
Resolving download.dokuwiki.org (download.dokuwiki.org)... 138.201.137.132, 2a01:4f8:172:3483::2
Connecting to download.dokuwiki.org (download.dokuwiki.org)|138.201.137.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4206676 (4.0M) [application/octet-stream]
Saving to: 'dokuwiki-stable.tgz'

dokuwiki-stable.tgz          100%[=====] 4.01M  1.79MB/s   in 2.2s

2025-01-18 20:06:49 (1.79 MB/s) - 'dokuwiki-stable.tgz' saved [4206676/4206676]
```

## DokuWiki

16. Go to /var/www/html directory

```
cd /var/www/html
```

```
eusoff@vbox:~$ cd /var/www/html
```

17. Download DokuWiki.

```
sudo wget https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
```

```
sudo wget https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
--2025-01-18 20:06:46-- https://download.dokuwiki.org/src/dokuwiki/dokuwiki-stable.tgz
Resolving download.dokuwiki.org (download.dokuwiki.org)... 138.201.137.132, 2a01:4f8:172:3483::2
Connecting to download.dokuwiki.org (download.dokuwiki.org)|138.201.137.132|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4206676 (4.0M) [application/octet-stream]
Saving to: 'dokuwiki-stable.tgz'

dokuwiki-stable.tgz          100%[=====] 4.01M  1.79MB/s   in 2.2s

2025-01-18 20:06:49 (1.79 MB/s) - 'dokuwiki-stable.tgz' saved [4206676/4206676]
```

18. Extract the DokuWiki file.

```
sudo tar -xvzf dokuwiki-stable.tgz
```

```
eusoff@vbox:/var/www/html$ sudo tar -xvzf dokuwiki-stable.tgz
dokuwiki-2024-02-06b/
dokuwiki-2024-02-06b/.htaccess.dist
dokuwiki-2024-02-06b/bin/
dokuwiki-2024-02-06b/bin/wantedpages.php
dokuwiki-2024-02-06b/bin/.htaccess
dokuwiki-2024-02-06b/bin/gittool.php
dokuwiki-2024-02-06b/bin/indexer.php
```

19. List directory and rename the file.

```
ls
sudo mv dokuwiki-2024-02-06b dokuwiki
ls
```

```
eusoff@vbox:/var/www/html$ ls
dokuwiki-2024-02-06b  dokuwiki-stable.tgz  index.html  wordpress
eusoff@vbox:/var/www/html$ sudo mv dokuwiki-2024-02-06b dokuwiki
eusoff@vbox:/var/www/html$ ls
dokuwiki  dokuwiki-stable.tgz  index.html  wordpress
```

20. Remove the unextracted DokuWiki file.

```
sudo rm dokuwiki-stable.tgz
```

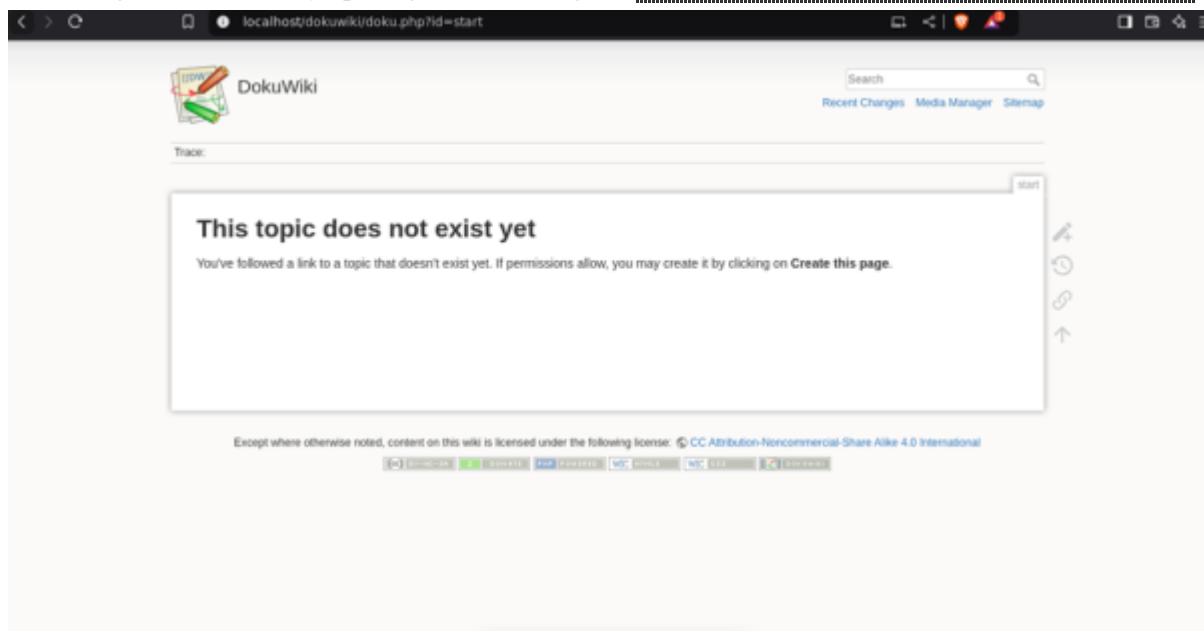
```
eusoff@vbox:/var/www/html$ sudo rm dokuwiki-stable.tgz
```

21. Set permissions.

```
sudo chown -R www-data:www-data /var/www/html/dokuwiki  
sudo chmod -R 755 /var/www/html/dokuwiki
```

```
eusoff@vbox:/var/www/html$ sudo chown -R www-data:www-data /var/www/html/dokuwiki  
eusoff@vbox:/var/www/html$ sudo chmod -R 755 /var/www/html/dokuwiki
```

22. Configure DokuWiki by opening browser and go to <http://localhost/dokuwiki> [<http://localhost/dokuwiki>]





## Directory and File Management

List directory contents:

```
ls
```

Change directory:

```
cd
```

Print working directory:

```
pwd
```

Create directory:

```
mkdir
```

Remove directory:

```
rmdir
```

Copy files/directories:

```
cp
```

Move/rename files/directories:

```
mv
```

Concatenate and display file content:

```
cat
```

Create empty file:

```
touch
```

Remove files/directories:

```
rm
```

Find files in the system:

```
find
```

Locate a command:

```
which
```

Estimate file space usage:

```
du
```

Report file system disk space usage:

```
df
```



## Add Sudoers without Sudo

Let's say you have just freshly installed your new Linux OS on a brand new PC or VM. After you setup the username and password, you encountered a problem when trying to install a new software. The problem is you could not use sudo.

```
eusoff@vbox:~$ sudo apt-get curl -fsS https://dl.brave.com/install.sh | sh
[sudo] password for eusoff:
eusoff is not in the sudoers file.
```

Here is a guide on how to add yourself into sudoers. Make sure to follow the instructions on this first to prevent any errors.

---

1. Open terminal.
2. Type the following command and enter the root password.

```
su root
```

```
eusoff@vbox:~$ su root
Password:
```

3. You will now be in root.

```
root@vbox:/home/eusoff# █
```

4. Type this command and press Enter.

```
sudo visudo
```

```
root@vbox:/home/eusoff# sudo visudo█
```

5. ./etc/sudoers.tmp file will be opened and this is what it will look like.

The screenshot shows a terminal window titled "GNU nano 7.2" with the file "/etc/sudoers.tmp" open. The file contains the following content:

```
# This file MUST be edited with the 'visudo' command as root.
#
# Please consider adding local content in /etc/sudoers.d/ instead of
# directly modifying this file.
#
# See the man page for details on how to write a sudoers file.
#
Defaults env_reset
Defaults mail_badpass
Defaults secure_path="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:>
#
# This fixes CVE-2005-4890 and possibly breaks some versions of kdesu
# (#1011624, https://bugs.kde.org/show_bug.cgi?id=452532)
Defaults use_pty
#
# This preserves proxy settings from user environments of root
# equivalent users (group sudo)
#Defaults:%sudo env_keep += "http_proxy https_proxy ftp_proxy all_proxy no_proxy"
[ Read 54 lines ]
```

6. Scroll down until you see this.

#User Privilege Specification

```
# User privilege specification
root    ALL=(ALL:ALL) ALL

# Allow members of group sudo to execute any command
%sudo   ALL=(ALL:ALL) ALL

# See sudoers(5) for more information on "@include" directives:
```

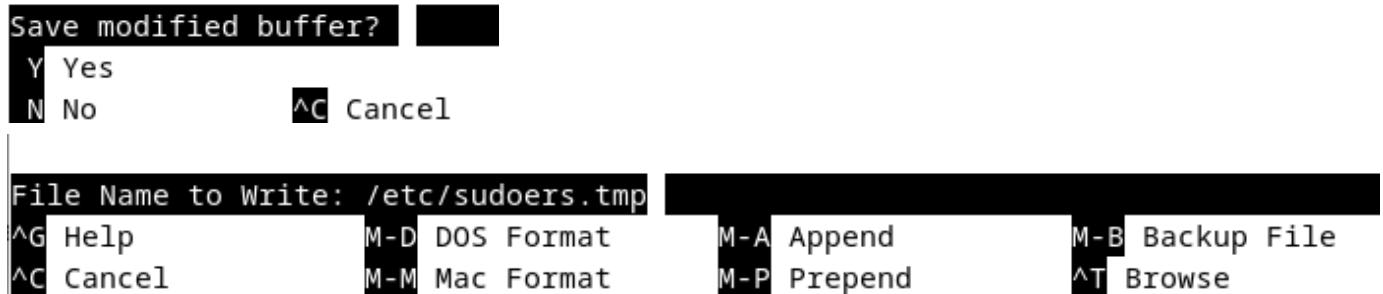
@includedir /etc/sudoers.d

7. Add the following line {username} ALL=(ALL:ALL) ALL at the back. In my scenario:

eusoff ALL=(ALL:ALL) ALL

```
# User privilege specification
root    ALL=(ALL:ALL) ALL
eusoff ALL=(ALL:ALL) ALL
# Allow members of group sudo to ex
%sudo   ALL=(ALL:ALL) ALL
```

8. Press **Ctrl + X** to save, when asked to save modified buffer, press **Y** and then **Enter**.



9. Now your username will have sudo permissions.

```
[eusoff@vbox:~]$ sudo apt update
[sudo] password for eusoff:
Hit:1 http://deb.debian.org/debian bookworm InRelease
Hit:2 http://deb.debian.org/debian bookworm-updates InRelease
Hit:3 http://security.debian.org/debian-security bookworm-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
eusoff@vbox:~$
```

---

Now, you are able to run commands that require sudo permission without going into root!

sudoers.txt · Last modified: 2025/01/18 08:46 by 1211112299



## File Permissions and Ownership

Change file permissions:

`chmod`

Change file ownership:

`chown`

Change group ownership:

`chgrp`

Set default file permissions:

`umask`



# Networking

Display network interfaces:

```
ip a  
nmcli device status
```

Configure network interfaces:

```
ip  
nmcli
```

Test network connectivity:

```
ping
```

Display network connections:

```
netstat
```

Show IP addresses:

```
ip addr show
```

Show active connections:

```
nmcli connection show --active
```

Configure static IP:

```
nmcli  
ip
```

Configure DHCP:

```
nmcli  
ip
```

Synchronize time with NTP:

```
ntpdate  
ntpd
```



# Shell Scripting

Execute shell script:

```
./script.sh  
bash script.sh  
source script.sh
```

Read user input:

```
read
```

Echo text to screen:

```
echo
```

Arithmetic operations:

```
let  
expr
```

Conditional statements:

```
if  
case
```

Loops:

```
for  
while
```

Array operations:

```
declare  
read -a
```

Check file/directory existence:

```
[file] -e  
[file] -d  
[file] -f
```

Check file permissions:

```
[file] -r  
[file] -w  
[file] -x
```

Check file type:

```
[file] -b  
[file] -c  
[file] -L  
[file] -S
```



## System Monitoring and Processes

Display system processes:

`top`

Show logged-in users:

`w`  
`who`

Show system uptime:

`uptime`

Kill processes:

`kill`

Display process IDs:

`ps`

Show system load:

`w`  
`uptime`



# Backup and Archiving

Create tar archive:

```
tar -czf
```

Extract tar archive:

```
tar -xzf
```

Backup with rsync:

```
rsync -av
```

Backup with tar:

```
tar -cvzf
```

Backup with mysqldump:

```
mysqldump
```



# Package Management

Install packages:

```
sudo apt-get install <package>
```

Remove packages:

```
sudo apt-get remove <package>
```

Update package list:

```
sudo apt-get update
```

Upgrade installed packages:

```
sudo apt-get upgrade
```

Search for packages:

```
apt-cache search <keyword>
```

Show package information:

```
apt-cache show <package>
```

Clean up package cache:

```
sudo apt-get clean
```

Remove unused packages:

```
sudo apt-get autoremove
```



## Debian-Specific Service Management

Start a service:

```
sudo systemctl start <service>
```

Stop a service:

```
sudo systemctl stop <service>
```

Restart a service:

```
sudo systemctl restart <service>
```

Enable a service at boot:

```
sudo systemctl enable <service>
```

Disable a service at boot:

```
sudo systemctl disable <service>
```

Check service status: sudo

```
systemctl status <service>
```



## Miscellaneous

Display system information:

```
uname -a
```

Show environment variables:

```
env
```

Set environment variables:

```
export
```

Display command history:

```
history
```

Clear terminal screen:

```
clear
```

Search for patterns in files:

```
grep
```

Search for files:

```
locate, find
```

Compress files:

```
gzip, bzip2
```

Decompress files:

```
gunzip, bunzip2
```



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## Quick Access Tools

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