

Install Paper on Ubuntu 20.04

Learn how to install Paper, a high-performance Minecraft server software, on Ubuntu 20.04. Follow our step-by-step guide for a smooth setup process.

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Introduction

Paper is a high-performance fork of Spigot designed to address gameplay and mechanics inconsistencies, offering numerous unique features and significant performance improvements not available in Spigot. This guide will walk you through the steps to install Paper on Ubuntu 20.04, ensuring you can configure it for optimal performance. It's recommended to run all commands as a non-root user with `sudo` privileges to maintain security.

1. Install Prerequisites

- Deploy a [Vultr Ubuntu 20.04](#) cloud server instance.
- Create a sudo user.
- [Update the Ubuntu server](#).

Install the required utilities.

```
$ sudo apt-get install wget apt-transport-https gnupg
```

Import the AdoptOpenJDK GPG key.

```
$ wget -q0 - https://adoptopenjdk.jfrog.io/adoptopenjdk/api/gpg/key/public | sudo apt-key add -
```

Configure AdoptOpenJDK's apt repository.

```
$ echo "deb https://adoptopenjdk.jfrog.io/adoptopenjdk/deb $(cat /etc/os-release | grep UBUNTU_CODENAME | cut -d = -f 2) main" | sudo tee /etc/apt/sources.list.d/adoptopenjdk.list
```

Refresh the package index.

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

Install AdoptOpenJDK.

```
$ sudo apt-get install adoptopenjdk-11-hotspot -y
$ sudo apt-get install jq -y
```

2. Create a Swapfile

Create a swap file. The example allocates a 1 GB file, set this value according to your needs.

```
$ sudo fallocate -l 1G /swapfile
```

Set the permissions of the swap file.

```
$ sudo chmod 600 /swapfile
```

Allocate the swap space.

```
$ sudo mkswap /swapfile
```

Turn on swap.

```
$ sudo swapon /swapfile
```

Make your swap file permanent by modifying the `fstab` file.

```
$ sudo nano /etc/fstab
```

Add this line to the bottom of the file.

```
/swapfile none swap sw 0 0
```

3. Install Paper on Ubuntu 20.04

Ensure you are in the `home` directory of the user you plan to use for Paper.

```
$ cd ~
```

Create a folder for Paper and download the latest build. This example downloads Paper version 1.16.5. If you need a different version, replace `1.16.5` with the version you want to download.

```
$ mkdir paper
$ cd paper
$ LATEST_BUILD=$(curl -X GET "https://papermc.io/api/v2/projects/paper/versions/1.16.5"
-H "accept: application/json" | jq '.builds[-1]')
$ curl -o paperclip.jar -X GET "https://papermc.io/api/v2/projects/paper/versions/
1.16.5/builds/${LATEST_BUILD}/downloads/paper-1.16.5-${LATEST_BUILD}.jar" -H "accept:
application/java-archive" -JO
```

Optional - Install an older version

If you want an older build, look up the available build numbers.

```
$ curl -X GET "https://papermc.io/api/v2/projects/paper/versions/1.16.5" -H "accept:
application/json"
```

Replace `[BUILD_ID]` in the following command with the desired build.

```
$ curl -o paperclip.jar -X GET "https://papermc.io/api/v2/projects/paper/versions/
1.16.5/builds/[BUILD_ID]/downloads/paper-1.16.5-[BUILD_ID].jar" -H "accept:
application/java-archive" -JO
```

4. Start the Server

Create a startup script for your server.

```
$ nano start.sh
```

Paste the following into `start.sh`. The `4G` parameters in `-Xms4G -Xmx4G` configure Java for 4 GB of RAM. Change this to the amount of RAM you want to allocate for Paper. The operating system requires available RAM as well, please don't assign all available RAM to Paper. For example, if the VPS has 8 GB RAM, you might consider setting `-Xms7G -Xmx7G`.

```
#!/bin/sh
while true
do
java -Xms4G -Xmx4G -XX:+UseG1GC -XX:+ParallelRefProcEnabled -XX:MaxGCPauseMillis=200 -
XX:+UnlockExperimentalVMOptions -XX:+DisableExplicitGC -XX:+AlwaysPreTouch -
XX:G1NewSizePercent=30 -XX:G1MaxNewSizePercent=40 -XX:G1HeapRegionSize=8M -
XX:G1ReservePercent=20 -XX:G1HeapWastePercent=5 -XX:G1MixedGCCountTarget=4 -
XX:InitiatingHeapOccupancyPercent=15 -XX:G1MixedGCLiveThresholdPercent=90 -
XX:G1RSetUpdatingPauseTimePercent=5 -XX:SurvivorRatio=32 -XX:+PerfDisableSharedMem -
XX:MaxTenuringThreshold=1 -Dusing.aikars.flags=https://mcflags.emc.gs -
Daikars.new.flags=true -jar paperclip.jar nogui
echo "restarting in 10"
sleep 10
done
```

Make `start.sh` executable.

```
$ chmod +x start.sh
```

Start your server.

```
$ ./start.sh
```

Java downloads Paper. The first time it loads, it prompts you to accept the EULA and fails to load. The script then loops, and you need to type `Ctrl + C` to exit the script at this point.

Edit `eula.txt`.

```
$ nano eula.txt
```

Change `eula=` from `false` to `true`. Save and exit the file.

Start your server again.

```
$ ./start.sh
```

Optional: Run the server in the background

Install screen.

```
$ sudo apt-get install screen -y
```

Open an instance of screen.

```
$ screen -S "paper"
```

Start your server script.

```
$ cd ~/paper  
$ ./start.sh
```

Configure your server's settings and install plugins.

Troubleshooting

If `paperclip.jar` doesn't run, you need more RAM on your server or a larger swap file.



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