# Raspberry Pi Minecraft PE Server (Pocket Edition)

This tutorial will demonstrate how to set up a Raspberry Pi Minecraft server PE. This project is a cheap way of providing you with an always-on, Pocket Edition capable server.

This setup stops you from having to leave your phone or computer online if you want others to be always able to access your world. The Pi is also pretty good on power usage so you can save on your power bill too.

For this tutorial, we will be making use of the Nukkit software. We decided to utilize Nukkit since we found that it was one of the most stable Minecraft Pocket Edition servers currently available.

Please keep in mind the Pi is quite limited in resources so you may have some issues when it comes to performance.

Tweaking the server properties is a great way to get more performance and maybe some room for more people. I wouldn't recommend having more than five people joining the server. However, you may want to experiment to see how much it will be able to handle.

If you're after a server for the Java version of Minecraft, then you should check out our previous tutorial that shows you how to set up a spigot Minecraft server.

If you would like to know more about the server software, then you can find out more about it on the Nukkit website.

Equipment List

The following pieces of equipment are what I recommend when it comes to completing this Raspberry Pi Minecraft pocket edition server.

Raspberry Pi 3 or newer Micro SD Card

Ethernet Cable or Wi-Fi

Power Supply

Optional

Raspberry Pi Case

Note: Don't forget that if you're using a Pi 3 then this has Wi-Fi inbuilt and you won't need a dongle.

Setting up your Raspberry Pi Minecraft PE Server

In this tutorial, we will work entirely within the terminal. In fact, it is best to change the boot mode of the Raspberry Pi, so it boots directly into the terminal for the Minecraft Pocket Edition server.

You can also install Raspbian Lite, so you don't install any of the additional packages that come with the full version of Raspbian, make sure you install java as we will need that.

Minecraft PE servers are hugely demanding on the Raspberry Pi's hardware, so every extra bit of resources made available to it, the more it can handle. It's important to keep this in mind before installing any additional software packages that may drag the performance down.

1. First, let's make sure everything on the Raspberry Pi is up to date by running the following two commands.

2. Now we will need to make a couple of changes in the raspberry pi config tool. Let's open the tool by entering the following command:

3. First, let's go to Advanced Options->Memory Split and update this to 16. (This will allow for more memory to be free for the server)

4. Secondly, now is a good time to change the "boot up" option so that it boots straight into the terminal. Go to Boot Options -> Desktop/CLI, and press ENTER with Console selected to enable booting to console.

Note: This does not need to be done if you're running on Raspbian lite.

5. To truly make the most of the Minecraft Pocket Edition server, you will need to overclock your Raspberry Pi.

The following steps only work with the Raspberry Pi 1 and 2 as the raspi-config tool does not currently support the Raspberry Pi 3 for overclocking.
Tclonline

While you're still in the raspi-config tool, go to Overclock, here pick the "High" overclocking option. This will give the Raspberry Pi a good overclock, though make sure you have a decent, stable power supply, most USB chargers will not cut it.

6. If you haven't activated SSH before, make sure you go to Advanced Options->SSH and select "Enable". You will need this for easy access to your Raspberry Pi.

7. Now go to "Finish" and reboot your Raspberry Pi using the following command.

8. We need to make sure we have Java installed, the following command will install the default JDK package for Raspbian.

9. Before we get too ahead of ourselves, now is a great chance to grab the IP address of the Raspberry Pi. You will need to write down the value from the next command, and we will need to use this later.

In the terminal, enter the following command:

10. With that now set up, we will now proceed with downloading and setting up the Nukkit server software.

Before we get too far ahead of ourselves, let's first make a directory to keep this in.

Run the following commands to make the directory in the pi user's root directory.

11. Finally, let's download Nukkit, we usually will have to compile the software which can take a while due to the Raspberry Pi's low processing power.

Thankfully some nice users have provided their CI (Continuous Integration) servers to the public.

Run the following wget command to download the latest build of Nukkit to your Raspberry Pi.

12. With Nukkit now downloaded to our Raspberry Pi we can now run it, this will generate all the files we need to be able to configure the server further.

Running Nukkit is incredibly easy, we can run it with the following simple command.

Upon running the server for the first time, you will be asked to choose a language, for this tutorial we will be using English. Therefore we typed eng into the console and pressed enter.

The server should immediately begin to boot up, and the server should display the following text when it is ready to be connected to.

While you can now begin to play on your server, you might want first to configure it, so it is set up more to your liking. To do this, first, kill the process by pressing CTRL + C.

13. Two configuration files come with Nukkit, and one controls Nukkit's own options such as being able to change the number of chunks it loads in, the other controls the actual Minecraft options such as what game mode you want the server to be using.

You can read up on the "server.properties" file and see what changes you can make to it by going to the Minecraft server properties page.

Run the following command to edit Nukkit's configuration file.

Alternatively, run the following command to edit the Minecraft server configuration.

Once you have finished making your changes to the configuration files, make sure you save them by pressing CTRL + X then pressing Y and then ENTER.

Afterwards, you can immediately proceed to start up Nukkit again by typing in the following command:

Connecting to your Minecraft PE Server

It is easy to connect the Raspberry Pi Minecraft server to a local network. To test out our recently setup server, we will need to do the following.

Now load up Minecraft on a Mobile Phone or a Windows 10 PC (Minecraft Windows 10 Edition) that is located on the same local network as the Raspberry Pi.

Go to the friend's tab and then your server should pop up at the bottom under LAN Games. If it doesn't simply go to direct connect and enter the IP we got earlier on the Pi using the hostname command "hostname -I".

We have highlighted the direct connect button in our screenshot below.

If you want to allow access to the Minecraft Pocket Edition server via the internet, then you will need to setup port forwarding.

You will need to port forward the port 19132 (Unless you change it in the server properties) to the local IP address of your Raspberry Pi. Keep in mind opening ports always increases the security risk from outside sources.

For more information check out our port forwarding guide for the Raspberry Pi.

Updating your Minecraft Pocket Edition Server

1. To update your Raspberry Pi powered Minecraft Pocket Edition Server you will first have to make sure you are in the correct directory by running the following change directory command.

2. Within this directory, all we need to do is redownload the latest available Nukkit binary from their build servers.

Run the following command to download the latest build of Nukkit to your Raspberry Pi.

3. Once the download has finished you should now have the latest available build of Nukkit, and you can now start your server up again by running the following command.

Start the Pocket Edition Server at Boot

1. To be able to get our Pocket Edition server to start at startup, we will need to go ahead and create a service for it.

Let's begin writing this service by running the command below.

2. Within this file add the following text.

This text defines the service and tells the service manager what file to run.

Once you have entered in all the data, you can save the file by pressing CTRL + X then Y followed by ENTER.

3. Now that we have created our new service we need to go ahead and enable it by running the following command.

4. Let's go ahead and now start up our Pi's Minecraft Pocket Edition server with the command below.

This command will tell the service manager to start up our newly created service.

5. If you want to check the status of the Pocket Edition servers service, then you can with the command below.

Hopefully, by now you should have a fully operational Raspberry Pi Minecraft PE Server. If you come across any issues or have some feedback related to this tutorial, then please don't hesitate to leave a comment below.