

How to Host a Dedicated Killing Floor 2 Server on Google Cloud (Linux/Ubuntu)

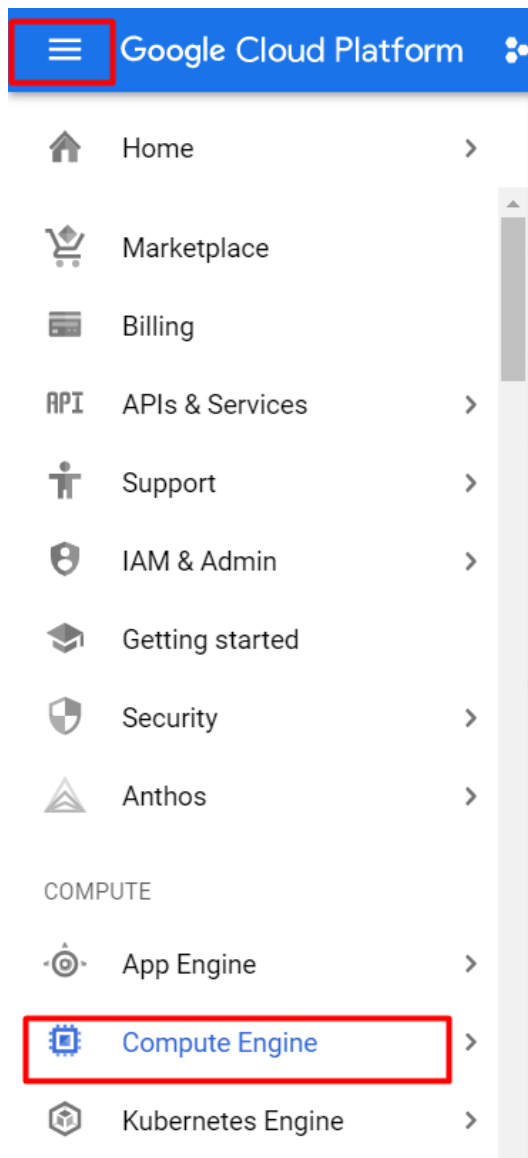
With the recent release of Killing Floor 2 on the Epic Games Store, players are having a hard time on setting up their servers especially since one can't just create a lobby and start a game with their friends. Want to have a personal dedicated server running 24 / 7 without using your personal computer? Then this guide's for you. Buckle up – this is a long one

Google Cloud Setup

If you already have an existing Google Cloud account directly follow the next step. If you don't have one, you can create one for free by following this [tutorial](#).

Creating a VM Instance

Once you're at the home page of Google Cloud click the **navigation menu** at the upper left portion and click **Compute Engine** under the Compute section.



The next step would be clicking create an instance on the upper portion of the web-page.



You'll be directed to the create an instance page where you will be filling out some forms. Change the **name** to whatever you want while following it's requirements. Change the **region** to that which is closest to yours and pick whatever zone you want (there's no impact to the latency). Have the **machine configuration** to follow that of the picture. This is the most optimal and low cost in order to run a Killing Floor server.

Name ?

Name is permanent

server-test

Labels ? (Optional)[+ Add label](#)**Region** ?

Region is permanent

asia-southeast1 (Singapore)

Zone ?

Zone is permanent

asia-southeast1-b

Machine configuration**Machine family****General-purpose**

Memory-optimized

Compute-optimized

Machine types for common workloads, optimized for cost and flexibility

Series

N1

Powered by Intel Skylake CPU platform or one of its predecessors

Machine type

Custom


Cores 1 vCPU 1 - 96**Memory** 4 GB 1 - 6.5

Change the boot disk by clicking on **change** and change the **operating system** to Ubuntu, the **version** to Ubuntu 18.04 LTS the **boot disk type** to SSD persistent disk and the **size** to 50.

Boot disk ?

New 10 GB standard persistent disk

Image

 Debian GNU/Linux 10 (buster)[Change](#)

Boot disk

Select an image or snapshot to create a boot disk; or attach an existing disk. Can't find what you're looking for? Explore hundreds of VM solutions in [Marketplace](#).

Public images

Custom images

Snapshots

Existing disks

Operating system

Ubuntu

Version

Ubuntu 18.04 LTS

amd64 bionic image built on 2020-07-29, supports Shielded VM features ?

Boot disk type ?

SSD persistent disk

Size (GB) ?

50

With all the other fields set as default you can now create the instance. You'll be directed back to the VM instances and you'll now see your created instance.

Firewall Settings

After creating your first instance you would need to port forward the ports **udp:7777**, **udp:27015**, **udp:20560**, and **tcp:8080**. We can do this by clicking the **navigation menu** and find **vpc network** and clicking on **firewall**.

Google Cloud Platform My First Project

Home

Spanner

Memorystore

Data Transfer

NETWORKING

VPC network

Network services

Hybrid Connectivity

Network Service Tiers

Network Security

Network Intelligence

OPERATIONS

Monitoring

Debugger

Firewall

+ CREATE FIREWALL RULE

Firewall rules control incoming traffic from outside your network.

Note: App Engine firewalls are not supported.

Filter table

Name	Type
VPC networks	
External IP addresses	
Firewall	
Routes	
VPC network peering	
Shared VPC	
Serverless VPC access	
Packet mirroring	

query-port	Ingress
steam-port	Ingress
web-port	Ingress
default-	Ingress

Once you're at the firewall page, create a firewall rule by clicking the **Create a Firewall Rule** at the top.

Firewall

+ CREATE FIREWALL RULE

REFRESH

CONFIGURE LOGS

DELETE

Fill in the **name** with your desired name. Leave the other fields as default except for **targets** which should be set to all instances of the network and **source IP ranges** as 0.0.0.0/0. Under **protocol and ports** is where we'll be putting

the ports. Check **specified protocols and ports** and also check **udp** and put into the field 7777. Click **create** when finished.

Targets

All instances in the network

Source filter

IP ranges

Source IP ranges *

0.0.0.0/0 for example, 0.0.0.0/0, 192.168.2.0/24

Second source filter

None

Protocols and ports

☐ Allow all

☒ Specified protocols and ports

☐ tcp : 20, 50-60

☒ udp : 7777

☐ Other protocols

protocols, comma separated, e.g. ah, sctp

You would need to repeat this step three times each for ports: 7777, 27015, and 20560 on udp and 8080 on tcp.

Killing Floor 2 Server Setup

Once the steps above are completed we can now start on running our Killing Floor 2 server!

Launching VM Instance

Go back to **compute engine** and locate your created instance. Click on SSH and a new window would open.

☐ ☒ server-test asia-southeast1-b 10.148.0.5 (nic0) 35.247.188.48 **SSH** ⌵ ⋮

With the window open, type the following text (without the

quotation): “*sudo -s*” and press enter, this would make you a root user in Ubuntu. Then, type the words “*useradd -m steam*” and press enter.

```
root@server-test:~# useradd -m steam
root@server-test:~#
```



Installing SteamCMD

The next step is to install steamcmd. Your machine would need to install some stuff first. Do it by copy-pasting these lines of text into the instance:

```
sudo add-apt-repository multiverse
```

```
sudo dpkg --add-architecture i386
```

```
sudo apt update
```

```
sudo apt install lib32gcc1 steamcmd
```

After the process of installing is finished type “*sudo apt install steamcmd*” and press enter. Type “Y” after and press enter.

```
root@server-test:~# sudo apt install steamcmd
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  grub-pc-bin libnuma1
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  gcc-8-base:i386 libc6:i386 libgcc1:i386 libstdc++6:i386
Suggested packages:
  glibc-doc:i386 locales:i386 steam:i386
The following NEW packages will be installed:
  gcc-8-base:i386 libc6:i386 libgcc1:i386 libstdc++6:i386
  steamcmd:i386
0 upgraded, 5 newly installed, 0 to remove and 20 not upgraded.
Need to get 4191 kB of archives.
After this operation, 17.2 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

It would install some more stuff then the package configuration would appear. Just press tab in your keyboard then press enter. On the steam license agreement press the down key on your keyboard then press enter.



Configuring steamcmd

STEAM LICENSE AGREEMENT

Do you agree to all terms of the Steam License Agreement?

I DECLINE

I AGREE

<Ok>

Installing KF2 Server Files

Now that steamcmd is installed, we now need to download the Killing Floor Server files. First is to make a folder by typing `mkdir /kf2` and pressing enter. Next would be to give ownership of the directory to the user steam by typing `chown steam:steam /kf2` and pressing enter.

```
Unpacking gcc-8-base:i386 (8.4.0-1ubuntu1~18.04) ...
Selecting previously unselected package libgcc1:i386.
Preparing to unpack .../libgcc1_1%3a8.4.0-1ubuntu1~18.04_i386.deb
...
Unpacking libgcc1:i386 (1:8.4.0-1ubuntu1~18.04) ...
Selecting previously unselected package libc6:i386.
Preparing to unpack .../libc6_2.27-3ubuntu1.2_i386.deb ...
Unpacking libc6:i386 (2.27-3ubuntu1.2) ...
Selecting previously unselected package libstdc++6:i386.
Preparing to unpack .../libstdc++6_8.4.0-1ubuntu1~18.04_i386.deb .
..
Unpacking libstdc++6:i386 (8.4.0-1ubuntu1~18.04) ...
Selecting previously unselected package steamcmd:i386.
Preparing to unpack .../steamcmd_0~20130205-1_i386.deb ...
Unpacking steamcmd:i386 (0~20130205-1) ...
Setting up gcc-8-base:i386 (8.4.0-1ubuntu1~18.04) .....]
Setting up libc6:i386 (2.27-3ubuntu1.2) ...###.....]
Setting up libgcc1:i386 (1:8.4.0-1ubuntu1~18.04) .....]
Setting up libstdc++6:i386 (8.4.0-1ubuntu1~18.04) .....]
Setting up steamcmd:i386 (0~20130205-1) ...#####.....]
Processing triggers for libc-bin (2.27-3ubuntu1.2) ...#####..]
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
root@server-test:~# mkdir /kf2
root@server-test:~# chown steam:steam /kf2
root@server-test:~#
```

Next is to be the user steam by typing “su – steam” and pressing enter. Next is to type “mkdir ~/Steam && cd ~/Steam” which is to create a folder named Steam and going to that folder. Once inside the folder type “steamcmd” and press enter.

```
[----] Extracting package...
[----] Extracting package...
[----] Extracting package...
[----] Installing update...
[----] Installing update...
[----] Installing update...
[----] Installing update...
[----] Installing update...
[----] Installing update...
[----] Installing update...
[----] Installing update...
[----] Cleaning up...
[----] Update complete, launching Steamcmd...
CWorkThreadPool::~CWorkThreadPool: work processing queue not empty
: 7 items discarded.
Redirecting stderr to '/home/steam/.steam/logs/stderr.txt'
[ 0%] Checking for available updates...
[----] Verifying installation...
Steam Console Client (c) Valve Corporation
-- type 'quit' to exit --
Loading Steam API...Warning: failed to init SDL thread priority ma
nager: SDL not found
OK.

Steam>
```

Next is to type `login anonymous` and press enter. This would connect you anonymously to Steam. Next would be to type `force_install_dir /kf2` and press enter. Next is to type `app_update 232130 validate` and press enter. This would download the Killing Floor 2 servers into the /kf2 directory.

```
Update state (0x61) downloading, progress: 98.45 (21631954462 / 21972971105)
Update state (0x61) downloading, progress: 98.66 (21678470357 / 21972971105)
Update state (0x61) downloading, progress: 98.87 (21725753339 / 21972971105)
Update state (0x61) downloading, progress: 99.08 (21770788781 / 21972971105)
Update state (0x61) downloading, progress: 99.29 (21817338529 / 21972971105)
Update state (0x61) downloading, progress: 99.48 (21858223555 / 21972971105)
Update state (0x61) downloading, progress: 99.58 (21880243651 / 21972971105)
Update state (0x61) downloading, progress: 99.69 (21904360899 / 21972971105)
Update state (0x61) downloading, progress: 99.84 (21938342550 / 21972971105)
Update state (0x61) downloading, progress: 100.00 (6524237392 / 6524237392)
Update state (0x101) committing, progress: 100.00 (21972905378 / 21972971105)
Success! App '232130' fully installed.

Steam>
```

After the installation exit Steam by typing "exit" and press enter. We need to launch the server in order to create the config files. Do this by typing "/cd kf2" and pressing enter. In order to launch the server type `./Binaries/Win64/KFGameSteamServer.bin.x86_64 kf-bioticslab` and pressing enter. This would make the server run and initialize the config files. At this point we already know that the server is running but we still have to do a couple of additional steps.

```
"Tags":{"NumWaves":"7","CurrentWave":"1","bInProgress":"False","bCustom":"False","bAvailableForTakeover":"True","ZedCount":"10","MaxZedCount":"100","MapName":"KF-BIOTICSLAB","Difficulty":"0","Mode":"0","NumSpectators":"0","NumPublicConnections":"6","NumOpenPublicConnections":"6","JoinString":"35.247.188.48:7777","bUsesStats":"True","bRequiresPassword":"False","bCloudServer":"False","OwningPlayerName":"S2lsbGluZyBGbG9vciAyIFNlcnZlcnZlcg==","BotPlayers":"0","SteamServerUID":"90137703544833027","SecondsDeallocated":"0","Region":"USCentral"}}
[0068.83] DevOnline: Playfab server registered with lobby ID 3522054539313444110
[0128.87] DevOnline: Sending out playfab request to url Server/RefreshGameServerInstanceHeartbeat with data: {"LobbyId":"3522054539313444110"}
[0156.69] ScriptLog: (TW TAKEOVER LOG) KFGameInfo.CheckServerUnlock 1 - GetNumPlayers(): 0
[0156.69] ScriptLog: (TW TAKEOVER LOG) KFGameInfo.CheckServerUnlock 2 - Playfab: PlayfabInterface_0
[0156.69] ScriptLog: (TW TAKEOVER LOG) KFGameInfo.CheckServerUnlock 3 - IsLockedServer(): False (bUsedForTakeover: True, bAvailableForTakeover: True)
[0188.92] DevOnline: Sending out playfab request to url Server/RefreshGameServerInstanceHeartbeat with data: {"LobbyId":"3522054539313444110"}
```

Changing the Config Files

Terminate the server by pressing **ctrl + c** on your keyboard. Type **"ls"** in order to see all the folders inside **/kf2**. Type **"cd KFGame/Config"** and press enter to go to the config folder. If you were to type **"ls"** again you'll see all the config files for the server. The important ones are **KFWeb.ini** and **LinuxServer-KFGame.ini**. I'll only open **KFWeb.ini** in this tutorial as the contents of **LinuxServer-KFGame.ini** can be changed in the web portal.

```
$ ls
DefaultAI.ini
DefaultBenchmarking.ini
DefaultCompat.ini
DefaultEditor.ini
DefaultEditorKeyBindings.ini
DefaultEditorUserSettings.ini
DefaultEngine.ini
DefaultGame.ini
DefaultInput.ini
DefaultLightmass.ini
DefaultMultiAdmin.ini
DefaultSystemSettings.ini
DefaultUI.ini
DefaultWeb.ini
DefaultWebAdmin.ini
Dingo
Eos
KFAI.ini
KFWeb.ini
LinuxServer
LinuxServer-KFEngine.ini
LinuxServer-KFGame.ini
LinuxServer-KFInput.ini
LinuxServer-KFSystemSettings.ini
PCServer
$ █
```

In order to open KFWeb.ini type "*nano KFWeb.ini*". Nano is the built in text editor in Ubuntu and it is very useful. Change the value of **bEnabled** to true and save by pressing **ctrl + x**, followed by pressing **Y** and pressing enter.

```
GNU nano 2.9.3 KFWeb.ini

[IpDrv.WebConnection]
MaxValueLength=4096
MaxLineLength=4096

[IpDrv.WebServer]
Applications[0]=WebAdmin.KF2ServerAdmin
Applications[1]=WebAdmin.KF2ImageServer
ApplicationPaths[0]=/ServerAdmin
ApplicationPaths[1]=/images
ListenPort=8080
MaxConnections=18
ExpirationSeconds=86400
bEnabled=true

[IpDrv.WebResponse]
IncludePath=/KFGame/Web

[IniVersion]
0=1596700778.000000

[ Read 20 lines ]
^G Get Help    ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify
^X Exit        ^R Read File  ^\ Replace    ^U Uncut Text ^T To Spell
```

To go back to the /kf2 directory just type “cd /kf2”. Then we want to delete the file KF2Server.bat. We can do this by typing “rm -r KF2Server.bat”. Afterwards we would want to create a file in order to run the Killing Floor server easily. We can do this by typing “nano”. This will take you to the text editor.

Type “./Binaries/Win64/KFGameSteamServer.bin.x86_64 kf-bioticslab” and in order to save press **ctrl+x** then press **Y** then type the filename “KF2Server.sh” then press enter. You now have a new file to launch the server.

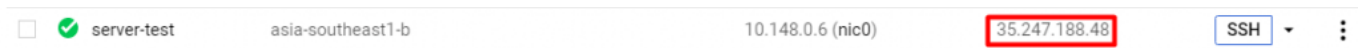
```
Binaries  KF2Server.sh  linux64  steamclient.so
Engine    KFGame        steamapps
$
```

Launching the Server

Congratulations you now have your very own KF2 Server! In order to launch it type `“./KF2Server.sh”`. The server will now launch and you can connect to it in the game in two ways:

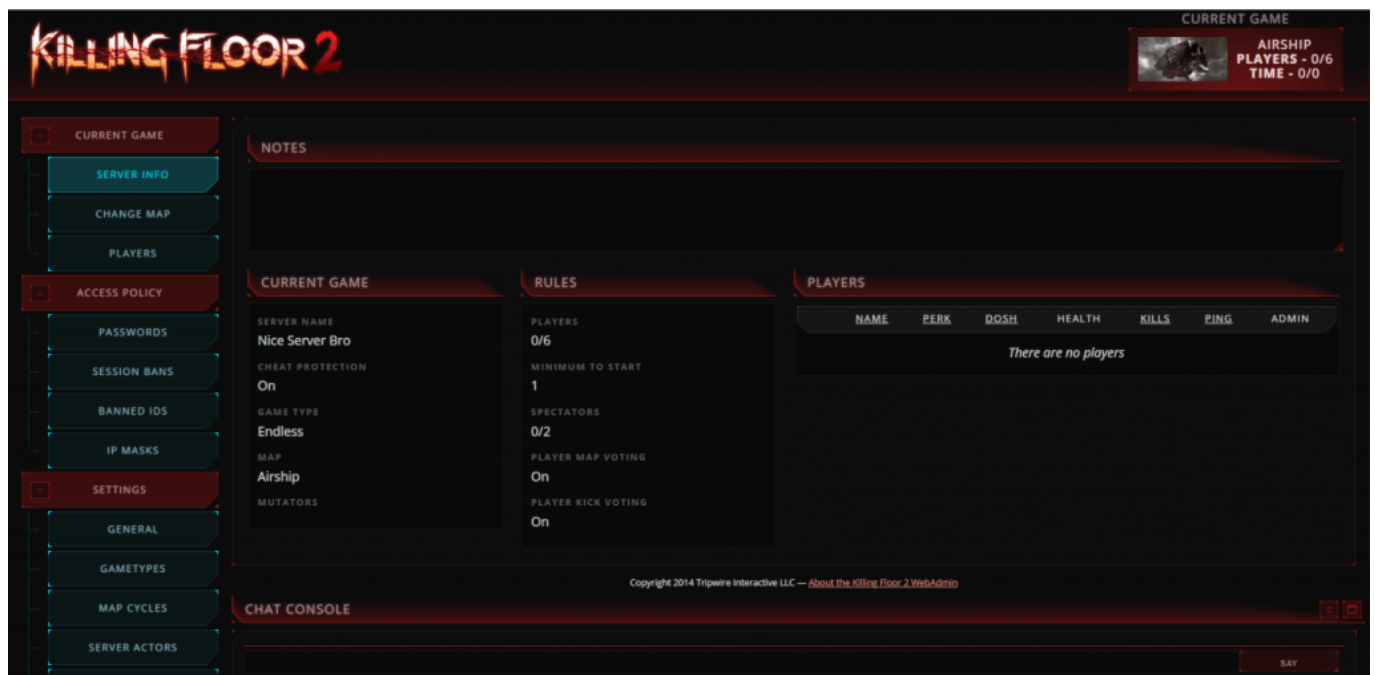
- Going to the server browser
- Press `“~”` on your keyboard and type `“open youripaddress”`

Now you might ask where do I find my ip address? You can find it at compute engine on your google cloud.



Configuring the Server

Now that you have your server open you can now edit the settings using the web portal. In your browser type `“youripaddress:8080/ServerAdmin/”`. This will lead you to the Killing Floor 2 web portal. The default username would be `“admin”` and the default password would be `“123”`. You can change all the settings of the game here.



Make your Server Run 24/7

Now that the server has launched you may think, how can I run

this 24/7 and without having to open the console? Well the answer is to use the screen feature of Ubuntu. First if your server is running stop it by pressing **ctrl + c**. Then exit being the steam user, by typing "exit". Once you're at the root user, type "screen". Now, you're running a seperate instance. Then type the following (which is just the summary of the steps above):

- *su - steam*
- *cd /kf2*
- *./KF2Server.sh*

Now that the server is running you can exit the screen by pressing **ctrl + a + d**. You can now close the console and the server will still be up and running.