

How to create a master server with GMnet and Amazon Free Tier (1 Year Free)

1# Go to this page: <https://portal.aws.amazon.com/gp/aws/developer/registration/index.html>

2# Create or login to your amazon account to create an AWS account.



Sign In or Create an AWS Account

What is your email (phone for mobile accounts)?

E-mail or mobile number:

☒ I am a new user.

☐ I am a returning user
and my password is:

Sign in using our secure server

[Forgot your password?](#)



**AWS Accounts Include
12 Months of Free Tier Access**

Including use of Amazon EC2,
Amazon S3, and Amazon DynamoDB

Visit aws.amazon.com/free for full offer terms

3# Provide your information for a personal or company account.



English ▼ [Sign Out](#)

Amazon Web Services Sign Up

Contact Information

☒ Company Account ☐ Personal Account

* Required Fields

Full Name*

Company Name*

Country* Sweden ▼

Address*

City*

State / Province or Region*

4# Enter payment information (Even if 12 months are free. You must use the free assets and be in the limits of the free assets. So just follow this tutorial.)



Payment Information

Please enter your payment information below. You will be able to try a broad set of AWS products for free via the Free Tier. We will only bill your credit or debit card for usage that is not covered by our Free Tier.

► [Frequently Asked Questions](#)

Credit/Debit Card Number

Expiration Date

Cardholder's Name

5# Enter a phone number for identity verification. Click call and you will get a call on your phone. An automated voice will ask for the 4 digit code on the page. Enter it on your keypad on your phone.



Identity Verification

You will be called immediately by an automated system and prompted to enter the PIN number provided.

1. Provide a telephone number

Please enter your information below and click the "Call Me Now" button.

Security Check ?

When entered you can continue.

1. Provide a telephone number ✓

2. Call in progress ✓

3. Identity verification complete

Your identity has been verified successfully.

[Continue to select your Support Plan](#)

6# Select the basic support plan and click continue.



Support Plan

AWS Support offers a selection of plans to meet your needs. All plans provide 24x7 access to customer service, AWS documentation, whitepapers, and support forums. For access to technical support and additional resources to help you plan, deploy, and optimize your AWS environment, we recommend selecting a support plan that best aligns with your AWS usage.

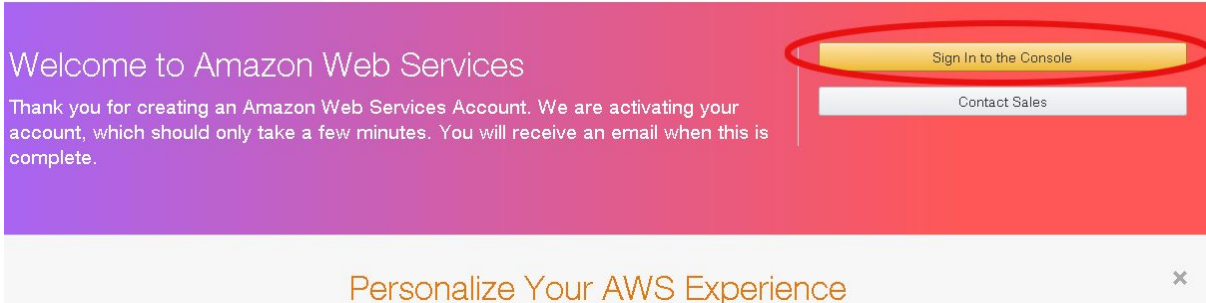
Please Select One

☒ **Basic**

Description: Customer Service for account and billing questions and access to the AWS Community Forums.

Price: Included

7# You have now a Amazon Web Services (AWS) account. Click sign in to the console.



Welcome to Amazon Web Services

Thank you for creating an Amazon Web Services Account. We are activating your account, which should only take a few minutes. You will receive an email when this is complete.

[Sign In to the Console](#)

[Contact Sales](#)

Personalize Your AWS Experience ×

8# Sign in again.



Sign In or Create an AWS Account

What is your email (phone for mobile accounts)?

E-mail or mobile number:

☐ I am a new user.

☒ I am a returning user
and my password is:

[Sign in using our secure server](#)

9# Click Launch a virtual machine (with EC2)

AWS services

Find a service by name (for example, EC2, S3, Elastic Beanstalk)

Recently visited services

All services

Build a solution

Get started with simple wizards and automated workflows.



Launch a virtual machine
With EC2
~1 minute



Build a web app
With Elastic Beanstalk
~6 minutes



Deploy a serverless microservice
With Lambda, API Gateway
~2 minutes



Host a static website
With S3, CloudFront, Route 53
~5 minutes



Create a backend for your mobile app
With Mobile Hub
~5 minutes



Register a domain
With Route 53
~3 minutes

10# Click “advanced EC2 Launch Instance wizard”



Quick Launch an EC2 Instance

Amazon EC2 provides virtual machines in the AWS cloud, known as EC2 instances.

This quick launch wizard lets you create an EC2 instance with AWS-recommended default configuration. If you need more options or ~~fine-grained control over instance parameters~~, please use the **advanced EC2 Launch Instance wizard**.

Get Started

11# Select the location you want the server in.

Andreas ▾

Ireland ▾

6. Configure Security Group7. Review

Cancel and go back

and applications) required to launch your instance. You can select an AMI provided by AWS, our u

1 to 31 of 31 AMI

Volume Type - ami-e5083683

Select

upported image. The default image includes AWS command line tools, Python, Ruby, Perl, 64-bit
SQL, PostgreSQL, and other packages.

12# Select “Ubuntu”. Notice the “Free tier”

root device type: ebsvirtualization type: hvm

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-405f7226

Select

Free tier eligible

Ubuntu Server 16.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).

64 bit

Root device type: ebsVirtualization type: hvm

13# Select “t2.micro” (Free tier) and click “Review and Launch”

☒	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate
☐	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
☐	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
☐	General purpose	t2.large	2	8	EBS only	-	Low to Moderate

Cancel

Previous

Review and Launch

Next

14# Ignore the big warning and click “Launch”

Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Improve your instances' security. Your security group, launch-wizard-2, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.
You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details

Ubuntu Server 16.04 LTS (HVM), SSD Volume Type - ami-405f7226

Edit AMI

Free tier eligible

Ubuntu Server 16.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).

Root Device Type: ebsVirtualization type: hvm

Instance Type

Edit instance type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Cancel

Previous

Launch

15# Click "Create a new key pair".

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Choose an existing key pair

Choose an existing key pair

Create a new key pair

Proceed without a key pair

No key pairs found

You don't have any key pairs. Please create a new key pair by selecting the **Create a new key pair** option above to continue.

Cancel

Launch Instances

16# Give it a name and click "Download Key Pair"

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

AmazonKeyPair

Download Key Pair

You have to download the private key file (*.pem file) before you can continue.

17# After download. Click “Launch Instances”

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name
AmazonKeyPair

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel

Launch Instances

18# Make sure your instance is launching.

Launch Status

✓

Your instances are now launching
The following instance launches have been initiated:

i

Get notified of estimated charges
Create [billing alerts](#) to get an email notification when

How to connect to your instances

19# Go to the right bottom of the page and click “View Instances”

Launch Status

Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

▼ Here are some helpful resources to get you started

- How to connect to your Linux instance
- Amazon EC2: User Guide
- Learn about AWS Free Usage Tier
- Amazon EC2: Discussion Forum

While your instances are launching you can also

- Create status check alarms to be notified when these instances fail status checks. (Additional charges may apply)
- Create and attach additional EBS volumes (Additional charges may apply)
- Manage security groups

View Instances

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20# Wait until the instance is a “Running” state.

Launch Instance Connect Actions ▼

Filter by tags and attributes or search by keyword

	Name	Instance ID	Instance Type	Availability Zone	Instance State
			t2.micro	us-west-2a	running

21# Note your public IP. We will use it later.

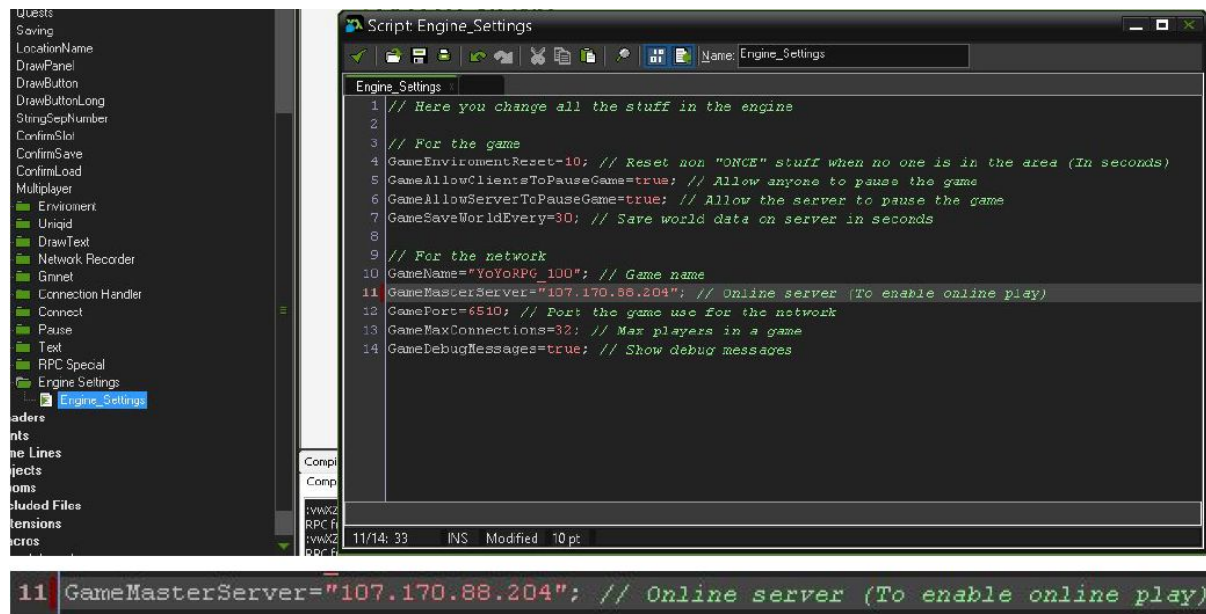
	i-05b24074ca13c33e8	t2.micro	eu-west-1a	running	Initializing	None
--	---------------------	----------	------------	---------	--------------	------

Instance: i-05b24074ca13c33e8 Public DNS: ec2-52-215-38-153.eu-west-1.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID	i-05b24074ca13c33e8	Public DNS (IPv4)	ec2-52-215-38-153.eu-west-1.compute.amazonaws.com
Instance state	running	IPv4 Public IP	52.215.38.153

22# Open the project and copy the address to the GameMasterServer variable in the Engine_Settings script:



make sure to enable:

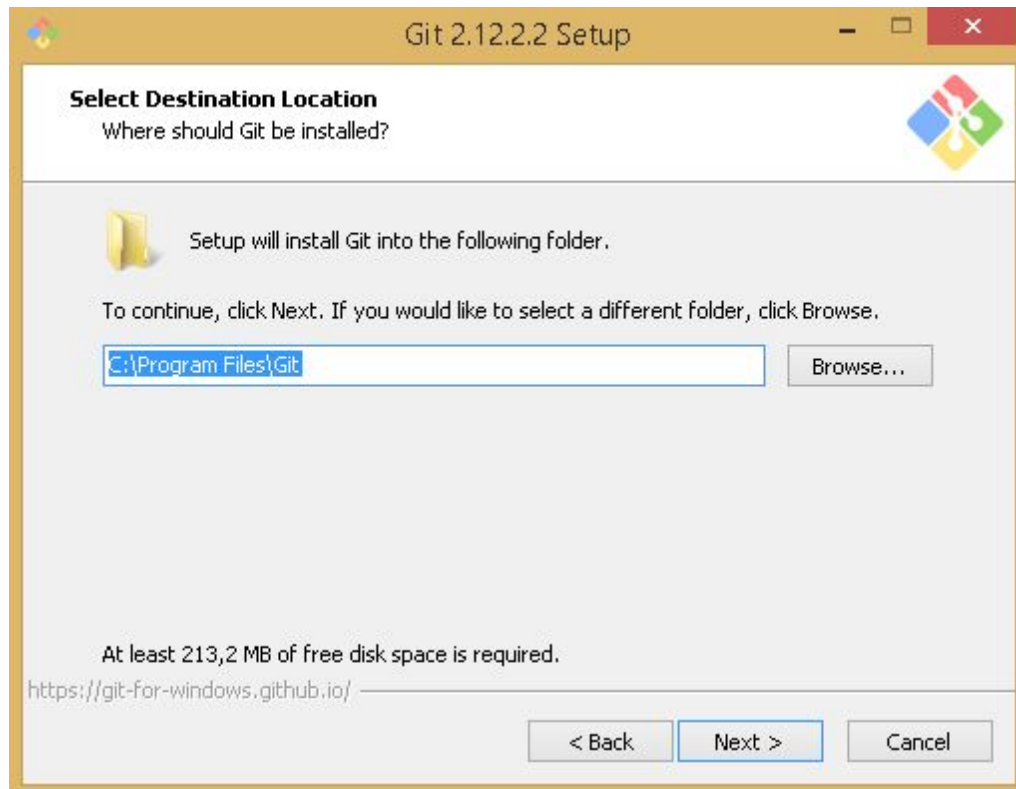
```
34 self.use_udphp = true;
```

23# Download GIT here: <https://git-scm.com/download/win>

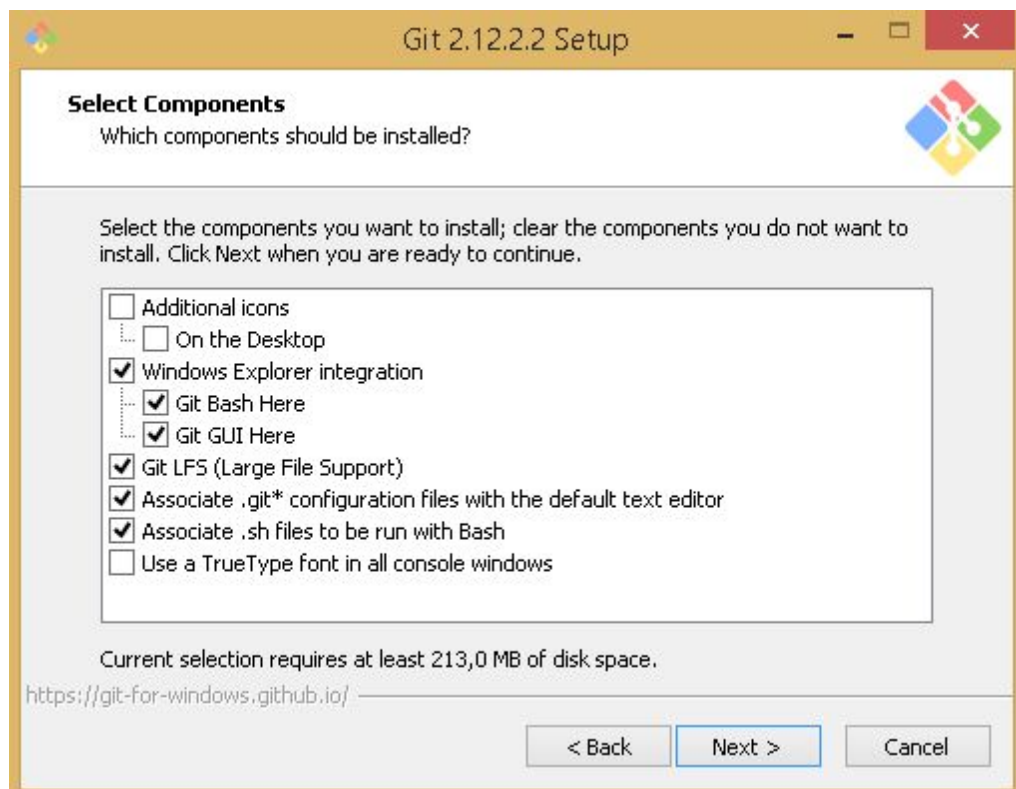
24# Run GIT and click "Next"



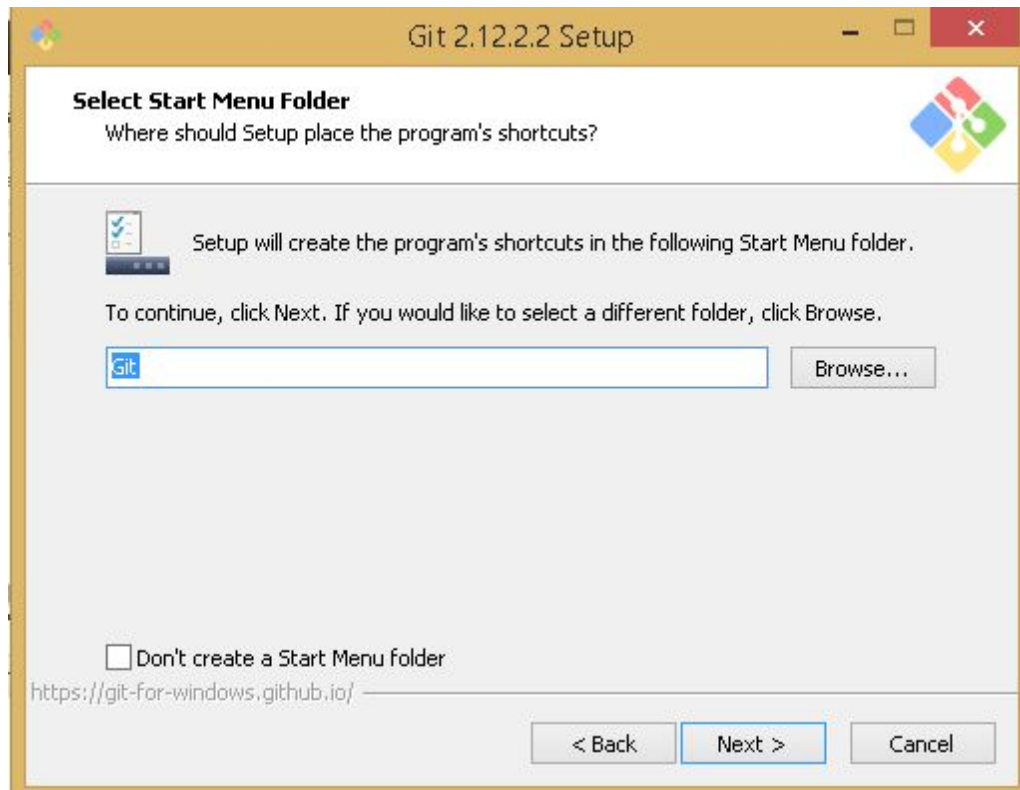
25# Choose a location and click next.



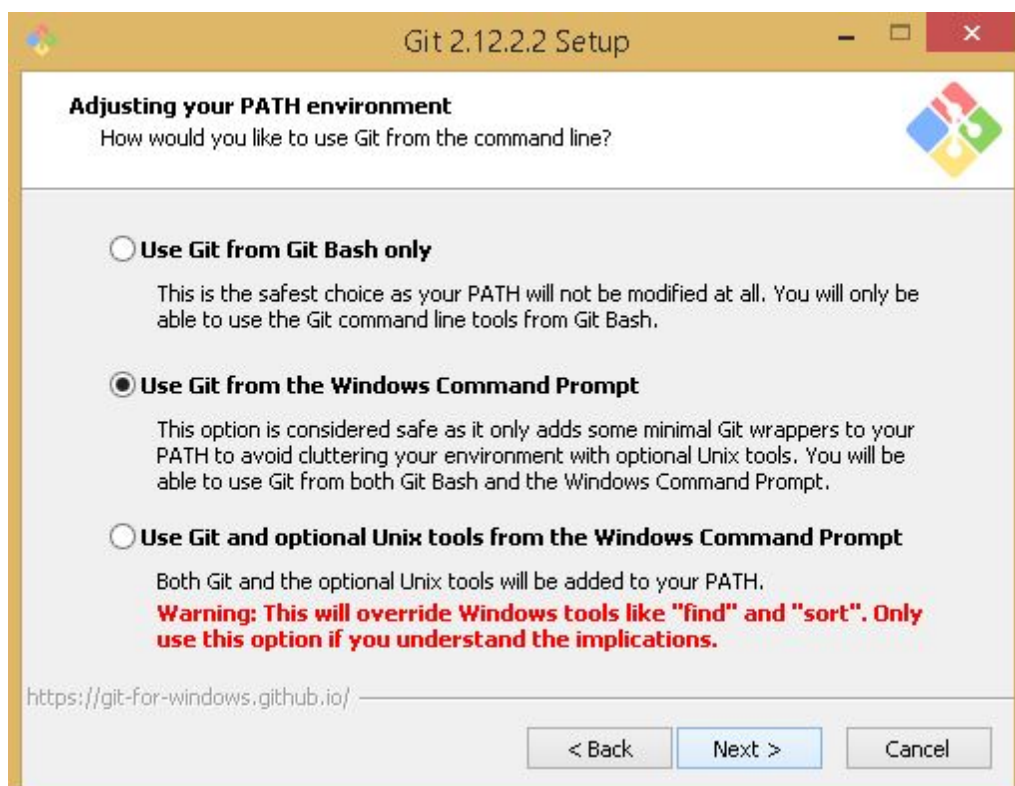
26# Make sure "GIT Bash Here" is selected and click Next.



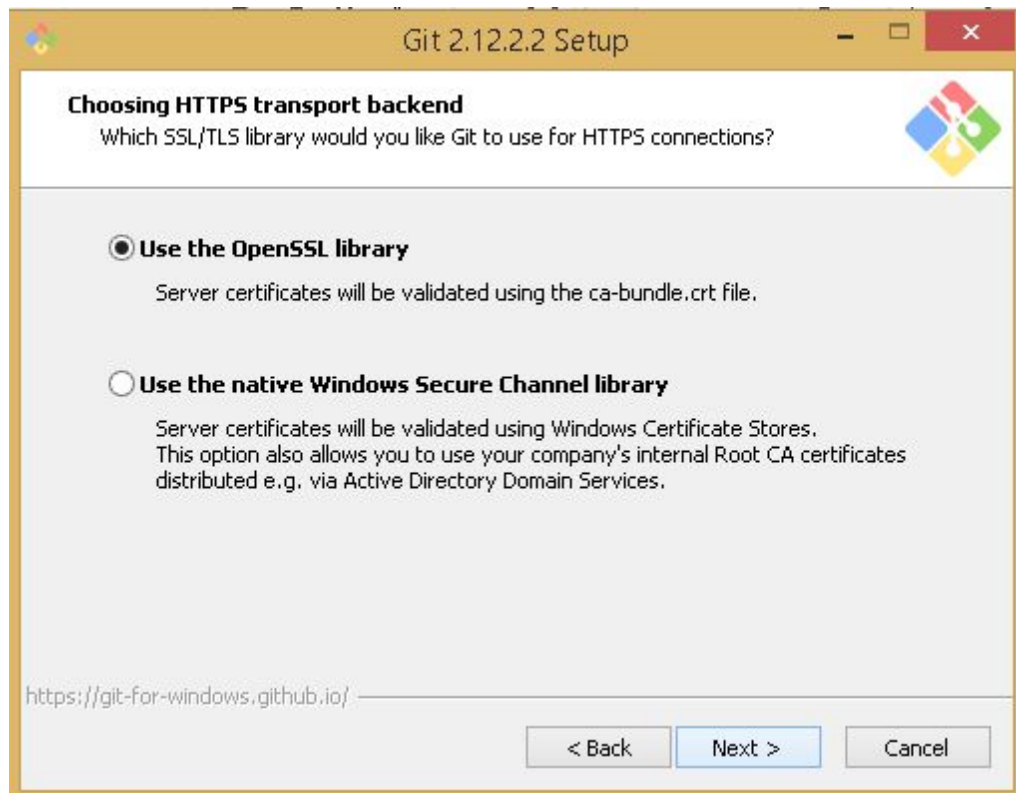
27# Click Next.



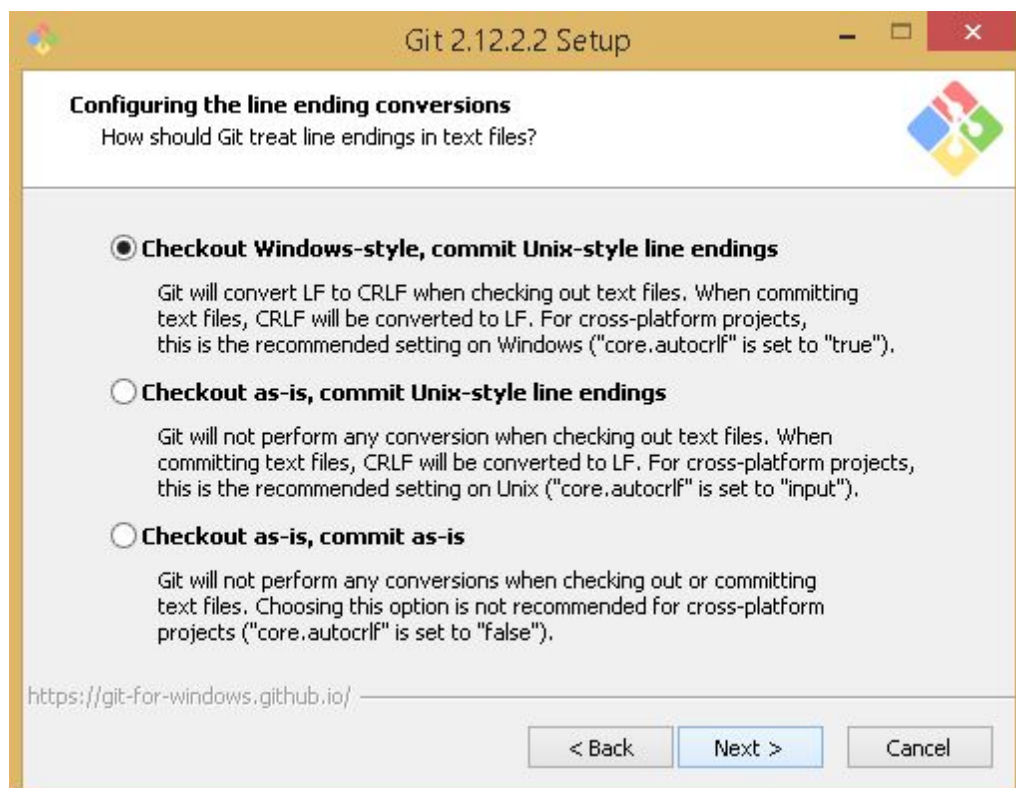
28# Click Next.



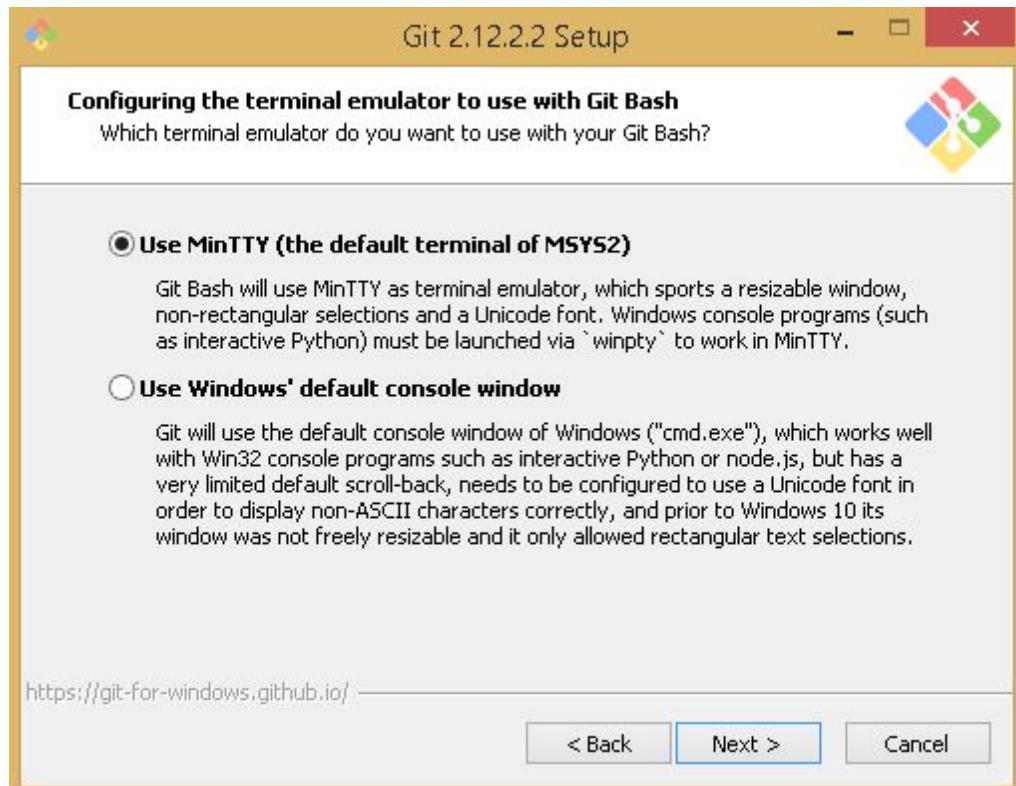
29# Click Next.



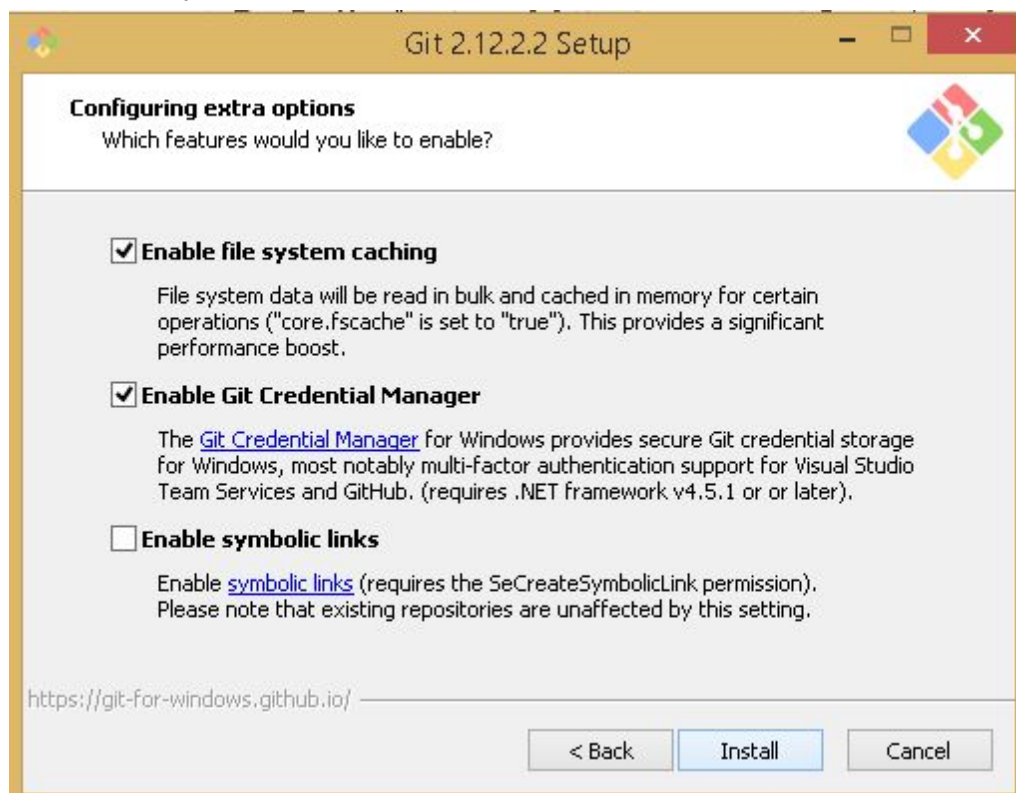
30# Click Next.



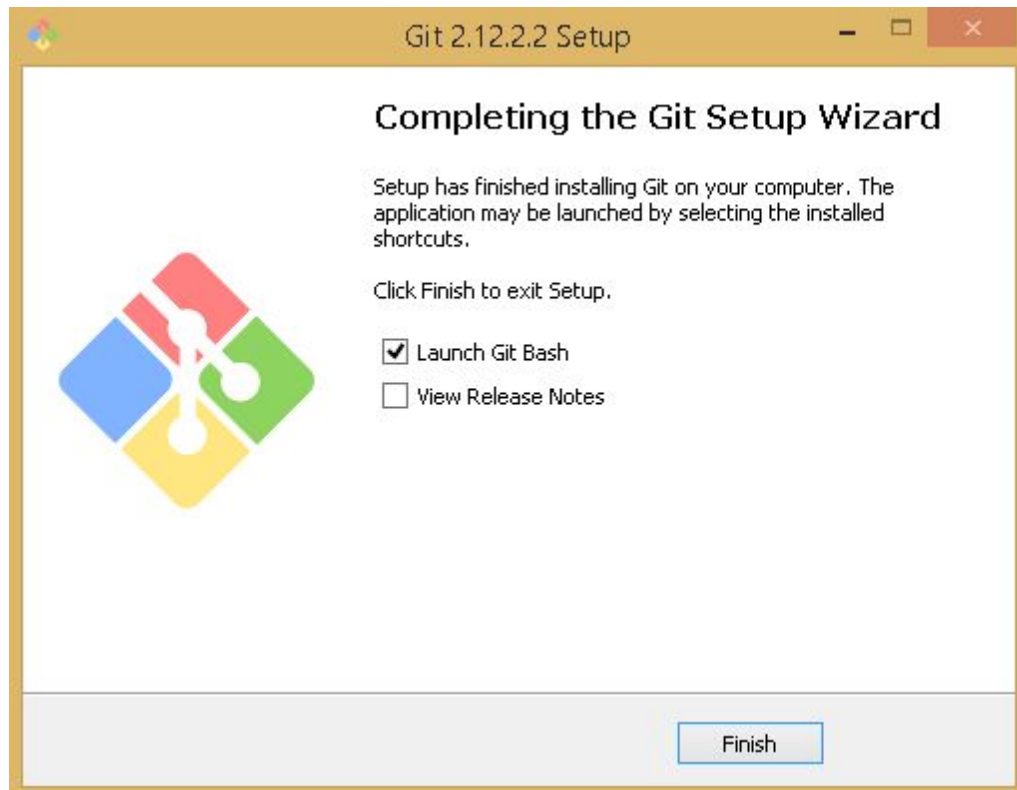
31# Click Next.



32# And finally click install.



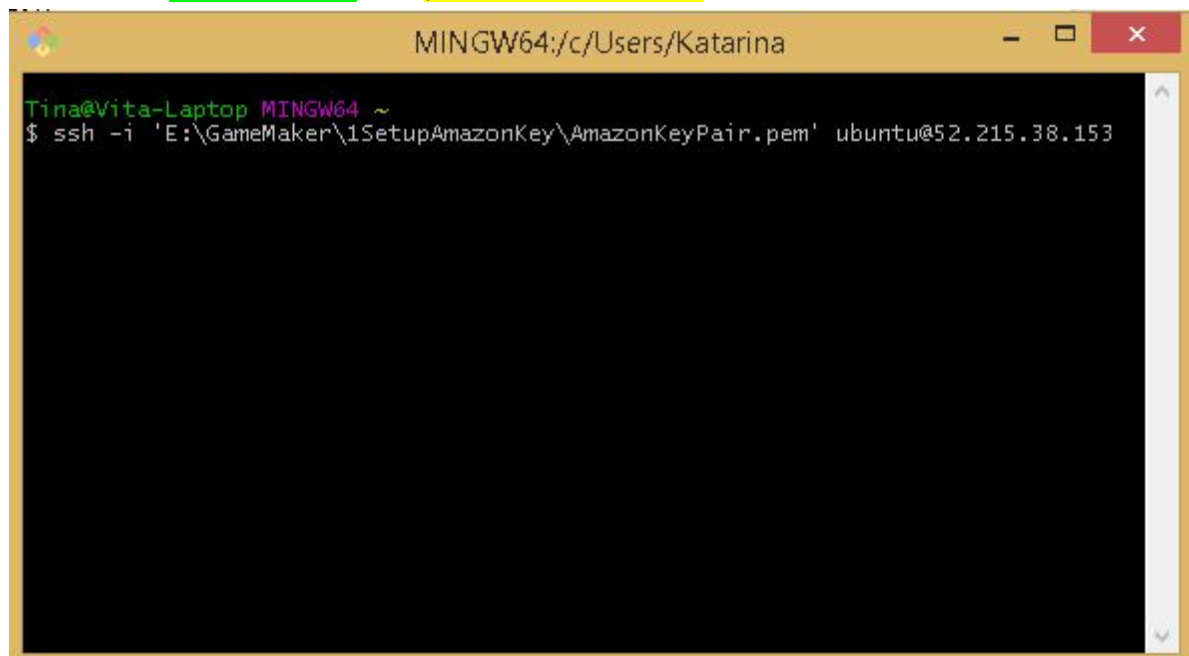
33# Check "Launch Git Bash"



34# Enter: `ssh -i 'E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem' ubuntu@52.215.38.153` and click enter

But replace the `E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem` with your location of the `.pem` file you downloaded in step 16#

And replace `52.215.38.153` with your IP from step 21#



35# If you get this message:

```
Permission denied (publickey).
```

The username is wrong. Try again with ubuntu. (ubuntu@52.215.38.153)

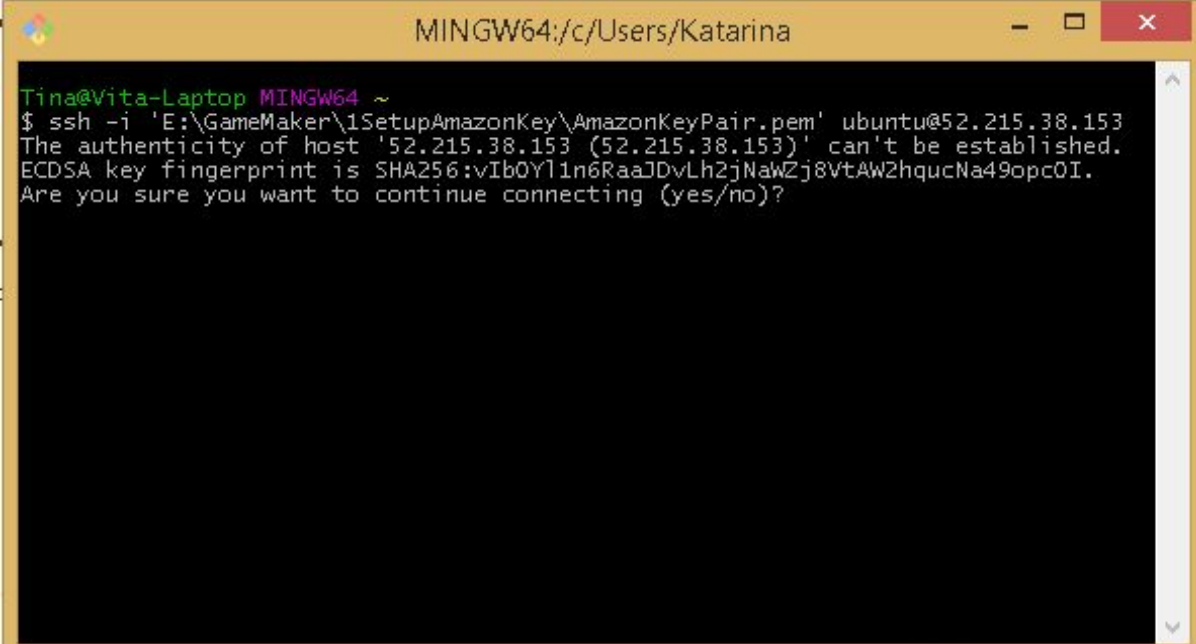
If it dont work you can try the following usernames:

ec2-user (ec2-user@52.215.38.153)

root (root@52.215.38.153)

fedora (fedora@52.215.38.153)

36# Type yes and click enter.



```
Tina@Vita-Laptop MINGW64 ~
$ ssh -i 'E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem' ubuntu@52.215.38.153
The authenticity of host '52.215.38.153 (52.215.38.153)' can't be established.
ECDSA key fingerprint is SHA256:vIb0Y1ln6RaaJDvLh2jNawZj8VtAW2hqucNa49opc0I.
Are you sure you want to continue connecting (yes/no)?
```

37# If you get this message:

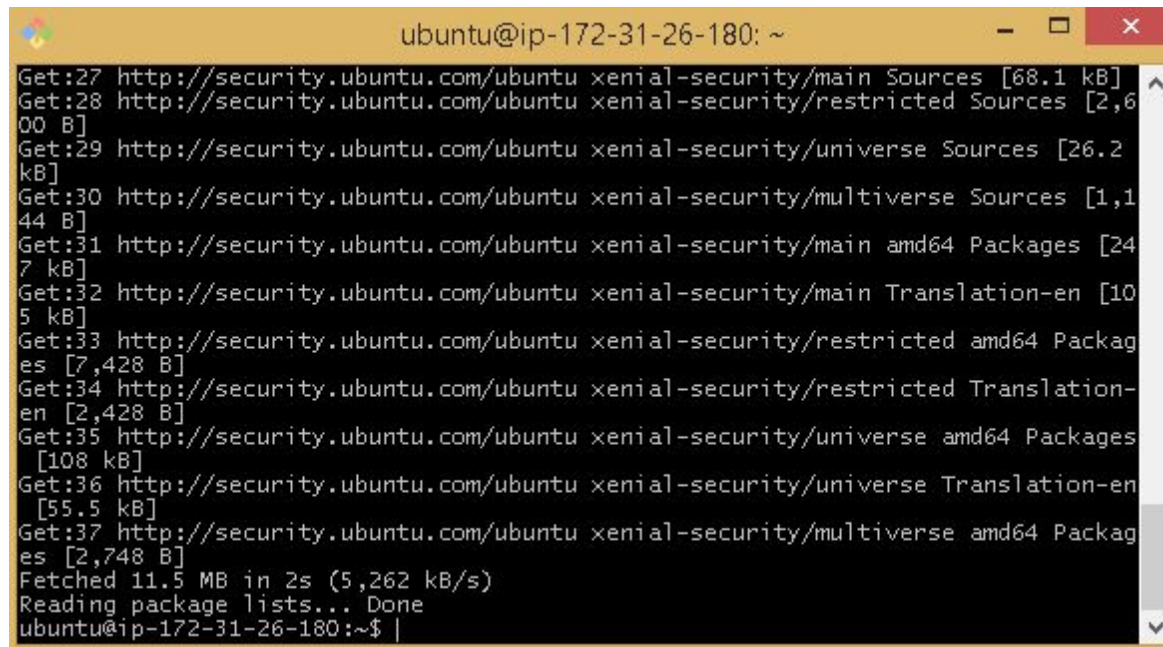
```
Connection to 52.215.38.153 closed by remote host.
Connection to 52.215.38.153 closed.
```

Just try step 34# again. Sometimes you need to try again and again.

38# Now we need to install Java on the server. Type and press enter: `sudo apt-get update`

```
ubuntu@ip-172-31-26-180:~$ sudo apt-get update
```

After a while:

A terminal window titled 'ubuntu@ip-172-31-26-180: ~' showing the output of the 'sudo apt-get update' command. The output lists updates for various Ubuntu repositories (xenial-security, universe, multiverse) and their respective package lists and translations. It shows that 11.5 MB were fetched in 2 seconds at a rate of 5,262 kB/s. The terminal text is as follows:

```
Get:27 http://security.ubuntu.com/ubuntu xenial-security/main Sources [68.1 kB]
Get:28 http://security.ubuntu.com/ubuntu xenial-security/restricted Sources [2,600 B]
Get:29 http://security.ubuntu.com/ubuntu xenial-security/universe Sources [26.2 kB]
Get:30 http://security.ubuntu.com/ubuntu xenial-security/multiverse Sources [1,144 B]
Get:31 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [247 kB]
Get:32 http://security.ubuntu.com/ubuntu xenial-security/main Translation-en [105 kB]
Get:33 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [7,428 B]
Get:34 http://security.ubuntu.com/ubuntu xenial-security/restricted Translation-en [2,428 B]
Get:35 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [108 kB]
Get:36 http://security.ubuntu.com/ubuntu xenial-security/universe Translation-en [55.5 kB]
Get:37 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [2,748 B]
Fetched 11.5 MB in 2s (5,262 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-26-180:~$
```

39# Type and press enter: `sudo apt-get install default-jre`

```
es [2,748 B]
Fetched 11.5 MB in 2s (5,262 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-26-180:~$ sudo apt-get install default-jre
```

You will be asked if its ok just type "y" and press enter.

```
Need to get 53.5 MB of archives.
After this operation, 301 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

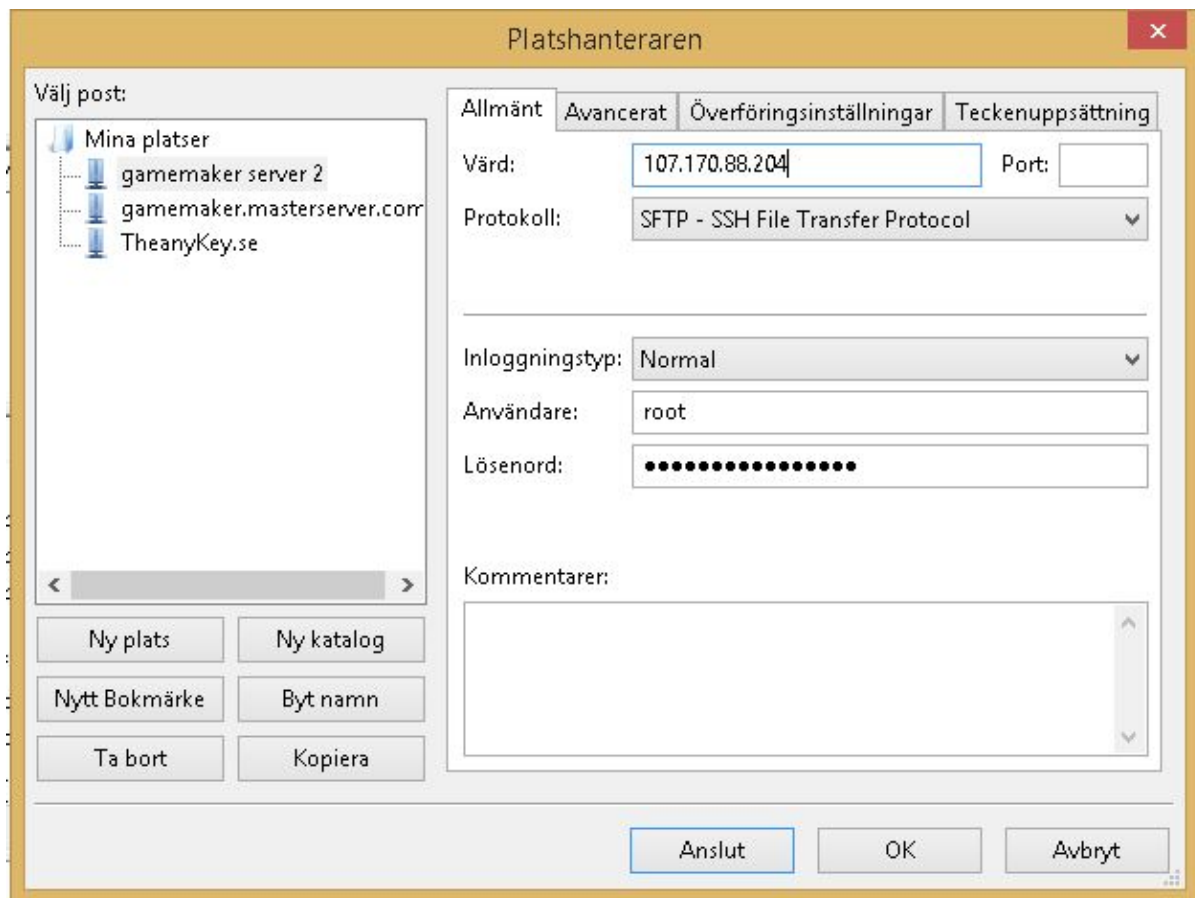
40# Wait until done:

```
done.
done.
ubuntu@ip-172-31-26-180:~$
```

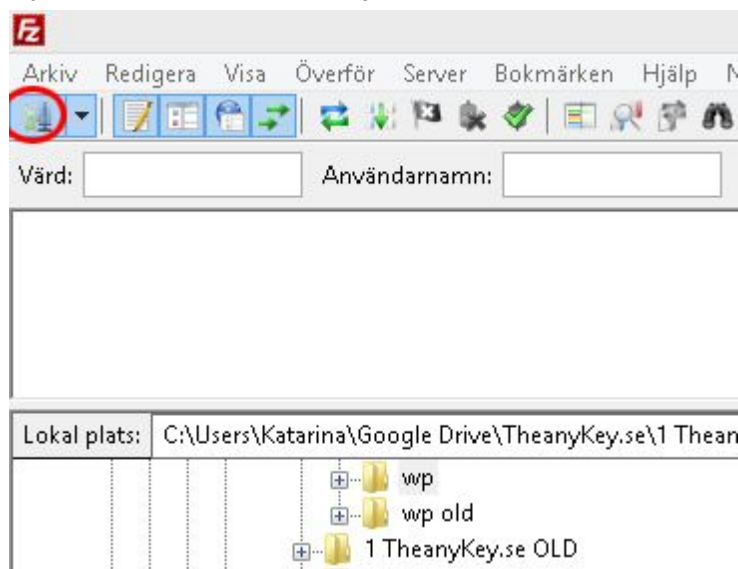
41# Now we need to upload the "gmnet_gate_punch.jar" file to the server. We need to download FileZilla here: <https://filezilla-project.org/download.php>



42# After you install FileZilla start it. This window will start (It will be completely empty for you):



If you dont see this window just click  in the left corner.



43# Enter Host (Your IP)

Host: Port:

44# Set SFTP - SSH as protocol

Protocol:

45# Logon Type: Key file

Logon Type:

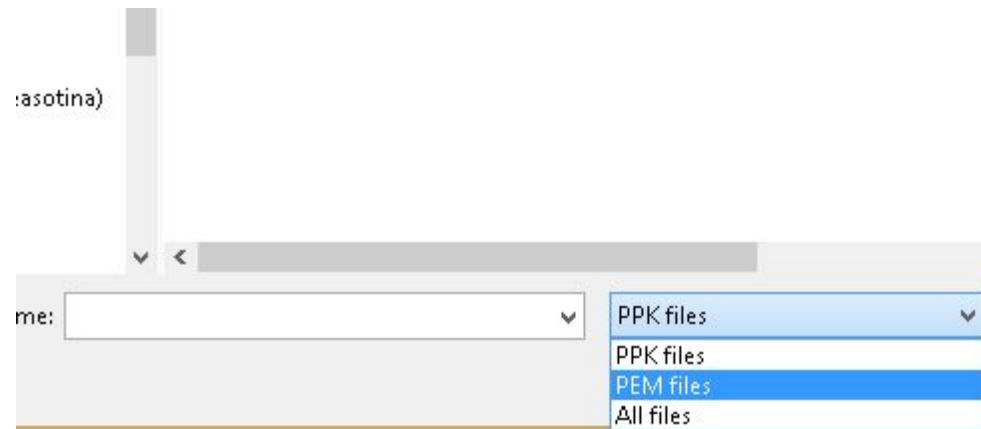
46# User name: ubuntu (the one from step 34#)

User:

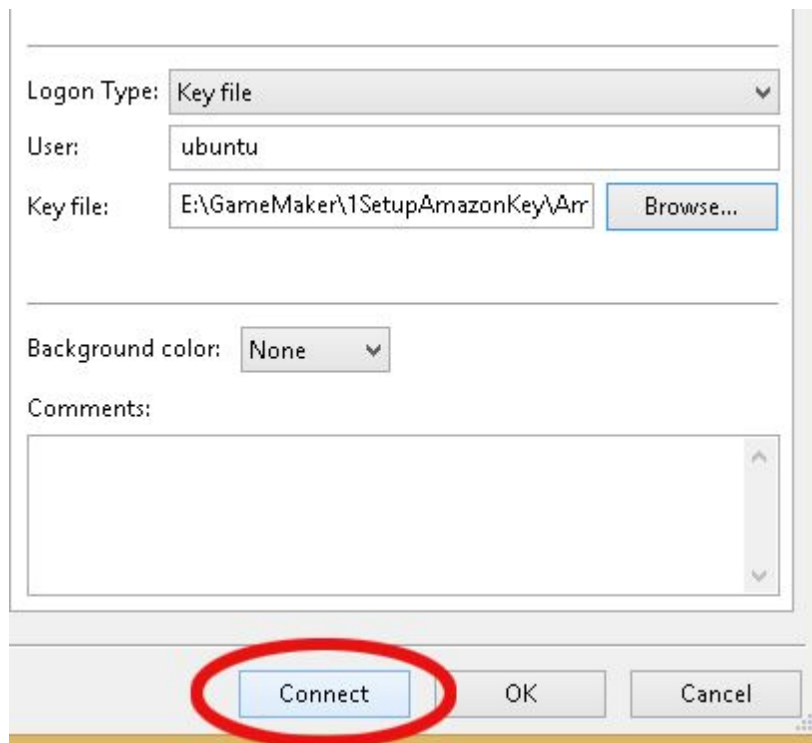
47# Browse for your “E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem” from **step 16**.

Key file:

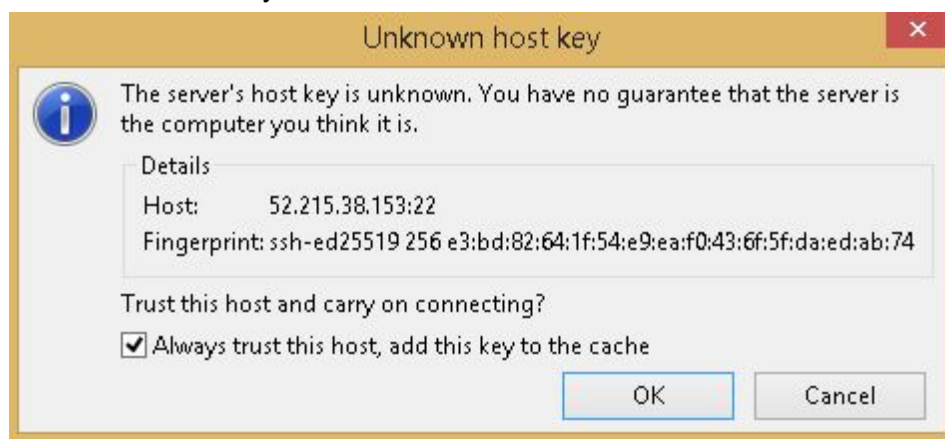
Make sure to select PEM files as filter



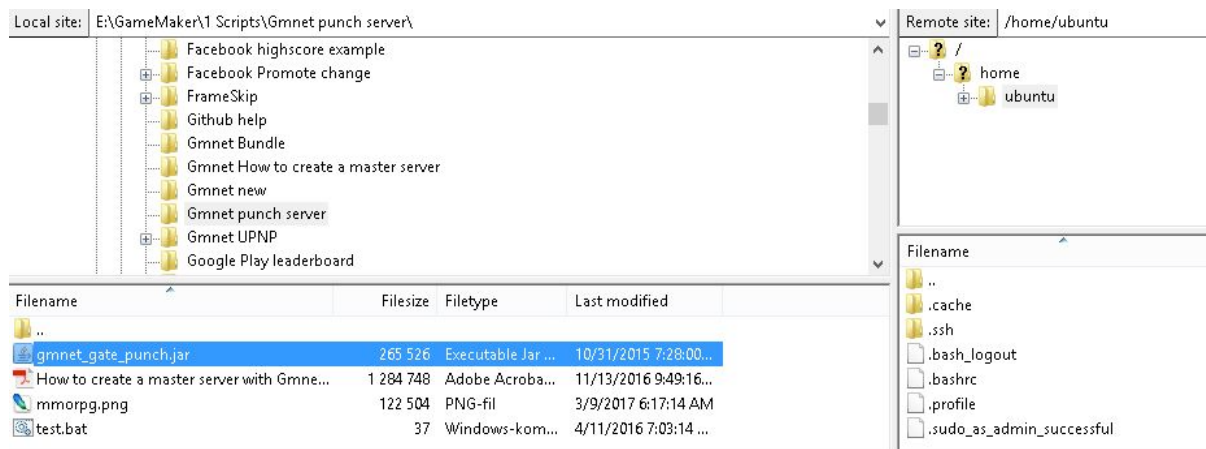
48# Click connect.



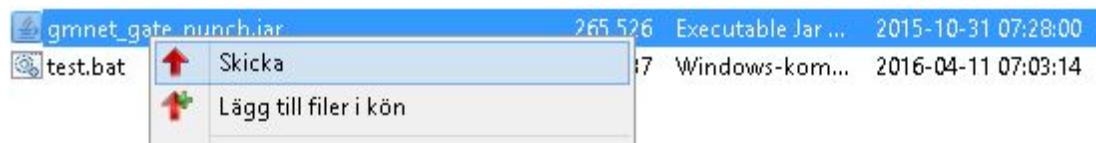
49# Click OK when you see this.



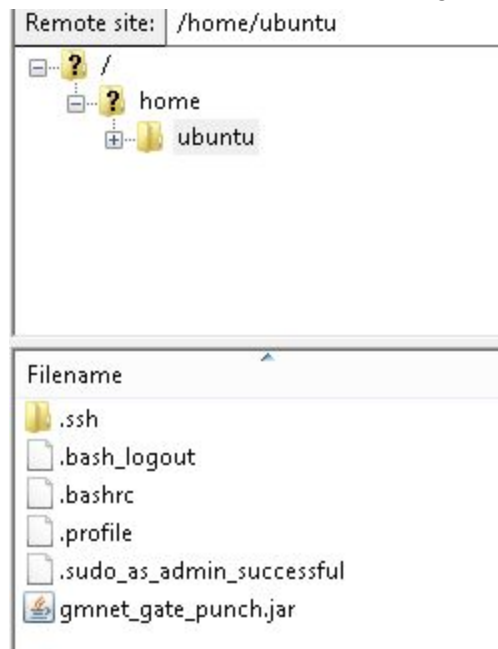
50# On the left side browse to your “gmnet_gate_punch.jar”. If you don’t have it download it from: <https://gmnet-engine.org/gatepunch/>



51# Right click on “gmnet_gate_punch.jar” and click send/upload:



You will then see the file on the right side:



52# Go back to the Git bash window

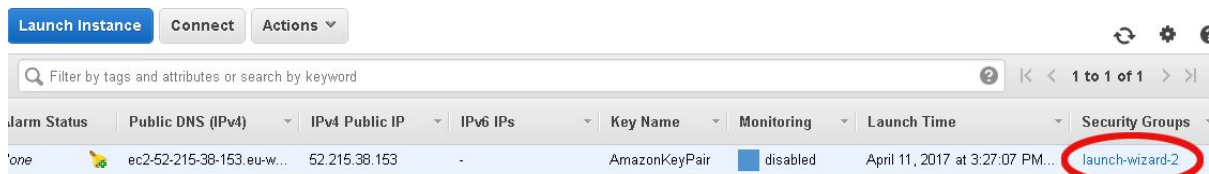
```
ubuntu@ip-172-31-26-180: ~  
Adding debian:thawte_Primary_Root_CA.pem  
done.  
Setting up default-jre-headless (2:1.8-56ubuntu2) ...  
Setting up openjdk-8-jre:amd64 (8u121-b13-0ubuntu1.16.04.2) ...  
update-alternatives: using /usr/lib/jvm/java-8-openjdk-amd64/jre/bin/policytool  
to provide /usr/bin/policytool (policytool) in auto mode  
Setting up default-jre (2:1.8-56ubuntu2) ...  
Setting up gconf-service-backend (3.2.6-3ubuntu6) ...  
Setting up gconf2 (3.2.6-3ubuntu6) ...  
Setting up libgnomevfs2-common (1:2.24.4-6.1ubuntu1) ...  
Setting up libgnomevfs2-0:amd64 (1:2.24.4-6.1ubuntu1) ...  
Setting up libgnome2-common (2.32.1-5ubuntu1) ...  
Setting up libgnome-2-0:amd64 (2.32.1-5ubuntu1) ...  
Processing triggers for libc-bin (2.23-0ubuntu5) ...  
Processing triggers for systemd (229-4ubuntu16) ...  
Processing triggers for ureadahead (0.100.0-19) ...  
Processing triggers for ca-certificates (20160104ubuntu1) ...  
Updating certificates in /etc/ssl/certs...  
0 added, 0 removed; done.  
Running hooks in /etc/ca-certificates/update.d...  
  
done.  
done.  
ubuntu@ip-172-31-26-180:~$ |
```

Start the gmnet master server by type in and press enter: `java -jar gmnet_gate_punch.jar`

```
ubuntu@ip-172-31-26-180:~$ java -jar gmnet_gate_punch.jar  
4/11/17 2:42 PM : GMnet GATE.PUNCH STARTED  
4/11/17 2:42 PM : Starting UDP and TCP servers on port 6510
```

53# The server is now started. We now need to allow players to use it.

54# Click “launch-wizard-2” under security groups.



55# Click Edit under the “Inbound” tab.

Create Security Group

Actions ▾

search : sg-d40abead ✕

Add filter

☐	Name ▾	Group ID
☐		sg-d40abead

Security Group: sg-d40abead

Description

Inbound

Outbound

Tags

Edit

Type ⓘ

Protocol ⓘ

SSH

TCP

56# Click “Add Rule” and set Type to “Custom TCP” and Port Range to 6510 and Source as any.

Edit inbound rules ✕

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ	
SSH ▾	TCP	22	Custom ▾ 0.0.0.0/0	✕
Custom TCP Rule ▾	TCP	6510	Anywhere ▾ 0.0.0.0, ::/0	✕

Add Rule

Cancel

Save

Custom TCP Rule ▾

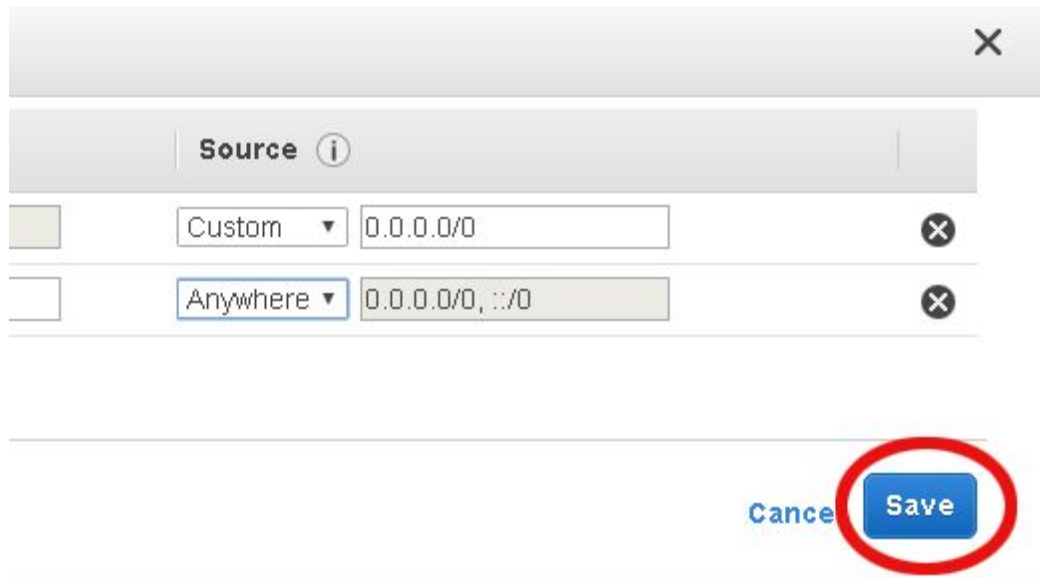
TCP

6510

Anywhere ▾

0.0.0.0/0, ::/0

57# Click "Save"



58# Everything should work now :-)

Extra:

To stop the server use Ctrl+C (Hold Ctrl and press the C key)

```
4/11/17 2:42 PM : GMnet GATE.PUNCH STARTED
4/11/17 2:42 PM : Starting UDP and TCP servers on port 6510
^Cubuntu@ip-172-31-26-180:~$
```

You can get a list of commands by type: `java -jar gmnet_gate_punch.jar -help`

```
ubuntu@ip-172-31-26-180:~$ java -jar gmnet_gate_punch.jar -help
usage: java -jar gmnet_gatepunch.jar [--disable-lobby] [-h] [-l <FILE>]
      [--name <arg>] [-p <PORT>] [-q] [--testing] [-v] [--version]
Start GMnet GATE.PUNCH. The master server for GMnet PUNCH / GMnet ENGINE.
More information: http://gmnet.parakooopa.deUse GMnet GATE.TESTER to debug
your master server (http://gmnet.parakooopa.de/tester).
      --disable-lobby  Ignore all requests of listing the connected
                        servers.
      -h,--help        Print this help text.
      -l,--log <FILE>  Log output to this file. Will still log even if
                        'quiet' is set.
      --name <arg>     Name this master server (can be used with HTMT)
      -p,--port <PORT> Specify the TCP and UDP port this server will listen
                        on. Default: 6510
      -q,--quiet       Don't output anything to the console.
      --testing        Enable testing mode to use debugging tools such as
                        HTMT.
      -v,--verbose     Print and/or log all information.
      --version        Print version information and exit.
ubuntu@ip-172-31-26-180:~$
```

To start the server with another port type: `java -jar gmnet_gate_punch.jar -port 6511`

Note that you must add the port in step 54#

If you get this message:

```
java.net.BindException: Address already in use
  at java.net.PlainSocketImpl.socketBind(Native Method)
  at java.net.AbstractPlainSocketImpl.bind(AbstractPlainSocketImpl.java:376)
  at java.net.ServerSocket.bind(ServerSocket.java:376)
  at java.net.ServerSocket.<init>(ServerSocket.java:237)
  at java.net.ServerSocket.<init>(ServerSocket.java:128)
  at org.parakoopa.gmnetgate.punch.Mediator.<init>(Mediator.java:218)
  at org.parakoopa.gmnetgate.punch.Mediator.main(Mediator.java:212)
```

You need to reboot. Type:

sudo reboot

```
ubuntu@ip-172-31-26-180:~$ sudo reboot|
```

```
ubuntu@ip-172-31-26-180:~$ sudo reboot
Connection to 52.215.38.153 closed by remote host.
Connection to 52.215.38.153 closed.

Tina@Vita-Laptop MINGW64 ~
$
```

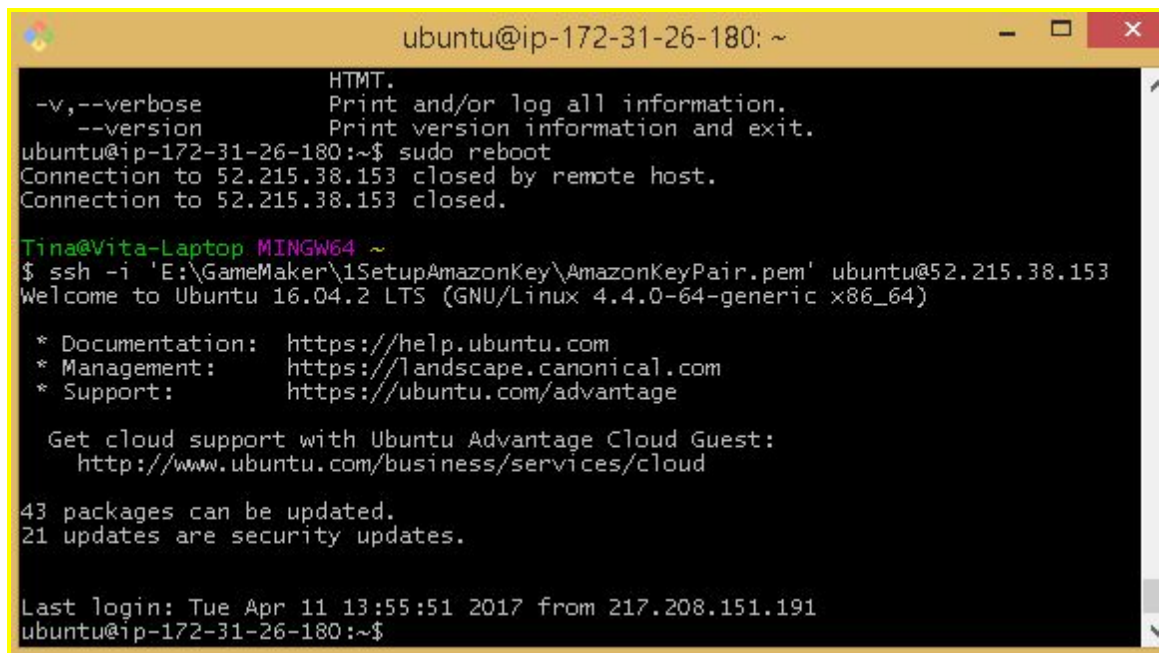
You need to wait some until you can connect again.

Enter: `ssh -i 'E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem'`

`ubuntu@52.215.38.153` and click enter

But replace the `E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem` with your location of the .pem file you downloaded in step 16#

And replace `52.215.38.153` with your IP from step 21#



```
ubuntu@ip-172-31-26-180: ~
-v,--verbose      HTMT.
--version          Print and/or log all information.
                  Print version information and exit.
ubuntu@ip-172-31-26-180:~$ sudo reboot
Connection to 52.215.38.153 closed by remote host.
Connection to 52.215.38.153 closed.

Tina@Vita-Laptop MINGW64 ~
$ ssh -i 'E:\GameMaker\1SetupAmazonKey\AmazonKeyPair.pem' ubuntu@52.215.38.153
Welcome to Ubuntu 16.04.2 LTS (GNU/Linux 4.4.0-64-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

43 packages can be updated.
21 updates are security updates.

Last login: Tue Apr 11 13:55:51 2017 from 217.208.151.191
ubuntu@ip-172-31-26-180:~$
```

You are now ready to start the server again with

You can give the master server max memory by typing:

`java -Xmx512M -Xms512M -jar gmnet_gate_punch.jar`
