



UNIVERSITY OF TORONTO
SCHOOL OF CONTINUING STUDIES

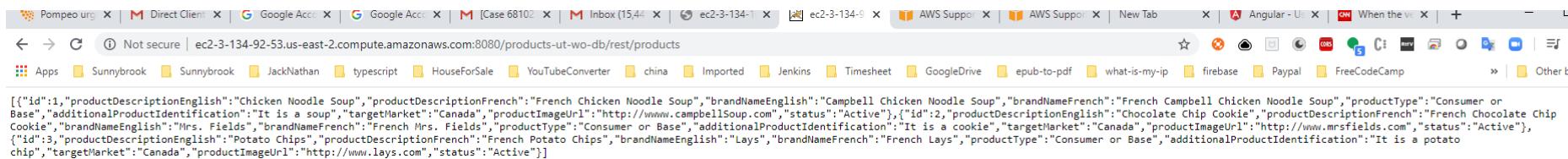
3416-003 Angular

**Module AWS: Setting Up Web Service
and deploying to AWS**

Table of Contents

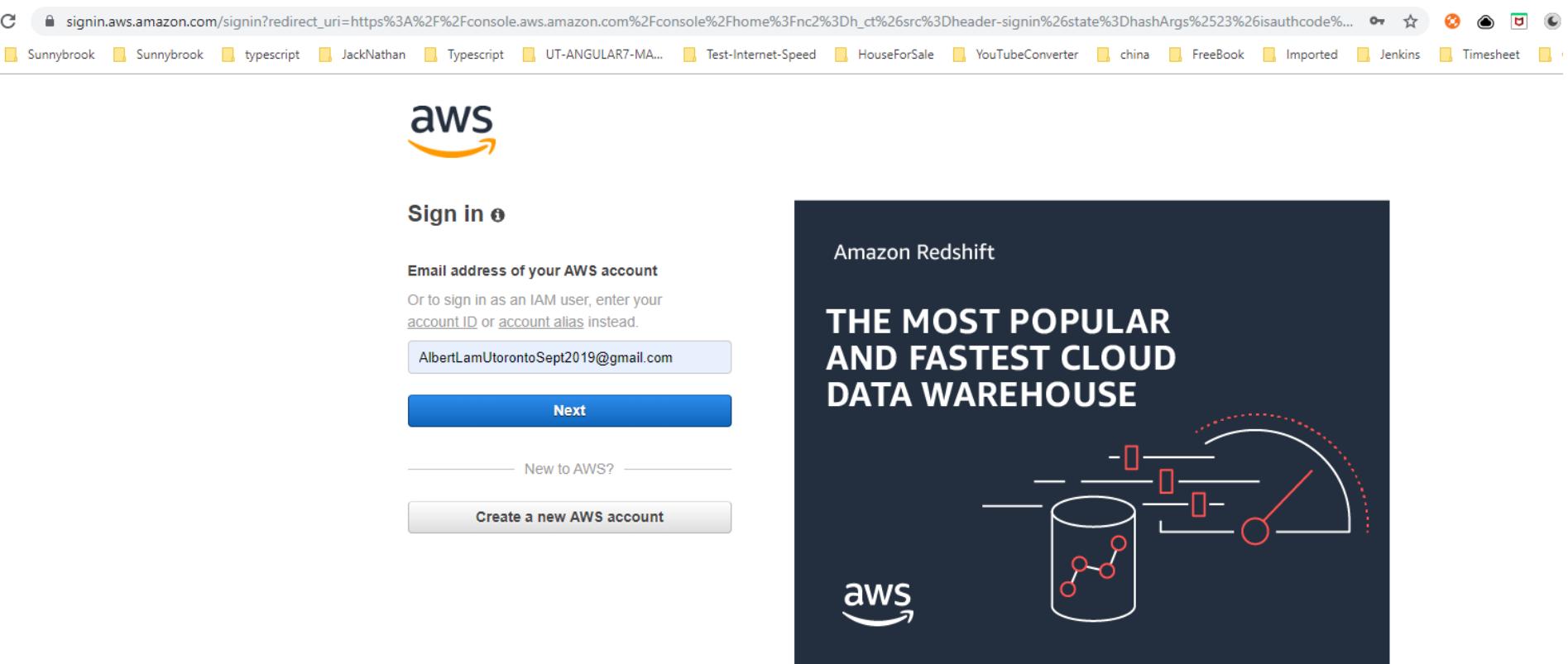
- Setup web service for local computer.
- Setup AWS
- Deploy webservice on aws.
- Test the following url:

<http://ec2-3-134-92-53.us-east-2.compute.amazonaws.com:8080/products-ut-wo-db/rest/products>



Create gmail account

- Create an gmail account called AlbertLamUtorontoSept2020@gmail.com.
- Click “create new aws account”:

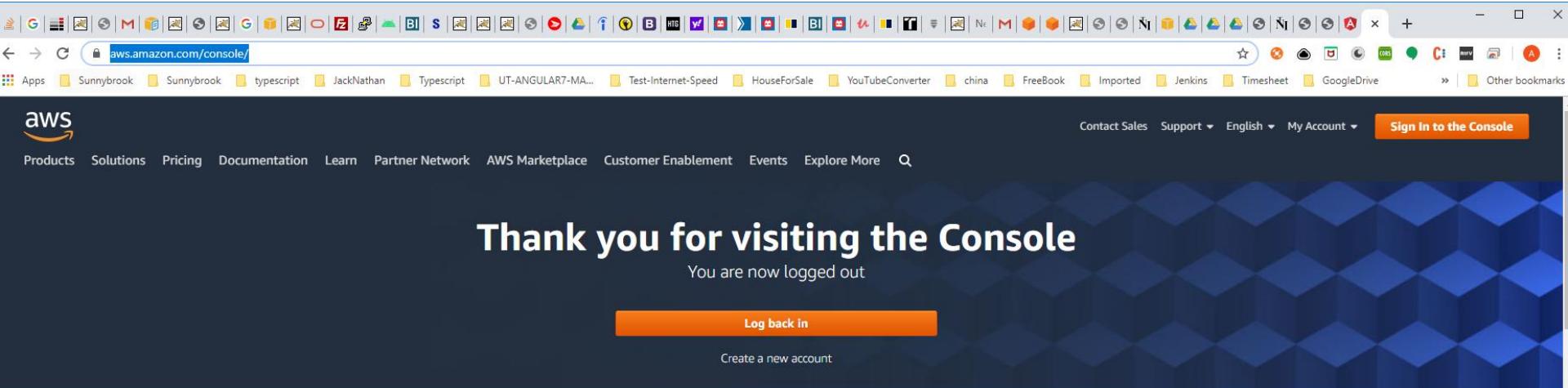


[About Amazon.com Sign In](#)

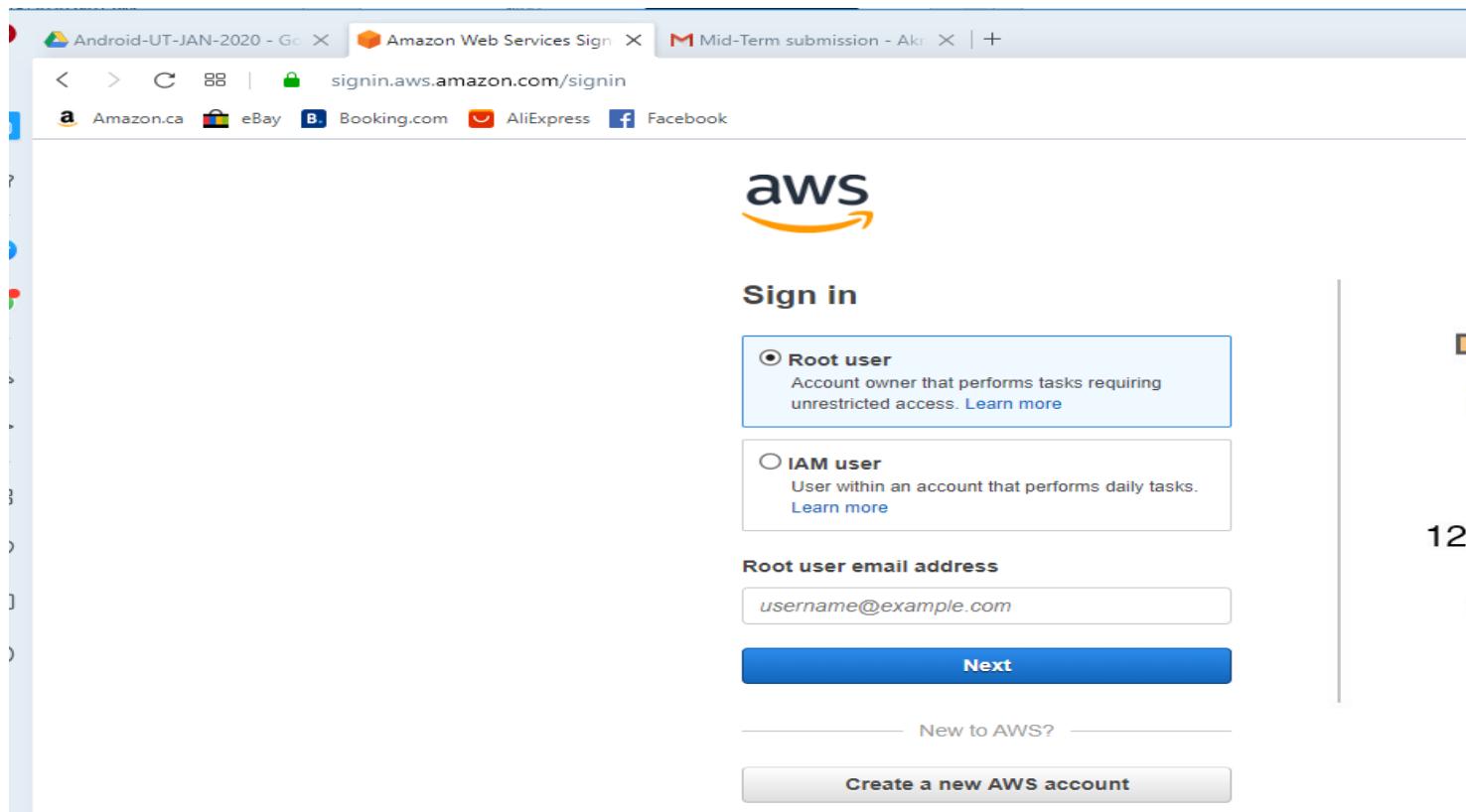
Amazon Web Services uses information from your Amazon.com account to identify you and allow access to Amazon Web Services. Your use of this site is governed by our Terms of Use and Privacy Policy linked below. Your use of Amazon Web Services products and services is governed by the AWS Customer Agreement linked below unless you have entered into a separate agreement with Amazon Web Services or an AWS Value Added Reseller to purchase these products and services. The AWS Customer Agreement

Create gmail account

- <https://aws.amazon.com/console/>



AWS(Click create a new AWS account)



12

portal.aws.amazon.com/billing/signup#/start

Apps UT-ANGULAR7-MA... Sunnybrook typescript JackNathan Typescript Jaden china FreeBook Imported Jenkins GoogleDrive japanese nest epub-pdf Wayback

waws

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

Create an AWS account

Email address

Password

Confirm password

AWS account name ?

[Sign in to an existing AWS account](#)

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[Privacy Policy](#) | [Terms of Use](#)

All fields are required.

Please select the account type and complete the fields below with your contact details.

Account type 

Professional Personal

Full name

Albert Lam

Phone number

4165772281

Country/Region

Canada

Address

122 valdor drive

Apartment, suite, unit, building, floor, etc.

City

markham

State / Province or region

ontario

Postal code

L6C0P2



Check here to indicate that you have read
and agree to the terms of the [AWS
Customer Agreement](#)

Create Account and Continue

Payment Information

We use your payment information to verify your identity and only for usage in excess of the [AWS Free Tier Limits](#). We will not charge you for usage below the AWS Free Tier Limits. For more information, see the [frequently asked questions](#).



When you submit your payment information, we will charge \$1 USD/EUR to your credit card as a verification charge to ensure your card is valid. The amount may show as pending in your credit card statement for 3-5 days until the verification is completed, at which time the charge will be removed. You may be redirected to your bank website to authorize the verification charge.

Credit/Debit card number

Expiration date

11	▼	2019	▼
----	---	------	---

Cardholder's name

Billing address

Use my contact address

24 Br...
Markham
CA

Confirm your identity

Before you can use your AWS account, you must verify your phone number. When you continue, the AWS automated system will contact you with a verification code.

How should we send you the verification code?

Text message (SMS) Voice call

Country or region code

Canada (+1)

Cell Phone Number

4165772281

Security check



re6a76y|

Send SMS

Confirm your identity

Before you can use your AWS account, you must verify your phone number. When you continue, the AWS automated system will contact you with a verification code.

[How should we send you the verification?](#)

Enter verification code

Enter the 4-digit verification code that you received on your phone.

9012

Verify Code

Having trouble? Sometimes it takes up to 10 minutes to receive a verification code. If it's been longer than that, [return to the previous page](#) and enter your number again.

Send SMS

AWS

- AWS send security code
- Click “free”:

Select a Support Plan

AWS offers a selection of support plans to meet your needs. Choose the support plan that best aligns with your AWS usage. [Learn more](#)

 Basic Plan	 Developer Plan	 Business Plan
Free	From \$29/month	From \$100/month
<ul style="list-style-type: none">• Included with all accounts• 24x7 self-service access to AWS resources• For account and billing issues only• Access to Personal Health Dashboard & Trusted Advisor	<ul style="list-style-type: none">• For early adoption, testing and development• Email access to AWS Support during business hours• 1 primary contact can open an unlimited number of support cases• 12-hour response time for nonproduction systems	<ul style="list-style-type: none">• For production workloads & business-critical dependencies• 24/7 chat, phone, and email access to AWS Support• Unlimited contacts can open an unlimited number of support cases• 1-hour response time for production systems

Need Enterprise level support?

Contact your account manager for additional information on running business and mission critical-workloads on AWS (starting at \$15,000/month). [Learn more](#)

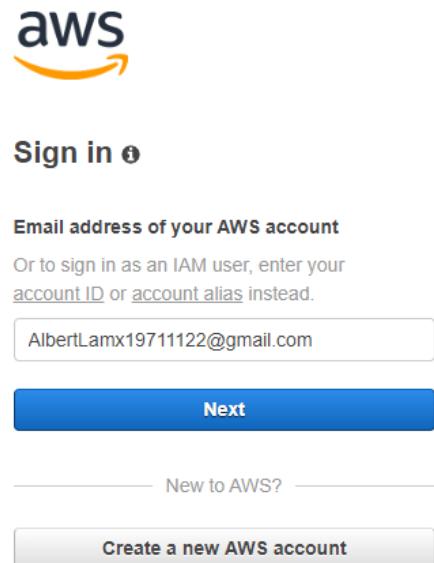
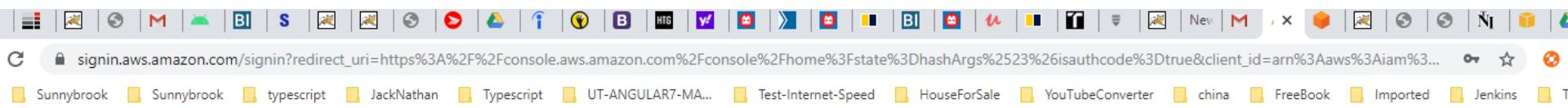
AWS

- Click “sign in to console”:

The screenshot shows a web browser window with the URL portal.aws.amazon.com/billing/signup#/confirmation. The page title is "Welcome to Amazon Web Services". The main message reads: "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." To the right, there is a yellow button labeled "Sign in to the Console" and a white button labeled "Contact Sales". At the bottom, there is a copyright notice: "© 2019 Amazon Web Services, Inc. or its affiliates. All rights reserved." followed by links to "Privacy Policy", "Terms of Use", and "Sign Out".

AWS

- Click NEXT.



The image shows the AWS sign-in form. It features the AWS logo at the top left. Below it is the heading "Sign in ⓘ". A text input field is labeled "Email address of your AWS account" with the placeholder "Or to sign in as an IAM user, enter your account ID or account alias instead.". An input field contains the email "AlbertLamx1971122@gmail.com". A blue "Next" button is positioned below the input field. At the bottom of the form, there is a link "New to AWS?" followed by a "Create a new AWS account" button.



The image is an advertisement for Amazon Forecast. The title "Amazon Forecast" is displayed in large, bold, white font. Below the title, the text "Accurate time-series forecasting service, based on the same technology used at Amazon.com" is written in a smaller white font. The background is dark blue. On the right side, there is a graphic featuring a brain-like hexagonal pattern next to a gear, symbolizing machine learning or forecasting. The AWS logo is visible in the bottom left corner of the ad.

AWS

- Click “Sign In”.

The screenshot shows a browser window with the AWS sign-in page and a sidebar advertisement for Amazon Forecast.

AWS Sign-In Page:

- The URL in the address bar is `signin.aws.amazon.com/signin?redirect_uri=https%3A%2F%2Fconsole.aws.amazon.com%2Fconsole%2Fhome%3Fstate%3DhashArgs%2523%26isauthcode%3Dtrue&client_id=arn%3Aaws%3Aiam%3...%`.
- The page title is "Root user sign in ⓘ".
- It displays the AWS logo at the top.
- The sign-in form includes:
 - Email: `AlbertLamx19711122@gmail.com`
 - Password input field containing `.....`
 - "Forgot password?" link
 - A large blue "Sign in" button.
- Links at the bottom include "Sign in to a different account" and "Create a new AWS account".

Amazon Forecast Advertisement:

- The ad has a dark blue background with the text "Amazon Forecast" in large white letters.
- Below the title, it says "Accurate time-series forecasting service, based on the same technology used at Amazon.com".
- It features the AWS logo and a graphic of a gear and a line graph.

EC2

Screenshot of the AWS Management Console home page (us-east-2.console.aws.amazon.com) showing the EC2 service selected.

The main navigation bar includes links for various AWS services like AppSync, CloudWatch Metrics, Lambda, and others, along with a search bar and user profile information.

AWS services section:

- Find Services**: A search bar with placeholder text "Example: Relational Database Service, database, RDS".
- Recently visited services**: A dropdown menu showing "EC2" and "Billing".
- All services**: A link to view all available AWS services.

Build a solution section:

- Launch a virtual machine**: With EC2, 2-3 minutes. Icon: Server.
- Build a web app**: With Elastic Beanstalk, 6 minutes. Icon: Cloud with a gear.
- Build using virtual servers**: With Lightsail, 1-2 minutes. Icon: Cloud with a plus sign.
- Connect an IoT device**: With AWS IoT, 5 minutes. Icon: Cloud with three people.

Access resources on the go section:

- Icon: Phone. Text: Access the Management Console using the AWS Console Mobile App. [Learn more](#)

Explore AWS section:

- Amazon Redshift**: Fast, simple, cost-effective data warehouse that can extend queries to your data lake. [Learn more](#)
- Run Serverless Containers with AWS Fargate**: AWS Fargate runs and scales your containers without having to manage servers or clusters. [Learn more](#)
- Scalable, Durable, Secure Backup & Restore with Amazon S3**: Discover how customers are building backup & restore solutions on AWS that save money. [Learn more](#)

EC2

- Click “launch a virtual machine”:

The screenshot shows the AWS Home page with the EC2 service selected. The top navigation bar includes links for Billing, Support, and EC2. The main content area features a "Build a solution" section with various quick-launch options. The "Launch a virtual machine" option under "Build a solution" is highlighted with a blue border. To the right, there are sections for AWS Certification, Amazon S3 on Outposts, Amazon Elasticsearch Service, AWS Storage Gateway, and Have feedback?.

AWS services

Find Services
You can enter names, keywords or acronyms.
Example: Relational Database Service, database, RDS

Recently visited services: Billing, Support, EC2

All services

Build a solution
Get started with simple wizards and automated workflows.

Launch a virtual machine	Build a web app	Build using virtual servers	Register a domain
With EC2 2-3 minutes	With Elastic Beanstalk 6 minutes	With Lightsail 1-2 minutes	With Route 53 3 minutes

Connect an IoT device	Start migrating to AWS	Start a development project	Deploy a serverless microservice
With AWS IoT 5 minutes	With CloudEndure Migration 1-2 minutes	With CodeStar 5 minutes	With Lambda, API Gateway 2 minutes

Stay connected to your AWS resources on-the-go
Download the AWS Console Mobile App to your iOS or Android mobile device. [Learn more](#)

Explore AWS

AWS Certification
Explore the resources available to help you prepare for your AWS Certification. [Learn more](#)

Amazon S3 on Outposts
You can now use S3 object storage in your on-premises environment. [Learn more](#)

Amazon Elasticsearch Service
Fully managed Elasticsearch for log analytics, without the operational overhead. [Learn more](#)

AWS Storage Gateway
Get on-premises low latency access to virtually unlimited cloud storage with this hybrid cloud storage service. [Learn more](#)

Have feedback?

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EC2

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#LaunchInstanceWizard:

Apps Sunnybrook TypeScript JackNathan Typescript UT-ANGULAR7-MA... Test-Internet-Speed HouseForSale YouTubeConverter china FreeBook Imported Jenkins Timesheet GoogleDrive > Other bookmarks

AlbertLamx19711122@gmail.c... Ohio Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Search for an AMI by entering a search term e.g. "Windows"

click "select".

Cancel and Exit

Quick Start

My AMIs

AWS Marketplace

Community AMIs

Free tier only ⓘ

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0dacb0c129b49f529 (64-bit x86) / ami-065b6220c7de34787 (64-bit Arm)

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)
 64-bit (Arm)

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0c64dd618a49aeee8

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-0520e698dd500b1d1 (64-bit x86) / ami-0099847d600887c9f (64-bit Arm)

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)
 64-bit (Arm)

SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type - ami-052a6e77572eba9a9 (64-bit x86) / ami-034ecb883363663c5 (64-bit Arm)

Select

K < 1 to 40 of 40 AMIs > |



EC2

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Click "Next Configure instance details".

Filter by:	All instance types	Current generation	Show/Hide Columns					
Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)								
	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

EC2

AWS Services Resource Groups ★

AlbertLamx19711122@gmail.c... Ohio Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0cfb5ad2444e583e1	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Click "Review and Launch".

Cancel Previous **Review and Launch** Next: Add Tags

EC2

AWS Services Resource Groups ★

AlbertLamx19711122@gmail.com Ohio Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

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.

AMI Details [Edit AMI](#)

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0dacb0c129b49f529

Free tier eligible Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.
Root Device Type: ebs Virtualization 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

Security Groups [Edit security groups](#)

Security group name: launch-wizard-1
Description: launch-wizard-1 created 2019-11-30T09:26:58.641-05:00

Type	Protocol	Port Range	Source	Description
This security group has no rules				

Click "Launch".

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

Tags [Edit tags](#)

Launch **Cancel** **Previous**

Select an existing key pair or create a new key pair X

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 ▼

Select a key pair
No key pairs found ▼

⚠ **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

Select an existing key pair or create a new key pair X

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](#)

[Choose an existing key pair](#)

Create a new key pair

[Proceed without a 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

EC2

Select an existing key pair or create a new key pair X

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
ALBERT1

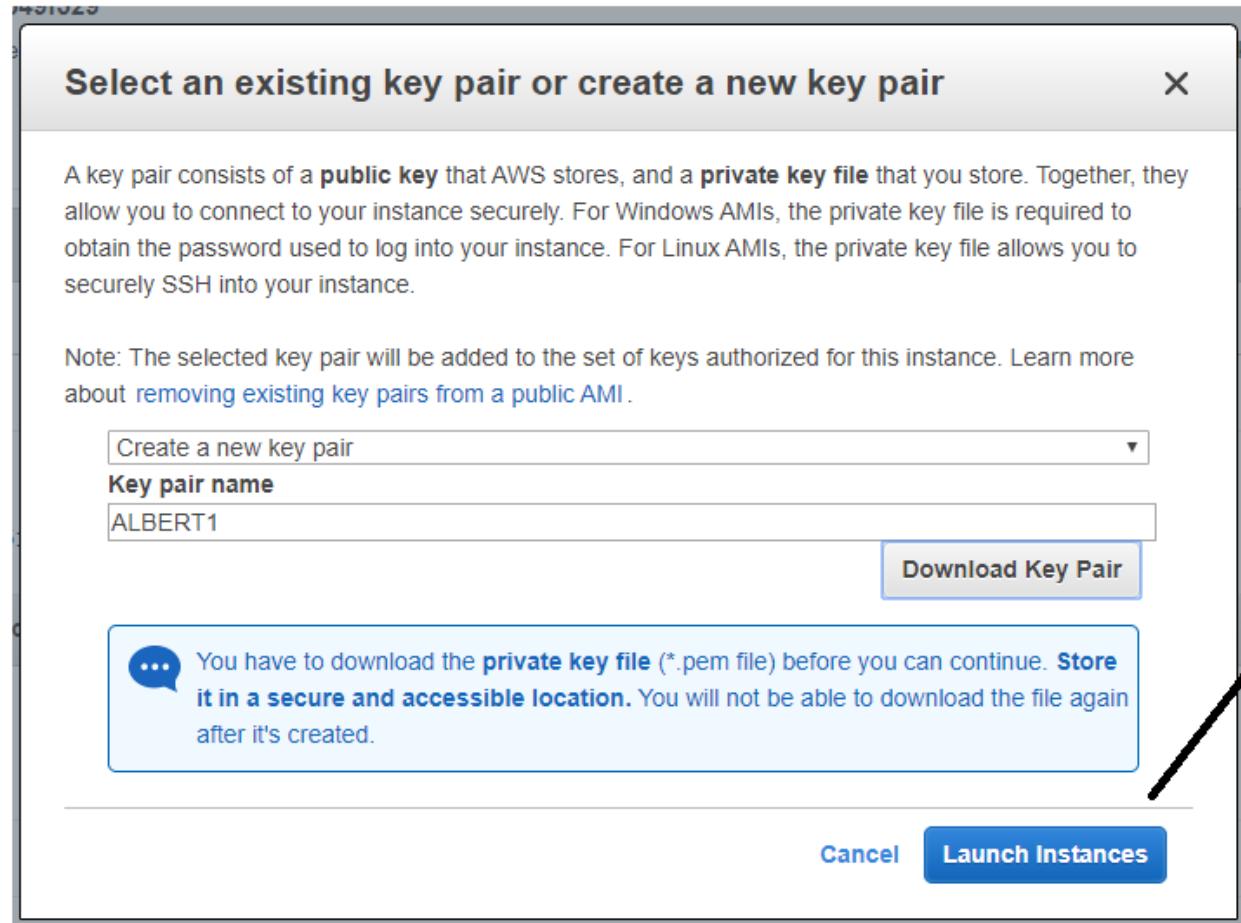
Download Key Pair

Info: 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**

click "download key pair".

EC2



click "launch instances".

AWS Services Resource Groups ★

AlbertLamx19711122@gmail.c... Ohio Support

Launch Status

Your instances are now launching
The following instance launches have been initiated: i-0e542c39767a7ddbd [View launch log](#)

Get notified of estimated charges
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

Click "View Instances".

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](#)

ec2

us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#Instances:

New EC2 Experience Tell us what you think

EC2 Dashboard New

Events New

Tags

Limits

Instances

Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts New

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups New

Elastic IPs New

Placement Groups New

Feedback English (US) ▾

AlbertLamTorontoSept2020 ▾ Ohio ▾ Support ▾

Instances (1/1) Info

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
-	i-0597bc580b6f0fb21	Running	t2.micro	Initializing	No alarms +	us-east-2b	ec2-52-14-130-217.us...	52.14.130.217	-

Instance: i-0597bc580b6f0fb21

Details Security Networking Storage Status Checks Monitoring Tags

Instance summary Info

Instance ID i-0597bc580b6f0fb21	Public IPv4 address 52.14.130.217 open address	Private IPv4 addresses 172.31.16.55
Instance state Running	Public IPv4 DNS ec2-52-14-130-217.us-east-2.compute.amazonaws.com open address	Private IPv4 DNS ip-172-31-16-55.us-east-2.compute.internal
Instance type t2.micro	Elastic IP addresses -	VPC ID vpc-0616a46d
AWS Compute Optimizer finding	IAM Role	Subnet ID

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ALBERT1.pem products-ut-wo-db....zip Nov23-to-Nov27.JPG 20201125_confirm....pdf 20201125_confirm....pdf 20201125_confirm....pdf products-ut-wo-db....zip Removed Show all

DNS NAME

- ec2-52-14-130-217.us-east-2.compute.amazonaws.com
- <http://ec2-52-14-130-217.us-east-2.compute.amazonaws.com/>

Putty

- <https://www.putty.org/>

The screenshot shows a web browser window with the URL [putty.org](https://www.putty.org/) in the address bar. The page content includes a screenshot of the PuTTY configuration window, a download button labeled "Download PuTTY", and a descriptive text block. A handwritten-style annotation with a black arrow points from the text "Click here." to the "Download PuTTY" button.

Click here.

Download PuTTY

PuTTY is an SSH and telnet client, developed originally by Simon Tatham for the Windows platform. PuTTY is open source software that is available with source code and is developed and supported by a group of volunteers.

You can download PuTTY [here](#).

Below suggestions are independent of the authors of PuTTY. They are *not* to be seen as endorsements by the PuTTY project.

Putty for windows

- → C chiark.greenend.org.uk/~sgtatham/putty/latest.html

Apps Sunnybrook Sunnybrook typescript JackNathan Typescript UT-ANGULAR7-MA... Test-Internet-Speed HouseForSale YouTubeConverter china FreeBook Imported

Download PuTTY: latest release (0.73)

[Home](#) | [FAQ](#) | [Feedback](#) | [Licence](#) | [Updates](#) | [Mirrors](#) | [Keys](#) | [Links](#) | [Team](#)
Download: [Stable](#) · [Snapshot](#) | [Docs](#) | [Changes](#) | [Wishlist](#)

This page contains download links for the latest released version of PuTTY. Currently this is 0.73, released on 2019-09-29.

When new releases come out, this page will update to contain the latest, so this is a good page to bookmark or link to. Alternatively, here is a [permanent link to the 0.73 release](#).

Please note that some versions of PuTTY are versions we think are reasonably likely to work well. However, they are often not the most up-to-date version of the code available. If you have a problem with this release, then it might have already been fixed in those versions.

Package files

Click this one.

You probably want one of these. They include versions of all the PuTTY utilities.

(Not sure whether you want the 32-bit or the 64-bit version? Read the [FAQ entry](#).)

MSI ('Windows Installer')

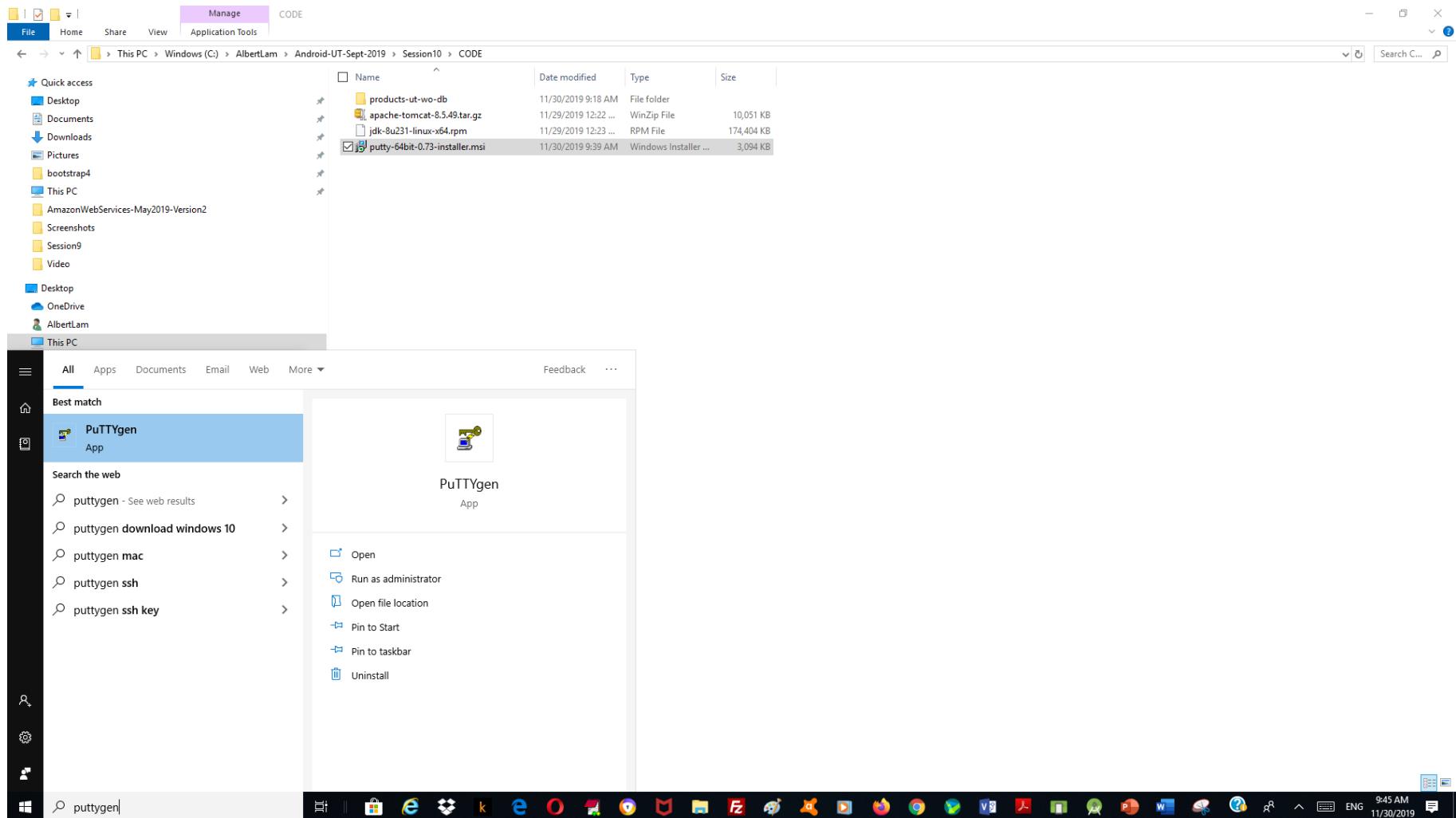
32-bit:	putty-0.73-installer.msi	(or by FTP)	(signature)
64-bit:	putty-64bit-0.73-installer.msi	(or by FTP)	(signature)

Unix source archive

.tar.gz:	putty-0.73.tar.gz	(or by FTP)	(signature)
----------	-----------------------------------	------------------------------	-------------------------------



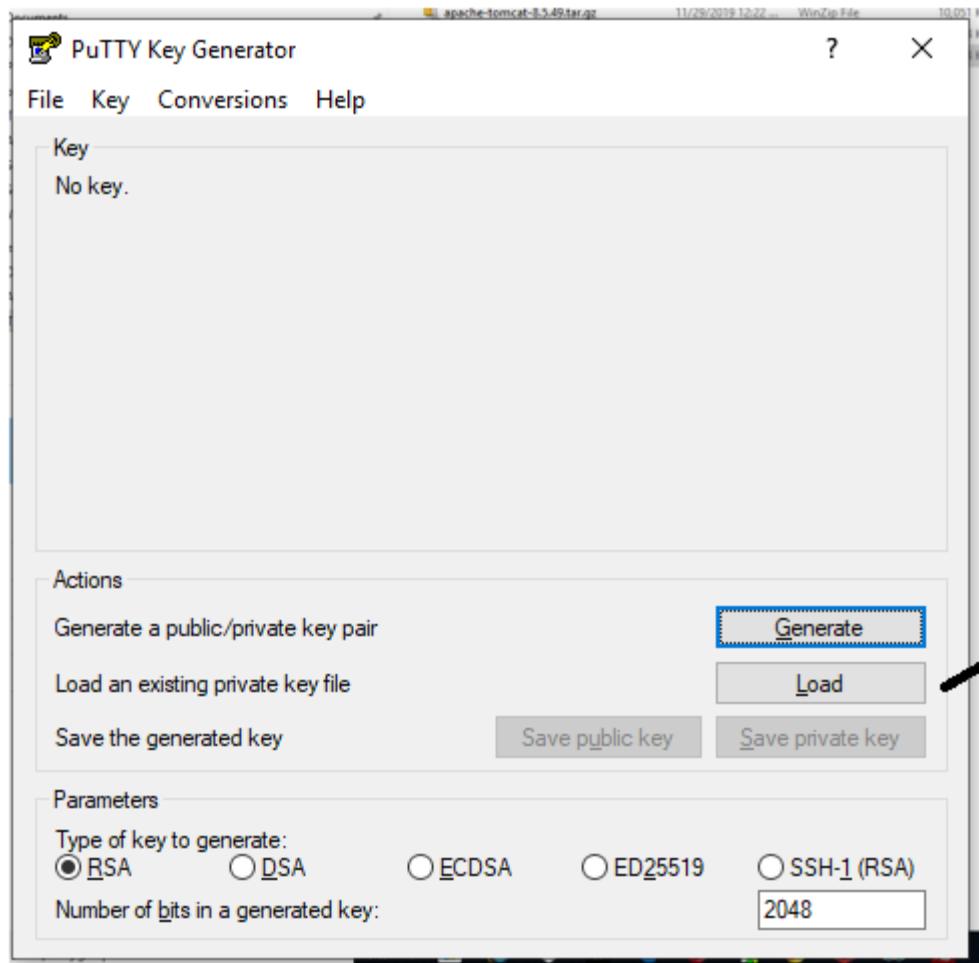
Putty for windows



Putty for windows

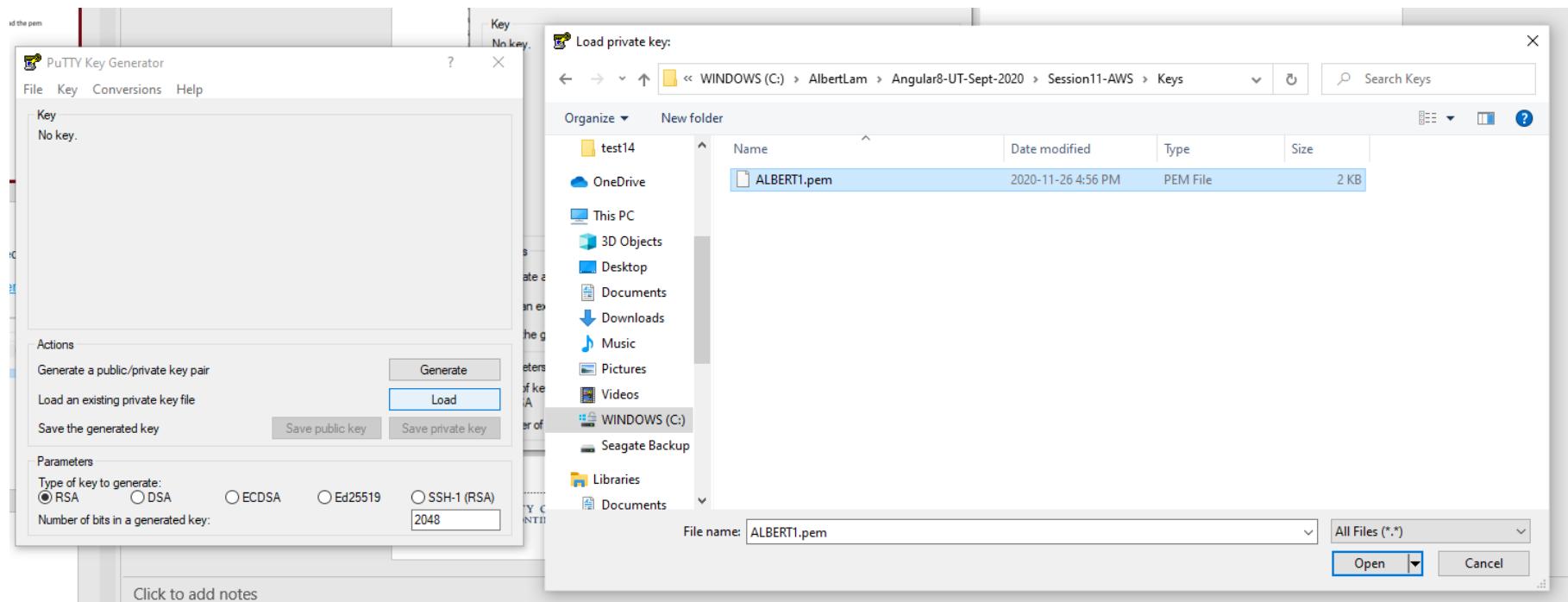
- In windows chose “putty key generator”.

Putty for windows

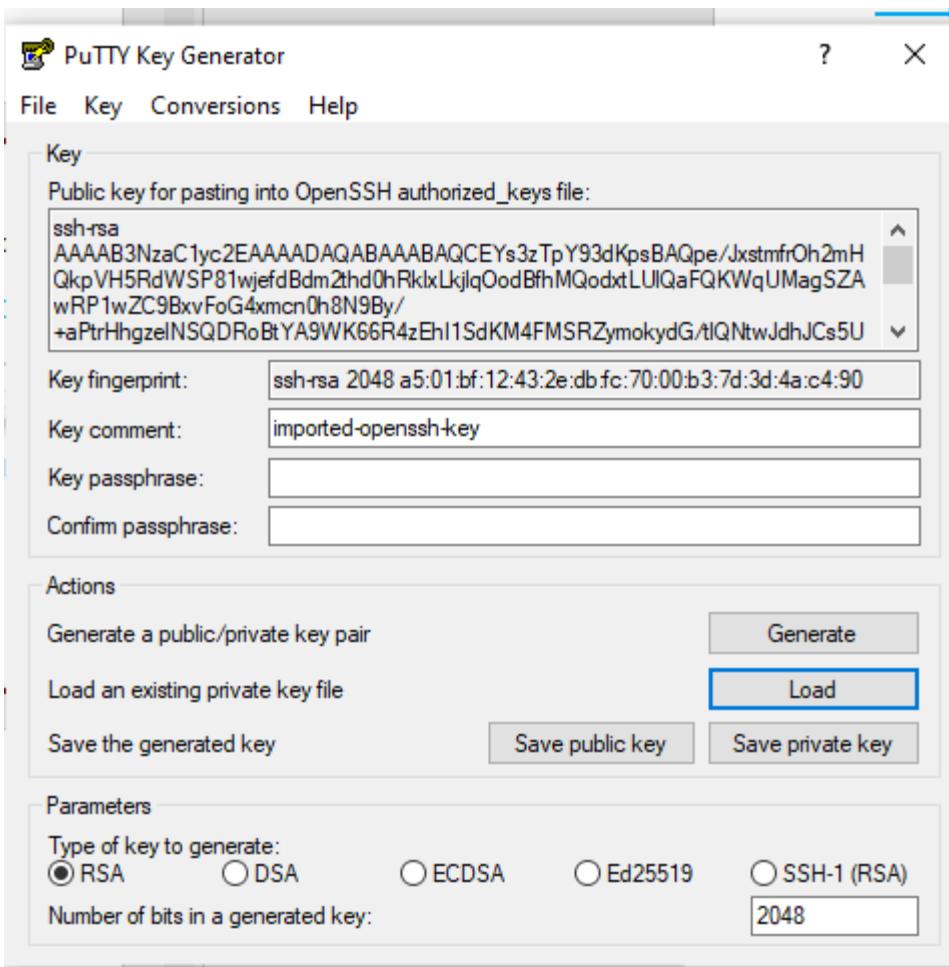


click "load" and load the pem file

Putty for windows

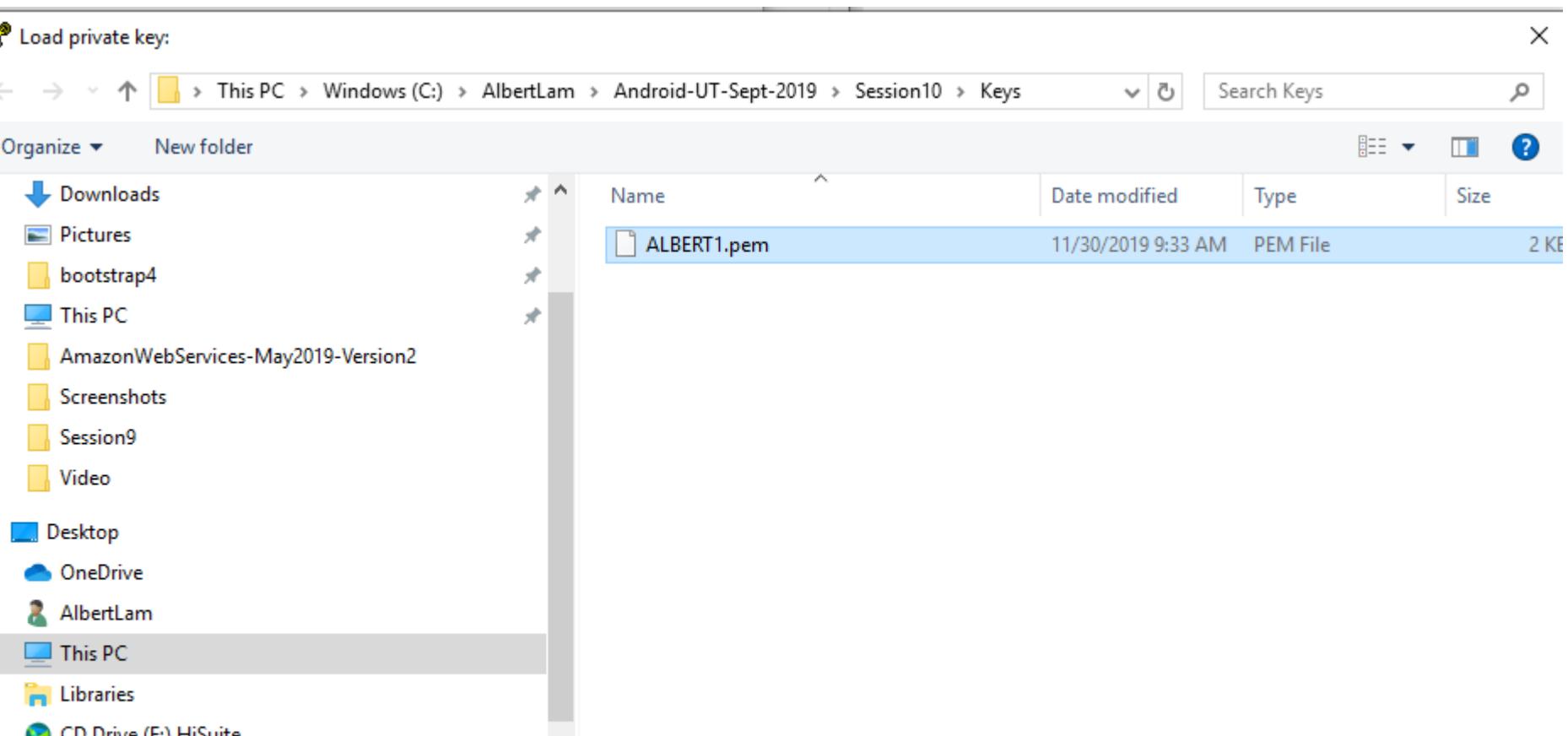


Putty for windows



Putty for windows

- For mac: ssh -i /path/my-key-pair.pem ec2-user@ec2-198-51-100-1.compute-1.amazonaws.com
- <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AccessingInstancesLinux.html>



For Mac User using Terminal

Connect To Your Instance

I would like to connect with

- A standalone SSH client [\(i\)](#)
- EC2 Instance Connect (browser-based SSH connection) [\(i\)](#)
- A Java SSH Client directly from my browser (Java required) [\(i\)](#)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (ALBERT1.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:
`chmod 400 ALBERT1.pem`
4. Connect to your instance using its Public DNS:
`ec2-3-134-105-137.us-east-2.compute.amazonaws.com`

Example:

```
ssh -i "ALBERT1.pem" ec2-user@ec2-3-134-105-137.us-east-2.compute.amazonaws.com
```

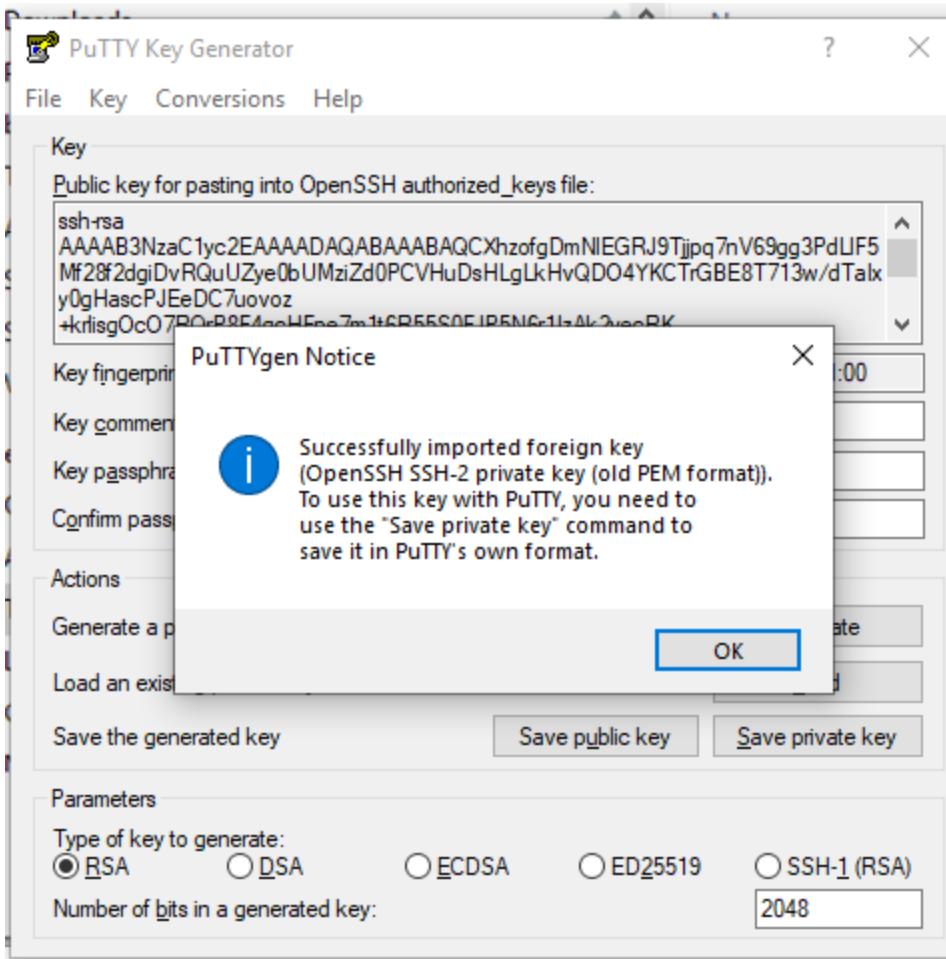
Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

[Close](#)

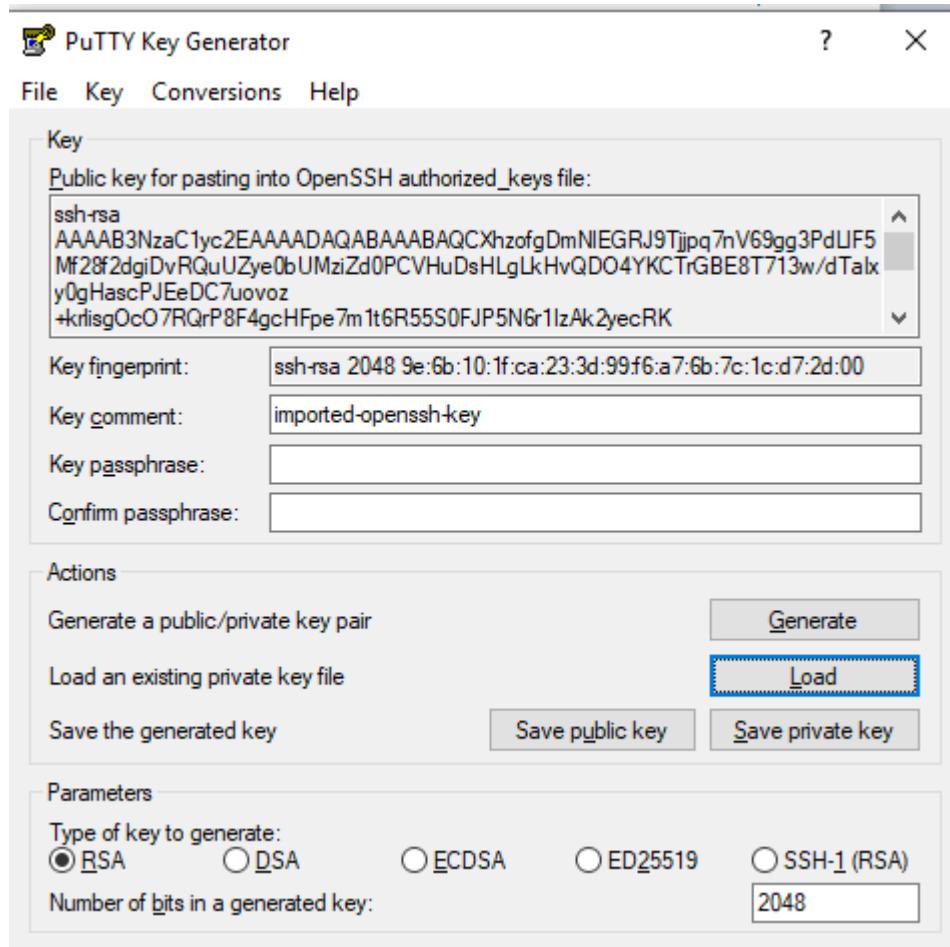
Putty for windows

- Open Putty Key Generator.
- Click Load.



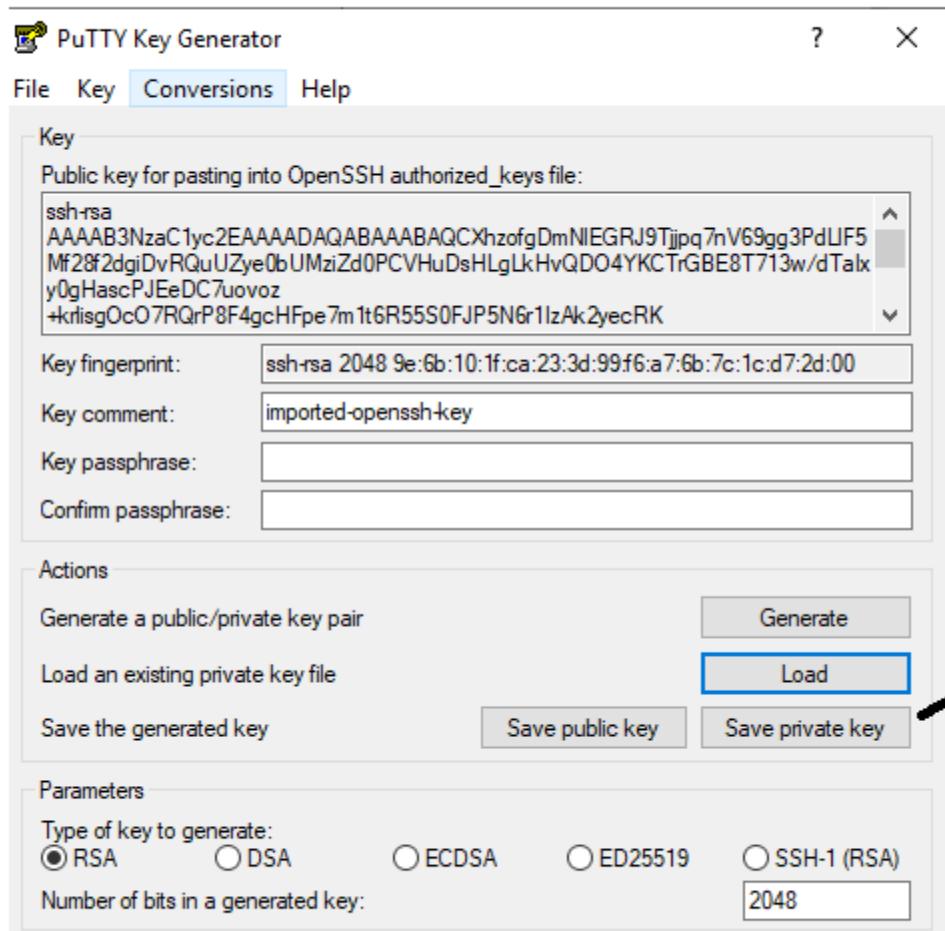
Putty for window

- Click “generate”.



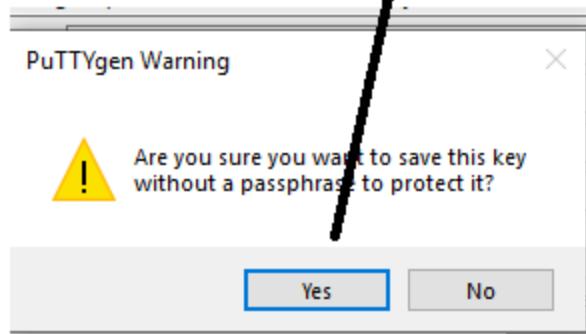
Putty for window

-

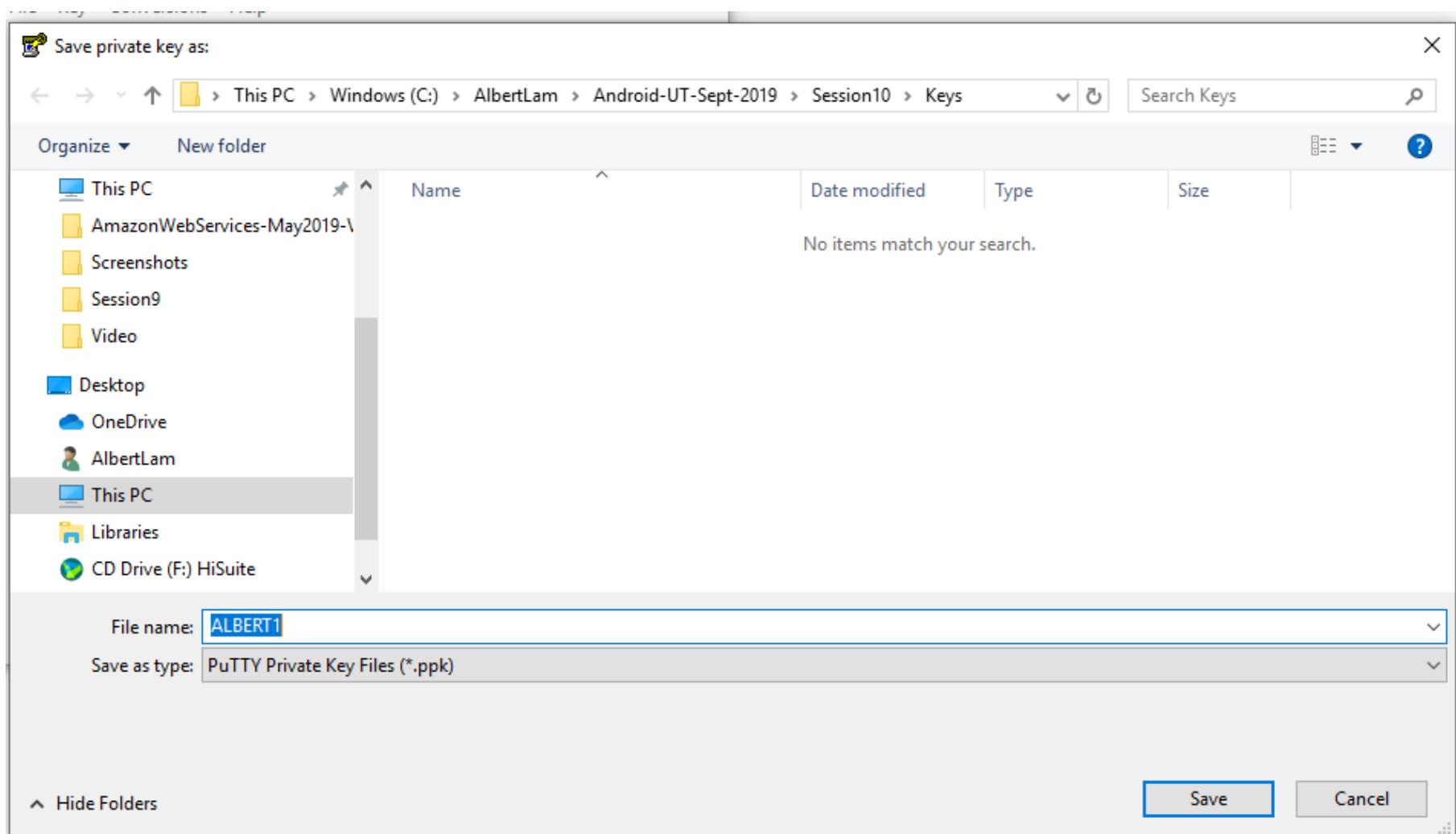


Putty for window

click "Yes"

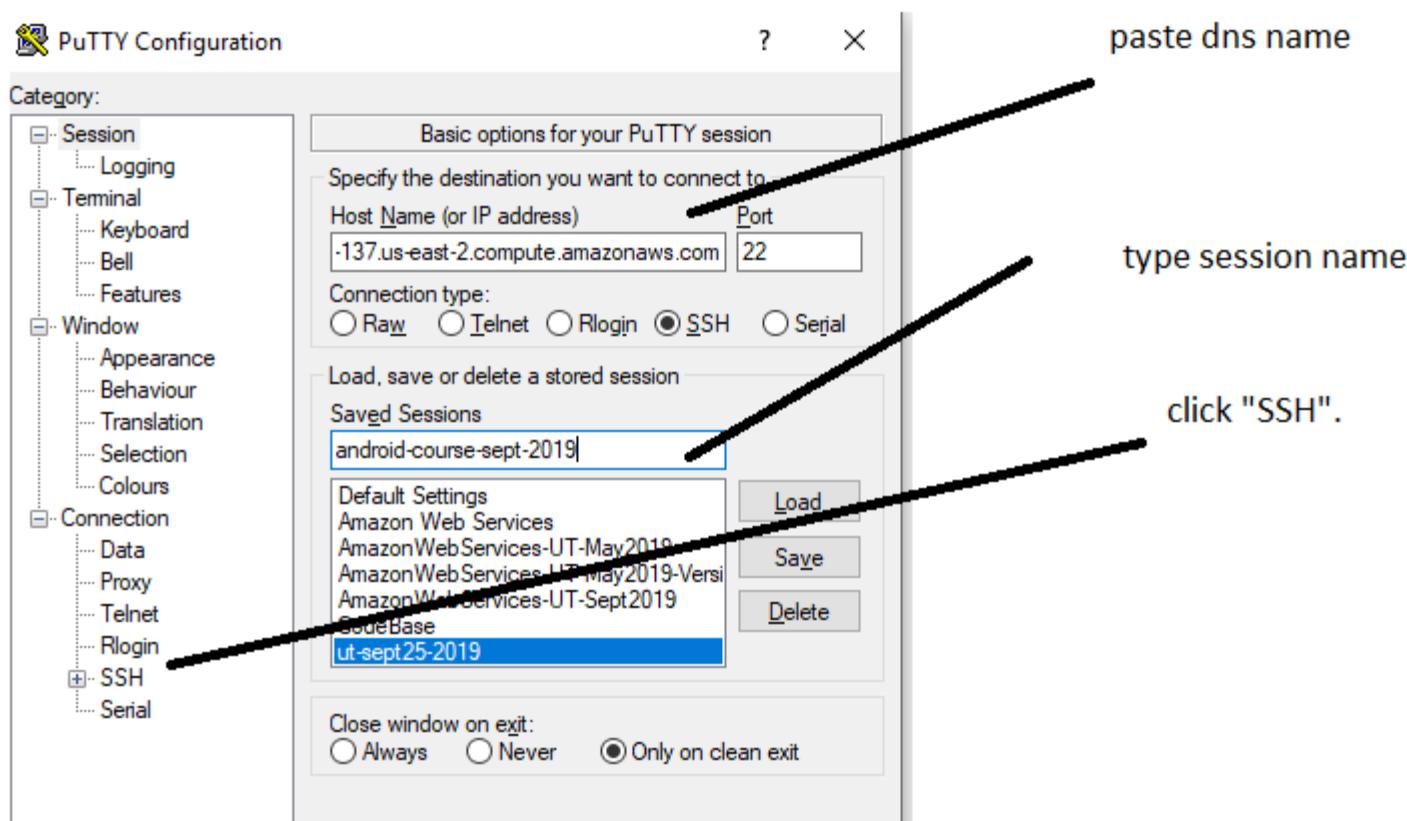


Putty for windows

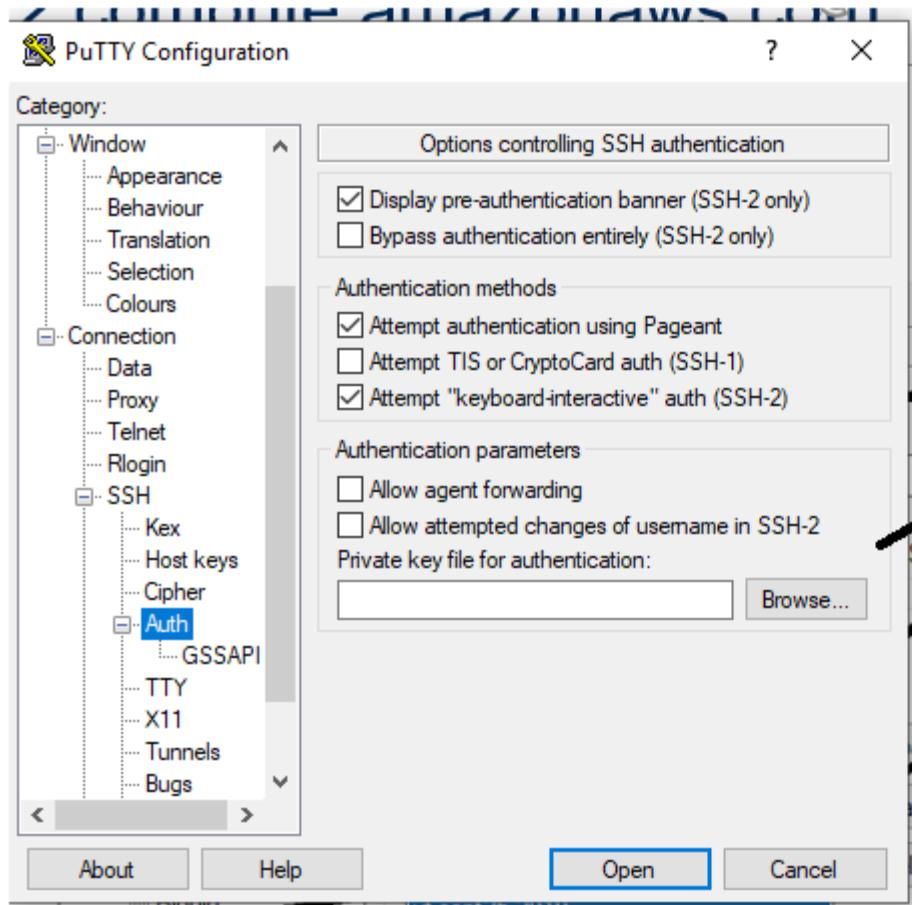


Putty for windows

- Start putty:
- Dns name: http://ec2-3-134-92-53.us-east-2.compute.amazonaws.com

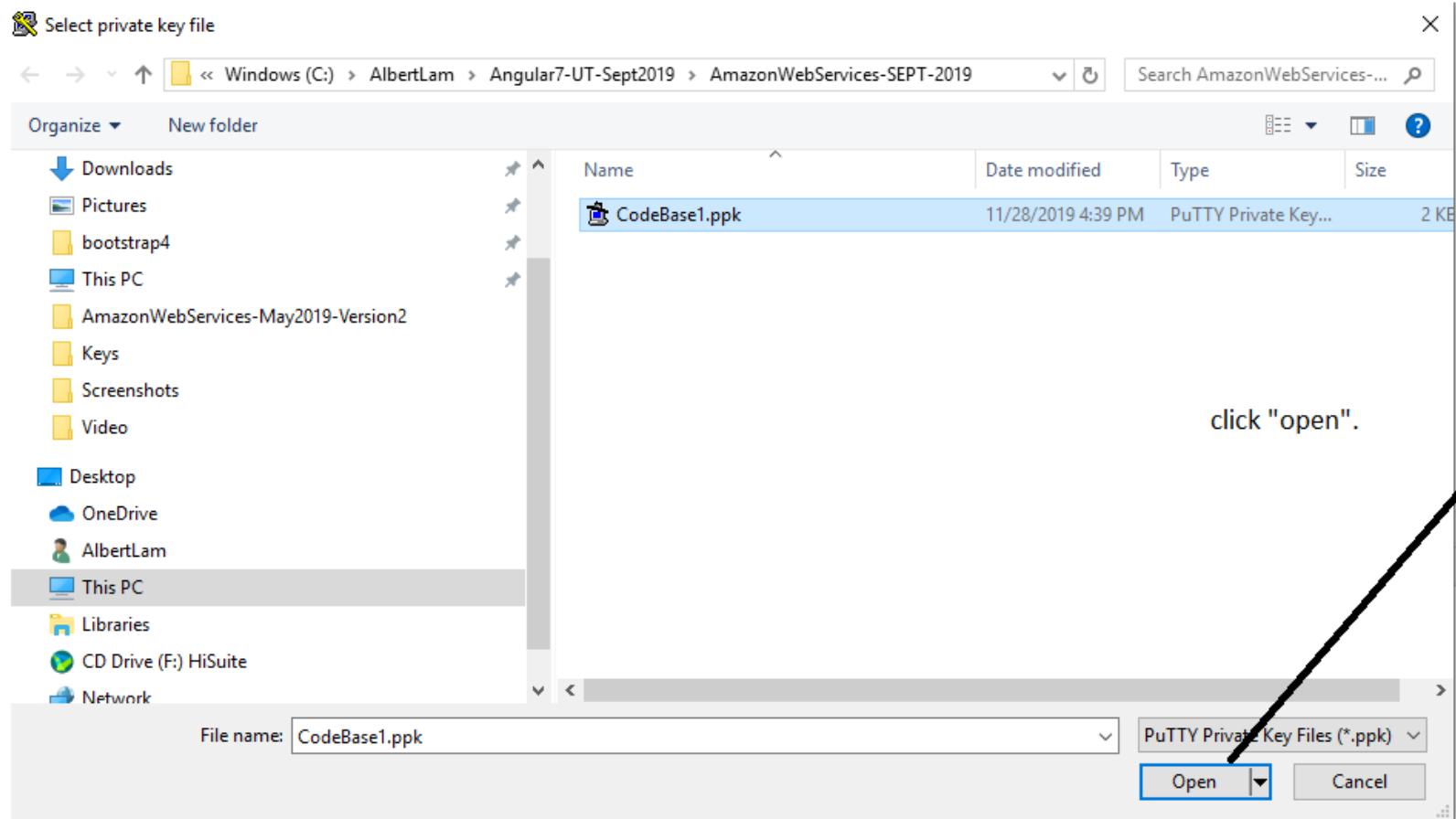


Putty for windows

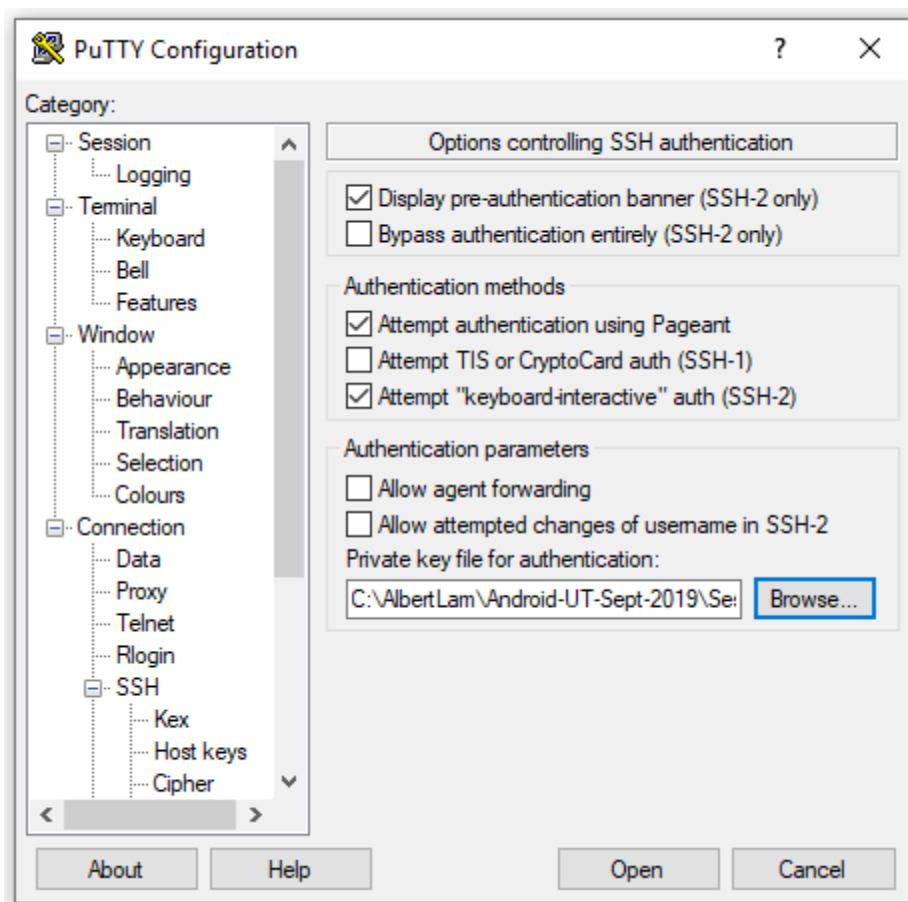


Click "Browse".

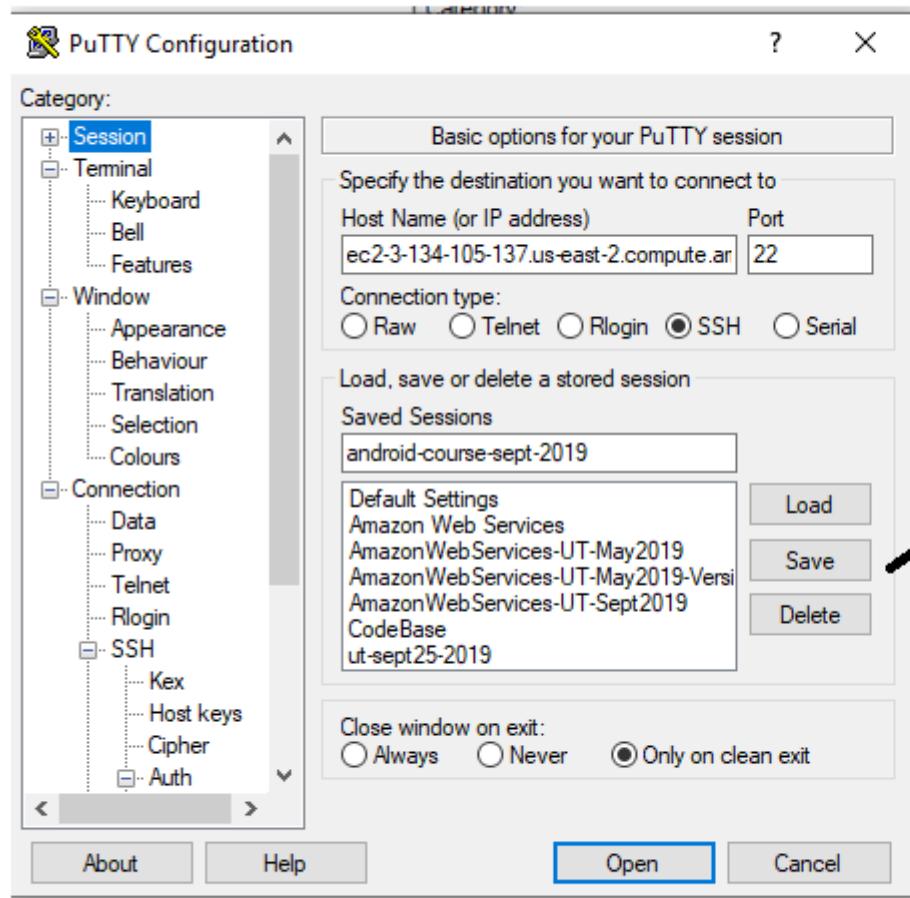
Putty for windows



Putty for windows

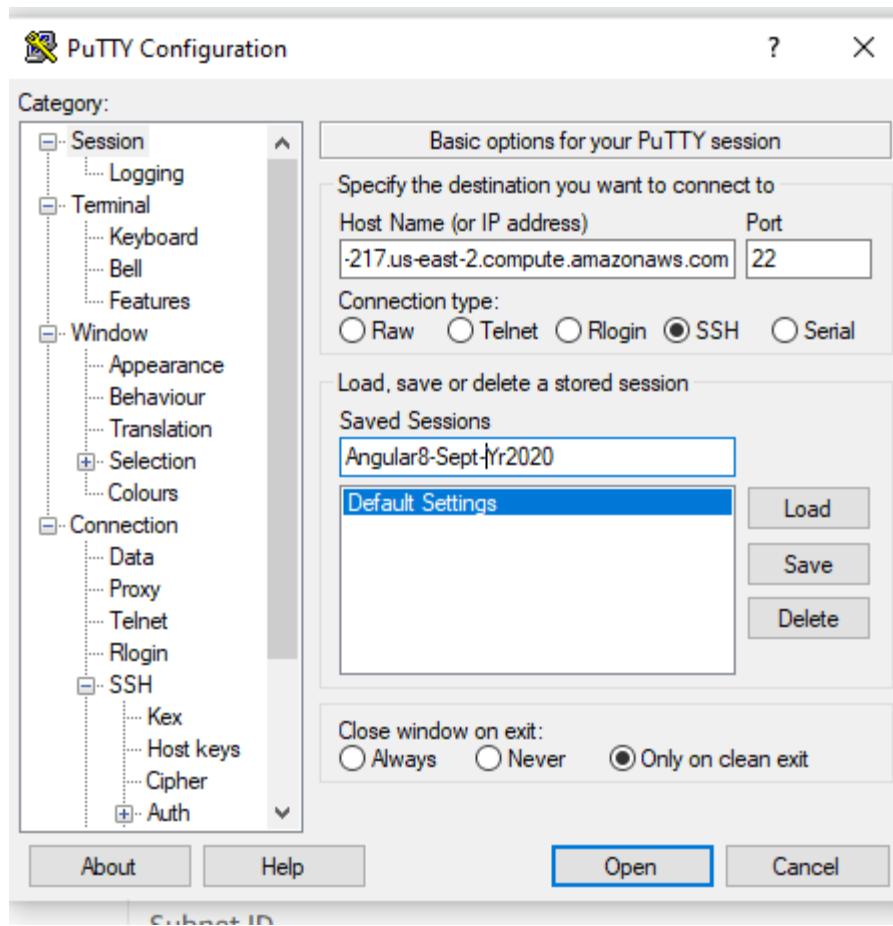


Putty for windows

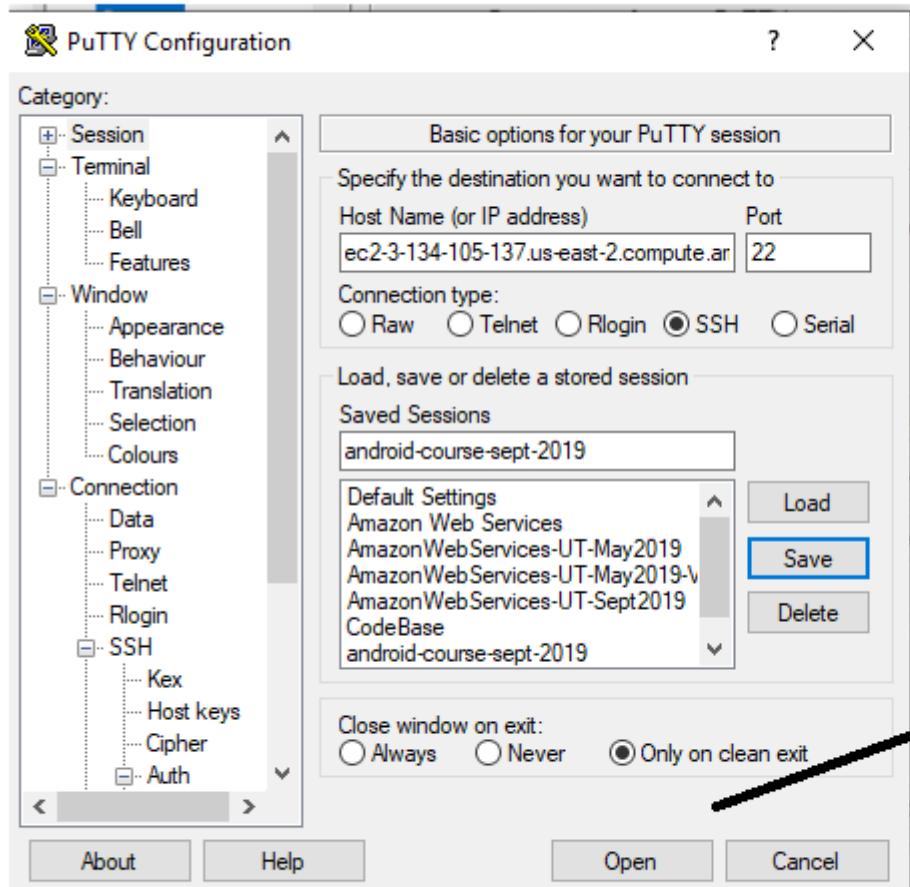


Go to session and click "save".

Putty for windows

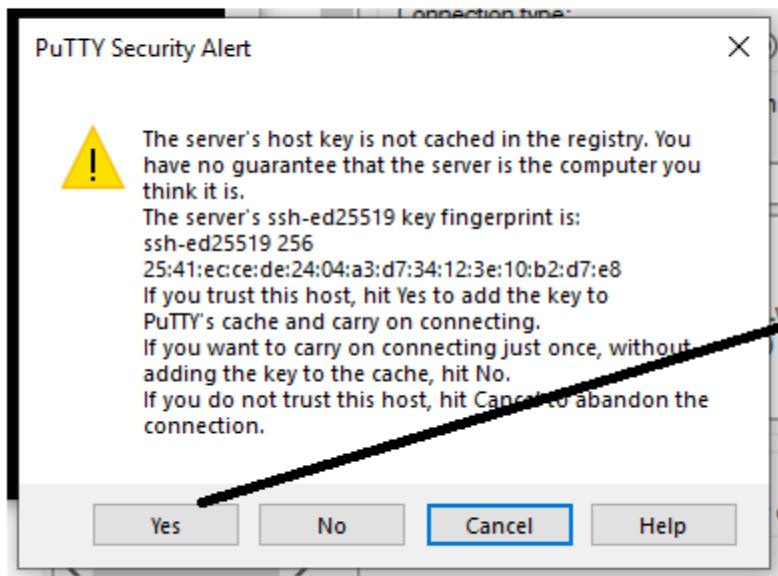


Putty for windows



Click "open".

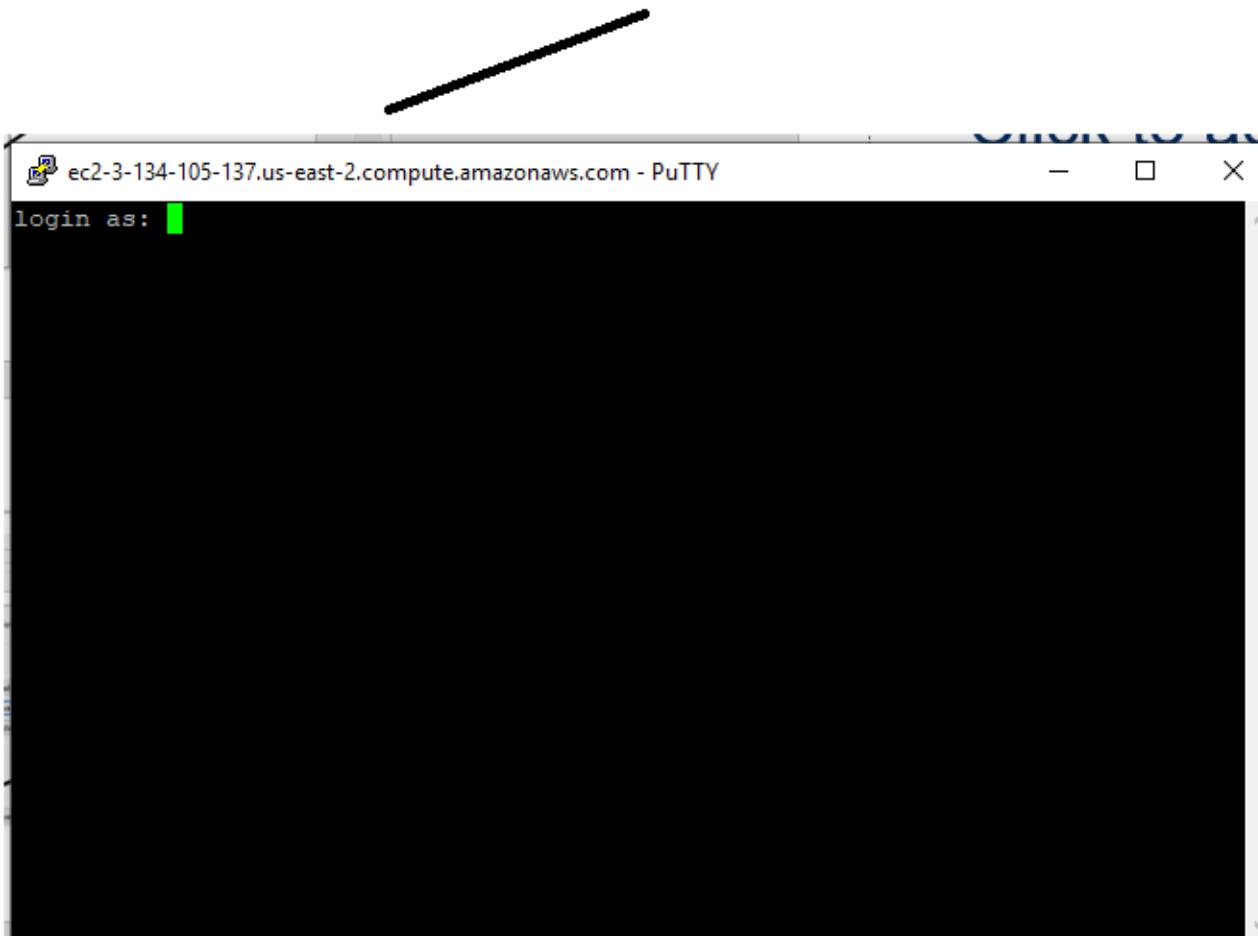
Putty for windows



Click "Yes".

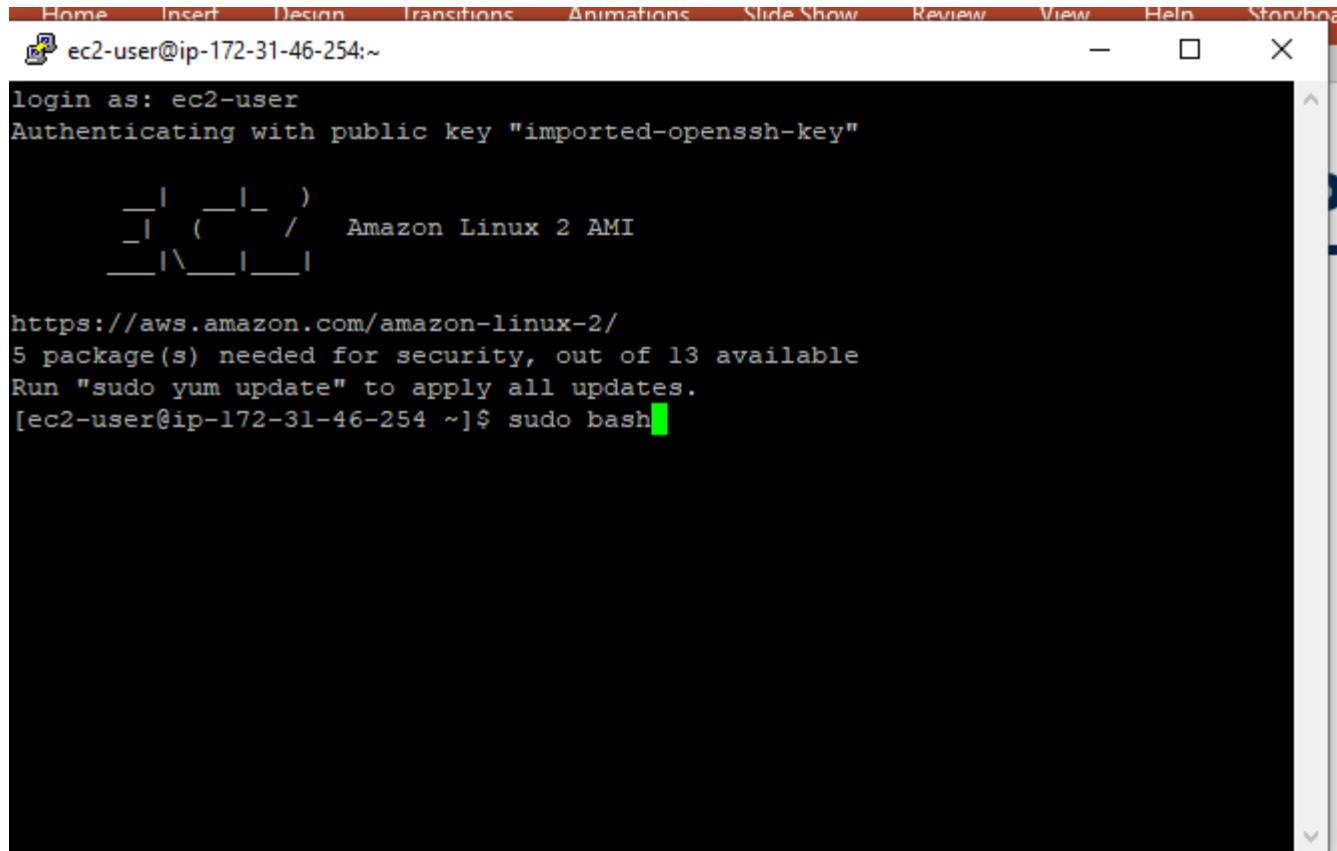
Putty for windows

type "ec2-user".



Putty for windows

- Type sudo bash.

A screenshot of a Microsoft Word document showing a terminal session in a Putty window. The terminal window has a title bar with the word "Putty" and the command "ec2-user@ip-172-31-46-254:~". The content of the terminal is:

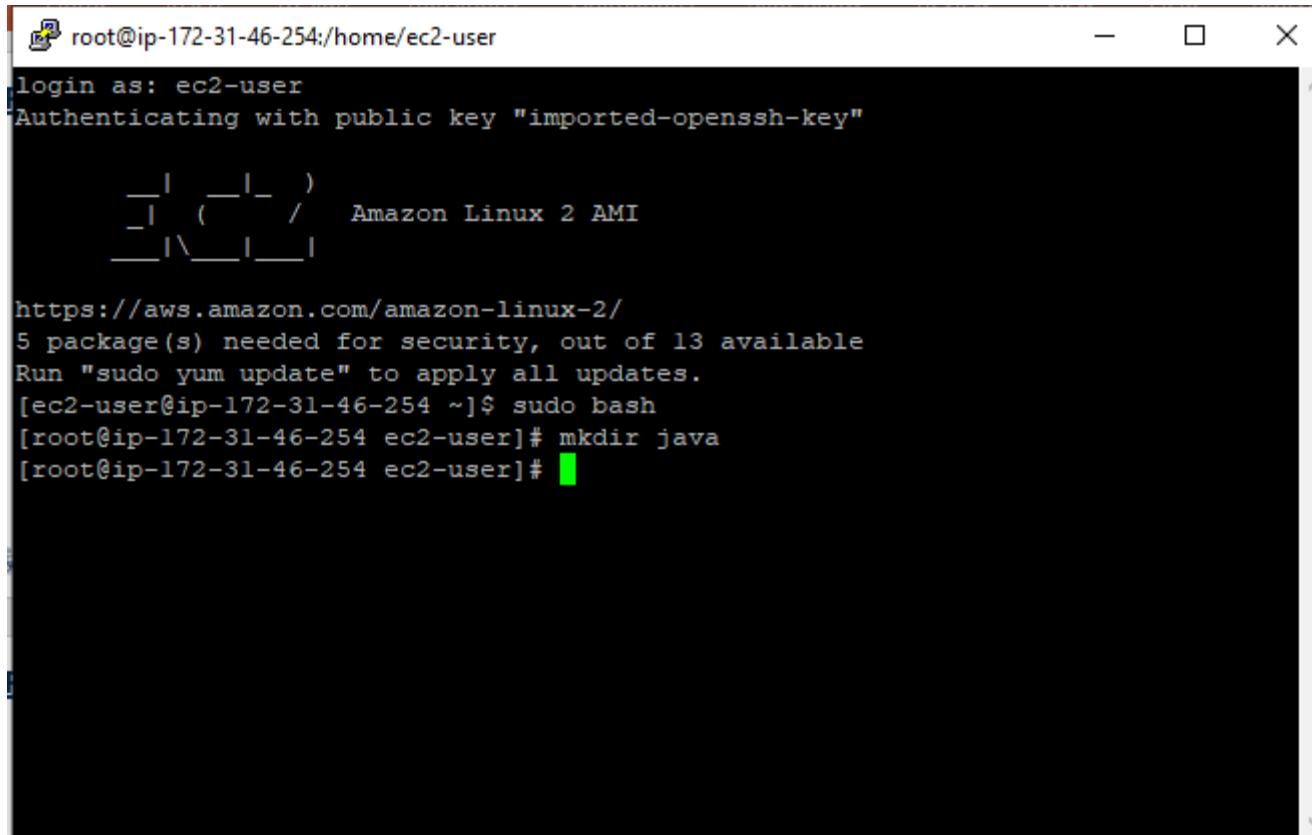
```
login as: ec2-user
Authenticating with public key "imported-openssh-key"

              _\   _ )   Amazon Linux 2 AMI
             _ \ \_ | _ |
https://aws.amazon.com/amazon-linux-2/
5 package(s) needed for security, out of 13 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-46-254 ~]$ sudo bash
```

The "sudo bash" command at the bottom is highlighted with a green rectangular selection.

Putty for windows

- Type:mkdir java



root@ip-172-31-46-254:/home/ec2-user

login as: ec2-user

Authenticating with public key "imported-openssh-key"

Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/

5 package(s) needed for security, out of 13 available

Run "sudo yum update" to apply all updates.

[ec2-user@ip-172-31-46-254 ~]\$ sudo bash

[root@ip-172-31-46-254 ec2-user]# mkdir java

[root@ip-172-31-46-254 ec2-user]#

Putty for windows

- Type:chmod –R 777 java

```
[root@ip-172-31-46-254 ec2-user]# mkdir java
[root@ip-172-31-46-254 ec2-user]# chmod -R 777 java
[root@ip-172-31-46-254 ec2-user]# █
```

Filezilla for windows

- <https://filezilla-project.org/download.php?platform=win64>

The screenshot shows a web browser window with the URL filezilla-project.org/download.php?platform=win64 in the address bar. The page itself is the FileZilla download page for Windows 64-bit. On the left, there's a sidebar with links for Home, FileZilla (Features, Screenshots, Download, Documentation, FileZilla Pro), FileZilla Server (Download), Community (Forum, Project page, Wiki), General (FAQ, Support, Contact, License, Privacy Policy, Trademark Policy), Development (Source code, Nightly builds, Translations, Version history, Changelog, Issue tracker), Other projects (libfilezilla, Octochess), and Sponsors. The main content area features the FileZilla logo and the tagline "The free FTP solution". A promotion for "FileZilla Pro" is visible, offering 20% off for Black Friday. Below this, a section titled "Download FileZilla Client for Windows (64bit)" is shown, stating that the latest stable version is 3.46.0. It asks users to select their platform. A large green button labeled "Download FileZilla Client" with a red arrow pointing to it is the focal point. To the right of this button, a black arrow points from the text "click \"download filezilla client\"." to the button. Below the download button, there's a note about bundled offers and supported Windows versions (7, 8, 8.1, 10). Further down, there are sections for "More download options" (with links for 32-bit and X platforms) and "Show additional download options".

Filezilla for windows

Please select your edition of FileZilla Client

	FileZilla	FileZilla with manual	FileZilla Pro
Standard FTP	Yes	Yes	Yes
FTP over TLS	Yes	Yes	Yes
SFTP	Yes	Yes	Yes
Comprehensive PDF manual	-	Yes	Yes
Amazon S3	-	-	Yes
Backblaze B2	-	-	Yes
Dropbox	-	-	Yes
Microsoft OneDrive	-	-	Yes
Google Drive	-	-	Yes
Google Cloud Storage	-	-	Yes
Microsoft Azure Blob and File Storage	-	-	Yes
WebDAV	-	-	Yes
OpenStack Swift	-	-	Yes
Box	-	-	Yes

click "download".

Download

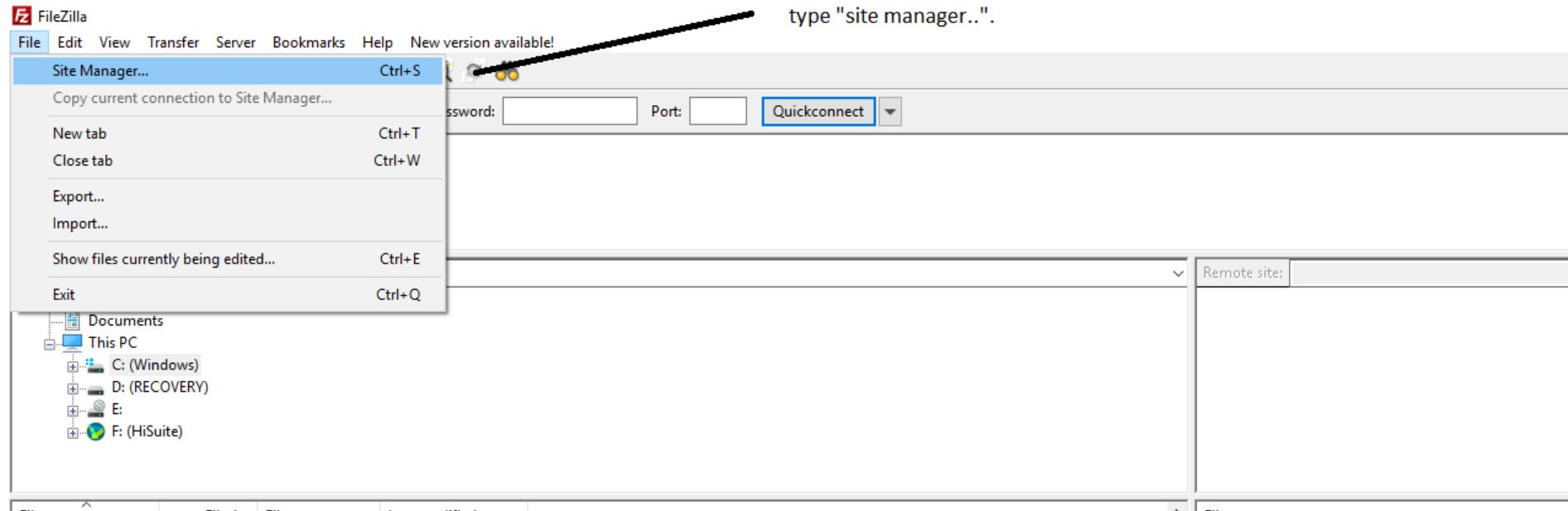
Select

Select



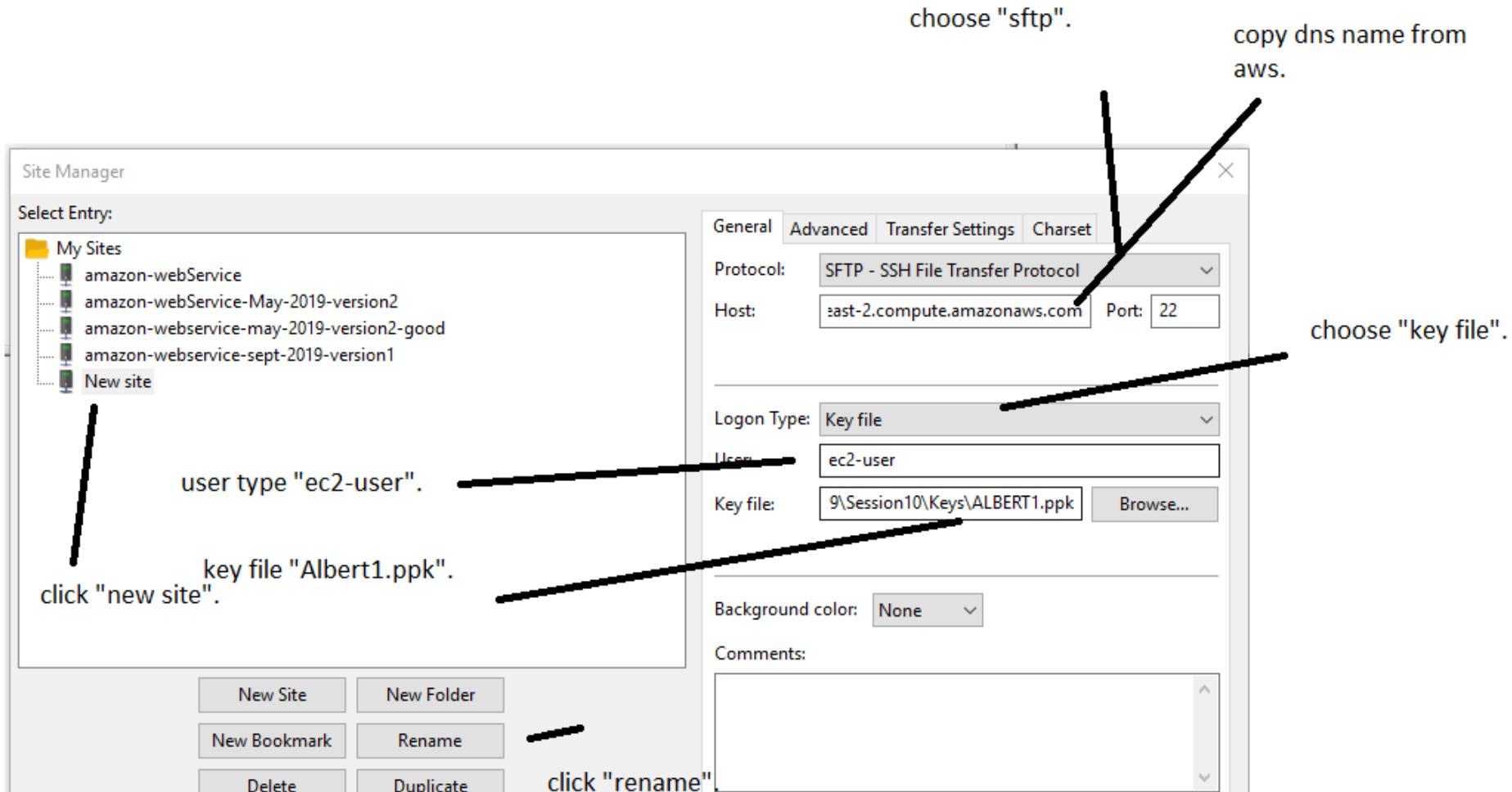
Filezilla for windows

- Install Filezilla for windows and Mac.

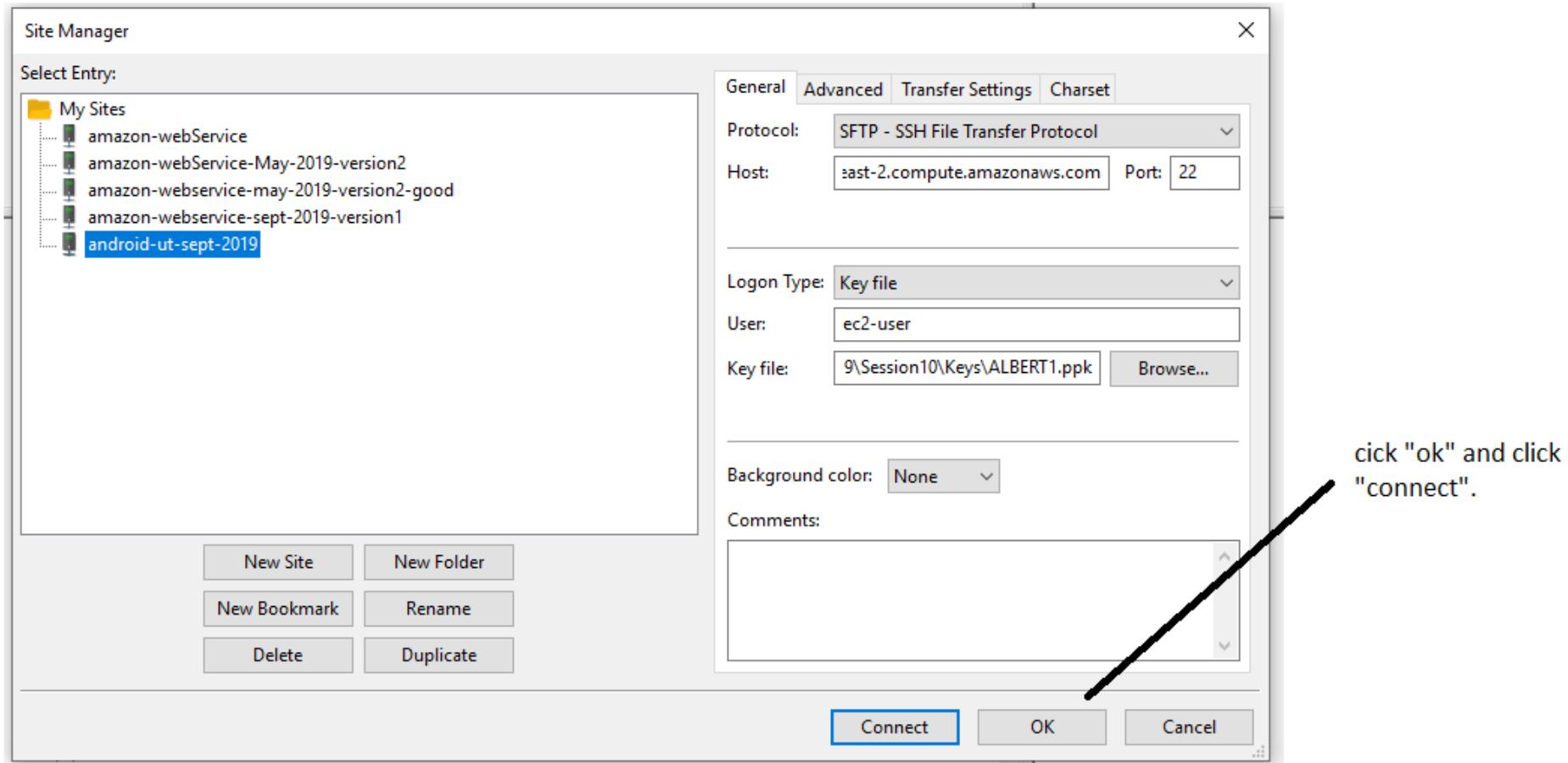


Filezilla for windows

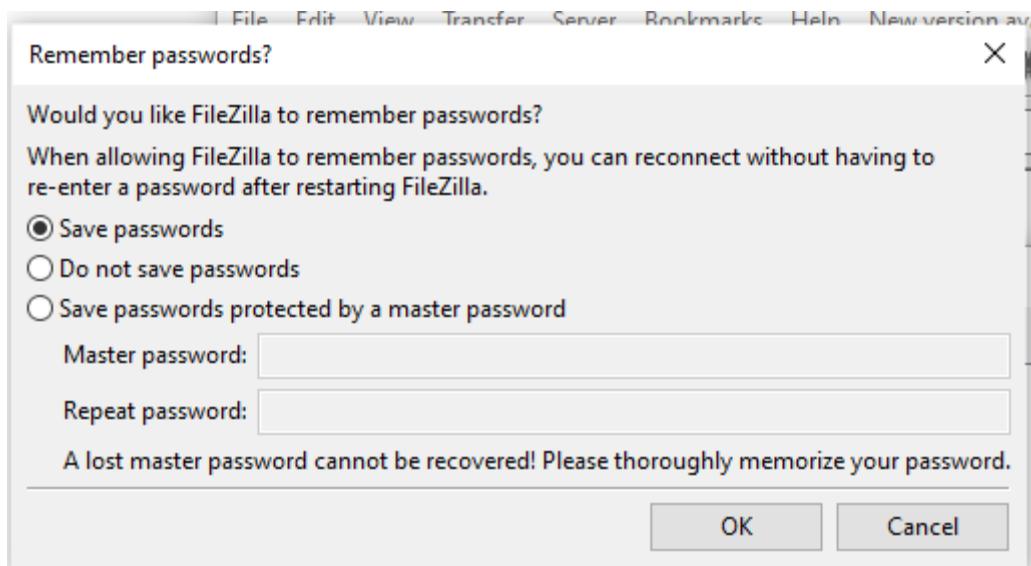
- Dns name: ec2-3-134-105-137.us-east-2.compute.amazonaws.com



Filezilla for windows



Filezilla for windows



Filezilla for windows

The screenshot shows the FileZilla interface with two sessions:

- Local site:** C:\AlbertLam\Android-UT-Sept-2019\Session10\CODE
- Remote site:** /home/ec2-user/java

Status Log:

- Status: Listing directory /home/ec2-user/java
- Status: Directory listing of "/home/ec2-user/java" successful
- Status: Connecting to ec2-3-134-105-137.us-east-2.compute.amazonaws.com...
- Status: Connected to ec2-3-134-105-137.us-east-2.compute.amazonaws.com
- Status: Retrieving directory listing...
- Status: Directory listing of '/home/ec2-user' successful

Local Site Content:

- Android-UT-Sept-2019
 - Assignment1
 - Course-Outline
 - Final-Assignment
 - Session1
 - Session10
 - CODE
 - Keys
 - Session2

Remote Site Content:

- /
 - home
 - ec2-user
 - .ssh
 - java

A tooltip message is displayed in the center of the interface: "Click 'Java' and click 'jdk and tomcat' and drag from left to right to java folder." A large black X is drawn over the local site's content area.

Filename	Filesize	Filetype	Last modified
..			
products-ut-wo...		File folder	11/30/2019 9:18:27...
apache-tomcat-...	10,291,273	WinZip File	11/29/2019 12:22:2...
FileZilla_3.46.0_...	10,376,812	WinZip File	11/30/2019 10:21:4...
FileZilla_3.46.0_...	9,014,712	Application	11/30/2019 10:15:3...
jdk-8u231-linux-...	178,589,686	RPM File	11/29/2019 12:23:0...
putty-64bit-0.73...	3,168,256	Windows Insta...	11/30/2019 9:39:17...

Filename	Filesize	Filetype	Last modified
..			

Empty directory listing

Filezilla for windows

The screenshot shows the FileZilla interface with two panes. The left pane (Local site) displays the contents of a folder on the user's computer, while the right pane (Remote site) shows the contents of a folder on a remote server. A status bar at the top indicates a successful upload of files.

Status Log:

- Status: Starting upload of C:\AlbertLam\Android-UT-Sept-2019\Session10\CODE\jdk-8u231-linux-x64.rpm
- Status: Starting upload of C:\AlbertLam\Android-UT-Sept-2019\Session10\CODE\apache-tomcat-8.5.49.tar.gz
- Status: Retrieving directory listing of "/home/ec2-user/java"...
- Status: Listing directory /home/ec2-user/java
- Status: Directory listing of "/home/ec2-user/java" successful
- Status: File transfer successful, transferred 10,291,220 bytes in 9 seconds

Local site: C:\AlbertLam\Android-UT-Sept-2019\Session10\CODE\

Filename	Filesize	Filetype	Last modified
..			
products-ut-wo...		File folder	11/30/2019 9:18:27...
apache-tomcat-...	10,291,220	WinZip File	11/29/2019 12:22:2...
FileZilla_3.46.0...	10,378,812	WinZip File	11/30/2019 10:21:4...
F FileZilla_3.46.0...	9,014,712	Application	11/30/2019 10:15:3...
jdk-8u231-linux-...	178,589,686	RPM File	11/29/2019 12:23:0...
putty-64bit-0.73...	3,168,256	Windows Insta...	11/30/2019 9:39:17...

Remote site: /home/ec2-user/java

Filename
..
jdk-8u231-linux-x64.rpm
apache-tomcat-8.5.49.tar.gz

A black arrow points from the bottom right towards the refresh button in the status bar, with the text "Right click and choose \"Refresh\"." positioned nearby.

Filezilla for Mac

- Go to “Edit/Settings”:

The screenshot shows the FileZilla interface with two sessions connected to an SFTP server at `sftp://ec2-user@ec2-3-134-105-137.us-east-2.compute.amazonaws.com`.

Session 1 (Local site): Local site is set to `C:\AlbertLam\Android-UT-Sept-2019\Session10\CODE`. The file list shows several files and folders, including `products-ut-wo...`, `apache-tomcat...`, `FileZilla 3.46.0...`, `jdk-8u231-linux...`, `products-ut-wo...`, and `putty-64bit-0.73...`. The total size is 219,932,011 bytes.

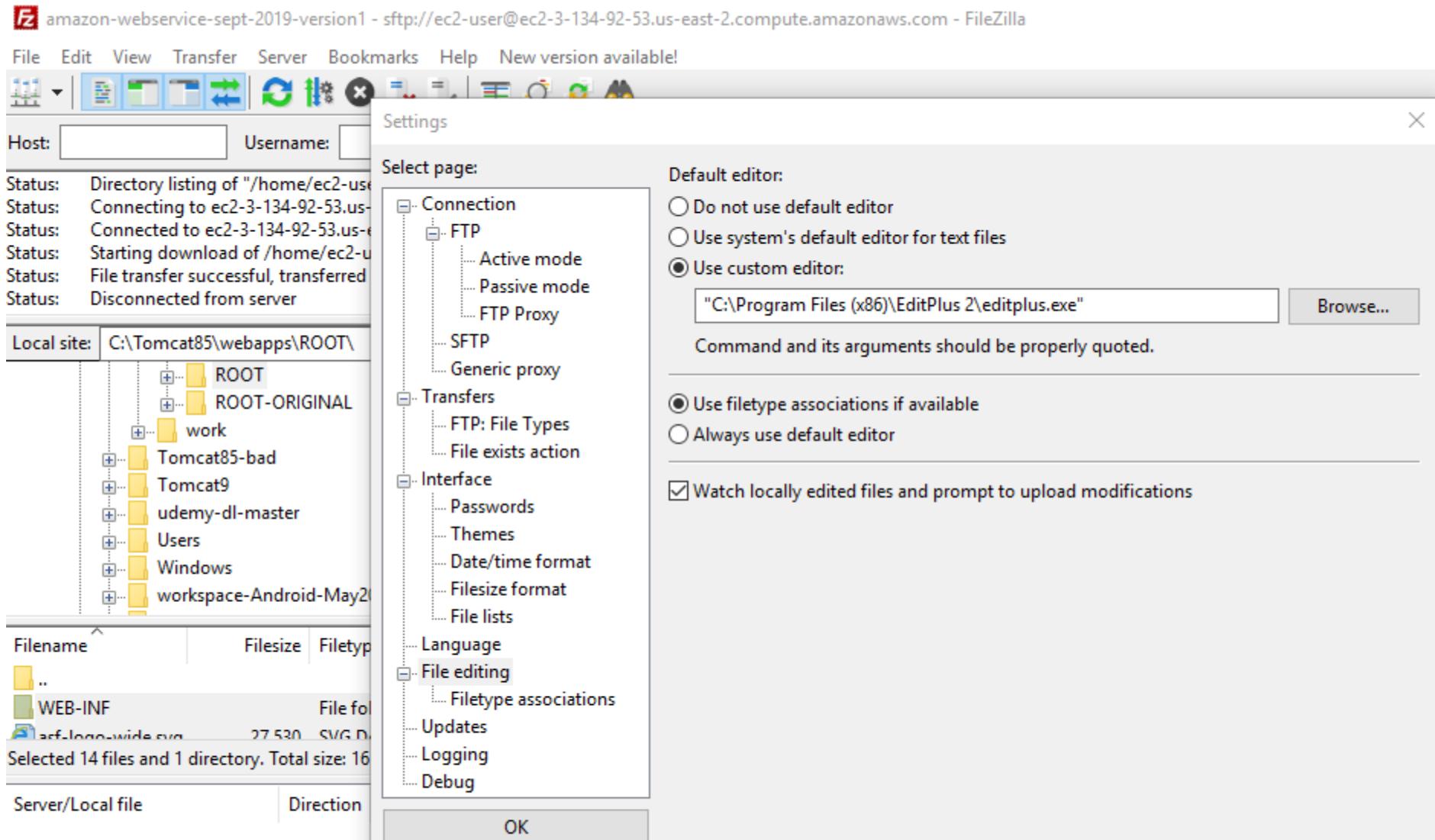
Session 2 (Remote site): Remote site is set to `/home/ec2-user`. The file list shows the contents of the `home` directory, which includes `..`, `.bash_history`, `.bashrc`, `.bash_profile`, `.bash_logout`, `java`, and `.ssh`. The total size is 452 bytes.

Bottom Navigation: The navigation bar includes tabs for `Server/Local file`, `Direction`, `Remote file`, `Size`, `Priority`, and `Status`. Below the navigation bar are buttons for `Queued files`, `Failed transfers (4)`, and `Successful transfers (6)`.

System Status: At the bottom right, there is a status bar showing "Queue: empty", the date "11/30/2019", and the time "3:38 PM".

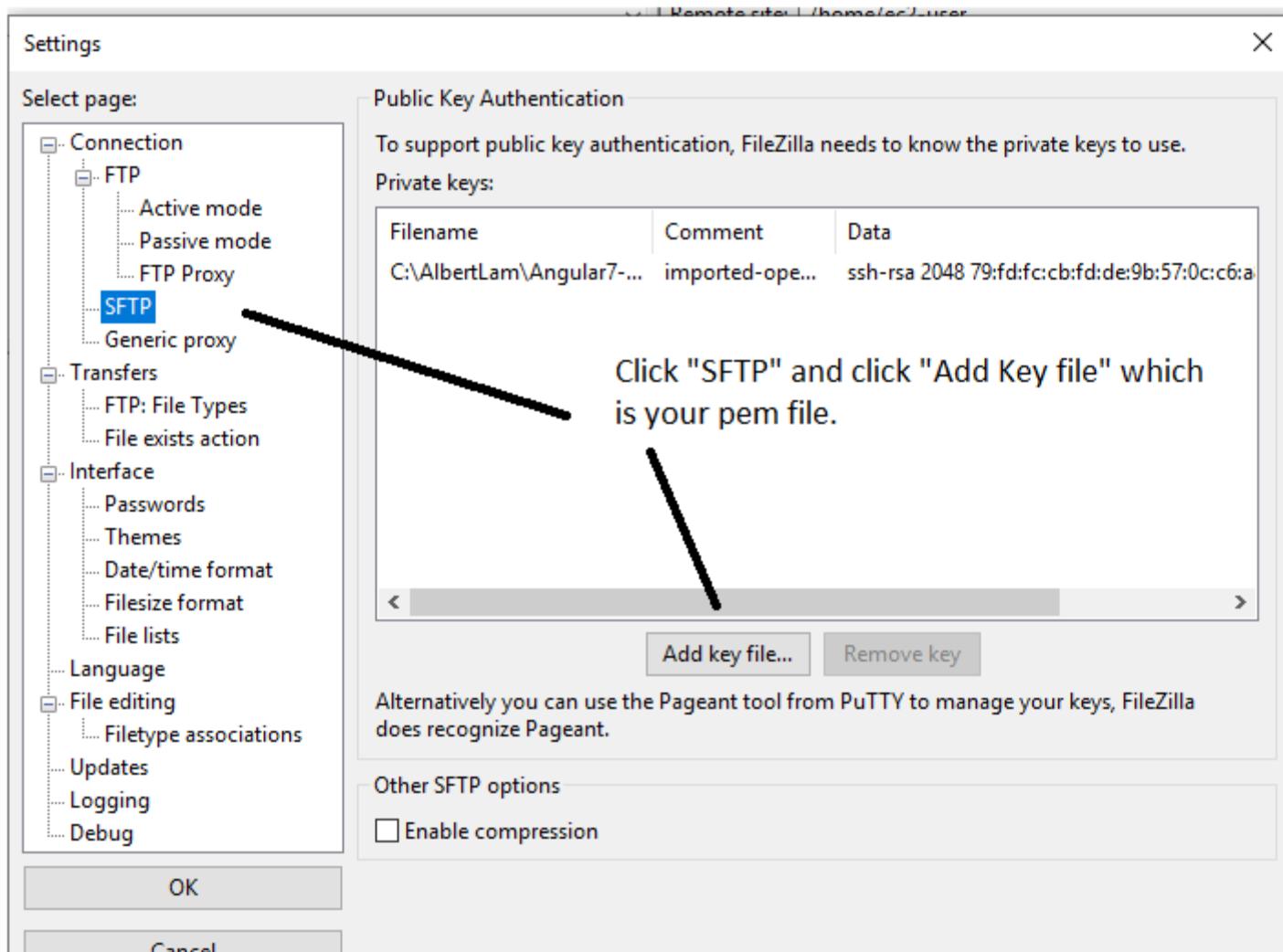
Filezilla for Mac

- Go to “Edit/Settings” and click “File editing”.



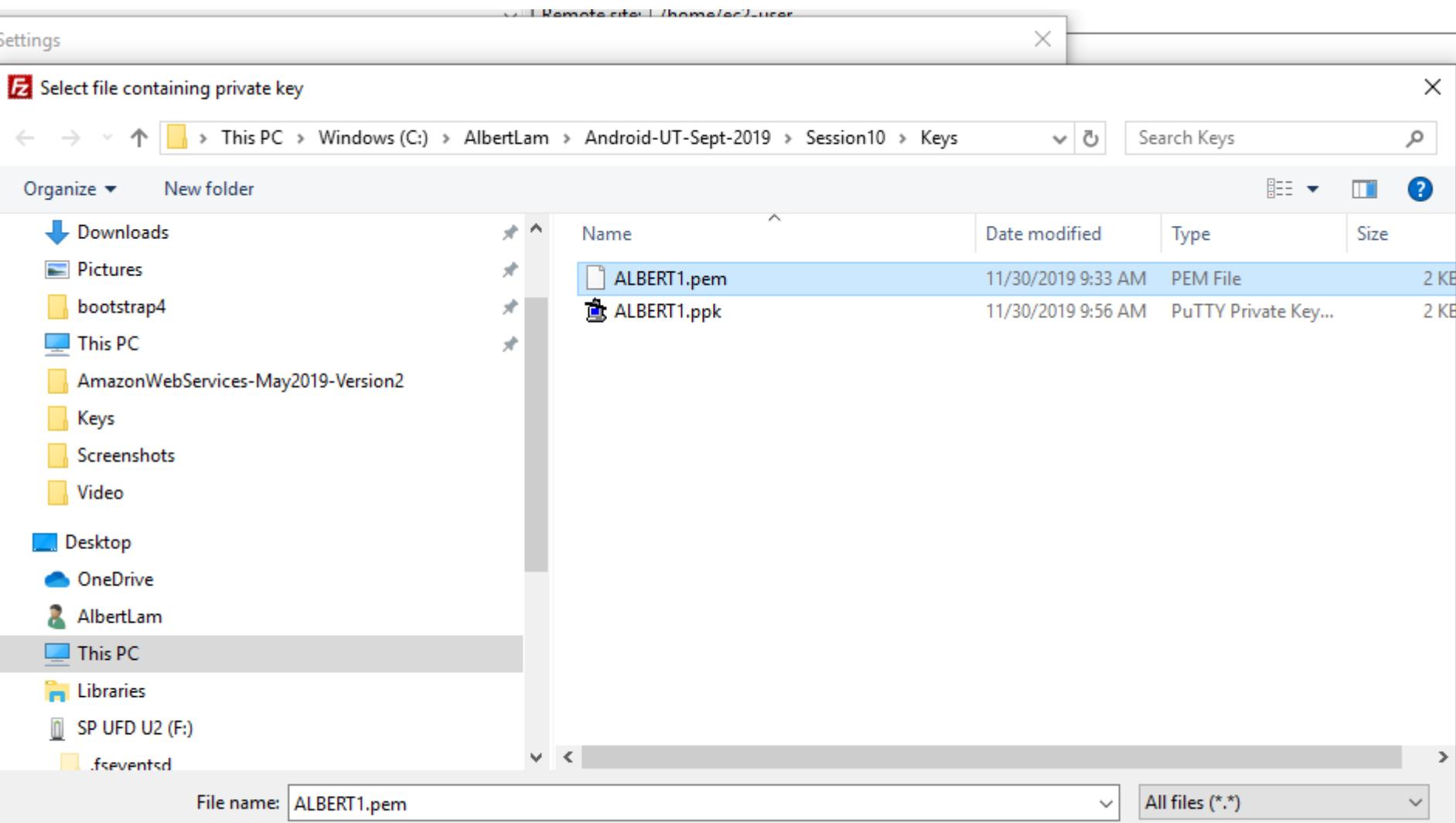
Filezilla for Mac

- Click “add key file”:

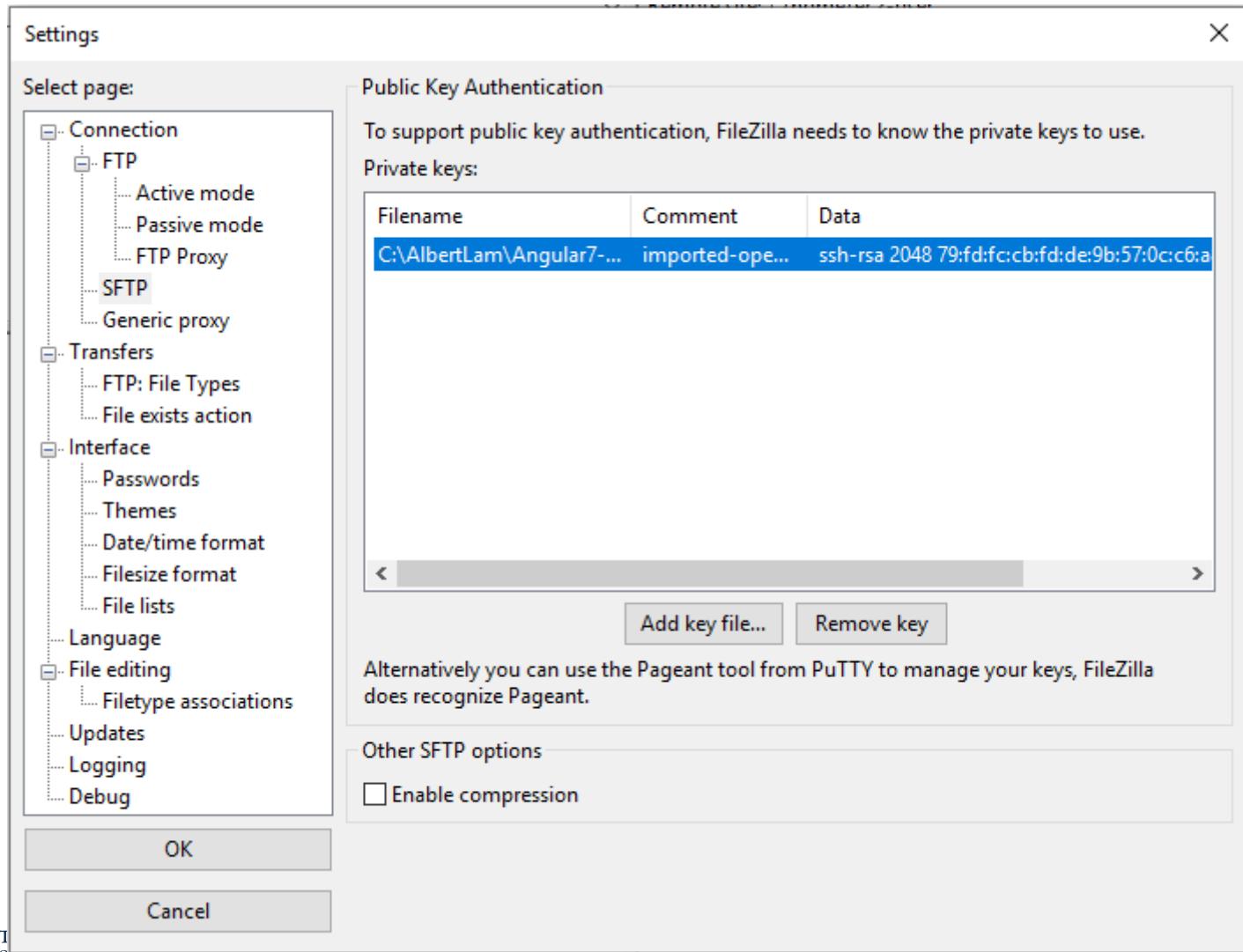


Filezilla for Mac

- Click “Albert1.pern” file:



Filezilla for Mac



Install jdk 1.8

- Download jdk 1.8 if filezilla not working:
 - Command:cd java
 - wget "https://download.oracle.com/otn/java/jdk/8u231-b11/5b13a193868b4bf28bcb45c792fce896/jdk-8u231-linux-x64.rpm"
 - Command to install:yum install jdk-8u231-linux-x64.rpm

```
[root@ip-172-31-46-254 ecz-user]# cd java
[root@ip-172-31-46-254 java]# ls
apache-tomcat-8.5.49.tar.gz  jdk-8u231-linux-x64.rpm
[root@ip-172-31-46-254 java]# yum install jdk-8u231-linux-x64.rpm
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Examining jdk-8u231-linux-x64.rpm: 2000:jdk1.8-1.8.0_231-fcs.x86_64
Marking jdk-8u231-linux-x64.rpm to be installed
Resolving Dependencies
--> Running transaction check
--> Package jdk1.8.x86_64 2000:1.8.0_231-fcs will be installed
--> Finished Dependency Resolution
amzn2-core/2/x86_64                                | 2.4 kB     00:00

Dependencies Resolved

=====
          Package      Arch      Version           Repository      Size
=====
Installing:
  jdk1.8      x86_64    2000:1.8.0_231-fcs      /jdk-8u231-linux-x64   294 M

Transaction Summary
=====
```

Install jdk 1.8

- Command to check version of java:java -version

```
Complete!
[root@ip-172-31-46-254 java]# java -version
java version "1.8.0_231"
Java(TM) SE Runtime Environment (build 1.8.0_231-b11)
Java HotSpot(TM) 64-Bit Server VM (build 25.231-b11, mixed mode)
[root@ip-172-31-46-254 java]# █
```

Install Tomcat 8

- If don't have filezilla:
- <https://tomcat.apache.org/download-80.cgi>

tomcat.apache.org/download-80.cgi

Apache Tomcat®

Search... GO

Apache Tomcat

- Home
- Taglibs
- Maven Plugin

Download

- Which version?
- Tomcat 9
- Tomcat 8
- Tomcat 7
- Tomcat Connectors
- Tomcat Native
- Taglibs
- Archives

Documentation

- Tomcat 9.0
- Tomcat 8.5
- Tomcat 7.0
- Tomcat Connectors
- Tomcat Native
- Wiki
- Migration Guide
- Presentations

Problems?

- Security Reports
- Find help
- FAQ
- Mailing Lists

Tomcat 8 Software Downloads

Welcome to the Apache Tomcat® 8.x software download page. This page provides download links for obtaining the latest release of Tomcat 8.0. Unsure which version you need? Specification versions implemented, minimum Java version required and lots more.

Quick Navigation

[KEYS](#) | [8.5.49](#) | [Browse](#) | [Archives](#)

Release Integrity

You must verify the integrity of the downloaded files. We provide OpenPGP signatures for every release file. This SHA-512 checksums for every release file. After you download the file, you should calculate a checksum for your system.

Mirrors

You are currently using <http://apache.mirror.colo-serv.net/>. If you encounter a problem with this mirror, please try another.

Other mirrors:

8.5.49

Please see the [README](#) file for packaging information. It explains what every distribution contains.

Binary Distributions

- Core:
 - [zip \(pgp, sha512\)](#)
 - [tar.gz \(pgp, sha512\)](#)
 - [32-bit Windows zip \(pgp, sha512\)](#)

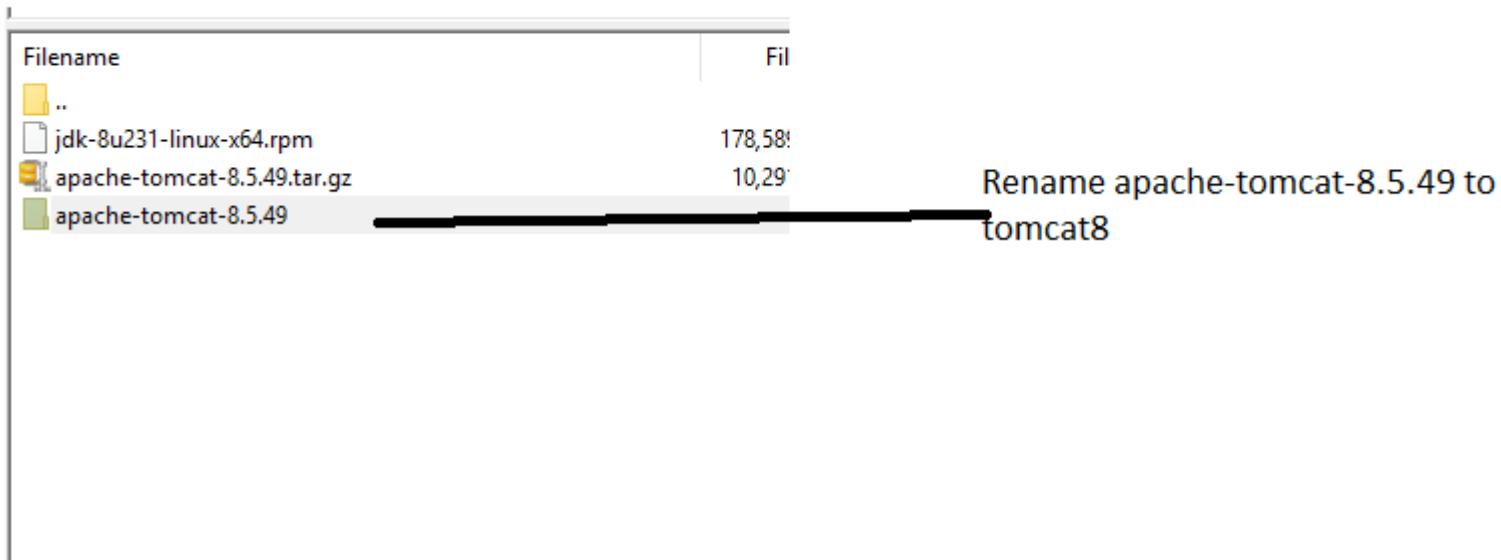
copy this link

Install Tomcat 8

- Command to download it: wget <http://apache.mirror.coloserv.net/tomcat/tomcat-8/v8.5.49/bin/apache-tomcat-8.5.49.tar.gz>
- To install tar file: tar xvfz apache-tomcat-8.5.49.tar.gz

```
[root@ip-172-31-46-254 java]# tar xvfzapache-tomcat-8.5.49.tar.gz
tar: Old option `f' requires an argument.
Try `tar --help' or `tar --usage' for more information.
[root@ip-172-31-46-254 java]# tar xvfz apache-tomcat-8.5.49.tar.gz
apache-tomcat-8.5.49/conf/
```

Install Tomcat 8



Install Tomcat 8

- Give 777 rights to java folder.

```
[root@ip-172-31-18-251 java]# cd ..
[root@ip-172-31-46-254 ec2-user]# ls
java
[root@ip-172-31-46-254 ec2-user]# chmod -R 777 java
[root@ip-172-31-46-254 ec2-user]#
```

Install Tomcat 8

- [root@ip-172-31-46-254 ec2-user]# cd java/tomcat8/bin
- Start tomcat:./startup.sh or sudo ./startup.sh
- Check if tomcat start:ps –ef | grep tomcat8
- Another way to check connection: wget <http://localhost:8080>

Install Tomcat 8

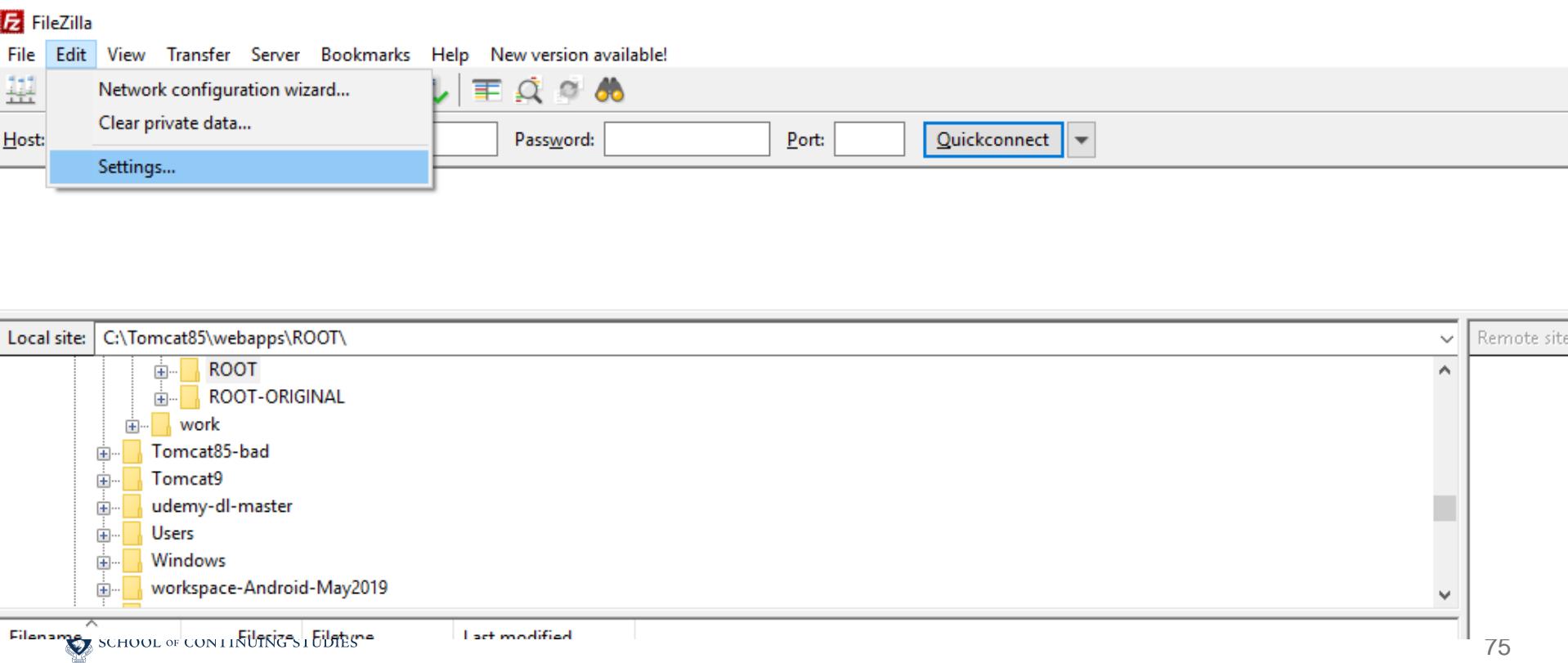
```
[root@ip-172-31-46-254 bin]# ./startup.sh
Using CATALINA_BASE: /home/ec2-user/java/tomcat8
Using CATALINA_HOME: /home/ec2-user/java/tomcat8
Using CATALINA_TMPDIR: /home/ec2-user/java/tomcat8/temp
Using JRE_HOME:      /
Using CLASSPATH:     /home/ec2-user/java/tomcat8/bin/bootstrap.jar:/home/ec2-user/java/tomcat8/bin/tomcat-juli.jar
Tomcat started.
[root@ip-172-31-46-254 bin]# ps -ef | grep tomcat8
root    1570  1 16 16:20 pts/0  00:00:02 /bin/java -Djava.util.logging.config.file=/home/ec2-user/java/tomcat8/conf/logging.properties -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -Djdk.tls.ephemeralDHKeySize=2048 -Djava.protocol.handler.pkgs=org.apache.catalina.webresources -Dorg.apache.catalina.security.SecurityListener.UMASK=0027 -Dignore.endorsed.dirs= -classpath /home/ec2-user/java/tomcat8/bin/bootstrap.jar:/home/ec2-user/java/tomcat8/bin/tomcat-juli.jar -Dcatalina.base=/home/ec2-user/java/tomcat8 -Dcatalina.home=/home/ec2-user/java/tomcat8 -Djava.io.tmpdir=/home/ec2-user/java/tomcat8/temp org.apache.catalina.startup.Bootstrap start
root    1626 3656  0 16:20 pts/0  00:00:00 grep --color=auto tomcat8
[root@ip-172-31-46-254 bin]# wget http://localhost:8080
--2019-11-30 16:22:00-- http://localhost:8080/
Resolving localhost (localhost)... 127.0.0.1
Connecting to localhost (localhost)|127.0.0.1|:8080... connected.
HTTP request sent, awaiting response... 200
Length: unspecified [text/html]
Saving to: 'index.html'

[<=>          ] 11,195
--.-K/s in 0.005s
```

2019-11-30 16:22:02 (2.17 MB/s) - 'index.html' saved [11195]

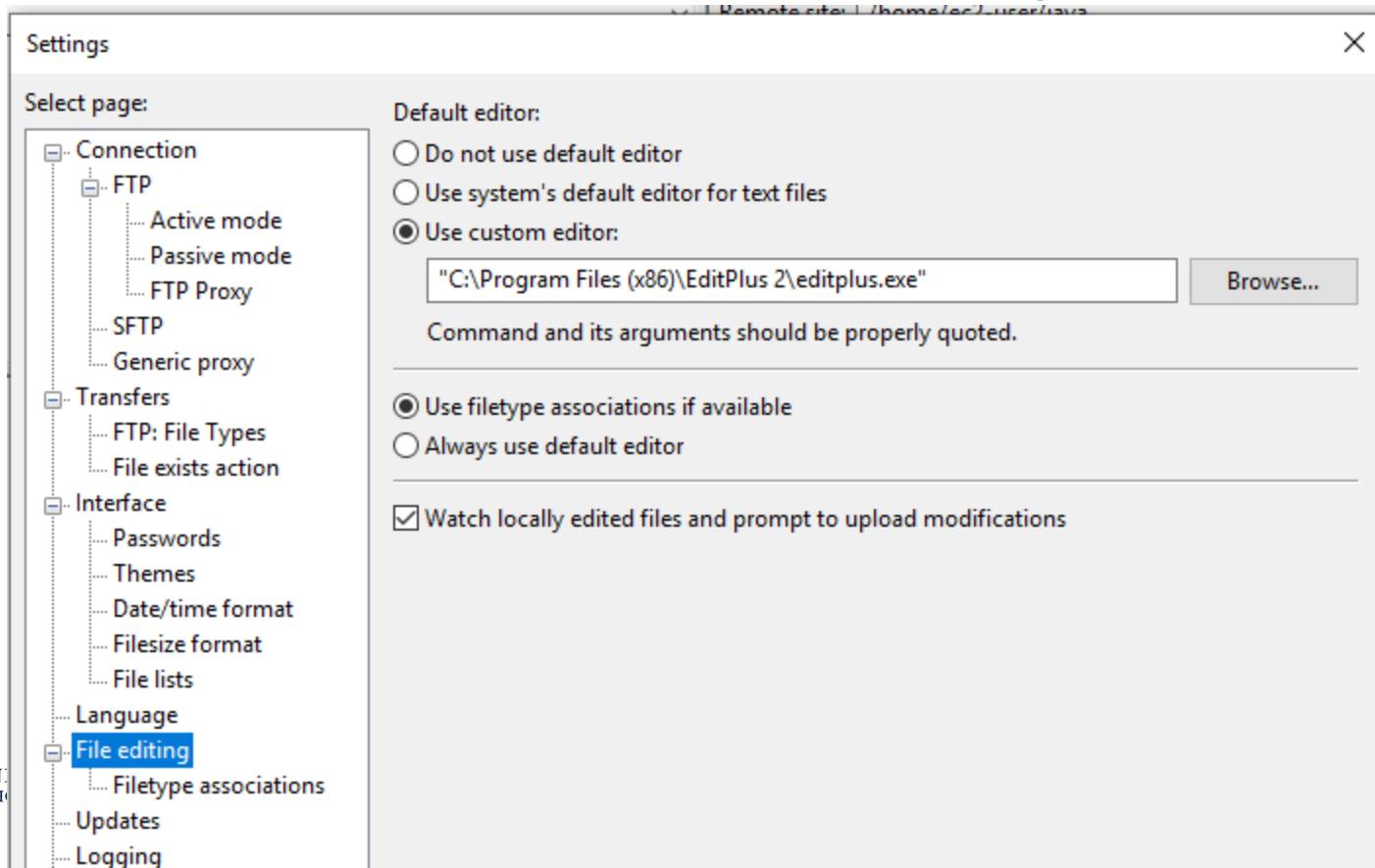
Install Tomcat 8

- Try url: <http://ec2-52-14-130-217.us-east-2.compute.amazonaws.com:8080/>
- Click “Edit/Settings”.
- Edit Filezilla to use editplus for editing:



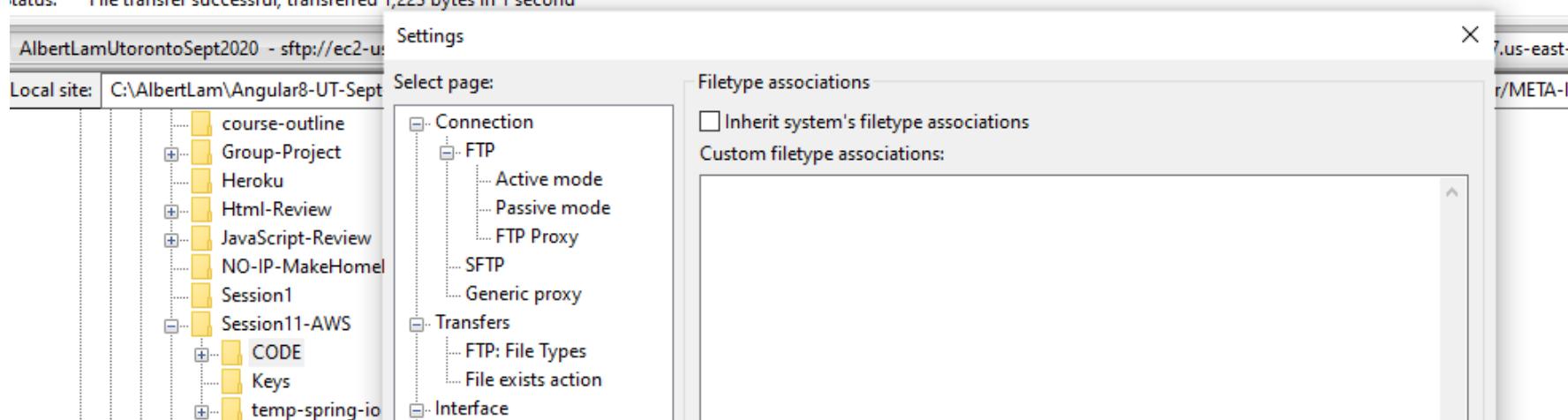
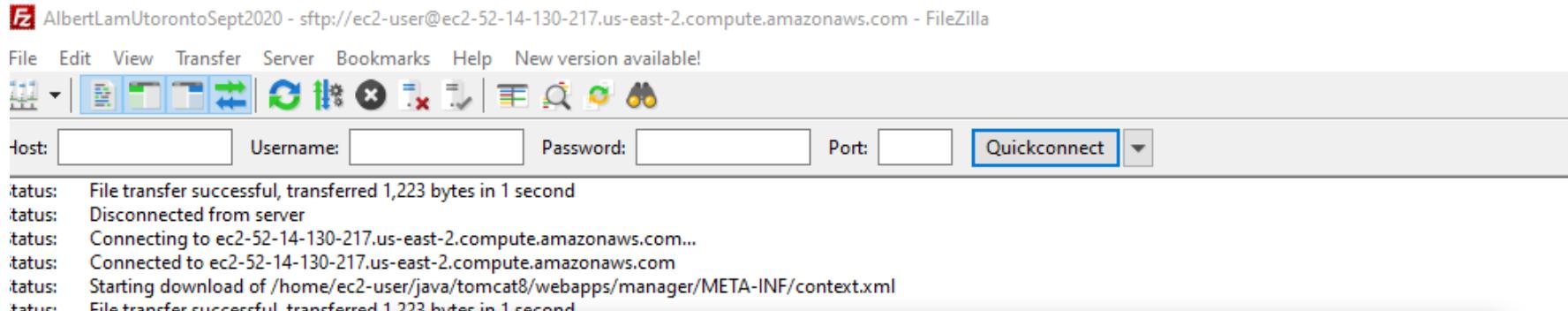
Install Tomcat 8

- Try url: <http://ec2-3-134-92-53.us-east-2.compute.amazonaws.com:8080/>
- Click “Edit/Settings”.
- Edit Filezilla to use editplus for editing:



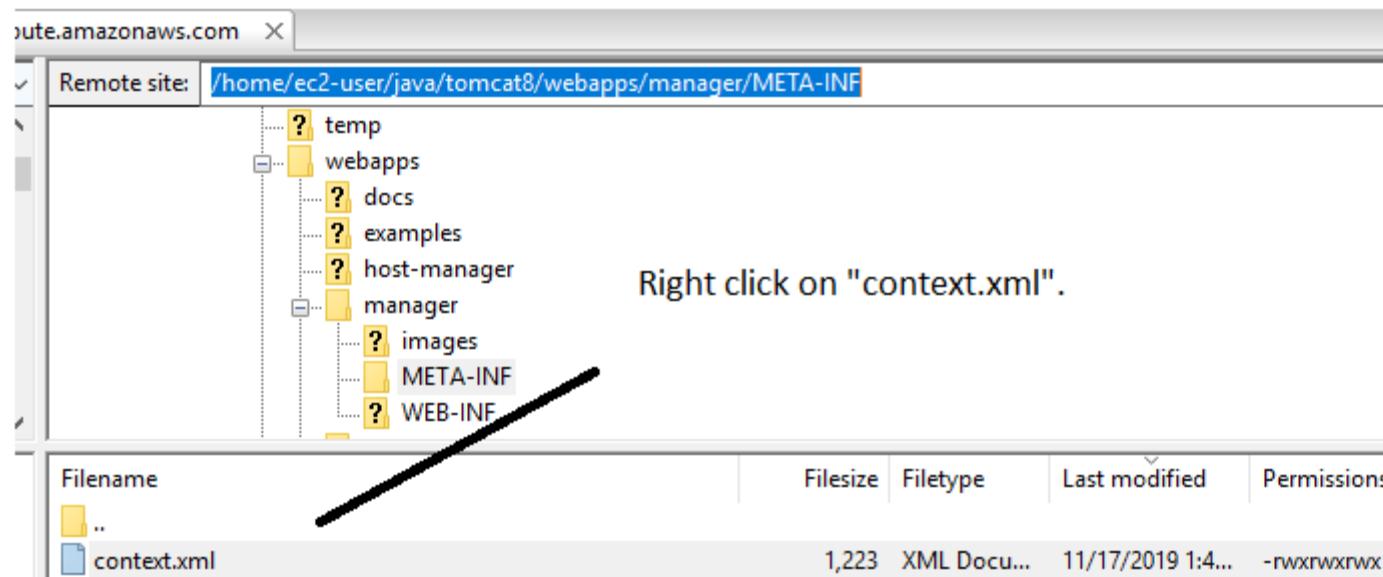
Install Tomcat 8

- Try url: <http://ec2-3-134-92-53.us-east-2.compute.amazonaws.com:8080/>
- Click “Edit/Settings”.
- Uncheck “inherit system’s filetype associations” for “filetype association”



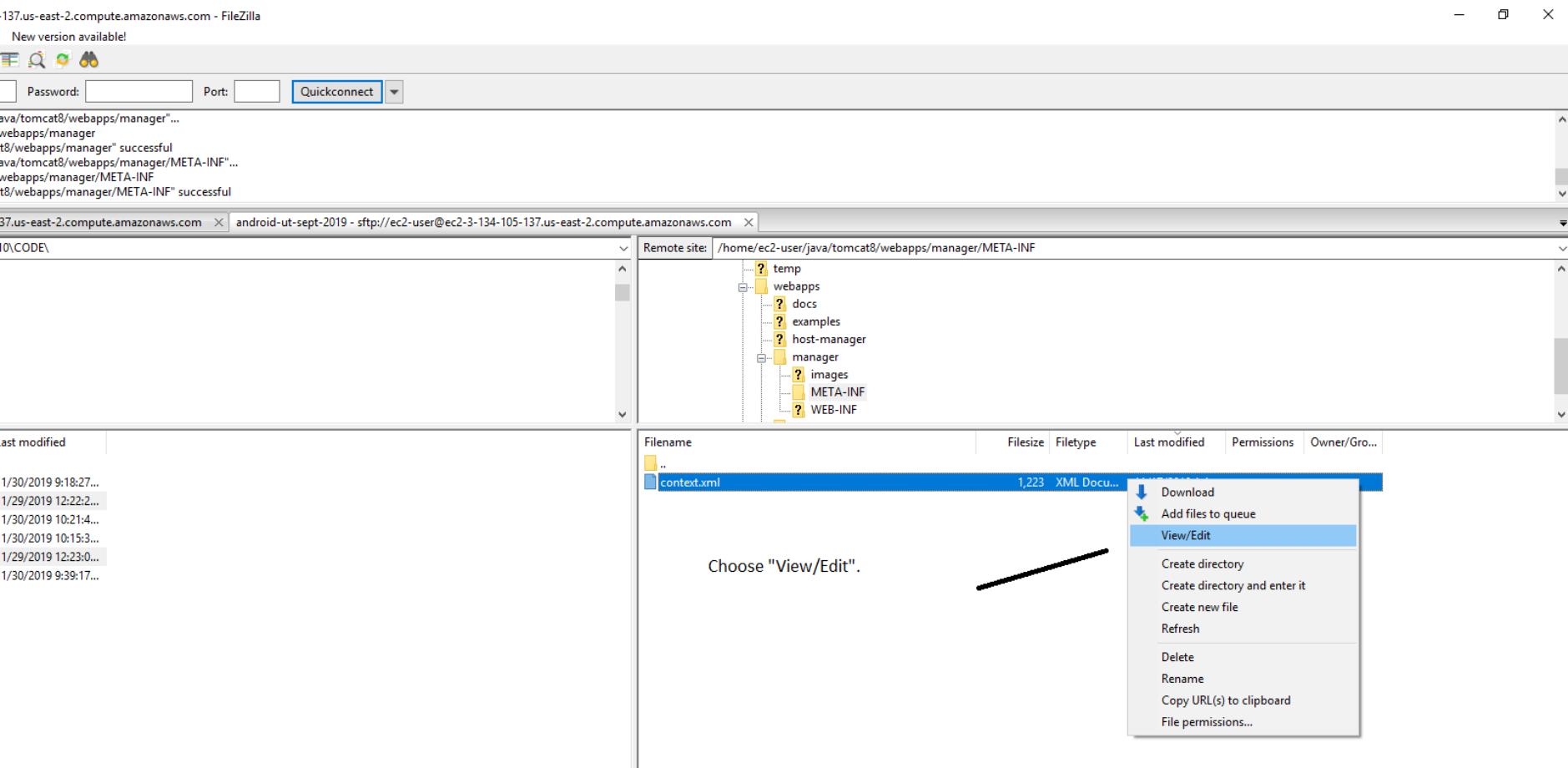
Install Tomcat 8

- Inside tomcat8>vi webapps/manager/META-INF/context.xml
- Or in filezilla:
- /home/ec2-user/java/tomcat8/webapps/manager/META-INF4



Install Tomcat 8

- Right click on file and choose “View/Edit”.



Install Tomcat 8

Ius - [C:\Users\tuyet\AppData\Local\Temp\fz3temp-2\context.xml]

Edit View Search Document Project Tools Window Help

ClipText

Dws

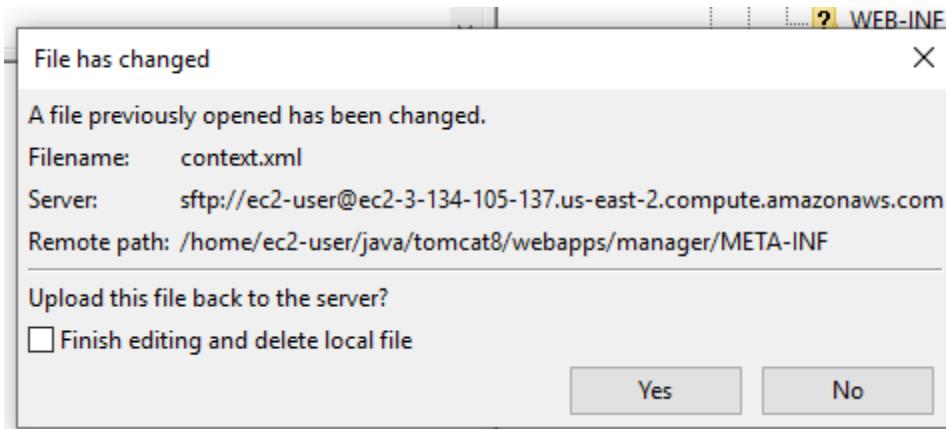
space-UT-Angular-Project
up-Project-Vers
otstrap4
C
ent.products
ent.ts
ent.ts.bak

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <!--
3   Licensed to the Apache Software Foundation (ASF) under one or more
4   contributor license agreements. See the NOTICE file distributed with
5   this work for additional information regarding copyright ownership.
6   The ASF licenses this file to You under the Apache License, Version 2.0
7   (the "License"); you may not use this file except in compliance with
8   the License. You may obtain a copy of the License at
9
10    http://www.apache.org/licenses/LICENSE-2.0
11
12 Unless required by applicable law or agreed to in writing, software
13 distributed under the License is distributed on an "AS IS" BASIS,
14 WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
15 See the License for the specific language governing permissions and
16 limitations under the License.
17 -->
18 <Context antiResourceLocking="false" privileged="true" >
19   <!--<Valve className="org.apache.catalina.valves.RemoteAddrValve"
20       allow="127\\.\\d+\\.\\d+\\.\\d+|::1|0:0:0:0:0:0:1" />-->
21   <Manager
22     sessionAttributeValueClassNameFilter="java\\.lang\\.\\(?:Boolean|Integer|Long|Number|String|LinkedHashMap)"/>
23 </Context>
```

comment this and save it in editplus and go back to filezilla.

Install Tomcat 8

- Click “Yes”:



Install Tomcat 8

- Start Server:

```
[root@ip-172-31-46-254 tomcat8]# cd bin
```

```
[root@ip-172-31-46-254 bin]# ./startup.sh
```

Using CATALINA_BASE: /home/ec2-user/java/tomcat8

Using CATALINA_HOME: /home/ec2-user/java/tomcat8

Using CATALINA_TMPDIR: /home/ec2-
user/java/tomcat8/temp

Using JRE_HOME: /

Using CLASSPATH: /home/ec2-
user/java/tomcat8/bin/bootstrap.jar:/home/ec2-
user/java/tomcat8/bin/tomcat-juli.jar

Tomcat started.

Install Tomcat 8

- Test if tomcat is working:
- <http://ec2-52-14-130-217.us-east-2.compute.amazonaws.com:8080/>

The screenshot shows the AWS CloudWatch Metrics console. At the top, there are tabs for 'Search Instance' (selected), 'Connect', and 'Actions'. Below the tabs is a search bar with placeholder text 'Filter by tags and attributes or search by keyword'. The main area displays a table of metrics. The columns are: Metric Name, Unit, Value, and Timestamp. There is one row of data: Metric Name is 'Launch Wizard Step 1', Unit is 'Count', Value is '1', and Timestamp is '2019-11-30T09:34:21Z'. A large black arrow points from the text 'Click "launch-wizard-1"' to the 'Metric Name' column of the table.

Metric Name	Unit	Value	Timestamp
Launch Wizard Step 1	Count	1	2019-11-30T09:34:21Z

Click "launch-wizard-1".

Install Tomcat 8

The screenshot shows the AWS EC2 console interface for managing security groups. The top navigation bar includes links for Services, Resource Groups, and a user icon. The main content area displays a table of security groups. A search bar at the top of the table lists "sg-0dbaa5459569e4415". The table columns are Name, Group ID, Group Name, VPC ID, Owner, and Description. One row is selected, showing "sg-0dbaa5459569e4415" as the Group ID, "launch-wizard-1" as the Group Name, "vpc-332ed758" as the VPC ID, "867554208266" as the Owner, and "launch-wizard-1 created 2019-11-30T09:26:58.0" as the Description. Below the table, a modal window titled "Security Group: sg-0dbaa5459569e4415" is open. It has tabs for "Description", "Inbound" (which is highlighted with a red box), "Outbound", and "Tags". A large black arrow points from the text "Click \"Inbound\"." to the "Inbound" tab. Another black arrow points from the text "Click \"Edit\"." to the "Edit" button. The modal also contains fields for "Type" (set to "SSH"), "Protocol" (set to "TCP"), "Port Range" (set to "22"), and "Source" (set to "0.0.0.0/0").

Install Tomcat 8

Edit inbound rules X

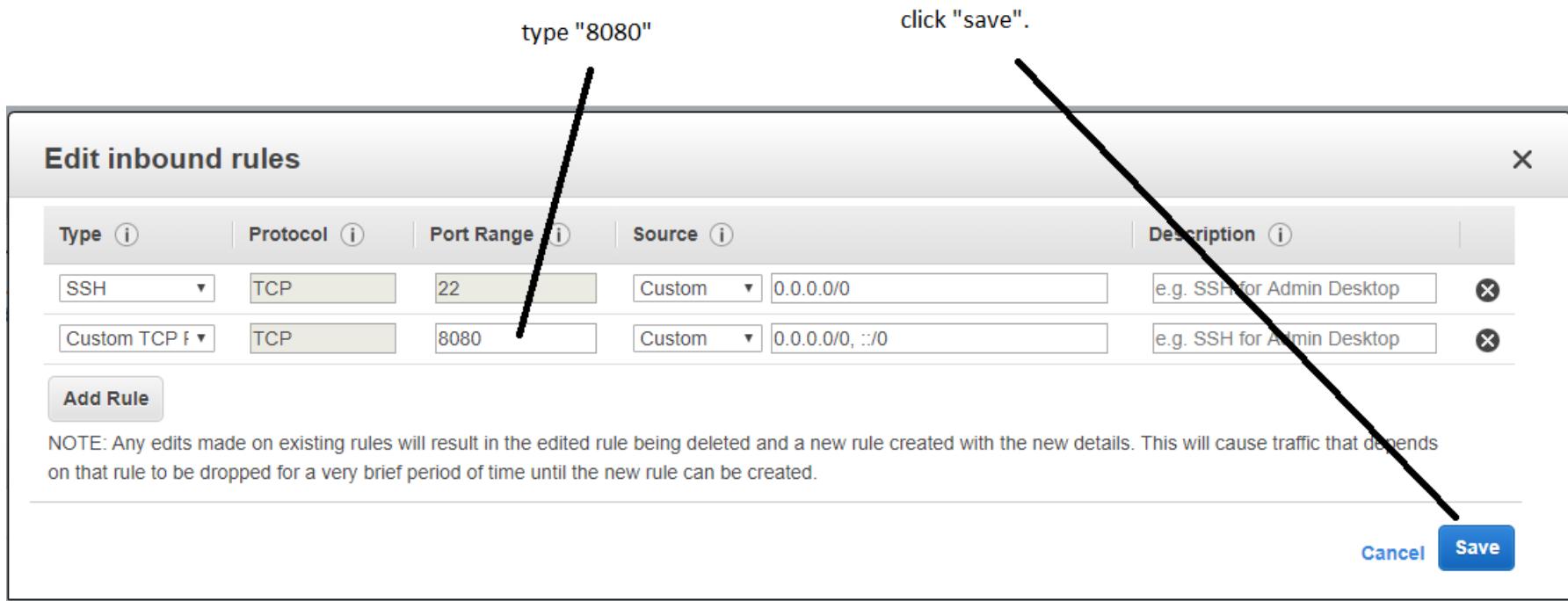
Type (i)	Protocol (i)	Port Range (i)	Source (i)	Description (i)
SSH	TCP	22	Custom	0.0.0.0/0 e.g. SSH for Admin Desktop

Add Rule — click "add rule".

NOTE: Any edits made on existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created.

[Cancel](#) Save

Install Tomcat 8



Install Tomcat 8

- url now working:<http://ec2-52-14-130-217.us-east-2.compute.amazonaws.com:8080/>

The screenshot shows a web browser window with a large toolbar at the top. The address bar displays "Not secure | ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080". The main content area is the Apache Tomcat 8.5.49 homepage. At the top, there is a navigation bar with links to Home, Documentation, Configuration, Examples, Wiki, and Mailing Lists. A "Find Help" button is also present. To the right of the navigation bar is the Apache logo. Below the navigation bar, a green banner reads "If you're seeing this, you've successfully installed Tomcat. Congratulations!". On the left side, there is a cartoon cat icon with the text "TM" next to it. To the right of the cat, under "Recommended Reading", are links to Security Considerations How-To, Manager Application How-To, and Clustering/Session Replication How-To. On the right side of the page, there are three buttons: Server Status, Manager App, and Host Manager. At the bottom of the page, there are several sections: Developer Quick Start (with links to Tomcat Setup, First Web Application, Realms & AAA, JDBC DataSources, Examples, and Servlet Specifications/Tomcat Versions), Managing Tomcat (with information about restricted access to the manager webapp), Documentation (with links to Tomcat 8.5 Documentation, Tomcat 8.5 Configuration, and Tomcat Wiki), and Getting Help (with links to FAQ and Mailing Lists, and information about mailing lists like tomcat-announce, tomcat-users, and taglibs-user).

Not secure | ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080

Home Documentation Configuration Examples Wiki Mailing Lists Find Help

Apache Tomcat/8.5.49

If you're seeing this, you've successfully installed Tomcat. Congratulations!

TM

Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)

Server Status

Manager App

Host Manager

Developer Quick Start

[Tomcat Setup](#) [Realms & AAA](#) [Examples](#) [Servlet Specifications](#)

[First Web Application](#) [JDBC DataSources](#) [Tomcat Versions](#)

Managing Tomcat

For security, access to the [manager webapp](#) is restricted. Users are defined in: `$CATALINA_HOME/conf/tomcat-users.xml`

In Tomcat 8.5 access to the manager application is split between different users. [Read more...](#)

[Release Notes](#)

[Changelog](#)

Documentation

[Tomcat 8.5 Documentation](#)

[Tomcat 8.5 Configuration](#)

[Tomcat Wiki](#)

Find additional important configuration information in: `$CATALINA_HOME/RUNNING.txt`

Developers may be interested in:

Getting Help

[FAQ and Mailing Lists](#)

The following mailing lists are available:

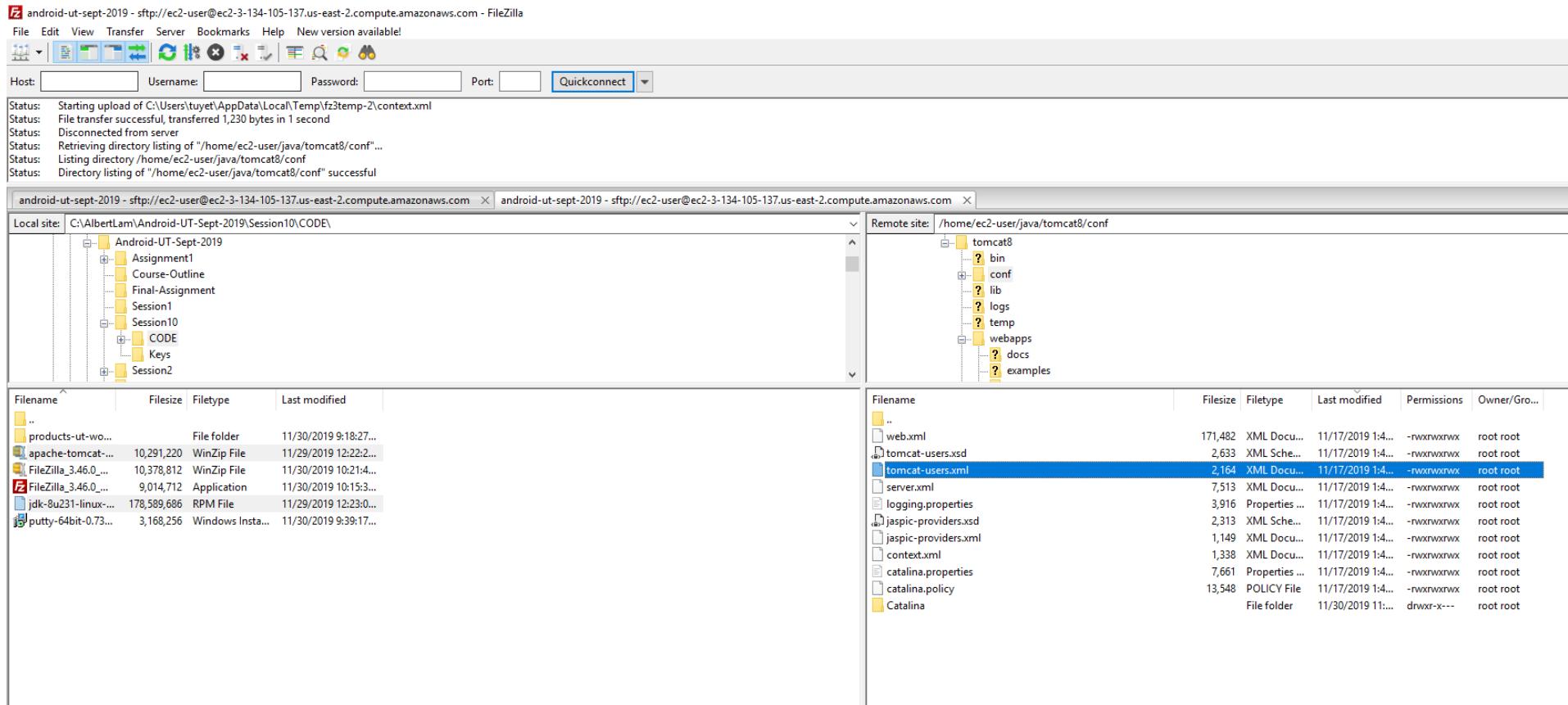
tomcat-announce
Important announcements, releases, security vulnerability notifications. (Low volume.)

tomcat-users
User support and discussion

taglibs-user
User support and discussion for [Apache Taglibs](#)

Install Tomcat 8

- Cannot access manager.
- If filezilla not working use: tomcat8>vi conf/tomcat-users.xml



Install Tomcat 8

- Add to tomcat-users.xml:

```
<role rolename="manager-gui">  
    <user username="admin" password="admin"  
        roles="manager-gui"/>
```

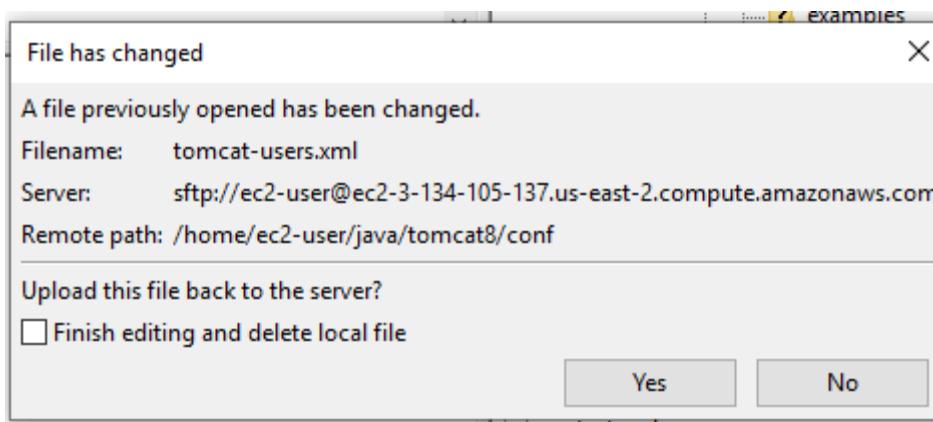
Type the following and ctrl + save.
Go to filezilla.

```
.. ..  
38     <role rolename="tomcat"/>  
39     <role rolename="role1"/>  
40     <user username="tomcat" password="" roles="tomcat"/>  
41     <user username="both" password="" roles="tomcat,role1"/>  
42     <user username="role1" password="" roles="role1"/>  
43 -->  
▶ 44     <role rolename="manager-gui"/>  
45     <user username="admin" password="admin" roles="manager-gui"/>  
46 </tomcat-users>
```



Install Tomcat 8

- Click “Yes”.



Install Tomcat 8

- Restart tomcat:
- Stop tomcat command: sudo ./shutdown.sh

```
[root@ip-172-31-46-254 bin]#sudo ./startup.sh
```

Using CATALINA_BASE: /home/ec2-user/java/tomcat8

Using CATALINA_HOME: /home/ec2-user/java/tomcat8

Using CATALINA_TMPDIR: /home/ec2-user/java/tomcat8/temp

Using JRE_HOME: /

Using CLASSPATH: /home/ec2-user/java/tomcat8/bin/bootstrap.jar:/home/ec2-user/java/tomcat8/bin/tomcat-juli.jar

Tomcat started.

```
[root@ip-172-31-46-254 bin]#
```

Install Tomcat 8

- Restart tomcat:

```
[root@ip-172-31-46-254 bin]# ./startup.sh
```

Using CATALINA_BASE: /home/ec2-user/java/tomcat8

Using CATALINA_HOME: /home/ec2-user/java/tomcat8

Using CATALINA_TMPDIR: /home/ec2-
user/java/tomcat8/temp

Using JRE_HOME: /

Using CLASSPATH: /home/ec2-
user/java/tomcat8/bin/bootstrap.jar:/home/ec2-
user/java/tomcat8/bin/tomcat-juli.jar

Tomcat started.

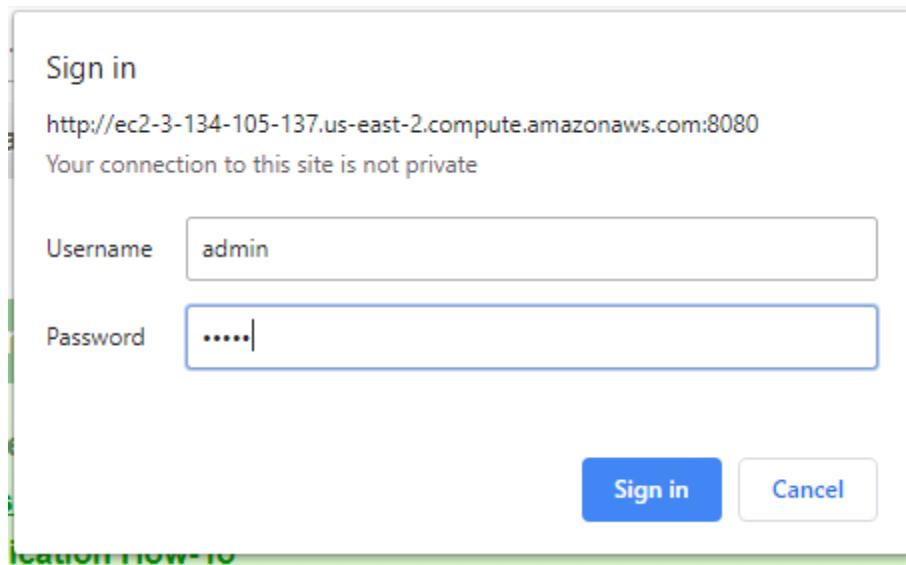
```
[root@ip-172-31-46-254 bin]#
```

Install Tomcat 8

The screenshot shows a web browser window with the following details:

- Address Bar:** Not secure | ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080
- Toolbar:** Includes icons for various applications like Google, Microsoft Office, and file management.
- Menu Bar:** Home Documentation Configuration Examples Wiki Mailing Lists Find Help
- Apache Logo:** The Apache Software Foundation logo is visible on the right.
- Welcome Message:** A green box contains the text: "If you're seeing this, you've successfully installed Tomcat. Congratulations!"
- Tomcat Mascot:** A cartoon tiger logo is on the left.
- Recommended Reading:** Includes links to Security Considerations How-To, Manager Application How-To, and Clustering/Session Replication How-To.
- Actions:** Buttons for Server Status, Manager App, and Host Manager.
- Developer Quick Start:** Links to Tomcat Setup, First Web Application, Realms & AAA, JDBC DataSources, Examples, and Servlet Specifications/Tomcat Versions.

Install Tomcat 8



Install Tomcat 8

The screenshot shows the Apache Tomcat Manager application interface. At the top, there is a browser header with the URL "ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080/manager/html". Below the header, a table lists several applications:

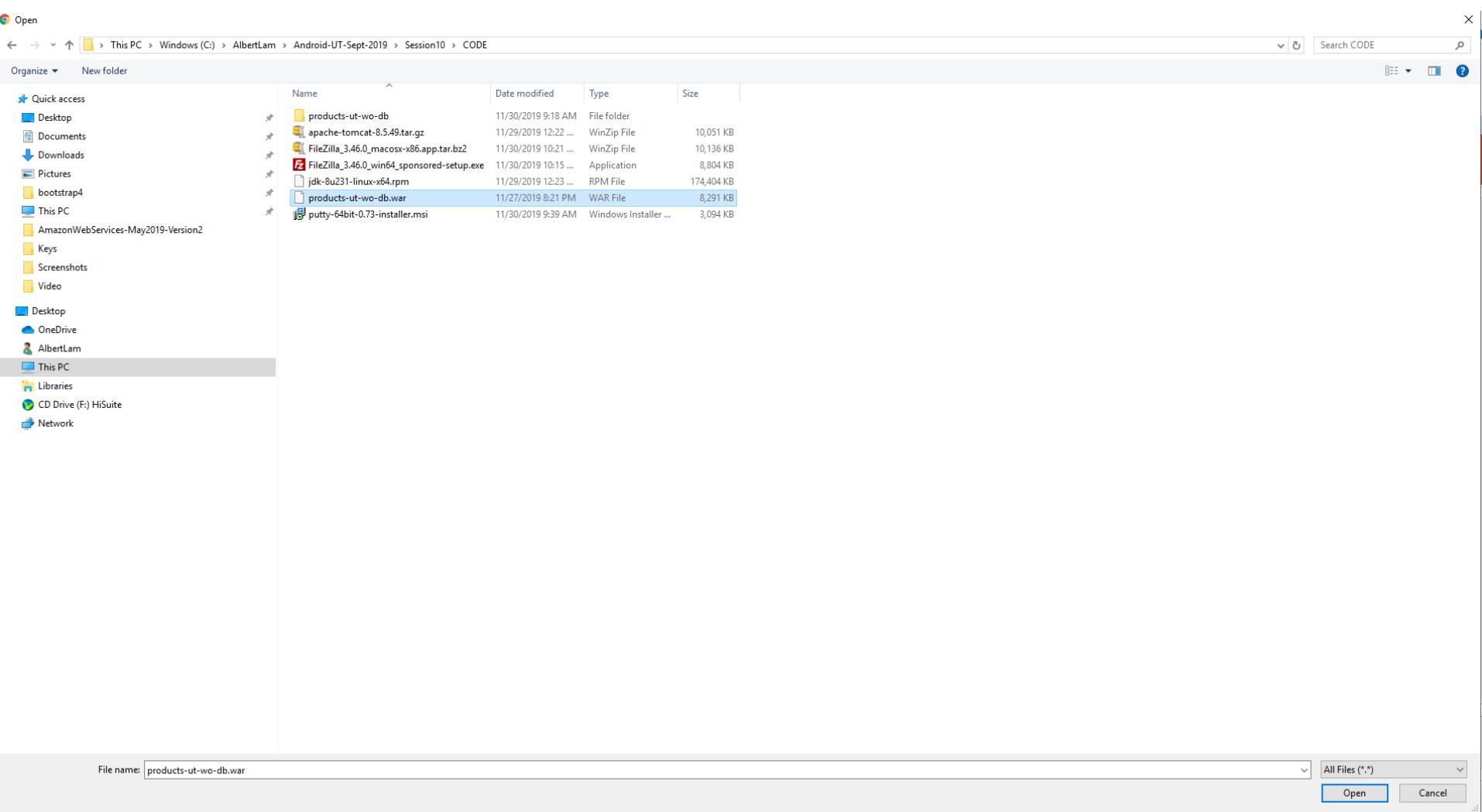
Application	Context Path	Servlet and JSP Examples	Status	Threads	Action Buttons
Servlet Examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
Tomcat Host Manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
Tomcat Manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

Below the table, there is a yellow banner with the text "Deploy". Underneath it, there are two sections for deploying WAR files:

- Deploy directory or WAR file located on server**:
This section contains three input fields: "Context Path (required)" (empty), "XML Configuration file path" (empty), and "WAR or Directory path" (empty). A "Deploy" button is located below these fields. A black arrow points from the "Deploy" button towards the "Choose File" button in the second section.
- WAR file to deploy**:
This section has a "Select WAR file to upload" dropdown set to "Choose File No file chosen", and a "Deploy" button below it.

At the bottom of the page, there is a yellow banner with the text "Configuration".

Deploy web service on Tomcat 8



Deploy web service on Tomcat 8

The screenshot shows the Tomcat Manager Application interface. At the top, there is a toolbar with various icons. Below it, a table lists deployed applications:

Application	Context Path	Description	Status	Instances	Actions
examples	None specified	Servlet and JSP Examples	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
host-manager	None specified	Tomcat Host Manager Application	true	0	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes
manager	None specified	Tomcat Manager Application	true	1	Start Stop Reload Undeploy Expire sessions with idle ≥ 30 minutes

Deploy

Deploy directory or WAR file located on server

Context Path (required):

XML Configuration file path:

WAR or Directory path:

[Deploy](#)

WAR file to deploy

Select WAR file to upload [Choose File](#) products-ut-wo-db.war

[Deploy](#)  Click "Deploy".

Configuration

Re-read TLS configuration files

Deploy web service on Tomcat 8

- Try url:<http://ec2-52-14-130-217.us-east-2.compute.amazonaws.com:8080/products-ut-wo-db/rest/products>

Production Deployment

- Copy C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version4\bootstrap4 to C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5
- Available web service:

<http://ec2-52-14-130-217.us-east-2.compute.amazonaws.com:8080/products-ut-wo-db/rest/products>

Environment.ts

- Edit C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4\src\environments\environment.prod.ts
- baseUrl: 'http://ec2-3-134-92-53.us-east-2.compute.amazonaws.com:8080/products-ut-wo-db/rest/'

is - [C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4\src\environments\environment.prod.ts]

The screenshot shows a code editor window with the following details:

- Title Bar:** is - [C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4\src\environments\environment.prod.ts]
- Menu Bar:** Edit View Search Document Project Tools Window Help
- Toolbar:** Includes icons for Copy (ctrl+C), Paste (ctrl+V), Find (ctrl+F), and others.
- Code Area:** Displays the following TypeScript code:

```
1 export const environment = {
2   production: true,
3   baseUrl: 'http://ec2-3-134-92-53.us-east-2.compute.amazonaws.com:8080/products-ut-wo-db/rest/'
4 }
5 };
6 
```
- Status Bar:** Shows the path C:\workspace-UT-Angular7-Sept-2019, the file name environment.prod.ts, and the status "Script-Review".

Production Build

- C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4>ng build --prod --base-href .

```
C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4>ng build --prod --base-href

Date: 2019-12-04T04:28:42.779Z
Hash: 9e9deef3ce9594c009c1
Time: 41185ms
chunk {0} runtime.26209474bfa8dc87a77c.js (runtime) 1.41 kB [entry] [rendered]
chunk {1} es2015-polyfills.e17997aea7f522b8d49d.js (es2015-polyfills) 56.6 kB [initial] [rendered]
chunk {2} main.cfd5cdcfad59c90b1458.js (main) 332 kB [initial] [rendered]
chunk {3} polyfills.8bbb231b43165d65d357.js (polyfills) 41 kB [initial] [rendered]
chunk {4} styles.3f900ab564f87f7d4272.css (styles) 124 kB [initial] [rendered]
chunk {scripts} scripts.d56c3d23fa0796bd398b.js (scripts) 136 kB [entry] [rendered]

C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4>
```

Deploy to Tomcat 8.5

- Copy files from C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4\dist\bootstrap4 to C:\Tomcat85\webapps\ROOT
- <http://localhost:8080/#/searchProduct>

Deploy to Tomcat 8.5

The screenshot shows a web browser window with the title "Bootstrap4". The address bar displays "localhost:8080/#searchProduct". The page content is titled "Search Products". It features two input fields: "Product ID" and "Product Description", followed by a "Search" button. Below these is a table with the following data:

#	Description English	Description French	BrandName English	BrandName French	Type	Product ID	Target Market	Image Url	Status
1	Chicken Noodle Soup	French Chicken Noodle Soup	Campbell Chicken Noodle Soup	French Campbell Chicken Noodle Soup	Consumer or Base	It is a soup	Canada	http://www.campbellSoup.com	Active
2	Chocolate Chip Cookie	French Chocolate Chip Cookie	Mrs. Fields	French Mrs. Fields	Consumer or Base	It is a cookie	Canada	http://www.mrsfields.com	Active
3	Potato Chips	French Potato Chips	Lays	French Lays	Consumer or Base	It is a potato chip	Canada	http://www.lays.com	Active

Deploy to AWS

- <http://ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080/>

The screenshot shows the FileZilla interface with two panes. The left pane (Local site) displays the file structure of a local workspace folder: C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4\dist\bootstrap4\. The right pane (Remote site) shows the directory structure of /home/ec2-user/java/tomcat8/webapps/ROOT. A large black arrow points from the Local site pane to the Remote site pane, indicating the transfer of files.

Local site: C:\workspace-UT-Angular7-Sept-2019\Group-Project\Group-Project-Version5\bootstrap4\dist\bootstrap4\

Remote site: /home/ec2-user/java/tomcat8/webapps/ROOT

Filename	Filesize	Filetype	Last modified	Permissions	Owner/Gro...
..					
3rdpartylicenses.txt	24,779	Text Document	12/3/2019 11:28:42...	-rw-rw-r--	ec2-user e...
es2015-polyfills.e17997aea7f522b8d49d.js	57,931	JavaScript Sour...	12/3/2019 11:28:42...	-rwxrwxrwx	root root
favicon.ico	5,430	Icon	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...
index.html	875	Chrome HTML...	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...
main.cfd5cdcfad59c90b1458.js	339,805	JavaScript Sour...	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...
polyfills.8bbb231b43165d65d357.js	41,994	JavaScript Sour...	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...
runtime.26209474bfa8dc87a77c.js	1,440	JavaScript Sour...	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...
scripts.d56c3d3f0a796bd4398.js	139,750	JavaScript Sour...	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...
styles.3f900ab564f87f7d4272.css	126,749	Cascading Styl...	12/3/2019 11:28:42...	-r--r--r--	ec2-user e...

Filename	Filesize	Filetype	Last modified	Permissions	Owner/Gro...
..					
styles.3f900ab564f87f7d4272.css	126,749	Cascading ...	12/3/2019 11:4...	-rw-rw-r--	ec2-user e...
favicon.ico	5,430	Icon	12/3/2019 11:4...	-rwxrwxrwx	root root
scripts.d56c3d3f0a796bd4398.js	139,750	JavaScript ...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
runtime.26209474bfa8dc87a77c.js	1,440	JavaScript ...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
polyfills.8bbb231b43165d65d357.js	41,994	JavaScript ...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
main.cfd5cdcfad59c90b1458.js	339,805	JavaScript ...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
index.html	875	Chrome H...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
es2015-polyfills.e17997aea7f522b8d49d.js	57,931	JavaScript ...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
3rdpartylicenses.txt	24,779	Text Docu...	12/3/2019 11:4...	-r--r--r--	ec2-user e...
tomcat.svg	67,795	SVG Docu...	11/17/2019 14...	-rwxrwxrwx	root root
torrent.ccc	5,501	Cascading ...	11/17/2019 14...	-rwxrwxrwx	root root

Deploy to AWS

- <http://ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080/#/searchProduct>

The screenshot shows a web browser window with the following details:

- Address Bar:** Not secure | ec2-3-134-105-137.us-east-2.compute.amazonaws.com:8080/#/searchProduct
- Tab Bar:** Apache Tomcat/8.5.49, Bootstrap4
- Content Area:**
 - Header:** Home, Add Product, Search Product
 - Section:** Search Products
 - Form:** Product ID, Product Description, Search button
 - Table:** A data grid displaying product information. The columns are: #, Description English, Description French, BrandName English, BrandName French, Type, Product ID, Target Market, Image Url, and Status.

Table Data:

#	Description English	Description French	BrandName English	BrandName French	Type	Product ID	Target Market	Image Url	Status
1	Chicken Noodle Soup	French Chicken Noodle Soup	Campbell Chicken Noodle Soup	French Campbell Chicken Noodle Soup	Consumer or Base	It is a soup	Canada	http://www.campbellSoup.com	Active
2	Chocolate Chip Cookie	French Chocolate Chip Cookie	Mrs. Fields	French Mrs. Fields	Consumer or Base	It is a cookie	Canada	http://www.mrsfields.com	Active
3	Potato Chips	French Potato Chips	Lays	French Lays	Consumer or Base	It is a potato chip	Canada	http://www.lays.com	Active



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