Install Linux on AWS

YoungMin Kwon



Amazon Web Services (AWS)

- Cloud computing
 - Computer system resources (storage, computing power, ...) available to the user ondemand
- Amazon Web Services (AWS)
 - AWS is a cloud computing platform provided by Amazon







Create an AWS Account

Goto

- https://aws.amazon.com
- Click on "Create an AWS Account" button...





Create an AWS Account

Create a free tier account





Set Free Tier Usage Alerts

 My Account ⇒ Billing preferences ⇒ Check Receive Free Tier Usage Alerts





■ Sign in ⇒ Launch a virtual machine with EC2



- Mark "Free tier only"
- Select the latest 64-bit (x86) LTS version of Ubuntu
 - LTS: Long Term Support



- Select t2.micro (Free tier eligible)
- Click on "Next: Configure Instance Details"

					NUMBER OF STREET	1000000		
aws	Services V	C	Search for services, I	leatures, marketplace p	roducts, and docs [A	lt+S]		Suppo
1. Choos	e AMI 2. Choose Instance Type	e 3. Configure Inst	ance 4. Add Storage	5. Add Tags 6. C	Configure Security Group 7. Revi	ew		
Step Amazon I networkin	2: Choose an Insta EC2 provides a wide selection o ng capacity, and give you the flex	ance Type of instance types opti xibility to choose the	mized to fit different us appropriate mix of reso	e cases. Instances are ources for your applicat	virtual servers that can run appl lons. Learn more about instanc	ications. They have varying core types and how they can mee	mbinations of CPU, memory, stor t your computing needs.	age, and
Filter by:	All instance families 👻	Current gener	ation ~ Show/Hig	de Columns				
Curren	tly selected: t2.micro (- ECUs,	1 vCPUs, 2.5 GHz,	, 1 GIB memory, EBS o	only)				
	Family -	Туре -	vCPUs 🕕 🔹	Memory (GiB) -	Instance Storage (GB) ① -	EBS-Optimized Available	Network Performance ① -	IPv6 Suppor
	12	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
•	t2	t2.micro Free tier eligible	1	1	EBS only		Low to Moderate	Yes
	12	t2.small	1	2	EBS only	-	Low to Moderate	Yes
	t2	t2.medium	2	4	EBS only		Low to Moderate	Yes
	t2	t2.large	2	8	EBS only		Low to Moderate	Yes
	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
	t3	t3.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
			0		EBC asks	Var	Up to 5 Cleable	Vec



Click on "Next: Configure Instance Details"



- Enter 30 to Size (GiB)
- Click on "Review and Launch"

Launch instance wiza	zard EC2 Mair 🗙	+									-		×
\leftrightarrow \rightarrow O \Leftrightarrow	https://ap	-northeast-2.console.a	aws.amazon.com	n/ec2/v2/hom	e?region=ap-nor	rtheast-2#Launch	InstanceWiz	ard:		î	£≡ (⊕	۲	
aws Services 🔻		Q Sea	rch for services,	features, man	ketplace product	s, and docs	[Alt+S	5]		\$ ykwon4 ▼	Seoul 🔻	Support	•
1. Choose AMI 2. Choose In	Instance Type	3. Configure Instance	4. Add Storage	5. Add Tags	s 6. Configure	e Security Group	7. Review						
Step 4: Add Stora our instance will be launched dit the settings of the root vo orage options in Amazon EC	age ed with the followi olume. You can a C2.	ing storage device set Ilso attach additional E	lings. You can a BS volumes aft	ittach addition: er launching a	al EBS volumes a an instance, but n	and instance store	e volumes te volumes. L	o your instanc earn more ab	e, or lout				
Volume Type (i)	Device (j)	Snapshot (j)	Size	(GiB) (j	Volume Type	ə (j)		IOPS (j)	Throughput (MB/s) (j)	Delete on Termination	Encrypti	on 🕕	
Root /c	/dev/sda1	snap-050dcc44t	30		General Purp	pose SSD (gp2)	~	100 / 3000	N/A		Not Encr	ypte 👻	
Add New Volume Free tier eligible custome usage restrictions.	ers can get up to	30 GB of EBS Genera	I Purpose (SSD)) or Magnetic	storage. Learn r	more about free	usage tier el	igibility and					
								Canc	Previous	Review and Lau	inch	d T	ags

Click on "Launch"

Eaunch instance wizard EC2 M	• × +							×
	ps://ap-northeast-2.cc	onsole.aws.amazon.com/ec	:2/v2/home?region=ap-northeast-2#Lau	inchInstanceWizard:	ίσ	¢≞ @		
WS Services ▼	(Q Search for services, fea	tures, marketplace products, and docs	[Alt+S]		Seoul 🔻	Support 🔻	
ose AMI 2. Choose Instance Ty	pe 3. Configure Insta	ince 4. Add Storage	5. Add Tags 6. Configure Security Group	7. Review				
p 7: Review Instance e review your instance launch de	Ce Launch tails. You can go back	to edit changes for each s	ection. Click Launch to assign a key pa	Ir to your instance and complete the launch	process.			
Your instances may be according to the second secon	es' security. Your essible from any IP ad al ports in your securit	security group, laund dress. We recommend that ty group to facilitate access	ch-wizard-2, is open to the worl at you update your security group rules to a to the application or service you're run	d. o allow access from known IP addresses onl ning, e.g., HTTP (80) for web servers. Edit s	ly. ecurity groups			
II Deteile							EditAM	
I DetallS	ALTS (HVM) SSD V	/olume Type . ami-0487	6f29fd3a5e8ba				CUILAMI	
Free 6er Ubuntu Server 20.04 LT: eligible Root Device Type: ebs: Ma Instance Type	S (HVM),EBS General F dualization type: hvm	³ urpose (SSD) Volume Type	. Support available from Canonical (http://w	ww.ubuntu.com/cloud/services).		Edit ins	tance type	
Instance Type ECU	s vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Perform	ance		
t2.micro -	1	1	EBS only	•	Low to Moderate			н
curity Groups						Edit secu	rity groups	
Security Groups	unch-wizard-2 unch-wizard-2 created	J 2021-09-06T09:51:19.72	:1+09:00			Edit secu	rity groups	5
ecurity Groups ecurity group name la escription la Type ()	unch-wizard-2 unch-wizard-2 created Protocol (j	1 2021-09-06T09:51:19.72)	1+09:00 Port Range ①	Source ()	Description ()	Edit secu	rity groups	5
ecurity Groups description la Type () SSH	unch-wizard-2 unch-wizard-2 created Protocol () TCP	1 2021-09-06T09:51:19.72	11+08:00 Port Range ① 22	Source () 0.0.0.0/0	Description (\hat{I})	Edit secu	rity groups	5
Security Groups Security group name Description Ia Type SSH Issue Instance Details	unch-wizard-2 unch-wizard-2 created Protocol () TCP	d 2021-09-06T09:51:19.72)	11+09:00 Port Range (j) 22	Source () 0.0.0.0/0	Description ()	Edit secu Edit insta	rity groups	5

- Select "Create a new key pair"
- Enter a Key pair name
- Click on "Download Key Pair"





Download the Key pair

Email the .pem file to yourself (to access the VM from other machines)

	Select an existing key pair or create a new key pair	
	Select all existing key pair of cleate a new key pair	
4 LTS (HVM), S (HVM),EBS G Intualization type: hv	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. Amazon EC2 supports ED25519 and RSA key pair types.	
	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.	
s VCPU:	Create a new key pair	Network Per
4	Key pair type	Louista Mada
1		Low to Model
	Key pair name	
	AWS_Ubuntu20.04LTS	
	Download Key Pair	
aunch-wizard-2	N	
aunch-wizard-2		
	it in a secure and accessible location. You will not be able to download the file again	
Proto	after it's created.	Description (
TCP		



- Click on "Launch Instances"
- Click on "View Instances"

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. Amazon EC2 supports ED25019 and RSA key pair types. Is VCPU Interesting a new key pair Image: State in the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance. Amazon EC2 supports ED25019 and RSA key pair types. 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. Networ Internet into a secure in the pair from a public AMI. Create a new key pair Networ Internet into a secure and excessible location. Download Key Pair Low to I Internet into a secure and accessible location. You will not be able to download the file again after the pair into a secure and accessible location. You will not be able to download the file again after the remeted. Into a secure and accessible location. You will not be able to download the file again after the remeted.	bessible from any hal ports in your s
4 LTS (HVM), 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 is required to securely SH into your instance. Anazon EC2 supports ED25519 and RSA key pair types. 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. Netword 1 Create a new key pair v Key pair type @ RSA OED25519 Key pair name RVS_Ubuntu20.04LTS Aunch-wizzerd-2 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 the reserved.	
VCPU Create a new key pair Key pair type RAA © ED25519 Key pair name AWS_Ubuntu20.04LTS Download Key Pair aunch-wizards2 aunch-wizards2 Wou 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 athe file screated	M LTS (HVM), TS (HVM),EBS G- trouateation type: Na
	s vCPU
Download Key Pair aunch-wizard-2 aunch-wizard-2 aunch-wizard-2 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 the resterior	1
aunch-wizard-2 aunch-wizard-2 You have to download the private key file (* perm file) before you can continue. Store it in a secure and accessible location. You will not be able to download the file again after the resterior	
after it's created	aunch-wizard-2 aunch-wizard-2
Proto Descripti	Proto
Cancel Launch Instances	TCP





- Wait until Status check becomes green
 - May need to refresh the page





"Instances" ⇒ Select the VM you created ⇒
 "Actions" ⇒ "Connect"

	Q Search for services, features, marketplace products, and docs [Alt+S]	😞 ykwon4 🔻 Seoul 🤊	Support V
New EC2 Experience ×	Instances (1/1) Info Connect Instance state V	Actions 🔺	ces 🔻
Ten us what you think	Q Filter Instances	Connect	1 > @
EC2 Dashboard	Name V Instance ID Instance state V Instance type V Status ch	View details	ilability Zone
Tags	✓ - i-0d8ee7e0a363f92d0	Manage instance state	ortheast-2c
Limits		Networking	•
▼ Instances		Security ►	
Instances New		Image and templates	
Instance Types		Monitor and troubleshoot	
Launch Templates			
Launen remplates			
Spot Requests			
Spot Requests Savings Plans			
Spot Requests Savings Plans Reserved Instances New			
Spot Requests Savings Plans Reserved Instances New Dedicated Hosts	Instance: i-0d8ee7e0a363f92d0		×
Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Capacity Reservations	Instance: i-0d8ee7e0a363f92d0		×
Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Capacity Reservations	Instance: i-0d8ee7e0a363f92d0 Details Security Networking Storage Status checks Monitoring Tags		×
Spot Requests Savings Plans Reserved Instances New Dedicated Hosts Capacity Reservations V Images AMIs	Instance: i-0d8ee7e0a363f92d0 = Details Security Networking Storage Status checks Monitoring Tags		×



- Click on "SSH client" tab
 - Copy the line after Example:





Connect to the VM (Linux, Mac)

- Create a .sh file with the following contents
 - It will run ssh
 - E.g. vi sshaws.sh





Connect to the VM (Linux, Mac)

- Remove rwx permissions from the .pem file
 - chmod go-rwx AWS_Ubuntu2004LTS.pem
- Add x permission to the .sh file
 - chmod u+x sshaws.sh
- Run the .sh file
 - ./sshaws.sh





Upload/Download Files (Linux, Mac)

- Create a .sh file with the following contents
 - It will run sftp
 - E.g. vi sftpaws.sh





Upload/Download Files (Linux, Mac)

- Add x permission to the .sh file
 - chmod u+x sftpaws.sh
- Run the .sh file
 - ./sftpaws.sh
 - E.g. to upload hello.c: put hello.c
 - E.g. to download hello.c: get hello.c





Connect to the VM (Windows)

- Download putty.exe, psftp.exe, puttygen.exe
- Convert a private key using puttygen.exe
- Create .cmd files to connect to the VM



Download putty.exe...

Goto

- https://www.putty.org
- Download putty.exe
 - Write click on putty.exe
 - Save link as...
- Download puttygen.exe
- Download psftp.exe
- Copy these .exe and the .pem files to a same folder
 - E.g. in Desktop\Tools\

	Antonio Territorio de la conservación Territorio de la conse		Download Pu PuTTY is an SSH that is available v You can download	TTY and telnet clien vith source code d PuTTY <u>here</u> .	t, developed and is devel
P Downlo	ad PuTTY: latest	release 🗆 🗙	+		
C	6) https://	www.chiark.greenend.or	g.uk/~sgtatham/put	ty/latest.html
MSI ('Wi	ndows Install	er')			53
64-bit x86	c put	ty-64bit-	0.76-installer.msi	(or by FTP)	(signature)
64-bit Arn	a: put	ty-arm64-	0.76-installer.msi	(or by FTP)	(signature)
32-bit x86	e put	ty-0.76-i	nstaller.msi	(or by FTP)	(signature)
Unix sour	ce archive				
.tar.gz:	put	tv-0.76.t	ar.gz	(or by FTP)	(signature)
The install	er packages a	bove will	provide versions of all	of these (except Pu]	TTYtel), but yo
The install (Not sure	ler packages a whether you w	bove will ant the 3	provide versions of all of a contract of the second s	of these (except Pu] on? Read the <u>FAQ e</u>	TTYtel), but you
The install (Not sure v putty.exe 64-bit x86	ler packages al whether you w (the SSH and	bove will ant the 3. I Telnet c	provide versions of all 2-bit or the 64-bit versio lient itself)	of these (except Pul on? Read the <u>FAQ e</u>	TTYtel), but you
The install (Not sure) putty.exe 64-bit x86 64-bit Arn	ler packages a whether you w (the SSH and : put	bove will ant the 3. I Telnet c	provide versions of all a 2-bit or the 64-bit version lient itself) Open link in new tab	of these (except Pul on? Read the <u>FAQ e</u>	TTYtel), but yo atry.) (signature (signature
The install (Not sure) putty.exe 64-bit x86 64-bit Arm 32-bit x86	ler packages a whether you w (the SSH and : put 1: put : put	bove will ant the 3.	provide versions of all 2-bit or the 64-bit versio lient itself) Open link in new tab	of these (except Pul on? Read the <u>FAQ e</u>	TTYtel), but yo ntry.) (signature (signature (signature
The install (Not sure v putty.exe 64-bit x86 64-bit Arm 32-bit x86	ler packages a whether you w (the SSH and : put: : put: : put:	bove will vant the 3: I Telnet c type () type ()	provide versions of all 2-bit or the 64-bit versio lient itself) Open link in new tab Open link in new window	of these (except Pul on? Read the <u>FAQ e</u>	TTYtel), but yo ntry.) (sig <u>aature</u> (sig <u>aature</u>
The install (Not sure • putty.exe 64-bit x86 64-bit Arn 32-bit x86 pscp.exe (64-bit **	ler packages a whether you w (the SSH and : put) : put) an SCP client	bove will vant the 3: I Telnet c type type type type type type	provide versions of all 2-bit or the 64-bit versio lient itself) Open link in new tab Open link in new window Open link in newwindow	of these (except Pu] on? Read the <u>FAQ e</u>	TTYtel), but yo atry.) (signature (signature (signature)
The install (Not sure • putty.exe 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit Am	ler packages a whether you w (the SSH and : put: i: put: an SCP client : pack : pack	bove will ant the 32 I Telnet c by c ty c	provide versions of all 2-bit or the 64-bit versio lient itself) Open link in new tab Open link in new window Open link in inPrivate windo Send link in vour devices	of these (except Pul on? Read the <u>FAQ e</u>	TTYtel), but yo atry.) (sigaature (sigaature (sigaature (sigaature (sigaature
The install (Not sure v putty.exe 64-bit x86 64-bit x86 pscp.exe (64-bit x86 64-bit x86 64-bit x86	ler packages a whether you w (the SSH and : put: 1: put: an SCP client 1: psci 1: psci	bove will ant the 32 I Telnet c tyre tyr	provide versions of all 2-bit or the 64-bit versio lient itself) Open link in new tab Open link in new window Open link in InPrivate wind Send link to your devices	of these (except Pul on? Read the FAQ e	(signature) (signature) (signature) (signature) (signature) (signature)
The install (Not sure v putty.exe 64-bit x86 64-bit x86 pscp.exe (64-bit x86 64-bit x86 64-bit x86	ler packages a whether you w (the SSH and : put: : put: an SCP client : psc; : psc; : psc; : psc;	bove will van the 3; I Telnet c tyre tyre tyre tyre tyre tyre tyre tyre	provide versions of all 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in InPrivate wind Send link to your devices Save link as	of these (except Pul on? Read the <u>FAQ e</u> 	(signature (signature (signature (signature (signature (signature
The install (Not sure v putty.exe 64-bit X86 64-bit X86 64-bit X86 64-bit X86 64-bit X86 95tp.exe (ler packages a whether you w (the SSH and : put: an SCP client : psc: : psc: (an SFTP clie	bove will van the 3: I Telnet c tyre	provide versions of all of 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in InPrivate windo Send link to your devices Save link as Copy link	of these (except Pull on? Read the <u>FAQ e</u>	(signature (signature (signature (signature (signature (signature
The install (Not sure + putty.exe 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 psftp.exe 64-bit x86 64-bit x86	ler packages a whether you v (the SSH and : put) : put) an SCP client : pic) : pic) : pic) (an SFTP client : pic)	bove will vant the 3: I Telnet c vie vie vie vie vie vie vie vie vie vie	provide versions of all o 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in InPrivate windo Send link to your devices Save link as Copy link	of these (except Pul on? Read the <u>FAQ e</u> 	TTYtel), but yo atry.) (signature (signature (signature (signature (signature (signature (signature (signature (signature
The install (Not sure + putty.exe 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86	ler packages a whether you v (the SSH and : eut: an SCP client : Pice : Pice (an SFTP clie : pice :	bove will vant the 3: I Telnet c tyre tyre tyre tyre tyre tyre tyre tyre	provide versions of all of 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in nPrivate windo Send link to your devices Save link as Copy link Add to Collections	of these (except Pul on? Read the <u>FAQ e</u> 	CTYtel), but yo atr) (signature (signature (signature (signature (signature (signature (signature (signature (signature
The install (Not sure + putty.exe 64-bit x86 64-bit Arm 32-bit x86 64-bit x86 64-bit Arm 32-bit x86 64-bit Arm 32-bit x86	ler packages a whether you v (the SSH and : eutri an SCP client : eitri : eitr	bove will ant the 3; I Telnet c by c b	provide versions of all o 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in new window Open link in InPrivate windo Send link to your devices Save link as Copy link Add to Collections	of these (except Pul on? Read the <u>FAQ e</u> ww	CTYtel), but yo atrx.) (signature (signature (signature (signature (signature (signature (signature (signature (signature
The install (Not sure + putty.exe 64-bit x86 64-bit x86 94-bit x86	ler packages a whether you v (the SSH and : put) :	bove will ant the 3; I Telnet c base tx.e tx.e tx.e tx.e tx.e tx.e tx.e tx.	provide versions of all o 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in new window Open link in inPrivate windo Send link to your devices Save link as Copy link Add to Collections Web capture	of these (except Pul on? Read the <u>FAQ e</u> 	CTYtel), but yo atrx.) (signature (signature (signature (signature (signature (signature (signature (signature (signature
The install (Not sure + putty.exe 64-bit x86 64-bit X86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86 64-bit x86	ler packages a whether you v (the SSH and : put) an SCP client : pic) an SCP client : pic) an SCP client : pic) (an SFTP client : pic) : pic)	bove will vant the 3: I Telnet c type	provide versions of all of 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new tab Open link in new window Open link in InPrivate windo Send link to your devices Save link as Copy link Add to Collections Web capture	of these (except Pul on? Read the FAQ e	CTYtel), but yo atrx.) (signature (signature (signature (signature (signature (signature (signature (signature
The install (Not sure + puty-exe 64-bit x86 64-bit x86	ler packages a whether you w (the SSH and : put) an SCP client : psci : psci : psci (an SFTP clie : psci :	bove will vant the 3: I Telnet c bits tyte C tyte C	provide versions of all of 2-bit or the 64-bit version lient itself) Open link in new tab Open link in new window Open link in inPrivate windo Send link to your devices Save link as Copy link Add to Collections Web capture Inspect	of these (except Pul m? Read the <u>FAQ e</u> 	(signature (signature (signature (signature (signature (signature (signature (signature (signature (signature (signature (signature (signature

Convert your Private Key (.pem file)

- Run puttygen.exe
- Select RSA \Rightarrow Load

Br Pully Key Generator			? X
Eile Key Conversions Help			
Key			
No key.			
Actions			
Actions Generate a public/private key pair			Generale
Actions Generate a public/private key pair Load an existing private key file			<u>Generale</u> Load
Actions Generate a public/private key pair Load an existing private key file Save the generated key		Save pyblic key	Generate Load
Actions Generate a public/private key pair Load an existing private key file Save the generated key Parameters		Save pyblic key	Generate Load
Actions Generate a public/private key pair Load an existing private key file Save the generated key Parameters Type of key to generate:	OFCESA	Save public key	Generals Load Save private key

- Choose "All files (*.*)
- Select the .pem file
 - in 20.04LTS is dropped

→	Tools >		~ U /2	Search Tools	
anize • New folder				E •	
🖻 Documents 🛷 ^	Name	Date modified	Туре	Size	^
E Pictures 🖈	Sectory	2/10/2020 11-10 A	File folder		
CSE216_Programming_Abstractions	Imo	10/16/2016 9/26 PM	File folder		
CSE306_Operating_Systems	Adobe Acrobat X Pro	9/22/2016 12:27 PM	Shortcut	3 KB	
CSE320 System Fundamentals II	Abol ab V3 Internet Security 9.0	9/22/2016 12:40 PM	Shortcut	3 KB	
Einal Evam	AWS Ubuntu2004LTS.pem	9/6/2021 9:58 AM	PEM File	2 KB	
	ftpmg	5/3/2018 10:42 PM	Windows Comma	1 KB	
OneDrive	In ftpsb	5/24/2018 11:06 A	Windows Comma	1 KB	
This PC	💿 ftpym	5/3/2018 10:42 PM	Windows Comma	1 KB	
3D Objects	12 Hancom Dictionary	11/4/2016 9:40 AM	Shortcut	2 KB	
Desition	Mancom Office Hanword 2010	11/4/2016 9:40 AM	Shortcut	2 KB	
BlackEriday	21 Microsoft Outlook 2010	9/22/2016 10:21 PM	Shortcut	3 KB	
biaconiday	2010 Microsoft PowerPoint 2010	9/22/2016 10:21 PM	Shortcut	3 KB	
Misc	2010 Microsoft Word 2010	9/22/2016 10:21 PM	Shortcut	3 KB	
_ tmp	g ⁸⁶ pscp	9/15/2017 11:52 A	Application	613 KB	
Tools	g ⁸⁶ psftp	9/25/2016 10:13 A	Application	359 KB	
Documents	📌 putty	9/25/2016 10:16 A	Application	519 KB	
Downloads	😴 puttygen	9/6/2021 10:38 AM	Application	784 KB	
Music	scrcpy-win64-v1.12.1	3/19/2020 11:18 A	Compressed (zipp	22,886 KB	
E Pictures	🔊 Skype	9/23/2016 2:03 PM	Shortcut	3 KB	
Videos	5 sshaws	9/6/2021 10:36 AM	Windows Comma	1 KB	
OS (C:)	sshmg	9/27/2016 11:20 A	Windows Comma	1 KB	
DATA (D)	i sshpi	2/9/2018 10:34 PM	Windows Comma	1 KB	
PERCENTER V	In sshsb	3/30/2018 9:39 AM	Windows Comma	1 KB	~
File exercise AMIC Library 20	04175		All	Los (8.8)	
File Bame: AWS_Ubuntu20	unit spem		All H	(Brivata Kay Files (teeld

Convert your Private Key (.pem file)

Save private key

Save it as a .ppk file

Rea conversion	в Пеф								
ey									
Public key for pasting	into OpenSSH authorized_k	eys file:							
ssh-rsa AAAAB3NzaC1yc2E Y1MvhTuCzkgJldRC +leb1AltKOpWKP4P +c2dSV5edbBK4g7s	AAAADAQABAAABAQCD46 ICE1AVyu8LcSL2uBbUb/Ws XIdVXlegjbDZze+lfi0bd9G35 IBgYs2GYLIPb6kS186/BMRN	LIT of MVBum J+tTiePbRxrc YzXKpZ1xprq WwWPKULen	3U80Y7oZOC6B2Kł dcP/1h2xSR6nfSfkN SwYYX8qXdPrGTK7 KkfcJK1CU7nQFPxc	HyFI/czZVA7C u78rHyO 7uaG6ZhFDvc: :Nuy5uemO6n	e2LUjmcjPq37 aiwBllsJyp nvf7TNdGLOIa	OeW/CIE G9ybSzV	^ ~		
(ev fingerprint:	ssh-rsa 2048 SHA256:/4ctX	tlaC+GYSFZ+	EonRg65IGDMV9s	hxiTxkEV48bh	ιA				
(ev comment	imported-openssh-key								
(ey p <u>a</u> ssphrase:									
Confirm passphrase:									
ctions									
Denerate a sublic/sei	unte luciu maio				C	-1-			
senerate a public/pri	vale key pali				Gener	ate			
oad an existing priva	ate key file				Loa	d			
Save the generated I	(ey		Save p <u>u</u> blic	key	Save priva	ate key			
arameters							N		
Type of key to dener	ate:								
● <u>R</u> SA	() <u>D</u> SA	O ECDSA	OEd	D <u>S</u> A	⊖ssH- <u>1</u>	(RSA)			
Number of hits in a de	enerated key:				2048				
ave private key as: $\rightarrow \gamma \uparrow \blacksquare \gamma$ This	s PC > Desktop > Tools >				v Ŭ	,⊂ Sea	rch Tools		×
ave private key as: \Rightarrow \land \uparrow \blacksquare $>$ This panize \bullet New folder	s PC > Desktop > Tools >				~ O	,∕⊂ Sea	rch Tools	•	×
ave private key as: → ← ↑ ↓ > This panize • New folder CSE216_Program ^	s PC > Desktop > Tools > r Name		Date modified	Туре	Y Ö Size	,≏ Sea	rch Tools	•	×
ave private key as: → ← ↑ ↓ > This panize • New folder CSE216_Program ^ CSE306_Operatir	s PC > Desktop > Tools > r Name \$ ScrCpy		Date modified 3/19/2020 11:19 A	Type File folder	Y D Size	,₽ Sea	rch Tools	•	×
ave private key as: ave private key as:	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A 10/16/2016 8:26 PM	Type File folder File folder	 ✓ Ŭ Size 	,≏ Sea	rch Tools	•	×
ave private key as: \rightarrow \sim \uparrow \blacksquare > Thi anize \sim New folder \blacksquare CSE216_Program \land \blacksquare CSE206_Operatir \blacksquare CSE306_Operatir \blacksquare Final_Exam \blacksquare OpeDrive	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A 10/16/2016 8:26 PM	Type File folder File folder	v D Size	,≏ Sea	rch Tools	-	×
ave private key as: \rightarrow \uparrow 1 \rightarrow Thi panize \bullet New folde CSE216_Program \uparrow CSE320_System_ Final_Exam OneDrive	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A 10/16/2016 8:26 PM	Type File folder File folder	✓ Ŭ Size	₽ Sea	rch Tools	. •	×
ave private key as: ave constraints of the set of th	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	v U Size	₽ Sea	rch Tools	 ∷ •	×
ave private key as: anize • New folde: SE216 /Pogram ^ SE306 Operatin SE306 Operatin SE306 Operatin SE306 Operatin SE306 Operatin SE306 Operatin SE306 Operatin	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	v D	,∕ Sea	rch Tools	•	×
ave private key as: ave private key as: New folde: SE306_Operatir SC52306_Operatir SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System SC52305_System	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A. 10/16/2016 826 PM	Type File folder File folder	v O		rch Tools	. ·	×
ave private key as anize · New folde CSE306_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir Display Comparison Do Objects Downloads	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	✓ Ŭ Size	₽ Sea	rch Tools	•	×
ave private key as: → ↑	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	V D	₽ Sea	rch Tools		×
ave private key as: →	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 8:26 PM	Type File folder File folder	V O	₽ Sear	rch Tools		×
ave private key as:	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	V O	₽ Sea	rch Tools		×
ave private key as: anize * New folde: ScS216_Program ^ ScS2306_Operatir ScS2302_System Final_Exam Components Doublets Doublets Doublets Postop Documents Documents Documents Components Components ScS2302_State Postop Documents ScS2302_State Postop Documents ScS2302_State Postop Documents ScS2302_State Postop Documents ScS2302_State Postop Documents ScS2302_State Postop Documents ScS230_State Postop Documents ScS230_State ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Documents ScS230_State Postop Postop	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A 10/16/2016 825 PM	Type File folder File folder	V D		rch Tools		×
ave private key as anize · New folde CSE306_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir Dispects Doublets Doublets Doublets Doublets Pictures Videos Office Doit	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	V D	P Sea	rch Tools	12 ·	x
ave private key as: → ↑	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 8:26 PM	Type File folder File folder	Size	P Sea	rch Tools	12 ·	x
ave private key as: anize New folde: SES216 /Pogram ^ SES206 Operatin SES206 Operatin SES205 Operatin SES205 Operatin SES205 Operatin Debtop Doublets Downloads Muic Pletures Pletures SECOREY (E) SECOREY (E)	s PC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	Size	₽ Sea	rch Tools		×
ave private key as →	sPC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A_ 10/16/2016 826 PM	Type File folder File folder	V O	P Sea	rch Tools		×
ave private key as:	sPC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A. 10/16/2016 825 PM	Type File folder File folder	V D	P Sea	rch Tools	E •	
ave private key as anize · New folde CSE306_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir CSE305_Operatir Documents Do	sPC > Desktop > Tools > Name ScrCpy Tmp		Date modified 3/19/2020 11:19 A 10/16/2016 826 PM	Type File folder File folder	V O	P Sea	rch Tools	E •	×
ave private key as. ave private key as. anize New folde: SES216_Program ^ CSE306_Operatin CSE306_Operatin CSE306_Operatin CSE306_Operatin CSE306_Operatin Final_Exam OneDrive Desktop Documents Documents Protures Pictures RECOVERY (E) OS (F) Backing (G) Whene (\\10.122'	s PC > Desktop > Tools > Name ScrCpy Tmp Ubuntu2004(TSppk		Date modified 3/19/2020 11:19 A_ 10/16/2016 8:26 PM	Type File folder File folder	Size	P See	rch Tools	≅ *	×

- Create a .cmd file (e.g. sshaws.cmd)
 - cd to the folder where .pem, .ppk file, .exe files are
 - notepad sshaws.cmd



In the .cmd file enter the command as in the figure





- Run the command
 - E.g. sshaws.cmd

You are connected to the VM on AWS

Command Prompt

:\Users\youngmin.kwon\Desktop\Tools>dir AWS*.* Volume in drive C is OS Volume Serial Number is 4208-28A3 Directory of C:\Users\youngmin.kwon\Desktop\Tools

09/00/2021	09.00 An	1,700 Aw3_000000000
09/06/2021	10:57 AM	1,462 AWS_Ubuntu200
	2 File(s)	3,162 bytes
	0 Dir(s)	110,111,059,968 bytes free
(.) Usans) va	ungmin kuon)D	sktan) Taol synatonad schous
C: \Users \yo	ungmin.kwon\De	esktop/roois/notepad ssnaws.

:\Users\youngmin.kwon\Desktop\Tools>sshaws.cmd

🚰 ubuntu@ip-172-31-44-244: ~

Using username "ubuntu". Authenticating with public key "imported-openssh-key" Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-1045-aws x86 64) * Documentation: https://help.ubuntu.com Management: https://landscape.canonical.com https://ubuntu.com/advantage Support: System information as of Mon Sep 6 06:02:38 UTC 2021 System load: 0.0 Usage of /: 4.4% of 29.02GB Users logged in: IPv4 address for eth0: 172.31.44.244 Memory usage: 22% Swap usage: 0% update can be applied immediately. To see these additional updates run: apt list --upgradable The list of available updates is more than a week old. To check for new updates run: sudo apt update Last login: Mon Sep 6 04:20:08 2021 from 223.194.196.108 To run a command as administrator (user "root"), use "sudo <command>". See "man sudo root" for details. ubuntu@ip-172-31-44-244:~\$

4LTS.pem 4LTS.ppk

Upload/Download Files

 Make a .cmd file (e.g. sftpaws.cmd) and enter the command as in the figure

.ppk file from pu	uttygen.exe					
	from AWS	SSH client tab				
*sftpaws - Notepage File Edit Format View Help					- 🗆	×
psftp -i "AWS_Ubuntu2004LTS.ppk" ubuntu@e	ec2-13-125-217-172.ap	o-northeast-2.compute.amaz	onaws.co	m		^
		Ln 2, Col 1	100%	Windows (CRLF)	UTF-8	



Upload/Download Files

- Run the command (e.g. sftpaws.cmd)
- You can upload/download files
 - E.g. to upload hello.c: put hello.c
 - E.g. to download hello.c: get hello.c





To Stop the VM

- After use, stop the VM
 - If you use multiple VMs, after the free limit (750 hr/mo) AWS will charge you
 - EC2 Dashboard ⇒ Instances ⇒ Select the VM ⇒ Instance State ⇒ Stop Instance (don't touch Terminate instance)



To Retart the VM

- EC2 Dashboard ⇒ Instances ⇒ Select the VM ⇒ Instance State ⇒ Start instance
- The SSH client will be changed after restart

Dashboard EC2 Management C × +					
\leftarrow \rightarrow \mathbb{C} $\widehat{\square}$ https://ap-northeast-2.console.aws.amazon.com/ec2/v2/home?region=ap-northeast-2#Home:					
aws Services ▼	■ EC2 Management Console x +				
New EC2 Experience Tell us what you think	← → C A https://ap-northeast-2.console.aws.amazon.com/ec2/v2/home?region=ap-northeast-2#Instances:				
	WS Services ▼ Q Search for services, features, marketplace products, and docs [Alt+S]				
EC2 Dashboard	New EC2 Experience X Instance	nce X Instances (1/1) Info		Connect	Instance state 🔺 Acti
Events Tags	EC2 Dashboard	er instances			Stop instance Start instance
Limits	Events I I I I I I I I I I I I I I I I I I I	lame	Instance state ▼ Instance type 0 ⊖ Stopped Q.Q. t2.micro	 ✓ Status check Alarm status Availa – No alarms + ap-nor 	Reboot instance
▼ Instances	Limits				Terminate instance
Instances New	▼ Instances Instances New	Instances EC2 Management	c₀ x +		
Instance Types	Instance Types		https://ap-northeast-2.console.aws.amazon.com/ec2	/v2/home?region=ap-northeast-2#Instances:	
Spot Requests	Spot Requests	aws Services ▼		Q Search for services, features, marketplace proc	ducts, and docs [Alt+S]
Savings Plans	Savings Plans Reserved Instances New	New EC2 Experience Tell us what you think	Instances (1/1) Info		
Reserved Instances New		EC2 Dashboard	Q Filter instances		
		Events	✓ Name ▼ Instance ID	Instance state ▼ Instance type	
		Limits	I-008667603363		♥ 2/2 CHECKS passed NO all