

# Tutorial 1

```
/******  
* Author      : Kai Chen  
* Last Modified : 2015-09-23  
* Email       : ck015@ie.cuhk.edu.hk  
*****/
```

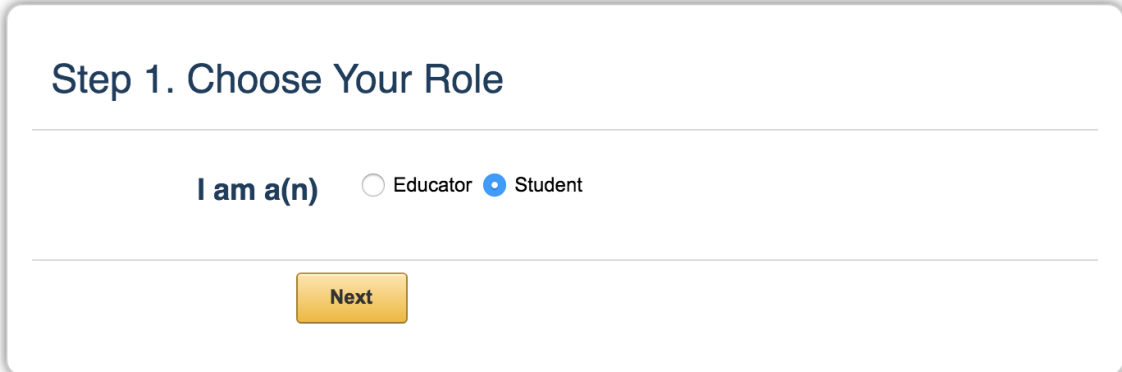
The tutorial consists of 4 sections:

- Account Registration
- Environment Settings
- VM Creating
- Linux Administration.

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## Account Registration

1. Open the link <https://www.awseducate.com/Application>, click **Nextf**.



Step 1. Choose Your Role

I am a(n)  Educator  Student

Next

2. Fill in the form (leave the **AWS Account ID** empty) and click the link in the red circle.

Note: Do not close the current page!

**Step 2. Fill out Application**

Institution Name  Please write the full name of your school / institution.

Country

City

Field of Study  Please select the most appropriate

First Name

Last Name

Email  Provide a valid, current email issued by your institution

AWS Account ID  You need an AWS account to receive program benefits. Your AWS Account ID is a 12-digit number.

[Don't have one? Sign up now](#)

Grade Level 

Available	Chosen
<input type="checkbox"/> Graduate	
<input type="checkbox"/> Undergraduate-Adv Courses	
<input type="checkbox"/> Undergraduate-Intro Courses	
<input type="checkbox"/> Vocational/Community College	

Click your grade level under Available and then click the arrow to move your grade level to Chosen

Graduation Year

Graduation Month

3. Fill in the email/mobile and choose **I am a new user**, then click the button.

## Sign In or Create an AWS Account

### What is your e-mail or mobile number?

**E-mail or mobile number:**

\*

- I am a new user.**
- I am a returning user and my password is:**

\*

[Forgot your password?](#)

4. Fill in the form and click the button.

## Login Credentials

Use the form below to create login credentials that can be used for AWS as well as Amazon.com.

**My name is:**

**My e-mail address is:**

**Type it again:**

note: this is the e-mail address that we will use to contact you about your account

**Enter a new password:**

**Type it again:**

[Create account](#)

5. Fill in the contact information form.

Postal code can be any numbers and the phone number must be your real number.

## Contact Information

*\* Required Fields*

**Full Name\***

**Company Name**

**Country\***

**Address\***

**City\***

**State / Province or Region\***

**Postal Code\***

**Phone Number\***

**Security Check**

[Refresh Image](#)

Please type the characters as shown above

6. Offer the credit card information and click **Continue**.

Progress bar: Contact Information (checked), Payment Information (current), Identity Verification, Support Plan, Confirmation

### Payment Information

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

AWS Free Usage Tier	Compute Amazon EC2	Storage Amazon S3	Database Amazon RDS
free for 1 year	750hrs/month*	5GB	750hrs/month*

[\\*View full offer details >](#)

**Credit/Debit Card Number** **Expiration Date**

01 2015

**Cardholder's Name**

Use my contact address

Use a new address

**Continue**

7. Confirm your phone number and click **Call Me Now**.

Progress bar: Contact Information (checked), Payment Information (checked), Identity Verification (current), Support Plan, Confirmation

### Identity Verification

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

**1. Provide a telephone number**

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

**Country Code** **Phone Number** **Ext**

Hong Kong (+852) 110

**Call Me Now**

2. Call in progress

3. Identity verification complete

8. A phone call will be made to you and you should input the 4-digit code shown on your screen.



## Identity Verification

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

1. Provide a telephone number ✓

2. Call in progress ✓

### 3. Identity verification complete

Your identity has been verified successfully

Continue to select your Support Plan

9. Select basic plan (which is selected in default) and click **Continue**.



## Support Plan

All customers receive free support. Choosing a paid support plan will allow you to receive one-on-one technical assistance from experienced engineers and access many other support features. Please see below.

Please Select One

**Basic (Free)**

Contact Customer Service for account and billing questions, receive help for resources that don't pass system health checks, and access the AWS Community Forums.

**Developer (\$49/month)**

Get started on AWS - ask technical questions and get a response to your web case within 12 hours during local business hours.

**Business (Starting at \$100/month - Pricing Example) - Recommended**

24/7/365 real-time assistance by phone and chat, a 1 hour response to web cases, and help with 3rd party software. Access AWS Trusted Advisor to increase performance, fault tolerance, security, and potentially save money. ⓘ

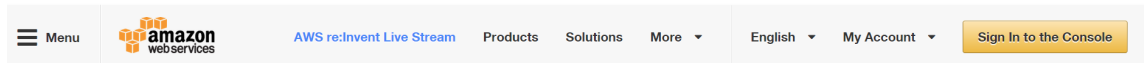
**Enterprise**

15 minute response to web cases, an assigned technical account manager (TAM) who is an expert in your use case, and white-glove case handling that notifies your TAM and the service engineering team of a critical issue.

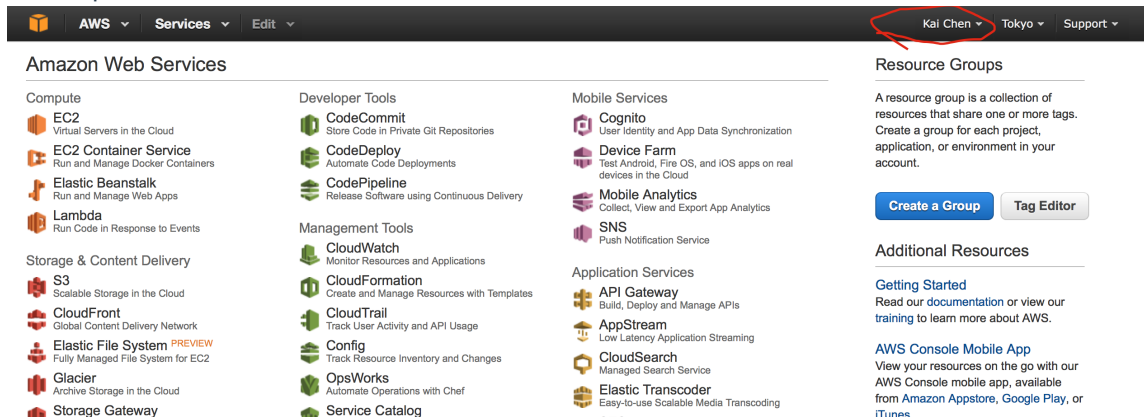
*If you select this option, you will not be charged immediately. We will contact you to discuss your needs and finalize the signup.*

Continue

10. You will finish the first procedure and can see the following page. Click **Sign in** button and sign in using you account.



11. This is the console page. Click your account name on the right top and select **My Account** from the dropdown menu.



12. You can see your account id here. Copy it and return to previous page at step 2, paste it to the empty input box, then click **Next**.



13. Verify your email address. The verification code can be found in your mailbox.

## Step 3. Verify Email Address

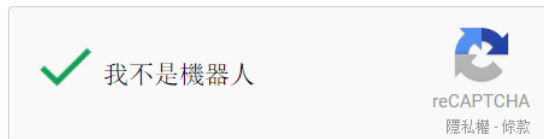
We need to verify the email address you provided in your AWS Educate application before we can process it.

We sent an email address verification message to your mail box at 363664470@qq.com. Please check your messages and input the verification code provided in the email.

Please do not close this page until you enter the verification code sent to your email address. If you close this page before entering the verification code, you will need to restart the application process. If you don't receive an email with the verification code in a few minutes, try checking your spam or junk mail folders.

Verification Code

Please click the box below to help assure that a person and not an automated program is submitting this application. If a set of letters is displayed enter them on the line. If you have any difficulty with the letters, you can click the reload icon to get a new set of letters, or click the headphones to hear audio of what to enter.



Next

14. Go on.

modified terms will become effective upon posting, or, if we notify you by email, as stated in the email message. By continuing your participation in the Program after the effective date of any modifications to these Terms, you agree to be bound by the modified Terms. It is your responsibility to check the Program site regularly for modifications to these Terms. We last modified these Terms on the date listed at the beginning of these Terms.

**6. Additional Terms:**

- a. You may not issue any press release regarding the Program without our prior written consent. You also agree not to misrepresent or embellish the relationship between us and you. For example, you agree not to imply that we support, sponsor, endorse, or contribute money to your teaching and research unless you have our prior written permission.
- b. Program credits are valid for a limited time only and expire on the date indicated when you receive the Program credit (or such other date designated by AWS). Failure to use Program credits before such expiration date will result in the forfeiture of Program credits. We reserve the right to cancel Program credits at any time. No refunds will be granted for any expired or cancelled Program credits.
- c. Program credits may not be used in a manner inconsistent with applicable laws or other terms governing the AWS Services.

Accept the terms

Submit

15. You finish it!

## Thank You!

We have received your application and it is currently under review. You will receive an email once the review is complete.

The AWS Educate Team

It will take some time to approve your AWS Educate application.

## Environment Settings

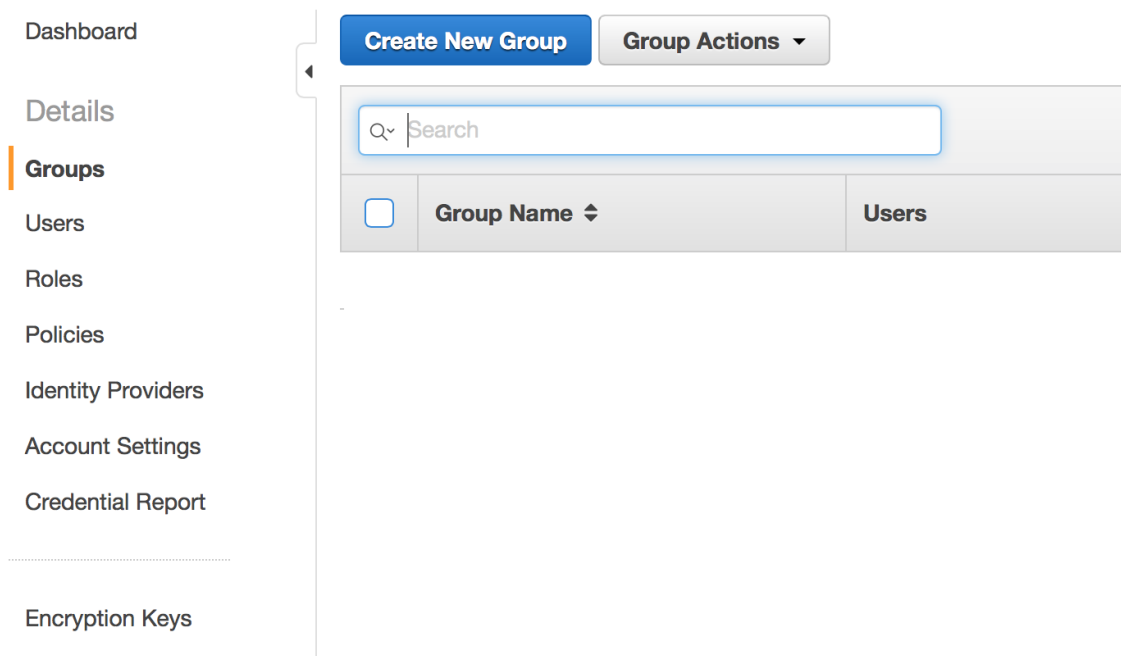
Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud. We will use EC2 in our course to help us build our services. Before we can launch virtual servers using EC2, we should first set up with it.

### Create an IAM user

Accessing AWS using the credentials for your AWS account is not recommended, it's better to use AWS Identity and Access Management (IAM) instead. Create an IAM user, and then add the user to an IAM group with administrative permissions or and grant this user administrative permissions.

### Create the Administrators group

1. Sign in to the AWS Management Console and open the IAM console at <https://console.aws.amazon.com/iam/>.
2. In the navigation pane, click **Groups**, and then click **Create New Group**.





3. In the Group Name box, type Administrators , and then click **Next Step**.

## Set Group Name

Specify a group name. Group names can be edited any time.

**Group Name:**

Administrators 

Example: Developers or ProjectAlpha  
Maximum 128 characters

4. In the list of policies, select the check box next to the AdministratorAccess policy.

### Attach Policy

Select one or more policies to attach. Each group can have up to 10 policies attached.

Filter: Policy Type	Q Search	Showing 150 results		
<input type="checkbox"/>	Policy Name	Attached Entities	Creation Time	Edited Time
<input checked="" type="checkbox"/>	AdministratorAccess	1	2015-02-07 02:39 UTC+0800	2015-02-07 02:39 UTC+...
<input type="checkbox"/>	AmazonAPIGatewayAdmini...	0	2015-07-10 01:34 UTC+0800	2015-07-10 01:34 UTC+...
<input type="checkbox"/>	AmazonAPIGatewayInvoke...	0	2015-07-10 01:36 UTC+0800	2015-07-10 01:36 UTC+...
<input type="checkbox"/>	AmazonAppStreamFullAccess	0	2015-02-07 02:40 UTC+0800	2015-02-07 02:40 UTC+...
<input type="checkbox"/>	AmazonAppStreamReadOnl...	0	2015-02-07 02:40 UTC+0800	2015-02-07 02:40 UTC+...
<input type="checkbox"/>	AmazonCognitoDeveloperA	0	2015-03-25 01:22 UTC+0800	2015-03-25 01:22 UTC+

5. Click **Next Step**, and then click **Create Group**.

## Create an IAM user

1. In the navigation pane, click **Users**, and then click **Create New Users**.

Dashboard

Details

Groups

**Users**

Roles

Policies

Identity Providers

Account Settings

Credential Report

---

Encryption Keys

**Create New Users** **User Actions**

Q Search

<input type="checkbox"/>	User Name	Groups	Password
--------------------------	-----------	--------	----------

2. In box 1, type a user name. Clear the check box next to Generate an access key for each user. Then click **Create**.

**Enter User Names:**

1.
2.
3.
4.
5.

Maximum 64 characters each

**Generate an access key for each user**

Users need access keys to make secure REST or Query protocol requests to AWS service APIs.  
For users who need access to the AWS Management Console, create a password in the Users panel after completing this wizard.

3. In the list of users, click the name (not the check box) of the user you just created. You can use the Search box to search for the user name.

4. In the Groups section, click **Add User to Groups**.

[IAM](#) > [Users](#) > **chenkai**

### ▼ Summary

<b>User ARN:</b>	arn:aws:iam::911714604265:user/chenkai
<b>Has Password:</b>	Yes
<b>Groups (for this user):</b>	0
<b>Path:</b>	/
<b>Creation Time:</b>	2015-09-16 19:33 UTC+0800

### ▼ Groups

**This user does not belong to any groups.**

[Add User to Groups](#)

5. Select the check box next to the Administrators group. Then click **Add to Groups**.

Select groups that user **chenkai** will be added to.

<input type="checkbox"/>	Group Name ⇅	Users	Inline Policy
<input checked="" type="checkbox"/>	Administrators	0	

6. Scroll down to the Security Credentials section. Under Sign-In Credentials, click **Manage Password**.

Access Keys

Use access keys to make secure REST or Query protocol requests to any AWS service API. For your protection, you should never share your secret keys with anyone. In addition, industry best practice recommends frequent key rotation. [Learn more about Access Keys](#)

[Create Access Key](#)

Access Key ID	Created	Last Used	Last Used Service	Last Used Region	Status	Actions
AKIAJDFVSRQKYP7ANYCQ	2015-09-16 19:33 UTC+0800	N/A	N/A	N/A	Active	<a href="#">Make Inactive</a>   <a href="#">Delete</a>

Sign-In Credentials

**User Name** chenkai [Manage Password](#)

**Password** Yes

**Last Used** 2015-09-17 12:38 UTC+0800

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**Multi-Factor Authentication Device** No [Manage MFA Device](#)

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**Signing Certificates** None [Manage Signing Certificates](#)

7. Select Assign a custom password. Then type a password in the Password and Confirm Password boxes. When you are finished, click **Apply**.

## Sign in as the new IAM user

1. (optional but recommended) Create an alias for your account.  
If you don't want the URL for your sign-in page to contain your AWS account ID, you can create an account alias. From the IAM dashboard, click Customize and enter an alias, such as your company name.

### Welcome to Identity and Access Management

IAM users sign-in link:

<https://kchen.signin.aws.amazon.com/console>

[Customize](#) | [Copy Link](#)

2. Sign out of the AWS console, then use the following URL, where *your\_account\_alias* is your AWS account alias.

[https://your\\_account\\_alias.signin.aws.amazon.com/console/](https://your_account_alias.signin.aws.amazon.com/console/)

If you omitted step 1, then use the following URL instead, where *your\_aws\_account\_id* is your AWS account number.

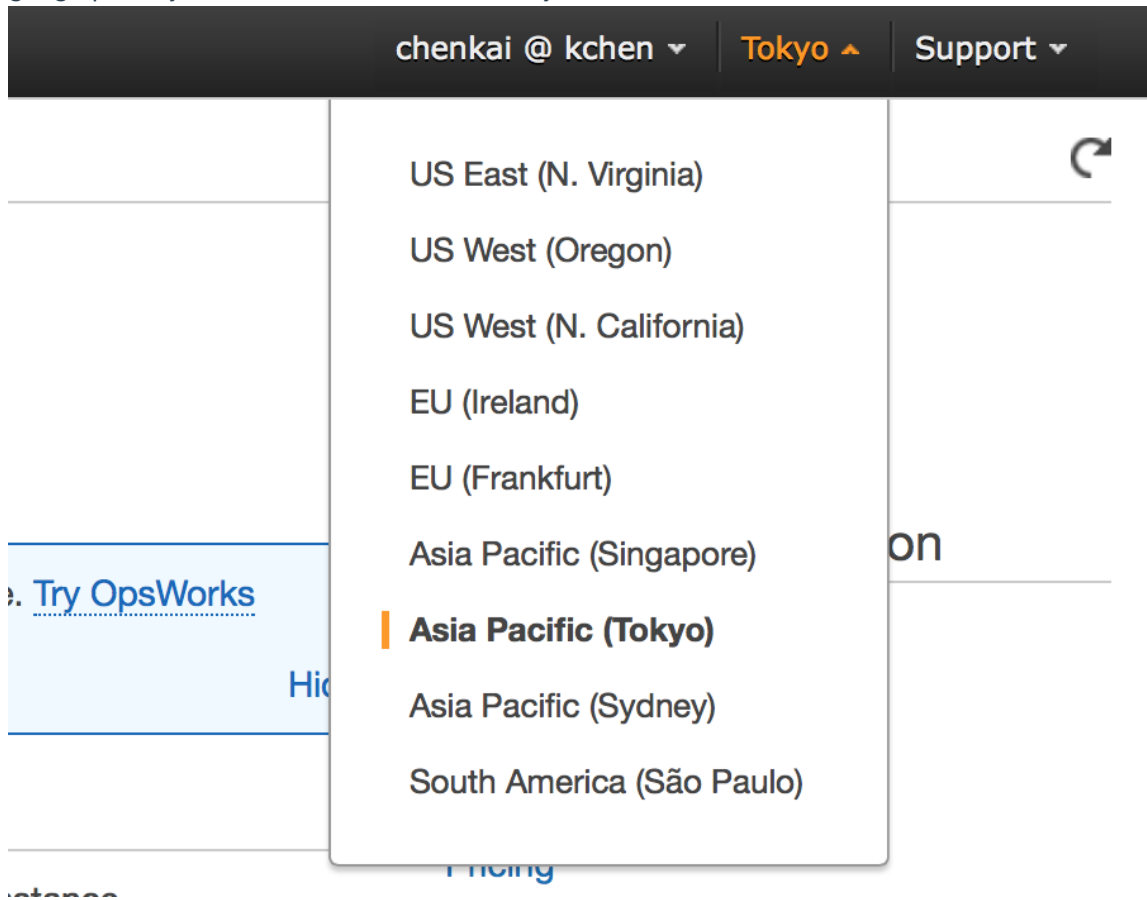
[https://your\\_aws\\_account\\_id.signin.aws.amazon.com/console/](https://your_aws_account_id.signin.aws.amazon.com/console/)

Enter the IAM user name and password that you just created. When you're signed in, the navigation bar displays "your\_user\_name @ your\_account\_alias" or "your\_user\_name @ your\_aws\_account\_id".

## Create a Key Pair

AWS uses public-key cryptography to secure the login information for your instance. A Linux instance has no password; you use a key pair to log in to your instance securely.

1. Sign in to AWS using the URL that you created in the previous section. Open the Amazon EC2 console.
2. From the navigation bar, select a region for the key pair. I recommend Asia Pacific which is geographically closer to us. Here I select Tokyo.



3. Click **Key Pairs** in the navigation pane.



**EC2 Dashboard**

Events

Tags

Reports

Limits

**INSTANCES**

Instances

Spot Requests

Reserved Instances

**IMAGES**

AMIs

Bundle Tasks

**ELASTIC BLOCK STORE**

Volumes

Snapshots

**NETWORK & SECURITY**

Security Groups

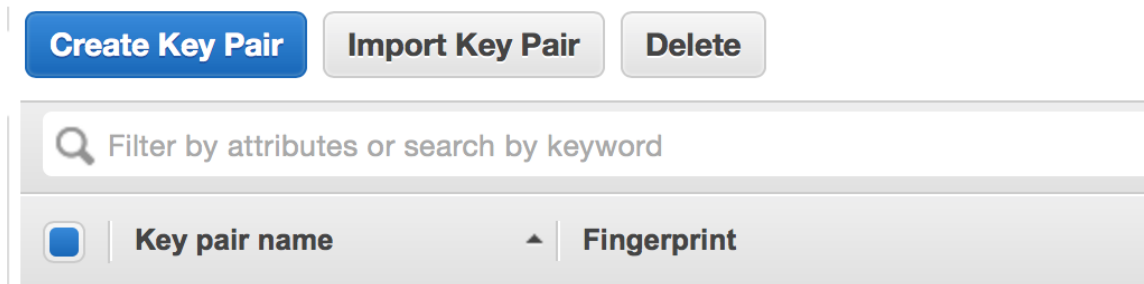
Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

4. Click **Create Key Pair**.

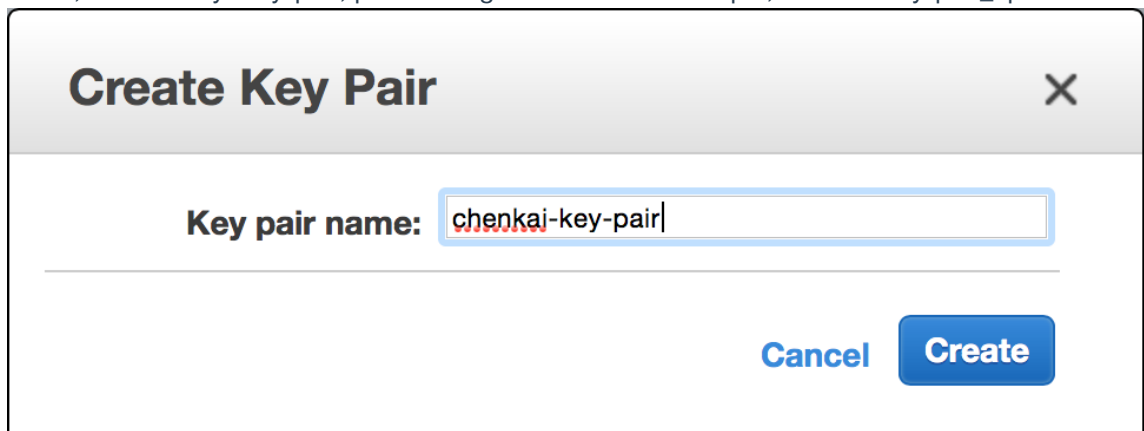


Buttons: **Create Key Pair**, **Import Key Pair**, **Delete**

Search: Filter by attributes or search by keyword

Columns: **Key pair name**, **Fingerprint**

5. Enter a name for the new key pair in the Key pair name field of the Create Key Pair dialog box, and then click Create. Choose a name that is easy for you to remember, such as your IAM user name, followed by -key-pair, plus the region name. For example, chen kai-key-pair\_ap2.



**Create Key Pair** [X]

Key pair name:

**Cancel** **Create**

6. The private key file is automatically downloaded by your browser. The base file name is the name you specified as the name of your key pair, and the file name extension is .pem. Save the private key file in a safe place.

## Create a Virtual Private Cloud (VPC)

If you can find a default VPC, you can skip this section and move to the next task. Otherwise, follow the [steps](#).

chenkai @ kchen ▾

Tokyo ▾

Support ▾



## Account Attributes



### Supported Platforms

VPC

Default VPC

vpc-f65ee293

## Create a Security Group

Security groups act as a firewall for associated instances, controlling both inbound and outbound traffic at the instance level. You must add rules to a security group that enable you to connect to your instance from your IP address using SSH. You can also add rules that allow inbound and outbound HTTP and HTTPS access from anywhere.

1. Open the Amazon EC2 console.
2. From the navigation bar, select a region for the security group. Security groups are specific to a region, so you should select the same region in which you created your key pair.
3. Click **Security Groups** in the navigation pane.
4. Click **Create Security Group**.

**Create Security Group**

Actions ▾

🔍 Filter by tags and attributes or search by keyword



Name ▾

Group ID



Group Name

5. Enter a name for the new security group and a description. Choose a name that is easy for you to remember, such as your IAM user name, followed by SG, plus the region name. For example, chenkai\_SG\_ap2.

6. In the VPC list, select your VPC. If you have a default VPC, it's the one that is marked with an asterisk (\*).

## Create Security Group

**Security group name** ⓘ

**Description** ⓘ

**VPC** ⓘ  ⓘ

\* denotes default VPC

7. On the Inbound tab, create the following rules (click Add Rule for each new rule), and then click Create:
  - Select **HTTP** from the Type list, and make sure that Source is set to Anywhere (0.0.0.0/0).
  - Select **HTTPS** from the Type list, and make sure that Source is set to Anywhere (0.0.0.0/0).
  - Select **SSH** from the Type list. In the Source box, ensure Custom IP is selected, and set the source to 137.189.0.0/16 (which means that any IP from CUHK can access your instance using SSH, if you want to access your instance from other places, add the ip address similarly).

### Security group rules:

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Source ⓘ
HTTP ⓘ	TCP	80	Anywhere ⓘ 0.0.0.0/0 ⓘ
HTTPS ⓘ	TCP	443	Anywhere ⓘ 0.0.0.0/0 ⓘ
SSH ⓘ	TCP	22	Custom IP ⓘ 137.189.0.0/16 ⓘ

[Add Rule](#)

# VM Creating

## Launch an Amazon EC2 Instance

1. From the console dashboard, click **Launch Instance**.

### Create Instance

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

[Launch Instance](#)

Note: Your instances will launch in the Asia Pacific (Tokyo) region



- The **Choose an Amazon Machine Image (AMI)** page displays a list of basic configurations, called Amazon Machine Images (AMIs), that serve as templates for your instance. Select the fourth one: Ubuntu Server 14.04 LTS (HVM). Notice that this configuration is marked “Free tier eligible.”

Step 1: Choose an Amazon Machine Image (AMI)

[Cancel and Exit](#)

My AMIs

AWS Marketplace

Community AMIs

Free tier only ?

	<b>Amazon Linux AMI 2015.03.1 (HVM), SSD Volume Type - ami-1c1b9f1c</b> <small>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.</small> <small>Root device type: ebs    Virtualization type: hvm</small>	<input type="button" value="Select"/> 64-bit
	<b>Red Hat Enterprise Linux 7.1 (HVM), SSD Volume Type - ami-b1b458b1</b> <small>Red Hat Enterprise Linux version 7.1 (HVM), EBS General Purpose (SSD) Volume Type</small> <small>Root device type: ebs    Virtualization type: hvm</small>	<input type="button" value="Select"/> 64-bit
	<b>SUSE Linux Enterprise Server 12 (HVM), SSD Volume Type - ami-d54a79d4</b> <small>SUSE Linux Enterprise Server 12 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.</small> <small>Root device type: ebs    Virtualization type: hvm</small>	<input type="button" value="Select"/> 64-bit
	<b>Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-936d9d93</b> <small>Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<a href="http://www.ubuntu.com/cloud/services">http://www.ubuntu.com/cloud/services</a>).</small>	<input type="button" value="Select"/> 64-bit

- On the **Choose an Instance Type** page, you can select the hardware configuration of your instance. The default selection is **t2.micro**, if not, change it to t2.micro.

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.

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
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate

- Click **Review and Launch** to let the wizard complete the other configuration settings for you.

- On the **Review Instance Launch** page, under **Security Groups**, Click **Edit security groups**.

Step 7: Review Instance Launch

AMI Details [Edit AMI](#)

**Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-936d9d93**  
Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).  
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 2015-09-19T13:33:47.074+08:00

Type	Protocol	Port Range	Source
SSH	TCP	22	0.0.0.0/0

- On the **Configure Security Group page**, ensure the **Select an existing security group** option is selected. Select your security group from the list of existing security groups, and click **Review and Launch**.

#### Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:  Create a new security group  
 Select an existing security group

Security Group ID	Name	Description	Actions
<input checked="" type="checkbox"/> sg-75c19410	chenkai_SG_ap2	security group for IERG4080	<a href="#">Copy to new</a>
<input type="checkbox"/> sg-541c5631	default	default VPC security group	<a href="#">Copy to new</a>

Inbound rules for sg-75c19410 (Selected security groups: sg-75c19410)

Type	Protocol	Port Range	Source
HTTPS	TCP	443	0.0.0.0/0
HTTP	TCP	80	0.0.0.0/0

[Cancel](#)
[Previous](#)
[Review and Launch](#)

- On the **Review Instance Launch page**, click **Launch**.
- In the **Select an existing key pair or create a new key pair** dialog box, select **Choose an existing key pair**, then select the key pair you created when getting set up.

### Select an existing key pair or create a new key pair ✕

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

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

Choose an existing key pair

**Select a key pair**

I acknowledge that I have access to the selected private key file (ck-key-pair.pem), and that without this file, I won't be able to log into my instance.

[Cancel](#)
[Launch Instances](#)

- A confirmation page lets you know that your instance is launching. Click **View Instances** to close the confirmation page and return to the console.
- On the Instances screen, you can view the status of your instance. It takes a short time for an instance to launch. When you launch an instance, its initial state is pending. After the instance starts, its state changes to running, and it receives a public DNS name.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS
<input checked="" type="checkbox"/>	i-a16d8304	t2.micro	ap-northeast-1a	running	2/2 checks ...	None	ec2-52-69-238-207.ap...

# Linux Administration

# Connect to Your Instance

## For Mac/Linux users

1. Open your command shell and run the following command, in which “my-key-pair.pem” is the private key filename downloaded by browser at the step **Create a Key Pair**.

```
chmod 400 my-key-pair.pem
```

2. Next, run the following command:

```
ssh -i /path/my-key-pair.pem ubuntu@public_dns_name
```

If there is a warning like the following, input yes and enter.

```
The authenticity of host 'ec2-52-69-238-207.ap-northeast-1.compute.amazonaws.com (52.69.238.207)' can't be established.  
RSA key fingerprint is b7:e9:71:19:53:92:db:b9:b2:fb:43:ad:f1:df:23:3f.  
Are you sure you want to continue connecting (yes/no)? yes
```

For example, I run the following commands on my computer.

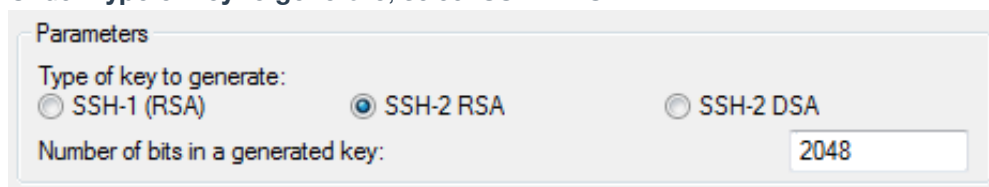
```
chmod 400 ~/Downloads/ck-key-pair.pem
```

```
ssh -i ~/Downloads/ck-key-pair.pem ubuntu@ec2-52-69-238-207.ap-northeast-1.compute.amazonaws.com
```

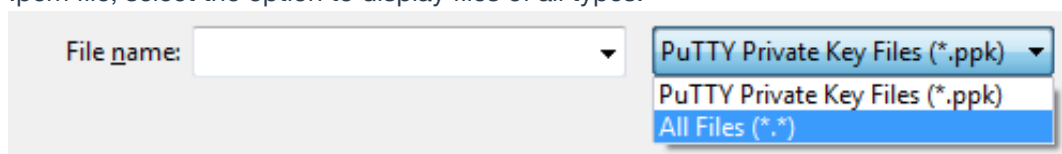
## For Windows Users

You will use PuTTY to connect to your instance.

1. Download and install PuTTY from <http://www.chiark.greenend.org.uk/~sgtatham/putty/>. Be sure to install the entire suite.
2. Start PuTTYgen
3. Under **Type of key to generate**, select **SSH-2 RSA**.

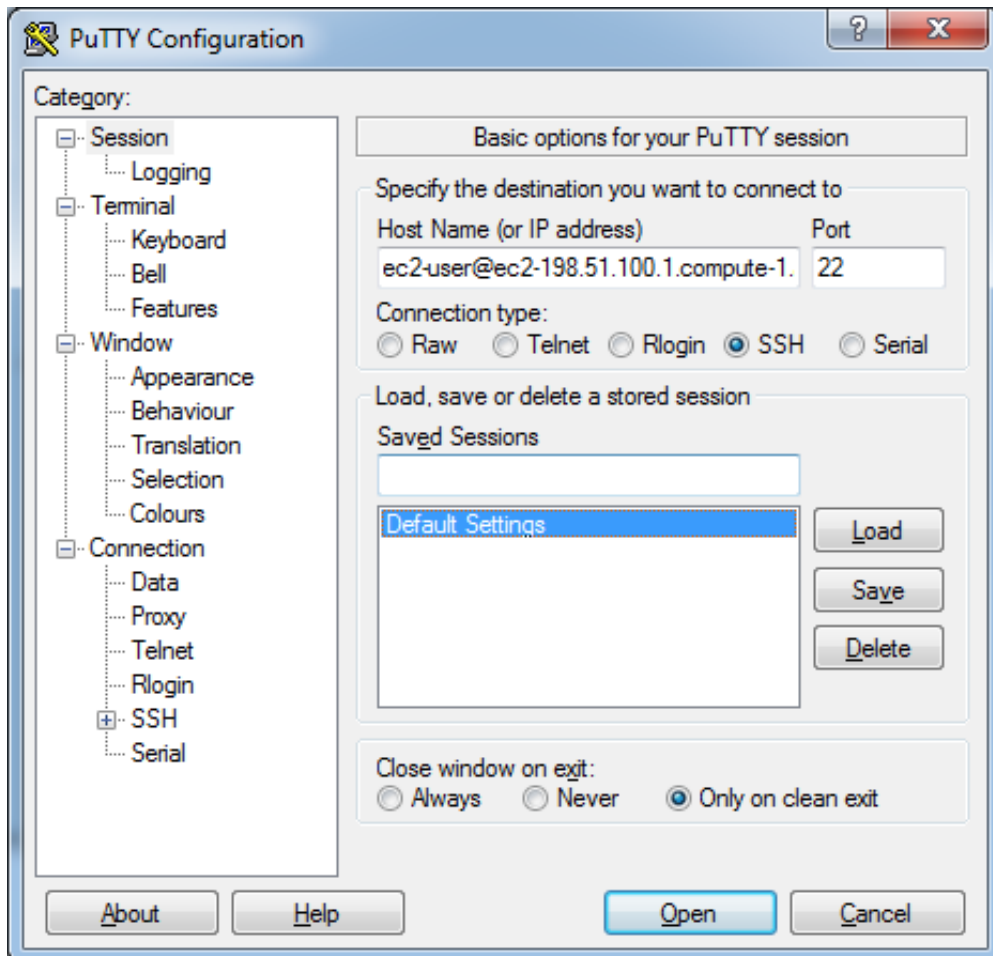


4. Click **Load**. By default, PuTTYgen displays only files with the extension .ppk. To locate your .pem file, select the option to display files of all types.

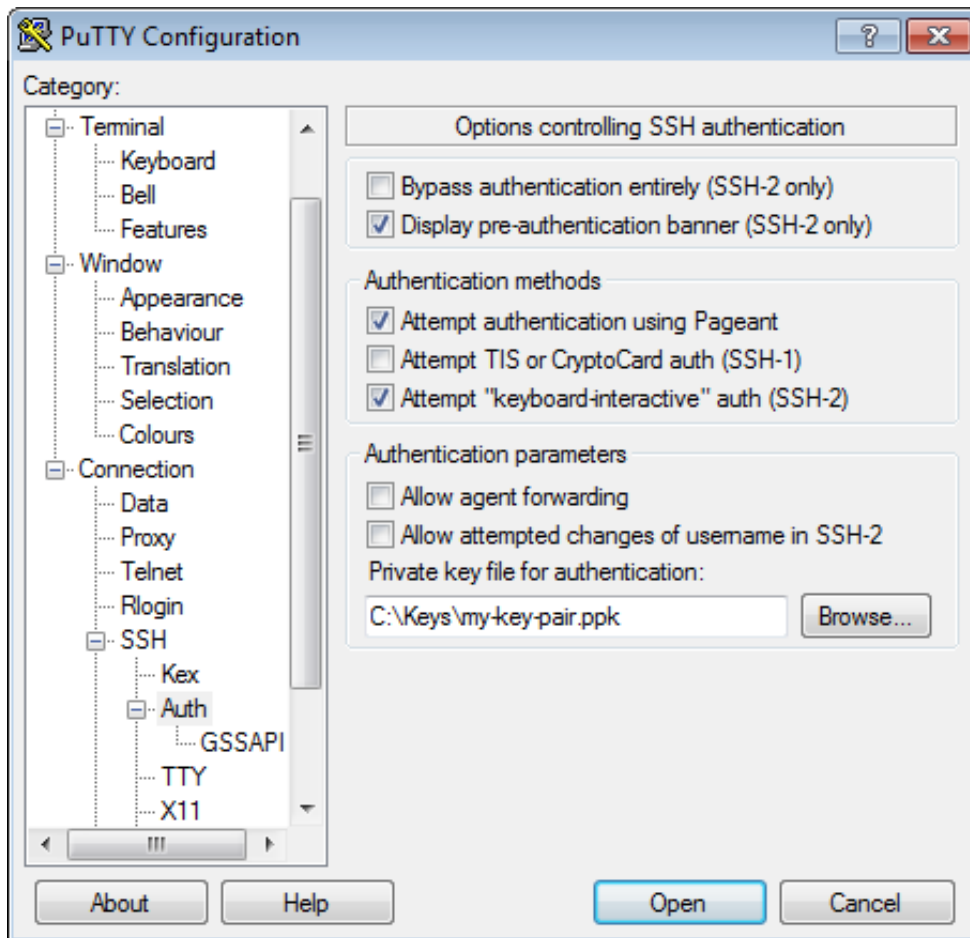


5. Select the private key file that you created in the previous procedure and click **Open**. Click **OK** to dismiss the confirmation dialog box.

6. Click **Save private key**. PuTTYgen displays a warning about saving the key without a passphrase. Click **Yes**.
7. Specify the same name for the key that you used for the key pair. PuTTY automatically adds the .ppk file extension.
8. Start PuTTY
9. In the Category pane, select **Session** and complete the following fields.
  - In the **Host Name** box, enter ubuntu@public\_dns\_name (do not follow the image below).
  - Under **Connection type**, select **SSH**.
  - Ensure that **Port** is 22.



10. In the **Category** pane, expand **Connection**, expand **SSH**, and then select **Auth**. Complete the following:
  - Click **Browse**.
  - Select the .ppk file that you generated for your key pair, and then click **Open**.
  - Click **Open** to start the PuTTY session.



11. If PuTTY displays a security alert dialog box that asks whether you trust the host you are connecting to. Click **Yes**. A window opens and you are connected to your instance.

## Some useful commands

### **cd**

Change directory

### **ls**

List information about file(s)

### **mkdir**

Create new folder(s)

### **cp**

Copy one or more files to another location

### **mv**

Move or rename files or directories

### **rm**

Remove files or directories

## apt-get

Search for and install software packages

## top

List processes running on the system

# Install and setting up with Nginx

1. Install nginx

```
sudo apt-get install nginx
```

2. Run nginx

Nginx should have started automatically. You can run the following command to check it.

```
sudo service nginx status
```

You can stop/restart nginx by running the following command

```
sudo service nginx stop/restart
```

If there is error messages like the following

```
nginx: [emerg] bind() to 0.0.0.0:80 failed (98: Address already in use)
nginx: [emerg] bind() to [::]:80 failed (98: Address already in use)
```

run the command

```
sudo killall -9 nginx
```

Then try to start nginx again.

3. Check whether nginx is successfully started. Run the following command.

```
curl localhost
```

If the output is like the following, then you get it!

```
ubuntu@ip-172-31-26-25:/etc/nginx$ curl localhost
<!DOCTYPE html>
<html>
<head>
<title>Welcome to nginx!</title>
<style>
  body {
    width: 35em;
    margin: 0 auto;
    font-family: Tahoma, Verdana, Arial, sans-serif;
  }
</style>
</head>
<body>
<h1>Welcome to nginx!</h1>
<p>If you see this page, the nginx web server is successfully installed and
working. Further configuration is required.</p>

<p>For online documentation and support please refer to
<a href="http://nginx.org/">nginx.org</a>.<br/>
Commercial support is available at
<a href="http://nginx.com/">nginx.com</a>.</p>

<p><em>Thank you for using nginx.</em></p>
</body>
</html>
```

You can also type the public DNS in a browser, then you can see this page.

# Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to [nginx.org](http://nginx.org/).  
Commercial support is available at [nginx.com](http://nginx.com/).

*Thank you for using nginx.*

## Reference

[1] Official documentation of AWS. <http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/get-set-up-for-amazon-ec2.html>

[2] *What is Cloud Computing?* <https://www.youtube.com/watch?v=jOhbTAU4OPI>