



# Chương 2. Dịch vụ điện toán đám mây của Amazon





# Bài 6. Giới thiệu về Amazon Web Services



# Nội dung

- Giới thiệu
- Hạ tầng toàn cầu
- Các dịch vụ
- Cách tính phí
- Tạo tài khoản AWS



# Giới thiệu

- AWS (Amazon Web Services) là nền tảng dịch vụ đám mây được Amazon cung cấp.
- Amazon cung cấp AWS từ năm 2006
- Cung cấp trên 175 dịch vụ đầy đủ tính năng từ các trung tâm dữ liệu trên toàn thế giới.
- AWS là nền tảng đám mây toàn diện và được sử dụng rộng rãi nhất.



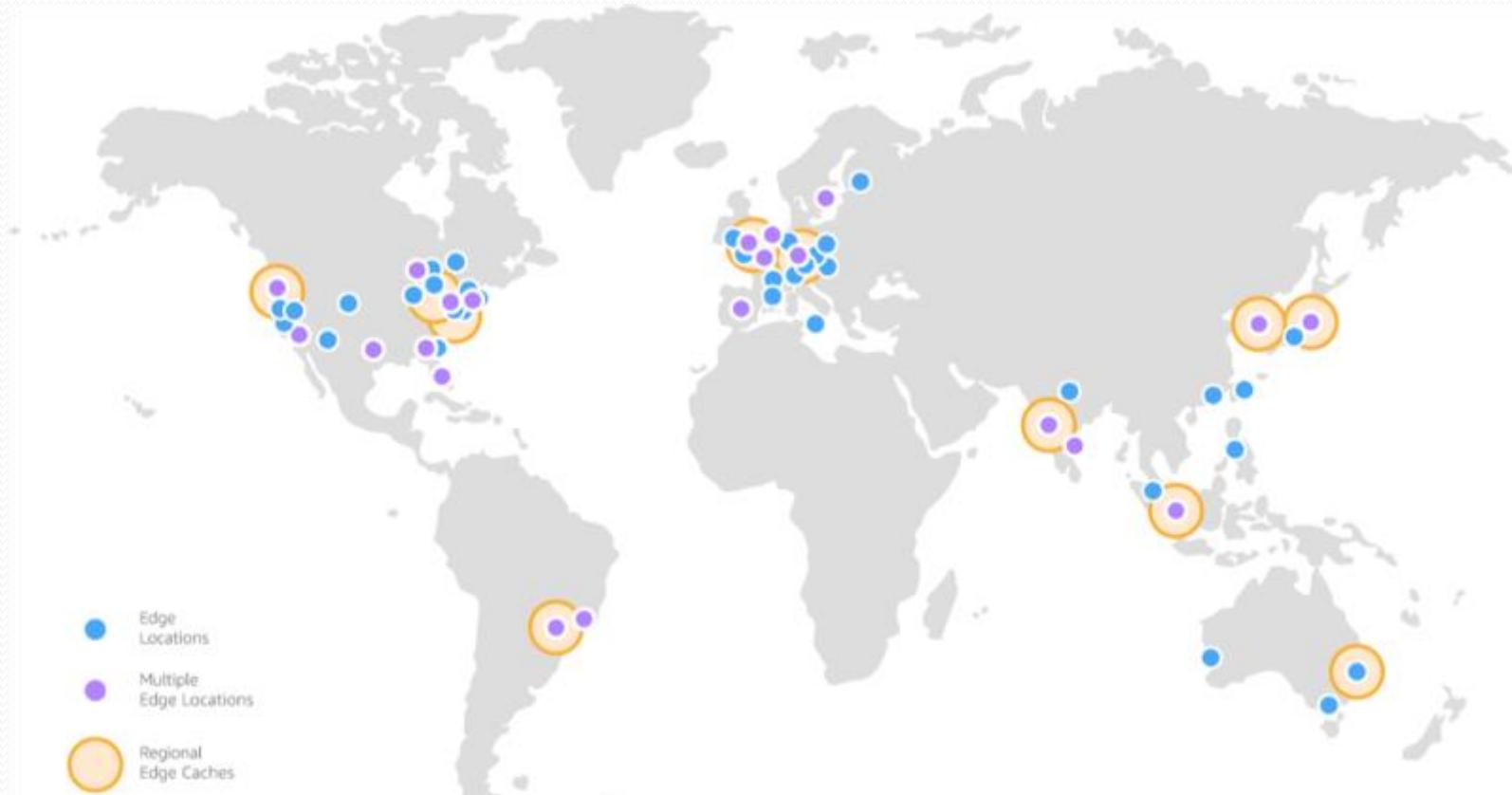
Figure 1. Magic Quadrant for Cloud Infrastructure and Platform Services





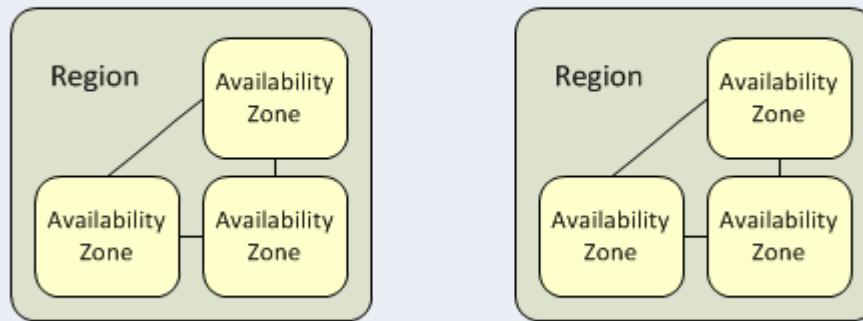
# Hạ tầng toàn cầu (Global Infrastructure)

- Hạ tầng của AWS đặt khắp nơi trên thế giới





## Amazon Web Services





# Regions (Khu vực)

- Là một khu vực địa lý với hạ tầng độc lập
- Mỗi khu vực có khả năng chịu lỗi và ổn định cao nhất
- Giao tiếp giữa các khu vực thông qua Internet
- Hiện nay AWS có 24 khu vực
- Các yếu tố ảnh hưởng bởi khu vực:
  - Độ trễ (Latency): Region càng gần độ trễ càng thấp
  - Chi phí (Cost): chi phí khác nhau giữa các Region
  - Pháp lý (Legal Compliance): mỗi Region có nguyên tắc pháp lý riêng
  - Tính năng (Features): mỗi Region có thể có các tính năng đặc thù riêng so với các Region khác.



# Availability Zones (Vùng sẵn sàng)

- Mỗi Region gồm nhiều cơ sở riêng biệt gọi là AZ
- Các AZ hoạt động độc lập
- Các AZ đặt ở các vị trí địa lý khác nhau
- Giữa các AZ của một Region được kết nối với nhau bởi đường truyền độ trễ thấp không public.
- Multi-AZ là tính năng phân phối tài nguyên trên nhiều AZ
- Các tài khoản của cùng một Region có thể tài nguyên ở các AZ khác nhau
- Hiện AWS có 77 AZ



# Edge Locations (Vị trí biên)

- Là vị trí chứa các tài nguyên trong mạng phân phối nội dung.
- Được đặt hầu hết các thành phố lớn, dùng cung cấp tài nguyên độ trễ thấp cho người dùng cuối.



# Các dịch vụ AWS



Compute



Migration



Security



Storage



Networking



Message



Database



Management  
tool



Analytics



# Compute

- Amazon Elastic Computer Cloud (EC2): dịch vụ máy chủ ảo
- Elastic Load Balacing (ELB): dịch vụ cân bằng tải
- AWS Lambda: dịch vụ triển khai code không server (serverless)
- AWS Elastic Beanstalk: triển khai các ứng dụng web
- VM Import/Export: import/export ảnh các máy ảo



# Storage and Content Delivery

- Amazon S3: dịch vụ lưu trữ đối tượng
- Amazon Glacier: dịch vụ lưu trữ dữ liệu ít truy cập
- Amazon Elastic Block Store (EBS): dịch vụ lưu trữ dạng khối, phục vụ cho EC2 nhưng độc lập EC2.
- Amazon Elastic File System (EFS): dịch vụ lưu trữ và chia sẻ file.
- Amazon CloudFront: dịch vụ phân phối nội dung (content delivery)
- Amazon Storage Gateway: dịch vụ cổng lưu trữ dữ liệu
- Amazon AWS Import/Export Snowball: dịch vụ di chuyển dữ liệu trực tiếp lên đám mây của AWS  
(<https://aws.amazon.com/vi/snowball/?whats-new-cards.sort-by=item.additionalFields.postDateTime&whats-new-cards.sort-order=desc>)



# Database

- Amazon RDS: dịch vụ cơ sở dữ liệu mô hình quan hệ Amazon Aurora, Oracle, Microsoft SQL Server, PostgreSQL, MySQL & MariaDB.
- Amazon DynamoDB: dịch vụ cơ sở dữ liệu NoSQL của Amazon
- Amazon Redshift: dịch vụ kho dữ liệu của Amazon
- Amazon ElastiCache: dịch vụ cache dữ liệu của Amazon



# Networking

- Amazon VPC: dịch vụ mạng riêng ảo
- Amazon Direct Connect: dịch vụ thiết lập kết nối dành riêng từ AWS đến DataCenter.
- Amazon Route53: dịch vụ quản lý tên miền DNS và định tuyến đến các dịch vụ của AWS.



# Developer Tools

- Amazon CodeCommit: dịch vụ quản lý code, có thể giao tiếp với git.
- Amazon CodeDeploy: dịch vụ triển khai code tự động lên các máy chủ ảo EC2, Lambda
- Amazon CodePipeline: dịch vụ liên quan đến code như cập nhật, biên dịch, test, ...



# Management Tools

- Amazon CloudWatch: giám sát các nguồn tài nguyên
- AWS CloudFormation: quản lý các nguồn tài nguyên
- AWS CloudTrail: dịch vụ lưu lại lịch sử hoạt động các dịch vụ
- AWS Config: dịch vụ quản lý cấu hình AWS
- AWS OpsWorks: dịch vụ định nghĩa cấu trúc ứng dụng
- AWS Service Catalog: dịch vụ quảng lý danh mục dịch vụ IT trên AWS
- AWS Trusted Advisor: công cụ trực tuyến giám sát giới hạn dịch vụ



# Security and Identity

- AWS Identity and Access Management: quản lý người dùng và quyền truy cập dịch vụ AWS
- AWS Key Management Service (KMS): quản lý khóa mã hóa các dịch vụ
- AWS Directory Service: quản lý và truy cập các tài nguyên dễ dàng
- AWS WAF: dịch vụ tường lửa cho các ứng dụng web
- AWS CloudHSM: dịch vụ bảo mật các mô đun phần cứng. Sinh và quản lý khóa mã hóa.



Amazon  
EC2



Amazon  
RDS



AWS  
Direct Connect



Amazon  
EBS



Amazon  
S3



Elastic Load  
Balancing



Amazon  
Route 53



Amazon  
VPC



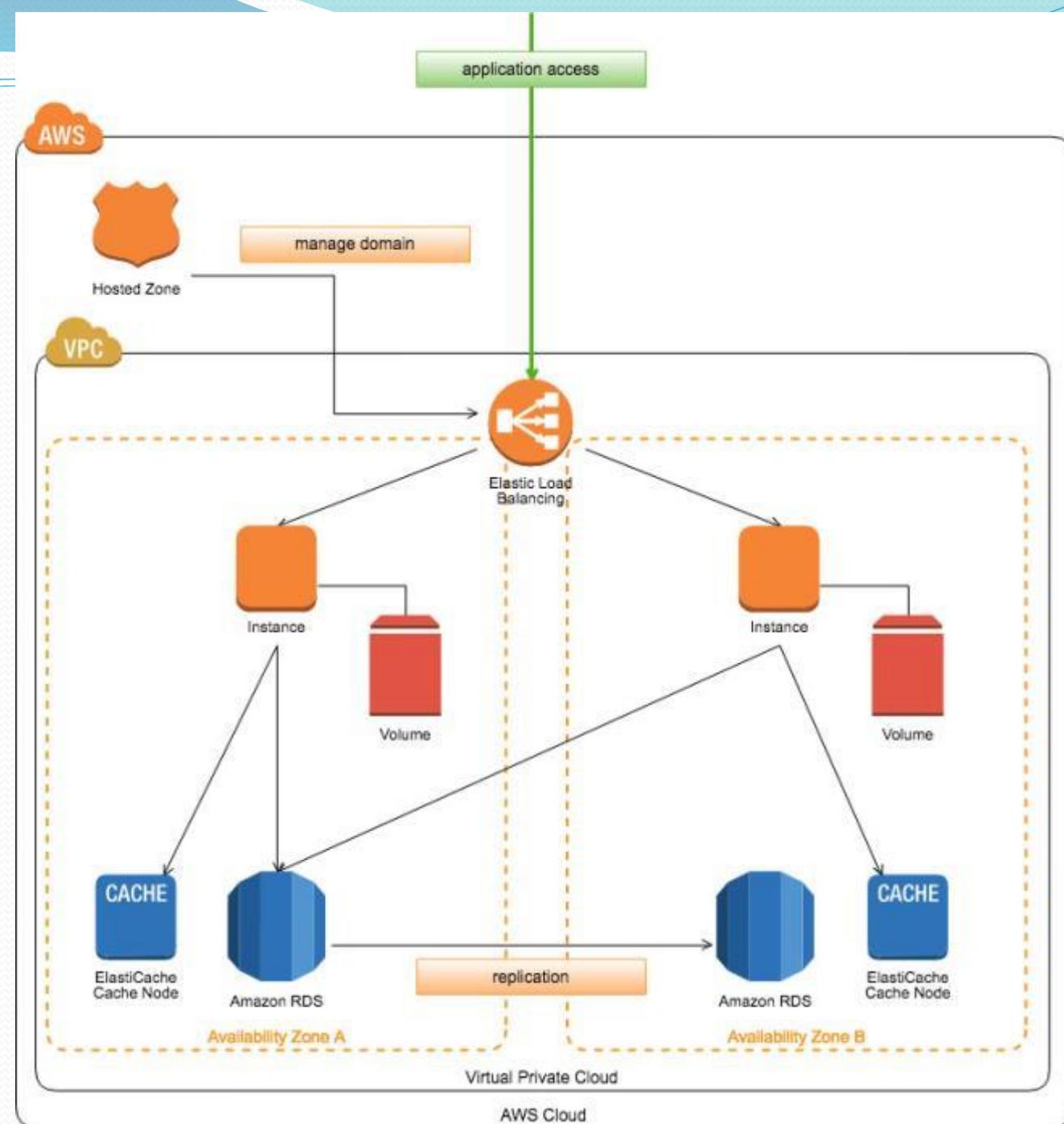
Elastic IP



# Mối liên hệ giữa các dịch vụ



- Kiến trúc cơ bản của ứng dụng các dịch vụ trên AWS





# Cách tính phí

- Cách tính phí dịch vụ của AWS rất đa dạng
- Cùng một dịch vụ của AWS nhưng giá theo vùng (region)
- Ví dụ:
  - region là "Asia Pacific (Tokyo)" có region code tương ứng là "ap-northeast-1"
  - Dịch vụ EC2:
    - On-Demand: Trả phí chừng nào bạn còn sử dụng nó - giá đắt nhất.
    - Spot Instance: Đầu thầu instance với giá thấp.
    - Reserved Instance: Là On-Demand Instance + thuê bao/ subscription.
    - Dedicated Hosts: Instance chạy trên server vật lý dành riêng / single-tenant hardware.

<https://aws.amazon.com/vi/pricing/>



# Cách tính phí (2)

- Giả sử chọn instance type là **m4.xlarge - OS linux** với:
  - Standard Reserved Instance
  - Hợp đồng 1 năm, trả sau (no upfront)

Purchase options	Instance type	Payment option	Monthly
Standard 1 year term	m4.xlarge	No upfront	\$127.24



# Tạo tài khoản

- 1. Truy cập địa chỉ [aws.amazon.com](https://aws.amazon.com) và click vào nút Create AWS Account

The screenshot shows the AWS re:Invent 2019 landing page. At the top right, there is a yellow button labeled "Create an AWS Account" which is highlighted with a red box. Below the header, there is a banner for the AWS Free Tier, featuring a yellow "Create a Free Account" button and information about Amazon EC2. The main content area features several promotional cards for AWS services: AWS Database Migration Service (with a statistic of over 26,000 databases migrated), RUN MICROSERVICES ON AWS (using Amazon ECS), AWS FREE TIER (offering hands-on experience for 12 months), and AMAZON AURORA (for reducing resource consumption on shared systems). At the bottom, there is a section titled "Explore Our Products" with icons for Compute, Storage, Database, Migration, and Networking & Content Delivery.

AWS re:Invent  
Registration opens June 20  
Full conference pass \$1,799

Create an AWS Account

Get Started with AWS for Free  
Create a Free Account

Amazon EC2  
750 hours of Linux & Windows Micro Instances/month

View AWS Free Tier Details +

OVER 26,000 DATABASES MIGRATED

RUN MICROSERVICES ON AWS  
Learn to build and scale containerized microservices with Amazon ECS

AWS FREE TIER  
Gain hands-on experience with AWS free for 12 months

AMAZON AURORA  
Learn how to reduce resource consumption on sharded systems

Explore Our Products

Compute Storage Database Migration Networking & Content Delivery



- 2. Chọn “I am a new user”, nhập vào email đăng ký sau đó bấm vào nút “Sign in using our secure server”

The screenshot shows the 'Amazon Web Services Sign In' page. At the top, there's a logo for 'amazon web services' with three orange boxes. Below it, the heading 'Sign In or Create an AWS Account' is displayed in orange. A sub-instruction 'What is your email (phone for mobile accounts)?' is followed by an input field containing 'vophithung1@gr000.co.jp'. Underneath, there are two radio button options: 'I am a new user.' (selected) and 'I am a returning user and my password is:'. Below these is a large yellow button labeled 'Sign in using our secure server'. To the right of the input fields, there's a graphic of a computer monitor with a checkmark and the text 'AWS Accounts Include 12 Months of Free Tier Access'. This section also mentions 'Including use of Amazon EC2, Amazon S3, and Amazon DynamoDB' and provides a link to 'aws.amazon.com/free'. At the bottom left, there's a section titled 'About Amazon.com Sign In' with a detailed legal notice about data usage and terms. At the very bottom, small links for 'Terms of Use' and 'Customer Agreement' are visible.



### 3. Nhập địa chỉ email và password

A screenshot of a web browser showing the "Amazon Web Services Sign In" page. The URL in the address bar is https://www.amazon.com/reviews/start?ie=UTF8&openid.pape\_name\_with\_page=120&forceMobileLayout=0&openid.identity=http%3A%2F%2Fspecs.openid.net%2Fid%2F2.0%2Fidentifier\_select&accountGia... The page title is "Amazon Web Services Sign In".

The page displays a "Login Credentials" form for creating account credentials. The fields are as follows:

- My name is:** Vo Hung
- My e-mail address is:** [REDACTED]@co.jp
- Type it again:** [REDACTED]@co.jp
- note:** this is the e-mail address that we will use to contact you about your account
- Enter a new password:** [REDACTED]
- Type it again:** [REDACTED]

A yellow "Create account" button is located below the password fields. At the bottom of the page, there is a section titled "About Amazon.com Sign In" with legal text and links to "Terms of Use", "Privacy Policy", and "AWS Customer Agreement". A small note states: "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 purchase these products and services from an AWS Value Added Reseller. The AWS Customer Agreement was updated on March 31, 2017. For more information about these updates, see Recent Changes."

At the very bottom, it says "An amazon.com company".



## 4. Tiếp theo điền các thông tin cá nhân

AWS Console - Signup

C Secure https://portal.aws.amazon.com/billing/home#/redirect?url=https%3A%2F%2Faws.amazon.com%2Fregistration-confirmation%2Faccount

Amazon web services

Amazon Web Services Sign Up

English Sign Out

### Contact Information

Company Account  Personal Account

\* Required Fields

Full Name\* Vo Phi Hung

Country\* Japan

Address\* [REDACTED]  
Apartment, suite, unit, building, floor, etc.

City\* Tokyo

State / Province or Region\* Tokyo

Postal Code\* [REDACTED]

Phone Number\* [REDACTED]

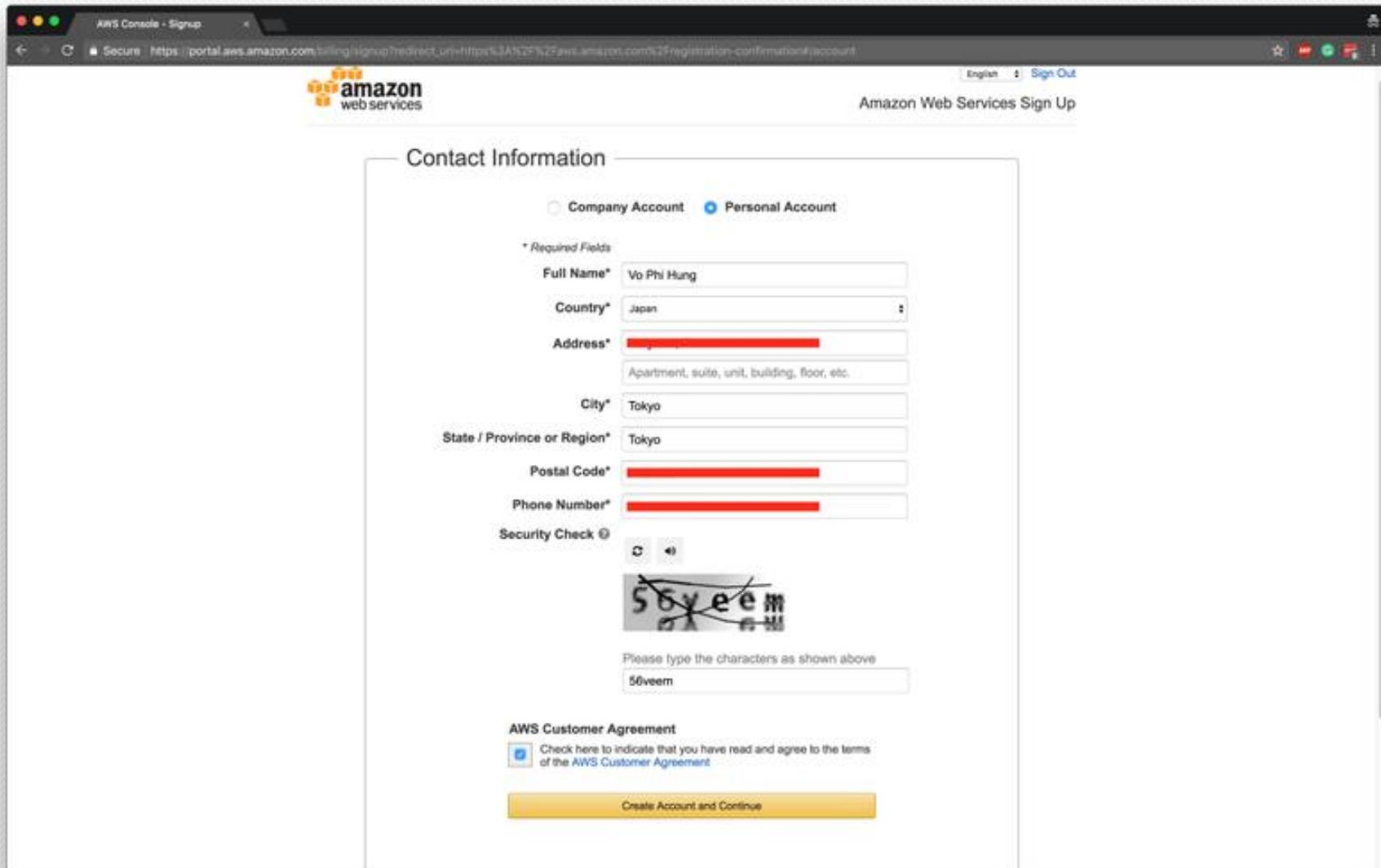
Security Check 

Please type the characters as shown above  
56veem

AWS Customer Agreement

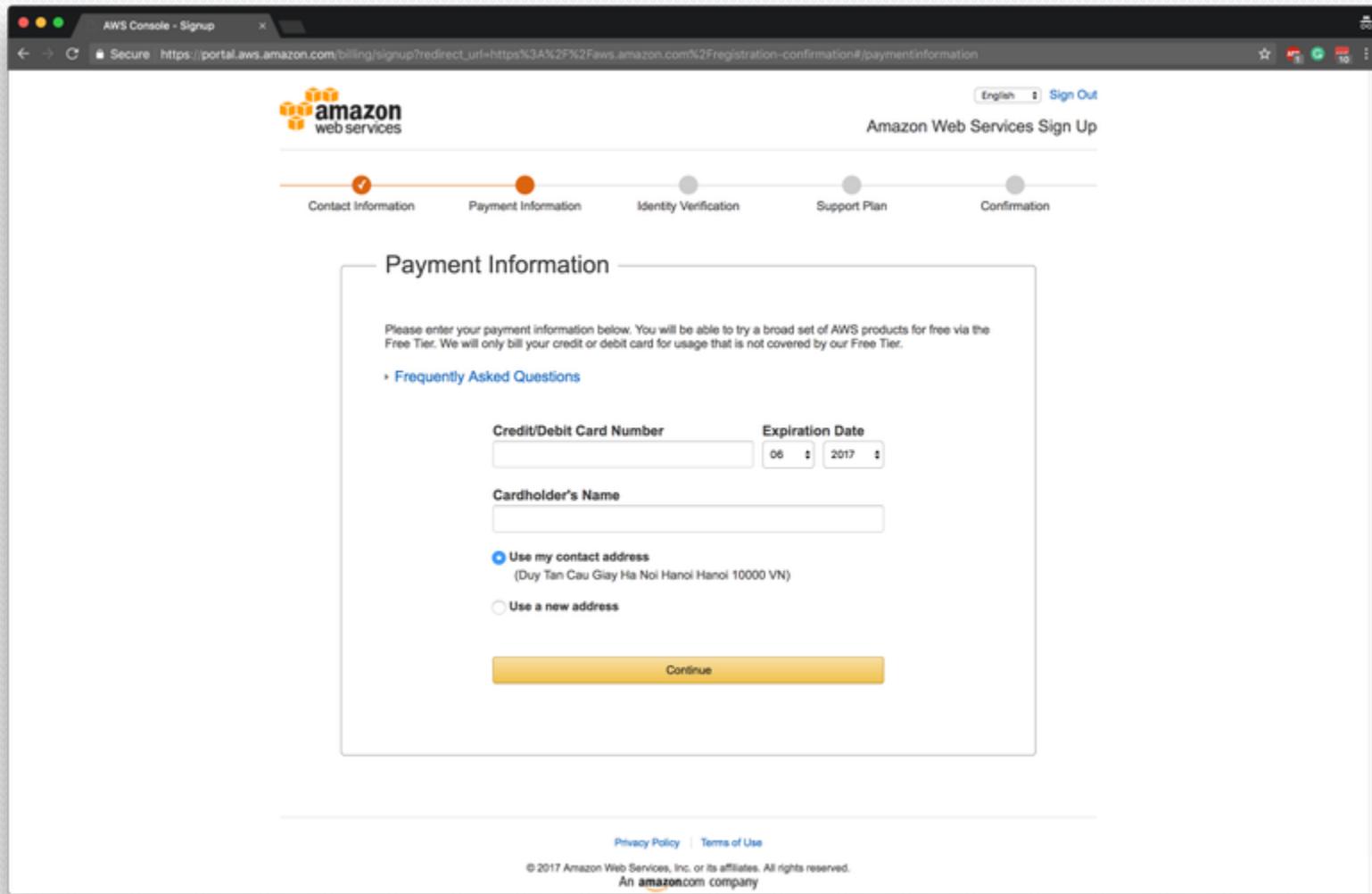
Check here to indicate that you have read and agree to the terms of the AWS Customer Agreement.

Create Account and Continue





## ● Điền thông tin thanh toán



The screenshot shows the 'Payment Information' step of the AWS sign-up process. The page is titled 'Amazon Web Services Sign Up' and features a progress bar with five steps: Contact Information, Payment Information (which is active and highlighted in orange), Identity Verification, Support Plan, and 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 Tier. We will only bill your credit or debit card for usage that is not covered by our Free Tier.

[Frequently Asked Questions](#)

Credit/Debit Card Number  Expiration Date  06  2017

Cardholder's Name

Use my contact address  
(Duy Tan Cau Giay Ha Noi Hanoi 10000 VN)

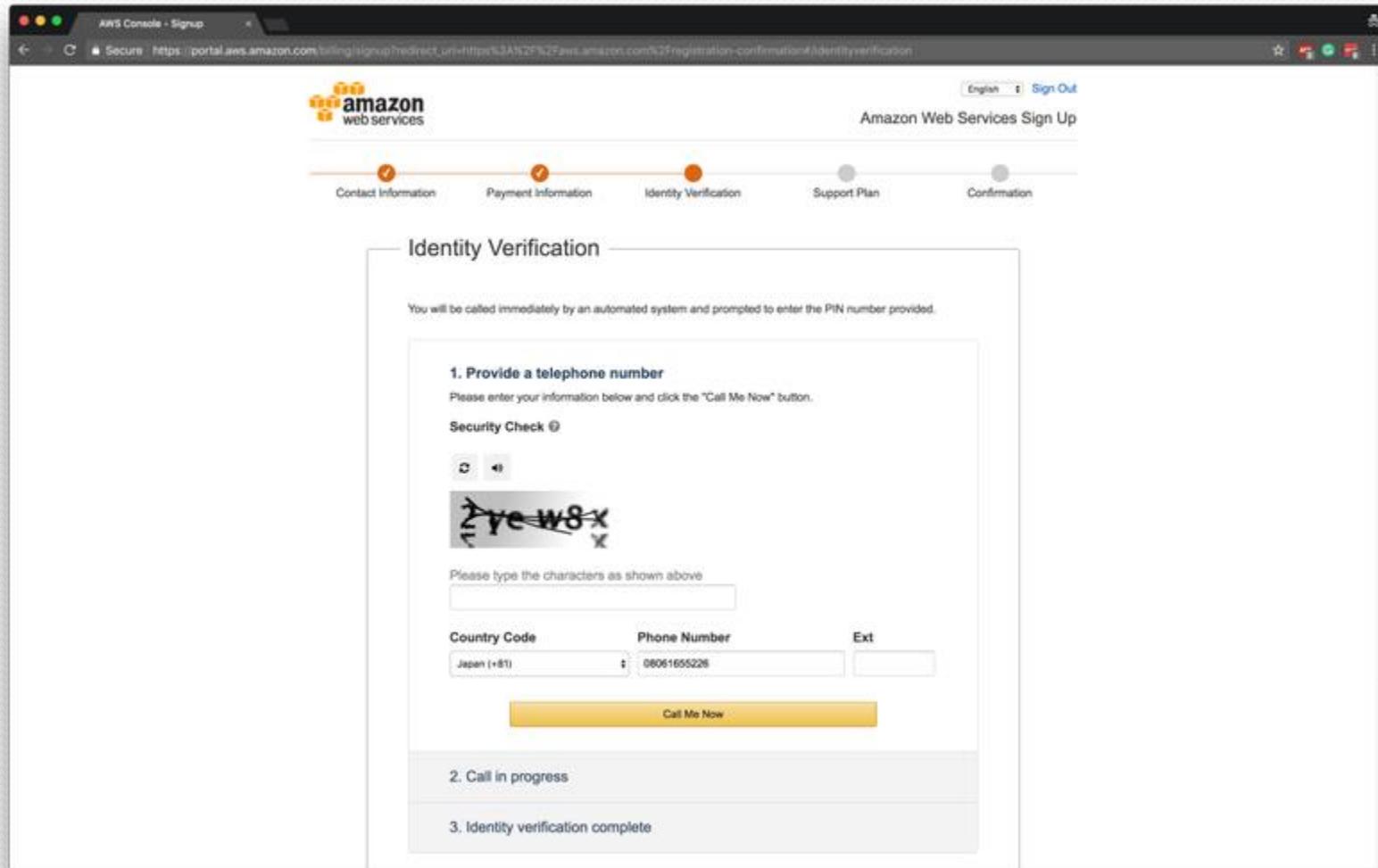
Use a new address

[Continue](#)

[Privacy Policy](#) | [Terms of Use](#)  
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An [amazon.com](#) company



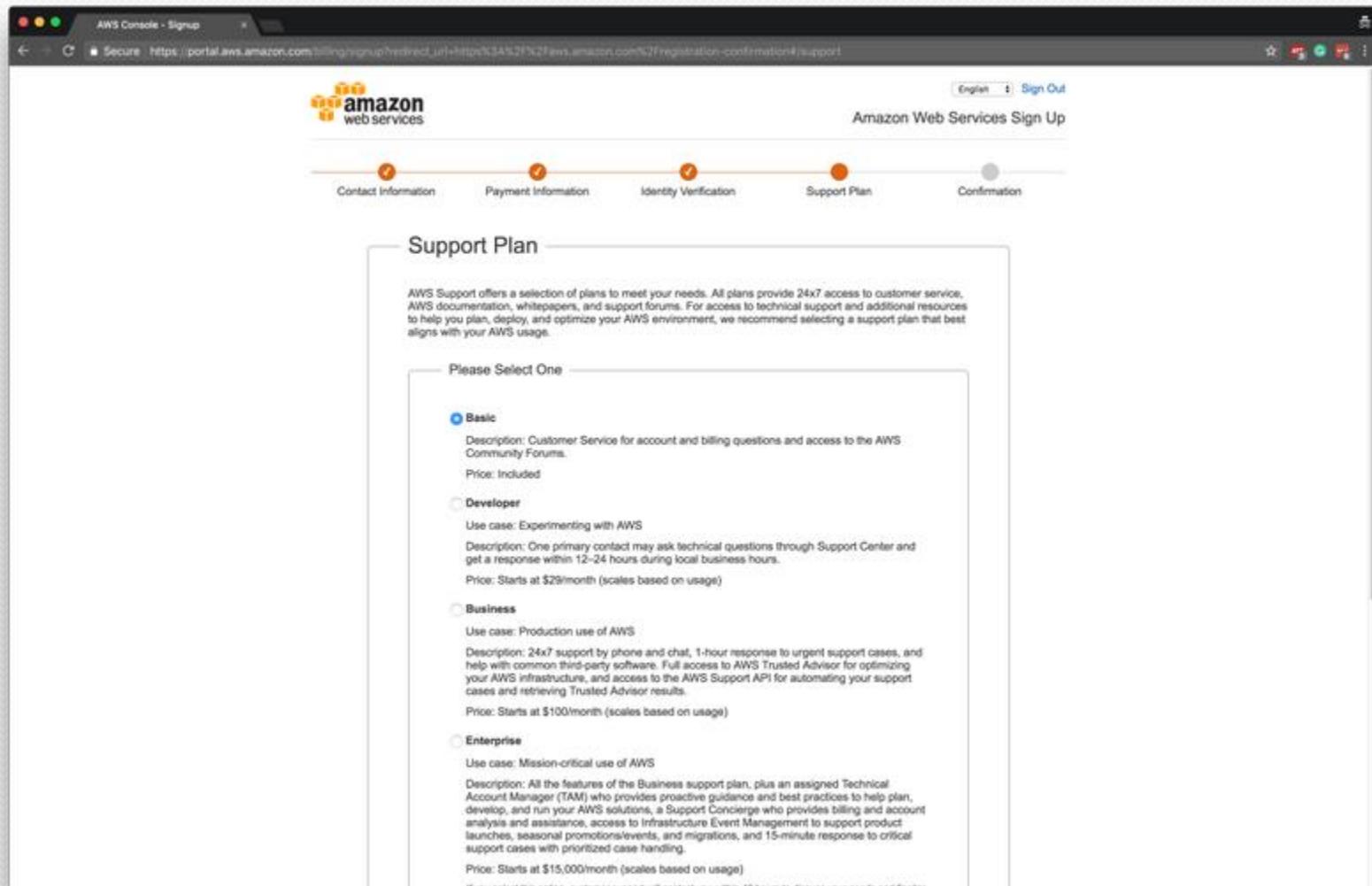
## 6. Xác thực người dùng



The screenshot shows a web browser window for 'AWS Console - Signup'. The URL is https://portal.aws.amazon.com/landing/signup/redirect\_url=https%3A%2F%2Faws.amazon.com%2Fregistration-confirmation#identityverification. The page is titled 'Amazon Web Services Sign Up' and shows the 'Identity Verification' step in a five-step process: Contact Information, Payment Information, Identity Verification (highlighted in orange), Support Plan, and Confirmation. The 'Identity Verification' section contains instructions: 'You will be called immediately by an automated system and prompted to enter the PIN number provided.' It includes a 'Security Check' CAPTCHA image showing the characters '2ye w8x' and a text input field for re-typing them. Below this, there are fields for 'Country Code' (Japan (+81)), 'Phone Number' (08061655228), and 'Ext'. A large yellow button labeled 'Call Me Now' is present. Below the form, three steps are listed: '2. Call in progress', '3. Identity verification complete'.



## 7. Chọn Support Plan



The screenshot shows a web browser window for the AWS Console - Signup. The URL is https://portal.aws.amazon.com/billing/signup#/redirectUrl=https%3A%2F%2Faws.amazon.com%2Fregistration%2Fconfirmation%2Fsupport. The page is titled "Amazon Web Services Sign Up". A progress bar at the top indicates five steps: Contact Information, Payment Information, Identity Verification, Support Plan (which is selected), and Confirmation. The main content area is titled "Support Plan". It explains that AWS Support offers a selection of plans to meet needs, providing 24x7 access to customer service, AWS documentation, whitepapers, and support forums. It recommends selecting a support plan that best aligns with AWS usage. Below this, a section titled "Please Select One" contains four options: Basic, Developer, Business, and Enterprise. Each option has a description, price, and a radio button for selection. The "Basic" option is selected.

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

Please Select One

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

**Developer**  
Use case: Experimenting with AWS  
Description: One primary contact may ask technical questions through Support Center and get a response within 12-24 hours during local business hours.  
Price: Starts at \$29/month (scales based on usage)

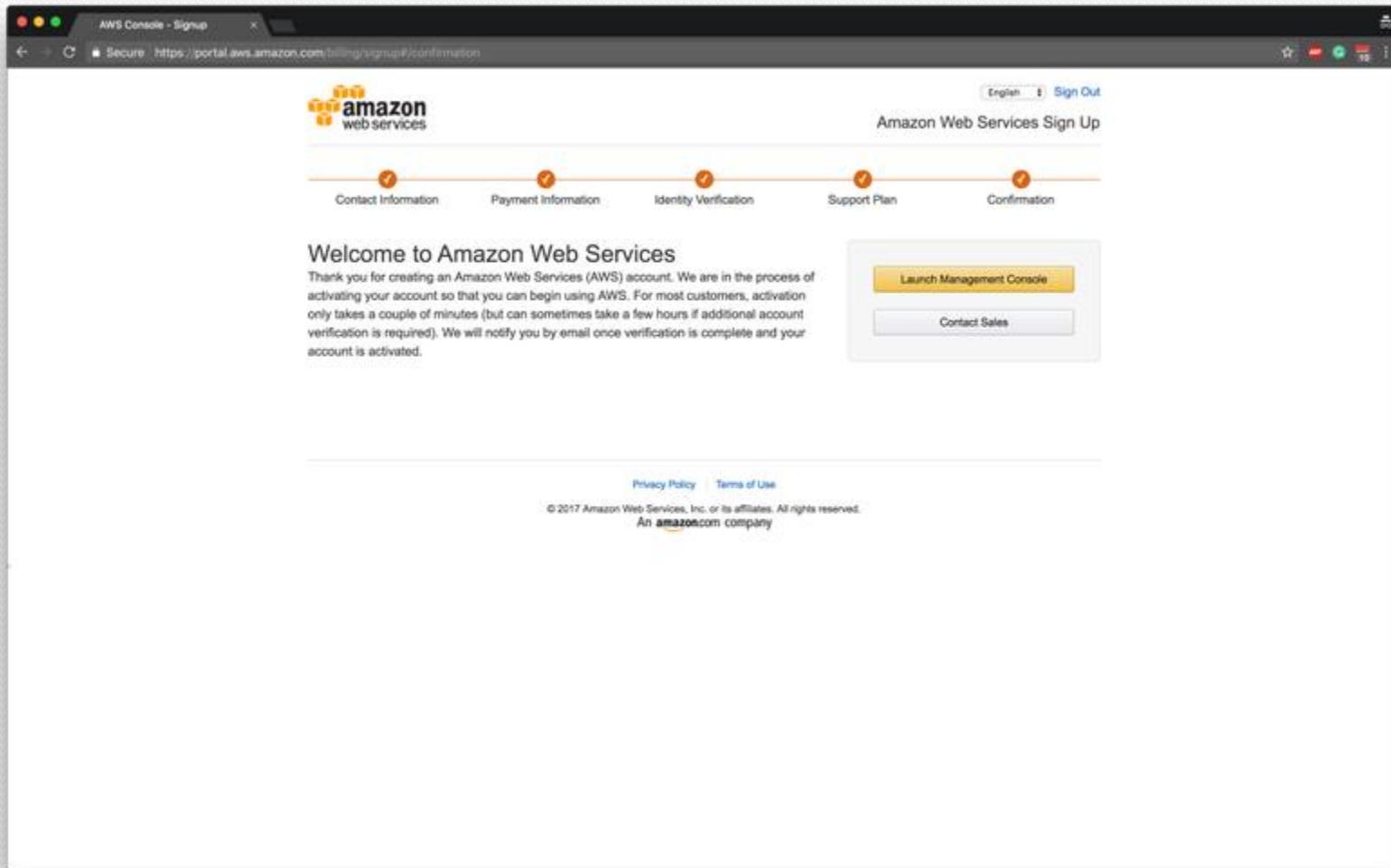
**Business**  
Use case: Production use of AWS  
Description: 24x7 support by phone and chat, 1-hour response to urgent support cases, and help with common third-party software. Full access to AWS Trusted Advisor for optimizing your AWS infrastructure, and access to the AWS Support API for automating your support cases and retrieving Trusted Advisor results.  
Price: Starts at \$100/month (scales based on usage)

**Enterprise**  
Use case: Mission-critical use of AWS  
Description: All the features of the Business support plan, plus an assigned Technical Account Manager (TAM) who provides proactive guidance and best practices to help plan, develop, and run your AWS solutions, a Support Concierge who provides billing and account analysis and assistance, access to Infrastructure Event Management to support product launches, seasonal promotions/events, and migrations, and 15-minute response to critical support cases with prioritized case handling.  
Price: Starts at \$15,000/month (scales based on usage)

If you select this option, customer support will contact you within 48 hours to discuss your needs and finalize



## 8. Hoàn thành



A screenshot of a web browser showing the "AWS Console - Signup" page. The URL in the address bar is <https://portal.aws.amazon.com/billing/signup#/confirmation>. The page is titled "Amazon Web Services Sign Up". At the top right, there are links for "English" and "Sign Out". Below the title, there is a progress bar with five steps: "Contact Information", "Payment Information", "Identity Verification", "Support Plan", and "Confirmation". The "Confirmation" step is highlighted with a yellow background. The main content area starts with "Welcome to Amazon Web Services". It says: "Thank you for creating an Amazon Web Services (AWS) account. We are in the process of activating your account so that you can begin using AWS. For most customers, activation only takes a couple of minutes (but can sometimes take a few hours if additional account verification is required). We will notify you by email once verification is complete and your account is activated." To the right of this text are two buttons: "Launch Management Console" (yellow background) and "Contact Sales". At the bottom of the page, there are links for "Privacy Policy" and "Terms of Use", followed by the copyright notice: "© 2017 Amazon Web Services, Inc. or its affiliates. All rights reserved. An [amazon.com](#) company".



# Giao diện Console

AWS Services ▾ Singapore ▾

## AWS Management Console

### AWS services

**Find Services**  
You can enter names, keywords or acronyms.

▼ Recently visited services  
 Billing      S3

▼ All services

Compute	Machine Learning
EC2	Amazon SageMaker
Lightsail	Amazon Augmented AI
Lambda	Amazon CodeGuru
Batch	Amazon Comprehend
Elastic Beanstalk	Amazon Forecast
Serverless Application Repository	Amazon Fraud Detector

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

**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](#)



# Giao diện phí sử dụng dịch vụ

Home

Cost Management

Cost Explorer

Budgets

Budgets Reports

Savings Plans

Cost & Usage Reports

Cost Categories

Cost allocation tags

Billing

Bills

Orders and invoices

Credits

Purchase orders (preview)

Preferences

Billing preferences

Payment methods

Consolidated billing

Tax settings

## Billing & Cost Management Dashboard



### Getting Started with AWS Billing & Cost Management

- Manage your costs and usage using [AWS Budgets](#)
  - Visualize your cost drivers and usage trends via [Cost Explorer](#)
  - Dive deeper into your costs using the [Cost and Usage Reports with Athena integration](#)
  - Learn more: Check out the [AWS What's New webpage](#)
- Do you have Reserved Instances (RIs)?
- Access the RI Utilization & Coverage reports—and RI purchase recommendations—via [Cost Explorer](#).

### Spend Summary

Cost Explorer

Welcome to the AWS Billing & Cost Management console. Your last month, month-to-date, and month-end forecasted costs appear below.

Current month-to-date balance for September 2020

\$0.22



► Important Information about these Costs

### Month-to-Date Spend by Service

Bill Details

The chart below shows the proportion of costs spent for each service you use.



\$0.22

CloudWatch	\$0.22
DynamoDB	\$0.00
S3	\$0.00
Tax	\$0.00
<b>Total</b>	<b>\$0.22</b>



# Giao diện CloudWatch

- CloudWatch
- Dashboards
- Alarms
- ALARM 0
- INSUFFICIENT 0
- OK 0
- Billing
- Logs
- Log groups
- Insights
- Metrics
- Events
- Rules
- Event Buses
- ServiceLens
- Service Map
- Traces
- Container Insights NEW
- Resources
- Performance Monitoring
- Synthetics NEW
- Canaries
- Contributor Insights
- Settings
- Favorites

## CloudWatch: Overview

1h 3h 12h 1d 3d 1w custom ▾

Actions ▾



### Get started with CloudWatch

Set alarms on any of your metrics to receive notifications when your metric crosses your specified threshold.	Monitor using your existing system, application and custom log files.	Create re-usable dashboards which allow you to monitor your AWS resources in one location.	Write rules to indicate which events are of interest to your application and what automated action to take.
<a href="#">View alarms</a>	<a href="#">View logs</a>	<a href="#">View dashboards</a>	<a href="#">View events</a>

### Alarms by AWS service

#### Services

Status	Alarm	Insufficient	OK
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AWS services publishing metrics in your account will appear here.

[Learn more about CloudWatch.](#)

### Recent alarms

[View recent alarms dashboard](#)

Recent alarms will appear here.

[Learn more about CloudWatch Alarms.](#)



# Tổng kết

- Amazon là nhà cung cấp dịch vụ điện toán đám mây hàng đầu
- Các dịch vụ phong phú và đa dạng
- Dễ sử dụng, dễ triển khai
- Cách tính phí đa dạng



# Câu hỏi

- Tìm hiểu về các Khu vực (Region) và Vùng khả dụng (AZ) của Amazon
- Tìm hiểu về cách tính phí một số dịch vụ cơ bản của AWS
- Đăng ký tài khoản AWS