

ASSIGNMENT 2

Name: Nguyen Gia Binh

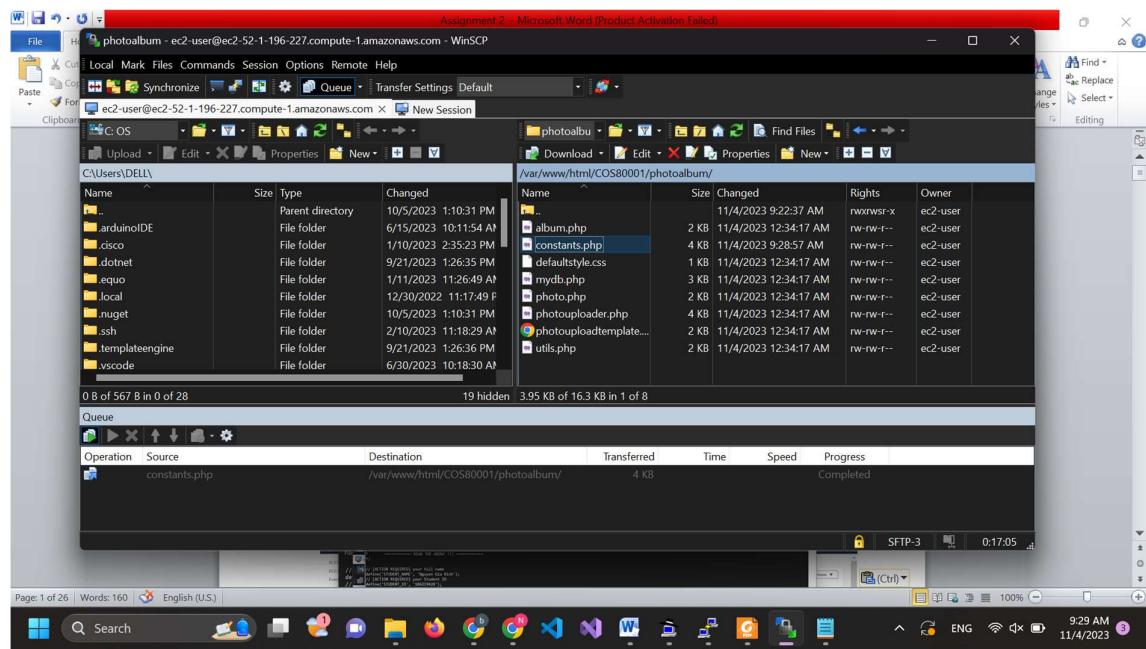
StudentID: 104219428

Tutorial time: Saturday 10:00AM

Date of Submission: 04/11/2023

Task 1: Functional requirements of Photo Album website

1.1: Modify constant.php



```
// ----- READ THE ABOVE !!! -----
// ----- READ THE ABOVE !!! -----
```

```
/*
 * // [ACTION REQUIRED] your full name
 * define('STUDENT_NAME', 'Nguyen Gia Binh');
 * // [ACTION REQUIRED] your student ID
 * define('STUDENT_ID', '104219428');
 */
// [ACTION REQUIRED] your tutorial session
define('TUTORIAL_SESSION', 'Saturday 12:00AM');
// [ACTION REQUIRED] name of the S3 bucket that stores images
define('BUCKET_NAME', 'asmphoto');
// [ACTION REQUIRED] region of the above bucket
define('REGION', 'us-east-1');
// [ACTION REQUIRED] endpoint of the S3 bucket
define('S3_BASE_URL', 'https://'.BUCKET_NAME.'.s3.amazonaws.com/');
// [ACTION REQUIRED] name of the database that stores photo meta-data (note that this is not the DB identifier of the RDS instance)
define('DB_NAME', 'photo');
// [ACTION REQUIRED] endpoint of RDS instance
define('DB_ENDPOINT', 'assignment1-db.rds.amazonaws.com');
// [ACTION REQUIRED] username of your RDS instance
define('DB_USERNAME', 'root');
// [ACTION REQUIRED] password of your RDS instance
define('DB_PWD', 'lucky707');
// [ACTION REQUIRED] name of the DB table that stores photo's meta-data
define('DB_PHOTO_TABLE_NAME', 'photo');
// The table above has 5 columns:
// [ACTION REQUIRED] name of the column in the above table that stores photo's titles
define('DB_PHOTO_TITLE_COL_NAME', 'titles');
// [ACTION REQUIRED] name of the column in the above table that stores photo's descriptions
define('DB_PHOTO_DESCRIPTION_COL_NAME', 'description');
// [ACTION REQUIRED] name of the column in the above table that stores photo's creation dates
define('DB_PHOTO_CREATED_DATE_COL_NAME', 'date');
// [ACTION REQUIRED] name of the column in the above table that stores photo's keywords
define('DB_PHOTO_KEYWORDS_COL_NAME', 'keywords');
// [ACTION REQUIRED] name of the column in the above table that stores photo's links in S3
define('DB_PHOTO_REFERENCE_COL_NAME', 'reference');
// [ACTION REQUIRED] name (can also be used) of the Lambda function that is used to create thumbnails
define('LAMBDA_FUNCTION_NAME', 'CreateThumbnail');
```

Line: 35/84 Column: 89 Character: 115 (0x73) Encoding: 1252 (ANSI - L - Modified)

Sat Nov 04 2023 08:49:32 GMT+0700 (Indochina Time) (37 minutes)

amazon/amzn2-ami-kernel-5.10-hvm-2.0.20230926.0-x86_64-gp2

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CloudFront Feedback

1.2: Download the zip file that contain AWS SDK PHP and unzip it

The screenshot shows a WinSCP session window titled "Assignment 2 - Microsoft Word (Product Activation Failed)". The address bar indicates the session is connected to "/var/www/html/COS80001/photoalbum/constants.php" on "ec2-user@ec2-52-1-196-227.compute-1.amazonaws.com". The main pane displays a terminal session with the following command and output:

```
aws-sdk-php/v3/download/aws.zip
2023-11-04 02:29:53-- https://docs.aws.amazon.com/aws-sdk-php/v3/download/aws.zip
Resolving docs.aws.amazon.com (docs.aws.amazon.com) ... 99.84.108.120, 99.84.108.49, 99.84.108.81, ...
Connecting to docs.aws.amazon.com (docs.aws.amazon.com) |99.84.108.120|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://docs.aws.amazon.com/aws-sdk-php/v3/download/aws.zip [following]
1. Download the zip file that contains AWS
wget -P /var/www/html http://docs.aws.amazon.com/aws-sdk-php/v3/download/aws.zip
2023-11-04 02:29:53-- https://docs.aws.amazon.com/aws-sdk-php/v3/download/aws.zip
2023-11-04 02:29:53-- Connecting to docs.aws.amazon.com (docs.aws.amazon.com) |99.84.108.120|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 5526264 (5.3M) [application/zip]
Saving to: '/var/www/html/aws.zip'

[Progress Bar] 100%[=====] 5,526,264 5.51MB/s in 1.0s
2023-11-04 02:29:54 (5.51 MB/s) - '/var/www/html/aws.zip' saved [5526264/5526264]

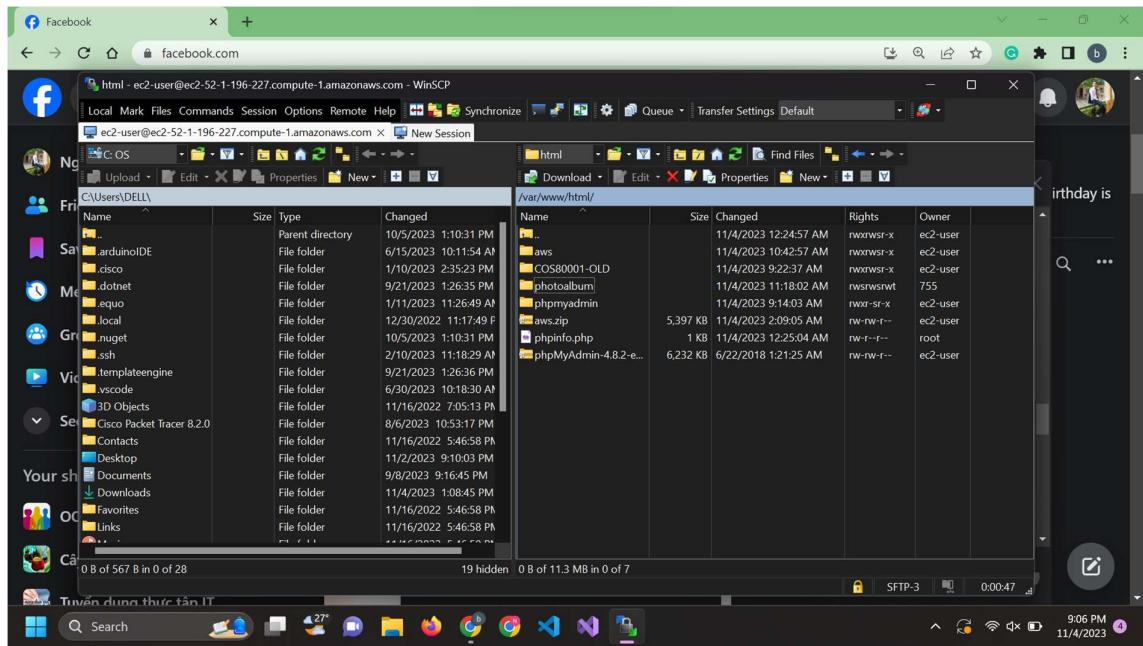
[ec2-user@ip-10-0-2-196 html]$
```

The status bar at the bottom shows "Line: 13/84" and "Column: 89". The toolbar includes standard Microsoft Word icons like Cut, Copy, Paste, etc.

The screenshot shows a WinSCP session window titled "Assignment 2 - Microsoft Word (Product Activation Failed)". The address bar indicates the session is connected to "/var/www/html/COS80001/photoalbum/constants.php" on "ec2-user@ec2-52-1-196-227.compute-1.amazonaws.com". The main pane displays a terminal session with the following command and output:

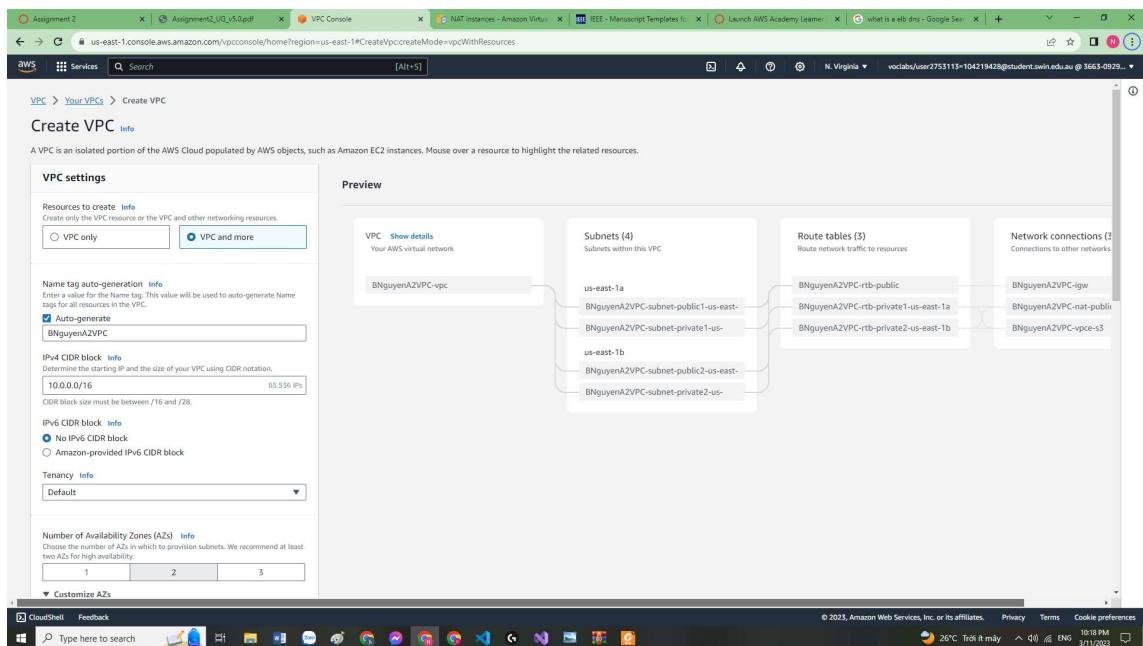
```
inflating: /var/www/html/aws/GuzzleHttp/Promise/Coroutine.php
inflating: /var/www/html/aws/GuzzleHttp/Promise/AggregateException.php
inflating: /var/www/html/aws/GuzzleHttp/Promise/RejectedPromise.php
inflating: /var/www/html/aws/GuzzleHttp/Promise/Create.php
inflating: /var/www/html/aws/GuzzleHttp/Promise/RejectionException.php
inflating: /var/www/html/aws/GuzzleHttp/Promise/Utils.php
inflating: /var/www/html/aws/GuzzleHttp/Promise/Is.php
creating: /var/www/html/aws/Psr/Http/Message/UriInterface.php
creating: /var/www/html/aws/Psr/Http/Message/Message.php
inflating: /var/www/html/aws/Psr/Http/Message/MessageInterface.php
inflating: /var/www/html/aws/Psr/Http/Message/UploadedFileInterface.php
inflating: /var/www/html/aws/Psr/Http/Message/ServerRequestInterface.php
inflating: /var/www/html/aws/Psr/Http/Message/StreamInterface.php
inflating: /var/www/html/aws/Psr/Http/Message/RequestInterface.php
inflating: /var/www/html/aws/Psr/Http/Message/ResponseInterface.php
creating: /var/www/html/aws/Psr/Http/Client/
inflating: /var/www/html/aws/Psr/Http/Client/NetworkExceptionInterface.php
inflating: /var/www/html/aws/Psr/Http/Client/ClientInterface.php
inflating: /var/www/html/aws/Psr/Http/Client/ClientExceptionInterface.php
inflating: /var/www/html/aws/Psr/Http/Client/RequestExceptionInterface.php
inflating: /var/www/html/aws/Psr/Http/Client/AwsAutoLoader.php
[ec2-user@ip-10-0-2-196 html]$
```

The status bar at the bottom shows "Line: 15/84" and "Column: 57". The toolbar includes standard Microsoft Word icons like Cut, Copy, Paste, etc.



Task 2:

2.1: Create a VPC and NAT Gateway



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The screenshot shows the AWS VPC console interface for creating a new VPC. The left panel contains configuration options for Availability Zones (AZs) and Subnet CIDR blocks. The right panel, titled 'Preview', displays the resulting VPC structure:

- Subnets (4):** BNguyenA2VPC-subnet-public1-us-east-1a, BNguyenA2VPC-subnet-private1-us-east-1a, BNguyenA2VPC-subnet-public2-us-east-1b, BNguyenA2VPC-subnet-private2-us-east-1b
- Route tables (3):** BNguyenA2VPC-rtb-public, BNguyenA2VPC-rtb-private1-us-east-1a, BNguyenA2VPC-rtb-private2-us-east-1b
- Network connections (3):** BNguyenA2VPC-igw, BNguyenA2VPC-nat-public, BNguyenA2VPC-vpc-e-s3

This screenshot shows the continuation of the VPC creation process. The 'VPC endpoints' section now includes an 'S3 Gateway' option, which is selected. The rest of the interface and preview are identical to the first screenshot.

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The screenshot shows the AWS VPC Console with the 'Preview' tab selected. It displays the following details:

- VPC:** BNguyenA2VPC-vpc
- Subnets (4):** Subnets within this VPC
 - us-east-1a: BNguyenA2VPC-subnet-public1-us-east-1a, BNguyenA2VPC-subnet-private1-us-east-1a
 - us-east-1b: BNguyenA2VPC-subnet-public2-us-east-1b, BNguyenA2VPC-subnet-private2-us-east-1b
- Route tables (3):** Route network traffic to resources
 - BNguyenA2VPC-rtb-public
 - BNguyenA2VPC-rtb-private1-us-east-1a
 - BNguyenA2VPC-rtb-private2-us-east-1b
- Network connections (3):** Connections to other networks
 - BNguyenA2VPC-igw
 - BNguyenA2VPC-nat-public1-us-east-1a
 - BNguyenA2VPC-vpcse-s3

Below the preview, there are sections for **Info**, **Tags**, and a **Create VPC** button.

The screenshot shows the 'Create VPC workflow' summary page. It lists the following steps:

- Success
- Details
 - Create VPC: vpc-0995ac76487dabcc6
 - Enable DNS hostnames
 - Enable DNS resolution
 - Verifying VPC creation: vpc-0995ac76487dabcc6
 - Create S3 endpoint: s3e-0260a0526099c543d
 - Create subnet: subnet-014dd6a3ed9df1bf8
 - Create subnet: subnet-0521ffed4ad093488
 - Create subnet: subnet-0eb4bdc125b74f8669
 - Create subnet: subnet-03c95b3875f59597a
 - Create Internet gateway: igw-0718942fcf672c4b3
 - Attach Internet gateway to the VPC
 - Create route table: rtb-0daa97592b1f72ff
 - Create route
 - Associate route table
 - Associate route table
 - Allocate elastic IP: eipalloc-06ab5b2f22772047
 - Create NAT gateway: nat-0cc4816268dd010d56
 - Wait for NAT Gateways to activate
 - Create route table: rtb-029chbb596ff95260
 - Create route
 - Associate route table
 - Create route table: rtb-05274b8adabfa76d0
 - Create route
 - Associate route table
 - Verifying route table creation
 - Associate S3 endpoint with private subnet route tables: vpc-0260a0526099c543d

A **View VPC** button is located at the bottom right of the summary area.

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VPC ID: vpc-0995ac76487dabcc6
 State: Available
 Tenancy: Default
 Default VPC No: 10.0.0.16
 Network Address Usage metrics: Disabled
 DNS hostnames: Enabled
 DNS resolution: Enabled
 Main route table: rtb-0031a60634b6f8706
 IPv6 pool: -
 Route 53 Resolver DNS Firewall rule groups: Failed to load rule groups
 Owner ID: 366309293917
 IPv6 CIDR (Network border group): -

Resource map

- VPC:** BNGuyenA2VPC-vpc
- Subnets (4):**
 - us-east-1a: BNGuyena2VPC-subnet-public1-us-east-1a...
 - us-east-1a: BNGuyena2VPC-subnet-private1-us-east-1a...
 - us-east-1b: BNGuyena2VPC-subnet-public2-us-east-1b...
 - us-east-1b: BNGuyena2VPC-subnet-private2-us-east-1b...
- Route tables (4):**
 - BNGuyena2VPC-rtb-private1-us-east-1a
 - BNGuyena2VPC-rtb-public
 - rtb-0031a60634b6f8706
 - BNGuyena2VPC-rtb-private2-us-east-1b
- Network connections (3):**
 - BNGuyena2VPC-igw
 - BNGuyena2VPC-nat-public1-us-east-1a
 - BNGuyena2VPC-vpcse-s3

2.2: S3 bucket (re-use the one from asm1b)

Name	Type	Last modified	Size	Storage class
album.php	php	October 14, 2023, 12:18:01 (UTC+07:00)	1.0 KB	Standard
constants.php	php	October 14, 2023, 12:18:00 (UTC+07:00)	2.9 KB	Standard
dark-cosmic-jhin-splash-art-lol-4K-87.jpg	jpg	October 14, 2023, 11:57:06 (UTC+07:00)	250.7 KB	Standard
defaultstyle.css	css	October 14, 2023, 12:18:02 (UTC+07:00)	388.0 B	Standard
jhin-dark-cosmic-lol-art-0-hd-wallpaper-1920x1080-uhdpaper.com-390.0_a.jpg	jpg	October 14, 2023, 11:57:08 (UTC+07:00)	399.7 KB	Standard
jhin-empyrean-lol-hd-wallpaper-uhdpaper.com-245@165.jpg	jpg	October 14, 2023, 11:57:10 (UTC+07:00)	513.5 KB	Standard
mydb.php	php	October 14, 2023, 12:18:03 (UTC+07:00)	1.2 KB	Standard
photo.php	php	October 14, 2023, 12:18:04 (UTC+07:00)	1.2 KB	Standard

Put the photo into your RDS database using the object URL and SQL

<https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jhin-splash-art-lol-4K-87.jpg>

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The screenshot shows the phpMyAdmin interface for the 'photo' database. In the SQL tab, the following SQL query was run:

```
1 INSERT INTO photo (title, description, date, keywords, refference)
2 VALUES ('Jhin', 'Jhin wallpaper', '2023-11-04', 'Jhin, darkstar, wallpaper', 'https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jhin-splash-art-lol-4K-87.jpg')
```

The 'Run SQL query/queries on database photo:' input field contains the same query. Below the input field, there are several buttons: Clear, Format, Get auto-saved query, Bind parameters, Delimiter (set to ;), Show this query here again (checked), Retain query box, Rollback when finished, Enable foreign key checks, and a Go button.

The screenshot shows the phpMyAdmin interface for the 'photo' database. In the SQL tab, the message '1 row inserted. (Query took 0.00090 seconds.)' is displayed above the query history. The query history shows the previously run SQL command. At the bottom right of the message area, there are three links: [Edit inline], [Edit], and [Create PHP code].

2.2.1: Change bucket policy to restricts access to a specific HTTP referrer

```

{
    "Version": "2012-10-17",
    "Id": "HTTP referer policy example",
    "Statement": [
        {
            "Sid": "Allow only GET requests originating from www.example.com and example.com",
            "Effect": "Allow",
            "Principal": "*",
            "Action": [
                "s3:GetObject",
                "s3:GetObjectVersion"
            ],
            "Resource": "arn:aws:s3:::asm1bphoto/*",
            "Condition": {
                "StringLike": {
                    "aws:Referer": [
                        "http://www.example.com/*",
                        "http://example.com/*"
                    ]
                }
            }
        }
    ]
}
  
```

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

Object Ownership
Bucket owner enforced
ACLs are disabled: All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

2.2.2: Tetsing photo resize

Name	Type	Last modified	Size	Storage class
photo.php	php	November 4, 2023, 10:02:54 (UTC+07:00)	1.2 KB	Standard
photouploader.php	php	November 4, 2023, 10:02:55 (UTC+07:00)	4.0 KB	Standard
photouploadtemplate.html	html	November 4, 2023, 10:02:56 (UTC+07:00)	1.4 KB	Standard
resized-jhn-dark-cosmic-lol-art-0-hd-wallpaper-1920x1080-uhdpaper.com-390_0_a.jpg	jpg	November 4, 2023, 11:15:12 (UTC+07:00)	52.2 KB	Standard
resized-jhn-empyrean-lol-hd-wallpaper-uhdpaper.com-245@1.jpg	jpg	November 4, 2023, 11:18:30 (UTC+07:00)	72.5 KB	Standard
utils.php	php	November 4, 2023, 10:02:57 (UTC+07:00)	1.7 KB	Standard

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Now I close public access

The screenshot shows the AWS S3 console with the URL <https://s3.console.aws.amazon.com/s3/bucket/asml1phphoto/property/bpa/edit?region=us-east-1>. The left sidebar shows 'Amazon S3' with 'Buckets' selected. The main content area is titled 'Edit Block public access (bucket settings)'. A note states: 'Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure your buckets and objects are protected, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases.' Below this, there are four checkboxes under 'Block all public access':

- Block public access to buckets and objects granted through new access control lists (ACLs)
- Block public access to buckets and objects granted through any access control lists (ACLs)
- Block public access to buckets and objects granted through new public bucket or access point policies
- Block public and cross-account access to buckets and objects through any public bucket or access point policies

At the bottom right are 'Cancel' and 'Save changes' buttons.

The screenshot shows the AWS S3 console with the URL <https://s3.console.aws.amazon.com/s3/buckets/asml1phphoto?region=us-east-1&tab=objects>. The left sidebar shows 'Amazon S3' with 'Buckets' selected. The main content area shows the 'asm1phphoto' bucket with the 'Objects' tab selected. A note says: 'Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 Inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions.' Below is a table of objects:

Name	Type	Last modified	Size	Storage class
album.php	php	November 4, 2023, 10:02:49 (UTC+07:00)	1.2 KB	Standard
constants.php	php	November 4, 2023, 10:02:50 (UTC+07:00)	4.2 KB	Standard
dark-cosmic-jhin-splash-art-lol-4K-87.jpg	jpg	October 14, 2023, 11:57:06 (UTC+07:00)	250.7 KB	Standard
defaultstyle.css	css	November 4, 2023, 10:02:51 (UTC+07:00)	388.0 B	Standard
jhin-dark-cosmic-lol-art-0-hd-wallpaper-1920x1080-uhdpaper.com-390x0_a.jpg	jpg	November 4, 2023, 11:15:10 (UTC+07:00)	399.7 KB	Standard
jhin-empyrean-lol-hd-wallpaper-uhdpaper.com-245@1.jpg.jpg	jpg	November 4, 2023, 11:18:28 (UTC+07:00)	513.5 KB	Standard
mydb.php	php	November 4, 2023, 10:02:52 (UTC+07:00)	2.6 KB	Standard
photo.php	php	November 4, 2023, 10:02:54 (UTC+07:00)	1.2 KB	Standard

At the top right are 'CloudShell', 'Feedback', and a search bar. At the bottom right are 'CloudShell', 'Feedback', and a search bar.

2.3: Load balancer

2.3.1: Create custom AMI

The screenshot shows the AWS EC2 Instances page. The left sidebar navigation includes: EC2 Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, New, Images (AMIs), AMI Catalog, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs), and Network Interfaces. The main content area displays three instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Bastion/Web s...	i-0264c88efc3959f0f	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-52-202-86-40.com...
Dev Server	i-02525c87ecb5e4e54	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-52-1-196-227.com...
TestInstance	i-0367e3234fd6b2719	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	-

A context menu is open over the 'Dev Server' instance, with options: Connect, Instance state, Actions (Launch instances, View details, Manage instance state, Instance settings, Networking, Security, Image and templates, Monitor and troubleshoot), Create image, Create template from instance, and Launch more like this.

The screenshot shows the 'Create Image' dialog for the instance i-02525c87ecb5e4e54 (Dev Server). The 'Image name' field is set to 'DevServerAMI'. The 'Image description - optional' field contains 'assignmentn 2 AMI'. Under 'Instance volumes', there is one EBS volume (/dev/xvda) with size 8, IOPS 100, Throughput 500, Delete on termination checked, and Encrypted unchecked. A note states: 'During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.' Under 'Tags - optional', there are two radio button options: 'Tag image and snapshots together' (selected) and 'Tag image and snapshots separately'. A note explains: 'A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.' At the bottom, it says 'No tags associated with the resource.'

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2.3.3: Create target group

The screenshot shows the AWS CloudShell interface with two browser windows open:

- Top Window (EC2 Instance Creation):** The URL is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateImage:instanceId=i-02525c87ecb5e4e54. The instance is named "DevServerAMI". The "Image description - optional" field contains "assignment 2 AMI". Under "Instance volumes", there is one EBS volume of size 8 GiB, type General Purpose SSD, IOPS 100, throughput 1000, delete on termination checked, and encrypted checked. A note says "During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes." Under "Tags - optional", the "Tag image and snapshots together" option is selected.
- Bottom Window (Target Group Creation):** The URL is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup:. The target group name is "TargetgroupA2". The protocol is set to "HTTP" and port is "80". The "IP address type" section shows "IPv4" selected, with a note that each instance has a default network interface (eth0) assigned the primary private IPv4 address. The "VPC" section lists "BNGuyenGiaBinhVPC-Subnet" with IP range 10.0.0.0/16. The "Protocol version" section shows "HTTP1" selected. The "Health checks" section is collapsed.

Target group name is: TargetgroupA2

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The screenshot shows a Windows desktop environment with the AWS CloudShell interface open. Two browser windows are visible:

- Top Browser Window:** The URL is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup`. This window is titled "Step 1" and "Create target group". It contains sections for "Health checks" (Protocol: HTTP, Path: `/photogallery_album.php`) and "Attributes" (Note: Certain default attributes will be applied). A "Next" button is at the bottom.
- Bottom Browser Window:** The URL is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTargetGroup`. This window is titled "Step 2" and "Register targets". It shows a table of "Available instances" with one entry: "i-02525c87ecb5e454" (Name: Dev Server, State: Running, Security groups: DevServerSG_A2, Zone: us-east-1b, Private IPv4 address: 10.0.2.196). Below the table, a section titled "Ports for the selected instances" shows port 80 selected. A "Review targets" section below lists "Targets (0)". The CloudShell toolbar and taskbar are visible at the bottom.

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2.3.4: Create load balancer

The screenshot shows the AWS CloudShell interface with two windows open, both titled "Create Application Load Balancer".

Top Window: Basic configuration

- Load balancer name:** ELBaz
- Scheme:** Internet-facing (selected)
- IP address type:** IPv4 (selected)

Bottom Window: Network mapping

- VPC:** BNguenA2VPC-vpc-0995ac1c9487dabc6
- Mappings:**
 - us-east-1a (use1-az2):** Subnet subnet-0eb4bdcc125b74f869 BNguenA2VPC-subnet-private1-us-east-1a
 - us-east-1b (use1-az4):** Subnet subnet-03c95b3875fb5957a BNguenA2VPC-subnet-private2-us-east-1b

Both windows include a note about selecting subnets without internet gateways, which will prevent receiving internet traffic.

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us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard:

Security groups [Info](#)
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can [create a new security group](#).

Security groups
Select up to 5 security groups

ELBSG02 VPC: vpc-0995ac76487dabcc

Listeners and routing [Info](#)
A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.

Listener HTTP:80

Protocol	Port	Default action	Info
HTTP	80	Forward to TargetgroupA2	Target type: Instance, IPv4

Create target group [Create target group](#)

Listener tags - optional
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add listener tag
You can add up to 50 more tags.

Add listener [Add listener](#)

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us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LoadBalancers:search=ELBa2

EC2 > Load balances

Load balancers (1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
ELBa2	ELBa2-284304114.us-east...	Provisioning...	vpc-0995ac76487dabcc	2 Availability Zones	application	November 4, 2023, 11:41 (UTC+07:00)

0 load balancers selected

Select a load balancer above.

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2.4: Auto Scaling

2.4.1: Create launch template

The screenshot shows the AWS CloudShell interface with two windows open, both titled "Create launch template".

Top Window: Create launch template

- Summary:**
 - Software Image (AMI): assignemtn2 AMI ami-0f577d51f69334f14
 - Virtual server type (instance type): t2.micro
 - Firewall (security group): DevServerSG_A2
 - Storage (volumes): 1 volume(s) - 8 GiB
- Launch template name and description:**
 - Launch template name - required: DevServerTemplate
 - Template version description: launch temp for dev server
 - Auto Scaling guidance info: Select this if you intend to use this template with EC2 Auto Scaling. A checkbox "Provide guidance to help me set up a template that I can use with EC2 Auto Scaling" is checked.
 - Template tags: None listed.
 - Source template: None listed.
- Launch template contents:** A section for specifying launch template details, currently empty.
- Create launch template** button.

Bottom Window: Application and OS Images (Amazon Machine Image) - required

- Summary:**
 - Software Image (AMI): assignemtn2 AMI ami-0f577d51f69334f14
 - Virtual server type (instance type): t2.micro
 - Firewall (security group): DevServerSG_A2
 - Storage (volumes): 1 volume(s) - 8 GiB
- Application and OS Images (Amazon Machine Image) - required** section:
 - Search bar: Search our full catalog including 1000s of application and OS images
 - Recent AMIs: None listed.
 - My AMIs: Selected tab. Shows a table for "DevServerAMI" with details: ami-0f577d51f69334f14, 2023-11-04T04:30:10.000Z, Virtualization: hvm, ENA enabled: true, Root device type: ebs.
 - Shared with me: None listed.
 - Browse more AMIs: Including AMIs from AWS, Marketplace and the Community.
- Instance type** section: Advanced tab selected.
- Create launch template** button.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS CloudShell interface with multiple tabs open. The active tab is titled "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTemplate:". The page displays the configuration for creating a new launch template. Key settings include:

- Instance type:** t2.micro (selected)
- Software Image (AMI):** assignmentmtn 2 AMI (ami-0f577d51f68334f14)
- Virtual server type (instance type):** t2.micro
- Firewall (security group):** DevServerSG_A2
- Storage (volumes):** 1 volume(s) - 8 GiB

A summary box provides details about the free tier for t2.micro instances. At the bottom right, there is a "Create launch template" button.

This screenshot shows the continuation of the EC2 launch template creation process. The "Network settings" section is expanded, showing:

- Subnet Info:** Don't include in launch template (selected)
- Firewall (security groups) Info:** Select existing security group (radio button selected)
- Security groups Info:** DevServerSG_A2

The "Storage (volumes)" section is also expanded, showing:

- EBS Volumes:** Volume 1 (AMI Root) (8 GiB, EBS, General purpose SSD (gp2))
- A note: "AMI Volumes are not included in the template unless modified"
- A message: "Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage"

At the bottom right, there is a "Create launch template" button.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS CloudShell interface with multiple tabs open. The active tab is titled "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTemplate". The main content area displays the "Advanced details" section of a launch template configuration. Key settings include:

- IAM instance profile:** LabInstanceProfile (arn:aws:iam::365309293917:instance-profile/LabInstanceProfile)
- Hostname type:** Don't include in launch template
- DNS Hostname:** Enable resource-based IPv4 (A record) DNS requests
- Instance auto-recovery:** Don't include in launch template
- Shutdown behavior:** Don't include in launch template
- Stop - Hibernate behavior:** Don't include in launch template
- Termination protection:** Don't include in launch template
- Stop protection:** Don't include in launch template
- Detailed CloudWatch monitoring:** Enable

The "Summary" section on the right provides a summary of the configuration, noting the use of the free tier for t2.micro instances. A "Create launch template" button is visible at the bottom right.

This screenshot shows the same AWS CloudShell interface and tab setup as the previous one. The "Advanced details" section now includes a "User data (optional)" field containing a base64-encoded shell script. The script installs MariaDB, starts the service, and creates a basic PHP info page. A note below the field states: "User data has already been base64 encoded". The "Summary" section and "Create launch template" button remain the same.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS CloudShell interface. The title bar indicates the URL is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTemplate. The main content area shows a success message: "Successfully created DevServerTemplate lt-0cb99ade9cfa1a7c0". Below this, there are sections for "Next Steps" and "Launch an instance". The "Launch an instance" section includes links for "Launch instance from this template", "Create an Auto Scaling group from your template", and "Create a Spot Fleet". A "View launch templates" button is located at the bottom right of the main content area. The bottom of the screen shows the Windows taskbar with various pinned icons.

2.4.2: Create auto scaling group

The screenshot shows the AWS CloudShell interface. The title bar indicates the URL is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchTemplateDetails:launchTemplateId=lt-0cb99ade9cfa1a7c0. The main content area displays the "DevServerTemplate (lt-0cb99ade9cfa1a7c0)" details. Under the "Actions" dropdown, the "Create Auto Scaling group" option is highlighted with a blue border. The "Launch template version details" section shows a single version (1) with the AMI ID "ami-0f577d51f69334f14". The bottom of the screen shows the Windows taskbar with various pinned icons.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS CloudShell interface at the bottom and the EC2 console at the top. The EC2 console displays the 'Create Auto Scaling Group' wizard, Step 4: Configure group size and scaling policies. The 'Name' field contains 'Dev server A2 auto scaling group'. The 'Launch template' dropdown is set to 'DevServerTemplate'. The 'Version' dropdown is set to 'Default (1)'. The 'Description' section shows 'launch temp for dev server'. The 'AMI ID' is 'ami-0f577d31f69334f14'. The 'Key pair name' is 'assignment1b'. The 'Launch template' section shows 'Launch template DevServerTemplate It-0cb99ade9cfa1a7c0'. The 'Instance type' is 't2.micro'. The 'Security groups' and 'Request Spot Instances' fields are empty. The 'Security group IDs' are 'sg-045f76b793c1f55da'. The status bar at the bottom right shows '11:52 AM 11/4/2023'.

The screenshot shows the AWS CloudShell interface at the bottom and the EC2 console at the top. The EC2 console displays the 'Create Auto Scaling Group' wizard, Step 5: Configure advanced options. The 'Choose instance launch options' step is selected. Under 'Instance type requirements', the 'Launch template' is 'DevServerTemplate', 'Version' is 'Default', and 'Description' is 'launch temp for dev server'. Under 'Network', the 'VPC' dropdown is set to 'vpc-0995aa54a67dabc5 (BjNgw4kZPC-904)' with '10.0.0.0/16'. Under 'Availability Zones and subnets', the 'Select Availability Zones and subnets' dropdown shows two entries: 'us-east-1a [subnet-0db4f0d0:125074f869 [BjNgw4kZPC-subnet-private1-us-east-1a] 10.0.0.0/24]' and 'us-east-1b [subnet-0395a8737898902 [BjNgw4kZPC-subnet-private2-us-east-1b] 10.0.0.0/24]'. The 'Next' button is highlighted.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS CloudShell interface with multiple tabs open. The active tab is titled "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup". The page displays the "Configure advanced options - optional" step of the "Create Auto Scaling group" wizard. The "Load balancing" section is visible, showing three options: "No load balancer" (selected), "Attach to an existing load balancer", and "Attach to a new load balancer". Below this, the "Attach to an existing load balancer" section shows a dropdown menu with "Choose from your load balancer target groups" selected. A dropdown menu also lists "TargetgroupA2 | HTTP Application Load Balancer ELBv2". The "Health checks" section is expanded, showing "EC2 health checks" with "Always enabled" selected. It also includes sections for "Additional health check types - optional" (with "Turn on Elastic Load Balancing health checks" recommended), "Health check grace period" (set to 300 seconds), and "Additional settings" (with "Monitoring" and "Default instance warmup" options). At the bottom, there are "Cancel", "Skip to review", "Previous", and "Next" buttons. The status bar at the bottom right shows "CloudShell Feedback" and the date/time "11/4/2023 11:54 AM".

Nguyen Gia Binh - 104219428

The screenshot shows the AWS Auto Scaling group creation wizard at Step 4: **Configure group size and scaling policies - optional**. The page is titled "Create Auto Scaling group". It includes sections for "Group size - optional" and "Scaling policies - optional". In the "Group size - optional" section, Desired capacity is set to 2, Minimum capacity is 2, and Maximum capacity is 3. In the "Scaling policies - optional" section, the "Target tracking scaling policy" is selected, and the "None" option is also present.

Group size - optional

Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum capacity limits. Your desired capacity must be within the limit range.

Desired capacity: 2

Minimum capacity: 2

Maximum capacity: 3

Scaling policies - optional

Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand.

Target tracking scaling policy
Choose a desired outcome and leave it to the scaling policy to add and remove capacity as needed to achieve that outcome.

None

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The screenshot shows the AWS Auto Scaling group creation wizard at Step 5: **Configure advanced options**. The page is titled "Create Auto Scaling group". It includes sections for "Configure group size and scaling policies" and "Add notifications". The "Configure advanced options" section is currently selected. A link to "Add tags" is also visible.

Configure group size and scaling policies

Add notifications

Add tags

Review

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The screenshot shows the AWS Auto Scaling group creation wizard at Step 6: **Add notifications**. The page is titled "Create Auto Scaling group". It includes sections for "Configure group size and scaling policies" and "Add tags". The "Add notifications" section is currently selected. A link to "Review" is also visible.

Configure group size and scaling policies

Add tags

Review

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The screenshot shows the AWS Auto Scaling group creation wizard at Step 7: **Review**. The page is titled "Create Auto Scaling group". It displays the configuration details entered in the previous steps. A "Create" button is visible at the bottom right.

Scaling policies - optional

Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand.

Target tracking scaling policy
Choose a desired outcome and leave it to the scaling policy to add and remove capacity as needed to achieve that outcome.

None

Scaling policy name: Target Tracking Policy

Metric type: Application Load Balancer request count per target

Target group: TargetgroupA2

Target value: 30

Instance warmup: 300 seconds

Disable scale in to create only a scale-out policy

Instance scale-in protection - optional

Create

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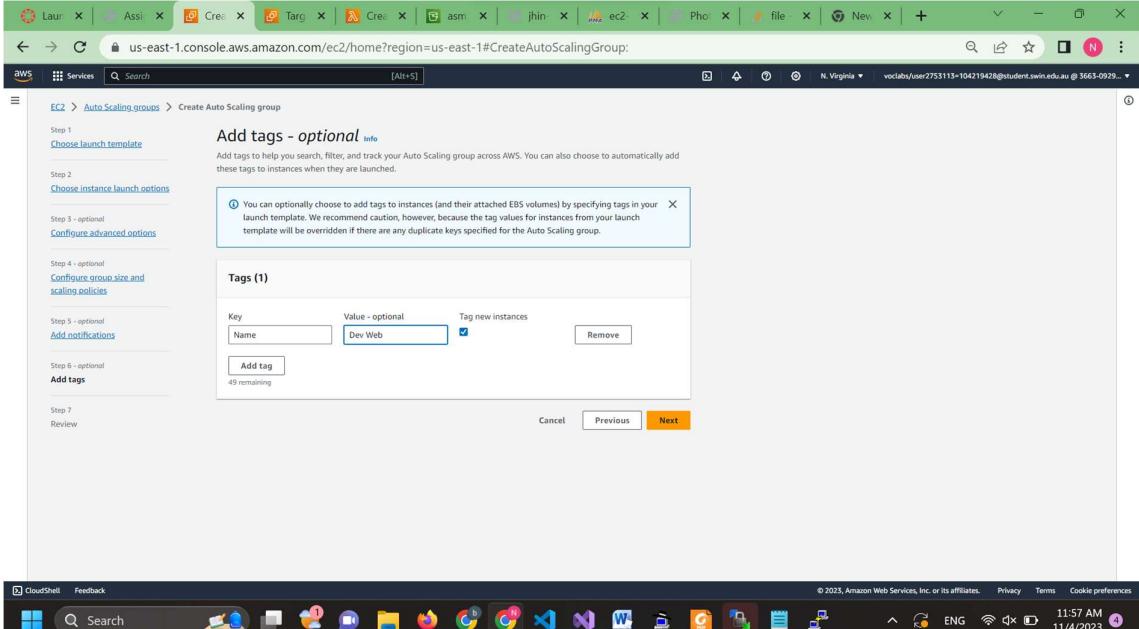
A screenshot of the Windows Snipping Tool application. The window title is "Snipping Tool". The content area shows a screenshot of the AWS Auto Scaling group creation wizard from the previous steps. A message at the bottom of the snipper says "Screenshot copied to clipboard and saved Select here to mark up and share the image".

Snipping Tool

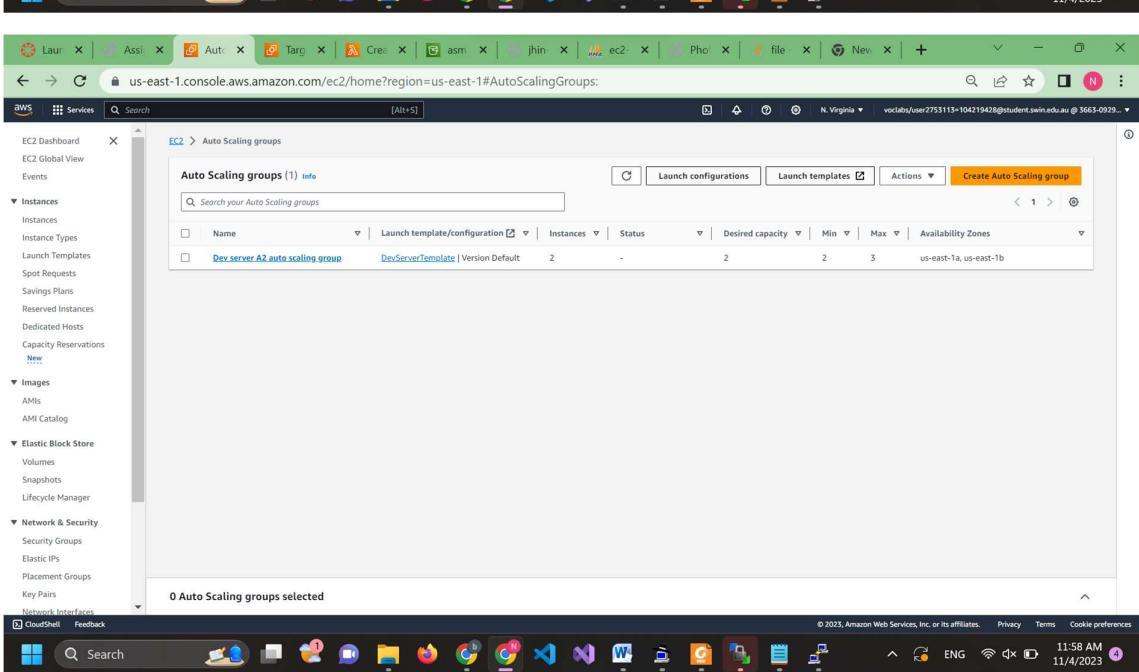
Screenshot copied to clipboard and saved Select here to mark up and share the image

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Nguyen Gia Binh - 104219428



The screenshot shows the AWS CloudShell interface with several tabs open, including Lambda, CloudWatch Metrics, CloudWatch Logs, Create, Target, Create, asm, jhin, ec2, Photo, file, New, and a blank tab. The main window displays the 'Create Auto Scaling group' wizard, Step 4: Add tags - optional. It shows a single tag named 'Dev Web' being added. The wizard has 6 steps, and the 'Next' button is highlighted.



The screenshot shows the 'Auto Scaling groups' page in the AWS EC2 service. It lists one Auto Scaling group: 'Dev server A2 auto scaling group'. The group is associated with the 'DevServerTemplate' launch configuration, has a desired capacity of 2, and is running in the 'us-east-1a, us-east-1b' availability zones. The sidebar on the left shows other EC2 management options like Instances, Images, and Network & Security.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS Management Console with the EC2 service selected. The main pane displays a table of EC2 instances. The table has columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, Public IPv4 DNS, Public IPv4 IP, and Elastic IP. Five instances are listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP	Elastic IP
Bastion/Web s...	i-0264c88efc395940f	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-52-202-66-40.com...	52.202.86.40	-
Dev Server	i-02525c87ecb5e454	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-52-1-196-227.com...	52.1.196.227	-
Dev Web	i-0f19ea0054c53ddf	Running	t2.micro	0 Initializing	No alarms	us-east-1b	-	-	-
TestInstance	i-0f67e3254fd6b2719	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	-	-	-
Dev Web	i-04eb5e1b231d32798	Running	t2.micro	0 Initializing	No alarms	us-east-1a	-	-	-

A modal window titled "Select an instance" is overlaid on the main page, listing the same five instances.

Modify both of the Dev Web instance IAM

To LabInstanceProfile

The screenshot shows the "Modify IAM role" configuration page for the instance i-04eb5e1b231d32798. The page title is "Modify IAM role" and the sub-path is "EC2 > Instances > i-04eb5e1b231d32798 > Modify IAM role".

The main form has the following fields:

- Instance ID:** i-04eb5e1b231d32798 (Dev Web)
- IAM role:** A dropdown menu currently set to "LabInstanceProfile". Other options include "Create new IAM role".
- Update IAM role:** A yellow "Update IAM role" button.

A "Cancel" link is also present. The interface includes a sidebar with EC2, Instances, and other navigation links. A footer bar at the bottom shows various icons and system information, including the date and time (11/4/2023, 12:02 PM).

Nguyen Gia Binh - 104219428

The screenshot shows the AWS Management Console with the URL us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroupDetailsId=Dev%2520server%2520A2%2520auto%2520scaling%2520group;view=instanceManagement. The main content is the 'Dev server A2 auto scaling group' details. It lists two instances:

Instance ID	Lifecycle	Instance type	Weighted capacity	Launch template...	Availability Zone	Health status	Protected from
i-0132002b1982a2cb7	InService	t2.micro	-	DevServerTemplate	us-east-1a	Healthy	
i-0abfaec77c2701549	InService	t2.micro	-	DevServerTemplate	us-east-1b	Healthy	

Below the instances, there is a 'Lifecycle hooks (0)' section with a 'Create lifecycle hook' button. A note states: "Lifecycle hooks help you perform custom actions on instances as they launch and before they terminate." There is also a 'Warm pool' section with a 'Create warm pool' button.

2.5: DevServer EC2 Instance

The screenshot shows the AWS Management Console with the URL us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances. The main content is the 'Launch an instance' wizard, step 1: Set options. It shows the following configuration:

- Name and tags:** Name is set to 'Dev Server'.
- Application and OS Images (Amazon Machine Image):** Selected AMI is 'Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type' (ami-0ef8a3424627bc1c1e4).
- Virtual server type (instance type):** Selected as 't2.micro'.
- Firewall (security group):** Selected security group is 'DevServerSG_A2'.
- Storage (volumes):** 1 volume(s) - 8 GiB.

A note on the right side states: "Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in step 2) usage in VPC and up to 5 unavailability zones on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of snapshots, and 100 GB of bandwidth to the internet."

At the bottom, there are 'Cancel' and 'Launch instance' buttons, with 'Review commands' link.

Nguyen Gia Binh - 104219428

The screenshot shows the AWS Lambda console interface. At the top, there are tabs for 'Assignment_1a', 'Assignment2_UQ_5.0.pdf', 'Launch an instance | EC2 | us-east...', and 'Launch AWS Academy Learner...'. The main area is titled 'AWS Services' with a search bar. The 'Lambda' service is selected. A summary box on the right says 'Number of instances info: 1'. Below it, 'Software Image (AMI)' is set to 'Amazon Linux 2 Kernel 5.10 AMI 2.0.20231101.0 x86_64 HVM gp2'. The 'Virtual server type (instance type)' is 't2.micro'. Under 'Firewall (security group)', it shows 'DevServerSG_A2'. Under 'Storage (volume(s))', it shows '1 volume(s) - 8 GB'. A note about the 'Free tier' is displayed: 'In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of snapshots, and 100 GiB of bandwidth to the internet.' At the bottom, there are 'Cancel', 'Launch instance' (which is orange), and 'Review commands' buttons.

Key pair name - required: assignment1b

Network settings:

- VPC - required: vpc-0995ac76487dabcc6 (B\NguyenA2VPC-vpc)
- Subnet info: subnet-05e1f8e54d09d8e88 ENguyenA2VPC subnet-public2-us-east-1b
- Auto-assign public IP: Disable
- Firewall (security groups): Create security group or Select existing security group (DevServerSG_A2)
- Common security groups info: DevServerSG_A2 sg-045f76793c1f55da
- Advanced network configuration

Configure storage:

- 1 volume(s) - 8 GiB

Re-use the script from assignment 1

Nguyen Gia Binh - 104219428

The screenshot shows the AWS CloudShell interface. A terminal window is open with the following command history:

```
#!/bin/bash
yum update -y
amazon-linux-extras install -y lamp-mariadb10.2 php7.2
service httpd start
yum install -y httpd mariadb-server php-mysqlnd php-mbstring
sed -i 's/^\(listen\s+80\)\s*$/\1 port=443/g' /etc/httpd/conf.d/welcome.conf
sed -i 's/^\(Listen\s+80\)\s*$/\1 port=80/g' /etc/httpd/conf.d/welcome.conf
chmod 2775 /var/www
find /var/www -type d -exec sudo chmod 2775 {} \;
find /var/www -type f -exec sudo chmod 664 {} \;
echo "<?php echo '<h2>Welcome to COS580001! Installed PHP version: ' . phver();?>" > /var/www/html/phpinfo.php
```

A tooltip for the free tier is visible, stating: "Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet."

Next Steps

- Create billing and free tier usage alerts
- Connect to your instance
- Connect an RDS database
- Create EBS snapshot policy
- Manage detailed monitoring
- Create Load Balancer
- Create AWS budget
- Manage CloudWatch alarms

Success
Successfully initiated launch of instance (i-02525c87eb5e4e54)

View all instances

Nguyen Gia Binh - 104219428

The screenshot shows the AWS Management Console with the EC2 service selected. The left sidebar has sections for EC2 Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, AMI Catalog, Elastic Block Store, Volumes, Snapshots, Lifecycle Manager, Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces, and Load Balancing. The main content area displays a table of EC2 instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP	Elastic IP
Bastion/Web S...	i-0264c88fc3959f0f	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-52-202-86-40.com...	52.202.86.40	-
Dev Server	i-02525c87ecb5e4e54	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	-	-	-
Testinstance	i-0367e3234fd6b2719	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	-	-	-

A modal window titled "Select an instance" is overlaid on the table, prompting the user to choose an instance to associate with an Elastic IP address.

2.5.2: Elastic IP

The screenshot shows the AWS Management Console with the EC2 service selected. The left sidebar shows the EC2 dashboard. The main content area is titled "Allocate Elastic IP address".

Step 1: Select Network Border Group

Network Border Group: us-east-1

Step 2: Select Public IPv4 address pool

Public IPv4 address pool: Amazon's pool of IPv4 addresses

Step 3: Add tags

Tags - optional: No tags associated with the resource.

Step 4: Review and Allocate

Review: Create accelerator []

Allocate []

Cancel

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The screenshot shows the AWS Elastic IP addresses page. A single Public IPv4 address, 52.1.196.227, is listed. The address is associated with an instance (i-02525c87ecb5e4e54) and has a Public IP type. The Actions menu is open, showing options like View details, Release Elastic IP address, Associate Elastic IP address, and Disassociate Elastic IP address.

Elastic IP addresses (1/1)

Name	Allocated IPv4 add...	Type	Allocation ID	Reverse DNS record	Actions
52.1.196.227	52.1.196.227	Public IP	eipalloc-0e0f3f74a8348fbe7	-	View details Release Elastic IP address Associate Elastic IP address Disassociate Elastic IP address Update reverse DNS Enable transfers Disable transfers Accept transfers

52.1.196.227

Summary

Allocated IPv4 address	Type	Allocation ID	Reverse DNS record
52.1.196.227	Public IP	eipalloc-0e0f3f74a8348fbe7	-

Associate Elastic IP address

Choose the instance or network interface to associate to this Elastic IP address (52.1.196.227)

Resource type

Instance
 Network interface

Instance

i-02525c87ecb5e4e54

Private IP address

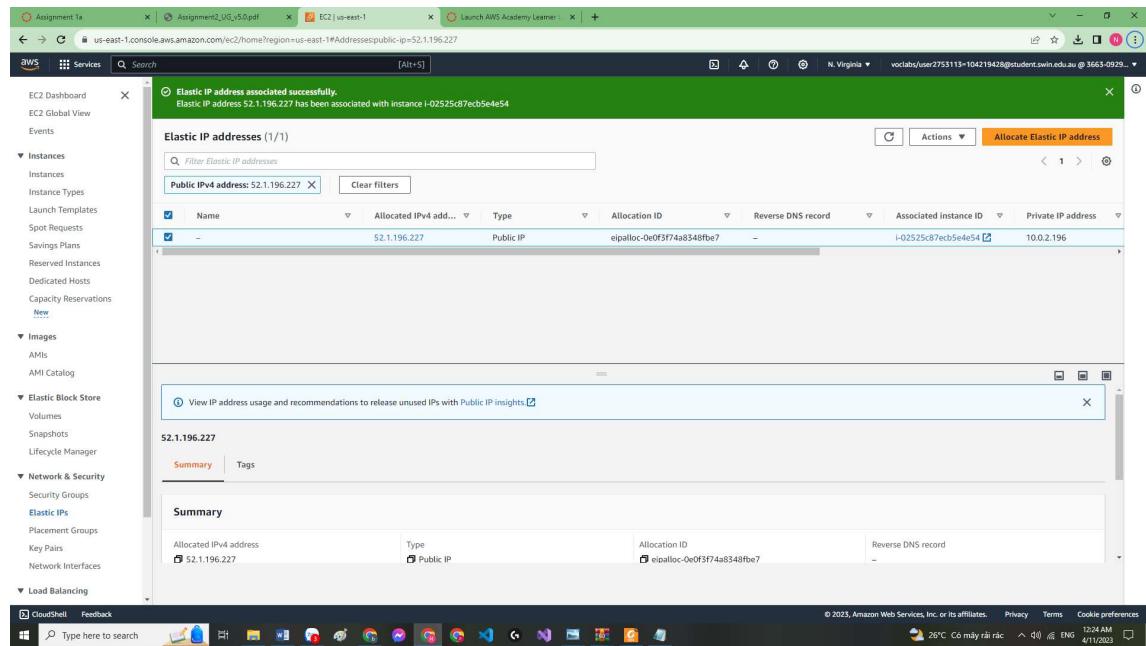
The private IP address with which to associate the Elastic IP address.

Resassociation

Specify whether the Elastic IP address can be reassigned with a different resource if it already associated with a resource.

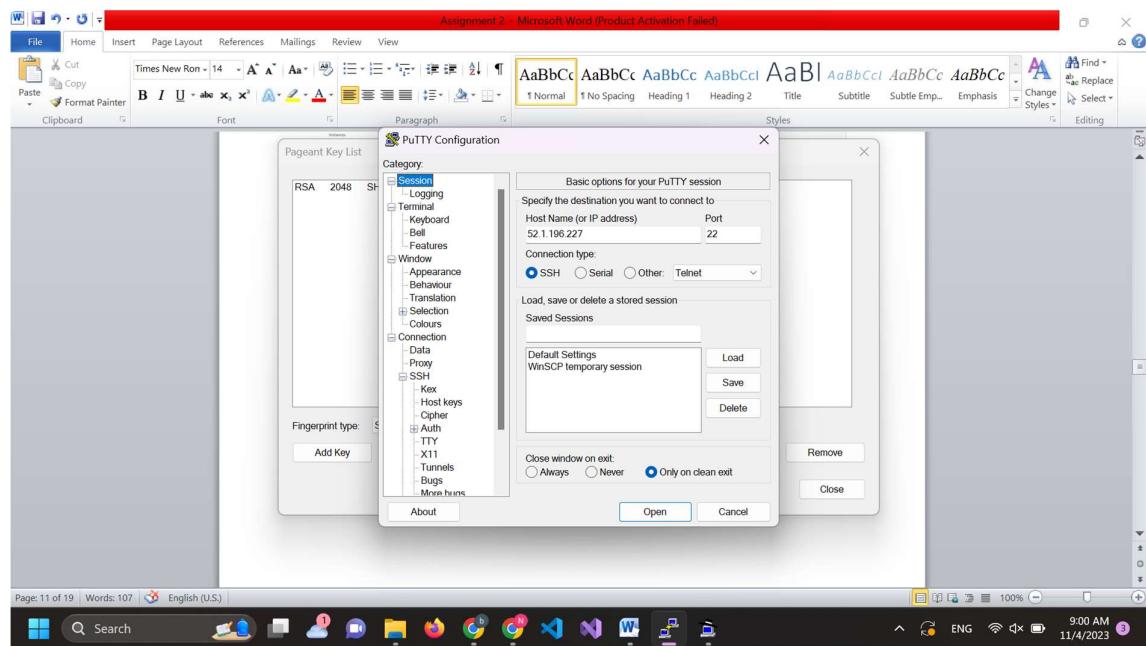
Allow this Elastic IP address to be reassigned

Cancel **Associate**



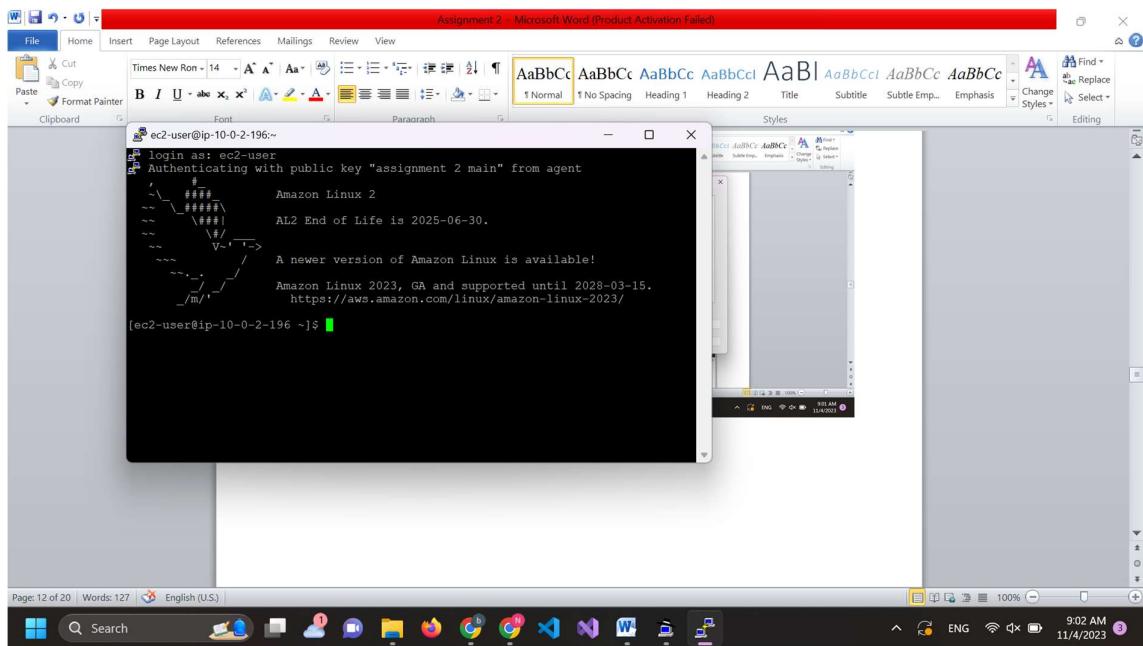
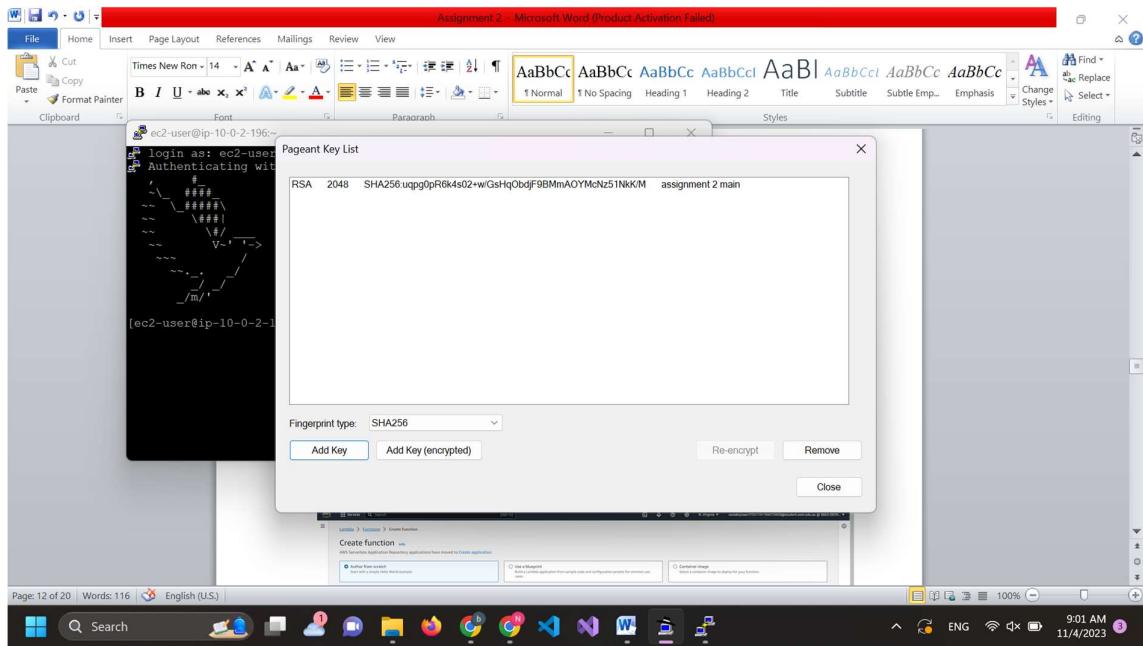
2.5.3: Install PHPmyadmin into Dev Server

Go into Putty and use Dev server public ipv4



Put the key from assignment 1 (I rename it) into pageant

Nguyen Gia Binh - 104219428



Now start installing phpmyadmin using the command

Nguyen Gia Binh - 104219428

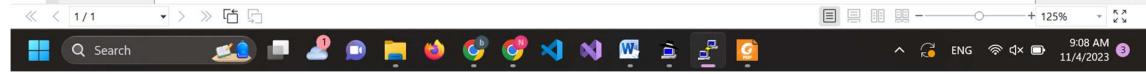
```
2023-11-04 02:06:46 ERROR 404: Not Found.  
--2023-11-04 02:06:46-- http://4.8.2-english.zip/  
Resolving 4.8.2-english.zip (4.8.2-english.zip)... failed: Name or service not known.  
wget: unable to resolve host address '4.8.2-english.zip'  
[ec2-user@ip-10-0-2-196 ~]$ wget https://files.phpmyadmin.net/phpMyAdmin/4.8.2/phpMyAdmin-4.8.2-english.zip  
--2023-11-04 02:07:55-- https://files.phpmyadmin.net/phpMyAdmin/4.8.2/phpMyAdmin-4.8.2-english.zip  
Resolving files.phpmyadmin.net (files.phpmyadmin.net)... 89.187.177.17, 156.146.36.24, 2a02:6ea0:400:1:12...  
Connecting to files.phpmyadmin.net (files.phpmyadmin.net)|89.187.177.17|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 6380983 (6.1M) [application/zip]  
Saving to: 'phpMyAdmin-4.8.2-english.zip'  
  
100%[=====] 6,380,983 28.0MB/s in 0.2s  
2023-11-04 02:07:55 (28.8 MB/s) - 'phpMyAdmin-4.8.2-english.zip' saved [6380983/6380983]  
[ec2-user@ip-10-0-2-196 ~]$ wget https://files.phpmyadmin.net/phpMyAdmin/4.8.2/phpMyAdmin-4.8.2-english.zip  
- Unzip the downloaded zip file:  
  unzip phpMyAdmin-4.8.2-english.zip  
- Change the directory name to phpmyadmin:  
  mv phpMyAdmin-4.8.2-english phpmyadmin
```

2. Reconfigure phpMyAdmin:

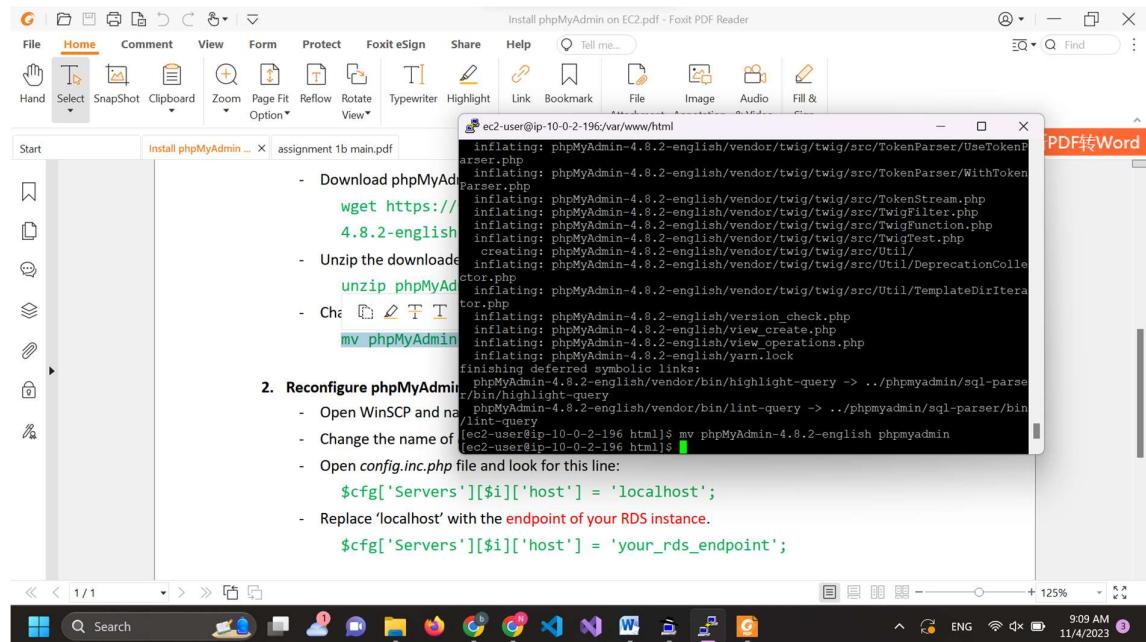


```
Install phpMyAdmin on EC2.pdf - Foxit PDF Reader  
ec2-user@ip-10-0-2-196:~$ cd /var/www/html  
ec2-user@ip-10-0-2-196:~/html$ wget https://files.phpmyadmin.net/phpMyAdmin/4.8.2/phpMyAdmin-4.8.2-english.zip  
--2023-11-04 02:07:55-- https://files.phpmyadmin.net/phpMyAdmin/4.8.2/phpMyAdmin-4.8.2-english.zip  
Resolving files.phpmyadmin.net (files.phpmyadmin.net)... 89.187.177.17, 156.146.36.24, 2a02:6ea0:400:1:12...  
Connecting to files.phpmyadmin.net (files.phpmyadmin.net)|89.187.177.17|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 6380983 (6.1M) [application/zip]  
Saving to: 'phpMyAdmin-4.8.2-english.zip'  
  
100%[=====] 6,380,983 28.0MB/s in 0.2s  
2023-11-04 02:07:55 (28.8 MB/s) - 'phpMyAdmin-4.8.2-english.zip' saved [6380983/6380983]  
[ec2-user@ip-10-0-2-196 ~]$ wget https://files.phpmyadmin.net/phpMyAdmin/4.8.2/phpMyAdmin-4.8.2-english.zip  
- Unzip the downloaded zip file:  
  unzip phpMyAdmin-4.8.2-english.zip  
- Change the directory name to phpmyadmin:  
  mv phpMyAdmin-4.8.2-english phpmyadmin
```

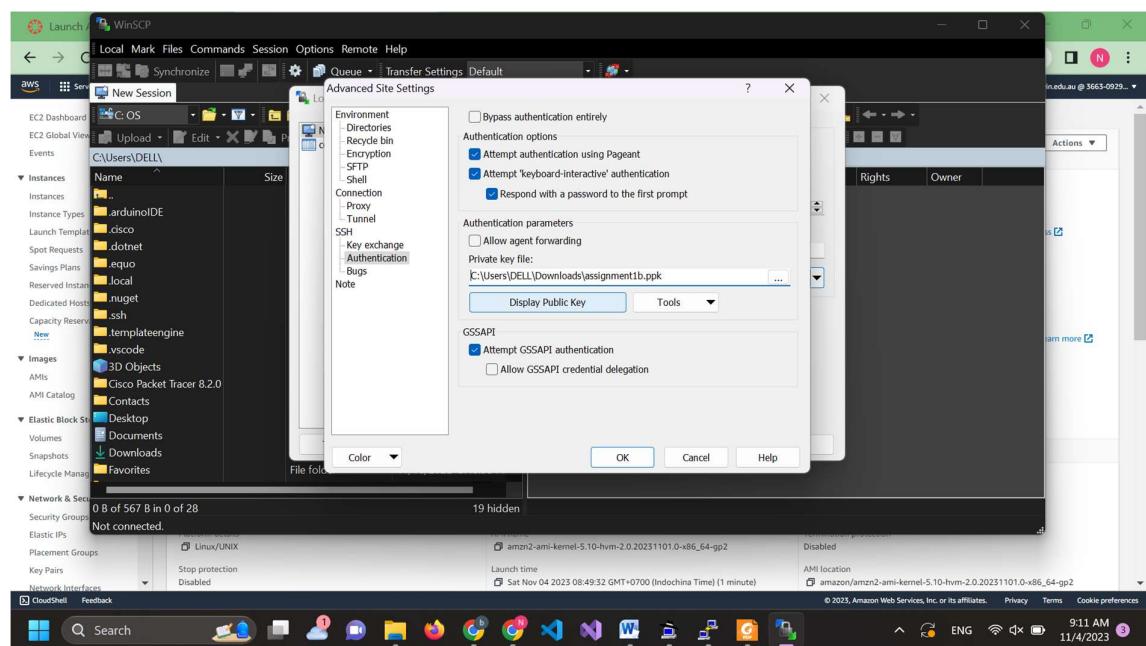
2. Reconfigure phpMyAdmin:



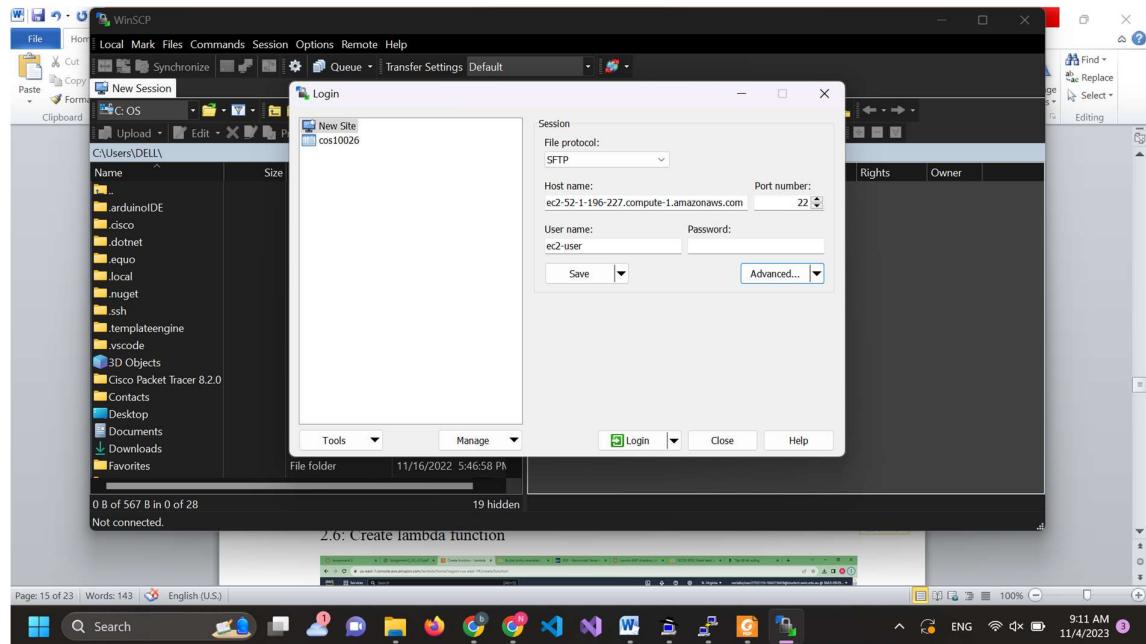
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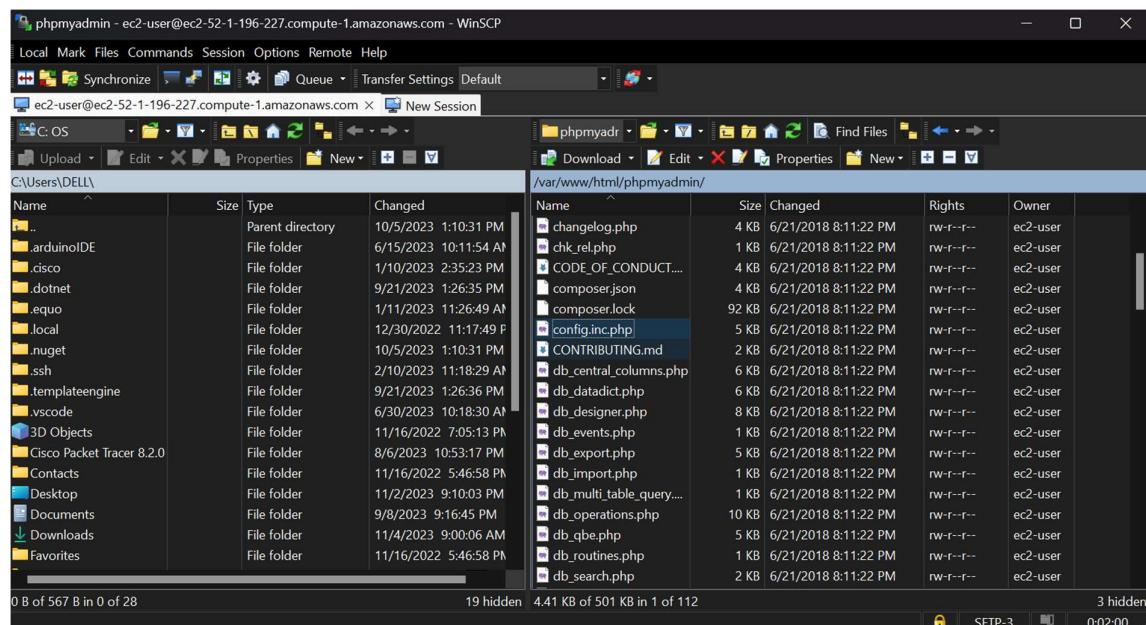
Open Win SCP using Devserver public DNS as Hostname



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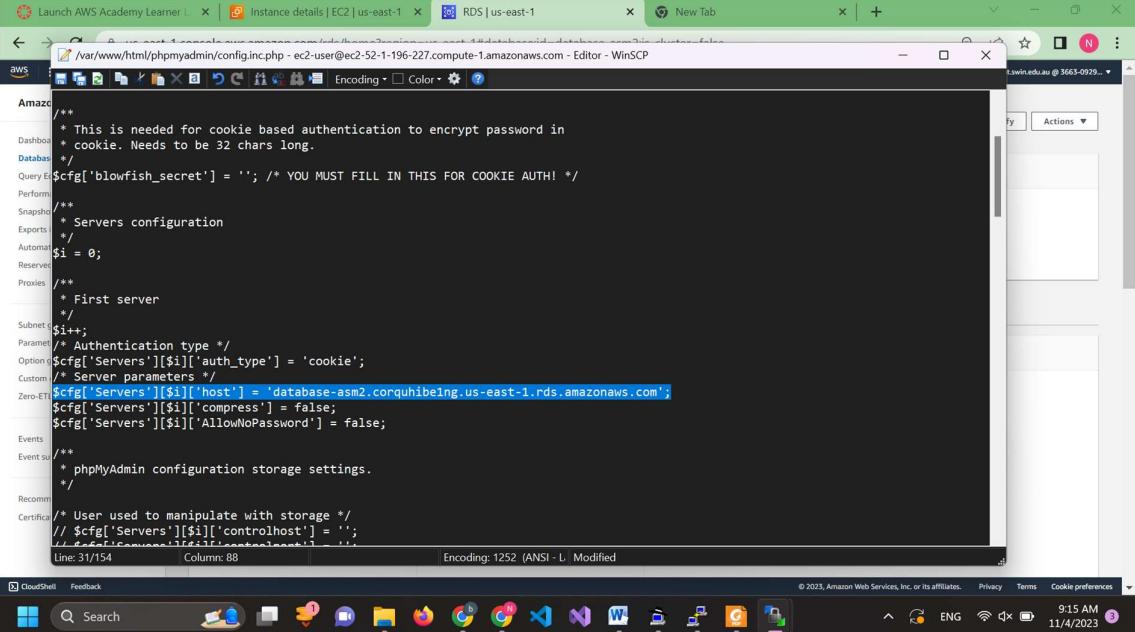


Reconfigure phpmyadmin



Change "localhost" to my RDS endpoint

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The screenshot shows a browser window with several tabs open. The active tab displays a configuration file for phpMyAdmin, specifically config.inc.php. The code includes comments explaining the purpose of various variables like \$cfg['blowfish_secret'] and \$cfg['Servers'][\$i]['auth_type']. It also defines a 'First server' with specific parameters such as host, compress, and AllowNoPassword. The file is saved in /var/www/html/phpmyadmin/config.inc.php.

```
/*
 * This is needed for cookie based authentication to encrypt password in
 * cookie. Needs to be 32 chars long.
 */
Query $cfg['blowfish_secret'] = ''; /* YOU MUST FILL IN THIS FOR COOKIE AUTH! */

$cfg['Servers'][$i] = 0;

$cfg['Servers'][$i][ 'auth_type'] = 'cookie';

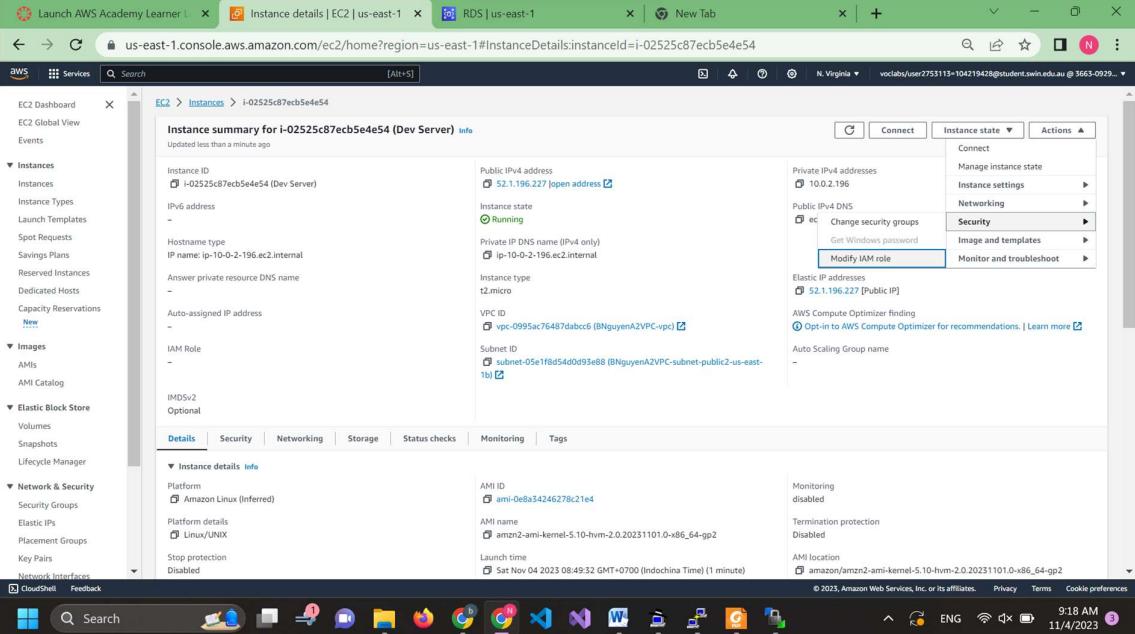
$cfg['Servers'][$i][ 'host'] = 'database-asm2.corquhibeing.us-east-1.rds.amazonaws.com';
$cfg['Servers'][$i][ 'compress'] = false;
$cfg['Servers'][$i][ 'AllowNoPassword'] = false;

/* phpMyAdmin configuration storage settings. */

/* User used to manipulate with storage */
// $cfg['Servers'][$i][ 'controlhost'] = '';
// $cfg['Servers'][$i][ 'controlport'] = ...;

Line: 31/154 Column: 88 Encoding: 1252 (ANSI - L - Modified)
```

Modify IAM role



The screenshot shows the AWS EC2 Instances page for an instance named i-02525c87ecb5e4e54. In the 'Actions' dropdown menu, the 'Modify IAM role' option is highlighted. The instance details panel shows basic information like Public IPv4 address (52.1.196.227), Instance state (Running), and Instance type (t2.micro). The 'Details' tab is selected, providing more detailed information about the instance's configuration.

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The screenshot shows the AWS CloudShell interface with two tabs open:

- Modify IAM role | EC2 | us-east-1**: This tab displays the "Modify IAM role" configuration page for instance `i-02525c87ecb5e4e54`. It shows the selected IAM role `I-02525c87ecb5e4e54 (Dev Server)` and a dropdown menu for selecting a Lambda instance profile. The "Update IAM role" button is highlighted.
- Instances | EC2 | us-east-1**: This tab shows the successful attachment of the Lambda instance profile to the specified instance. A message at the top of the table says "Successfully attached LambdaInstanceProfile to instance i-02525c87ecb5e4e54". The table lists three instances: `Bastion/Web S...`, `Dev Server`, and `Testinstance`, all running in the `t2.micro` instance type and `us-east-1b` availability zone.

The taskbar at the bottom of the screen includes icons for various Windows applications like File Explorer, Edge, and File Explorer.

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2.6: Create lambda function

The screenshot shows the 'Create function' wizard in the AWS Lambda console. It has three main options:

- Author from scratch: Start with a simple Hello World example.
- Use a blueprint: Build a Lambda application from sample code and configuration presets for common use cases.
- Container image: Select a container image to deploy for your function.

Below these options is a 'Basic information' section with fields for:

- Function name: CreateThumbnail
- Runtime: Python 2.7
- Architecture: x86_64

Under 'Permissions info', it says: "By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers." There is a 'Change default execution role' link.

The 'Execution role' section contains four options:

- Create a new role with basic Lambda permissions
- Use an existing role
- Create a new role from AWS policy templates

At the bottom right of the wizard, there are 'Throttle', 'Copy ARN', and 'Actions' buttons.

The screenshot shows the 'CreateThumbnail' function overview page. It includes:

- A summary card with the function name 'CreateThumbnail' and a 'Layers' section (0).
- A 'Description' field.
- A 'Last modified' timestamp: 3 seconds ago.
- A 'Function ARN': arn:aws:lambda:us-east-1:1366309293917:function:CreateThumbnail.
- A 'Function URL' link.
- Buttons for 'Throttle', 'Copy ARN', and 'Actions'.

Below the summary card, there are tabs for 'Code', 'Test', 'Monitor', 'Configuration', 'Aliases', and 'Versions'. The 'Code' tab is selected, showing the 'Code source' editor.

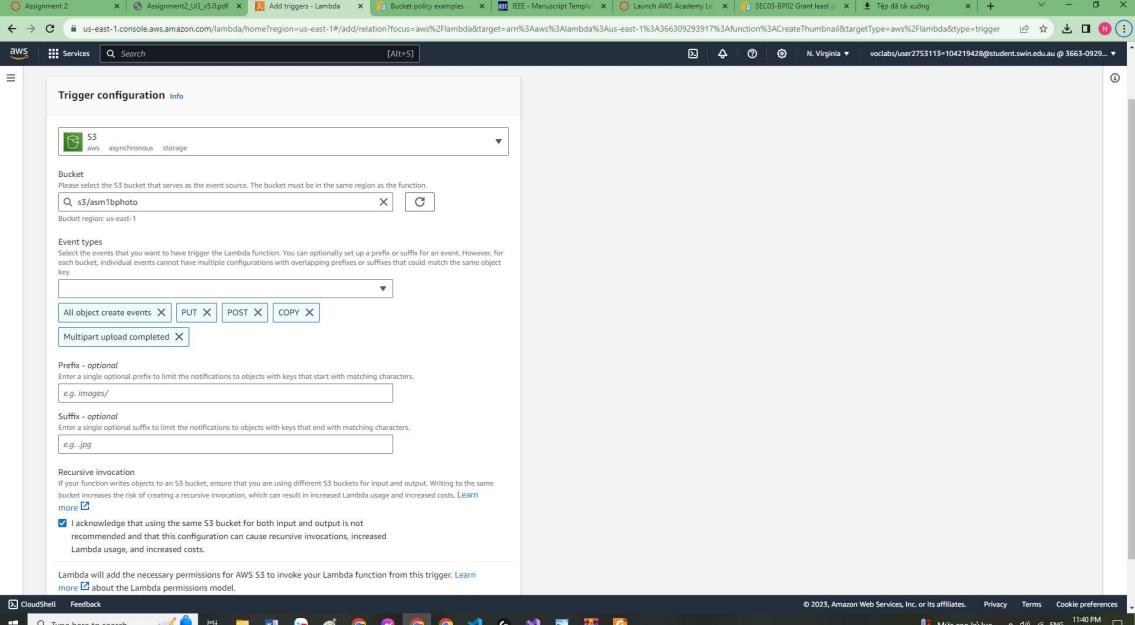
The 'Code source' editor displays the following Python code:

```
1 import json
2
3 def lambda_handler(event, context):
4     # TODO implement
5     return {
6         'statusCode': 200,
7         'body': json.dumps('Hello From Lambda!')
8     }
```

At the top of the editor, there are tabs for 'File', 'Edit', 'Find', 'View', 'Go', 'Tools', 'Window', and 'Test'. The 'Test' tab is currently selected. There is also a 'Deploy' button and a 'Upload from' dropdown.

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2.6.2:Configure the trigger:



The screenshot shows the 'Trigger configuration' page for a Lambda function. The trigger type is set to 'S3' and 'aws asynchronous'. A bucket named 's3/asm1bphoto' is selected from the dropdown. Under 'Event types', 'All object create events' is chosen. There are fields for 'Prefix' (e.g., 'images/') and 'Suffix' (e.g., '.jpg'). A note about recursive invocation is present, with a checkbox checked indicating acknowledgement of potential increased costs. A note also states that Lambda will add necessary permissions for AWS S3 to invoke the function.

Trigger configuration

S3 aws asynchronous storage

Bucket
Please select the S3 bucket that serves as the event source. The bucket must be in the same region as the function.
s3/asm1bphoto

Event types
Select the events that you want to have trigger the Lambda function. You can optionally set up a prefix or suffix for an event. However, for each bucket, individual events cannot have multiple configurations with overlapping prefixes or suffixes that could match the same object key.

All object create events PUT POST COPY Multipart upload completed

Prefix - optional
Enter a single optional prefix to limit the notifications to objects with keys that start with matching characters.
e.g. images/

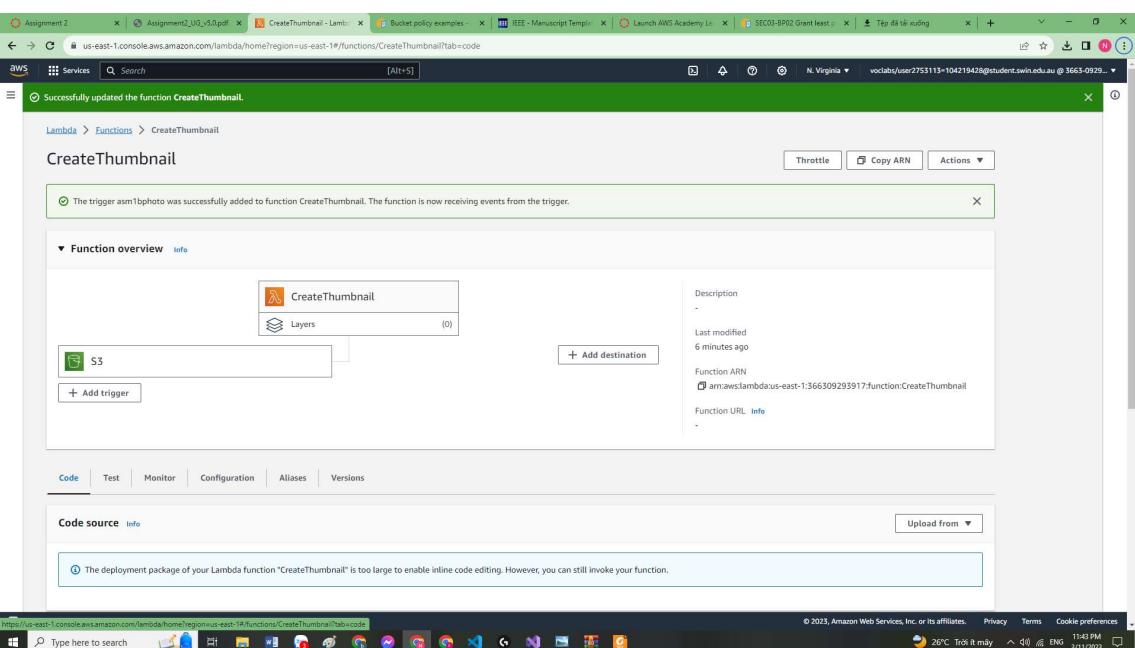
Suffix - optional
Enter a single optional suffix to limit the notifications to objects with keys that end with matching characters.
e.g. .jpg

Recursive invocation
If your function writes objects to an S3 bucket, ensure that you are using different S3 buckets for input and output. Writing to the same bucket increases the risk of creating a recursive invocation, which can result in increased Lambda usage and increased costs. Learn more ↗

I acknowledge that using the same S3 bucket for both input and output is not recommended and that this configuration can cause recursive invocations, increased Lambda usage, and increased costs.

Lambda will add the necessary permissions for AWS S3 to invoke your Lambda function from this trigger. Learn more ↗ about the Lambda permissions model.

CloudShell Feedback Type here to search © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences Mức cao kỹ lục ENG 11:40 PM 3/11/2023



The screenshot shows the Lambda function details page for 'CreateThumbnail'. A green banner at the top indicates 'Successfully updated the function CreateThumbnail.' The 'Function overview' section shows the function name 'CreateThumbnail', an S3 icon, and a 'Layers' section with '(0)'. The 'Description' field is empty. The 'Last modified' field shows '6 minutes ago'. The 'Function ARN' is listed as 'arn:aws:lambda:us-east-1:366309293917:function>CreateThumbnail'. The 'Function URL' link is shown. Below this, tabs for 'Code', 'Test', 'Monitor', 'Configuration', 'Aliases', and 'Versions' are visible. The 'Code source' tab is selected, showing a note that the deployment package is too large for inline editing. The browser address bar shows the URL 'https://us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/CreateThumbnail?tab=code'.

Successfully updated the function CreateThumbnail.

CreateThumbnail

The trigger s3/asm1bphoto was successfully added to function CreateThumbnail. The function is now receiving events from the trigger.

Function overview

CreateThumbnail

S3

Description

Last modified 6 minutes ago

Function ARN arn:aws:lambda:us-east-1:366309293917:function>CreateThumbnail

Code source

The deployment package of your Lambda function "CreateThumbnail" is too large to enable inline code editing. However, you can still invoke your function.

https://us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/CreateThumbnail?tab=code

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2.6.3: Upload a deployment package that I download from Canvas

The screenshot shows the AWS Lambda console interface. A modal window titled "Upload a .zip file" is open, prompting the user to upload a new zip file to overwrite existing code. The file "lambda-deployment-package.zip" (3.37 MB) is selected for upload. Below the modal, the Lambda function details are visible, including the successful update message: "Successfully updated the function CreateThumbnail." The function properties show a package size of 3.2 MB, SHA256 hash, and last modified date of November 3, 2023. The runtime settings show Python 3.7, Handler lambda_function.lambda_handler, and Architecture x86_64.

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2.7: RDS database

2.7.1: Create the database subnet group

The screenshot shows the 'Create DB subnet group' wizard in the AWS RDS console. The first step, 'Subnet group details', is completed with the name 'DBsubnetgroup_A2' and a VPC identifier 'BNguyenA2VPC-vpc (vpc-0995ac76487dabcc6)'. The second step, 'Add subnets', shows two selected subnets from the 'us-east-1a' and 'us-east-1b' availability zones: 'subnet-03c95b5875f85957a (10.0.4.0/24)' and 'subnet-0eb4bdc125b74f669 (10.0.3.0/24)'. A note indicates that for Multi-AZ DB clusters, three subnets must be selected in three different Availability Zones. The final step shows the 'Subnets selected (2)' table:

Availability zone	Subnet ID	CIDR block
us-east-1b	subnet-03c95b5875f85957a	10.0.4.0/24
us-east-1a	subnet-0eb4bdc125b74f669	10.0.3.0/24

Subnet group details

Name: DBsubnetgroup_A2
Must contain from 1 to 255 characters. Alphanumeric characters, spaces, hyphens, underscores, and periods are allowed.

Description: db subnet group for asm2

VPC: BNguyenA2VPC-vpc (vpc-0995ac76487dabcc6)

Add subnets

Availability Zones: Choose the Availability Zones that include the subnets you want to add.
Choose an availability zone: us-east-1a, us-east-1b

Subnets: Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones.
Select subnets: subnet-03c95b5875f85957a (10.0.4.0/24), subnet-0eb4bdc125b74f669 (10.0.3.0/24)

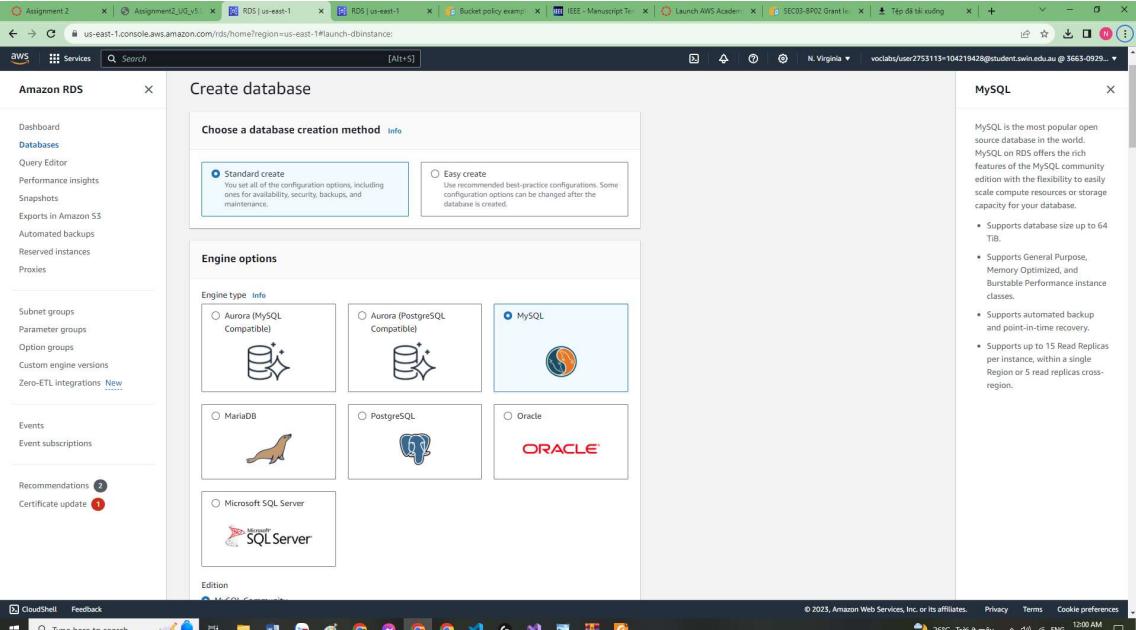
For Multi-AZ DB clusters, you must select 3 subnets in 3 different Availability Zones.

Subnets selected (2)

Availability zone	Subnet ID	CIDR block
us-east-1b	subnet-03c95b5875f85957a	10.0.4.0/24
us-east-1a	subnet-0eb4bdc125b74f669	10.0.3.0/24

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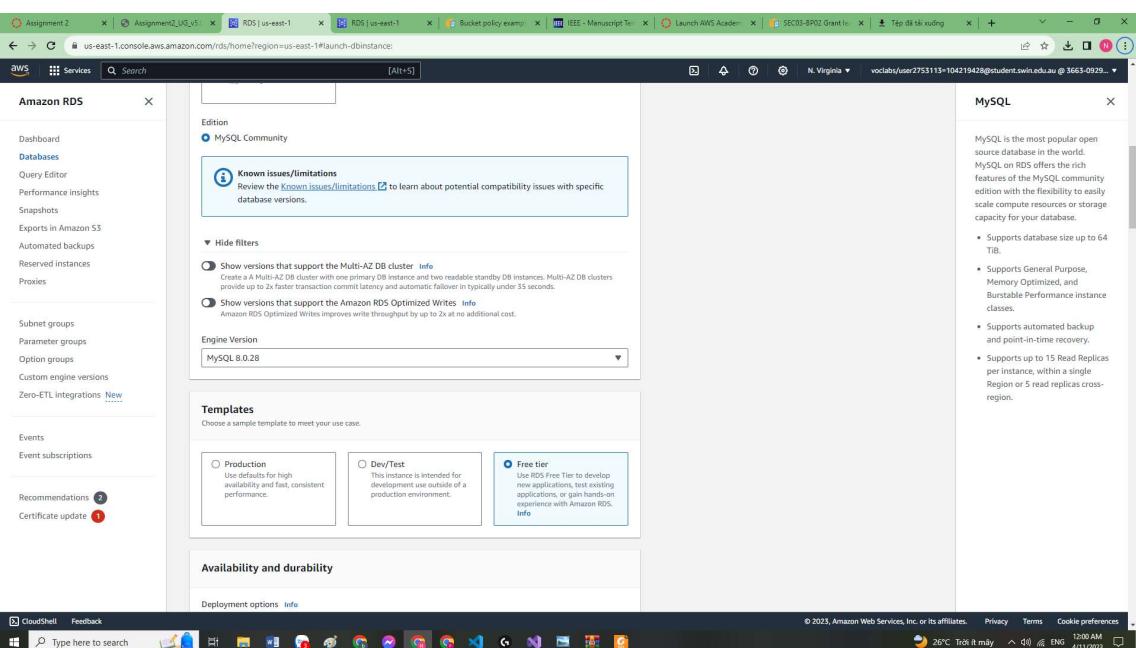
2.7.2: Config the database



The screenshot shows the 'Create database' configuration page for Amazon RDS. On the left, there's a sidebar with various RDS management options like Dashboard, Databases, Query Editor, and Engine options. The main area is titled 'Create database' and 'Choose a database creation method'. It offers two options: 'Standard create' (selected) and 'Easy create'. Below this is the 'Engine options' section, which lists several database engines: Aurora (MySQL Compatible), MySQL, MariaDB, PostgreSQL, Oracle, and Microsoft SQL Server. The MySQL engine is selected. To the right of the main configuration area is a 'MySQL' callout box with a bulleted list of features.

MySQL

- MySQL is the most popular open source database in the world.
- MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.



The screenshot shows the 'Edition' configuration page for MySQL Community. It includes sections for 'Known issues/limitations', 'Show versions that support the Multi-AZ DB cluster', 'Show versions that support the Amazon RDS Optimized Writes', 'Engine Version' (set to MySQL 8.0.28), 'Templates' (Production, Dev/Test, Free tier selected), and 'Availability and durability'. A 'MySQL' callout box on the right details the MySQL Community edition's features.

MySQL

- MySQL is the most popular open source database in the world.
- MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.
- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

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The screenshot shows the AWS RDS 'Settings' configuration page. In the 'DB instance identifier' field, 'Database-ASMySQL' is entered. Under 'Master username', 'admin' is specified. A note indicates that using master user credentials in Secrets Manager is not supported. The 'Master password' field contains a masked password. The 'Instance configuration' section shows the selected engine as MySQL and the instance class as db.t3.micro. The right panel displays information about MySQL, including its popularity and various features like support for up to 15 Read Replicas.

Password: lickmya707

The screenshot shows the AWS RDS 'Instance configuration' page. Under 'DB instance class', 'Burstable classes (includes t classes)' is selected. The 'Allocated storage' is set to 20 GiB. A note states that after modifying storage, the DB instance will be in storage optimization mode. The right panel provides details about the MySQL engine, including its performance and compatibility with different instance classes.

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The screenshot shows the AWS RDS MySQL setup process across three main sections: Connectivity, Public access, and Database authentication.

Connectivity: This section allows setting up connections to an EC2 compute resource or using IPv4 or Dual-stack mode. It also includes a VPC dropdown for associating the DB instance with a specific VPC.

Public access: This section determines if the database has a public IP address. Options include "Yes" (allowing public access) and "No" (not assigning a public IP). It also includes a VPC security group (firewall) section where users can choose existing groups or create new ones, and an availability zone section.

Database authentication: This section covers RDS Proxy settings, certificate authority (optional), and additional configuration options.

MySQL Summary: A summary table on the right provides key details about MySQL support, including database size up to 64 TiB, General Purpose, Memory Optimized, and Burstable Performance instance classes, automated backup, point-in-time recovery, and up to 15 Read Replicas per instance.

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The screenshot shows the AWS RDS console interface. On the left, a sidebar navigation menu includes options like Dashboard, Databases, Query Editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL Integrations, Events, Event subscriptions, Recommendations, and Certificate update.

The main content area displays a success message: "Successfully created DBSubnetgroup A2. View subnet group". It also features a notice about Aurora I/O-Optimized and a tip for creating a Blue/Green Deployment.

A table lists two databases: "assignment1b-db" (Available, MySQL Community, us-east-1a, db.t3.micro) and "database-asm2" (Creating, MySQL Community, -). A prominent orange button at the top right says "Create database".

Below this, another screenshot shows the "database-asm2" database details page. The "Summary" section includes fields for DB identifier, CPU usage (3.18%), Status (Available), Class (db.t3.micro), Role (Instance), Current activity (0 Connections), Engine (MySQL Community), and Region & AZ (us-east-1b).

The "Connectivity & security" tab is selected, displaying information about the endpoint, networking (Availability Zone: us-east-1b, VPC: BNguyenA2VPC-vpc, Subnet group: dbsubnetgroup_a2, Subnets: subnet-03c95b3875f85957a, subnet-0eb4bd125b74f6e9), and network type (Network type: -). It also shows VPC security groups (DBServerSG_A2 (sg-09c19c466e67e521)) and a certificate authority (rds-ca-2019).

Access phpmyadmin through ec2 instance

<http://ec2-52-1-196-227.compute-1.amazonaws.com/phpmyadmin/>

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A screenshot of a web browser showing the phpMyAdmin configuration page. The title bar includes tabs for 'Launch AWS Academy Learner...', 'Instance details | EC2 | us-east-1', 'RDS | us-east-1', and 'ec2-52-1-196-227.compute-1.amazonaws.com'. The main content area displays various configuration settings: 'General settings' (Change password, Server connection collation set to utf8mb4_unicode_ci), 'Appearance settings' (Theme set to pmahomme, Font size set to 82%), 'Database server' (Server: database-as... via TCP/IP, Server type: MySQL, Server connection: SSL is not being used, Server version: 8.0.28, User: admin@10.0.2.196, Server charset: UTF-8 Unicode (utf8)), 'Web server' (Apache/2.4.58, Database client version: libmysql - mysqlnd 5.0.12-dev, PHP extension: mysqli, curl, mbstring), and 'phpMyAdmin' (Version information: 4.8.2, latest stable version: 5.2.1, Documentation, Official Homepage). The left sidebar shows database schemas: New, information_schema, mysql, performance_schema, and sys.

Create the database call photo and create its table using this SQL

```
CREATE TABLE photo (
    title VARCHAR(255),
    description VARCHAR(255),
    date DATE,
    keywords VARCHAR(255),
    refference VARCHAR(255)
);
```

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The screenshot shows the phpMyAdmin interface for a MySQL database named 'photo'. In the left sidebar, under the 'Structure' tab, a SQL query is displayed:

```
1 CREATE TABLE photo (
2     title VARCHAR(255),
3     description VARCHAR(255),
4     date DATE,
5     keywords VARCHAR(255),
6     reference VARCHAR(255)
7 );
```

The 'SQL' tab is selected at the top. Below the query editor, there are several buttons: 'Clear', 'Format', 'Get auto-saved query', and checkboxes for 'Bind parameters', 'Show this query here again', 'Retain query box', 'Rollback when finished', and 'Enable foreign key checks'. A 'Go' button is located to the right of the checkboxes.

The screenshot shows the phpMyAdmin interface for the same 'photo' database. In the left sidebar, under the 'Structure' tab, a message box displays:

✓ 1 row inserted. (Query took 0.00090 seconds.)

Below the message, the SQL query is shown:

```
INSERT INTO photo (title, description, date, keywords, reference) VALUES ('Jhin', 'Jhin wallpaper', '2023-11-04', 'Jhin, darkstar, wallpaper', 'https://asm1bphoto.s3.amazonaws.com/dark-cosmic-jhin-splash-art-lol-4k-87.jpg');
```

At the bottom of the message box, there are links for '[Edit inline]', '[Edit]', and '[Create PHP code]'. The 'SQL' tab is selected at the top.

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Test if the Photo is visible when access from EC2 public DNS (this is before I change the bucket policy)



Student name: Nguyen Gia Binh

Student ID: 104219428

Tutorial session: Saturday 12:00AM

Uploaded photos:

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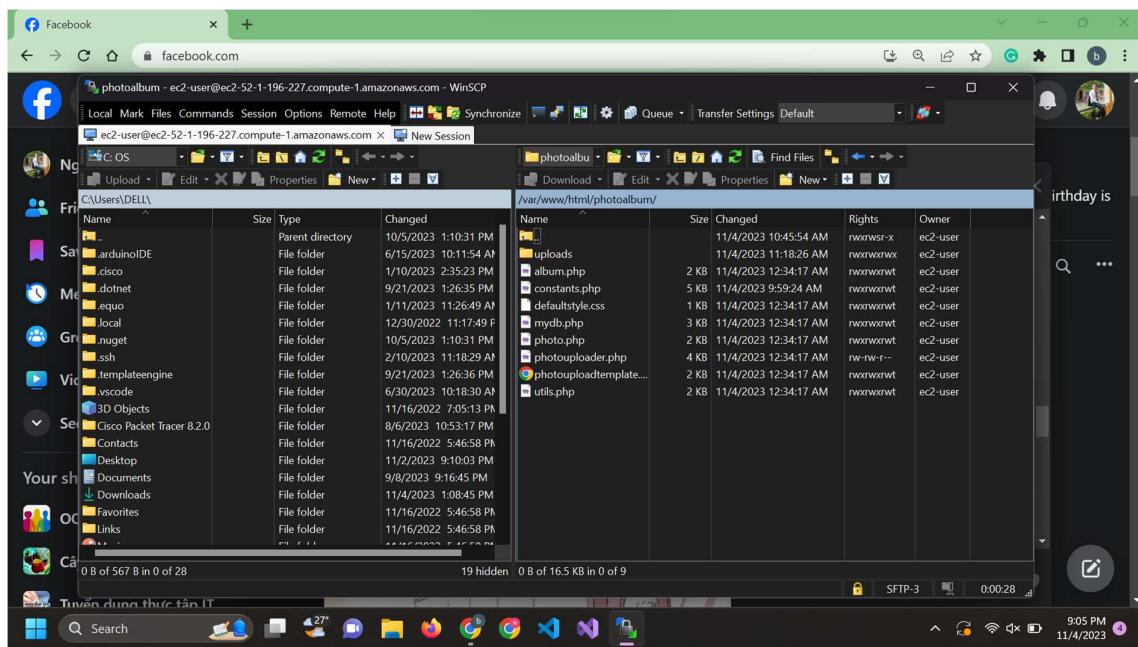
Photo	Name	Description	Creation date	Keywords
	Jhin	Jhin wallpaper	2023-11-04	Jhin, darkstar, wallpaper



Testing upload photo

There are 2 broken row because I change the photouploader file so it got broken but the third attempt was using the original photouploader php file.

* There was an error in this step but I forgot to take screenshot, You need to create a folder name “uploads” in order to upload photo and I created it in the photoalbum folder*



Nguyen Gia Binh - 104219428



Student name: Nguyen Gia Binh

Student ID: 104219428

Tutorial session: Saturday 12:00AM

Uploaded photos:

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Photo	Name	Description	Creation date	Keywords
	Jhin	Jhin wallpaper	2023-11-04	Jhin, darkstar, wallpaper
	Jhin_cool2	Jhinattack2		attack ult
	Jhin_cool2	Jhinattack2		attack ult
	Jhin_cool2123	123123	2023-11-04	attack ult12323123



Resizing photo: It is the 2 rows above the last row in this screenshot below

The screenshot shows the AWS S3 console with the following details:

- Buckets:** Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, IAM Access Analyzer for S3.
- Storage Lens:** Dashboards, AWS Organizations settings.
- Objects (13):**

Name	Type	Last modified	Size	Storage class
dark-cosmic-jhin-splash-art-lol-4K-87.jpg	jpg	October 14, 2023, 11:57:06 (UTC+07:00)	250.7 KB	Standard
defaultstyle.css	css	November 4, 2023, 10:02:51 (UTC+07:00)	388.0 B	Standard
jhin-dark-cosmic-lol-art-0-hd-wallpaper-uhdpaper.com-390x0_a.jpg	jpg	November 4, 2023, 11:15:10 (UTC+07:00)	399.7 KB	Standard
jhin-empyrean-lol-hd-wallpaper-uhdpaper.com-245@1@0.jpg	jpg	November 4, 2023, 11:18:28 (UTC+07:00)	513.5 KB	Standard
mydb.php	php	November 4, 2023, 10:02:52 (UTC+07:00)	2.6 KB	Standard
photo.php	php	November 4, 2023, 10:02:54 (UTC+07:00)	1.2 KB	Standard
photouploader.php	php	November 4, 2023, 10:02:55 (UTC+07:00)	4.0 KB	Standard
photouploadtemplate.html	html	November 4, 2023, 10:02:56 (UTC+07:00)	1.4 KB	Standard
resized-jhin-dark-cosmic-lol-art-0-hd-wallpaper-1920x1080-uhdpaper.com-390x0_a.jpg	jpg	November 4, 2023, 11:15:12 (UTC+07:00)	52.2 KB	Standard
resized-jhin-empyrean-lol-hd-wallpaper-uhdpaper.com-245@1@0.jpg	jpg	November 4, 2023, 11:18:30 (UTC+07:00)	72.5 KB	Standard
utils.php	php	November 4, 2023, 10:02:57 (UTC+07:00)	1.7 KB	Standard
- CloudShell Feedback:** © 2023, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences
- System Status:** 29°C, Nắng rải rác, ENG, 4:36 PM, 4/11/2023

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2.8: Security group

The screenshot shows the AWS CloudShell interface. The user has navigated to the EC2 service and selected the 'Security Groups' option. A new security group named 'ELBSGA2' is being created. The 'Details' tab is active, showing the security group name, ID, owner, and VPC ID. The 'Inbound rules' tab is selected, displaying two rules: one for port 80 (HTTP) and one for port 443 (HTTPS). Both rules are defined by security group rule IDs.

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
sgr-0751ff1b8b81692d3	sg-0acd87d4cc36047fe	IPv4	HTTP	TCP	80	0.0.0.0/0	-
sgr-097d18010a7beff7bd	sg-0acd87d4cc36047fe	IPv4	HTTPS	TCP	443	0.0.0.0/0	-

The screenshot shows the AWS CloudShell interface again. The user has created another security group named 'WebServerSG_A2'. The 'Details' tab is active, showing the security group name, ID, owner, and VPC ID. The 'Inbound rules' tab is selected, displaying two rules: one for port 80 (HTTP) and one for port 22 (SSH). Both rules are defined by security group rule IDs.

Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description
sgr-03a23338cf1d20629	sg-0c9e68c9dc95735ee	IPv4	HTTP	TCP	80	0.0.0.0/0	-
sgr-0e08c02cf78bfff76	sg-0c9e68c9dc95735ee	IPv4	SSH	TCP	22	0.0.0.0/24	-

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The screenshot shows the AWS EC2 console with the security group details for 'sg-0c190b1b8acf577a1 - NATServerSG_A2'. The 'Details' tab is selected, showing the following information:

Security group name	Security group ID	Description	VPC ID
NATServerSG_A2	sg-0c190b1b8acf577a1	NAT security group for asm2	vpc-0995ac76487dabcc6
Owner	366309293917	Inbound rules count 1 Permission entry	Outbound rules count 1 Permission entry

The 'Inbound rules' tab is active, displaying one rule:

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
-	sgr-01c9f284a5f1a1ff6	IPv4	Custom TCP	TCP	0	0.0.0.0/24	-

At the bottom, the Windows taskbar shows various open applications including CloudShell, Feedback, and several browser tabs.

The screenshot shows the AWS EC2 console with the security group details for 'sg-045f76b793c1f55da - DevServerSG_A2'. The 'Details' tab is selected, showing the following information:

Security group name	Security group ID	Description	VPC ID
DevServerSG_A2	sg-045f76b793c1f55da	dev server security group for asm 2	vpc-0995ac76487dabcc6
Owner	366309293917	Inbound rules count 4 Permission entries	Outbound rules count 1 Permission entry

The 'Inbound rules' tab is active, displaying four rules:

Name	Security group rule...	IP version	Type	Protocol	Port range	Source	Description
-	sgr-04083b5a7b06c77...	IPv4	SSH	TCP	22	0.0.0.0/0	-
-	sgr-05023fa20159021c8	-	HTTP	TCP	80	sg-0c190b1b8acf577a...	-
-	sgr-0a6b53e904d019...	IPv4	All TCP	TCP	0-65535	0.0.0.0/0	-
-	sgr-05f37240a5a32d7b	-	HTTPS	TCP	443	sg-0c190b1b8acf577a...	-

At the bottom, the Windows taskbar shows various open applications including CloudShell, Feedback, and several browser tabs.

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2.9: Network ACL

The screenshot shows the 'Create network ACL' page in the AWS VPC console. The 'Name' field is set to 'NACL2'. The 'VPC' dropdown is set to 'vpc-0995ac76487dabcc6 / BNguyenA2VPC-vpc'. A single tag 'Name: NACL2' is added. The 'Create network ACL' button is highlighted.

Create network ACL Info

A network ACL is an optional layer of security that acts as a firewall for controlling traffic in and out of a subnet.

Network ACL settings

Name - optional
Creates a tag with a key of 'Name' and a value that you specify.

VPC
VPC to use for this network ACL

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key Value - optional Remove tag
Add tag
You can add up to 50 more tags

Cancel **Create network ACL**

The screenshot shows the 'acl-00afe6b37e53eb85 / NACL2' details page. It displays the updated inbound rules:

Rule number	Type	Protocol	Port range	Source	Allow/Deny
1	All ICMP - IPv4	ICMP (1)	All	0.0.0.0/0	Allow
2	Custom TCP	TCP (6)	32768 - 65535	0.0.0.0/0	Allow
3	HTTPS (443)	TCP (6)	443	0.0.0.0/0	Allow
4	SSH (22)	TCP (6)	22	0.0.0.0/0	Allow
5	MySQL/Aurora (3306)	TCP (6)	3306	0.0.0.0/0	Allow
6	All traffic	All	All	0.0.0.0/0	Allow
*	All traffic	All	All	0.0.0.0/0	Deny

You have successfully updated inbound rules for acl-00afe6b37e53eb85 / NACL2

Details Info

Network ACL ID: Associated with: - Default: No VPC ID:

Inbound rules (7) Edit inbound rules

Filter inbound rules

The screenshot shows the same 'acl-00afe6b37e53eb85 / NACL2' details page, but the bottom part is cut off.

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The screenshot shows the AWS VPC Network ACL Details page. The URL is us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#NetworkAclDetails:networkAclId=acl-00aafe6b37e53eb85. The page displays a success message: "You have successfully updated subnet associations for acl-00aafe6b37e53eb85 / NACL2." Below this, the Network ACL details are shown, including its ID (acl-00aafe6b37e53eb85), association with 2 subnets, and owner (366309293917). The VPC ID is listed as `vpc-0995ac76487dabcc6 / BNguyenA2VPC-vpc`. The Subnet associations section lists two subnets: `subnet-07c95b3875f85957a` and `subnet-0eb4bdcc123b74f869`, both associated with the NACL2.

Name	Subnet ID	Associated with	Availability Zone	IPv4 CIDR	IPv6 CIDR
BNguyenA2VPC-subnet-private2...	subnet-07c95b3875f85957a	acl-00aafe6b37e53eb85 / NACL2	us-east-1b	10.0.4.0/24	-
BNguyenA2VPC-subnet-private1...	subnet-0eb4bdcc123b74f869	acl-00aafe6b37e53eb85 / NACL2	us-east-1a	10.0.3.0/24	-