

## Project 1 - Deploying a Multi-Tier Website Using AWS EC2

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**Topic:** Deploy a Multi-tier website using EC2

**Description:** Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front, so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

### **Problem Statement:**

Company ABC wants to move their product to AWS. They have the following things setup right now:

1. MySQL DB
2. Website (PHP)

The company wants high availability on this product, therefore wants autoscaling to be enabled on this website.

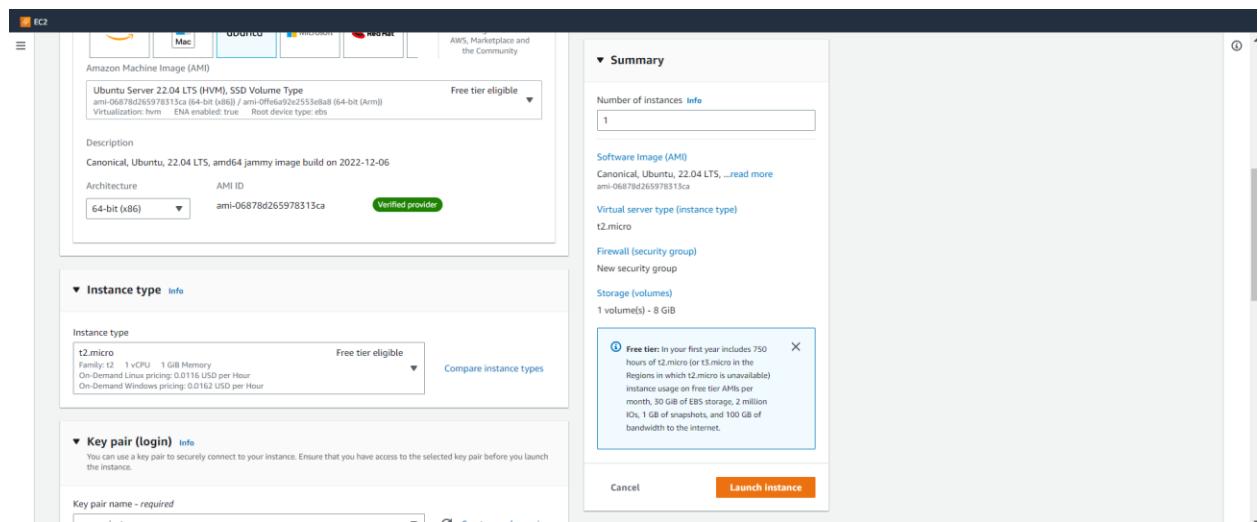
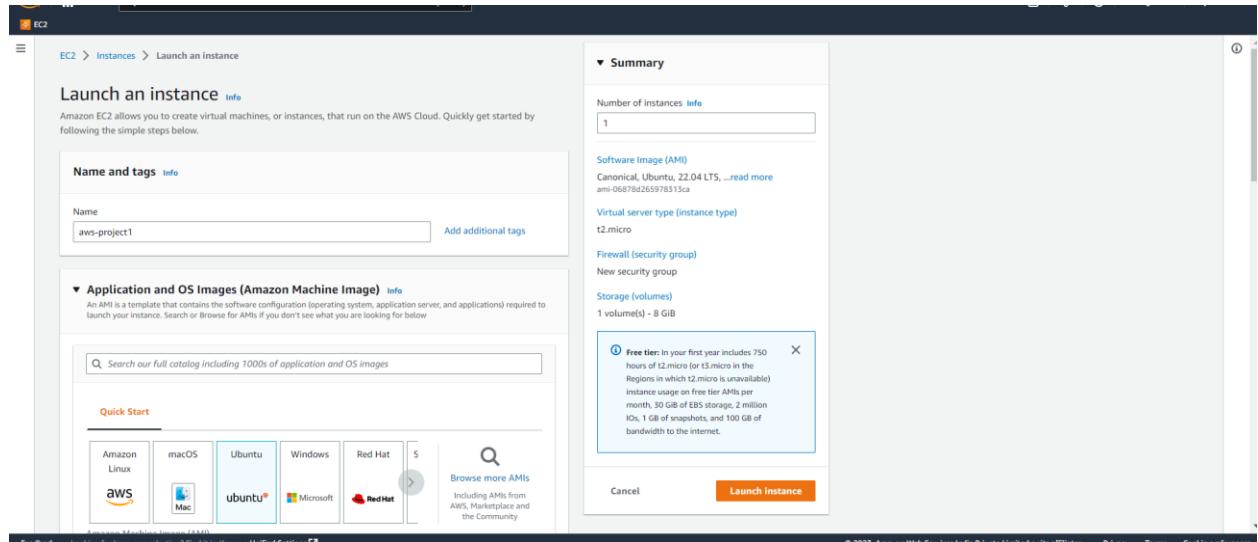
ENHANCED ON THIS WEBSITE.

### **Steps to solve:**

1. Launch an EC2 Instance
  2. Enable Auto Scaling on these instances (minimum 2)
  3. Create an RDS Instance
  4. Create Database & Table in RDS Instance
    - Database name: intel
    - Table name: data
    - Database password: intel123
  5. Change hostname in website
  6. Allow traffic from EC2 to RDS Instance
  7. Allow all-traffic to EC2 instance
-

## 1. Launch an Ec2 instance :

In ec2 → CLICK ON LAUNCH Insatnce :



The screenshot shows the AWS Launch Wizard configuration interface. On the left, there's a sidebar with navigation links like 'Home', 'Compute', 'Storage', 'Networking', 'Logs', and 'Metrics'. The main area is divided into two tabs: 'Security group' and 'Launch instance'.

**Security group tab:**

- Key pair (login):** Set to 'awsproject'.
- Network settings:** Subnet is 'vpc-084a9157925cb8948' and Auto-assign public IP is 'Enable'.
- Firewall (security groups):** A new security group named 'launch-wizard-6' is being created with the following rules:
  - Allow SSH traffic from Anywhere (0.0.0.0/0)
  - Allow HTTPS traffic from the internet To set up an endpoint, for example when creating a web server
  - Allow HTTP traffic from the internet To set up an endpoint, for example when creating a web server
- A note states: "Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only."

**Launch instance tab:**

- Summary:** Number of instances: 1.
- Software Image (AMI):** Canonical, Ubuntu, 22.04 LTS, ami-06878d265978513ca
- Virtual server type (instance type):** t2.micro
- Firewall (security group):** New security group
- Storage (volumes):** 1 volume(s) - 8 GiB
- Free tier information:** 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 GB of snapshots, and 100 GB of bandwidth to the internet.
- Buttons:** 'Cancel' and 'Launch instance' (highlighted in orange).

**When instance is launched :**  
**Select the instance : and go to security group then click on edit inbound rules :**

Screenshot of the AWS EC2 Instances page showing a single instance named "aws-project1".

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP	Elastic IP
aws-project1	i-0a0e1e5b9a9bc23ae	Running	t2.micro	-	No alarms	us-east-1e	ec2-54-152-58-23.com...	54.152.58.23	-

**Security Details:**

- IAM Role: -
- Owner ID: 354107503754
- Launch time: Tue Jan 10 2023 19:02:10 GMT+0530 (India Standard Time)
- Security groups: sg-0f2cac8488787bd3 (launch-wizard-6)

**Inbound rules:**

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
-	sgr-011690c7492a42e0d	22	TCP	0.0.0.0/0	launch-wizard-6	-
-	sgr-0ac07bc131342bad1	80	TCP	0.0.0.0/0	launch-wizard-6	-
-	sgr-0b0f0dae67ef0db7f	443	TCP	0.0.0.0/0	launch-wizard-6	-
-	All traffic	All	All	Anywhere-1... (0.0.0.0/0)	-	-

Screenshot of the "Edit inbound rules" page for security group sg-0f2cac8488787bd3.

**Inbound rules:**

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-011690c7492a42e0d	SSH	TCP	22	Custom (0.0.0.0/0)	SSH access
sgr-0ac07bc131342bad1	HTTP	TCP	80	Custom (0.0.0.0/0)	HTTP access
sgr-0b0f0dae67ef0db7f	HTTPS	TCP	443	Custom (0.0.0.0/0)	HTTPS access
-	All traffic	All	All	Anywhere-1... (0.0.0.0/0)	-

**Buttons:**

- Add rule
- Cancel
- Preview changes
- Save rules

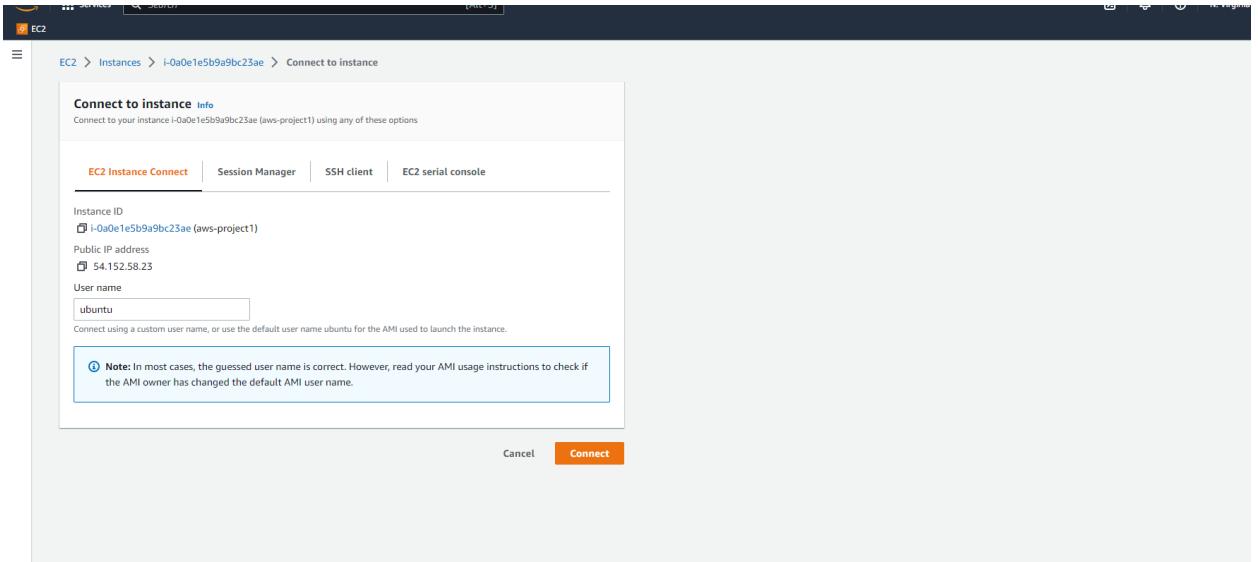
Screenshot of the AWS EC2 Instances page showing the same instance "aws-project1".

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP	Elastic IP
aws-project1	i-0a0e1e5b9a9bc23ae	Running	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-54-152-58-23.com...	54.152.58.23	-

**Details:**

- Instance state: running
- Instance type: t2.micro
- Status check: 2/2 checks passed
- Alarm status: No alarms
- Availability Zone: us-east-1e
- Public IPv4 DNS: ec2-54-152-58-23.com...
- Public IPv4 IP: 54.152.58.23
- Elastic IP: -

**Click on connect :**



```
aws Services Search [Alt+S] EC2
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf error-pages.
Enabling conf other-whitespace-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symbolic link /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
Created symbolic link /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.1-4build1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-49-137:~$ ubuntu@ip-172-31-49-137:~$ ubuntu@ip-172-31-49-137:~$ [ ]
i-0a0e1e5b9a9bc23ae (aws-project1)
PublicIP: 54.152.58.23 PrivateIP: 172.31.49.137
```

```
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-49-137:~$ ubuntu@ip-172-31-49-137:~$ ubuntu@ip-172-31-49-137:~$ history
 1  sudo apt-get update
 2  sudo apt-install -y
 3  sudo apt-get install apache2 -y
 4  history
ubuntu@ip-172-31-49-137:~$ [ ]
i-0a0e1e5b9a9bc23ae (aws-project1)
PublicIP: 54.152.58.23 PrivateIP: 172.31.49.137
```



## Create a database :

### Search for RDS :

The screenshot shows the AWS RDS Dashboard for the US East (N. Virginia) region. The left sidebar lists various RDS management options like Databases, Query Editor, and Performance Insights. The main content area displays a summary of resources, including DB Instances (0/40), Allocated storage (0 TB/100 TB), DB Clusters (0/40), Reserved instances (0/40), and Snapshots (1). A prominent callout box encourages users to try the Multi-AZ deployment option for MySQL and PostgreSQL. To the right, a 'Recommended for you' section lists tasks such as 'Build RDS Operational Tasks', 'Amazon RDS Backup and Restore using AWS Backup', 'Migrate SSRS to RDS for SQL Server', and 'Implementing Cross-Region DR'. At the bottom, there's an 'Additional information' section.

**We listened to your feedback!**

Now, create a database with a single click using our pre-built configurations! Or choose your own configurations.

[Share your feedback](#)

## Create database

**Choose a database creation method** [Info](#)

Standard create  
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

Easy create  
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

**Engine options**

Engine type [Info](#)

Amazon Aurora 

MySQL 

MariaDB 

PostgreSQL 

Oracle 

Microsoft SQL Server 

**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.

**Show versions that support the Multi-AZ DB cluster** [Info](#)  
Create a Multi-AZ DB cluster with one primary DB instance and two readable standby DB instances. Multi-AZ DB clusters provide up to 2x faster transaction commit latency and automatic failover in typically under 35 seconds.

**Show versions that support the Amazon RDS Optimized Writes** [Info](#)  
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine Version: MySQL 8.0.28

**Templates**  
Choose a sample template to meet your use case.

Production  
Use defaults for high availability and fast, consistent performance.

Dev/Test  
This instance is intended for development use outside of a production environment.

Free tier  
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.

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The DB instance identifier is case-insensitive, but is stored as all lowercase in "mydbinstance". Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

**Credentials Settings**

Master username [Info](#)  
Type a login ID for the master user of your DB instance.

1 to 16 alphanumeric characters. First character must be a letter.

Manage master credentials in AWS Secrets Manager  
Manage master user credentials in Secrets Manager. RDS can generate a password for you and manage it throughout its lifecycle.

Auto generate a password  
Amazon RDS can generate a password for you, or you can specify your own password.

Master password [Info](#)  
  
Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), ' (single quote), " (double quote) and @ (at sign)

Confirm master password [Info](#)

**Instance configuration**  
The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class [Info](#)

Standard classes (includes m classes)

Memory optimized classes (includes r and x classes)

Burstable classes (includes t classes)

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**EC2**

db.t3.micro	2 vCPUs   1 GiB RAM   Network: 2,085 Mbps
<input checked="" type="checkbox"/> Include previous generation classes	
<b>Storage</b>	
Storage type <a href="#">Info</a>	General Purpose SSD (gp2) Baseline performance determined by volume size
Allocated storage	200 GiB <small>The minimum value is 20 GiB and the maximum value is 6,144 GiB</small>
<b>Storage autoscaling</b> <a href="#">Info</a> Provides dynamic scaling support for your database's storage based on your application's needs.	
<input type="checkbox"/> Enable storage autoscaling Enabling this feature will allow the storage to increase after the specified threshold is exceeded.	
<b>Connectivity</b> <a href="#">Info</a>	
Compute resource Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.	
<input checked="" type="radio"/> Don't connect to an EC2 compute resource <small>Don't set up a connection to a compute resource for this DB instance.</small>	
<input type="radio"/> Connect to an EC2 compute resource <small>Set up a connection to an EC2 compute resource for this DB instance.</small>	
Choose the VPC. The VPC defines the virtual networking environment for this DB instance. Default VPC (vpc-084a9157925c8948)	
Only VPCs with a corresponding DB subnet group are listed.	
<b>After a database is created, you can't change its VPC.</b>	
<b>DB Subnet group</b> <a href="#">Info</a> Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.	
<input checked="" type="radio"/> default	
<b>Public access</b> <a href="#">Info</a> <input type="radio"/> Yes RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that which resources can connect to the database.	
<input checked="" type="radio"/> No RDS doesn't assign a public IP address to the database. Only Amazon EC2 Instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.	
<b>VPC security group (firewall)</b> <a href="#">Info</a> Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.	
<input checked="" type="radio"/> Choose existing Choose existing VPC security groups	
<input type="radio"/> Create new Create new VPC security group	
Existing VPC security groups <input checked="" type="radio"/> default	
<b>Availability Zone</b> <a href="#">Info</a> No preference	
<input checked="" type="radio"/> default	
Availability Zone <a href="#">Info</a> No preference	
<b>RDS Proxy</b> RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.	
<input type="checkbox"/> Create an RDS Proxy <a href="#">Info</a> RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see <a href="#">Amazon RDS Proxy pricing</a> .	
<b>Additional configuration</b>	
Database port <a href="#">Info</a>	TCP/IP port that the database will use for application connections. 3306
<b>Database authentication</b>	
Database authentication options <a href="#">Info</a>	
<input checked="" type="radio"/> Password authentication Authenticates using database passwords.	
<input type="radio"/> Password and IAM database authentication Authenticates using the database password and user credentials through AWS IAM users and roles.	
<input type="radio"/> Password and Kerberos authentication Choose a directory in which you want to allow authorized users to authenticate with this DB instance using Kerberos Authentication.	

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The screenshot shows the 'Additional configuration' step of the AWS RDS MySQL setup wizard. It includes sections for Database options, Backup, IAM role, Maintenance, and Deletion protection.

- Database options:**
  - Initial database name: intel
  - DB parameter group: default.mysql8.0
  - Option group: default:mysql-8-0
- Backup:**
  - Enable automated backups (checked)
  - A note states: "Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to details [here](#)."
  - Backup retention period: 7 days
- IAM role:**
  - The following service-linked role is used for publishing logs to CloudWatch Logs.
  - RDS service-linked role
  - A note: "Ensure that general, slow query, and audit logs are turned on. Error logs are enabled by default. [Learn more](#)"
- Maintenance:**
  - Auto minor version upgrade (Info)
  - Enable auto minor version upgrade (checked): "Enabling auto minor version upgrade will automatically upgrade to new minor versions as they are released. The automatic upgrades occur during the maintenance window for the database."
  - Maintenance window (Info): "Select the period you want pending modifications or maintenance applied to the database by Amazon RDS."
    - Choose a window (radio button selected)
    - No preference (radio button)
- Deletion protection:**
  - Enable deletion protection (checkbox): "Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database."

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**Now go to ec2 :**

**Click on connect :**

```

aws Services Search [Alt+5]
EC2

Creating config file /etc/php/5.6/mods-available/opcode.ini with new version
Setting up mysql-client-8.0 (8.0.31-0ubuntu0.22.04.1) ...
Setting up php5.6-readline (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...

Creating config file /etc/php/5.6/mods-available/readline.ini with new version
Setting up php5.6-cli (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...
update-alternatives: using /usr/bin/php5.6 to provide /usr/bin/php (php) in auto mode
php5.6-readline (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) provides /usr/bin/phar (phar) in auto mode
update-alternatives: using /usr/bin/phar.phar5.6 to provide /usr/bin/phar.phar (phar.phar) in auto mode

Creating config file /etc/php/5.6/cli/php.ini with new version
Setting up mysql-client (8.0.31-0ubuntu0.22.04.1) ...
Setting up libapache2-mod-php5.6 (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...

Creating config file /etc/php/5.6/apache2/php.ini with new version
Module mpm_event disabled.
Module mpm_prefork enabled.
mpm_prefork: switch from mpm_event to prefork
apache2: invoke-rc.d: Enable module php5.6
Setting up php5.6 (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for php5.6-cli (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...
Processing triggers for libapache2-mod-php5.6 (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

Ubuntu:~$ 172.31.49.137 ~$ [1]

i-0a0e1e5b9a9bc23ae (aws-project1)
PublicIPs: 54.152.58.23 PrivateIPs: 172.31.49.137

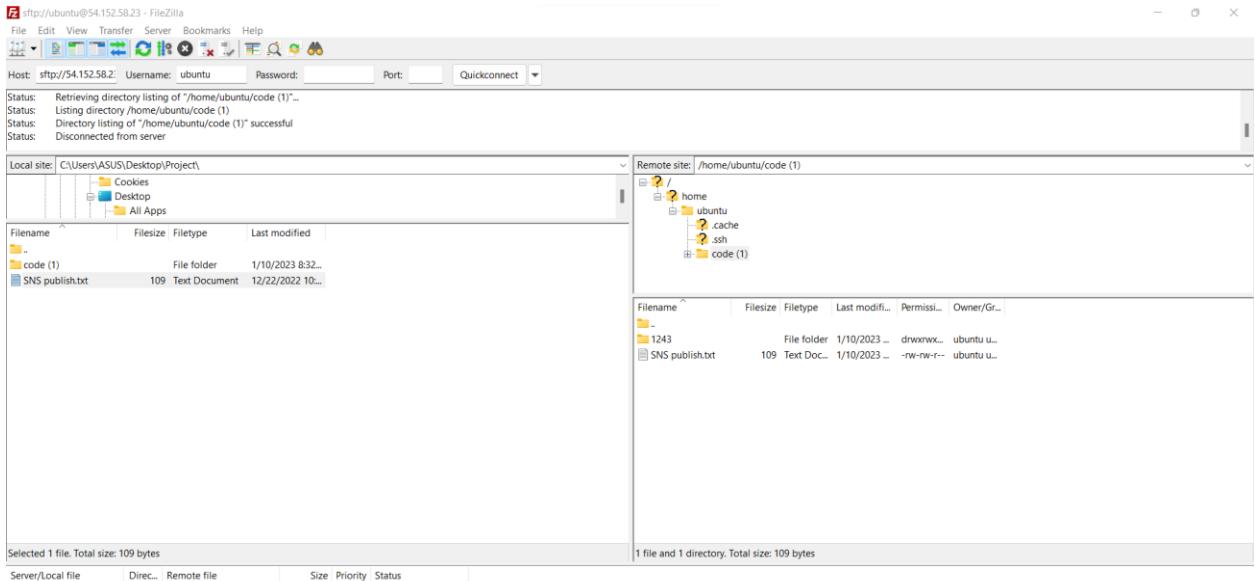
```

## Put 2 commands :

- 1 sudo apt-get update**
- 2 sudo apt-install -y**
- 3 sudo apt-get install apache2 -y**
- 4 history**
- 5 sudo apt install php5.6 mysql-client php5.6-mysql**
- 6 sudo apt install php5.6 mysql-client php5.6mysql**
- 7 sudo apt install php5.6 mysql-client php5.6-mysql**
- 8 sudo apt install php5.6 mysql-client php5.6 -mysql**
- 9 sudo add-apt-repository -y ppa:ondrej/php**
- 10 history**

To transfer files to rds : third party tool: Filezilla:

Copy public ip of server:



**Files got transferred :**

**In the linux machine : type command as ls :**

```

Module mpm_event disabled.
Enabling module mpm_prefork.
apache2_switch_mpm Switch to prefork
apache2_invoke Enable module php5
/etc/init.d/php5-fpm restart
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for php5.6-clii (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...
Processing triggers for libapache2-mod-php5.6 (5.6.40-64+ubuntu22.04.1+deb.sury.org+1) ...
Scanning processes...
Scanning linux Images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-49-137:~$ history
1 sudo apt-get update
2 sudo apt-get -y
3 sudo apt-get install apache2 -y
4 history
5 sudo apt install php5.6 mysql-client php5.6-mysql
6 sudo apt install php5.6 mysql-client php5.6-mysql
7 sudo apt install php5.6 mysql-client php5.6-mysql
8 sudo apt install php5.6 mysql-client php5.6-mysql
9 sudo add-apt-repository -y ppa:ondrej/php
10 history
ubuntu@ip-172-31-49-137:~$ 
ubuntu@ip-172-31-49-137:~$ 
ubuntu@ip-172-31-49-137:~$ ls
`code (1)'
ubuntu@ip-172-31-49-137:~$ 

```

i-0a0e1e5b9a9bc23ae (aws-project1)  
PublicIP: 54.152.58.23 PrivateIP: 172.31.49.137

**Now we need to change the default web page to our custom php webpage :**

**Cd /var/www/html/**

**Ls**

**Index.html will show in linux :**

```
aws Services Search [Alt+S] EC2
cp: cannot create regular file '/var/www/html/index.php': Permission denied
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 cp /home/ubuntu/1243/index.php /var/www/html
cp: cannot create regular file '/var/www/html/index.php': Permission denied
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 cp /home/ubuntu/code/1243/index.php /var/www/html
cp: cannot create regular file '/var/www/html/index.php': Permission denied
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 cp /home/ubuntu/1243/index.php /var/www/html
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 ls
images index.php
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 cd /home/ubuntu/1243/
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 ls
images index.php
ubuntu@ip-172-31-49-137:/home/ubuntu/1243 cd /home/ubuntu/
ubuntu@ip-172-31-49-137:~$ ls
1243 DNS publish.txt code
ubuntu@ip-172-31-49-137:~$ /home/ubuntu/index.php /var/www/html
cp: cannot copy '/home/ubuntu/index.php': No such file or directory
ubuntu@ip-172-31-49-137:~$ cp /home/ubuntu/1243/index.php /var/www/html
cp: cannot create regular file '/var/www/html/index.php': Permission denied
ubuntu@ip-172-31-49-137:~$ cd /var/www/html
ubuntu@ip-172-31-49-137:/var/www/html$ ls
index.html
ubuntu@ip-172-31-49-137:/var/www/html$ ls
ubuntu@ip-172-31-49-137:/var/www/html$ ls
ubuntu@ip-172-31-49-137:/var/www/html$ ls
index.html
ubuntu@ip-172-31-49-137:/var/www/html$ sudo cp /home/ubuntu/1243/index.php /var/www/html
ubuntu@ip-172-31-49-137:/var/www/html$ ls
ubuntu@ip-172-31-49-137:/var/www/html$ sudo cp -r /home/ubuntu/1243/index.php /var/www/html
ubuntu@ip-172-31-49-137:/var/www/html$ ls /var/www/html
index.html index.php
ubuntu@ip-172-31-49-137:/var/www/html$ ls /var/www/html
images index.html index.php
ubuntu@ip-172-31-49-137:/var/www/html$ []
```

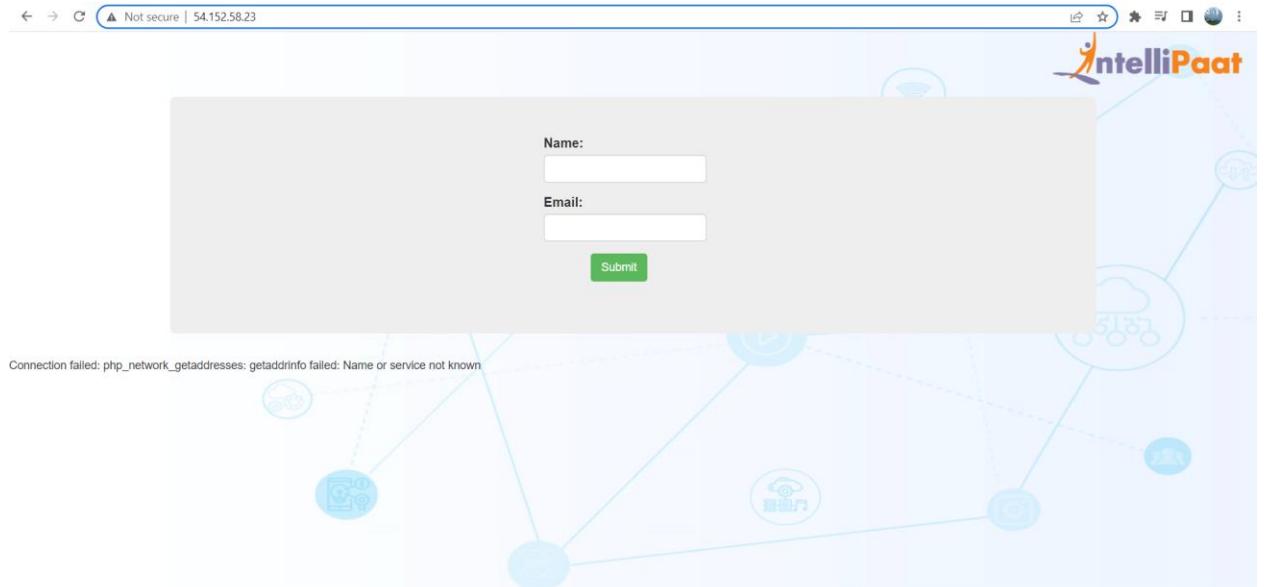
i-0a0e1e5b9a9bc23ae (aws-project1)

**sudo cp /home/ubuntu/1243/index.php /var/www/html**  
**38 sudo cp -r /home/ubuntu/1243/index.php /var/www/html**  
**39 ls /var/www/html**  
**40 sudo cp -r /home/ubuntu/1243/images /var/www/html**  
**41 ls /var/www/html**  
**42 history**

```
1 ls
2 cd /var/www/html/
3 ls
4 cp /home/ubuntu/1243/index.php /var/www/html
5 cp /home/ubuntu/code (1)/1243/index.php /var/www/html
6 cp /home/ubuntu/code/1243/index.php /var/www/html
7 cp /home/ubuntu/code/1243/index.php /var/www/html
8 cp /home/ubuntu/code/1243/index.php /var/www/html
9 cp /home/ubuntu/code(1)/1243/index.php /var/www/html
10 ls
11 cp /home/ubuntu/1243/index.php /var/www/html
12 ls
13 cd //home/ubuntu/1243/
14 ls
15 cp /home/ubuntu/1243/index.php /var/www/html
16 cp /home/ubuntu/1243/index.php /var/www/html
17 cp /home/ubuntu/code/1243/index.php /var/www/html
18 cp /home/ubuntu/code/1243/index.php /var/www/html
19 cp /home/ubuntu/code(1)/1243/index.php /var/www/html
20 ls
21 cp /home/ubuntu/1243/index.php /var/www/html
22 ls
23 cd //home/ubuntu/1243/
24 ls
25 cp /home/ubuntu/1243/index.php /var/www/html
26 cp /home/ubuntu/1243/index.php /var/www/html
27 cp /home/ubuntu/code/1243/index.php /var/www/html
28 ls
29 cd /home/ubuntu/1243/
30 ls
31 cd //home/ubuntu/
32 ls
33 cp /home/ubuntu/index.php /var/www/html
34 cp /home/ubuntu/1243/index.php /var/www/html
35 ls /var/www/html/
36 ls
37 sudo cp /home/ubuntu/1243/index.php /var/www/html
38 sudo cp -r /home/ubuntu/1243/index.php /var/www/html
39 ls /var/www/html
40 cp /home/ubuntu/1243/images /var/www/html
41 ls /var/www/html
42 history
ubuntu@ip-172-31-49-137:/var/www/html$ ~C
ubuntu@ip-172-31-49-137:/var/www/html$ sudo rm index.html
ubuntu@ip-172-31-49-137:/var/www/html$ ls
images index.php
ubuntu@ip-172-31-49-137:/var/www/html$ []
```

i-0a0e1e5b9a9bc23ae (aws-project1)

PublicIPs: 54.152.58.23 PrivateIPs: 172.31.49.137



This screenshot shows the 'Edit inbound rules' section of the AWS EC2 Security Groups configuration. It lists four existing rules:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-07039fbf718aa6ee	HTTP	TCP	80	Custom	0.0.0.0/0
sgr-014cc057eb903b958	All traffic	All	All	Custom	sg-02042e78fc08df404
sgr-02c6d5d0d80fa6243	SSH	TCP	22	Custom	0.0.0.0/0
-	MySQL/Aurora	TCP	3306	Custom	sg-0f2ccac0488787bd3

At the bottom right, there are 'Cancel', 'Preview changes', and 'Save rules' buttons.

**In the rds :**

**In the linux instance :steps to connect to the database :**

```

EC2
System information as of Tue Jan 10 19:21:15 UTC 2023
System load: 0.0          Processes:           112
Usage of /: 24.9% of 7.57GB   Users logged in: 1
Memory usage: 27%          IPv4 address for eth0: 172.31.49.137
Swap usage: 0%
* Ubuntu Pro delivers the most comprehensive open source security and
  compliance features.
  https://ubuntu.com/aws/pro

34 updates can be applied immediately.
17 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Last login: Tue Jan 10 19:16:54 2023 from 10.206.107.29
ubuntu@ip-172-31-49-137:~$ sudo su -
root@ip-172-31-49-137:~# cd /var/www/html
root@ip-172-31-49-137:/var/www/html# ls
images index.php
root@ip-172-31-49-137:/var/www/html# sudo mysql -h database-1.credgoxszgqc.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 73
Server version: 8.0.28 Source distribution

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> []

```

i-0a0e1e5b9a9bc23ae (aws-project1)  
PublicIP: 54.152.58.23 PrivateIP: 172.31.49.137

**sudo mysql -h database-1.credgoxszgqc.us-east-1.rds.amazonaws.com -u admin -p  
enter password :**

**connected**

```

Last login: Tue Jan 10 19:16:54 2023 from 10.206.107.29
ubuntu@ip-172-31-49-137:~$ sudo su -
root@ip-172-31-49-137:~# cd /var/www/html
root@ip-172-31-49-137:/var/www/html# ls
images index.php
root@ip-172-31-49-137:/var/www/html# sudo mysql -h database-1.credgoxszgqc.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 73
Server version: 8.0.28 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)
mysql> []

```

i-0a0e1e5b9a9bc23ae (aws-project1)  
PublicIP: 54.152.58.23 PrivateIP: 172.31.49.137

**Show databases;**

**Now we want to change the index.php file code :**

**Quit**

**Sudo nano index.php**

```

<html>
    <head>
        <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
        <body background="#images/2.png" style="background-repeat: no-repeat; background-size: 100% 100%">
            <div class="container">
                <div class="jumbotron vertical-center">
                    <table class="grid" cellspacing="0">
                        <tr>
                            <td colspan="4" style="text-align: center; vertical-align: middle; height: 150px;">
                                <form method="post">
                                    <div class="form-group" action="post">
                                        <label for="firstname">Name:</label>
                                        <input type="text" class="form-control" name="firstname" />
                                    </div>
                                    <div class="form-group">
                                        <label for="email">Email:</label>
                                        <input type="text" class="form-control" name="email" />
                                    </div>
                                </form>
                            </td>
                        </tr>
                    </table>
                </div>
            </div>
        </body>
    </html>

```

index.php

```

<?php
$firstname = $_POST['firstname'];
$email = $_POST['email'];
$username = "intelli_coghw13fbmq.us-east-2.rds.amazonaws.com";
$hostname = "intel";
$password = "intel123";

```

i-0a0e1e5b9a9bc23ae (aws-project1)

PublicIP: 54.152.58.23 PrivateIP: 172.31.4.137

FileZilla\_3.62.0\_win...exe FileZilla\_Server\_1.6...exe awsproject.pem

**Here give the endpoint :**

```

AWS Services Search [Alt+S]
[?] EC2
| performance_schema |
| sys |
5 rows in set (0.01 sec)

mysql> quit
Bye
root@ip-172-31-49-137:/var/www/html# sudo nano index.php
root@ip-172-31-49-137:/var/www/html#
root@ip-172-31-49-137:/var/www/html# root@ip-172-31-49-137:/var/www/html# root@ip-172-31-49-137:/var/www/html# sudo mysql -h database-1.credgoxszgqc.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 76
Server version: 8.0.28 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
5 rows in set (0.00 sec)

mysql> []

```

i-0a0e1e5b9a9bc23ae (aws-project1)

PublicIPs: 54.152.58.23 PrivateIPs: 172.31.49.137

**Use intel :**

```

root@ip-172-31-49-137:/var/www/html#
root@ip-172-31-49-137:/var/www/html#
root@ip-172-31-49-137:/var/www/html# sudo mysql -h database-1.credgoxszgqc.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 76
Server version: 8.0.28 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database      |
+-----+
| information_schema |
| intel          |
| mysql          |
| performance_schema |
| sys            |
+-----+
5 rows in set (0.00 sec)

mysql> use intel;
ERROR 1049 (42000): Unknown database 'intel'
mysql> use intel;
Database changed
mysql> []

```

i-0a0e1e5b9a9bc23ae (aws-project1)  
PublicIPs: 54.152.58.23 PrivateIPs: 172.31.49.137

**Inside intel db we will create the table :**

```

+-----+
| information_schema |
| intel          |
| mysql          |
| performance_schema |
| sys            |
+-----+
5 rows in set (0.00 sec)

mysql> use intel;
ERROR 1049 (42000): Unknown database 'intel'
mysql> use intel;
Database changed
mysql> create table data (firstname varchar(20) , email varchar(30));
Query OK, 0 rows affected (0.07 sec)

mysql> []

```

```

describe data' at line 1
mysql> describe data;
+-----+-----+-----+-----+-----+-----+
| Field    | Type     | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| firstname | varchar(20) | YES |   | NULL    |       |
| email    | varchar(30)  | YES |   | NULL    |       |
+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> []

```

**Now go to chrome and hit the instance ip :**

Not secure | 54.152.58.23



Name:

Email:

**Submit**

New record created successfully

```
+-----+-----+-----+
| email | varchar(50) | YES |    | NO(BLANK) |    |
+-----+-----+-----+
2 rows in set (0.01 sec)

mysql> select * from data;
+-----+-----+
| firstname | email      |
+-----+-----+
| tejasavi  | abc@123gmail.com |
| tejasavi  | abc@123gmail.com |
| avdhesh   | 123456@gmail.com |
+-----+-----+
3 rows in set (0.01 sec)

mysql> []
i-0a0e1e5b9a9bc23ae (aws-project1)
```

## Create image :

Start Course | IntelliPaat | Start Course | IntelliPaat | ROS Management Co... | EC2 Instance Connect | Instances | EC2 Manag... | 54.152.58.23 | to edit file in ubuntu | +

us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#Instances:instanceState=running

EC2

Instances (1/1) info

Find instance by attribute or tag (case-sensitive)

Instance state = running X Clear filters

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
aws-project1	i-0a0e1e5b9a9bc23ae	Running	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-54-152-58-23.co...

Actions ▾ Connect Instance state ▾

Actions ▾ Launch instances ▾

View details

Manage instance state

Instance settings

Networking

Security

Image and templates ▾

Monitor and troubleshoot

Connect

Create image

Create template from instance

Launch more like this

Details Security Networking Storage Status checks Monitoring Tags

Instance summary info

Instance ID: i-0a0e1e5b9a9bc23ae (aws-project1)

Public IPv4 address: 54.152.58.23 [open address]

Private IP address:

Instance state: Running

Instance type: t2.micro

IP name: ip-172-31-49-137.ec2.internal

Private IP DNS name (IPv4 only): ip-172-31-49-137.ec2.internal

Elastic IP addresses:

Public IPv4 DNS: ec2-54-152-58-23.compute-1.amazonaws.com [open address]

Answer private resource DNS name: IPv4 (A)

VPC ID: vpc-084a9157925cb8948

Subnet ID: subnet-075837b649607ac20

AWS Compute Optimizer finding: Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name:

Feedback: Feedback for browser selection that is in the new United Services

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EC2 > Instances > i-0a0e1e5b9a9bc23ae > Create image

**Create image info**

An image (also referred to as an AMI) defines the programs and settings that are applied when you launch an EC2 instance. You can create an image from the configuration of an existing instance.

Instance ID	i-0a0e1e5b9a9bc23ae (aws-project1)						
Image name	abc-image						
Maximum 127 characters. Can't be modified after creation.							
Image description - optional	Image description						
Maximum 255 characters							
No reboot	<input type="checkbox"/> Enable						
Instance volumes							
Volume type	Device	Snapshot	Size	Volume type	IOPS	Throughput	Delete on termination
EBS	/dev/...	Create new snapshot fr...	8	EBS General Purpose 5...	100		<input checked="" type="checkbox"/> Enable
<a href="#">Add volume</a>							
(i) During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.							

Feedback Looking for language selection? Find it in the new [Unified Settings](#).

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**After creating ami :**

**Launch configuration :**

EC2 > Launch configurations > Create launch configuration

**Create launch configuration** [Info](#)

(i) Instead of using launch configurations to create your EC2 Auto Scaling groups, we recommend that you use launch templates and make use of the Auto Scaling guidance option. For more information on migrating launch configurations and using launch templates, see the documentation.

**Launch configuration name**

Name  
project-LC

**Amazon machine image (AMI)** [Info](#)

AMI  
abc-image

**Instance type** [Info](#)

Instance type  
t2.micro (1 vCPU, 1 GiB, EBS Only) [Choose instance type](#)

EC2

Security groups [Info](#)

Assign a security group

Create a new security group

Select an existing security group

**Security groups**

Search security groups

[Copy to new](#) [View rules](#)

Security group ID	Name	VPC ID	Description
sg-0d66ab53a7c9cf811	launch-wizard-5	vpc-084a9157925cb8948	launch-wizard-5 created 2023-01-05T18:58:41.877Z
sg-059f58fa3af5ea53b	launch-wizard-3	vpc-084a9157925cb8948	launch-wizard-3 created 2023-01-05T04:55:43.887Z
sg-0317be02dd0fd837	launch-wizard-2	vpc-084a9157925cb8948	launch-wizard-2 created 2023-01-04T04:27:25.567Z
sg-0f2ccac8488787bd3	launch-wizard-6	vpc-084a9157925cb8948	launch-wizard-6 created 2023-01-10T13:28:28.214Z
sg-02042e78fc08df404	default	vpc-084a9157925cb8948	default VPC security group
sg-0de440a8a9e233293	launch-wizard-4	vpc-084a9157925cb8948	launch-wizard-4 created 2023-01-05T15:25:57.489Z
sg-0602d0bc78e754c52	launch-wizard-1	vpc-084a9157925cb8948	launch-wizard-1 created 2023-01-03T19:39:10.927Z

**⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.**

aws Services [Search](#) [Alt+S]

EC2

sg-0d66ab53a7c9cf811 launch-wizard-5 vpc-084a9157925cb8948 launch-wizard-5 created 2023-01-05T18:58:41.877Z

sg-059f58fa3af5ea53b launch-wizard-3 vpc-084a9157925cb8948 launch-wizard-3 created 2023-01-05T04:55:43.887Z

sg-0317be02dd0fd837 launch-wizard-2 vpc-084a9157925cb8948 launch-wizard-2 created 2023-01-04T04:27:25.567Z

**sg-0f2ccac8488787bd3 launch-wizard-6 vpc-084a9157925cb8948 launch-wizard-6 created 2023-01-10T13:28:28.214Z**

sg-02042e78fc08df404 default vpc-084a9157925cb8948 default VPC security group

sg-0de440a8a9e233293 launch-wizard-4 vpc-084a9157925cb8948 launch-wizard-4 created 2023-01-05T15:25:57.489Z

sg-0602d0bc78e754c52 launch-wizard-1 vpc-084a9157925cb8948 launch-wizard-1 created 2023-01-03T19:39:10.927Z

**⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.**

**Key pair (login) [Info](#)**

Key pair options

Choose an existing key pair

Existing key pair

awsproject

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

[Cancel](#) [Create launch configuration](#)

EC2

Recommendation to not use launch configurations  
Amazon EC2 Auto Scaling no longer adds support for new EC2 features to launch configurations and will stop supporting new EC2 instance types after December 31, 2022. We recommend that customers using launch configurations migrate to launch templates. For more information, see the documentation.

Successfully created launch configuration: project-LC

EC2 > Launch configurations

Launch configurations (1) [Info](#)

Search launch configurations

Name	AMI ID	Instance type	Spot price	Creation time
project-LC	ami-0e21c1ae1d...	t2.micro	-	Wed Jan 11 2023 01:39:39 GMT+0530 (India Standard Time)

Actions ▾ Copy to launch template ▾ Create launch configuration

## Create auto scaling group

;

Hosts  
Instances  
Reservations

Logs

Cloud Store

Manager

Security Groups

Groups

Interfaces

Scaling Policies

Users

Configurations

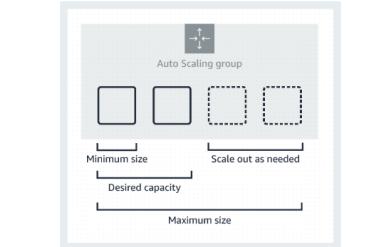
**Auto Scaling Groups**

## Amazon EC2 Auto Scaling

helps maintain the availability of your applications

Auto Scaling groups are collections of Amazon EC2 instances that enable automatic scaling and fleet management features. These features help you maintain the health and availability of your applications.

### How it works



An Auto Scaling group is a collection of Amazon EC2 instances that are treated as a logical unit.

### Create Auto Scaling group

Get started with EC2 Auto Scaling by creating an Auto Scaling group.

[Create Auto Scaling group](#)

### Pricing

Amazon EC2 Auto Scaling features have no additional fees beyond the service fees for Amazon EC2, CloudWatch (for scaling policies), and the other AWS resources that you use. Visit the pricing page of each service to learn more.

### Getting started

[What is Amazon EC2 Auto Scaling?](#)  
[Getting started with Amazon EC2 Auto Scaling](#)  
[Set up a scaled and load-balanced application](#)

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WS Services Search [Alt+S]

**EC2**

Choose instance launch options

Step 3 (optional)  
Configure advanced options

Step 4 (optional)  
Configure group size and scaling policies

Step 5 (optional)  
Add notifications

Step 6 (optional)  
Add tags

Step 7  
Review

**Name**

**Auto Scaling group name**  
Enter a name to identify the group.  
  
Must be unique to this account in the current Region and no more than 255 characters.

**Launch configuration** [Info](#) [Switch to launch template](#)

**Launch configuration**  
Choose a launch configuration that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

**Create a launch configuration** [\[x\]](#)

Launch configuration project-LC	AMI ID ami-0e21c1aec1d0f67c0	Date created Wed Jan 11 2023 01:39:39 GMT+0530 (India Standard Time)
Security groups <a href="#">sg-0f2ccac8488787bd3</a> <a href="#">[x]</a>	Instance type t2.micro	Key pair name awsproject

[Cancel](#) [Next](#)

Feedback Looking for language selection? Find it in the new Unified Settings [\[x\]](#)

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aws Services Search [Alt+S]

**EC2**

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1  
Choose launch template or configuration

Step 2  
Choose instance launch options

Step 3 (optional)  
Configure advanced options

Step 4 (optional)  
Configure group size and scaling policies

Step 5 (optional)  
Add notifications

Step 6 (optional)  
Add tags

Step 7  
Review

**Choose instance launch options** [Info](#)

Choose the VPC network environment that your instances are launched into, and customize the instance types and purchase options.

**Network** [Info](#)

For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.

**VPC**  
Choose the VPC that defines the virtual network for your Auto Scaling group.  
 [\[x\]](#) [\[x\]](#)  
172.31.0.0/16 Default

**Create a VPC** [\[x\]](#)

**Availability Zones and subnets**  
Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.  
 [\[x\]](#) [\[x\]](#)

us-east-1a   subnet-0df18c6100299eeb5 <a href="#">X</a> 172.31.32.0/20 Default
us-east-1b   subnet-072324dc2847fa28c <a href="#">X</a> 172.31.0.0/20 Default
us-east-1c   subnet-0ca976a93f8413d3c <a href="#">X</a> 172.31.80.0/20 Default
us-east-1d   subnet-0d1dff3f2834bbe7 <a href="#">X</a> 172.31.16.0/20 Default

EC2 Services Search [Alt+S]

Step 1 Choose launch template or configuration

Step 2 Choose instance launch options

Step 3 (optional) Configure advanced options

Step 4 (optional) Configure group size and scaling policies

Step 5 (optional) Add notifications

Step 6 (optional) Add tags

Step 7 Review

### Configure group size and scaling policies Info

Set the desired, minimum, and maximum capacity of your Auto Scaling group. You can optionally add a scaling policy to dynamically scale the number of instances in the group.

**Group size - optional Info**

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	3
Minimum capacity	2
Maximum capacity	5

**Scaling policies - optional**

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

<input type="radio"/> Target tracking scaling policy Our desired metric will dictate how many instances to add and remove capacity as needed to achieve that outcome.	<input checked="" type="radio"/> None
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------

☰ ⓘ Predictive scaling policy now supports custom metrics, which also allows you to retain metrics across Blue/Green deployments. Learn more

ⓘ We have launched a new allocation strategy, 'Price capacity optimized', that optimizes for both the lowest price and available capacity for the number of Spot Instances that are launching. For more information, see [Allocation strategies](#).

ⓘ inws created successfully

EC2 > Auto Scaling groups

**Auto Scaling groups (1) Info**

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
inws	project-LC	0	Updating capacity...	3	2	5	us-east-1a, us-east-1b, us-east-1c, us-east-1d, us-east-1e, us-east-1f

☰ EC2

EC2 > Auto Scaling groups > inws

inws

Details Activity **Automatic scaling** Instance management Monitoring Instance refresh

**Dynamic scaling policies (0) Info**

Actions		Create dynamic scaling policy
---------	--	-------------------------------

**Predictive scaling policies (0) Info**

Actions		Create predictive scaling policy
---------	--	----------------------------------

**Scheduled actions (0) Info**

Actions		Create scheduled action
No scheduled actions are currently specified		
<a href="#">Create scheduled action</a>		

**Create dynamic scaling policy :**

## Create dynamic scaling policy

Policy type  
Step scaling ▾

Scaling policy name  
aws-proj-scaleup

CloudWatch alarm  
Choose an alarm that can scale capacity whenever:  
Create a CloudWatch alarm ↗

Take the action  
Add ▾  
0 capacity units ▾  
Add step

Instances need  
300 seconds warm up before including in metric

Cancel Create

## Create cloud watch alarm :

Select metric

Your CloudWatch graph is empty.  
Select some metrics to appear here.

Browse Query Graphed metrics Options Source Add math Add query

Metrics (945)

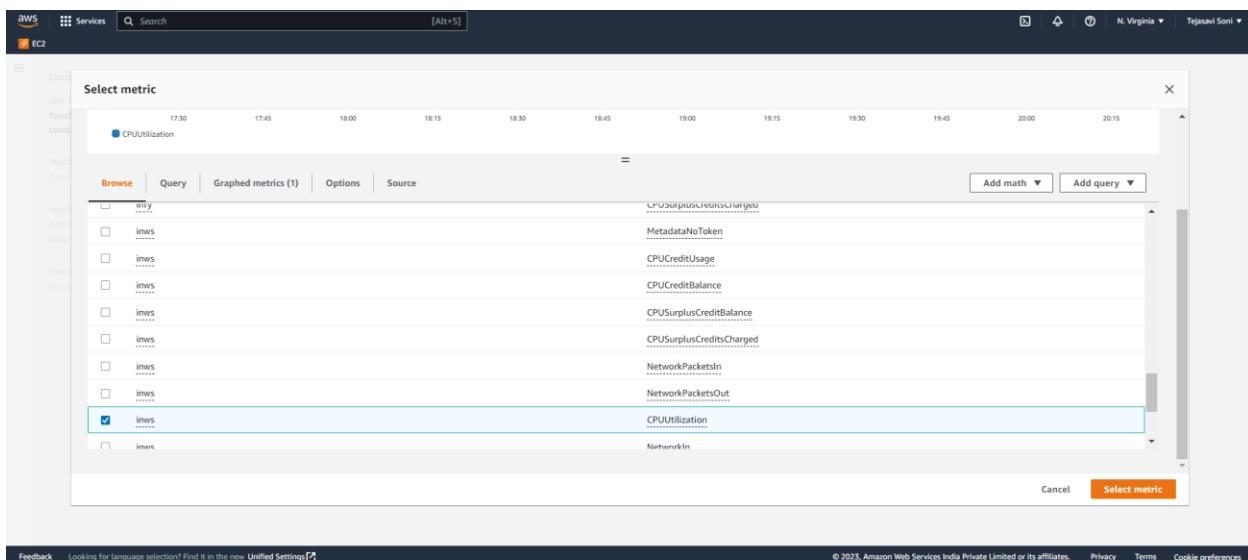
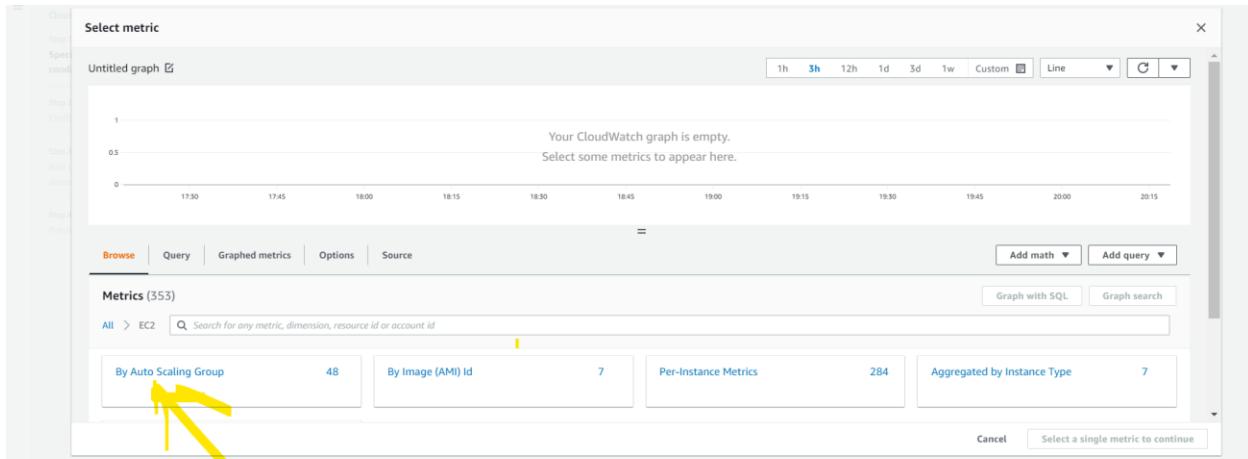
Search for any metric, dimension, resource id or account id

Graph with SQL Graph search

ApplicationELB	9	DynamoDB	14	EBS	162	EC2	353
ELB	28	ElasticBeanstalk	1	Logs	2	RDS	140

Select a single metric to continue

Click on ec2



AWS Services Search [Alt+S] N. Virginia Tejaswi Soni

CloudWatch > Alarms > Create alarm

Step 1 Specify metric and conditions

Step 2 Configure actions

Step 3 Add name and description

Step 4 Preview and create

### Specify metric and conditions

**Metric**

Graph  
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 1 minute.

Percent: 80

Namespace: AWS/EC2

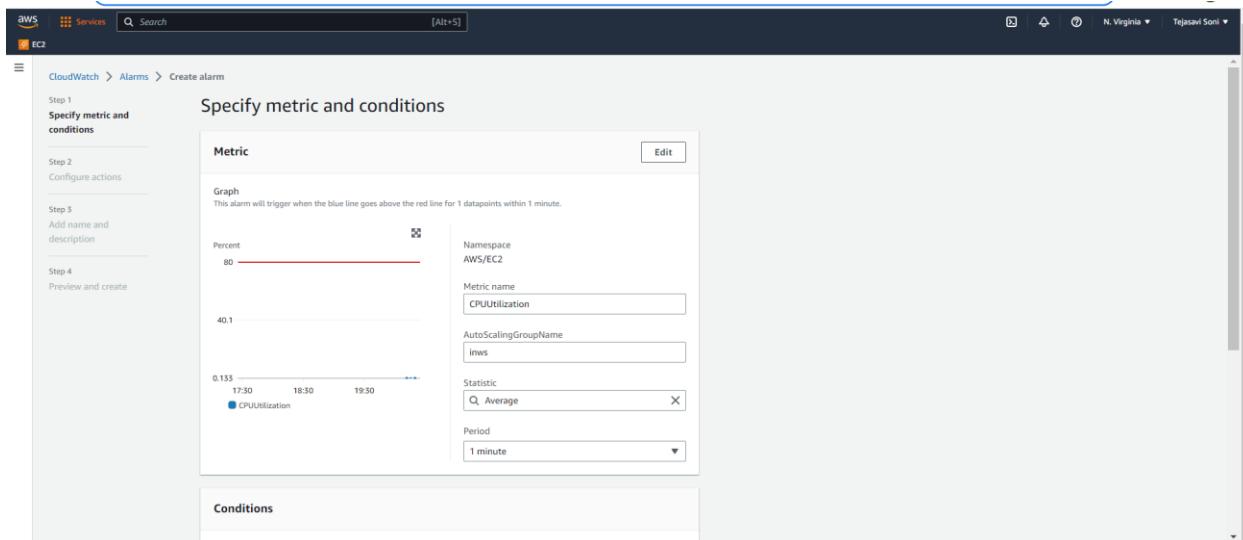
Metric name: CPUUtilization

AutoScalingGroupName: iaws

Statistic: Average

Period: 1 minute

**Conditions**



CloudWatch > Alarms > Create alarm

Step 1 Specify metric and conditions

Step 2 Configure actions

Step 3 Add name and description

Step 4 Preview and create

### Specify metric and conditions

Graph  
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 1 minute.

Percent: 80

Namespace: AWS/EC2

Metric name: CPUUtilization

AutoScalingGroupName: iaws

Statistic: Average

Period: 1 minute

### Conditions

Threshold type:

Static Use a value as a threshold

Anomaly detection Use a band as a threshold

Whenever CPUUtilization is...

Greater than... threshold

Greater/Equal than... threshold

Lower/Equal than... threshold

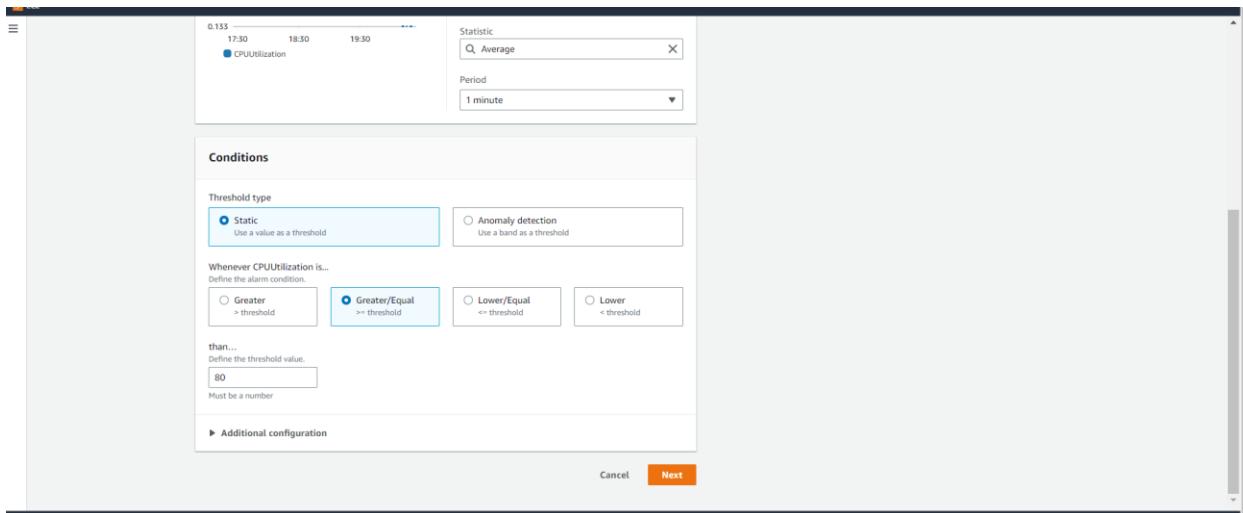
Lower than... threshold

than... Define the threshold value: 80

Must be a number

Additional configuration

Cancel Next



CloudWatch > Alarms > Create alarm

Step 1 Specify metric and conditions

Step 2 Configure actions

Step 3 Add name and description

Step 4 Preview and create

### Add name and description

Name and description

Alarm name: Aws-proj-CW-alarm

Alarm description - optional [View formatting guidelines](#)

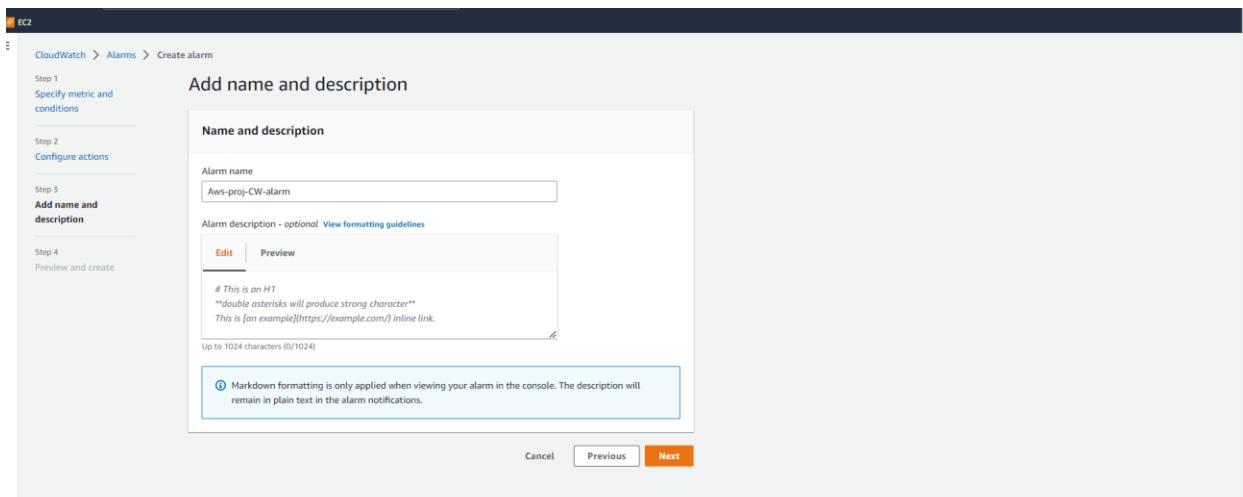
Edit  Preview

# This is an H1  
\*\*double asterisks will produce strong character\*\*  
This is [an example](https://example.com/) inline link.

Up to 1024 characters (0/1024)

Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.

Cancel Previous Next



**Click on next →create alarm:**

The screenshot shows the AWS CloudWatch Alarms interface. At the top, a green banner displays the message "Successfully created alarm Aws-proj-CW-alarm." Below the banner, the navigation bar includes "CloudWatch > Alarms". The main area is titled "Alarms (1)". A search bar and filters for "Name", "State", "Last state update", "Conditions", and "Actions" are present. A single alarm entry is listed: "Aws-proj-CW-alarm" with "Insufficient data" status, last updated on "2023-01-11 01:58:31", and a condition "CPUUtilization >= 80 for 1 datapoints within 1 minute". A "Create alarm" button is located at the top right of the table.

**Creating one more alarm : Scale down :**

The screenshot shows the AWS CloudWatch Metrics Alarm configuration page for an AutoScaling group named "inws". The "Conditions" section is active. Under "Threshold type", "Static" is selected. The condition is defined as "Whenever CPUCreditUsage is... Greater than or equal to threshold" with a value of "60". Other options like "Anomaly detection" and "Lower/Equal" are also shown. The "Period" is set to "1 minute". The "Statistic" is set to "Average".

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

**Create dynamic scaling policy**

Policy type: Step scaling

Scaling policy name: aws-sg-auto-project

CloudWatch alarm: Choose an alarm that can scale capacity whenever: Aws-proj-CW-alarm

Create a CloudWatch alarm: Create a CloudWatch alarm (CPUUtilization >= 80 for 1 consecutive periods of 60 seconds for the metric dimensions: AutoScalingGroupName = inws)

Take the action:

- Add: 2 capacity units when 80 <= CPUUtilization < +infinity
- Add step

Instances need: 300 seconds warm up before including in metric

We have launched a new allocation strategy, 'Price capacity optimized', that optimizes for both the lowest price and available capacity for the number of Spot Instances that are launching. For more information, see [Allocation strategies](#).

**Auto Scaling groups (1/1) Info**

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
inws	project-LC	3	-	3	2	5	us-east-1a, us-east-1b, us-east-1c, us-0a...

The screenshot shows the AWS EC2 Auto Scaling groups page for the group 'inws'. The 'Automatic scaling' tab is selected. A single scaling policy, 'aws-sg-auto-project', is listed under 'Dynamic scaling policies'. The policy is of type 'Step scaling' and is enabled. It triggers when the CloudWatch alarm 'Aws-proj-CW-alarm' is breached, which occurs when CPUUtilization >= 80 for 1 consecutive periods of 60 seconds. The policy adds 2 capacity units when CPUUtilization <= infinity and waits 300 seconds between steps. The interface includes standard AWS navigation elements like 'Details', 'Activity', 'Instance management', 'Monitoring', and 'Instance refresh'.

The screenshot shows the 'Create dynamic scaling policy' wizard. The first step, 'Create scaling policy', is displayed. The 'Policy type' is set to 'Step scaling'. The 'Scaling policy name' is 'scale-down-ang'. Under 'CloudWatch alarm', a dropdown menu shows 'scale-downalarm' selected. Below it, a note states: 'Create a CloudWatch alarm [ ] breaches the alarm threshold: CPUCreditUsage <= 60 for 1 consecutive periods of 60 seconds for the metric dimensions: AutoScalingGroupName = inws'. The 'Take the action' section shows a single step: adding 1 capacity unit when CPUCreditUsage >= -infinity. The 'Instances need' field is set to 300 seconds warm up before including in metric. The left sidebar shows the AWS navigation bar and the EC2 service selection.

Screenshot of the AWS EC2 Auto Scaling Groups page for the 'inws' group. The 'Automatic scaling' tab is selected. A green success message at the top states: 'Dynamic scaling policy created or edited successfully.' Below it, there are two policy details:

- aws-sg-auto-project**: Step scaling, Enabled. Triggers when CPUUtilization >= 80 for consecutive periods of 60 seconds. Adds 2 capacity units when 80 <= CPUUtilization < +infinity and warms up after 300 seconds.
- scale-down-asg**: Step scaling, Enabled. Triggers when CPUCreditUsage >= 60 for consecutive periods of 60 seconds. Adds 1 capacity unit when 60 >= CPUCreditUsage > -infinity and warms up after 300 seconds.

Now come to instance and check weather instances got increased or not :

Screenshot of the AWS EC2 Instances page showing four running instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP	Elastic IP
aws-project1	i-0a0e1e5b9a9bc23ae	Running	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-54-152-58-23.com...	54.152.58.23	-
-	i-06c5ffb5a2e674e56	Running	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-3-86-13-44.comput...	3.86.13.44	-
-	i-089c2dc78bd58fa1	Running	t2.micro	2/2 checks passed	No alarms	us-east-1f	ec2-18-232-185-214.co...	18.232.185.214	-
-	i-07016aa9bdf279057	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-44-201-9-1.comput...	44.201.9.1	-

Screenshot of a web browser showing three different public IP addresses (3.86.13.44, 18.232.185.214, and 44.201.9.1) all pointing to the same application, which displays a form for Name and Email submission.

On all three diff ips same application is running :

The screenshot shows the AWS CloudWatch Alarms page. The left sidebar includes options like Dashboards, Alarms (with 1 new), Metrics, Logs, X-Ray traces, and Events. The main area displays two alarms:

Name	State	Last state update	Conditions	Actions
Aws-proj-CW-alarm	Insufficient data	2023-01-11 02:09:01	CPUUtilization >= 80 for 1 datapoints within 1 minute	Actions enabled
sacle-downalarm	In alarm	2023-01-11 02:03:23	CPU/CreditUsage <= 60 for 1 datapoints within 1 minute	Actions enabled

**Alarm also get triggered .**

**Terminate one of the instances :**

The screenshot shows the AWS EC2 Instances page. The left sidebar includes options like New EC2 Experience, EC2 Dashboard, Global View, Events, Tags, Limits, Instances (with 1 new), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, and Images. The main area shows a list of instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 IP	Elastic IP
-	i-0921f70a0ec08bb37	Running	t2.micro	Initializing	No alarms	us-east-1d	ec2-3-93-182-137.com...	3.93.182.137	-
aws-project1	i-0a01e1e5b9a9bc23ae	Running	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-54-152-58-23.com...	54.152.58.23	-
<input checked="" type="checkbox"/>	i-06c5ffb5a2e674e56	Shutting-down	t2.micro	2/2 checks passed	No alarms	us-east-1e	ec2-3-86-13-44.comput...	3.86.13.44	-
-	i-089c2dc78cbd58fa1	Running	t2.micro	2/2 checks passed	No alarms	us-east-1f	ec2-18-232-185-214.co...	18.232.185.214	-
-	i-07016aa9bdf279057	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-44-201-9-1.comput...	44.201.9.1	-

Details for instance i-06c5ffb5a2e674e56 are shown in a modal:

- Successfully terminated i-06c5ffb5a2e674e56
- Currently creating AMI ami-0e21c1aec1d0f67c0 from instance i-0a01e1e5b9a9bc23ae. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI.

**Automatically one instance got added due to ASG .**

-----X-----

