

Project – 1

Deploying A Multi-Tier Website Using AWS 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 need, configure security and networking, and manage storage. Amazon EC2 enable you to scale up or down to handle change in requirements or spikes in popularity, reducing your need to forecast traffic.

Problem Statement:

Company ABC want to move their product to AWS. They have the following things set up right now:

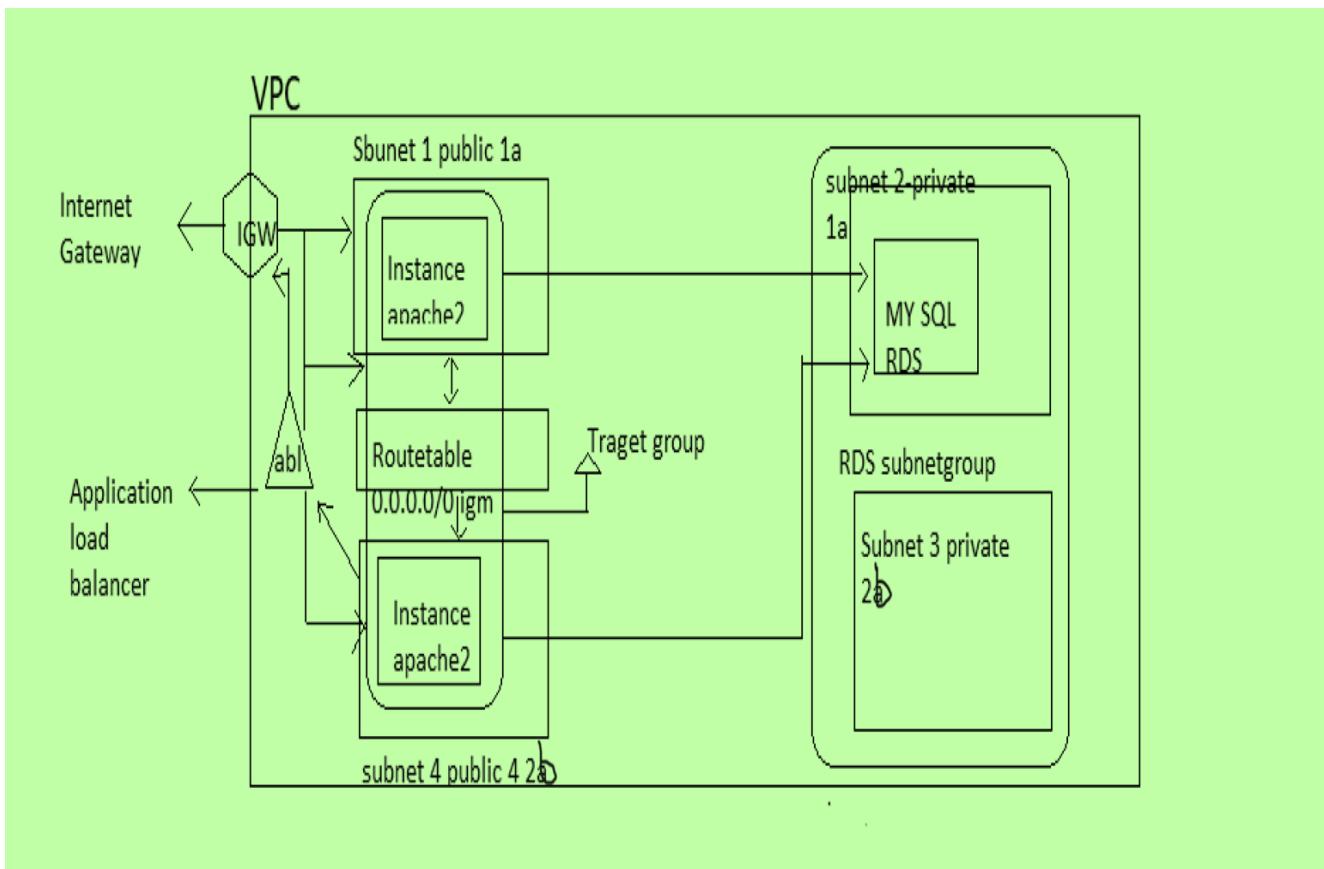
1. MySQL DB
2. Website(PHP)

The company wants high availability on this product, therefore wants auto scaling to be enabled 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:
 - a. Database name: intel
 - b. Table name : data
 - c. Database password: intel123
5. Change hostname in website
6. Allow traffic from EC2 to RDS instance
7. Allow all-traffic to EC2 instance

Solution Architecture



Steps

VPC

- Click create VPC
- Provide a name to VPC and provide the CIDR
- Provide the necessary configuration
- Finally VPC is created
- Go to visual subnet calculator
- provide the Network address and click update
- And divide depend upon the requirement
- Click create subnet
- Provide the name for the subnet and availability zone
- Provide CIDR block which was calculated
- Create 2 public subnet in two different availability zone and create 2 private subnet in two different availability zone
- Select the 2 public subnet separately one by one and go to action
- Click edit subnet association and enable auto assign public IPV4 address
- And click save the changes
- Click the Create internet gateway
- Provide the name for internet gateway
- Finally internet gateway is created
- Go to action and click attach VPC
- Select the VPC which was created and click attach internet gateway
- Click the create route table
- Provide the name for route table
- Select the VPC which was created
- Finally route table is created
- Select the route table and go to action
- Click Edit subnet association and select the 2 public subnet
- And click the save association
- Select the route table and go to routes
- Click edit routes and add route
- Select the destination as 0.0.0.0/0 and select the target as internet gateway which was created
- Click the save changes
- Finally the entire VPC is created

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VPC > Your VPCs > Create VPC

Create VPC Info

A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Resources to create Info
Create only the VPC resource or the VPC and other networking resources.

VPC only VPC and more

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

task-vpc

IPv4 CIDR block Info
 IPv4 CIDR manual input IPAM-allocated IPv4 CIDR block

IPv4 CIDR

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IPv4 CIDR manual input
 IPAM-allocated IPv4 CIDR block

IPv4 CIDR
10.0.0.0/24
CIDR block size must be between /16 and /28.

IPv6 CIDR block Info
 No IPv6 CIDR block IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy Info
Default

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 - <i>optional</i>
Name	task-vpc

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No IPv6 CIDR block
 IPAM-allocated IPv6 CIDR block Amazon-provided IPv6 CIDR block IPv6 CIDR owned by me

Tenancy Info
Default

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 - <i>optional</i>
Name	task-vpc

Add tag
You can add 49 more tags

Cancel

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You successfully created vpc-038444ee78f41e571 / task-vpc

VPC > Your VPCs > vpc-038444ee78f41e571

vpc-038444ee78f41e571 / task-vpc

Details		Info	
VPC ID	vpc-038444ee78f41e571	State	Available
Tenancy	Default	DNS hostnames	Disabled
Default VPC	No	DHCP option set	dopt-04034fb08daece9a
Network Address Usage	metrics Disabled	IPv4 CIDR	10.0.0.0/24
		Main route table	rtb-0ad11f3a1e1e11770
		IPv6 pool	-
		Owner ID	730335585916
		Main network ACL	acl-0ddc2e68ea3ec4b35
		IPv6 CIDR (Network border group)	-

Actions ▾

Resource map | View | CIDRs | Flow logs | Tags | Integrations

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Your VPCs (1) Info

Name : task-vpc

Clear filters

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
task-vpc	vpc-038444ee78f41e571	Available	10.0.0.0/24	-

Select a VPC above

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Visual Subnet Calculator



Enter the network you wish to subnet:

Network Address Mask bits
10.0.0.0 /24 Update Reset

Show columns: Subnet address Netmask Range of addresses Useable IPs Hosts Divide Join

Click below to split and join subnets.
If you wish to save this subnetting for later, bookmark [this hyperlink](#).

Subnet address	Range of addresses	Useable IPs	Hosts	Divide	Join
10.0.0.0/27	10.0.0.0 - 10.0.0.31	10.0.0.1 - 10.0.0.30	30	Divide	
10.0.0.32/27	10.0.0.32 - 10.0.0.63	10.0.0.33 - 10.0.0.62	30	Divide	
10.0.0.64/27	10.0.0.64 - 10.0.0.95	10.0.0.65 - 10.0.0.94	30	Divide	
10.0.0.96/27	10.0.0.96 - 10.0.0.127	10.0.0.97 - 10.0.0.126	30	Divide	
10.0.0.128/27	10.0.0.128 - 10.0.0.159	10.0.0.129 - 10.0.0.158	30	Divide	
10.0.0.160/27	10.0.0.160 - 10.0.0.191	10.0.0.161 - 10.0.0.190	30	Divide	
10.0.0.192/27	10.0.0.192 - 10.0.0.223	10.0.0.193 - 10.0.0.222	30	Divide	
10.0.0.224/27	10.0.0.224 - 10.0.0.255	10.0.0.225 - 10.0.0.254	30	Divide	

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VPC > Subnets > Create subnet

Create subnet Info

VPC

VPC ID
Create subnets in this VPC.
vpc-038444ee78f41e571 (task-vpc)

Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/24

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

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Subnet name
Create a tag with a key of 'Name' and a value that you specify.
task-public-subnet-1

The name can be up to 256 characters long.

Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1a

IPv4 VPC CIDR block Info
Choose the IPv4 VPC CIDR block to create a subnet in.
10.0.0.0/24

IPv4 subnet CIDR block
10.0.0.0/27 32 IPs
< > ^ v

▼ Tags - optional
Key Value - optional
Name task-public-subnet-1 Remove

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Subnet 2 of 2

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
task-private-subnet-2

The name can be up to 256 characters long.

Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
No preference

IPv4 VPC CIDR block Info
Choose the IPv4 VPC CIDR block to create a subnet in.
10.0.0.0/24

IPv4 subnet CIDR block
10.0.0.32/27 32 IPs
< > ^ v

▼ Tags - optional
Key Value - optional

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Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.

The name can be up to 256 characters long.

Availability Zone [Info](#)
Choose the zone in which your subnet will reside, or let Amazon choose one for you.

IPv4 VPC CIDR block [Info](#)
Choose the IPv4 VPC CIDR block to create a subnet in.

IPv4 subnet CIDR block
 32 IPs
< > ^ v

Tags - optional

Key	Value - optional
<input type="text" value="Name"/>	<input type="text" value="task-private-subnet-3"/>

[Add new tag](#)
You can add 49 more tags.
[Remove](#)

[Add new subnet](#)

[Cancel](#) [Create subnet](#)

Subnet 1 of 1

Subnet name
Create the IPv4 VPC CIDR block to create a subnet in.

IPv4 subnet CIDR block
 32 IPs
< > ^ v

Tags - optional

Key	Value - optional
<input type="text" value="Name"/>	<input type="text" value="task-private-subnet-3"/>

[Add new tag](#)
You can add 49 more tags.
[Remove](#)

[Add new subnet](#)

[Cancel](#) [Create subnet](#)

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.

The name can be up to 256 characters long.

Availability Zone [Info](#)
Choose the zone in which your subnet will reside, or let Amazon choose one for you.

IPv4 VPC CIDR block [Info](#)
Choose the IPv4 VPC CIDR block to create a subnet in.

IPv4 subnet CIDR block
 32 IPs
< > ^ v

Tags - optional

Key	Value - optional
-----	------------------

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Choose the IPv4 VPC CIDR block to create a subnet in.

[Alt+S]

IPv4 subnet CIDR block

52 IPs

Tags - optional

Key	Value - optional
<input type="text" value="Name"/>	<input type="text" value="task-public-subnet-4"/>

Add new tag

You can add 49 more tags.

VPC dashboard

EC2 Global View

Filter by VPC:

Virtual private cloud

- Your VPCs
- Subnets**
- Route tables
- Internet gateways
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists

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Subnets (10) Info

<input type="checkbox"/>	Name	Subnet ID	State	VPC
<input type="checkbox"/>	task-private-subnet-2	subnet-08117fc02a8955dc	Available	vpc-038444ee78f41e571 task-...
<input type="checkbox"/>	task-public-subnet-1	subnet-0ce6696ca75d0261b	Available	vpc-038444ee78f41e571 task-...
<input type="checkbox"/>	task-private-subnet-3	subnet-0bc528852db882447	Available	vpc-038444ee78f41e571 task-...
<input type="checkbox"/>	task-public-subnet-4	subnet-0612780714db16b2d	Available	vpc-038444ee78f41e571 task-...

Select a subnet

VPC > Subnets > [subnet-0ce6696ca75d0261b](#) > Edit subnet settings

Edit subnet settings Info

Subnet

Subnet ID subnet-0ce6696ca75d0261b	Name task-public-subnet-1
---	--

Auto-assign IP settings Info

Enable AWS to automatically assign a public IPv4 or IPv6 address to a new primary network interface for an instance in this subnet.

Enable auto-assign public IPv4 address Info

Enable auto-assign customer-owned IPv4 address Info

Option disabled because no customer owned pools found.

Resource-based name (RBN) settings Info

Create a resource-based name (RBN) for this subnet. This RBN can be used to identify the subnet in CloudWatch Metrics and CloudWatch Logs.

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Option disabled because no customer owned pools found.

Resource-based name (RBN) settings [Info](#)

Specify the hostname type for EC2 instances in this subnet and optional RBN DNS query settings.

Enable resource name DNS A record on launch [Info](#)

Enable resource name DNS AAAA record on launch [Info](#)

Hostname type [Info](#)

Resource name

IP name

DNS64 settings

Enable DNS64 to allow IPv6-only services in Amazon VPC to communicate with IPv4-only services and networks.

Enable DNS64 [Info](#)

Cancel Save

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VPC > Subnets > subnet-0612780714db16b2d > Edit subnet settings

Edit subnet settings [Info](#)

Subnet

Subnet ID	Name
subnet-0612780714db16b2d	task-public-subnet-4

Auto-assign IP settings [Info](#)

Enable AWS to automatically assign a public IPv4 or IPv6 address to a new primary network interface for an instance in this subnet.

Enable auto-assign public IPv4 address [Info](#)

Enable auto-assign customer-owned IPv4 address [Info](#)

Option disabled because no customer owned pools found.

Resource-based name (RBN) settings [Info](#)

Specify the hostname type for EC2 instances in this subnet and optional RBN DNS query settings.

Enable resource name DNS A record on launch [Info](#)

Enable resource name DNS AAAA record on launch [Info](#)

Hostname type [Info](#)

Resource name

IP name

DNS64 settings

Enable DNS64 to allow IPv6-only services in Amazon VPC to communicate with IPv4-only services and networks.

Enable DNS64 [Info](#)

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Option disabled because no customer owned pools found.

Resource-based name (RBN) settings [Info](#)

Specify the hostname type for EC2 instances in this subnet and optional RBN DNS query settings.

Enable resource name DNS A record on launch [Info](#)

Enable resource name DNS AAAA record on launch [Info](#)

Hostname type [Info](#)

Resource name

IP name

DNS64 settings

Enable DNS64 to allow IPv6-only services in Amazon VPC to communicate with IPv4-only services and networks.

Enable DNS64 [Info](#)

Cancel Save

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Screenshot of the AWS VPC dashboard showing the Internet gateways section. A search bar at the top has "Name : task-vpc" entered. Below it is a table with columns: Name, Internet gateway ID, State, and VPC ID. A message says "No matching resource found". At the bottom, there's a note: "Select an internet gateway above".

Screenshot of the "Create internet gateway" wizard. Step 1: "Internet gateway settings". It shows a "Name tag" field containing "task-internet-gateway". Step 2: "Tags - optional". It shows a single tag "Name: task-internet-gateway". A note says "You can add 49 more tags." At the bottom are "Cancel" and "Create internet gateway" buttons.

Screenshot of the "Create internet gateway" wizard. Step 1: "Internet gateway settings". It shows a "Name tag" field containing "task-internet-gateway". Step 2: "Tags - optional". It shows a single tag "Name: task-internet-gateway". A note says "You can add 49 more tags." At the bottom are "Cancel" and "Create internet gateway" buttons.

Attach to VPC (igw-0dd09ae4f9cc49fc2)

VPC

Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.

Available VPCs

Attach the internet gateway to this VPC.

X

▶ AWS Command Line Interface command

Cancel Attach internet gateway

igw-0dd09ae4f9cc49fc2 / task-internet-gateway

Details Info

Internet gateway ID igw-0dd09ae4f9cc49fc2	State Attached	VPC ID vpc-038444ee78f41e571	Owner 730335585916
--	-----------------------------------	---	---------------------------------------

Tags

Manage tags

Key	Value
Name	task-internet-gateway

Create route table Info

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

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

VPC
The VPC to use for this route table.

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
-----	------------------

Create route table

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

VPC
The VPC to use for this route table.

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 - <i>optional</i>
<input type="text" value="Name"/>	<input type="text" value="task-route-table-subnet-1"/>
Add new tag	

You can add 49 more tags.

[Cancel](#) [Create route table](#)

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Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (2/4)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
task-private-subnet-2	subnet-08117fce02a8955dc	10.0.0.32/27	-	Main (rtb-0ad11f3a1e1e11770)
<input checked="" type="checkbox"/> task-public-subnet-1	subnet-0ce6696ca75d0261b	10.0.0.0/27	-	rtb-02b80e62b4bff4c61 / task-r
<input checked="" type="checkbox"/> task-public-subnet-4	subnet-0612780714db16b2d	10.0.0.96/27	-	Main (rtb-0ad11f3a1e1e11770)
task-private-subnet-3	subnet-0bc528852db882447	10.0.0.64/27	-	Main (rtb-0ad11f3a1e1e11770)

Selected subnets

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Edit routes

Destination	Target	Status	Propagated
10.0.0.0/24	<input type="text" value="local"/>	<input checked="" type="radio"/> Active	No
<input type="text" value="0.0.0.0/0"/>	<input type="text" value="Internet Gateway"/>	-	No
	<input type="text" value="igw-0dd09ae4f9cc49fc2"/>		Remove

[Add route](#) [Cancel](#) [Preview](#) [Save changes](#)

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The screenshot shows the AWS VPC Route Table configuration page. A success message at the top indicates "Updated routes for rtb-02b80e62b4bff4c61 / task-route-table-subnet-1 successfully". The main table displays route details:

Route table ID	Main	Explicit subnet associations	Edge associations
rtb-02b80e62b4bff4c61	No	subnet-0ce6696ca75d0261b / task-public-subnet-1	-
VPC	Owner ID		
vpc-038444ee78f41e571 task-vpc	73033585916		

The "Routes" tab is selected, showing two routes:

Destination	Target	Status	Propagated
0.0.0.0/0	igw-0dd09ae4f9cc49fc2	Active	No
10.0.0.0/24	local	Active	No

Database

- DB subnet group
 - a) Click Create DB subnet group
 - b) Provide the name for the DB subnet group
 - c) Select the VPC which was created
 - d) Select the 2 availability zone where the 2 private subnet is created
 - e) Select the subnet 2 private subnet which was created
 - f) And click the create
 - g) Finally DB Subnet group is created
- Click the create database
- Select the standard create in database creation method
- Select MySQL in engine Options
- Provide the name for the database
- Provide the master password as intel123 as per the statement
- Select the VPC which was created
- Select the subnet group which was created
- Click additional configuration provide the initial database name as intel as per the statement
- Finally database is created
- Go to security group and click the edit inbound rules
- In source default it will take the IP Address of our machine
- Remove the IP Address and provide the IP Address of VPC
- Finally save the rule

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Amazon RDS Subnet groups

Subnet groups (0) Create DB subnet group

Name	Description	Status	VPC
No db subnet groups You don't have any db subnet groups.			

Create DB subnet group

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Amazon RDS Subnet groups

Create DB subnet group

To create a new subnet group, give it a name and a description, and choose an existing VPC. You will then be able to add subnets related to that VPC.

Subnet group details

Name task-subnetgroup

Description task-subnetgroup

VPC task-vpc (vpc-058444ee78f41e571)

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Amazon RDS Dashboard

Subnet groups

Add subnets

Availability Zones Choose the Availability Zones that include the subnets you want to add. Choose an availability zone

Subnets Choose the subnets that you want to add. The list includes the subnets in the selected Availability Zones. Select subnets

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Amazon RDS

Availability Zones
Choose the Availability Zones that include the subnets you want to add.
Select subnets
subnet-08117fce02a8955dc (10.0.0.32/27) X
subnet-0bc528852db882447 (10.0.0.64/27) X

Subnets selected (2)

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

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Amazon RDS

Select subnets
subnet-08117fce02a8955dc (10.0.0.32/27) X
subnet-0bc528852db882447 (10.0.0.64/27) X

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-1a	subnet-08117fce02a8955dc	10.0.0.32/27
us-east-1b	subnet-0bc528852db882447	10.0.0.64/27

Cancel Create © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Amazon RDS

RDS > Subnet groups

Subnet groups (1)

Name	Description	Status	VPC
task-subnetgroup	task-subnetgroup	Complete	vpc-03844ee78f41e571

Successfully created task-subnetgroup. View subnet group

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Amazon RDS

Databases (0)

Group resources Modify Actions

Filter by databases

DB identifier Status Role Engine Region & AZ Size Recommendations

No instances found

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RDS > Create database

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

Aurora (MySQL Compatible) Aurora (PostgreSQL Compatible)

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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.

Engine type Info

Aurora (MySQL Compatible) Aurora (PostgreSQL Compatible)

MySQL MariaDB

PostgreSQL Oracle

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DB instance identifier [Info](#)

Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.

The DB instance identifier is case-insensitive, but is stored as all lowercase (as 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. The 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.

ⓘ If you manage the master user credentials in Secrets Manager, some RDS features aren't supported.

[Learn more](#)

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ⓘ If you manage the master user credentials in Secrets Manager, some RDS features aren't supported.

[Learn more](#)

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](#)

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Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

3 Subnets, 2 Availability Zones

Only VPCs with a corresponding DB subnet group are listed.

ⓘ After a database is created, you can't change its VPC.

DB subnet group [Info](#)

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.

2 Subnets, 2 Availability Zones

Public access [Info](#)

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 specify which resources can connect to the database.

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.

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VPC security group (firewall) [Info](#)

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.

Choose existing
Choose existing VPC security groups

Create new
Create new VPC security group

New VPC security group name

Availability Zone [Info](#)

RDS Proxy
RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

Create an RDS Proxy [Info](#)
RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#).

Certificate authority - *optional* [Info](#)
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rds-ca-2019 (default)

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Enable Enhanced Monitoring
Enabling Enhanced Monitoring metrics are useful when you want to see how different processes or threads use the CPU.

▼ Additional configuration
Database options, encryption turned on, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.

Database options

Initial database name [Info](#)

If you do not specify a database name, Amazon RDS does not create a database.

DB parameter group [Info](#)

Option group [Info](#)

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Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro, db.t3.micro or db.t4g.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user-initiated DB Snapshots.

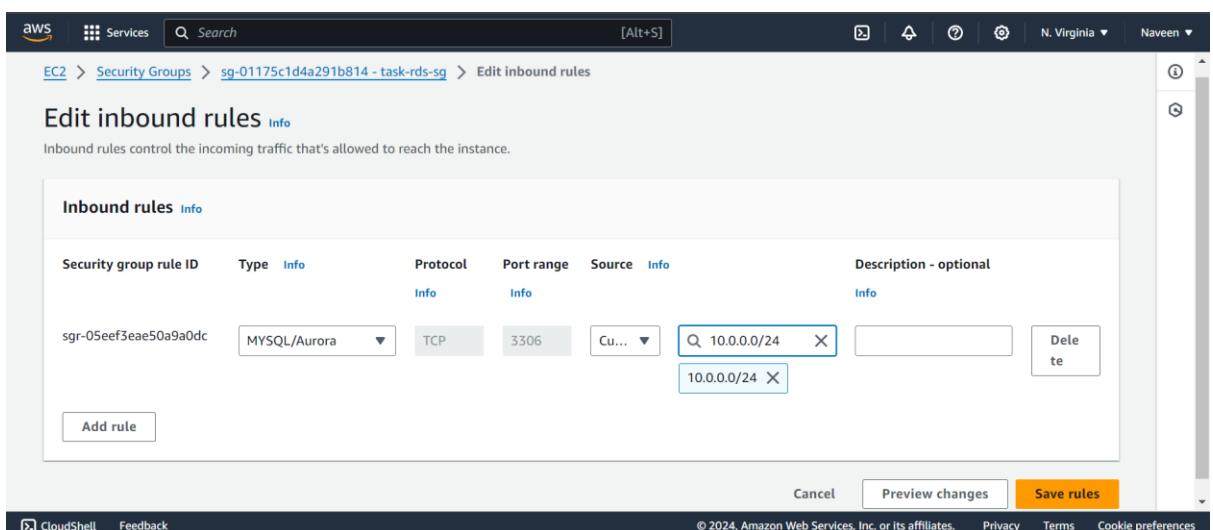
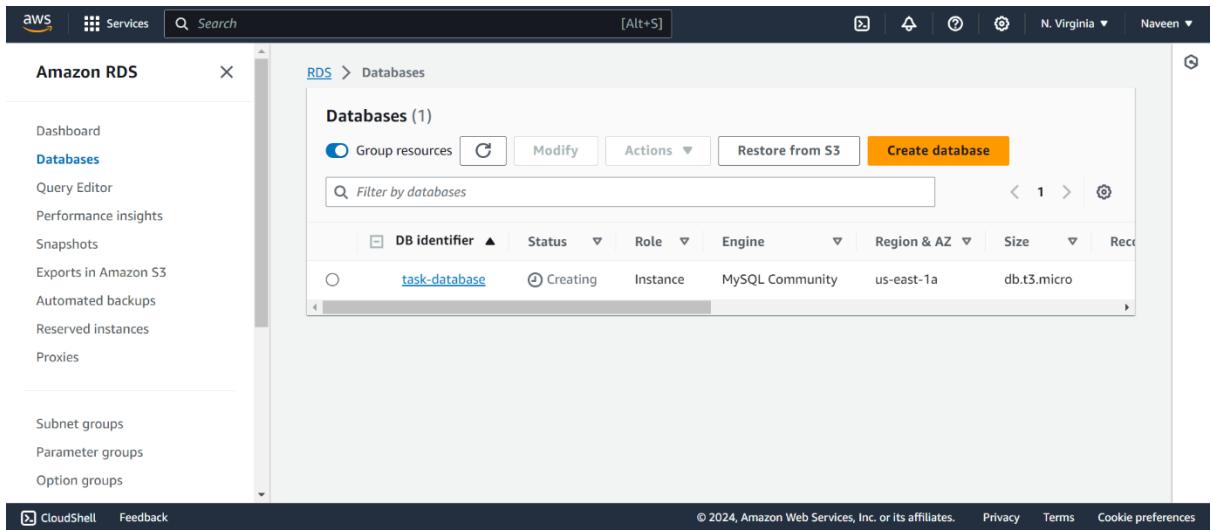
[Learn more about AWS Free Tier](#)

When your free usage expires or if your application use exceeds the free usage tiers, you simply pay standard, pay-as-you-go service rates as described in the [Amazon RDS Pricing page](#).

ⓘ You are responsible for ensuring that you have all of the necessary rights for any third-party products or services that you use with AWS services.

Cancel **Create database**

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EC2 - Instance

- Click the launch instance
- Provide the name for the EC2 instance
- Select the Ubuntu as AMI and instance type t2 micro
- Select the VPC which was created and select the public subnet
- Select the Create a new security group and provide a name for security group
- Provide the SSH and HTTP in security group
- Finally EC2 instance is created
- Select the EC2 instance and connect to instance
- Update the instance by running the command **sudo apt-get update -y**
- Next install web server by running the command **sudo apt-get install apache2 -y**

- Go to the html directory and remove the index.html file by running the command **`sudo rm index.html`**
- And clone the necessary code from github for the web page
- Go to the AWS project and move the entire folder to html by running command **`sudo mv * /var/www/html`**
- Now put the public address of the EC2 instance in browser web page is reflected with some error
- Since the web server was install in html but the code was in PHP there was an error to troubleshoot the error get repository ppa:ondrej/php from there install php5.6, mysql-client, php5.6-mysqli by running the command **`sudo add-apt-repository -y ppa:ondrej/php`** and **`sudo apt install php5.6 mysql-client php5.6-mysqli -y`**
- Open the index.php file by running command **`sudo vim index.php`**
- In connection detail provide the endpoint of the database with is created in server name and save the changes and exit from the file
- Connect to database by the instance which was created by running the command **`sudo mysql -h endpoint of database -u admin -pintel123.`** (MySql client is already installed)
- Now we are in database check detail of database by running command **`show databases;`**
- Go inside the intel by running command **`use intel;`**
- Table should be created for seeing the data for that **Create table (firstname varchar(25),email varchar(30));** click enter the table is created
- Provide a name and email address and click submit in webpage which was created
- Next run the command **`select * from data;`**
- Now the name and email data which was provided in the webpage will be reflected in the database table

Screenshot of the AWS EC2 Instances page showing no instances in the N. Virginia region.

The search bar shows "Find Instance by attribute or tag (case-sensitive)".

Actions dropdown menu includes "Launch instances".

Message: "No instances" and "You do not have any instances in this region".

Launch instances button.

Modal window titled "Select an instance" is open.

Screenshot of the "Launch an instance" wizard.

Step 1: Name and tags. Name: "task-project-ec2".

Step 2: Application and OS Images (Amazon Machine Image). Includes a search bar and a list of AMIs: Amazon Linux 2023.3.2..., ami-0005e0cfe09cc9050; Virtual server type: t2.micro; Firewall: New security group; Storage: (volumes).

Summary panel shows: Number of instances: 1; Software Image (AMI): Amazon Linux 2023.3.2...; Virtual server type: t2.micro; Firewall: New security group; Storage: (volumes).

Launch instance button.

Screenshot of the "Launch an instance" wizard.

Step 1: Quick Start. Includes a search bar and a grid of OS icons: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, ...

Step 2: Amazon Machine Image (AMI). Selected: Ubuntu Server 22.04 LTS (HVM), SSD Volume Type. Details: ami-0c7217cdde317fec (64-bit (x86)) / ami-05d47d29a4c2d19e1 (64-bit (Arm)).

Description: Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2023-12-07.

Architecture: Free tier eligible.

Summary panel shows: Number of instances: 1; Software Image (AMI): Canonical, Ubuntu, 22.04 LTS, ...; Virtual server type: t2.micro; Firewall: New security group; Storage: (volumes).

Launch instance button.

Network settings

VPC - required: **vpc-038444ee78f41e571 (task-vpc)** 10.0.0.0/24

Subnet: **subnet-0ce6696ca75d0261b task-public-subnet-1**
VPC: vpc-038444ee78f41e571 Owner: 730335585916 Availability Zone: us-east-1a IP addresses available: 27 CIDR: 10.0.0.0/27

Create new subnet

Auto-assign public IP: **Enable**

Firewall (security groups): **Create security group**

Security group name - required: **task-project-securitygroup**

Description - required: **launch-wizard-1 created 2024-01-14T12:31:52.779Z**

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0):
 Type: **ssh**, Protocol: **TCP**, Port range: **22**
 Source type: **Anywhere**, Description: **e.g. SSH for admin desktop**

Security group rule 2 (TCP, 80, 0.0.0.0/0):
 Type: **HTTP**, Protocol: **TCP**, Port range: **80**
 Source type: **Anywhere**, Description: **e.g. SSH for admin desktop**

Summary

Number of instances: **1**

Software Image (AMI): Canonical, Ubuntu, 22.04 LTS, ...
ami-0c7217cdde317cfec

Virtual server type (instance type): **t2.micro**

Firewall (security group): New security group

Storage (volumes)

Cancel Launch instance Review commands

Security group name - required: **task-project-securitygroup**

Description - required: **launch-wizard-1 created 2024-01-14T12:31:52.779Z**

Inbound Security Group Rules

Security group rule 1 (TCP, 22, 0.0.0.0/0):
 Type: **ssh**, Protocol: **TCP**, Port range: **22**
 Source type: **Anywhere**, Description: **e.g. SSH for admin desktop**

Summary

Number of instances: **1**

Software Image (AMI): Canonical, Ubuntu, 22.04 LTS, ...
ami-0c7217cdde317cfec

Virtual server type (instance type): **t2.micro**

Firewall (security group): New security group

Storage (volumes)

Cancel Launch instance Review commands

Security group rule 1 (TCP, 22, 0.0.0.0/0):
 Type: **ssh**, Protocol: **TCP**, Port range: **22**
 Source type: **Anywhere**, Description: **e.g. SSH for admin desktop**

Security group rule 2 (TCP, 80, 0.0.0.0/0):
 Type: **HTTP**, Protocol: **TCP**, Port range: **80**
 Source type: **Anywhere**, Description: **e.g. SSH for admin desktop**

Summary

Number of instances: **1**

Software Image (AMI): Canonical, Ubuntu, 22.04 LTS, ...
ami-0c7217cdde317cfec

Virtual server type (instance type): **t2.micro**

Firewall (security group): New security group

Storage (volumes)

Cancel Launch instance Review commands

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Root volume (not encrypted)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

Click refresh to view backup information

The tags that you assign determine whether the instance will be backed up by any Data Lifecycle Manager policies.

0 x File systems Edit

Advanced details Info

Number of instances Info
1

Software Image (AMI)
Canonical, Ubuntu, 22.04 LTS, ...read more
ami-0c7217cdde317cfec

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)

Cancel Launch instance Review commands

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EC2 Dashboard EC2 Global View Events Console-to-Code Preview

Instances (1) Info Find Instance by attribute or tag (case-sensitive)

Name Instance ID Instance state Instance type Status check Alarm status Available

task-project-ec2 i-087b97541cd2d57be Running t2.micro Initializing View alarms + us-east-1

Select an instance

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See <https://ubuntu.com/esm> or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-0-24:~\$

i-087b97541cd2d57be (task-project-ec2)

Public IPs: 34.227.47.160 Private IPs: 10.0.0.24

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```
aws Services Search [Alt+S] N. Virginia Naveen
ubuntu@ip-10-0-0-24:~$ sudo apt-get install apache2 -y
```

i-087b97541cd2d57be (task-project-ec2)

PublicIPs: 34.227.47.160 PrivateIPs: 10.0.0.24

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The screenshot shows a web browser window with the URL `34.227.47.160` in the address bar. The page displayed is the Apache2 Default Page, featuring the Ubuntu logo and the text "Apache2 Default Page". A red button labeled "It works!" is visible. Below the button, there is explanatory text about the default welcome page and configuration. A "Configuration Overview" section provides details about the configuration files, mentioning `/etc/apache2/` and `/etc/apache2/apache2.conf`. The browser interface includes a search bar, a taskbar with various icons, and a status bar at the bottom.

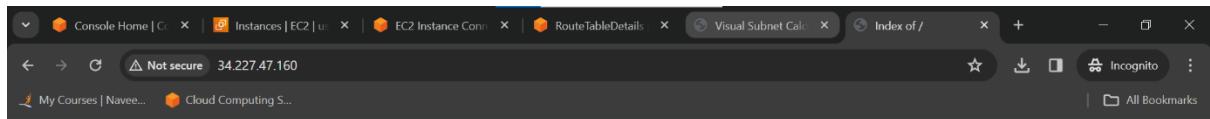
```
aws Services Search [Alt+S] N. Virginia Naveen
ubuntu@ip-10-0-0-24:~$ cd /var/www/html
ubuntu@ip-10-0-0-24:/var/www/html$ ls
index.html
ubuntu@ip-10-0-0-24:/var/www/html$ sudo rm index.html
ubuntu@ip-10-0-0-24:/var/www/html$
```

i-087b97541cd2d57be (task-project-ec2)

PublicIPs: 34.227.47.160 PrivateIPs: 10.0.0.24

CloudShell Feedback

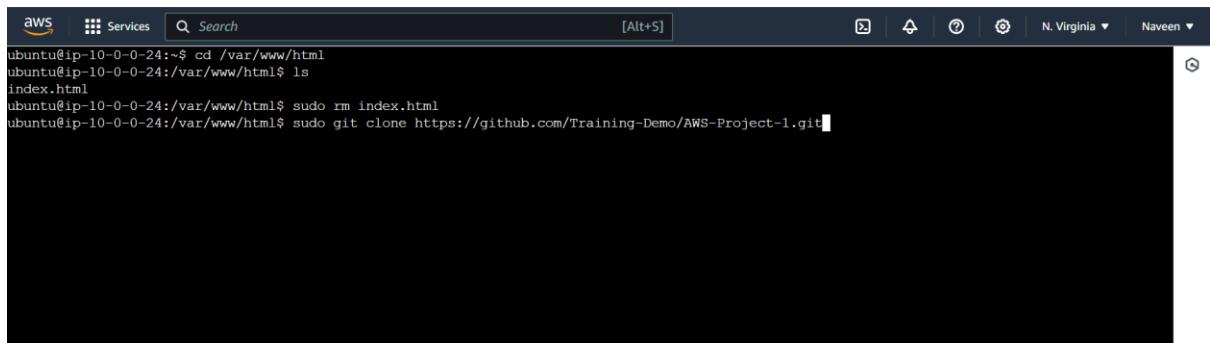
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Index of /

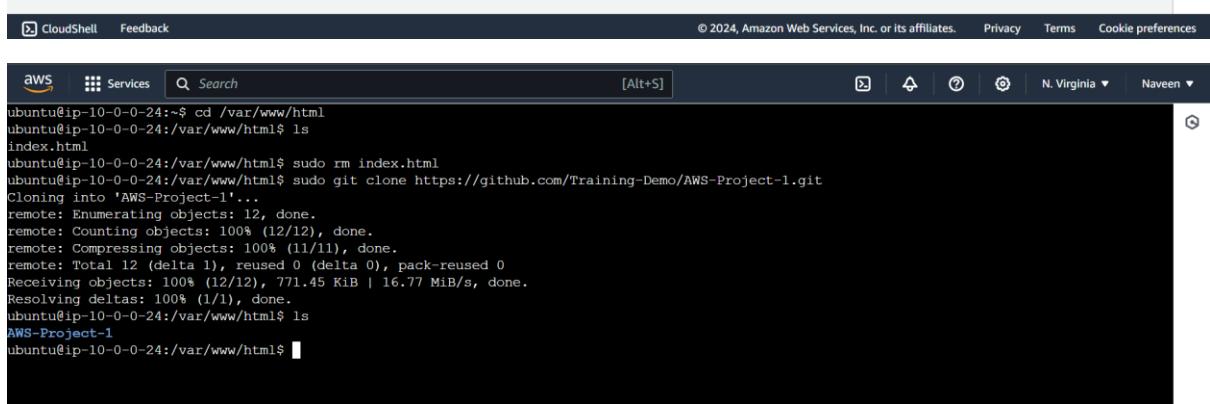
Name Last modified Size Description

Apache/2.4.52 (Ubuntu) Server at 34.227.47.160 Port 80



i-087b97541cd2d57be (task-project-ec2)

Public IPs: 34.227.47.160 Private IPs: 10.0.0.24



i-087b97541cd2d57be (task-project-ec2)

Public IPs: 34.227.47.160 Private IPs: 10.0.0.24



AWS Services Search [Alt+S] N. Virginia Naveen

```
ubuntu@ip-10-0-0-24:/var/www/html$ ls
index.html
ubuntu@ip-10-0-0-24:/var/www/html$ sudo rm index.html
ubuntu@ip-10-0-0-24:/var/www/html$ sudo git clone https://github.com/Training-Demo/AWS-Project-1.git
Cloning into 'AWS-Project-1'...
remote: Enumerating objects: 12, done.
remote: Counting objects: 100% (12/12), done.
remote: Compressing objects: 100% (11/11), done.
remote: Total 12 (delta 1), reused 0 (delta 0), pack-reused 0
Receiving objects: 100% (12/12), 771.45 KiB | 16.77 MiB/s, done.
Resolving deltas: 100% (1/1), done.
ubuntu@ip-10-0-0-24:/var/www/html$ ls
AWS-Project-1
ubuntu@ip-10-0-0-24:/var/www/html$ cd AWS-Project-1
ubuntu@ip-10-0-0-24:/var/www/html/AWS-Project-1$ ls
images index.php
ubuntu@ip-10-0-0-24:/var/www/html/AWS-Project-1$ sudo mv * /var/www/html
ubuntu@ip-10-0-0-24:/var/www/html/AWS-Project-1$ ls
```

i-087b97541cd2d57be (task-project-ec2)

Public IPs: 34.227.47.160 Private IPs: 10.0.0.24

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Console Home Instances | EC2 EC2 Instance Details RouteTableDetails Visual Subnet 34.227.47.160 Start Course Incognito All Bookmarks

Not secure 34.227.47.160 My Courses | Naveen... Cloud Computing S...

intelliPaat

Name:

Email:

Submit

```
connect_error { die("Connection failed: " . $conn->connect_error); } if(isset($_POST['firstname']) && isset($_POST['email'])){ $sql = "INSERT INTO data (firstname,email) VALUES ('".$_firstname."','".$_email."'); if ($conn->query($sql) === TRUE) { echo "New record created successfully"; } else { echo "Error: " . $sql . " " . $conn->error; } $conn->close(); } ?>
```

Type here to search 28°C 06:39 PM 14-01-2024

Screenshot of a web browser showing a login form for "IntelliPaat". The form includes fields for "Name:" and "Email:", a "Submit" button, and a "Forgot Password?" link. The background features a network diagram with nodes and connections.

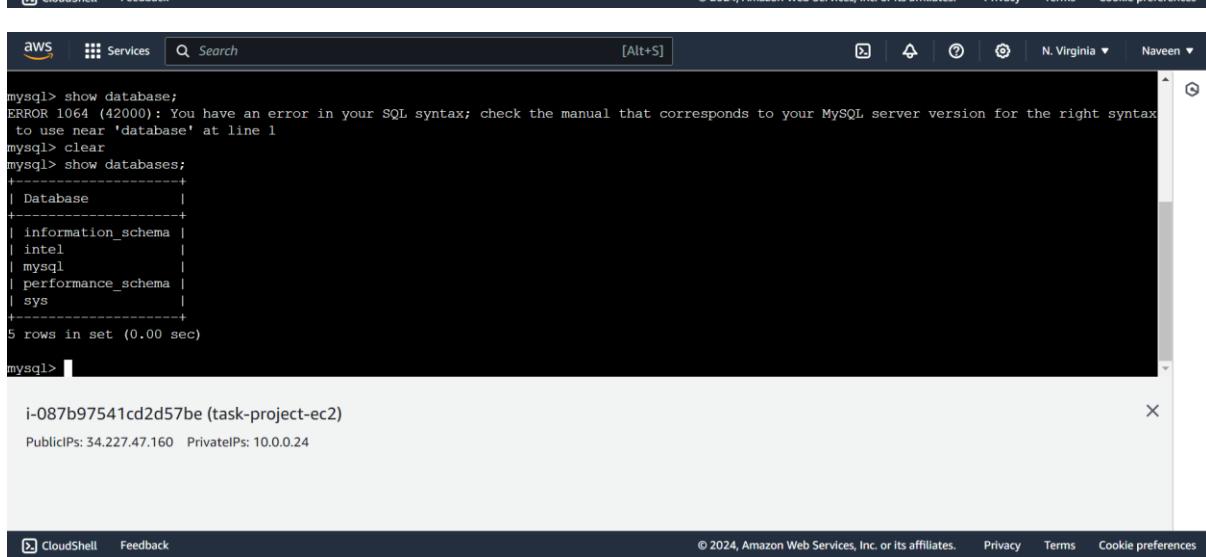
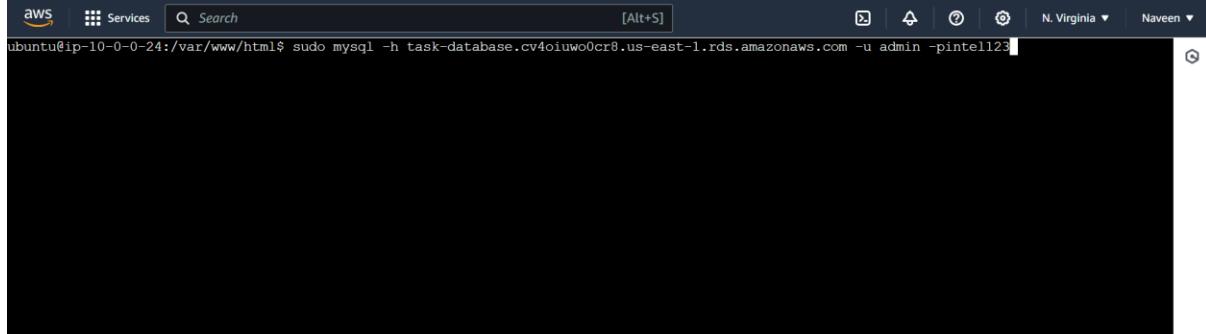
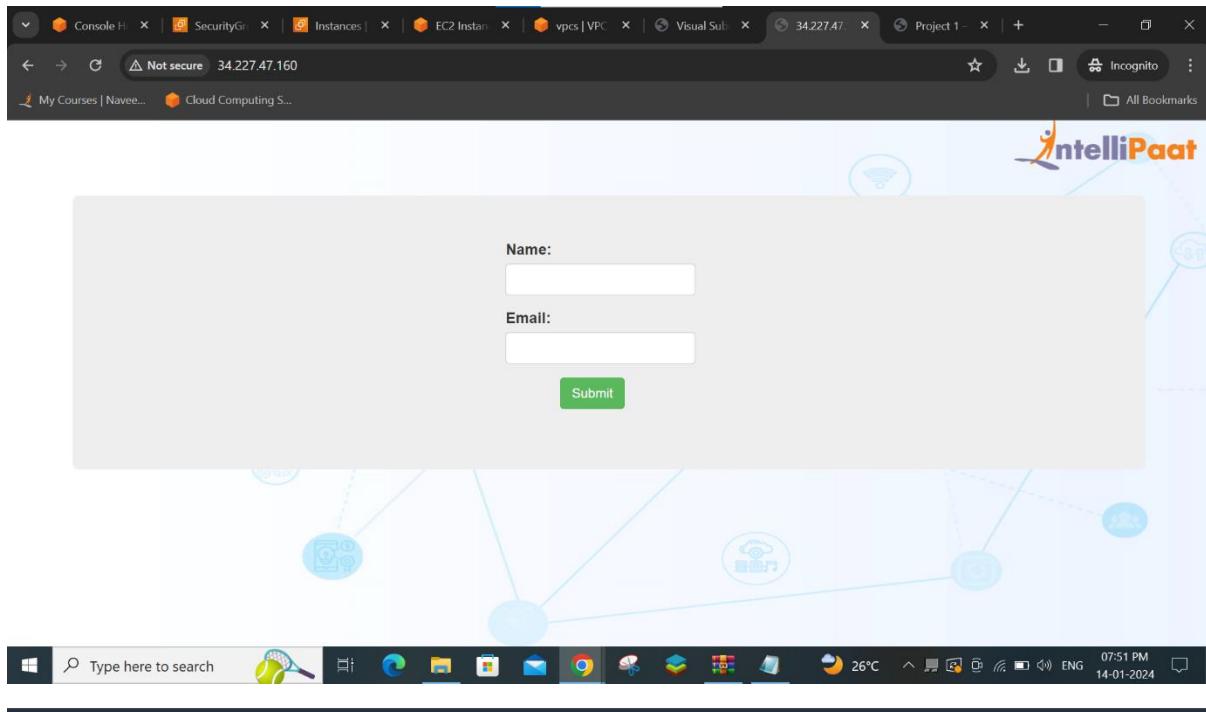
Connection failed: php_network_getaddresses: getaddrinfo failed: Name or service not known

aws Services Search [Alt+S] N. Virginia Naveen 06:51 PM 14-01-2024

i-087b97541cd2d57be (task-project-ec2)

PublicIPs: 34.227.47.160 PrivateIPs: 10.0.0.24

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aws Services Search [Alt+S] N. Virginia Naveen

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

mysql> useintel;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax
to use near 'useintel' at line 1
mysql> use intel;
Database changed
mysql>
```

i-087b97541cd2d57be (task-project-ec2)

PublicIPs: 34.227.47.160 PrivateIPs: 10.0.0.24

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```
aws Services Search [Alt+S] N. Virginia Naveen
```

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

mysql> useintel;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax
to use near 'useintel' at line 1
mysql> use intel;
Database changed
mysql> create table data (firstname varchar(25),email varchar(30));
```

i-087b97541cd2d57be (task-project-ec2)

PublicIPs: 34.227.47.160 PrivateIPs: 10.0.0.24

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My Courses | Navee... Cloud Computing S... All Bookmarks intelliPaat

Name:

Email:

New record created successfully

AWS CloudShell screenshot showing a MySQL session. The session starts with an error message: "mysql> useintel; ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'useintel' at line 1". It then successfully creates a table named 'data' with columns 'firstname' and 'email', and inserts a single row with values 'naveen' and 'naveenrajasekaran@gmail.com'. Finally, it lists the contents of the 'data' table.

```
mysql> useintel;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'useintel' at line 1
mysql> use intel;
Database changed
mysql> create table data (firstname varchar(25),email varchar(30));
Query OK, 0 rows affected (0.03 sec)

mysql> select * from data;
+-----+-----+
| firstname | email           |
+-----+-----+
| naveen    | naveenrajasekaran@gmail.com |
+-----+-----+
1 row in set (0.00 sec)

mysql>
```

i-087b97541cd2d57be (task-project-ec2)
Public IPs: 34.227.47.160 Private IPs: 10.0.0.24

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AMI

- Select the instance and Go to action
- Select image and templates and select create image
- Create an AMI image
- Provide a name to Image
- Finally AMI is created

AWS EC2 Instances page showing the 'Create image' dialog for instance i-087b97541cd2d57be. The dialog fields are filled as follows:

- Instance ID: i-087b97541cd2d57be (task-project-ec2)
- Image name: task-project-ami
- Image description - optional: Image description
- No reboot: Enable

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The screenshot shows the 'Tag image and snapshots separately' option selected. It includes a note about using tags to search and filter resources, and two radio button options: 'Tag image and snapshots separately' (selected) and 'Tag the image and the snapshots with different tags'. Below this, there's a note about using tags to identify resources and a 'Create image' button at the bottom right.

The screenshot shows the 'Amazon Machine Images (AMIs)' page with one item listed:

Name	AMI name	AMI ID	Source
task-project-ami	task-project-ami	ami-0402ef0e3b44aa304	730335585916/task-project-ami

Application load balancer

- Create a load application load balancer and provide a name to the load balancer
- Create a target group
 - a) Choose a target type as instance
 - b) And provide a name to target
 - c) Next protocol is http → port is 80 and IPV4
 - d) Register the target by selecting the EC2 instance
 - e) And Click a target group
- Select the target group which was created in listener and routing
- And click a create load balancer
- Now if we put the DNS name in the Brower the customized web page same of EC2 instance which was created will be reflected

AWS Services Search [Alt+S] N. Virginia Naveen

Volumes Snapshots Lifecycle Manager

Network & Security Security Groups Elastic IPs Placement Groups Key Pairs Network Interfaces

Load Balancing Load Balancers Target Groups Trust Stores New

Auto Scaling Auto Scaling Groups

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Load balancers

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

Filter load balancers

Name	DNS name	State	VPC ID	Availability Z
0 load balancers selected				

Select a load balancer above.

AWS Services Search [Alt+S] N. Virginia Naveen

Application Load Balancer Info

Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic.

Network Load Balancer Info

Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate management, and support for VPC endpoints.

Gateway Load Balancer Info

Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support AWS.

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Basic configuration

Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.

task-load-balancer

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme **Info**

Scheme can't be changed after the load balancer is created.

Internet-facing

An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

Internal

An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type **Info**

Select the type of IP addresses that your subnets use.

IPv4

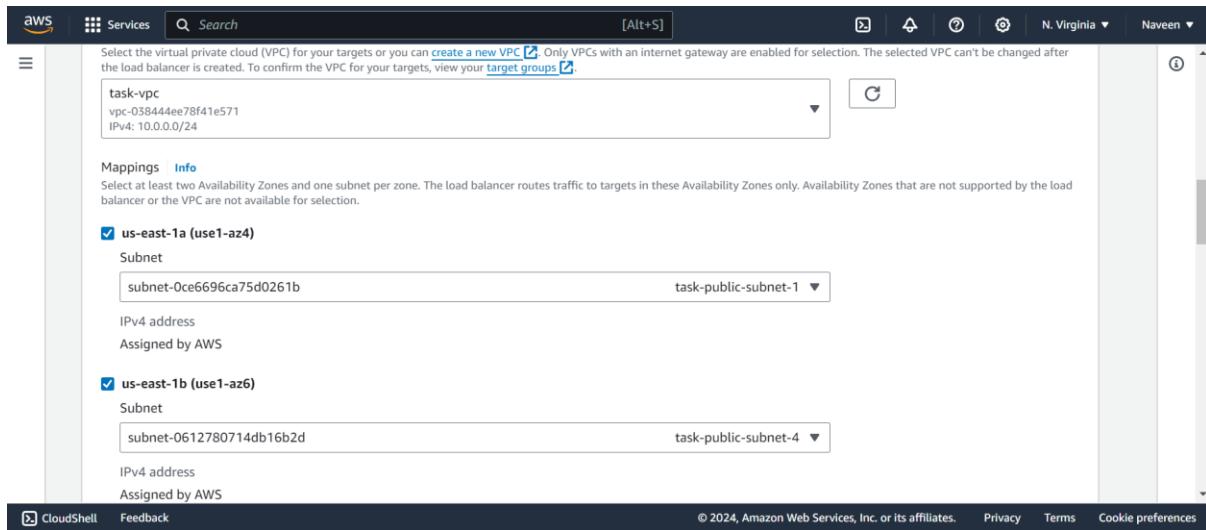
Recommended for internal load balancers.

Dualstack

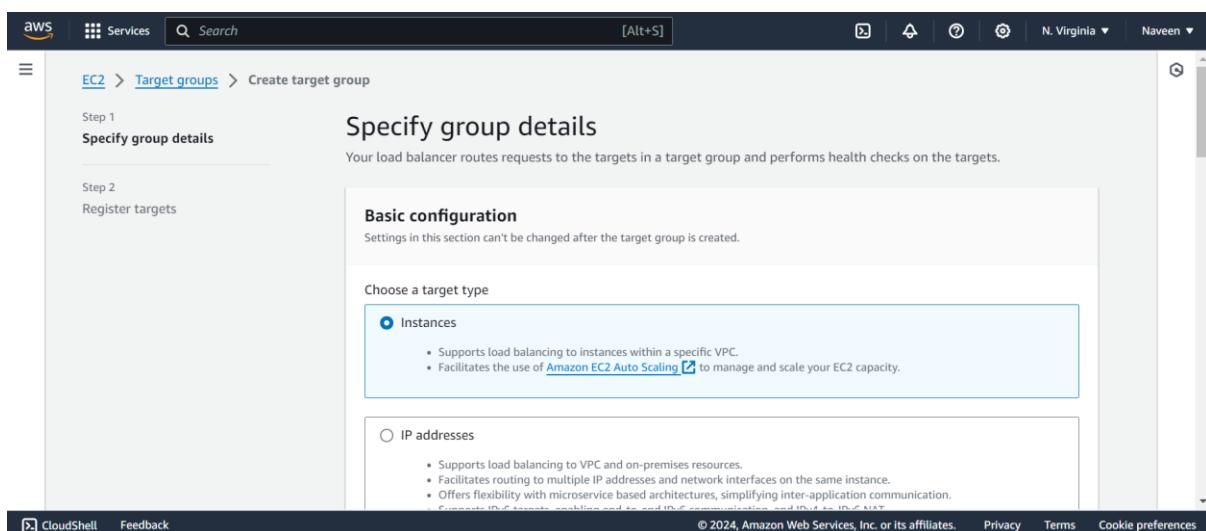
Includes IPv4 and IPv6 addresses.

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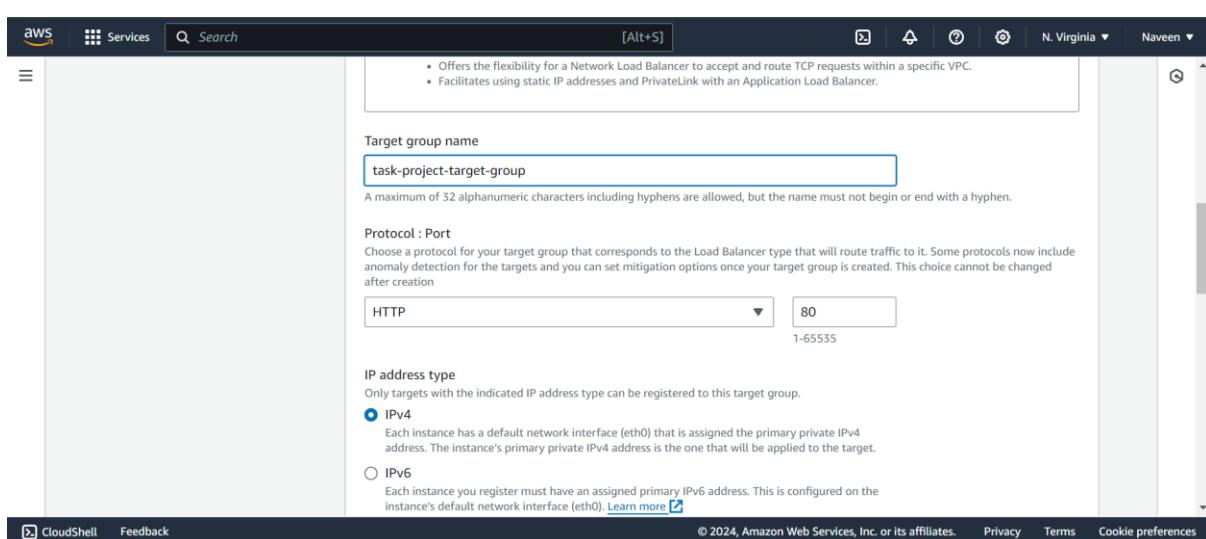
Screenshot of the AWS CloudFront console showing the creation of a new distribution. The 'VPC' section is selected, and a VPC named 'task-vpc' is chosen. Two Availability Zones ('us-east-1a' and 'us-east-1b') are mapped to subnets 'task-public-subnet-1' and 'task-public-subnet-4' respectively.



Screenshot of the AWS EC2 Target Groups console showing the creation of a new target group. The 'Specify group details' step is shown, with the 'Basic configuration' section selected. The 'Instances' target type is chosen, which supports load balancing to instances within a specific VPC and facilitates the use of Amazon EC2 Auto Scaling.



Screenshot of the AWS EC2 Target Groups console showing the continuation of the target group creation process. The 'Target group name' is set to 'task-project-target-group'. The 'Protocol : Port' section shows 'HTTP' selected with port '80'. The 'IP address type' section shows 'IPv4' selected, which is described as having a default network interface (eth0) assigned the primary private IPv4 address. The 'IPv6' option is also present but described as requiring an assigned primary IPv6 address.



VPC
Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.

task-vpc
vpc-038444ee78f41e571
IPv4: 10.0.0.0/24

Protocol version

HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.

HTTP2
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC, but gRPC-specific features are not available.

gRPC
Send requests to targets using gRPC. Supported when the request protocol is gRPC.

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to test their status.

Health check protocol

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Attributes

Info Certain default attributes will be applied to your target group. You can view and edit them after creating the target group.

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

Cancel **Next**

1 selection is now pending below. Include more or register targets when ready.

Review targets

Targets (1) **Remove all pending**

Filter targets **Show only pending**

Remove	Health status	Instance ID	Name	Port	State
X	Pending	i-087b97541cd2d57be	task-project-ec2	80	Running

1 pending **Cancel** **Previous** **Create target group**

AWS Services Search [Alt+S] N. Virginia Naveen

Protocol Port Default action Info

HTTP : 80 Forward to task-project-target-group Target type: Instance, IPv4

1-65535 HTTP C

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-on services - optional**

Additional AWS services can be integrated with this load balancer at launch. You can also add these and other services after your load balancer is created by reviewing the "Integrated Services" tab for the selected load balancer.

AWS Global Accelerator Info

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AWS Services Search [Alt+S] N. Virginia Naveen

task-load-balancer

- Internet-facing
- IPv4

task-project-securitygroup sg-0d3fd0dc82c508ed3

VPC vpc-038444ee78f41e5/1 task-vpc

- us-east-1a subnet-0ce6696ca75d0261b
- task-public-subnet-1
- us-east-1b subnet-0612780714db16b2d
- task-public-subnet-4

HTTP:80 defaults to task-project-target-group

Add-on services Edit Tags Edit

None None

Attributes

Certain default attributes will be applied to your load balancer. You can view and edit them after creating the load balancer.

Cancel Create load balancer

AWS Services Search [Alt+S] N. Virginia Naveen

EC2 Dashboard X

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Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations New

Load balancers (1)

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

Actions Create load balancer

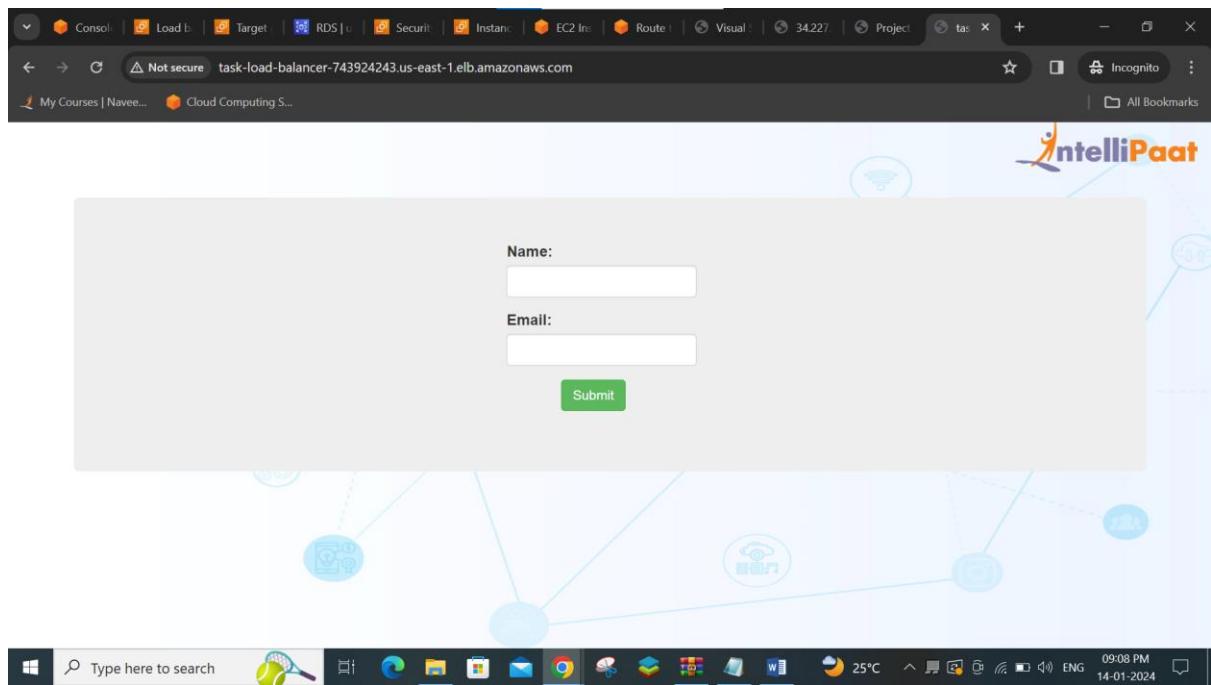
Filter load balancers

Name	DNS name	State	VPC ID	Availability Z
task-load-balancer	task-load-balancer-74392...	Provisioning..	vpc-038444ee78f41e5...	2 Availability Z

0 load balancers selected

Select a load balancer above.

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Auto Scaling

- Create auto scaling group
- Provide the name for auto scaling group
- Create a launch template
 - a. Select the AMI which was created
 - b. And add necessary configuration and create a template
- Select the template which was created
- Select the Attach to an existing load balancer in load balancing
- Select the Application load balancer which was created
- Provide the Group size Desired (capacity - 2)
- Provide minimum and maximum capacity (minimum capacity - 2 and maximum capacity - 3)
- Once the auto scaling group is created 2 EC2 instance will be created by the auto scaling group because the desire capacity is 2
- If we put the public ID address of 2 new created instance in browser the customized web page same of EC2 instance which was created will be reflected

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
Choose launch template

Step 2
Choose instance launch options

Step 3 - optional
Configure advanced options

Step 4 - optional
Configure group size and scaling

Step 5 - optional
Add notifications

Step 6 - optional
Add tags

Choose launch template Info

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

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 template Info

For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. If you need to create an Auto Scaling group without a launch template, use the AWS CLI or AWS SDKs.

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Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

Launch template name and description

Launch template name - required

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.

Template version description

Max 255 chars

Auto Scaling guidance Info
Select this if you intend to use this template with EC2 Auto Scaling

Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

Summary

Software Image (AMI)
task-project-ami
ami-007a53bcb0333d0ac

Virtual server type (instance type)
t2.micro

Firewall (security group)
-

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year

Cancel **Create launch template**

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Search our full catalog including 1000s of application and OS images

Recents **My AMIs** Quick Start

Don't include in launch template Owned by me Shared with me

Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

task-project-ami
ami-007a53bcb0333d0ac
2024-03-02T08:13:51.000Z Virtualization: hvm ENA enabled: true Root device type: ebs

Description

-

Architecture AMI ID

task-project-ami ami-007a53bcb0333d0ac

Summary

Software Image (AMI)
task-project-ami
ami-007a53bcb0333d0ac

Virtual server type (instance type)
t2.micro

Firewall (security group)
-

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year

Cancel **Create launch template**

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Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
 On-Demand Windows base pricing: 0.0162 USD per Hour
 On-Demand SUSE base pricing: 0.0116 USD per Hour
 On-Demand RHEL base pricing: 0.0716 USD per Hour
 On-Demand Linux base pricing: 0.0116 USD per Hour

All generations Compare instance types

Additional costs apply for AMIs with pre-installed software

Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Resource tags [Info](#)

No resource tags are currently included in this template. Add a resource tag to include it in the launch template.

Add new tag

You can add up to 50 more tags.

Advanced details [Info](#)

available via the CLI and API until December 31, 2023.

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

task-project-template

Create a launch template

Version

Default (1) C

Create a launch template version

Description	Launch template	Instance type
ver0	task-project-template	t2.micro
AMI ID	Security groups	Request Spot Instances
ami-007a53bcb0333d0ac	-	No
Key pair name	Security group IDs	
apple	sg-03a74645064a0e180	

EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
[Choose launch template](#)

Step 2
[Choose instance launch options](#)

Step 3 - optional
[Configure advanced options](#)

Step 4 - optional
[Configure group size and scaling](#)

Step 5 - optional
[Add notifications](#)

Step 6 - optional
[Add tags](#)

[CloudShell](#) [Feedback](#)

Choose instance launch options Info

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

Instance type requirements Info

You can keep the same instance attributes or instance type from your launch template, or you can choose to override the launch template by specifying different instance attributes or manually adding instance types.

Launch template	Version	Description
task-project-template	Default	ver0
lt-0594a0ea1dfd80f4f		

Instance type
t2.micro

Override launch template

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EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
[Choose launch template](#)

Step 2
[Choose instance launch options](#)

Step 3 - optional
[Configure advanced options](#)

Step 4 - optional
[Configure group size and scaling](#)

Step 5 - optional
[Add notifications](#)

Step 6 - optional
[Add tags](#)

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Configure advanced options - optional Info

Integrate your Auto Scaling group with other services to distribute network traffic across multiple servers using a load balancer or to establish service-to-service communications using VPC Lattice. You can also set options that give you more control over health check replacements and monitoring.

Load balancing Info

Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.

No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.

Attach to an existing load balancer
Choose from your existing load balancers.

Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.

[Attach to an existing load balancer](#)

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EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1
[Choose launch template](#)

Step 2
[Choose instance launch options](#)

Step 3 - optional
[Configure advanced options](#)

Step 4 - optional
[Configure group size and scaling](#)

Step 5 - optional
[Add notifications](#)

Step 6 - optional
[Add tags](#)

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Add notifications

Scaling group.

Attach to an existing load balancer

Select the load balancers that you want to attach to your Auto Scaling group.

Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.

Choose from Classic Load Balancers

Existing load balancer target groups
Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups

task-project-target-group | HTTP X
Application Load Balancer: task-load-balancer

VPC Lattice integration options Info

To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates communications between AWS services and helps you connect and manage your applications across compute services in AWS.

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Configure group size and scaling

Choose the unit of measurement for the desired capacity value. vCPUs and Memory(GiB) are only supported for mixed instances groups configured with a set of instance attributes.

Units (number of instances) ▾

Desired capacity
Specify your group size.
2

Step 5 - optional
[Add notifications](#)

Step 6 - optional
[Add tags](#)

Step 7
[Review](#)

Scaling Info
You can resize your Auto Scaling group manually or automatically to meet changes in demand.

Scaling limits
Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity
2
Equal or less than desired capacity

Max desired capacity
3
Equal or greater than desired capacity

Automatic scaling - optional

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Add tags - optional Info

Add tags to help you search, filter, and track your Auto Scaling group across AWS. You can also choose to automatically add these tags to instances when they are launched.

💡 You can optionally choose to add tags to instances (and their attached EBS volumes) by specifying tags in your launch template. We recommend caution, however, because the tag values for instances from your launch template will be overridden if there are any duplicate keys specified for the Auto Scaling group. X

Tags (1)

Key	Value - optional	Tag new instances
name	task-auto-scaling-ec2	<input checked="" type="checkbox"/>

[Add tag](#) [Remove](#)

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Review Info

Step 1: Choose launch template

Group details		
Auto Scaling group name task-project-auto-scaling-group		
Launch template		
Launch template task-project-template ↗	Version Default	Description ver0

Step 2: Choose instance launch options

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Enable instance protection from scale in

Step 5: Add notifications

Notifications

No notifications

Step 6: Add tags

Tags (1)

Key	Value	Tag new instances
name	task-auto-scaling-ec2	Yes

Cancel Previous **Create Auto Scaling group**

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EC2 > Auto Scaling groups

Auto Scaling groups (1) Info

Name	Launch template/configuration	Instances	Status	Desired capacity	Min capacity	Max capacity
task-project-auto-scaling-group	task-project-template Version Default	0	Updating capacity...	2	2	2

0 Auto Scaling groups selected

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EC Dashboard EC2 Global View Events Console-to-Code **Preview** Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations New

Instances (3) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Ava
task-project-ec2	i-09869ad029595adcf	Running	t2.micro	2/2 checks passed	View alarms +	us-e
	i-014a61d585a68eb6c	Running	t2.micro	Initializing	View alarms +	us-e
	i-09f1d3d1cd6afe6ad	Running	t2.micro	2/2 checks passed	View alarms +	us-e

Select an instance

The screenshot shows the AWS CloudWatch Activity history page. On the left, there's a sidebar with navigation links like Snapshots, Lifecycle Manager, Network & Security, Load Balancing, and Auto Scaling. The main area displays activity logs with a header 'Activity history (2)'. A search bar at the top of the log table says 'Filter activity history'. The log table has columns for Status, Description, and Cause. Two entries are listed:

Status	Description	Cause
Successful	Launching a new EC2 instance: i-09f1d3d1cd6afe6ad	At 2024-03-02T09:24:30Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-03-02T09:24:42Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.
Successful	Launching a new EC2 instance: i-014a61d585a68eb6c	At 2024-03-02T09:24:30Z a user request created an AutoScalingGroup changing the desired capacity from 0 to 2. At 2024-03-02T09:24:42Z an instance was started in response to a difference between desired and actual capacity, increasing the capacity from 0 to 2.

At the bottom of the page, there are links for CloudShell, Feedback, and a footer with copyright information: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences.

Security Group Rules

- Go to **RDS Data Base** security group and edit inbound rules
- Delete the existing inbound rules and click the add rule
- In the type Allow only **MySQL/Aurora** source from our **EC2 Instance security group** and click the save rules
- Click the create security group for (creating for load balancer)
- Provide the name for security group and click Add rule
- In the type Allow only **HTTP** from **0.0.0.0/0 (from Anywhere-IPv4)**
- Click the create security group
- Go Inside the application load balancer which was created next navigate to security and click Edit
- Now select the security group which was created for load balancer and click save changes
- Go to EC2 Instance security group and click edit inbound rules
- There should be In Type Allow **HTTP** from source will be **security group which created** for load balancer
- Finally click the save rules

[EC2](#) > [Security Groups](#) > [sg-01839ca2bec659759 - task-rds-sg](#) > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
-	MySQL/Aurora	TCP	3306	Cu... <small>▼</small>	<input type="text" value="sg-03a74645064a0e1"/> 80

[Add rule](#)

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[EC2](#) > [Security Groups](#) > Create security group

Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details	
Security group name <small>Info</small>	<input type="text" value="task-project-load-balancer"/>
Name cannot be edited after creation.	
Description <small>Info</small>	<input type="text" value="Allows SSH access to developers"/>
VPC <small>Info</small>	vpc-083a894730a843d88

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This security group has no inbound rules.

[Add rule](#)

Outbound rules Info

Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Destination <small>Info</small>	Description - optional <small>Info</small>
HTTP	TCP	80	An... <small>▼</small>	<input type="text" value="0.0.0.0"/> 0.0.0.0/0

[Add rule](#)

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

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- Dedicated Hosts
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Image CloudShell Feedback

AMI Catalog

Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

Network & Security

- Security Groups
- Elastic IPs
- Placement Groups
- Key Pairs
- Network Interfaces

Load Balancing

- Load Balancers
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Security group (sg-09caf5d51a577b72e | task-project-load-balancer) was created successfully

Details

EC2 > Security Groups > sg-09caf5d51a577b72e - task-project-load-balancer

sg-09caf5d51a577b72e - task-project-load-balancer

Actions ▾

Details			
Security group name	Security group ID	Description	VPC ID
task-project-load-balancer	sg-09caf5d51a577b72e	task-project-load-balancer	VPC-083a894730a843d88
Owner	Inbound rules count	Outbound rules count	
992382377757	0 Permission entries	1 Permission entry	

Inbound rules Outbound rules Tags

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Custom (use 1-az1)

subnet-05b35b4b0be41d112

us-east-1b (use1-az1)

Load balancer ARN

arn:aws:elasticloadbalancing:us-east-1:992382377757:loadbalancer/app/task-load-balancer/2e98e2ff8c31d714

DNS name [Info](#)

task-load-balancer-1130113155.us-east-1.elb.amazonaws.com (A Record)

Listeners and rules Network mapping Resource map - new Security Monitoring Integrations

Security groups (1)

A security group is a set of firewall rules that control the traffic to your load balancer.

Edit

Security Group ID	Name	Description
sg-03a74645064a0e180	launch-wizard-1	launch-wizard-1 created 2024-03-02T08:07:34.207Z

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EDIT Security groups

Load balancer details: task-load-balancer

Security groups

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

task-project-load-balancer sg-09caf5d51a577b72e VPC: vpc-083a894730a843d88

Cancel Save changes

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▼ Instances

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EC2 > Security Groups > sg-03a74645064a0e180 - launch-wizard-1

sg-03a74645064a0e180 - launch-wizard-1

Actions ▾

Details			
Security group name	sg-03a74645064a0e180	Security group ID	vpc-083a894730a843d88
Owner	992382377757	Description	Created 2024-03-02T08:07:34.207Z
		Inbound rules count	3 Permission entries
		Outbound rules count	1 Permission entry

Inbound rules Outbound rules Tags

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Instances Feedback

Inbound rules Info

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
sgr-0117eefac5ac88588	SSH	TCP	22	Cu... ▾	Info
-	HTTP	TCP	80	Cu... ▾	Info

Add rule

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