

Subject – Cloud deployment lab

The screenshot shows the AWS IAM Users page. The left sidebar navigation includes 'Identity and Access Management (IAM)', 'Dashboard', 'Access management' (with 'User groups', 'Users', 'Roles', 'Policies', 'Identity providers', and 'Account settings' listed), 'Access reports' (with 'Access Analyzer', 'External access', and 'Unused access' listed), and 'CloudShell' and 'Feedback' buttons.

The main content area displays the 'Users (3) Info' section. It states: "An IAM user is an identity with long-term credentials that is used to interact with AWS in an account." Below this is a search bar and a table listing three users:

User name	Path	Group	Last activity	MFA	Password age
User1	/	1	-	-	37 minutes
User2	/	1	-	-	-
User3	/	1	-	-	-

The screenshot shows the AWS IAM User groups page. The left sidebar navigation is identical to the previous screenshot.

The main content area displays the 'User groups (3) Info' section. It states: "A user group is a collection of IAM users. Use groups to specify permissions for a collection of users." Below this is a search bar and a table listing three user groups:

Group name	Users	Permissions	Creation time
EC2Admin	1	Defined	10 minutes ago
EC2Support	1	Defined	5 minutes ago
S3Support	1	Defined	2 minutes ago

Microsoft Word - Exp 01.docx EC2Support | IAM | Global New Tab

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/groups/details/EC2Support?section=users

WhatsApp Inbox (170) - anshu... My Grammarly - Gr...

aws Services Search [Alt+S]

EC2Support Info

Summary

User group name: EC2Support Creation time: August 13, 2024, 23:22 (UTC+05:30) ARN: arn:aws:iam::026090516376:group/EC2Support

Users (1) Permissions Access Advisor

Users in this group (1)

An IAM user is an entity that you create in AWS to represent the person or application that uses it to interact with AWS.

User name	Groups	Last activity	Creation time
User2	1	None	35 minutes ago

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Microsoft Word - Exp 01.docx EC2Support | IAM | Global New Tab

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/groups/details/EC2Support?section=permissions

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aws Services Search [Alt+S]

EC2Support Info

Summary

User group name: EC2Support Creation time: August 13, 2024, 23:22 (UTC+05:30) ARN: arn:aws:iam::026090516376:group/EC2Support

Users (1) Permissions Access Advisor

Permissions policies (1) Info

You can attach up to 10 managed policies.

Policy name	Type	Attached entities
EC2Support Policy	Managed policy	1

Filter by Type: All types < 1 > ©

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Microsoft Word - Exp 01.docx S3Support | IAM | Global New Tab

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us-east-1.console.aws.amazon.com/iam/home/?region=us-east-1#/groups/details/S3Support?section=users

AWS Services Search [Alt+S]

S3Support Info

Identity and Access Management (IAM)

Search IAM

Dashboard

User groups

- Users
- Roles
- Policies
- Identity providers
- Account settings

Access reports

- Access Analyzer
- External access
- Unused access

CloudShell Feedback

S3Support

Summary

User group name: S3Support Creation time: August 13, 2024, 23:25 (UTC+05:30) ARN: arn:aws:iam::026090516376:group/S3Support

Users (1) Permissions Access Advisor

Users in this group (1)

An IAM user is an entity that you create in AWS to represent the person or application that uses it to interact with AWS.

<input type="checkbox"/>	User name	Groups	Last activity	Creation time
<input type="checkbox"/>	User3	1	None	32 minutes ago

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Microsoft Word - Exp 01.docx EC2Admin | IAM | Global New Tab WhatsApp Inbox (170) - anshi... My Grammarly - Gr...

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EC2Admin Info

Summary

User group name	Creation time	ARN
EC2Admin	August 13, 2024, 23:17 (UTC+05:30)	arn:aws:iam::026090516376:group/EC2Admin

Users (1) Permissions Access Advisor

Users in this group (1)

An IAM user is an entity that you create in AWS to represent the person or application that uses it to interact with AWS.

User name	Groups	Last activity	Creation time
User1		None	48 minutes ago

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S3Support Info

Summary

User group name	Creation time	ARN
S3Support	August 13, 2024, 23:25 (UTC+05:30)	arn:aws:iam::026090516376:group/S3Support

Users (1) Permissions Access Advisor

Permissions policies (1) Info

You can attach up to 10 managed policies.

Policy name	Type	Attached entities
ViewOnlyAccess	AWS managed - job function	1

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Microsoft Word - Exp 01.docx EC2Admin | IAM | Global New Tab

us-east-1.console.aws.amazon.com/iam/home?region=us-east-1#/groups/details/EC2Admin?section=permissions

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Identity and Access Management (IAM)

Search IAM

Dashboard

User groups

- Users
- Roles
- Policies
- Identity providers
- Account settings

Access management

- User groups**
- Access Analyzer
- External access
- Unused access

CloudShell Feedback

Summary

User group name: EC2Admin Creation time: August 13, 2024, 23:17 (UTC+05:30) ARN: arn:aws:iam::026090516376:group/EC2Admin

Permissions

Permissions policies (1) Info

You can attach up to 10 managed policies.

Filter by Type: All types

Policy name	Type	Attached entities
AmazonEC2ReadOnlyAccess	AWS managed	2

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NAME – Anshi

SAP ID – 500101953

ROLL NO – R2142220034

Subject – Cloud deployment lab

EXP 2: S3- Multi-region Storage Backup with Cross-Region Replication

Task 1, Task 2 and Task 3:

A screenshot of the AWS S3 console. The top navigation bar shows the URL 'us-east-1.console.aws.amazon.com/s3/get-started?region=us-east-1'. The main content area has a dark background. On the left, there's a sidebar with 'Storage' and a large 'Amazon S3' heading with the subtext 'Store and retrieve any amount of data from anywhere'. Below this is a paragraph about Amazon S3 and a 'Create bucket' button. On the right, there's a 'Pricing' section with a paragraph about no minimum fees and a link to the AWS Simple Monthly Calculator. At the bottom, there's a 'How it works' section with a video thumbnail titled 'Introduction to Amazon S3' and a 'Copy link' button. The footer includes links for 'CloudShell', 'Feedback', '© 2024, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

Successfully created bucket "bucketexample1098". To upload files and folders, or to configure additional bucket settings, choose [View details](#).

Amazon S3 > Buckets

▶ Account snapshot - updated every 24 hours [All AWS Regions](#)

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

[View Storage Lens dashboard](#)

[General purpose buckets](#) [Directory buckets](#)

General purpose buckets (1) [Info](#) [All AWS Regions](#)

Buckets are containers for data stored in S3.

Name	AWS Region	IAM Access Analyzer	Creation date
bucketexample1098	US East (N. Virginia) us-east-1	View analyzer for us-east-1	August 19, 2024, 21:40:58 (UTC+05:30)

[Create bucket](#)

[Find buckets by name](#)

< 1 > ⌂

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Services Search [Alt+S]

Amazon S3 > Buckets > [bucketexample1098](#) > Edit Bucket Versioning

Edit Bucket Versioning [Info](#)

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Bucket Versioning

Suspend
This suspends the creation of object versions for all operations but preserves any existing object versions.

Enable

Multi-factor authentication (MFA) delete
An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. [Learn more](#)

Disabled

[Cancel](#) [Save changes](#)

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Screenshot of the AWS S3 Buckets page showing two buckets created on August 19, 2024.

Buckets

- Access Grants
- Access Points
- Object Lambda Access Points
- Multi-Region Access Points
- Batch Operations
- IAM Access Analyzer for S3

Storage Lens

- Dashboards
- Storage Lens groups
- AWS Organizations settings

General purpose buckets (2)

Name	AWS Region	IAM Access Analyzer	Creation date
bucketexample1097	US West (Oregon) us-west-2	View analyzer for us-west-2	August 19, 2024, 22:00:20 (UTC+05:30)
bucketexample1098	US East (N. Virginia) us-east-1	View analyzer for us-east-1	August 19, 2024, 21:40:58 (UTC+05:30)

Upload succeeded

Summary

Destination	Succeeded	Failed
s3://bucketexample1098	1 file, 7.0 B (100.00%)	0 files, 0 B (0%)

Files and folders (1 Total, 7.0 B)

Name	Folder	Type	Size	Status	Error
pre-crr.txt.txt	-	text/plain	7.0 B	Success	-

Amazon S3 > Buckets > bucketexample1098 > Replication rules > exemplereplication1

exemplereplication1 Info

Actions ▾

Replication rule summary

Replication rule name exemplereplication1	Status Enabled	Priority 0
--	--	---------------

Source bucket

Source bucket name bucketexample1098	Scope Entire bucket	Tags -
Source Region US East (N. Virginia) us-east-1	Prefix -	

Destination

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Amazon S3 > Buckets > bucketexample1098

bucketexample1098 Info

Objects Properties Permissions Metrics Management Access Points

Objects (2) Info

Upload

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	crr-bucket.txt.txt	txt	August 19, 2024, 22:38:05 (UTC+05:30)	7.0 B	Standard
<input type="checkbox"/>	pre-crr.txt.txt	txt	August 19, 2024, 22:20:11 (UTC+05:30)	7.0 B	Standard

Amazon S3

Buckets

- Access Grants
- Access Points
- Object Lambda Access Points
- Multi-Region Access Points
- Batch Operations
- IAM Access Analyzer for S3

Block Public Access settings for this account

▼ Storage Lens

- Dashboards
- Storage Lens groups
- AWS Organizations settings

Feature spotlight

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bucketexample1097

Objects Properties Permissions Metrics Management Access Points

Objects (1)

Copy S3 URI Copy URL Download Open Delete Actions Create folder Upload

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix Show versions

Name	Type	Last modified	Size	Storage class
crr-bucket.txt.txt	txt	August 19, 2024, 22:38:05 (UTC+05:30)	7.0 B	Standard

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Replication configuration successfully updated

If changes to the configuration aren't displayed, choose the refresh button. Changes apply only to new objects. To replicate existing objects with this configuration, choose [Create replication job](#).

US East (N. Virginia) us-east-1

Replication rules (1)

View details Edit rule Delete Create replication rule

Use replication rules to define options you want Amazon S3 to apply during replication such as server-side encryption, replica ownership, transitioning replicas to another storage class, and more. [Learn more](#)

Replication rule name	Status	Destination bucket	Destination Region	Priority	Scope	Storage class	Replica owner	Replication Time Control	KMS-encrypted objects (SSE-KMS or DSSE-KMS)
examplereplication1	Disabled	s3://bucketexample1097	US West (Oregon) us-west-2	0	Entire bucket	Same as source	Same as source	Disabled	Do not replicate

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

Upload succeeded
View details below.

Summary

Destination	Succeeded	Failed
s3://bucketexample1098/crr-text/	1 file, 7.0 B (100.00%)	0 files, 0 B (0%)

Files and folders Configuration

Files and folders (1 Total, 7.0 B)

Name	Folder	Type	Size	Status	Error
crr-folder.txt...	-	text/plain	7.0 B	Succeeded	-

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aws Services Search [Alt+S] Oregon AnshiMehta

Amazon S3 Buckets bucketexample1097 info

Buckets Access Grants Access Points Object Lambda Access Points Multi-Region Access Points Batch Operations IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens Dashboards Storage Lens groups AWS Organizations settings

Objects (2) info Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

Name	Type	Last modified	Size	Storage class
crr-bucket.txt.txt	txt	August 19, 2024, 22:38:05 (UTC+05:30)	7.0 B	Standard
crr-text/	Folder	-	-	-

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NAME – Anshi

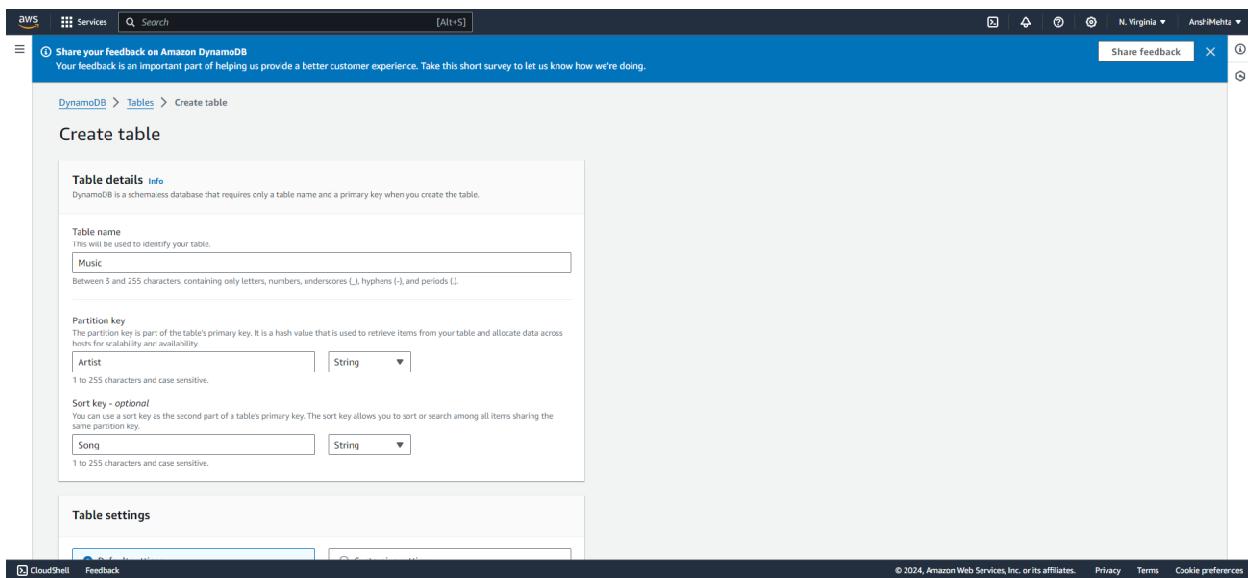
SAP ID – 500101953

ROLL NO – R2142220034

Subject – Cloud deployment lab

EXP 3 : Introduction to Amazon DynamoDB

TASK 1 – CREATION OF TABLE



The screenshot shows the 'Create table' step in the AWS DynamoDB console. At the top, there's a blue header bar with the AWS logo, a search bar, and a 'Share feedback' button. Below the header, a message encourages users to share feedback about the service. The main area is titled 'Create table' and contains two sections: 'Table details' and 'Table settings'. In the 'Table details' section, the 'Table name' is set to 'Music'. Under 'Partition key', it is defined as 'Artist' of type 'String'. Under 'Sort key (optional)', it is defined as 'Song' of type 'String'. The 'Table settings' section includes dropdowns for 'Billing mode' (set to 'Provisioned') and 'Global secondary indexes'. At the bottom, there are buttons for 'Next Step' and 'Cancel'.

TASK 2- ADDITION OF DATA

AWS Services Search [Alt+S] Share feedback X N. Virginia AnshMehta

Share your feedback on Amazon DynamoDB
Your feedback is an important part of helping us provide a better customer experience. Take this short survey to let us know how we're doing.

DynamoDB > Explore items: Music > Create item

Create item

You can add, remove, or edit the attributes of an item. You can nest attributes inside other attributes up to 32 levels deep. Learn more ⓘ

Attribute name	Value	Type
Artist - Partition key	Pink Floyd	String
Song - Sort key	Money	String
Album	The Dark Side Of The Moon	String Remove
Year	1975	Number Remove

Add new attribute ▾

Cancel Create item

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CREATION OF SECOND ITEM

AWS Services Search [Alt+S] Share feedback X N. Virginia AnshMehta

Share your feedback on Amazon DynamoDB
Your feedback is an important part of helping us provide a better customer experience. Take this short survey to let us know how we're doing.

DynamoDB > Explore items: Music > Create item

Create item

You can add, remove, or edit the attributes of an item. You can nest attributes inside other attributes up to 32 levels deep. Learn more ⓘ

Attribute name	Value	Type
Artist - Partition key	John Lennon	String
Song - Sort key	Imagine	String
Year	1971	Number Remove
Genre	Soft Rock	String Remove

Add new attribute ▾

Cancel Create item

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CREATION OF THIRD ITEM

Create item

You can add, remove, or edit the attributes of an item. You can nest attributes inside other attributes up to 32 levels deep. Learn more [\[?\]](#)

Attribute name	Value	Type
Artist - Partition key	Psy	String
Song - Sort key	Gangnam Style	String
Album	Psy 6(Six Rules), part1	String
Year	2011	Number
LengthSeconds	219	Number

[Cancel](#) [Create item](#)

TASK 3 -MODIFY AN EXISTING ITEM

Edit item

You can add, remove, or edit the attributes of an item. You can nest attributes inside other attributes up to 32 levels deep. Learn more [\[?\]](#)

Attribute name	Value	Type
Artist - Partition key	Psy	String
Song - Sort key	Gangnam Style	String
Album	Psy 6(Six Rules), part1	String
LengthSeconds	219	Number
Year	2012	Number

[Cancel](#) [Save](#) [Save and close](#)

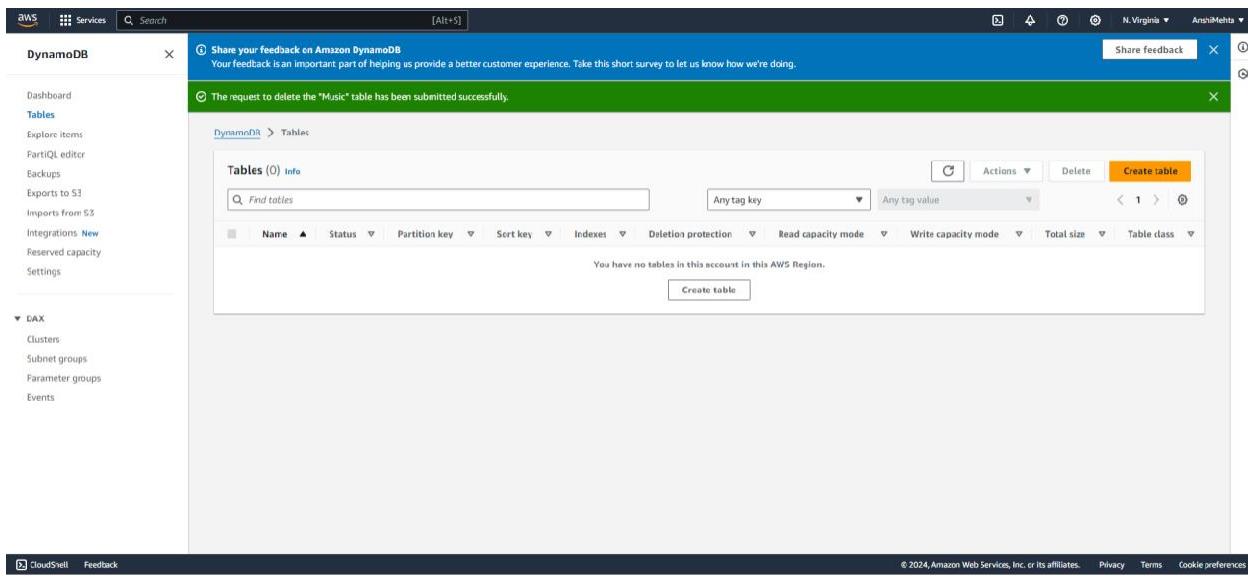
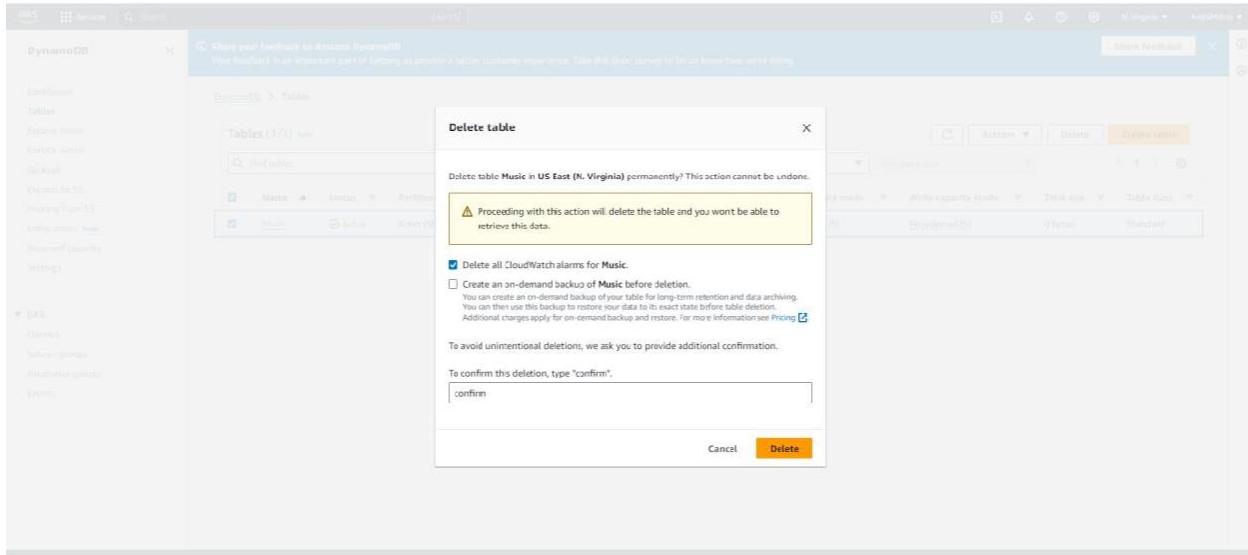
TASK 4 – QUERY THE TABLE

The screenshot shows the AWS DynamoDB console interface. On the left, there's a navigation sidebar with options like Dashboard, Tables, Explore items, PartiQL editor, Backups, Exports to S3, Imports from S3, Integrations, Reserved capacity, Settings, DAX, Clusters, Subnet groups, Parameter groups, and Events. The main area is titled 'Music' under 'Explore items'. It has a 'Scan or query items' section with two tabs: 'Scan' (radioed) and 'Query'. Under 'Query', a table named 'Table - Music' is selected. The 'Artist (Partition key)' is set to 'Psy'. The 'Song (Sort key)' is set to 'Equal to Gangnam Style'. A 'Select attribute projection' dropdown shows 'All attributes'. Below these settings are 'Filters' and 'Run' and 'Reset' buttons. A message at the bottom says 'Completed. Read capacity units consumed: 0.5'. The top right corner shows 'Share feedback' and user information 'N. Virginia' and 'AnshMehta'.

ALTERNATIVE METHOD

This screenshot is similar to the previous one but shows a 'Scan' operation instead of a query. The 'Scan' tab is selected in the 'Scan or query items' section. The rest of the interface is identical, including the table selection, attribute projections, filters, and the successful completion message at the bottom.

TASK 5 – DELETE THE TABLE





NAME – Anshi

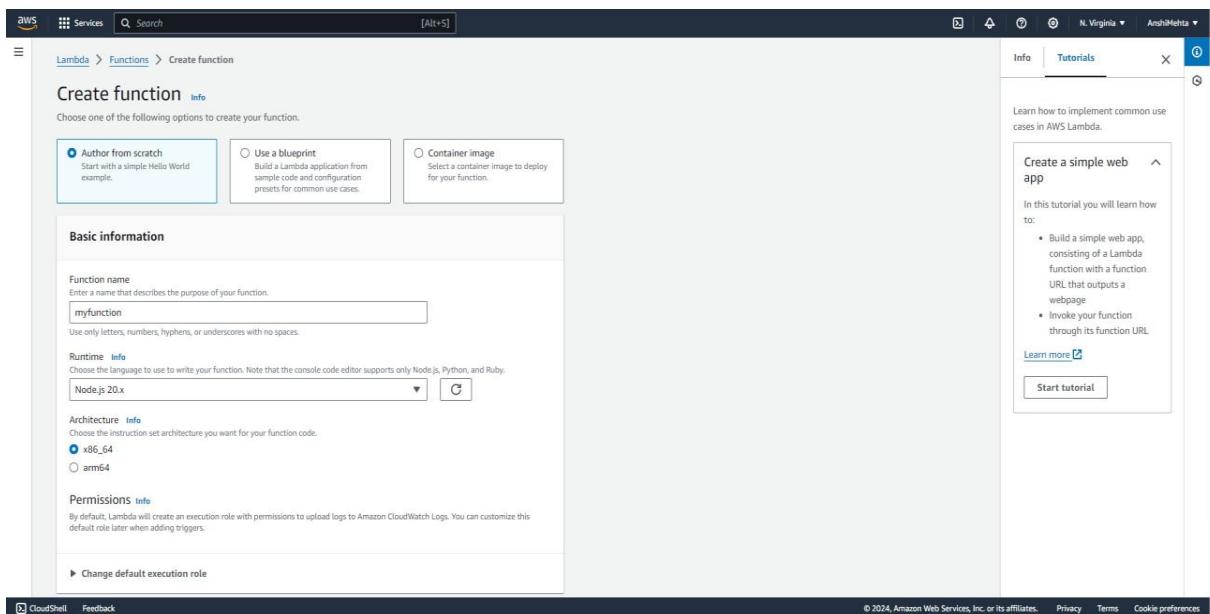
SAP ID – 500101953

ROLL NO – R2142220034

Subject – Cloud deployment lab

EXP 4: Introduction to Amazon API Gateway

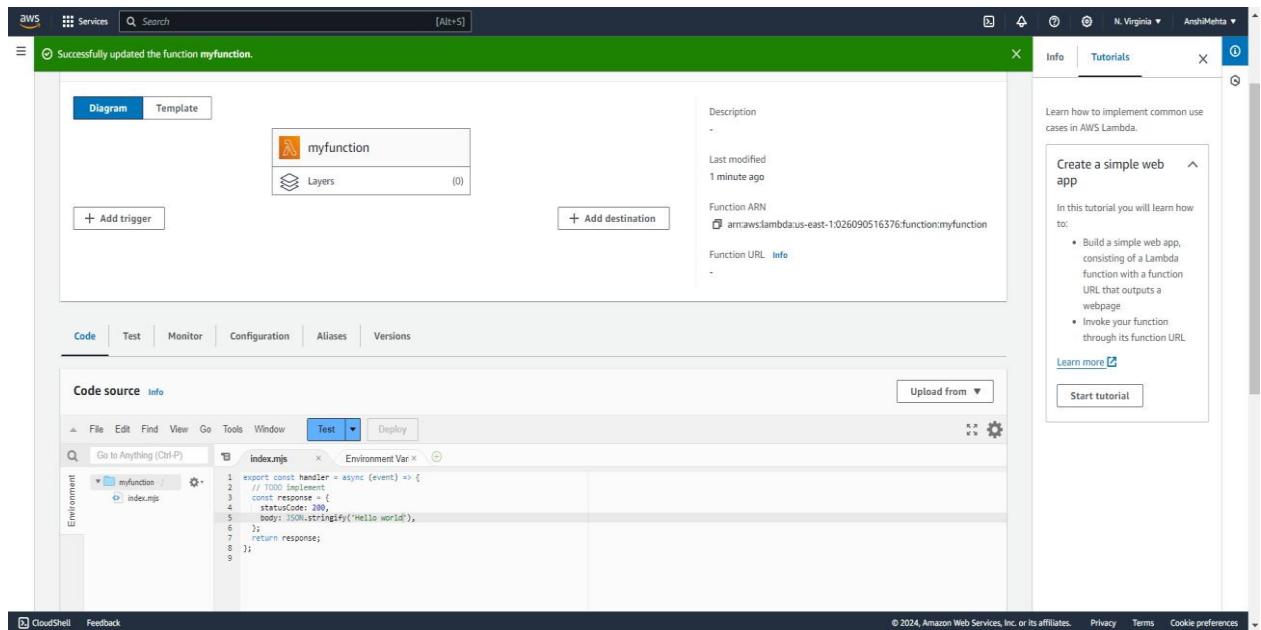
Task 1: Create a Lambda function



The screenshot shows the 'Create function' wizard in the AWS Lambda console. The top navigation bar includes 'Services', 'Search', and 'Info [Alt+S]'. The left sidebar shows 'Lambda > Functions > Create function'. The main area has three tabs: 'Info' (selected), 'Tutorials', and 'X'. The 'Info' tab contains a brief description of Lambda and links to common use cases. A 'Create a simple web app' tutorial is highlighted, showing steps to build a simple web application using Lambda. The 'Basic information' section is filled out with the following details:

- Function name:** myfunction
- Runtime:** Node.js 20.x
- Architecture:** x86_64
- Permissions:** By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

At the bottom of the wizard, there is a link to 'Change default execution role'.



Task2: Create REST API

The screenshot shows the AWS API Gateway console. It displays three main API creation options:

- WebSocket API**: Described as "Build a WebSocket API using persistent connections for real-time use cases such as chat applications or dashboards." It includes a note about compatibility with "Lambda, HTTP backends" and "Import" and "Build" buttons.
- REST API**: Described as "Develop a REST API where you gain complete control over the request and response along with API management capabilities." It includes a note about compatibility with "Lambda, HTTP, AWS Services" and "Import" and "Build" buttons.
- REST API Private**: This option is partially visible at the bottom.

Screenshot of the AWS API Gateway 'Create REST API' page.

API details

- New API: Create a new REST API.
- Clone existing API: Create a copy of an API in this AWS account.
- Import API: Import an API from an OpenAPI definition.
- Example API: Learn about API Gateway with an example API.

API name: my-rest-api

Description - optional:

API endpoint type: Regional APIs are deployed in the current AWS Region. Edge-optimized APIs route requests to the nearest CloudFront Point of Presence. Private APIs are only accessible from VPCs.

Region: Regional

Buttons: Cancel, Create API

Task 3: Create a Lambda non-proxy integration

Screenshot of the AWS API Gateway 'Create Method' page for creating a Lambda non-proxy integration.

Method details

Method type: ANY

Integration type:

- Lambda function: Integrate your API with a Lambda function. (selected)
- HTTP: Integrate with an existing HTTP endpoint.
- Mock: Generate a response based on API Gateway mappings and transformations.
- AWS service: Integrate with an AWS Service.
- VPC link: Integrate with a resource that isn't accessible over the public internet.

Lambda proxy integration: Send the request to your Lambda function as a structured event.

Lambda function: Provide the Lambda function name or alias. You can also provide an ARN from another account.

us-east-1 ▾ Q: am:aws:lambda:us-east-1:026090516376:function:myfn X

Grant API Gateway permission to invoke your Lambda function. To turn off, update the function's resource policy yourself, or provide an invoke role that API Gateway uses to invoke your function.

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Task 4: Deploy API

The screenshot shows the AWS API Gateway interface. On the left, a sidebar lists various API-related options like APIs, Resources, Stages, and Documentation. The main content area is titled 'Stages' and shows a single stage named 'Prod'. The 'Stage details' section contains the following information:

Stage name	Rate Info	Web ACL
Prod	-	-

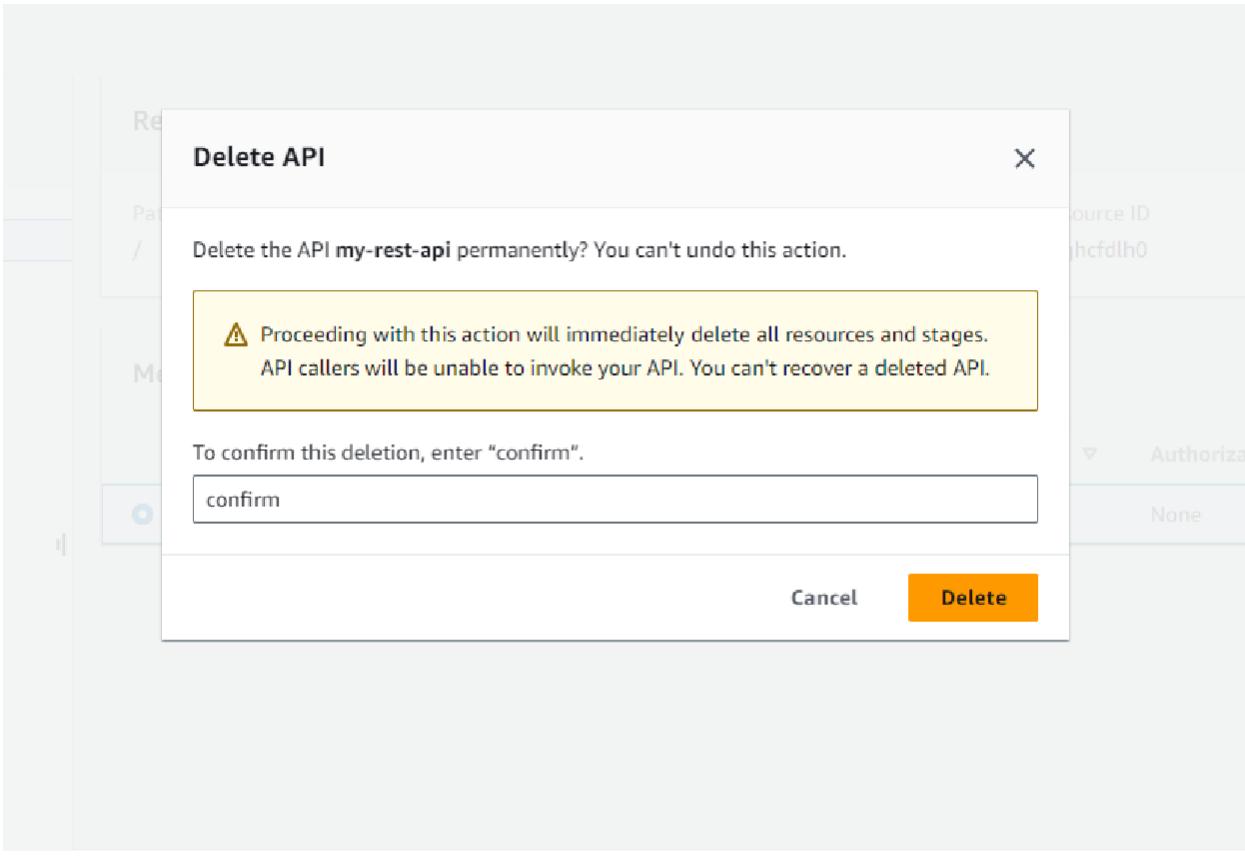
Under 'Cache cluster Info', it says 'Inactive'. Under 'Default method-level caching', it also says 'Inactive'. Below this, the 'Invoke URL' is listed as <https://1vsd95479e.execute-api.us-east-1.amazonaws.com/Prod>. A note indicates an 'Active deployment' made on August 27, 2024, at 19:01 (UTC+05:30). The 'Logs and tracing' section shows 'CloudWatch logs' (Inactive), 'Detailed metrics' (Inactive), and 'Data tracing' (Inactive). There are 'Edit' buttons for both sections.

Task 5: Invoke API

Pretty-print

```
{"statusCode":200,"body":"\"Hello worl\""}
```

Task 6: Clean UP





NAME – Anshi

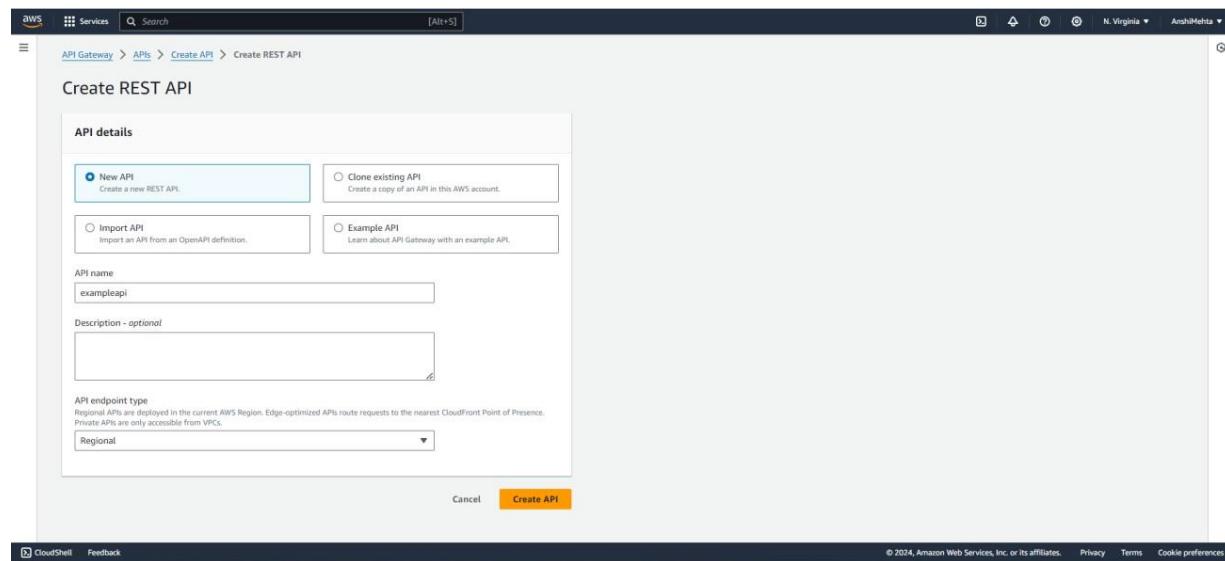
SAP ID – 500101953

ROLL NO – R2142220034

Subject – Cloud deployment lab

EXP 4: Introduction to Amazon API Gateway

Part 2



The screenshot shows the 'Create REST API' wizard in the AWS Management Console. The top navigation bar includes 'Services', a search bar, and account information for 'N. Virginia' and 'AnshiMehta'. The breadcrumb trail indicates the user is at 'API Gateway > APIs > Create API > Create REST API'. The main form is titled 'Create REST API' and contains the following fields:

- API details:**
 - New API: Create a new REST API.
 - Clone existing API: Create a copy of an API in this AWS account.
 - Import API: Import an API from an OpenAPI definition.
 - Example API: Learn about API Gateway with an example API.
- API name:** exampleapi
- Description - optional:** (empty text area)
- API endpoint type:** Regional (dropdown menu)

At the bottom of the form are 'Cancel' and 'Create API' buttons. The footer of the page includes links for 'ClearShell', 'Feedback', and copyright information: '© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

Successfully created REST API 'randomapi' (cacy2r67ue).

API Gateway > APIs > Resources - randomapi (cacy2r67ue) > Create resource

Create resource

Resource details

Proxy resource info
Proxy resources handle requests to all sub-resources. To create a proxy resource use a path parameter that ends with a plus sign, for example {proxy+}.

Resource path: / Resource name: pets

CORS (Cross Origin Resource Sharing) info
Create an OPTIONS method that allows all origins, all methods, and several common headers.

[Cancel](#) [Create resource](#)

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Authorization: None

Request validator: None

API key required

Operation name - optional: GetPets

URL query string parameters

Name	Required	Caching	Action
Type	<input type="checkbox"/>	<input type="checkbox"/>	Remove
page	<input type="checkbox"/>	<input type="checkbox"/>	Remove

[Add query string](#)

HTTP request headers

Request body

[Cancel](#) [Create method](#)

Screenshot of the AWS API Gateway Resources page for the 'randomapi' API.

Left Sidebar:

- APIs
- Custom domain names
- VPC links
- ▼ API: randomapi**
 - Resources
 - Stages
 - Authorizers
 - Gateway responses
 - Models
 - Resource policy
 - Documentation
 - Dashboard
 - API settings
- Usage plans
- API keys
- Client certificates
- Settings

Top Bar:

- CloudShell
- Feedback
- Search
- [Alt+S]
- N. Virginia
- AnshMehta

Main Content:

Resources: /pets - GET - Method execution

ARN: arn:aws:execute-api:us-east-1:026090516376:cacy2r67ue/*:GET/pets
Resource ID: wcz5ni

Method request → Integration request → HTTP integration
Client ← Method response ← Integration response

Method request | Integration request | Integration response | Method response | Test

Method request settings:

- Authorization: NONE
- Request validator: None
- API key required: False
- SDK operation name: Generated based on method and path

Request paths (0)

Screenshot of the AWS API Gateway Integration Request configuration page.

Left Sidebar:

- Content handling: Passthrough
- Integration timeout: 2500 ms
- Request body passthrough: When no template matches the request content-type header (selected)
- URL path parameters
- URL query string parameters

Right Content Area:

Content handling: Passthrough

Integration timeout: 2500 ms

Request body passthrough: When no template matches the request content-type header (selected)

URL path parameters:

Name	Mapped from	Caching
type	method.request.querystr	<input type="checkbox"/>
page	method.request.querystr	<input type="checkbox"/>

URL query string parameters:

Name	Mapped from	Caching
Add query string parameter		

Bottom Bar:

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Screenshot of the AWS API Gateway Test interface for a GET method on the /pets endpoint.

API Gateway

- APIs
- Custom domain names
- VPC links
- API: randomapi**
 - Resources
 - Stages
 - Authorizers
 - Gateway responses
 - Models
 - Resource policy
 - Documentation
 - Dashboard
 - API settings
- Usage plans
- API keys
- Client certificates
- Settings

Create resource

ARN: arn:aws:execute-api:us-east-1:026090516576:cacy2r67ue/*:GET/pets

Resource ID: wc25ni

HTTP integration

Method request

Integration request

Method response

Integration response

Test

Test method

Make a test call to your method. When you make a test call, API Gateway skips authorization and directly invokes your method.

Query strings

r type=Dog&page=2

Headers

header1:value1
header2:value2

Client certificate

No client certificates have been generated.

Test

Screenshot of the AWS API Gateway Test results interface for the same GET method.

API Gateway

- APIs
- Custom domain names
- VPC links
- API: randomapi**
 - Resources
 - Stages
 - Authorizers
 - Gateway responses
 - Models
 - Resource policy
 - Documentation
 - Dashboard
 - API settings
- Usage plans
- API keys
- Client certificates
- Settings

Create resource

/pets - GET method test results

Request	Latency ms	Status
/petstore/pets. ?page=2&type=method.request.QueryString.type	10	200

Response body

Cannot GET /petstore/pets. ?page=2&type=method.request.QueryString.type

Response headers

```
{
  "Content-Type": "application/json",
  "X-Amzn-Trace-Id": "Root=1-66d7055e-8b9c2b9dbb912b59cce7f94d"
}
```

Logs

```
Execution log for request f507b661-f3d9-4a24-ba88-35ed31147ca5
Tue Sep 03 12:47:26 UTC 2024 : Starting execution for request: f507b661-f3d9-4a24-ba88-35ed31147ca5
Tue Sep 03 12:47:26 UTC 2024 : HTTP Method: GET, Resource Path: /pets
Tue Sep 03 12:47:26 UTC 2024 : Method request path: {}
Tue Sep 03 12:47:26 UTC 2024 : Method request query string: { r type=Dog, page=2 }
Tue Sep 03 12:47:26 UTC 2024 : Method request headers: {}
Tue Sep 03 12:47:26 UTC 2024 : Method request body before transformations:
Tue Sep 03 12:47:26 UTC 2024 : Endpoint request URL: http://petstore-demo-endpoint.execute-api.com/petstore/pets.?
page=2&type=method.request.QueryString.type
Tue Sep 03 12:47:26 UTC 2024 : Endpoint request headers: {x-amzn-apigateway-api-id=cacy2r67ue, Accept=application/json, User-Agent=AmazonAPIGateway_cacy2r67ue, X-Amzn-Trace-Id=Root=1-66d7055e-8b9c2b9dbb912b59cce7f94d}
Tue Sep 03 12:47:26 UTC 2024 : Endpoint request body after transformations:
Tue Sep 03 12:47:26 UTC 2024 : Sending request to http://petstore-demo-endpoint.execute-api.com/petstore/pets.?
page=2&type=method.request.QueryString.type
Tue Sep 03 12:47:26 UTC 2024 : Received response. Status: 404, Integration latency: 3 ms
Tue Sep 03 12:47:26 UTC 2024 : Endpoint response headers: {Date=Tue, 03 Sep 2024 12:47:26 GMT, Content-Type=text/plain, Content-Length=74, Connection=keep-alive, X-Powered-By=Express}
Tue Sep 03 12:47:26 UTC 2024 : Endpoint response body before transformations: Cannot GET /petstore/pets.?
```

Cookie preferences

Pretty-print

```
[ {
  "id": 1,
  "type": "dog",
  "price": 249.99
},
{
  "id": 2,
  "type": "cat",
  "price": 124.99
},
{
  "id": 3,
  "type": "fish",
  "price": 0.99
}]
```

Screenshot of the AWS API Gateway 'Create resource' dialog.

The dialog shows the following details:

- Resource path:** /pets/
- Resource name:** {petId}
- CORS (Cross Origin Resource Sharing) Info:** Create an OPTIONS method that allows all origins, all methods, and several common headers.

Buttons at the bottom: Cancel and Create resource (highlighted).

Success message: Successfully created deployment for randomapi. This deployment is active for Prod.

Screenshot of the AWS API Gateway 'Resources' page.

The page displays the newly created resource:

- Path:** /pets/{petId}
- Resource ID:** p3k7z8
- Methods:** (0)

API actions and Deploy API buttons are visible on the right.

Salesforce Integration

Integration type

- Lambda function Integrate your API with a Lambda function.
- HTTP Integrate with an existing HTTP endpoint.
- Mock Generate a response based on API Gateway mappings and transformations.

AWS service Integrate with an AWS Service.

VPC link Integrate with a resource that isn't accessible over the public internet.

HTTP proxy integration Send the request to your HTTP endpoint without customizing the integration request or integration response.

HTTP method GET

Endpoint URL `r http://petstore-demo-endpoint.execute-api.com/petstore/pets/{id}`

Content handling [Learn more](#) Passthrough

Integration timeout [Info](#) By default, you can enter an integration timeout of 50 - 29,000 milliseconds. You can use Service Quotas to raise the integration timeout to greater than 29,000 ms.

Pretty-print

```
[{"id": 1, "type": "dog", "price": 249.99}]
```




NAME – Anshi

SAP ID – 500101953

ROLL NO – R2142220034

Subject – Cloud deployment lab

EXP 4: Introduction to Amazon API Gateway

Part 3

A screenshot of the AWS S3 console. At the top, a green banner displays the message "Successfully created bucket 'random645'". Below this, the main interface shows a single bucket named "random645" in the "General purpose buckets" list. The bucket was created on September 11, 2024, at 19:59:31 (UTC+05:30). On the right side of the screen, there is an open AI chat window titled "Amazon Q" which says "Hello! I'm Amazon Q, your AWS generative AI assistant." and provides options to "Ask me anything about AWS" or "Continue".

Name	AWS Region	IAM Access Analyzer	Creation date
random645	US East (N. Virginia) us-east-1	View analyzer for us-east-1	September 11, 2024, 19:59:31 (UTC+05:30)

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Create function Info

Choose one of the following options to create your function.

Author from scratch Start with a simple Hello World example.

Use a blueprint Build a Lambda application from sample code and configuration presets for common use cases.

Container image Select a container image to deploy for your function.

Basic information

Function name Enter a name that describes the purpose of your function.
function643

Use only letters, numbers, hyphens, or underscores with no spaces.

Runtime Info Choose the language to use when writing your function. Note that the console code editor supports only Node.js, Python, and Ruby.
Node.js 20.x

Architecture Info Choose the instruction set architecture you want for your function code.
 x86_64
 arm64

Permissions Info By default, Lambda will create an execution role with permissions to upload logs to Amazon CloudWatch Logs. You can customize this default role later when adding triggers.

▶ Change default execution role

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Amazon Q Hello! I'm Amazon Q, your AWS generative AI assistant.

Ask me anything about AWS services and features or choose a sample question below to start a conversation.

Amazon Q can now list and describe your AWS resources. By continuing, you consent to Amazon Q making cross-Region calls to access your resources.

You can update cross-Region preferences in chat settings. Learn more

Don't allow Continue

Ask me anything about AWS Max 4000 characters

Amazon Q Developer uses generative AI. You may need to verify responses. See the AWS Responsible AI Policy.

Successfully created the function **function643**. You can now change its code and configuration. To invoke your function with a test event, choose "Test".

function643

Function overview Info

Diagram Template

function643

Layers (0)

+ Add trigger + Add destination

Description

Last modified 22 seconds ago

Function ARN arn:aws:lambda:us-east-1:026090516376:function:function643

Function URL Info

Code Test Monitor Configuration Aliases Versions

Code source Info

File Edit View Go Tools Window Text Deploy

index.mjs

```
1 import const handler = async (event) => {
```

Upload from

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Amazon Q Hello! I'm Amazon Q, your AWS generative AI assistant.

Ask me anything about AWS services and features or choose a sample question below to start a conversation.

Amazon Q can now list and describe your AWS resources. By continuing, you consent to Amazon Q making cross-Region calls to access your resources.

You can update cross-Region preferences in chat settings. Learn more

Don't allow Continue

Ask me anything about AWS Max 4000 characters

Amazon Q Developer uses generative AI. You may need to verify responses. See the AWS Responsible AI Policy.

Screenshot of the AWS Lambda console showing the successful update of a function named "function643".

The Lambda function code source is displayed in a code editor:

```
index.js
1 export const handler = async (event) => {
2     // ...
3     const response = {
4         statusCode: 200,
5         body: JSON.stringify('Hello Function!'),
6     };
7     return response;
8 }
```

The Lambda function has been successfully updated.

Below the Lambda interface, the AWS API Gateway console shows the creation of a new REST API named "restapi642".

The API Gateway Resources page displays the newly created resource:

- Path: /
- Resource ID: xypec194xe

The Methods section shows 0 methods defined.

A sidebar on the right features the Amazon Q AI assistant, which asks for permission to list and describe AWS resources. The user can choose "Don't allow" or "Continue".

Screenshot of the AWS API Gateway Resources page showing a successfully created resource '/resource654'. The resource details show a path of '/resource654' and a Resource ID of p9zoya. The Methods section shows 'No methods defined.'

Screenshot of the AWS API Gateway Create method page for the '/resource654' resource. The Method details section shows a POST method type and a Lambda function integration type selected. Other options include HTTP, Mock, AWS service, VPC link, and Lambda proxy integration.

Screenshot of the AWS API Gateway console showing the creation of a POST method for a resource.

API Gateway > APIs > Resources - restapi642 (1ne4n1cryb)

Successfully created method 'POST' in 'resource654': Redeploy your API for the update to take effect.

Resources

/resource654 - POST - Method execution

ARN: arn:aws:execute-api:us-east-1:026090516376:1ne4n1cryb/~POST/resource654
Resource ID: p9zoya

Method request → Integration request → Integration response → Lambda integration ← Method response ← Integration response ← Method request

Method request settings

Authorization: NONE
API key required: False

Amazon Q

Hello! I'm Amazon Q, your AWS generative AI assistant.

Ask me anything about AWS services and features or choose a sample question below to start a conversation.

Amazon Q can now list and describe your AWS resources. By continuing, you consent to Amazon Q making cross-Region calls to access your resources. You can update cross-Region preferences in chat settings. Learn more

Don't allow Continue

Ask me anything about AWS Max 4000 characters

Amazon Q Developer uses generative AI. You may need to verify responses. See the AWS Responsible AI Policy.

CLOUD DEPLOYMENT LAB ASSIGNMENT

NAME - Anshi

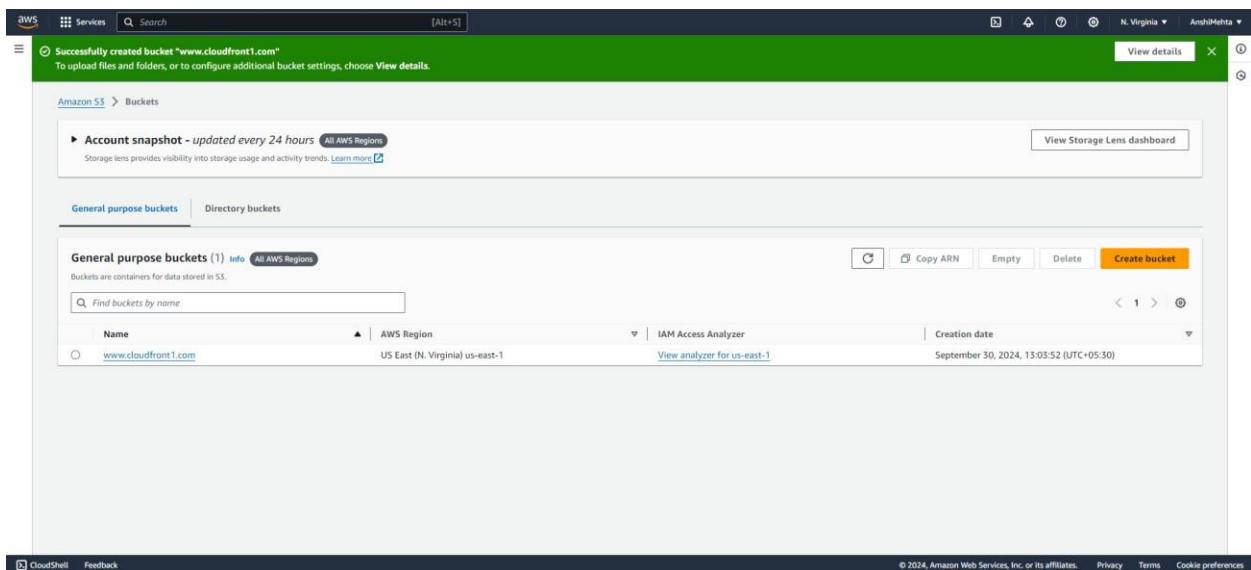
SAP ID – 500101953

ROLL NO. – R2142220034

BATCH – 4(CC&VT)

Introduction to Amazon CloudFront

Task 1: Create a S3 Bucket



The screenshot shows the AWS S3 console interface. At the top, there is a green success message: "Successfully created bucket 'www.cloudfront1.com'. To upload files and folders, or to configure additional bucket settings, choose View details." Below this, the main S3 dashboard is visible. A navigation bar at the top includes "Amazon S3 > Buckets". On the left, there are tabs for "General purpose buckets" (selected) and "Directory buckets". The main content area displays a table of buckets. The first row in the table is for the newly created bucket "www.cloudfront1.com", which has a status of "Active". It includes columns for "Name" (www.cloudfront1.com), "AWS Region" (US East (N. Virginia) us-east-1), "IAM Access Analyzer" (View analyzer for us-east-1), and "Creation date" (September 30, 2024, 13:03:52 (UTC+05:30)). Action buttons for "Copy ARN", "Empty", "Delete", and "Create bucket" are also present. The bottom of the screen shows standard AWS footer links: CloudShell, Feedback, © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

Task2: Upload the HTML File

The screenshot shows the AWS CloudFront 'Upload: status' page. At the top, a green header bar indicates 'Upload succeeded'. Below it, the main title is 'Upload: status'. A note says 'The information below will no longer be available after you navigate away from this page.' The 'Summary' section shows the destination as 's3://www.cloudfront1.com' with 1 file (index.html) successfully uploaded (3.2 KB, 100.00%) and 0 files failed. The 'Files and folders' tab is selected, showing a table with one item: 'index.html.t...' (text/plain, 3.2 KB, Succeeded). The bottom right corner has a 'Close' button.

Task3: Create CloudFront

The screenshot shows the 'Create distribution' wizard, Step 1: Origin. It starts with an 'Origin' section where the 'Origin domain' is set to 'www.cloudfront1.com.s3.us-east-1.amazonaws.com'. A note says this S3 bucket has static web hosting enabled and recommends using the S3 website endpoint. There is a 'Use website endpoint' button. Below it, there's an 'Origin path - optional' field with 'Enter the origin path' placeholder. In the 'Name' section, the name is 'www.cloudfront1.com.s3.us-east-1.amazonaws.com'. Under 'Origin access', the 'Legacy access identities' option is selected, with a note about using a CloudFront origin access identity (OAI) to access the S3 bucket. The bottom right corner includes 'CloudShell', 'Feedback', and copyright information: '© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences'.

Function type

	Function ARN / Name	Include body
Viewer request	No association	
Viewer response	No association	
Origin request	No association	
Origin response	No association	

Web Application Firewall (WAF) Info

Enable security protections
Keep your application secure from the most common web threats and security vulnerabilities using AWS WAF. Blocked requests are stopped before they reach your web servers.

Do not enable security protections
Select this option if your application does not need security protections from AWS WAF.

Settings

Price class Info
Choose the price class associated with the maximum price that you want to pay.

Use all edge locations (best performance)

Use only North America and Europe

Use North America, Europe, Asia, Middle East, and Africa

Alternate domain name (CNAME) - optional
Add the custom domain names that you use in URLs for the files served by this distribution.

[Add item](#)

(?) To add a list of alternative domain names, use the bulk editor.

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

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Custom domain entries
Add the custom domain entries that you use in URLs for the files served by this distribution.

[Add item](#)

(?) To add a list of alternative domain names, use the bulk editor.

Custom SSL certificate - optional
Associate a certificate from AWS Certificate Manager. The certificate must be in the US East (N. Virginia) Region (us-east-1).

[Choose certificate](#) [\(C\)](#)

[Request certificate](#) [\(F\)](#)

Supported HTTP versions
Add support for additional HTTP versions. HTTP/1.0 and HTTP/1.1 are supported by default.

HTTP/2

HTTP/3

Default root object - optional
The object (file name) to return when a viewer requests the root URL (/) instead of a specific object.

Standard logging
Get logs of viewer requests delivered to an Amazon S3 bucket.

Off

On

IPv6

Off

On

Description - optional

[Cancel](#) [Create distribution](#)

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

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Task 4: Testing

← → ⌛ Not secure cloudfront1.com.s3-website-us-east-1.amazonaws.com

WhatsApp 📲 Inbox (170) - ansh... 📲 My Grammarly - Gr... 📲 Adobe Acrobat

403 Forbidden

- Code: AccessDenied
- Message: Access Denied
- RequestId: RTR0PTC2BS53BYQ0
- HostId: QVek2J3isdef2aq3QXOInfoOShnfoweiIpEFtarRJO5DstMTaUZXGdv8Xj/RyIggwkwmPc9ro=

An Error Occurred While Attempting to Retrieve a Custom Error Document

- Code: AccessDenied
- Message: Access Denied

← → ⌛ File C:/Users/hp/index.html

Adventure Awaits

Home Types of Adventures Gallery Contact

Welcome to Your Adventure!

Join us as we explore the great outdoors, embark on thrilling journeys, and seek new experiences. Adventure is not just a destination; it's a way of life!

Types of Adventures

- **Hiking:** Explore nature trails and enjoy the beauty of the wilderness.
- **Camping:** Experience the great outdoors by spending nights under the stars.
- **Travel:** Discover new cultures and places around the world.
- **Extreme Sports:** Push your limits with activities like rock climbing, bungee jumping, and skydiving.

EXPERIMENT-8

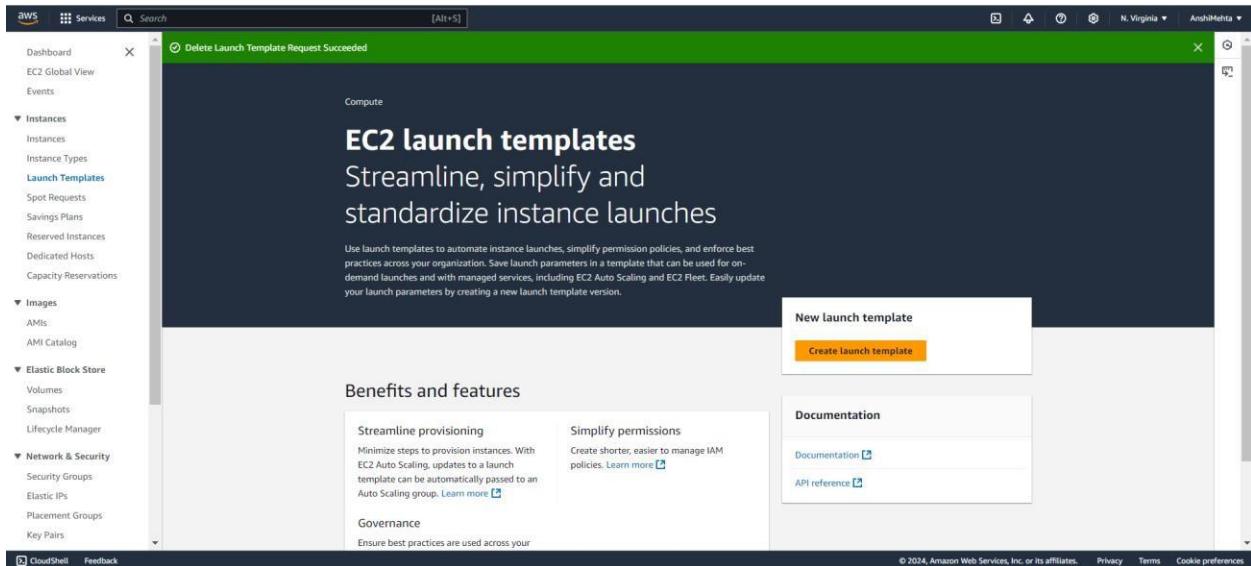
Introduction to amazon ec2 auto scaling

Steps To create Auto Scaling Launch Template

Step 1: Click on the All Services.

Step 2: Click on the EC2(Elastic Cloud Computing).

Step 3: Scroll Down and click on the Launch Templates and click on the Create launch template

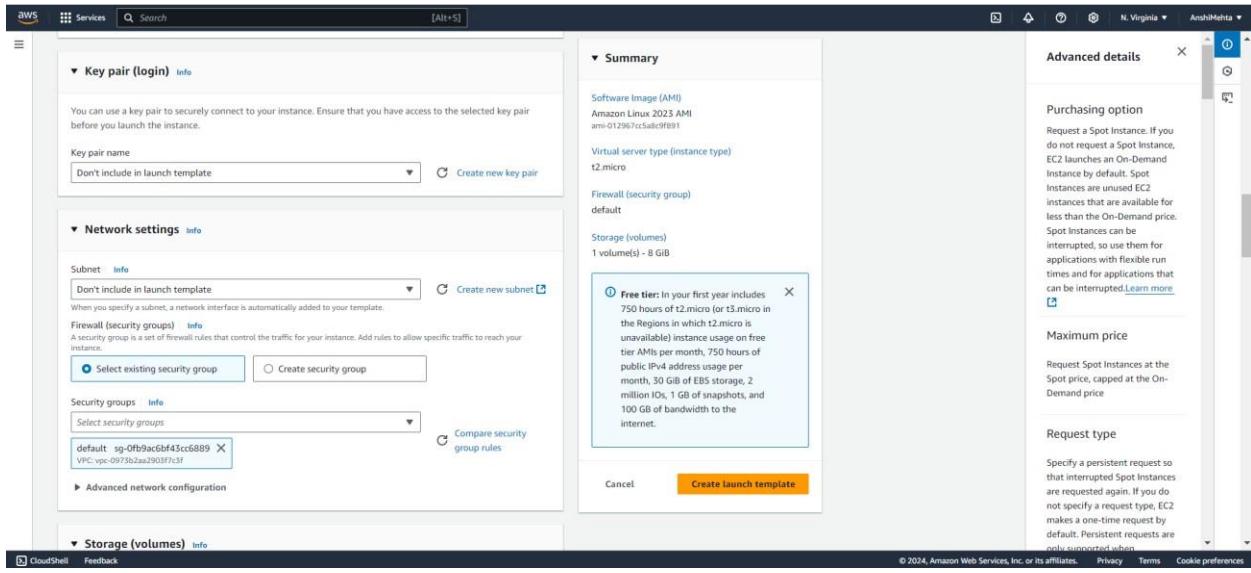


Step 4: Type the Template name.

Step 5: Select the Amazon Machine Image.

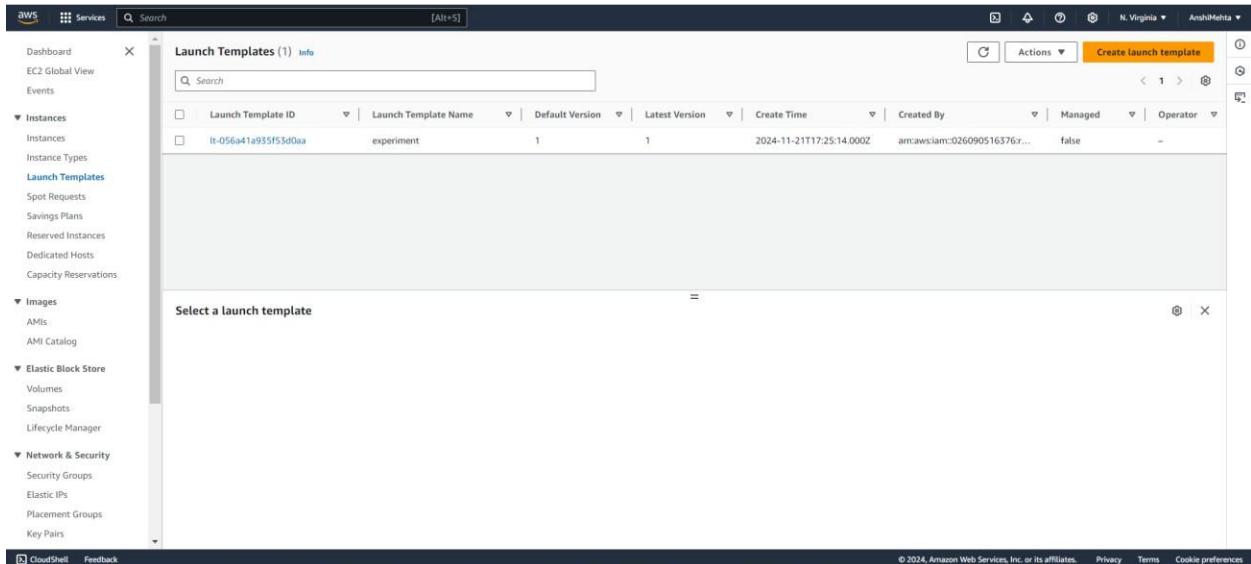
Step 6: Select the Instance Type

Step 7: Select the Security Group or Create the new one



Step 8: Click on the Create Launch Template.

Step 9: Now you can see the template is created. Now, scroll down and click on the Auto Scaling Groups.



Create An Auto Scaling Group Using a Launch Template

Step 1: Click on the Create Auto Scaling group.

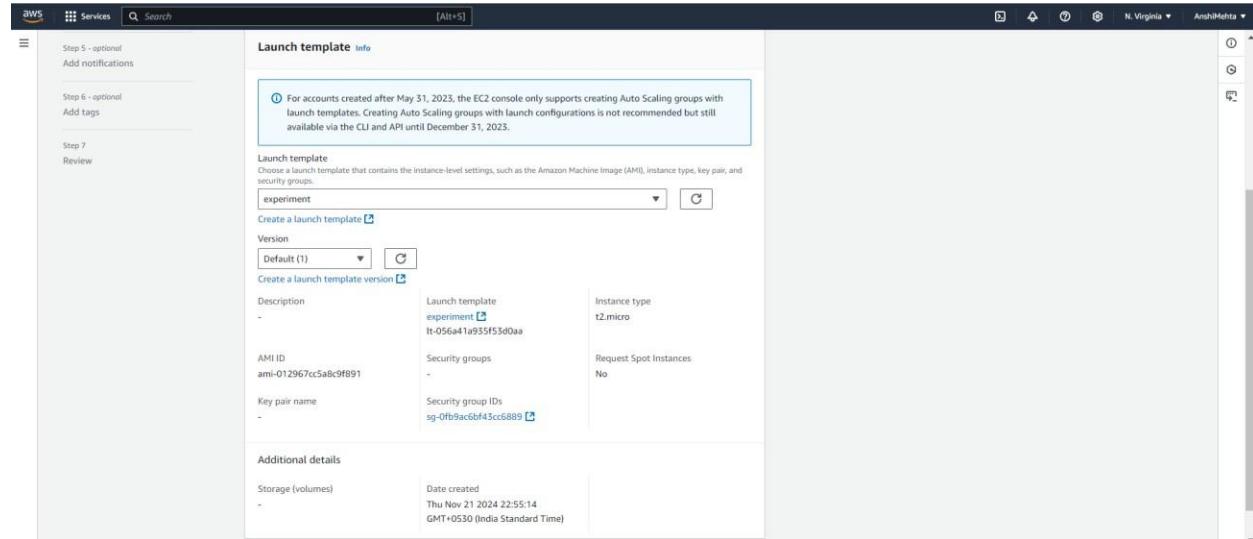
Step 2: Type the Auto Scaling group name.

Step 3: Select your Template.

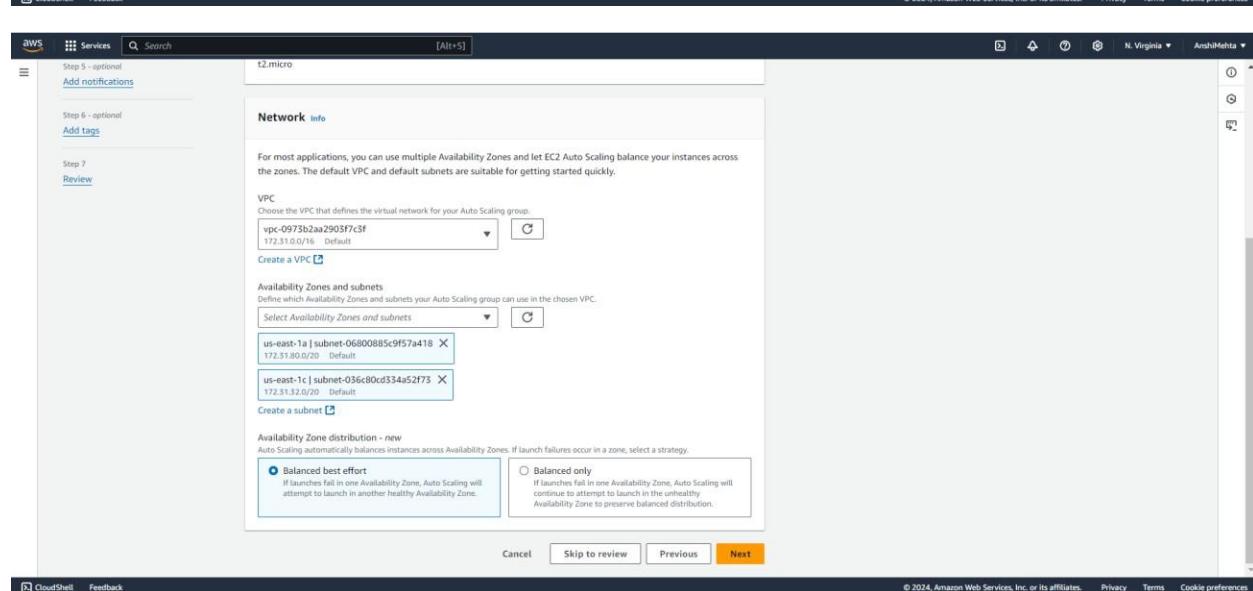
Step 4: Select the VPC or go with the default VPC and also select the Availability zone.

Step 5: Configure the Group size and Scaling policies.

Select as per your requirement:



The screenshot shows the 'Launch template' configuration step. It includes a note about creating Auto Scaling groups with launch templates being supported until December 31, 2023. The 'Launch template' dropdown is set to 'experiment'. A 'Version' dropdown shows 'Default (1)'. The 'Description' field is empty. Under 'AMI ID', it shows 'ami-012967cc5a8c9fb91'. Under 'Key pair name', it shows 'Key pair name'. The 'Instance type' is 't2.micro'. Under 'Security groups', it shows 'Security groups' and 'Request Spot Instances' set to 'No'. Under 'Security group IDs', it shows 'sg-0fb9ac6bf43cc6889'. The 'Additional details' section shows 'Storage (volumes)' and 'Date created' (Thu Nov 21 2024 22:55:14 GMT+0530 (India Standard Time)).



The screenshot shows the 'Network' configuration step. It lists the chosen VPC as 'vpc-0973b2aa2903f7c3f' (172.31.0.0/16, Default). Under 'Availability Zones and subnets', it shows two selected subnets: 'us-east-1a | subnet-068008b5cf57a418' (172.31.80.0/20, Default) and 'us-east-1c | subnet-036c0cd334a52f73' (172.31.12.0/20, Default). The 'Create a subnet' button is visible. In the 'Availability Zone distribution - new' section, the 'Balanced best effort' radio button is selected. The 'Next' button is at the bottom right.

Step 6: Select the Target tracking scaling policy.

Group size Info
Set the initial size of the Auto Scaling group. After creating the group, you can change its size to meet demand, either manually or by using automatic scaling.

Desired capacity 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.
4

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	Max desired capacity
4	6
Equal or less than desired capacity	Equal or greater than desired capacity

Automatic scaling - optional
Choose whether to use a target tracking policy. You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

No scaling policies
 Target tracking scaling policy
Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

Scaling policy name:

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Step 7: Click on the Create Auto Scaling Group.

latest, 1 Scaling policy created successfully

Auto Scaling groups (1/1) Info

Create Auto Scaling group

Auto Scaling group: latest

Thu Nov 21 2024 23:20:42 GMT+0530 (India Standard Time)

Launch template

Launch template it-056a41a935f530aa experiment	AMI ID ami-012967cc5a8cf891	Instance type t2.micro	Owner arn:aws:iam::026090516376:root
--	--------------------------------	---------------------------	---

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Step 7: Click on the Create Auto Scaling Group.

Test:

- See the instances the desired number given during configuration the same number of instances are created.
- Terminate any of the instances and wait for few min you will see load balancer will automatically create another instance to maintain the load.

The screenshot shows the AWS EC2 Instances page with the search bar set to "All states". A single instance, "i-052a672a568738517", is selected and highlighted with a blue border. This instance is listed as "Terminated" with a status check of "2/2 checks passed". It has a Public IPv4 address of 54.91.174.80 and a Private IPv4 address of 172.31.1.1. The instance type is t2.micro, and it was last updated less than a minute ago.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
i-0619ad6286e6519d0		Terminated	t2.micro	-	View alarms	us-east-1a	ec2-54-91-174-80.com...	54.91.174.80	-
i-0fd765e19ab78ea70		Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-52-207-254-196.co...	52.207.254.196	-
i-052a672a568738517		Terminated	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-52-207-254-196.co...	52.207.254.196	-
i-068dc6c67e575f6cf		Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-52-207-254-196.co...	52.207.254.196	-
i-06e3fb5733d685bd		Terminated	t2.micro	-	View alarms	us-east-1c	-	-	-
i-0ef6662dac54ffaz74		Terminated	t2.micro	-	View alarms	us-east-1c	-	-	-
i-0796af6c23dec4e15		Running	t2.micro	2/2 checks passed	View alarms	us-east-1c	ec2-54-174-225-200.co...	54.174.225.200	-
i-0b8f6fb9e9b0faf68f		Running	t2.micro	2/2 checks passed	View alarms	us-east-1c	ec2-54-83-156-90.com...	54.83.156.90	-

Successfully tested

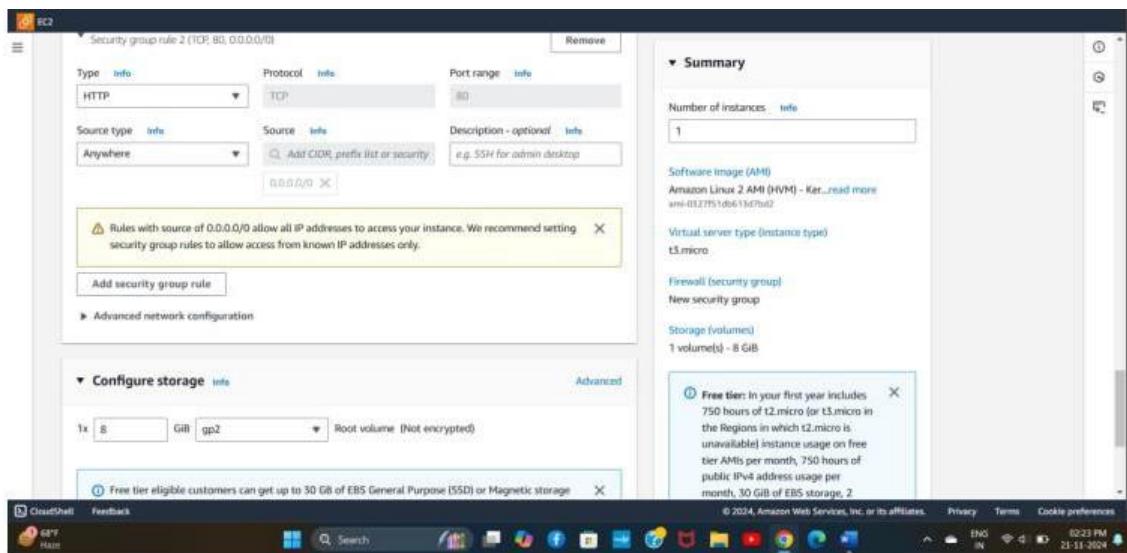
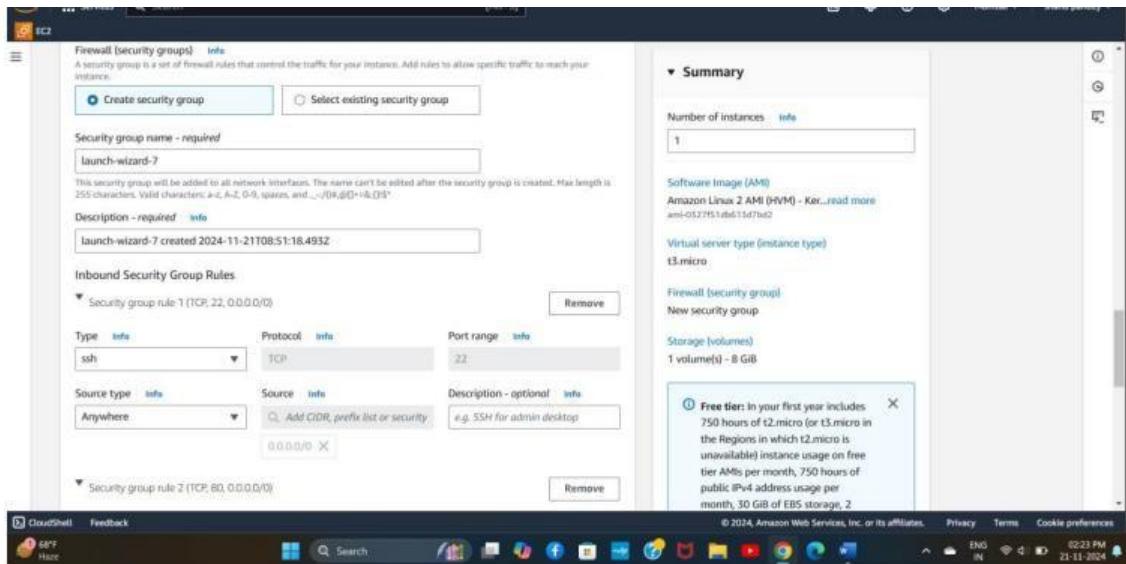
EXPERIMENT – 10

Step 1: To prepare the LAMP server

Step 2: Test your LAMP server

Step 3: Secure the database server

Step 4: (Optional) Install phpMyAdmin



The screenshot shows the AWS CloudShell interface with the EC2 service selected. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, Elastic Block Store, Security Groups, and Network & Security. The main area displays the 'Instances (1) info' table with one row: mywebserver9 (Instance ID: i-0349cb2691fa41495), which is Running, t2.micro, and Initializing. Below the table is a modal titled 'Select an instance' with a single item: mywebserver9.

The screenshot shows a terminal session in the AWS CloudShell. The instance ID is i-0349cb2691fa41495 (mywebserver9). The public IP is 3.110.207.95 and the private IP is 172.31.14.136. The terminal output shows a welcome message for Amazon Linux 2, noting its end-of-life date (2025-06-30) and a link to the latest version (Amazon Linux 2023). The user runs the command 'sudo yum update -y' and installs the MariaDB 10.5 package, which is marked as having an end-of-support date of 2025-06-24.

This screenshot shows a continuation of the terminal session from the previous one. The user runs 'sudo yum update -y' again, which updates several packages including amzn2-core, amzn2extra-docker, amzn2extra-kernel-5.10, and amzn2-core. It also installs mariadb10.5. The log indicates that mariadb10.5 has an end-of-support date of 2025-06-24. The user then runs 'sudo yum clean all' and 'sudo rm -rf /var/lib/yum/history*' to clear the history.

```
aws Services Search [Alt+S] EC2

amzn2-core
amzn2extra-docker
amzn2extra-kernel-5.10
amzn2extra-mariadb10.5
(1/9): amzn2-core/x86_64/group.gz
(2/9): amzn2-core/x86_64/updateinfo
(3/9): amzn2extra-docker/x86_64/primary_db
(4/9): amzn2extra-kernel-5.10/x86_64/updateinfo
(5/9): amzn2extra-mariadb10.5/x86_64/updateinfo
(6/9): amzn2extra-mariadb10.5/x86_64/primary_db
(7/9): amzn2extra-mariadb10.5/x86_64/primary_db
(8/9): amzn2extra-kernel-5.10/x86_64/primary_db
(9/9): amzn2-core/x86_64/primary_db
Resolving Dependencies
--> Running transaction check
--> Package mariadb.x86_64 3:10.5.25-1.amzn2 will be installed
--> Processing Dependency: mariadb-common(x86-64) = 3:10.5.25-1.amzn2 for package: 3:mariadb-10.5.25-1.amzn2.x86_64
--> Processing Dependency: mariadb-libs(x86-64) = 3:10.5.25-1.amzn2 for package: 3:mariadb-10.5.25-1.amzn2.x86_64
--> Processing Dependency: mariadb-server(x86-64) = 3:10.5.25-1.amzn2 for package: 3:mariadb-10.5.25-1.amzn2.x86_64
--> Running transaction check
--> Package mariadb-common.x86_64 3:10.5.25-1.amzn2 will be installed
--> Processing Dependency: /etc/my.cnf for package: 3:mariadb-common-10.5.25-1.amzn2.x86_64
--> Package mariadb-libs.x86_64 1:5.5.60-1.amzn2.0.1 will be updated
```

```
aws Services Search [Alt+S] EC2

40 mock available [ *stable ]
41 livepatch available [ *stable ]
45 haproxy2 available [ *stable ]
46 collectd available [ *stable ]
47 aws-nitro-enclaves-cli available [ *stable ]
48 R4 available [ *stable ]
49 kernel-5.4 available [ *stable ]
50 selinux-ng available [ *stable ]
52 tomcat9 available [ *stable ]
53 unbound1.13 available [ *stable ]
54 mariadb10.3=latest enabled [ *stable ]
55 kernel-5.10=Latest enabled [ *stable ]
56 redis6 available [ *stable ]
59 postgresql13 available [ *stable ]
60 mock2 available [ *stable ]
61 unbound2.0.5 available [ *stable ]
62 kernel-5.15 available [ *stable ]
63 postgresql14 available [ *stable ]
64 firefox available [ *stable ]
65 lustre available [ *stable ]
66 tpphp8.1 available [ *stable ]
67 awei211 available [ *stable ]
68 tpphp8.2 available [ *stable ]
69 dnsmasq available [ *stable ]
70 unbound1.17 available [ *stable ]
72 collectd-python3 available [ *stable ]
! Note on end-of-support. Use 'info' subcommand.
[ec2-user@ip-172-31-14-136 ~]$
```

```
i-0349cb2691fa41495 (mywebserver9)
PublicIP: 3.110.207.95 PrivateIP: 172.31.14.136

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```

```
Amazon Linux release 2 (Karoo)
[ec2-user@ip-172-31-14-136 ~]$ sudo amazon-linux-extras install php0.2
topic php0.2 has end-of-support date of 2025-06-30
installing php-pdo, php-tgm, php-mysqlnd, php-oci, php-json
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amazonlinux:~$ sudo amazon-linux-extras docker amzn2extra-kernel-5.10 amzn2extra-mariadb10.5 amzn2extra-php0.2
12 metadata files removed
8 sqlite files removed
9 metadata files removed
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2-core
amzn2extra-docker
amzn2extra-kernel-5.10
amzn2extra-mariadb10.5
amzn2extra-php0.2
amzn2extra-selinux-3
(1/11): amzn2-core/2/x86_64/group.gz
(2/11): amzn2-core/2/x86_64/updateinfo
(3/11): amzn2extra-docker/2/x86_64/primary_db
(4/11): amzn2extra-docker/2/x86_64/updateinfo
(5/11): amzn2extra-mariadb10.5/2/x86_64/updateinfo
(6/11): amzn2extra-mariadb10.5/2/x86_64/primary_db
(7/11): amzn2extra-kernel-5.10/2/x86_64/updateinfo
(8/11): amzn2extra-kernel-5.10/2/x86_64/primary_db
(9/11): amzn2extra-mariadb10.5/2/x86_64/primary_db
(10/11): amzn2extra-php0.2/2/x86_64/primary_db
(11/11): amzn2-core/2/x86_64/primary_db
Resolving Dependencies
--> Running transaction check
i-0349cb2691fa41495 (mywebserver9)
PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136
```

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```
Installation failed. Check that you have permissions to install.
[ec2-user@ip-172-31-14-136 ~]$ sudo yum install -y httpd
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
amzn2extra-docker
amzn2extra-kernel-5.10
amzn2extra-mariadb10.5
amzn2extra-php0.2
Resolving Dependencies
--> Running transaction check
--> Package httpd.x86_64 0:2.4.62-1.amzn2.0.2 will be installed
--> Processing Dependency: httpd-filesystem = 2.4.62-1.amzn2.0.2 for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: httpd-tools.x86_64 = 2.4.62-1.amzn2.0.2 for package: httpd-2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: libxml2.x86_64 = 2.9.9-0.2.amzn2.0.2.x86_64
--> Processing Dependency: mod_ssl.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_http2.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_vhost_alias.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_deflate.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_expires.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_headers.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_mime.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_setenvif.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_socache_shmcb.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_wsgi.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_dav.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_dav_fs.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_perl.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_ruby.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_python.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_ssl.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_vhost_alias.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_deflate.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_expires.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_headers.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_mime.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_setenvif.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_socache_shmcb.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_wsgi.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_dav.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_dav_fs.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_perl.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_ruby.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Processing Dependency: mod_python.x86_64 = 2.4.62-1.amzn2.0.2.x86_64
--> Running transaction check
--> Package apr-util.x86_64 0:1.6.3-1.amzn2.0.1 will be installed
--> Processing Dependency: apr-util-bdb(x86_64) = 1.6.3-1.amzn2.0.1 for package: apr-util-1.6.3-1.amzn2.0.1.x86_64
--> Processing Dependency: generic-logos-htpd.noarch 0:18.0.0-4.amzn2 will be installed
--> Package httpd-filesystem.noarch 0:2.4.62-1.amzn2.0.2 will be installed
--> Package http-tools.x86_64 0:2.4.62-1.amzn2.0.2 will be installed
--> Package mailcap.noarch 0:2.1.41-2.amzn2 will be installed
--> Package mod_http2.x86_64 0:11.15.19-1.amzn2.0.2 will be installed
--> Running transaction check
--> Package apr-util.x86_64 0:1.6.3-1.amzn2.0.1 will be installed
--> Processing Dependency: apr-util-bdb(x86_64) = 1.6.3-1.amzn2.0.1 for package: apr-util-1.6.3-1.amzn2.0.1.x86_64
--> Processing Dependency: generic-logos-htpd.noarch 0:18.0.0-4.amzn2 will be installed
--> Package httpd-filesystem.noarch 0:2.4.62-1.amzn2.0.2 will be installed
--> Package http-tools.x86_64 0:2.4.62-1.amzn2.0.2 will be installed
--> Package mailcap.noarch 0:2.1.41-2.amzn2 will be installed
--> Package mod_http2.x86_64 0:11.15.19-1.amzn2.0.2 will be installed
--> Running transaction check
```

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```
complete!
[ec2-user@ip-172-31-14-136 ~]$ yum info package_name
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Error: No matching Packages to list
[ec2-user@ip-172-31-14-136 ~]$
```

i-0349cb2691fa41495 (mywebserver9)
PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136

```
[ec2-user@ip-172-31-14-136 ~]$ yum info package_name
Dependency Installed:
apr.x86_64 0:1.7.2-1.amzn2
generic-logos-htpd.noarch 0:10.0.0-4.amzn2
mailcap.noarch 0:2.1.41-2.amzn2
apr-util.x86_64 0:1.6.3-1.amzn2.0.1
httpd-fsnotify.noarch 0:2.4.62-1.amzn2.0.2
mod_http2.x86_64 0:1.15.19-1.amzn2.0.2
apr-util-bdb.x86_64 0:1.6.3-1.amzn2.0.1
httpd-tools.x86_64 0:2.4.62-1.amzn2.0.2

Complete!
[ec2-user@ip-172-31-14-136 ~]$ yum info package_name
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Error! No matching Packages to list
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl start httpd
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl enable httpd
Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.
[ec2-user@ip-172-31-14-136 ~]$ sudo system is-enabled httpd
sudo: system: command not found
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl is-enabled httpd
enabled
[ec2-user@ip-172-31-14-136 ~]$ sudo usermod -a -G apache ec2-user
[ec2-user@ip-172-31-14-136 ~]$ sudo chown -R ec2-user:apache /var/www
[ec2-user@ip-172-31-14-136 ~]$ curl -I http://127.0.0.1:80 -v | grep "HTTP/2"
HTTP/2.0 200 OK
Content-Type: text/html; charset=UTF-8
Date: Mon, 01 Jan 2024 14:13:52 GMT
Server: Apache/2.4.62.1-amzn2.0.2
X-Powered-By: PHP/8.1.10.5.25-1.amzn2
[ec2-user@ip-172-31-14-136 ~]$ find /var/www -name f -exec sudo chmod 0664 {} \;
[ec2-user@ip-172-31-14-136 ~]$ echo "<?php phpinfo(); ?>" > /var/www/html/phpinfo.php
[ec2-user@ip-172-31-14-136 ~]$ sudo yum list installed httpd mariadb-server phpmyadmin
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Installed Packages
httpd.x86_64
mariadb-server.x86_64
[ec2-user@ip-172-31-14-136 ~]$ rm /var/www/html/phpinfo.php
[ec2-user@ip-172-31-14-136 ~]$
```

i-0349cb2691fa41495 (mywebserver9)
PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136

```
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl start mariadb
[ec2-user@ip-172-31-14-136 ~]$ sudo mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
```

i-0349cb2691fa41495 (mywebserver9)

PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136

```
[ec2-user@ip-172-31-14-136 ~]$ sudo mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user. If you've just installed MariaDB, and
haven't set the root password yet, you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password or using the unix_socket ensures that nobody
can log into the MariaDB root user without the proper authorisation.

You already have your root account protected, so you can safely answer "n".
switch to unix_socket authentication [Y/n]
Enabled successfully!
Reloading privilege tables..
... Success!

You already have your root account protected, so you can safely answer "n".
Change the root password? [Y/n] y
New password:
```

i-0349cb2691fa41495 (mywebserver9)
PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136

i-0349cb2691fa41495 (mywebserver9)

```
EC2
installation should now be secure.

Thanks for using MariaDB!
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl stop mariadb
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl enable mariadb
Created symlink from /etc/systemd/system/mysqld.service to /usr/lib/systemd/system/mariadb.service.
Created symlink from /etc/systemd/system/mariadb.service to /usr/lib/systemd/system/mariadb.service.
[ec2-user@ip-172-31-14-136 ~]$ sudo yum install php-mbstring php-xml -y
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
mzn2-core
Resolving Dependencies
--> Running transaction check
--> Package php-mbstring.x86_64 0:8.2.23-1.amzn2 will be installed
--> Processing Dependency: php-common(x86-64) = 8.2.23-1.amzn2 for package: php-mbstring-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libonig.so.2(64bit) for package: php-mbstring-8.2.23-1.amzn2.x86_64
--> Package php-xml.x86_64 0:8.2.23-1.amzn2 will be installed
--> Processing Dependency: libxml.so.1(LIBXML2_1.0.11)(64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libxml.so.1(LIBXML2_1.0.13)(64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libxml.so.1(LIBXML2_1.0.18)(64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libxml.so.1(LIBXML2_3.0.22)(64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libxml.so.1(LIBXML2_3.0.24)(64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libxmlt.so.0() (64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Processing Dependency: libxmlt.so.0(64bit) for package: php-xml-8.2.23-1.amzn2.x86_64
--> Running transaction check
--> Package libxmlt.x86_64 0:1.1.20-6.amzn2 will be installed
--> Package oniguruma.x86_64 0:5.9.6-1.amzn2.0.7 will be installed
--> Package php-common.x86_64 0:8.2.23-1.amzn2 will be installed

i-0349cb2691fa41495 (mywebserver9)
PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136
```

```
EC2
Running transaction test
transaction test succeeded
Running transaction
  Installing : oniguruma-5.9.6-1.amzn2.0.7.x86_64
  Installing : librip-1.3.3-1.amzn2.0.1.x86_64
  Installing : php-common-8.2.23-1.amzn2.x86_64
  Installing : libxml-1.1.28-6.amzn2.x86_64
  Installing : php-xml-8.2.23-1.amzn2.x86_64
  Installing : php-mbstring-8.2.23-1.amzn2.x86_64
  Verifying : php-mbstring-8.2.23-1.amzn2.x86_64
  Verifying : libxml-1.1.28-6.amzn2.x86_64
  Verifying : librip-1.3.3-1.amzn2.0.1.x86_64
  Verifying : php-xml-8.2.23-1.amzn2.x86_64
  Verifying : oniguruma-5.9.6-1.amzn2.0.7.x86_64
  Verifying : php-common-8.2.23-1.amzn2.x86_64

Installed:
  php-mbstring.x86_64 0:8.2.23-1.amzn2
  php-xml.x86_64 0:8.2.23-1.amzn2

Dependency Installed:
  libxmlt.x86_64 0:1.1.20-6.amzn2      libzip.x86_64 0:1.3.2-1.amzn2.0.1      oniguruma.x86_64 0:5.9.6-1.amzn2.0.7      php-common.x86_64 0:8.2.23-1.amzn2

Complete!
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl restart httpd
[ec2-user@ip-172-31-14-136 ~]$ sudo systemctl restart php-fpm
Failed to restart php-fpm.service: Unit not found.
[ec2-user@ip-172-31-14-136 ~]$ cd /var/www/html
[ec2-user@ip-172-31-14-136 html]$
```

i-0349cb2691fa41495 (mywebserver9)

PublicIPs: 3.110.207.95 PrivateIPs: 172.31.14.136