

ADVANCE DEVOPS EXPERIMENT NO.1

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Class:D15A

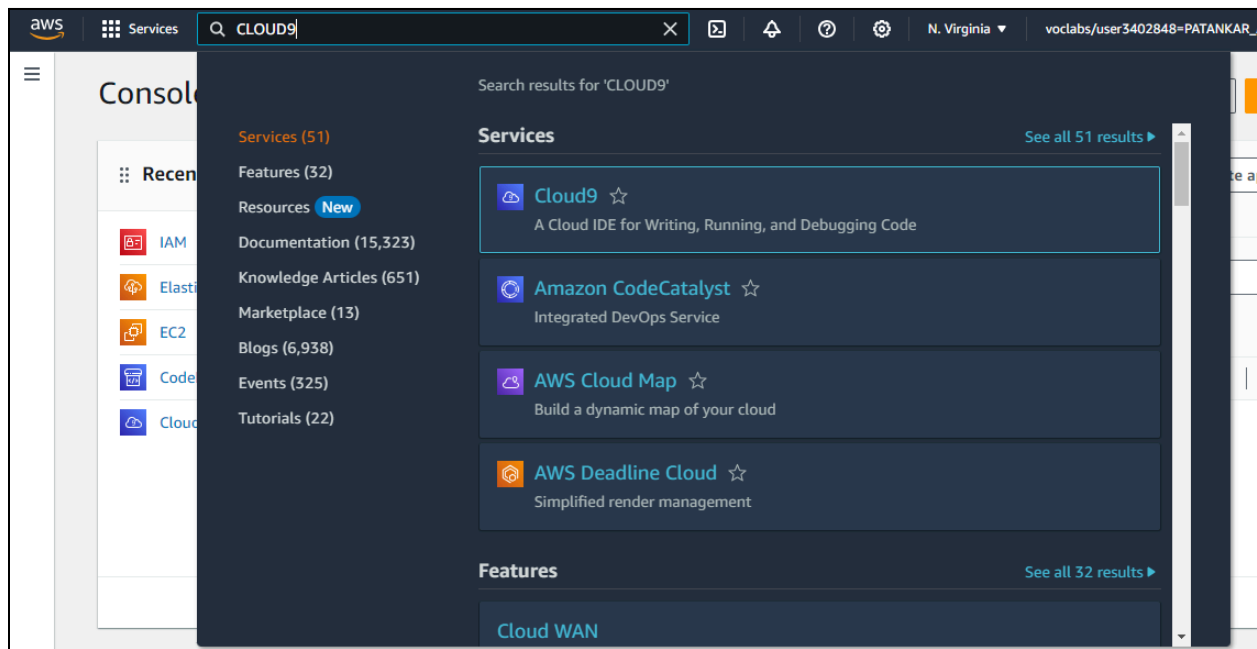
Roll No:34

Aim:To understand the benefits of Cloud Infrastructure and Setup AWS Cloud9 IDE, Launch AWS Cloud9 IDE and Perform Collaboration Demonstration.

Cloud9

Steps:

1.Open your AWS account and search for Cloud9 service inside Developer tools. Create a new Cloud9 environment by filling in the required details. Make sure you use an EC2 instance to create your environment.



Services

Search

[Alt+S]

N. Virginia

voclabs/user3402848=PATANKAR_ARYAN_ANIL

Developer Tools

AWS Cloud9

A cloud IDE for writing, running, and debugging code

AWS Cloud9 allows you to write, run, and debug your code with just a browser. With AWS Cloud9, you have immediate access to a rich code editor, integrated debugger, and built-in terminal with preconfigured AWS CLI. You can get started in minutes and no longer have to spend the time to install local applications or configure your development machine.

New AWS Cloud9 environment

Create environment

Details

Name

Test123

Limit of 60 characters, alphanumeric, and unique per user.

Description - optional

Limit 200 characters.

Environment type [Info](#)

Determines what the Cloud9 IDE will run on.

☒ New EC2 instance

Cloud9 creates an EC2 instance in your account. The configuration of your EC2 instance cannot be changed by Cloud9 after creation.

☐ Existing compute

You have an existing instance or server that you'd like to use.

New EC2 instance

Instance type [Info](#)

The memory and CPU of the EC2 instance that will be created for Cloud9 to run on.

☒ **t2.micro (1 GiB RAM + 1 vCPU)**
Free-tier eligible. Ideal for educational users and exploration.

☐ **t3.small (2 GiB RAM + 2 vCPU)**
Recommended for small web projects.

☐ **m5.large (8 GiB RAM + 2 vCPU)**
Recommended for production and most general-purpose development.

☐ **Additional instance types**
Explore additional instances to fit your need.

Platform [Info](#)

This will be installed on your EC2 instance. We recommend Amazon Linux 2023.

Amazon Linux 2023 ▼

Timeout

How long Cloud9 can be inactive (no user input) before auto-hibernating. This helps prevent unnecessary charges.

30 minutes ▼

Network settings [Info](#)

Connection

How your environment is accessed.

☐ **AWS Systems Manager (SSM)**
Accesses environment via SSM without opening inbound ports (no ingress).


☒ **Secure Shell (SSH)**
Accesses environment directly via SSH, opens inbound ports.

► **VPC settings** [Info](#)

► **Tags - optional** [Info](#)

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.

The following IAM resources will be created in your account

- **AWSServiceRoleForAWSCloud9** - AWS Cloud9 creates a service-linked role for you. This allows AWS Cloud9 to call other AWS services on your behalf. You can delete the role from the AWS IAM console once you no longer have any AWS Cloud9 environments. [Learn more](#) 

ch [Alt+S] N. Virginia voclabs/user3402848=PATANKAR_ARYAN_ANIL @ 5543-

Successfully created Test123. To get the most out of your environment, see [Best practices for using AWS Cloud9](#)

For capabilities similar to AWS Cloud9, explore AWS Toolkits in your own IDE and AWS CloudShell in the AWS Management Console. [Learn more](#)

AWS Cloud9 > Environments

Environments (1) Delete View details Open in Cloud9 Create environment

My environments

Name	Cloud9 IDE	Environment type	Connection	Permission	Owner ARN
Test123	Open	EC2 instance	Secure Shell (SSH)	Owner	arn:aws:sts::554378108602:assumed-role/voclabs/user3402848=PATANKAR_ARYAN_ANIL

Q iam N. Virginia voclabs/user3402848=

Search results for 'iam'

Services (11) See all 11 results

Features (24)

Resources **New**

Documentation (59,458)

Knowledge Articles (467)

Marketplace (856)

Blogs (1,843)

Events (12)

Tutorials (1)

IAM Manage access to AWS resources

IAM Identity Center Manage workforce user access to multiple AWS accounts and cloud applications

Resource Access Manager Share AWS resources with other accounts or AWS Organizations

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management

User groups

Users

Roles

Policies

IAM > Users

Users (0) Info

An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

Search

User name	Path	Group	Last activity	MFA	Password age
No resources to display					

Create user

User name

aryan

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ _ - (hyphen)

☒

 Provide user access to the AWS Management Console - *optional*

If you're providing console access to a person, it's a [best practice](#) to manage their access in IAM Identity Center.

Console password

☐ Autogenerated password

You can view the password after you create the user.

☒ Custom password

Enter a custom password for the user.

.....

• Must be at least 8 characters long

• Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols (! " # \$ % & ' () * + , - . / : ; < = > ? [\] ^ _ ` { | } ~)

☐ Show password

☒ Users must create a new password at next sign-in - Recommended

Users automatically get the [IAMUserChangePassword](#) policy to allow them to change their own password.

User details

User name	Console password type	Require password reset
aryan	Custom password	Yes

Permissions summary

< 1 >

Name	Type	Used as
IAMUserChangePassword	AWS managed	Permissions policy

Tags - *optional*

Tags are key-value pairs you can add to AWS resources to help identify, organize, or search for resources. Choose any tags you want to associate with this user.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Add user to an existing group or create a new one using groups is a best practice way to manage user permissions by job function. [Learn more](#)

Permissions options

☒ **Add user to group**

Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

☐ **Copy permissions**

Copy all group memberships, attached managed policies, and inline policies from an existing user.

☐ **Attach policies directly**

Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.



Get started with groups

Create a group and select policies to attach to the group. We recommend using groups to manage user permissions by job function, AWS service access, or custom permissions. [Learn more](#)

Create group

User name
aryanp

Console password type
None

Require password reset
No

Permissions summary

< 1 >

Name ↗	Type	Used as
No resources		

Tags - optional

Tags are key-value pairs you can add to AWS resources to help identify, organize, or search for resources. Choose any tags you want to associate with this user.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Cancel

Previous

Create user

Here the environment has been successfully created

For capabilities similar to AWS Cloud9, explore AWS Toolkits in your own IDE and AWS CloudShell in the AWS Management Console. [Learn more](#)

[AWS Cloud9](#) > Environments

Environments (1)

Delete

View details

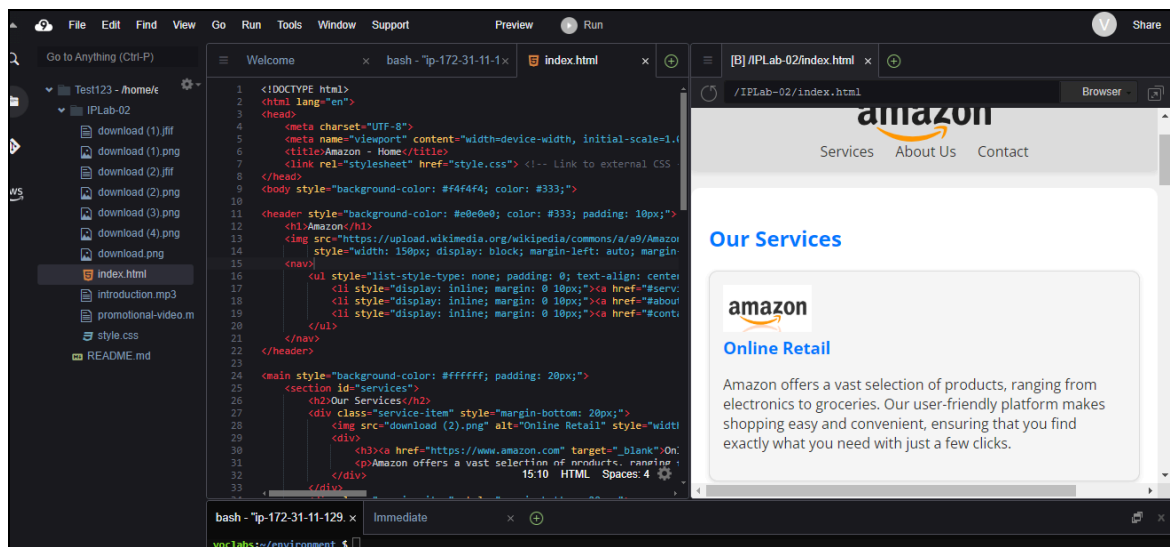
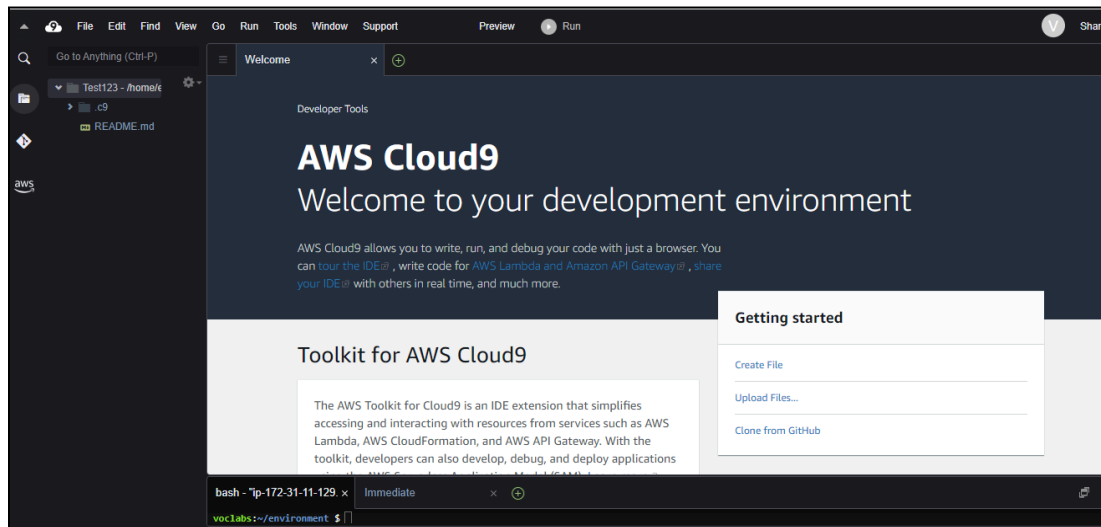
Open in Cloud9

Create environment

My environments

	Name	Cloud9 IDE	Environment type	Connection	Permission	Owner ARN
<input type="radio"/>	Test123	Open	EC2 instance	Secure Shell (SSH)	Owner	arn:aws:sts::554378108602:assumed-role/voclabs/user3402848=PATANKAR_ARYAN_ANIL

2. We have successfully set up and launched our Cloud9 environment. Over here, we can build and develop programs as per our desire. We are also allowed to collaborate with multiple other users and access shared resources.



Further, we are supposed to login from another browser using the credentials of the IAM user, to access the shared cloud9 environment with us. These steps could not be completed because Cloud9 services have been disrupted and there is no access to the IAM user from the remote login.

EC2 INSTANCE

Steps:

1. Create a new instance and follow the steps

EC2 > Instances > Launch an instance

Launch an instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name

Add additional tags

Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Summary

Number of instances

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.5.2...read more
ami-0ae8f15ae66fe8cda

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch instance

Recents

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Linux

SUS

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type

Free tier eligible

ami-04a81a99f5ec58529 (64-bit (x86)) / ami-0c14ff330901e49ff (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Ubuntu Server 24.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Architecture

64-bit (x86)

AMI ID



ami-04a81a99f5ec58529

Verified provider

▼ Configure storage [Info](#)


[Advanced](#)

1x GiB ▼ 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](#)

▼ 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.

Key pair name - *required*



[Create new key pair](#)

▼ 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: 0.026 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

▼ Network settings Info

Edit

Network Info

vpc-0eb15f74eb572c84e

Subnet Info

No preference (Default subnet in any availability zone)

Auto-assign public IP Info

Enable

Additional charges apply

when outside of free tier allowance

Firewall (security groups) Info

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group

☐ Select existing security group

We'll create a new security group called 'launch-wizard-3' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

Anywhere
0.0.0.0/0 ▼

☐ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☐ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

EC2 > Instances > Launch an instance

✔ Success

Successfully initiated launch of instance (i-0d949d3b5f417c6b6)

▼ Launch log

Initializing requests

✔ Succeeded

Creating security groups

✔ Succeeded

Creating security group rules

✔ Succeeded

Launch initiation

✔ Succeeded

Instances (1/1) Info

Connect

Instance state

Actions

Launch instances

Q

Find Instance by attribute or tag (case-sensitive)

All states


Instance ID = i-0d949d3b5f417c6b6

X

Clear filters

< 1 >

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input checked="" type="checkbox"/>	Aryan	i-0d949d3b5f417c6b6	<div><div></div>Running</div>	t2.micro	<div><div></div>Initializing</div>	<div>View alarms</div>	us-east-1



Ubuntu

Apache2 Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```

/etc/apache2/
|-- apache2.conf
/
  |-- ports.conf
  |-- mods-enabled
        
```

```

[1]+  Stopped                  nano index1.html
root@ip-172-31-36-118:/var/www/html# sudo nano index.html
root@ip-172-31-36-118:/var/www/html# sudo start apache2
sudo: start: command not found
root@ip-172-31-36-118:/var/www/html# sudo systemctl start apache2
root@ip-172-31-36-118:/var/www/html# sudo systemctl status apache2
* apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Sun 2024-08-18 09:03:15 UTC; 22min ago
     Docs: https://httpd.apache.org/docs/2.4/
  Main PID: 3261 (apache2)
    Tasks: 55 (limit: 1130)
   Memory: 5.3M (peak: 5.5M)
      CPU: 128ms
   CGroup: /system.slice/apache2.service
           └─3261 /usr/sbin/apache2 -k start
           └─3264 /usr/sbin/apache2 -k start
           └─3265 /usr/sbin/apache2 -k start

Aug 18 09:03:15 ip-172-31-36-118 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Aug 18 09:03:15 ip-172-31-36-118 systemd[1]: Started apache2.service - The Apache HTTP Server.
root@ip-172-31-36-118:/var/www/html#

```

See "man sudo_root" for details.

```

ubuntu@ip-172-31-36-118:~$ :/home/ubuntu# apt install apache2
-bash: :/home/ubuntu#: No such file or directory
ubuntu@ip-172-31-36-118:~$ cls
Command 'cls' not found, but there are 20 similar ones.
ubuntu@ip-172-31-36-118:~$ sudo su
root@ip-172-31-36-118:/home/ubuntu# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3
  libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser

```

i-0d949d3b5f417c6b6 (Aryan)

PublicIPs: 52.207.231.96 PrivateIPs: 172.31.36.118

