

Name: Keyur Patel

Roll no : 16010421073

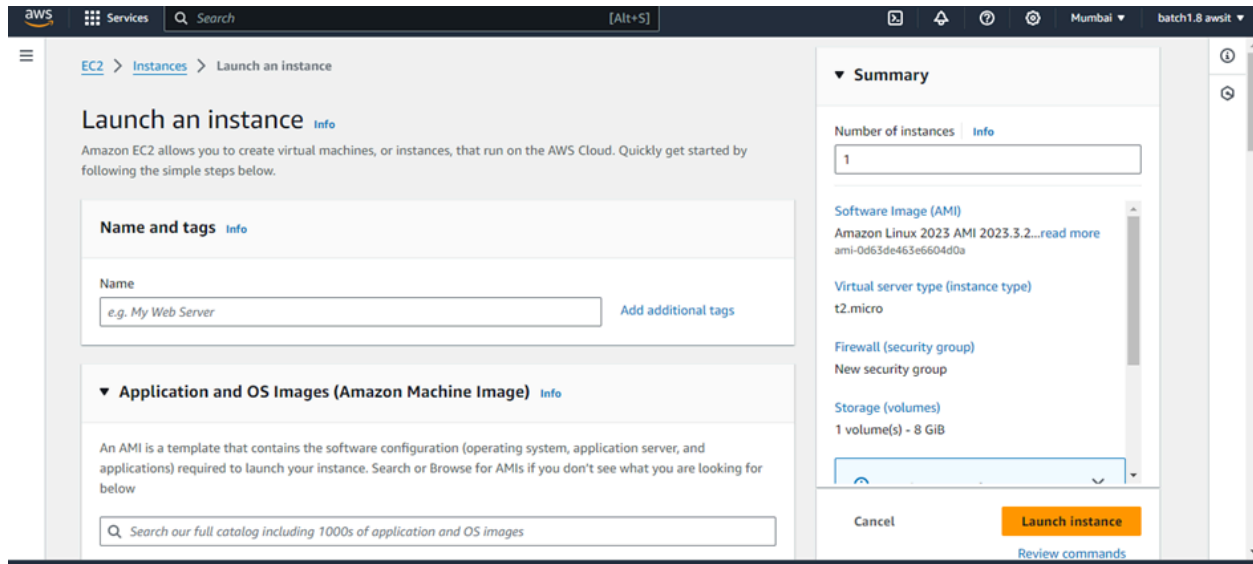
Batch: A2

Exp-3

Aim: Creating Window Virtual Machine Instance using AWS (IaaS) using RDP and executing C++ program on Window Instance.

Results: (Program / Steps with screenshots)

1. Launching an instance



The screenshot shows the AWS Management Console interface for launching an EC2 instance. The breadcrumb navigation indicates the path: EC2 > Instances > Launch an instance. The main heading is 'Launch an instance' with an 'Info' link. Below this, a brief description states: '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.'

The configuration is organized into sections:

- Name and tags** (Info link): Includes a 'Name' text input field containing 'e.g. My Web Server' and an 'Add additional tags' button.
- Application and OS Images (Amazon Machine Image)** (Info link): Includes a search bar with the placeholder text 'Search our full catalog including 1000s of application and OS images'.
- Summary** (Expanded): A right-hand panel showing the following configuration details:
 - Number of instances** (Info link): A text input field with the value '1'.
 - Software Image (AMI)**: 'Amazon Linux 2023 AMI 2023.3.2...read more' with the ID 'ami-0d63de463e6604d0a'.
 - Virtual server type (instance type)**: 't2.micro'.
 - Firewall (security group)**: 'New security group'.
 - Storage (volumes)**: '1 volume(s) - 8 GiB'.

At the bottom of the Summary panel, there are three buttons: 'Cancel', 'Launch instance' (highlighted in orange), and a link for 'Review commands'.

2. Adding a new machine and creating a Key-Pair

Create key pair

Key pair name

Key pairs allow you to connect to your instance securely.

group_4

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

☒ RSA

RSA encrypted private and public key pair

☐ ED25519

ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

☒ .pem

For use with OpenSSH

☐ .ppk

For use with PuTTY

⚠ When prompted, store the private key in a secure and accessible location on

Cancel

Create key pair

3. successfully made an instance:

Success

Successfully initiated launch of instance (i-06b5ac16408d1ca5d)

Launch log

Next Steps

Q What would you like to do next with this instance, for example "create alarm" or "create backup"

< 1 2 3 4 5 6 >

4. checking if the instance is running:

Instances (1/2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4
Adwait	i-0ba4316873274a2a6	Terminated	t2.micro	–	View alarms +	ap-south-1a	–	–
Group_4	i-06b5ac16408d1ca5d	Running	t2.micro	Initializing	View alarms +	ap-south-1a	ec2-13-201-59-213.ap-...	13.201.59.2

Instance: i-06b5ac16408d1ca5d (Group_4)

IAM Role –	Subnet ID subnet-0c3e4649ab425a9a6	Auto Scaling Group name –
IMDSv2 Required	AMI ID ami-00d59001b2335bdca	Monitoring disabled
Platform windows	AMI name Windows_Server-2022-English-Full-Base-2024.01.16	Termination protection Disabled

5. connecting the instance:

Connect to instance Info

Connect to your instance i-06b5ac16408d1ca5d (Group_4) using any of these options

Session Manager | **RDP client** | EC2 serial console

Instance ID
i-06b5ac16408d1ca5d (Group_4)

Connection Type

- Connect using RDP client**
Download a file to use with your RDP client and retrieve your password.
- Connect using Fleet Manager
To connect to the instance using Fleet Manager Remote Desktop, the SSM Agent must be installed and running on the instance. For more information, see [Working with SSM Agent](#)

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

[Download remote desktop file](#)

When prompted, connect to your instance using the following details:

Public DNS ec2-13-201-59-213.ap-south-1.compute.amazonaws.com	Username Administrator
--	---------------------------

Password [Get password](#)

Info If you've joined your instance to a directory, you can use your directory credentials to connect to your instance.

6. Using the RSA private key to generate the password:


Get Windows password [Info](#)


Use your private key to retrieve and decrypt the initial Windows administrator password for this instance.

Instance ID
i-06b5ac16408d1ca5d (Group_4)

Key pair associated with this instance
group_4

Private key
Either upload your private key file or copy and paste its contents into the field below.

 Upload private key file

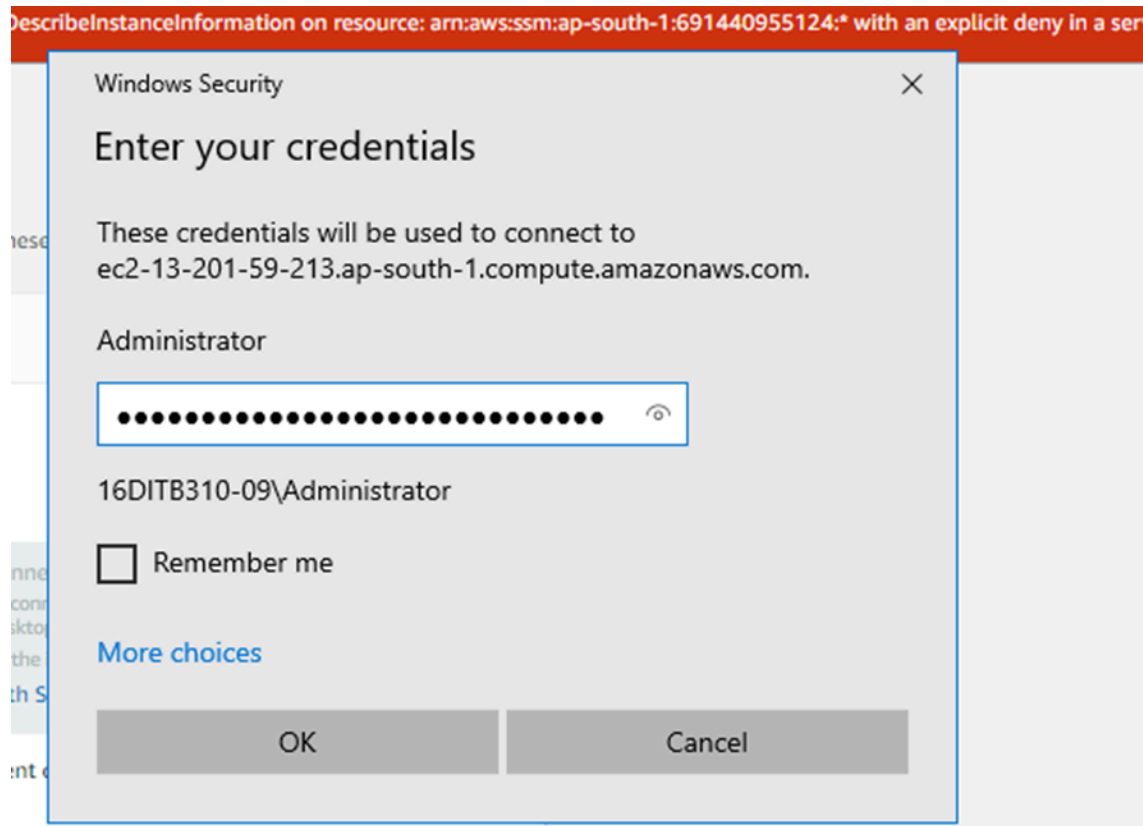
 group_4.pem
1.674KB

Private key contents - optional

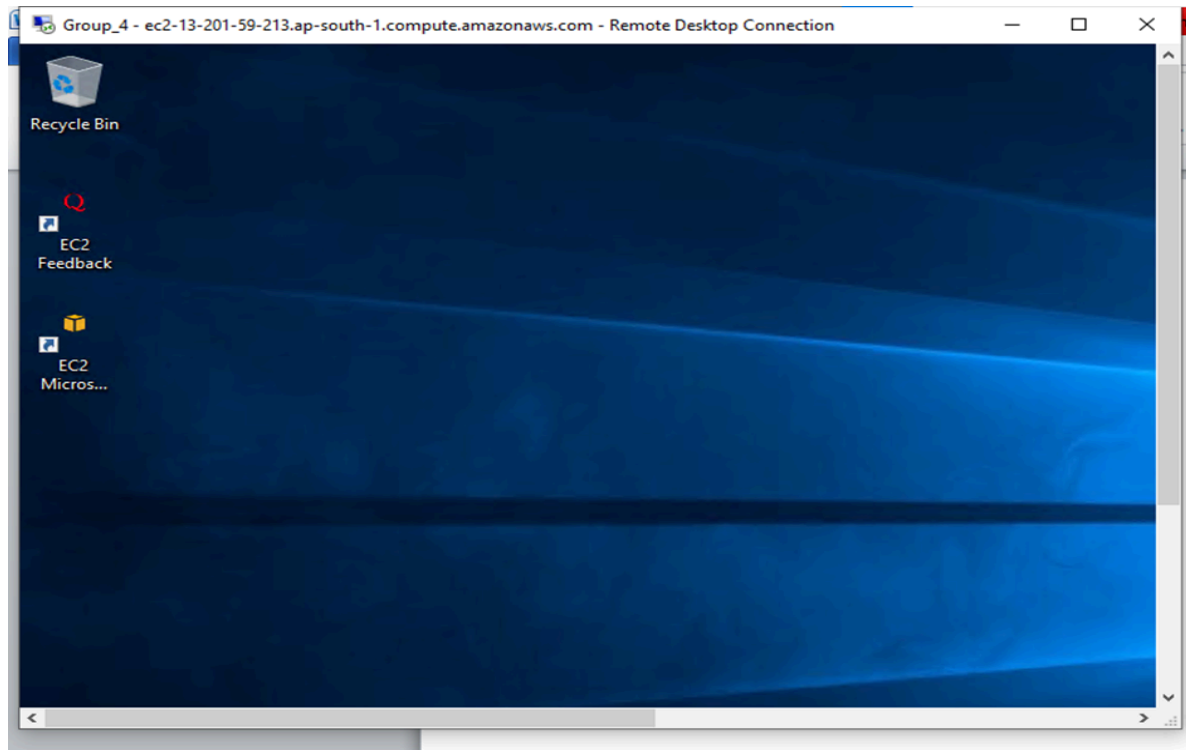
```
-----BEGIN RSA PRIVATE KEY-----
MIIeowIBAAKCAQEAioBCmT95ldGV4FC9SJWylFP3NlNDfuo3hS6fDX0i2xXhJSL0
9ev95Ay5NF+stro+dAHy62z4bzkybiRtp57wOWA3n7DC1e7bjCCXEoXGdZBwvpBi
abarcHcY6aFkw/4+rVPxZNAwePSX0DcjB1YAPLiI9IN3vG1WQaPnXqIfYaeVOAWtm
CISZPyjoq0eBYXZjKVcW8fRqr0syk2oKoZcrXUcVva1DI8DHZsgO/uwQnW2eQKwo
tiJvYFA3mlzqkElRkkrgjNb+wrjbwa/RBilgt1PnwpSABXJzrqDITvAW4v4gonli
dGodWNvoBeEmLwpSvlw2Iz372xtR9P+p2/esCQIDAQABAoIBAF1qUwEgAfbd7NPm
QTTY2wcWdxgqls04Vog6wMaNT3QrlrbAlC5GpPEq78P2f/yjM7p1Eg5ealZCYtRN
-----
```

Cancel Decrypt password

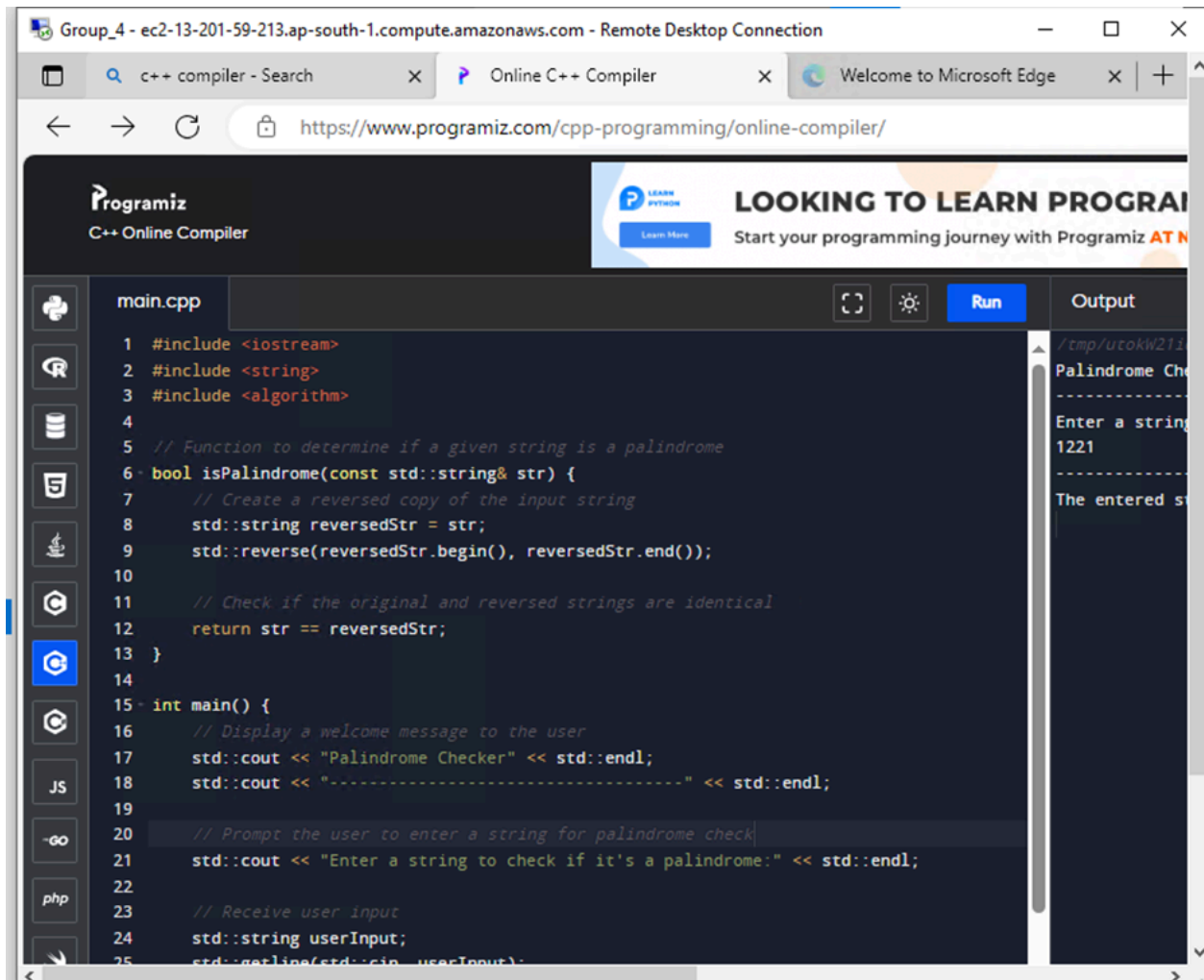
7. After generating the password, we login onto the AWS Cloud:



8. Running a different windows system on AWS Cloud:



9. RUNNING THE C++ PROGRAM ON A ONLINE COMPIER:



The screenshot shows a remote desktop connection to a Group 4 instance. The browser window displays the Programiz C++ Online Compiler. The code in main.cpp is as follows:

```
1 #include <iostream>
2 #include <string>
3 #include <algorithm>
4
5 // Function to determine if a given string is a palindrome
6 bool isPalindrome(const std::string& str) {
7     // Create a reversed copy of the input string
8     std::string reversedStr = str;
9     std::reverse(reversedStr.begin(), reversedStr.end());
10
11     // Check if the original and reversed strings are identical
12     return str == reversedStr;
13 }
14
15 int main() {
16     // Display a welcome message to the user
17     std::cout << "Palindrome Checker" << std::endl;
18     std::cout << "-----" << std::endl;
19
20     // Prompt the user to enter a string for palindrome check
21     std::cout << "Enter a string to check if it's a palindrome:" << std::endl;
22
23     // Receive user input
24     std::string userInput;
25     std::getline(std::cin, userInput);
```

The output on the right shows the program's execution:

```
/tmp/utokw211
Palindrome Checker
-----
Enter a string
1221
-----
The entered s
```

Questions:

1. Explain two AWS IaaS, PaaS and SaaS services for each?

Sure, let me provide you with examples of two AWS services for each category: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

Infrastructure as a Service (IaaS):

1. Amazon EC2 (Elastic Compute Cloud):

- Description: EC2 is a scalable compute service that allows users to rent virtual servers on-demand. It provides full control over the computing resources, allowing users to configure the instances based on their requirements.
- Use Cases: Hosting applications, running batch processing, and providing scalable computing resources.

2. Amazon S3 (Simple Storage Service):

- Description: S3 is a scalable object storage service for storing and retrieving data. It offers high durability and availability, and users can store and retrieve any amount of data at any time.
- Use Cases: Storing and retrieving files, backup and restore, data archiving, and serving static assets for web applications.

Platform as a Service (PaaS):

1. AWS Elastic Beanstalk:

- Description: Elastic Beanstalk is a fully managed service that simplifies the deployment and management of applications. It supports various programming languages and web application frameworks, allowing developers to focus on writing code rather than managing infrastructure.
- Use Cases: Web application hosting, microservices deployment, and automatic scaling.

2. AWS RDS (Relational Database Service):

- Description: RDS is a managed relational database service that supports multiple database engines, including MySQL, PostgreSQL, and Microsoft SQL Server. It automates routine database tasks such as patching, backups, and scaling.
- Use Cases: Hosting relational databases for applications, data warehousing, and business intelligence.

Software as a Service (SaaS):

1. Amazon WorkMail:

- Description: WorkMail is a secure and managed business email and calendaring service. It eliminates the need for managing email infrastructure and provides features like encryption, data loss prevention, and mobile device management.

- Use Cases: Business email and calendaring for organizations.

2. Amazon Chime:

- Description: Chime is a secure communication and collaboration service that includes online meetings, video conferencing, and chat. It allows users to conduct virtual meetings and collaborate in real-time.

- Use Cases: Virtual meetings, team collaboration, and online communication.

These examples showcase a variety of AWS services spanning IaaS, PaaS, and SaaS, each serving different needs for users and businesses.

Outcome:

CO2 Study the Evolution of Cloud Computing and its models.

CONCLUSION:

Amazon Elastic Compute Cloud (Amazon EC2) provides a flexible and scalable solution for computing capacity in the AWS Cloud. By eliminating the need for upfront hardware investments, EC2 allows developers to expedite application development and deployment. Its capability to launch and configure virtual servers, manage security and networking, and handle storage efficiently, empowers users to adapt to changing requirements or sudden spikes in popularity, reducing the need for accurate traffic forecast.

