CLOUD COMPUTING PRACTICAL-1

Name – Ruchika G Karoo

Roll No – A029

SAP ID – 86062300066

NAME : RUCHIKA G. KARDD.
ROLL NO: A029

Page No. :
Date :

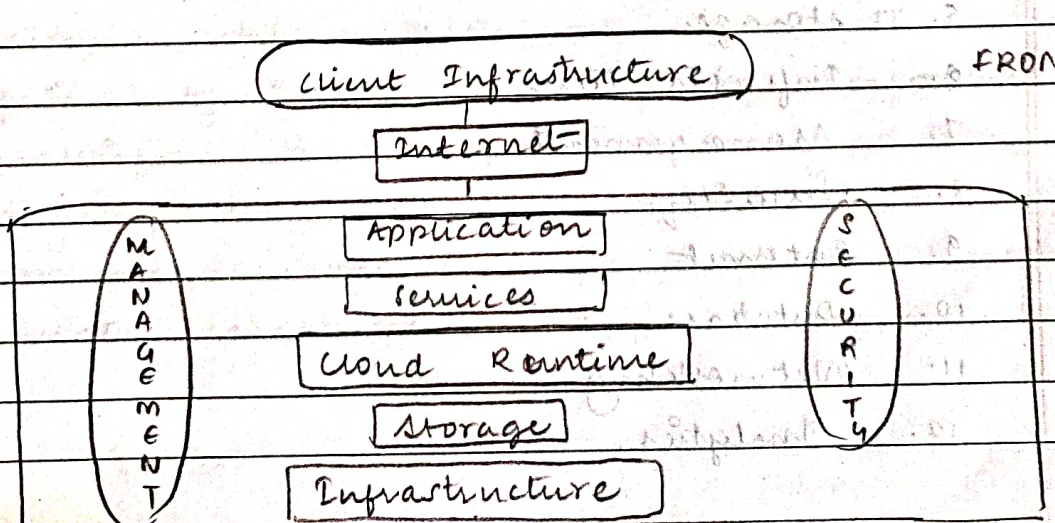
CLOUD COMPUTING - A-1

* ARCHITECTURE OF CLOUD COMPUTING

Cloud computing, is one of the most demanding technologies of the current time and is giving a new shape to every organisation by providing on-demand virtualized services/resources. starting from small to medium and medium to large, every organization uses cloud computing services for storing information and accessing it from anywhere and at any time only ~~time~~ with the help of internet.

Architecture of cloud computing is the combination of both SOA (Service Oriented Architecture) and EDA (Event Driven Architecture). Client infra, application, service, runtime cloud, storage, infra, management & security all these are the components of cloud computing architecture.

Cloud Architecture is divided into 2 parts—
1) Frontend 2) Backend.



Page No. :
Date :

1. Frontend - It refers to the client side of cloud computing system. Means it contains all the user interfaces and applications which are used by the client to access the cloud computing services / resources. For ex, use of a web browser to access the cloud platform.

2. Backend - refers to the cloud itself which is used by the service provider. It contains the resources as well as manage the resources and provides security mechanisms. Along with this, it includes huge storage, virtual applications, virtual machines, etc.

Components of cloud computing Architecture

1. Client Infrastructure
2. Application
3. Service
4. Runtime cloud
5. storage
6. Infrastructure
7. Management
8. Security.
9. Internet
10. Database
11. Networking
12. Analytics.

Page No. :
Date :

* IAAS (Infrastructure as a Service).

Iaas is a business model that delivers IT infrastructure like compute, storage, and network resources on a pay-as-you-go basis over the internet. You can use Iaas to request and configure the resources you require to run your applications and IT systems. You are responsible for deploying, maintaining, and supporting your applications, and the Iaas provider is responsible for maintaining the physical infrastructure. Infrastructure as a Service gives you flexibility and control over your IT resources in a cost-effective manner.

While the industry has traditionally used terms like Iaas, Platform as a Services & Saas to group cloud services, at AWS, it focuses on solutions to your needs, which can span many service types. Iaas is used to scale your compute capacity while reducing your IT expenditure. Benefits of Iaas are Speed, Performance, Reliability, Back up & recovery, Competitive pricing. Use cases of Iaas are high performance computing, Website hosting, Big data analytics, App development.

Page No. :
Date :

* AWS

AWS (Amazon Web Services) is a comprehensive, evolving cloud computing platform provided by Amazon. It includes a mixture of IaaS, PaaS, SaaS offerings. AWS offers tools such as compute power, database storage and content delivery services.

Amazon Web services launched its first web services in 2002 from the internal infrastructure that the company built to handle its online retail operations. In 2006, it began offering its defining IaaS services. AWS was one of the first companies to introduce a pay-as-you-go cloud computing model that scales to provides users with compute, storage and throughout as needed.

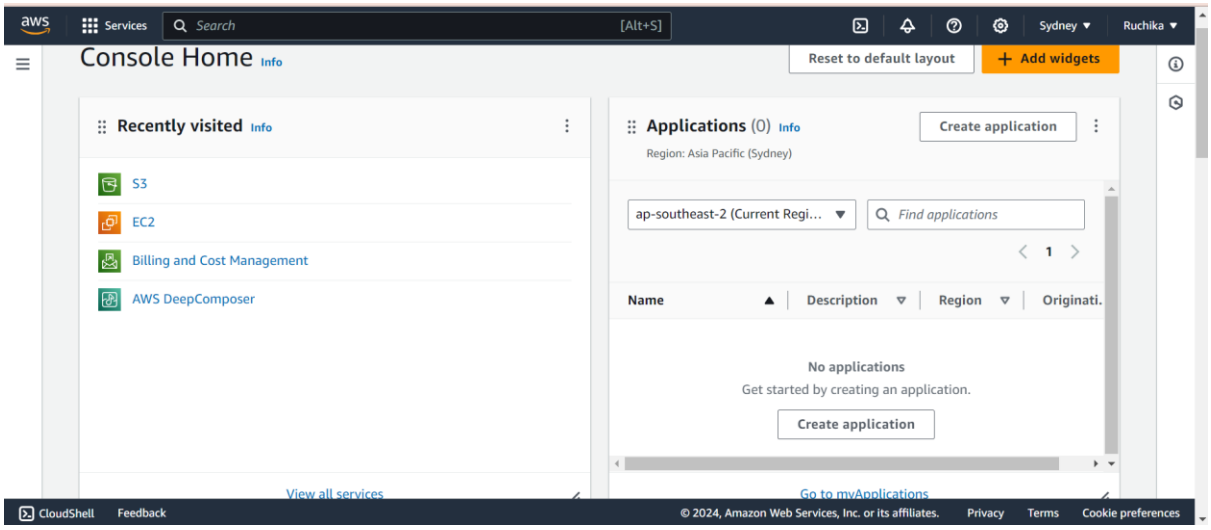
AWS offers many different tools & products for enterprises and software developers in 245 countries & territories. Govt. agencies, education institutions, nonprofits and private organisations use AWS services.

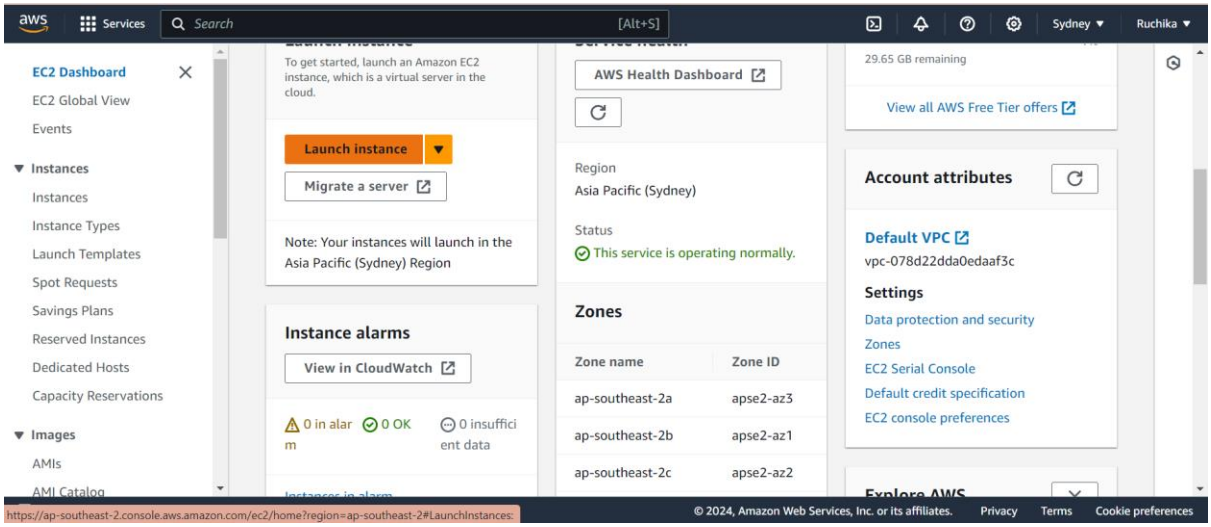
AWS is important because it provides a range of offerings for individuals, as well as public & private sector organisations to create applications & information services of all kinds.

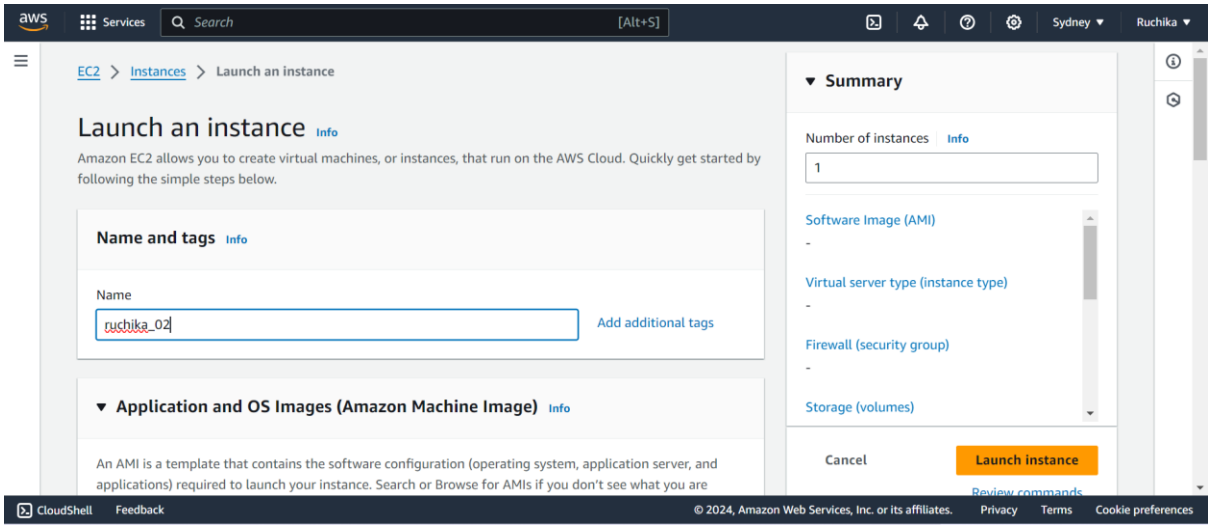
Page No. :
Date :

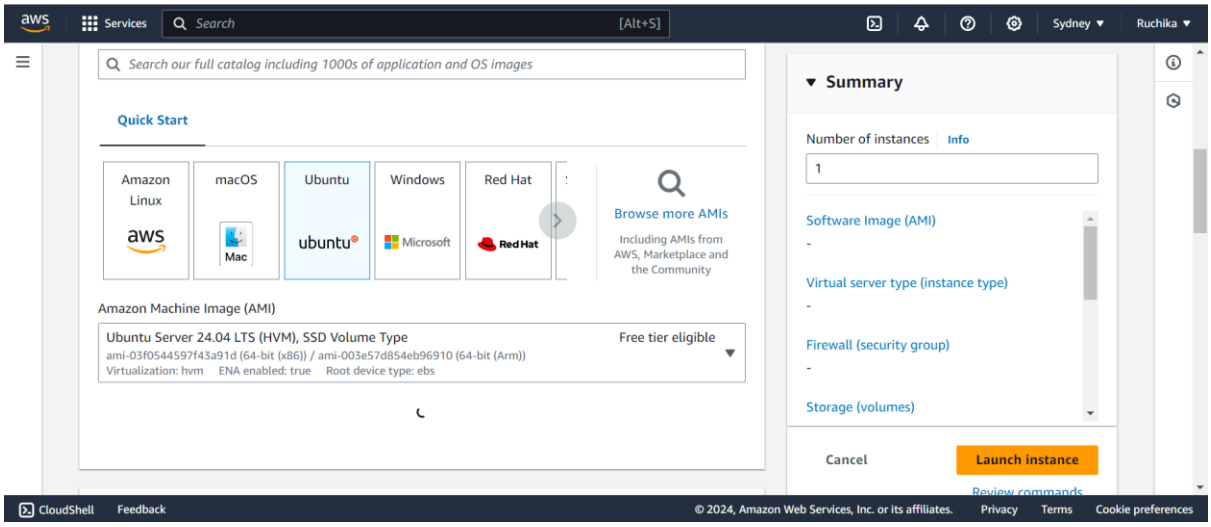
* EC2

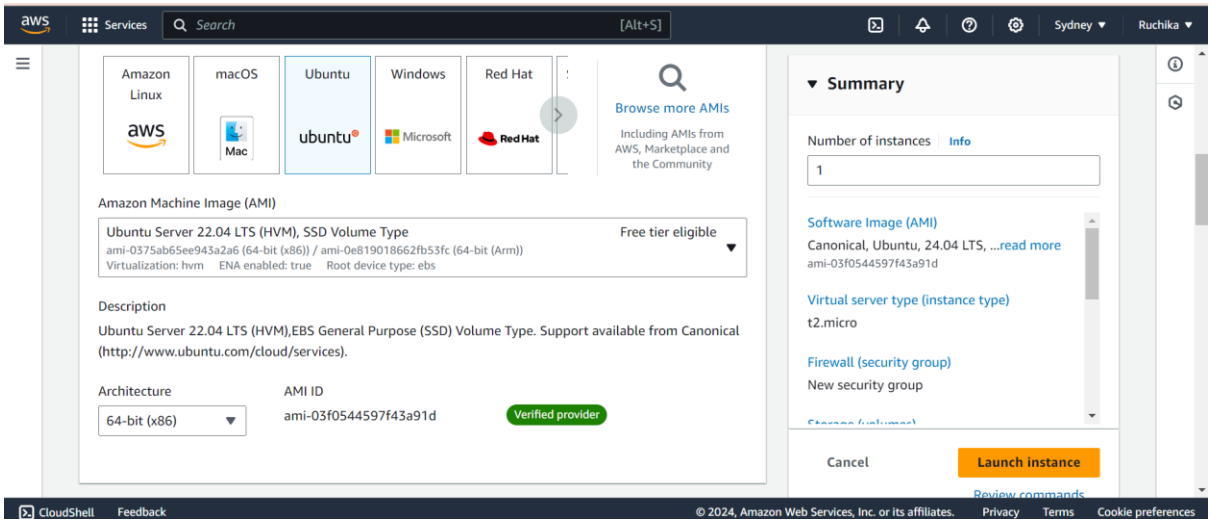
EC2 stands for Elastic compute cloud. EC2 is an on-demand computing services on the AWS cloud platform. Under computing, it includes all the services a computing device can offer to you along with the flexibility of a virtual environment. It also allows the user to configure their instances as per their requirements i.e. allocate the RAM, ROM and storage according to the need of the current task. Even the user can dismantle the virtual device once its task is completed and it is no more required. For providing, all these scalable resources AWS charges some bill amount at the end of every month, the bill amount is entirely dependent on your usage. EC2 allows you to rent virtual computers. The provision of servers on AWS cloud is one of the easiest ways in EC2. EC2 has resizable capacity. EC2 offers security, reliability, high performance, and cost-effective infrastructure so as to meet the demanding business needs.


Console Home Info
Reset to default layout
+ Add widgets
Recently visited Info
S3
EC2
Billing and Cost Management
AWS DeepComposer
View all services
Applications (0) Info
Region: Asia Pacific (Sydney)
Create application
ap-southeast-2 (Current Regi...
Find applications
Name
Description
Region
Originati.
No applications
Get started by creating an application.
Create application
Go to myApplications
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

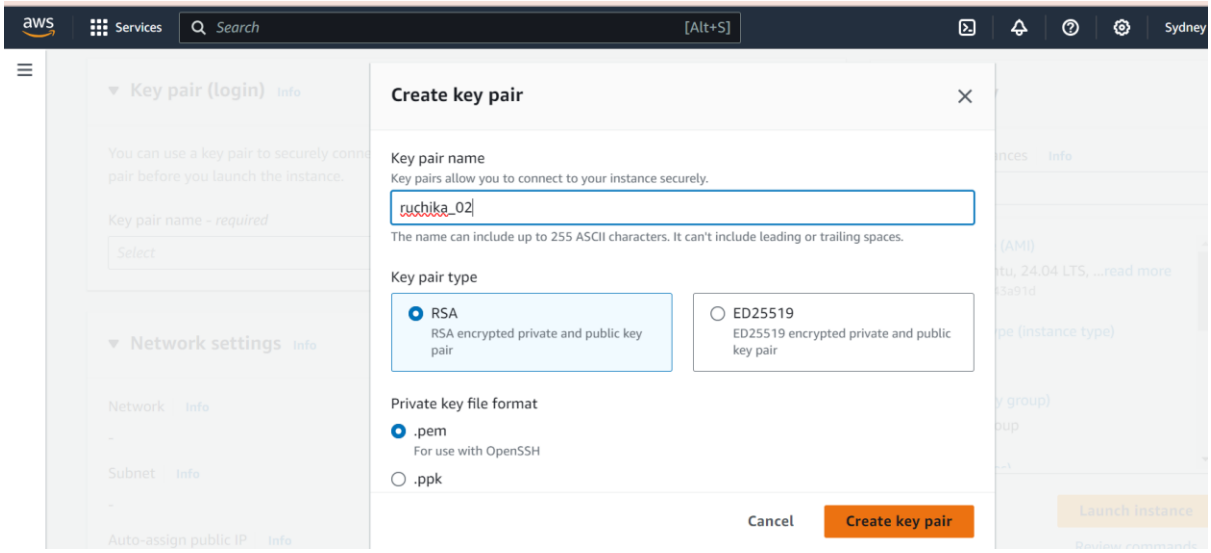

EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.
Launch instance
Migrate a server
Note: Your instances will launch in the Asia Pacific (Sydney) Region
Instance alarms
View in CloudWatch
AWS Health Dashboard
Region
Asia Pacific (Sydney)
Status
This service is operating normally.
Zones
Zone name
Zone ID
ap-southeast-2a
apse2-az3
ap-southeast-2b
apse2-az1
ap-southeast-2c
apse2-az2
29.65 GB remaining
View all AWS Free Tier offers
Account attributes
Default VPC
vpc-078d22dda0edaaf3c
Settings
Data protection and security
Zones
EC2 Serial Console
Default credit specification
EC2 console preferences
https://ap-southeast-2.console.aws.amazon.com/ec2/home?region=ap-southeast-2#LaunchInstances:
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

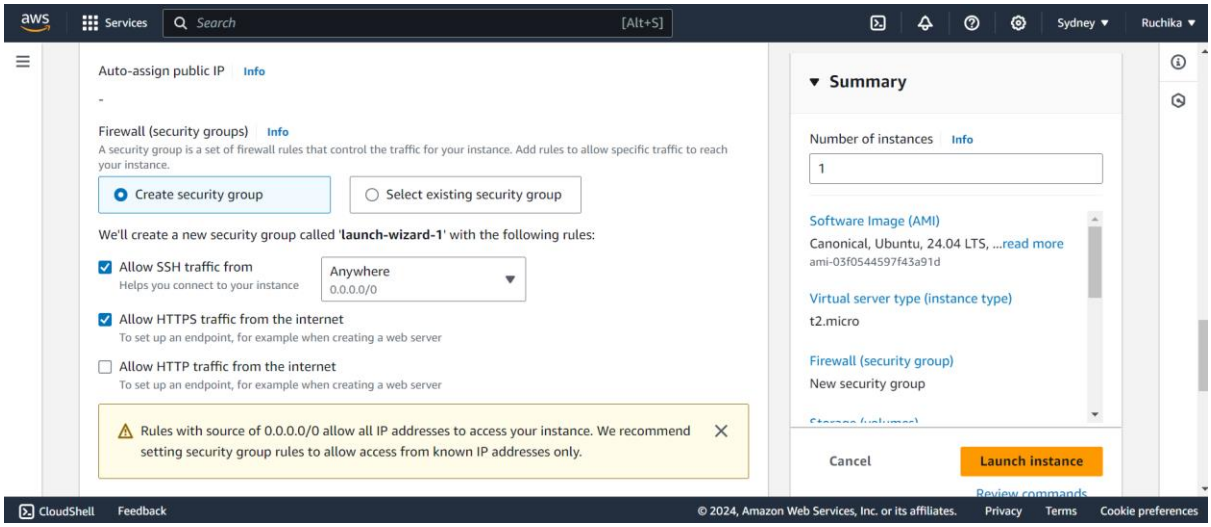

EC2 > Instances > Launch an instance
Launch an instance Info
Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.
Name and tags Info
Name
ruchika_02
Add additional tags
Application and OS Images (Amazon Machine Image) Info
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
Summary
Number of instances Info
1
Software Image (AMI)
-
Virtual server type (instance type)
-
Firewall (security group)
-
Storage (volumes)
Cancel
Launch instance
Review commands
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

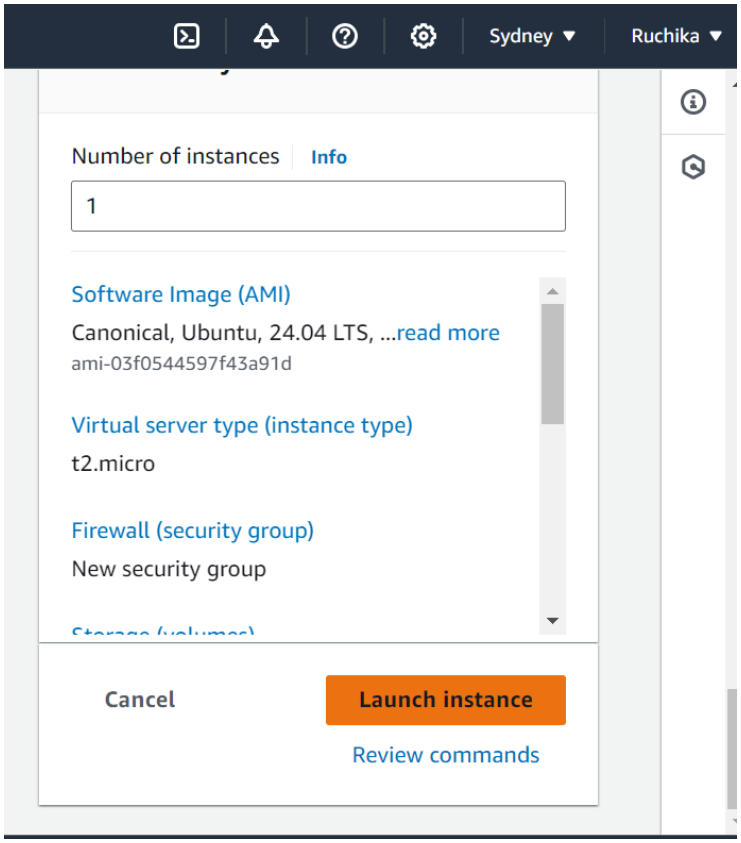


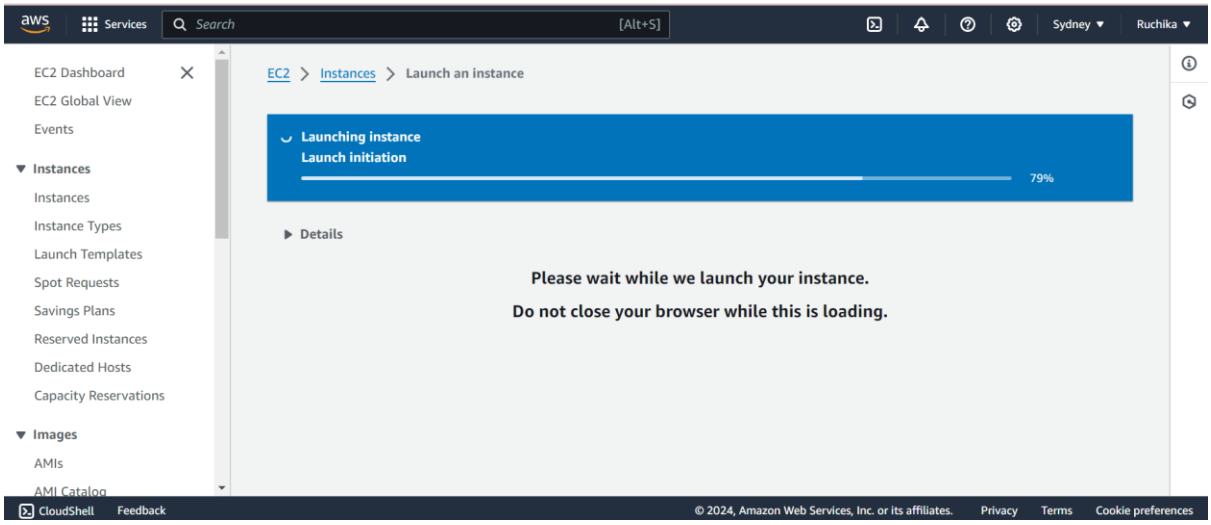


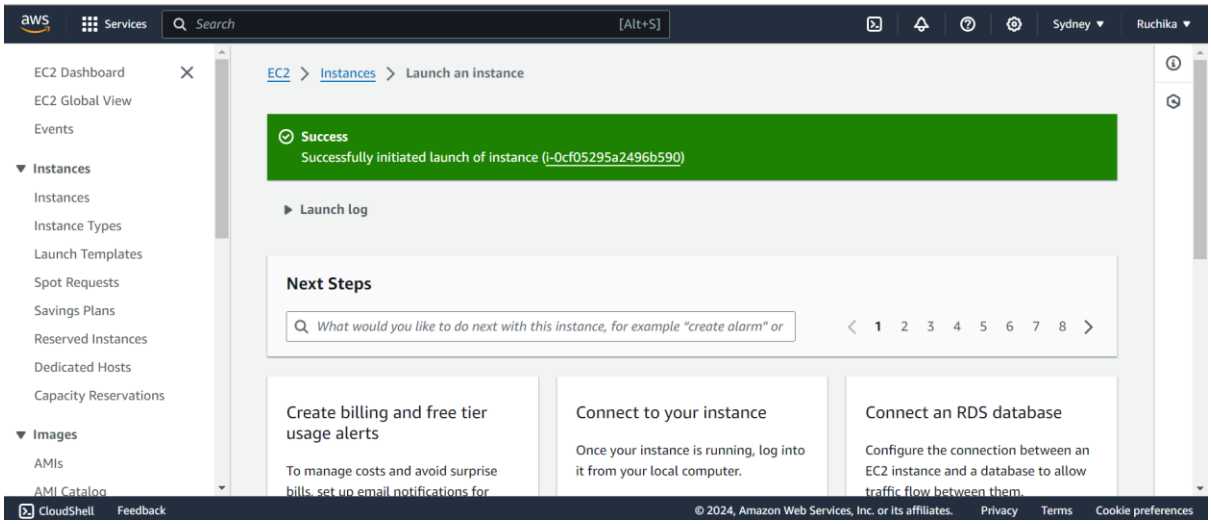
Create new key pair

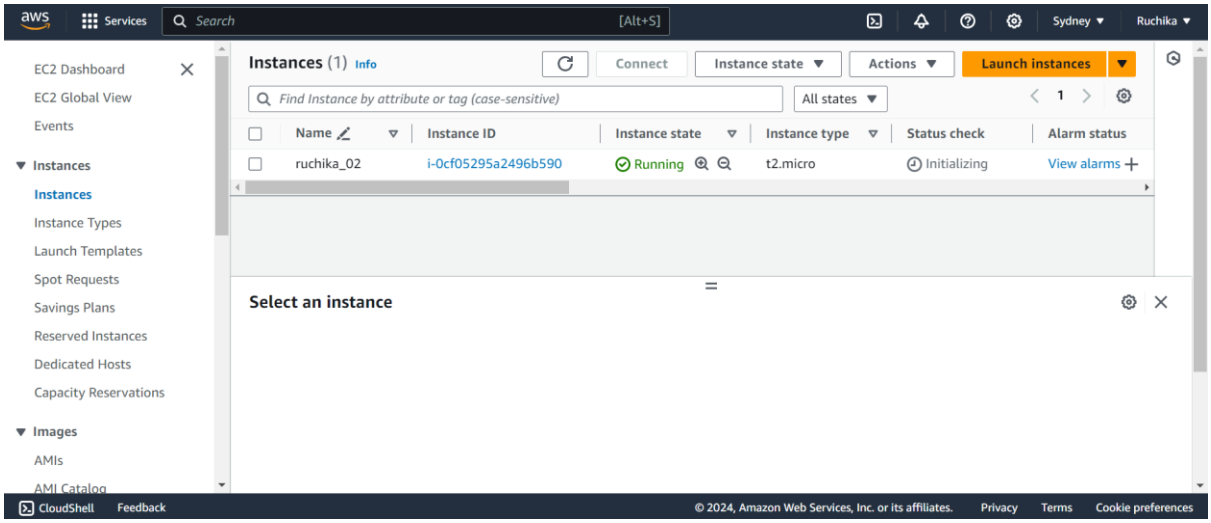


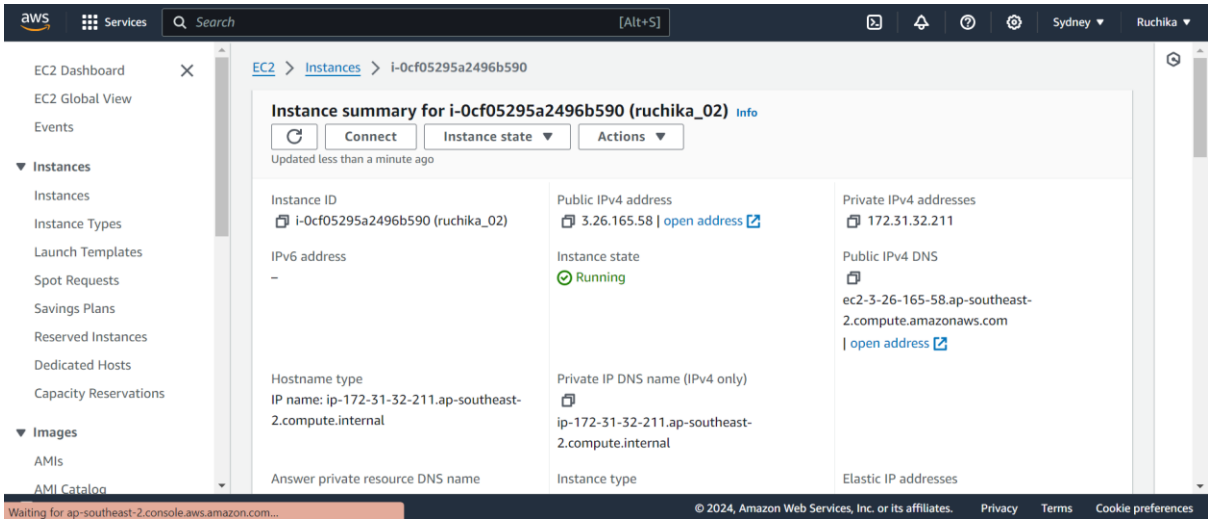

aws
Services
Search
[Alt+S]
Sydney
Ruchika
Auto-assign public IP Info
-
Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Create security group
Select existing security group
We'll create a new security group called 'launch-wizard-1' 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
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Summary
Number of instances Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-03f0544597f43a91d
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Cancel
Launch instance
Review commands
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

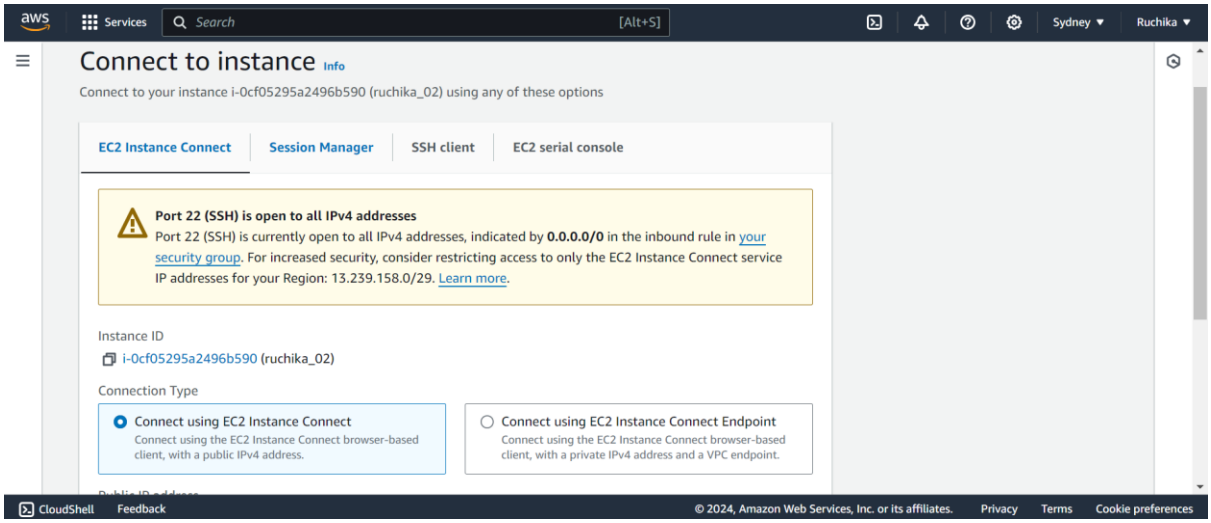

Sydney
Ruchika
Number of instances Info
1
Software Image (AMI)
Canonical, Ubuntu, 24.04 LTS, ...read more
ami-03f0544597f43a91d
Virtual server type (instance type)
t2.micro
Firewall (security group)
New security group
Cancel
Launch instance
Review commands

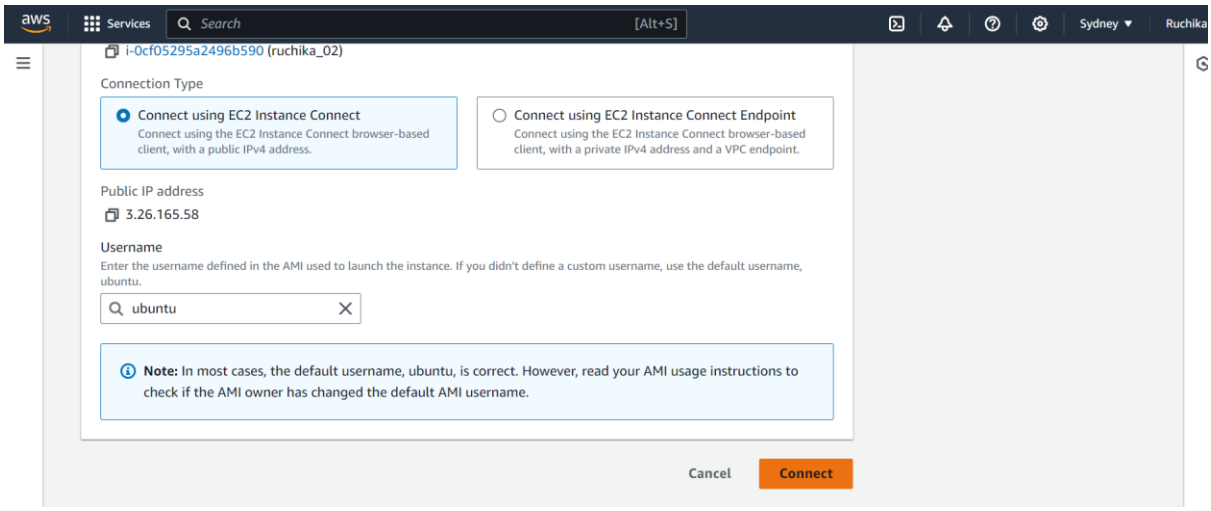

aws
Services
Search
[Alt+S]
Sydney
Ruchika
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
EC2 > Instances > Launch an instance
Launching instance
Launch initiation
79%
Details
Please wait while we launch your instance.
Do not close your browser while this is loading.
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

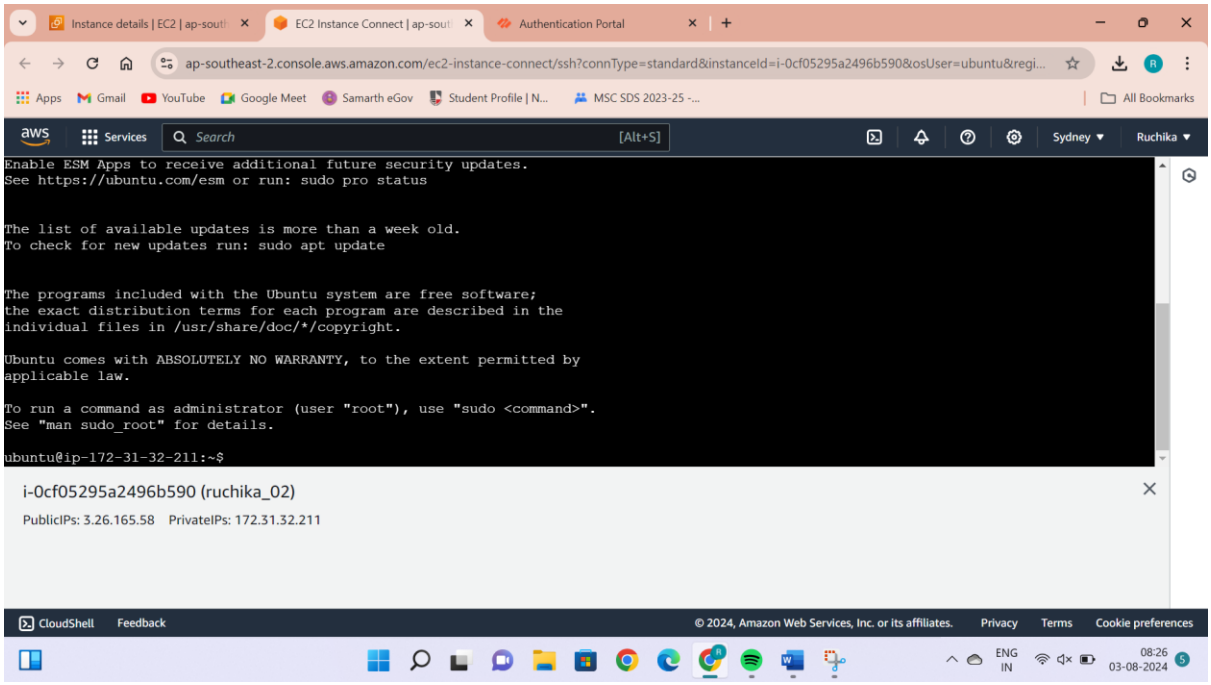

aws
Services
Search
[Alt+S]
Sydney
Ruchika
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
EC2 > Instances > Launch an instance
Success
Successfully initiated launch of instance (i-0cf05295a2496b590)
Launch log
Next Steps
What would you like to do next with this instance, for example "create alarm" or
1 2 3 4 5 6 7 8
Create billing and free tier usage alerts
To manage costs and avoid surprise bills, set up email notifications for
Connect to your instance
Once your instance is running, log into it from your local computer.
Connect an RDS database
Configure the connection between an EC2 instance and a database to allow traffic flow between them.
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

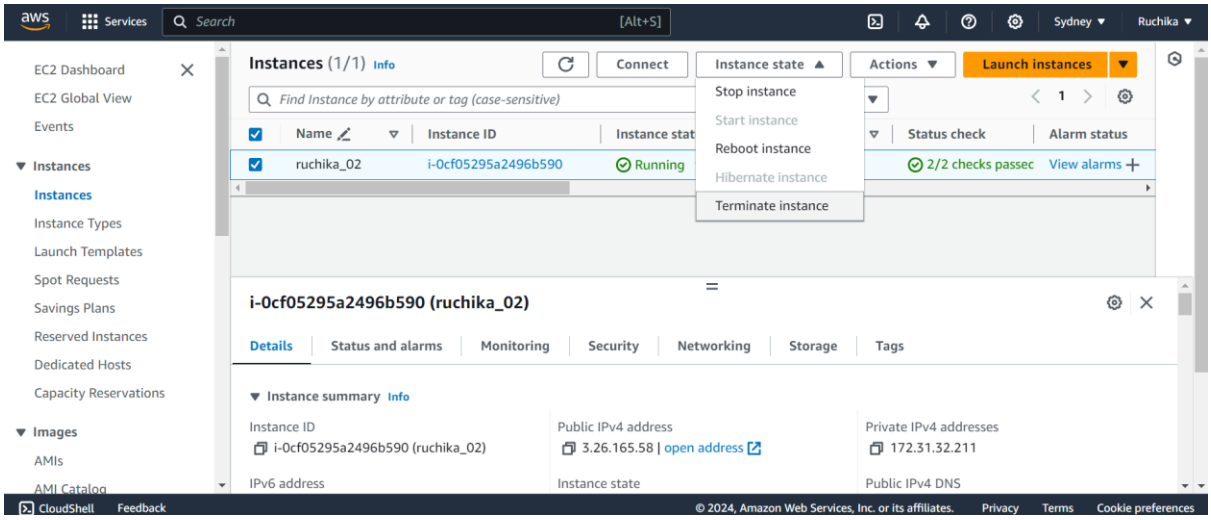

aws
Services
Search
[Alt+S]
Sydney
Ruchika
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Instances (1) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
1
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
ruchika_02
i-0cf05295a2496b590
Running
t2.micro
Initializing
View alarms
Select an instance
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

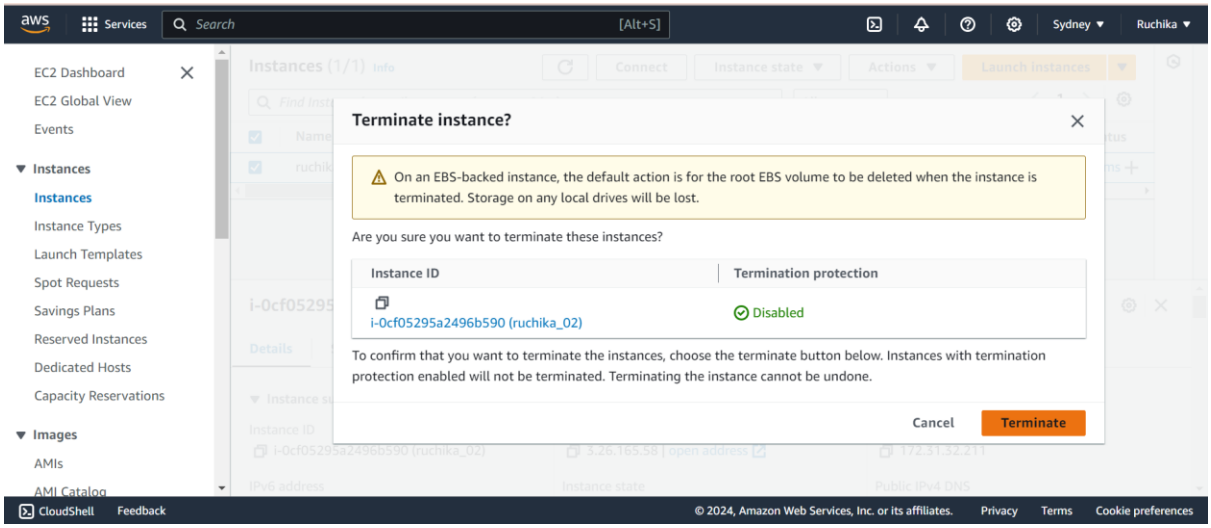

aws
Services
Search
[Alt+S]
Sydney
Ruchika
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
EC2 > Instances > i-0cf05295a2496b590
Instance summary for i-0cf05295a2496b590 (ruchika_02) Info
Connect
Instance state
Actions
Updated less than a minute ago
Instance ID
i-0cf05295a2496b590 (ruchika_02)
Public IPv4 address
3.26.165.58 | open address
Private IPv4 addresses
172.31.32.211
IPv6 address
–
Instance state
Running
Public IPv4 DNS
ec2-3-26-165-58.ap-southeast-2.compute.amazonaws.com | open address
Hostname type
IP name: ip-172-31-32-211.ap-southeast-2.compute.internal
Private IP DNS name (IPv4 only)
ip-172-31-32-211.ap-southeast-2.compute.internal
Answer private resource DNS name
Instance type
Elastic IP addresses
Waiting for ap-southeast-2.console.aws.amazon.com...
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

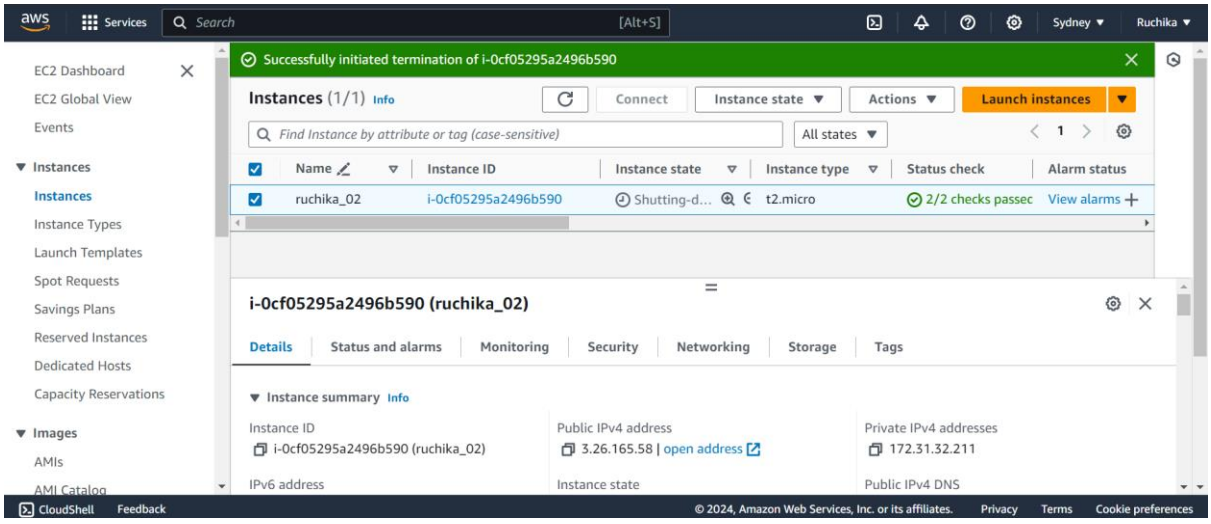

Connect to instance Info
Connect to your instance i-0cf05295a2496b590 (ruchika_02) using any of these options
EC2 Instance Connect
Session Manager
SSH client
EC2 serial console
Port 22 (SSH) is open to all IPv4 addresses
Port 22 (SSH) is currently open to all IPv4 addresses, indicated by 0.0.0.0/0 in the inbound rule in your security group. For increased security, consider restricting access to only the EC2 Instance Connect service IP addresses for your Region: 13.239.158.0/29. Learn more.
Instance ID
i-0cf05295a2496b590 (ruchika_02)
Connection Type
Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.
Connect using EC2 Instance Connect Endpoint
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.


i-0cf05295a2496b590 (ruchika_02)
Connection Type
Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 address.
Connect using EC2 Instance Connect Endpoint
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.
Public IP address
3.26.165.58
Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ubuntu.
ubuntu
Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.
Cancel
Connect

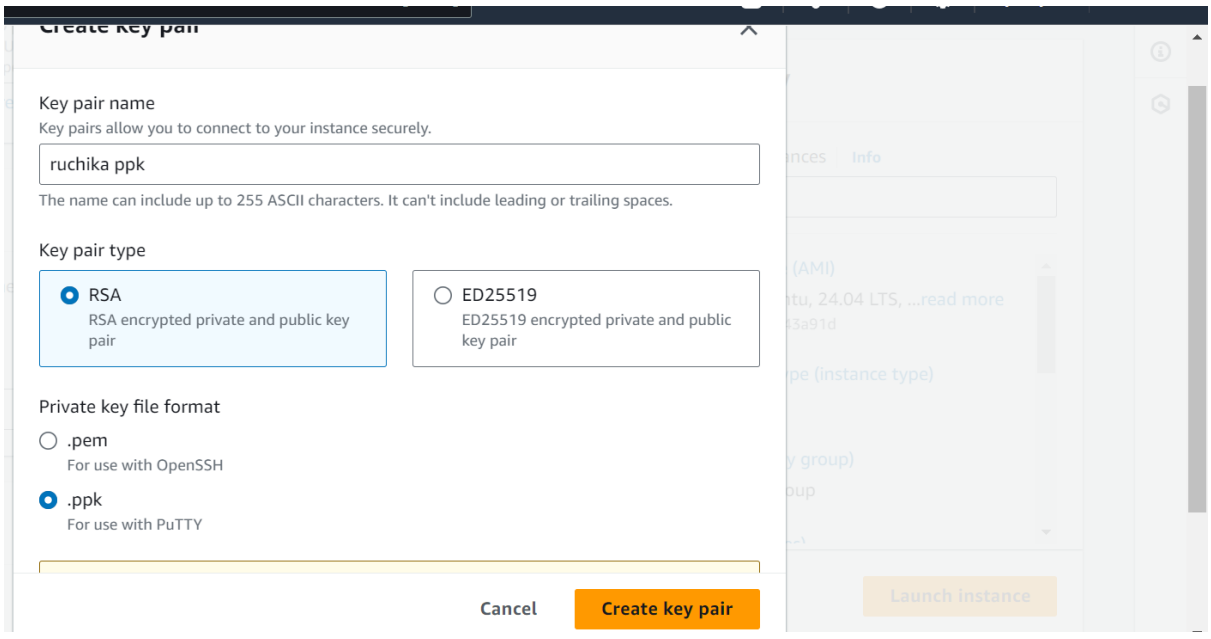

Instance details | EC2 | ap-south
EC2 Instance Connect | ap-sout
Authentication Portal
ap-southeast-2.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-0cf05295a2496b590&osUser=ubuntu&regi...
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-172-31-32-211:~$
i-0cf05295a2496b590 (ruchika_02)
PublicIPs: 3.26.165.58 PrivateIPs: 172.31.32.211


aws
Services
Search
[Alt+S]
Sydney
Ruchika
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Images
AMIs
AMI Catalog
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
Stop instance
Start instance
Reboot instance
Hibernate instance
Terminate instance
Name
Instance ID
Instance state
Status check
Alarm status
ruchika_02
i-0cf05295a2496b590
Running
2/2 checks passec
View alarms
i-0cf05295a2496b590 (ruchika_02)
Details
Status and alarms
Monitoring
Security
Networking
Storage
Tags
Instance summary Info
Instance ID
i-0cf05295a2496b590 (ruchika_02)
Public IPv4 address
3.26.165.58 | open address
Private IPv4 addresses
172.31.32.211
IPv6 address
Instance state
Public IPv4 DNS
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

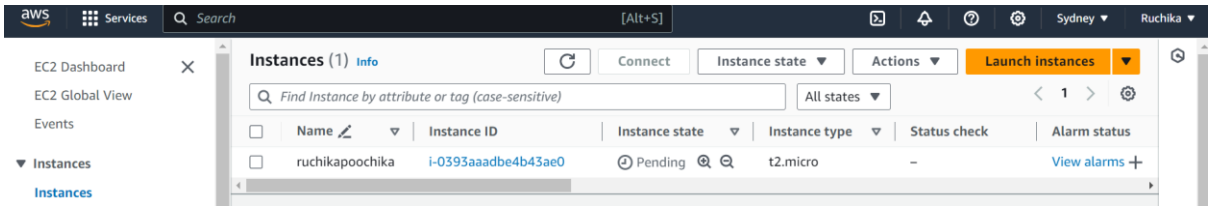

Terminate instance?
On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.
Are you sure you want to terminate these instances?
Instance ID
Termination protection
i-0cf05295a2496b590 (ruchika_02)
Disabled
To confirm that you want to terminate the instances, choose the terminate button below. Instances with termination protection enabled will not be terminated. Terminating the instance cannot be undone.
Cancel
Terminate

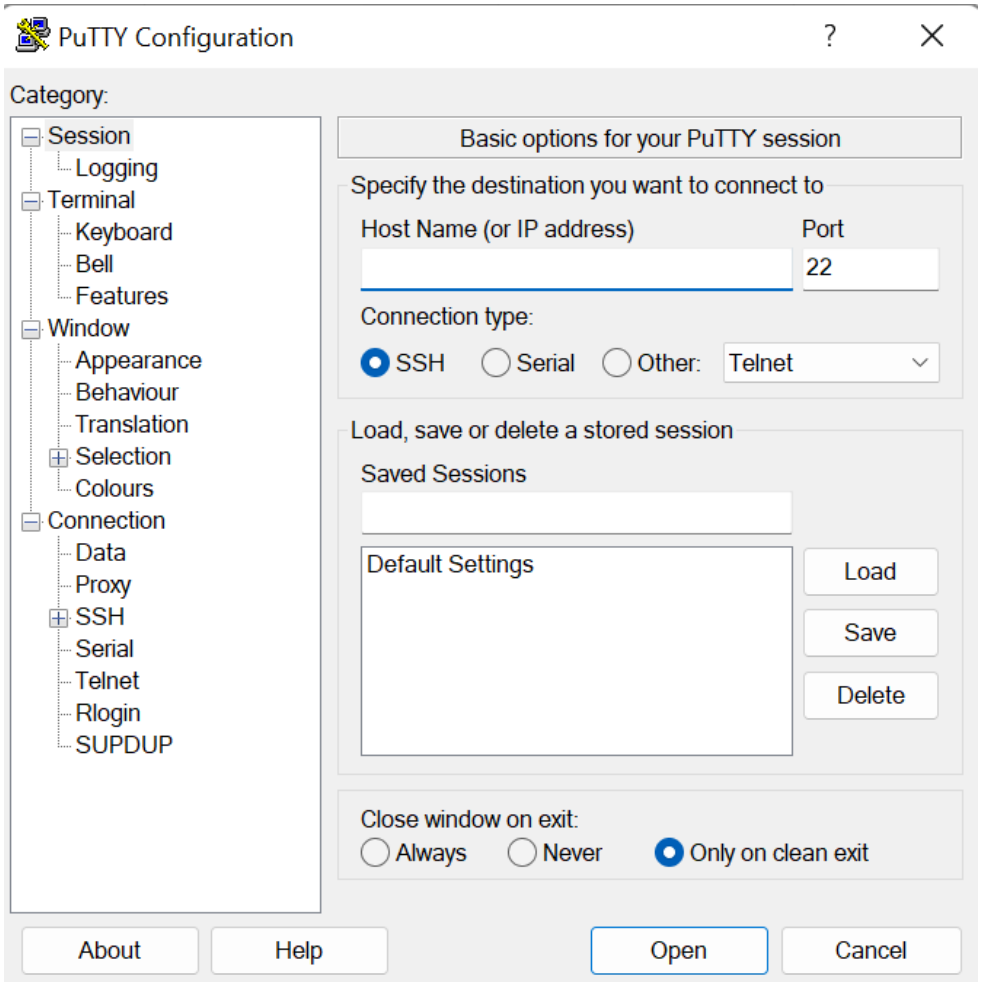

Successfully initiated termination of i-0cf05295a2496b590
Instances (1/1) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
ruchika_02
i-0cf05295a2496b590
Shutting-d...
t2.micro
2/2 checks passec
View alarms
i-0cf05295a2496b590 (ruchika_02)
Details
Status and alarms
Monitoring
Security
Networking
Storage
Tags
Instance summary Info
Instance ID
i-0cf05295a2496b590 (ruchika_02)
Public IPv4 address
3.26.165.58 | open address
Private IPv4 addresses
172.31.32.211
IPv6 address
Instance state
Public IPv4 DNS

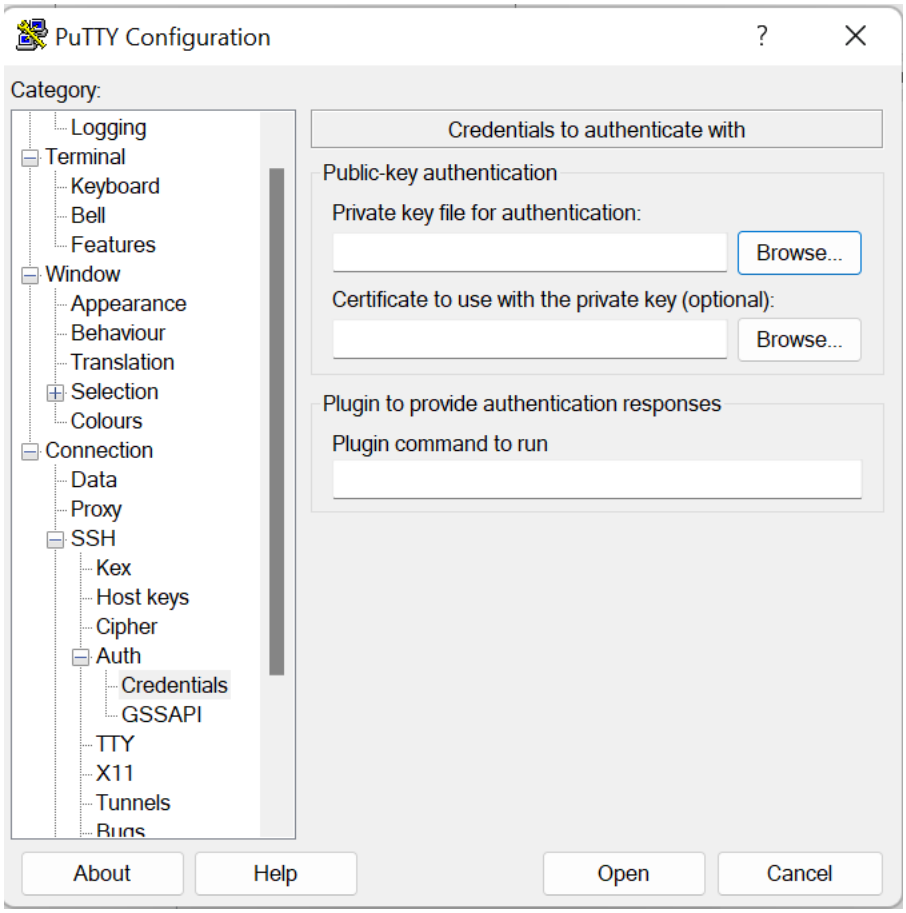
USING PUTTY

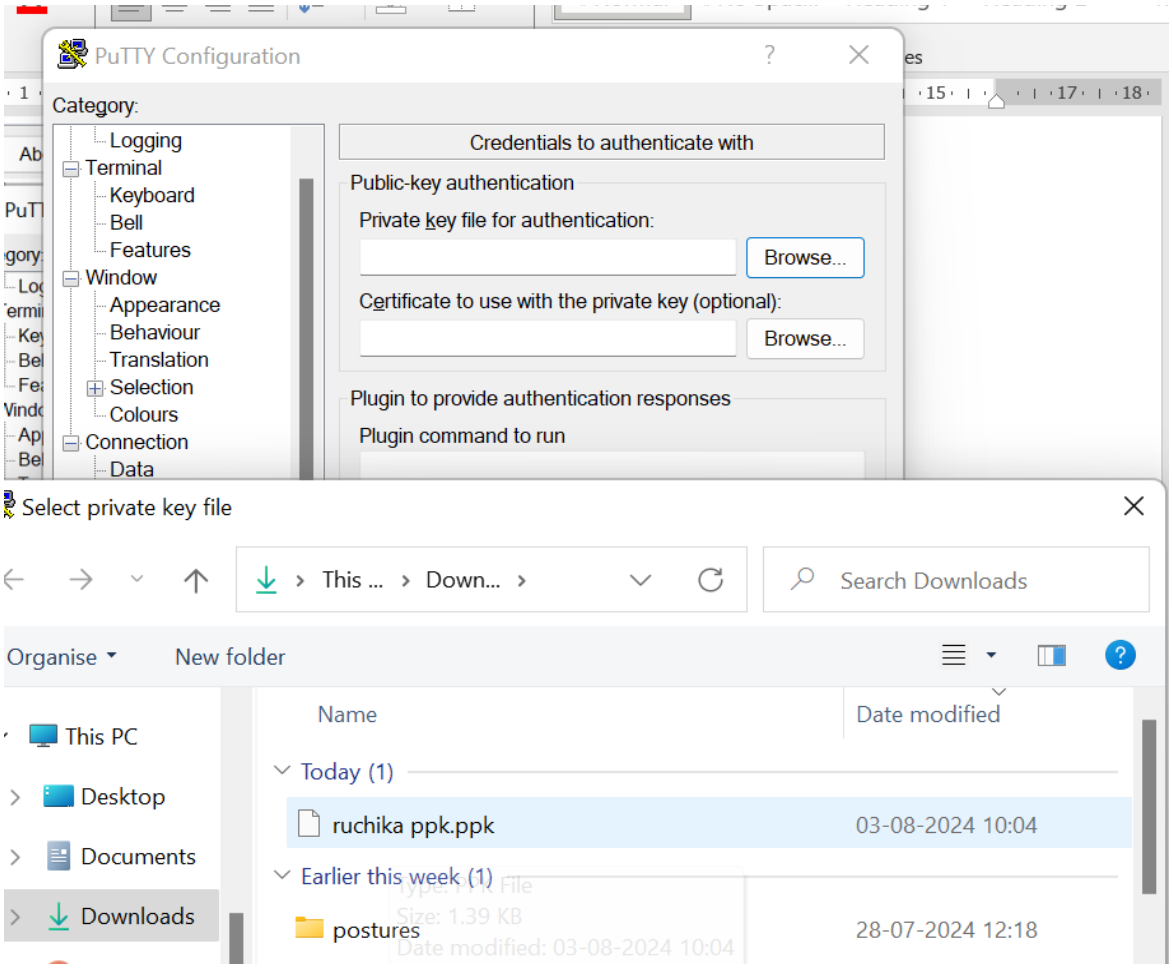

Key pair name
Key pairs allow you to connect to your instance securely.
ruchika ppk
The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.
Key pair type
RSA
RSA encrypted private and public key pair
ED25519
ED25519 encrypted private and public key pair
Private key file format
.pem
For use with OpenSSH
.ppk
For use with PuTTY
Cancel
Create key pair

,


Services
Search
[Alt+S]
Sydney
Ruchika
EC2 Dashboard
EC2 Global View
Events
Instances
Instances
Instances (1) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
Name
Instance ID
Instance state
Instance type
Status check
Alarm status
ruchikapoochika
i-0393aaadbe4b43ae0
Pending
t2.micro
View alarms


PuTTY Configuration
Category:
Session
Logging
Terminal
Keyboard
Bell
Features
Window
Appearance
Behaviour
Translation
Selection
Colours
Connection
Data
Proxy
SSH
Serial
Telnet
Rlogin
SUPDUP
Basic options for your PuTTY session
Specify the destination you want to connect to
Host Name (or IP address)
Port
22
Connection type:
SSH
Serial
Other:
Telnet
Load, save or delete a stored session
Saved Sessions
Default Settings
Load
Save
Delete
Close window on exit:
Always
Never
Only on clean exit
About
Help
Open
Cancel





Then launch it and terminate server later