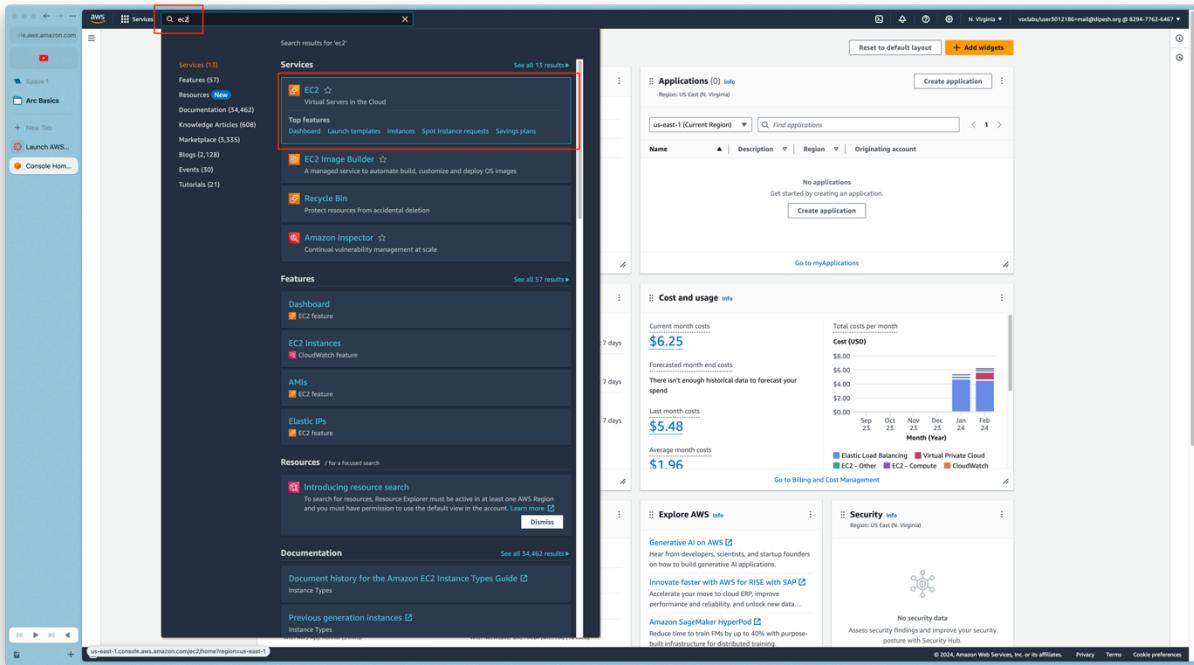


Basic Labs

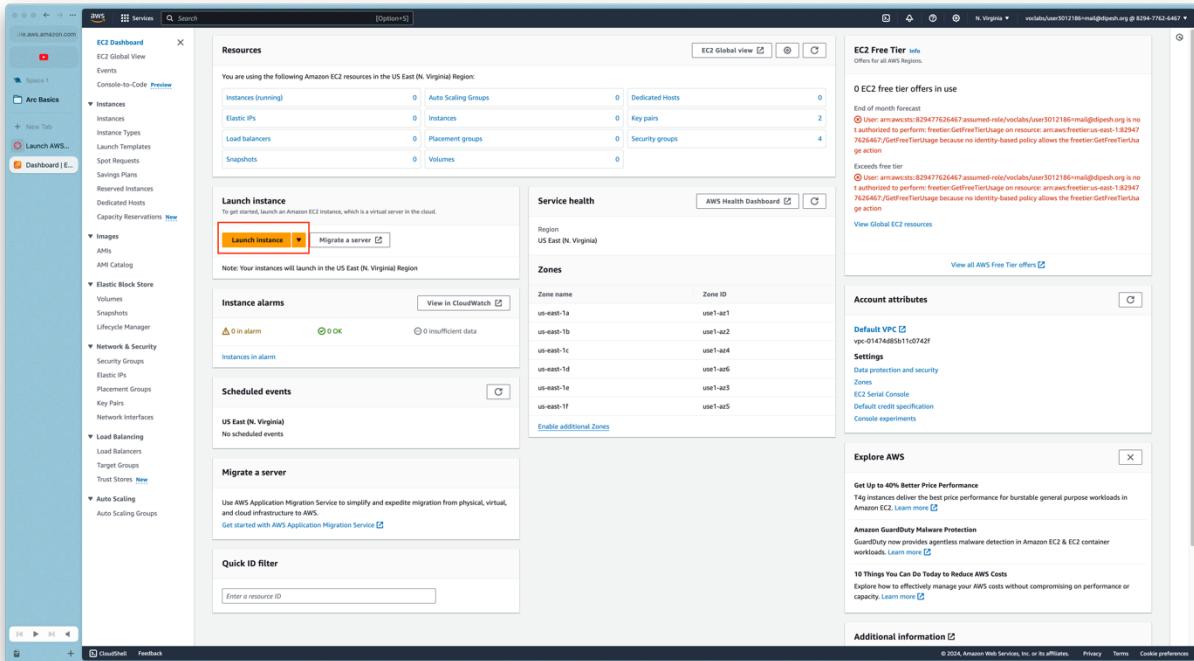
1. EC2 Basics Lab:

To set up an EC2 instance, search EC2 in the search bar and click on EC2.



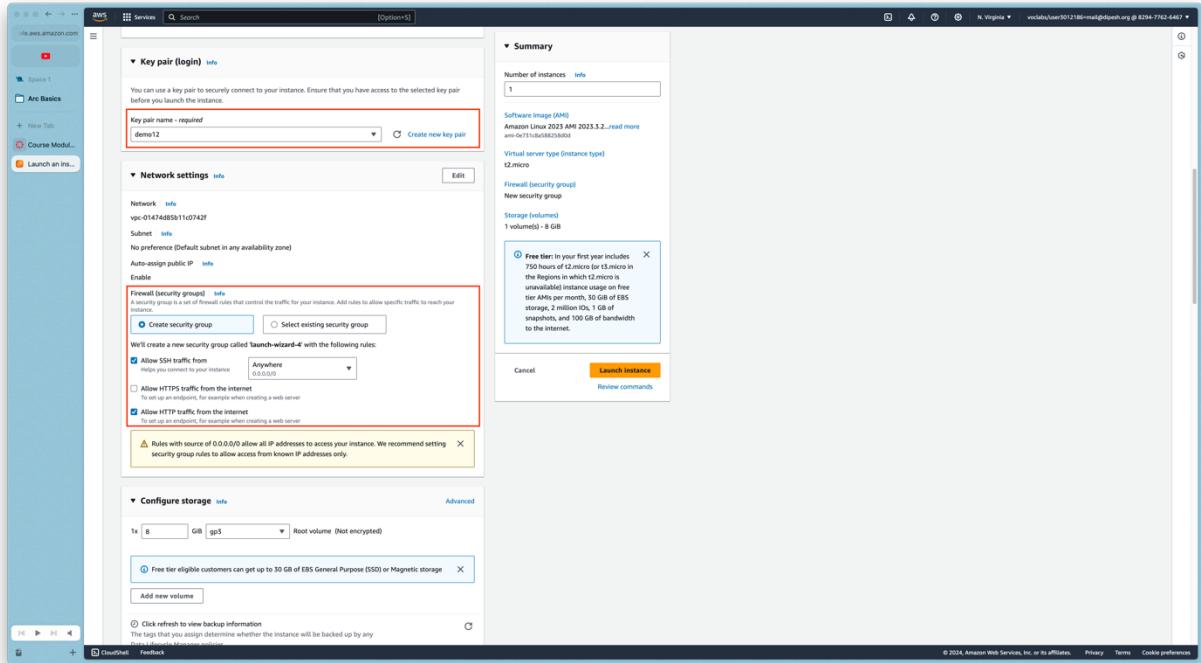
The screenshot shows the AWS Home page with a search bar at the top containing 'ec2'. Below the search bar, there are three main sections: 'Services', 'Features', and 'Resources'. The 'Services' section has a box around the 'EC2' entry, which is described as 'Virtual Servers in the Cloud'. The 'Features' section includes 'EC2 Instances', 'AMIs', 'Elastic IPs', and 'Documentation'. The 'Resources' section includes 'Previous generation instances' and 'Instance Types'. To the right of the search results, there are several cards: 'Applications', 'Cost and usage', 'Explore AWS', and 'Security'.

Click on “Launch Instance” button.

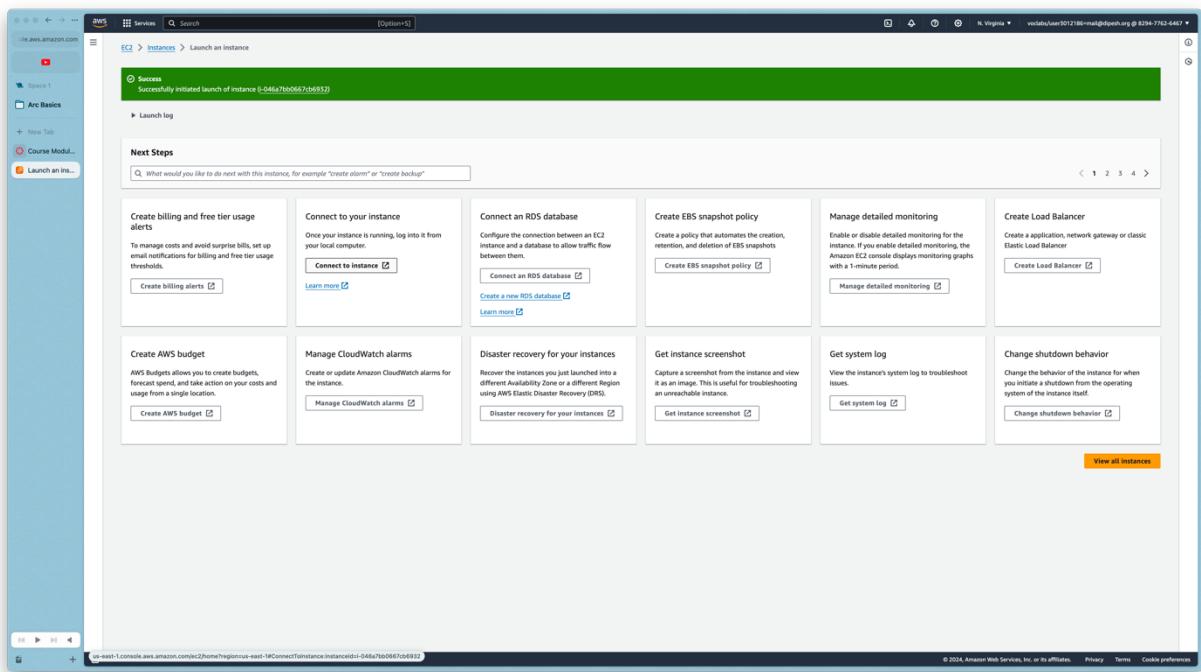


The screenshot shows the EC2 Dashboard. On the left, there is a navigation menu with various services like EC2 Global View, Events, and Capacity Reservations. The main area is titled 'Resources' and shows a table of EC2 resources: Instances (running), Auto Scaling Groups, Dedicated Hosts, Elastic IPs, Instances, Key pairs, Load balancers, Placement groups, Security groups, Snapshots, and Volumes. Below this, there is a 'Launch Instance' button, which is highlighted with a red box. Other sections include 'Service health', 'Zones', 'Account attributes', 'Explore AWS', and 'Additional information'.

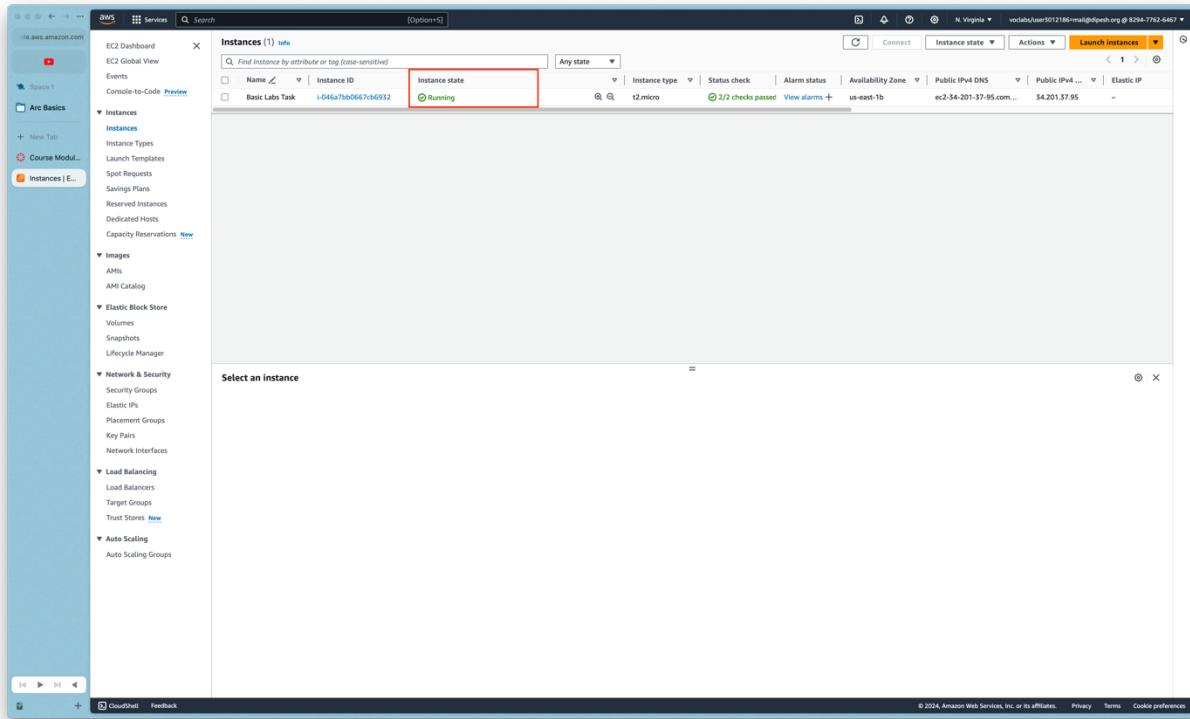
I have configured the settings as per my needs. I have created a new key pair and allowed SSH and HTTP on security group.



Click on “Launch Instance” to start the instance.



Wait for few minute for the instance to finish setting up. You will get an “Running” message on Instance state once the EC2 instance setting has completed.

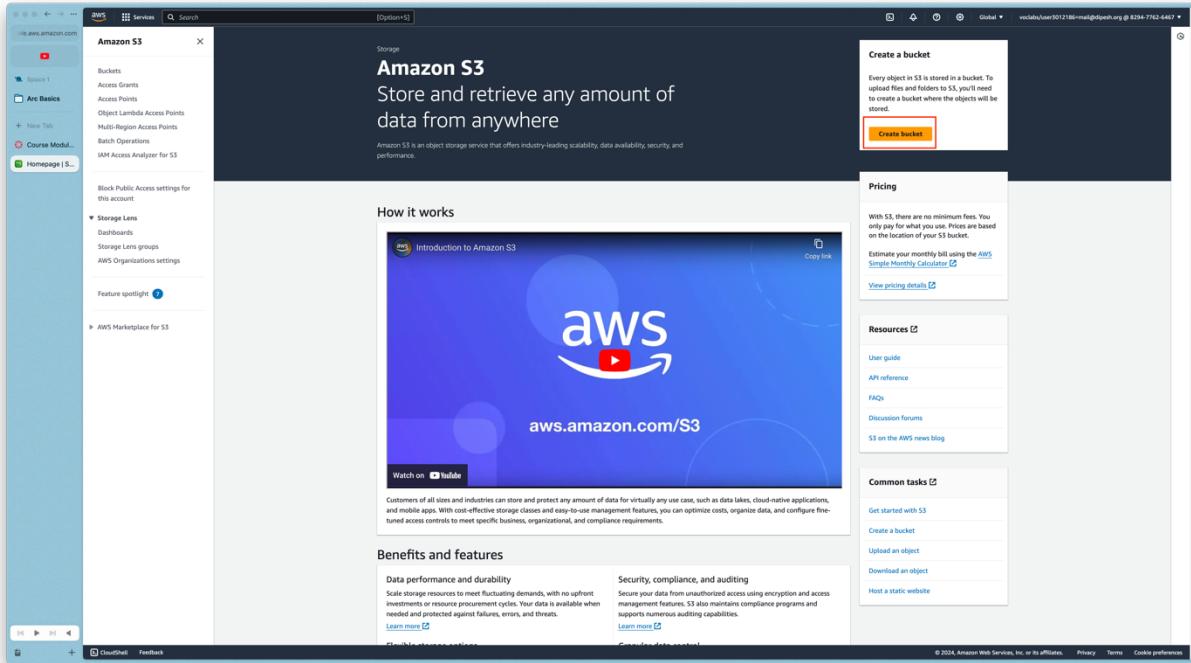


Using the key, we can connect to the server using SSH.

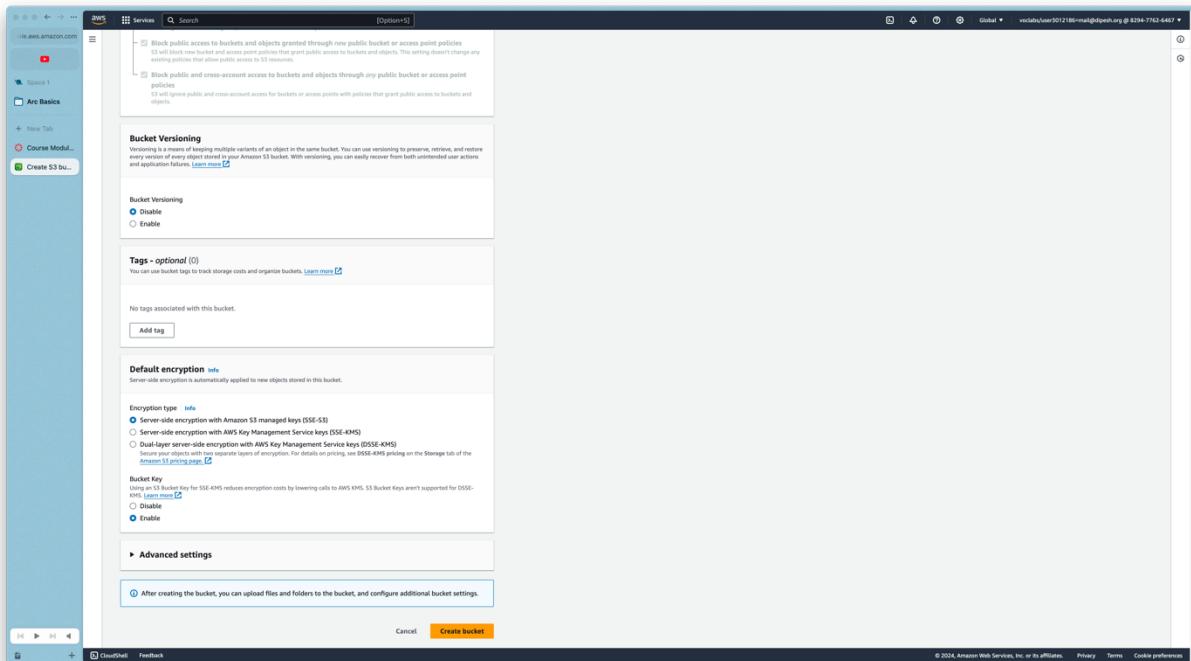
A screenshot of a terminal window titled 'Desktop — ec2-user@ip-172-31-85-13:~ — ssh -i demo12.pem ec2-user@3...'. The command entered is 'ssh -i demo12.pem ec2-user@34.201.37.95'. The response shows the Amazon Linux 2023 logo and the URL https://aws.amazon.com/linux/amazon-linux-2023. The prompt '[ec2-user@ip-172-31-85-13 ~]\$' is visible at the bottom.

2. S3 Storage Fundamentals Lab:

To create a S3 bucket (bucket is like a container for storing data), search for S3 on search bar and once on page there is a button “Create Bucket”.



Configure the bucket as per the needs clicking on “Create bucket” will create a bucket.



This is the bucket, I have created, it's empty right now.

The screenshot shows the AWS S3 console interface. In the top navigation bar, the path 'Amazon S3 > Buckets > basic-labs-task' is visible. Below this, the 'basic-labs-task' bucket name is displayed. The main content area is titled 'Objects (0) info'. It includes a search bar labeled 'Find objects by prefix' and a table header with columns: Name, Type, Last modified, Size, and Storage class. A message at the bottom states 'No objects' and 'You don't have any objects in this bucket.' There is a prominent 'Upload' button at the bottom of the table. The left sidebar shows other buckets like 'Arc Basics' and 'Course Module...', and the bottom navigation bar includes links for 'CloudFront', 'Feedback', and copyright information.

Let's add some files which are referred to as objects in the bucket.

The screenshot shows the AWS S3 console after a file has been uploaded. At the top, a green banner indicates 'Upload succeeded'. Below it, the 'Upload: status' section shows a summary table with one row: 'Destination' (s3://basic-labs-task), 'Succeeded' (1 file, 1.0 MB (100.00%)), and 'Failed' (0 files, 0 B (0%)). The 'Files and folders (1 Total, 1.0 MB)' section shows a table with one entry: 'peacock-victo...' (image/jpeg, 1.0 MB, Status: Succeeded). The left sidebar and bottom navigation bar are identical to the previous screenshot.

3. VPC Configuration Lab:

New VPC can be created by clicking the button “Create VPC”.

The screenshot shows the AWS VPC dashboard. On the left, there's a sidebar with various navigation options like 'Arc Basics', 'Scenic View', 'Course Modules', and 'AWS Verified Access'. The main area is titled 'Create VPC' with a sub-section 'Launch EC2 Instances'. Below this, there's a grid of resources categorized by region (US East 1). The categories include VPCs, Subnets, Route Tables, Internet Gateways, Egress-only Internet Gateways, Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, Peering connections, Security, Network ACLs, Security groups, DNS firewall, Rule groups, Domain lists, Network Firewall, Firewalls, Firewall policies, Network Firewall rule groups, TLS inspection configurations, Network Firewall resource groups, Virtual private network (VPN), Customer gateways, Virtual private gateways, Site-to-Site VPN connections, Client VPN endpoints, and AWS Verified Access. Each category has a 'See all regions' link. To the right, there are sections for 'Service Health', 'Settings', 'Additional Information', 'AWS Network Manager', and 'Site-to-Site VPN Connections'.

Configure the VPS setting

The screenshot shows the 'Create VPC' configuration wizard. The current step is 'VPC settings'. It includes fields for 'Name tag auto-generation' (set to 'Auto-generate'), 'VPC CIDR block' (set to '10.0.0.0/16'), 'IPv6 CIDR block' (set to 'No IPv6 CIDR block'), 'Tenancy' (set to 'Default'), 'Number of Availability Zones (AZs)' (set to '1'), 'Number of public subnets' (set to '1'), 'Number of private subnets' (set to '1'), and 'NAT gateways (1)' (set to 'In 1 AZ'). On the right, there's a 'Preview' section showing a network diagram with a VPC, two subnets ('us-east-1a' and 'us-east-1b'), route tables, and network connections. The preview also shows 'Basic Labs Task-vpc' and 'Basic Labs Task-rtb-public'.

The VPS is set up successfully and up and running.

Your VPCs (2) info

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP option set	Main route table	Main network ACL
vpc-01474d83b11c0742f	Available	172.31.0/16	-	-	dopt-0ad120c795c653...	rtb-0891f3f5015ed4b85	acl-0c980db0f854f13ff
Basic Labs Task-vpc	Available	10.0.0/16	-	-	dopt-0ad120c795c653...	-	-

Select a VPC above

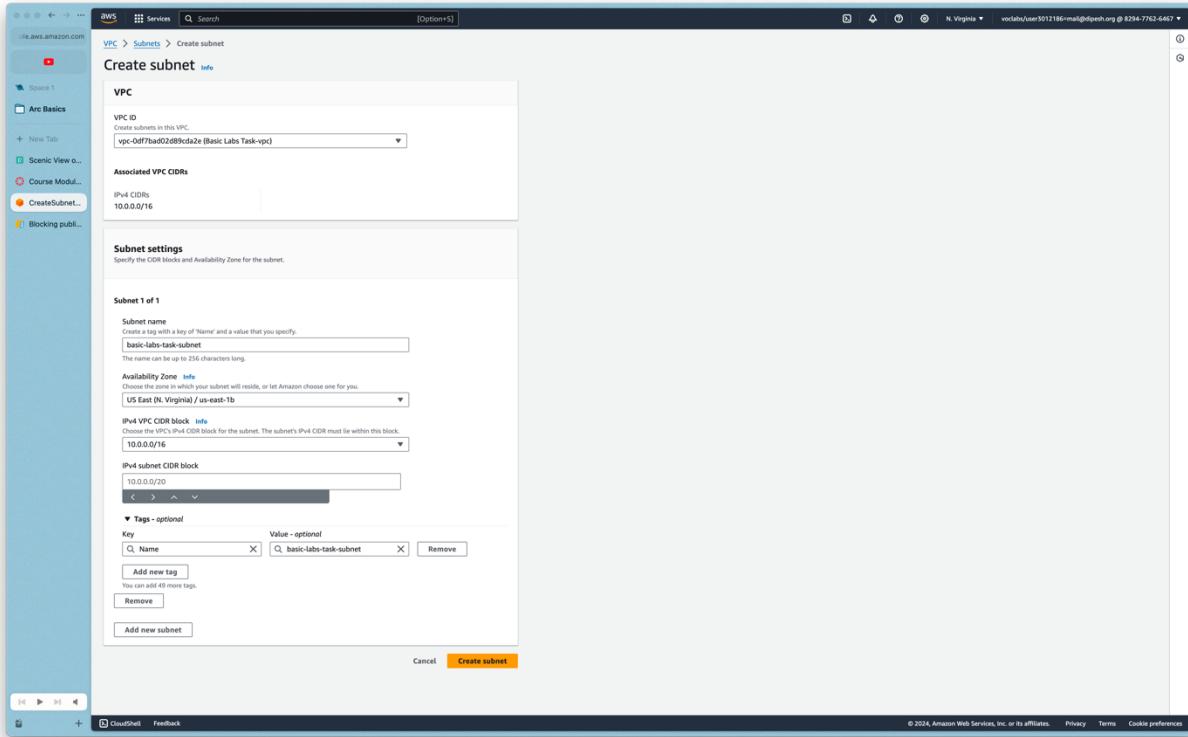
Similarly, subnets can be created by clicking the subnets under Virtual Private Cloud tab.

Subnets (6) info

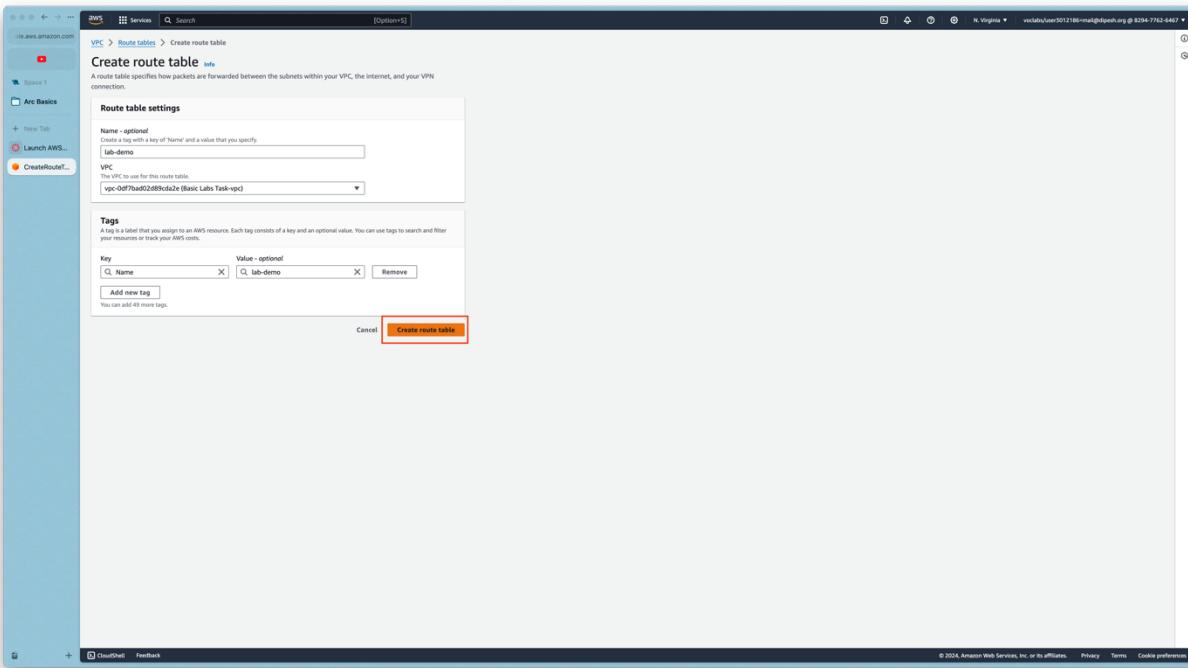
Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses	Availability Zone
-	subnet-016ef2731a3ba524f	Available	vpc-01474d83b11c0742f	172.31.48.0/20	-	4091	us-east-1e
-	subnet-05ed452e0243df576	Available	vpc-01474d83b11c0742f	172.31.80.0/20	-	4090	us-east-1b
-	subnet-05e4cb9b8bc191668	Available	vpc-01474d83b11c0742f	172.31.32.0/20	-	4091	us-east-1d
-	subnet-0d974d2d28ac53a	Available	vpc-01474d83b11c0742f	172.31.16.0/20	-	4091	us-east-1c
-	subnet-05fe0a0ad011fc5b	Available	vpc-01474d83b11c0742f	172.31.0/20	-	4091	us-east-1a
-	subnet-05be9ec08ad1a3c9	Available	vpc-01474d83b11c0742f	172.31.64.0/20	-	4091	us-east-1f

Select a subnet

Configure the settings for setting up subnets and click “Create subnet” button at the end of page.



The same process goes for creating route table.



Route Table is created successfully.

The screenshot shows the AWS VPC Route Tables page. The main title is "Route table rtb-0b5fd16fa63d43a67 | lab-demo was created successfully." Below the title, the route table ID is "rtb-0b5fd16fa63d43a67" and it is associated with the VPC "vpc-0df7ba02d9cda2e | Basic Labs Task-vpc". The "Details" section shows the Main route table status as "No" and the Owner ID as "829477626467". Under the "Routes" tab, there is one route entry: Destination "10.0.0.0/16" and Target "local", with a Status of "Active" and Propagation set to "No". The left sidebar lists various VPC management options like Subnets, Route tables, Internet gateways, and NAT gateways. The bottom right corner includes standard AWS footer links: © 2024, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookies preferences.

4. IAM Users and Roles Lab

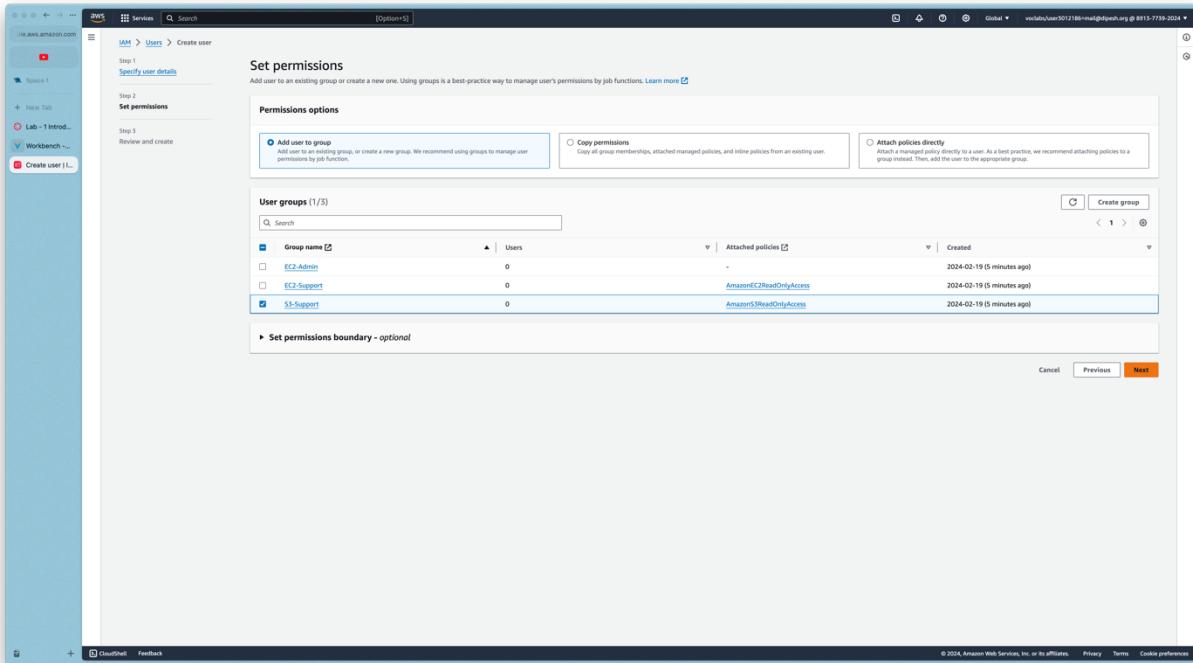
Creating user group, you can search for IAM in search bar and click on IAM. You can add users to group. For example if an user is assigned to group with permissions for viewing EC2 instance, he/she can only view the instance and cannot make any changes to the instance.

The screenshot shows the 'Create user group' interface in the AWS IAM console. The 'User group name' field is filled with 'EC2_read_only'. In the 'Add users to the group' section, three users are listed: 'awsstudent', 'user-1', and 'user-2'. Under 'Attach permissions policies', several AWS managed policies are selected, including 'AmazonEC2ContainerRegistryFullAccess', 'AmazonEC2ContainerRegistryPowerUser', 'AmazonEC2ContainerReadOnly', 'AmazonEC2ContainerServiceAutoscaleRole', 'AmazonEC2ContainerServiceEventsRole', 'AmazonEC2ContainerServiceforEC2Role', 'AmazonEC2ContainerServiceRole', 'AmazonEC2ContainerServiceTaskRole', and 'AmazonEC2ReadonlyAccess'. A search bar at the top right is set to 'read'.

You can also create user, give the username in the username box and click “Next”.

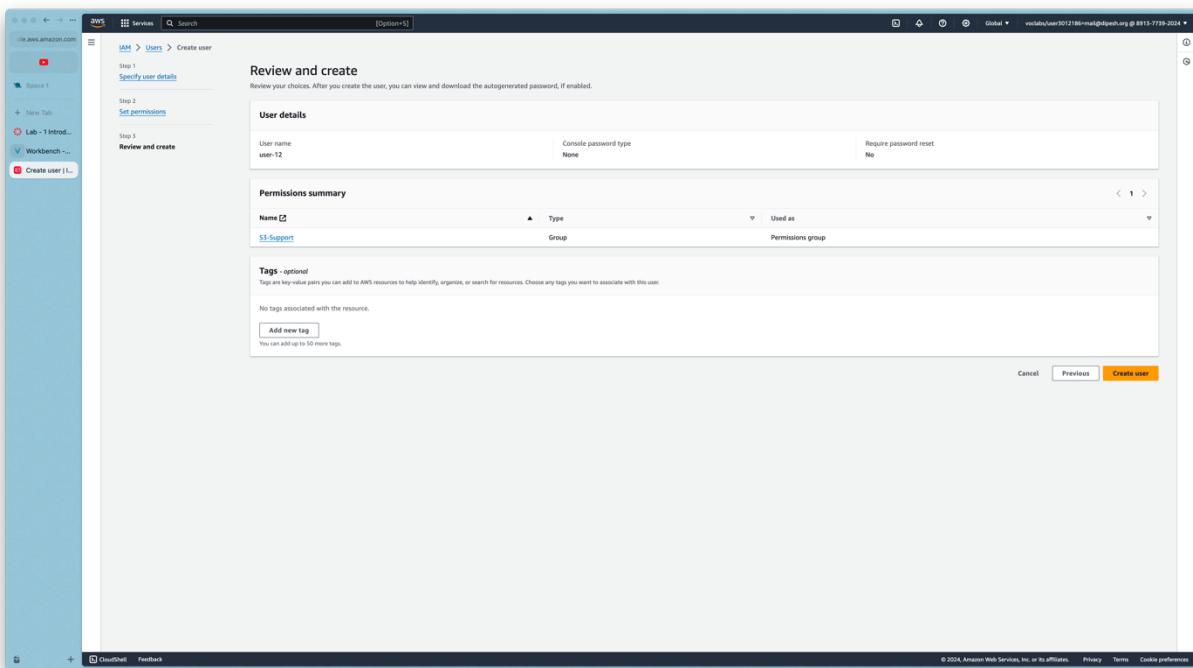
The screenshot shows the 'Specify user details' step of the 'Create user' wizard. The 'User name' field is set to 'user-1'. The 'Provide user access to the AWS Management Console - optional' checkbox is checked. A note below states: 'If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keyspaces, you can generate them after you create this IAM user.' A 'Next Step' button is located at the bottom right.

If user group is already created, you can simply add that user to the group.



The screenshot shows the 'Set permissions' step of the 'Create user' wizard. It displays a list of existing user groups: 'EC2-Admin' (0 users, no policies), 'EC2-Support' (0 users, attached policy 'AmazonEC2ReadOnlyAccess'), and 'S3-Support' (0 users, attached policy 'AmazonS3ReadOnlyAccess'). A 'Create group' button is visible at the top right of the group list.

Review the user name and permissions click on “Create user” to create the user.



The screenshot shows the 'Review and create' step of the 'Create user' wizard. It summarizes the user details: User Name: 'user-12', Console password type: 'None', and 'Require password reset: No'. Under 'Permissions summary', it shows the user is associated with the 'S3-Support' group. The 'Tags - optional' section is empty. At the bottom, there is a note about adding up to 50 more tags, a 'Create user' button, and standard navigation buttons.