

CLOUD ARCHITECTURE (INT 364) – CA1

NAME : TARUN NANDIGAM

ROLLNO : 02

K23GR

QUES 1 : Create a Private Subnet With NAT Gateway.

The screenshot shows the 'Create VPC' page in the AWS Management Console. The page is titled 'Create VPC' and includes a brief description: 'A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances.' The 'VPC settings' section contains the following options:

- Resources to create:** 'VPC only' is selected.
- Name tag - optional:** 'vpc-ca1' is entered.
- IPv4 CIDR block:** '10.0.0.0/16' is entered.
- IPv6 CIDR block:** 'No IPv6 CIDR block' is selected.
- Tenancy:** 'Default' is selected.

The 'Tags' section shows a key-value pair: 'Name' with value 'vpc-ca1'. At the bottom, there are buttons for 'Cancel', 'Preview code', and 'Create VPC'.

The screenshot shows the 'Create subnet' page in the AWS Management Console. The page is titled 'Create subnet' and includes a brief description: 'Specify the CIDR blocks and Availability Zone for the subnet.' The 'Subnet settings' section contains the following options:

- Subnet name:** 'PublicSubnet-1' is entered.
- Availability Zone:** 'United States (N. Virginia) / us-east-1a' is selected.
- IPv4 VPC CIDR block:** '10.0.0.0/16' is selected.
- IPv4 subnet CIDR block:** '10.0.1.0/24' is entered.

The 'Tags' section shows a key-value pair: 'Name' with value 'PublicSubnet-1'. At the bottom, there are buttons for 'Cancel' and 'Create subnet'.

Account ID: 96727264-2157

United States (N. Virginia)

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VPC

Subnets

subnet-00c7b0218b582d89

Edit subnet settings

Subnet

Subnet ID

subnet-00c7b0218b582d89

Name

PublicSubnet-1

Auto-assign IP settings

Enable AWS to automatically assign a public IPv4 or IPv6 address to a new primary network interface for an instance in this subnet.

☒ Enable auto-assign public IPv4 address

☐ Enable auto-assign customer-owned IPv4 address

Resource-based name (RBN) settings

Specify the hostname type for EC2 instances in this subnet and optional RBN DNS query settings.

☐ Enable resource name DNS A record on launch

☐ Enable resource name DNS AAAA record on launch

Hostname type

☐ Resource name

☒ IP name

DNS64 settings

Enable DNS64 to allow IPv6-only services in Amazon VPC to communicate with IPv4-only services and networks.

☐ Enable DNS64

Cancel

Save

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VPC

Subnets

VPC dashboard

Subnets

Subnets (5)

Find subnets by attribute or tag

	Name	Subnet ID	State	VPC	Black Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID
<input type="checkbox"/>	-	subnet-0b1a5c659166ea4	Available	vpc-076c70cfdf276332f	<input type="radio"/> Off	172.31.80.0/20	-	-
<input type="checkbox"/>	-	subnet-03ceffbf6d7e08bdc	Available	vpc-076c70cfdf276332f	<input type="radio"/> Off	172.31.64.0/20	-	-
<input type="checkbox"/>	-	subnet-018bc9774990d7cb7	Available	vpc-076c70cfdf276332f	<input type="radio"/> Off	172.31.32.0/20	-	-
<input type="checkbox"/>	-	subnet-063cd5929ba3cd61	Available	vpc-076c70cfdf276332f	<input type="radio"/> Off	172.31.16.0/20	-	-
<input type="checkbox"/>	-	subnet-075be479183e0157f	Available	vpc-076c70cfdf276332f	<input type="radio"/> Off	172.31.48.0/20	-	-
<input type="checkbox"/>	-	subnet-0a5b709a0204e2a7	Available	vpc-076c70cfdf276332f	<input type="radio"/> Off	172.31.0.0/20	-	-
<input type="checkbox"/>	PublicSubnet-1	subnet-00c7b0218b582d89	Available	vpc-06486be4117f47703 vpc-...	<input type="radio"/> Off	10.0.1.0/24	-	-
<input type="checkbox"/>	PrivateSubnet-2	subnet-080ee55eb2649fb94	Available	vpc-06486be4117f47703 vpc-...	<input type="radio"/> Off	10.0.2.0/24	-	-

Select a subnet

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United States (N. Virginia)

Account ID: 9677-7264-2137

voctabz/user3801515=marun.nandagam-23@ops.in

VPC

Internet gateways

Create internet gateway

Create internet gateway

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

Internet gateway settings

Name tag
Create a tag with a key of 'Name' and a value that you specify.

MyIGW_ca1

Tags - optional
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.

Key	Value - optional	
Q Name	MyIGW_ca1	Remove

[Add new tag](#)

You can add 48 more tags.

[Cancel](#) [Create internet gateway](#)

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United States (N. Virginia)

Account ID: 9677-7264-2137

voctabz/user3801515=marun.nandagam-23@ops.in

VPC

Internet gateways

Attach to VPC (igw-0156061a82f056382)

The following internet gateway was created: igw-0156061a82f056382 - MyIGW_ca1. You can now attach to a VPC to enable the VPC to communicate with the internet.

Attach to a VPC

Attach to VPC (igw-0156061a82f056382)

VPC
Attach an internet gateway to a VPC to enable the VPC to communicate with the internet. Specify the VPC to attach below.

Available VPCs
Attach the internet gateway to this VPC.

Q vpc-06486be4117647703

AWS Command Line Interface command

[Cancel](#) [Attach internet gateway](#)

[Cancel](#) [Create route table](#)

Cancel Preview Save changes

United States (N. Virginia)

Account ID: 9677-7244-2187
vocalab:user3801515@arun.sandgam23@psa.in

VPC

NAT gateways

Create NAT gateway

Create NAT gateway

Create NAT gateway

info

A highly available, managed Network Address Translation (NAT) service that instances in private subnets can use to connect to services in other VPCs, on-premises networks, or the Internet.

NAT gateway settings

Name - optional

Create a tag with a key of 'Name' and a value that you specify.

CA1-nat

The name can be up to 256 characters long.

Subnet

Select a subnet in which to create the NAT gateway.

subnet-00cc7b0218b582d89 (PublicSubnet-1)

Connectivity type

Select a connectivity type for the NAT gateway.

☒ Public

☐ Private

Elastic IP allocation ID

info

Assign an Elastic IP address to the NAT gateway.

epallloc-08c2c45b690228e14 (EIP-NAT-ca1)

Allocate Elastic IP

Additional settings

info

Tags

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.

Key

Q Name

X

Value - optional

Q CA1-nat

X

Remove

Add new tag

You can add 49 more tags.

Cancel

Create NAT gateway

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

Private-EC2-ca1

Add additional tags

Application and OS Images (Amazon Machine Image)

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose [Browse more AMIs](#).

Search

Search our full catalog including 1000s of application and OS Images

My AMIs

Quick Start

Amazon Linux

macOS

Ubuntu

Windows

Red Hat

SUSE Linux

Debian

Amazon Linux 2023 kernel-6.1 AMI

ami-0ca6d6f6d048ca2c (64-bit x86), uefi-grubefi / ami-023c74abb71253ab4 (64-bit ARM), uefi

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

Free tier eligible

Description

Amazon Linux 2023 (kernel-6.1) is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications.

Amazon Linux 2023 AMI 2023.9.20251110.1 x86_64 HVM kernel-6.1

Architecture

64-bit (x86)

Boot mode

uefi-preferred

AMI ID

ami-0ca6d6f6d048ca2c

Publish Date

2025-11-08

Username

ec2-user

Verified provider

Summary

Number of instances

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.9.2...read more

ami-0ca6d6f6d048ca2c

Virtual server type (instance type)

t3.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t3.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of snapshots, and 100 GB of bandwidth to the internet. Data transfer charges are not included as part of the free tier allowance.

Cancel

Launch instance

Preview code

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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.

Instance type

t3.micro

Family: t3 | 2 vCPU | 1 GiB Memory | Current generation: true

On-Demand Ubuntu Pro base pricing: 0.0159 USD per Hour | On-Demand SUSE base pricing: 0.0104 USD per Hour

On-Demand Linux base pricing: 0.0104 USD per Hour | On-Demand RHEL base pricing: 0.0392 USD per Hour

On-Demand Windows base pricing: 0.0196 USD per Hour

Free tier eligible

All generations

Compare instance types

Key pair (login)

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

Private-EC2-ca1-key

Create new key pair

Network settings

VPC - required

vpc-06486be411747703 (vpc-ca1)

10.0.0.0/16

Subnet

subnet-080ee53eb2649fb04

PrivateSubnet-2

VPC: vpc-06486be411747703 | Owner: 967772642137 | Availability Zone: us-east-1a (us-east-1a)

Zone type: Availability Zone | IP addresses available: 251 | CIDR: 10.0.2.0/24

Create new subnet

Auto-assign public IP

Disable

Firewall (security groups)

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

Security group name - required

SG-Private-ca1

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and hyphens (-). Hyphens cannot be at the beginning or end of the name.

Summary

Number of instances

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.9.2...read more

ami-0ca6d6f6d048ca2c

Virtual server type (instance type)

t3.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t3.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GiB of snapshots, and 100 GB of bandwidth to the internet. Data transfer charges are not included as part of the free tier allowance.

Cancel

Launch instance

Preview code

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EC2 > Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Capacity Manager

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

Load Balancers

Target Groups

Trust Stores

Auto Scaling

Auto Scaling Groups

Instances (1/2)

Find Instance by attribute or tag (case-sensitive)

All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6 IPs
<input checked="" type="checkbox"/>	Private-EC2-ca1	i-03f2e677ebd6c6fca	Running	t3.micro	3/3 checks passed	View alarms +	us-east-1a	-	-	-	-
<input type="checkbox"/>	ca1-test-server	i-0911320252a7f265a	Running	t3.micro	Initializing	View alarms +	us-east-1a	-	13.220.150.143	-	-

i-03f2e677ebd6c6fca (Private-EC2-ca1)

Details

Status and alarms

Monitoring

Security

Networking

Storage

Tags

▼ Security details

IAM Role

Owner ID

Launch time

Security groups

sg-0aea263a70732eb7 (SG-Private-ca1)

▼ Inbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups	Description
No rules to display						

▼ Outbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Destination	Security groups	Description
-	sg-0783b63fc08c4ddcb	All	All	0.0.0.0/0	SG-Private-ca1	-

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Amazon S3 > Buckets > Create bucket

Create bucket

Buckets are containers for data stored in S3.

General configuration

AWS Region

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

Bucket type

General purpose

Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

Directory

Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name

my-log-bucket-ca1

Bucket names must be 3 to 63 characters and unique within the global namespace. Bucket names must also begin and end with a letter or number. Valid characters are a-z, 0-9, periods (.), and hyphens (-). Learn more

Copy settings from existing bucket - optional

Only the bucket settings in the following configuration are copied.

Choose bucket

Format: s3://bucket/prefix

Object Ownership

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

Object Ownership

ACLs disabled (recommended)

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

ACLs enabled

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership

Bucket owner enforced

Block Public Access settings for this bucket

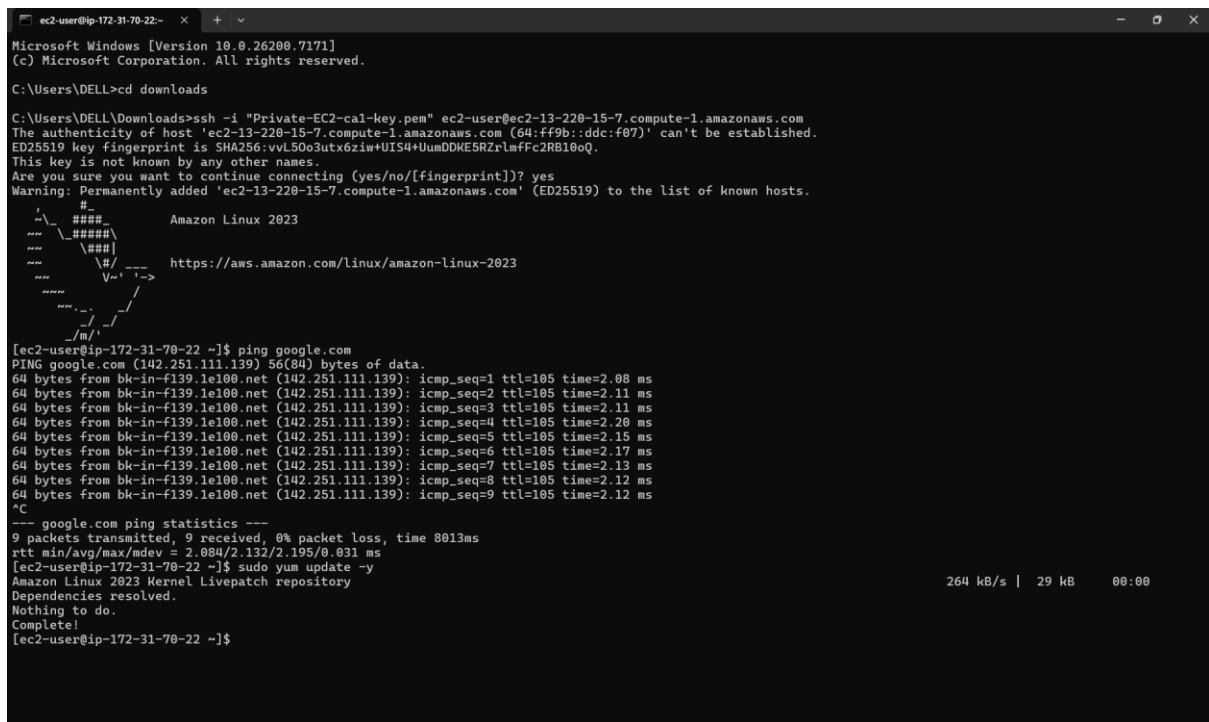
Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. Learn more

☒ Block all public access

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United States (N. Virginia)

Account ID: 9677-7264-2137

viewhelp/user2801515=marun.mndgam.73@ops.in

Amazon S3 > Buckets

General purpose buckets

All AWS Regions

Directory buckets

General purpose buckets (1)

info

Buckets are containers for data stored in S3.

Find buckets by name

Name	AWS Region	Creation date
my-log-bucket-ca1	US East (N. Virginia) us-east-1	November 18, 2025, 09:30:08 (UTC+05:30)

Copy ARN

Empty

Delete

Create bucket

Account snapshot

info

Updated daily

Storage Lens provides visibility into storage usage and activity trends.

View dashboard

External access summary - new

info

Updated daily

External access findings help you identify bucket permissions that allow public access or access from other AWS accounts.

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Account ID: 9677-7264-2137

viewhelp/user2801515=marun.mndgam.73@ops.in

Amazon S3 > Buckets > my-log-bucket-ca1 > Lifecycle configuration > Create lifecycle rule

Create lifecycle rule

info

Lifecycle rule configuration

Lifecycle rule name

MyLifecycleRule

Up to 255 characters

Choose a rule scope

Limit the scope of this rule using one or more filters

Apply to all objects in the bucket

Apply to all objects in the bucket

If you want the rule to apply to specific objects, you must use a filter to identify those objects. Choose "Limit the scope of this rule using one or more filters". Learn more

I acknowledge that this rule will apply to all objects in the bucket.

Lifecycle rule actions

Choose the actions you want this rule to perform.

Transition current versions of objects between storage classes

This action will move current versions.

Transition noncurrent versions of objects between storage classes

This action will move noncurrent versions.

Expire current versions of objects

Permanently delete noncurrent versions of objects

Delete expired object delete markers or incomplete multipart uploads

These actions are not supported when filtering by object tags or object size.

Transitions are charged per request

For a lifecycle transition action, each request corresponds to an object transition. For details on lifecycle transition pricing, see requests pricing info on the Storage & requests tab of the Amazon S3 pricing page.

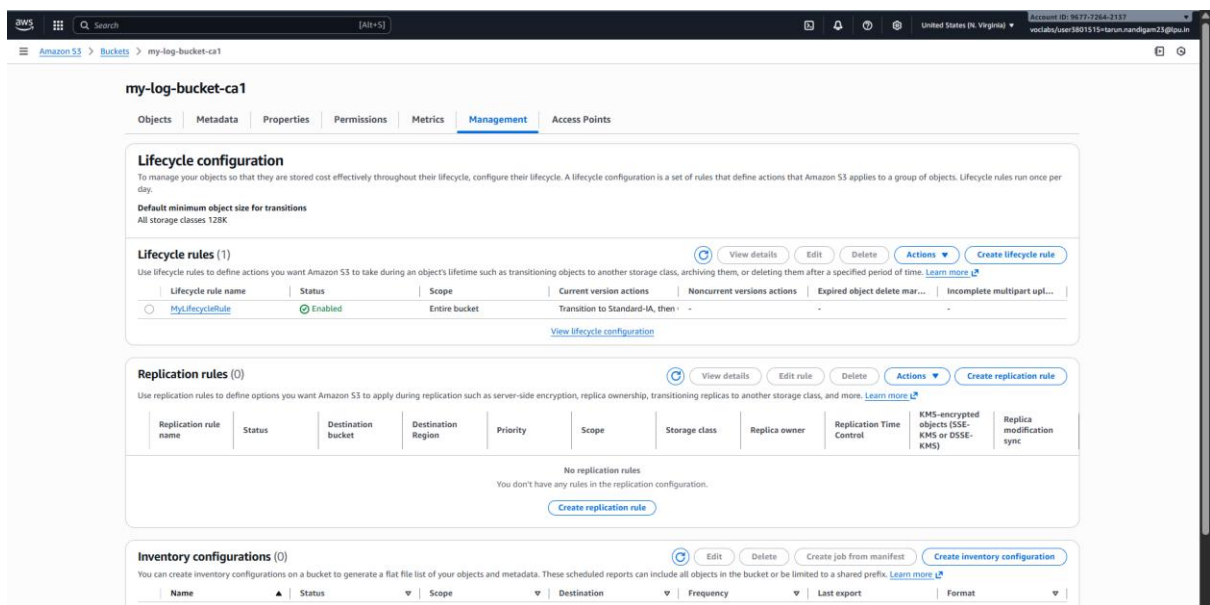
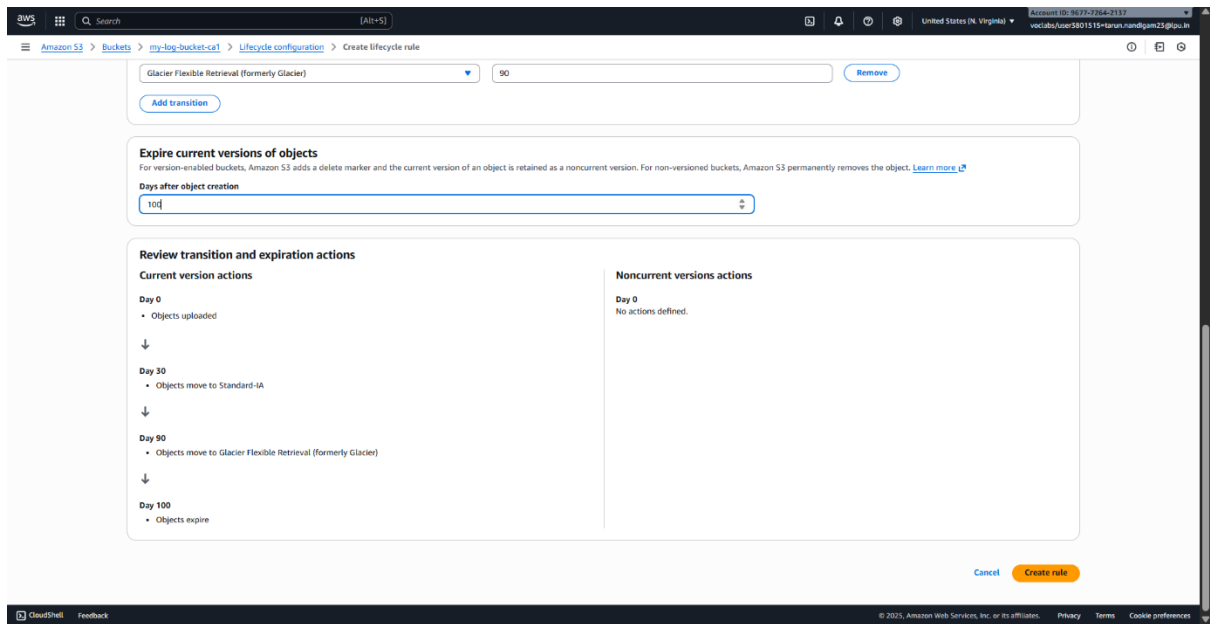
I acknowledge that this lifecycle rule will incur a transition cost per request.

By default, objects less than 128KB will not transition across any storage class

We don't recommend transitioning objects less than 128 KB because the transition costs can outweigh the storage savings. If your use case requires transitioning objects less than 128 KB, specify a minimum object size filter for each applicable lifecycle rule with a transition action.

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United States (N. Virginia)

Account ID: 9677-7264-2137
vsc1abz/user5001515@tarun.nandgam21@gmail.in

Amazon S3

Buckets

my-log-bucket-ca1

Lifecycle configuration

MyLifecycleRule

Choose storage class transitions

Standard-IA

Days after object creation

30

Remove

Glacier Flexible Retrieval (formerly Glacier)

90

Remove

Add transition

Expire current versions of objects

For version-enabled buckets, Amazon S3 adds a delete marker and the current version of an object is retained as a noncurrent version. For non-versioned buckets, Amazon S3 permanently removes the object. [Learn more](#)

Days after object creation

180

Review transition and expiration actions

Current version actions

Day 0

• Objects uploaded

↓

Day 30

• Objects move to Standard-IA

↓

Day 90

• Objects move to Glacier Flexible Retrieval (formerly Glacier)

↓

Day 180

• Objects expire

Noncurrent versions actions

Day 0

No actions defined.

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United States (N. Virginia)

Account ID: 9677-7264-2137
vsc1abz/user5001515@tarun.nandgam21@gmail.in

Amazon S3

Buckets

my-log-bucket-ca1

Lifecycle configuration

MyLifecycleRule

MyLifecycleRule

info

Edit

Delete

Actions

Lifecycle rule configuration

Lifecycle rule name

MyLifecycleRule

Status

Enabled

Scope

Entire bucket

Prefix

-

Object tags

-

Minimum object size

-

When no minimum object size is specified, the minimum object size for transitions is determined by the lifecycle configuration. [Learn more](#)

Maximum object size

-

Review transition and expiration actions

Current version actions

Day 0

• Objects uploaded

↓

Day 30

• Objects move to Standard-IA

↓

Day 90

• Objects move to Glacier Flexible Retrieval (formerly Glacier)

↓

Day 180

• Objects expire

Noncurrent versions actions

Day 0

No actions defined.

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