



Department of
Computer Science and Engineering
Accredited by NBA | Permanently Affiliated to Anna
University - Chennai



AWS Cloud and Devops

by Mr. Mahendran Selvakumar

Configure automatic snapshot creation using Amazon Data Lifecycle Manager

Name: Vijayananth S L

Class: III CSE

Organized by KPR Institute of Engineering and Technology

Department of Computer Science and Engineering

Amazon Data Lifecycle Manager is a **feature** of Amazon Web Service which automates the creation, retention, and deletion of snapshots and backup policies for EBS volumes.

Lifecycle policy can be created for Instance as well as volume also. Here I have explained regarding **volume lifecycle policy**. You can create for instance as well; the method remains same throughout.

Let's create an instance,

- Create new EC2 Instance. I named instance as “**ec2_snapshot**”
- Choose **Windows OS** or any other.

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

ec2_snapshot

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 looking for below

Q Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Li

SUS

Q

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

I'm gonna reuse my key pair which I have already created. Remember to create key pair with **.pem** file type for windows.

▼ 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*

test2_key

▼

↻

 Create new key pair

For Windows instances, you use a key pair to decrypt the administrator password. You then use the decrypted password to connect to your instance.

You can see my instance has been successfully initiated.

Instances (1/1) Info

Last updated less than a minute ago




Connect

Instance state ▼

Actions ▼

Find Instance by attribute or tag (case-sensitive)

All states ▼

<input checked="" type="checkbox"/>	Name ↗	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼
<input checked="" type="checkbox"/>	ec2_snapshot	i-0bcf3a2733a867360	Running  	t2.micro	 2/2 checks passed	View alarms +	ap-south-1b

i-0bcf3a2733a867360 (ec2_snapshot)

Details

Status and alarms

Monitoring

Security

Networking


Storage

Tags


Status checks Info

Status checks detect problems that may impair i-0bcf3a2733a867360 (ec2_snapshot) from running your applications.

System status checks

 System reachability check passed

Instance status checks

 Instance reachability check passed

Now let's head towards **creating a volume**. Hope you are aware about creating EBS volume, if not explore my previous documents regarding creating a EBS volume.

Some points to remember:

- Create volume at *same location* of instance.
- Allocate the *required volume* for an instance.

Volume type

Info

General Purpose SSD (gp3)

Size (GiB)

Info

5

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS

Info

3000

Min: 3000 IOPS, Max: 16000 IOPS. The value must be an integer.

Throughput (MiB/s)

Info

125

Min: 125 MiB, Max: 1000 MiB. Baseline: 125 MiB/s.

Availability Zone

Info

ap-south-1b

Snapshot ID - optional

Info

Don't create volume from a snapshot

Encryption

Info

Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

☐ Encrypt this volume

Now you can see we have successfully created a volume of **5 Gb**, with tag named **tag-vj**

Volumes (1/1)

Info

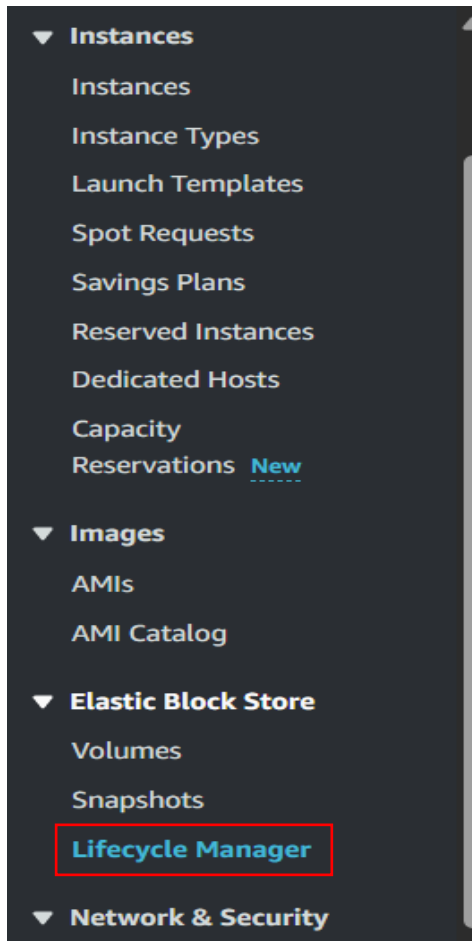
Actions

Create volume

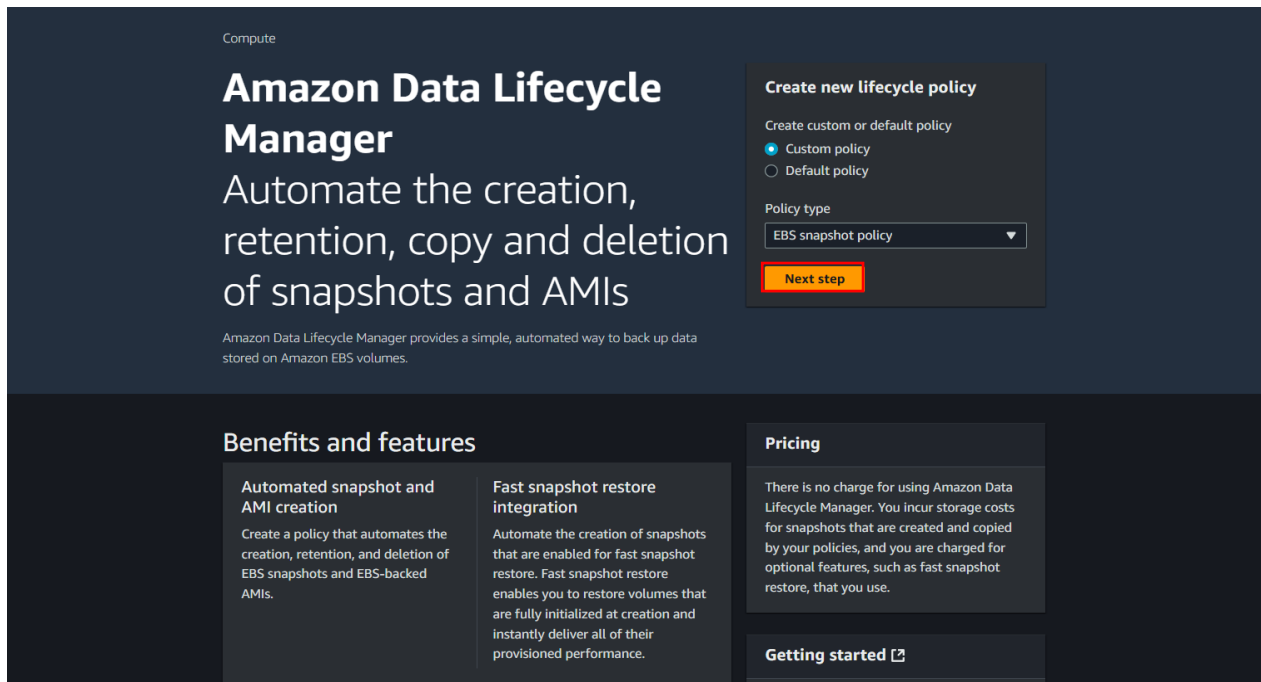
Search

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Created	Availability Zone	Volume state
<input checked="" type="checkbox"/>	tag-vj	vol-03e73d842893e62d1	gp3	5 GiB	3000	125	-	2024/11/01 10:47 GMT+5:...	ap-south-1b	Available

Now we can assign an Automatic schedule for creating a snapshot by using *Lifecycle Manager*. Click on **Lifecycle Manager**

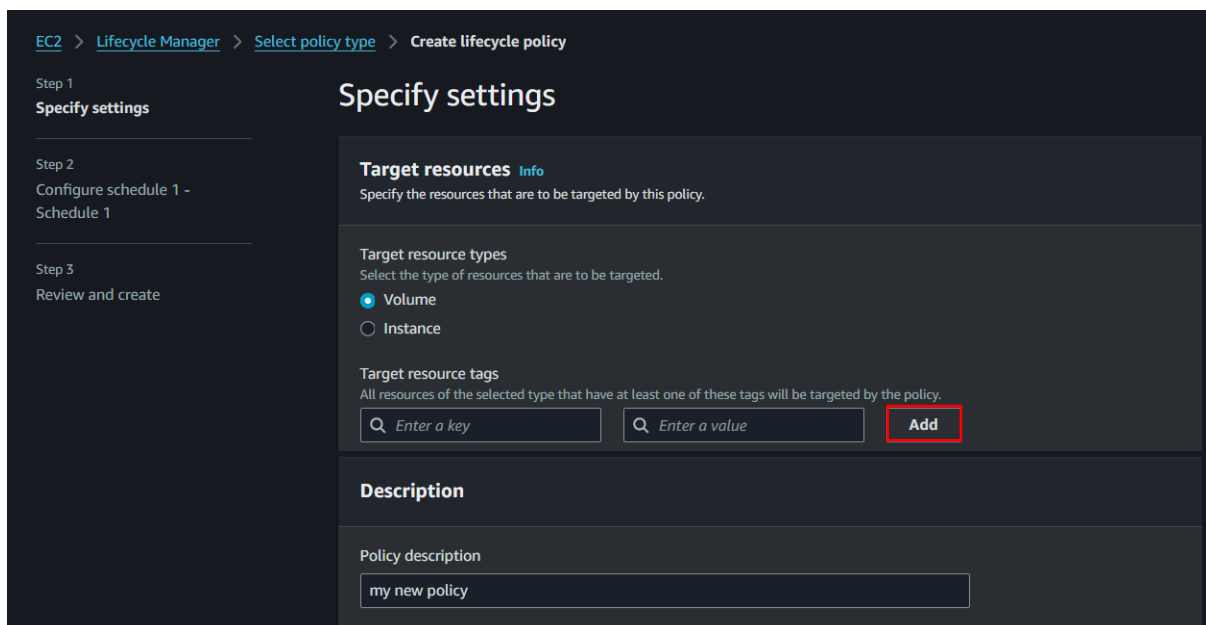


You can see the below page when you click on Lifecycle Manager, here click **Next Step**



You can select **volume** or **instance** for which you need to assign Lifecycle policy. Tags can be mentioned for targeting the required resources (volume or instance).

For adding tags enter **key**, **value** and click on **add** button.



We can modify our policy according to our need (name, frequency, start time, retention, etc...)

Retention*: This helps you to limit the number of snapshots to be stored (ex: 10, 20, 25....) without keeping all the snapshot at the cost of storage space.

Click on **Review Policy**

The screenshot shows the AWS Lifecycle Policy configuration interface. At the top, there's a 'Schedule name' field with 'Schedule 1' entered. Below it, 'Frequency' is set to 'Daily' and 'Every' is set to '1 hour'. The 'Starting at' field shows '11:00' and 'UTC'. The 'Retention type' is 'Count', and the 'Keep' field shows '3' snapshots in standard tier. Below these settings is a section titled 'Advanced settings - optional' with five expandable options: 'Tagging Info', 'Snapshot archiving Info', 'Fast snapshot restore Info', 'Cross-Region copy Info', and 'Cross-account sharing Info'. At the bottom right, there are three buttons: 'Cancel', 'Previous', and 'Review policy' (highlighted in orange).

Schedule name
Schedule 1

Frequency
Daily

Every
1 hour

Starting at
11:00 UTC

Retention type
Count

Keep
3 snapshots in standard tier

Advanced settings - optional

- **Tagging Info**
Specify the tags that are to be applied to snapshots created by this schedule. These tags are not applied to cross-Region copies created by the schedule.
- **Snapshot archiving Info**
Enable snapshot archiving to automatically move snapshots created by this schedule from the standard storage tier to the archive storage tier.
- **Fast snapshot restore Info**
Enable fast snapshot restore to ensure that volumes created from snapshots created by this schedule instantly deliver all of their provisioned performance.
- **Cross-Region copy Info**
Enable cross-Region copy to copy snapshots created by this schedule to up to three additional Regions.
- **Cross-account sharing Info**
Enable cross-account sharing to share the snapshots created by this schedule with other AWS accounts.

Cancel Previous **Review policy**

You can view a summary of your **Lifecycle policy**. If you wish to modify you can click on **Modify** button.

Or else click on **create policy**.

Review and create

Additional schedules must have the same retention type as Schedule 1, but they can have their own retention count or age. Snapshot archiving can be enabled for one schedule only.

Add another schedule

Step 1: Policy settings

Modify

Policy details

Target resource types	Target resource tags
Volume	Name:tag-vj
Description	Role name
My new policy	AWSDatalifecycleManagerDefaultRole
Policy status	Policy tags
Enabled	-

Step 2: Schedule 1 configuration

Modify

Schedule details

Schedule name	Frequency
Schedule 1	Every 1 hour(s) starting at 11:00
Retention in standard tier	
3 most recent snapshot(s)	

Cancel

Previous

Create policy

A new Policy has been assigned.

Data Lifecycle Manager (1) Info

All policies ▾

↺

Actions ▾

Create lifecycle policy

<input type="checkbox"/>	Name ↗	Policy ID	Description	Policy type	Policy state
<input type="checkbox"/>		policy-0748a82a03c824238	My new policy	EBS snapshot policy	✔ Enabled

The snapshots remain empty until the time is lapsed. Once the schedule is crossed you will be able to see your snapshots lined up here.

Snapshots

Info

Owned by me

Search

<

1

>

⚙️

Name

Snapshot ID

Volume size

Description

Storage tier

Snapshot status

Started

You currently have no snapshots in this Region.

There we go, a snapshot has been successfully created and available for further usage.

With the help of **policy id**, you can verify the snapshot belongs to which policy.

The screenshot shows the AWS Snapshots console. At the top, there's a header 'Snapshots (1/1)' with an 'Info' link. Below it is a search bar and a table with columns: Name, Snapshot ID, Volume size, Description, Storage tier, Snapshot status, Started, and Progress. A single snapshot is listed with ID 'snap-01c3da0f5a11a7068', size '5 GiB', description 'Created for policy: policy-0...', storage tier 'Standard', status 'Completed', and started time '2024/11/01 11:43 GMT+5:30'. Below the table, the 'Details' tab is selected for the snapshot ID 'snap-01c3da0f5a11a7068'. It shows fields for Snapshot ID, Progress (Available 100%), Snapshot status (Completed), Owner (890742606447), Started (Fri Nov 01 2024 11:43:27 GMT+0530 (India Standard Time)), Product codes, Fast snapshot restore, Source volume (Volume ID: vol-03e73d842893e62d1, Volume size: 5 GiB), and Description (Created for policy: policy-0748a82a03c824238 schedule: Schedule 1).

See the policy id mentioned in snapshot match with the policy id in Lifecycle Manager.

The screenshot shows the AWS Data Lifecycle Manager console. At the top, there's a header 'Data Lifecycle Manager (1)' with an 'Info' link. Below it is a search bar and a table with columns: Name, Policy ID, Description, Policy type, and Policy state. A single policy is listed with ID 'policy-0748a82a03c824238', description 'My new policy', policy type 'EBS snapshot policy', and policy state 'Enabled'. The 'Policy ID' column is highlighted with a red box.

1 hour later another snapshot is available as mentioned in the policy.

The screenshot shows the AWS Snapshots console. At the top, there's a header 'Snapshots (2)' with an 'Info' link. Below it is a search bar and a table with columns: Name, Snapshot ID, Volume size, Description, Storage tier, Snapshot status, Started, and Progress. Two snapshots are listed. The first has ID 'snap-00300439612789bc5', size '5 GiB', description 'Created for policy: policy-0...', storage tier 'Standard', status 'Completed', and started time '2024/11/01 12:35 GMT+5:30'. The second has ID 'snap-01c3da0f5a11a7068', size '5 GiB', description 'Created for policy: policy-0...', storage tier 'Standard', status 'Completed', and started time '2024/11/01 11:43 GMT+5:30'.

Finally, if you are in free tier do not forget to **delete** all your volumes, snapshots, lifecycle policy, or instance if you have created.

Thank you... Happy learning! :)
