




What is an EBS Snapshot?

An **EBS Snapshot** is a **backup of your EBS volume** stored in **Amazon S3** — but you won't see it directly in your S3 buckets.

Think of it like taking a **photo of your disk** at a specific moment in time. If anything goes wrong with your volume (data loss, corruption, accidental delete), you can **restore it back to that snapshot** .

How EBS Snapshots Work

1.  You create a **snapshot** of an existing EBS volume.
2.  AWS **stores it incrementally** in S3 (you're only billed for the changed blocks).
3.  You can **restore a new EBS volume** from that snapshot **anytime, in any region**.

Create a snapshot

```
aws ec2 create-snapshot --volume-id vol-0123abcd --description "Backup before update"
```

Restore a volume

```
aws ec2 create-volume --snapshot-id snap-0123abcd --availability-zone us-east-1a
```

Key Features of EBS Snapshots

1. Incremental Backups

- After the first full backup, only **changed blocks** are saved in future snapshots.

- Saves **time, bandwidth, and cost** 💰.

2. Restorable

- You can restore your snapshot into a new EBS volume **anytime**.
- Great for disaster recovery, migration, or duplication.

3. Cross-Region Copy

- Snapshots can be **copied across AWS regions** for backup redundancy and faster regional recovery.

4. Encryption

- If your volume is encrypted, your snapshots will be too — and vice versa.
- You can use **KMS (Key Management Service)** for key control 🔑.






5. Lifecycle Automation

- Use **Data Lifecycle Manager (DLM)** to automate snapshot creation/deletion.
- Set policies like: *"Keep daily backups for 7 days"*.

6. Sharing


- Snapshots can be **shared across AWS accounts**, making it useful for collaboration or public datasets.

Common Use Cases

Use Case	Why Use Snapshots?
 Backup & Restore	Easy rollbacks and recovery points before app changes or upgrades
 Environment Duplication	Clone production data to test/staging
 Disaster Recovery	Replicate backups to another region for high availability
 Volume Migration	Move volumes between AZs or EC2 instances
 Multi-Account Sharing	Share preloaded volumes with teams or customers

Pricing of Snapshots (2025 Approx.)

Factor	Description
Storage	~\$0.05 per GB/month (varies by region)
Incremental	You only pay for changed blocks, not entire volume
Data Transfer	Free when creating snapshots from EBS volumes; cross-region copies incur standard transfer fees

 Example: A 100 GB volume with 10 GB of changed data after a month would cost about:

- **Initial snapshot:** 100 GB x \$0.05 = \$5
- **Second snapshot** (incremental): 10 GB x \$0.05 = \$0.50

Creating and Automating Snapshots (CLI/Console)

 Console:

1. Go to **EC2 Dashboard > Volumes**
2. Select your volume → Actions → **Create Snapshot**
3. Add description → Click **Create**

CLI:

```
aws ec2 create-snapshot \  
--volume-id vol-0abc123456def7890 \  
--description "Nightly backup"
```

Automate with DLM (Data Lifecycle Manager):

You can set up policies that:

- Take snapshots **daily/hourly/weekly**
- Retain last N copies
- Delete old snapshots automatically

Summary Table

Feature	Details
Storage Type	S3 (invisible to user)
Backup Type	Incremental
Restoration	Can restore as new EBS volume
Encryption	Supports KMS encryption

Automation	Possible via DLM
Sharing	Across accounts & regions
Cost	~\$0.05/GB per month

Final Thoughts

 **EBS Snapshots are essential for backup, recovery, and flexibility in AWS.**

They provide **peace of mind**, help maintain **business continuity**, and support advanced use cases like **automated DevOps pipelines** or **multi-region deployments**.

 "A snapshot a day keeps the data loss away!"  
