

PROJECT : 5 CROSS-REGION BACKUP STRATEGY

Launch EC2 in region A

Create and copy EBS snapshot to region B

Restore EC2 in region B

Validate application availability

➤ Launch ec2 instance in region A
region A – asia pacific(Mumbai) ap-south-1

The screenshot shows the AWS Management Console for the 'ap-south-1' region. The 'Instances' page displays a table with one instance:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
webserver	i-091404a72f8b71147	Running	t3.micro	Initializing		ap-south-1a	ec2-13-233

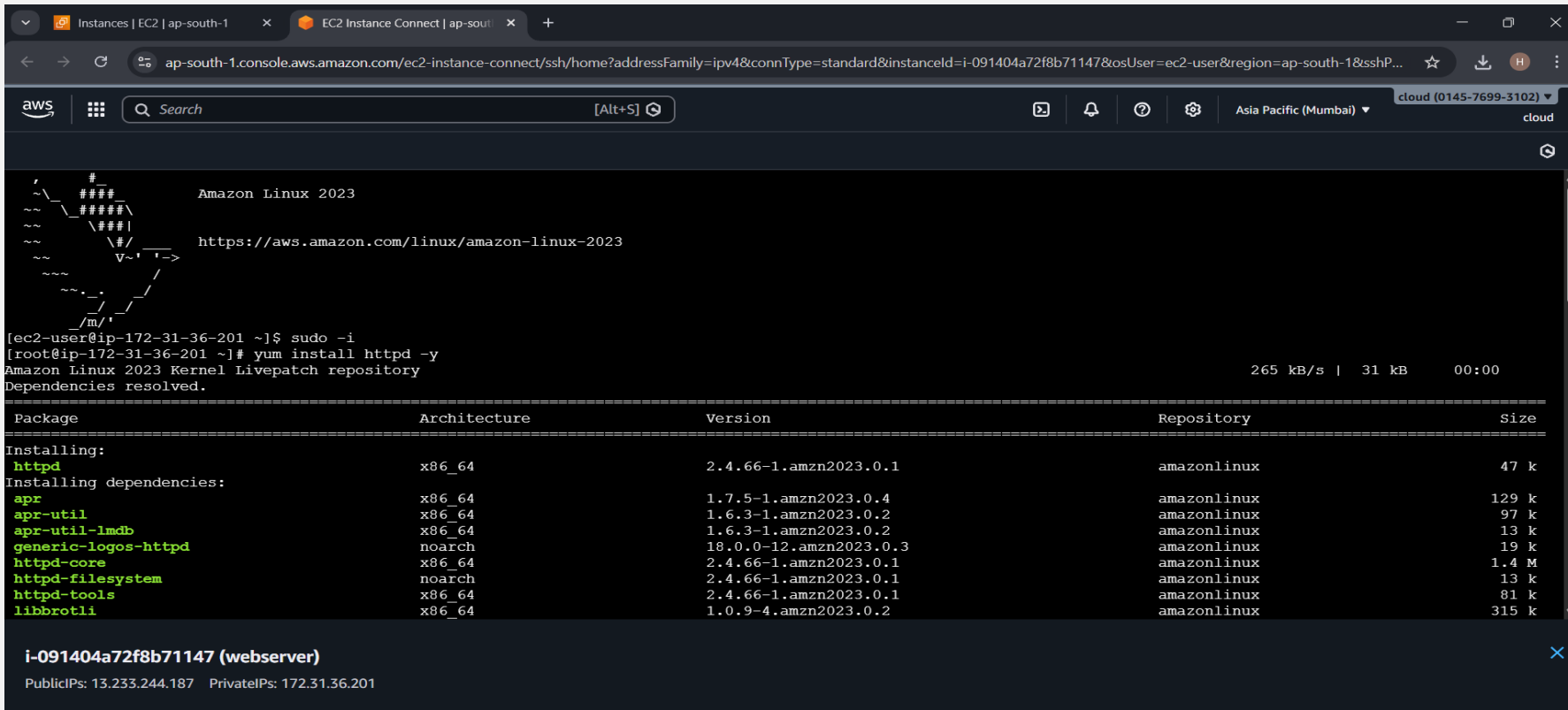
Below the table, the 'Instance summary' for 'i-091404a72f8b71147 (webserver)' is shown:

- Instance ID: i-091404a72f8b71147
- Public IPv4 address: 13.233.244.187
- Private IPv4 addresses: 172.31.36.201
- Instance state: Running
- Public DNS: ec2-13-233-244-187.ap-south-1.compute.amazonaws.com

The screenshot shows the detailed view of the EC2 instance 'i-091404a72f8b71147 (webserver)'. The 'Instance summary' section provides the following details:

- Instance ID: i-091404a72f8b71147
- Public IPv4 address: 13.233.244.187
- Private IPv4 addresses: 172.31.36.201
- Instance state: Running
- Public DNS: ec2-13-233-244-187.ap-south-1.compute.amazonaws.com
- Private IP DNS name (IPv4 only): ip-172-31-36-201.ap-south-1.compute.internal
- Instance type: t3.micro
- VPC ID: vpc-09277edf317d80e6e
- Subnet ID: subnet-0627171909643dc00
- Instance ARN: arn:aws:ec2:ap-south-1:014576993102:instance/i-091404a72f8b71147

➤ Here we connect instance and install httpd



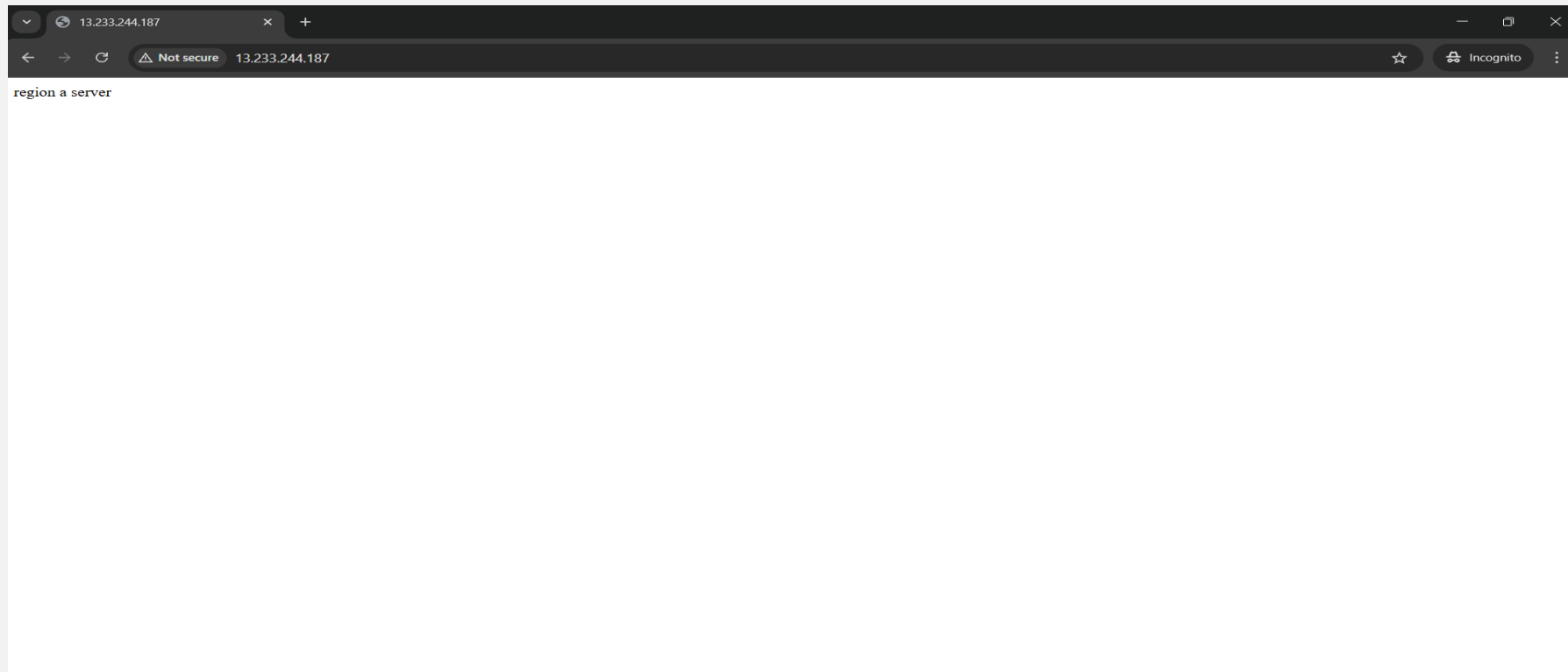
```
[ec2-user@ip-172-31-36-201 ~]$ sudo -i
[root@ip-172-31-36-201 ~]# yum install httpd -y
Amazon Linux 2023 Kernel Livepatch repository
Dependencies resolved.
265 kB/s | 31 kB    00:00
```

Package	Architecture	Version	Repository	Size
Installing:				
httpd	x86_64	2.4.66-1.amzn2023.0.1	amazonlinux	47 k
Installing dependencies:				
apr	x86_64	1.7.5-1.amzn2023.0.4	amazonlinux	129 k
apr-util	x86_64	1.6.3-1.amzn2023.0.2	amazonlinux	97 k
apr-util-ldap	x86_64	1.6.3-1.amzn2023.0.2	amazonlinux	13 k
generic-logos-httpd	noarch	18.0.0-12.amzn2023.0.3	amazonlinux	19 k
httpd-core	x86_64	2.4.66-1.amzn2023.0.1	amazonlinux	1.4 M
httpd-filesystem	noarch	2.4.66-1.amzn2023.0.1	amazonlinux	13 k
httpd-tools	x86_64	2.4.66-1.amzn2023.0.1	amazonlinux	81 k
libbrotli	x86_64	1.0.9-4.amzn2023.0.2	amazonlinux	315 k

i-091404a72f8b71147 (webserver)

PublicIPs: 13.233.244.187 PrivateIPs: 172.31.36.201

➤ Create index.html file use public ip it will display the output



- Create EBS snapshot in region A
here we select the root volume attached to
EC2

The screenshot shows the AWS Management Console interface for the 'ap-south-1' region. The left sidebar contains navigation links for Instances, Images, Elastic Block Store (with 'Volumes' selected), and Network & Security. The main content area is titled 'Volumes (1)' and shows a table with the following data:

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Source volume ID	Created
	vol-0e86da35e0421efa6	gp3	8 GiB	3000	125	snap-04558a8...	-	2026/02/18 02:13:36 PM (GMT+05:30)

Below the table, there is a 'Fault tolerance for all volumes in this Region' section. It includes a 'Snapshot summary' card showing '0 / 1' volumes backed up, and a 'Data Lifecycle Manager default policy for EBS Snapshots status' card indicating 'No default policy set up'.

➤ By using root volume we create snapshot

The screenshot shows the AWS Management Console interface for creating a snapshot. The browser tabs include 'Create snapshot | EC2 | ap-south-1', 'EC2 Instance Connect | ap-south-1', and 'New Tab'. The address bar shows the URL: `ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#CreateSnapshotFromVolume&volumeId=vol-0e86da35e0421efa6`. The console header includes the AWS logo, a search bar, a 'Ask Amazon Q' button, and the region 'Asia Pacific (Mumbai)'. The breadcrumb trail is 'EC2 > Volumes > vol-0e86da35e0421efa6 > Create snapshot'. The main heading is 'Create snapshot' with an 'Info' link. Below it, a subtitle reads: 'Create a point-in-time snapshot to back up the data on an Amazon EBS volume to Amazon S3.' The form is divided into three sections: 1. 'Source volume' with 'Volume ID' set to `vol-0e86da35e0421efa6` and 'Availability Zone' set to `aps1-az1 (ap-south-1a)`. 2. 'Snapshot details' with a 'Description' field containing 'region-backup' (with a note '255 characters maximum.') and 'Encryption' set to 'Not encrypted'. 3. 'Tags' section with a note: 'No tags associated with the resource.'

Create snapshot [Info](#)

Create a point-in-time snapshot to back up the data on an Amazon EBS volume to Amazon S3.

Source volume

Volume ID
`vol-0e86da35e0421efa6`

Availability Zone
`aps1-az1 (ap-south-1a)`

Snapshot details

Description
Add a description for your snapshot

255 characters maximum.

Encryption [Info](#)
Not encrypted

Tags [Info](#)
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.
No tags associated with the resource.

➤ Copy snapshot to region b
region b –us east(ohio) us-east-2a

The screenshot shows the AWS Management Console interface for the 'us-east-2' region. The main content area is titled 'Snapshots (1)' and includes a search bar and a table of snapshots. The table has columns for Name, Snapshot ID, Full snapshot size, Volume size, Description, Storage tier, and Snapshot status. A single snapshot is listed with ID 'snap-0a7115559974baed4' and a status of 'Pending'. The left sidebar contains navigation links for EC2, Instances, Images, and Elastic Block Store. The top navigation bar shows the AWS logo, a search bar, and the current region 'United States (Ohio)'.

Name	Snapshot ID	Full snapshot size	Volume size	Description	Storage tier	Snapshot status
	snap-0a7115559974baed4	-	8 GiB	[Copied snap-09f13f24b3f...	Standard	Pending

- Restore EC2 region b
by copied snapshot we will create volume in
correct availability zone

The screenshot shows the AWS Management Console interface for the 'us-east-2' region. The main content area displays the 'Volumes (1)' page. A table lists the following volume:

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot ID	Source volume ID	Created
	vol-04514acbba02ff435	gp3	8 GiB	3000	125	snap-0a71155...	-	2026/02/18

Below the table, there is a section titled 'Fault tolerance for all volumes in this Region'. It includes a 'Snapshot summary' showing '0 / 1' volumes backed up, and a 'Data Lifecycle Manager default policy for EBS Snapshots status' section indicating 'No default policy set up'.

➤ Launch EC2 instance in region B

The screenshot displays the AWS Management Console interface for the EC2 service in the us-east-2 region. A green notification banner at the top indicates the successful initiation of the instance 'i-025db0413e06412e4'. The main content area shows a table of instances, with one instance 'webserver1' listed. The instance details panel for 'i-025db0413e06412e4 (webserver1)' is expanded, showing the 'Details' tab with the following information:

Instance summary		
Instance ID	Public IPv4 address	Private IPv4 addresses
i-025db0413e06412e4	-	172.31.27.128
IPv6 address	Instance state	Public DNS
-	Pending	-
Hostname type	Private IP DNS name (IPv4 only)	

➤ Detach its root volume

The screenshot shows the AWS Management Console interface for the 'Volumes' section. A green banner at the top indicates 'Successfully detached volume.' The table lists two volumes:

Name	Volume ID	Type	Size	IOPS	Throughput
<input checked="" type="checkbox"/>	vol-0d37dbb208fe7c3e3	gp3	8 GiB	3000	125
<input type="checkbox"/>	vol-04514acbb02ff435	gp3	8 GiB	3000	125

The 'Actions' menu for the selected volume is open, showing options:

- Modify volume
- Create snapshot
- Create snapshot lifecycle policy
- Delete volume
- Attach volume
- Detach volume
- Force detach volume
- Manage auto-enabled I/O
- Copy volume - new
- Manage tags
- Resilience testing

The details for the selected volume (vol-0d37dbb208fe7c3e3) are shown below:

Details	Status checks	Monitoring	Tags
Volume ID vol-0d37dbb208fe7c3e3	Size 8 GiB	Type gp3	
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more	Volume state In-use	IOPS 3000	
Fast snapshot restored No	Availability Zone use2-az2 (us-east-2b)	Created Wed Feb 18 2026 14:29:26 GMT+0530 (India Standard Time)	Multi-Attach enabled No

➤ Attach restored volume into instance.

The screenshot shows the AWS Management Console interface for attaching a volume to an EC2 instance. The browser tabs at the top include 'Instances | EC2 | ap-south-1', 'Attach volume | EC2 | us-east-2', and several 'EC2 Instance Connect' tabs. The address bar shows the URL: `us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#AttachVolume:volumeId=vol-04514acbb02ff435`. The console header includes the AWS logo, a search bar, and navigation icons. The breadcrumb trail is: `EC2 > Volumes > vol-04514acbb02ff435 > Attach volume`. The main section is titled 'Attach volume' with an 'Info' link. Below the title is a descriptive text: 'Attach a volume to an instance to use it as you would a regular physical hard disk drive.' The 'Basic details' section contains the following information: 'Volume ID' is `vol-04514acbb02ff435`; 'Availability Zone' is `use2-az2 (us-east-2b)`; 'Instance' is a dropdown menu showing `i-025db0413e06412e4 (webserv1) (stopped)` with a refresh icon; and 'Device name' is a dropdown menu showing `/dev/xvda`. A note below the device name states: 'Recommended device names for Linux: /dev/xvda for root volume, /dev/sd[f-p] for data volumes.' At the bottom of the details section is a blue information box with a warning icon and text: 'Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.' The bottom right of the console shows a 'Cancel' button and an orange 'Attach volume' button.

Instances | EC2 | ap-south-1 | Attach volume | EC2 | us-east-2 | EC2 Instance Connect | us-east-2 | EC2 Instance Connect | ap-south-1 | New Tab

us-east-2.console.aws.amazon.com/ec2/home?region=us-east-2#AttachVolume:volumeId=vol-04514acbb02ff435

aws Search [Alt+S]

United States (Ohio) cloud (0145-7699-3102) cloud

EC2 > Volumes > vol-04514acbb02ff435 > Attach volume

Attach volume [Info](#)

Attach a volume to an instance to use it as you would a regular physical hard disk drive.

Basic details

Volume ID
vol-04514acbb02ff435

Availability Zone
use2-az2 (us-east-2b)

Instance [Info](#)
i-025db0413e06412e4 (webserv1) (stopped)

Only instances in the same Availability Zone as the selected volume are displayed.

Device name [Info](#)
/dev/xvda

Recommended device names for Linux: /dev/xvda for root volume, /dev/sd[f-p] for data volumes.

Info Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

Cancel Attach volume

- Connect EC2 instance and start httpd.

A screenshot of a terminal window accessed via a web browser. The browser's address bar shows the URL: console.aws.amazon.com/ec2-instance-connect/ssh/home?region=us-east-2&connType=standard&instanceId=i-025db0413e06412e4&osUser=ec2-user&sshPort=22&addressFamily=... The terminal window displays the Amazon Linux 2023 logo, the text "Amazon Linux 2023", and the URL "https://aws.amazon.com/linux/amazon-linux-2023". Below this, it shows the last login time: "Last login: Wed Feb 18 08:34:37 2026 from 13.233.177.5". The user "ec2-user" runs the command "sudo -i", and the prompt changes from "[ec2-user@ip-172-31-27-128 ~]\$" to "[root@ip-172-31-27-128 ~]#". The user then runs "systemctl start httpd". The terminal output shows the command being executed and the prompt changing to root. The terminal is viewed through a browser window showing the AWS console URL.

➤ Our backup successfully restore in another region instance.

