

Lambda Bootstrapping

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Problem Statement- Delete unused EBS Volume Across Regions

Requirements – 2 different volumes in different regions, python code

- 1) **Create Lambda Function to delete the unused EBS volume across regions (auto-delete-root-efs volume-backup)**

The image shows two screenshots of the AWS Management Console. The top screenshot is from the 'ap-south-1' region, displaying a list of three EBS volumes. The bottom screenshot is from the 'ap-southeast-1' region, displaying a single EBS volume.

Top Screenshot (ap-south-1):

- Notification: Successfully created volume vol-0be81185ca3623b96.
- Section: Volumes (3) Info
- Table of Volumes:

| Name | Volume ID | Type | Size | IOPS | Throughput | Snapshot ID | Created |
|------|-----------------------|------|--------|------|------------|-----------------|----------------------------|
| - | vol-0e66cd7fb3f335c4c | gp3 | 8 GiB | 3000 | 125 | snap-0725c89... | 2024/08/31 12:58 GMT+5:... |
| - | vol-04d12678c14fa3670 | gp3 | 8 GiB | 3000 | 125 | snap-0725c89... | 2024/08/31 12:58 GMT+5:... |
| - | vol-0be81185ca3623b96 | gp3 | 10 GiB | 3000 | 125 | - | 2024/08/31 13:55 GMT+5:... |

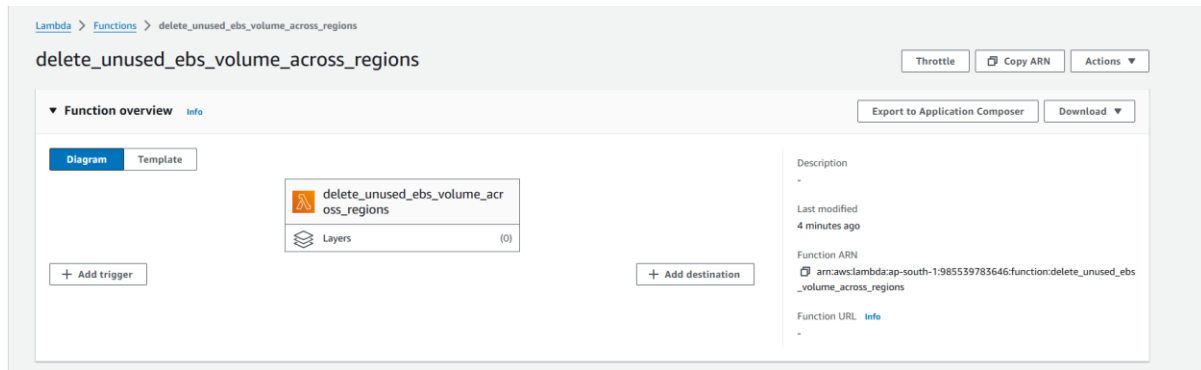
Bottom Screenshot (ap-southeast-1):

- Notification: Successfully created volume vol-0169b70630e203c59.
- Section: Volumes (1) Info
- Table of Volumes:

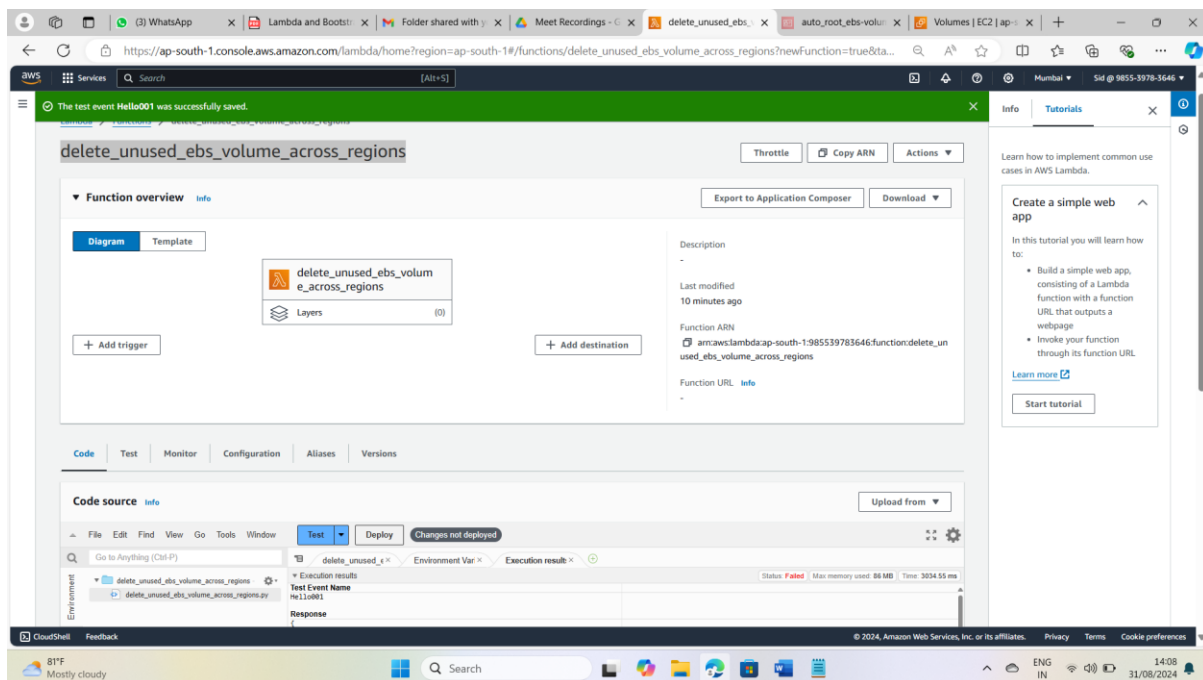
| Name | Volume ID | Type | Size | IOPS | Throughput | Snapshot ID | Created |
|------|-----------------------|------|---------|------|------------|-------------|----------------------------|
| - | vol-0169b70630e203c59 | gp3 | 100 GiB | 3000 | 125 | - | 2024/08/31 15:17 GMT+5:... |

2) Crate Lambda function (delete_unused_ebs_volume_across_regions.py) file

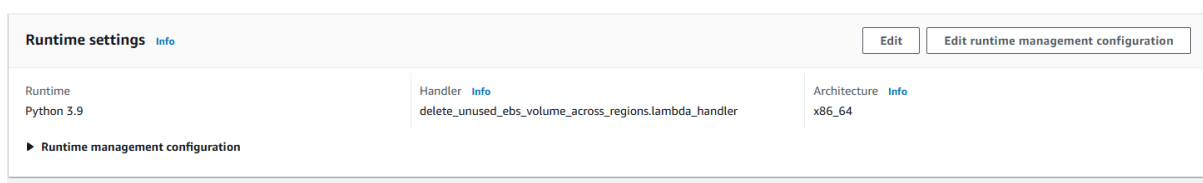
Use below link for python code - [greentea/delete_unused_ebs_volume_across_regions.py](https://greentea.github.io/delete_unused_ebs_volume_across_regions.py)
at master · satyam88/greentea · GitHub



3) Change lambda function name as lambda name + .py



4) Change runtime setting name as below. (Change lambda handler)



5) Change timeout value to 1 min

The screenshot shows the AWS Lambda console's Configuration tab. The 'General configuration' section is active, displaying the following details:

| Property | Value |
|-------------------|-------------|
| Description | - |
| Memory | 128 MB |
| Ephemeral storage | 512 MB |
| Timeout | 1 min 0 sec |
| SnapStart | None |

An 'Edit' button is visible in the top right corner of the configuration section.

6) Run the Lambda function manually

The screenshot shows the AWS Lambda console with the 'delete_unused_ebs_volume_across_regions' function selected. The 'Execution results' tab is active, displaying the following information:

- Status:** Succeeded
- Max memory used:** 96 MB
- Time:** 20676.41 ms
- Test Event Name:** He11o
- Response:** {"statusCode": 200, "body": "Completed volume deletion process"}
- Function Logs:** START RequestId: d847d348-325c-47db-98f5-27e074f3e965 Version: \$LATEST
END RequestId: d847d348-325c-47db-98f5-27e074f3e965
REPORT RequestId: d847d348-325c-47db-98f5-27e074f3e965 Duration: 20676.41 ms Billed Duration: 20677 ms Memory Size: 128 MB Max Memory Used: 96 MB Init Duration: 263.47 ms

7) Unused volume deleted successfully.

The screenshot shows the AWS Management Console's 'Volumes' page. A green notification banner at the top states: 'Successfully created volume vol-0169b70630e203c59.' Below the banner, the 'Volumes' section is visible, showing a table with columns: Name, Volume ID, Type, Size, IOPS, Throughput, Snapshot ID, and Created. The table is currently empty, with a message stating: 'You currently have no volumes in this region.'

Problem Statement- Create instance using bootstrapping method (add user, groups at the time creation of instance.)

1) Create a EC2 instance with stuffing and installing some package

Instances (1/2) [Info](#)

Find Instance by attribute or tag (case-sensitive) All states

Last updated less than a minute ago Refresh Connect Instance state Actions Launch instances

| | Name | Instance ID | Instance state | Instance type | Status check | Alarm status | Availability Zone | Public IPv4 DNS | Public IPv4 ... | Elastic IP |
|-------------------------------------|------------------|---------------------|----------------|---------------|-------------------|-----------------------------|-------------------|---------------------------|-----------------|------------|
| <input checked="" type="checkbox"/> | Bootstrapping... | i-087f303f92fdda689 | Running | t2.micro | 2/2 checks passed | View alarms | ap-south-1b | ec2-3-75-254-206.ap-so... | 3.7.254.206 | - |
| <input type="checkbox"/> | Prod_server | i-0d7d882e4db980d75 | Running | t2.micro | 2/2 checks passed | View alarms | ap-south-1b | ec2-3-111-40-6.ap-sout... | 3.111.40.6 | - |

2) Use below code for bootstrapping at time of creating new instance.

```
#!/bin/bash
```

```
useradd prathamesh
```

```
useradd vaishali
```

```
groupadd asw-prod
```

```
usermode -a -G asw-prod Vaishali
```

```
yum install httpd -y
```

```
yum install telnet -y
```

3) Connected the Boot Strapping

```

#
~\##### Amazon Linux 2023
~~\#####\
~~\###|
~~\#/ https://aws.amazon.com/linux/amazon-linux-2023
~~V~' '->
~~~
~~~
~~~
~/m/' '->

Last login: Sat Aug 31 10:10:06 2024 from 13.233.177.3
[ec2-user@ip-172-31-4-190 ~]$ sudo su -
Last login: Sat Aug 31 10:11:02 UTC 2024 on pts/1
[root@ip-172-31-4-190 ~]# free -m
              total        used        free      shared  buff/cache   available
Mem:           949          141          509           0          298          665
Swap:           0           0           0

[root@ip-172-31-4-190 ~]# df -h
Filesystem      Size      Used Avail Use% Mounted on
devtmpfs        4.0M      0      4.0M   0% /dev
tmpfs           475M      0      475M   0% /dev/shm
tmpfs           190M     448K     190M   1% /run
/dev/xvda1      8.0G     1.6G     6.4G  20% /
tmpfs           475M      0      475M   0% /tmp
/dev/xvda128    10M     1.3M     8.7M  13% /boot/efi
tmpfs           95M       0       95M   0% /run/user/1000

[root@ip-172-31-4-190 ~]# lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0     8G  0 disk
├─xvda1     202:1    0     8G  0 part /
├─xvda127   259:0    0     1M  0 part
└─xvda128   259:1    0    10M  0 part /boot/efi

[root@ip-172-31-4-190 ~]# █

```

```

top - 10:13:15 up 10 min, 2 users, load average: 0.00, 0.02, 0.02
Tasks: 104 total, 1 running, 103 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.0 us, 0.0 sy, 0.0 ni, 97.5 id, 0.0 wa, 0.0 hi, 0.0 si, 2.5 st
MiB Mem : 949.5 total, 509.5 free, 141.1 used, 298.9 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 665.5 avail Mem

```

| PID | USER | PR | NI | VIRT | RES | SHR | S | %CPU | %MEM | TIME+ | COMMAND |
|-----|------|-----|-----|--------|-------|-------|---|------|------|---------|-----------------------------|
| 1 | root | 20 | 0 | 105628 | 16800 | 10068 | S | 0.0 | 1.7 | 0:00.76 | systemd |
| 2 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | kthreadd |
| 3 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | rcu_gp |
| 4 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | rcu_par_gp |
| 5 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | slub_flushwq |
| 6 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | netns |
| 8 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | kworker/0:0H-events_highpri |
| 10 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | mm_percpu_wq |
| 11 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | rcu_tasks_kthread |
| 12 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | rcu_tasks_rude_kthread |
| 13 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | rcu_tasks_trace_kthread |
| 14 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.14 | ksoftirqd/0 |
| 15 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.03 | rcu_preempt |
| 16 | root | rt | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | migration/0 |
| 18 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | cpuhp/0 |
| 20 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | kdevtmpfs |
| 21 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | inet_frag_wq |
| 22 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | kauditd |
| 23 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | khungtaskd |
| 24 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | oom_reaper |
| 27 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | writeback |
| 28 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.01 | kcompactd0 |
| 29 | root | 39 | 19 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | khugepaged |
| 30 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | kintegrityd |
| 31 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | kblockd |
| 32 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | blkcg_punt_bio |
| 33 | root | 20 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | xen-balloon |
| 34 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | tpm_dev_wq |
| 35 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | md |
| 36 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.00 | edac-poller |
| 37 | root | -51 | 0 | 0 | 0 | 0 | S | 0.0 | 0.0 | 0:00.00 | watchdogd |
| 38 | root | 0 | -20 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.03 | kworker/0:1H-kblockd |
| 39 | root | 20 | 0 | 0 | 0 | 0 | I | 0.0 | 0.0 | 0:00.01 | kworker/u30:3-writeback |

4) Check the users are created or not

```

[root@ip-172-31-4-190 ~]# id vaishali
uid=1002(vaishali) gid=1002(vaishali) groups=1002(vaishali)

```