ITIM

PRACTICAL - 15

Name : Yagna Patel
Enrollment No. : 211621020
Batch : 61(CBA)

Tasks :

Question: Use stratis to create file systems from pools of storage provided by physical storage devices.

So for that you need to perform the below mention tasks:

- Create a thin-provisioned file system using Stratis storage management solution.
- Verify that the Stratis volumes grow dynamically to support real-time data growth.
- Access data from the snapshot of a thin-provisioned file system.

1) Start the `advstorage-stratis` Lab

```
[student@workstation ~]$ lab advstorage-stratis start

Starting lab.

Preparing servera for lab exercise work:

 · Ensuring stratis-filesystem1-snap does not exist on servera.  SUCCESS
 · Ensuring stratis-filesystem1 does not exist on servera......  SUCCESS
 · Ensuring stratispool1 does not exist on servera.............  SUCCESS
 · Ensuring /stratisvol does not exist on servera..............  SUCCESS
 · Ensuring /stratisvol-snap does not exist on servera.........  SUCCESS
 · Ensuring clean additional disks on servera..................  SUCCESS
```

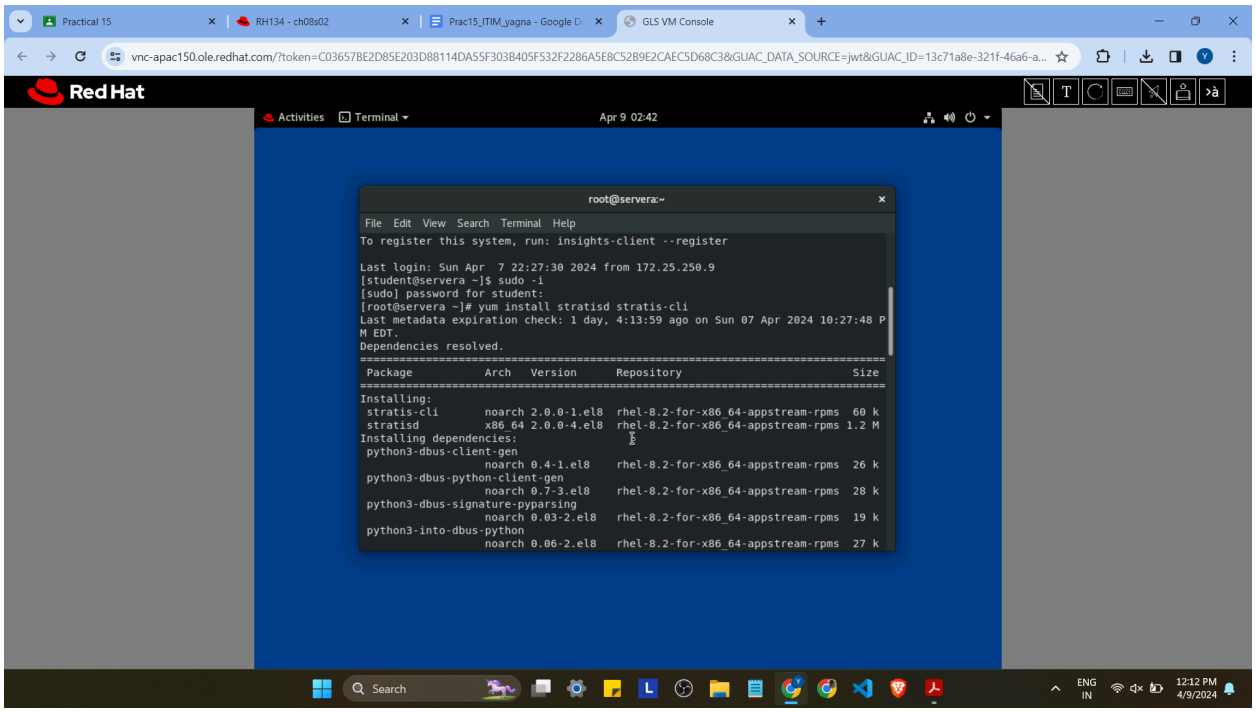
2) open an SSH session to `servera` as `student`.

```
[student@workstation ~]$ ssh student@servera
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Sun Apr  7 22:27:30 2024 from 172.25.250.9
[student@servera ~]$
```

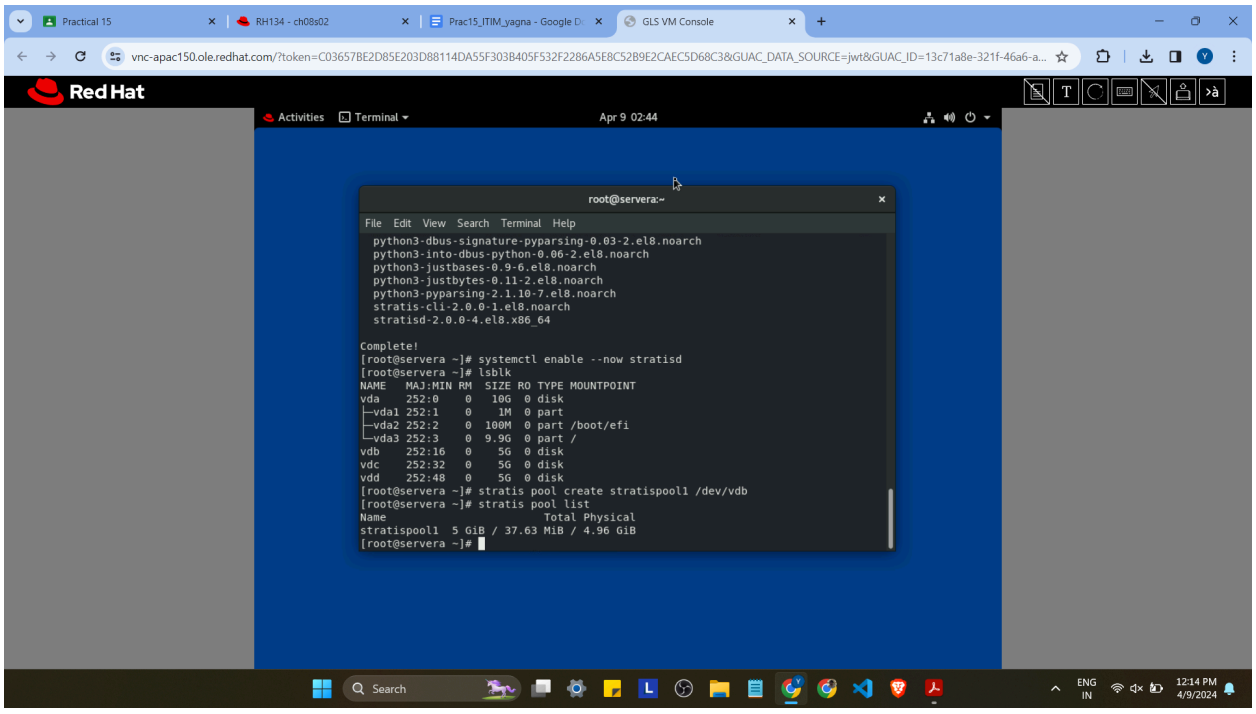
3) Install the stratisd and stratis-cli packages using the `yum` command.



4) Activate the `stratisd` service using the `systemctl` command.

Create a Stratis pool named `stratispool1` using the `stratis pool create` command.

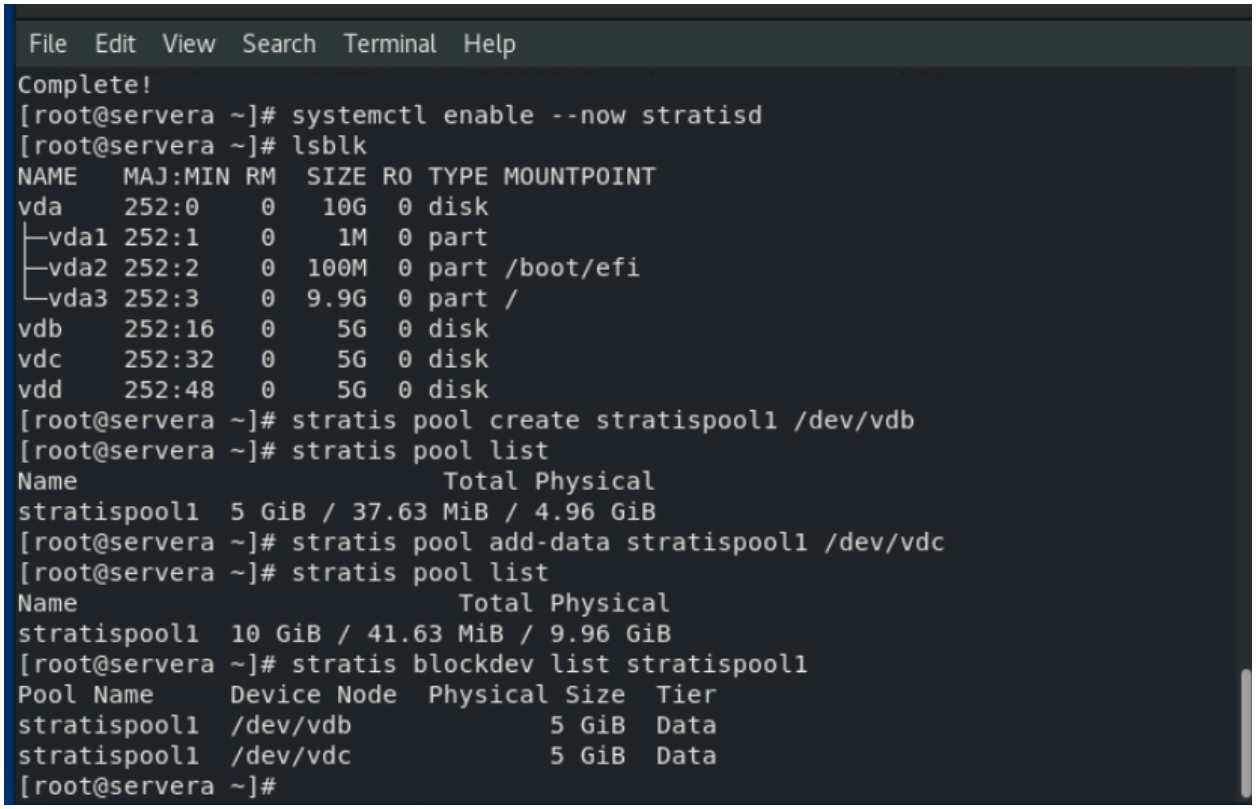
Verify the availability of `stratispool1` using the `stratis pool list` command.



5)Add the block device `/dev/vdc` to `stratispool1` using the `stratis pool add-data` command.

Verify the size of `stratispool1` using the `stratis pool list` command.

Verify the block devices that are currently members of `stratispool1` using the `stratis blockdev list` command.



6)

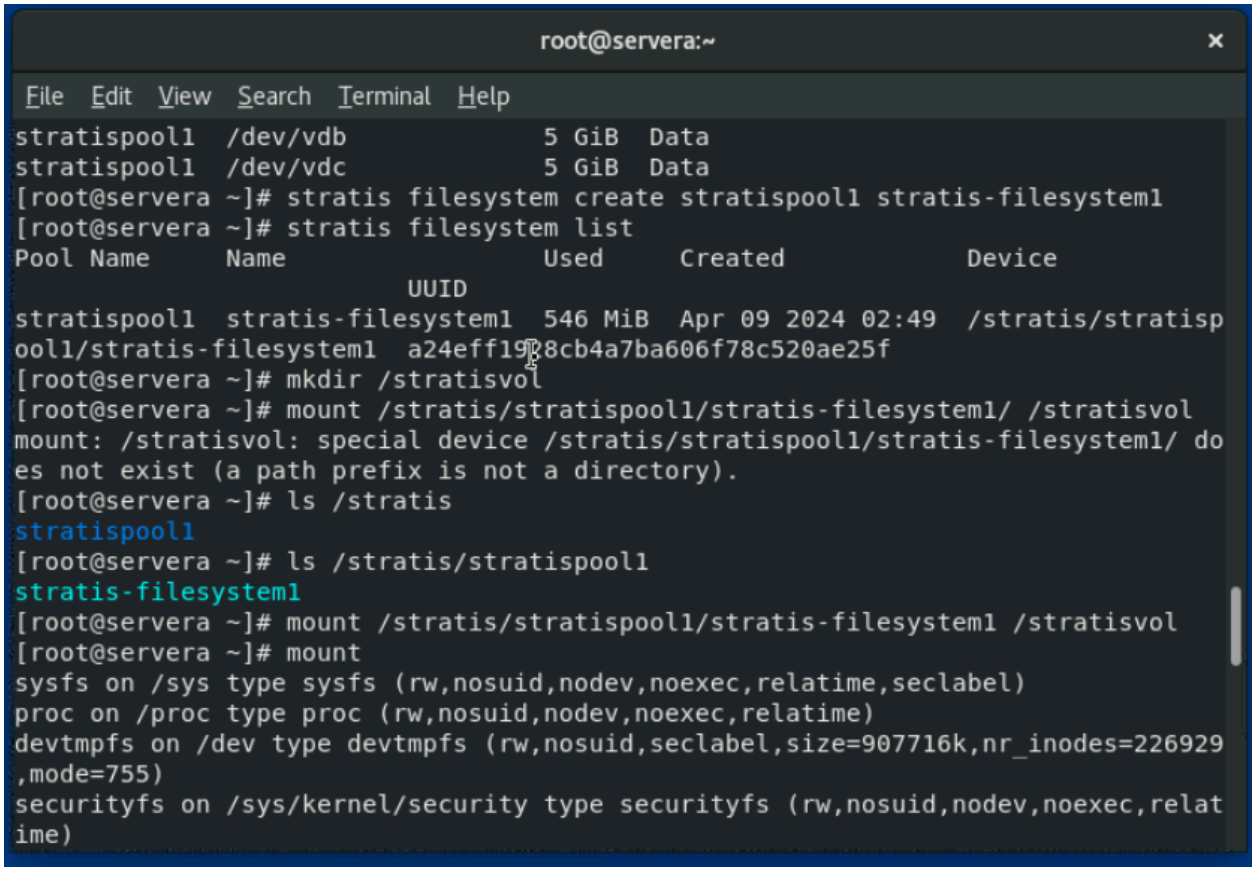
Create the thin-provisioned file system `stratis-filesystem1` on `stratispool1` using the `stratis filesystem create` command. It may take up to a minute for the command to complete.

Verify the availability of `stratis-filesystem1` using the `stratis filesystem list` command

Create a directory named `/stratisvol` using the `mkdir` command.

Mount `stratis-filesystem1` on `/stratisvol` using the `mount` command.

Verify that the `stratis-filesystem1` volume is mounted on `/stratisvol` using the `mount` command.



Create the text file `/stratisvol/file1` using the `echo` command.

7)Verify that the thin-provisioned file system `stratis-filesystem1` dynamically grows as the data on the file system grows.
Create a 2 GiB file on `stratis-filesystem1` using the `dd` command. It may take up to a minute for the command to complete.

View the current usage of `stratis-filesystem1` using the `stratis filesystem list` command.

```
[root@servera ~]# stratis filesystem list
Pool Name     Name                 Used     Created            Device
                          UUID
stratispool1  stratis-filesystem1  546 MiB  Apr 09 2024 02:49  /stratis/stratisp
ool1/stratis-filesystem1  a24eff1928cb4a7ba606f78c520ae25f
[root@servera ~]# dd if=/dev/urandom of=/stratisvol/file2 bs=1M count=2048
2048+0 records in
2048+0 records out
2147483648 bytes (2.1 GB, 2.0 GiB) copied, 12.4536 s, 172 MB/s
[root@servera ~]# stratis filesystem list
Pool Name     Name                 Used      Created            Device
                          UUID
stratispool1  stratis-filesystem1  2.53 GiB  Apr 09 2024 02:49  /stratis/stratis
pool1/stratis-filesystem1  a24eff1928cb4a7ba606f78c520ae25f
[root@servera ~]#
```

8) Create a snapshot of `stratis-filesystem1` named `stratis-filesystem1-snap`. The snapshot will provide you with access to any file that is deleted from `stratis-filesystem1`.Create a snapshot of `stratis-filesystem1` using the `stratis filesystem snapshot` command.

```
[root@servera ~]# stratis filesystem snapshot stratispool1 stratis-filesystem1 s
tratis-filesystem1-snap
[root@servera ~]# stratis filesystem list
Pool Name     Name                      Used      Created            Device
                               UUID
stratispool1  stratis-filesystem1       2.53 GiB  Apr 09 2024 02:49  /stratis/st
ratispool1/stratis-filesystem1       a24eff1928cb4a7ba606f78c520ae25f
stratispool1  stratis-filesystem1-snap  2.53 GiB  Apr 09 2024 03:00  /stratis/st
ratispool1/stratis-filesystem1-snap  6c26fcc237bc4c9e9e1136616c409fc4
[root@servera ~]# rm /stratisvol/file1
rm: remove regular file '/stratisvol/file1'? y
[root@servera ~]# mkdir /stratisvol-snap
[root@servera ~]# mount /stratis/stratispool1/stratis-filesystem1-snap /stratisv
ol-snap
[root@servera ~]# cat /stratisvol-snap/file1
Hello World
[root@servera ~]#
```

9)Unmount `/stratisvol` and `/stratisvol-snap` using the `umount` command.

```
[root@servera ~]# umount /stratisvol-snap
[root@servera ~]# umount /stratisvol
[root@servera ~]#
```

10)Remove the thin-provisioned file system `stratis-filesystem1` and its snapshot `stratis-filesystem1-snap` from the system.
Destroy `stratis-filesystem1-snap` using the `stratis filesystem destroy` command.

Destroy `stratis-filesystem1` using the `stratis filesystem destroy` command.

```
[root@servera ~]# stratis filesystem destroy stratispool1 stratis-filesystem1-sn
ap
[root@servera ~]# stratis filesystem destroy stratispool1 stratis-filesystem1
[root@servera ~]#
```

Finish the lab

```
[root@servera ~]# exit
logout
[student@servera ~]$ exit
logout
Connection to servera closed.
[student@workstation ~]$ lab advstorage-stratis finish

Completing the lab on servera:

 · Removing stratis-filesystem1-snap from on servera..........  SUCCESS
 · Removing stratis-filesystem1 from servera..................  SUCCESS
 · Removing stratispool1 from servera.........................  SUCCESS
 · Removing /stratisvol from servera..........................  SUCCESS
 · Removing /stratisvol-snap from servera.....................  SUCCESS
 · Ensuring clean additional disks on servera.................  SUCCESS

Lab finished.

[student@workstation ~]$
```