## ITIM PRACTICAL - 15

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## 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.

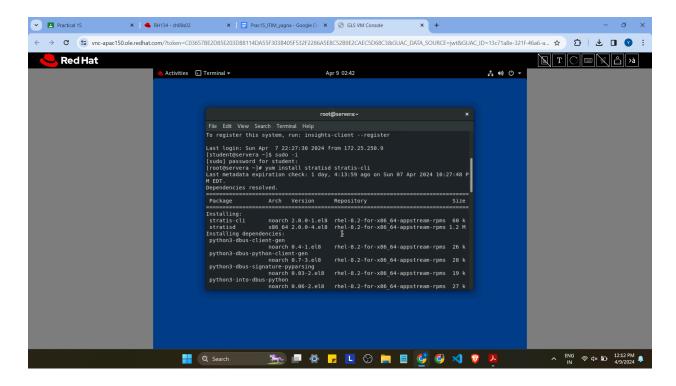
```
[student@workstation ~]$ ssh student@servera
Activate the web console with: systemctl enable --now cockpit.socket

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 ~]$ ■
```

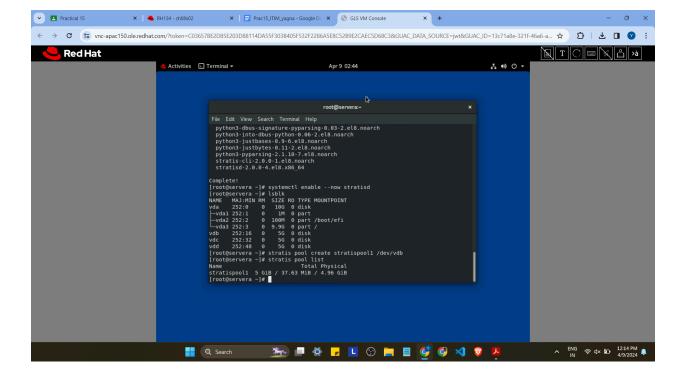
3) Install the stratisd and stratis-cli packages using the yum command.



4) Activate the stratisd service using the systematl 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.

```
File Edit View Search Terminal Help
Complete!
[root@servera ~]# systemctl enable --now stratisd
[root@servera ~]# lsblk
       MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
vda 252:0 0 10G 0 disk

--vda1 252:1 0 1M 0 part

--vda2 252:2 0 100M 0 part /boot/efi

--vda3 252:3 0 9.9G 0 part /
       252:16 0 5G 0 disk
       252:32 0 5G 0 disk
vdc
       252:48 0
                      5G 0 disk
vdd
[root@servera ~]# stratis pool create stratispool1 /dev/vdb
[root@servera ~]# stratis pool list
Name
                              Total Physical
stratispool1 5 GiB / 37.63 MiB / 4.96 GiB
[root@servera ~]# stratis pool add-data stratispool1 /dev/vdc
[root@servera ~]# stratis pool list
Name
                               Total Physical
stratispool1 10 GiB / 41.63 MiB / 9.96 GiB
[root@servera ~]# stratis blockdev list stratispool1
Pool Name
              Device Node Physical Size Tier
stratispool1 /dev/vdb
                                     5 GiB Data
stratispool1 /dev/vdc
                                     5 GiB Data
[root@servera ~]#
```

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.

```
root@servera:~
                                                                                ×
<u>File Edit View Search Terminal Help</u>
stratispool1 /dev/vdb
                                   5 GiB Data
stratispool1 /dev/vdc
                                   5 GiB Data
[root@servera ~]# stratis filesystem create stratispool1 stratis-filesystem1
[root@servera ~]# stratis filesystem list
Pool Name
             Name
                                            Created
                                                               Device
                          UUID
stratispooll stratis-filesystem1 546 MiB Apr 09 2024 02:49 /stratis/stratisp
ool1/stratis-filesystem1 a24eff19p8cb4a7ba606f78c520ae25f
[root@servera ~]# mkdir /stratisvol
[root@servera ~]# mount /stratis/stratispooll/stratis-filesystem1/ /stratisvol
mount: /stratisvol: special device /stratis/stratispool1/stratis-filesystem1/ do
es not exist (a path prefix is not a directory).
[root@servera ~]# ls /stratis
[root@servera ~]# ls /stratis/stratispool1
stratis-filesystem1
[root@servera ~]# mount /stratis/stratispooll/stratis-filesystem1 /stratisvol
[root@servera ~]# mount
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime,seclabel)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
devtmpfs on /dev type devtmpfs (rw,nosuid,seclabel,size=907716k,nr inodes=226929
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relat
ime)
```

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

```
[root@servera ~]# echo "Hello World" > /stratisvol/file1
[root@servera ~]#
```

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
                                            Created
             Name
                                  Used
                                                              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
                                       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/stratispooll/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 stratespool1 strates-filesystem1-sn
ap
[root@servera ~]# strates filesystem destroy stratespool1 strates-filesystem1
[root@servera ~]#
```

## Finish the lab