Azure VM - Problem statement

You are a cloud architect working in the Research and Development (R&D) Team of a product-based company. Your team wants to analyze a large amount of data to help with taking strategic decisions and improving business. To enable this, a Virtual Machine installed with a MySQL server is required. Your manager asks you to create a Virtual Machine with the following parameters.

i) Virtual Machine: Region: (US) East US, Availability Zones: No infrastructure redundancy required, Image: Ubuntu Server 18.04 LTS, Size: B2ms, OS disk type: Standard HDD (Connect with VM to your local machine through the SSH connection and make sure that you can able to access it).

ii) Attach a new data disk to the Linux VM: Storage type: Standard HDD, Size (GiB): 64 with disk Partition and mount the disk.

iii) Install the mysql-server package: sudo apt-get update; sudo apt-get install mysql-server.

Note

Use the credentials given in the hands-on to log in to the Azure Portal.

Create a new resource group and use the same resource group for all resources.

The Username/Password/Services Name can be as per your choice.

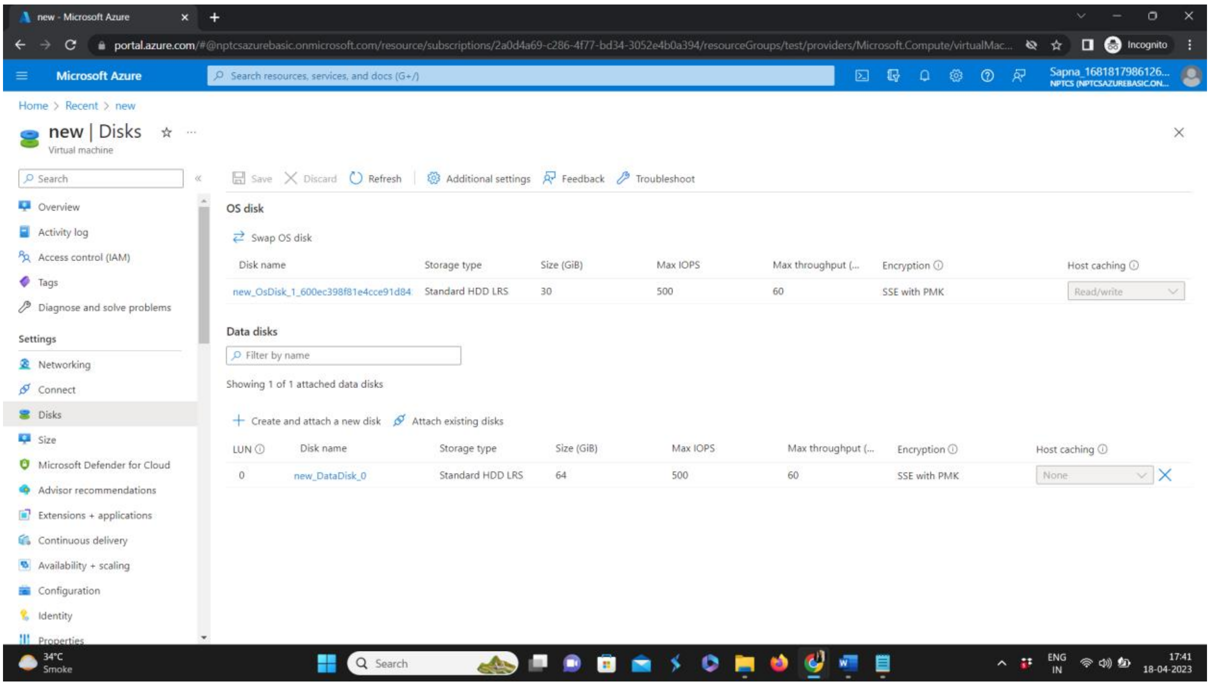
After completing the hands-on, delete all the resources created.

Username

Sapna_1681817986126@nptcsazurebasic.onmicrosoft.com

Password

2730e0-8aeF67@



OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption ⓘ	Host caching ⓘ
new_OsDisk_1_600ec398f81e4cce91d84	Standard HDD LRS	30	500	60	SSE with PMK	Read/write

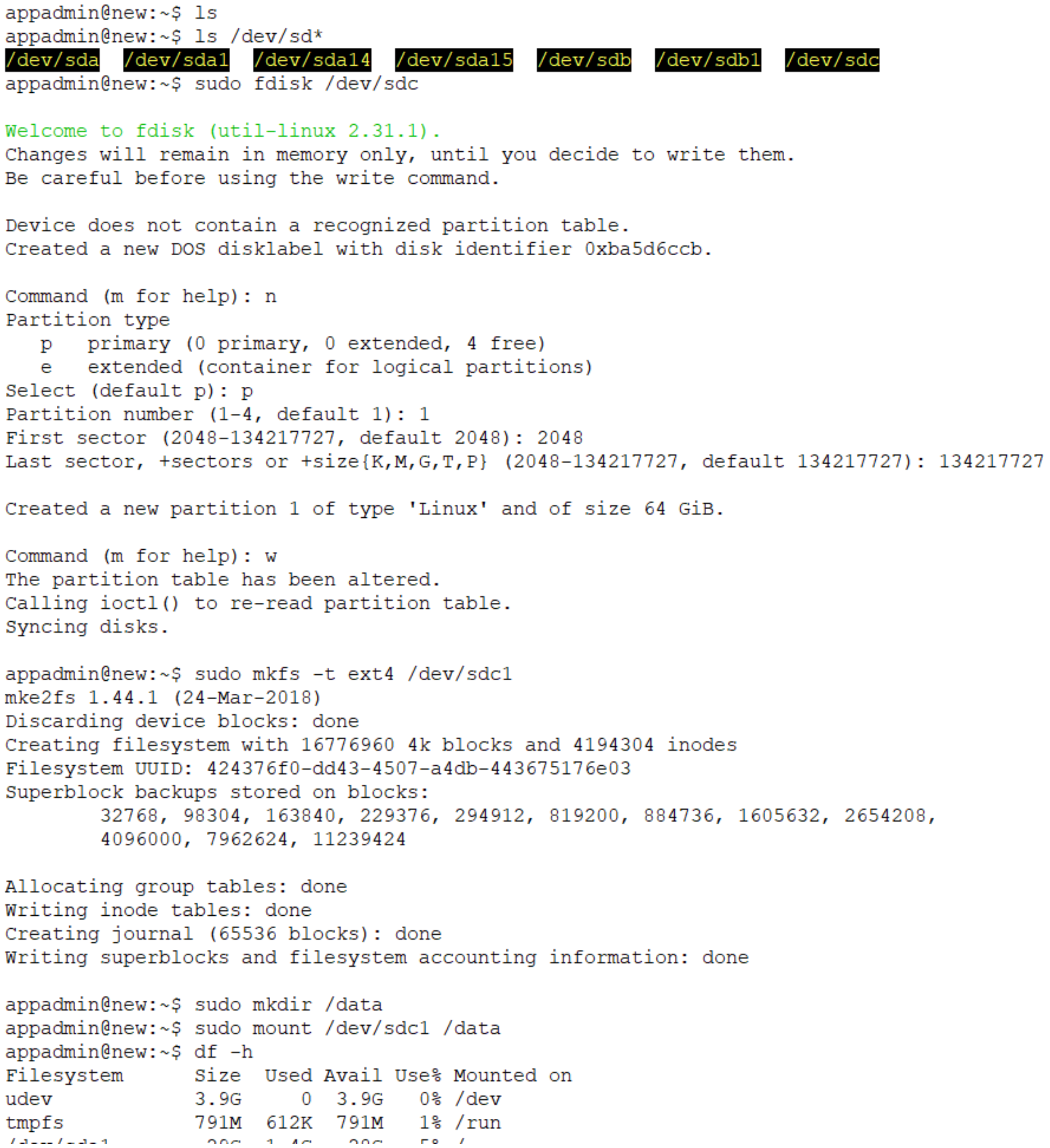
Data disks

Filter by name

Showing 1 of 1 attached data disks

LUN ⓘ	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...	Encryption ⓘ	Host caching ⓘ
0	new_DataDisk_0	Standard HDD LRS	64	500	60	SSE with PMK	None

Mount the data disk to vm :



```
appadmin@new:~$ ls
appadmin@new:~$ ls /dev/sd*
/dev/sda  /dev/sda1  /dev/sda14  /dev/sda15  /dev/sdb  /dev/sdb1  /dev/sdc
appadmin@new:~$ sudo fdisk /dev/sdc

Welcome to fdisk (util-linux 2.31.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0xba5d6ccb.

Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-134217727, default 2048): 2048
Last sector, +sectors or +size{K,M,G,T,P} (2048-134217727, default 134217727): 134217727

Created a new partition 1 of type 'Linux' and of size 64 GiB.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

appadmin@new:~$ sudo mkfs -t ext4 /dev/sdc1
mke2fs 1.44.1 (24-Mar-2018)
Discarding device blocks: done
Creating filesystem with 16776960 4k blocks and 4194304 inodes
Filesystem UUID: 424376f0-dd43-4507-a4db-443675176e03
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
        4096000, 7962624, 11239424

Allocating group tables: done
Writing inode tables: done
Creating journal (65536 blocks): done
Writing superblocks and filesystem accounting information: done

appadmin@new:~$ sudo mkdir /data
appadmin@new:~$ sudo mount /dev/sdc1 /data
appadmin@new:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            3.9G     0  3.9G   0% /dev
tmpfs           791M  612K  791M   1% /run
```

Run the following command to identify the new disk: ls /dev/sd*
You should see a new disk listed as /dev/sdc or similar. Running ls /dev/sd* lists all the attached disks in the Linux VM. This includes both the OS disk (typically /dev/sda) and any additional data disks that have been attached. The output will show the device names for each disk, which usually follow the format /dev/sdX, where X is a letter starting from b, c, d, and so on. For example, if the new data disk was assigned to LUN 0 during creation, then it would appear as /dev/sdc in the output of this command.

fdisk is a command-line utility in Linux used for creating and managing disk partitions. It allows users to create, delete, and modify partitions on a hard drive.

To use fdisk, you typically specify the device name of the disk you want to partition (e.g., /dev/sda or /dev/sdb), followed by the partition number you want to modify (if applicable). Once you are in the fdisk prompt, you can use various commands to perform actions such as creating a new partition, deleting a partition, changing the type of a partition, or writing the changes to the partition table.

Here are some common commands used in fdisk:

p: Prints the partition table for the selected disk
n: Creates a new partition

d: Deletes a partition
t: Changes the type of a partition
w: Writes the changes to the partition table and exits fdisk
It is important to be cautious when using fdisk as it can modify or delete existing partitions and data on the disk. Make sure to have a backup of your data before performing any operations on a disk with fdisk.

Run the following command to partition the disk: sudo fdisk /dev/sdc
Type "n" and hit Enter to create a new partition, and then follow the prompts to specify the partition size (use default for full size), partition type (primary), and partition number (1).

Type "w" and hit Enter to write the changes and exit fdisk.
Running sudo fdisk /dev/sdc opens the fdisk utility for the newly attached data disk /dev/sdc, which allows you to create a partition on the disk.

Once you run the command, you will see the Command (m for help): prompt. From here, you can create a new partition by typing n and pressing Enter. The utility will then prompt you to specify the partition type, partition number, and partition size. You can choose the default values by pressing Enter for each prompt, except for the partition size, where you can specify the desired size for the partition.

After you have created the partition, type w to write the changes to the disk and exit the fdisk utility.

It is important to note that partitioning the disk will erase any existing data on it, so make sure to back up any important data before proceeding with this step.

Run the following command to format the new partition: sudo mkfs -t ext4 /dev/sdc1
The sudo mkfs -t ext4 /dev/sdc1 command formats the newly created partition /dev/sdc1 with the ext4 file system. This prepares the partition for use and creates a file system on it that can be mounted to a directory in the Linux file system.

The mkfs command is used to create a file system on a disk partition, and the -t option specifies the type of file system to create. In this case, we are using the ext4 file system, which is a popular file system in Linux for its performance and reliability.

It is important to note that formatting a partition erases any existing data on it, so make sure to back up any important data before running this command.

Create a directory where you want to mount the new partition: sudo mkdir /data

Mount the new partition to the directory you just created: sudo mount /dev/sdc1 /data
Use the following command to make sure the new partition is mounted correctly: df -h
To automatically mount the partition after a reboot, add the following line to /etc/fstab:

```
/dev/sdc1      /data     ext4    defaults,nofail     1      2
```

Install mysql .