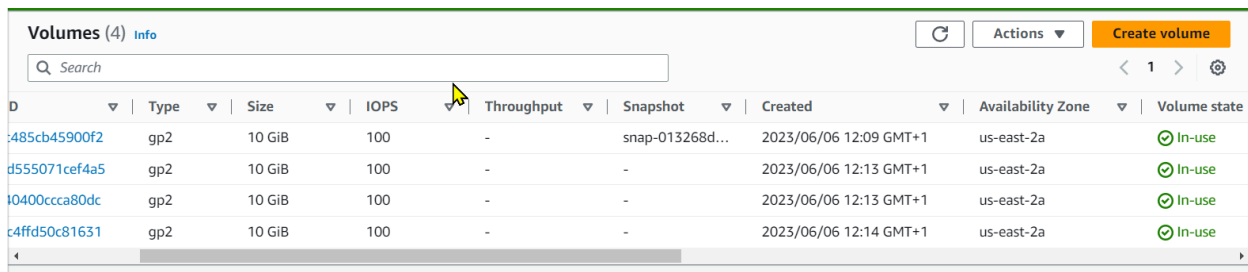


WEB SOLUTION WITH WORDPRESS

Task: Prepare storage infrastructure on two Linux servers and implement a basic web solution using WordPress. WordPress is a free and open-source content management system written in PHP and paired with MySQL or MariaDB as its backend Relational Database Management System (RDBMS).

A: Step 1 — Prepare the Web Server

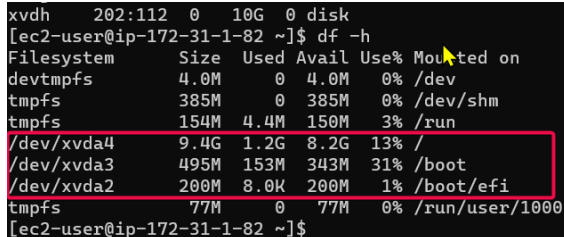
1. Launch an EC2 instance that will serve as "Web Server". Create 3 volumes in the same AZ as your Web Server EC2, each of 10 GB.



The screenshot shows the AWS Management Console 'Volumes' page. It lists four 10 GiB gp2 volumes in the us-east-2a availability zone, all in 'In-use' state. The volumes are: 485cb45900f2, d555071cef4a5, f0400ccca80dc, and c4ffd50c81631. Each volume is associated with a snapshot (snap-013268d...). The table has columns for ID, Type, Size, IOPS, Throughput, Snapshot, Created, Availability Zone, and Volume state.

ID	Type	Size	IOPS	Throughput	Snapshot	Created	Availability Zone	Volume state
485cb45900f2	gp2	10 GiB	100	-	snap-013268d...	2023/06/06 12:09 GMT+1	us-east-2a	In-use
d555071cef4a5	gp2	10 GiB	100	-	-	2023/06/06 12:13 GMT+1	us-east-2a	In-use
f0400ccca80dc	gp2	10 GiB	100	-	-	2023/06/06 12:13 GMT+1	us-east-2a	In-use
c4ffd50c81631	gp2	10 GiB	100	-	-	2023/06/06 12:14 GMT+1	us-east-2a	In-use

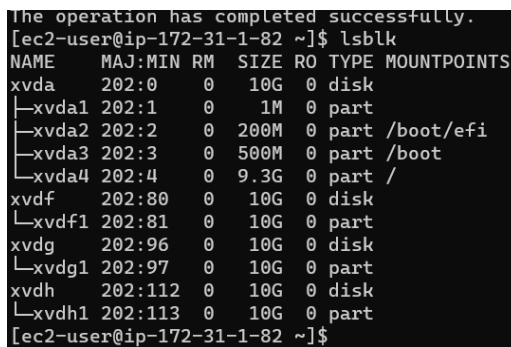
2. Use `df -h` command to see all mounts and free space on your server.



The screenshot shows a terminal window with the output of the `df -h` command. The output lists the file systems and their usage. The partitions `/dev/xvda4`, `/dev/xvda3`, and `/dev/xvda2` are highlighted with a red box. The output is as follows:

```
xvdh 202:112 0 10G 0 disk
[ec2-user@ip-172-31-1-82 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M  0  4.0M   0% /dev
tmpfs           385M  0  385M   0% /dev/shm
tmpfs           154M  4.4M  150M   3% /run
/dev/xvda4       9.4G  1.2G  8.2G  13% /
/dev/xvda3       495M  153M  343M  31% /boot
/dev/xvda2       200M  8.0K  200M   1% /boot/efi
tmpfs            77M  0  77M   0% /run/user/1000
[ec2-user@ip-172-31-1-82 ~]$
```

3. Use `lsblk` utility to view the newly configured partition on each of the 3 disks.



The screenshot shows a terminal window with the output of the `lsblk` command. The output lists the block devices and their partitions. The partitions `xvda1`, `xvda2`, `xvda3`, and `xvda4` are highlighted with a red box. The output is as follows:

```
The operation has completed successfully.
[ec2-user@ip-172-31-1-82 ~]$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda        202:0    0   10G  0 disk
├─xvda1     202:1    0    1M  0 part
├─xvda2     202:2    0  200M  0 part /boot/efi
├─xvda3     202:3    0  500M  0 part /boot
└─xvda4     202:4    0   9.3G  0 part /
xvdf        202:80    0   10G  0 disk
└─xvdf1     202:81    0   10G  0 part
xvdg        202:96    0   10G  0 disk
└─xvdg1     202:97    0   10G  0 part
xvdh        202:112  0   10G  0 disk
└─xvdh1     202:113  0   10G  0 part
[ec2-user@ip-172-31-1-82 ~]$
```

4. Verify that your VG has been created successfully by running `sudo vgs`

```
[ec2-user@ip-172-31-2-145 ~]$ sudo vgcreate vg-webdata /dev/xvda1 /dev/xvda2 /dev/xvda3 /dev/xvda4
Volume group "vg-webdata" successfully created
[ec2-user@ip-172-31-2-145 ~]$ sudo vgs
VG          #PV #LV #SN Attr   VSize   VFree
vg-webdata   3   0   0 wz--n- <29.99g <29.99g
```

5. Verify that your Logical Volume has been created successfully by running `sudo lvs`

```
[ec2-user@ip-172-31-2-145 ~]$ sudo lvs
LV          VG          Attr      LSize   Pool Origin Data%  Meta%  Move Log Cp
y%Sync Convert
apps-lv     vg-webdata  -wi-a----- 14.00g
logs-lv     vg-webdata  -wi-a----- 14.00g
```

6. Verify the entire setup:

`sudo vgdisplay -v #view complete setup - VG, PV, and LV`

`sudo lsblk`

```
[ec2-user@ip-172-31-14-251 ~]$ sudo lsblk
NAME                                MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
xvda                                202:0    0   10G  0 disk
├─xvda1                             202:1    0    1M  0 part
├─xvda2                             202:2    0  200M  0 part /boot/efi
├─xvda3                             202:3    0  500M  0 part /boot
└─xvda4                             202:4    0   9.3G  0 part /
xvdf                                202:80   0   10G  0 disk
└─xvdf1                             202:81   0   10G  0 part
   └─webdata--vg-logs--lv           253:1    0   14G  0 lvm  /var/log
xvdg                                202:96   0   10G  0 disk
└─xvdg1                             202:97   0   10G  0 part
   ├──webdata--vg-apps--lv         253:0    0   14G  0 lvm  /var/www/html
   └─webdata--vg-logs--lv         253:1    0   14G  0 lvm  /var/log
xvdh                                202:112  0   10G  0 disk
└─xvdh1                             202:113  0   10G  0 part
   └─webdata--vg-apps--lv         253:0    0   14G  0 lvm  /var/www/html
```

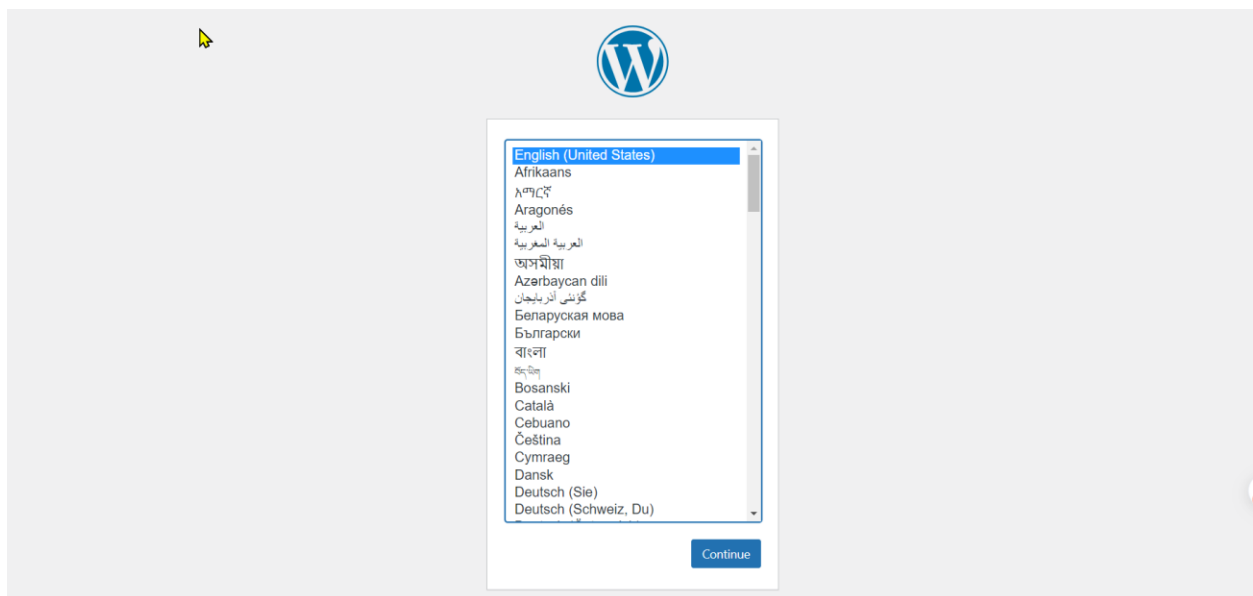
7. Verify your setup by running `df -h`, output must look like this:

```
[ec2-user@ip-172-31-2-145 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0    4.0M   0% /dev
tmpfs           385M   0    385M   0% /dev/shm
tmpfs           154M  4.4M   150M   3% /run
/dev/xvda4       9.4G  1.3G   8.1G  14% /
/dev/xvda3       495M  153M   343M  31% /boot
/dev/xvda2       200M   8.0K   200M   1% /boot/efi
tmpfs           77M    0     77M   0% /run/user/1000
/dev/mapper/vg--webdata-apps--lv 14G   24K   13G   1% /var/www/html
/dev/mapper/vg--webdata-logs--lv 14G  796K   13G   1% /var/log
[ec2-user@ip-172-31-2-145 ~]$
```

B: Step 2 — Prepare the Database Server

```
[ec2-user@ip-172-31-3-94 ~]$ sudo mount /dev/vg-webdata/db-lv /db
[ec2-user@ip-172-31-3-94 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        4.0M   0    4.0M   0% /dev
tmpfs           385M   0    385M   0% /dev/shm
tmpfs           154M  4.4M   150M   3% /run
/dev/xvda4       9.4G  1.3G   8.1G  14% /
/dev/xvda3       495M  153M   343M  31% /boot
/dev/xvda2       200M   8.0K   200M   1% /boot/efi
tmpfs           77M    0     77M   0% /run/user/1000
/dev/mapper/vg--webdata-db--lv 20G   24K   19G   1% /db
[ec2-user@ip-172-31-3-94 ~]$
```

C: Step 3 — Configure WordPress to connect to remote database.



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