# ****Storage Management****

Please make sure you are stating from a ‘clean slate’ by running

/scenariolabs/Storage/resetStorageToOriginal

### Question 1

You are working on a system which has a newly acquired filesystem mounted on /DS1201, the associated Logical Volume being Ora01

The filesystem and data was to have been put in place by a contractor and indeed have been, to an extent. However, sudden budget cuts meant the contractor had to leave before completing the task. You have to finish off the job.

Run the command

/scenariolabs/Storage/Q1

This will set up the scenario. You the department running the weblogic app is complaining that it isn’t working, this has been traced to the lack of access to the database which, in turn, has been traced to the absence of the filesystem.

Try ‘mount /DS1201’. This should work. Alas it fails.

Your job is to get the system to automatically mount /DS1201. The idea is that the filesystem should be available directly after a reboot.

/scenariolabs/Storage/CheckQ1

Will tell you if you have fixed the underlying difficulty.

Geoff’s method

/scenariolabs/Storage/resetStorageToOriginal

/scenariolabs/Storage/Q1

mount /DS1201

grep ‘DS1201’ /etc/fstab

more /etc/fstab

grep ‘DS’ /etc/fstab

grep ‘DS1’ /etc/fstab

grep ‘DS12’ /etc/fstab

grep ‘DS120’ /etc/fstab (NB: this will not work)

looks like DS12O1 is an O not a 0

file /DS1201 (NB: directory exsists)

nano /etc/fstab

rename DS12O1 with DS1201

mount /DS1201

automatic mount

ovando method – don’t work

Tried:

Try: mount /DS1201

Try to mount: [root@ml-refvm-422293 rootvg]# mount -t xfs /dev/rootvg/Ora01 /DS1201

mount: mount point /DS1201 does not exist

check it it was mounted: df -h /DS1201

Filesystem Size Used Avail Use% Mounted on

/dev/mapper/rootvg-Ora01 1014M 33M 982M 4% /DS1201

(NB: looks like it is mounted to the wroung file in the wrong directory)

Try unmount from the file: umount /DS1201

Try again: df -h /DS1201

Filesystem Size Used Avail Use% Mounted on

/dev/mapper/rootvg-rootlv 7.8G 3.2G 4.3G 43% /

### Question 2

To set up the scenario, run the command

/scenariolabs/Storage/Q2

You have a number of machines which have access to shared disks through a Storage Area Array. The shared storage in question appears on this system as the Logical Volume ‘Ora01’.

Normally this LV is used by another machine. That machine has failed due to a power supply problem which will take some time to fix. It has been decided to mount the filesystem/volume on your current machine, which is in the fortunate position of being able, at least, to access the storage. An entry has been added to /etc/fstab and you are ready to mount. Run the command.

mount /DS1201

You can see that it will not mount. You are under time pressure. Please get this filesystem mounted so that the application can be started on this machine. Also, you need to make sure it mounts each time the machine boots. Obviously, since this partition contains data, it cannot be overwritten or rebuilt.

Run repair: xfs\_repair /dev/mapper/rootvg-Ora01

Run: mount /DS1201 (NB: gives wrong fs type or file type)

cat /etc/fstab

Run (to check mount): lsblk –-fs

We find the FSTYPE for the system is not xfs type it is ext4 (NB: rootvg-Ora01 ext4)

nano /etc/fstab

change /dev/rootvg/Ora01 /DS1201 xfs to /dev/rootvg/Ora01 /DS1201 ext4

mount /DS1201

Check mount: df -h /DS1201

### Question 3

There was a sudden power outage which has badly affected a number of crucial systems in the data centre. Sadly, it came at busy time. Actually, the increased power demands due to increasing workloads in the datacentre *caused* a substation to trip out. Set up the scenario with:

/scenariolabs/Storage/Q3 (takes 20-30 seconds to complete)

Please bring the /data filesystem back online as quickly as possible.

My way – I think works

Try (but will not work): mount /data

cat /etc/fstab (NB: will see that /data is in /dev/rootvg/smallVol)

run to fix: xfs\_repair /dev/rootvg/smallVol

run: mount /data

check:

Geoff way

cat /etc/fstab

mount /data

lsblk –-fs

see rootvg-smallVol has no FSTYPE at all

xfs\_repair /dev/rootvg/smallVol

mount/data

ls /data 🡪 lost+found

cd /data/lost+found (NB: this lost+found is the file we could not access before).

### Question 4

Victim of its own success the trial of a new Oracle database has lead to the /DS1201 filesystem filling up, bringing a popular piece of software to its knees. It can still be used for read purposes but no more can be written. Management do NOT want the database to be taken offline, so no downtime. They do want you to sort out the space problem and bring the space usage to between 10% - 20%.

Set up the scenario with:

/scenariolabs/Storage/Q4

Df -h

Can see DS1201 is 100% used

Lvextend -l +200M /dev/rootvg/Ora01

Xfs\_grwfs /dev/rootvg/Ora01

Df -h

Can see same problem 100% used

Lvextend -l +1000M /dev/rootvg/Ora01