

Module-2: EC2 and EFS Assignment – 3

The Assignment

Create an EFS and connect it to 3 different EC2 instances. Make sure that all instances have different Operating System. For instance, Ubuntu, Red Hat Linus and Amazon Linux 2.

Submission

Proof of EFS attached to Amazon Linux instance.

```
harisharan@harisharan-home-pc -
- ( ) / Amazon Linux 2 AMI
https://aws.amazon.com/amazon-linux-2/
1 package(s) needed for security, out of 14 available
run 'sudo yum update' to apply all updates.
[ec2-user@ip-172-31-1-39 ~]$ sudo mkdir /mnt/efs
[ec2-user@ip-172-31-1-39 ~]$ sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsz=1048576,hard,timeo=600,retrans=2,noresvport fs-037144daa2fbdcd.efs.us-east-1.amazonaws.com:/ /mnt/efs
Filesystem                                Size  Used Avail Use% Mounted on
devtmpfs                                 482M   0  482M   0% /dev
tmpfs                                    492M   0  492M   0% /dev/shm
tmpfs                                    492M 404K  491M   1% /run
tmpfs                                    492M   0  492M   0% /sys/fs/cgroup
/dev/xvda1                               8.0G  1.5G  6.6G   1% /
tmpfs                                     50M   0   50M   0% /run/user/1000
fs-037144daa2fbdcd.efs.us-east-1.amazonaws.com:/ 8.0E  0.0E   0% /mnt/efs
[ec2-user@ip-172-31-1-39 ~]$ ls /mnt/efs
file
tmp
[ec2-user@ip-172-31-1-39 ~]$ mount
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
devtmpfs on /dev type devtmpfs (rw,nosuid,size=492984k,nr_inodes=123246,nodev=755)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev)
tmpfs on /devpts type devpts (rw,nosuid,noexec,relatime,gid=5,node=620,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,nodev,nodev=755)
tmpfs on /sys/fs/cgroup type tmpfs (ro,nosuid,nodev,noexec,nodev=755)
cgroup on /sys/fs/cgroup/systemd type cgroup (rw,nosuid,nodev,noexec,relatime,xattr,release_agent=/usr/lib/systemd/systemd-cgroups-agent,name=systemd)
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime)
cgroup on /sys/fs/cgroup/hugetlb type cgroup (rw,nosuid,nodev,noexec,relatime,hugetlb)
cgroup on /sys/fs/cgroup/net_cls,net_prio type cgroup (rw,nosuid,nodev,noexec,relatime,net_cls,net_prio)
cgroup on /sys/fs/cgroup/bkio type cgroup (rw,nosuid,nodev,noexec,relatime,bkio)
cgroup on /sys/fs/cgroup/cpuset type cgroup (rw,nosuid,nodev,noexec,relatime,cpuset)
cgroup on /sys/fs/cgroup/perf_event type cgroup (rw,nosuid,nodev,noexec,relatime,perf_event)
cgroup on /sys/fs/cgroup/devices type cgroup (rw,nosuid,nodev,noexec,relatime,devices)
cgroup on /sys/fs/cgroup/pids type cgroup (rw,nosuid,nodev,noexec,relatime,pids)
cgroup on /sys/fs/cgroup/cpuset type cgroup (rw,nosuid,nodev,noexec,relatime,cpuset)
cgroup on /sys/fs/cgroup/frezer type cgroup (rw,nosuid,nodev,noexec,relatime,frezer)
cgroup on /sys/fs/cgroup/memory type cgroup (rw,nosuid,nodev,noexec,relatime,memory)
/dev/xvda1 on / type xfs (rw,relatime,attr2,inode64,noquota)
systemd-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=21,pgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=12248)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime,pagesize=2M)
nfs on /dev/nfs type nfs (rw,relatime)
debugfs on /sys/kernel/debug type debugfs (rw,relatime)
nfs on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw,relatime)
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,size=100016k,nodev=700,uid=1000,gid=1000)
fs-037144daa2fbdcd.efs.us-east-1.amazonaws.com:/ on /mnt/efs type nfs4 (rw,relatime,vers=4.1,rsize=1048576,wsz=1048576,namlen=255,hard,nresvport,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.31.1.39,local_lock=none,addr=172.31.14.55)
tmpfs on /run/user/0 type tmpfs (rw,nosuid,nodev,relatime,size=100016k,nodev=700)
[ec2-user@ip-172-31-1-39 ~]$ Connection to ec2-3-90-251-191.compute-1.amazonaws.com closed by remote host.
Connection to ec2-3-90-251-191.compute-1.amazonaws.com closed.
(base) harisharan@harisharan-home-pc: $
```

Proof of EFS attached to RHEL instance.

```
harisharan@harisharan-home-pc -
Running scriptlet: python3-3.6.8-2.module+el8.1.0+3334+Scb623d7.x86_64 3/12
Installing : python3-pip-9.0.3-19.el8.noarch 4/12
Installing : libverto-libevent-0.3.0-5.el8.x86_64 5/12
Installing : gssproxy-0.8.0-19.el8.x86_64 6/12
Running scriptlet: gssproxy-0.8.0-19.el8.x86_64 6/12
Installing : stunnel-5.56-5.el8_3.x86_64 7/12
Running scriptlet: stunnel-5.56-5.el8_3.x86_64 7/12
Running scriptlet: rpcbind-1.2.5-8.el8.x86_64 8/12
Installing : rpcbind-1.2.5-8.el8.x86_64 8/12
Running scriptlet: rpcbind-1.2.5-8.el8.x86_64 9/12
Installing : quota-nls-1:4.04-12.el8.noarch 10/12
Installing : quota-1:4.04-12.el8.x86_64 11/12
Running scriptlet: nfs-utils-1:2.3.3-41.el8_4.3.x86_64 11/12
Installing : nfs-utils-1:2.3.3-41.el8_4.3.x86_64 11/12
Running scriptlet: nfs-utils-1:2.3.3-41.el8_4.3.x86_64 12/12
Installing : amazon-efs-utils-1.31.2-1.el8.noarch 12/12
Running scriptlet: amazon-efs-utils-1.31.2-1.el8.noarch 12/12
Verifying : python3-pip-9.0.3-19.el8.noarch 1/12
Verifying : python3-3.6.8-2.module+el8.1.0+3334+Scb623d7.x86_64 2/12
Verifying : quota-nls-1:4.04-12.el8.noarch 3/12
Verifying : rpcbind-1.2.5-8.el8.x86_64 4/12
Verifying : stunnel-5.56-5.el8_3.x86_64 5/12
Verifying : libverto-libevent-0.3.0-5.el8.x86_64 6/12
Verifying : quota-1:4.04-12.el8.x86_64 7/12
Verifying : gssproxy-0.8.0-19.el8.x86_64 8/12
Verifying : python3-setuputils-39.2.0-6.el8.noarch 9/12
Verifying : keyutils-1.5.10-6.el8.x86_64 10/12
Verifying : nfs-utils-1:2.3.3-41.el8_4.3.x86_64 11/12
Verifying : amazon-efs-utils-1.31.2-1.el8.noarch 12/12
Installed products updated.

Installed:
amazon-efs-utils-1.31.2-1.el8.noarch gssproxy-0.8.0-19.el8.x86_64 keyutils-1.5.10-6.el8.x86_64 libverto-libevent-0.3.0-5.el8.x86_64 nfs-utils-1:2.3.3-41.el8_4.3.x86_64
python3-pip-9.0.3-19.el8.noarch python3-setuputils-39.2.0-6.el8.noarch python3-3.6.8-2.module+el8.1.0+3334+Scb623d7.x86_64 quota-1:4.04-12.el8.x86_64 quota-nls-1:4.04-12.el8.noarch
rpcbind-1.2.5-8.el8.x86_64 stunnel-5.56-5.el8_3.x86_64

Complete!
[ec2-user@ip-172-31-56-38 efs-utills] sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsize=1048576,hard,timeo=600,retrans=2,noresvport fs-037144daa02fbdcd.efs.us-east-1.amazonaws.com:/ /mnt/efs
[ec2-user@ip-172-31-56-38 efs-utills] df -h
Filesystem            Size  Used Avail Use% Mounted on
devtmpfs              377M   0  377M   0% /dev
tmpfs                 404M   0  404M   0% /dev/shm
tmpfs                 404M  11M  393M   3% /run
tmpfs                 404M   0  404M   0% /sys/fs/cgroup
/dev/xvda2             18G  1.5G   8.6G  15% /
tmpfs                  81M   0   81M   0% /run/user/1000
fs-037144daa02fbdcd.efs.us-east-1.amazonaws.com:/ 8.4E   0  8.4E   0% /mnt/efs
[ec2-user@ip-172-31-56-38 efs-utills] touch /mnt/efs/file.temp
touch: cannot touch '/mnt/efs/file.temp': Permission denied
[ec2-user@ip-172-31-56-38 efs-utills] sudo touch /mnt/efs/file.temp
[ec2-user@ip-172-31-56-38 efs-utills] Connection to ec2-35-173-177-36.compute-1.amazonaws.com closed by remote host.
Connection to ec2-35-173-177-36.compute-1.amazonaws.com closed.
(base) harisharan@harisharan-home-pc -
```

Proof of EFS attached to Ubuntu instance.

```
hariharan@hariharan-home-pc: -
hariharan@hariharan-home-pc: -
hariharan@hariharan-home-pc: -
Selecting previously unselected package nfs-common.
Preparing to unpack .../5-nfs-common_1.3.1-3.4-2-subuntu3.4_amd64.deb ...
Unpacking nfs-common (1:1.3.4-2-subuntu3.4) ...
Setting up libtirpc-common (1.2.5-1) ...
Setting up keyutils (1.6-6ubuntu1) ...
Setting up libnfsdmap2-amd64 (0.23-5-subuntu1) ...
Setting up libtirpc3:amd64 (1.2.5-1) ...
Setting up rpcbind (1.2.5-8) ...
Created symlink /etc/systemd/system/multi-user.target.wants/rpcbind.service → /lib/systemd/system/rpcbind.service.
Created symlink /etc/systemd/system/sockets.target.wants/rpcbind.socket → /lib/systemd/system/rpcbind.socket.
Setting up nfs-common (1:1.3.4-2-subuntu3.4) ...
Creating config file /etc/ldmapd.conf with new version
Adding system user 'statd' (UID 114) ...
Adding new user 'statd' (UID 114) with group 'nogroup' ...
Not creating home directory '/var/lib/nfs'.
Created symlink /etc/systemd/system/multi-user.target.wants/nfs-client.target → /lib/systemd/system/nfs-client.target.
Created symlink /etc/systemd/system/remote-fs.target.wants/nfs-client.target → /lib/systemd/system/nfs-client.target.
nfs-utils.service is a disabled or a static unit, not starting it.
Processing triggers for systemd (245.4-4ubuntu3.13) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
ubuntu@ip-172-31-31-88: ~$ mkdir /mnt/efs
mkdir: cannot create directory '/mnt/efs': Permission denied
ubuntu@ip-172-31-31-88: ~$ sudo mkdir /mnt/efs
ubuntu@ip-172-31-31-88: ~$ df -h
df: invalid option -- 'h'
Try 'df --help' for more information.
ubuntu@ip-172-31-31-88: ~$ df -h

```

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/root	7.7G	1.4G	6.3G	18%	/
devtmpfs	482M	0	482M	0%	/dev
tmpfs	487M	0	487M	0%	/dev/shm
tmpfs	98M	816K	97M	1%	/run
tmpfs	5.0M	0	5.0M	0%	/run/lock
tmpfs	487M	0	487M	0%	/sys/fs/cgroup
/dev/loop0	25M	25M	0	100%	/snap/amazon-ssn-agent/4046
/dev/loop1	56M	56M	0	100%	/snap/core18/2118
/dev/loop2	62M	62M	0	100%	/snap/core20/1169
/dev/loop3	68M	68M	0	100%	/snap/lxd/21545
/dev/loop4	33M	33M	0	100%	/snap/snapd/13648
tmpfs	98M	0	98M	0%	/run/user/1000
fs-037144daa2fbdcd.efs.us-east-1.amazonaws.com/	8.0E	0	8.0E	0%	/mnt/efs

```
file.tmp
ubuntu@ip-172-31-31-88: ~$ ls /mnt/efs
connection to ec2-3-82-289-159.compute-1.amazonaws.com closed by remote host.
connection to ec2-3-82-289-159.compute-1.amazonaws.com closed.
(base) hariharan@hariharan-home-pc: ~$
```