Installing dependencies for OpenStack Swift

```
debjyotisarkar@sumonta-22341019:~$ sudo apt-get install git curl gcc memcached
rsync sqlite3 xfsprogs git-core libffi-dev python-setuptools
[sudo] password for debjyotisarkar:
Reading package lists... Done
```

```
debjyotisarkar@sumonta-22341019:~$ sudo apt-get install python-coverage python-
dev python-nose python-simplejson python-xattr python- eventlet python-greenlet
 python-pastedeploy python-netifaces python-pip python-dnspython python-mock
```

Installing the Swift CLI

```
debjyotisarkar@sumonta-22341019:~$ cd /opt
debjyotisarkar@sumonta-22341019:/opt$ git clone https://github.com/openstack/py
thon-swiftclient.git
```

```
debjyotisarkar@sumonta-22341019:/opt$ cd /opt/python-swiftclient;
debjyotisarkar@sumonta-22341019:/opt/python-swiftclient$ sudo pip install -r re
quirements.txt;
```

```
debjyotisarkar@sumonta-22341019:/opt/python-swiftclient$ python3 setup.py install;
```

Installing Swift

```
debjyotisarkar@sumonta-22341019:/opt$ git clone https://github.com/openstack/swift
.git
```

```
debjyotisarkar@sumonta-22341019:/opt$ cd /opt/swift ;
debjyotisarkar@sumonta-22341019:/opt/swift$ sudo python setup.py install;
```

Copying the swift configuration files

```
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo mkdir -p /etc/swift
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ cd /opt/swift/etc
```

```
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo cp account-server.conf-sample
 /etc/swift/account-server.conf
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo cp container-server.\conf-sam
ple /etc/swift/container-server.conf
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo cp object-server.conf-sample
/etc/swift/object-server.conf
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo cp proxy-server.conf-sample /
etc/swift/proxy-server.conf
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo cp drive-audit.conf-sample /e
tc/swift/drive-audit.conf
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo cp swift.conf-sample /etc/swi
ft/swift.conf
```

For mounting drives, we first create directories and name them using the device's labels

```
debjyotisarkar@sumonta-22341019:/$ sudo mkdir -p /srv/node/d1
debjyotisarkar@sumonta-22341019:/$ sudo mkdir -p /srv/node/d2
debjyotisarkar@sumonta-22341019:/$ sudo mkdir -p /srv/node/d3
```

Run the command for the drives to be mounted

```
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo mkfs.xfs -f -L d3 /dev/vdd
meta-data=/dev/vdd               isize=512    agcount=4, agsize=393216 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=0, rmapbt=0, reflink=0
data     =                       bsize=4096   blocks=1572864, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0 ftype=1
log      =internal log           bsize=4096   blocks=2560, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096   blocks=0, rtextents=0
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo mount -t xfs -o noatime,nodiratime,logbufs
=8 -L d3 /srv/node/d3
```

```
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo mkfs.xfs -f -L d2 /dev/vdb
meta-data=/dev/vdb               isize=512    agcount=4, agsize=393216 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=0, rmapbt=0, reflink=0
data     =                       bsize=4096   blocks=1572864, imaxpct=25
         =                       sunit=0      swidth=0 blks
naming   =version 2              bsize=4096   ascii-ci=0 ftype=1
log      =internal log           bsize=4096   blocks=2560, version=2
         =                       sectsz=512   sunit=0 blks, lazy-count=1
realtime =none                   extsz=4096   blocks=0, rtextents=0
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo mount -t xfs -o noatime,nodiratime,logbufs
=8 -L d2 /srv/node/d2
```

```
debjyotisarkar@sumonta-22341019:/opt/swift/etc$ sudo mount -t xfs -o noatime,nodiratime,logbufs
=8 -L d1 /srv/node/d1
```

Adding a new user named Swift and giving it ownership to the directories

```
debjyotisarkar@sumonta-22341019:~$ sudo useradd swift
[sudo] password for debjyotisarkar:
```

```
debjyotisarkar@sumonta-22341019:~$ sudo chown -R swift:swift /srv/node
debjyotisarkar@sumonta-22341019:~$
```

We create a script named start_swift.conf and have the following commands and make sure the script is executable using chmod +x

Open | start_swift.conf — /etc/init

```
description "mount swift drives"
start on runlevel [234]
stop on runlevel [0156]
exec /opt/swift/bin/mount_devices
```

Open | mount_devices — /opt/swift

```
mount -t xfs -o noatime,nodiratime,logbufs=8 -L d1 /srv/node/d1
mount -t xfs -o noatime,nodiratime,logbufs=8 -L d2 /srv/node/d2
mount -t xfs -o noatime,nodiratime,logbufs=8 -L d3 /srv/node/d3
```

Next, we use the mount command to mount the drives

```
debjyotisarkar@sumonta-22341019:~$ mount
sysfs on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
udev on /dev type devtmpfs (rw,nosuid,relatime,size=1989740k,nr_inode
de=755)
devpts on /dev/pts type devpts (rw,nosuid,noexec,relatime,gid=5,mode=
```

We create ring using the following commands using part power 3, replicas 3 and min_part_hours 1

```
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder account.buil
der create 3 3 1
[sudo] password for debjyotisarkar:
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder container.bu
ilder create 3 3 1
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder object.build
er create 3 3 1
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder object-n.bui
lder create 3 3 1
```

Next, we add the builder files to the devices

```
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder account.builder add r1z1-
127.0.0.1:6002/d1 100
Device d0r1z1-127.0.0.1:6002R127.0.0.1:6002/d1_"" with 100.0 weight got id 0
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder container.builder add r1z
1-127.0.0.1:6001/d1 100
Device d0r1z1-127.0.0.1:6001R127.0.0.1:6001/d1_"" with 100.0 weight got id 0
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder object.builder add r1z1-1
27.0.0.1:6000/d1 100
Device d0r1z1-127.0.0.1:6000R127.0.0.1:6000/d1_"" with 100.0 weight got id 0
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder account.builder add r1z1-
127.0.0.1:6002/d2 100
Device d1r1z1-127.0.0.1:6002R127.0.0.1:6002/d2_"" with 100.0 weight got id 1
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder container.builder add r1z
1-127.0.0.1:6001/d2 100
Device d1r1z1-127.0.0.1:6001R127.0.0.1:6001/d2_"" with 100.0 weight got id 1
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder object.builder add r1z1-1
27.0.0.1:6000/d2 100
Device d1r1z1-127.0.0.1:6000R127.0.0.1:6000/d2_"" with 100.0 weight got id 1
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder account.builder add r1z1-
127.0.0.1:6002/d3 100
Device d2r1z1-127.0.0.1:6002R127.0.0.1:6002/d3_"" with 100.0 weight got id 2
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder container.builder add r1z
1-127.0.0.1:6001/d3 100
Device d2r1z1-127.0.0.1:6001R127.0.0.1:6001/d3_"" with 100.0 weight got id 2
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder object.builder add r1z1-1
27.0.0.1:6000/d3 100
Device d2r1z1-127.0.0.1:6000R127.0.0.1:6000/d3_"" with 100.0 weight got id 2
debjyotisarkar@sumonta-22341019:/etc/swift$
```

After adding the devices, we rebalance the files and create them

```
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder account.builder rebalance
Reassigned 24 (300.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder container.builder rebalan
ce
Reassigned 24 (300.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
debjyotisarkar@sumonta-22341019:/etc/swift$ sudo swift-ring-builder object.builder rebalance
Reassigned 24 (300.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
debjyotisarkar@sumonta-22341019:/etc/swift$
```

This creates three files in /etc/swift named account.ring.gz, container.ring.gz, object.ring.gz

I created a new file named 0-swift.conf and put the command in it

Next, I created a new log directory and set the permissions accordingly

```
debjyotisarkar@sumonta-22341019:/etc/rsyslog.d$ sudo chown -R syslog.adm /var/log/swift
debjyotisarkar@sumonta-22341019:/etc/rsyslog.d$ sudo chmod -R g+w /var/log/swift
debjyotisarkar@sumonta-22341019:/etc/rsyslog.d$
```

I edited the proxy server config files and edited the suffix and prefix files and added a new user account and changed the account management and account auto create booleans

```
# once a cluster has been deployed.
# Use only printable chars (python -c "import string; print(string.printa

swift_hash_path_suffix = RzUfDdu32L7J2ZBDYgsD6YI3Xie7hTVO8/oaQbpTbI8=
swift_hash_path_prefix = OZ1uQJNjJzTuFaM8X3v%fsJ1iR#F8wJjf9uhRiABevQ4
```

```
user_myaccount_me = hello .admin .reseller_admin
```

```
# allow_account_management = true
#
# If set to 'true' authorized accounts that do not ye
# cluster will be automatically created.
# account_autocreate = true
#
```

Following that, I tried authenticating the account but when I tried verifying account access I got 503 error and I could not complete the rest of the assignment due to the lack of time. I plan on finishing this assignment during the semester break.

```
debjyotisarkar@sumonta-22341019:/etc/swift$ curl -v -H 'X-Auth-User: myaccount:me' -H 'X-Auth
-Key: hello' http://localhost:8080/auth/v1.0/
*   Trying 127.0.0.1...
* TCP_NODELAY set
* Connected to localhost (127.0.0.1) port 8080 (#0)
> GET /auth/v1.0/ HTTP/1.1
> Host: localhost:8080
> User-Agent: curl/7.58.0
> Accept: */*
> X-Auth-User: myaccount:me
> X-Auth-Key: hello
>
< HTTP/1.1 200 OK
< Content-Type: text/html; charset=UTF-8
< X-Auth-Token: AUTH_tkdc624a7cb6654e14acb47316ed9613f7
< X-Storage-Token: AUTH_tkdc624a7cb6654e14acb47316ed9613f7
< X-Auth-Token-Expires: 86399
< X-Storage-Url: http://localhost:8080/v1/AUTH_myaccount
< Content-Length: 0
< X-Trans-Id: tx1f8adf4396cc4bdb97a99-0066f9367f
< X-Openstack-Request-Id: tx1f8adf4396cc4bdb97a99-0066f9367f
< Date: Sun, 29 Sep 2024 11:14:07 GMT
<
* Connection #0 to host localhost left intact
```