Final Assignment

Ilmi Tabassum

ID 17101130

Course: CSE491

Sec: 02

Summer-2020

Submitted to: Jannatun Noor (JNM)

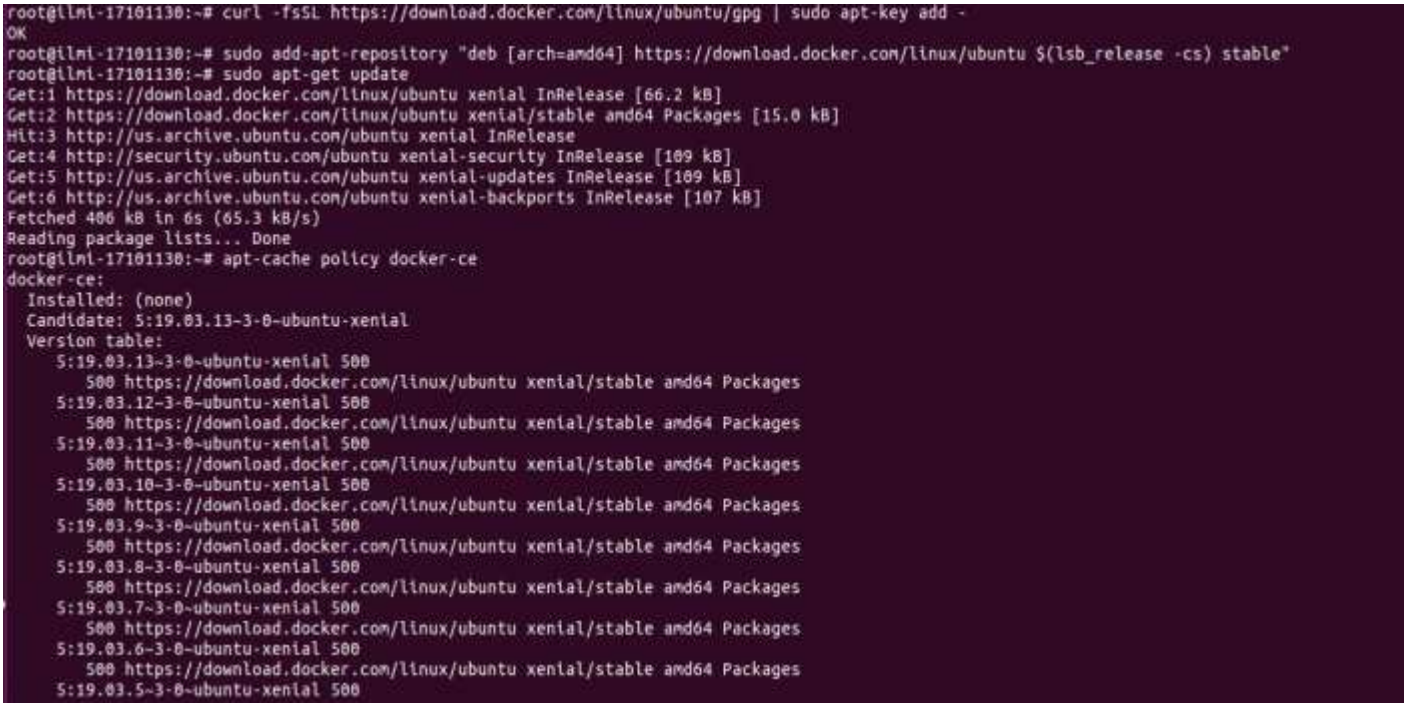
Install Docker on Ubuntu 16.04

Installing Docker repository

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add –

sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"

apt-cache policy docker-ce



install Docker:

sudo apt-get install -y docker-ce

Docker should now be installed, the daemon started, and the process enabled to start on boot. Check that it’s running:

sudo systemctl status docker

```
root@ilml-17101130:~# sudo systemctl status docker
● docker.service - Docker Application Container Engine
   Loaded: loaded (/lib/systemd/system/docker.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2020-09-25 11:07:44 PDT; 28min ago
     Docs: https://docs.docker.com
 Main PID: 7338 (dockerd)
    Tasks: 18
   Memory: 42.9M
      CPU: 1.062s
   CGroup: /system.slice/docker.service
           └─7338 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

Sep 25 11:07:41 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:41.767072125-07:00" level=warning msg="Your kernel does not support swap m
Sep 25 11:07:41 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:41.767125223-07:00" level=warning msg="Your kernel does not support cgroup
Sep 25 11:07:41 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:41.767133255-07:00" level=warning msg="Your kernel does not support cgroup
Sep 25 11:07:41 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:41.767351407-07:00" level=info msg="Loading containers: start."
Sep 25 11:07:42 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:42.728430251-07:00" level=info msg="Default bridge (docker0) is assigned w
Sep 25 11:07:43 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:43.695205897-07:00" level=info msg="Loading containers: done."
Sep 25 11:07:44 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:44.476746427-07:00" level=info msg="Docker daemon" commit=4484c46d9d graph
Sep 25 11:07:44 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:44.476845028-07:00" level=info msg="Daemon has completed initialization"
Sep 25 11:07:44 ilml-17101130 dockerd[7338]: time="2020-09-25T11:07:44.686120812-07:00" level=info msg="API listen on /var/run/docker.sock"
Sep 25 11:07:44 ilml-17101130 systemd[1]: Started Docker Application Container Engine.
```

```
root@ilml-17101130:~# sudo apt-get install software-properties-common
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  python3-software-properties software-properties-gtk
The following packages will be upgraded:
  python3-software-properties software-properties-common
  software-properties-gtk
3 upgraded, 0 newly installed, 0 to remove and 71 not upgraded.
Need to get 77.1 kB of archives.
After this operation, 0 B of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 software-properties-common all 0.96.20.10 [9,504 B]
Get:2 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 software-properties-gtk all 0.96.20.10 [47.4 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu xenial-updates/main amd64 python3-software-properties all 0.96.20.10 [20.2 kB]
Fetched 77.1 kB in 11s (6,665 B/s)
(Reading database ... 177269 files and directories currently installed.)
Preparing to unpack .../software-properties-common_0.96.20.10_all.deb ...
Unpacking software-properties-common (0.96.20.10) over (0.96.20.9) ...
Preparing to unpack .../software-properties-gtk_0.96.20.10_all.deb ...
Unpacking software-properties-gtk (0.96.20.10) over (0.96.20.9) ...
Preparing to unpack .../python3-software-properties_0.96.20.10_all.deb ...
Unpacking python3-software-properties (0.96.20.10) over (0.96.20.9) ...
Processing triggers for dbus (1.10.6-1ubuntu3.6) ...
Processing triggers for man-db (2.7.5-1) ...
```

docker run hello-world

```
root@ilml-17101130:~# docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
0e03bdcc26d7: Pull complete
Digest: sha256:4cf9c47f86df71d48364001ede3a4fcd85ae80ce02ebad74156906caff5378bc
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/
```

docker run ubuntu

```
root@ilmi-17101130:~# docker run ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
e6ca3592b144: Pull complete
534a5505201d: Pull complete
990916bd23bb: Pull complete
Digest: sha256:cbcf86d7781dbb3a6aa2bcea25403f6b8b443e20b9959165cf52d2cc9608e4b9
Status: Downloaded newer image for ubuntu:latest
root@ilmi-17101130:~# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
ubuntu              latest              bb0eaf4eee00        8 days ago          72.9MB
hello-world         latest              bf756fb1ae65        8 months ago        13.3kB
root@ilmi-17101130:~# docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS               NAMES
root@ilmi-17101130:~# sudo docker container ls -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS                      PORTS               NAMES
af5cb017d3eb        ubuntu              "/bin/bash"         8 minutes ago       Exited (0) 8 minutes ago                        gracious_robin
son
3d54735fd2a3        hello-world         "/hello"            14 minutes ago      Exited (0) 13 minutes ago                       vigorous_archi
medes
```

```
root@ilmi-17101130:~# docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS                      PORTS               NAMES
af5cb017d3eb        ubuntu              "/bin/bash"         9 minutes ago       Exited (0) 9 minutes ago                        gracious_robin
son
3d54735fd2a3        hello-world         "/hello"            14 minutes ago      Exited (0) 14 minutes ago                       vigorous_archi
medes
```

docker search ubuntu

```
root@ilmi-17101130:~# docker search ubuntu
NAME                                                      DESCRIPTION                                     STARS               OFFICIAL
    AUTOMATED
ubuntu                                                    Ubuntu is a Debian-based Linux operating sys…   11342               [OK]

dorowu/ubuntu-desktop-lxde-vnc                            Docker image to provide HTML5 VNC interface …   465
    [OK]
rastasheep/ubuntu-sshd                                    Dockerized SSH service, built on top of offi…   247
    [OK]
consol/ubuntu-xfce-vnc                                    Ubuntu container with "headless" VNC session…   226
    [OK]
ubuntu-upstart                                            Upstart is an event-based replacement for th…   110                 [OK]

ansible/ubuntu14.04-ansible                               Ubuntu 14.04 LTS with ansible                   98
    [OK]
neurodebian                                               NeuroDebian provides neuroscience research s…   78                  [OK]

1and1internet/ubuntu-16-nginx-php-phpmyadmin-mysql-5      ubuntu-16-nginx-php-phpmyadmin-mysql-5          50
    [OK]
ubuntu-debootstrap                                        debootstrap --variant=minbase --components=m…   44                  [OK]

nuagebec/ubuntu                                           Simple always updated Ubuntu docker images w…   24
    [OK]
i386/ubuntu                                               Ubuntu is a Debian-based Linux operating sys…   24

1and1internet/ubuntu-16-apache-php-5.6                    ubuntu-16-apache-php-5.6                        14
    [OK]
1and1internet/ubuntu-16-apache-php-7.0                    ubuntu-16-apache-php-7.0                        13
    [OK]
1and1internet/ubuntu-16-nginx-php-phpmyadmin-mariadb-10   ubuntu-16-nginx-php-phpmyadmin-mariadb-10       11
    [OK]
1and1internet/ubuntu-16-nginx-php-5.6                     ubuntu-16-nginx-php-5.6                         8
    [OK]
```

Docker images:

```
root@ilmi-17101130:~# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
ubuntu              latest              bb0eaf4eee00        8 days ago          72.9MB
hello-world         latest              bf756fb1ae65        8 months ago        13.3kB
```

Sudo docker pull swift

```
root@ilmi-17101130:~# sudo docker pull swift
Using default tag: latest
latest: Pulling from library/swift
5d9821c94847: Pull complete
a610eae58dfc: Pull complete
a40e0eb9f140: Pull complete
647632863021: Pull complete
57e6349e03b6: Pull complete
Digest: sha256:9dcced8a4c6a56b1f718d1cccd4df20401a460a9f99d6fce30fe74f3ee40aadd
Status: Downloaded newer image for swift:latest
docker.io/library/swift:latest
```

Creating swift docker container

```
root@ilmi-17101130:~# docker run  -it --name ilmi_swift swift /bin/bash
root@9f0d50903cdd:/# docker start ilmi_swift
```

Docker ps -a

```
root@ilmi-17101130:~# docker ps -a
CONTAINER ID        IMAGE               COMMAND             CREATED
STATUS                      PORTS               NAMES
9f0d50903cdd        swift               "/bin/bash"         50 minutes ago
Exited (255) 3 minutes ago                      ilmi_swift
af5cb017d3eb        ubuntu              "/bin/bash"         2 hours ago
Exited (0) 2 hours ago                          gracious_robinson
3d54735fd2a3        hello-world         "/hello"            2 hours ago
Exited (0) 2 hours ago                          vigorous_archimedes
```

Installing updates inside the container

```
root@9f0d50903cdd:/# apt-get install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 21 not upgraded.
Need to get 194 kB of archives.
After this operation, 803 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu bionic/main amd64 net-tools amd64 1.60+git20161116.90da8a0-1ubuntu1 [194 kB]
Fetched 194 kB in 7s (28.3 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package net-tools.
(Reading database ... 17797 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20161116.90da8a0-1ubuntu1_amd64.deb ...
Unpacking net-tools (1.60+git20161116.90da8a0-1ubuntu1) ...
Setting up net-tools (1.60+git20161116.90da8a0-1ubuntu1) ...
```

```
root@9f0d50903cdd:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:4 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [10.1 kB
Get:5 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:6 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [907 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]
Get:9 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [1115 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.3 MB]
Get:11 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [126 kB
Get:12 http://archive.ubuntu.com/ubuntu bionic/restricted amd64 Packages [13.5 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [146 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1434 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [1406 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [33.9 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [8432 B]
Get:18 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [8286 B]
Fetched 18.6 MB in 1min 5s (287 kB/s)
```

Swift Installation inside Container

```
apt-get install curl gcc memcached rsync sqlite3 xfsprogs \
git-core libffi-dev python-setuptools \
liberasurecode-dev libssl-dev
```

```
root@9f0d50903cdd:~# apt-get install curl gcc memcached rsync sqlite3 xfsprogs \
> git-core libffi-dev python-setuptools \
> liberasurecode-dev libssl-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'git' instead of 'git-core'
gcc is already the newest version (4:7.4.0-1ubuntu2.3).
gcc set to manually installed.
git is already the newest version (1:2.17.1-1ubuntu0.7).
The following additional packages will be installed:
  liberasurecode1 libevent-2.1-6 libpopt0 libpython-stdlib libreadline5 python python-minimal python-pkg-resources python2.7
  python2.7-minimal
Suggested packages:
  libisal2 liberasure2 libssl-doc libcache-memcached-perl libmemcached libanyevent-perl libyaml-perl libterm-readkey-perl python-doc
  python-tk python-setuptools-doc python2.7-doc binfmt-support openssh-server sqlite3-doc xfsdump acl attr quota
The following NEW packages will be installed:
  curl liberasurecode-dev liberasurecode1 libevent-2.1-6 libffi-dev libpopt0 libpython-stdlib libreadline5 libssl-dev memcached python
  python-minimal python-pkg-resources python-setuptools python2.7 python2.7-minimal rsync sqlite3 xfsprogs
0 upgraded, 19 newly installed, 0 to remove and 21 not upgraded.
Need to get 6257 kB of archives.
After this operation, 24.1 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 python2.7-minimal amd64 2.7.17-1~18.04ubuntu1.1 [1303 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic/main amd64 python-minimal amd64 2.7.15~rc1-1 [28.1 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 python2.7 amd64 2.7.17-1~18.04ubuntu1.1 [240 kB]
```

```
apt-get install python-coverage python-dev python-nose \
python-xattr python-eventlet \
python-greenlet python-pastedeploy \
python-netifaces python-pip python-dnspython \
python-mock
```

Install the Swift command-line interface (CLI) from GitHub

cd /opt
git clone https://github.com/openstack/python-swiftclient.git

```
cd python-swiftclient
git status
git checkout stable/train
git status
```

```
root@9f0d50903cdd:~# cd /opt
root@9f0d50903cdd:/opt# git clone https://github.com/openstack/python-swiftclient.git
Cloning into 'python-swiftclient'...
remote: Enumerating objects: 138, done.
remote: Counting objects: 100% (138/138), done.
remote: Compressing objects: 100% (98/98), done.
remote: Total 5505 (delta 68), reused 94 (delta 39), pack-reused 5367
Receiving objects: 100% (5505/5505), 3.20 MiB | 1.82 MiB/s, done.
Resolving deltas: 100% (3731/3731), done.
root@9f0d50903cdd:/opt# cd /opt/python-swiftclient;
root@9f0d50903cdd:/opt/python-swiftclient# git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
root@9f0d50903cdd:/opt/python-swiftclient# git checkout stable/train
Branch 'stable/train' set up to track remote branch 'stable/train' from 'origin'.
Switched to a new branch 'stable/train'
root@9f0d50903cdd:/opt/python-swiftclient# git status
On branch stable/train
Your branch is up to date with 'origin/stable/train'.

nothing to commit, working tree clean
```

pip install -r requirements.txt

```
root@9f0d50903cdd:/opt/python-swiftclient# pip install -r requirements.txt
Collecting futures>=3.0.0 (from -r requirements.txt (line 1))
  Downloading https://files.pythonhosted.org/packages/d8/a6/f46ae3f1da0cd4361c344888f59ec2f5785e69c872e175a748ef6071cdb5/futu
res-3.3.0-py2-none-any.whl
Collecting requests>=1.1.0 (from -r requirements.txt (line 2))
  Downloading https://files.pythonhosted.org/packages/45/1e/0c169c6a5381e241ba7404532c16a21d86ab872c9bed8bdcd4c423954103/requ
ests-2.24.0-py2.py3-none-any.whl (61kB)
    100% |################################| 71kB 218kB/s
Requirement already satisfied: six>=1.9.0 in /usr/lib/python2.7/dist-packages (from -r requirements.txt (line 3))
Collecting urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 (from requests>=1.1.0->-r requirements.txt (line 2))
  Downloading https://files.pythonhosted.org/packages/9f/f0/a391d1463ebb1b233795cabfc0ef38d3db4442339de68f847026199e69d7/urll
ib3-1.25.10-py2.py3-none-any.whl (127kB)
    100% |################################| 133kB 260kB/s
Collecting chardet<4,>=3.0.2 (from requests>=1.1.0->-r requirements.txt (line 2))
  Downloading https://files.pythonhosted.org/packages/bc/a9/01ffebfb562e4274b6487b4bb1ddec7ca55ec7510b22e4c51f14098443b8/char
det-3.0.4-py2.py3-none-any.whl (133kB)
    100% |################################| 143kB 407kB/s
Collecting certifi>=2017.4.17 (from requests>=1.1.0->-r requirements.txt (line 2))
  Downloading https://files.pythonhosted.org/packages/5e/c4/6c4fe722df5343c33226f0b4e0bb042e4dc13483228b4718baf286f86d87/cert
ifi-2020.6.20-py2.py3-none-any.whl (156kB)
    100% |################################| 163kB 488kB/s
Requirement already satisfied: idna<3,>=2.5 in /usr/lib/python2.7/dist-packages (from requests>=1.1.0->-r requirements.txt (l
ine 2))
Installing collected packages: futures, urllib3, chardet, certifi, requests
Successfully installed certifi-2020.6.20 chardet-3.0.4 futures-3.3.0 requests-2.24.0 urllib3-1.25.10
```

python setup.py install

```
root@9f0d50903cdd:/opt/python-swiftclient# python setup.py install
running install
running build
running build_py
creating build
creating build/lib.linux-x86_64-2.7
creating build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/multithreading.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/__init__.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/exceptions.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/command_helpers.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/authv1.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/utils.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/version.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/service.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/shell.py -> build/lib.linux-x86_64-2.7/swiftclient
copying swiftclient/client.py -> build/lib.linux-x86_64-2.7/swiftclient
running egg_info
creating python_swiftclient.egg-info
writing requirements to python_swiftclient.egg-info/requires.txt
writing python_swiftclient.egg-info/PKG-INFO
writing top-level names to python_swiftclient.egg-info/top_level.txt
writing dependency_links to python_swiftclient.egg-info/dependency_links.txt
writing entry points to python_swiftclient.egg-info/entry_points.txt
writing pbr to python_swiftclient.egg-info/pbr.json
[pbr] Processing SOURCES.txt
writing manifest file 'python_swiftclient.egg-info/SOURCES.txt'
[pbr] In git context, generating filelist from git
warning: no previously-included files matching '*.pyc' found anywhere in distribution
reading manifest template 'MANIFEST.in'
writing manifest file 'python_swiftclient.egg-info/SOURCES.txt'
running build_scripts
creating build/scripts-2.7
copying and adjusting bin/swift -> build/scripts-2.7
changing mode of build/scripts-2.7/swift from 644 to 755
```

cd
git clone https://github.com/openstack/swift.git

```
root@9f0d50903cdd:/# git clone https://github.com/openstack/swift.git
Cloning into 'swift'...
remote: Enumerating objects: 59, done.
remote: Counting objects: 100% (59/59), done.
remote: Compressing objects: 100% (46/46), done.
remote: Total 86423 (delta 30), reused 25 (delta 13), pack-reused 86364
Receiving objects: 100% (86423/86423), 58.89 MiB | 4.09 MiB/s, done.
Resolving deltas: 100% (66469/66469), done.
Checking out files: 100% (841/841), done.
root@9f0d50903cdd:/#
```

. Create persistent storage for data. How many device/disk you will use thats upon you but make sure at least three replica must be present there. Create persistent storage for log. Must use recent swift stable version.

cd /swift
git status
git checkout stable/train
git status

```
root@9f0d50903cdd:/# cd /swift
root@9f0d50903cdd:/swift# git status
On branch master
Your branch is up to date with 'origin/master'.

nothing to commit, working tree clean
root@9f0d50903cdd:/swift# git checkout stable/train
Branch 'stable/train' set up to track remote branch 'stable/train' from 'origin'.
Switched to a new branch 'stable/train'
root@9f0d50903cdd:/swift# git status
On branch stable/train
Your branch is up to date with 'origin/stable/train'.

nothing to commit, working tree clean
```

python setup.py install

```
root@9f0d50903cdd:/swift# python setup.py install
running install
running build
running build_py
creating build
creating build/lib.linux-x86_64-2.7
creating build/lib.linux-x86_64-2.7/swift
creating build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/mem_diskfile.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/__init__.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/ssync_sender.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/reconstructor.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/replicator.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/mem_server.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/diskfile.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/server.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/updater.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/expirer.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/ssync_receiver.py -> build/lib.linux-x86_64-2.7/swift/obj
copying swift/obj/auditor.py -> build/lib.linux-x86_64-2.7/swift/obj
creating build/lib.linux-x86_64-2.7/swift/common
creating build/lib.linux-x86_64-2.7/swift/common/ring
copying swift/common/ring/__init__.py -> build/lib.linux-x86_64-2.7/swift/common/ring
copying swift/common/ring/composite_builder.py -> build/lib.linux-x86_64-2.7/swift/common/ring
copying swift/common/ring/builder.py -> build/lib.linux-x86_64-2.7/swift/common/ring
```

Creating directory for Swift and copy in the configuration files

cd

mkdir -p /etc/swift

cd swift/etc

cp account-server.conf-sample /etc/swift/account-server.conf

cp container-server.conf-sample /etc/swift/container-server.conf

cp object-server.conf-sample /etc/swift/object-server.conf

cp proxy-server.conf-sample /etc/swift/proxy-server.conf

cp drive-audit.conf-sample /etc/swift/drive-audit.conf

cp swift.conf-sample /etc/swift/swift.conf

```
root@9f0d50903cdd:/swift# cd
root@9f0d50903cdd:~# mkdir -p /etc/swift
root@9f0d50903cdd:~# cd swift/etc
bash: cd: swift/etc: No such file or directory
root@9f0d50903cdd:~# cd /swift/etc
root@9f0d50903cdd:/swift/etc# cp account-server.conf-sample /etc/swift/account-server.conf
root@9f0d50903cdd:/swift/etc# cp container-server.conf-sample /etc/swift/container-server.conf
root@9f0d50903cdd:/swift/etc# cp object-server.conf-sample /etc/swift/object-server.conf
root@9f0d50903cdd:/swift/etc# cp proxy-server.conf-sample /etc/swift/proxy-server.conf
root@9f0d50903cdd:/swift/etc# cp drive-audit.conf-sample /etc/swift/drive-audit.conf
root@9f0d50903cdd:/swift/etc# cp swift.conf-sample /etc/swift/swift.conf
```

Swift-init -h

```
root@9f0d50903cdd:/swift/etc# swift-init -h
Usage: swift-init <server>[.<config>] [<server>[.<config>] ...] <command> [options]

where:
    <server>  is the name of a swift service e.g. proxy-server.
              The '-server' part of the name may be omitted.
              'all', 'main' and 'rest' are reserved words that represent a
              group of services.
              all: Expands to all swift daemons.
              main: Expands to main swift daemons.
                    (proxy, container, account, object)
              rest: Expands to all remaining background daemons (beyond
                    "main").
                    (updater, replicator, auditor, etc)
    <config>  is an explicit configuration filename without the
              .conf extension. If <config> is specified then <server> should
              refer to a directory containing the configuration file, e.g.:

                  swift-init object.1 start

              will start an object-server using the configuration file
              /etc/swift/object-server/1.conf
    <command> is a command from the list below.

Commands:
    force-reload: alias for reload
            kill: stop a server (no error if not running)
       no-daemon: start a server interactively
         no-wait: spawn server and return immediately
            once: start server and run one pass on supporting daemons
          reload: graceful shutdown then restart on supporting servers
         restart: stops then restarts server
        shutdown: allow current requests to finish on supporting servers
           start: starts a server
          status: display status of tracked pids for server
            stop: stops a server
```

Adding Drives to Swift

ls /sys/block

```
root@ilmi-17101130:~# docker start 9f0d50903cdd
9f0d50903cdd
root@ilmi-17101130:~# docker exec -it 9f0d50903cdd bash
root@9f0d50903cdd:/# df
Filesystem     1K-blocks    Used Available Use% Mounted on
overlay         19525500 6980780  11529836  38% /
tmpfs              65536       0     65536   0% /dev
tmpfs            1008776       0   1008776   0% /sys/fs/cgroup
shm                65536       0     65536   0% /dev/shm
/dev/sda1       19525500 6980780  11529836  38% /etc/hosts
tmpfs            1008776       0   1008776   0% /proc/asound
tmpfs            1008776       0   1008776   0% /proc/acpi
tmpfs            1008776       0   1008776   0% /proc/scsi
tmpfs            1008776       0   1008776   0% /sys/firmware
root@9f0d50903cdd:/# ls /sys/block
loop0  loop1  loop2  loop3  loop4  loop5  loop6  loop7  sda  sdb  sdc  sdd  sr0
```

mkfs.xfs -f -L d1 /dev/sdb

```
root@ilmi-17101130:~# mkfs.xfs -f -L d1 /dev/sdb
meta-data=/dev/sdb               isize=512    agcount=4, agsize=65536 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=0
data     =                       bsize=4096   blocks=262144, 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
```

mkfs.xfs -f -L d2 /dev/sdc

```
root@ilmi-17101130:~# mkfs.xfs -f -L d1 /dev/sdc
meta-data=/dev/sdc               isize=512    agcount=4, agsize=65536 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=0
data     =                       bsize=4096   blocks=262144, 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
```

mkfs.xfs -f -L d3 /dev/sdd

```
root@ilmi-17101130:~# mkfs.xfs -f -L d1 /dev/sdd
meta-data=/dev/sdd               isize=512    agcount=4, agsize=65536 blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=0
data     =                       bsize=4096   blocks=262144, 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
```

Partition should be 8. i.e in ring builder change the value of <part-power> to 3. Use replication value to 3 also.

cd /etc/swift
swift-ring-builder account.builder create 3 3 1
swift-ring-builder container.builder create 3 3 1
swift-ring-builder object.builder create 3 3 1

```
root@9f0d50903cdd:/# cd /etc/swift
root@9f0d50903cdd:/etc/swift# swift-ring-builder account.builder create 3 3 1
root@9f0d50903cdd:/etc/swift# swift-ring-builder container.builder create 3 3 1
root@9f0d50903cdd:/etc/swift# swift-ring-builder object.builder create 3 3 1
```

```
swift-ring-builder account.builder add r1z1-127.0.0.1:6002/d1 100
swift-ring-builder container.builder add r1z1-127.0.0.1:6001/d1 100
swift-ring-builder object.builder add r1z1-127.0.0.1:6000/d1 100
swift-ring-builder account.builder add r1z1-127.0.0.1:6002/d2 100
swift-ring-builder container.builder add r1z1-127.0.0.1:6001/d2 100
swift-ring-builder object.builder add r1z1-127.0.0.1:6000/d2 100
swift-ring-builder account.builder add r1z1-127.0.0.1:6002/d3 100
swift-ring-builder container.builder add r1z1-127.0.0.1:6001/d3 100
swift-ring-builder object.builder add r1z1-127.0.0.1:6000/d3 100
```

```
root@9f0d50903cdd:/etc/swift# 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
root@9f0d50903cdd:/etc/swift# swift-ring-builder container.builder add r1z1-127.0.0.1:6001/d1 100
Device d0r1z1-127.0.0.1:6001R127.0.0.1:6001/d1_"" with 100.0 weight got id 0
root@9f0d50903cdd:/etc/swift# swift-ring-builder object.builder add r1z1-127.0.0.1:6000/d1 100
Device d0r1z1-127.0.0.1:6000R127.0.0.1:6000/d1_"" with 100.0 weight got id 0
root@9f0d50903cdd:/etc/swift# 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
root@9f0d50903cdd:/etc/swift# swift-ring-builder container.builder add r1z1-127.0.0.1:6001/d2 100
Device d1r1z1-127.0.0.1:6001R127.0.0.1:6001/d2_"" with 100.0 weight got id 1
root@9f0d50903cdd:/etc/swift# swift-ring-builder object.builder add r1z1-127.0.0.1:6000/d2 100
Device d1r1z1-127.0.0.1:6000R127.0.0.1:6000/d2_"" with 100.0 weight got id 1
root@9f0d50903cdd:/etc/swift# 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
root@9f0d50903cdd:/etc/swift# swift-ring-builder container.builder add r1z1-127.0.0.1:6001/d3 100
Device d2r1z1-127.0.0.1:6001R127.0.0.1:6001/d3_"" with 100.0 weight got id 2
root@9f0d50903cdd:/etc/swift# swift-ring-builder object.builder add r1z1-127.0.0.1:6000/d3 100
Device d2r1z1-127.0.0.1:6000R127.0.0.1:6000/d3_"" with 100.0 weight got id 2
root@9f0d50903cdd:/etc/swift# swift-ring-builder account.builder rebalance
Reassigned 24 (300.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
root@9f0d50903cdd:/etc/swift# swift-ring-builder container.builder rebalance
Reassigned 24 (300.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
root@9f0d50903cdd:/etc/swift# swift-ring-builder object.builder rebalance
Reassigned 24 (300.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
```

```
swift-ring-builder account.builder rebalance
swift-ring-builder container.builder rebalance
swift-ring-builder object.builder rebalance
```

ls

```
root@9f0d50903cdd:/etc/swift# ls
account-server.conf  container-server.conf  object-server.conf  swift.conf
account.builder      container.builder      object.builder
account.ring.gz      container.ring.gz      object.ring.gz
backups              drive-audit.conf       proxy-server.conf
```

swift-ring-builder account.builder
nano account-server.conf
bind_port : 6002

```
root@9f0d50903cdd:/etc/swift# swift-ring-builder account.builder
account.builder, build version 4, id bd783591b1ac4bb398d25527178832ec
8 partitions, 3.000000 replicas, 1 regions, 1 zones, 3 devices, 0.00 balance, 0.00 dispersion
The minimum number of hours before a partition can be reassigned is 1 (0:53:35 remaining)
The overload factor is 0.00% (0.000000)
Ring file account.ring.gz is up-to-date
Devices:    id region zone ip address:port replication ip:port  name weight partitions balance flags meta
             0      1    1  127.0.0.1:6002      127.0.0.1:6002    d1 100.00          8    0.00
             1      1    1  127.0.0.1:6002      127.0.0.1:6002    d2 100.00          8    0.00
             2      1    1  127.0.0.1:6002      127.0.0.1:6002    d3 100.00          8    0.00
```

```
  GNU nano 2.9.3 account-server.conf                                    Mod

[DEFAULT]
# bind_ip = 0.0.0.0
bind_port = 6002
# keep_idle = 600
# bind_timeout = 30
# backlog = 4096
# user = swift
# swift_dir = /etc/swift
```

swift-ring-builder container.builder
nano container-server.conf
bind_port : 6001

```
root@9f0d50903cdd:/etc/swift# swift-ring-builder container.builder
container.builder, build version 4, id 9c4664645e14404bb690e7aa93c9e7d2
8 partitions, 3.000000 replicas, 1 regions, 1 zones, 3 devices, 0.00 balance, 0.00 dispersion
The minimum number of hours before a partition can be reassigned is 1 (0:47:21 remaining)
The overload factor is 0.00% (0.000000)
Ring file container.ring.gz is up-to-date
Devices:   id region zone ip address:port replication ip:port  name weight partitions balance flags meta
            0      1    1  127.0.0.1:6001      127.0.0.1:6001    d1 100.00          8    0.00
            1      1    1  127.0.0.1:6001      127.0.0.1:6001    d2 100.00          8    0.00
            2      1    1  127.0.0.1:6001      127.0.0.1:6001    d3 100.00          8    0.00
```

```
[DEFAULT]
# bind_ip = 0.0.0.0
bind_port = 6001
# keep_idle = 600
# bind_timeout = 30
# backlog = 4096
# user = swift
# swift_dir = /etc/swift
# devices = /srv/node
# mount_check = true
# disable_fallocate = false
```

swift-ring-builder object.builder
nano object-server.conf
bind_port : 6000

```
root@9f0d50903cdd:/etc/swift# swift-ring-builder object.builder
object.builder, build version 4, id 6f3a8c5ce2884dcd968e22a95d974377
8 partitions, 3.000000 replicas, 1 regions, 1 zones, 3 devices, 0.00 balance, 0.00 dispersion
The minimum number of hours before a partition can be reassigned is 1 (0:39:41 remaining)
The overload factor is 0.00% (0.000000)
Ring file object.ring.gz is up-to-date
Devices:   id region zone ip address:port replication ip:port  name weight partitions balance flags meta
            0      1    1  127.0.0.1:6000      127.0.0.1:6000    d1 100.00          8    0.00
            1      1    1  127.0.0.1:6000      127.0.0.1:6000    d2 100.00          8    0.00
            2      1    1  127.0.0.1:6000      127.0.0.1:6000    d3 100.00          8    0.00
root@9f0d50903cdd:/etc/swift# nano object-server.conf
```

```
[DEFAULT]
# bind_ip = 0.0.0.0
bind_port = 6000
# keep_idle = 600
# bind_timeout = 30
# backlog = 4096
# user = swift
# swift_dir = /etc/swift
# devices = /srv/node
```

```
cd /etc
cd rsyslog.d
nano 0-swift.conf
local0.* /var/log/swift/all.log
```

```
root@9f0d50903cdd:/# cd /etc/rsyslog.d
root@9f0d50903cdd:/etc/rsyslog.d# cat nano 0-swift.conf
cat: nano: No such file or directory
local0.* /var/log/swift/all.log
```

```
cd /etc/swift
nano swift.conf
```

```
  GNU nano 2.9.3 swift.conf

[swift-hash]

# swift_hash_path_suffix and swift_hash_path_prefix are used as part of the
# hashing algorithm when determining data placement in the cluster.
# These values should remain secret and MUST NOT change
# once a cluster has been deployed.
# Use only printable chars (python -c "import string; print(string.printable)")

swift_hash_path_suffix = ilmiaytdqagdyqahuyshuqayh1234567
swift_hash_path_prefix = changemewsfrweuihgufvehw12345678
```

```
cd
service memcached start
ps aux | grep memcached
```

```
root@9f0d50903cdd:~/python-swiftclient# cd
root@9f0d50903cdd:~# service memcached start
Starting memcached: memcached.
root@9f0d50903cdd:~# ps aux | grep memcached
memcache    616  0.0  0.1 424764  2892 ?        Sl   21:52   0:00 /usr/bin/memcached -m 64 -p 11211 -u memcache -l 127.0.0.1 -P /var/run/memcached/memcached.pid
root        627  0.0  0.0  11464  1056 pts/1    S+   21:52   0:00 grep --color=auto memcached
```

```
cd /etc/swift
nano proxy-server.conf
user_myaccount_me = secretpassword .admin .reseller_admin <storage
URL:8080>
allow_account_management = trueaccount_autocreate = true
```

```
# If set to 'true' any authorized user may create and delete accounts; if
# 'false' no one, even authorized, can.
allow_account_management = true
#
# If set to 'true' authorized accounts that do not yet exist within the Swift
# cluster will be automatically created.
account_autocreate = true
#
```

```
user_admin_admin = admin .admin .reseller_admin
user_test_tester = testing .admin
user_test_tester2 = testing2 .admin
user_test_tester3 = testing3
user_test2_tester2 = testing2 .admin
user_test5_tester5 = testing5 service
user_myaccount_me = secretpassword .admin .reseller_admin <storage URL:8080>
```

```
cd
cd /etc/swift
swift-init account start
```

```
root@9f0d50903cdd:~# cd /etc/swift
root@9f0d50903cdd:/etc/swift# swift-init account start
Starting account-server...(/etc/swift/account-server.conf)
Traceback (most recent call last):
  File "/usr/local/bin/swift-account-server", line 19, in <module>
    from swift.common.wsgi import run_wsgi
  File "/usr/local/lib/python2.7/dist-packages/swift/common/wsgi.py", line 37, in <module>
    from swift.common.storage_policy import BindPortsCache
  File "/usr/local/lib/python2.7/dist-packages/swift/common/storage_policy.py", line 28, in <module>
    from pyeclib.ec_iface import ECDriver, ECDriverError, VALID_EC_TYPES
ImportError: No module named pyeclib.ec_iface
```

```
swift-init container start
```

```
root@9f0d50903cdd:/etc/swift# swift-init container start
Starting container-server...(/etc/swift/container-server.conf)
Traceback (most recent call last):
  File "/usr/local/bin/swift-container-server", line 19, in <module>
    from swift.common.wsgi import run_wsgi
  File "/usr/local/lib/python2.7/dist-packages/swift/common/wsgi.py", line 37, in <module>
    from swift.common.storage_policy import BindPortsCache
  File "/usr/local/lib/python2.7/dist-packages/swift/common/storage_policy.py", line 28, in <module>
    from pyeclib.ec_iface import ECDriver, ECDriverError, VALID_EC_TYPES
ImportError: No module named pyeclib.ec_iface
```

swift-init object start

```
root@9f0d50903cdd:/etc/swift# swift-init object start
Starting object-server...(/etc/swift/object-server.conf)
Traceback (most recent call last):
  File "/usr/local/bin/swift-object-server", line 19, in <module>
    from swift.common.wsgi import run_wsgi
  File "/usr/local/lib/python2.7/dist-packages/swift/common/wsgi.py", line 37, in <module>
    from swift.common.storage_policy import BindPortsCache
  File "/usr/local/lib/python2.7/dist-packages/swift/common/storage_policy.py", line 28, in <module>
    from pyeclib.ec_iface import ECDriver, ECDriverError, VALID_EC_TYPES
ImportError: No module named pyeclib.ec_iface
```

swift-init proxy restart

```
root@9f0d50903cdd:/etc/swift# swift-init proxy restart
Signal proxy-server  pid: 703  signal: 15
No proxy-server running
Starting proxy-server...(/etc/swift/proxy-server.conf)
Error trying to load config from /etc/swift/proxy-server.conf: The 'lxml>=3.4.1' distribution w
as not found and is required by swift
```

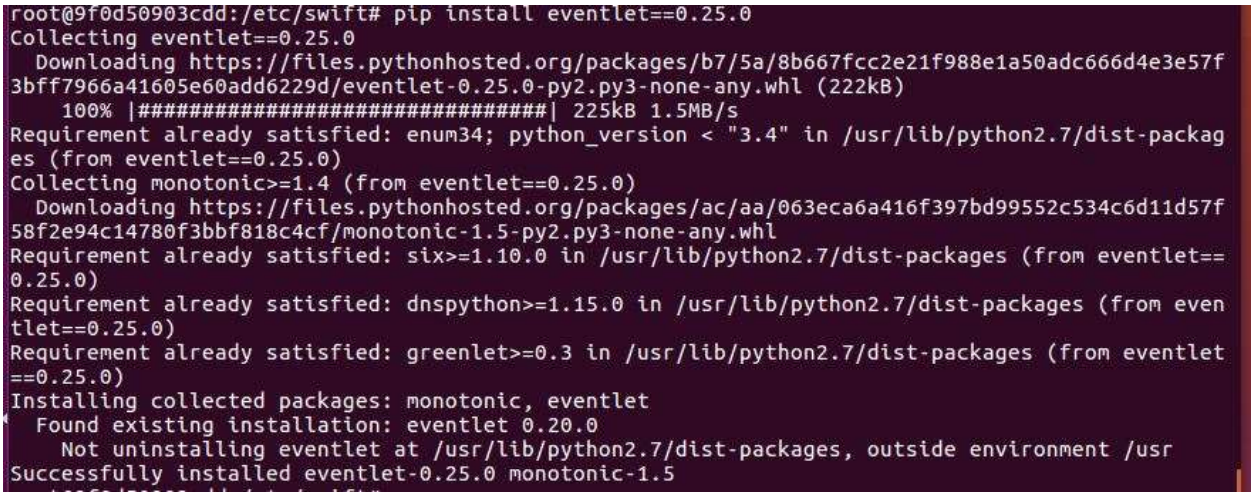
apt-get install libxml2-dev libxslt-dev

```
root@9f0d50903cdd:/etc/swift# apt-get install libxml2-dev libxslt-dev
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'libxslt1-dev' instead of 'libxslt-dev'
The following additional packages will be installed:
  gir1.2-harfbuzz-0.0 icu-devtools libelf1 libfreetype6 libglib2.0-bin libglib2.0-dev
  libglib2.0-dev-bin libgraphite2-3 libgraphite2-dev libharfbuzz-dev libharfbuzz-gobject0
  libharfbuzz-icu0 libharfbuzz0b libicu-dev libicu-le-hb-dev libicu-le-hb0 libiculx60
  libmpdec2 libpcre16-3 libpcre3-dev libpcre32-3 libpcrecpp0v5 libpng16-16 libpython3-stdlib
  libpython3.6-minimal libpython3.6-stdlib libxslt1.1 python3 python3-distutils
  python3-lib2to3 python3-minimal python3.6 python3.6-minimal
Suggested packages:
  libglib2.0-doc libgraphite2-utils icu-doc python3-doc python3-tk python3-venv
  python3.6-venv python3.6-doc binfmt-support
The following NEW packages will be installed:
  gir1.2-harfbuzz-0.0 icu-devtools libelf1 libfreetype6 libglib2.0-bin libglib2.0-dev
  libglib2.0-dev-bin libgraphite2-3 libgraphite2-dev libharfbuzz-dev libharfbuzz-gobject0
  libharfbuzz-icu0 libharfbuzz0b libicu-dev libicu-le-hb-dev libicu-le-hb0 libiculx60
  libmpdec2 libpcre16-3 libpcre3-dev libpcre32-3 libpcrecpp0v5 libpng16-16 libpython3-stdlib
  libpython3.6-minimal libpython3.6-stdlib libxml2-dev libxslt1-dev libxslt1.1 python3
  python3-distutils python3-lib2to3 python3-minimal python3.6 python3.6-minimal
0 upgraded, 35 newly installed, 0 to remove and 21 not upgraded.
Need to get 18.5 MB of archives.
After this operation, 91.8 MB of additional disk space will be used.
```

pip install lxml==3.4.1

swift-init proxy restart

pip install eventlet==0.25.0



sudo python -m easy_install --upgrade pyOpenSSL

```
root@9f0d50903cdd:/etc/swift# sudo python -m easy_install --upgrade pyOpenSSL
Searching for pyOpenSSL
Reading https://pypi.python.org/simple/pyOpenSSL/
Downloading https://files.pythonhosted.org/packages/9e/de/f8342b68fa9e981d348039954657bdf681b2a
b93de27443be51865ffa310/pyOpenSSL-19.1.0-py2.py3-none-any.whl#sha256=621880965a720b8ece2f1b2f54
ea2071966ab00e2970ad2ce11d596102063504
Best match: pyOpenSSL 19.1.0
Processing pyOpenSSL-19.1.0-py2.py3-none-any.whl
Installing pyOpenSSL-19.1.0-py2.py3-none-any.whl to /usr/local/lib/python2.7/dist-packages
writing requirements to /usr/local/lib/python2.7/dist-packages/pyOpenSSL-19.1.0-py2.7.egg/EGG-I
NFO/requires.txt
Adding pyOpenSSL 19.1.0 to easy-install.pth file

Installed /usr/local/lib/python2.7/dist-packages/pyOpenSSL-19.1.0-py2.7.egg
Processing dependencies for pyOpenSSL
Searching for cryptography>=2.8
Reading https://pypi.python.org/simple/cryptography/
Downloading https://files.pythonhosted.org/packages/6a/a8/784e82d913987a5bf75a30824cae9edafa1f3
65a6c43c86ff468e9eee454/cryptography-3.1.1-cp27-cp27mu-manylinux1_x86_64.whl#sha256=680da076cad
81cdf5ffcac50c477b6790be81768d30f9da9e01960c4b18a66db
Best match: cryptography 3.1.1
Processing cryptography-3.1.1-cp27-cp27mu-manylinux1_x86_64.whl
Installing cryptography-3.1.1-cp27-cp27mu-manylinux1_x86_64.whl to /usr/local/lib/python2.7/dis
t-packages
writing requirements to /usr/local/lib/python2.7/dist-packages/cryptography-3.1.1-py2.7-linux-x
86_64.egg/EGG-INFO/requires.txt
Adding cryptography 3.1.1 to easy-install.pth file

Installed /usr/local/lib/python2.7/dist-packages/cryptography-3.1.1-py2.7-linux-x86_64.egg
Finished processing dependencies for pyOpenSSL
```

```
root@9f0d50903cdd:/etc/swift# curl -v -H 'X-Auth-User: myaccount:me' -H 'X-Auth-
Key:secretpassword'
curl: no URL specified!
curl: try 'curl --help' or 'curl --manual' for more information
root@9f0d50903cdd:/etc/swift# curl -v -H 'X-Auth-User: admin:admin' -H 'X-Auth-K
ey: admin' http://127.0.0.1/auth/v1.0
*   Trying 127.0.0.1...
* TCP_NODELAY set
* connect to 127.0.0.1 port 80 failed: Connection refused
* Failed to connect to 127.0.0.1 port 80: Connection refused
* Closing connection 0
curl: (7) Failed to connect to 127.0.0.1 port 80: Connection refused
```

Authentication does not work

I have tired many ways but In failed so I thought of trying autentication using fnndsc/docker-swift-onlyone

Test your authorization, authentication, and upload and download of a object successfully.

Create a volume for Swift.

docker volume create swift_storage

Create the "onlyone" container.

docker run -d --name swift-onlyone -p 12345:8080 -v swift_storage:/srv -t fnndsc/docker-swift-onlyone

Here auth url points to port 12345 of host machine's localhost which will be redirected to port 8080 of docker container.

With that container running we can now check the logs.

```
docker logs swift-onlyone
```

I tried to change the **startmain.sh** to change the Partition should be 8. i.e in ring builder change the value of <part-power> to 3 and replication value to 3.

```
root@ilmi-17101130:~# docker logs swift-onlyone
No existing ring files, creating them...
Device d0r1z1-127.0.0.1:6010R127.0.0.1:6010/sdb1_"" with 1.0 weight got id 0
Reassigned 128 (100.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
Device d0r1z1-127.0.0.1:6011R127.0.0.1:6011/sdb1_"" with 1.0 weight got id 0
Reassigned 128 (100.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
Device d0r1z1-127.0.0.1:6012R127.0.0.1:6012/sdb1_"" with 1.0 weight got id 0
Reassigned 128 (100.00%) partitions. Balance is now 0.00.  Dispersion is now 0.00
Copying ring files to /srv to save them if it's a docker volume...
Starting supervisord...
Starting to tail /var/log/syslog...(hit ctrl-c if you are starting the container in a bash shell)
tail: cannot open '/var/log/syslog' for reading: No such file or directory
tail: '/var/log/syslog' has appeared;  following new file
Oct  1 08:55:18 57c0ef32ec49 rsyslogd: imklog: cannot open kernel log (/proc/kmsg): Operation not permitted.
Oct  1 08:55:18 57c0ef32ec49 rsyslogd: activation of module imklog failed [v8.32.0 try http://www.rsyslog.com/e/2145 ]
Oct  1 08:55:18 57c0ef32ec49 rsyslogd: rsyslogd's groupid changed to 102
Oct  1 08:55:18 57c0ef32ec49 rsyslogd: rsyslogd's userid changed to 101
Oct  1 08:55:18 57c0ef32ec49 rsyslogd:  [origin software="rsyslogd" swVersion="8.32.0" x-pid="61" x-info="http://www.rsys
log.com"] start
Oct  1 08:55:23 57c0ef32ec49 account-reaper: Starting 54
Oct  1 08:55:25 57c0ef32ec49 account-auditor: Starting 56
Oct  1 08:55:25 57c0ef32ec49 account-replicator: Starting 59
Oct  1 08:55:26 57c0ef32ec49 container-sync: Starting 58
Oct  1 08:55:26 57c0ef32ec49 container-sync: Configuration option internal_client_conf_path not defined. Using default co
nfiguration, See internal-client.conf-sample for options
Oct  1 08:55:26 57c0ef32ec49 object-updater: Starting 63
Oct  1 08:55:26 57c0ef32ec49 object-replicator: Starting 55
Oct  1 08:55:26 57c0ef32ec49 object-replicator: Starting object replicator in daemon mode.
```

Account, container, and object replicator processes run in the background on all nodes that are running the corresponding services. A replicator will continuously examine its local node and compare the accounts, containers, or objects against the copies on other nodes in the cluster. If one of other nodes has an old or missing copy, then the replicator will send a copy of its local data out to that node. Replicators only push their local data out to other nodes.

```
oxy-logging cache listing_formats bulk tempurl slo dlo ratelimit crossdomain tempauth staticweb copy versioned_writes con
tainer-quotas account-quotas proxy-logging proxy-server".
Oct  1 08:55:29 57c0ef32ec49 proxy-server: STDERR: (139) wsgi starting up on http://0.0.0.0:8080
Oct  1 08:55:39 57c0ef32ec49 account-replicator: Beginning replication run
Oct  1 08:55:39 57c0ef32ec49 account-replicator: Replication run OVER
Oct  1 08:55:39 57c0ef32ec49 account-replicator: Attempted to replicate 0 dbs in 0.00118 seconds (0.00000/s)
Oct  1 08:55:39 57c0ef32ec49 account-replicator: Removed 0 dbs
Oct  1 08:55:39 57c0ef32ec49 account-replicator: 0 successes, 0 failures
Oct  1 08:55:39 57c0ef32ec49 account-replicator: diff:0 diff_capped:0 empty:0 hashmatch:0 no_change:0 remote_merge:0 rsyn
c:0 ts_repl:0
Oct  1 08:55:56 57c0ef32ec49 object-replicator: Starting object replication pass.
Oct  1 08:55:56 57c0ef32ec49 object-replicator: Nothing replicated for 0.00234603881836 seconds.
Oct  1 08:55:56 57c0ef32ec49 object-replicator: Object replication complete. (0.00 minutes)
Oct  1 08:56:09 57c0ef32ec49 account-replicator: Beginning replication run
Oct  1 08:56:09 57c0ef32ec49 account-replicator: Replication run OVER
Oct  1 08:56:09 57c0ef32ec49 account-replicator: Attempted to replicate 0 dbs in 0.00079 seconds (0.00000/s)
Oct  1 08:56:09 57c0ef32ec49 account-replicator: Removed 0 dbs
Oct  1 08:56:09 57c0ef32ec49 account-replicator: 0 successes, 0 failures
Oct  1 08:56:09 57c0ef32ec49 account-replicator: diff:0 diff_capped:0 empty:0 hashmatch:0 no_change:0 remote_merge:0 rsyn
c:0 ts_repl:0
Oct  1 08:56:26 57c0ef32ec49 object-replicator: Starting object replication pass.
Oct  1 08:56:26 57c0ef32ec49 object-replicator: Nothing replicated for 0.00114583969116 seconds.
Oct  1 08:56:26 57c0ef32ec49 object-replicator: Object replication complete. (0.00 minutes)
```

We can now use the Swift python client to access Swift using the Docker forwarded port, in this example port 12345

```
root@ilmi-17101130:~# docker ps
CONTAINER ID        IMAGE                      COMMAND                  CREATED             STATUS              PORTS
                    NAMES
57c0ef32ec49        fnndsc/docker-swift-onlyone   "/bin/sh -c /usr/loc…"   2 minutes ago       Up 2 minutes        0.0.0.
0:12345->8080/tcp   swift-onlyone
root@ilmi-17101130:~# swift -A http://127.0.0.1:12345/auth/v1.0 -U chris:chris1234 -K testing stat
              Account: AUTH_chris
           Containers: 0
              Objects: 0
                Bytes: 0
      X-Put-Timestamp: 1601542631.53205
          X-Timestamp: 1601542631.53205
           X-Trans-Id: tx69f3d8d0a94a4661a055f-005f7599e7
         Content-Type: text/plain; charset=utf-8
X-Openstack-Request-Id: tx69f3d8d0a94a4661a055f-005f7599e7
```

uploading a file:

swift,txt

```
ilmi-17101130@ilmi-17101130:~$ swift -A http://127.0.0.1:12345/auth/v1.0 -U chris:chris1234 -K testing upload swift swift
.txt
swift.txt
```

Try downloading a file

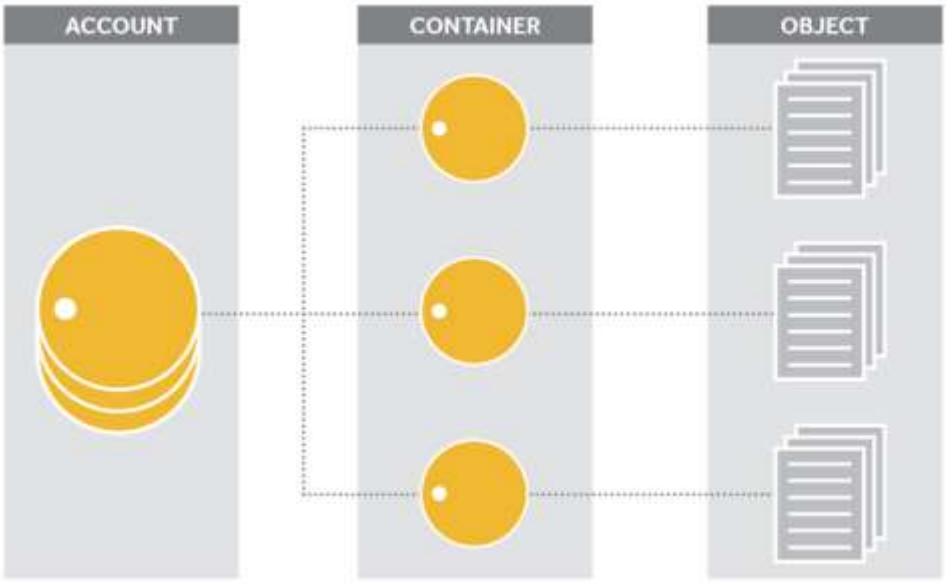
```
ilmi-17101130@ilmi-17101130:~$ swift -A http://127.0.0.1:12345/auth/v1.0 -U chris:chris1234 -K testing download swift swi
ft.txt
swift.txt [auth 0.009s, headers 0.019s, total 0.020s, 0.000 MB/s]
```

4. How many containers will need for setup the swift? Will it be good to run all services in a single container? Or major services (proxy, account, container, object) should be in different containers?

Ans: I am using single container for running all services proxy, account, container, object. It will be easy to get used to using object storage instead of a file system, and when they need the eventual consistency and multiple replicas provided by a larger OpenStack Swift cluster, they can work on implementing that. The container's main process is responsible for managing all processes that it starts. In some cases, the main process isn't well-designed, and doesn't handle "reaping" (stopping) child processes gracefully when the container exits. If your process falls into this category, we can use the --init option when we run the container.

A storage location is given in one of three formats:

- `/account`
  - The account storage location is a uniquely named storage area that contains the metadata (descriptive information) about the account itself as well as the list of containers in the account.
- `/account/container`
  - The container storage location is the user-defined storage area within an account where metadata about the container itself and the list of objects in the container will be stored.
- `/account/container/object`
  - The object storage location is where the data object and its metadata will be stored.



3. Create persistent storage for data. How many device/disk you will use thats upon you but make sure at least three replica must be present there. Create persistent storage for log. Must use recent swift stable version.

Ans: I tried to create persistence storage of data for my container so that after deletion there is backup.

Create and manage volumes

Unlike a bind mount, you can create and manage volumes outside the scope of any container.

```
root@ilmi-17101130:~# docker volume create my-vol
my-vol
root@ilmi-17101130:~# docker volume ls
DRIVER              VOLUME NAME
local               my-vol
local               swift_storage
root@ilmi-17101130:~# docker volume inspect my-vol
[
    {
        "CreatedAt": "2020-10-01T02:31:40-07:00",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/my-vol/_data",
        "Name": "my-vol",
        "Options": {},
        "Scope": "local"
    }
```


```
root@ilmi-17101130:~# docker volume create my-vol
my-vol
root@ilmi-17101130:~# docker volume ls
DRIVER              VOLUME NAME
local               my-vol
local               swift_storage
root@ilmi-17101130:~# docker volume inspect my-vol
[
    {
        "CreatedAt": "2020-10-01T02:31:40-07:00",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/my-vol/_data",
        "Name": "my-vol",
        "Options": {},
        "Scope": "local"
    }
```



```
root@ilmi-17101130:~# docker volume inspect my-vol
[
    {
        "CreatedAt": "2020-10-01T02:31:40-07:00",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/my-vol/_data",
        "Name": "my-vol",
        "Options": {},
        "Scope": "local"
    }
]
```

three replica must be present here:

docker service ps ilmi-service to verify that the service is running

```
root@ilmi-17101130:~# docker service create -d --replicas=3 --name ilmi-service --mount source=my-vol,target=/app  swift:
latest
ytty1nb0dlnizi5lv9ylufo8z
root@ilmi-17101130:~# docker service ps ilmi-service
ID                  NAME                IMAGE               NODE                DESIRED STATE       CURRENT STATE
     ERROR               PORTS
e07ir3c2lxhr        ilmi-service.1      swift:latest        ilmi-17101130       Running             Starting 27 seconds a
go
fqb8yf6zbls0        ilmi-service.2      swift:latest        ilmi-17101130       Running             Starting 27 seconds a
go
xagi27w7ay2c        ilmi-service.3      swift:latest        ilmi-17101130       Running             Starting 27 seconds a
go
```

With the backup just created, we can restore it to the same container, or another that you made elsewhere.

Then un-tar the backup file in the new container`s data volume: ilmi2 and dbstore is still in backup of bdata. Even if we remove the containers.

```
root@ilmi-17101130:~# docker run -v /dbdata --name dbstore ubuntu /bin/bash
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
d72e567cc804: Pull complete
0f3630e5ff08: Pull complete
b6a83d81d1f4: Pull complete
Digest: sha256:bc2f7250f69267c9c6b66d7b6a81a54d3878bb85f1ebb5f951c896d13e6ba537
Status: Downloaded newer image for ubuntu:latest
root@ilmi-17101130:~# docker run -v /dbdata --name ilmi17101130 ubuntu /bin/bash
root@ilmi-17101130:~# docker run --rm --volumes-from ilmi17101130 -v $(pwd):/backup ubuntu tar cvf /backup/backup.tar /il
mi17101130
tar: Removing leading '/' from member names
tar: /ilmi17101130: Cannot stat: No such file or directory
tar: Exiting with failure status due to previous errors
root@ilmi-17101130:~# docker run --rm --volumes-from ilmi17101130 -v $(pwd):/backup ubuntu tar cvf /backup/backup.tar /db
data
/dbdata/
tar: Removing leading '/' from member names
root@ilmi-17101130:~# docker run -v /dbdata --name ilmi2 ubuntu /bin/bash
root@ilmi-17101130:~# docker run --rm --volumes-from ilmi2 -v $(pwd):/backup ubuntu bash -c "cd /dbdata && tar xvf /backu
p/backup.tar --strip 1"
```

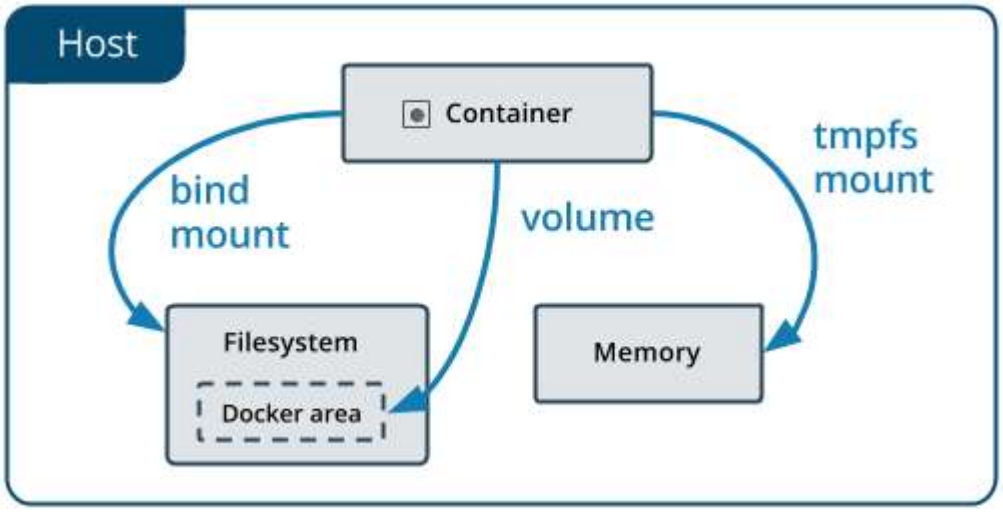
5. If you use a fixed image for creating container then how you can upgrade swift storage accordingly? How scalability can be maintained using docker container? Means, if we want to add new storage how can that be done in container?

Ans:

- Stop all background Swift jobs with `swift-init rest stop`

- Shutdown all Swift storage processes with `swift-init {account|container|object} shutdown`. This will do a graceful stop, allowing current requests to complete.
- Upgrade all system packages and new Swift code
- Update the Swift configs with any needed changes
- If necessary (eg for kernel upgrades), reboot the server
- Start the storage services with `swift-init {account|container|object} start`
- Start the background processes with `swift-init rest start`

The Docker Swarm cluster manager offers clustering, scheduling, and integration capabilities that let developers build and ship multi-container/multi-host distributed applications. It includes all of the necessary scaling and management for container-based systems.



- **Volumes** are stored in a part of the host filesystem which is *managed by Docker* (`/var/lib/docker/volumes/` on Linux). Non-Docker processes should not modify this part of the filesystem. Volumes are the best way to persist data in Docker.
- **Bind mounts** They may even be important system files or directories. Non-Docker processes on the Docker host or a Docker container can modify them at any time.

Swift storage nodes require access to local storage and filesystem. Take a 'block-device' config setting that can be used to specify which storage device(s) to use.

- One or more local block devices (eg, sdb or /dev/sdb). It's important that this device be the same on all machine units assigned to this service. Multiple block devices should be listed as a space-separated list of device nodes.

Multiple devices can be specified. In all cases, the resulting block device(s) will each be formatted as XFS file system and mounted at /srv/node/$devname.