ONAP SO Debug Env Setup

Chuanyu Chen 2017.8.24
Seshu Kumar M 2017.9.24

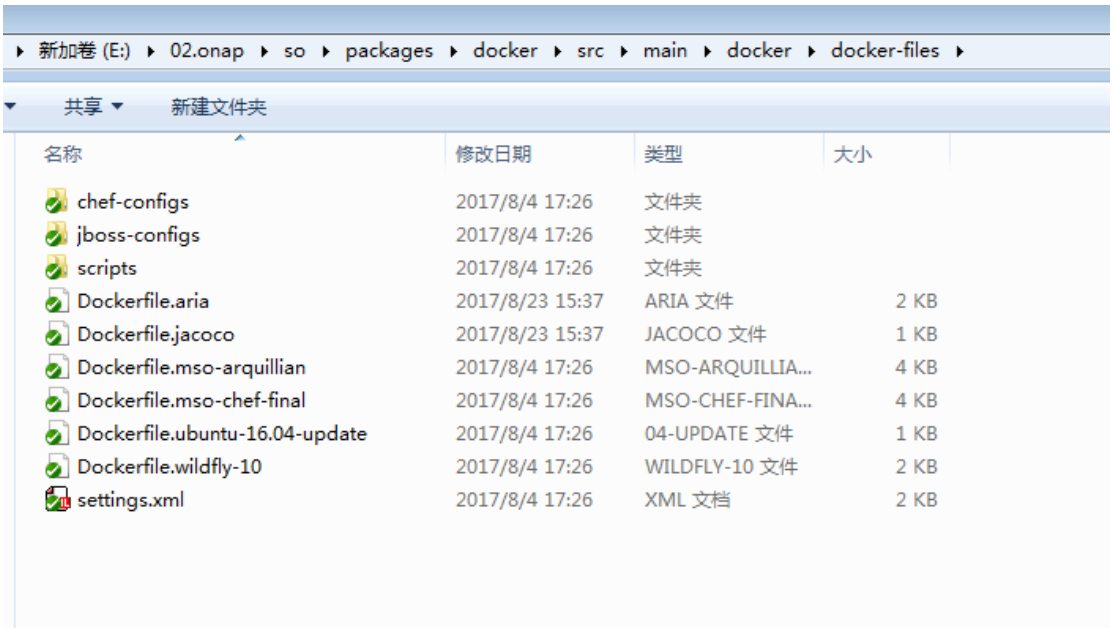
1、Get All Artifacts of SO

Build all projects of SO， we can get the following artifacts of SO from each target folder：
asdc-controller-1.1.0-SNAPSHOT.war
mso-api-handler-infra-1.1.0-SNAPSHOT.war
mso-catalog-db-adapter-1.1.0-SNAPSHOT.war
mso-network-adapter-1.1.0-SNAPSHOT.war
mso-requests-db-adapter-1.1.0-SNAPSHOT.war
mso-sdnc-adapter-1.1.0-SNAPSHOT.war
mso-tenant-adapter-1.1.0-SNAPSHOT.war
mso-vnf-adapter-1.1.0-SNAPSHOT.war
mso-workflow-message-adapter-1.1.0-SNAPSHOT.war
MSOCockpit-1.1.0-SNAPSHOT.war
MSOCommonBPMN-1.1.0-SNAPSHOT.war
MSOInfrastructureBPMN-1.1.0-SNAPSHOT.war
MSOMockServer-1.1.0-SNAPSHOT.war

2、Prepare the docker build folder

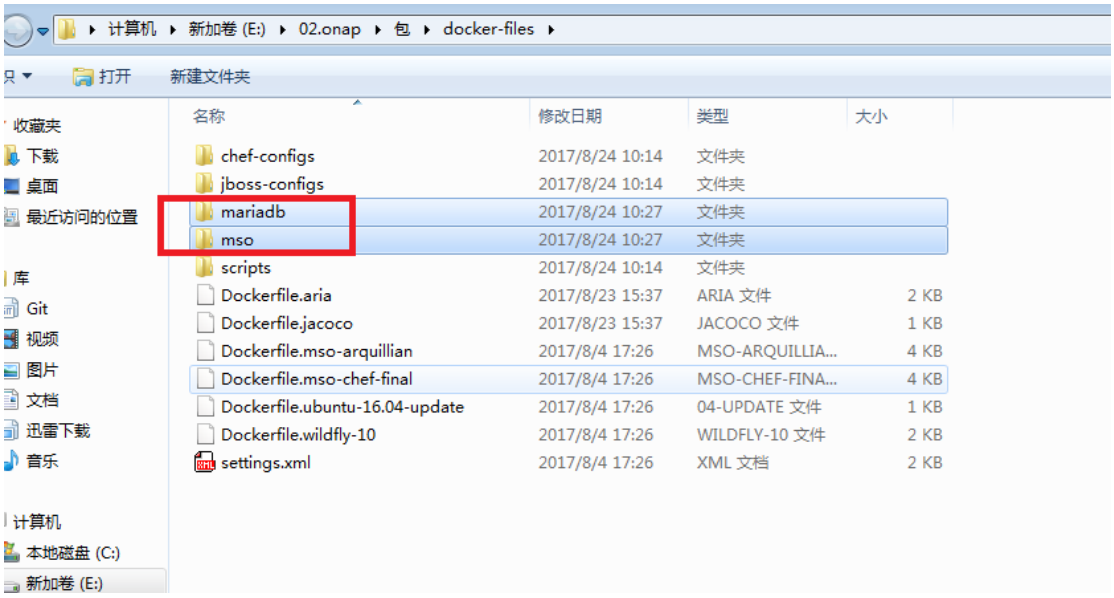
2.1 Copy dockerFiles

Copy docker-files folder of the packages project as the working path.

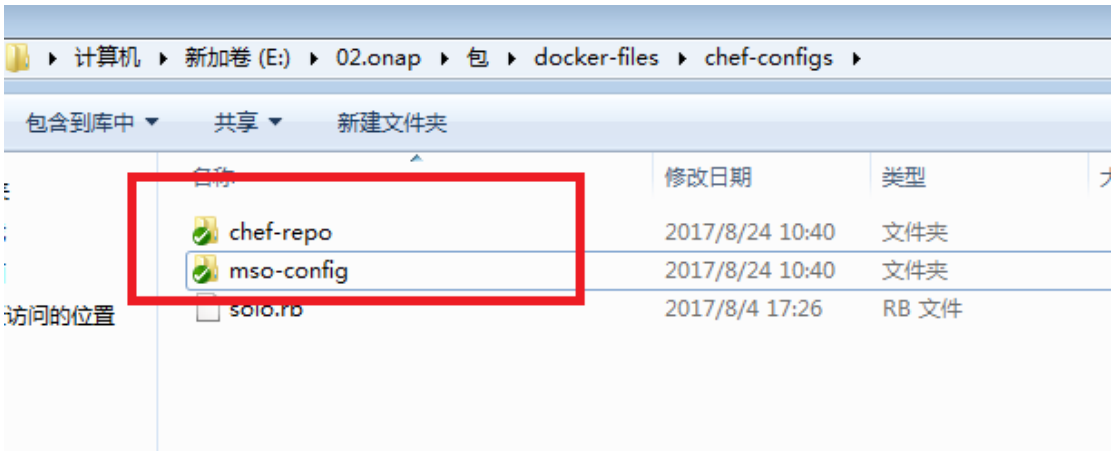


2.2 Copy Configurations to working path.

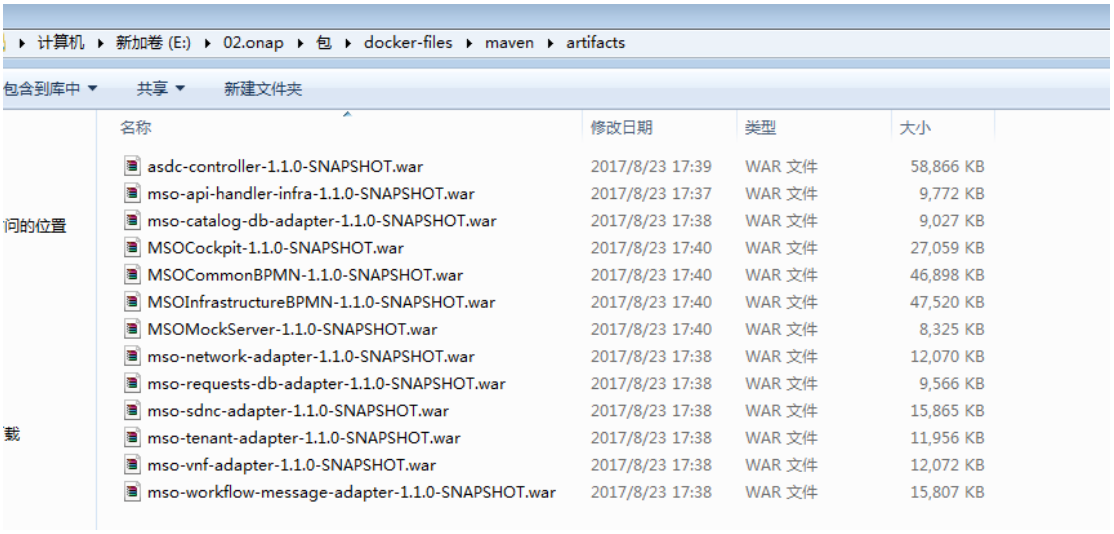
1. Copy docker volume configs to the working path.
   Source: docker-config\volumes of docker-config project.



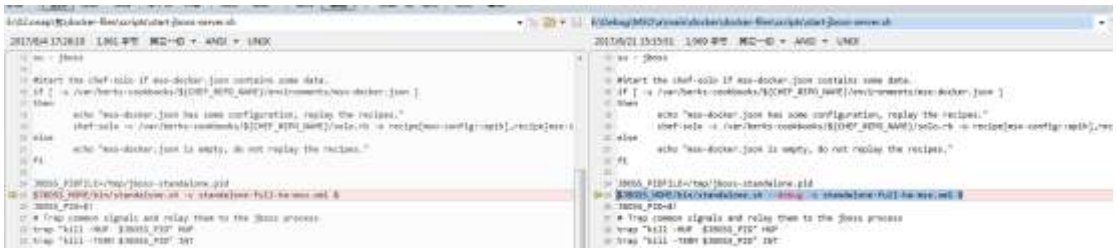
2. Copy the chef-configs files to working_path\chef-configs
   Source: so-config project and chef-repo project.
   Note:we need to rename so-config to mso-config. Because the DockerFile have not been changed , it use the name as mso-config, I think it is an issue that ATT change mso to so resultes.



3. Put the artifacts to maven/artifacts under the working path



4. mofidy \scripts\start-jboss-server.sh for debug as below.
   Add –debug for SO jboss start command.
   $JBOSS_HOME/bin/standalone.sh --debug -c standalone-full-ha-mso.xml &



3、 Build Docker Images

3.1 Copy the working path to linux.

```
root@SZX1000124253:~# cd /opt/mso/docker-files/
root@SZX1000124253:/opt/mso/docker-files# ls -l
total 60
drwxr-xr-x 4 root root 4096 Aug 24 10:58 chef-configs
drwxr-xr-x 4 root root 4096 Aug 24 10:58 chef-repo
-rw-r--r-- 1 root root 1140 Aug 24 10:58 Dockerfile.aria
-rw-r--r-- 1 root root 1011 Aug 24 10:58 Dockerfile.jacoco
-rw-r--r-- 1 root root 4020 Aug 24 10:58 Dockerfile.mso-arquillian
-rw-r--r-- 1 root root 3622 Aug 24 10:58 Dockerfile.mso-chef-final
-rw-r--r-- 1 root root  517 Aug 24 10:58 Dockerfile.ubuntu-16.04-update
-rw-r--r-- 1 root root 1042 Aug 24 10:58 Dockerfile.wildfly-10
drwxr-xr-x 4 root root 4096 Aug 24 10:58 jboss-configs
drwxr-xr-x 4 root root 4096 Aug 24 10:58 mariadb
drwxr-xr-x 3 root root 4096 Aug 24 10:58 maven
drwxr-xr-x 3 root root 4096 Aug 24 10:58 mso
drwxr-xr-x 2 root root 4096 Aug 24 10:58 scripts
-rw-r--r-- 1 root root 1675 Aug 24 10:58 settings.xml
drwxr-xr-x 7 root root 4096 Aug 24 10:58 so-config
root@SZX1000124253:/opt/mso/docker-files#
```

3.2 Mariadb

Because we do not need to debug mariadb, so we can use the image from nexus3.onap.org:10001/mariadb

```
root@SZX1000124253:~# docker pull nexus3.onap.org:10001/mariadb
Using default tag: latest
latest: Pulling from mariadb
a8e225cee373: Pull complete
0e1c704443c4: Pull complete
2ea2b04d5bba: Downloading [>                                                  ]  540 kB/74.97 MB
28735c5f20f6: Download complete
58f5b3b3c375: Download complete
2473877f1349: Download complete
26ac5660158b: Download complete
5c045c503830: Download complete
89e8d29cd0ae: Download complete
9a337be08e55: Download complete
```

```
root@SZX1000124253:~# docker images
REPOSITORY                                TAG                 IMAGE ID            CREATED             VIRTUAL SIZE
<none>                                    <none>              0e1c704443c4        2 days ago          142.6 MB
onap/mso                                  latest              3f322a95c781        8 days ago          1.552 GB
onap/wildflynew                           latest              37d34a45a8e3        8 days ago          632.6 MB
<none>                                    <none>              d49a5f57ce88        9 days ago          633.8 MB
ubuntu                                    latest              56a4fe6a7078        13 days ago         120.1 MB
nexus3.onap.org:10001/mariadb             latest              4bd9def9970f        3 weeks ago         387 MB
jxtest1                                   latest              3e3dcaa79a6d        3 months ago        213.7 MB
```

3.3 Download ubuntu image

```
root@SZX1000124253:~# docker pull ubuntu
```

```
                    mariadb
root@SZX1000124253:~# docker images
REPOSITORY                                    TAG                 IMAGE ID            CREATED             VIRTUAL SIZE
<none>                                        <none>              0e1c704443c4        2 days ago          142.6 MB
onap/mso                                      latest              3f322a95c781        8 days ago          1.552 GB
onap/wildflynew                               latest              37d34a45a8e3        8 days ago          632.6 MB
<none>                                        <none>              d49a5f57ce88        9 days ago          633.8 MB
ubuntu                                        latest              56e4fe6a7878        13 days ago         120.1 MB
nexus3.onap.org:10001/mariadb                 latest              4bd9def9970f        3 weeks ago         397 MB
jxtest2                                       latest              3e3dcaa79a6d        3 months ago        213.7 MB
jxtest                                        latest              89f4c9007811        3 months ago        213.7 MB
ubuntu-with-vi-dockerfile                     latest              89f4c9007811        3 months ago        213.7 MB
jxtest1                                       latest              89f4c9007811        3 months ago        213.7 MB
ubuntu-with-vi                                latest              0ce76a9a2c5b        3 months ago        237 MB
onap/wildfly                                  latest              b8d705f3ad1c        3 months ago        633.8 MB
registry                                      latest              bb682e0624bd        3 months ago        33.2 MB
centos                                        latest              d4350798c2ee        8 months ago        191.8 MB
jinxinjob1                                    latest              8e976f700755        10 months ago       1.093 MB
job1                                          latest              7e8519892f72        10 months ago       1.093 MB
jinxin1983/busybox                            v1                  9967c5ad88de        10 months ago       1.093 MB
registry.example.net:5001/jinxin1983/busybox  v1                  9967c5ad88de        10 months ago       1.093 MB
busybox                                       latest              9967c5ad88de        10 months ago       1.093 MB
progrium/stress                               latest              873c28292d23        3 years ago         281.8 MB
```

3.4 Build wildfly image

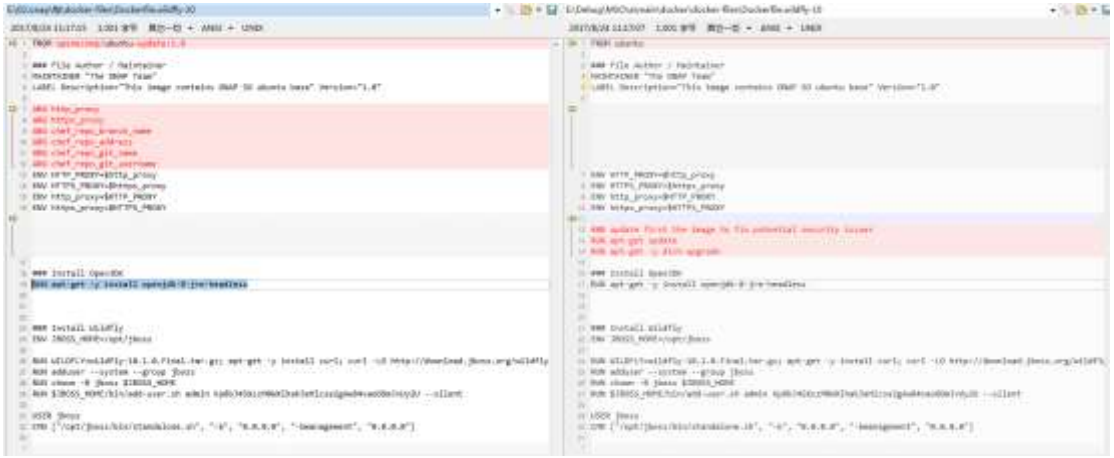
A. First of all, we need to modify “Dockerfile.wildfly-10” as below.

a) From ubuntu, because we download ubuntu image, we need to make sure the name same as that we download

b) Remove ARG, this is because my docker version is old , ARG command is not supported and here these ARGs is not used in this docker file.

c) Add below lines for install jre, this is from MSO repo’s wildfly DockerFile, if there are no these lines, “RUN apt-get -y install openjdk-8-jre-headless” will be failed.

```
### update first the image to fix potential security issues
RUN apt-get update
RUN apt-get -y dist-upgrade
```



B. And then rename “Dockerfile.wildfly-10” as “Dockerfile”.

```
root@SZX1000124253:/opt/mso/docker-files# ls -l
total 60
drwxr-xr-x 4 root root 4096 Aug 24 10:58 chef-configs
drwxr-xr-x 4 root root 4096 Aug 24 10:58 chef-repo
-rw-r--r-- 1 root root  892 Aug 24 11:02 Dockerfile
-rw-r--r-- 1 root root 1140 Aug 24 10:58 Dockerfile.aria
-rw-r--r-- 1 root root 1011 Aug 24 10:58 Dockerfile.jacoco
-rw-r--r-- 1 root root 4020 Aug 24 10:58 Dockerfile.mso-arquillian
-rw-r--r-- 1 root root 3622 Aug 24 10:58 Dockerfile.mso-chef-final
-rw-r--r-- 1 root root  517 Aug 24 10:58 Dockerfile.ubuntu-16.04-update
drwxr-xr-x 4 root root 4096 Aug 24 10:58 jboss-configs
drwxr-xr-x 4 root root 4096 Aug 24 10:58 mariadb
drwxr-xr-x 3 root root 4096 Aug 24 10:58 maven
drwxr-xr-x 3 root root 4096 Aug 24 10:58 mso
drwxr-xr-x 2 root root 4096 Aug 24 10:58 scripts
-rw-r--r-- 1 root root 1675 Aug 24 10:58 settings.xml
drwxr-xr-x 7 root root 4096 Aug 24 10:58 so-config
root@SZX1000124253:/opt/mso/docker-files#
```

C. Build docker image. Here I name it as onap/wildfly1 , because onap/wildfly already exists.

```
root@SZX1000124253:/opt/mso/docker-files# docker build -t onap/wildfly1 .
Sending build context to Docker daemon 292.7 MB
Step 1 : FROM ubuntu
 ---> 56a4fe6a7878
Step 2 : MAINTAINER "The ONAP Team"
 ---> Running in 432482f8d509
 ---> d30c69371745
Removing intermediate container 432482f8d509
Step 3 : LABEL Description "This image contains ONAP SO ubuntu base" Version "1.0"
 ---> Running in 783fa38f7c40
 ---> 89f73cad4e17
Removing intermediate container 783fa38f7c40
Step 4 : ENV HTTP_PROXY $http_proxy
 ---> Running in 0e78030b32f9
 ---> 332ba5acf64e
Removing intermediate container 0e78030b32f9
Step 5 : ENV HTTPS_PROXY $https_proxy
 ---> Running in b94d8c2f7dac
```

```
root@SZX1000124253:/opt/mso/docker-files# docker images
REPOSITORY                                TAG                 IMAGE ID            CREATED             VIRTUAL SIZE
onap/wildfly1                             latest              3d5412f068c5        21 seconds ago      632.6 MB
nexus3.onap.org:10001/mariadb             latest              9a337be08e55        2 days ago          397.2 MB
onap/mso                                  latest              3f322a95c781        5 days ago          1.552 GB
onap/wildflynew                           latest              37d34a45a8e3        8 days ago          632.6 MB
<none>                                    <none>              d49a5f57ce88        9 days ago          633.8 MB
ubuntu                                    latest              56a4fe6a7878        13 days ago         120.1 MB
<none>                                    <none>              4bd9def9970f        3 weeks ago         397 MB
jxtest2                                   latest              3e3dcaa79a6d        3 months ago        213.7 MB
jxtest                                    latest              89f4c9007811        3 months ago        213.7 MB
ubuntu-with-vi-dockerfile                 latest              89f4c9007811        3 months ago        213.7 MB
jxtest1                                   latest              89f4c9007811        3 months ago        213.7 MB
ubuntu-with-vi                            latest              0ce76a9a2c5b        3 months ago        237 MB
onap/wildfly                              latest              b8d705f3ad1c        3 months ago        633.8 MB
registry                                  latest              bb682e0824bd        3 months ago        33.2 MB
centos                                    latest              d4350798c2ee        8 months ago        191.8 MB
jinxinjob1                                latest              8e976f700755        10 months ago       1.093 MB
job1                                      latest              7e8513892f72        10 months ago       1.093 MB
busybox                                   latest              9967c5ad88de        10 months ago       1.093 MB
jinxin1983/busybox                        v1                  9967c5ad88de        10 months ago       1.093 MB
registry.example.net:5001/jinxin1983/busybox   v1             9967c5ad88de        10 months ago       1.093 MB
progrium/stress                           latest              873c28292d23        3 years ago         281.8 MB
```

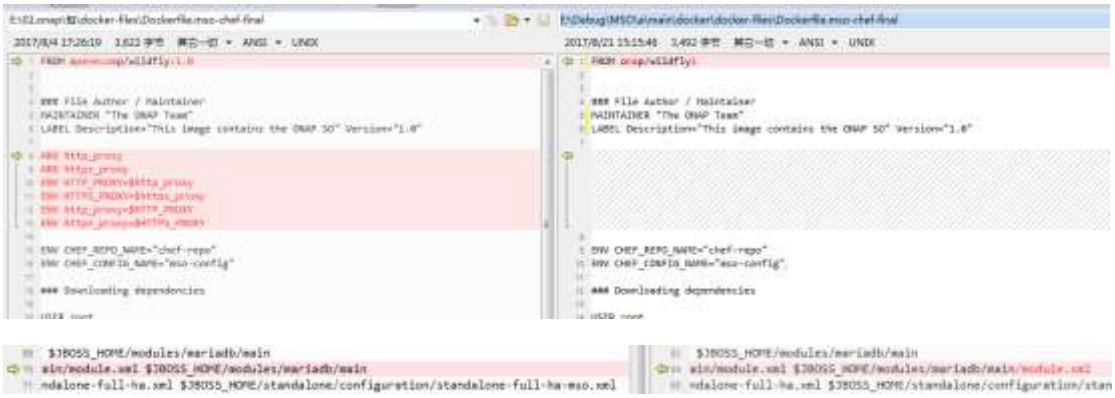
3.5 Build SO image

1. Modify “Dockerfile.mso-chef-final” as below .

   Change from image to onap/wildfly1 which we have build.

   Remove ARG block because our docker version does not support ARG command and it is not used.

Add module.xml at line 70. I think it is a issue.



2. Rename Dockerfile.mso-chef-final to Dockerfile (you can rename the exsiting DockerFile back to Dockerfile.wildfly-10 first).

3. Build SO docker image

```
root@SZX1000124253:/opt/mso/docker-files# docker build -t onap/mso1 .
Sending build context to Docker daemon 292.7 MB
Step 1 : FROM onap/wildfly1
 ---> 3d8412f068c5
Step 2 : MAINTAINER "The ONAP Team"
 ---> Running in 9e67ffb6d6b4
 ---> 6bed005385e3
Removing intermediate container 9e67ffb6d6b4
Step 3 : LABEL Description "This image contains the ONAP SO" Version "1.0"
 ---> Running in 470f13e9e94a
 ---> 1d90081a2a1a
Removing intermediate container 470f13e9e94a
Step 4 : ENV CHEF_REPO_NAME "chef-repo"
 ---> Running in 8e3013053123
 ---> f72fb4715dcd
Removing intermediate container 8e3013053123
Step 5 : ENV CHEF_CONFIG_NAME "mso-config"
 ---> Running in d45259bf5c74
 ---> f69f8583506c
Removing intermediate container d45259bf5c74
Step 6 : USER root
 ---> Running in 18fcae0cf1e4
 ---> a38dd958803a
Removing intermediate container 18fcae0cf1e4
Step 7 : RUN apt-get install -y curl && curl -LO  https://packages.chef.io/stable/ubuntu/1
4/mariadb-java-client-1.5.4.jar && apt-get remove --purge -y curl && apt-get autoremove -y
 ---> Running in 21f2efad546f
```

```
root@SZX1000124253:~# docker images
REPOSITORY                                TAG                 IMAGE ID
<none>                                    <none>              a38dd958803a
onap/wildfly1                             latest              3d8412f068c5
nexus3.onap.org:10001/mariadb             latest              9a337be08e55
onap/mso1                                 latest              3f322a95c781
onap/wildflynew                           latest              37d34a45a8e3
<none>                                    <none>              d49a5f57ce88
ubuntu                                    latest              56a4fe6a7878
<none>                                    <none>              4bd9def9970f
jxtest2                                   latest              3e3dcaa79a6d
jxtest                                    latest              89f4c9007811
ubuntu-with-vi-dockerfile                 latest              89f4c9007811
jxtest1                                   latest              89f4c9007811
ubuntu-with-vi                            latest              0ce76a9a2c5b
onap/wildfly                              latest              b8d705f3ad1c
```

4 Run Docker Containers

4.1 Run MariaDB

The Command to run mariadb is:

docker run -d --name mariadb -h db.mso.testlab.openecomp.org -e MYSQL_ROOT_PASSWORD=password -p 3306:3306 -v /opt/mso/docker-files/mariadb/docker-entrypoint-initdb.d:/docker-entrypoint-initdb.d -v /opt/mso/docker-files/mariadb/conf.d:/etc/mysql/conf.d nexus3.onap.org:10001/mariadb

the mariadb's username and password is :root password

```
root@SZX1000124253:~# docker exec -it mariadb /bin/bash
root@db:/# mysql -uroot -ppassword
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 14538
Server version: 10.2.7-MariaDB-10.2.7+maria~jessie-log mariadb.org binary distribution

Copyright (c) 2000, 2017, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| camundabpmn        |
| information_schema |
| mso_catalog        |
| mso_requests       |
| mysql              |
| performance_schema |
+--------------------+
6 rows in set (0.00 sec)

MariaDB [(none)]>
```

4.2 Run SO

The Command to run SO is:

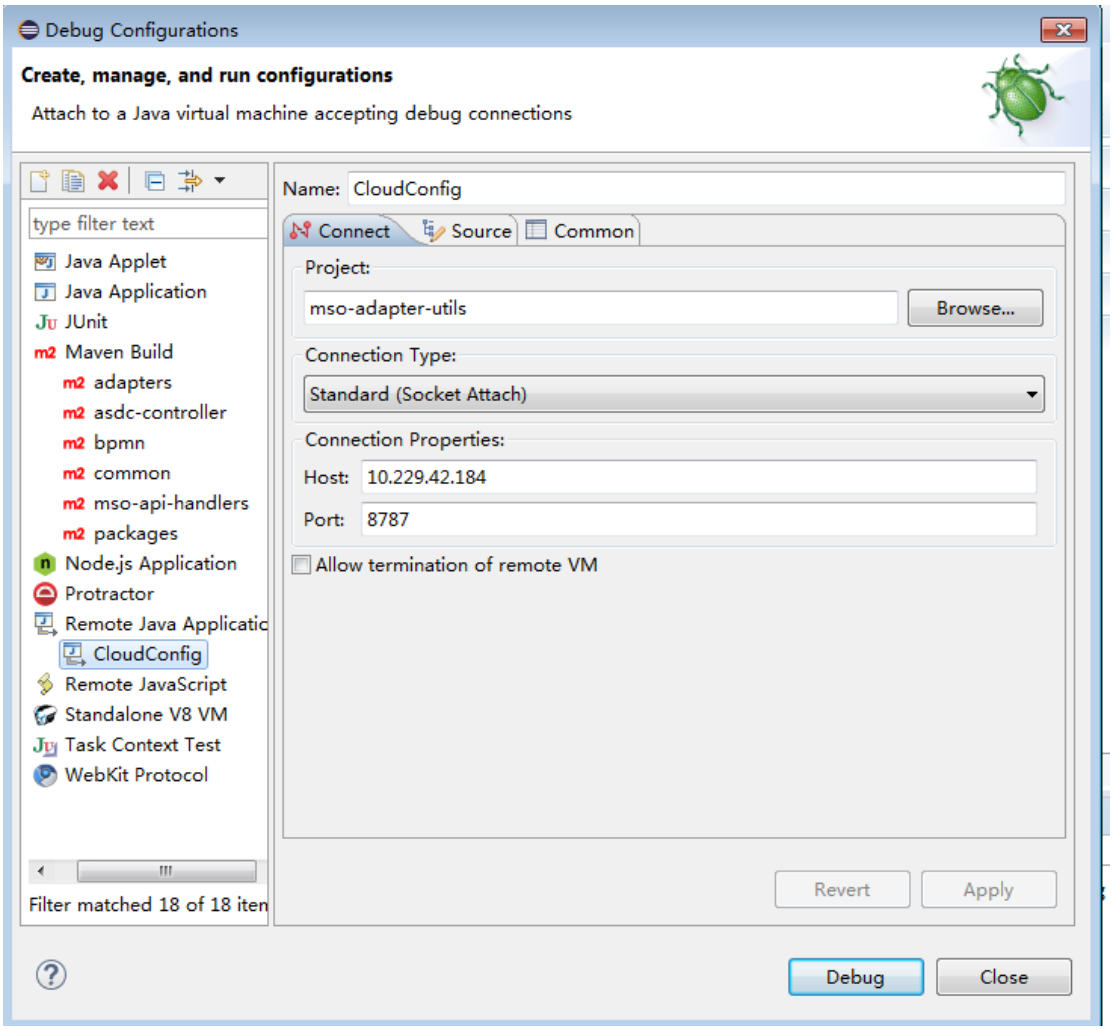
docker run -d --name mso -h mso.mso.testlab.openecomp.org -e MYSQL_ROOT_PASSWORD=password --link=mariadb:db.mso.testlab.openecomp.org -p 3904:3904 -p 8787:8787 -p 3905:3905 -p 8080:8080 -p 9990:9990 -v /opt/mso/docker-files/mso/chef-config:/shared onap/mso

Note:-p 8787 if for debug;

--link=mariadb:db.mso.testlab.openecomp.org it's for link to mariadb instance.

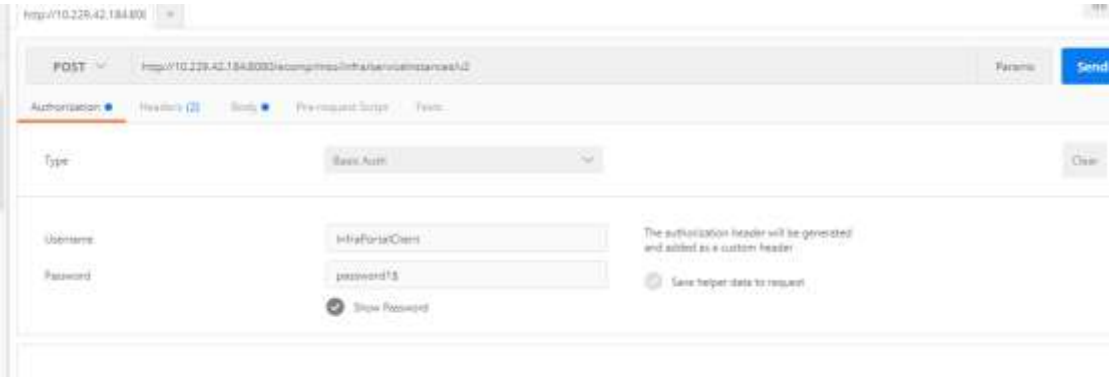
5. Debug Using Eclipse & Postman

1.Add new Remote java application debug configuration as below. The port is 8787.

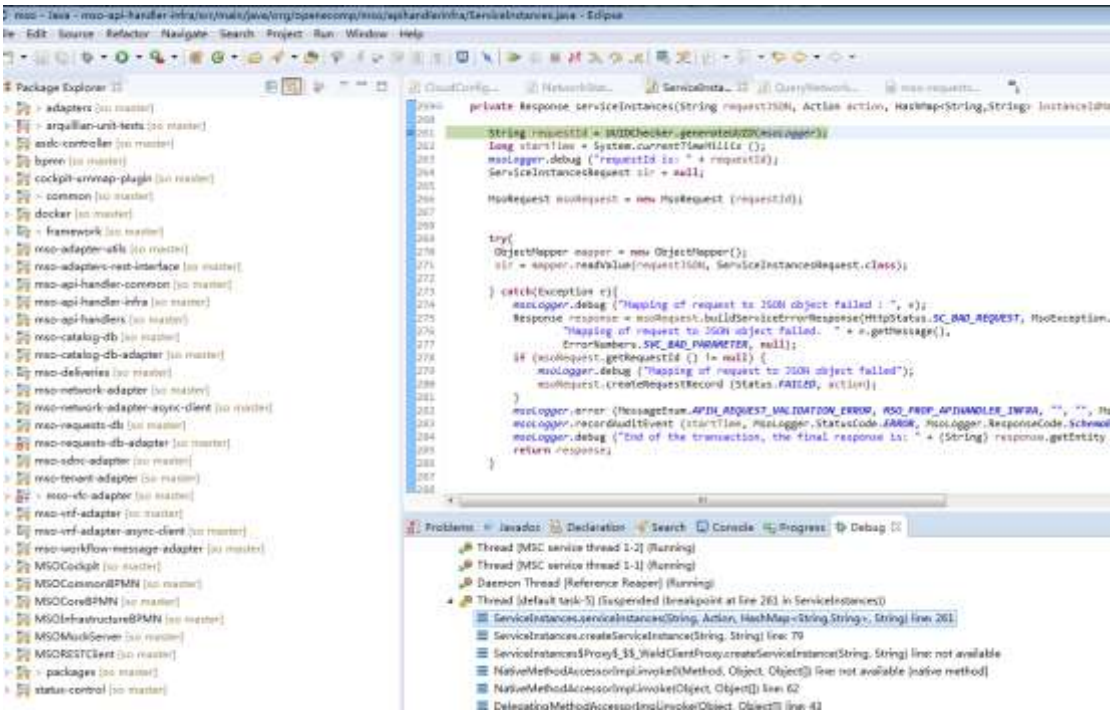


2.Post message using postman

Note: Basic Auth is needed , username:InfraPortalClient ,password: password1$



We will get the breakpoint at the eclipse.



Note:

Find additional information on the wiki

https://wiki.onap.org/display/DW/Development+Environment