Experimental report of Nanchang University

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class: Computer science and technology154

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course: Linux Programming

Project name

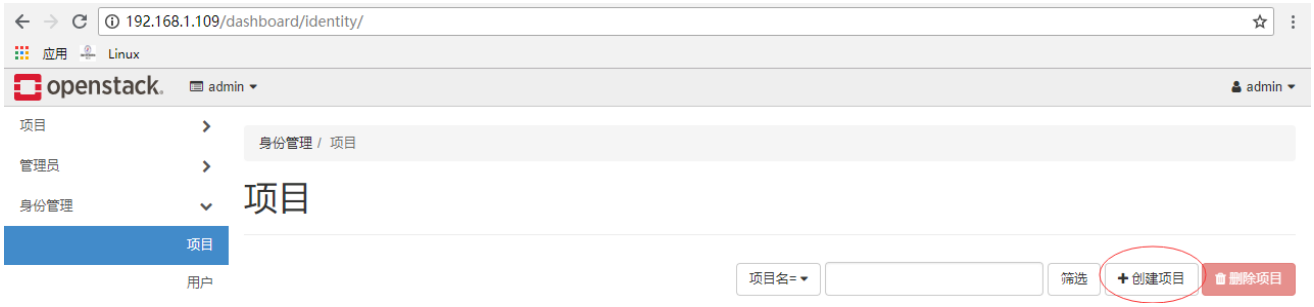
Build openstack and Share it

Purpose

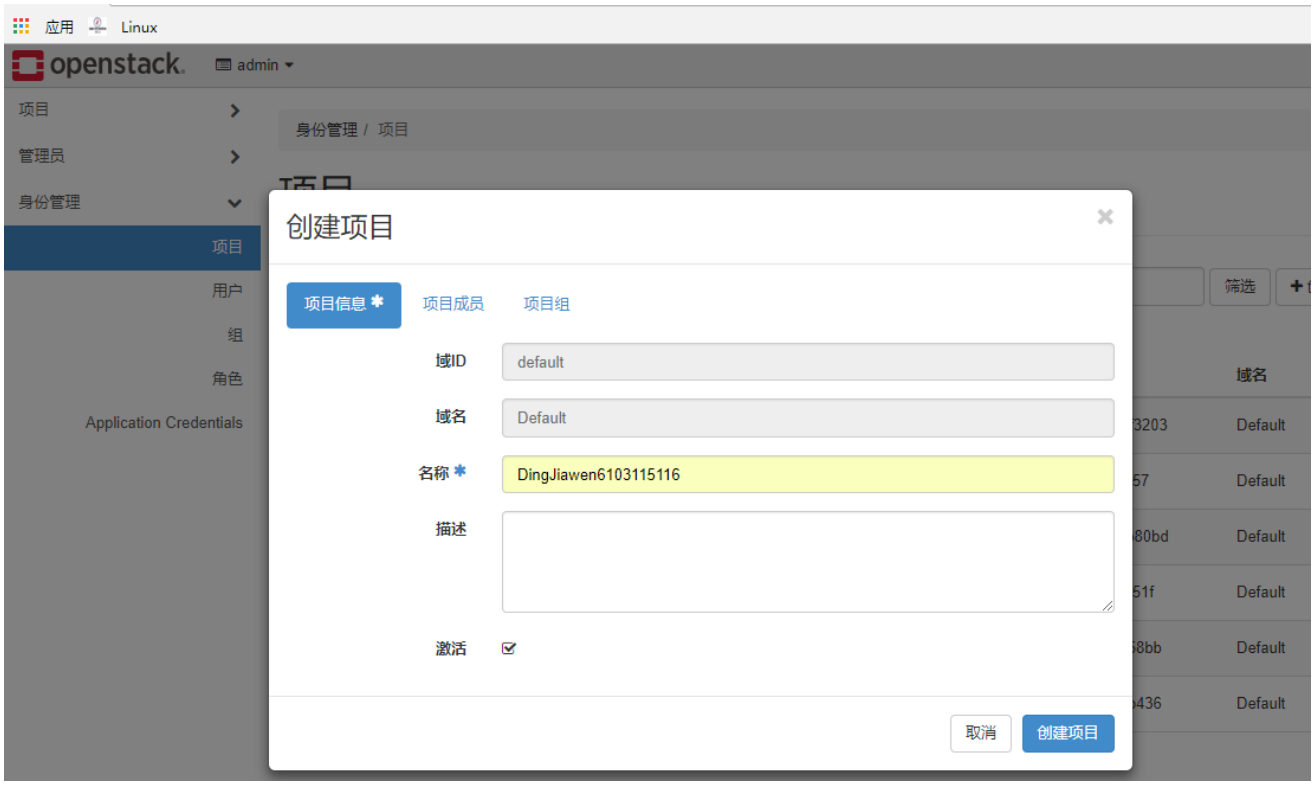
Deploy an openstack platform to build an instance (host) on the platform, and then deploy a service on the host.

Experimental steps

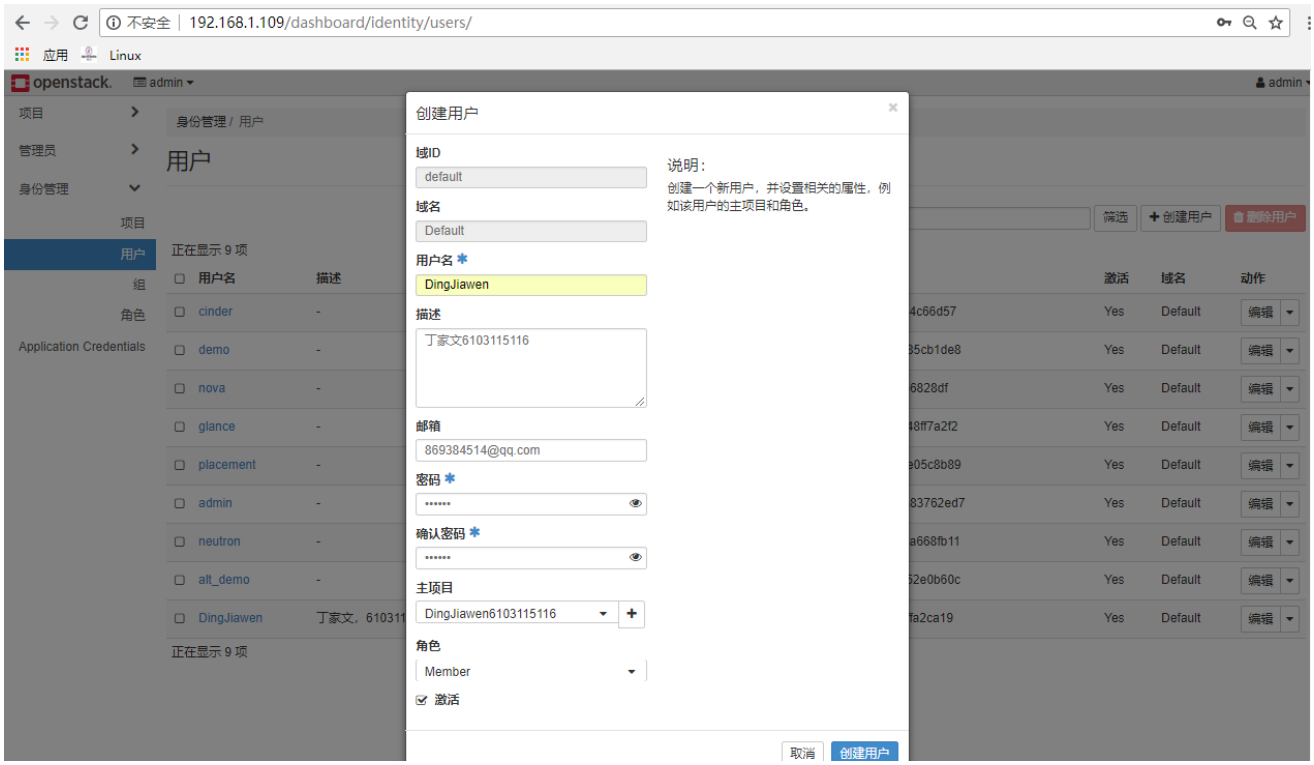
- **Deploying openstack services through devstack**



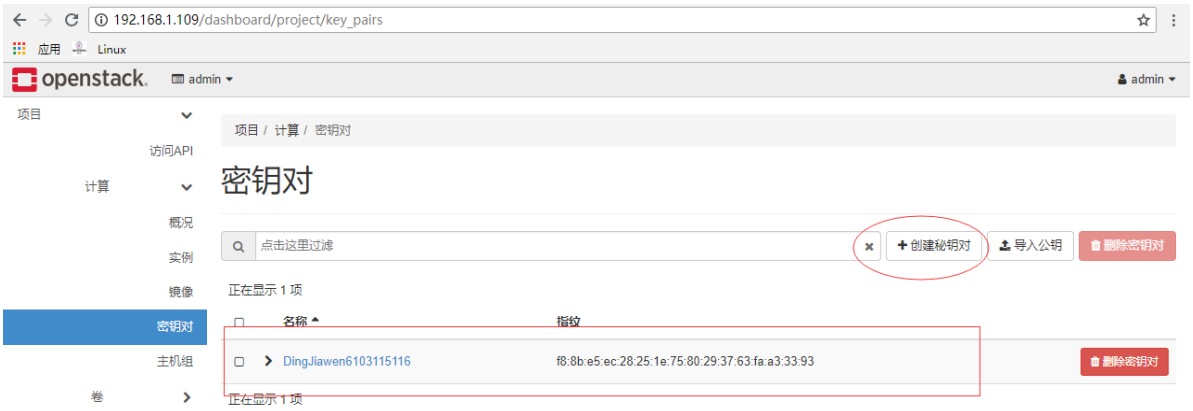
- **Create a project**



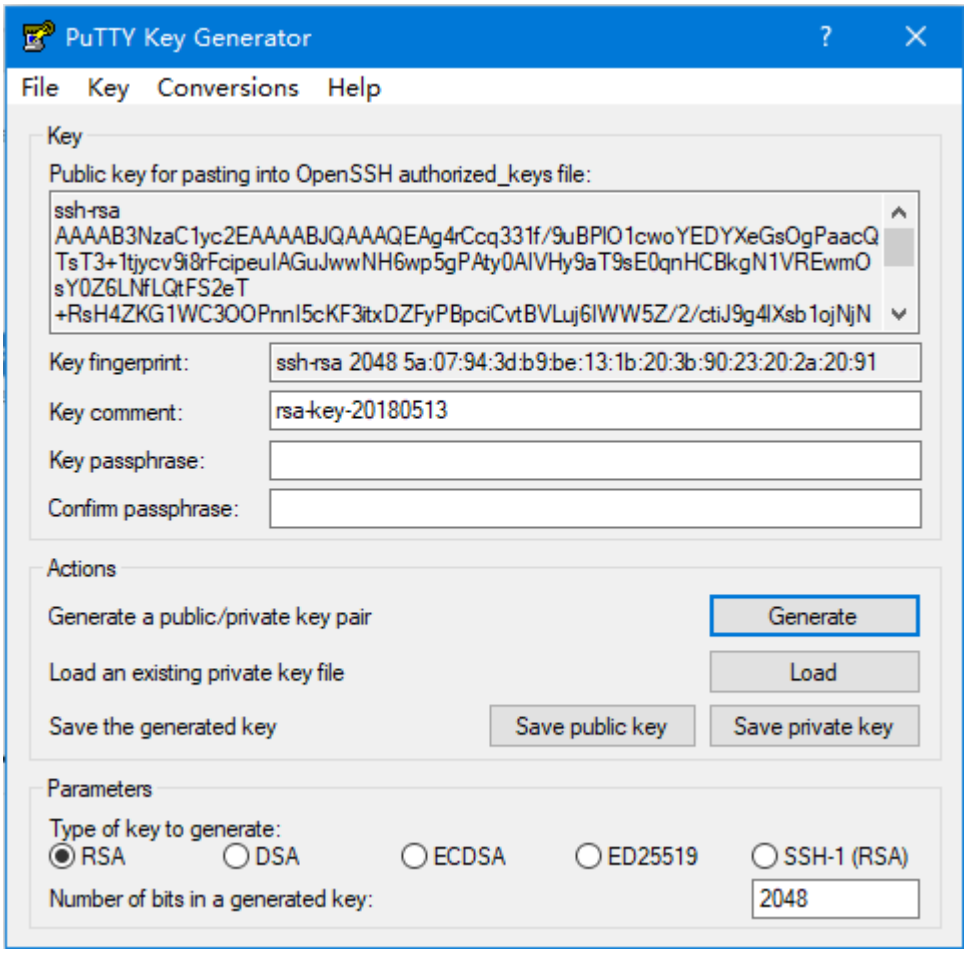
- **Create a user**



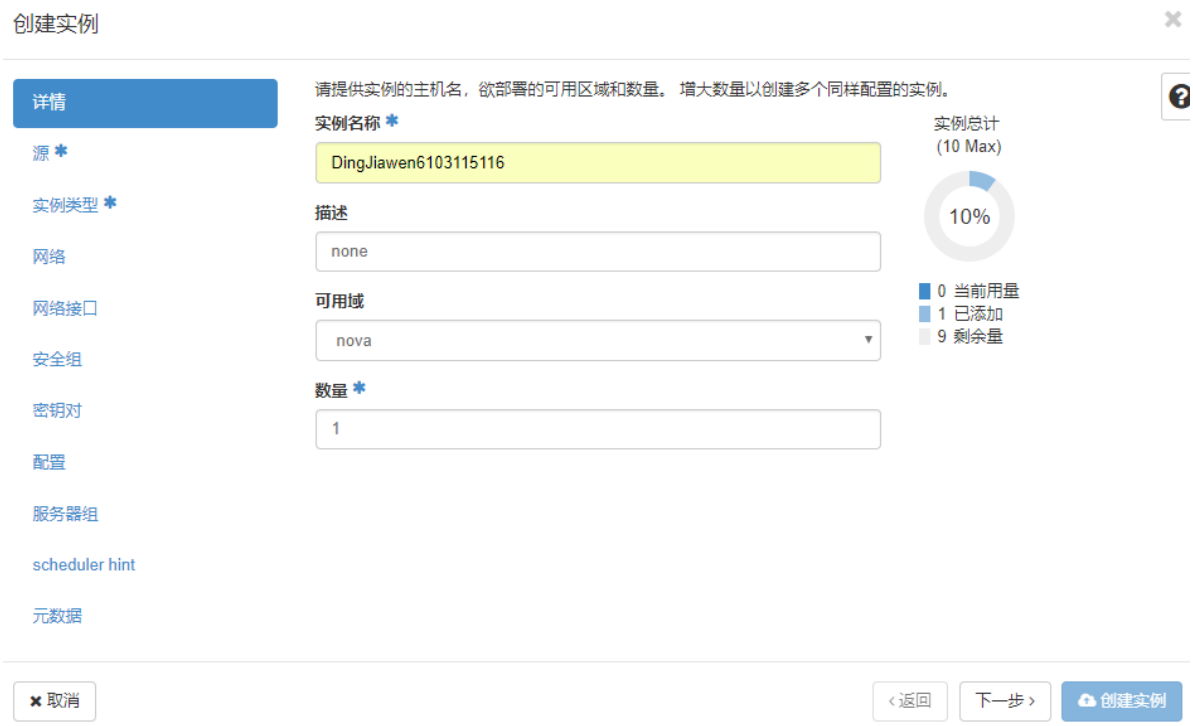
- **Create key pair**
  - Created through system



  - Created through PuTTYgen



- **Create an instance**
  - details



  - source

- instance type

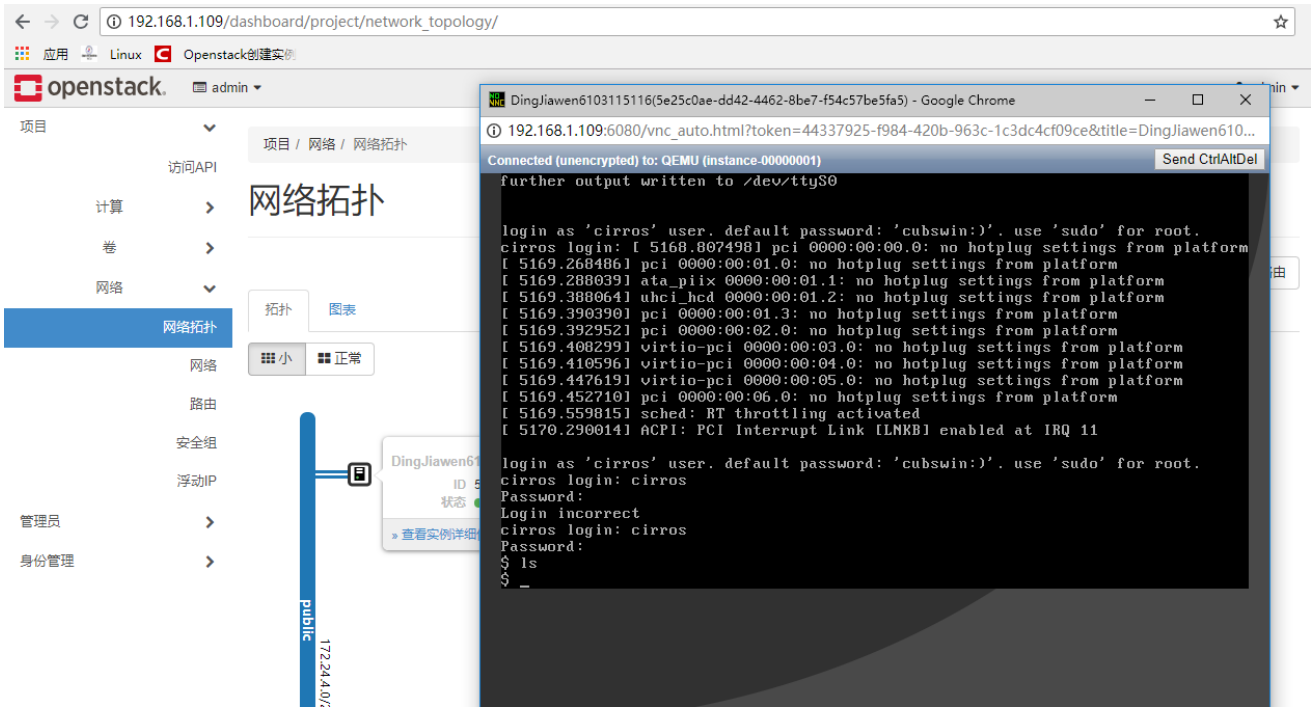
- successful

- **Assign IP for an instance**

- Details of the instance

- Network topology

- Boarding the host



- **Explain :**

Since the computer can not carry the pressure of openstack service, the following experiments are carried out by using Docker in Windows environment.

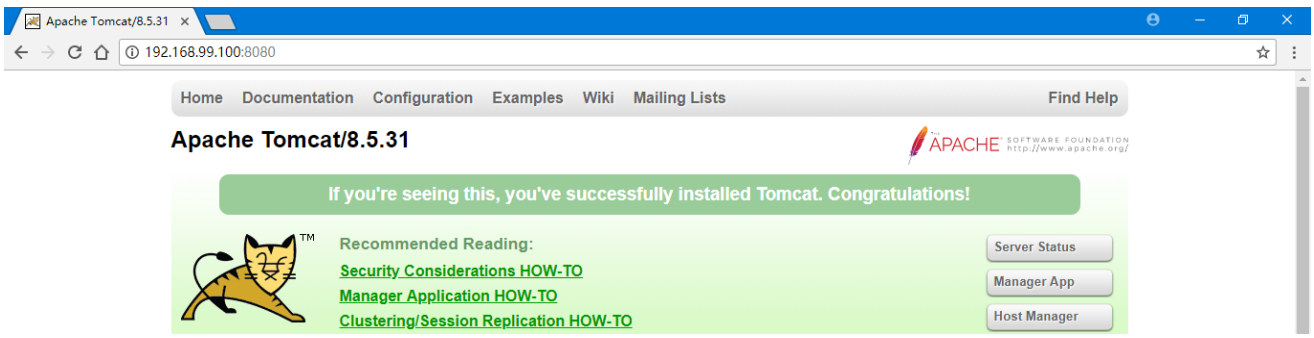
- **Pull Tomcat(already)**

```
86938@ncuwen MINGW64 ~
$ docker pull tomcat
Using default tag: latest
latest: Pulling from library/tomcat
Digest: sha256:bb46fa03a24e949afe92ecac99374d9bfad5d99c05e4855f91ccb437124aa13f
Status: Image is up to date for tomcat:latest
```

- **run it**

```
86938@ncuwen MINGW64 ~
$ docker run --name tomcat -p 8080:8080 -v E:/Linux.war -d tomcat
72c0b641256dc57d308b163514af84132354415bd91c05bef20eff7af98313b7
```

- **Display**



- **Deploying my own project**
  - Enter the container to view the directory structure

```
86938@ncuwen MINGW64 ~
$ docker exec -it tomcat /bin/sh
# ls
LICENSE  NOTICE  RELEASE-NOTES  RUNNING.txt  bin  conf  include  lib  logs  native-jni-lib  temp  webapps  work
# 
```

  - Upload local files to the container

```
86938@ncuwen MINGW64 ~
$ docker cp Linux.war tomcat:/usr/local/tomcat/tomcat/webapps
Error response from daemon: Could not find the file /usr/local/tomcat/tomcat in container tomcat

86938@ncuwen MINGW64 ~
$ docker cp Linux.war tomcat:/usr/local/tomcat/webapps

86938@ncuwen MINGW64 ~
$ docker exec -it tomcat /bin/sh
# cd /
# cd /usr/local/tomcat/webapps
# ls
Linux  Linux.war  ROOT  docs  examples  host-manager  manager
# 
```

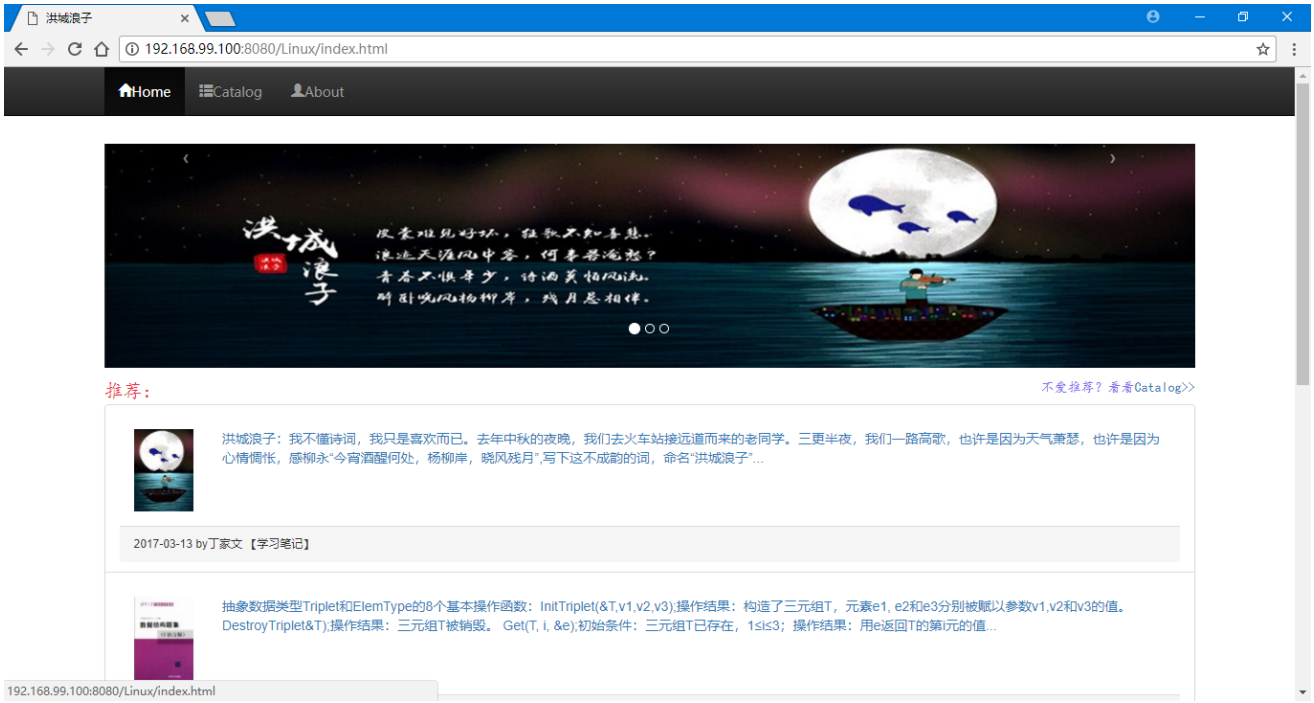
  - Explain
    - Local host directory : C:\Users\86938
    - container : /usr/local/tomcat/webapps

- **ReStart Tomcat**

```
# cd ..
# ls
LICENSE  RELEASE-NOTES  bin   include  logs            temp     work
NOTICE   RUNNING.txt    conf  lib      native-jni-lib  webapps
# cd bin
# ls
bootstrap.jar                configtest.sh    startup.sh
catalina-tasks.xml           daemon.sh        tomcat-juli.jar
catalina.sh                  digest.sh        tool-wrapper.sh
commons-daemon-native.tar.gz setclasspath.sh  version.sh
commons-daemon.jar           shutdown.sh
# ./shutdown.sh
Using CATALINA_BASE:   /usr/local/tomcat
Using CATALINA_HOME:   /usr/local/tomcat
Using CATALINA_TMPDIR: /usr/local/tomcat/temp
Using JRE_HOME:        /docker-java-home/jre
Using CLASSPATH:       /usr/local/tomcat/bin/bootstrap.jar:/usr/local/tomcat/bin/tomcat-juli.jar
#
86938@ncuwen MINGW64 ~
$ docker exec -it tomcat /bin/sh
Error response from daemon: Container 72c0b641256dc57d308b163514af84132354415bd91c05bef20eff7af98313b7 is not running

86938@ncuwen MINGW64 ~
$ docker start tomcat
tomcat
```

- **Display**



Reflection

Openstack is build a cloud platform (public or private) on the server or personal computer , and then on this cloud platform, many instances (hosts) can be created, and a IP is allocated for each instance, within the network, the services deployed on this instance can be accessed through the IP.

Docker can also create a virtual host through a pull image, and the service on the host can also be accessed through the IP allocated by the Docker.

Reference

【Docker】: https://www.docker.com/

【Tomcat in Docker】: https://blog.csdn.net/leafage_m/article/details/72081987

【File transfer from localhost to docker】: https://blog.csdn.net/leafage_m/article/details/72082011

【Using Volume for file transfer in the host and Docker containers】: https://blog.csdn.net/Leafage_M/article/details/78575205