

Computer Networks – Lab  
Fall 2020

Momina Atif Dar  
P18-0030

Client Server Communication using Docker

**Server Side**

Container creation:

```
(base) momina@death-eater:~$ sudo docker run --name server-p180030 -it ubuntu  
root@dd7645bfb83e:/# _
```

Starting container:

```
(base) momina@death-eater:~$ sudo docker start server-p180030  
server-p180030
```

Running container:

```
(base) momina@death-eater:~$ sudo docker exec -it server-p180030 bash  
root@dd7645bfb83e:/# _
```

Installing vim:  
(after apt-get update)

```
root@dd7645bfb83e:/# apt-get install vim  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done
```

Installing 'ifconfig' and other similar tools:

```
root@dd7645bfb83e:/# apt install inetutils-ping net-tools -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libidn11 netbase
The following NEW packages will be installed:
  inetutils-ping libidn11 net-tools netbase
0 upgraded, 4 newly installed, 0 to remove and 15 not upgraded.
Need to get 316 kB of archives.
```

Installing python:

```
root@dd7645bfb83e:/# apt-get install python
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'python-is-python2' instead of 'python'
The following additional packages will be installed:
  libpython2-stdlib libpython2.7-minimal libpython2.7-stdlib python2
  python2-minimal python2.7 python2.7-minimal
Suggested packages:
  python2-doc python-tk python2.7-doc binutils binfmt-support
The following NEW packages will be installed:
  libpython2-stdlib libpython2.7-minimal libpython2.7-stdlib python-is-python2
  python2 python2-minimal python2.7 python2.7-minimal
0 upgraded, 8 newly installed, 0 to remove and 15 not upgraded.
```

Checking the IP of server:

(172.17.0.4)



## Client Side

Creation of container:

```
(base) momina@death-eater:~$ sudo docker run --name client-p180030 -it ubuntu  
root@eb8ffffac4888:/# _
```

Starting container:

```
(base) momina@death-eater:~$ sudo docker start client-p180030  
client-p180030  
(base) momina@death-eater:~$ _
```

Running container:

```
(base) momina@death-eater:~$ sudo docker exec -it client-p180030 bash  
root@eb8ffffac4888:/# _
```

Installing vim:

```
root@eb8ffffac4888:/# apt-get install vim  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  alsa-topology-conf alsa-ucm-conf file libasound2 libasound2-data libcanberra0 libexpat1 l  
  libltdl7 libmagic-mgc libmagic1 libmpdec2 libogg0 libpython3.8 libpython3.8-minimal
```

Installing 'ifconfig' and other similar tools:

```
root@eb8ffffac4888:/# apt install inetutils-ping net-tools -y  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  libidn11 netbase  
The following NEW packages will be installed:  
  inetutils-ping libidn11 net-tools netbase  
0 upgraded, 4 newly installed, 0 to remove and 15 not upgraded.
```

## Installing python:

```
root@eb8fffac4888:/# apt-get install python
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'python-is-python2' instead of 'python'
The following additional packages will be installed:
  libpython2-stdlib libpython2.7-minimal libpython2.7-stdlib python2 python2-minimal python2.7
  python2.7-minimal
Suggested packages:
  python2-doc python-tk python2.7-doc binutils binfmt-support
The following NEW packages will be installed:
  libpython2-stdlib libpython2.7-minimal libpython2.7-stdlib python-is-python2 python2
  python2-minimal python2.7 python2.7-minimal
0 upgraded, 8 newly installed, 0 to remove and 15 not upgraded.
```

### Creating a client.py file:

```
import socket
s=socket.socket(socket.AF_INET, socket.SOCK_STREAM)
s.connect(("172.17.0.4", 1024))
msg=s.recv(1024)
print(msg.decode("utf-8"))

"client.py" 6L, 143C
```

## Connection Established

Server Side:

```
root@dd7645bfb83e:/# python server.py
connection to ('172.17.0.5', 43278) established
_
```

Client Side:

```
root@eb8ffffac4888:/# python client.py
this message is coming from Server side.
root@eb8ffffac4888:/# _
```

---