

```
# cd /home /user /containernet
```

```
# python3 ./setup.py install
```

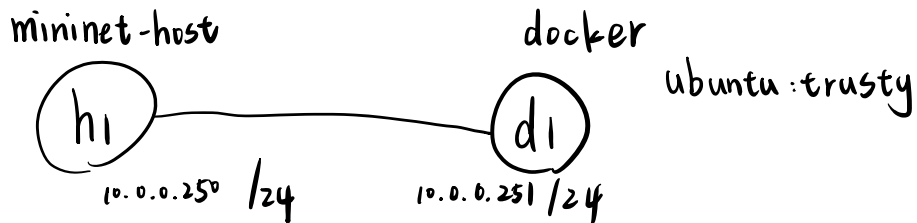
```
# cd /home /user /containernet /example
```

```
# python3 dockertest.py
```

```
> h1 ping d1  
✓
```

```
# docker image
```

```
# docker pull ubuntu:trusty
```



```
# gedit dockertest.py
```

```
# python3 dockertest.py
```

```
> xterm h1
```

```
h1
```

```
# ping 10.0.0.251
```

呼叫 d1

```
# docker ps
```

```
# docker exec -it mn.d1 bash
```

```
/# ifconfig
```

```
10.0.0.251
```

```
/# ping 10.0.0.250
```

```
/# docker run -it ubuntu:trusty bash
```

更新

```
/# apt update
```

安装ssh

```
/# apt install openssh-server
```

```
/# apt install apache2
```

```
/# apt install vim
```

编辑

ssh配置文件

```
/# vim /etc/ssh/sshd_config
```

```
# PermitRootLogin without-password
PermitRootLogin yes
```

啟動 ssh

```
/# /etc/init.d/ssh start
/# /etc/init.d/ssh status
* sshd is running
/# ifconfig
172.17.0.2
```

設定 password

```
/# passwd root
ubuntu
```

測試 terminal

```
# ssh root@172.17.0.2
```

```
/# ifconfig
172.17.0.2
/# exit
```

網頁啟動 docker

```
/# /etc/init.d/apache2 start
/# /etc/init.d/apache2 status
* apache2 is running
```

```
/# cd /var/www/html
/# echo hi > hi.htm
```

測試 terminal

```
# curl 172.17.0.2/hi.htm
hi
```

做成 new image

```
# docker ps
# docker commit [ID] ubuntu:1.0
```

```
# gedit dockerhost1.py
```

```
image="ubuntu:1.0"
```

```
net.start()
```

```
d1.cmd("/etc/init.d/ssh start")
```

```
d1.cmd("/etc/init.d/apache2 start")
```

```
# python3 dockerhost1.py
```

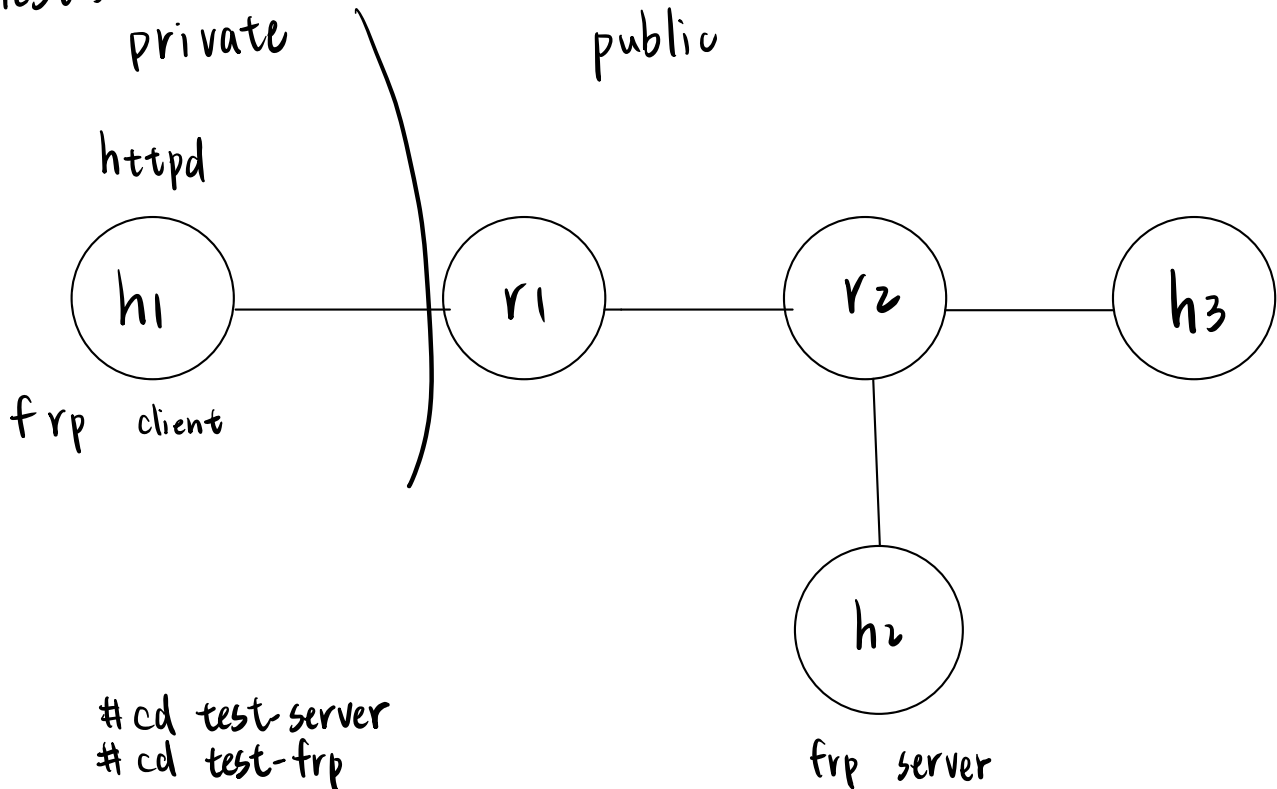
```
> hi ssh root@10.0.0.251
/# exit
```

```
> h1 curl 10.0.0.251/hi.htm  
hi
```

1. port forwarding (DNAT)

2. frp

Test<sup>3</sup>



```
# cd test-server
```

```
# cd test-frp
```

```
# python test.py
```

```
> xterm h1 h1 h2 h3
```

```
h1
```

```
# echo hi > hi.htm
```

```
# python -m SimpleHTTPServer 80
```

```
h1 h2
```

```
# cd /frp/conf
```

```
# ./frps -c frps.ini
```

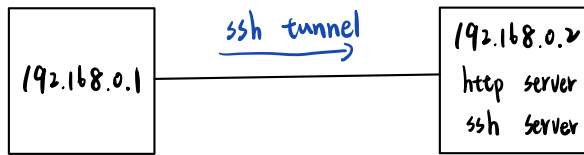
```
h3
```

```
# cat /etc/hosts
```

```
# curl www.example.com:8080/hi.htm
```

```
hi
```

# Local Port Forwarding



```
# cd /test-server/test-sshtunnel
```

```
# python3 l.py
```

```
> xterm hi hi
```

new terminal

```
# docker exec -it mn.d1 bash
/# /etc/init.d / ssh start
/# /etc/init.d / apache2 start
/#
```

```
hi
# wireshark
```

```
hi
# curl 192.168.0.2 /hi.htm
```

hi

```
# ssh -Nf -L 192.168.0.1:5555:192.168.0.2:80 root@192.168.0.2
passwd: ubuntu
```

```
# netstat -tunlp | grep 5555
```

```
# curl 192.168.0.1:5555/hi.htm
hi
```