



Experiments12

Linux Administration

Open Source SW Development
CSE22300



SSH

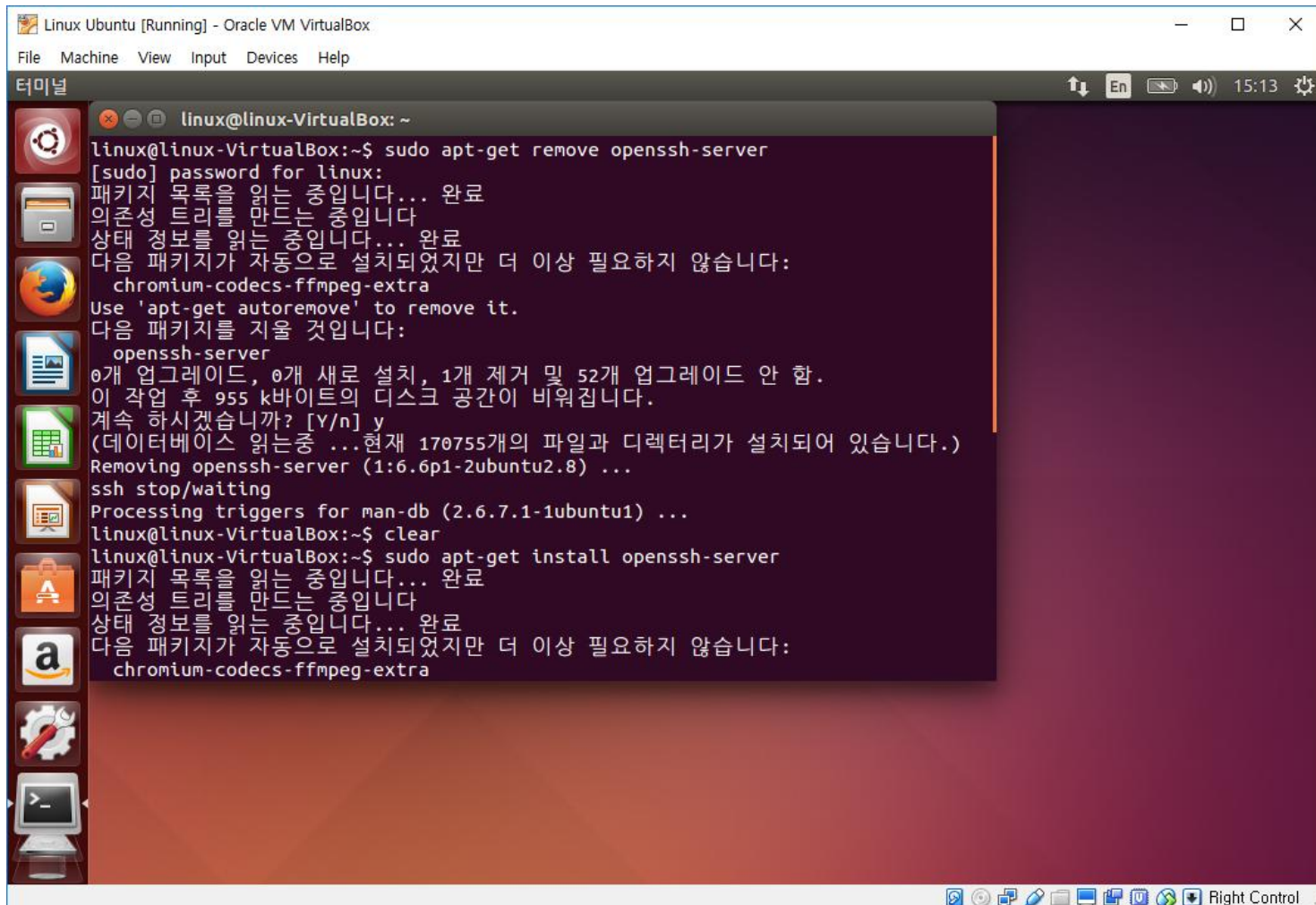
- **Secure Shell**
- **Supports secure remote logins, secure remote command execution, secure file transfers**
- **Has a client server architecture – SSH server program and client program**

Features

- **Privacy**
 - via strong end-to-end encryption- DES, IDEA, Blowfish
- **Integrity**
 - via 32 bit Cyclic Redundancy Check (CRC-32)
- **Authentication**
 - server via server's host key, client usually via password or public key
- **Authorization**
 - controlled at a server wide level or per account basis
- **Forwarding**
 - encapsulating another TCP based service such as Telnet within an SSH session

Install SSH Server

- **sudo apt-get install openssh-server**

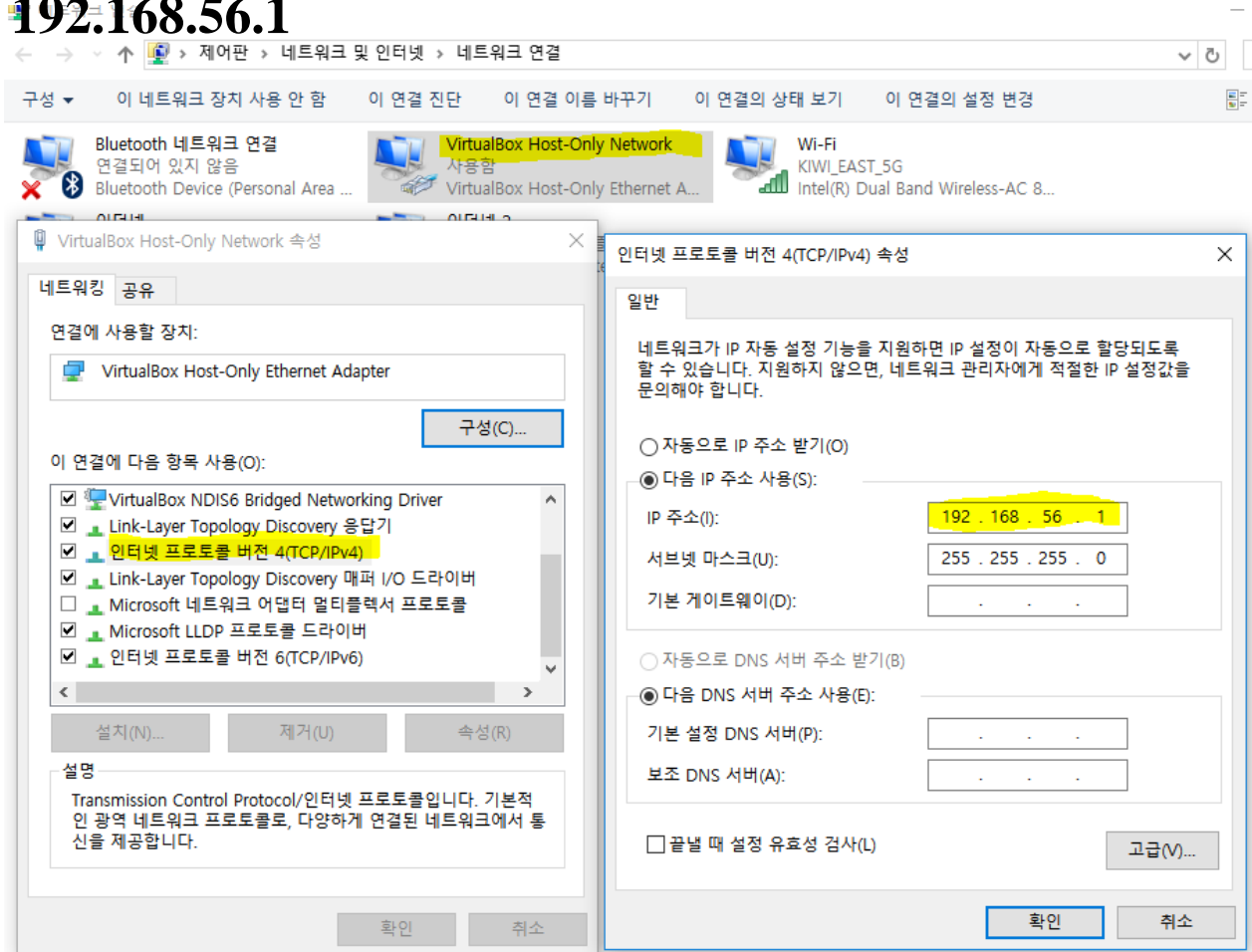


The screenshot shows a terminal window titled "linux@linux-VirtualBox: ~" within an Oracle VM VirtualBox environment. The terminal output shows the following sequence of commands and their results:

```
linux@linux-VirtualBox:~$ sudo apt-get remove openssh-server
[sudo] password for linux:
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
다음 패키지가 자동으로 설치되었지만 더 이상 필요하지 않습니다:
  chromium-codecs-ffmpeg-extra
Use 'apt-get autoremove' to remove it.
다음 패키지를 지울 것입니다:
  openssh-server
0개 업그레이드, 0개 새로 설치, 1개 제거 및 52개 업그레이드 안 함.
이 작업 후 955 k바이트의 디스크 공간이 비워집니다.
계속 하시겠습니까? [Y/n] y
(데이터베이스 읽는중 ...현재 170755개의 파일과 디렉터리가 설치되어 있습니다.)
Removing openssh-server (1:6.6p1-2ubuntu2.8) ...
ssh stop/waiting
Processing triggers for man-db (2.6.7.1-1ubuntu1) ...
linux@linux-VirtualBox:~$ clear
linux@linux-VirtualBox:~$ sudo apt-get install openssh-server
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
다음 패키지가 자동으로 설치되었지만 더 이상 필요하지 않습니다:
  chromium-codecs-ffmpeg-extra
```

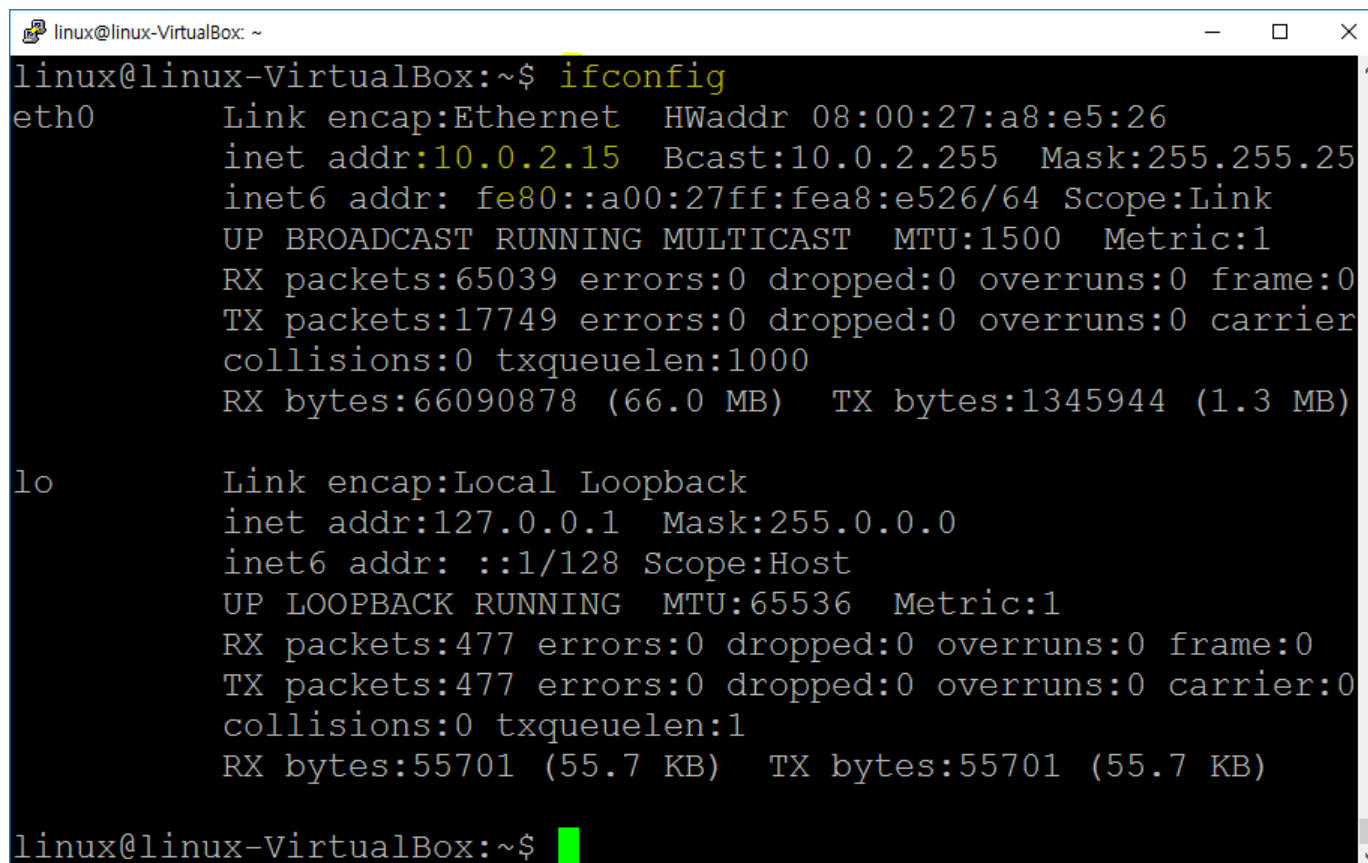
Configuring Virtualbox for SSH

- IP of VirtualBox Host-Only Network
 - 192.168.56.1



Configuring Virtualbox for SSH

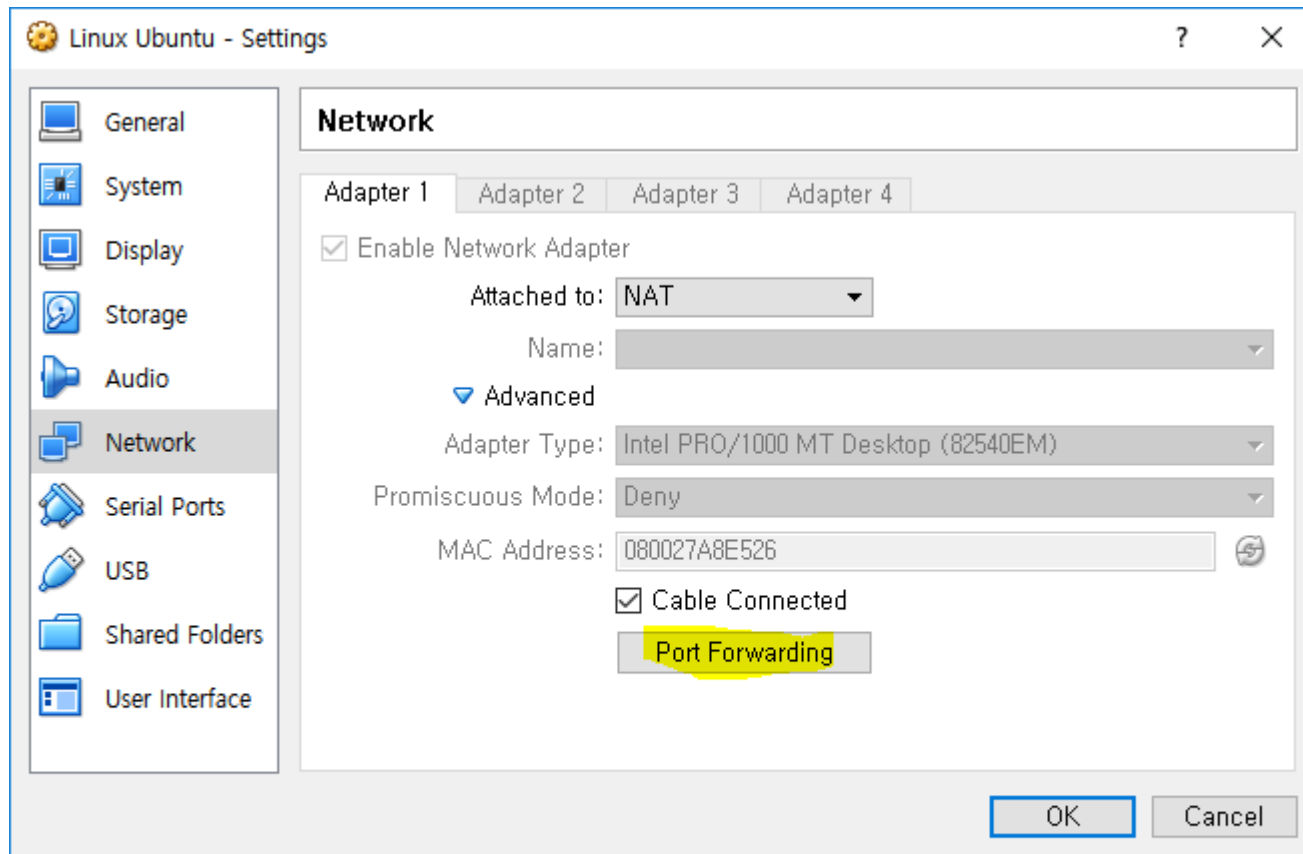
- IP of Linux with ifconfig
 - 10.0.2.15



```
linux@linux-VirtualBox: ~  
linux@linux-VirtualBox:~$ ifconfig  
eth0      Link encap:Ethernet  HWaddr 08:00:27:a8:e5:26  
          inet addr:10.0.2.15  Bcast:10.0.2.255  Mask:255.255.255  
          inet6 addr: fe80::a00:27ff:fea8:e526/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:65039 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:17749 errors:0 dropped:0 overruns:0 carrier  
          collisions:0 txqueuelen:1000  
          RX bytes:66090878 (66.0 MB)  TX bytes:1345944 (1.3 MB)  
  
lo        Link encap:Local Loopback  
          inet addr:127.0.0.1  Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
          UP LOOPBACK RUNNING  MTU:65536  Metric:1  
          RX packets:477 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:477 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1  
          RX bytes:55701 (55.7 KB)  TX bytes:55701 (55.7 KB)  
  
linux@linux-VirtualBox:~$
```

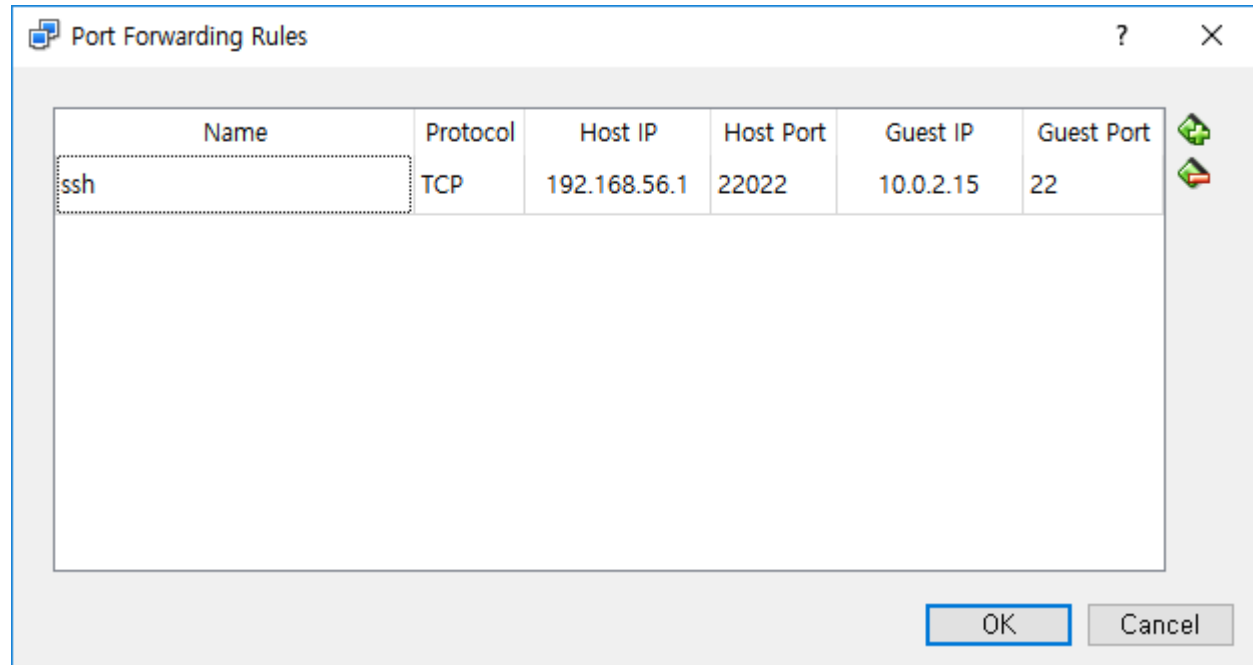
Configuring Virtualbox for SSH

- **Device → Network → Network Settings → Advanced**



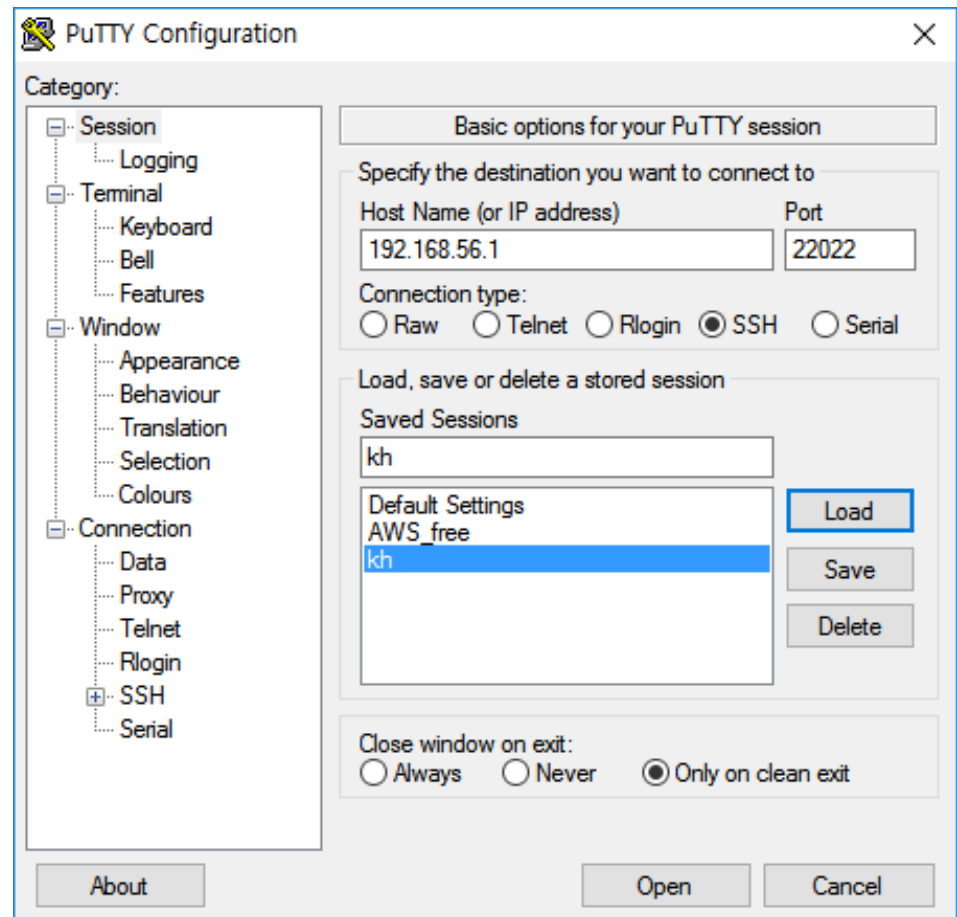
Configuring Virtualbox for SSH

- **Name : ssh**
- **Host IP : IP of VirtualBox Host-only Network (192.168.56.1)**
- **Host Port : 22022**
- **Guest IP : IP of Linux (10.0.2.15)**
- **Guest Port : 22**

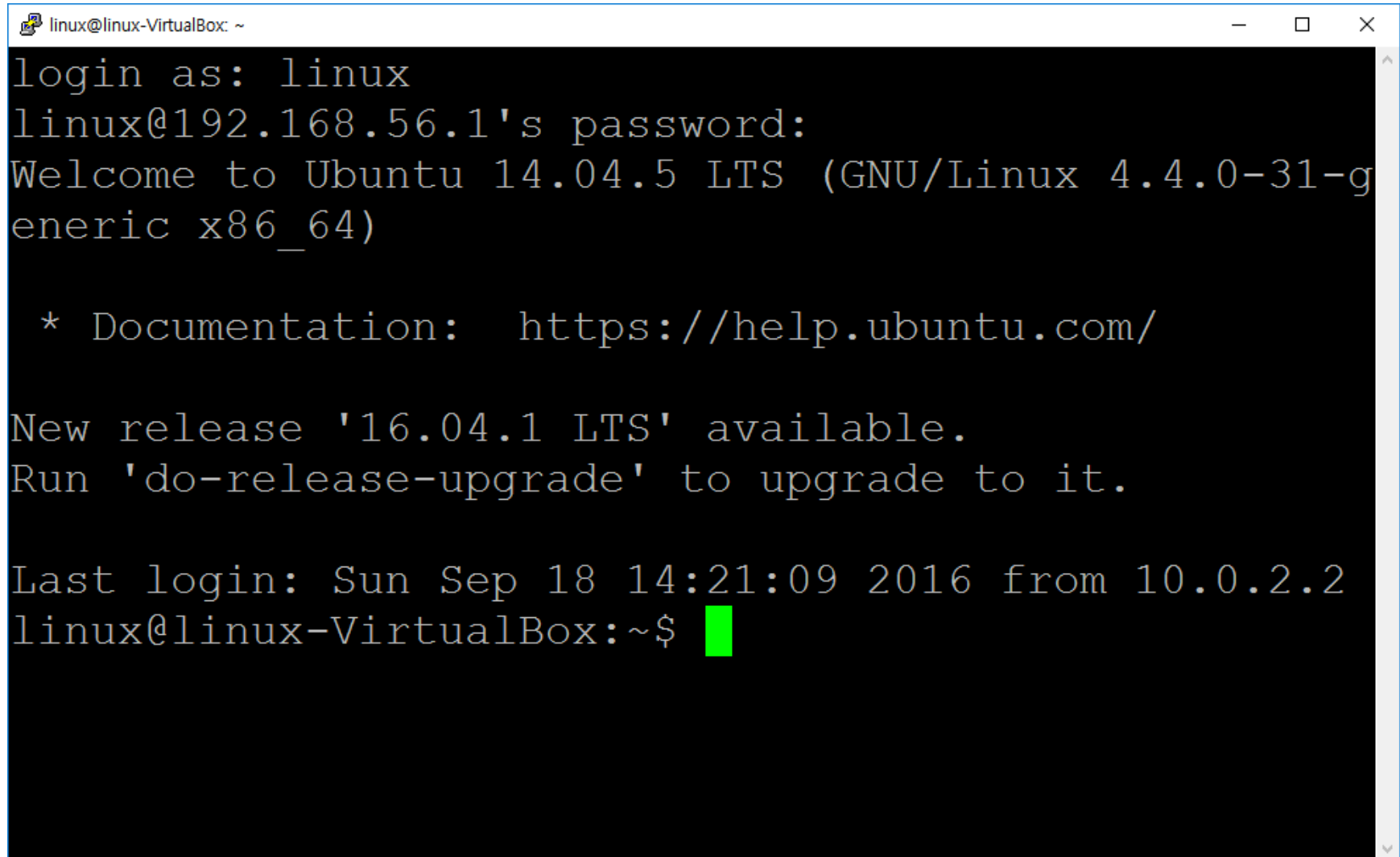


Putty

- **SSH client**
 - <https://the.earth.li/~sgtatham/putty/latest/x86/putty.exe>
- **Host Name**
 - **IP of Virtualbox Host-only Network**
 - **192.168.56.1**
- **Port**
 - **22022**



Connect

A terminal window titled 'linux@linux-VirtualBox: ~' with standard window controls. The terminal displays the login process for a user named 'linux' on an Ubuntu 14.04.5 LTS system. It shows the password prompt, a welcome message, documentation link, upgrade notification for 16.04.1 LTS, and the last login details. The prompt ends with a green cursor.

```
linux@linux-VirtualBox: ~  
login as: linux  
linux@192.168.56.1's password:  
Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 4.4.0-31-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com/  
  
New release '16.04.1 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Sun Sep 18 14:21:09 2016 from 10.0.2.2  
linux@linux-VirtualBox:~$
```

Assignment 01

- **Install Open-SSH Server in your VM of Virtual Box**
- **Connect the VM through SSH**
- **How to submit?**
 - **Capture Screenshot of login**

Assignment 02

- **Create a Block Device (10GB)**
- **Mount the block device into /ABC directory**
- **Create an user who has /ABC directory as home directory**

- **How to submit?**
 - **Capture Screenshot of /ABC directory**

Assignment 03

- **Install Apache Webserver**
 - Use apt-get
 - Connect `http://localhost`
- **How to submit?**
 - Capture Screenshot of browser