Lab Assignment

Cybersecurity Professional Program

Linux Security

Services and Hardening

LNX-05-L1

Install and Configure SSH

Lab Objective

Understand how to configure a new virtual machine in VirtualBox and how to transfer a file via Secure Copy Protocol (SCP).

Lab Mission

Install the SSH service for remote connection, use Secure Copy Protocol (SCP) to transfer files, and work with the Ubuntu Linux distribution.

Lab Duration

40–50 minutes

Requirements

- Practical experience with the APT package manager
- Knowledge of networking configuration
- Knowledge of SSH commands

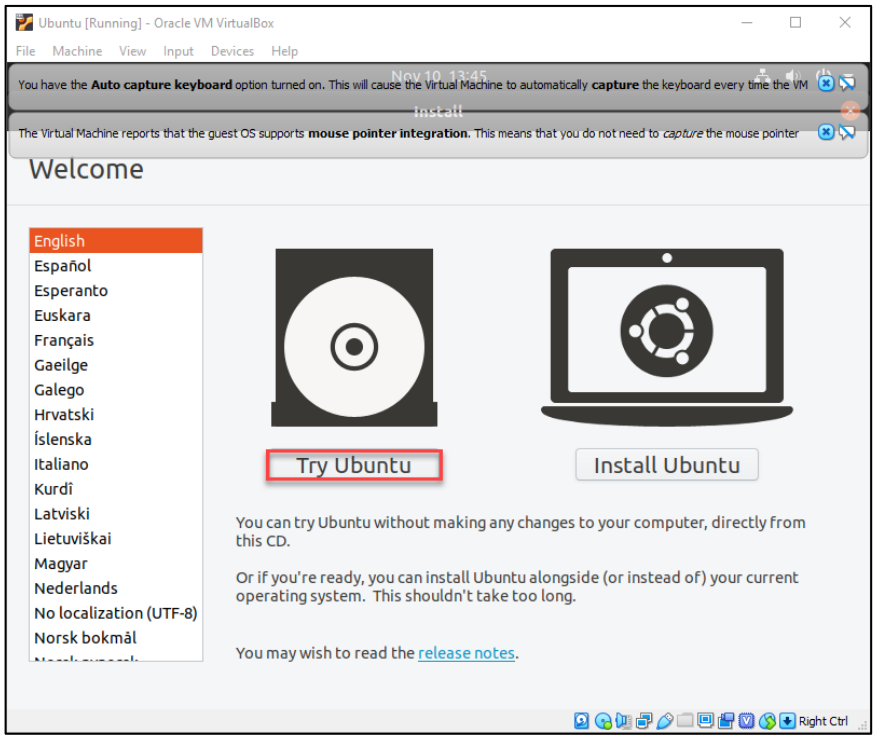
Resources

- Environment & Tools
  - VirtualBox
    - Debian
    - Ubuntu 20.04
  - SSH

Lab Task 1: Ubuntu CD Disc Startup

Use the Ubuntu 20.04 installation guide to create a new Ubuntu machine for use throughout the course.

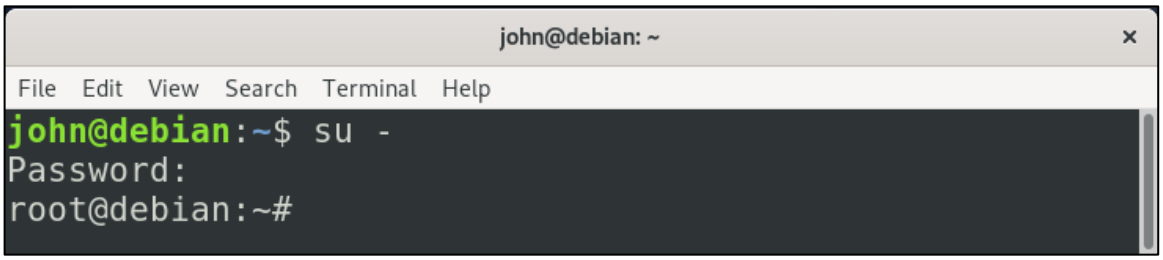
Note: When you reach step 15 in the installation guide, click ***Try Ubuntu*** instead of ***Install Ubuntu*.**



Lab Task 2: Install SSH and Work with SSH and SCP

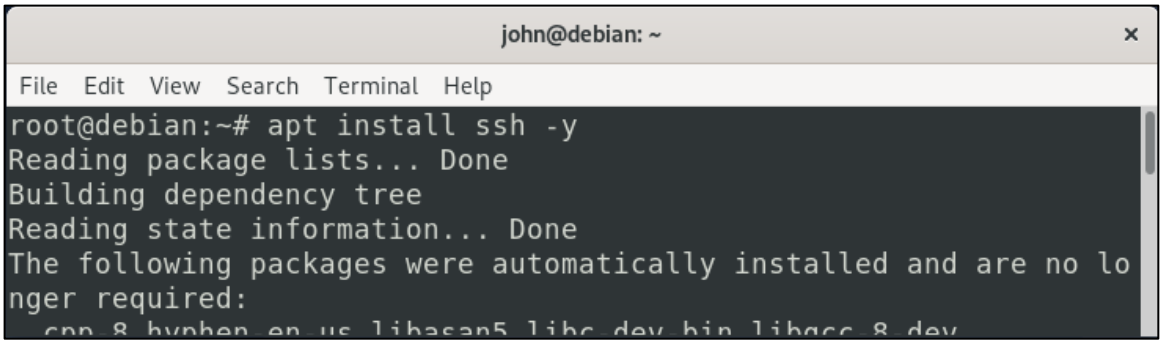
Facilitate communication between two Linux clients using Secure Shell (SSH).

1 Open the terminal and use the command ***su -*** to switch to the root user.

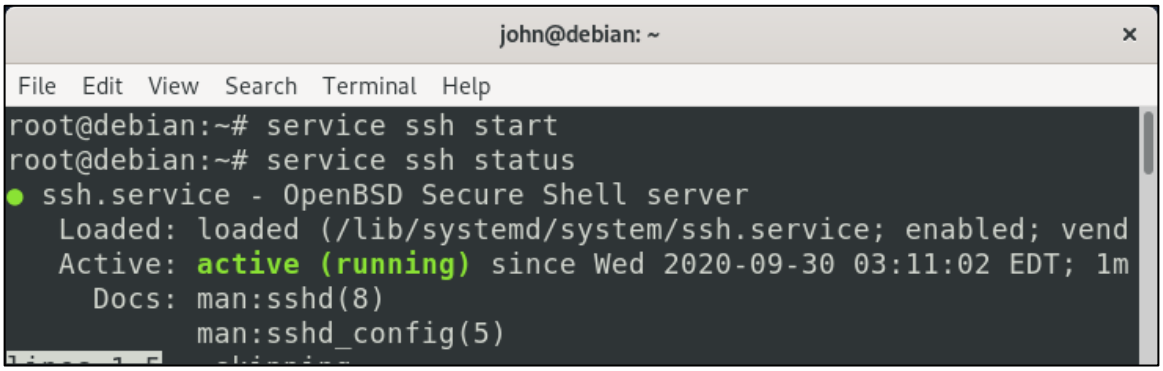


2 Use the ***apt update*** command.

3 Use the command ***apt install ssh -y*** to install the SSH service.



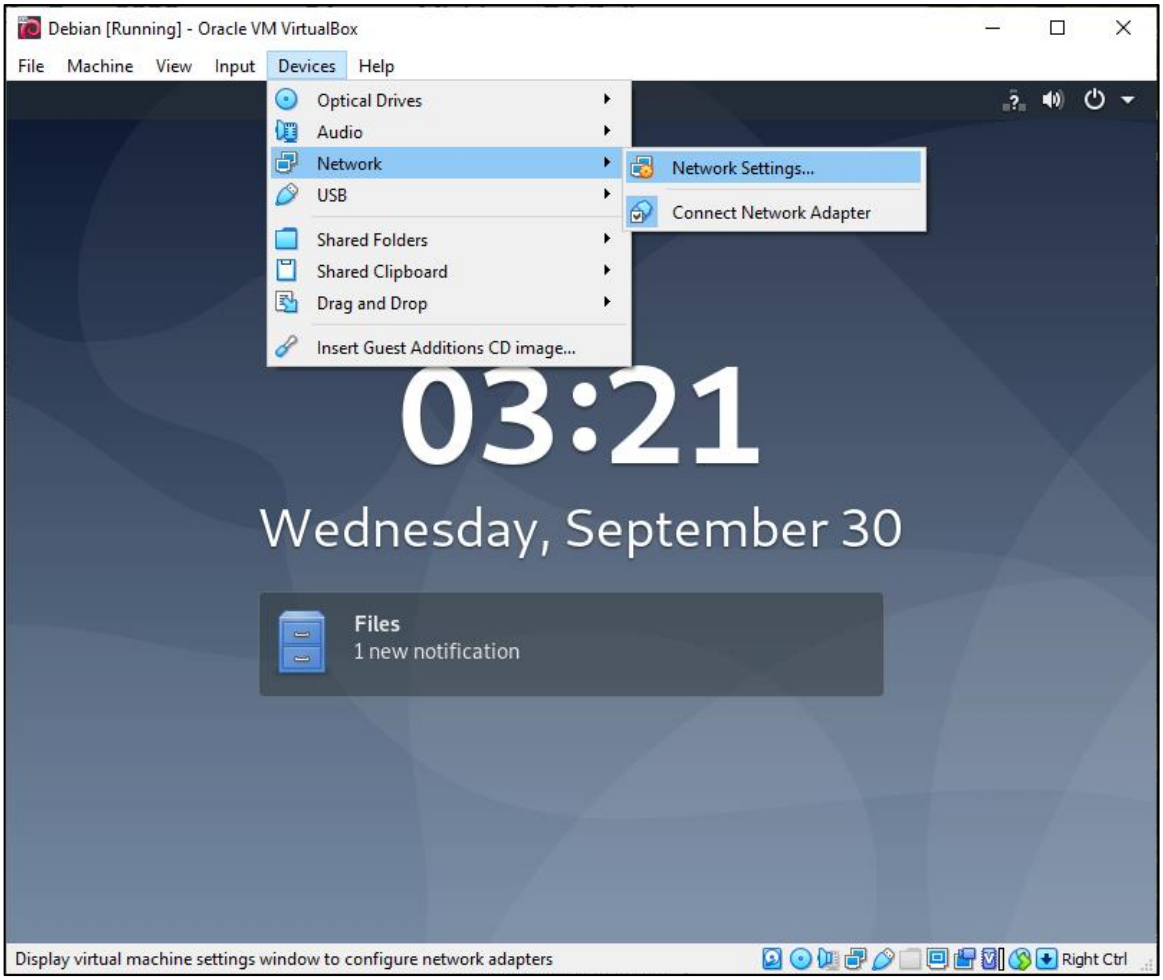
4 Use the command ***service ssh start*** to start the SSH service. Verify that SSH is running and active using the ***service ssh status*** command.



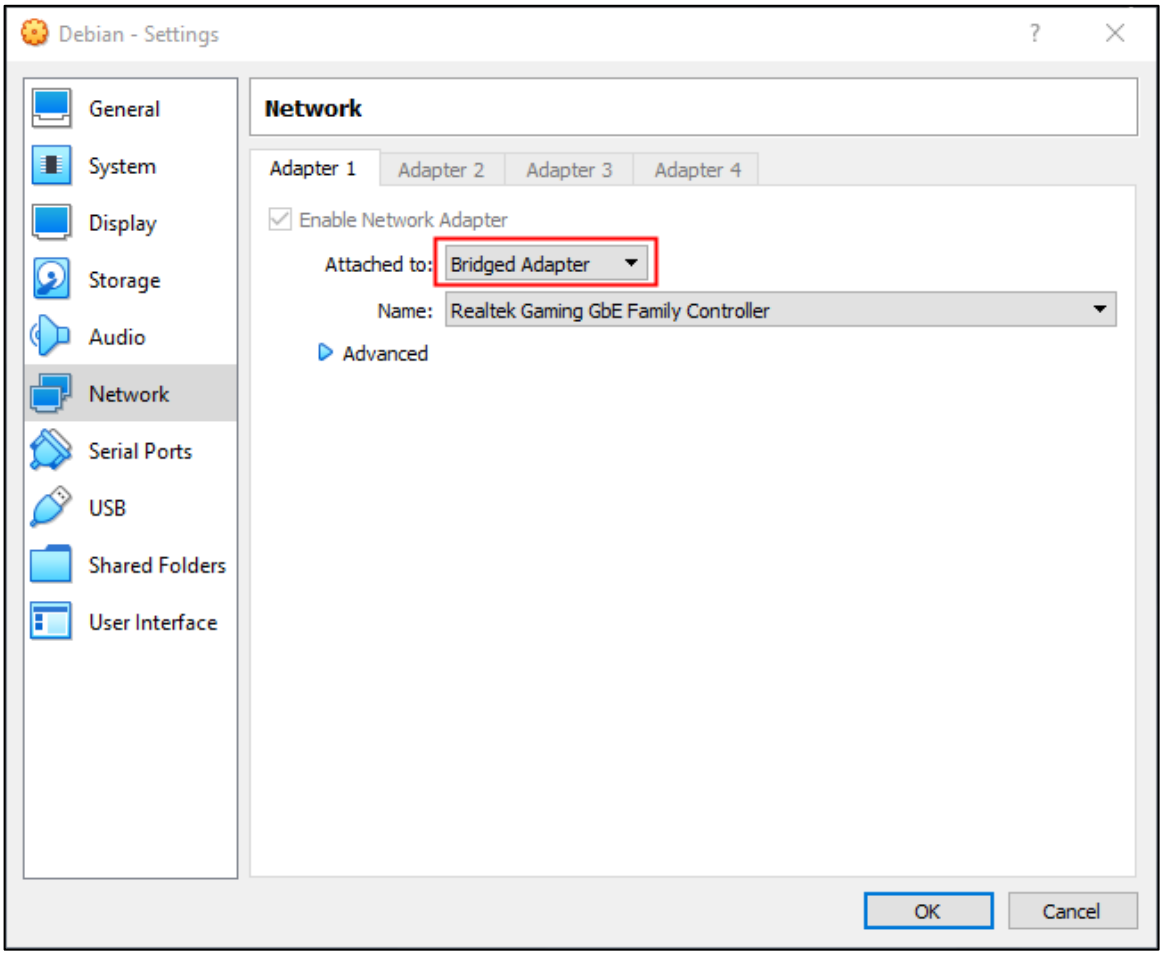
Lab Task 3: Debian/Ubuntu Network Configuration

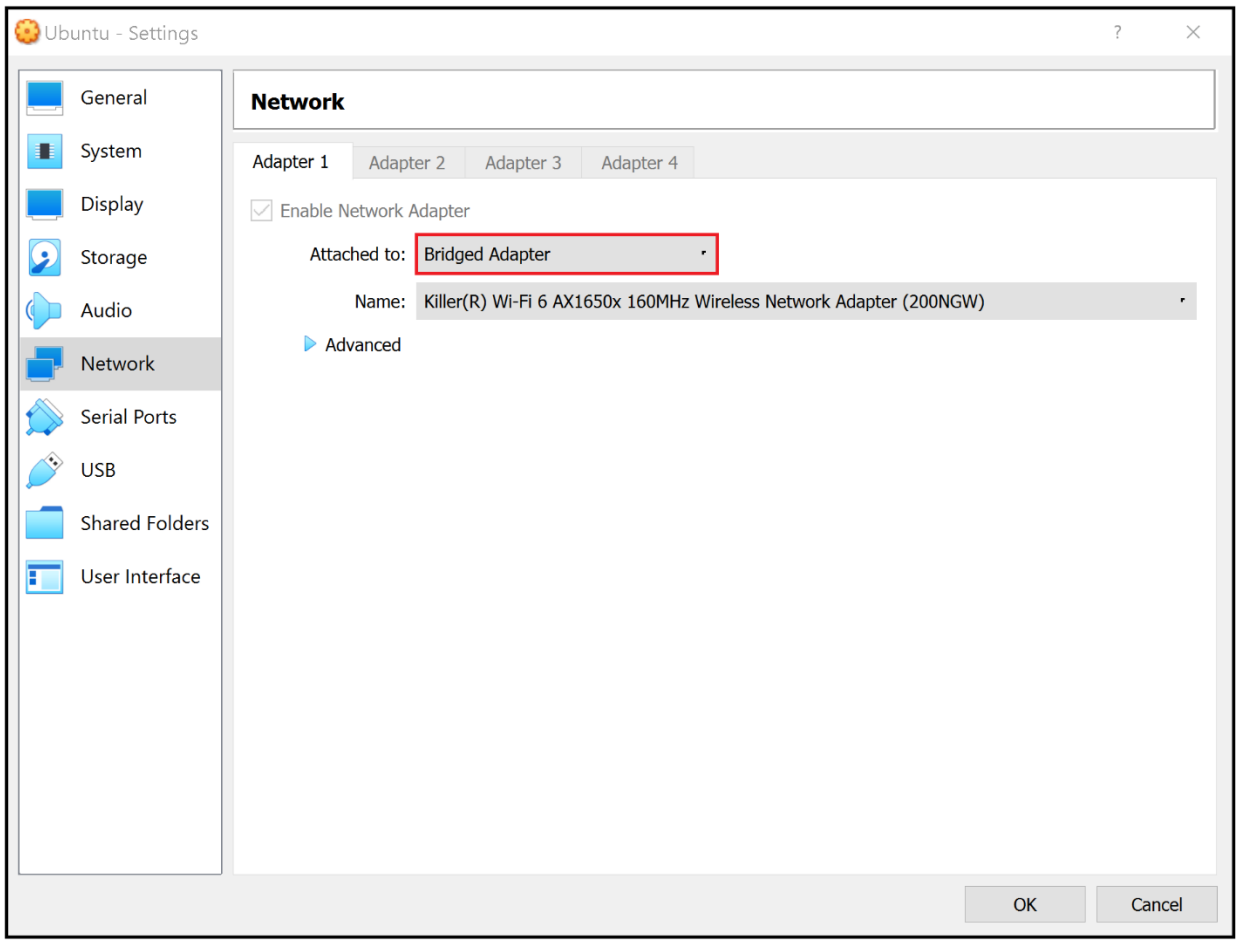
In this task, you will verify that Debian/Ubuntu is in bridged mode and is connected to the internet.

1 Click **Devices** in the VM menu, select ***Network***, and click ***Network Settings…*** to open the network configuration window.



2 Select the ***Bridged Adapter*** option and click **OK**.
Note: If the ***Bridged Adapter*** causes issues, try NAT.




Ubuntu - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Bridged Adapter
Name:
Killer(R) Wi-Fi 6 AX1650x 160MHz Wireless Network Adapter (200NGW)
Advanced
OK
Cancel

3 Use the command ***ip a*** to verify the IP address of your local machines. Verify the Debian/Ubuntu machines received an appropriate IP address on the local network.

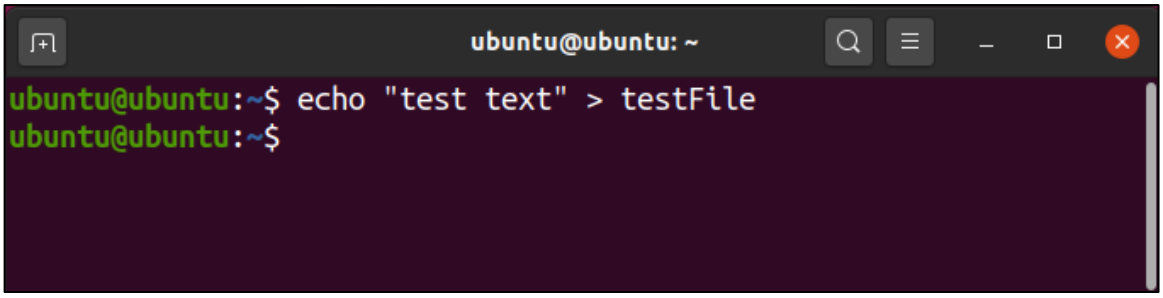
```
john@debian: ~
File  Edit  View  Search  Terminal  Help
root@debian:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN gro
up default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
state UP group default qlen 1000
    link/ether 08:00:27:6d:00:ff brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.12/24 brd 192.168.1.255 scope global dynamic enp0s3
       valid_lft 3598sec preferred_lft 3598sec
    inet6 2a00:a040:19c:a2e7:a00:27ff:fe6d:ff/64 scope global dynamic m
ngtmpaddr
       valid_lft 808166sec preferred_lft 330576sec
    inet6 fe80::a00:27ff:fe6d:ff/64 scope link
       valid_lft forever preferred_lft forever
root@debian:~#
```

```
john@john-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defaul
t qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP gr
oup default qlen 1000
    link/ether 08:00:27:bb:76:30 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.46/24 brd 192.168.0.255 scope global dynamic noprefixroute en
p0s3
       valid_lft 86206sec preferred_lft 86206sec
    inet6 fe80::c81c:5495:e80f:d599/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
```

Lab Task 4: File Creation and Transfer

In this task, you will create a file on the Ubuntu machine and transfer it to the Debian machine.

1. Open the terminal in the same way you open it in Debian. Use the command ***echo "test text" > testFile*** to create a new file with the text *test text*.



2. Use the command ***scp testFile <user>@<ip address>:~/*** to transfer the file from Ubuntu to your home directory on the Debian machine via SCP. Type **yes** when asked to connect and provide your password.

3 On the Debian machine, navigate to your home directory and verify the file was transferred using the ***ls*** command.