

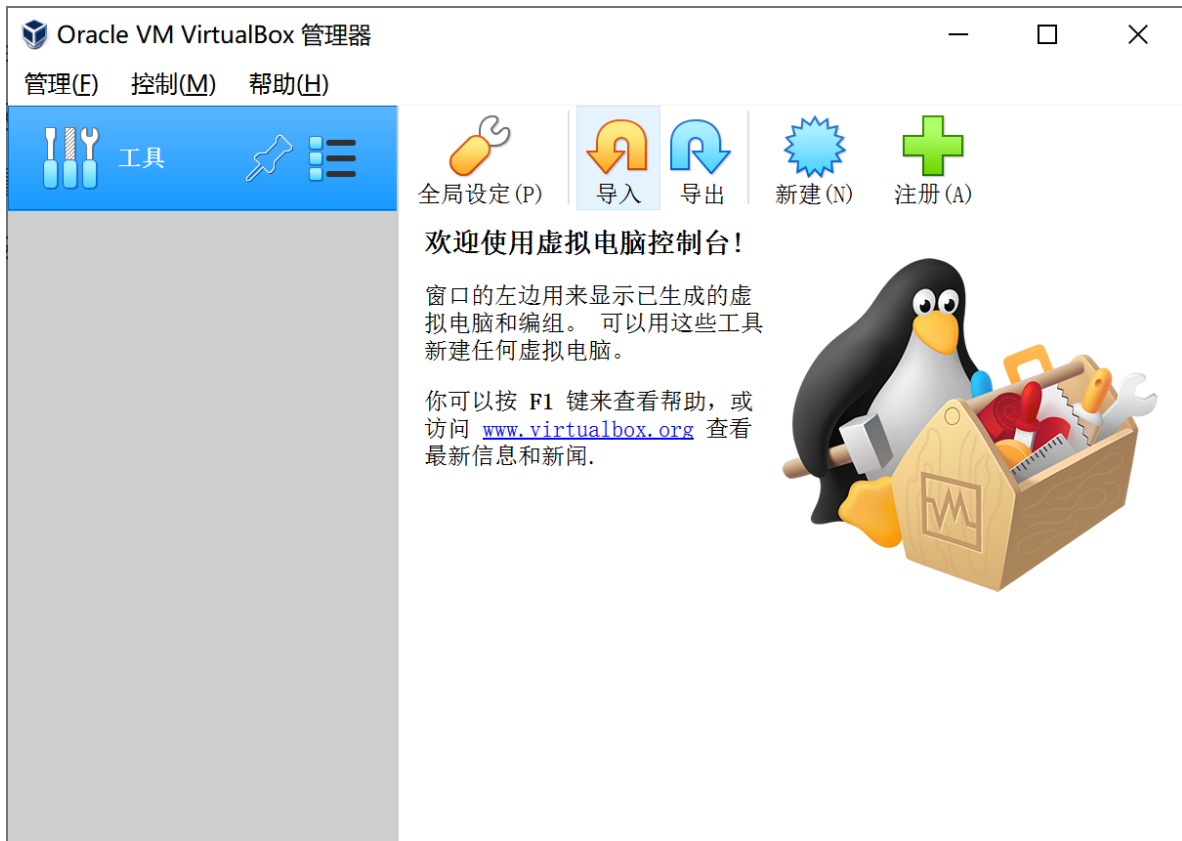
实验1 建立环境

实验要求

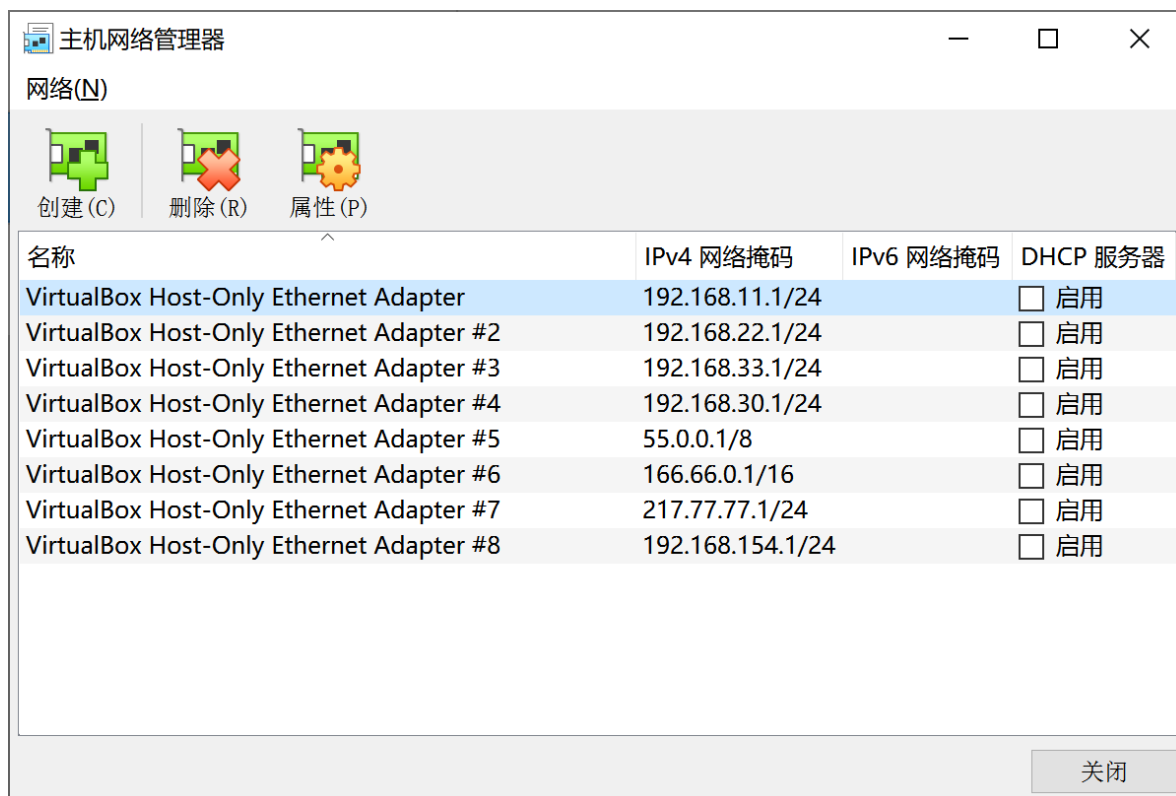
1. 使用 VirtualBox 虚拟机建立网络信息安全实验环境;
2. 配置虚拟网卡, 虚拟机使用多个虚拟网卡进行通信;
3. 安装及配置新的虚拟机;
4. 使用已经安装好的虚拟机。

实验流程

Virtual box 安装



网卡配置



由于Windows的限制，无法创建ipv4第四部分为0的网络。

虚拟机安装

Windows



Ubuntu



命令行使用

Ubuntu

```
jerry@jerry-VirtualBox:~$ ifconfig
enp0s3  Link encap:Ethernet  HWaddr 08:00:27:4b:65:00
        inet addr:10.0.2.15  Bcast:10.0.2.255  Mask:255.255.255.0
        inet6 addr: fe80::db:5715:cbeb:3fee/64 Scope:Link
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        RX packets:4628 errors:0 dropped:0 overruns:0 frame:0
        TX packets:1707 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:6313952 (6.3 MB)  TX bytes:111241 (111.2 KB)

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:54 errors:0 dropped:0 overruns:0 frame:0
        TX packets:54 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 txqueuelen:1000
        RX bytes:4310 (4.3 KB)  TX bytes:4310 (4.3 KB)
```

```

jerry@jerry-VirtualBox:~$ ls
Desktop Documents Downloads examples.desktop Music Pictures Public Templates Videos
jerry@jerry-VirtualBox:~$ mkdir test
jerry@jerry-VirtualBox:~$ ls
Desktop Documents Downloads examples.desktop Music Pictures Public Templates test Videos
jerry@jerry-VirtualBox:~$ cp examples.desktop examples.desktopp
jerry@jerry-VirtualBox:~$ mv examples.desktopp test
jerry@jerry-VirtualBox:~$ ls -alh
total 136K
drwxr-xr-x 18 jerry jerry 4.0K 6月 27 18:06 .
drwxr-xr-x  3 root root  4.0K 6月 27 16:18 ..
-rw-r----- 1 jerry jerry   8 6月 27 17:16 .bash_history
-rw-r--r--  1 jerry jerry 220 6月 27 16:18 .bash_logout
-rw-r--r--  1 jerry jerry 3.7K 6月 27 16:18 .bashrc
drwx----- 14 jerry jerry 4.0K 6月 27 17:01 .cache
drwx-----  3 jerry jerry 4.0K 6月 27 16:36 .compiz
drwx----- 14 jerry jerry 4.0K 6月 27 17:16 .config
drwxr-xr-x  2 jerry jerry 4.0K 6月 27 16:22 Desktop
-rw-r--r--  1 jerry jerry  25 6月 27 16:22 .dmrc
drwxr-xr-x  2 jerry jerry 4.0K 6月 27 16:22 Documents
drwxr-xr-x  2 jerry jerry 4.0K 6月 27 16:22 Downloads
-rw-r--r--  1 jerry jerry 8.8K 6月 27 16:18 examples.desktop
drwx-----  2 jerry jerry 4.0K 6月 27 16:31 .gconf
drwx-----  3 jerry jerry 4.0K 6月 27 17:15 .gnupg
-rw-r-----  1 jerry jerry 2.5K 6月 27 17:15 .ICEauthority
drwx-----  3 jerry jerry 4.0K 6月 27 16:22 .local
drwx-----  5 jerry jerry 4.0K 6月 27 16:30 .mozilla
drwxr-xr-x  2 jerry jerry 4.0K 6月 27 16:22 Music
drwxr-xr-x  2 jerry jerry 4.0K 6月 27 16:22 Pictures

```

Windows

```
C:\WINDOWS\system32\cmd.exe

C:\Documents and Settings\Administrator>dir
驱动器 C 中的卷没有标签。
卷的序列号是 CC31-099D

C:\Documents and Settings\Administrator 的目录

2020-06-27  18:07    <DIR>        .
2020-06-27  18:07    <DIR>        ..
2015-11-11  21:34    <DIR>        Favorites
2015-11-12  08:45    <DIR>        My Documents
2015-11-11  21:26                0 Sti_Trace.log
2020-06-27  18:07    <DIR>        test
2015-11-11  21:25    <DIR>        「开始」菜单
2015-11-11  21:25    <DIR>        桌面
                1 个文件                0 字节
                7 个目录 130,128,273,408 可用字节

C:\Documents and Settings\Administrator>copy Sti_Trace.log test.log
已复制      1 个文件。

C:\Documents and Settings\Administrator>ls
'ls' 不是内部或外部命令，也不是可运行的程序
或批处理文件。

C:\Documents and Settings\Administrator>dir
驱动器 C 中的卷没有标签。
卷的序列号是 CC31-099D

C:\Documents and Settings\Administrator 的目录

2020-06-27  18:07    <DIR>        .
2020-06-27  18:07    <DIR>        ..
2015-11-11  21:34    <DIR>        Favorites
2015-11-12  08:45    <DIR>        My Documents
2015-11-11  21:26                0 Sti_Trace.log
2020-06-27  18:07    <DIR>        test
2015-11-11  21:26                0 test.log
2015-11-11  21:25    <DIR>        「开始」菜单
2015-11-11  21:25    <DIR>        桌面
                2 个文件                0 字节
                7 个目录 130,128,273,408 可用字节

C:\Documents and Settings\Administrator>
```

```
C:\WINDOWS\system32\cmd.exe
是否可以启动? <Y/N> [Y]: n

C:\Documents and Settings\Administrator>ipconfig

Windows IP Configuration

Ethernet adapter 本地连接:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 10.0.2.15
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.2.2

C:\Documents and Settings\Administrator>netstat

Active Connections

    Proto Local Address          Foreign Address         State
C:\Documents and Settings\Administrator>net localgroup

\USTC-81A9C3DF58 的别名
-----
*Administrators
*Backup Operators
*Distributed COM Users
*Guests
*HelpServicesGroup
*IIS_WPG
*Network Configuration Operators
*Performance Log Users
*Performance Monitor Users
*Power Users
*Print Operators
*Remote Desktop Users
*Replicator
*SQLServer2005MSSQLServerADHelperUser$USTC-81A9C3DF58
*SQLServer2005MSSQLUser$USTC-81A9C3DF58$SQLEXPRESS
*SQLServer2005SQLBrowserUser$USTC-81A9C3DF58
*TelnetClients
*Users
命令成功完成。
```

上机实践

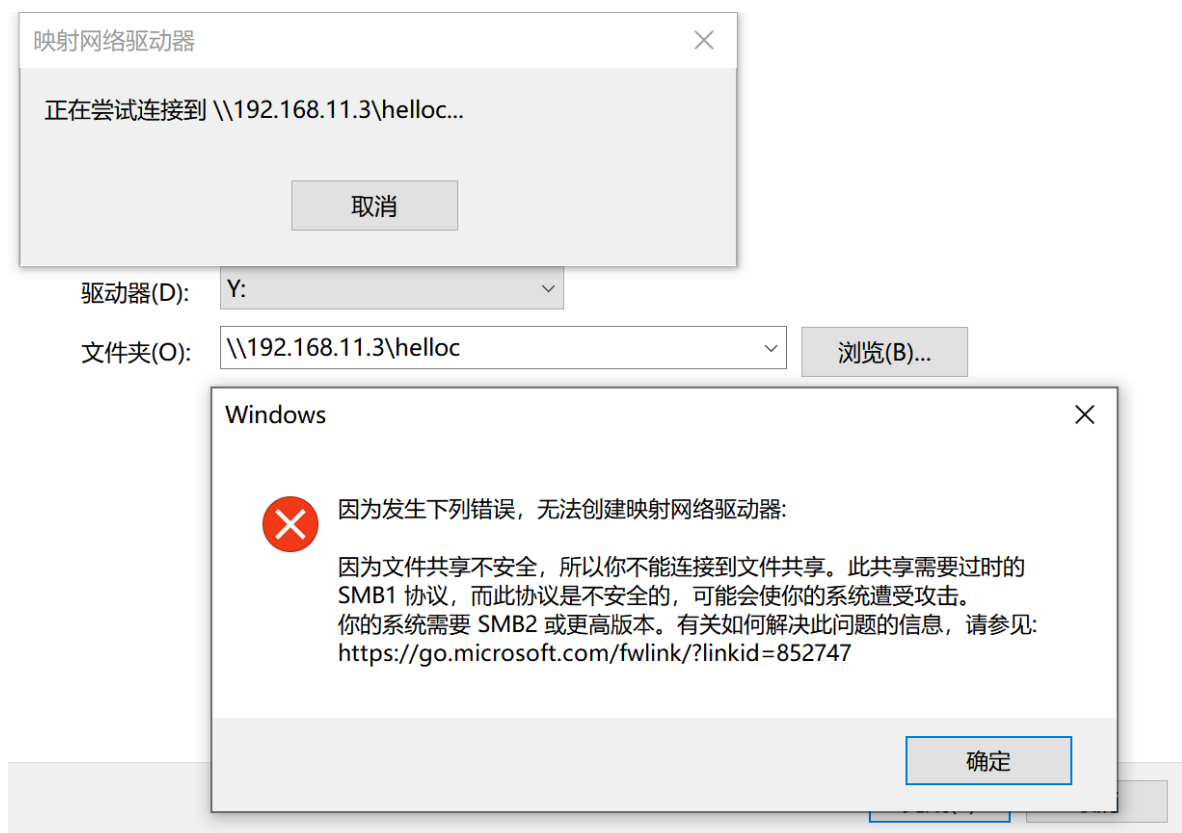
nmap扫描:

```
jerry@jerry-VirtualBox: ~
Nmap done: 1 IP address (1 host up) scanned in 1.21 seconds
jerry@jerry-VirtualBox:~$ nmap -O 192.168.11.3
TCP/IP fingerprinting (for OS scan) requires root privileges.
QUITTING!
jerry@jerry-VirtualBox:~$ sudo nmap -O 192.168.11.3
[sudo] password for jerry:

Starting Nmap 7.01 ( https://nmap.org ) at 2020-06-27 19:57 CST
mass_dns: warning: Unable to determine any DNS servers. Reverse DNS is disabled.
Try using --system-dns or specify valid servers with --dns-servers
Nmap scan report for 192.168.11.3
Host is up (0.00044s latency).
Not shown: 993 closed ports
PORT      STATE SERVICE
21/tcp    open  ftp
80/tcp    open  http
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
1025/tcp  open  NFS-or-IIS
1026/tcp  open  LSA-or-nterm
MAC Address: 08:00:27:79:50:BE (Oracle VirtualBox virtual NIC)
Device type: general purpose
Running: Microsoft Windows XP|2003
OS CPE: cpe:/o:microsoft:windows_xp::sp2 cpe:/o:microsoft:windows_server_2003::s
p1 cpe:/o:microsoft:windows_server_2003::sp2
OS details: Microsoft Windows XP SP2 or Windows Server 2003 SP1 or SP2
Network Distance: 1 hop

OS detection performed. Please report any incorrect results at https://nmap.org/
submit/ .
Nmap done: 1 IP address (1 host up) scanned in 8.28 seconds
jerry@jerry-VirtualBox:~$
```

共享磁盘映射功能出现系统版本过老问题:



希望老师、助教能够理解。

结果讨论

配置环境实在是一个繁琐的事情，会有很多坑需要踩一遍。

