南京邮电大学

实 验 报 告

（ 2024 / 2025 学年 第 一 学期）

课程名称	Linux 编程
实验名称	实验一
实验时间	2024 年 10 月 18 日
指导单位	计算机学院、软件学院、网络空间安全学院
指导教师	王磊

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学院(系)	计算机学院	专 业	信息安全

实 验 报 告

实验名称	实验一			指导教师	王磊
实验类型	上机	实验学时	4	实验时间	2024.10.18

一、 实验目的和要求

通过实验熟悉 Linux 操作系统环境，掌握基本的 Linux 命令使用

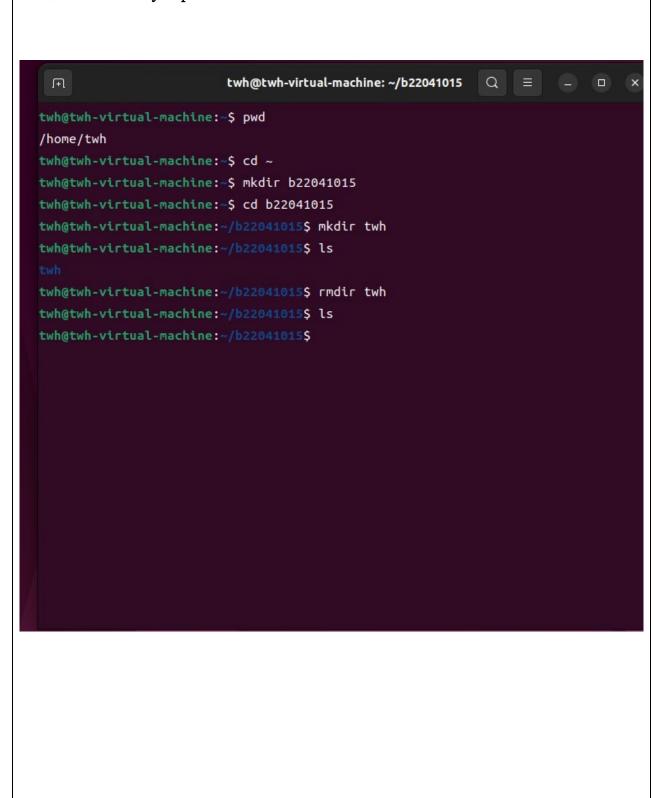## 二、实验环境(实验设备)

Win11+Vmware Workstation Pro+Ubuntu

三、实验原理及内容

掌握 Linux 文件权限管理。

掌握基本的文件和目录操作。

掌握 Linux 用户管理。

掌握文件压缩和归档。

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（1）Directory Operation

(2) File operation

```
twh@twh-virtual-machine:~/b22041015$ cd ~
twh@twh-virtual-machine:~$ touch twh.txt
twh@twh-virtual-machine:~$ ls
1.txt    4.py          Desktop      get-pip.py    Public      twh.txt
2.py     b22041015     Documents    Music         snap        Videos
3.py     b22041015twh  Downloads    Pictures      Templates
twh@twh-virtual-machine:~$ echo "hello world" > twh.txt
twh@twh-virtual-machine:~$ cat twh.txt
hello world
twh@twh-virtual-machine:~$ cp twh.txt twh2.txt
```

```
twh@twh-virtual-machine:~$ mv twh.txt b22041015.txt
twh@twh-virtual-machine:~$ ls
1.txt    4.py          b22041015.txt    Downloads    Pictures    Templates
2.py     b22041015     Desktop          get-pip.py   Public      twh2.txt
3.py     b22041015twh  Documents        Music        snap        Videos
twh@twh-virtual-machine:~$
```

(3)User Management

```
root@twh-virtual-machine: /home/twh

twh@twh-virtual-machine:~$ whoami
twh
twh@twh-virtual-machine:~$ sudo su root
[sudo] password for twh:
root@twh-virtual-machine:/home/twh# groupadd student
root@twh-virtual-machine:/home/twh# whoami
root
root@twh-virtual-machine:/home/twh# adduser b22041015
Adding user `b22041015' ...
Adding new group `b22041015' (1002) ...
Adding new user `b22041015' (1001) with group `b22041015' ...
Creating home directory `/home/b22041015' ...
Copying files from `/etc/skel' ...
New password:
```

```
BAD PASSWORD: The password is shorter than 8 characters
Retype new password:
passwd: password updated successfully
Changing the user information for b22041015
Enter the new value, or press ENTER for the default
        Full Name []:
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
root@twh-virtual-machine:/home/twh# usermod -g student b22041015
```

```
root@twh-virtual-machine:/home/twh# su b22041015
b22041015@twh-virtual-machine:/home/twh$ cd ~
b22041015@twh-virtual-machine:~$ touch twh.txt
b22041015@twh-virtual-machine:~$ ls -l
total 0
-rw-r--r-- 1 b22041015 student 0 10月 18 08:31 twh.txt
b22041015@twh-virtual-machine:~$
```

(4) Permission management

(5) Other management

```
b22041015@twh-virtual-machine:~/others$ cd ../
b22041015@twh-virtual-machine:~$ tar -czvf backup.tar.gz others
others/
others/backup.tar.gz
b22041015@twh-virtual-machine:~$ cd others/
b22041015@twh-virtual-machine:~/others$ ls -l
total 4
-rw-r--r-- 1 b22041015 student 45 10月 18 08:39 backup.tar.gz
b22041015@twh-virtual-machine:~/others$ tar -xzvf backup.tar.gz
b22041015@twh-virtual-machine:~/others$ ls -l
total 4
-rw-r--r-- 1 b22041015 student 45 10月 18 08:39 backup.tar.gz
b22041015@twh-virtual-machine:~/others$ touch 111.txt
b22041015@twh-virtual-machine:~/others$ pwd
/home/b22041015/others
b22041015@twh-virtual-machine:~/others$ vim 111.txt
b22041015@twh-virtual-machine:~/others$ grep '^n' 111.txt
no, I study in njupt.
no, I study in njupt.
b22041015@twh-virtual-machine:~/others$ grep '\.005' 111.txt
b22041015@twh-virtual-machine:~/others$ grep '\.00$' 111.txt
this line ends with .00
He is 15. It is 16.00
this line ends with .00
He is 15. It is 16.00
b22041015@twh-virtual-machine:~/others$ grep '5\..' 111.txt
He is 15. It is 16.00
He is 15. It is 16.00
b22041015@twh-virtual-machine:~/others$ grep '^[wy]' 111.txt
wy is the short of my name.
wy is the short of my name.
b22041015@twh-virtual-machine:~/others$
```

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四、**实验小结**（包括总结上机调试过程中所遇到的问题和解决方法、感想与建议等）

问题：在修改文件权限时，对权限符号不够熟悉，导致无法预期设置权限。

解决方法：通过实验和 ls -l 命令查看权限变化，逐步理解并掌握了权限设置的方法和意义。

通过本次实验，我对 Linux 操作系统有了更加深入的了解和掌握。

五、**指导教师评语**

成　绩		批阅人		日　期	