



湖南大学
HUNAN UNIVERSITY

课程实验报告

课 程 名 称: 云计算基础与应用
实验项目名称: 安装和使用 Linux 系统
专 业 班 级: 软件 2203
姓 名: 梁澜琨
学 号: 202226010326
指 导 教 师: 肖雄仁
完 成 时 间: 2024 年 10 月 16 日

信息科学与工程学院

实验题目	安装和使用 Linux 系统
实验目的	让学生能够独立在 PC 或虚拟机环境中安装 Linux 生熟悉 Linux 系统命令语法和一些基本命令，理解多用户概念
实验环境	软件环境：VMware Workstation Pro 硬件环境：个人笔记本

实验内容及操作步骤：

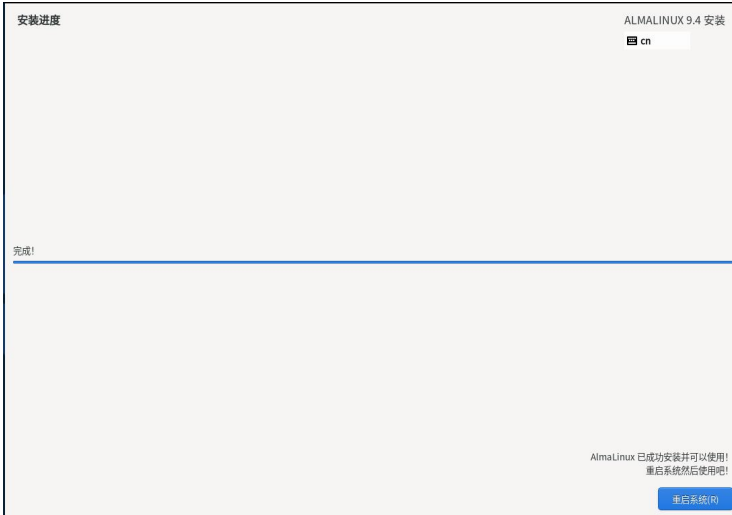
一、 安装 Linux 系统

1. 选择正确的机器类型并访问机器

启动 VMware Workstation，选择文件>>新建虚拟机，并配置相关选项



2. 配置并安装 AlmaLinux 9.0 发行版



3. 安装时配置网络参数

NAT 设置

网络: vmnet8
子网 IP: 10.69.162.0
子网掩码: 255.255.255.0
网关 IP(G): 10.69.162.2

端口转发(F)

主机端口	类型	虚拟机 IP 地址	描述
------	----	-----------	----

添加(A)... 移除(R) 属性(P)

高级

☒ 允许活动的 FTP(T)

☒ 允许任何组织唯一标识符(O)

UDP 超时(以秒为单位)(U): 30

配置端口(C): 0

☐ 启用 IPv6(E)

IPv6 前缀(S): fd15:4ba5:5a2b:1008::/64

DNS 设置(D)... NetBIOS 设置(N)...

确定 取消 帮助

名称	类型	外部连接	主机连接	DHCP	子网地址
Vmnet0	桥接模式	自动桥接	-	-	-
Vmnet1	仅主机...	-	已连接	已启用	192.168.163.0
Vmnet8	NAT 模式	NAT 模式	已连接	已启用	10.69.162.0

添加网络(N)... 移除网络(O) 重命名网络(W)...

Vmnet 信息

☐ 桥接模式(将虚拟机直接连接到外部网络)(B)

已桥接至(G): 自动 自动设置(U)...

☒ NAT 模式(与虚拟机共享主机的 IP 地址)(N) NAT 设置(S)...

☐ 仅主机模式(在专用网络内连接虚拟机)(H)

☒ 将主机虚拟适配器连接到此网络(N)

主机虚拟适配器名称: VMware 网络适配器 Vmnet8

☒ 使用本地 DHCP 服务将 IP 地址分配给虚拟机(D) DHCP 设置(P)...

子网 IP (I): 10.69.162.0 子网掩码(M): 255.255.255.0

还原默认设置(R) 导入(I)... 导出(O)... 确定 取消 应用(A) 帮助


```
[root@localhost ~]#
```

用户登录后如下所示:

```
localhost login: lu
Password:
Last failed login: Wed Oct 16 20:45:16 CST 2024 on tty3
There were 3 failed login attempts since the last successful login.
[lu@localhost ~]$
```

区别: 用户名不同, 右方括号后 root 为 “#”, 普通用户为 “\$”

2. 使用终端软件登录远程服务器

```
C:\Users\llk>ssh s2226010326@140.210.196.152 -p 61122
s2226010326@140.210.196.152's password:
You are required to change your password immediately (administrator enforced).
You are required to change your password immediately (administrator enforced).

Welcome to Huawei Cloud Service

Last login: Wed Oct 16 21:09:29 2024 from 58.20.30.72
WARNING: Your password has expired.
You must change your password now and login again!
Changing password for user s2226010326.
Current password:
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
Connection to 140.210.196.152 closed.

C:\Users\llk>ssh s2226010326@140.210.196.152 -p 61122
s2226010326@140.210.196.152's password:

Welcome to Huawei Cloud Service

Last login: Wed Oct 16 21:11:27 2024 from 58.20.30.72
```

3. linux 基本命令

修改密码:

```
s2226010326@HCS-ALma9:~$ passwd
Changing password for user s2226010326.
Current password:
New password:
```

显示系统日期:

```
s2226010326@HCS-ALma9:~$ date
Wed Oct 16 09:16:28 PM CST 2024
```

显示日历:

```
s2226010326@HCS-Alma9:~$ cal 9 1752
    September 1752
Su Mo Tu We Th Fr Sa
                1  2 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
```

可以发现缺失了几天，因为 1752 年 9 月，英国及其殖民地从儒略历转换到了格里高利历

```
s2226010326@HCS-Alma9:~$ cal 1 1999
    January 1999
Su Mo Tu We Th Fr Sa
                1  2
 3  4  5  6  7  8  9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
s2226010326@HCS-Alma9:~$ cal 1 99
    January 0099
Su Mo Tu We Th Fr Sa
                1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31
```

不同

生成系统中的所有用户列表：

```
s2226010326@HCS-Alma9:~$ who
s2226010214 pts/0      2024-10-16 20:43 (211.142.244.222)
s2226010229 pts/1      2024-10-16 20:01 (175.0.227.57)
s2226010229 pts/2      2024-10-16 20:27 (175.0.227.57)
s2226010226 pts/4      2024-10-16 20:52 (58.20.30.28)
s2226010509 pts/5      2024-10-16 15:16 (58.20.19.50)
s2226010326 pts/6      2024-10-16 21:11 (58.20.30.72)
s2226010118 pts/7      2024-10-16 21:00 (222.244.139.209)
s2226010229 pts/8      2024-10-16 19:04 (175.0.227.57)
s2204060224 pts/9      2024-10-16 21:08 (58.20.30.23)
s2226010522 pts/10     2024-10-16 19:09 (222.244.139.35)
s2226010519 pts/11     2024-10-16 19:09 (222.244.139.106)
s2108060212 pts/12     2024-10-16 21:10 (117.176.186.109)
s2226010323 pts/13     2024-10-16 21:15 (58.20.30.63)
s2226010519 pts/14     2024-10-16 20:12 (222.244.139.106)
s2226010229 pts/15     2024-10-16 21:20 (58.20.30.73)
s2226010117 pts/16     2024-10-16 21:22 (222.244.139.69)
```

显示自己的登录名：

```
s2226010326@HCS-Alma9:~$ whoami
s2226010326
```

显示您自己的用户帐户和 root 用户的登录信息


```
s2226010326
s2226010326@HCS-Alma9:~$ finger s2226010326
Login: s2226010326                Name:
Directory: /home/s2226010326      Shell: /bin/bash
On since Wed Oct 16 21:11 (CST) on pts/6 from 58.20.30.72
No mail.
No Plan.
s2226010326@HCS-Alma9:~$ finger root
Login: root                      Name: root
Directory: /root                 Shell: /bin/bash
Last login Tue Oct 15 17:04 (CST) on pts/0 from 222.244.139.113
New mail received Wed Oct 16 15:38 2024 (CST)
    Unread since Thu Oct 10 15:29 2024 (CST)
No Plan.
```

清理屏幕:



打印文本:

```
s2226010326@HCS-Alma9:~$ echo Out to lunch
Out to lunch
s2226010326@HCS-Alma9:~$ banner Out to lunch

#####  #  # #####
#  #  #  #  #
#  #  #  #  #
#  #  #  #  #
#  #  #  #  #
#  #  #  #  #
#####  #####  #

#####  #####
#  #  #
#  #  #
#  #  #
#  #  #
#  #  #
#  #####

#  #  #  #  #  #####  #  #
#  #  #  ##  #  #  #  #  #
#  #  #  #  #  #  #  #  #
#  #  #  #  #  #  #  #####
#  #  #  #  #  #  #  #  #
#  #  #  #  ##  #  #  #  #
#####  #####  #  #  #####  #  #
```

4. 发送与接收邮件

```
s2226010326@HCS-Alma9:~$ mail s2226010326
Subject: A reminder to myself
To: s2226010326
ha ha ha ha ha
^D
-----
(Preliminary) Envelope contains:
To: s2226010326
Subject: A reminder to myself
Send this message [yes/no, empty: recompose]? yes
s2226010326@HCS-Alma9:~$ mail
s-nail version v14.9.22.  Type '?' for help
/var/spool/mail/s2226010326: 1 message 1 new
>N 1 s2226010326@HCS-Alma 2024-10-16 21:36 18/729 "A reminder to myself
& t 1
[-- Message 1 -- 18 lines, 729 bytes --]:
From: s2226010326@HCS-Alma9.com
Message-Id: <202410161336.49GDaGH0581823@HCS-Alma9.com>
Date: Wed, 16 Oct 2024 21:36:16 +0800
To: s2226010326@HCS-Alma9.com
Subject: A reminder to myself

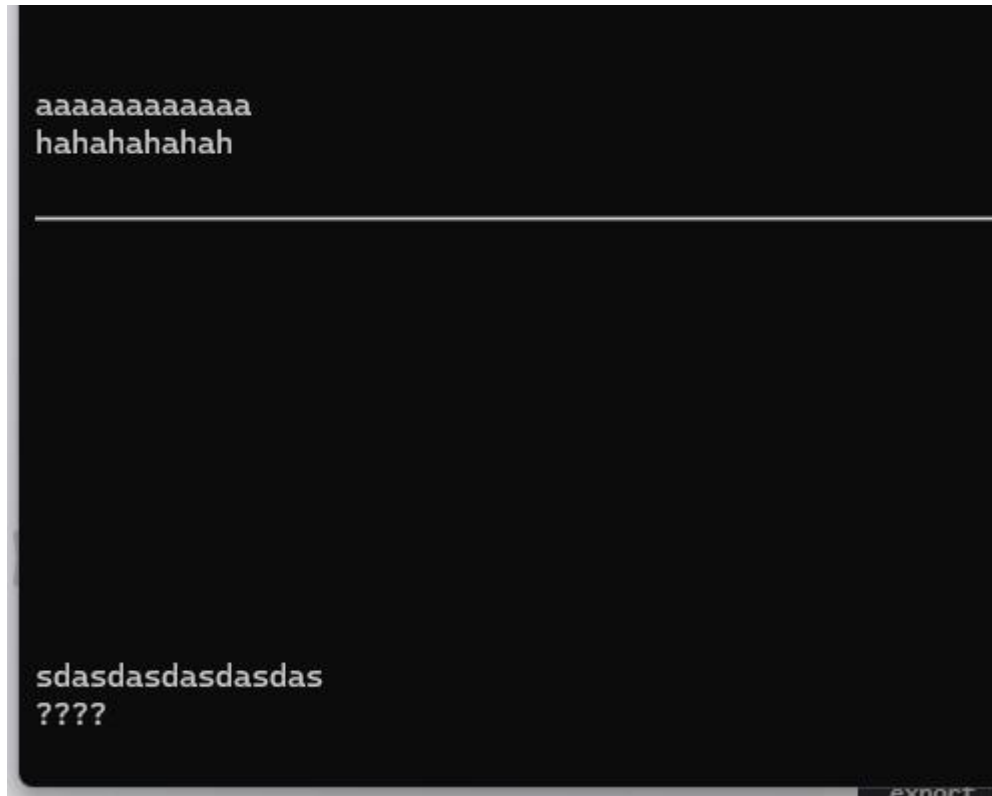
ha ha ha ha ha

& s
/home/s2226010326/mbox [New file] 739 bytes
& Interrupt
& q
Held 1 message in /var/spool/mail/s2226010326
You have mail in /var/spool/mail/s2226010326
```

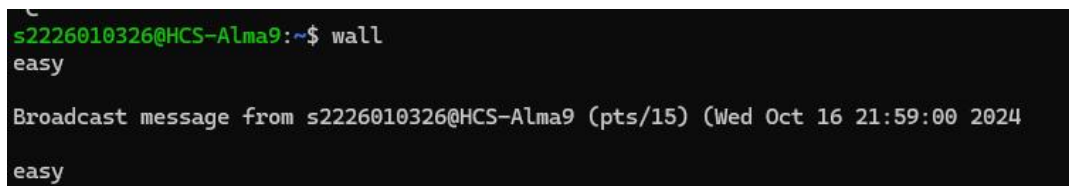
5. 与其他用户通信

```
s2226010326@HCS-Alma9:~$ write s2226010323
hahahaha
oo
s2226010326@HCS-Alma9:~$
Message from s2226010323@HCS-Alma9 on pts/13 at 21:56 ...
??????
EOF
^C
```

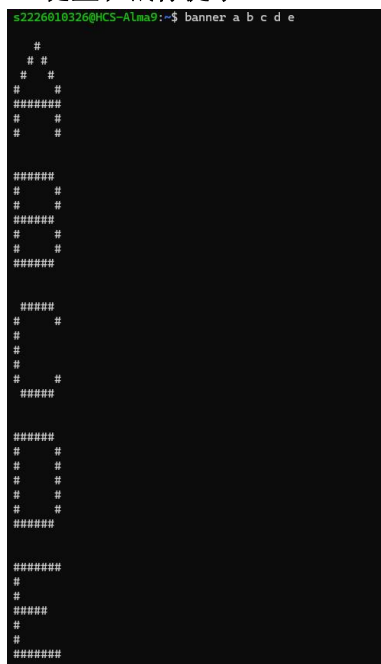
与其他用户配对通讯



向所有已登录用户发信息：



5. 键盘和鼠标提示：



```
s2226010326@HCS-ALma9:~$
s2226010326@HCS-ALma9:~$ banner End of Exercise

##### # # #####
# ## # # #
# # # # #
##### # # # # #
# # # # #
# # # # #
##### # # #####

##### #####
# # #
# # #
# # #####
# # #
# # #
##### #

##### # # ##### ##### ##### ### ##### #####
# # # # # # # # # # # #
# # # # # # # # # # #
##### # ##### # # ##### #####
# # # # # # # # # #
# # # # # # # # # #
##### # # ##### # # ##### #####
```

```
s2226010326@HCS-Alma9:~$ figlet hello world
```

hello world

```
s2226010326@HCS-Alma9:~$ showfigfonts
```

banner :

```
#####  ##  #  #  #  ##### #####
#  #  #  #  ##  #  ##  #  #  #
#####  #  #  #  #  #  #  #####  #  #
#  #  #####  #  #  #  #  #  #####
#  #  #  #  #  ##  #  ##  #  #  #
#####  #  #  #  #  #  #####  #  #
```

big :

block :

```
bubble :
```

$$(\bar{b} \mid \bar{u} \mid \bar{b} \mid \bar{b} \mid \bar{l} \mid \bar{e})$$

```
digital :
```

```

+++++
|d|i|g|i|t|a|l|
+++++

```

ivrit :

```
lean :
```



```
mini :
```

$$\begin{array}{ccccccc} & & & 0 & & 0 & \\ & & & | & & | & \\ | & | & | & | & | & | & | \end{array}$$

```
mnemonic :
mnemonic

script :

shadow :

slant :

small :
Every 1.0s: date '+%D%n%T' | figlet -kct HCS-Alma9: Wed Oct 16 22:11:16 2024
```

```
s2226010326@HCS-Alma9:~$ cowsay hello world

< hello world >

s2226010326@HCS-Alma9:~$ cowsay -l
Cow files in /usr/share/cowsay:
beavis.zen blowfish bud-frogs bunny cheese cower default dragon
dragon-and-cow elephant elephant-in-snake eyes flaming-sheep fox
ghostbusters head-in hellokitty kiss kitty koala kosh luke-koala
mech-and-cow meow milk moofasa moose mutilated ren sheep skeleton small
stegosaurus stimpky supermilkster surgery telebears three-eyes turkey turtle
tux udder vader vader-koala www
s2226010326@HCS-Alma9:~$ cowsay -f dragon hello world

< hello world >
```

6. 使用历史记录命令

```
s2226010326@HCS-Alma9:~$ history
 1  2024-10-16 21:12:01 s2226010326 ls
 2  2024-10-16 21:12:25 s2226010326 passwd
 3  2024-10-16 21:16:26 s2226010326 data
 4  2024-10-16 21:16:28 s2226010326 date
 5  2024-10-16 21:17:10 s2226010326 cal 2021
 6  2024-10-16 21:17:18 s2226010326 cal 9 1752
 7  2024-10-16 21:21:14 s2226010326 cal 1 1999
 8  2024-10-16 21:21:18 s2226010326 cal 1 99
 9  2024-10-16 21:22:12 s2226010326 who
10  2024-10-16 21:23:30 s2226010326 whoami
11  2024-10-16 21:24:56 s2226010326 finger s2226010326
12  2024-10-16 21:25:03 s2226010326 finger root
13  2024-10-16 21:26:14 s2226010326 claer
```

执行历史命令：

```
s2226010326@HCS-Alma9:~$ !2
passwd
Changing password for user s2226010326.
Current password:
```

搜索历史命令：

```
(reverse-i-search)`cle': clear
```

7. 锁定终端

```
s2226010326@HCS-Alma9:~$ vlock
This tty (pts/15) is not a virtual console.

The pts/15 is now locked by s2226010326.
Password:
s2226010326@HCS-Alma9:~$
logout
Connection to 140.210.196.152 closed.

C:\Users\llk>
```

实验结果及分析：如上述内容所示，实验结果均正确

收获与体会：

1. 在安装 Linux 之前，我们首先了解了不同 Linux 发行版的特点
2. 在实际安装过程中，我学会了如何在安装过程中配置网络、时区等关键参数
3. 我熟悉了常用的 Linux 命令，掌握了如何使用这些命令进行相应的操作
4. 我了解到每个用户都有自己的账号，并且用户之间相互隔离，确保了系统的安全性。学习了如何添加和删除用户、以及如何切换用户，如何进行用户间的交流等

实验成绩	