



南昌大学实验报告

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实验类型：☒ 验证 ☐ 综合 ☐ 设计 ☐ 创新 实验日期：__2021.11.3__ 实验成绩：__

一、 实验项目名称

Linux 系统管理

二、 实验目的

1. 掌握网络通信管理操作。
2. 掌握进程管理的操作。

三、 实验要求

要求使用 Xshell 进行登录，具体操作如下：

1. 设置系统主机名为自己姓名的简称，如：hx。

```
@192.168.2.136:22
1 centOs7
[root@localhost ~]# clear
[root@localhost ~]# hostname dingjun
[root@localhost ~]# exit
登出
Connection closing...Socket close.
Connection closed by foreign host.
Disconnected from remote host(centOs7) at 15:46:03.
Type `help' to learn how to use Xshell prompt.
[C:\~]$
Connecting to 192.168.2.136:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+J'.
WARNING! The remote SSH server rejected X11 forwarding request.
Last failed login: Wed Nov 3 15:46:07 CST 2021 from 192.168.2.1 on ssh:notty
There was 1 failed login attempt since the last successful login.
Last login: Wed Nov 3 15:11:19 2021 from 192.168.2.1
[root@dingjun ~]#
```

2. 设置一个虚拟 IP 地址，并能连接成功。

```
****@192.168.2.136:22
话，点击左侧的箭头按钮。

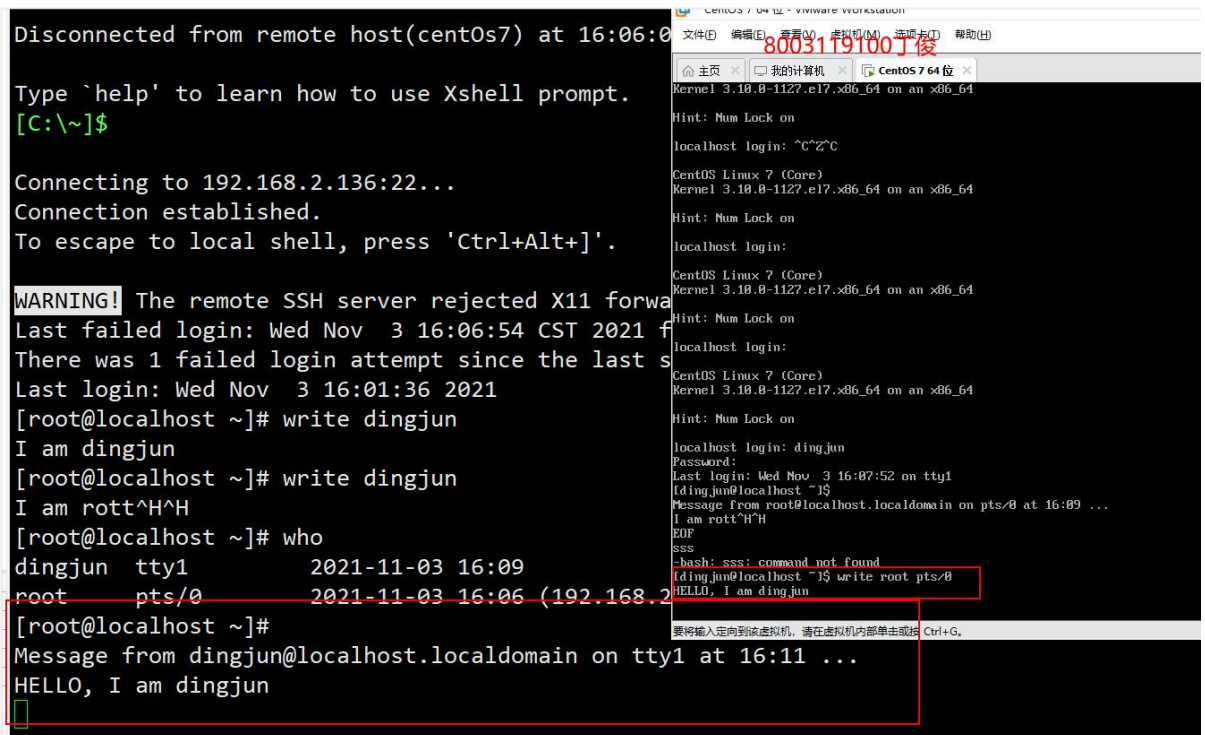
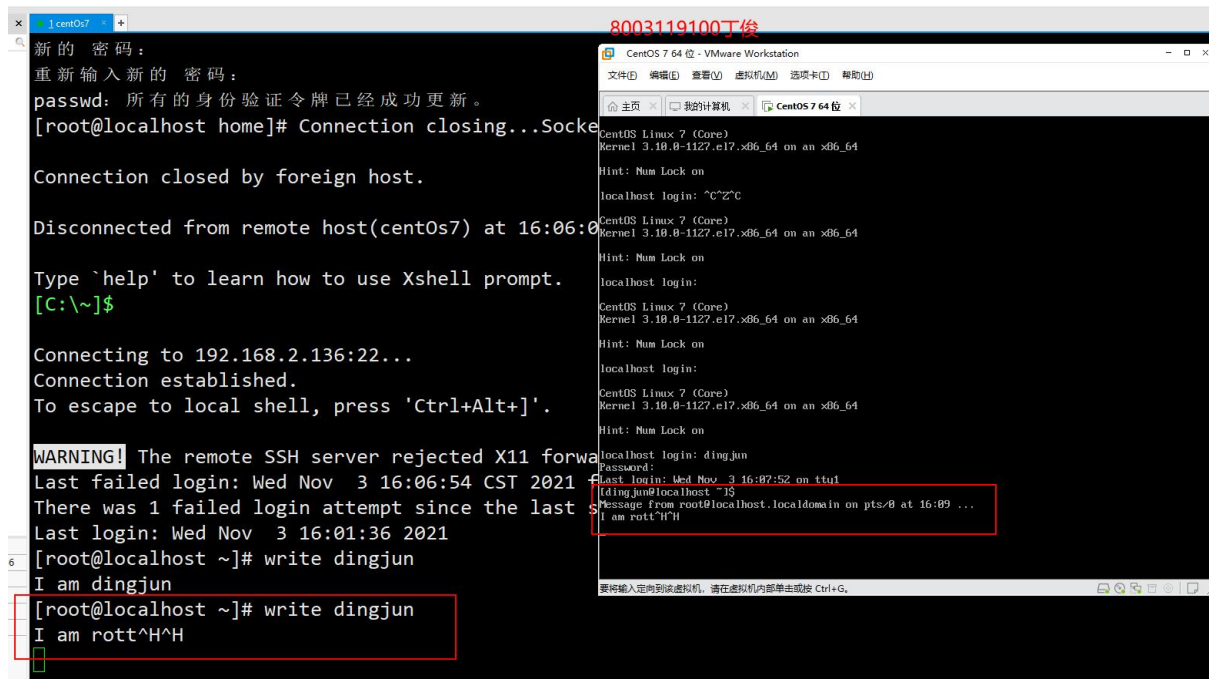
1 centOs7 + 8003119100丁俊

There was 1 failed login attempt since the last successful login.
Last login: Wed Nov 3 15:11:19 2021 from 192.168.2.1
[root@dingjun ~]# ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.2.136 netmask 255.255.255.0
    inet6 fe80::f838:139a:e98a:3fc prefixlen 64
    ether 00:0c:29:15:08:3f txqueuelen 1000
    RX packets 1866 bytes 127993 (124.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 524 bytes 55400 (54.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 64 bytes 5568 (5.4 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 64 bytes 5568 (5.4 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0
[root@dingjun ~]# ip ens33:1 192.168.2.66
Object "ens33:1" is unknown, try "ip help".
[root@dingjun ~]# ifconfig ens33:1 192.168.2.66
[root@dingjun ~]#
```

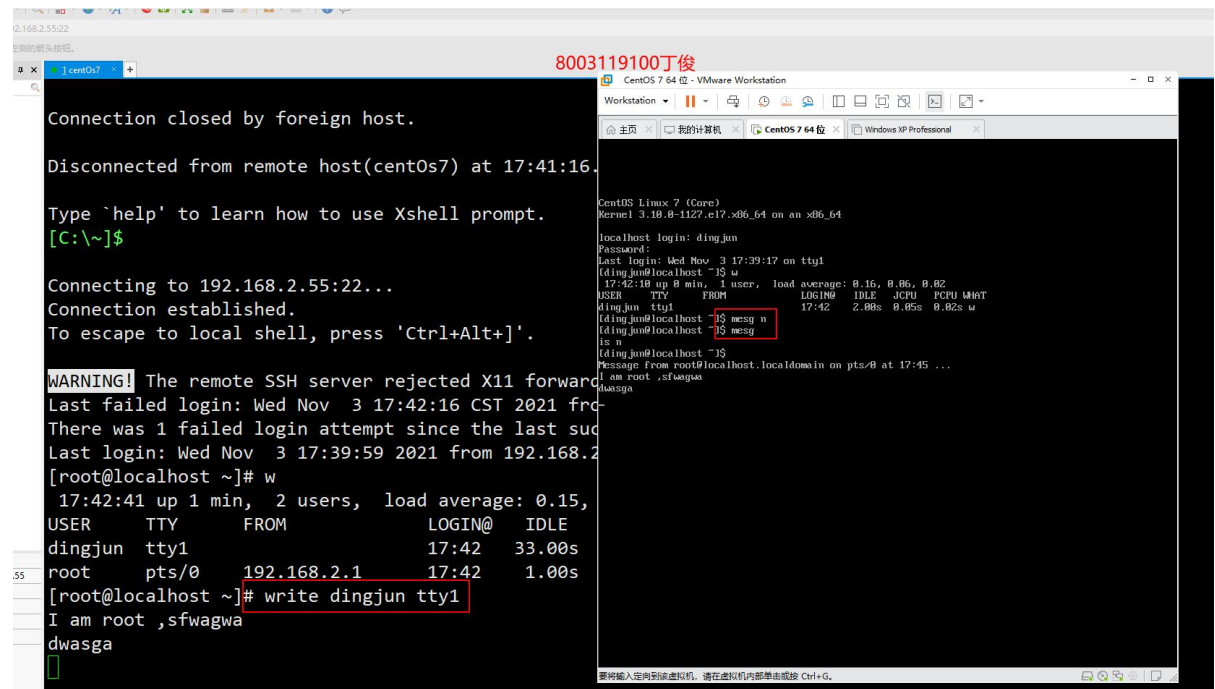
3. 使用 write 命令给另一个用户（以自己姓名全拼创建的用户，如：huaxin）发消息，当禁用了消息功能，是否还能实现双向互发消息，请验证。

```
[root@localhost ~]# sudo useradd dingjun
useradd: 警告：此主目录已经存在。
不从 skel 目录里向其中复制任何文件。
正在创建信箱文件：文件已存在
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[root@localhost ~]# cd /home
[root@localhost home]# ll
总用量 0
drwx-----. 2 dingjun dingjun 62 11月 3 15:50 dingjun
drwx-----. 2 1001 1001 62 11月 3 15:52 dj
[root@localhost home]# sudo passwd dingjun
更改用户 dingjun 的密码。
新的密码：
无效的密码：密码未通过字典检查 - 它基于字典单词
重新输入新的密码：
passwd: 所有的身份验证令牌已经成功更新。
[root@localhost home]# passwd dingjun
更改用户 dingjun 的密码。
新的密码：
无效的密码：密码未通过字典检查 - 它基于字典单词
```

```
[root@localhost ~]# w
17:42:41 up 1 min, 2 users, load average: 0.15, 0.07, 0.03
USER      TTY      FROM          LOGIN@      IDLE        JCPU   PCPU WHAT
dingjun    tty1                    17:42       33.00s    0.03s    0.03s -bash
root      pts/0    192.168.2.1   17:42       1.00s    0.03s    0.02s w
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```



在 dingjun 用户中使用 “mesg n” 命令，表示 dingjun 不想接收任何消息，但是对 root 用户传来的消息必须接收



```
Connection closed by foreign host.

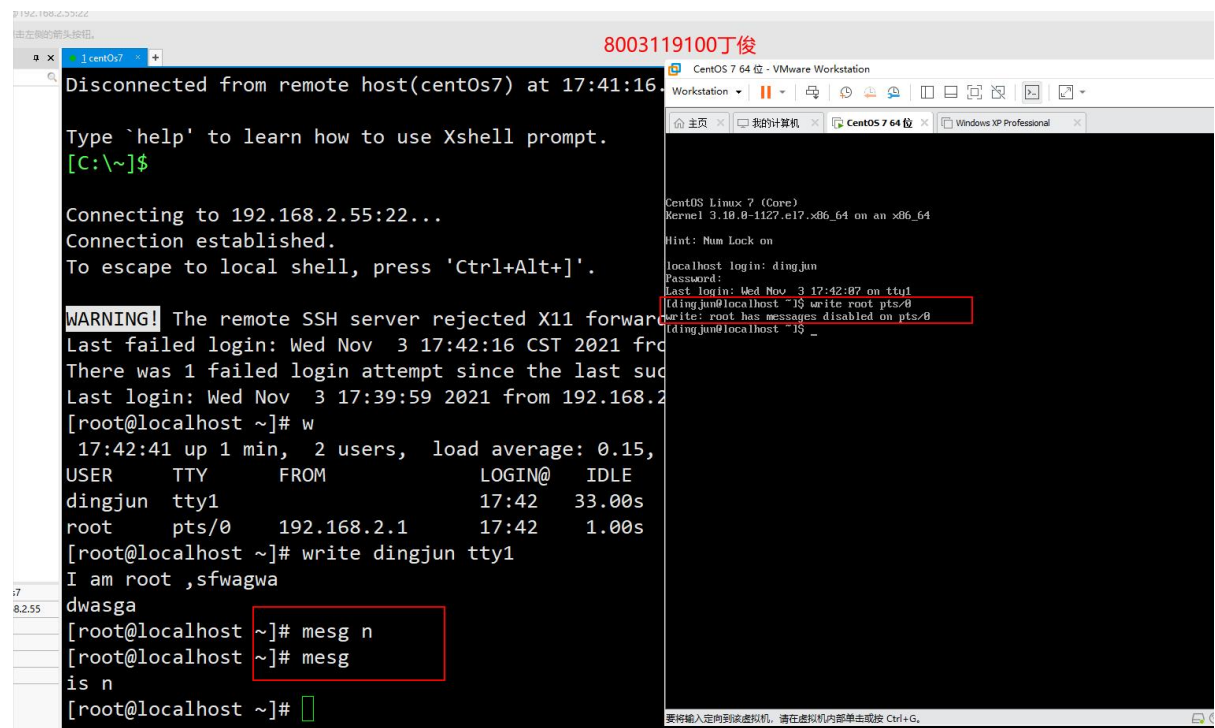
Disconnected from remote host(cent0s7) at 17:41:16.

Type `help' to learn how to use Xshell prompt.
[C:\~]$

Connecting to 192.168.2.55:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+J'.

WARNING! The remote SSH server rejected X11 forwarding.
Last failed login: Wed Nov  3 17:42:16 CST 2021 from 192.168.2.1 on pts/0
There was 1 failed login attempt since the last successful login.
Last login: Wed Nov  3 17:39:59 2021 from 192.168.2.1
[root@localhost ~]# w
 17:42:41 up 1 min,  2 users,  load average: 0.15, 0.08, 0.05
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
dingjun   tty1                    17:42    33.00s
root      pts/0    192.168.2.1      17:42    1.00s
[root@localhost ~]# write dingjun tty1
I am root ,sfbwagwa
dwasga
[dingjun@localhost ~]$ mesg n
is n
[dingjun@localhost ~]$
```

假设 root 用户执行命令 “mesg n”，表示 root 用户不想接收其他人的消息,此时其他用户不能向 root 用户发消息



```
Disconnected from remote host(cent0s7) at 17:41:16.

Type `help' to learn how to use Xshell prompt.
[C:\~]$

Connecting to 192.168.2.55:22...
Connection established.
To escape to local shell, press 'Ctrl+Alt+J'.

WARNING! The remote SSH server rejected X11 forwarding.
Last failed login: Wed Nov  3 17:42:16 CST 2021 from 192.168.2.1 on pts/0
There was 1 failed login attempt since the last successful login.
Last login: Wed Nov  3 17:39:59 2021 from 192.168.2.1
[root@localhost ~]# w
 17:42:41 up 1 min,  2 users,  load average: 0.15, 0.08, 0.05
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU   WHAT
dingjun   tty1                    17:42    33.00s
root      pts/0    192.168.2.1      17:42    1.00s
[root@localhost ~]# write dingjun tty1
I am root ,sfbwagwa
dwasga
[dingjun@localhost ~]$ mesg n
is n
[dingjun@localhost ~]$
```


4. 使用 mail 命令以文件为内容进行发送，要求对方回复。

```
192.168.2.136:22
去主机的新头信息。
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[root@localhost ~]# yum clean all
已加载插件：fastestmirror
正在清理软件源： base extras updates
Cleaning up list of fastest mirrors
Other repos take up 111 M of disk space (use --verbose for details)
[root@localhost ~]# yum repolist
已加载插件：fastestmirror
Determining fastest mirrors
base                                     | 3.6 kB  00:00:00
extras                                 | 2.9 kB  00:00:00
updates                               | 2.9 kB  00:00:00
(1/4): extras/7/x86_64/primary_db     | 243 kB  00:00:00
(2/4): base/7/x86_64/group_gz         | 153 kB  00:00:01
(3/4): base/7/x86_64/primary_db       | 6.1 MB  00:00:01
(4/4): updates/7/x86_64/primary_db    | 12 MB  00:00:04
源标识                                源名称                                状态
base/7/x86_64                        CentOS-7 - Base - 163.com              10
extras/7/x86_64                      CentOS-7 - Extras - 163.com            2
updates/7/x86_64
repolist: 13,515
[root@localhost ~]# yum -y install mailx.x86_64
已加载插件：fastestmirror
Loading mirror speeds from cached hostfile
正在解决依赖关系
--> 正在检查事务
```

```
Last login: Mon Nov  8 17:26:24 2021 from 192.168.2.1
[root@DJ ~]# mail -s "Hello" dingjun
Hello dingjun Nice to meet you 8003119100丁俊
.
EOT
[root@DJ ~]#
```

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```
U 1 root Wed Nov 3 18:33 19/643 "Hello"
>N 2 root Mon Nov 8 17:23 18/689 "hello"
N 3 root Mon Nov 8 17:26 18/597 "Hello"
```

&

Message 2:

From root@localhost.localdomain Mon Nov 8 17:23:28 2021
Return-Path: <root@localhost.localdomain>
X-Original-To: dingjun
Delivered-To: dingjun@localhost.localdomain
Date: Mon, 08 Nov 2021 17:23:25 +0800
To: dingjun@localhost.localdomain
Subject: hello
User-Agent: Heirloom mailx 12.5 7/5/10
Content-Type: text/plain; charset=us-ascii
From: root@localhost.localdomain (root)
Status: R

& ^CInterrupt

&

Message 3:

From root@DJ.localdomain Mon Nov 8 17:26:56 2021
Return-Path: <root@DJ.localdomain>
X-Original-To: dingjun
Delivered-To: dingjun@DJ.localdomain
Date: Mon, 08 Nov 2021 17:26:56 +0800
To: dingjun@DJ.localdomain
Subject: Hello

User-Agent: Heirloom mailx 12.5 7/5/10

Content-Type: text/plain; charset=us-ascii
From: root@DJ.localdomain (root)
Status: R

Hello dingjun Nice to meet you

& _

Nice to meet you in the network

[dingjun@localhost ~]\$ mail

No mail for dingjun

[dingjun@localhost ~]\$ mail

Heirloom Mail version 12.5 7/5/10. Type ? for help.

"/var/spool/mail/dingjun": 1 message 1 new

>N 1 root Wed Nov 3 18:33 18/633 "Hello"

& Held 1 message in /var/spool/mail/dingjun

You have mail in /var/spool/mail/dingjun

[dingjun@localhost ~]\$ mail root

Subject: Hello

I have receiver your mail

.

EOT

[dingjun@localhost ~]\$

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6. 使用 at 命令自己设计一个守护作业。

```
***@192.168.2.136:22
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[1 centOs7]
[root@DJ ~]# yum -y install at-3.1.13-24.el7.x86_64
已加载插件：fastestmirror
Loading mirror speeds from cached hostfile
正在解决依赖关系
--> 正在检查事务
---> 软件包 at.x86_64.0.3.1.13-24.el7 将被 安装
--> 解决依赖关系完成

依赖关系解决

=====
Package                架构          版本          源
=====
正在安装：
at                      x86_64        3.1.13-24.el7 base

事务概要
=====
安装 1 软件包

总下载量：51 k
安装大小：95 k
Downloading packages:
at-3.1.13-24.el7.x86_64.rpm | 51 kB 00:00
Running transaction check
```

```
***@192.168.2.136:22
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[1 centOs7]
[root@DJ ~]# ls
anaconda-ks.cfg  dj
[root@DJ ~]# at 10:00am +1 day
at> rm -rf dj/*
at> mail -s "hello" dingjun
at> <EOT>
job 13 at Thu Nov  4 10:00:00 2021
[root@DJ ~]#
```

7. 使用 cron 服务设计一个守护作业实现自动化运维。

```
[root@localhost ~]# vi task1
[root@localhost ~]#
```

```
0 21 * * * /usr/local/etc/rc.d/lighttpd restart
1 23 8 11 * rm -rf dingjun
5 18-23/2 5 * * mail -s "Hello" dingjun
20 22 9 11 * mkdir newDJ
~
~
~
~
~
```

如上任务列表代表每月的 21 点重启 apache

11 月 8 日晚上 23 点删除目录 dingjun

每天晚上 18 点至 23 点每个两小时给用户 dingjun 发送一条 email 消息

11 月 9 日 22 点新建一个文件夹 newDJ

```
[root@localhost ~]# ls
anaconda-ks.cfg  dj  m1  m2  m3  task1
[root@localhost ~]# crontab -u root task1
[root@localhost ~]#
```

四、主要仪器设备及耗材

计算机、VMware、CentOS 7、word

五、实验步骤

六、实验数据及处理结果

七、思考讨论题或体会或对改进实验的建议

八、参考资料

[1] 文东戈,赵艳芹.Linux 操作系统实用教程（第 2 版）[M].北京：清华大学出版社.2019,9.