

Week 5
Lab Report
CIT 217
Chaz Davis

BCTC
Spring 2020

February 13, 2020

Part 1: Chapter 7 Questions

i) Run the command `sleep 1000` in the background. Using the `ps` command, provide the output displaying it's still running.

I ran `sleep 1000` into the terminal.

I then ran the command `Ctrl + z` to suspend the program and then `bg` to put it into the background.

Finally, I ran `ps` to show the running processes on the system. The output you can see in Fig. 1a on Pg. 2.

ii) Abruptly terminate the sleep process that you created. Use the `ps` command to provide the output it is no longer running.

First, I brought the sleep command back from the background to the foreground using `fg`.

Then I used the key sequence `Ctrl + c` to kill the foregrounded process.

Finally, I ran `ps` to show the running processes on the system. The output you can see in Fig. 1b on Pg. 2.

iii) Provide the dynamic output of the top running processes on your system.

First I opened a terminal and then ran the command `top`, the output of which you can see in Fig. 1c on Pg. 2.

```

student@server1 ~]$ sleep 1000
^Z
[2]+  Stopped                  sleep 1000
student@server1 ~]$ bg
[2]+ sleep 1000 &
student@server1 ~]$ ps
  PID TTY          TIME CMD
 3360 pts/0    00:00:00 bash
 3668 pts/0    00:00:00 tail
 4207 pts/0    00:00:00 sleep
 4222 pts/0    00:00:00 ps

```

(a) Starting and verifying the Sleep 1000 process

```

[student@server1 ~]$ fg
sleep 1000
^C
[student@server1 ~]$ ps
  PID TTY          TIME CMD
 3360 pts/0    00:00:00 bash
 4244 pts/0    00:00:00 ps
[student@server1 ~]$ █

```

(b) Terminating the sleep process

```

student@server1:~
File Edit View Search Terminal Help
top - 11:46:41 up 44 min, 2 users, load average: 0.51, 0.39, 0.34
Tasks: 275 total, 3 running, 271 sleeping, 1 stopped, 0 zombie
%Cpu(s): 62.8 us, 0.3 sy, 0.0 ni, 36.9 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem: 1878192 total, 939060 used, 939132 free, 744 buffers
KiB Swap: 0 total, 0 used, 0 free, 409448 cached Mem

  PID USER      PR  NI  VIRT  RES  SHR S %CPU  %MEM    TIME+  COMMAND
 4183 student    20   0   4340   84    0 R 58.7   0.0   1:05.78 process101
 2244 student    20   0 1442388 168972 37824 S  3.0   9.0   4:17.63 gnome-shell
   774 root        20   0 186764 33524  7604 S  0.7   1.8   0:33.80 Xorg
 2363 student    20   0 346176 16804 12844 S  0.3   0.9   0:03.19 vmtocsd
 4167 student    20   0 123772 1764  1152 R  0.3   0.1   0:00.79 top
    1 root        20   0   52840 6604  3760 S  0.0   0.4   0:03.64 systemd
    2 root        20   0      0      0      0 S  0.0   0.0   0:00.00 kthreadd
    3 root        20   0      0      0      0 S  0.0   0.0   0:00.00 ksoftirqd/0
    5 root        0 -20      0      0      0 S  0.0   0.0   0:00.00 kworker/0:0H
    7 root        rt    0      0      0      0 S  0.0   0.0   0:00.00 migration/0
    8 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcu_bh
    9 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/0
   10 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/1
   11 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/2
   12 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/3
   13 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/4
   14 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/5
   15 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/6
   16 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/7
   17 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/8
   18 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/9
   19 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/10
   20 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/11
   21 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/12
   22 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/13
   23 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/14
   24 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/15
   25 root        20   0      0      0      0 S  0.0   0.0   0:00.00 rcuob/16

```

(c) Output of Top

Figure 1: Chapter 7 Screenshots

Part 2: Chapter 8 Questions

i) Provide the output of the system status for the service firewalld.

I went to the terminal on server1 and entered `sudo systemctl status firewalld`.

I then entered my password.

Finally, I was given the output of the status of the firewall daemon see Fig. 2a

ii) Is the service nfs enabled or disabled? Provide the output of its state.

After logging into the terminal and entering the command `sudo systemctl status nfs` and entering my credentials, we can now see in Fig. 2b that nfs is loaded but not active.

Alternatively, I could have run the command `sudo systemctl is-enabled nfs` that output is provided in Fig. 2c.

```
student@server1 ~]$ sudo systemctl status firewalld
firewalld.service - firewalld - dynamic firewall daemon
  Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled)
  Active: active (running) since Thu 2020-02-13 11:02:05 EST; 1h 6min ago
  Main PID: 642 (firewalld)
  CGroup: /system.slice/firewalld.service
          └─642 /usr/bin/python -Es /usr/sbin/firewalld --nofork --nopid

Feb 13 11:02:05 localhost systemd[1]: Started firewalld - dynamic firewall daemon.
student@server1 ~]$
```

(a) Firewalld status

```
student@server1 ~]$ sudo systemctl status nfs
[sudo] password for student:
nfs-server.service - NFS Server
  Loaded: loaded (/usr/lib/systemd/system/nfs-server.service; disabled)
  Active: inactive (dead)

student@server1 ~]$
```

(b) nfs Status

```
student@server1 ~]$ sudo systemctl is-enabled nfs
[sudo] password for student:
disabled
student@server1 ~]$
```

(c) nfs is-enabled

Figure 2: Chapter 8 Screenshots

Part 3: Chapter 9 Questions

i) ssh to server1 then run the hostname command. Provide the output.

I logged into Desktop1 and opened a terminal. I then entered `ssh student@server1` after confirmation and key creation I was able to enter my password for the server account.

I then ran the command `hostname` the output of which you can see in Fig. 3a on Pg. 5.

ii) Edit the sshd config file. Disable root logins. Disable strict modes. Provide the output of the file where this was accomplished.

I logged into the server and used the command `sudo vim /etc/ssh/sshd_config`

I then, went down to the authentication section, and changed the yes to a no for both `PermitRootLogin` see Fig. 3b on Pg. 5 and for `StrictModes`. See Fig. 3c on Pg. 5.

Then to verify it took effect I used the command `less /etc/ssh/sshd_config` See Fig. 3d on Pg. 5.

iii) Generate an ssh key saved as your first name. Provide the output.

I used the command `ssh-keygen` and when prompted for file I told it to save as Chaz.

To verify this I used the command `cat chaz`, the output is displayed in Fig. 3e on Pg. 5.

```

[student@desktop1 ~]$ ssh student@server1
The authenticity of host 'server1 (172.25.1.11)' can't be established.
ECDSA key fingerprint is 65:4d:ac:8a:c9:58:82:b5:0c:91:c4:ef:a5:e6:f6:65.
Are you sure you want to continue connecting (yes/no)? y
Please type 'yes' or 'no': yes
Warning: Permanently added 'server1,172.25.1.11' (ECDSA) to the list of known hosts.
student@server1's password:
Last login: Thu Feb 13 11:25:06 2020
[student@server1 ~]$ hostname
server1.example.com
[student@server1 ~]$ █

```

(a) Server1 hostname

```

# Authentication:

#LoginGraceTime 2m
#PermitRootLogin no
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10

```

```

# Authentication:

#LoginGraceTime 2m
#PermitRootLogin no
#StrictModes no
#MaxAuthTries 6
#MaxSessions 10

```

(b) PermitRootLogin

(c) StrictModes

```

root@server1:~#
File Edit View Search Terminal Help

# Ciphers and keying
#KeyExchange default none

# Logging
# obsoletes QuietMode and FascistLogging
# syslogFacility AUTH
# syslogFacility AUTHPRIV
#LogLevel INFO

# Authentication:
#LoginGraceTime 2m
#PermitRootLogin no
#StrictModes no
#MaxAuthTries 6
#MaxSessions 10

#RSAAuthentication yes
#PubkeyAuthentication yes

# The default is to check both .ssh/authorized_keys and .ssh/authorized_keys2
# but this is overridden so installations will only check .ssh/authorized_keys
AuthorizedKeysFile .ssh/authorized_keys

AuthorizedPrincipalsFile none

AuthorizedKeysCommand none
AuthorizedKeysCommandUser nobody

# For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostsRSAAuthentication no
# similar for protocol version 2
#HostbasedAuthentication no

```

(d) Less sshd config

```

[root@server1 ~]# cat /etc/ssh/sshd_config
#-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEAZES1CQLEt4Qp9B8cRcP0c0d+rDBA9KXbRo5LD0t17P1
Z1wbM1OUa3fMLZ7e01UFfNRdQ+3vYw5dAnh0R6P8dIKnjzbo6zaw9cTQ86gt
LfgEphd8/nLUZ+a+QKMI198Mjmm2fP8H58J1g190k6R+h5y4Czs1L+DUYzogu18
C4KF8Ztpw0/yGSNj aPly/nJMX4R7FwqN87uXPN73gdTdk6XMc1vU/Pu/g8tjEj
e6dJMYaxZa2tkQpeMvA7CLNUCA1A6H1wvWw8/sD6MchQ088P0+tiF0ZK r2C6Ft
Ch3Neh2dKfQAIYtgyZ0PL13tF13jTcy8M1pwIDAQAAB1BQACg9wNkZ2uzg6d5
1yo/3GPXkuc+EtRGSyK8yBNK1gh13e0ovWM74Yx5fVt88r0L4+GwJ8GntLS3Z
dcUffPp0CvS+NcB0xH0o8L9xd138zIHYTWitaoZQ059N/2fCY1pARVQGFp8Zxc
7ZmMgdjT1ItkDxg/L01FoTsUnZzV1wVJGteyma15veGd5/5Ha2WszrL0xEMDw
JbSmD/os33tg+Qssqaj3cPnu5zcGg3Y/4PzB2kCagVYj1300mBQVJ8kL2Ksu1XJ
4hahk61HrE6swT0bo81VCh/e08rp3EPjgM4a0LkyefFqJ3Hr05avx9LWS
oZ/1WIdhAoGBAPn/JpF8LORUMCmtD1p2H6Kwofc9g+9A08H4/tG2PbgiFbM0M
rCDNDTV0Aksa6ugNj170owFjMgf17z2qCYr4Hvdp6KBZcSMTQPL4zm8/8xt0YGe
y8BVLvXhwy0MD7/IbflcacftsZ7AAAJgyctCpB9Pndv07DwGF0y9e4jAoGBAN2u
5VJ3bJ6cm8YQpwaPnRL7LwRwNt1y89H7gvtwqRkxLLMyqoru23w0V5VJYur
15akZ0SvuFE2YL3VTubn1azaaHcerPudAZX16zu93eC+/T/4su7Muw2Ntk0cqvYx
kJFyKghoQz5D1HvH16cw4TKu98680M1tALGmtAoGBAIQpVJjRhNIWtDCTSBv
fRzyB6vQnas1fmxS1o/NKjTKNj1Jd1cYcq00+DmUgr0dTzZmR46Ld8xGB0okHm1
AQp84uYpYMD8aw0z64CTnPuzn6Bqkq/tXJ9r0Lk967a+VPu9AUrGHbdk11B0a
B06NKL1T08R3D0TLrx30WTAoGAP1ovwzh1vhn0jEjEhagP9ZsuAv1wR1wMRS
kdL+xxqvIZt8ZB0PmWqLD09864udppH1HNT/6oqEsBrwzTUL/SacCwjsRos5ow1y
RL1jbotdzwP/5HKNyb5F42u+yMMERu8mULStGcnMwYcamx1n7231QEELx0WtG2
S96hFbkCgYEAof3r0AJY1512LwEnus0Kne6WF65nqyZRI4p8bq4+1PMZyZw/EZQEj
f3-ON/UuPqewv675Yc9yJpP+kz3nT0PRVfmgLDmBcw5U60STc0iH2aZw6tR9G2
ay/2D061c5owwJKTDA8e5f/sd4F7/0D93E14sD1LUGva7fmuK3zj6c=
-----END RSA PRIVATE KEY-----
[root@server1 ~]#

```

(e) RSA output of Chaz

Figure 3: Chapter 9 screenshots