Linux System Administration

System administration command

```
student@CSDEPT-14 ~ $ pwd
/home/student
student@CSDEPT-14 ~ $ su
Password:
CSDEPT-14 student # useradd Guest
CSDEPT-14 student # passwd Guest
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
CSDEPT-14 student # userdel Guest
CSDEPT-14 student # exit
exit
```

System monitoring commands

```
student@CSDEPT-14 ~ $ top

top - 06:12:48 up 4 min,  2 users,  load average: 0.12, 0.24, 0.12
Tasks: 159 total,   1 running, 158 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.1 us,  0.1 sy,  0.0 ni, 99.8 id,  0.0 wa,  0.0 hi,  0.0 si,
0.0 st
KiB Mem:   4047688 total,  1215468 used,  2832220 free,   718132 buffers
KiB Swap:        0 total,        0 used,        0 free,   281812 cached

  PID USER      PR  NI  VIRT  RES  SHR S  %CPU %MEM   TIME+   COMMAND
 1430 root      20   0  134m  31m  11m S   1.7  0.8  0:01.20 Xorg
 2128 student   20   0  261m  14m  10m S   1.7  0.4  0:00.57 mate-
terminal
 1570 root      20   0     0    0    0 S   0.3  0.0  0:00.02 flush-8:0
    1 root      20   0  3752 2160 1376 S   0.0  0.1  0:00.75 init
    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  0:00.01 ksoftirqd/0
    4 root      20   0     0    0    0 S   0.0  0.0  0:00.00 kworker/0:0
    5 root       0 -20     0    0    0 S   0.0  0.0  0:00.00
kworker/0:0H
    6 root      20   0     0    0    0 S   0.0  0.0  0:00.35 kworker/u:0
    7 root       0 -20     0    0    0 S   0.0  0.0  0:00.00
kworker/u:0H
    8 root      rt   0     0    0    0 S   0.0  0.0  0:00.00 migration/0
    9 root      20   0     0    0    0 S   0.0  0.0  0:00.00 rcu_bh
   10 root      20   0     0    0    0 S   0.0  0.0  0:00.06 rcu_sched
   11 root      rt   0     0    0    0 S   0.0  0.0  0:00.00 watchdog/0
   12 root      rt   0     0    0    0 S   0.0  0.0  0:00.00 watchdog/1
   13 root      20   0     0    0    0 S   0.0  0.0  0:00.01 ksoftirqd/1
   14 root      rt   0     0    0    0 S   0.0  0.0  0:00.00 migration/1
top - 06:14:02 up 5 min,  2 users,  load average: 0.09, 0.20, 0.12
Tasks: 151 total,   2 running, 149 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.7 us,  0.3 sy,  0.0 ni, 99.0 id,  0.0 wa,  0.0 hi,  0.0 si,
0.0 st
KiB Mem:   4047688 total,  1208928 used,  2838760 free,   718132 buffers
KiB Swap:        0 total,        0 used,        0 free,   288340 cached




student@CSDEPT-14 ~ $ top -u student

top - 06:18:49 up 10 min,  2 users,  load average: 0.01, 0.09, 0.10
Tasks: 153 total,   1 running, 150 sleeping,   2 stopped,   0 zombie
%Cpu(s):  1.0 us,  0.4 sy,  0.0 ni, 95.0 id,  3.6 wa,  0.0 hi,  0.0 si,
0.0 st
KiB Mem:   4047688 total,  1218240 used,  2829448 free,   718136 buffers
KiB Swap:        0 total,        0 used,        0 free,   295284 cached

  PID USER      PR  NI  VIRT  RES  SHR S  %CPU %MEM   TIME+   COMMAND
 1664 student   20   0 70100 7248 5852 S   0.0  0.2  0:00.05 x-session-
manag
 1744 student   20   0  4128  208    0 S   0.0  0.0  0:00.00 ssh-agent
 1747 student   20   0  3876  544  336 S   0.0  0.0  0:00.00 dbus-launch
```

```
 1748 student     20    0  4252 1500  780 S   0.0  0.0   0:00.05 dbus-daemon
 1764 student     20    0  183m  11m 9116 S   0.0  0.3   0:00.12 mate-
settings-d
 1765 student     20    0 47888 3868 3312 S   0.0  0.1   0:00.00 mate-
keyring-da
 1772 student     20    0 66292  10m 9088 S   0.0  0.3   0:00.32 marco
 1774 student     20    0 27440 2664 2288 S   0.0  0.1   0:00.01 gvfsd
 1780 student     20    0 45124 3308 2800 S   0.0  0.1   0:00.00 gvfsd-fuse
 1783 student     20    0  267m  11m 9172 S   0.0  0.3   0:00.23 mate-panel
 1794 student      9  -11  106m 5428 3804 S   0.0  0.1   0:00.03 pulseaudio
 1802 student     20    0  293m  18m  13m S   0.0  0.5   0:00.42 caja
 1807 student     20    0  237m 9444 7132 S   0.0  0.2   0:00.03 mate-
bluetooth-
 1814 student     20    0  290m  31m  15m S   0.0  0.8   0:01.63 mintmenu
 1817 student     20    0  250m  12m 9.9m S   0.0  0.3   0:00.46 wnck-applet
 1820 student     20    0  252m  12m 9.8m S   0.0  0.3   0:00.06 clock-
applet
 1822 student     20    0  236m 9004 6768 S   0.0  0.2   0:00.03
notification-ar
 1823 student     20    0 71708 8808 7260 S   0.0  0.2   0:00.03 mate-power-
mana
 1824 student     20    0 60816 7400 6044 S   0.0  0.2   0:00.02 mate-


student@CSDEPT-14 ~ $ cat /proc/meminfo
MemTotal:        4047688 kB
MemFree:         2830612 kB
Buffers:          718132 kB
Cached:           294752 kB
SwapCached:            0 kB
Active:           245648 kB
Inactive:         909896 kB
Active(anon):     143444 kB
Inactive(anon):    12360 kB
Active(file):     102204 kB
Inactive(file):   897536 kB
Unevictable:           0 kB
Mlocked:               0 kB
HighTotal:       3192104 kB
HighFree:        2742976 kB
LowTotal:         855584 kB
LowFree:           87636 kB
SwapTotal:             0 kB
SwapFree:              0 kB
Dirty:                44 kB
Writeback:             0 kB
AnonPages:        142660 kB
Mapped:            63384 kB
Shmem:             13144 kB
Slab:              37772 kB
SReclaimable:      25324 kB
SUnreclaim:        12448 kB
KernelStack:        2448 kB
PageTables:         5036 kB
NFS_Unstable:          0 kB
Bounce:                0 kB
WritebackTmp:          0 kB
```

```
CommitLimit:        2023844 kB
Committed_AS:       1180892 kB
VmallocTotal:        122880 kB
VmallocUsed:           9276 kB
VmallocChunk:        111700 kB
HardwareCorrupted:        0 kB
AnonHugePages:            0 kB
HugePages_Total:          0
HugePages_Free:           0
HugePages_Rsvd:           0
HugePages_Surp:           0
Hugepagesize:          2048 kB
DirectMap4k:           8184 kB
DirectMap2M:         905216 kB
```

```
student@CSDEPT-14 ~ $ free
             total       used       free     shared    buffers     cached
Mem:        4047688    1216828    2830860          0     718132     294752
-/+ buffers/cache:      203944    3843744

Swap:             0          0          0
```

```
student@CSDEPT-14 ~ $ vmstat
procs -----------memory---------- ---swap-- -----io---- -system-- ----
cpu----
 r  b   swpd   free   buff  cache   si   so    bi    bo   in   cs us sy
id wa
 1  0      0 2831356 718132 294796    0    0  1118    14   51  191  1  0
93  5
```

```
student@CSDEPT-14 ~ $ ipcs

------ Shared Memory Segments --------
key        shmid      owner      perms      bytes      nattch     status
0x00000000 229376     student    600        393216     2          dest
0x00000000 327681     student    600        393216     2          dest
0x00000000 360450     student    600        393216     2          dest
0x00000000 393219     student    600        393216     2          dest
0x00000000 425988     student    600        393216     2          dest
0x00000000 524293     student    600        393216     2          dest
0x00000000 557062     student    600        393216     2          dest
0x00000000 589831     student    600        393216     2          dest
0x00000000 688136     student    600        393216     2          dest
0x00000000 851977     student    600        393216     2          dest
0x00000000 884746     student    600        393216     2          dest
0x00000000 983051     student    600        393216     2          dest
0x00000000 1015820    student    600        393216     2          dest
0x00000000 1048589    student    600        393216     2          dest
0x00000000 1245198    student    600        524288     2          dest
0x00000000 1277967    student    600        524288     2          dest
0x00000000 1900560    student    600        1048576    2          dest
0x00000000 1409041    student    600        393216     2          dest
0x00000000 1507346    student    600        393216     2          dest
0x00000000 1540115    student    600        524288     2          dest
```

```
0x00000000 1572884    student    600      393216     2         dest
0x00000000 1966101    student    600      393216     2         dest
0x00000000 1933334    student    600      1048576    2         dest
0x00000000 1802263    student    600      524288     2         dest
0x00000000 2097177    student    600      393216     2         dest
0x00000000 2261018    student    600      33554432   2         dest
0x00000000 2195483    student    600      393216     2         dest


------ Semaphore Arrays --------
key         semid       owner       perms       nsems

------ Message Queues --------
key         msqid       owner       perms       used-bytes    messages



student@CSDEPT-14 ~ $ lsof -p 1
COMMAND PID USER   FD       TYPE DEVICE SIZE/OFF NODE NAME
init     1 root  cwd   unknown                          /proc/1/cwd
(readlink: Permission denied)
init     1 root  rtd   unknown                          /proc/1/root
(readlink: Permission denied)
init     1 root  txt   unknown                          /proc/1/exe
(readlink: Permission denied)
init     1 root NOFD                                    /proc/1/fd (opendir:
Permission denied)



student@CSDEPT-14 ~ $ lsof -p 1 |wc  -1
wc: invalid option -- '1'
Try 'wc --help' for more information.
student@CSDEPT-14 ~ $ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type      State         I-Node  Path
unix  10     [ ]         DGRAM                   829     /dev/log
unix  3      [ ]         STREAM    CONNECTED     12528
unix  3      [ ]         STREAM    CONNECTED     10604   @/tmp/dbus-
Qs6xYuOCx9
unix  3      [ ]         STREAM    CONNECTED     10580
unix  3      [ ]         STREAM    CONNECTED     13374
unix  3      [ ]         STREAM    CONNECTED     10461
unix  3      [ ]         STREAM    CONNECTED     10396   @/tmp/.X11-
unix/X0
unix  3      [ ]         STREAM    CONNECTED     12266
unix  3      [ ]         STREAM    CONNECTED     10644   @/tmp/.X11-
unix/X0
unix  3      [ ]         STREAM    CONNECTED     13690   @/dbus-vfs-
daemon/socket-tPZzoyUd
unix  3      [ ]         STREAM    CONNECTED     12408   @/tmp/dbus-
sONqTQXbGx
unix  3      [ ]         STREAM    CONNECTED     13366
unix  3      [ ]         STREAM    CONNECTED     12129
unix  3      [ ]         STREAM    CONNECTED     867
/var/run/dbus/system_bus_socket
```

```
unix  3      [ ]           STREAM      CONNECTED      10115
/var/run/dbus/system_bus_socket
unix  3      [ ]           DGRAM                      8577
unix  3      [ ]           STREAM      CONNECTED      14573
/var/run/dbus/system_bus_socket
unix  3      [ ]           STREAM      CONNECTED      13705
unix  3      [ ]           STREAM      CONNECTED      10605
unix  3      [ ]           STREAM      CONNECTED      13660
unix  3      [ ]           STREAM      CONNECTED      13418
unix  3      [ ]           STREAM      CONNECTED      12059
unix  3      [ ]           STREAM      CONNECTED      12011
unix  3      [ ]           STREAM      CONNECTED      13321
unix  3      [ ]           STREAM      CONNECTED      264
unix  3      [ ]           STREAM      CONNECTED      10358   @/tmp/dbus-
sONqTQXbGx
unix  3      [ ]           STREAM      CONNECTED      10576
/var/run/dbus/system_bus_socket
unix  3      [ ]           STREAM      CONNECTED      10648   @/tmp/dbus-
sONqTQXbGx
unix  3      [ ]           STREAM      CONNECTED      10595
unix  3      [ ]           STREAM      CONNECTED      14578   @/tmp/dbus-
sONqTQXbGx
unix  2      [ ]           DGRAM                      13376
unix  3      [ ]           STREAM      CONNECTED      10363   @/tmp/.X11-
unix/X0
unix  2      [ ]           STREAM      CONNECTED      11902
unix  3      [ ]           STREAM      CONNECTED      10495
/var/run/dbus/system_bus_socket
unix  3      [ ]           STREAM      CONNECTED      13324
unix  2      [ ]           DGRAM                      1908
unix  3      [ ]           STREAM      CONNECTED      10612
unix  3      [ ]           STREAM      CONNECTED      10509
/var/run/dbus/system_bus_socket
unix  3      [ ]           STREAM      CONNECTED      12012
/var/run/dbus/system_bus_socket
unix  3      [ ]           STREAM      CONNECTED      10388   @/tmp/dbus-
sONqTQXbGx
unix  3      [ ]           STREAM      CONNECTED      9016
unix  3      [ ]           STREAM      CONNECTED      14495   @/tmp/dbus-
sONqTQXbGx


student@CSDEPT-14 ~ $ netstat -s
Ip:
    0 total packets received
    0 forwarded
    0 incoming packets discarded
    0 incoming packets delivered
    0 requests sent out
    1608 dropped because of missing route
Icmp:
    0 ICMP messages received
    0 input ICMP message failed.
    ICMP input histogram:
    0 ICMP messages sent
    0 ICMP messages failed
    ICMP output histogram:
Tcp:
```

```
     0 active connections openings
     0 passive connection openings
     0 failed connection attempts
     0 connection resets received
     0 connections established
     0 segments received
     0 segments send out
     0 segments retransmited
     0 bad segments received.
     0 resets sent
Udp:
     0 packets received
     0 packets to unknown port received.
     0 packet receive errors
     0 packets sent
UdpLite:
TcpExt:
     0 packet headers predicted
IpExt:


student@CSDEPT-14 ~ $ ipcs

------ Shared Memory Segments --------
key        shmid      owner      perms      bytes      nattch     status
0x00000000 229376     student    600        393216     2          dest
0x00000000 327681     student    600        393216     2          dest
0x00000000 360450     student    600        393216     2          dest
0x00000000 393219     student    600        393216     2          dest
0x00000000 425988     student    600        393216     2          dest
0x00000000 524293     student    600        393216     2          dest
0x00000000 557062     student    600        393216     2          dest
0x00000000 589831     student    600        393216     2          dest
0x00000000 688136     student    600        393216     2          dest
0x00000000 851977     student    600        393216     2          dest
0x00000000 884746     student    600        393216     2          dest
0x00000000 983051     student    600        393216     2          dest
0x00000000 1015820    student    600        393216     2          dest
0x00000000 1048589    student    600        393216     2          dest
0x00000000 1245198    student    600        524288     2          dest
0x00000000 1277967    student    600        524288     2          dest
0x00000000 1900560    student    600        1048576    2          dest
0x00000000 1409041    student    600        393216     2          dest
0x00000000 1507346    student    600        393216     2          dest
0x00000000 1540115    student    600        524288     2          dest
0x00000000 1572884    student    600        393216     2          dest
0x00000000 1966101    student    600        393216     2          dest
0x00000000 1933334    student    600        1048576    2          dest
0x00000000 1802263    student    600        524288     2          dest
0x00000000 2097177    student    600        393216     2          dest
0x00000000 2261018    student    600        33554432   2          dest
0x00000000 2195483    student    600        393216     2          dest


------ Semaphore Arrays --------
key        semid      owner      perms      nsems


------ Message Queues --------
key        msqid      owner      perms      used-bytes   messages
```

```
student@CSDEPT-14 ~ $ ipcs -m

------ Shared Memory Segments --------
key         shmid     owner     perms     bytes       nattch    status
0x00000000 229376     student   600       393216      2         dest
0x00000000 327681     student   600       393216      2         dest
0x00000000 360450     student   600       393216      2         dest
0x00000000 393219     student   600       393216      2         dest
0x00000000 425988     student   600       393216      2         dest
0x00000000 524293     student   600       393216      2         dest
0x00000000 557062     student   600       393216      2         dest
0x00000000 589831     student   600       393216      2         dest
0x00000000 688136     student   600       393216      2         dest
0x00000000 851977     student   600       393216      2         dest
0x00000000 884746     student   600       393216      2         dest
0x00000000 983051     student   600       393216      2         dest
0x00000000 1015820    student   600       393216      2         dest
0x00000000 1048589    student   600       393216      2         dest
0x00000000 1245198    student   600       524288      2         dest
0x00000000 1277967    student   600       524288      2         dest
0x00000000 1900560    student   600       1048576     2         dest
0x00000000 1409041    student   600       393216      2         dest
0x00000000 1507346    student   600       393216      2         dest
0x00000000 1540115    student   600       524288      2         dest
0x00000000 1572884    student   600       393216      2         dest
0x00000000 1966101    student   600       393216      2         dest
0x00000000 1933334    student   600       1048576     2         dest
0x00000000 1802263    student   600       524288      2         dest
0x00000000 2097177    student   600       393216      2         dest
0x00000000 2261018    student   600       33554432    2         dest
0x00000000 2195483    student   600       393216      2         dest


student@CSDEPT-14 ~ $ ipcs -u

------ Shared Memory Status --------
segments allocated 27
pages allocated 11136
pages resident  3022
pages swapped   0
Swap performance: 0 attempts  0 successes

------ Semaphore Status --------
used arrays = 0
allocated semaphores = 0

------ Messages Status --------
allocated queues = 0
used headers = 0
used space = 0 bytes
```