

# Operációs rendszerek Bsc

## 3.gyak

2021.02.04

**Készítette:**

Szabó Bálint Bsc

Programtervező informatikus

EJX162

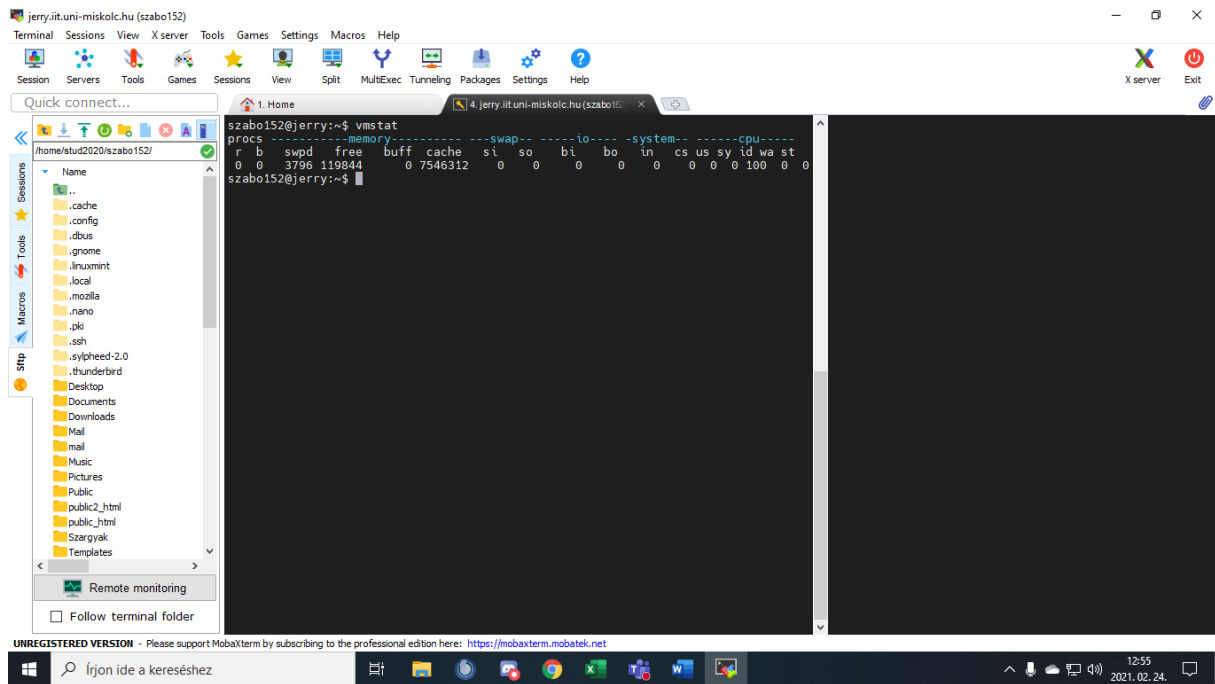
### 1. feladat

a, top

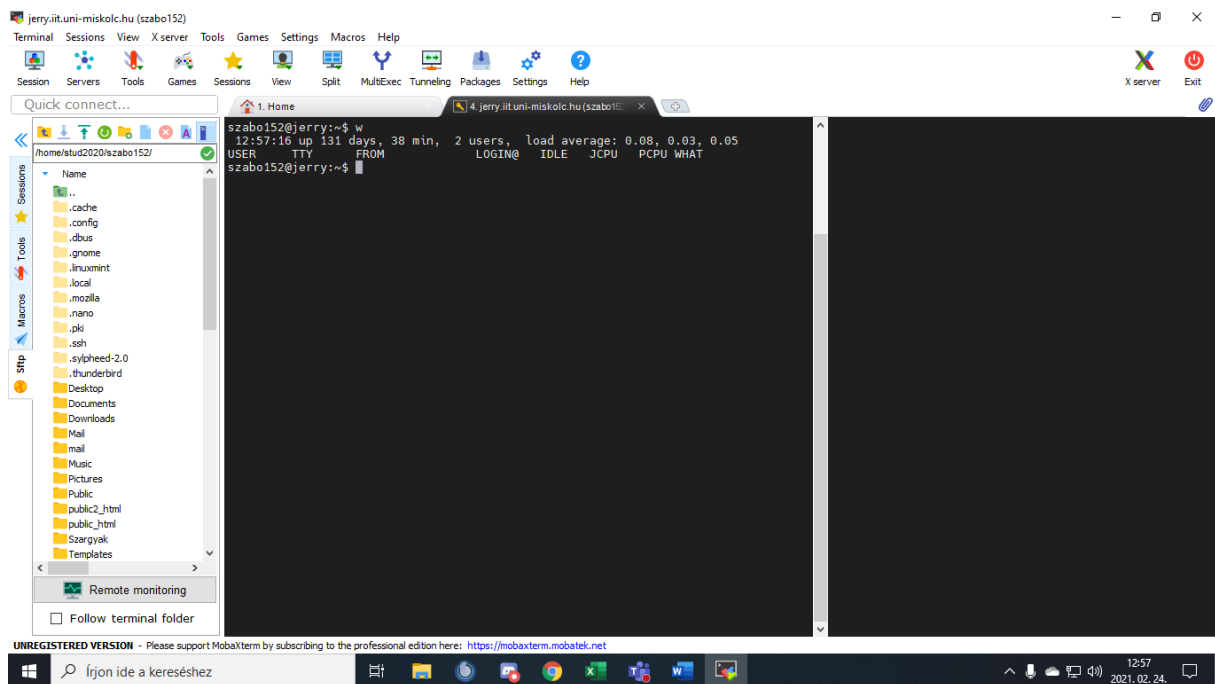
```
top - 12:53:05 up 131 days, 34 min, 2 users, load average: 0.07, 0.04, 0.05
Tasks: 5 total, 1 running, 4 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.3 us, 0.3 sy, 0.0 ni, 99.4 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
KiB Mem : 8025292 total, 120784 free, 358268 used, 7546240 buff/cache
KiB Swap: 2097148 total, 2093352 free, 3796 used, 7468172 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
25888 szabo152 20   0   39756   3392   2912 R   0.3   0.0   0:00.15 top
25861 szabo152 20   0   87388   4744   3708 S   0.0   0.1   0:00.01 sshd
25868 szabo152 20   0   87036   4708   3812 S   0.0   0.1   0:00.00 sshd
25869 szabo152 20   0    5440   1564   1428 S   0.0   0.0   0:00.01 sftp-server
25870 szabo152 20   0   16428   5852   2996 S   0.0   0.1   0:00.09 bash
```

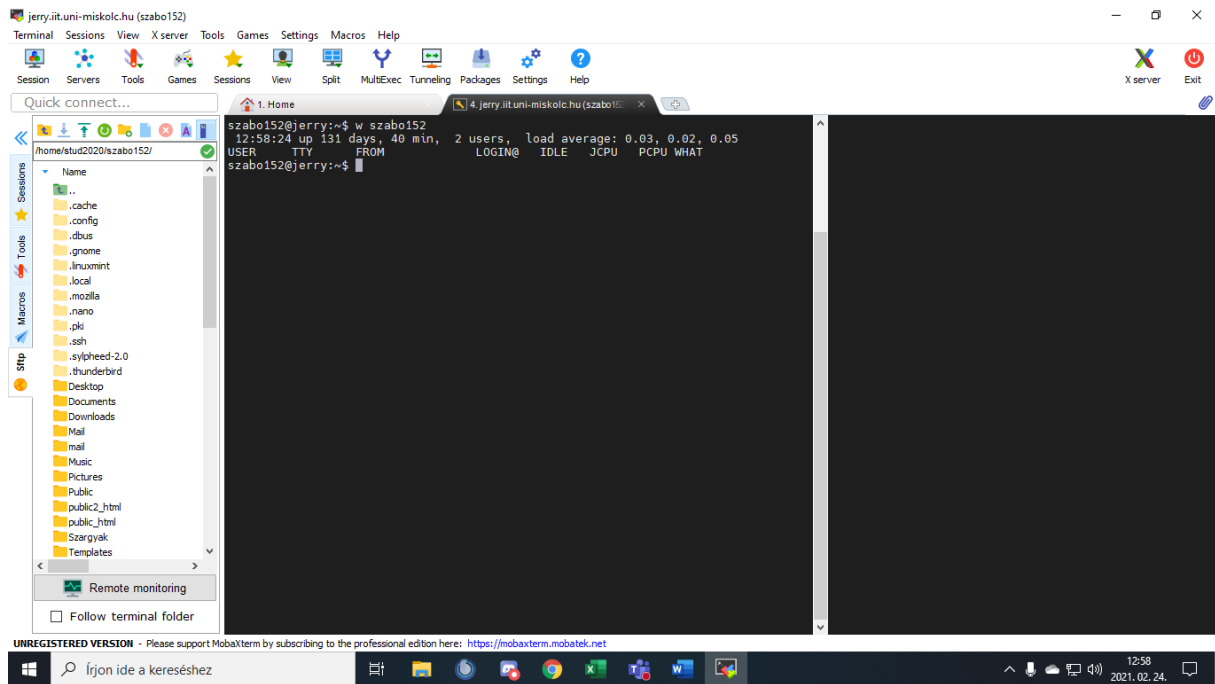
b, vmstat



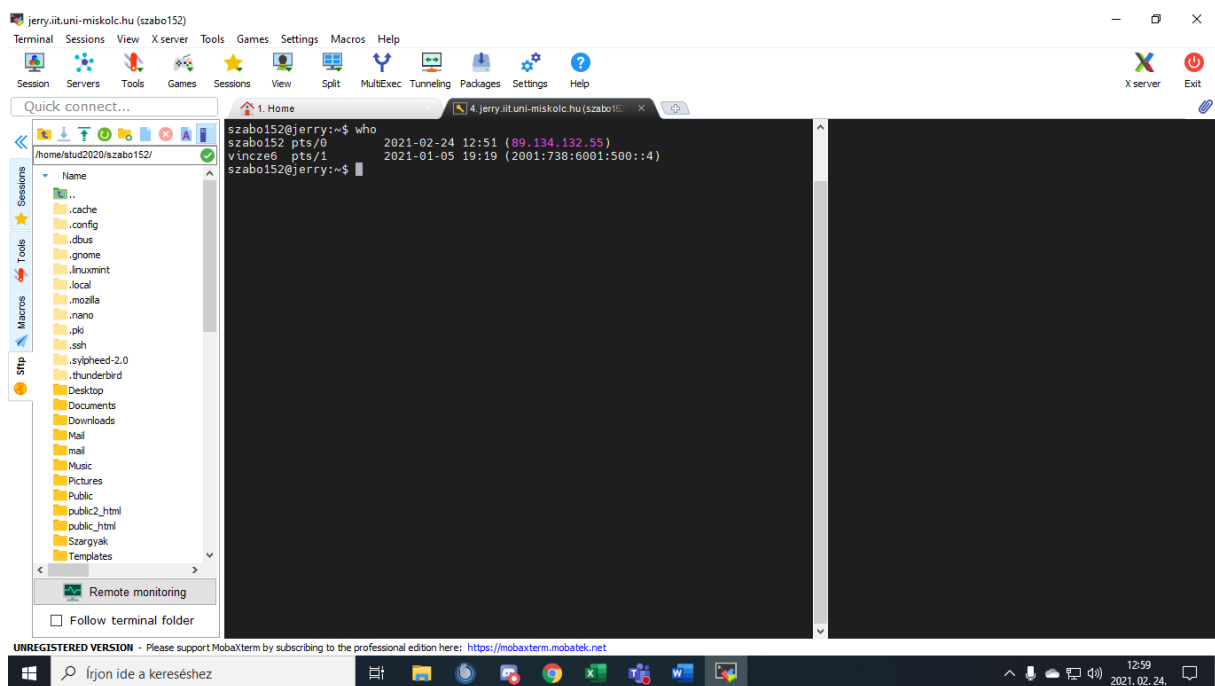
C, W



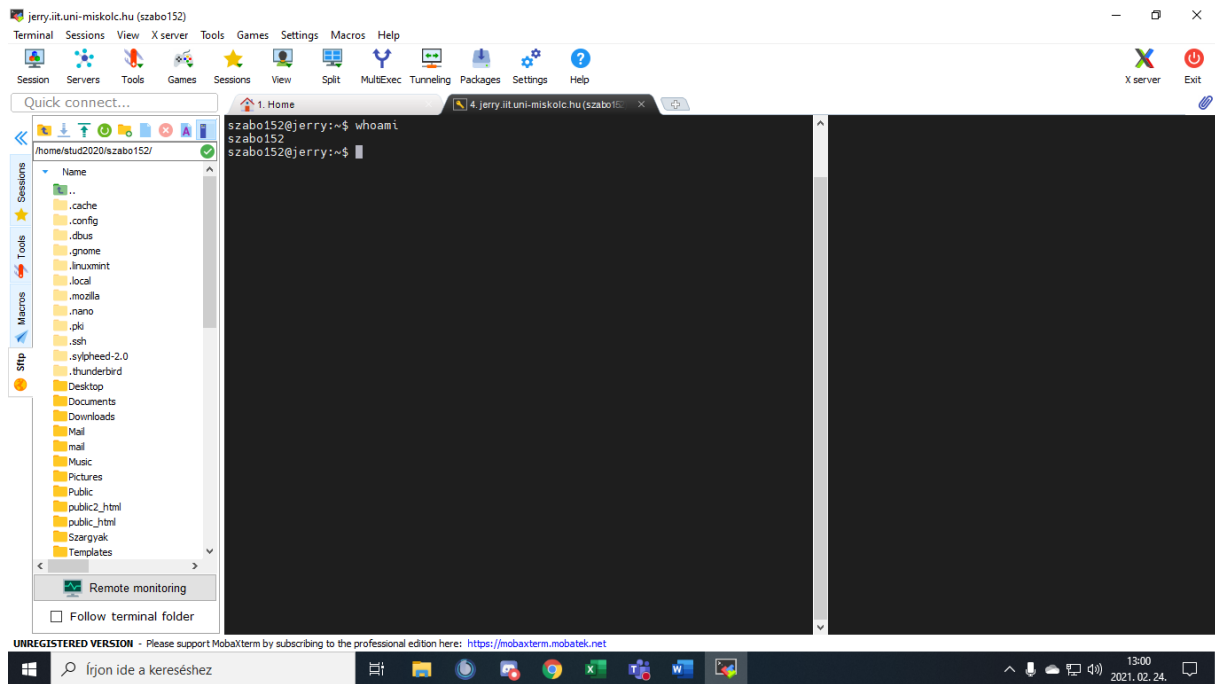
c, w szabo152



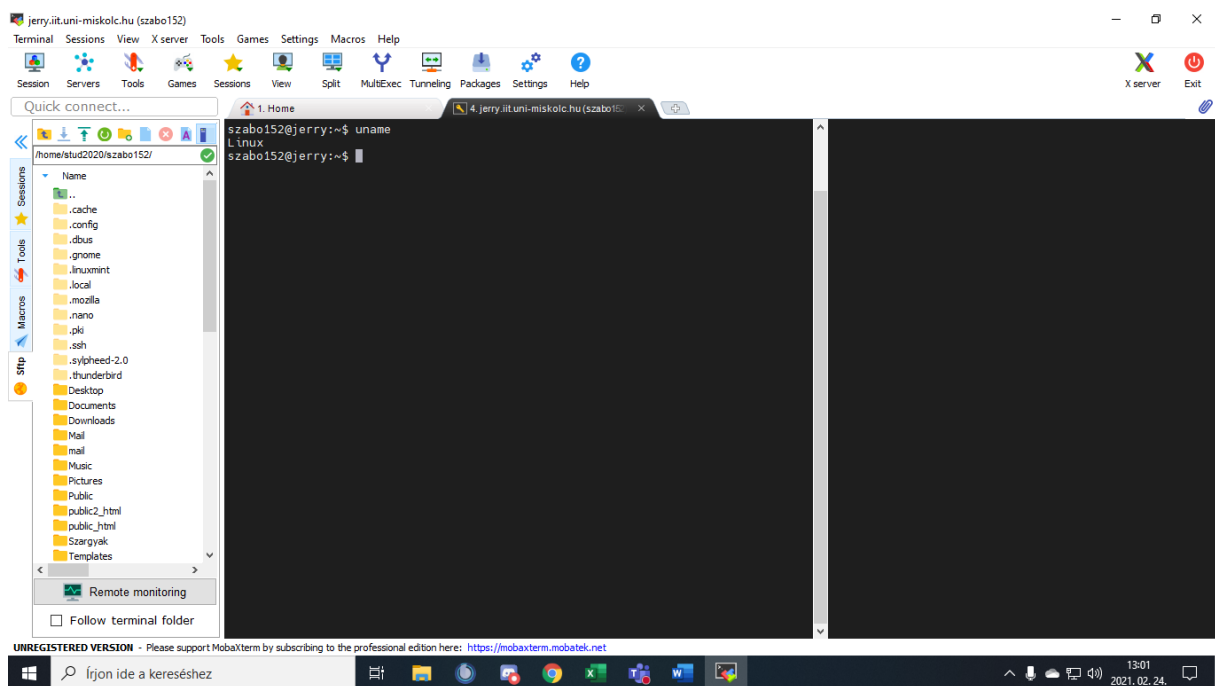
c, who



c, whoami



d, `uname`



e, `ps` , `ps -A` , `ps -Al` , `ps -AlF`

Terminal Sessions View X server Tools Games Settings Macros Help

Quick connect...

1. Home

```
szabo152@jerry:~$ ps
PID TTY TIME CMD
25870 pts/0 00:00:00 bash
26454 pts/0 00:00:00 ps
szabo152@jerry:~$ ps -A
PID TTY TIME CMD
25861 ? 00:00:00 sshd
25868 ? 00:00:00 sshd
25869 ? 00:00:00 sftp-server
25870 pts/0 00:00:00 bash
26457 pts/0 00:00:00 ps
szabo152@jerry:~$ ps -Al
F S UID PID PPID C PRI NI ADDR SZ WCHAN TTY TIME CMD
5 S 8999 25861 25837 0 80 0 - 21847 - ? 00:00:00 sshd
5 S 8999 25868 25862 0 80 0 - 21759 - ? 00:00:00 sshd
0 S 8999 25869 25868 0 80 0 - 1360 - ? 00:00:00 sftp-server
0 S 8999 25870 25861 0 80 0 - 4107 - pts/0 00:00:00 bash
0 R 8999 26460 25870 0 80 0 - 8082 - pts/0 00:00:00 ps
szabo152@jerry:~$ ps -AlF
F S UID PID PPID C PRI NI ADDR SZ WCHAN RSS PSR STIME TTY TI
ME CMD
5 S szabo152 25861 25837 0 80 0 - 21847 - 4744 0 12:51 ? 00:00:
00 sshd: szabo152@pts/0
5 S szabo152 25868 25862 0 80 0 - 21759 - 4708 0 12:51 ? 00:00:
00 sshd: szabo152@notty
0 S szabo152 25869 25868 0 80 0 - 1360 - 1564 1 12:51 ? 00:00:
00 /usr/lib/openssh/sftp-server
0 S szabo152 25870 25861 0 80 0 - 4107 - 5068 3 12:51 pts/0 00:00:
00 -bash
0 R szabo152 26463 25870 0 80 0 - 8327 - 3040 5 13:04 pts/0 00:00:
00 ps -AlF
szabo152@jerry:~$
```

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13:04 2021.02.24

## ps -AlFH , ps ax , ps axu

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Quick connect...

1. Home

```
szabo152@jerry:~$ ps -AlFH
F S UID PID PPID C PRI NI ADDR SZ WCHAN RSS PSR STIME TTY TI
ME CMD
5 S szabo152 25868 25862 0 80 0 - 21759 - 4708 0 12:51 ? 00:00:
00 sshd: szabo152@notty
0 S szabo152 25869 25868 0 80 0 - 1360 - 1564 1 12:51 ? 00:00:
00 /usr/lib/openssh/sftp-server
5 S szabo152 25861 25837 0 80 0 - 21847 - 4744 0 12:51 ? 00:00:
00 sshd: szabo152@pts/0
0 S szabo152 25870 25861 0 80 0 - 4107 - 5068 3 12:51 pts/0 00:00:
00 -bash
0 R szabo152 26487 25870 0 80 0 - 8327 - 3144 5 13:05 pts/0 00:00:
00 ps -AlFH
szabo152@jerry:~$ ps ax
PID TTY STAT TIME COMMAND
25861 ? S 0:00 sshd: szabo152@pts/0
25868 ? S 0:00 sshd: szabo152@notty
25869 ? Ss 0:00 /usr/lib/openssh/sftp-server
25870 pts/0 Ss 0:00 -bash
26492 pts/0 R+ 0:00 ps ax
szabo152@jerry:~$ ps axu
USER PID %CPU %MEM VSZ RSS TTY STAT START TIME COMMAND
szabo152 25861 0.0 0.0 87388 4744 ? S 12:51 0:00 sshd: szabo152@pt
szabo152 25868 0.0 0.0 87036 4708 ? S 12:51 0:00 sshd: szabo152@no
szabo152 25869 0.0 0.0 5440 1564 ? Ss 12:51 0:00 /usr/lib/openssh/
szabo152 25870 0.0 0.0 16428 5068 pts/0 Ss 12:51 0:00 -bash
szabo152 26497 0.0 0.0 33308 2984 pts/0 R+ 13:05 0:00 ps axu
szabo152@jerry:~$
```

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13:05 2021.02.24

## ps -ejH , ps axjf , pstree

```
szabo152@jerry:~$ ps -ejH
PID   PGID   SID   TTY      TIME CMD
25868 25862 25862 ?        00:00:00 sshd
25869 25869 25869 ?        00:00:00 sftp-server
25861 25837 25837 ?        00:00:00 sshd
25870 25870 25870 pts/0    00:00:00 bash
26537 26537 25870 pts/0    00:00:00 ps
szabo152@jerry:~$ ps axjf
PPID   PID   PGID   SID   TTY      TPGID  STAT  UID   TIME COMMAND
25862 25868 25862 25862 ?        -1  S    8999   0:00 sshd: szabo152@notty
25868 25869 25869 25869 ?        -1  Ss   8999   0:00 \_ /usr/lib/openssh/sftp
25837 25861 25837 25837 ?        -1  S    8999   0:00 sshd: szabo152@pts/0
25861 25870 25870 25870 pts/0    26548  Ss   8999   0:00 \_ -bash
25870 26548 26548 25870 pts/0    26548  R+    8999   0:00 \_ ps axjf
szabo152@jerry:~$ pstree
?--?--sshd--sftp-server
?--?--sshd--bash--pstree
szabo152@jerry:~$
```

ps -auxf | sort -nr -k 3 | head -5

```
szabo152@jerry:~$ ps -auxf | sort -nr -k 3 | head -5
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
szabo152 26730  0.0  0.0   8308    672 pts/0    S+   13:17   0:00 \_ head -5
szabo152 26729  0.0  0.0   27060   2108 pts/0    S+   13:17   0:00 \_ sort -nr
-k 3
szabo152 26728  0.0  0.0   33308   3048 pts/0    R+   13:17   0:00 \_ ps -auxf
szabo152 25870  0.0  0.0   16428   5068 pts/0    Ss   12:51   0:00 \_ -bash
szabo152@jerry:~$
```

f, free

The screenshot shows a MobaXterm window with a terminal session. The terminal displays the output of the 'free' command, which shows memory usage statistics. The output is as follows:

```
szabo152@jerry:~$ free
              total        used        free      shared  buff/cache   available
Mem:           8025292      354388      115900       164612       7555004       7463860
Swap:          2097148         3796       2093352
```

The MobaXterm interface includes a sidebar with file explorer, a top menu bar, and a status bar at the bottom indicating the version and a link to the professional edition.

g, iostat

The screenshot shows a MobaXterm window with a terminal session. The terminal displays the output of the 'iostat' command, which shows system statistics. The output is as follows:

```
szabo152@jerry:~$ iostat
Linux 4.1.6-grsec (jerry)      02/24/2021      _x86_64_      (6 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
           0.09    0.00    0.88    0.00    0.00   99.82

Device:            tps    kB_read/s    kB_wrtn/s    kB_read    kB_wrtn
szabo152@jerry:~$
```

The MobaXterm interface includes a sidebar with file explorer, a top menu bar, and a status bar at the bottom indicating the version and a link to the professional edition.

h, sar

jerry.it.uni-miskolc.hu (szabo152)

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Session Servers Tools Games Sessions View Split MultExec Tunneling Packages Settings Help

Quick connect...

1. Home

4. jerry.it.uni-miskolc.hu (szabo152)

~/home/stud2020/szabo152/

File manager sidebar:

- Name
- ..
- .cache
- .config
- .dbus
- .gnome
- .linuxmint
- .local
- .mozilla
- .nano
- .plk
- .ssh
- .sylpheed-2.0
- .thunderbird
- Desktop
- Documents
- Downloads
- Mail
- mail
- Music
- Pictures
- Public
- public2\_html
- public\_html
- Szargyak
- Templates

Remote monitoring

Follow terminal folder

```
07:45:01 AM all 0.50 0.00 0.36 0.00 0.15 98.99
07:55:01 AM all 0.07 0.00 0.06 0.00 0.14 99.72
08:05:01 AM all 0.08 0.00 0.07 0.00 0.13 99.72
08:15:01 AM all 0.11 0.00 0.09 0.00 0.14 99.66
08:25:01 AM all 0.10 0.00 0.09 0.00 0.16 99.65
08:35:01 AM all 0.09 0.00 0.07 0.00 0.15 99.69
08:45:01 AM all 0.13 0.00 0.11 0.00 0.15 99.62
08:55:01 AM all 0.09 0.00 0.08 0.00 0.14 99.69
09:05:01 AM all 0.11 0.00 0.09 0.00 0.14 99.66
09:15:01 AM all 0.17 0.00 0.12 0.00 0.14 99.58
09:25:01 AM all 0.16 0.00 0.14 0.00 0.13 99.57
09:35:01 AM all 0.13 0.00 0.11 0.00 0.14 99.62
09:45:01 AM all 0.15 0.00 0.12 0.00 0.14 99.60
09:55:01 AM all 0.21 0.00 0.17 0.00 0.13 99.49
10:05:01 AM all 0.19 0.00 0.15 0.00 0.13 99.53
10:15:01 AM all 0.11 0.00 0.09 0.00 0.14 99.66
10:25:01 AM all 0.12 0.00 0.09 0.00 0.14 99.66
10:35:01 AM all 0.10 0.00 0.09 0.00 0.15 99.66
10:45:01 AM all 0.11 0.00 0.09 0.00 0.14 99.66
10:55:01 AM all 0.12 0.00 0.10 0.00 0.14 99.64
11:05:01 AM all 0.12 0.00 0.10 0.00 0.13 99.65
11:15:01 AM all 0.14 0.00 0.11 0.00 0.14 99.62
11:25:01 AM all 0.06 0.00 0.06 0.00 0.15 99.73
11:35:01 AM all 0.06 0.00 0.05 0.00 0.15 99.74
11:45:01 AM all 0.32 0.00 0.23 0.01 0.13 99.30
11:55:01 AM all 0.16 0.00 0.13 0.00 0.13 99.58
Average: all 0.21 0.00 0.16 0.00 0.15 99.48

11:55:01 AM CPU %user %nice %system %iowait %steal %idle
12:05:01 PM all 0.17 0.00 0.14 0.00 0.13 99.57
12:15:01 PM all 0.15 0.00 0.12 0.00 0.14 99.59
12:25:01 PM all 0.17 0.00 0.13 0.00 0.13 99.57
12:35:01 PM all 0.13 0.00 0.11 0.00 0.14 99.62
12:45:01 PM all 0.11 0.00 0.09 0.00 0.13 99.67
12:55:01 PM all 0.13 0.00 0.11 0.00 0.13 99.63
01:05:01 PM all 0.27 0.00 0.23 0.00 0.14 99.37
01:15:01 PM all 0.11 0.00 0.10 0.00 0.36 99.43
Average: all 0.21 0.00 0.16 0.00 0.15 99.48
```

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i, mpstat

jerry.it.uni-miskolc.hu (szabo152)

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Session Servers Tools Games Sessions View Split MultExec Tunneling Packages Settings Help

Quick connect...

1. Home

4. jerry.it.uni-miskolc.hu (szabo152)

~/home/stud2020/szabo152/

File manager sidebar:

- Name
- ..
- .cache
- .config
- .dbus
- .gnome
- .linuxmint
- .local
- .mozilla
- .nano
- .plk
- .ssh
- .sylpheed-2.0
- .thunderbird
- Desktop
- Documents
- Downloads
- Mail
- mail
- Music
- Pictures
- Public
- public2\_html
- public\_html
- Szargyak
- Templates

Remote monitoring

Follow terminal folder

```
szabo152@jerry:~$ mpstat
Linux 4.1.6-grsec (jerry)      02/24/2021      _x86_64_      (6 CPU)

01:20:19 PM CPU %user %nice %sys %iowait %irq %soft %steal %guest
%gnice %idle
01:20:19 PM all 0.09 0.00 0.08 0.00 0.00 0.00 0.00 0.00
0.00 99.82
szabo152@jerry:~$
```

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j, pmap



