Operációsrendszerek BSc

4.Gyak 2022.03.02

Készítette: Földesi Dominik

G616TL

2022.03.02

a.feladat, Jelentést készít a jelenleg futó rendszerről

```
                              mint@mint: ~                    _   □   ✕

 File   Edit   View   Search   Terminal   Help

top - 21:43:16 up 2 min,  1 user,  load average: 2.10, 1.30, 0.52
Tasks: 152 total,   1 running, 151 sleeping,   0 stopped,   0 zombie
%Cpu(s): 19.9 us,  5.1 sy,  0.0 ni, 75.1 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   1987.8 total,    286.8 free,    557.1 used,   1143.9 buff/cache
MiB Swap:      0.0 total,      0.0 free,      0.0 used.   1227.3 avail Mem

   PID USER       PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
  1467 mint       20   0 3339716 207328 121260 S  13.4  10.2   0:22.00 cinnamon
   962 root       20   0  609016  94536  54396 S   6.2   4.6   0:06.28 Xorg
  1726 mint       20   0  466048  39900  31000 S   3.3   2.0   0:00.96 gnome-t+
  1502 mint       20   0  712700  68480  46572 S   1.3   3.4   0:01.59 nemo-de+
  1195 mint       20   0  301208  25088  18832 S   0.3   1.2   0:00.26 csd-key+
  1501 mint       20   0  315208  37140  25048 S   0.3   1.8   0:00.26 blueber+
     1 root       20   0  101496  11340   8592 S   0.0   0.6   0:01.57 systemd
     2 root       20   0       0      0      0 S   0.0   0.0   0:00.00 kthreadd
     3 root        0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_gp
     4 root        0 -20       0      0      0 I   0.0   0.0   0:00.00 rcu_par+
     5 root       20   0       0      0      0 I   0.0   0.0   0:00.00 kworker+
     6 root        0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker+
     7 root       20   0       0      0      0 I   0.0   0.0   0:00.17 kworker+
     8 root       20   0       0      0      0 I   0.0   0.0   0:00.01 kworker+
     9 root        0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_perc+
    10 root       20   0       0      0      0 S   0.0   0.0   0:00.32 ksoftir+
    11 root       20   0       0      0      0 I   0.0   0.0   0:00.34 rcu_sch+
    12 root       rt   0       0      0      0 S   0.0   0.0   0:00.00 migrati+
    13 root      -51   0       0      0      0 S   0.0   0.0   0:00.00 idle_in+
    14 root       20   0       0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
    15 root       20   0       0      0      0 S   0.0   0.0   0:00.00 kdevtmp+
    16 root        0 -20       0      0      0 I   0.0   0.0   0:00.00 netns
    17 root       20   0       0      0      0 S   0.0   0.0   0:00.00 rcu_tas+
```

b.feladat, hardver , rendszerinformáció

```
mint@mint:~$ vmstat
procs -----------memory---------- ---swap-- -----io---- -system-- ------cpu-----
 r  b   swpd   free   buff  cache   si   so    bi    bo   in   cs us sy id wa st
 0  0      0 285492 206812 971976    0    0  3073     0  297 1689 34 12 53  0  0
mint@mint:~$ w
```

c.feladat, bejelentkezett felhasználók

```
mint@mint:~$ w
 21:44:02 up 2 min,  1 user,  load average: 1.45, 1.28, 0.55
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
mint     tty7     :0               21:41    2:41   7.72s  0.57s cinnamon-sessio
mint@mint:~$
```

d.feladat, mennyi idő óta működik a rendszer

```
mint@mint:~$ who -b
         system boot   2022-03-08 21:41
```

e.feladat, processzeket listáz

```
mint@mint:~$ ps
    PID TTY          TIME CMD
   1882 pts/0     00:00:00 bash
   1893 pts/0     00:00:00 ps
```

szálak:

```
mint@mint:~$ ps ax
    PID TTY      STAT   TIME COMMAND
      1 ?        Ss     0:01 /sbin/init splash
      2 ?        S      0:00 [kthreadd]
      3 ?        I<     0:00 [rcu_gp]
      4 ?        I<     0:00 [rcu_par_gp]
      5 ?        I      0:00 [kworker/0:0-cgroup_destroy]
      6 ?        I<     0:00 [kworker/0:0H-kblockd]
      7 ?        I      0:00 [kworker/0:1-events]
      8 ?        I      0:00 [kworker/u2:0-events_unbound]
      9 ?        I<     0:00 [mm_percpu_wq]
     10 ?        S      0:00 [ksoftirqd/0]
     11 ?        I      0:00 [rcu_sched]
     12 ?        S      0:00 [migration/0]
     13 ?        S      0:00 [idle_inject/0]
     14 ?        S      0:00 [cpuhp/0]
     15 ?        S      0:00 [kdevtmpfs]
     16 ?        I<     0:00 [netns]
     17 ?        S      0:00 [rcu_tasks_kthre]
     18 ?        S      0:00 [kauditd]
     19 ?        S      0:00 [khungtaskd]
     20 ?        S      0:00 [oom_reaper]
     21 ?        I<     0:00 [writeback]
     22 ?        S      0:00 [kcompactd0]
     23 ?        SN     0:00 [ksmd]
     24 ?        SN     0:00 [khugepaged]
     70 ?        I<     0:00 [kintegrityd]
     71 ?        I<     0:00 [kblockd]
```

```
mint@mint:~$ ps -ALF
UID          PID     PPID     LWP  C NLWP       SZ   RSS PSR STIME TTY            TIME
 CMD
root           1        0       1  0    1    25374 11340   0 21:41 ?          00:00:01
 /sbin/init splash
root           2        0       2  0    1        0     0   0 21:41 ?          00:00:00
 [kthreadd]
root           3        2       3  0    1        0     0   0 21:41 ?          00:00:00
 [rcu_gp]
root           4        2       4  0    1        0     0   0 21:41 ?          00:00:00
 [rcu_par_gp]
root           5        2       5  0    1        0     0   0 21:41 ?          00:00:00
 [kworker/0:0-cgroup_destroy]
root           6        2       6  0    1        0     0   0 21:41 ?          00:00:00
 [kworker/0:0H-kblockd]
root           7        2       7  0    1        0     0   0 21:41 ?          00:00:00
 [kworker/0:1-events]
root           8        2       8  0    1        0     0   0 21:41 ?          00:00:00
 [kworker/u2:0-events_unbound]
root           9        2       9  0    1        0     0   0 21:41 ?          00:00:00
 [mm_percpu_wq]
root          10        2      10  0    1        0     0   0 21:41 ?          00:00:00
 [ksoftirqd/0]
root          11        2      11  0    1        0     0   0 21:41 ?          00:00:00
 [rcu_sched]
root          12        2      12  0    1        0     0   0 21:41 ?          00:00:00
 [migration/0]
```

f.feladat,

```
mint@mint:~$ free
              total        used        free      shared  buff/cache   available
Mem:        2035456      571268      283420       45084     1180768     1254820
Swap:             0           0           0
```

g.feladat, átlagos CPU terhelést mutatja

```
mint@mint:~$ iostat
Linux 5.4.0-91-generic (mint)    03/08/22       _x86_64_        (1 CPU)

avg-cpu:  %user   %nice %system %iowait  %steal   %idle
          27.45    0.00    8.85    0.21    0.00   63.50

Device             tps    kB_read/s    kB_wrtn/s    kB_dscd/s    kB_read    kB_wrtn
    kB_dscd
loop0           695.85       702.77         0.00         0.00     218288          0
                0
sda               0.65        14.05         0.00         0.00       4364          0
                0
scd0             23.40      1006.94         0.00         0.00     312766          0
                0
```

h.feladat, A rendszer aktivitását mutatja ki

```
mint@mint:~$ sar 4 5
Linux 5.4.0-91-generic (mint)    03/08/22    _x86_64_    (1 CPU)

21:46:49    CPU    %user    %nice    %system    %iowait    %steal    %idle
21:46:53    all    9.95     0.00     0.77       0.00       0.00      89.29
21:46:57    all    6.27     0.00     0.50       0.00       0.00      93.23
21:47:01    all    5.26     0.00     0.00       0.00       0.00      94.74
21:47:05    all    5.75     0.00     0.50       0.00       0.00      93.75
21:47:09    all    6.28     0.00     0.00       0.00       0.00      93.72
Average:    all    6.69     0.00     0.35       0.00       0.00      92.96
```

i.feladat, Processzor aktivitását mutatja ki

```
mint@mint:~$ mpstat
Linux 5.4.0-91-generic (mint)    03/08/22    _x86_64_    (1 CPU)

21:47:26    CPU    %usr    %nice    %sys %iowait    %irq    %soft    %steal    %guest    %
gnice    %idle
21:47:26    all    23.64    0.00    7.23    0.17    0.00    0.08    0.00    0.00
0.00    68.87
```

j.feladat, Memóriahasználat

```
mint@mint:~$ vmstat
procs ----------memory---------- ---swap-- -----io---- -system-- ------cpu-----
 r  b   swpd   free   buff   cache   si   so    bi    bo   in   cs us sy id wa st
 0  0      0 177004 213444 1061800    0    0  1388     0  199 1000 23  7 70  0  0
```

Windows:

1. verzió

```
PS C:\Users\domip> $PSVersionTable

Name                           Value
----                           -----
PSVersion                      5.1.22000.282
PSEdition                      Desktop
PSCompatibleVersions           {1.0, 2.0, 3.0, 4.0...}
BuildVersion                   10.0.22000.282
CLRVersion                     4.0.30319.42000
WSManStackVersion              3.0
PSRemotingProtocolVersion      2.3
SerializationVersion           1.1.0.1


PS C:\Users\domip>
```

2. rendszeridő

```
PS C:\Users\domip> Get-Date

08 March 2022 22:57:46
```

3. szolgáltatások

```
PS C:\Users\domip> Get-Service

Status   Name                DisplayName
------   ----                -----------
Running  AarSvc_155714bc     Agent Activation Runtime_155714bc
Stopped  AJRouter            AllJoyn-útválasztó szolgáltatás
Stopped  ALG                 Alkalmazási réteg átjárószolgáltatása
Stopped  AppIDSvc            Alkalmazásidentitás
Running  Appinfo             Alkalmazásinformációk
Stopped  AppReadiness        Alkalmazás-előkészítő
Running  AppXSvc             AppX telepítő szolgáltatás (AppXSVC)
Running  ArmouryCrateSer...  ARMOURY CRATE Service
Running  AsHidService        ASUS HID Access Sevice
Running  ASLDRService        ASLDR Service
Stopped  asus                ASUS Update Service (asus)
Running  AsusAppService      ASUS App Service
Running  ASUSDisplayCtro...  ASUS Display Control Service
Running  ASUSLinkNear        ASUS Link Near
Running  ASUSLinkRemote      ASUS Link Remote
Running  ASUSLiveUpdateA...  ASUS Software Manager
Stopped  asusm               ASUS Update Service (asusm)
Running  AsusMultiAntenn...  ASUS MultiAntenna Service
Running  ASUSOptimization    ASUS Optimization
```

4. c meghajtón lévő könyvtárak és filek

```
PS C:\Users\domip> Get-Childitem


    Directory: C:\Users\domip


Mode                LastWriteTime         Length Name
----                -------------         ------ ----
d-----        02/03/2020     18:13                .eclipse
d-----        21/11/2020     13:11                .Origin
d-----        01/03/2022     23:20                .p2
d-----        21/11/2020     13:11                .QtWebEngineProcess
d-----        02/03/2020     18:13                .tooling
d-----        08/03/2022     22:39                .VirtualBox
d-r---        15/07/2021     17:30                3D Objects
d-----        09/01/2020     15:43                ansel
d-r---        08/02/2022     17:54                Contacts
d-----        07/02/2022     21:36                Desktop
d-----        09/01/2020     15:38                Documents
d-r---        08/03/2022     22:48                Downloads
d-----        02/03/2020     17:56                eclipse
d-----        01/03/2022     23:28                eclipse-workspace
d-r---        08/02/2022     17:54                Favorites
d-----        16/02/2022     12:22                G616TL
d-r---        08/02/2022     17:54                Links
d-r---        08/02/2022     17:54                Music
dar--l        18/02/2022     11:27                OneDrive
d-----        08/09/2020     16:09                OpenVPN
d-----        20/01/2019     01:07                Roaming
d-r---        08/02/2022     17:54                Saved Games
d-r---        08/02/2022     17:54                Searches
d-r---        08/03/2022     22:24                Videos
d-----        01/03/2022     22:35                VirtualBox VMs
```

5. aliasok

```
PS C:\Users\domip> Get-Alias

CommandType     Name                                               Version    Source
-----------     ----                                               -------    ------
Alias           % -> ForEach-Object
Alias           ? -> Where-Object
Alias           ac -> Add-Content
Alias           asnp -> Add-PSSnapin
Alias           cat -> Get-Content
Alias           cd -> Set-Location
Alias           CFS -> ConvertFrom-String                          3.1.0.0    Microsoft.PowerShell....
Alias           chdir -> Set-Location
Alias           clc -> Clear-Content
Alias           clear -> Clear-Host
Alias           clhy -> Clear-History
Alias           cli -> Clear-Item
Alias           clp -> Clear-ItemProperty
Alias           cls -> Clear-Host
Alias           clv -> Clear-Variable
Alias           cnsn -> Connect-PSSession
Alias           compare -> Compare-Object
Alias           copy -> Copy-Item
Alias           cp -> Copy-Item
Alias           cpi -> Copy-Item
Alias           cpp -> Copy-ItemProperty
Alias           curl -> Invoke-WebRequest
Alias           cvpa -> Convert-Path
```

6. ujprocessz nevű alias kreálás

```
PS C:\Users\domip> Get-Alias ujprocessz

CommandType      Name                                                Version    Source
-----------      ----                                                -------    ------
Alias            ujprocessz -> Get-Process


PS C:\Users\domip>
```
```
PS C:\Users\domip> New-Alias "ujprocessz" Get-Process
PS C:\Users\domip> ujprocessz

Handles  NPM(K)    PM(K)     WS(K)     CPU(s)     Id  SI ProcessName
-------  ------    -----     -----     ------     --  -- -----------
     88       6     1340      5756              6736   0 AggregatorHost
    384      23    12568     31884     0.17    15848   6 ApplicationFrameHost
   1338      54   103408     70300              4496   0 ArmouryCrate.Service
    975      53    43548     54388    25.23     2492   6 ArmouryCrate.UserSessionHelper
     71       8     1120      4388              4540   0 AsHidSrv64
    135       9     1768      5800              3708   0 AsLdrSrv64
    120       9     1396      7264     0.02     7176   6 AsMonStartupTask64
    320      18     5356     19224              4548   0 AsusAppService
    175      12     2416      3784     0.08    17984   6 ASUSDisplayCtrl
    262      14    13232     16064              4508   0 ASUSDisplayCtrlService
    160      13     1876      3476     0.06     9756   6 ASUSHelloBG
    350      17     3756     12480              4688   0 AsusLinkNear
    201      12     6832     11612              4656   0 AsusLinkRemote
    276      11     7568      9588              4596   0 AsusMultiAntennaSvc
   1177      34    47296     48228     1.20    25432   6 asusns
```

7. egy meghajtó szolgáltatásai

```
PS C:\Users\domip> Get-Service | ft name, status

Name                                          Status
----                                          ------
AarSvc_155714bc                               Running
AJRouter                                      Stopped
ALG                                           Stopped
AppIDSvc                                      Stopped
Appinfo                                       Running
AppReadiness                                  Stopped
AppXSvc                                       Running
ArmouryCrateService                           Running
AsHidService                                  Running
ASLDRService                                  Running
asus                                          Stopped
AsusAppService                                Running
ASUSDisplayCtrolService                       Running
ASUSLinkNear                                  Running
ASUSLinkRemote                                Running
ASUSLiveUpdateAgent                           Running
asusm                                         Stopped
AsusMultiAntennaSvc                           Running
```

```
PS C:\Users\domip> Get-Service | fl name, status


Name   : AarSvc_155714bc
Status : Running

Name   : AJRouter
Status : Stopped

Name   : ALG
Status : Stopped

Name   : AppIDSvc
Status : Stopped

Name   : Appinfo
Status : Running

Name   : AppReadiness
Status : Stopped

Name   : AppXSvc
Status : Running

Name   : ArmouryCrateService
```

8. Növekvő szerinti rendezés

```
PS C:\Users\domip> Get-Process | Sort-Object name

Handles  NPM(K)    PM(K)    WS(K)   CPU(s)     Id  SI ProcessName
-------  ------    -----    -----   ------     --  -- -----------
     88       6     1340     5756            6736   0 AggregatorHost
    384      23    12568    31884     0.17  15848   6 ApplicationFrameHost
   1338      54   103408    71084            4496   0 ArmouryCrate.Service
    975      53    43548    54396    26.23   2492   6 ArmouryCrate.UserSessionHelper
     71       8     1120     4388            4540   0 AsHidSrv64
    135       9     1768     5800            3708   0 AsLdrSrv64
    120       9     1396     7264     0.02   7176   6 AsMonStartupTask64
    320      18     5356    19224            4548   0 AsusAppService
    175      12     2416     3748     0.08  17984   6 ASUSDisplayCtrl
    262      14    13232    16064            4508   0 ASUSDisplayCtrlService
    160      13     1876     3428     0.06   9756   6 ASUSHelloBG
    350      17     3756    12480            4688   0 AsusLinkNear
    201      12     6832    11612            4656   0 AsusLinkRemote
    276      11     7568     9588            4596   0 AsusMultiAntennaSvc
   1187      34    47296    48244     1.20  25432   6 asusns
PS C:\Users\domip> Get-Process | Sort-Object name -Descending

Handles  NPM(K)    PM(K)    WS(K)   CPU(s)     Id  SI ProcessName
-------  ------    -----    -----   ------     --  -- -----------
    868      53    52004    12164     0.78  22100   6 YourPhone
    736      43    45724    44404            5808   0 XtuService
    319      15     9112    16832            1244   0 WUDFHost
    214       8     1428     6348           22644   0 WUDFHost
    357      20    32828    42740            6464   0 WmiPrvSE
    384      18    17904    26464            6492   0 WmiPrvSE
    143       9     1968     7328            4128   0 wlanext
   1874      91    95868   189904   105.64  14000   6 WINWORD
    275      13     2684    18876           21740   6 winlogon
    162      11     1548     7220             956   0 wininit
    293      31    11208    28752     0.70  21004   6 Win32Bridge.Server
     78       4     2008     9948     0.16   2076   6 VirtualBoxVM
     81       4     1988     5312     0.23   8548   6 VirtualBoxVM
   1186     176   104048   128024   174.58  11708   6 VirtualBoxVM
    544      24    71904   118340     4.41  10704   6 VirtualBox
    760      44    39256    30592     0.69   7908   6 Video.UT
```

9. wi-vel kezdődő nevek lekérdezése

```
PS C:\Users\domip> Get-Service | Where-Object {$_.name -like "wi*"}

Status   Name               DisplayName
------   ----               -----------
Stopped  WiaRpc             Állókép-beviteli események
Running  WinDefend          Microsoft Defender víruskereső szol...
Running  WinHttpAutoProx... WinHTTP automatikus webproxy-kereső...
Running  Winmgmt            Windows Management Instrumentation
Stopped  WinRM              Rendszerfelügyeleti webszolgáltatások
Stopped  wisvc              Windows Insider szolgáltatás
```

10. Status szerinti csoportosítás az objektumokat

```
PS C:\Users\domip> Get-Service | Group-Object status

Count Name                      Group
----- ----                      -----
  143 Running                   {AarSvc_155714bc, Appinfo, AppXSvc, ArmouryCrateService...}
  166 Stopped                   {AJRouter, ALG, AppIDSvc, AppReadiness...}


PS C:\Users\domip> _
```

11. Objektumok megszámlálása

```
PS C:\Users\domip> Get-Process | Measure-Object


Count    : 265
Average  :
Sum      :
Maximum  :
Minimum  :
Property :
```

12. Átlag min max sum

```
PS C:\Users\domip> Get-Process | Measure-Object -property id -Maximum -Minimum -Average -Sum


Count    : 264
Average  : 10123.6363636364
Sum      : 2672640
Maximum  : 27204
Minimum  : 0
Property : Id
```

13. Windows idő

```
PS C:\Users\domip> Get-Service | Where-Object { $_.name -eq "w32time"}

Status    Name               DisplayName
------    ----               -----------
Stopped   W32Time            Windows Time


PS C:\Users\domip>
```

14. egy új szöveg nevű változó létrehozása

```
PS C:\Users\domip> $szoveg = "Eger"
PS C:\Users\domip> "$szoveg-ben lakom."
Eger-ben lakom.
```

15. Műveletek a létrehozott változóval

```
PS C:\Users\domip> $szoveg.Length
4
PS C:\Users\domip> $szoveg.toUpper()
EGER
PS C:\Users\domip> $szoveg.Replace("er","ér")
Egér
PS C:\Users\domip> $szoveg.Split("g")
E
er
```

16. Neptunkod.txt file készítése

```
PS C:\Users\domip> New-Item G616TL.txt


    Directory: C:\Users\domip


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        08/03/2022     23:07              0 G616TL.txt
```

```
PS C:\Users\domip> Set-Content G616TL.txt "Földesi Dominik"
```