

## Tugas 2 Praktikum SKJ

### Activity 3.1

1. uname

```
gafnaalfaatiha@cloudshell:~$ uname
Linux
gafnaalfaatiha@cloudshell:~$
```

uname : Menampilkan informasi tentang nama kernel

2. df

```
gafnaalfaatiha@cloudshell:~$ df
Filesystem            1K-blocks    Used Available Use% Mounted on
overlay               119475748 60236148 59223216 51% /
tmpfs                  65536      0    65536 0% /dev
/dev/sda1             119475748 60236148 59223216 51% /root
/dev/disk/by-id/google-home-part1 5018272    80  4739716 1% /home
/dev/root             2019696 1103880  835816 59% /usr/lib/modules
shm                    65536      0    65536 0% /dev/shm
tmpfs                  65536      0    65536 0% /google/host/var/run
shm                    65536      0    65536 0% /google/host/var/run/containerd/io.containerd.grpc.v1.cri/sandboxes/93c4f17693f1c5544acde9c6c4b27c799e17632c789355461da35993983ac06/shm
gafnaalfaatiha@cloudshell:~$
```

df : menampilkan informasi tentang ruang disk yang digunakan dalam sistem file.

3. hostname

```
gafnaalfaatiha@cloudshell:~$ hostname
cs-37377095188-default
gafnaalfaatiha@cloudshell:~$
```

hostname :menampilkan nama host dari sistem(hostname)

4. hostname -I

```
gafnaalfaatiha@cloudshell:~$ hostname -I
10.88.0.4 172.17.0.1
gafnaalfaatiha@cloudshell:~$
```

hostname -I : menampilkan alamat IP dari sistem

### Activity 3.2

1. Save the trace of a command echo hello to a file titled "echo.log".

```
ga@naalifaatihah@cloudshell:~$ stty echo hello
execve("/usr/bin/echo", ["echo", "hello"], 0x7fff7b200318 /* 61 vars */) = 0
brk(NULL)                                = 0x584b5e0f9000
arch_prctl(0x3001 /* ARCH ??? */, 0x7ffcf4e67230) = -1 EINVAL (Invalid argument)
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x792898d64000
access("/etc/ld.so.preload", R_OK)       = -1 ENOENT (No such file or directory)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=36503, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 36503, PROT_READ, MAP_PRIVATE, 3, 0) = 0x792898d5b000
close(3)                                 = 0
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\0\3\0\0\0\1\0\0\0\0P\237\2\0\0\0\0\0... 832) = 832
pread64(3, "\6\0\0\0\4\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0... 784, 64) = 784
pread64(3, "\4\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0... 48, 848) = 48
pread64(3, "\4\0\0\0\0\2\4\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0... 68, 896) = 68
newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=2220400, ...}, AT_EMPTY_PATH) = 0
pread64(3, "\6\0\0\0\4\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0... 784, 64) = 784
mmap(NULL, 2264656, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x792898b32000
mprotect(0x792898b5a000, 2023424, PROT_NONE) = 0
mmap(0x792898b5a000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x792898b5a000
mmap(0x792898bcef000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1bd000) = 0x792898bcef000
mmap(0x792898d48000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x215000) = 0x792898d48000
mmap(0x792898d4e000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x792898d4e000
close(3)                                 = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x792898b2f000
arch_prctl(ARCH_SET_FS, 0x792898b2ef740) = 0
set_tid_address(0x792898b2fa10)          = 903
set_robust_list(0x792898b2fa20, 24)      = 0
rseq(0x792898b300e0, 0x20, 0, 0x530533053) = 0
mprotect(0x792898d48000, 16384, PROT_READ) = 0
mprotect(0x584b5cc4c000, 4096, PROT_READ) = 0
mprotect(0x792898d9e000, 8192, PROT_READ) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
munmap(0x792898d5b000, 36503)            = 0
getrandom("\xc7\xcd\x9c\xf4\x8c\xe8\xfc\xd4", 8, GRND_NONBLOCK) = 8
brk(NULL)                                = 0x584b5e0f9000
brk(0x584b5e11a000)                      = 0x584b5e11a000
openat(AT_FDCWD, "/usr/lib/locale/locale-archive", O_RDONLY|O_CLOEXEC) = 3
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=3048928, ...}, AT_EMPTY_PATH) = 0
mmap(NULL, 3048928, PROT_READ, MAP_PRIVATE, 3, 0) = 0x792898846000
close(3)                                 = 0
newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x2), ...}, AT_EMPTY_PATH) = 0
write(1, "hello\n", 6hello
)                                           = 6
close(1)                                  = 0
close(2)                                  = 0
exit_group(0)                             = ?
+++ exited with 0 +++
ga@naalifaatihah@cloudshell:~$
```

```
gafnaalfaatiha@cloudshell:~$ strace -o echo.log echo hello
hello
```

```
GNU nano 6.2 [echo", ["echo", "hello"], 0x7fff8467ec98 /# 61 vars */) = 0  
brk(NULL) = 0x569bf062d000  
arch prctl(0x3001 /* ARCH ??? */, 0x7ffff16699520) = -1 EINVAL (Invalid argument)  
mmap(NULL, 8192, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7bf848baa000  
access("/etc/ld.so.preload", R_OK) = -1 ENOENT (No such file or directory)  
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3  
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=36503, ...}, AT_EMPTY_PATH) = 0  
mmap(NULL, 36503, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7bf848ba1000  
close(3) = 0  
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libc.so.6", O_RDONLY|O_CLOEXEC) = 3  
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\1\0\1\0\0P\237\2\0\0\0\0\0....", 832) = 832  
pread64(3, "\x00\0\0\0\x00\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0....", 784, 64) = 784  
pread64(3, "\x40\0\0\0 \0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0....", 48, 848) = 48  
pread64(3, "\x40\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0....", 68, 896) = 68  
newfstatat(3, "", {st_mode=S_IFREG|0755, st_size=2220400, ...}, AT_EMPTY_PATH) = 0  
pread64(3, "\x00\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0\0....", 784, 64) = 784  
pread64(3, "\x24\x66, PROT_READ, MAP_PRIVATE|MAP_DENYWRITE, 3, 0) = 0x7bf848978000  
mprotect(0x7bf84898a000, 2023424, PROT_NONE) = 0  
mmap(0x7bf84899e000, 1658880, PROT_READ|PROT_EXEC, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x28000) = 0x7bf84899a000  
mmap(0x7bf8489b3000, 360448, PROT_READ, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x1bd000) = 0x7bf8489b3000  
mmap(0x7bf8489be000, 24576, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_DENYWRITE, 3, 0x215000) = 0x7bf8489be000  
mmap(0x7bf8489b9000, 52816, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_FIXED|MAP_ANONYMOUS, -1, 0) = 0x7bf8489b9000  
close(3) = 0  
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7bf848975000  
arch prctl(ARCH_SET_FS, 0x7bf848975740) = 0  
set_tid_address(0x7bf848975a10) = 511  
set robust list (0x7bf848975a20, 24) = 0  
rseq(0x7bf8489760e0, 0x20, 0, 0x53053053) = 0  
mprotect(0x7bf84898e000, 16384, PROT_READ) = 0  
mprotect(0x569bef7d9000, 4096, PROT_READ) = 0  
mprotect(0x7bf8489be4000, 8192, PROT_READ) = 0  
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0  
munmap(0x7bf848ba1000, 36503) = 0  
getrandom("\xf7\xdc\x6c\x2f\x5f\x37\xec\x26", 8, GRND_NONBLOCK) = 8  
brk(NULL) = 0x569bf062d000  
brk(0x569bf064e000) = 0x569bf064e000  
openat(AT_FDCWD, "/usr/lib/locale/locale-archive", O_RDONLY|O_CLOEXEC) = 3  
newfstatat(3, "", {st_mode=S_IFREG|0644, st_size=3048928, ...}, AT_EMPTY_PATH) = 0  
mmap(NULL, 3048928, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7bf848a68c000  
close(3) = 0  
newfstatat(1, "", {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0x2), ...}, AT_EMPTY_PATH) = 0  
write(1, "hello\n", 6) = 6  
close(1) = 0  
close(2) = 0  
exit_group(0) = ?  
+++ exited with 0 +++
```

Read 46 Lines

## Melihat isi dari file echo.log melalui tool nano

2. Filter the “echo.log” file to find the text “hello” being mentioned.

```
gafnaalfaatiha@cloudshell:~$ grep hello echo.log
execve("/usr/bin/echo", ["echo", "hello"], 0x7ffc84676c98 /* 61 vars */) = 0
write(1, "hello\n", 6) = 6
gafnaalfaatiha@cloudshell:~$
```

3. Explain what the system call that related to the text in question number 2 is doing based on the manual page of the system call.

Jawab :

***execve("/usr/bin/echo", ["echo", "hello"], 0x7ffc84676c98 /\* 61 vars \*/) = 0***

execve mengeksekusi program “/usr/bin/echo” dengan dengan argumen "echo" dan "hello". Execve adalah system call yang digunakan untuk menjalankan program baru. ["echo", "hello"] adalah daftar argumen yang diberikan ke program echo, yang akan mencetak kata "hello" ke layar.

***write(1, "hello\n", 6) = 6***

system call yang menulis data ke file deskriptor menggunakan fungsi write().