

WORKING WITH PROCESS COMMANDS IN LINUX/UNIX

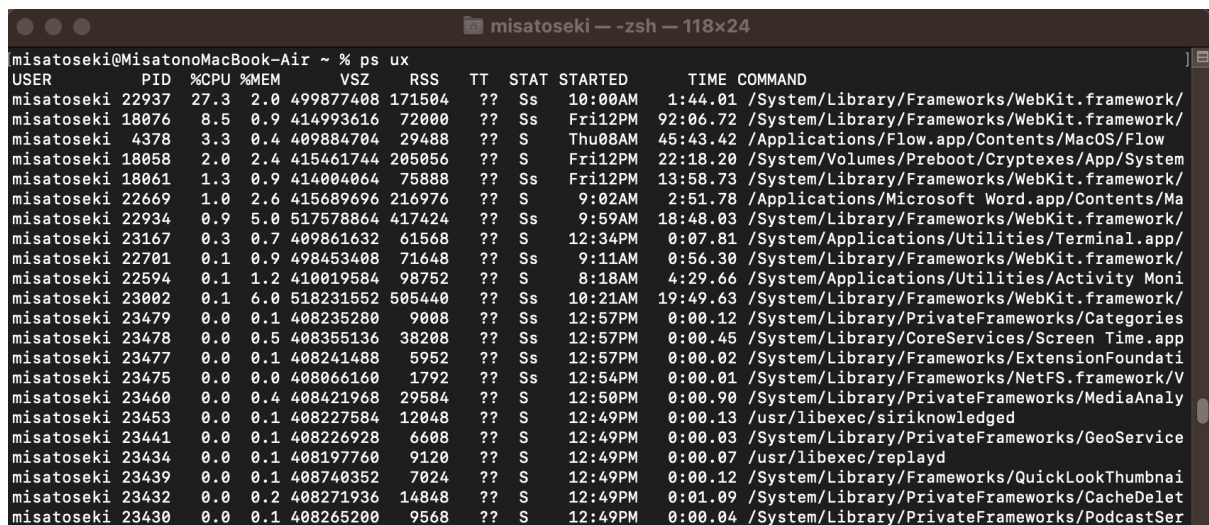
1. INTRODUCTION

In this report, we observe what happens when executing a process command. This time, we will execute the typical command ps, kill, top, df and nice.

2. PURPOSE AND INFORMATION WE CAN GET BY COMMANDS

A. ps command

This command is used to display currently running processes. Depending on the options of the command, running processes can be displayed in different ways. For example, ps -ux displays all processes in detail.



USER	PID	%CPU	%MEM	VSZ	RSS	TT	STAT	STARTED	TIME	COMMAND
misatoseki	22937	27.3	2.0	499877408	171504	??	Ss	10:00AM	1:44.01	/System/Library/Frameworks/WebKit.framework/
misatoseki	18076	8.5	0.9	414993616	72000	??	Ss	Fri12PM	92:06.72	/System/Library/Frameworks/WebKit.framework/
misatoseki	4378	3.3	0.4	409884704	29488	??	S	Thu08AM	45:43.42	/Applications/Flow.app/Contents/MacOS/Flow
misatoseki	18058	2.0	2.4	415461744	205056	??	S	Fri12PM	22:18.20	/System/Volumes/Preboot/Cryptexes/App/System
misatoseki	18061	1.3	0.9	414004064	75888	??	Ss	Fri12PM	13:58.73	/System/Library/Frameworks/WebKit.framework/
misatoseki	22669	1.0	2.6	415689696	216976	??	S	9:02AM	2:51.78	/Applications/Microsoft Word.app/Contents/Ma
misatoseki	22934	0.9	5.0	517578864	417424	??	Ss	9:59AM	18:48.03	/System/Library/Frameworks/WebKit.framework/
misatoseki	23167	0.3	0.7	409861632	61568	??	S	12:34PM	0:07.81	/System/Applications/Utilities/Terminal.app/
misatoseki	22701	0.1	0.9	498453408	71648	??	Ss	9:11AM	0:56.30	/System/Library/Frameworks/WebKit.framework/
misatoseki	22594	0.1	1.2	410019584	98752	??	S	8:18AM	4:29.66	/System/Applications/Utilities/Activity Moni
misatoseki	23002	0.1	6.0	518231552	505440	??	Ss	10:21AM	19:49.63	/System/Library/Frameworks/WebKit.framework/
misatoseki	23479	0.0	0.1	408235280	9008	??	Ss	12:57PM	0:00.12	/System/Library/PrivateFrameworks/Categories
misatoseki	23478	0.0	0.5	408355136	38208	??	Ss	12:57PM	0:00.45	/System/Library/CoreServices/Screen Time.app
misatoseki	23477	0.0	0.1	408241488	5952	??	Ss	12:57PM	0:00.02	/System/Library/Frameworks/ExtensionFoundati
misatoseki	23475	0.0	0.0	408066160	1792	??	Ss	12:54PM	0:00.01	/System/Library/Frameworks/NetFS.framework/V
misatoseki	23460	0.0	0.4	408421968	29584	??	S	12:50PM	0:00.90	/System/Library/PrivateFrameworks/MediaAnaly
misatoseki	23453	0.0	0.1	408227584	12048	??	S	12:49PM	0:00.13	/usr/libexec/siriknowledged
misatoseki	23441	0.0	0.1	408226928	6608	??	S	12:49PM	0:00.03	/System/Library/PrivateFrameworks/GeoService
misatoseki	23434	0.0	0.1	408197760	9120	??	S	12:49PM	0:00.07	/usr/libexec/replayd
misatoseki	23439	0.0	0.1	408740352	7024	??	S	12:49PM	0:00.12	/System/Library/Frameworks/QuickLookThumbnai
misatoseki	23432	0.0	0.2	408271936	14848	??	S	12:49PM	0:01.09	/System/Library/PrivateFrameworks/CacheDelet
misatoseki	23430	0.0	0.1	408265200	9568	??	S	12:49PM	0:00.04	/System/Library/PrivateFrameworks/PodcastSer

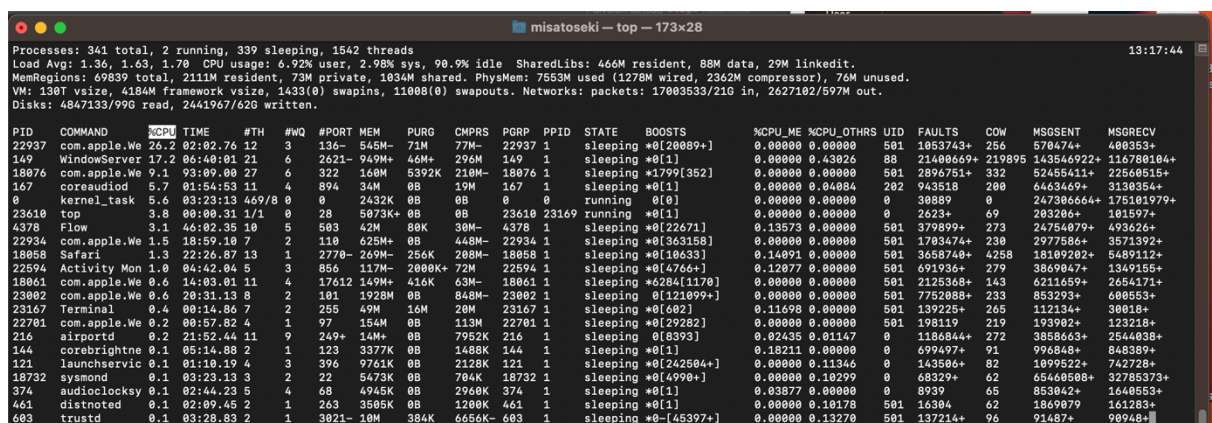
B. kill command:

This command is used to terminate a process. By specifying a process ID (PID), the specified process can be killed.



C. top command

This command is used to monitor running processes in real time, displaying CPU and memory usage, etc., and allowing the user to change the priority of the process or terminate it.



D. df command:

This command is used to display disk usage. It can display file system usage, free space, etc.

```
misatoseki@MisatonoMacBook-Air ~ % df
Filesystem      512-blocks    Used Available Capacity iused   ifree %used    Mounted on
/dev/disk3s1s1  478724992 17460960 302260296     6% 349475 1511301480     0% /
devfs           397         397     0    100%    688      0    100% /dev
/dev/disk3s6    478724992 2097192 302260296     1%   1 1511301480     0% /System/Volumes/VM
/dev/disk3s2    478724992 9373120 302260296     4%  827 1511301480     0% /System/Volumes/Preboot
/dev/disk3s4    478724992 15816 302260296     1%  42 1511301480     0% /System/Volumes/Update
/dev/disk1s2    1024000    12328  988504     2%   1  4942520     0% /System/Volumes/xarts
/dev/disk1s1    1024000    12512  988504     2%  28  4942520     0% /System/Volumes/iSCPreboot
/dev/disk1s3    1024000     936  988504     1%  50  4942520     0% /System/Volumes/Hardware
/dev/disk3s5    478724992 145718768 302260296    33% 629194 1511301480     0% /System/Volumes/Data
map auto_home   0         0     0    100%     0      0    100% /System/Volumes/Data/home
misatoseki@MisatonoMacBook-Air ~ %
```

E. nice command

This is used to change the priority of a process. It allows us to give priority to processes and adjust CPU usage priority.

```
top - 11:40:09 up 1 min, 1 user, load average: 0.24, 0.08, 0.03
Tasks: 153 total, 1 running, 152 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
MiB Mem : 3920.9 total, 2991.2 free, 528.3 used, 401.4 buff/cache
MiB Swap: 976.0 total, 976.0 free, 0.0 used. 3240.1 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
  552 root        20   0   890816  111572  57320 S   1.0   2.8   0:01.70 Xorg
  512 root        20   0      0      0      0 S   0.3   0.0   0:00.02 usb-storage
  843 misato      20   0  1214608  104284  75072 S   0.3   2.6   0:00.36 xfwm4
 1101 misato      20   0   422280  100992  83820 S   0.3   2.5   0:00.60 qterminal
 1129 misato      20   0   10428    3492   2796 R   0.3   0.1   0:00.09 top
    1 root        20   0   168164  11460   8324 S   0.0   0.3   0:00.35 systemd
```

```
(misato@kali)-[~]
$ nice -n 19 top
```

```
top - 11:41:59 up 2 min, 1 user, load average: 0.29, 0.14, 0.05
Tasks: 153 total, 1 running, 152 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.4 us, 0.3 sy, 0.0 ni, 99.3 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 3920.9 total, 2984.2 free, 535.0 used, 401.7 buff/cache
MiB Swap: 976.0 total, 976.0 free, 0.0 used. 3233.4 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+  COMMAND
  552 root        20   0   890816  111600  57320 S   1.0   2.8   0:03.83 Xorg
 1101 misato      20   0   422276  101060  83816 S   0.7   2.5   0:01.49 qterminal
  897 misato      20   0   344860   29404  19620 S   0.3   0.7   0:00.75 panel-15-genmon
  898 misato      20   0   596228   44696  33220 S   0.3   1.1   0:00.30 panel-16-pulsea
 1796 misato     39  19   10432    3344   2776 R   0.3   0.1   0:00.03 top
```

3. WHAT I LEARNED

A process uses memory, CPU, and other system resources. Process commands are used to manage running processes. I found that these commands allow us to view, control, and terminate processes and develop machine performance.