



ALBUKHARY INTERNATIONAL UNIVERSITY

SCHOOL OF COMPUTING & INFORMATICS

Course Title : **OPERATING SYSTEMS**
Course Code : **CCC 2123**

LAB EXERCISE (WEEK 9)

Instructions:

Using the Command Line Interface (CLI) for Linux that we have learned and used so far, please execute the following tasks:

Task 1: System Information:

- Display the system's hostname.

```
(kali㉿kali)-[~]  
└─$ hostname  
kali
```

- Retrieve and present information about the kernel version.

```
(kali㉿kali)-[~]  
└─$ hostnamectl  
Static hostname: kali  
Icon name: computer-vm  
Chassis: vm  
Machine ID: a99fbd769ee94071b869ae5e6aba8f05  
Boot ID: 41c845acf19f472eae6719a7b2d07736  
Virtualization: vmware  
Operating System: Kali GNU/Linux Rolling  
Kernel: Linux 6.6.9-686-pae  
Architecture: x86  
Hardware Vendor: VMware, Inc.  
Hardware Model: VMware Virtual Platform  
Firmware Version: 6.00  
Firmware Date: Thu 2020-11-12  
Firmware Age: 3y 6month 1w 3d
```

Task 2: Process Management:

- List all currently running processes.

```
(kali㉿kali)-[~]
└─$ ps -e
PID TTY          TIME CMD
  1 ?        00:00:02 systemd
  2 ?        00:00:00 kthreadd
  3 ?        00:00:00 pool_workqueue_release
  4 ?        00:00:00 kworker/R-rcu_g
  5 ?        00:00:00 kworker/R-rcu_p
  6 ?        00:00:00 kworker/R-slub_
  7 ?        00:00:00 kworker/R-netns
  8 ?        00:00:00 kworker/0:0-cgroup_destroy
  9 ?        00:00:00 kworker/0:0H-events_highpri
 11 ?        00:00:00 kworker/u8:0-floppy
 12 ?        00:00:00 kworker/R-mm_pe
 13 ?        00:00:00 rcu_tasks_kthread
```

- Find and display information about the process associated with the terminal.
- Terminate a specific process using the appropriate command.

```
(kali㉿kali)-[~]
└─$ kill 913
kill: kill 913 failed: operation not permitted
```

```
(kali㉿kali)-[~]
└─$ kill 1638
```

- Check whether the process has been terminated.

```
1580 ?        00:00:00 gvfs-go-a-volume
1586 ?        00:00:00 gvfs-afc-volume
1598 ?        00:00:00 gvfs-mtp-volume
1603 ?        00:00:00 gvfs-gphoto2-vo
1626 ?        00:00:00 gvfsd-trash
1639 ?        00:00:00 obexd
1714 ?        00:00:13 qterminal
1733 pts/0      00:00:04 zsh
6631 ?        00:00:00 kworker/3:0
```

Task 3: System Resource Usage:

- Utilise a command to show the current system load.

```
(kali㉿kali)-[~]
└─$ uptime
21:06:25 up 25 min,  1 user,  load average: 0.22, 0.15, 0.11
```

- Identify the top processes consuming CPU and memory resources.

```
kali@kali: ~  
File Actions Edit View Help  
top - 20:46:09 up 4 min, 1 user, load average: 0.29, 0.28, 0.15  
Tasks: 214 total, 1 running, 213 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 1.0 us, 2.1 sy, 0.0 ni, 96.9 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st  
MiB Mem : 2010.0 total, 1072.4 free, 722.1 used, 423.7 buff/cache  
MiB Swap: 1024.0 total, 1024.0 free, 0.0 used. 1288.0 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
912	root	20	0	320416	84408	47596	S	3.0	4.1	0:06.45	Xorg
1714	kali	20	0	340948	86860	77156	S	1.7	4.2	0:02.09	qterminal
51	root	39	19	0	0	0	S	1.0	0.0	0:00.37	khugepaged
3689	kali	20	0	13028	5376	3840	R	1.0	0.3	0:00.09	top
1262	kali	20	0	91920	26988	20536	S	0.7	1.3	0:01.67	panel-15-genmon
17	root	20	0	0	0	0	I	0.3	0.0	0:00.22	rcu_preempt
59	root	20	0	0	0	0	I	0.3	0.0	0:00.04	kworker/u10:1-events_unbound
576	root	20	0	49676	7808	6912	S	0.3	0.4	0:00.53	vmtoolsd
1194	kali	20	0	445064	108908	71648	S	0.3	5.3	0:02.79	xfwm4
1252	kali	20	0	161420	48920	35372	S	0.3	2.4	0:01.61	xfdesktop
1260	kali	20	0	110948	61472	18688	S	0.3	3.0	0:01.71	panel-13-cpugra
1396	kali	20	0	83868	32764	27476	S	0.3	1.6	0:00.98	vmtoolsd
1	root	20	0	21280	11192	9144	S	0.0	0.5	0:02.07	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.01	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:00.00	pool_workqueue_release
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-rcu_g
5	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-rcu_p
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-slub_
7	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-netns
8	root	20	0	0	0	0	I	0.0	0.0	0:00.05	kworker/0:0-events
9	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/0:0H-events_highpri
10	root	20	0	0	0	0	I	0.0	0.0	0:00.00	kworker/0:1-cgroup_destroy
11	root	20	0	0	0	0	I	0.0	0.0	0:00.00	kworker/u8:0-floppy
12	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/R-mm_pe
13	root	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_tasks_kthread