

MODULE 3 SCRIPTING WITH LINUX

In our Module 3, we developed a Python script on a Raspbian Linux platform, aiming to extract and display critical information about the Linux Kernel. The script features a suite of functions, each designed to provide specific system insights:

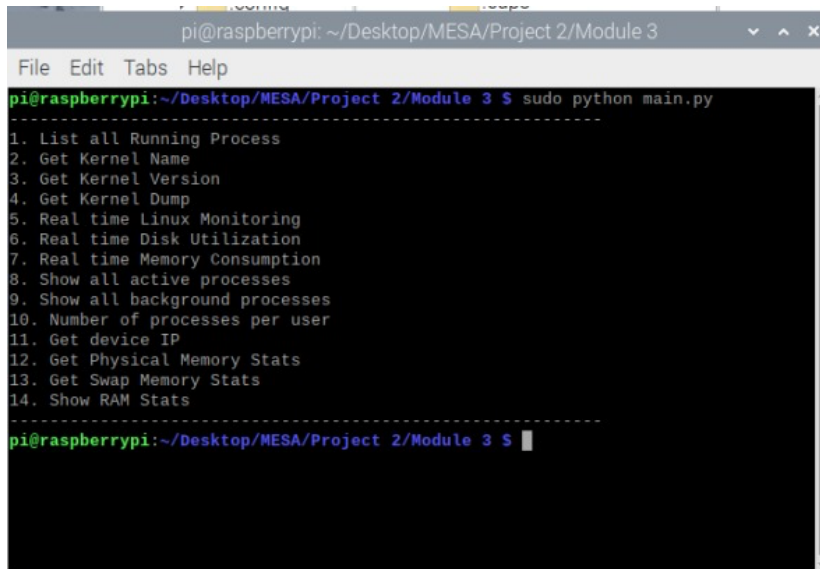
- **List All Running Processes (get_all_running_processes):** This function executes the `ps aux` command to list all processes currently running on the system. It's crucial for monitoring active system processes.
- **Get Kernel Name (get_kernel_name):** By executing `uname --kernel-name`, this function retrieves the name of the installed kernel, aiding in system identification.
- **Get Kernel Version (get_kernel_version):** This function uses `uname --kernel-version` to fetch the kernel version, providing an insight into the system's core versioning.
- **Get Kernel Dump (get_kernel_dump):** This function displays the kernel dump using the `dmesg` command, which is essential for diagnosing system crashes or errors.
- **Real-Time Linux Monitoring (real_time_monitoring):** Utilizing the `atop` command, this function monitors various aspects of system performance in real-time.
- **Real-Time Disk Utilization (show_disk_usage):** It executes `atop -d` to monitor disk usage, offering a snapshot of the system's storage performance.
- **Real-Time Memory Consumption (check_memory):** This function employs `atop -m` to track memory usage, crucial for understanding the system's memory allocation and consumption.
- **Show All Active Processes (show_all_active_process):** It runs `atop -a` to display all active processes, complementing the first function for a comprehensive process overview.
- **Show All Background Processes (show_all_background_process):** By executing `atop -c`, this function lists background processes, which is vital for full system process management.
- **Number of Processes per User (processes_per_user):** This function uses `atop -au` to show processes organized by user, aiding in user-specific process monitoring.
- **Get Device IP (get_device_ip):** It retrieves the system's IP address using `ifconfig`, a fundamental aspect of network configuration and troubleshooting.
- **Get Physical Memory Stats (stats_physical_memory):** Utilizing `free -m`, this function displays detailed statistics of the physical memory usage.
- **Get Swap Memory Stats (stats_swap_memory):** Similar to the previous, it provides swap memory statistics, essential for understanding paging and memory management.

- Show RAM Stats (stats_RAM): This function executes lscpu to display detailed RAM statistics, offering insights into the system's memory architecture.

Bonus Section :

Our script is not only automated to execute these functions sequentially but also configured to run at system start-up using crontab. `sudo crontab -e` this command opens the editor. After pasting `command@reboot sudo python "/home/pi/Desktop/MESA/Project 2/Module 3/main.py"` & it executes python executable during boot up.

This ensures immediate system information retrieval post-boot, making the script a comprehensive tool for system administrators.



```

pi@raspberrypi: ~/Desktop/MESA/Project 2/Module 3
File Edit Tabs Help
pi@raspberrypi:~/Desktop/MESA/Project 2/Module 3 $ sudo python main.py
-----
1. List all Running Process
2. Get Kernel Name
3. Get Kernel Version
4. Get Kernel Dump
5. Real time Linux Monitoring
6. Real time Disk Utilization
7. Real time Memory Consumption
8. Show all active processes
9. Show all background processes
10. Number of processes per user
11. Get device IP
12. Get Physical Memory Stats
13. Get Swap Memory Stats
14. Show RAM Stats
-----
pi@raspberrypi:~/Desktop/MESA/Project 2/Module 3 $

```

Figure 1 : Command Line

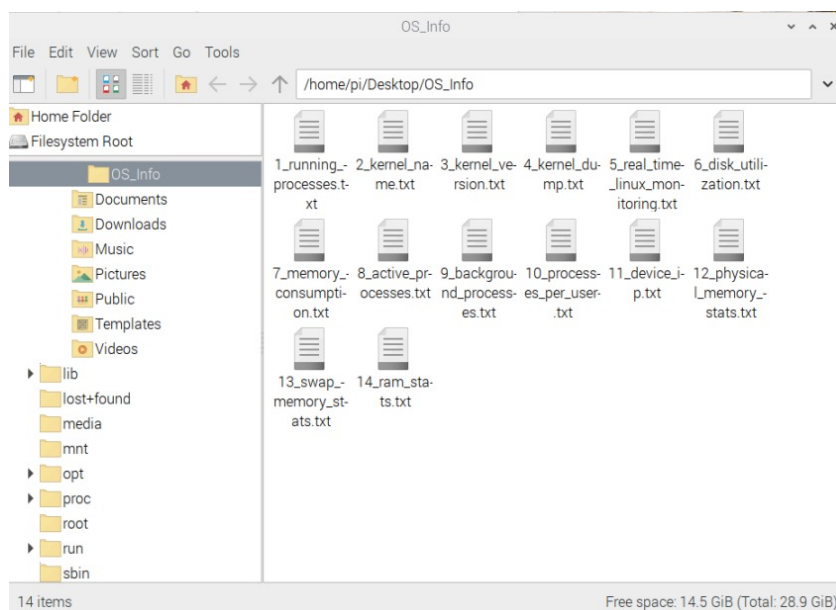


Figure 2 : Text for each command

In conclusion, our project successfully integrates a diverse range of system information functionalities. It demonstrates our proficiency in scripting complex tasks in a Linux environment, significantly enhancing our skills in system administration and Python programming.

Code :

```
"""
/*****
* @file get_kernel_details.py
* System Information Retrieval Script for Linux - Project 3 Module 3
*
* This script automatically retrieves various system information
* details and saves them to individual files for later analysis.
*
* @author Kiran Jojare, Viraj Patel
* @see <a href="https://www.gnu.org/software/bash/manual/">Bash Reference Manual</a>
* @see <a href="https://docs.python.org/3/library/os.html">Python OS Library Documentation</a>
*****/
"""

import os
import platform
import time

# Directory where output files will be saved
output_directory = "/home/pi/Desktop/OS_Info"

def execute_command(command, output_file):
    """
    Executes a system command and redirects the output to a specified file.

    Args:
    command (str): The system command to be executed.
    output_file (str): The name of the file where the command output will be saved.
    """
    full_command = f'{command} > {output_directory}/{output_file}'
    os.system(full_command)

def show_menu():
    """
    Displays the menu options for system information retrieval.
    The menu is displayed for informational purposes.
    """
    menu_options = {
        "1": "List all Running Process",
        "2": "Get Kernel Name",
        "3": "Get Kernel Version",
        "4": "Get Kernel Dump",
        "5": "Real time Linux Monitoring",
        "6": "Real time Disk Utilization",
        "7": "Real time Memory Consumption",
        "8": "Show all active processes",
        "9": "Show all background processes",
        "10": "Number of processes per user",
        "11": "Get device IP",
        "12": "Get Physical Memory Stats",
        "13": "Get Swap Memory Stats",
        "14": "Show RAM Stats"
    }

    print("-----")
    for key, value in menu_options.items():
        print(f"{key}. {value}")
    print("-----")

def main():
    """
    Main function to execute system information commands and save their outputs.
    Each command's output is saved to a distinct text file.
    """
    show_menu()
```

```
# Execute commands and save outputs to files
execute_command('ps aux', '1_running_processes.txt')
execute_command('uname --kernel-name', '2_kernel_name.txt')
execute_command('uname --kernel-version', '3_kernel_version.txt')
execute_command('dmesg', '4_kernel_dump.txt')
execute_command('timeout 2 atop', '5_real_time_linux_monitoring.txt')
execute_command('timeout 2 atop -d', '6_disk_utilization.txt')
execute_command('timeout 2 atop -m', '7_memory_consumption.txt')
execute_command('timeout 2 atop -a', '8_active_processes.txt')
execute_command('timeout 2 atop -c', '9_background_processes.txt')
execute_command('timeout 2 atop -au', '10_processes_per_user.txt')
execute_command('ifconfig | grep \'broadcast\' | awk \'{print $2}\'', '11_device_ip.txt')
execute_command('free -m | grep \'Mem\' | awk \'{print \"Physical Memory Stats in MB: \",
\"Total:\", $2, \"Used:\", $3, \"Free:\", $4, \"Shared:\", $5, \"Buff/Cache:\", $6, \"Available:\",
$7}\', '12_physical_memory_stats.txt')
execute_command('free -m | grep \'Swap\' | awk \'{print \"Swap Memory Stats in MB: \", \"Total:\",
$2, \"Used:\", $3, \"Free:\", $4, \"Shared:\", $5, \"Buff/Cache:\", $6, \"Available:\", $7}\',
'13_swap_memory_stats.txt')
execute_command('lscpu', '14_ram_stats.txt')

if __name__ == "__main__":
    main()
```

Text output :

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
root	1	23.6	1.0	17760	10156	?	Ss	19:54	0:03	/sbin/init splash
root	2	0.1	0.0	0	0	?	S	19:54	0:00	[kthreadd]
root	3	0.0	0.0	0	0	?	I<	19:54	0:00	[rcu_gp]
root	4	0.0	0.0	0	0	?	I<	19:54	0:00	[rcu_par_gp]
root	5	0.0	0.0	0	0	?	I<	19:54	0:00	[slub_flushwq]
root	6	0.0	0.0	0	0	?	I<	19:54	0:00	[netns]
root	7	0.2	0.0	0	0	?	I	19:54	0:00	[kworker/0:0-events]
root	8	0.0	0.0	0	0	?	I<	19:54	0:00	[kworker/0:0H-mmc_complete]
root	9	11.3	0.0	0	0	?	I	19:54	0:01	[kworker/u8:0-events_unbound]
root	10	0.0	0.0	0	0	?	I<	19:54	0:00	[mm_percpu_wq]
root	11	0.0	0.0	0	0	?	I	19:54	0:00	[rcu_tasks_kthread]
root	12	0.0	0.0	0	0	?	I	19:54	0:00	[rcu_tasks_rude_kthread]
root	13	0.0	0.0	0	0	?	I	19:54	0:00	[rcu_tasks_trace_kthread]
root	14	0.0	0.0	0	0	?	S	19:54	0:00	[ksoftirqd/0]
root	15	0.8	0.0	0	0	?	I	19:54	0:00	[rcu_preempt]
root	16	0.0	0.0	0	0	?	S	19:54	0:00	[migration/0]
root	17	0.0	0.0	0	0	?	S	19:54	0:00	[cpuhp/0]
root	18	0.0	0.0	0	0	?	S	19:54	0:00	[cpuhp/1]
root	19	0.0	0.0	0	0	?	S	19:54	0:00	[migration/1]
root	20	0.1	0.0	0	0	?	S	19:54	0:00	[ksoftirqd/1]
root	21	0.0	0.0	0	0	?	I	19:54	0:00	[kworker/1:0-events]
root	22	0.0	0.0	0	0	?	I<	19:54	0:00	[kworker/1:0H-mmc_complete]
root	23	0.0	0.0	0	0	?	S	19:54	0:00	[cpuhp/2]
root	24	0.0	0.0	0	0	?	S	19:54	0:00	[migration/2]
root	25	0.0	0.0	0	0	?	S	19:54	0:00	[ksoftirqd/2]
root	26	0.0	0.0	0	0	?	I	19:54	0:00	[kworker/2:0-events]
root	27	0.0	0.0	0	0	?	I<	19:54	0:00	[kworker/2:0H-kblockd]
root	28	0.0	0.0	0	0	?	S	19:54	0:00	[cpuhp/3]
root	29	0.0	0.0	0	0	?	S	19:54	0:00	[migration/3]
root	30	0.0	0.0	0	0	?	S	19:54	0:00	[ksoftirqd/3]
root	31	0.0	0.0	0	0	?	I	19:54	0:00	[kworker/3:0-events]
root	32	0.0	0.0	0	0	?	I<	19:54	0:00	[kworker/3:0H-events_highpri]
root	33	0.0	0.0	0	0	?	S	19:54	0:00	[kdevtmpfs]
root	34	0.0	0.0	0	0	?	I<	19:54	0:00	[inet_frag_wq]
root	35	0.0	0.0	0	0	?	I	19:54	0:00	[kworker/0:1-events]
root	36	0.0	0.0	0	0	?	S	19:54	0:00	[kauditd]
root	37	0.0	0.0	0	0	?	I	19:54	0:00	[kworker/0:2-cgroup_destroy]
root	38	0.0	0.0	0	0	?	S	19:54	0:00	[khungtaskd]
root	39	1.4	0.0	0	0	?	I	19:54	0:00	[kworker/u8:1-events_unbound]
root	40	0.0	0.0	0	0	?	S	19:54	0:00	[oom_reaper]
root	41	0.0	0.0	0	0	?	I<	19:54	0:00	[writeback]
root	42	0.0	0.0	0	0	?	S	19:54	0:00	[kcompactd0]
root	43	0.0	0.0	0	0	?	I<	19:54	0:00	[kintegrityd]
root	44	0.0	0.0	0	0	?	I<	19:54	0:00	[kblockd]

root	45	0.0	0.0	0	0 ?	I<	19:54	0:00	[blkcg_punt_bio]
root	46	0.0	0.0	0	0 ?	S	19:54	0:00	[watchdogd]
root	47	0.0	0.0	0	0 ?	I	19:54	0:00	[kworker/u8:2-events_unbound]
root	48	0.4	0.0	0	0 ?	I	19:54	0:00	[kworker/3:1-events]
root	49	1.6	0.0	0	0 ?	I<	19:54	0:00	[kworker/3:1H-kblockd]
root	50	0.0	0.0	0	0 ?	I<	19:54	0:00	[rpciod]
root	51	0.0	0.0	0	0 ?	I<	19:54	0:00	[xpriod]
root	52	0.0	0.0	0	0 ?	I	19:54	0:00	[kworker/u8:3]
root	53	0.2	0.0	0	0 ?	I	19:54	0:00	[kworker/1:1-events]
root	54	0.4	0.0	0	0 ?	I	19:54	0:00	[kworker/2:1-events]
root	55	0.0	0.0	0	0 ?	S	19:55	0:00	[kswapd0]
root	56	0.0	0.0	0	0 ?	I<	19:55	0:00	[nfsiod]
root	57	0.0	0.0	0	0 ?	I<	19:55	0:00	[kthrotld]
root	59	1.2	0.0	0	0 ?	I	19:55	0:00	[kworker/3:2-events]
root	62	0.0	0.0	0	0 ?	S	19:55	0:00	[hwrng]
root	63	0.0	0.0	0	0 ?	I<	19:55	0:00	[iscsi_conn_clea]
root	64	0.0	0.0	0	0 ?	I<	19:55	0:00	[nvme-wq]
root	65	0.0	0.0	0	0 ?	I<	19:55	0:00	[nvme-reset-wq]
root	66	0.0	0.0	0	0 ?	I<	19:55	0:00	[nvme-delete-wq]
root	67	0.0	0.0	0	0 ?	I<	19:55	0:00	[dwc_otg]
root	68	0.0	0.0	0	0 ?	I<	19:55	0:00	[DWC Notificatio]
root	69	0.0	0.0	0	0 ?	I<	19:55	0:00	[uas]
root	70	0.0	0.0	0	0 ?	S<	19:55	0:00	[vchiq-slot/0]
root	71	0.0	0.0	0	0 ?	S<	19:55	0:00	[vchiq-recy/0]
root	72	0.0	0.0	0	0 ?	S<	19:55	0:00	[vchiq-sync/0]
root	73	0.0	0.0	0	0 ?	I<	19:55	0:00	[zswap-shrink]
root	74	0.5	0.0	0	0 ?	I<	19:55	0:00	[kworker/u9:0-
brcmf_wq/mmc1:0001:1]									
root	95	0.0	0.0	0	0 ?	I	19:55	0:00	[kworker/2:2-events]
root	96	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmc_complete]
root	97	1.2	0.0	0	0 ?	I<	19:55	0:00	[kworker/2:1H-kblockd]
root	98	1.3	0.0	0	0 ?	I<	19:55	0:00	[kworker/0:1H-kblockd]
root	99	0.3	0.0	0	0 ?	I	19:55	0:00	[kworker/1:2-events]
root	100	2.1	0.0	0	0 ?	I<	19:55	0:00	[kworker/1:1H-mmc_complete]
root	101	0.0	0.0	0	0 ?	S	19:55	0:00	[jbd2/mmcblk0p2-8]
root	102	0.0	0.0	0	0 ?	I<	19:55	0:00	[ext4-rsv-conver]
root	103	0.0	0.0	0	0 ?	I<	19:55	0:00	[kworker/1:2H]
root	104	0.2	0.0	0	0 ?	D<	19:55	0:00	[kworker/2:2H+kblockd]
root	106	0.0	0.0	0	0 ?	I<	19:55	0:00	[kworker/0:2H]
root	107	0.0	0.0	0	0 ?	S	19:55	0:00	[irq/184-usb-001:003:01]
root	108	0.0	0.0	0	0 ?	I<	19:55	0:00	[mld]
root	109	0.0	0.0	0	0 ?	I<	19:55	0:00	[ipv6_addrconf]
root	124	0.0	0.0	0	0 ?	I<	19:55	0:00	[kworker/3:2H]
root	140	9.5	1.1	32724	10536 ?	Ss	19:55	0:00	/lib/systemd/systemd-journald
root	150	1.3	0.0	0	0 ?	I	19:55	0:00	[kworker/1:3-events]
root	157	0.5	0.3	16848	3188 ?	Ss	19:55	0:00	/lib/systemd/systemd-fsckd
root	173	19.3	0.6	22124	6248 ?	Ss	19:55	0:01	/lib/systemd/systemd-udev
root	174	0.0	0.0	0	0 ?	I	19:55	0:00	[kworker/0:3-events]
root	175	9.1	0.7	21980	6808 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	177	8.3	0.7	23908	6604 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	178	11.0	0.8	22872	7756 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	179	8.2	0.6	21808	5684 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	180	7.0	0.6	23936	5996 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	181	8.7	0.8	25508	7536 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	182	10.8	0.7	21812	6812 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	183	6.5	0.5	23916	5384 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	184	6.5	0.6	23916	6400 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	185	9.0	0.8	24540	7544 ?	S	19:55	0:00	/lib/systemd/systemd-udev
root	196	0.0	0.0	0	0 ?	S	19:55	0:00	[vchiq-keep/0]
root	197	0.0	0.0	0	0 ?	S<	19:55	0:00	[SMIO]
root	223	0.0	0.0	0	0 ?	S	19:55	0:00	[spi0]
root	228	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	230	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	244	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	245	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	246	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	248	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	249	0.0	0.0	0	0 ?	I<	19:55	0:00	[mmal-vchiq]
root	278	0.3	0.0	0	0 ?	I	19:55	0:00	[kworker/2:3-events]
root	299	0.0	0.0	0	0 ?	I<	19:55	0:00	[cfg80211]
root	309	0.0	0.0	0	0 ?	S	19:55	0:00	[cec-vc4-hdmi]
root	310	0.0	0.0	0	0 ?	S	19:55	0:00	[irq/82-vc4 hdmi cec]
root	319	0.0	0.0	0	0 ?	S	19:55	0:00	[card0-crtc0]
root	320	0.0	0.0	0	0 ?	S	19:55	0:00	[card0-crtc1]
root	321	0.0	0.0	0	0 ?	S	19:55	0:00	[card0-crtc2]

```

root      322  0.0  0.0      0      0 ?      S   19:55  0:00 [card0-crtc3]
root      323  0.0  0.0      0      0 ?      I<  19:55  0:00 [brcmf_wq/mmcl:0]
root      324  0.0  0.0      0      0 ?      S   19:55  0:00 [brcmf_wdog/mmcl:0001:1]
systemd+  343 12.2  0.3  88100  3428 ?      Ssl 19:55  0:00 /lib/systemd/systemd-timesyncd
root      346  0.0  0.0      0      0 ?      I   19:55  0:00 [kworker/3:3-events]
root      350  0.0  0.0      0      0 ?      I<  19:55  0:00 [kworker/u9:1]
root      393  1.2  0.3  13876  3172 ?      Ss  19:55  0:00 /lib/systemd/systemd-rfkill
root      427  5.0  0.9  502480  9248 ?      S<sl 19:55  0:00 /bin/brltty --no-daemon
avahi     438  2.6  0.3   7068  2836 ?      Ss  19:55  0:00 avahi-daemon: running
[raspberrypi.local]
root      441  0.6  0.0   1948    72 ?      S<  19:55  0:00 /usr/sbin/atopacctd
root      442  1.0  0.2   6692  2404 ?      Ss  19:55  0:00 /usr/sbin/cron -f
message+  443  9.6  0.4   8128  4052 ?      Ss  19:55  0:00 /usr/bin/dbus-daemon --system --
address=systemd: --nofork --nopidfile --systemd-activation --syslog-only
root      446  2.6  0.6  17764  6212 ?      Ds  19:55  0:00 (crub_all)
avahi     452  0.0  0.0   6888    312 ?      S   19:55  0:00 avahi-daemon: chroot helper
root      458  0.6  0.1   2060  1260 ?      Ss  19:55  0:00 /bin/sh /usr/bin/btuart
root      460  5.6  0.8  237420  7824 ?      Ssl 19:55  0:00 /usr/libexec/polkitd --no-debug
root      481  4.0  0.3  220880  3304 ?      Ssl 19:55  0:00 /usr/sbin/rsyslogd -n -iNONE
root      500  2.3  0.4  12168  4340 ?      S   19:55  0:00 sudo python
/home/pi/Desktop/MESA/Project 2/Module 3/main.py
root      516 14.6  0.6  14104  5944 ?      Ss  19:55  0:00 /lib/systemd/systemd-logind
nobody    517  0.6  0.2   5480  2388 ?      Ss  19:55  0:00 /usr/sbin/thd --triggers
/etc/triggerhappy/triggers.d/ --socket /run/thd.socket --user nobody --deviceglob /dev/input/event*
root      521 15.0  1.3  395756 12816 ?      Ssl 19:55  0:00 /usr/libexec/udisks2/udisksd
root      523  2.0  0.5  13576  4780 ?      Ss  19:55  0:00 /sbin/wpa_supplicant -u -s -O
/run/wpa_supplicant
root      535  5.0  0.1   2120  1472 ?      S   19:55  0:00 /usr/bin/hciattach /dev/serial1
bcm43xx 921600 noflow - b8:27:eb:9c:95:c6
root      538  0.0  0.1   3112  1752 ?      Ss  19:55  0:00 /usr/sbin/dhccpd -b -q
root      550 17.5  1.0  15856  9364 ?      S   19:55  0:00 python
/home/pi/Desktop/MESA/Project 2/Module 3/main.py
root      579 18.5  0.7   7572  6628 ?      S<Ls 19:55  0:00 /usr/bin/atop -R -w
/var/log/atop/atop_20231115 600
root      584  0.5  0.0   92288    92 ?      SLsl 19:55  0:00 /usr/sbin/rngd -r /dev/hwrng
root      588  7.0  0.8   29564  7908 ?      Ss  19:55  0:00 /usr/sbin/cupsd -l
epmd      589  1.0  0.1   6016  1276 ?      Ss  19:55  0:00 /usr/bin/epmd -systemd
root      597  1.5  0.2   6956  2304 ?      Ss  19:55  0:00 /usr/bin/vncserver-x11-serviced -
fg
root      599  8.5  0.8  236204  8072 ?      Ssl 19:55  0:00 /usr/sbin/lightdm
root      601 14.0  1.3  27580 12336 ?      S   19:55  0:00 /usr/bin/vncserver-x11-core -
service
root      607 11.0  0.6  13636  6428 ?      Ss  19:55  0:00 sshd: /usr/sbin/sshd -D [listener]
0 of 10-100 startups
root      608  0.0  0.4  13992  3748 ?      Ss  19:55  0:00 wpa_supplicant -B -
c/etc/wpa_supplicant/wpa_supplicant.conf -iwlan0
root      614 12.0  0.9  241188  8448 ?      Dsl 19:55  0:00 /usr/sbin/ModemManager
root      621  6.0  0.7  16360  6808 ?      R   19:55  0:00 /usr/lib/xorg/Xorg :0 -seat seat0
-auth /var/run/lightdm/root/:0 -nolisten tcp vt7 -novtswitch
root      622  0.0  0.3   17764  2840 ?      S   19:55  0:00 (agetty)
root      624  0.0  0.3   17764  2840 ?      S   19:55  0:00 (agetty)
lp        626  3.0  0.6  16644  5800 ?      S   19:55  0:00 /usr/lib/cups/notifier/dbus
dbus://
root      627  7.0  0.8  26336  8188 ?      Rs  19:55  0:00 /usr/sbin/cups-browsed
root      635  0.0  0.0   2060    480 ?      S   19:55  0:00 sh -c ps aux >
/home/pi/Desktop/OS_Info/1_running_processes.txt
root      636  0.0  0.3   9452  2908 ?      R   19:55  0:00 ps aux

```

Linux

#1642 SMP PREEMPT Mon Apr 3 17:24:16 BST 2023

```

[ 0.000000] Booting Linux on physical CPU 0x0000000000 [0x410fd034]
[ 0.000000] Linux version 6.1.21-v8+ (dom@builddbot) (aarch64-linux-gnu-gcc-8 (Ubuntu/Linaro 8.4.0-
3ubuntu1) 8.4.0, GNU ld (GNU Binutils for Ubuntu) 2.34) #1642 SMP PREEMPT Mon Apr 3 17:24:16 BST
2023
[ 0.000000] random: crng init done
[ 0.000000] Machine model: Raspberry Pi 3 Model B Rev 1.2
[ 0.000000] efi: UEFI not found.
[ 0.000000] Reserved memory: created CMA memory pool at 0x000000001ec00000, size 256 MiB
[ 0.000000] OF: reserved mem: initialized node linux,cma, compatible id shared-dma-pool
[ 0.000000] Zone ranges:
[ 0.000000] DMA [mem 0x0000000000000000-0x000000003b3fffff]
[ 0.000000] DMA32 empty
[ 0.000000] Normal empty

```

```
[ 0.000000] Movable zone start for each node
[ 0.000000] Early memory node ranges
[ 0.000000]   node 0: [mem 0x0000000000000000-0x000000003b3fffff]
[ 0.000000] Initmem setup node 0 [mem 0x0000000000000000-0x000000003b3fffff]
[ 0.000000] On node 0, zone DMA: 19456 pages in unavailable ranges
[ 0.000000] percpu: Embedded 29 pages/cpu s78504 r8192 d32088 u118784
[ 0.000000] pcpu-alloc: s78504 r8192 d32088 u118784 alloc=29*4096
[ 0.000000] pcpu-alloc: [0] 0 [0] 1 [0] 2 [0] 3
[ 0.000000] Detected VIPT I-cache on CPU0
[ 0.000000] CPU features: kernel page table isolation forced ON by KASLR
[ 0.000000] CPU features: detected: Kernel page table isolation (KPTI)
[ 0.000000] CPU features: detected: ARM erratum 843419
[ 0.000000] CPU features: detected: ARM erratum 845719
[ 0.000000] alternatives: applying boot alternatives
[ 0.000000] Built 1 zonelists, mobility grouping on. Total pages: 238896
[ 0.000000] Kernel command line: coherent_pool=1M 8250.nr_uarts=1 snd_bcm2835.enable_headphones=0
snd_bcm2835.enable_headphones=1 snd_bcm2835.enable_hdmi=1 snd_bcm2835.enable_hdmi=0 video=Composite-
1:720x480@60i vc_mem.mem_base=0x3ec00000 vc_mem.mem_size=0x40000000 console=ttyS0,115200
console=tty1 root=PARTUUID=ecbbd781-02 rootfstype=ext4 fsck.repair=yes rootwait quiet splash
plymouth.ignore-serial-consoles cfg80211.ieee80211_regdom=GB
[ 0.000000] Unknown kernel command line parameters "splash", will be passed to user space.
[ 0.000000] Dentry cache hash table entries: 131072 (order: 8, 1048576 bytes, linear)
[ 0.000000] Inode-cache hash table entries: 65536 (order: 7, 524288 bytes, linear)
[ 0.000000] mem auto-init: stack:off, heap alloc:off, heap free:off
[ 0.000000] Memory: 665128K/970752K available (11776K kernel code, 2106K rwddata, 3688K rodata,
4160K init, 1077K bss, 43480K reserved, 262144K cma-reserved)
[ 0.000000] SLUB: HWalign=64, Order=0-3, MinObjects=0, CPUs=4, Nodes=1
[ 0.000000] ftrace: allocating 39744 entries in 156 pages
[ 0.000000] ftrace: allocated 156 pages with 4 groups
[ 0.000000] trace event string verifier disabled
[ 0.000000] rcu: Preemptible hierarchical RCU implementation.
[ 0.000000] rcu: RCU event tracing is enabled.
[ 0.000000] rcu: RCU restricting CPUs from NR_CPUS=256 to nr_cpu_ids=4.
[ 0.000000] Trampoline variant of Tasks RCU enabled.
[ 0.000000] Rude variant of Tasks RCU enabled.
[ 0.000000] Tracing variant of Tasks RCU enabled.
[ 0.000000] rcu: RCU calculated value of scheduler-enlistment delay is 25 jiffies.
[ 0.000000] rcu: Adjusting geometry for rcu_fanout_leaf=16, nr_cpu_ids=4
[ 0.000000] NR_IRQS: 64, nr_irqs: 64, preallocated irq: 0
[ 0.000000] Root IRQ handler: bcm2836_arm_irqchip_handle_irq
[ 0.000000] rcu: srcu_init: Setting srcu_struct sizes based on contention.
[ 0.000000] arch_timer: cp15 timer(s) running at 19.20MHz (phys).
[ 0.000000] clocksource: arch_sys_counter: mask: 0xffffffffffffff max_cycles: 0x46d987e47,
max_idle_ns: 440795202767 ns
[ 0.000001] sched_clock: 56 bits at 19MHz, resolution 52ns, wraps every 4398046511078ns
[ 0.000383] Console: colour dummy device 80x25
[ 0.000470] printk: console [tty1] enabled
[ 0.000544] Calibrating delay loop (skipped), value calculated using timer frequency.. 38.40
BogoMIPS (lpj=76800)
[ 0.000585] pid_max: default: 32768 minimum: 301
[ 0.000765] LSM: Security Framework initializing
[ 0.001019] Mount-cache hash table entries: 2048 (order: 2, 16384 bytes, linear)
[ 0.001061] Mountpoint-cache hash table entries: 2048 (order: 2, 16384 bytes, linear)
[ 0.002881] cgroup: Disabling memory control group subsystem
[ 0.006132] cblist_init_generic: Setting adjustable number of callback queues.
[ 0.006155] cblist_init_generic: Setting shift to 2 and lim to 1.
[ 0.006428] cblist_init_generic: Setting shift to 2 and lim to 1.
[ 0.006692] cblist_init_generic: Setting shift to 2 and lim to 1.
[ 0.007333] rcu: Hierarchical SRCU implementation.
[ 0.007351] rcu: Max phase no-delay instances is 1000.
[ 0.009235] EFI services will not be available.
[ 0.009986] smp: Bringing up secondary CPUs ...
[ 0.011558] Detected VIPT I-cache on CPU1
[ 0.011739] CPU1: Booted secondary processor 0x0000000001 [0x410fd034]
[ 0.013530] Detected VIPT I-cache on CPU2
[ 0.013677] CPU2: Booted secondary processor 0x0000000002 [0x410fd034]
[ 0.015374] Detected VIPT I-cache on CPU3
[ 0.015517] CPU3: Booted secondary processor 0x0000000003 [0x410fd034]
[ 0.015730] smp: Brought up 1 node, 4 CPUs
[ 0.015762] SMP: Total of 4 processors activated.
[ 0.015781] CPU features: detected: 32-bit EL0 Support
[ 0.015796] CPU features: detected: 32-bit EL1 Support
[ 0.015815] CPU features: detected: CRC32 instructions
[ 0.016018] CPU: All CPU(s) started at EL2
[ 0.016050] alternatives: applying system-wide alternatives
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[ 0.018598] devtmpfs: initialized
[ 0.043796] Enabled cp15_barrier support
[ 0.043850] Enabled setend support
[ 0.044223] clocksource: jiffies: mask: 0xffffffff max_cycles: 0xffffffff, max_idle_ns:
7645041785100000 ns
[ 0.044271] futex hash table entries: 1024 (order: 4, 65536 bytes, linear)
[ 0.055810] pinctrl core: initialized pinctrl subsystem
[ 0.057195] DMI not present or invalid.
[ 0.058218] NET: Registered PF_NETLINK/PF_ROUTE protocol family
[ 0.070439] DMA: preallocated 1024 KiB GFP_KERNEL pool for atomic allocations
[ 0.070874] DMA: preallocated 1024 KiB GFP_KERNEL|GFP_DMA pool for atomic allocations
[ 0.072429] DMA: preallocated 1024 KiB GFP_KERNEL|GFP_DMA32 pool for atomic allocations
[ 0.072593] audit: initializing netlink subsys (disabled)
[ 0.073035] audit: type=2000 audit(0.072:1): state=initialized audit_enabled=0 res=1
[ 0.074082] thermal_sys: Registered thermal governor 'step_wise'
[ 0.074217] cpuidle: using governor menu
[ 0.075065] hw-breakpoint: found 6 breakpoint and 4 watchpoint registers.
[ 0.075369] ASID allocator initialised with 32768 entries
[ 0.075630] Serial: AMBA PL011 UART driver
[ 0.093278] bcm2835-mbox 3f00b880.mailbox: mailbox enabled
[ 0.116623] raspberrypi-firmware soc:firmware: Attached to firmware from 2023-03-17T10:52:42,
variant start
[ 0.120640] raspberrypi-firmware soc:firmware: Firmware hash is
82f3750a65fadae9a38077e3c2e217ad158c8d54
[ 0.133991] KASLR enabled
[ 0.195902] bcm2835-dma 3f007000.dma: DMA legacy API manager, dmachans=0x1
[ 0.203030] SCSI subsystem initialized
[ 0.203401] usbcore: registered new interface driver usbfs
[ 0.203495] usbcore: registered new interface driver hub
[ 0.203603] usbcore: registered new device driver usb
[ 0.204279] usb_phy_generic phy: supply vcc not found, using dummy regulator
[ 0.204628] usb_phy_generic phy: dummy supplies not allowed for exclusive requests
[ 0.205070] pps_core: LinuxPPS API ver. 1 registered
[ 0.205089] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti
<giometti@linux.it>
[ 0.205132] PTP clock support registered
[ 0.206950] vgaarb: loaded
[ 0.208304] clocksource: Switched to clocksource arch_sys_counter
[ 0.209314] VFS: Disk quotas dquot_6.6.0
[ 0.209433] VFS: Dquot-cache hash table entries: 512 (order 0, 4096 bytes)
[ 0.209734] FS-Cache: Loaded
[ 0.210020] CacheFiles: Loaded
[ 0.226589] NET: Registered PF_INET protocol family
[ 0.227350] IP idsents hash table entries: 16384 (order: 5, 131072 bytes, linear)
[ 0.230004] tcp_listen_portaddr_hash hash table entries: 512 (order: 1, 8192 bytes, linear)
[ 0.230058] Table-perturb hash table entries: 65536 (order: 6, 262144 bytes, linear)
[ 0.230098] TCP established hash table entries: 8192 (order: 4, 65536 bytes, linear)
[ 0.230229] TCP bind hash table entries: 8192 (order: 6, 262144 bytes, linear)
[ 0.230606] TCP: Hash tables configured (established 8192 bind 8192)
[ 0.230857] UDP hash table entries: 512 (order: 2, 16384 bytes, linear)
[ 0.230927] UDP-Lite hash table entries: 512 (order: 2, 16384 bytes, linear)
[ 0.231279] NET: Registered PF_UNIX/PF_LOCAL protocol family
[ 0.232389] RPC: Registered named UNIX socket transport module.
[ 0.232411] RPC: Registered udp transport module.
[ 0.232429] RPC: Registered tcp transport module.
[ 0.232445] RPC: Registered tcp NFSv4.1 backchannel transport module.
[ 0.232484] PCI: CLS 0 bytes, default 64
[ 0.235569] hw perfevents: enabled with armv8_cortex_a53 PMU driver, 7 counters available
[ 0.235978] kvm [1]: IPA Size Limit: 40 bits
[ 0.237926] kvm [1]: Hyp mode initialized successfully
[ 2.011505] Initialise system trusted keyrings
[ 2.012119] workingset: timestamp_bits=46 max_order=18 bucket_order=0
[ 2.025496] zbud: loaded
[ 2.030184] NFS: Registering the id_resolver key type
[ 2.030235] Key type id_resolver registered
[ 2.030253] Key type id_legacy registered
[ 2.030480] nfs4filelayout_init: NFSv4 File Layout Driver Registering...
[ 2.030506] nfs4flexfilelayout_init: NFSv4 Flexfile Layout Driver Registering...
[ 2.032686] Key type asymmetric registered
[ 2.032714] Asymmetric key parser 'x509' registered
[ 2.032842] Block layer SCSI generic (bsg) driver version 0.4 loaded (major 247)
[ 2.033263] io scheduler mq-deadline registered
[ 2.033290] io scheduler kyber registered
[ 2.045362] simple-framebuffer 3eaa9000.framebuffer: framebuffer at 0x3eaa9000, 0x151800 bytes
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[ 2.045402] simple-framebuffer 3aaa9000.framebuffer: format=a8r8g8b8, mode=720x480x32,
linelength=2880
[ 2.046093] Console: switching to colour frame buffer device 90x30
[ 2.049232] simple-framebuffer 3aaa9000.framebuffer: fb0: simplefb registered!
[ 2.057299] Serial: 8250/16550 driver, 1 ports, IRQ sharing enabled
[ 2.061495] bcm2835-rng 3f104000.rng: hwrng registered
[ 2.062753] vc-mem: phys_addr:0x00000000 mem_base=0x3ec00000 mem_size:0x40000000(1024 MiB)
[ 2.065120] gpptomem-bcm2835 3f200000.gpiomem: Initialised: Registers at 0x3f200000
[ 2.085954] brd: module loaded
[ 2.100411] loop: module loaded
[ 2.101571] Loading iSCSI transport class v2.0-870.
[ 2.109164] usbcore: registered new interface driver r8152
[ 2.109294] usbcore: registered new interface driver lan78xx
[ 2.109409] usbcore: registered new interface driver smsc95xx
[ 2.110214] dwc_otg: version 3.00a 10-AUG-2012 (platform bus)
[ 2.839731] Core Release: 2.80a
[ 2.839757] Setting default values for core params
[ 2.839790] Finished setting default values for core params
[ 3.040337] Using Buffer DMA mode
[ 3.040354] Periodic Transfer Interrupt Enhancement - disabled
[ 3.040372] Multiprocessor Interrupt Enhancement - disabled
[ 3.040388] OTG VER PARAM: 0, OTG VER FLAG: 0
[ 3.040411] Dedicated Tx FIFOs mode

[ 3.045493] WARN::dwc_otg_hcd_init:1074: FIQ DMA bounce buffers: virt = fffffffc008459000 dma =
0x00000000df000000 len=9024
[ 3.045538] FIQ FSM acceleration enabled for :
Non-periodic Split Transactions
Periodic Split Transactions
High-Speed Isochronous Endpoints
Interrupt/Control Split Transaction hack enabled
[ 3.045561] dwc_otg: Microframe scheduler enabled

[ 3.045634] WARN::hcd_init_fiq:497: MPHI regs_base at fffffffc00806d000
[ 3.045735] dwc_otg 3f980000.usb: DWC OTG Controller
[ 3.045780] dwc_otg 3f980000.usb: new USB bus registered, assigned bus number 1
[ 3.045845] dwc_otg 3f980000.usb: irq 74, io mem 0x00000000
[ 3.045907] Init: Port Power? op_state=1
[ 3.045924] Init: Power Port (0)
[ 3.046469] usb usb1: New USB device found, idVendor=1d6b, idProduct=0002, bcdDevice= 6.01
[ 3.046498] usb usb1: New USB device strings: Mfr=3, Product=2, SerialNumber=1
[ 3.046522] usb usb1: Product: DWC OTG Controller
[ 3.046543] usb usb1: Manufacturer: Linux 6.1.21-v8+ dwc_otg_hcd
[ 3.046564] usb usb1: SerialNumber: 3f980000.usb
[ 3.047773] hub 1-0:1.0: USB hub found
[ 3.047871] hub 1-0:1.0: 1 port detected
[ 3.049248] dwc_otg: FIQ enabled
[ 3.049268] dwc_otg: NAK holdoff enabled
[ 3.049284] dwc_otg: FIQ split-transaction FSM enabled
[ 3.049320] Module dwc_common_port init
[ 3.050096] usbcore: registered new interface driver uas
[ 3.050265] usbcore: registered new interface driver usb-storage
[ 3.050630] mousedev: PS/2 mouse device common for all mice
[ 3.058101] sdhci: Secure Digital Host Controller Interface driver
[ 3.058125] sdhci: Copyright(c) Pierre Ossman
[ 3.059084] sdhci-pltfm: SDHCI platform and OF driver helper
[ 3.063148] ledtrig-cpu: registered to indicate activity on CPUs
[ 3.063723] hid: raw HID events driver (C) Jiri Kosina
[ 3.063992] usbcore: registered new interface driver usbhid
[ 3.064067] usbhid: USB HID core driver
[ 3.072743] NET: Registered PF_PACKET protocol family
[ 3.072947] Key type dns_resolver registered
[ 3.075309] registered taskstats version 1
[ 3.075426] Loading compiled-in X.509 certificates
[ 3.076850] Key type .fscrypt registered
[ 3.076873] Key type fscrypt-provisioning registered
[ 3.103779] uart-pl011 3f201000.serial: cts_event_workaround enabled
[ 3.104015] 3f201000.serial: ttyAMA0 at MMIO 0x3f201000 (irq = 99, base_baud = 0) is a PL011 rev2
[ 3.109206] bcm2835-aux-uart 3f215040.serial: there is not valid maps for state default
[ 3.110274] printk: console [ttyS0] disabled
[ 3.110457] 3f215040.serial: ttyS0 at MMIO 0x3f215040 (irq = 71, base_baud = 50000000) is a 16550
[ 3.110885] printk: console [ttyS0] enabled
[ 3.113289] bcm2835-wdt bcm2835-wdt: Broadcom BCM2835 watchdog timer
[ 3.113980] bcm2835-power bcm2835-power: Broadcom BCM2835 power domains driver
[ 3.117332] mmc-bcm2835 3f300000.mmcnr: mmc_debug:0 mmc_debug2:0
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[ 3.117362] mmc-bcm2835 3f300000.mmcnr: DMA channel allocated
[ 3.144786] sdhost: log_buf @ 000000007780c121 (c2922000)
[ 3.160571] Indeed it is in host mode hprt0 = 00021501
[ 3.195806] mmc0: sdhost-bcm2835 loaded - DMA enabled (>1)
[ 3.200849] of_cfs_init
[ 3.201036] of_cfs_init: OK
[ 3.202646] Waiting for root device PARTUUID=ecbbd781-02...
[ 3.230208] mmc0: host does not support reading read-only switch, assuming write-enable
[ 3.233574] mmc0: new high speed SDHC card at address 5048
[ 3.235273] mmcblk0: mmc0:5048 SD32G 29.7 GiB
[ 3.240945] mmcblk0: p1 p2
[ 3.241943] mmcblk0: mmc0:5048 SD32G 29.7 GiB (quirks 0x00004000)
[ 3.266897] EXT4-fs (mmcblk0p2): mounted filesystem with ordered data mode. Quota mode: none.
[ 3.267068] VFS: Mounted root (ext4 filesystem) readonly on device 179:2.
[ 3.275834] mmc1: new high speed SDIO card at address 0001
[ 3.277500] devtmpfs: mounted
[ 3.290210] Freeing unused kernel memory: 4160K
[ 3.290449] Run /sbin/init as init process
[ 3.290498]   with arguments:
[ 3.290514]     /sbin/init
[ 3.290531]     splash
[ 3.290547]   with environment:
[ 3.290563]     HOME=/
[ 3.290579]     TERM=linux
[ 3.352389] usb 1-1: new high-speed USB device number 2 using dwc_otg
[ 3.352667] Indeed it is in host mode hprt0 = 00001101
[ 3.564965] usb 1-1: New USB device found, idVendor=0424, idProduct=9514, bcdDevice= 2.00
[ 3.565013] usb 1-1: New USB device strings: Mfr=0, Product=0, SerialNumber=0
[ 3.566235] hub 1-1:1.0: USB hub found
[ 3.566438] hub 1-1:1.0: 5 ports detected
[ 3.856374] usb 1-1.1: new high-speed USB device number 3 using dwc_otg
[ 3.956942] usb 1-1.1: New USB device found, idVendor=0424, idProduct=ec00, bcdDevice= 2.00
[ 3.957011] usb 1-1.1: New USB device strings: Mfr=0, Product=0, SerialNumber=0
[ 3.960428] smsc95xx v2.0.0
[ 3.968480] systemd[1]: System time before build time, advancing clock.
[ 4.128186] SMSC LAN8700 usb-001:003:01: attached PHY driver (mii_bus:phy_addr=usb-001:003:01,
irq=184)
[ 4.129582] smsc95xx 1-1.1:1.0 eth0: register 'smc95xx' at usb-3f980000.usb-1.1, smc95xx USB 2.0
Ethernet, b8:27:eb:36:3f:6c
[ 4.258791] NET: Registered PF_INET6 protocol family
[ 4.261915] Segment Routing with IPv6
[ 4.261995] In-situ OAM (IOAM) with IPv6
[ 4.340796] systemd[1]: systemd 247.3-7+deb11u4 running in system mode. (+PAM +AUDIT +SELINUX +IMA
+APPARMOR +SMACK +SYSVINIT +UTMP +LIBCRYPTSETUP +GCRYPT +GNUTLS +ACL +XZ +LZ4 +ZSTD +SECCOMP +BLKID
+ELFUTILS +KMOD +IDN2 -IDN +PCRE2 default-hierarchy=unified)
[ 4.342357] systemd[1]: Detected architecture arm64.
[ 4.353156] systemd[1]: Set hostname to <raspberrypi>.
[ 5.393148] systemd[1]: /lib/systemd/system/plmouth-start.service:16: Unit configured to use
KillMode=none. This is unsafe, as it disables systemd's process lifecycle management for the service.
Please update your service to use a safer KillMode=, such as 'mixed' or 'control-group'. Support for
KillMode=none is deprecated and will eventually be removed.
[ 5.655582] systemd[1]: Queued start job for default target Graphical Interface.
[ 5.674859] systemd[1]: Created slice system-getty.slice.
[ 5.677102] systemd[1]: Created slice system-modprobe.slice.
[ 5.678764] systemd[1]: Created slice system-serial\x2dgetty.slice.
[ 5.680458] systemd[1]: Created slice system-systemd\x2dfscck.slice.
[ 5.681808] systemd[1]: Created slice User and Session Slice.
[ 5.682626] systemd[1]: Started Forward Password Requests to Wall Directory Watch.
[ 5.684382] systemd[1]: Set up automount Arbitrary Executable File Formats File System Automount
Point.
[ 5.685172] systemd[1]: Reached target Slices.
[ 5.685367] systemd[1]: Reached target Swap.
[ 5.686794] systemd[1]: Listening on Syslog Socket.
[ 5.687868] systemd[1]: Listening on fsck to fsckd communication Socket.
[ 5.688558] systemd[1]: Listening on initctl Compatibility Named Pipe.
[ 5.690527] systemd[1]: Listening on Journal Audit Socket.
[ 5.691714] systemd[1]: Listening on Journal Socket (/dev/log).
[ 5.693361] systemd[1]: Listening on Journal Socket.
[ 5.696780] systemd[1]: Listening on udev Control Socket.
[ 5.698134] systemd[1]: Listening on udev Kernel Socket.
[ 5.699645] systemd[1]: Condition check resulted in Huge Pages File System being skipped.
[ 5.721088] systemd[1]: Mounting POSIX Message Queue File System...
[ 5.728109] systemd[1]: Mounting RPC Pipe File System...
[ 5.737014] systemd[1]: Mounting Kernel Debug File System...
[ 5.745904] systemd[1]: Mounting Kernel Trace File System...
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[ 5.747034] systemd[1]: Condition check resulted in Kernel Module supporting RPCSEC_GSS being
skipped.
[ 5.757286] systemd[1]: Starting Restore / save the current clock...
[ 5.765179] systemd[1]: Starting Set the console keyboard layout...
[ 5.773906] systemd[1]: Starting Create list of static device nodes for the current kernel...
[ 5.782269] systemd[1]: Starting Load Kernel Module configfs...
[ 5.794585] systemd[1]: Starting Load Kernel Module drm...
[ 5.809492] systemd[1]: Starting Load Kernel Module fuse...
[ 5.814282] systemd[1]: Condition check resulted in Set Up Additional Binary Formats being
skipped.
[ 5.822503] systemd[1]: Starting File System Check on Root Device...
[ 5.838601] systemd[1]: Starting Journal Service...
[ 5.854961] systemd[1]: Starting Load Kernel Modules...
[ 5.864093] systemd[1]: Starting Coldplug All udev Devices...
[ 5.898139] systemd[1]: Mounted POSIX Message Queue File System.
[ 5.899378] systemd[1]: Mounted RPC Pipe File System.
[ 5.900718] systemd[1]: Mounted Kernel Debug File System.
[ 5.901974] systemd[1]: Mounted Kernel Trace File System.
[ 5.905915] systemd[1]: Finished Restore / save the current clock.
[ 5.910263] systemd[1]: Finished Create list of static device nodes for the current kernel.
[ 5.913736] systemd[1]: modprobe@configfs.service: Succeeded.
[ 5.916052] systemd[1]: Finished Load Kernel Module configfs.
[ 5.951366] fuse: init (API version 7.37)
[ 5.965058] systemd[1]: Mounting Kernel Configuration File System...
[ 5.969804] systemd[1]: modprobe@fuse.service: Succeeded.
[ 5.978933] systemd[1]: Finished Load Kernel Module fuse.
[ 5.989448] systemd[1]: Mounted Kernel Configuration File System.
[ 6.003662] systemd[1]: Mounting FUSE Control File System...
[ 6.020775] i2c_dev: i2c /dev entries driver
[ 6.024060] systemd[1]: Started File System Check Daemon to report status.
[ 6.041135] systemd[1]: Finished Load Kernel Modules.
[ 6.077849] systemd[1]: Starting Apply Kernel Variables...
[ 6.088193] systemd[1]: Mounted FUSE Control File System.
[ 6.139063] systemd[1]: modprobe@drm.service: Succeeded.
[ 6.141808] systemd[1]: Finished Load Kernel Module drm.
[ 6.207837] systemd[1]: Finished Apply Kernel Variables.
[ 6.262691] systemd[1]: Finished File System Check on Root Device.
[ 6.296202] systemd[1]: Starting Remount Root and Kernel File Systems...
[ 6.344584] systemd[1]: Started Journal Service.
[ 6.532855] EXT4-fs (mmcblk0p2): re-mounted. Quota mode: none.
[ 6.642127] systemd-journald[140]: Received client request to flush runtime journal.
[ 6.674924] systemd-journald[140]: File
/var/log/journal/54561d4fcc8a4f9d8e97e4a7d7762e2f/system.journal corrupted or uncleanly shut down,
renaming and replacing.
[ 8.349799] vc_sm_cma: module is from the staging directory, the quality is unknown, you have been
warned.
[ 8.353455] bcm2835_vc_sm_cma_probe: Videocore shared memory driver
[ 8.353511] [vc_sm_connected_init]: start
[ 8.372004] [vc_sm_connected_init]: installed successfully
[ 8.375821] mc: Linux media interface: v0.10
[ 8.517380] videodev: Linux video capture interface: v2.00
[ 8.650739] bcm2835_mmal_vchiq: module is from the staging directory, the quality is unknown, you
have been warned.
[ 8.672655] bcm2835_isp: module is from the staging directory, the quality is unknown, you have
been warned.
[ 8.683945] bcm2835_v4l2: module is from the staging directory, the quality is unknown, you have
been warned.
[ 8.702198] bcm2835-isp bcm2835-isp: Device node output[0] registered as /dev/video13
[ 8.703281] bcm2835-isp bcm2835-isp: Device node capture[0] registered as /dev/video14
[ 8.704378] bcm2835-isp bcm2835-isp: Device node capture[1] registered as /dev/video15
[ 8.707341] bcm2835-isp bcm2835-isp: Device node stats[2] registered as /dev/video16
[ 8.707405] bcm2835-isp bcm2835-isp: Register output node 0 with media controller
[ 8.707443] bcm2835-isp bcm2835-isp: Register capture node 1 with media controller
[ 8.707474] bcm2835-isp bcm2835-isp: Register capture node 2 with media controller
[ 8.707525] bcm2835-isp bcm2835-isp: Register capture node 3 with media controller
[ 8.715792] bcm2835-isp bcm2835-isp: Device node output[0] registered as /dev/video20
[ 8.718858] bcm2835-isp bcm2835-isp: Device node capture[0] registered as /dev/video21
[ 8.737264] bcm2835-isp bcm2835-isp: Device node capture[1] registered as /dev/video22
[ 8.738364] bcm2835-isp bcm2835-isp: Device node stats[2] registered as /dev/video23
[ 8.738449] bcm2835-isp bcm2835-isp: Register output node 0 with media controller
[ 8.738486] bcm2835-isp bcm2835-isp: Register capture node 1 with media controller
[ 8.738518] bcm2835-isp bcm2835-isp: Register capture node 2 with media controller
[ 8.738549] bcm2835-isp bcm2835-isp: Register capture node 3 with media controller
[ 8.740986] bcm2835-isp bcm2835-isp: Loaded V4L2 bcm2835-isp
```

```
[ 8.752423] snd_bcm2835: module is from the staging directory, the quality is unknown, you have
been warned.
[ 8.803320] bcm2835_audio bcm2835_audio: card created with 8 channels
[ 8.820901] bcm2835_codec: module is from the staging directory, the quality is unknown, you have
been warned.
[ 8.854150] bcm2835-codec bcm2835-codec: Device registered as /dev/video10
[ 8.854235] bcm2835-codec bcm2835-codec: Loaded V4L2 decode
[ 8.861256] bcm2835-codec bcm2835-codec: Device registered as /dev/video11
[ 8.861335] bcm2835-codec bcm2835-codec: Loaded V4L2 encode
[ 8.889308] bcm2835-codec bcm2835-codec: Device registered as /dev/video12
[ 8.889393] bcm2835-codec bcm2835-codec: Loaded V4L2 isp
[ 8.904630] bcm2835-codec bcm2835-codec: Device registered as /dev/video18
[ 8.904717] bcm2835-codec bcm2835-codec: Loaded V4L2 image_fx
[ 8.939363] bcm2835-codec bcm2835-codec: Device registered as /dev/video31
[ 8.939483] bcm2835-codec bcm2835-codec: Loaded V4L2 encode_image
[ 9.605090] cfg80211: Loading compiled-in X.509 certificates for regulatory database
[ 9.654603] cfg80211: Loaded X.509 cert 'sforshee: 00b28ddf47aef9cea7'
[ 9.675959] cfg80211: loaded regulatory.db is malformed or signature is missing/invalid
[ 9.781358] Console: switching to colour dummy device 80x25
[ 9.795145] vc4-drm soc:gpu: bound 3f400000.hvs (ops vc4_hvs_ops [vc4])
[ 9.805878] Registered IR keymap rc-cec
[ 9.806189] rc rc0: vc4-hdmi as /devices/platform/soc/3f902000.hdmi/rc/rc0
[ 9.806599] input: vc4-hdmi as /devices/platform/soc/3f902000.hdmi/rc/rc0/input0
[ 9.873333] vc4-drm soc:gpu: bound 3f902000.hdmi (ops vc4_hdmi_ops [vc4])
[ 9.874058] vc4-drm soc:gpu: bound 3f004000.txp (ops vc4_txp_ops [vc4])
[ 9.874581] vc4-drm soc:gpu: bound 3f206000.pixelvalve (ops vc4_crtc_ops [vc4])
[ 9.875053] vc4-drm soc:gpu: bound 3f207000.pixelvalve (ops vc4_crtc_ops [vc4])
[ 9.875549] vc4-drm soc:gpu: bound 3f807000.pixelvalve (ops vc4_crtc_ops [vc4])
[ 9.875937] vc4-drm soc:gpu: bound 3fc00000.v3d (ops vc4_v3d_ops [vc4])
[ 9.891482] [drm] Initialized vc4 0.0.0 20140616 for soc:gpu on minor 0
[ 9.893847] vc4-drm soc:gpu: [drm] Cannot find any crtc or sizes
[ 9.902356] brcmfmac: F1 signature read @0x18000000=0x1541a9a6
[ 9.952948] brcmfmac: brcmf_fw_alloc_request: using brcm/brcmfmac43430-sdio for chip BCM43430/1
[ 9.953935] usbcore: registered new interface driver brcmfmac
[ 10.310461] brcmfmac: brcmf_c_preinit_dcmts: Firmware: BCM43430/1 wl0: Jul 19 2021 03:24:18
version 7.45.98 (TOB) (56df937 CY) FWID 01-8e14b897
[ 12.372262] input: BRLTTY 6.3 Linux Screen Driver Keyboard as /devices/virtual/input/input1
[ 12.529843] Process accounting resumed
[ 13.019153] 8021q: 802.1Q VLAN Support v1.8
[ 13.097900] uart-pl011 3f201000.serial: no DMA platform data
[ 13.159904] Adding 102396k swap on /var/swap. Priority:-2 extents:1 across:102396k SSFS
[ 13.878206] brcmfmac: brcmf_cfg80211_set_power_mgmt: power save enabled
[ 14.353359] smsc95xx 1-1.1:1.0 eth0: hardware isn't capable of remote wakeup
[ 14.358629] smsc95xx 1-1.1:1.0 eth0: Link is Down
```

```
ATOP - raspberrypi      2023/11/15  19:55:14      -----      15s elapsed
PRC | sys   12.03s | user   9.32s | #proc  161 | #zombie  0 | #exit   3 |
CPU | sys   115% | user   93% | irq     3% | idle    151% | wait    38% |
cpu | sys    34% | user   23% | irq     1% | idle    34% | cpu000 w 8% |
cpu | sys    28% | user   28% | irq     1% | idle    32% | cpu001 w 12% |
cpu | sys    28% | user   21% | irq     0% | idle    42% | cpu003 w 9% |
cpu | sys    25% | user   21% | irq     1% | idle    44% | cpu002 w 9% |
CPL | avg1   1.77 | avg5   0.38 | avg15  0.12 | csw    53435 | intr  137259 |
MEM | tot   909.6M | free  659.5M | cache 104.9M | buff   19.5M | slab   40.3M |
SWP | tot   100.0M | free  100.0M | swcac  0.0M | vmcom  355.3M | vmlim  554.8M |
DSK |      mmcblk0 | busy   62% | read   3582 | write   43 | avio  2.61 ms |
NET | transport | tcp_i   4 | tcp_o   4 | udpi    7 | udpo    7 |
NET | network   | ip_i   15 | ip_o   15 | ipfrw   0 | deliv  13 |
NET | lo      ---- | pcki   15 | pcko   15 | si     0 Kbps | so     0 Kbps |
*** system and process activity since boot ***
PID SYSCPU USRCPU RDELAY VGROW  RGROW  RDSK  WRDSK  CPU CMD
  1  2.11s  1.44s  0.84s 17760K 10156K 52799K 28K 23% systemd
  9  1.70s  0.00s  0.04s    OK    OK    OK  11% kworker/u8:0-e
173  0.38s  1.17s  2.29s 22124K 6248K  952K  0K 10% systemd-udev
140  0.55s  0.41s  0.33s 32724K 10536K 1072K 7040K 6% systemd-journ
178  0.34s  0.54s  1.39s 22872K 7756K 2244K  0K 6% systemd-udev
182  0.36s  0.51s  1.52s 21812K 6812K 1748K  0K 6% systemd-udev
175  0.29s  0.44s  1.42s 21980K 6808K 1616K  0K 5% systemd-udev
185  0.31s  0.41s  1.61s 24540K 7544K 1212K  0K 5% systemd-udev
181  0.36s  0.34s  0.93s 25508K 7536K 6476K  0K 5% systemd-udev
177  0.26s  0.41s  1.16s 23908K 6604K  40K  0K 4% systemd-udev
179  0.24s  0.42s  1.18s 21808K 5684K 1232K  0K 4% systemd-udev
343  0.28s  0.33s  0.26s 88100K 3428K  108K  0K 4% systemd-timesy
```

180	0.26s	0.30s	1.03s	23936K	5996K	312K	0K	4%	systemd-udev
184	0.22s	0.30s	1.11s	23916K	6400K	1200K	0K	3%	systemd-udev
183	0.23s	0.29s	1.10s	23916K	5384K	1636K	0K	3%	systemd-udev
521	0.22s	0.23s	0.21s	386.5M	12816K	4656K	0K	3%	udisksd
516	0.20s	0.24s	0.30s	14104K	5944K	260K	0K	3%	systemd-logind
579	0.25s	0.12s	0.08s	7572K	6628K	796K	16K	2%	atop
550	0.12s	0.23s	0.11s	15856K	9364K	5364K	52K	2%	python
443	0.12s	0.19s	0.28s	8128K	4052K	796K	0K	2%	dbus-daemon
100	0.27s	0.00s	0.01s	0K	0K	0K	0K	2%	kworker/1:1H+k
49	0.26s	0.00s	0.02s	0K	0K	0K	0K	2%	kworker/3:1H-k
39	0.22s	0.00s	0.09s	0K	0K	552K	0K	1%	kworker/u8:1-e
427	0.10s	0.10s	0.05s	490.7M	9248K	5744K	4K	1%	brltty
601	0.09s	0.09s	0.05s	27580K	13084K	5840K	4K	1%	vncserver-x11-
599	0.07s	0.10s	0.09s	230.7M	8072K	1248K	4K	1%	lightdm
460	0.07s	0.10s	0.11s	231.9M	7824K	3356K	0K	1%	polkitd
98	0.17s	0.00s	0.01s	0K	0K	0K	0K	1%	kworker/0:1H-m
614	0.07s	0.09s	0.09s	237.7M	9196K	4164K	0K	1%	ModemManager
59	0.16s	0.00s	0.08s	0K	0K	0K	0K	1%	kworker/3:2-ev
97	0.15s	0.00s	0.01s	0K	0K	0K	0K	1%	kworker/2:1H-k
588	0.06s	0.08s	0.07s	29564K	7908K	3992K	8K	1%	cupsd
481	0.09s	0.04s	0.28s	215.7M	3304K	948K	176K	1%	rsyslogd
150	0.13s	0.00s	0.27s	0K	0K	552K	0K	1%	kworker/1:3-ev
15	0.12s	0.00s	0.23s	0K	0K	0K	0K	1%	rcu_preempt
607	0.03s	0.08s	0.01s	13636K	6428K	0K	0K	1%	sshd
535	0.10s	0.01s	0.07s	2120K	1472K	988K	0K	1%	hciattach
621	0.07s	0.02s	0.04s	112.8M	9260K	4996K	16K	1%	Xorg
650	0.08s	0.01s	0.01s	6960K	6560K	0K	0K	1%	atop
627	0.04s	0.04s	0.01s	169.9M	9564K	1936K	0K	1%	cups-browsed
446	0.05s	0.03s	0.20s	17764K	6212K	8K	0K	1%	(crub_all)
438	0.05s	0.03s	0.05s	7068K	2836K	480K	0K	1%	avahi-daemon
74	0.08s	0.00s	0.00s	0K	0K	0K	0K	1%	kworker/u9:0-b
500	0.05s	0.02s	0.11s	12168K	4340K	868K	0K	0%	sudo
523	0.04s	0.02s	0.11s	13576K	4780K	2848K	0K	0%	wpa_supplicant
393	0.03s	0.03s	0.01s	13876K	3172K	28K	0K	0%	systemd-rfkill
48	0.06s	0.00s	0.28s	0K	0K	0K	0K	0%	kworker/3:1-ev
54	0.06s	0.00s	0.16s	0K	0K	4K	0K	0%	kworker/2:1-ev
157	0.02s	0.03s	0.02s	16848K	3188K	24K	0K	0%	systemd-fsckd
7	0.04s	0.00s	0.17s	0K	0K	0K	0K	0%	kworker/0:0-ev
53	0.04s	0.00s	0.06s	0K	0K	0K	0K	0%	kworker/1:1-ev
99	0.04s	0.00s	0.08s	0K	0K	32K	0K	0%	kworker/1:2-ev
104	0.02s	0.02s	0.00s	0K	0K	0K	0K	0%	kworker/2:2H-k
626	0.02s	0.01s	0.00s	16644K	5800K	32K	0K	0%	dbus
442	0.02s	0.01s	0.02s	6692K	2404K	764K	0K	0%	cron
597	0.03s	0.00s	0.01s	6956K	2304K	748K	0K	0%	vncserver-x11-
441	0.03s	0.00s	0.04s	1948K	72K	0K	0K	0%	atopacctd
278	0.03s	0.00s	0.15s	0K	0K	0K	0K	0%	kworker/2:3-ev
517	0.02s	0.00s	0.00s	5480K	2388K	72K	0K	0%	thd
589	0.02s	0.00s	0.00s	6016K	1276K	52K	0K	0%	epmd
458	0.02s	0.00s	0.04s	2060K	1260K	172K	0K	0%	btuart
2	0.02s	0.00s	0.00s	0K	0K	0K	0K	0%	kthreadd
20	0.02s	0.00s	0.01s	0K	0K	0K	0K	0%	ksoftirqd/1
608	0.00s	0.01s	0.00s	13992K	3748K	0K	0K	0%	wpa_supplicant
538	0.01s	0.00s	0.01s	3048K	1828K	1564K	0K	0%	dhcpcd
584	0.01s	0.00s	0.03s	92288K	92K	0K	0K	0%	rngd
14	0.01s	0.00s	0.06s	0K	0K	0K	0K	0%	ksoftirqd/0
25	0.00s	0.01s	0.04s	0K	0K	0K	0K	0%	ksoftirqd/2
30	0.00s	0.01s	0.04s	0K	0K	0K	0K	0%	ksoftirqd/3
33	0.01s	0.00s	0.00s	0K	0K	0K	0K	0%	kdevtmpfs
37	0.01s	0.00s	0.04s	0K	0K	0K	0K	0%	kworker/0:2-cg
106	0.01s	0.00s	0.01s	0K	0K	0K	0K	0%	kworker/0:2H
124	0.01s	0.00s	0.01s	0K	0K	0K	0K	0%	kworker/3:2H
652	0.00s	0.01s	-	0K	0K	-	-	0%	<crda>
622	0.00s	0.00s	0.00s	17764K	2840K	0K	0K	0%	(agetty)
624	0.00s	0.00s	0.00s	17764K	2840K	0K	0K	0%	(agetty)
649	0.00s	0.00s	0.00s	5236K	608K	0K	0K	0%	timeout
648	0.00s	0.00s	0.00s	2060K	524K	0K	0K	0%	sh
452	0.00s	0.00s	0.00s	6888K	312K	0K	0K	0%	avahi-daemon
3	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_gp
4	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_par_gp
5	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	slub_flushwq
6	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	netns
8	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/0:0H-m
10	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	mm_percpu_wq
11	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_tasks_kthr
12	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_tasks_rude

13	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% rcu_tasks_trac
16	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% migration/0
17	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cpuhp/0
18	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cpuhp/1
19	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% migration/1
21	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/1:0-ev
22	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/1:0H-m
23	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cpuhp/2
24	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% migration/2
26	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/2:0-ev
27	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/2:0H-k
28	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cpuhp/3
29	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% migration/3
31	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/3:0-ev
32	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/3:0H-e
34	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% inet_frag_wq
35	0.00s	0.00s	0.05s	OK	OK	OK	OK	0% kworker/0:1-ev
36	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kauditd
38	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% khungtaskd
40	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% oom_reaper
41	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% writeback
42	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kcompactd0
43	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kintegrityd
44	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kblockd
45	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% blkcg_punt_bio
46	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% watchdogd
47	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u8:2-e
50	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% rpciod
51	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% xprtiod
52	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u8:3
55	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kswapd0
56	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nfsiod
57	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kthrotld
62	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% hwrng
63	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% iscsi_conn_cle
64	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nvme-wq
65	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nvme-reset-wq
66	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nvme-delete-wq
67	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% dwc_otg
68	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% DWC Notificati
69	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% uas
70	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-slot/0
71	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-recy/0
72	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-sync/0
73	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% zswap-shrink
95	0.00s	0.00s	0.01s	OK	OK	OK	OK	0% kworker/2:2-ev
96	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmc_complete
101	0.00s	0.00s	0.00s	OK	OK	OK	172K	0% jbd2/mmcblk0p2
102	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% ext4-rsv-conve
103	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/1:2H
107	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% irq/184-usb-00
108	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mld
109	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% ipv6_addrconf
174	0.00s	0.00s	0.06s	OK	OK	OK	OK	0% kworker/0:3-ev
196	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-keep/0
197	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% SMIO
223	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% spi0
228	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
230	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
244	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
245	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
246	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
248	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
249	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
299	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cfg80211
309	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cec-vc4-hdmi
310	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% irq/82-vc4 hdm
319	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc0
320	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc1
321	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc2
322	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc3
323	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% brcmf_wq/mmc1:
324	0.00s	0.00s	0.02s	OK	OK	OK	OK	0% brcmf_wdog/mmc
346	0.00s	0.00s	0.01s	OK	OK	OK	OK	0% kworker/3:3-ev
350	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u9:1


```
653 0.00s 0.00s - OK OK - - 0% <dhcpcd-run-h>
654 0.00s 0.00s - OK OK - - 0% <cached_setup>
```

```
ATOP - raspberrypi      2023/11/15 19:55:16 ----- 17s elapsed
PRC | sys 12.37s | user 9.62s | #proc 160 | #zombie 0 | #exit 1 |
CPU | sys 105% | user 85% | irq 3% | idle 159% | wait 48% |
cpu | sys 31% | user 21% | irq 1% | idle 36% | cpu000 w 11% |
cpu | sys 25% | user 26% | irq 1% | idle 33% | cpu001 w 15% |
cpu | sys 26% | user 19% | irq 0% | idle 46% | cpu003 w 9% |
cpu | sys 23% | user 19% | irq 1% | idle 44% | cpu002 w 14% |
CPL | avg1 1.77 | avg5 0.38 | avg15 0.12 | csw 59091 | intr 159611 |
MEM | tot 909.6M | free 615.6M | cache 142.1M | buff 19.5M | slab 40.8M |
SWP | tot 100.0M | free 100.0M | swcac 0.0M | vmcom 376.8M | vmlim 554.8M |
DSK | mmcbblk0 | busy 66% | read 3983 | write 43 | avio 2.83 ms |
NET | transport | tcpi 6 | tcpo 6 | udpi 9 | udpo 9 |
NET | network | ipi 24 | ipo 29 | ipfrw 0 | deliv 21 |
NET | wlan0 0% | pcki 6 | pcko 13 | si 0 Kbps | so 0 Kbps |
NET | lo ---- | pcki 19 | pcko 19 | si 0 Kbps | so 0 Kbps |
```

*** system and process activity since boot ***

PID	TID	RDSK	WRDSK	WCANCL	DSK	CMD
1	-	52883K	32K	OK	31%	systemd
621	-	40176K	16K	OK	23%	Xorg
140	-	1072K	7128K	OK	5%	systemd-journald
181	-	6476K	0K	OK	4%	systemd-udevd
601	-	5840K	4K	OK	3%	vncserver-x11-
427	-	5744K	4K	OK	3%	brltty
550	-	5364K	68K	OK	3%	python
521	-	4656K	0K	OK	3%	udisksd
614	-	4508K	0K	OK	3%	ModemManager
588	-	3992K	8K	OK	2%	cupsd
460	-	3356K	0K	OK	2%	polkitd
523	-	2848K	0K	OK	2%	wpa_supplicant
178	-	2244K	0K	OK	1%	systemd-udevd
627	-	1936K	0K	OK	1%	cups-browsed
182	-	1748K	0K	OK	1%	systemd-udevd
183	-	1636K	0K	OK	1%	systemd-udevd
175	-	1616K	0K	OK	1%	systemd-udevd
538	-	1572K	0K	OK	1%	dhcpcd
655	-	1364K	0K	OK	1%	vncagent
599	-	1248K	4K	OK	1%	lightdm
179	-	1232K	0K	OK	1%	systemd-udevd
185	-	1212K	0K	OK	1%	systemd-udevd
184	-	1200K	0K	OK	1%	systemd-udevd
481	-	948K	180K	OK	1%	rsyslogd
535	-	1004K	0K	OK	1%	hciattach
173	-	952K	0K	OK	1%	systemd-udevd
500	-	868K	0K	OK	1%	sudo
579	-	796K	16K	OK	0%	atop
443	-	796K	0K	OK	0%	dbus-daemon
442	-	764K	0K	OK	0%	cron
597	-	748K	0K	OK	0%	vncserver-x11-
39	-	552K	0K	OK	0%	kworker/u8:1-e
150	-	552K	0K	OK	0%	kworker/1:3-mm
438	-	480K	0K	OK	0%	avahi-daemon
180	-	312K	0K	OK	0%	systemd-udevd
516	-	260K	0K	OK	0%	systemd-logind
458	-	172K	0K	OK	0%	btuart
101	-	0K	172K	OK	0%	jbd2/mmcblk0p2
343	-	108K	0K	OK	0%	systemd-timesy
517	-	72K	0K	OK	0%	thd
589	-	52K	0K	OK	0%	epmd
177	-	40K	0K	OK	0%	systemd-udevd
99	-	32K	0K	OK	0%	kworker/1:2-ev
626	-	32K	0K	OK	0%	dbus
157	-	24K	0K	OK	0%	systemd-fsckd
54	-	4K	0K	OK	0%	kworker/2:1-ev
9	-	0K	0K	OK	0%	kworker/u8:0-e
100	-	0K	0K	OK	0%	kworker/1:1H-m
49	-	0K	0K	OK	0%	kworker/3:1H-m
59	-	0K	0K	OK	0%	kworker/3:2-ev
98	-	0K	0K	OK	0%	kworker/0:1H-m
97	-	0K	0K	OK	0%	kworker/2:1H-k
15	-	0K	0K	OK	0%	rcu_preempt

607	-	OK	OK	OK	0% sshd
662	-	OK	OK	OK	0% atop
74	-	OK	OK	OK	0% kworker/u9:0-b
48	-	OK	OK	OK	0% kworker/3:1-ev
104	-	OK	OK	OK	0% kworker/2:2H-k
7	-	OK	OK	OK	0% kworker/0:0-rc
53	-	OK	OK	OK	0% kworker/1:1-ev
278	-	OK	OK	OK	0% kworker/2:3-ev
441	-	OK	OK	OK	0% atopacctd
2	-	OK	OK	OK	0% kthreadd
20	-	OK	OK	OK	0% ksoftirqd/1
608	-	OK	OK	OK	0% wpa_supplicant
584	-	OK	OK	OK	0% rngd
14	-	OK	OK	OK	0% ksoftirqd/0
25	-	OK	OK	OK	0% ksoftirqd/2
30	-	OK	OK	OK	0% ksoftirqd/3
33	-	OK	OK	OK	0% kdevtmpfs
35	-	OK	OK	OK	0% kworker/0:1-ev
37	-	OK	OK	OK	0% kworker/0:2-cg
106	-	OK	OK	OK	0% kworker/0:2H
124	-	OK	OK	OK	0% kworker/3:2H
622	-	OK	OK	OK	0% (agetty)
624	-	OK	OK	OK	0% (agetty)
661	-	OK	OK	OK	0% timeout
660	-	OK	OK	OK	0% sh
452	-	OK	OK	OK	0% avahi-daemon
3	-	OK	OK	OK	0% rcu_gp
4	-	OK	OK	OK	0% rcu_par_gp
5	-	OK	OK	OK	0% slub_flushwq
6	-	OK	OK	OK	0% netns
8	-	OK	OK	OK	0% kworker/0:0H-m
10	-	OK	OK	OK	0% mm_percpu_wq
11	-	OK	OK	OK	0% rcu_tasks_kthr
12	-	OK	OK	OK	0% rcu_tasks_rude
13	-	OK	OK	OK	0% rcu_tasks_trac
16	-	OK	OK	OK	0% migration/0
17	-	OK	OK	OK	0% cpuhp/0
18	-	OK	OK	OK	0% cpuhp/1
19	-	OK	OK	OK	0% migration/1
21	-	OK	OK	OK	0% kworker/1:0-ev
22	-	OK	OK	OK	0% kworker/1:0H-m
23	-	OK	OK	OK	0% cpuhp/2
24	-	OK	OK	OK	0% migration/2
26	-	OK	OK	OK	0% kworker/2:0-ev
27	-	OK	OK	OK	0% kworker/2:0H-k
28	-	OK	OK	OK	0% cpuhp/3
29	-	OK	OK	OK	0% migration/3
31	-	OK	OK	OK	0% kworker/3:0-ev
32	-	OK	OK	OK	0% kworker/3:0H-e
34	-	OK	OK	OK	0% inet_frag_wq
36	-	OK	OK	OK	0% kauditd
38	-	OK	OK	OK	0% khungtaskd
40	-	OK	OK	OK	0% oom_reaper
41	-	OK	OK	OK	0% writeback
42	-	OK	OK	OK	0% kcompactd0
43	-	OK	OK	OK	0% kintegrityd
44	-	OK	OK	OK	0% kblockd
45	-	OK	OK	OK	0% blkcg_punt_bio
46	-	OK	OK	OK	0% watchdogd
47	-	OK	OK	OK	0% kworker/u8:2-e
50	-	OK	OK	OK	0% rpciod
51	-	OK	OK	OK	0% xprtiod
52	-	OK	OK	OK	0% kworker/u8:3
55	-	OK	OK	OK	0% kswapd0
56	-	OK	OK	OK	0% nfsiod
57	-	OK	OK	OK	0% kthrotld
62	-	OK	OK	OK	0% hwrng
63	-	OK	OK	OK	0% iscsi_conn_cle
64	-	OK	OK	OK	0% nvme-wq
65	-	OK	OK	OK	0% nvme-reset-wq
66	-	OK	OK	OK	0% nvme-delete-wq
67	-	OK	OK	OK	0% dwc_otg
68	-	OK	OK	OK	0% DWC Notificati
69	-	OK	OK	OK	0% uas
70	-	OK	OK	OK	0% vchiq-slot/0

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71      -      OK      OK      OK      0% vchiq-recy/0
72      -      OK      OK      OK      0% vchiq-sync/0
73      -      OK      OK      OK      0% zswap-shrink
95      -      OK      OK      OK      0% kworker/2:2-ev
96      -      OK      OK      OK      0% mmc_complete
102     -      OK      OK      OK      0% ext4-rsv-conve
103     -      OK      OK      OK      0% kworker/1:2H
107     -      OK      OK      OK      0% irq/184-usb-00
108     -      OK      OK      OK      0% mld
109     -      OK      OK      OK      0% ipv6_addrconf
174     -      OK      OK      OK      0% kworker/0:3-ev
196     -      OK      OK      OK      0% vchiq-keep/0
197     -      OK      OK      OK      0% SMIO
223     -      OK      OK      OK      0% spi0
228     -      OK      OK      OK      0% mmal-vchiq
230     -      OK      OK      OK      0% mmal-vchiq
244     -      OK      OK      OK      0% mmal-vchiq
245     -      OK      OK      OK      0% mmal-vchiq
246     -      OK      OK      OK      0% mmal-vchiq
248     -      OK      OK      OK      0% mmal-vchiq
249     -      OK      OK      OK      0% mmal-vchiq
299     -      OK      OK      OK      0% cfg80211
309     -      OK      OK      OK      0% cec-vc4-hdmi
310     -      OK      OK      OK      0% irq/82-vc4 hdm
319     -      OK      OK      OK      0% card0-crtc0
320     -      OK      OK      OK      0% card0-crtc1
321     -      OK      OK      OK      0% card0-crtc2
322     -      OK      OK      OK      0% card0-crtc3
323     -      OK      OK      OK      0% brcmf_wq/mmc1:
324     -      OK      OK      OK      0% brcmf_wdog/mmc
346     -      OK      OK      OK      0% kworker/3:3-ev
350     -      OK      OK      OK      0% kworker/u9:1
663     -      -      -      -      0% <atop>

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ATOP - raspberrypi      2023/11/15 19:55:18      -----      19s elapsed
PRC | sys      13.18s | user  10.56s | #proc   169 | #zombie    0 | #exit     4 |
CPU | sys      100% | user   82% | irq      2% | idle     167% | wait     49% |
cpu | sys       29% | user   20% | irq      1% | idle     39% | cpu000 w 11% |
cpu | sys       24% | user   24% | irq      1% | idle     37% | cpu001 w 15% |
cpu | sys       25% | user   18% | irq      0% | idle     47% | cpu003 w 10% |
cpu | sys       22% | user   19% | irq      0% | idle     45% | cpu002 w 13% |
CPL | avgl      1.77 | avg5    0.38 | avgl5   0.12 | csw     66202 | intr 181455 |
MEM | tot     909.6M | free  572.7M | cache 156.7M | buff    20.3M | slab   42.7M |
SWP | tot     100.0M | free  100.0M | swcac   0.0M | vmcom  561.6M | vmlim  554.8M |
DSK |      mmcblk0 | busy   66% | read   4436 | write    52 | avio  2.80 ms |
NET | transport | tcpi     8 | tcpo     8 | udpi    24 | udpo    11 |
NET | network   | ipi     49 | ipo     39 | ipfrw    0 | deliv   40 |
NET | wlan0      0% | pcki    29 | pcko    21 | si      1 Kbps | so      1 Kbps |
NET | lo         --- | pcki    22 | pcko    22 | si      0 Kbps | so      0 Kbps |

```

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*** system and process activity since boot ***
PID VSTACK  VSIZE  RSIZE  PSIZE  VGROW  RGROW  SWAPSZ  MEM CMD
621  132K    1.1G  46624K    OK   1.1G  46624K    OK   5% Xorg
601  132K   30420K 15928K    OK  30420K 15928K    OK   2% vncserver-x11-
140  132K   49108K 14904K    OK  49108K 14904K    OK   2% systemd-journa
521  132K   386.5M 12816K    OK  386.5M 12816K    OK   1% udisksd
  1   132K   99688K 10256K    OK  99688K 10256K    OK   1% systemd
614  132K   238.5M 9600K     OK  238.5M 9600K     OK   1% ModemManager
460  132K   233.5M 9596K     OK  233.5M 9596K     OK   1% polkitd
627  132K   169.9M 9564K     OK  169.9M 9564K     OK   1% cups-browsed
681  132K   162.6M 9556K     OK  162.6M 9556K     OK   1% lightdm
550  132K   15856K 9364K     OK  15856K 9364K     OK   1% python
427  132K   490.7M 9248K     OK  490.7M 9248K     OK   1% brlty
686  132K   16176K 8632K     OK  16176K 8632K     OK   1% systemd
599  132K   230.8M 8260K     OK  230.8M 8260K     OK   1% lightdm
588  132K   29564K 7908K     OK  29564K 7908K     OK   1% cupsd
178  132K   22872K 7756K     OK  22872K 7756K     OK   1% systemd-udev
185  132K   24540K 7544K     OK  24540K 7544K     OK   1% systemd-udev
181  132K   25508K 7536K     OK  25508K 7536K     OK   1% systemd-udev
182  132K   21812K 6812K     OK  21812K 6812K     OK   1% systemd-udev
175  132K   21980K 6808K     OK  21980K 6808K     OK   1% systemd-udev
579  712K   7572K 6628K     OK   7572K 6628K     OK   1% atop
177  132K   23908K 6604K     OK  23908K 6604K     OK   1% systemd-udev
728  132K   6992K 6560K     OK   6992K 6560K     OK   1% atop

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516	132K	14376K	6536K	0K	14376K	6536K	0K	1% systemd-logind
607	132K	13636K	6428K	0K	13636K	6428K	0K	1% sshd
184	132K	23916K	6400K	0K	23916K	6400K	0K	1% systemd-udev
173	132K	22124K	6248K	0K	22124K	6248K	0K	1% systemd-udev
702	132K	19976K	6236K	0K	19976K	6236K	0K	1% pulseaudio
180	132K	23936K	5996K	0K	23936K	5996K	0K	1% systemd-udev
626	132K	16644K	5800K	0K	16644K	5800K	0K	1% dbus
179	132K	21808K	5684K	0K	21808K	5684K	0K	1% systemd-udev
183	132K	23916K	5384K	0K	23916K	5384K	0K	1% systemd-udev
655	132K	10824K	5024K	0K	10824K	5024K	0K	1% vncagent
687	132K	101.1M	4832K	0K	101.1M	4832K	0K	1% (sd-pam)
523	132K	13576K	4780K	0K	13576K	4780K	0K	1% wpa_supplicant
500	132K	12168K	4340K	0K	12168K	4340K	0K	0% sudo
443	132K	8440K	4104K	0K	8440K	4104K	0K	0% dbus-daemon
608	132K	13992K	3748K	0K	13992K	3748K	0K	0% wpa_supplicant
343	132K	88100K	3428K	0K	88100K	3428K	0K	0% systemd-timesy
715	132K	7688K	3340K	0K	7688K	3340K	0K	0% dbus-daemon
701	132K	15388K	3324K	0K	15388K	3324K	0K	0% pipewire
481	132K	215.7M	3304K	0K	215.7M	3304K	0K	0% rsyslogd
157	132K	16848K	3188K	0K	16848K	3188K	0K	0% systemd-fsckd
622	132K	17764K	2840K	0K	17764K	2840K	0K	0% (agetty)
624	132K	17764K	2840K	0K	17764K	2840K	0K	0% (agetty)
438	132K	7068K	2836K	0K	7068K	2836K	0K	0% avahi-daemon
713	132K	149.9M	2644K	0K	149.9M	2644K	0K	0% rtkit-daemon
723	132K	4128K	2408K	0K	4128K	2408K	0K	0% xrdp
442	132K	6692K	2404K	0K	6692K	2404K	0K	0% cron
517	132K	5480K	2388K	0K	5480K	2388K	0K	0% thd
726	132K	5848K	2324K	0K	5848K	2324K	0K	0% cpp
597	132K	6956K	2304K	0K	6956K	2304K	0K	0% vncserver-x11-
538	132K	3048K	1828K	0K	3048K	1828K	0K	0% dhcpcd
703	132K	2060K	1384K	0K	2060K	1384K	0K	0% Xsession
589	132K	6016K	1276K	0K	6016K	1276K	0K	0% epmd
727	132K	5236K	532K	0K	5236K	532K	0K	0% timeout
724	132K	2060K	516K	0K	2060K	516K	0K	0% sh
725	132K	2060K	480K	0K	2060K	480K	0K	0% sh
452	132K	6888K	312K	0K	6888K	312K	0K	0% avahi-daemon
584	132K	92288K	92K	0K	92288K	92K	0K	0% rngd
441	132K	1948K	72K	0K	1948K	72K	0K	0% atopacctd
2	0K	0K	0K	0K	0K	0K	0K	0% kthreadd
3	0K	0K	0K	0K	0K	0K	0K	0% rcu_gp
4	0K	0K	0K	0K	0K	0K	0K	0% rcu_par_gp
5	0K	0K	0K	0K	0K	0K	0K	0% slub_flushwq
6	0K	0K	0K	0K	0K	0K	0K	0% netns
7	0K	0K	0K	0K	0K	0K	0K	0% kworker/0:0+ev
8	0K	0K	0K	0K	0K	0K	0K	0% kworker/0:0H-m
9	0K	0K	0K	0K	0K	0K	0K	0% kworker/u8:0-e
10	0K	0K	0K	0K	0K	0K	0K	0% mm_percpu_wq
11	0K	0K	0K	0K	0K	0K	0K	0% rcu_tasks_kthr
12	0K	0K	0K	0K	0K	0K	0K	0% rcu_tasks_rude
13	0K	0K	0K	0K	0K	0K	0K	0% rcu_tasks_trac
14	0K	0K	0K	0K	0K	0K	0K	0% ksoftirqd/0
15	0K	0K	0K	0K	0K	0K	0K	0% rcu_preempt
16	0K	0K	0K	0K	0K	0K	0K	0% migration/0
17	0K	0K	0K	0K	0K	0K	0K	0% cpuhp/0
18	0K	0K	0K	0K	0K	0K	0K	0% cpuhp/1
19	0K	0K	0K	0K	0K	0K	0K	0% migration/1
20	0K	0K	0K	0K	0K	0K	0K	0% ksoftirqd/1
21	0K	0K	0K	0K	0K	0K	0K	0% kworker/1:0-ev
22	0K	0K	0K	0K	0K	0K	0K	0% kworker/1:0H-m
23	0K	0K	0K	0K	0K	0K	0K	0% cpuhp/2
24	0K	0K	0K	0K	0K	0K	0K	0% migration/2
25	0K	0K	0K	0K	0K	0K	0K	0% ksoftirqd/2
26	0K	0K	0K	0K	0K	0K	0K	0% kworker/2:0-ev
27	0K	0K	0K	0K	0K	0K	0K	0% kworker/2:0H-k
28	0K	0K	0K	0K	0K	0K	0K	0% cpuhp/3
29	0K	0K	0K	0K	0K	0K	0K	0% migration/3
30	0K	0K	0K	0K	0K	0K	0K	0% ksoftirqd/3
31	0K	0K	0K	0K	0K	0K	0K	0% kworker/3:0-ev
32	0K	0K	0K	0K	0K	0K	0K	0% kworker/3:0H-e
33	0K	0K	0K	0K	0K	0K	0K	0% kdevtmpfs
34	0K	0K	0K	0K	0K	0K	0K	0% inet_frag_wq
35	0K	0K	0K	0K	0K	0K	0K	0% kworker/0:1-ev
36	0K	0K	0K	0K	0K	0K	0K	0% kauditd
37	0K	0K	0K	0K	0K	0K	0K	0% kworker/0:2-cg
38	0K	0K	0K	0K	0K	0K	0K	0% khungtaskd

39	OK	OK	OK	OK	OK	OK	OK	0% kworker/u8:1+e
40	OK	OK	OK	OK	OK	OK	OK	0% oom_reaper
41	OK	OK	OK	OK	OK	OK	OK	0% writeback
42	OK	OK	OK	OK	OK	OK	OK	0% kcompactd0
43	OK	OK	OK	OK	OK	OK	OK	0% kintegrityd
44	OK	OK	OK	OK	OK	OK	OK	0% kblockd
45	OK	OK	OK	OK	OK	OK	OK	0% blkcg_punt_bio
46	OK	OK	OK	OK	OK	OK	OK	0% watchdogd
47	OK	OK	OK	OK	OK	OK	OK	0% kworker/u8:2-e
48	OK	OK	OK	OK	OK	OK	OK	0% kworker/3:1-ev
49	OK	OK	OK	OK	OK	OK	OK	0% kworker/3:1H-k
50	OK	OK	OK	OK	OK	OK	OK	0% rpciod
51	OK	OK	OK	OK	OK	OK	OK	0% xprtiod
52	OK	OK	OK	OK	OK	OK	OK	0% kworker/u8:3
53	OK	OK	OK	OK	OK	OK	OK	0% kworker/1:1-ev
54	OK	OK	OK	OK	OK	OK	OK	0% kworker/2:1-ev
55	OK	OK	OK	OK	OK	OK	OK	0% kswapd0
56	OK	OK	OK	OK	OK	OK	OK	0% nfsiod
57	OK	OK	OK	OK	OK	OK	OK	0% kthrotld
59	OK	OK	OK	OK	OK	OK	OK	0% kworker/3:2-ev
62	OK	OK	OK	OK	OK	OK	OK	0% hwrng
63	OK	OK	OK	OK	OK	OK	OK	0% iscsi_conn_cle
64	OK	OK	OK	OK	OK	OK	OK	0% nvme-wq
65	OK	OK	OK	OK	OK	OK	OK	0% nvme-reset-wq
66	OK	OK	OK	OK	OK	OK	OK	0% nvme-delete-wq
67	OK	OK	OK	OK	OK	OK	OK	0% dwc_otg
68	OK	OK	OK	OK	OK	OK	OK	0% DWC Notificati
69	OK	OK	OK	OK	OK	OK	OK	0% uas
70	OK	OK	OK	OK	OK	OK	OK	0% vchiq-slot/0
71	OK	OK	OK	OK	OK	OK	OK	0% vchiq-recy/0
72	OK	OK	OK	OK	OK	OK	OK	0% vchiq-sync/0
73	OK	OK	OK	OK	OK	OK	OK	0% zswap-shrink
74	OK	OK	OK	OK	OK	OK	OK	0% kworker/u9:0+h
95	OK	OK	OK	OK	OK	OK	OK	0% kworker/2:2-ev
96	OK	OK	OK	OK	OK	OK	OK	0% mmc_complete
97	OK	OK	OK	OK	OK	OK	OK	0% kworker/2:1H-k
98	OK	OK	OK	OK	OK	OK	OK	0% kworker/0:1H-k
99	OK	OK	OK	OK	OK	OK	OK	0% kworker/1:2-ev
100	OK	OK	OK	OK	OK	OK	OK	0% kworker/1:1H-m
101	OK	OK	OK	OK	OK	OK	OK	0% jbd2/mmcblk0p2
102	OK	OK	OK	OK	OK	OK	OK	0% ext4-rsv-conve
103	OK	OK	OK	OK	OK	OK	OK	0% kworker/1:2H
104	OK	OK	OK	OK	OK	OK	OK	0% kworker/2:2H-m
106	OK	OK	OK	OK	OK	OK	OK	0% kworker/0:2H
107	OK	OK	OK	OK	OK	OK	OK	0% irq/184-usb-00
108	OK	OK	OK	OK	OK	OK	OK	0% mld
109	OK	OK	OK	OK	OK	OK	OK	0% ipv6_addrconf
124	OK	OK	OK	OK	OK	OK	OK	0% kworker/3:2H
150	OK	OK	OK	OK	OK	OK	OK	0% kworker/1:3-ev
174	OK	OK	OK	OK	OK	OK	OK	0% kworker/0:3-ev
196	OK	OK	OK	OK	OK	OK	OK	0% vchiq-keep/0
197	OK	OK	OK	OK	OK	OK	OK	0% SMIO
223	OK	OK	OK	OK	OK	OK	OK	0% spi0
228	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
230	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
244	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
245	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
246	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
248	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
249	OK	OK	OK	OK	OK	OK	OK	0% mmal-vchiq
278	OK	OK	OK	OK	OK	OK	OK	0% kworker/2:3-ev
299	OK	OK	OK	OK	OK	OK	OK	0% cfg80211
309	OK	OK	OK	OK	OK	OK	OK	0% cec-vc4-hdmi
310	OK	OK	OK	OK	OK	OK	OK	0% irq/82-vc4 hdm
319	OK	OK	OK	OK	OK	OK	OK	0% card0-crtc0
320	OK	OK	OK	OK	OK	OK	OK	0% card0-crtc1
321	OK	OK	OK	OK	OK	OK	OK	0% card0-crtc2
322	OK	OK	OK	OK	OK	OK	OK	0% card0-crtc3
323	OK	OK	OK	OK	OK	OK	OK	0% brcmf_wq/mmcl:
324	OK	OK	OK	OK	OK	OK	OK	0% brcmf_wdog/mmc
346	OK	OK	OK	OK	OK	OK	OK	0% kworker/3:3-ev
350	OK	OK	OK	OK	OK	OK	OK	0% kworker/u9:1-h
729	OK	OK	OK	OK	OK	OK	OK	0% <atop>
718	OK	OK	OK	OK	OK	OK	OK	0% <modprobe>
535	OK	OK	OK	OK	OK	OK	OK	0% <hciattach>

458 OK OK OK OK OK OK OK 0% <btuart>

```

ATOP - raspberrypi      2023/11/15 19:55:20      ----a-----      21s elapsed
PRC | sys   14.17s | user  11.45s | #proc   184 | #zombie   0 | #exit    39 |
CPU | sys   100% | user   81% | irq     2% | idle    162% | wait     55% |
cpu | sys    29% | user   20% | irq     1% | idle    38% | cpu000 w 13% |
cpu | sys    24% | user   24% | irq     1% | idle    35% | cpu001 w 17% |
cpu | sys    25% | user   18% | irq     0% | idle    45% | cpu003 w 12% |
cpu | sys    22% | user   19% | irq     0% | idle    45% | cpu002 w 14% |
CPL | avg1    2.18 | avg5    0.49 | avg15   0.16 | csw    76704 | intr   205020 |
MEM | tot   909.6M | free   524.5M | cache 191.6M | buff    20.7M | slab    45.4M |
SWP | tot   100.0M | free   100.0M | swcac   0.0M | vmcom  642.2M | vmlim  554.8M |
DSK |      mmcblk0 | busy    69% | read   5080 | write    55 | avio   2.82 ms |
NET | transport | tcpi    10 | tcpo    10 | udpi    30 | udpo    17 |
NET | network   | ipi     60 | ipo     53 | ipfrw    0 | deliv   50 |
NET | wlan0     0% | pcki    33 | pcko    35 | si      1 Kbps | so      1 Kbps |
NET | lo        --- | pcki    24 | pcko    24 | si      0 Kbps | so      0 Kbps |

      *** system and process activity since boot ***
PID SYSCPU USRCPU RDELAY VGRROW RGROW RDDSK WRDSK CPU CMD
  1  2.25s  1.55s  0.91s  99.0M 10260K 54579K  32K 18% systemd
  9  1.74s  0.00s  0.04s      OK      OK   100K   0K  8% kworker/u8:0-e
173 0.39s  1.18s  2.30s 22124K 6248K  952K   0K  7% systemd-udev
140 0.66s  0.46s  0.39s 49108K 16548K 7976K 8064K  5% systemd-journ
182 0.39s  0.53s  1.53s 21812K 6812K 1748K   0K  4% systemd-udev
178 0.34s  0.54s  1.39s 22872K 7756K 2244K   0K  4% systemd-udev
621 0.37s  0.37s  0.10s  1.1G 46624K 43388K  20K  4% Xorg
175 0.29s  0.44s  1.42s 21980K 6808K 1616K   0K  3% systemd-udev
185 0.31s  0.41s  1.61s 24540K 7544K 1212K   0K  3% systemd-udev
181 0.36s  0.35s  0.93s 25508K 7536K 6476K   0K  3% systemd-udev
177 0.26s  0.41s  1.16s 23908K 6604K  40K   0K  3% systemd-udev
179 0.24s  0.42s  1.18s 21808K 5684K 1232K   0K  3% systemd-udev
343 0.28s  0.33s  0.26s 88100K 3428K  108K   0K  3% systemd-times
702 0.23s  0.34s  0.09s 268.2M 23088K 14620K   0K  3% pulseaudio
180 0.26s  0.30s  1.03s 23936K 5996K  312K   0K  3% systemd-udev
443 0.15s  0.40s  0.34s  8440K 4104K  812K   0K  3% dbus-daemon
184 0.22s  0.30s  1.11s 23916K 6400K 1200K   0K  2% systemd-udev
183 0.23s  0.29s  1.10s 23916K 5384K 1636K   0K  2% systemd-udev
516 0.24s  0.27s  0.32s 14376K 6536K  260K   0K  2% systemd-logind
521 0.22s  0.23s  0.21s 386.5M 12816K 4656K   0K  2% udisksd
686 0.11s  0.30s  0.01s 16176K 8632K 1492K   0K  2% systemd
579 0.25s  0.12s  0.08s 7572K 6628K  796K  16K  2% atop
550 0.12s  0.23s  0.11s 15856K 9364K 5364K  96K  2% python
460 0.12s  0.22s  0.17s 233.5M 9596K 4532K   0K  2% polkitd
614 0.17s  0.15s  0.10s 238.5M 9600K 4508K   0K  2% ModemManager
758 0.14s  0.18s  0.05s 13888K 3180K  32K   0K  2% systemd-hostn
 49 0.32s  0.00s  0.02s      OK      OK      OK   0K  2% kworker/3:1H-m
100 0.32s  0.00s  0.01s      OK      OK      OK   0K  2% kworker/1:1H-k
427 0.13s  0.13s  0.07s 498.8M 9548K 5776K   4K  1% brlatty
 39 0.23s  0.00s  0.10s      OK      OK   812K   0K  1% kworker/u8:1-e
 98 0.22s  0.00s  0.01s      OK      OK      OK   0K  1% kworker/0:1H-m
601 0.10s  0.10s  0.05s 30420K 15928K 5840K   8K  1% vncserver-x11-
599 0.09s  0.10s  0.09s 230.8M 8260K 1252K   4K  1% lightdm
 59 0.18s  0.00s  0.12s      OK      OK      OK   0K  1% kworker/3:2-ev
481 0.11s  0.06s  0.35s 215.7M 3304K  948K 216K  1% rsyslogd
 15 0.16s  0.00s  0.26s      OK      OK      OK   0K  1% rcu_preempt
 97 0.15s  0.00s  0.01s      OK      OK      OK   0K  1% kworker/2:1H-k
150 0.15s  0.00s  0.36s      OK      OK   552K   0K  1% kworker/1:3-ev
745 0.07s  0.07s  0.02s 23872K 9396K 2860K   0K  1% bluetoothd
588 0.06s  0.08s  0.07s 29564K 7908K 3992K   8K  1% cupsd
438 0.07s  0.06s  0.07s 7068K 2836K  480K   0K  1% avahi-daemon
 74 0.12s  0.00s  0.01s      OK      OK      OK   0K  1% kworker/u9:0-b
900 0.07s  0.04s  0.00s 7016K 6560K   0K   0K  1% atop
607 0.03s  0.08s  0.01s 13636K 6428K   0K   0K  1% sshd
627 0.05s  0.05s  0.01s 169.9M 9564K 1936K   0K  0% cups-browsed
681 0.04s  0.06s  0.01s 162.6M 9556K  56K   4K  0% lightdm
104 0.07s  0.02s  0.00s      OK      OK      OK   0K  0% kworker/2:2H-m
 48 0.08s  0.00s  0.32s      OK      OK      OK   0K  0% kworker/3:1-ev
655 0.05s  0.02s  0.01s 10824K 5024K 1848K   0K  0% vncagent
500 0.05s  0.02s  0.11s 12168K 4340K  868K   0K  0% sudo
746 0.05s  0.01s  0.00s 85300K 5756K  680K   0K  0% pipewire-media
701 0.04s  0.02s  0.01s 91804K 5420K 1920K   0K  0% pipewire
523 0.04s  0.02s  0.11s 13576K 4780K 2848K   0K  0% wpa_supplicant
703 0.04s  0.02s  0.03s 2060K  528K 10088K   4K  0% x-session-mana

```

441	0.05s	0.01s	0.05s	1948K	72K	0K	0K	0%	atopacctd
54	0.06s	0.00s	0.16s	0K	0K	4K	0K	0%	kworker/2:1-cg
715	0.02s	0.03s	0.00s	7688K	3340K	92K	0K	0%	dbus-daemon
157	0.02s	0.03s	0.02s	16848K	3188K	24K	0K	0%	systemd-fsckd
7	0.05s	0.00s	0.21s	0K	0K	0K	0K	0%	kworker/0:0-ev
278	0.05s	0.00s	0.18s	0K	0K	0K	0K	0%	kworker/2:3-ev
53	0.04s	0.00s	0.06s	0K	0K	0K	0K	0%	kworker/1:1-ev
99	0.04s	0.00s	0.08s	0K	0K	32K	0K	0%	kworker/1:2-ev
894	0.03s	0.00s	0.01s	169.5M	8432K	7908K	0K	0%	systemctl
626	0.02s	0.01s	0.00s	16644K	5800K	32K	0K	0%	dbus
865	0.02s	0.01s	0.00s	194.7M	5604K	24K	0K	0%	brltty
732	0.01s	0.02s	0.00s	13876K	3208K	4K	0K	0%	systemd-rfkill
713	0.02s	0.01s	0.00s	149.9M	2644K	64K	0K	0%	rtkit-daemon
442	0.02s	0.01s	0.02s	6692K	2404K	764K	0K	0%	cron
597	0.03s	0.00s	0.01s	6956K	2304K	748K	0K	0%	vncserver-x11-
538	0.03s	0.00s	0.01s	3048K	1912K	1660K	16K	0%	dhcpcd
517	0.02s	0.00s	0.00s	5480K	2388K	72K	0K	0%	thd
589	0.02s	0.00s	0.00s	6016K	1276K	52K	0K	0%	epmd
2	0.02s	0.00s	0.00s	0K	0K	0K	0K	0%	kthreadd
14	0.02s	0.00s	0.06s	0K	0K	0K	0K	0%	ksoftirqd/0
20	0.02s	0.00s	0.02s	0K	0K	0K	0K	0%	ksoftirqd/1
30	0.00s	0.02s	0.04s	0K	0K	0K	0K	0%	ksoftirqd/3
103	0.02s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/1:2H-k
608	0.00s	0.01s	0.01s	13992K	3748K	0K	0K	0%	wpa_supplicant
624	0.01s	0.00s	0.00s	5104K	1876K	48K	0K	0%	agetty
622	0.01s	0.00s	0.00s	2132K	1396K	16K	0K	0%	agetty
584	0.01s	0.00s	0.03s	92288K	92K	0K	0K	0%	rngd
25	0.00s	0.01s	0.04s	0K	0K	0K	0K	0%	ksoftirqd/2
33	0.01s	0.00s	0.00s	0K	0K	0K	0K	0%	kdevtmpfs
35	0.01s	0.00s	0.09s	0K	0K	0K	0K	0%	kworker/0:1-ev
37	0.01s	0.00s	0.04s	0K	0K	0K	0K	0%	kworker/0:2-cg
70	0.01s	0.00s	0.00s	0K	0K	0K	0K	0%	vchiq-slot/0
106	0.01s	0.00s	0.01s	0K	0K	0K	0K	0%	kworker/0:2H
124	0.01s	0.00s	0.01s	0K	0K	0K	0K	0%	kworker/3:2H
324	0.01s	0.00s	0.02s	0K	0K	0K	0K	0%	brcmf_wdog/mmc
913	0.01s	0.00s	-	0K	0K	-	-	0%	<resolvconf>
687	0.00s	0.00s	0.00s	101.1M	4832K	0K	0K	0%	(sd-pam)
863	0.00s	0.00s	0.00s	43848K	3196K	0K	0K	0%	xbrlapi
904	0.00s	0.00s	0.00s	2060K	1432K	0K	0K	0%	resolvconf
895	0.00s	0.00s	0.00s	6040K	676K	0K	0K	0%	grep
899	0.00s	0.00s	0.00s	5236K	568K	0K	0K	0%	timeout
901	0.00s	0.00s	0.00s	2060K	516K	0K	0K	0%	dhcpcd-run-hoo
744	0.00s	0.00s	0.00s	4932K	476K	36K	0K	0%	sleep
898	0.00s	0.00s	0.00s	2060K	464K	0K	0K	0%	sh
869	0.00s	0.00s	0.00s	5444K	456K	0K	0K	0%	ssh-agent
452	0.00s	0.00s	0.00s	6888K	312K	0K	0K	0%	avahi-daemon
733	0.00s	0.00s	0.00s	2120K	132K	0K	0K	0%	hciattach
893	0.00s	0.00s	0.00s	2060K	100K	0K	0K	0%	x-session-mana
743	0.00s	0.00s	0.00s	2060K	96K	0K	0K	0%	bthelper
3	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_gp
4	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_par_gp
5	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	slub_flushwq
6	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	netns
8	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/0:0H-m
10	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	mm_percpu_wq
11	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_tasks_kthr
12	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_tasks_rude
13	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	rcu_tasks_trac
16	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	migration/0
17	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	cpuhp/0
18	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	cpuhp/1
19	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	migration/1
21	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/1:0-ev
22	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/1:0H-m
23	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	cpuhp/2
24	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	migration/2
26	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/2:0-ev
27	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/2:0H-k
28	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	cpuhp/3
29	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	migration/3
31	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/3:0-ev
32	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kworker/3:0H-e
34	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	inet_frag_wq
36	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	kauditd
38	0.00s	0.00s	0.00s	0K	0K	0K	0K	0%	khungtaskd

40	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% oom_reaper
41	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% writeback
42	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kcompactd0
43	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kintegrityd
44	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kblockd
45	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% blkcg_punt_bio
46	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% watchdogd
47	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u8:2-e
50	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% rpciod
51	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% xprtiod
52	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u8:3
55	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kswapd0
56	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nfsiod
57	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kthrotld
62	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% hwrng
63	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% iscsi_conn_cle
64	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nvme-wq
65	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nvme-reset-wq
66	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% nvme-delete-wq
67	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% dwc_otg
68	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% DWC Notificati
69	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% uas
71	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-recy/0
72	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-sync/0
73	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% zswap-shrink
95	0.00s	0.00s	0.01s	OK	OK	OK	OK	0% kworker/2:2-ev
96	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmc_complete
101	0.00s	0.00s	0.00s	OK	OK	OK	384K	0% jbd2/mmcblk0p2
102	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% ext4-rsv-conve
107	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% irq/184-usb-00
108	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mld
109	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% ipv6_addrconf
174	0.00s	0.00s	0.06s	OK	OK	OK	OK	0% kworker/0:3-ev
196	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% vchiq-keep/0
197	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% SMIO
223	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% spi0
228	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
230	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
244	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
245	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
246	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
248	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
249	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% mmal-vchiq
299	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cfg80211
309	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% cec-vc4-hdmi
310	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% irq/82-vc4 hdm
319	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc0
320	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc1
321	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc2
322	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% card0-crtc3
323	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% brcmf_wq/mmcl:
346	0.00s	0.00s	0.01s	OK	OK	OK	OK	0% kworker/3:3-ev
350	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u9:1-h
730	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u9:2-b
734	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% kworker/u9:3-h
897	0.00s	0.00s	0.00s	OK	OK	OK	OK	0% krfcomm
902	0.00s	0.00s	-	OK	OK	-	-	0% <atop>
903	0.00s	0.00s	-	OK	OK	-	-	0% <dhcpcd-run-h>
905	0.00s	0.00s	-	OK	OK	-	-	0% <mkdir>
906	0.00s	0.00s	-	OK	OK	-	-	0% <cat>
907	0.00s	0.00s	-	OK	OK	-	-	0% <rm>
909	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
914	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
911	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
912	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
915	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
916	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
917	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
918	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
919	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
920	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
921	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
922	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
923	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>
924	0.00s	0.00s	-	OK	OK	-	-	0% <resolvconf>


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925 0.00s 0.00s - OK OK - - 0% <resolvconf>
926 0.00s 0.00s - OK OK - - 0% <resolvconf>
927 0.00s 0.00s - OK OK - - 0% <resolvconf>
910 0.00s 0.00s - OK OK - - 0% <resolvconf>
928 0.00s 0.00s - OK OK - - 0% <resolvconf>
929 0.00s 0.00s - OK OK - - 0% <resolvconf>
930 0.00s 0.00s - OK OK - - 0% <resolvconf>
931 0.00s 0.00s - OK OK - - 0% <resolvconf>
932 0.00s 0.00s - OK OK - - 0% <resolvconf>
933 0.00s 0.00s - OK OK - - 0% <resolvconf>
934 0.00s 0.00s - OK OK - - 0% <resolvconf>
908 0.00s 0.00s - OK OK - - 0% <resolvconf>
936 0.00s 0.00s - OK OK - - 0% <dbus-send>
937 0.00s 0.00s - OK OK - - 0% <resolvconf>
938 0.00s 0.00s - OK OK - - 0% <cat>
939 0.00s 0.00s - OK OK - - 0% <resolvconf>
935 0.00s 0.00s - OK OK - - 0% <resolvconf>
941 0.00s 0.00s - OK OK - - 0% <resolvconf>
942 0.00s 0.00s - OK OK - - 0% <resolvconf>

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ATOP - raspberrypi      2023/11/15 19:55:22      -----      23s elapsed
PRC | sys  15.10s | user 12.39s | #proc 194 | #zombie 0 | #exit 12 |
CPU | sys  98% | user 78% | irq 2% | idle 166% | wait 56% |
cpu | sys  28% | user 19% | irq 1% | idle 38% | cpu000 w 14% |
cpu | sys  23% | user 23% | irq 1% | idle 37% | cpu001 w 17% |
cpu | sys  25% | user 17% | irq 0% | idle 45% | cpu003 w 13% |
cpu | sys  22% | user 18% | irq 0% | idle 47% | cpu002 w 13% |
CPL | avg1  2.18 | avg5  0.49 | avg15 0.16 | csw 87735 | intr 227713 |
MEM | tot  909.6M | free 486.5M | cache 211.6M | buff 21.3M | slab 46.9M |
SWP | tot  100.0M | free 100.0M | swcac 0.0M | vmcom 788.6M | vmlim 554.8M |
DSK |      mmcblk0 | busy 71% | read 5426 | write 411 | avio 2.81 ms |
NET | transport | tcpi 12 | tcpo 12 | udpi 35 | udpo 22 |
NET | network   | ipi 78 | ipo 71 | ipfrw 0 | deliv 68 |
NET | wlan0      0% | pcki 38 | pcko 51 | si 1 Kbps | so 2 Kbps |
NET | lo         ---- | pcki 27 | pcko 27 | si 0 Kbps | so 0 Kbps |

*** system and process activity since boot ***

PID      TID S CPU COMMAND-LINE (horizontal scroll with <- and -> keys)
1        - S 17% /sbin/init splash
9        - I 8% kworker/u8:0-wr
173      - S 7% /lib/systemd/systemd-udevd
140      - S 5% /lib/systemd/systemd-journald
182      - S 4% /lib/systemd/systemd-udevd
178      - S 4% /lib/systemd/systemd-udevd
621      - S 3% /usr/lib/xorg/Xorg :0 -seat seat0 -auth /var/run/lightdm/root/:0 -nolisten tcp
vt7 -novtswitch
175      - S 3% /lib/systemd/systemd-udevd
185      - S 3% /lib/systemd/systemd-udevd
181      - S 3% /lib/systemd/systemd-udevd
177      - S 3% /lib/systemd/systemd-udevd
179      - S 3% /lib/systemd/systemd-udevd
702      - S 3% /usr/bin/pulseaudio --daemonize=no --log-target=journal
443      - S 3% /usr/bin/dbus-daemon --system --address=systemd: --nofork --nopidfile --
systemd-activation --syslog-only
343      - S 3% /lib/systemd/systemd-timesyncd
180      - S 2% /lib/systemd/systemd-udevd
184      - S 2% /lib/systemd/systemd-udevd
183      - S 2% /lib/systemd/systemd-udevd
516      - S 2% /lib/systemd/systemd-logind
521      - S 2% /usr/libexec/udisks2/udisksd
460      - S 2% /usr/libexec/polkitd --no-debug
686      - S 2% /lib/systemd/systemd --user
579      - S 2% /usr/bin/atop -R -w /var/log/atop/atop_20231115 600
550      - S 2% python /home/pi/Desktop/MESA/Project 2/Module 3/main.py
49       - I 2% kworker/3:1H-kb
614      - S 1% /usr/sbin/ModemManager
758      - S 1% /lib/systemd/systemd-hostnamed
100      - I 1% kworker/1:1H-kb
703      - S 1% /usr/bin/lxsession -s LXDE-pi -e LXDE -w openbox-lxde-pi
427      - S 1% /bin/brltty --no-daemon
98       - D 1% kworker/0:1H+kb
39       - I 1% kworker/u8:1-ex
601      - S 1% /usr/bin/vncserver-x11-core -service
599      - S 1% /usr/sbin/lightdm

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59      - I    1% kworker/3:2-eve
481    - S    1% /usr/sbin/rsyslogd -n -iNONE
15     - I    1% rcu_preempt
150    - I    1% kworker/1:3-eve
1068   - R    1% openbox --config-file /home/pi/.config/openbox/lxde-pi-rc.xml
1100   - R    1% /usr/bin/python3 /usr/bin/orca
1112   - R    1% atop -c
97     - I    1% kworker/2:1H-kb
745    - S    1% /usr/libexec/bluetooth/bluetoothd
588    - S    1% /usr/sbin/cupsd -l
438    - S    1% avahi-daemon: running [raspberrypi.local]
74     - I    1% kworker/u9:0-br
1070   - S    0% lxdm
607    - S    0% sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups
627    - S    0% /usr/sbin/cups-browsed
681    - S    0% lightdm --session-child 14 17
1081   - D    0% pcmanfm --desktop --profile LXDE-pi
865    - S    0% /bin/brltty -b ba -s no -x a2 -N
655    - S    0% /usr/bin/vncagent service 0
104    - I    0% kworker/2:2H-mm
715    - S    0% /usr/bin/dbus-daemon --session --address=systemd: --nofork --nopidfile --
systemd-activation --syslog-only
48     - I    0% kworker/3:1-eve
1107   - D    0% /usr/libexec/at-spi-bus-launcher --launch-immediately
1059   - S    0% /usr/libexec/gvfsd-fuse /run/user/1000/gvfs -f
500    - S    0% sudo python /home/pi/Desktop/MESA/Project 2/Module 3/main.py
441    - S    0% /usr/sbin/atopacctd
7      - I    0% kworker/0:0-eve
746    - S    0% /usr/bin/pipewire-media-session
1077   - R    0% lxpanel --profile LXDE-pi
701    - S    0% /usr/bin/pipewire
523    - S    0% /sbin/wpa_supplicant -u -s -O /run/wpa_supplicant
54     - I    0% kworker/2:1-cgr
1054   - S    0% /usr/libexec/gvfsd
157    - S    0% /lib/systemd/systemd-fsckd
278    - I    0% kworker/2:3-eve
53     - I    0% kworker/1:1-eve
99     - I    0% kworker/1:2-eve
1094   - E    0% pactl
626    - S    0% /usr/lib/cups/notifier/dbus dbus://
1095   - S    0% /usr/libexec/geoclue-2.0/demos/agent
732    - S    0% /lib/systemd/systemd-rfkill
713    - S    0% /usr/libexec/rtkit-daemon
442    - S    0% /usr/sbin/cron -f
597    - S    0% /usr/bin/vncserver-x11-serviced -fg
538    - S    0% /usr/sbin/dhccpd -b -q
103    - I    0% kworker/1:2H-mm
1123   - E    0% pactl
1116   - D    0% zenity --warning --width=400 --text=SSH is enabled and the default password
for the 'pi' user has not been changed.\n\nThis is a security risk - please login as the 'pi' user
and run Raspberry Pi Configuration to set a new password.
1088   - S    0% lxsession-xdg-autostart -d LXDE
517    - S    0% /usr/sbin/thd --triggers /etc/triggerhappy/triggers.d/ --socket
/run/thd.socket --user nobody --deviceglob /dev/input/event*
589    - S    0% /usr/bin/epmd -systemd
2      - S    0% kthreadd
14     - S    0% ksoftirqd/0
20     - S    0% ksoftirqd/1
30     - S    0% ksoftirqd/3
70     - S    0% vchiq-slot/0
124    - I    0% kworker/3:2H
608    - S    0% wpa_supplicant -B -c/etc/wpa_supplicant/wpa_supplicant.conf -i wlan0
624    - S    0% /sbin/agetty -o -p -- \u --keep-baud 115200,57600,38400,9600 ttyS0 vt220
622    - S    0% /sbin/agetty --autologin pi --noclear tty1 linux
584    - S    0% /usr/sbin/rngd -r /dev/hwrng
25     - S    0% ksoftirqd/2
33     - S    0% kdevtmpfs
35     - I    0% kworker/0:1-eve
37     - I    0% kworker/0:2-cgr
106    - I    0% kworker/0:2H
324    - S    0% brcmf_wdog/mmc1
687    - S    0% (sd-pam)
863    - S    0% /bin/xbrlapi
1108   - S    0% sh -c timeout 2 atop -c > /home/pi/Desktop/OS_Info/9_background_processes.txt
1111   - S    0% timeout 2 atop -c

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1102 - S 0% sh /etc/xdg/lxsession/LXDE-pi/sshpwd.sh
1117 - S 0% /bin/sh /usr/lib/raspi-config/cmstart.sh
1119 - S 0% /bin/sh /usr/bin/raspi-config nonint is_kms
744 - S 0% sleep 5
1096 - S 0% /usr/bin/ssh-agent -s
869 - S 0% /usr/bin/ssh-agent x-session-manager
452 - S 0% avahi-daemon: chroot helper
733 - S 0% /usr/bin/hciattach /dev/serial1 bcm43xx 921600 noflow - b8:27:eb:9c:95:c6
743 - S 0% /bin/sh /usr/bin/bthelper hci0
3 - I 0% rcu_gp
4 - I 0% rcu_par_gp
5 - I 0% slub_flushwq
6 - I 0% netns
8 - I 0% kworker/0:0H-mm
10 - I 0% mm_percpu_wq
11 - I 0% rcu_tasks_kthre
12 - I 0% rcu_tasks_rude_
13 - I 0% rcu_tasks_trace
16 - S 0% migration/0
17 - S 0% cpuhp/0
18 - S 0% cpuhp/1
19 - S 0% migration/1
21 - I 0% kworker/1:0-eve
22 - I 0% kworker/1:0H-mm
23 - S 0% cpuhp/2
24 - S 0% migration/2
26 - I 0% kworker/2:0-eve
27 - I 0% kworker/2:0H-kb
28 - S 0% cpuhp/3
29 - S 0% migration/3
31 - I 0% kworker/3:0-eve
32 - I 0% kworker/3:0H-ev
34 - I 0% inet_frag_wq
36 - S 0% kauditd
38 - S 0% khungtaskd
40 - S 0% oom_reaper
41 - I 0% writeback
42 - S 0% kcompactd0
43 - I 0% kintegrityd
44 - I 0% kblockd
45 - I 0% blkcg_punt_bio
46 - S 0% watchdogd
47 - I 0% kworker/u8:2-ev
50 - I 0% rpciod
51 - I 0% xprtiod
52 - I 0% kworker/u8:3
55 - S 0% kswapd0
56 - I 0% nfsiod
57 - I 0% kthrotld
62 - S 0% hwrng
63 - I 0% iscsi_conn_clea
64 - I 0% nvme-wq
65 - I 0% nvme-reset-wq
66 - I 0% nvme-delete-wq
67 - I 0% dwc_otg
68 - I 0% DWC Notificatio
69 - I 0% uas
71 - S 0% vchiq-recy/0
72 - S 0% vchiq-sync/0
73 - I 0% zswap-shrink
95 - I 0% kworker/2:2-eve
96 - I 0% mmc_complete
101 - S 0% jbd2/mmcblk0p2-
102 - I 0% ext4-rsv-conver
107 - S 0% irq/184-usb-001
108 - I 0% mld
109 - I 0% ipv6_addrconf
174 - I 0% kworker/0:3-eve
196 - S 0% vchiq-keep/0
197 - S 0% SMIO
223 - S 0% spi0
228 - I 0% mmal-vchiq
230 - I 0% mmal-vchiq
244 - I 0% mmal-vchiq
245 - I 0% mmal-vchiq

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246      - I    0% mmal-vchiq
248      - I    0% mmal-vchiq
249      - I    0% mmal-vchiq
299      - I    0% cfg80211
309      - S    0% cec-vc4-hdmi
310      - S    0% irq/82-vc4 hdmi
319      - S    0% card0-crtc0
320      - S    0% card0-crtc1
321      - S    0% card0-crtc2
322      - S    0% card0-crtc3
323      - I    0% brcmf_wq/mmc1:0
346      - I    0% kworker/3:3-eve
350      - I    0% kworker/u9:1-hc
730      - I    0% kworker/u9:2-br
734      - I    0% kworker/u9:3-hc
897      - S    0% krfcomm
1114     - E    0% atop
1113     - E    0% gettext
1115     - E    0% lxsession-xdg-a
1121     - E    0% who
1122     - E    0% awk
1120     - E    0% raspi-config
1118     - E    0% lxsession-xdg-a
1127     - E    0% lxsession-xdg-a
1130     - E    0% lxsession-xdg-a
1092     - E    0% start-pulseaudi

```

```

ATOP - raspberrypi      2023/11/15 19:55:24      ----a-----      25s elapsed
PRC | sys    16.55s | user  16.10s | #proc   193 | #zombie   0 | #exit    1 |
CPU | sys    98% | user   88% | irq      2% | idle     154% | wait     58% |
cpu | sys    28% | user   21% | irq      1% | idle     35% | cpu000 w 15% |
cpu | sys    23% | user   26% | irq      1% | idle     34% | cpu001 w 17% |
cpu | sys    24% | user   20% | irq      0% | idle     42% | cpu003 w 13% |
cpu | sys    22% | user   21% | irq      0% | idle     43% | cpu002 w 13% |
CPL | avg1    2.81 | avg5    0.65 | avg15   0.21 | csw     99476 | intr  250881 |
MEM | tot   909.6M | free  400.9M | cache  241.4M | buff    22.8M | slab   49.0M |
SWP | tot   100.0M | free  100.0M | swcac   0.0M | vmcom  872.4M | vmlim  554.8M |
DSK |      mmcblk0 | busy    73% | read   5971 | write    411 | avio  2.85 ms |
NET | transport | tcpi    19 | tcpo    19 | udpi     36 | udpo     23 |
NET | network   | ipi     91 | ipo     86 | ipfrw     0 | deliv    81 |
NET | wlan0      0% | pcki    40 | pcko    59 | si        1 Kbps | so      2 Kbps |
NET | lo         ---- | pcki    34 | pcko    34 | si         0 Kbps | so      0 Kbps |

```

*** system and process activity since boot ***

NPROCS	SYSCPU	USRCPU	RSIZE	PSIZE	RDDSK	WRDSK	RNET	SNET	CPU	RUID
159	13.99s	10.35s	317.1M	0K	174.5M	9680K	0	0	97%	root
27	1.94s	4.78s	322.6M	0K	89264K	24K	0	0	27%	pi
1	0.18s	0.56s	4300K	0K	812K	0K	0	0	3%	messageb
1	0.28s	0.33s	3428K	0K	108K	0K	0	0	2%	systemd-
2	0.08s	0.06s	3148K	0K	480K	0K	0	0	1%	avahi
1	0.02s	0.01s	5800K	0K	32K	0K	0	0	0%	lp
1	0.02s	0.01s	2644K	0K	64K	0K	0	0	0%	rtkit
1	0.02s	0.00s	2388K	0K	72K	0K	0	0	0%	nobody
1	0.02s	0.00s	1276K	0K	52K	0K	0	0	0%	epmd

10.0.0.185

Physical Memory Stats in MB: Total: 909 Used: 252 Free: 339 Shared: 1 Buff/Cache: 317 Available: 596

Swap Memory Stats in MB: Total: 99 Used: 0 Free: 99 Shared: Buff/Cache: Available:

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Architecture:      aarch64
CPU op-mode(s):    32-bit, 64-bit
Byte Order:        Little Endian
CPU(s):            4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s):         1
Vendor ID:         ARM
Model:             4
Model name:        Cortex-A53
Stepping:          r0p4
CPU max MHz:       1200.0000

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CPU min MHz:          600.0000
BogoMIPS:             38.40
L1d cache:            128 KiB
L1i cache:            128 KiB
L2 cache:             512 KiB
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf:    Not affected
Vulnerability Mds:     Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec store bypass: Not affected
Vulnerability Spectre v1: Mitigation; __user pointer sanitization
Vulnerability Spectre v2: Not affected
Vulnerability Srbds:    Not affected
Vulnerability Tsx async abort: Not affected
Flags:                  fp asimd evtstrm crc32 cpuid
```