#371827 - Create Bash Script to Audit Ubuntu 20.04 Hardware Specs

Objective

This task involves creating a Bash script to collect and display essential hardware specifications of an Ubuntu 20.04 system. The script will provide information about uptime, timezone, OS details, CPU information, and network addresses.

Scenario:

You need to gather hardware details about an Ubuntu 20.04 system for system monitoring, troubleshooting, or reporting purposes. A Bash script can automate this process.

Constraints:

- The script should be compatible with Ubuntu 20.04.
- The script should gather following details

1. Uptime (How much time the system is up for)
2. Current Server Local Timezone
3. OS Family
4. OS Version
5. name of the OS
6. Kernel Version
7. CPU - Cores
8. CPU - Architecture
9. Private IP
10. Public IP
11. RAM Utilization.

- After executing the script all the details should be added in to harware_report_DD_MM_YY.txt file. Where DD_MM_YY is date of file execution. (If the file is executed on 15 Sept then the file should be named hardware_report_15_09_2024) - For Example.

$cat hardware_report_15_09_2024
Uptime: up 10 minutes
Current Server Local Timezone: IST

Create Bash script that gathers the required hardware details on an Ubuntu 20.04 system.

```
root@ubuntu:~# cat hardwareinfo.sh
#!/bin/bash

DATE=$(date +"%d_%m_%Y")


OUTPUT_FILE="hardware_report_${DATE}.txt"

UPTIME=$(uptime -p)
TIMEZONE=$(timedatectl | grep "Time zone" | awk '{print $3}')
OS_FAMILY=$(uname -o)
OS_VERSION=$(lsb_release -d | cut -f2-)
OS_NAME=$(lsb_release -i | cut -f2-)
KERNEL_VERSION=$(uname -r)
CPU_CORES=$(nproc)
CPU_ARCHITECTURE=$(uname -m)
PRIVATE_IP=$(hostname -I | awk '{print $1}')
PUBLIC_IP=$(curl -s ifconfig.me)
RAM_UTILIZATION=$(free -h | awk '/Mem:/ {print $3 "/" $2}')

echo "Uptime: $UPTIME" > $OUTPUT_FILE
echo "Current Server Local Timezone: $TIMEZONE" >> $OUTPUT_FILE
echo "OS Family: $OS_FAMILY" >> $OUTPUT_FILE
echo "OS Version: $OS_VERSION" >> $OUTPUT_FILE
echo "OS Name: $OS_NAME" >> $OUTPUT_FILE
echo "Kernel Version: $KERNEL_VERSION" >> $OUTPUT_FILE
echo "CPU - Cores: $CPU_CORES" >> $OUTPUT_FILE
echo "CPU - Architecture: $CPU_ARCHITECTURE" >> $OUTPUT_FILE
echo "Private IP: $PRIVATE_IP" >> $OUTPUT_FILE
echo "Public IP: $PUBLIC_IP" >> $OUTPUT_FILE
echo "RAM Utilization: $RAM_UTILIZATION" >> $OUTPUT_FILE
root@ubuntu:~#
```

Commands:

DATE=$(date +"%d_%m_%Y") :

- This command formats the current date in the DD_MM_YYYY format. The output is stored in the variable DATE

OUTPUT_FILE="hardware_report_${DATE}.txt"s

- This line creates the filename by embedding the current date into the string hardware_report_${DATE}.txt and stores it in the variable OUTPUT_FILE

UPTIME=$(uptime -p)

- uptime -p: This command shows how long the system has been running in a human-readable format

TIMEZONE=$(timedatectl | grep "Time zone" | awk '{print $3}')

- timedatectl: Displays system time and date settings.
- grep "Time zone": Filters out the line containing the "Time zone" string.
- awk '{print $3}': Extracts the third field (the actual timezone) from the line.

OS_FAMILY=$(uname -o)

- uname -o: Returns the operating system family name (e.g., "GNU/Linux").

OS_VERSION=$(lsb_release -d | cut -f2-)

- lsb_release -d: Provides a description of the operating system (e.g., "Ubuntu 20.04.6 LTS").
- cut -f2-: Removes the field name, leaving only the OS version description.

OS_NAME=$(lsb_release -i | cut -f2-)

- lsb_release -i: Displays the distributor ID (e.g., "Ubuntu").
- cut -f2-: Removes the field name, leaving only the OS name.

KERNEL_VERSION=$(uname -r)

- uname -r: Provides the kernel version.

CPU_CORES=$(nproc)

- nproc: Displays the number of available processing units (CPU cores)

CPU_ARCHITECTURE=$(uname -m)

- uname -m = Returns the machine hardware architecture (e.g., "x86_64")

PRIVATE_IP=$(hostname -I | awk '{print $1}')

- hostname -I: Displays all IP addresses assigned to the system.
- awk '{print $1}': Extracts the first IP address.

PUBLIC_IP=$(curl -s ifconfig.me)

- Fetches the public IP address of the system from the ifconfig.me service. The -s option ensures the output is silent except for the public IP

RAM_UTILIZATION=$(free -h | awk '/Mem:/ {print $3 "/" $2}')

- free -h: Displays memory usage in human-readable format.
- awk '/Mem:/ {print $3 "/" $2}': Extracts the used and total memory

Execute script

```
root@ubuntu:~# sh hardwareinfo.sh
root@ubuntu:~# ls
000-default.conf                        hardwareinfo.sh
192.168.240.133.conf                    hardware_report_27_08_2024.txt
```

After running the script ‘hardware_report_date’ is created. The file will contain the specified system details.

```
root@ubuntu:~# cat hardware
hardwareinfo.sh                 hardware_report_27_08_2024.txt
root@ubuntu:~# cat hardware
hardwareinfo.sh                 hardware_report_27_08_2024.txt
root@ubuntu:~# cat hardware_report_27_08_2024.txt
Uptime: up 24 minutes
Current Server Local Timezone: Etc/UTC
OS Family: GNU/Linux
OS Version: Ubuntu 20.04.6 LTS
OS Name: Ubuntu
Kernel Version: 5.4.0-192-generic
CPU - Cores: 4
CPU - Architecture: x86_64
Private IP: 192.168.215.133
Public IP: 152.56.4.94
RAM Utilization: 244Mi/1.9Gi
```

Thank You

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