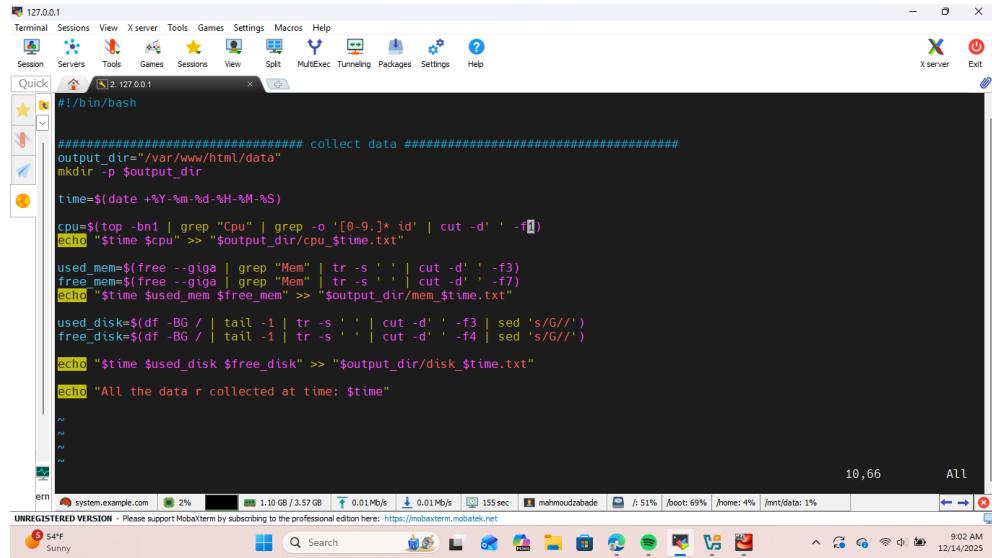


# Task2

## Collect data script (collect.sh)

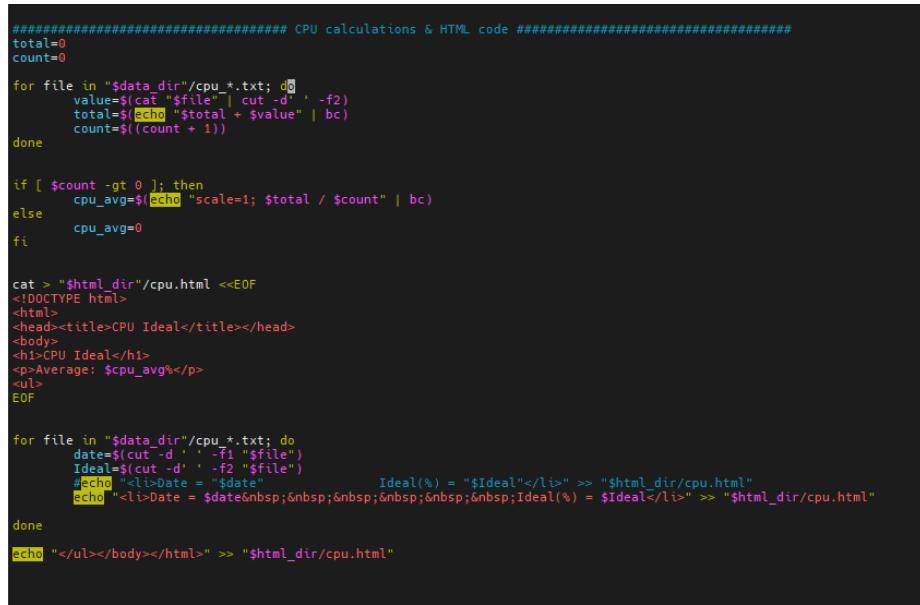


A screenshot of the Mobaxterm terminal window titled '2. 127.0.0.1'. The terminal shows the execution of a bash script named 'collect.sh'. The script collects system data including CPU usage, memory usage, and disk usage, and outputs it to files in '/var/www/html/data'. The terminal window has a toolbar at the top with various icons for sessions, tools, games, and settings. The status bar at the bottom shows system information like battery level (51%), boot time (155 sec), and network speed (1.01 MB/s). The taskbar at the bottom includes icons for file explorer, browser, and other applications.

```
#!/bin/bash
#####
# collect data #####
output_dir="/var/www/html/data"
mkdir -p $output_dir
time=$(date +%Y-%m-%d-%H-%M-%S)
cpu=$(top -bn1 | grep "Cpu" | grep -o '[0-9.]* id' | cut -d'.' -f1)
echo "$time $cpu" >> "$output_dir/cpu_$time.txt"
used_mem=$(free --giga | grep "Mem" | tr -s ' ' | cut -d' ' -f3)
free_mem=$(free --giga | grep "Mem" | tr -s ' ' | cut -d' ' -f7)
echo "$time $used_mem $free_mem" >> "$output_dir/mem_$time.txt"
used_disk=$(df -BG / | tail -1 | tr -s ' ' | cut -d' ' -f3 | sed 's/G//')
free_disk=$(df -BG / | tail -1 | tr -s ' ' | cut -d' ' -f4 | sed 's/G//')
echo "$time $used_disk $free_disk" >> "$output_dir/disk_$time.txt"
echo "All the data r collected at time: $time"
```

## Display the collected data script (calculate\_avg.sh)

- CPU calculations and HTML code



A screenshot of the terminal showing the execution of 'calculate\_avg.sh'. The script calculates the average CPU usage from the collected data files and generates an HTML report. The output shows the calculation of the average and the generation of the HTML file 'cpu.html'.

```
#####
# CPU calculations & HTML code #####
total=0
count=0

for file in "$data_dir"/cpu_*.txt; do
    value=$(cat "$file" | cut -d'.' -f2)
    total=$((total + $value))
    count=$((count + 1))
done

if [ $count -gt 0 ]; then
    cpu_avg=$(echo "scale=1; $total / $count" | bc)
else
    cpu_avg=0
fi

cat > "$html_dir"/cpu.html <<EOF
<!DOCTYPE html>
<html>
<head><title>CPU Ideal</title></head>
<body>
<h1>CPU Ideal</h1>
<p>Average: $cpu_avg%</p>
<ul>
EOF

for file in "$data_dir"/cpu_*.txt; do
    date=$(cut -d'.' -f1 $file)
    Ideal=$(cut -d'.' -f2 $file)
    echo "<li>Date = $date" Ideal(%) = $Ideal" </li>" >> "$html_dir/cpu.html"
    echo "<li>Date = $date" Ideal(%) = $Ideal" </li>" >> "$html_dir/cpu.html"
done

echo "</ul></body></html>" >> "$html_dir/cpu.html"
```

- Memory calculations and HTML code

```

count=0
for file in "$data_dir"/mem_*txt; do
    value1=$(cat "$file" | cut -d' ' -f2)
    value2=$(cat "$file" | cut -d' ' -f3)
    total1=$((total1 + value1))
    total2=$((total2 + value2))
    count=$((count + 1))
done
if [ $count -gt 0 ]; then
    used_mem_avg=$((total1 / count))
    free_mem_avg=$((total2 / count))
else
    used_mem_avg=0
    free_mem_avg=0
fi

cat > "$html_dir"/mem.html <<EOF
<!DOCTYPE html>
<html>
<head><title>Memory Statistics</title></head>
<body>
<h1>Memory Statistics</h1>
<p>Average Used: $used_mem_avg GB</p>
<p>Average Free: $free_mem_avg GB</p>
</ul>
EOF

for file in "$data_dir"/mem_*txt; do
    mem_date=$(cut -d' ' -f1 "$file")
    mem_used=$(cut -d' ' -f2 "$file")
    mem_free=$(cut -d' ' -f3 "$file")
    echo "<li>$(cat $file)</li>" >> "$html_dir/mem.html"
    echo "<li>Date = $mem_date<br/>Used(GB) = $mem_used<br/>Free(GB) = $mem_free</li>" >> "$html_dir/mem.html"
done

```

- Disk calculations and HTML code

```

for file in "$data_dir"/disk_*txt; do
    value1=$(cat "$file" | cut -d' ' -f2)
    value2=$(cat "$file" | cut -d' ' -f3)
    total1=$((total1 + value1))
    total2=$((total2 + value2))
    count=$((count + 1))
done

if [ $count -gt 0 ]; then
    used_disk_avg=$((total1 / count))
    free_disk_avg=$((total2 / count))
else
    used_disk_avg=0
    free_disk_avg=0
fi

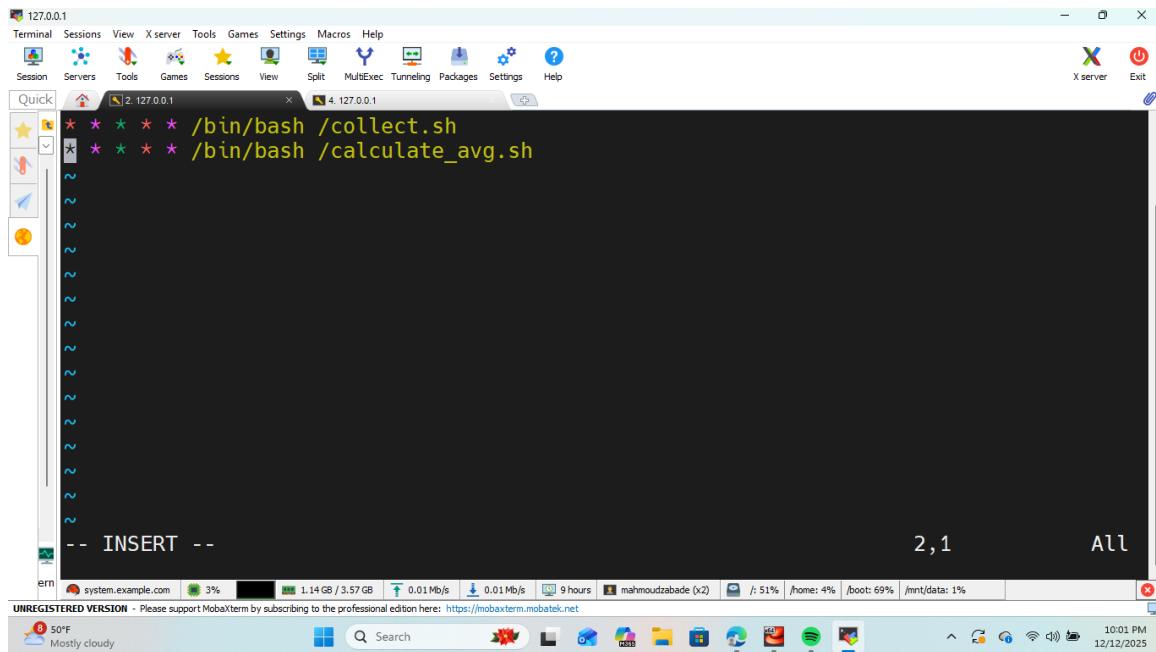
cat > "$html_dir"/disk.html <<EOF
<!DOCTYPE html>
<html>
<head><title>Disk Statistics</title></head>
<body>
<h1>Disk Statistics</h1>
<p>Average Used: $used_disk_avg GB</p>
<p>Average Free: $free_disk_avg GB</p>
<ul>
EOF

for file in "$data_dir"/disk_*txt; do
    disk_date=$(cut -d' ' -f1 '$file')
    disk_used=$(cut -d' ' -f2 '$file')
    disk_free=$(cut -d' ' -f3 '$file')
    echo "<li>Date = $disk_date<br/>Used(GB) = $disk_used<br/>Free(GB) = $disk_free</li>" >> "$html_dir/disk.html"
done

#echo "<li>$(cat $file)</li>" >> "$html_dir/disk.html"

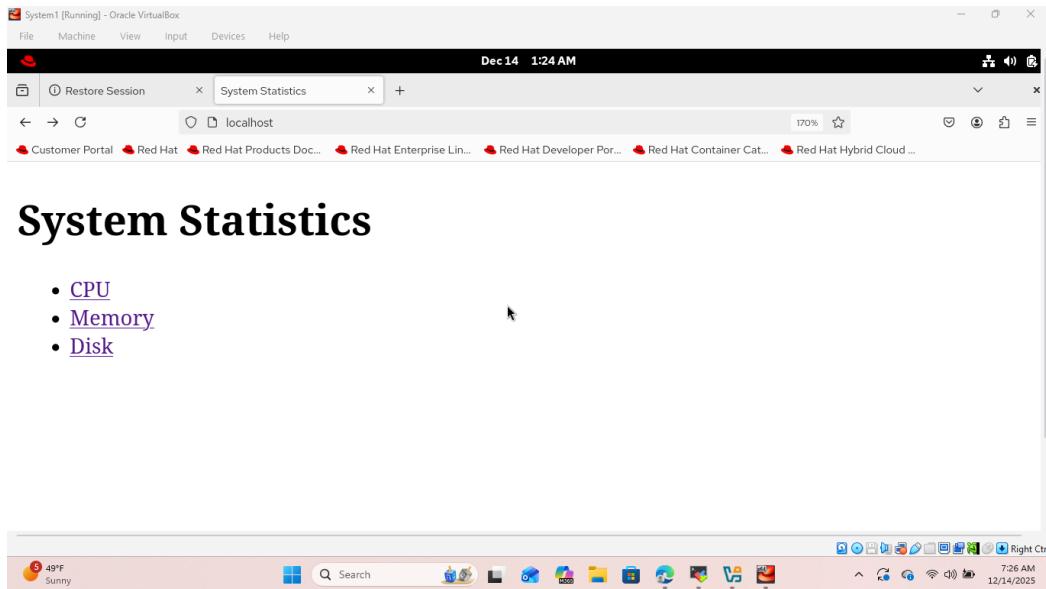
```

# Crontab



## HTML page & Results

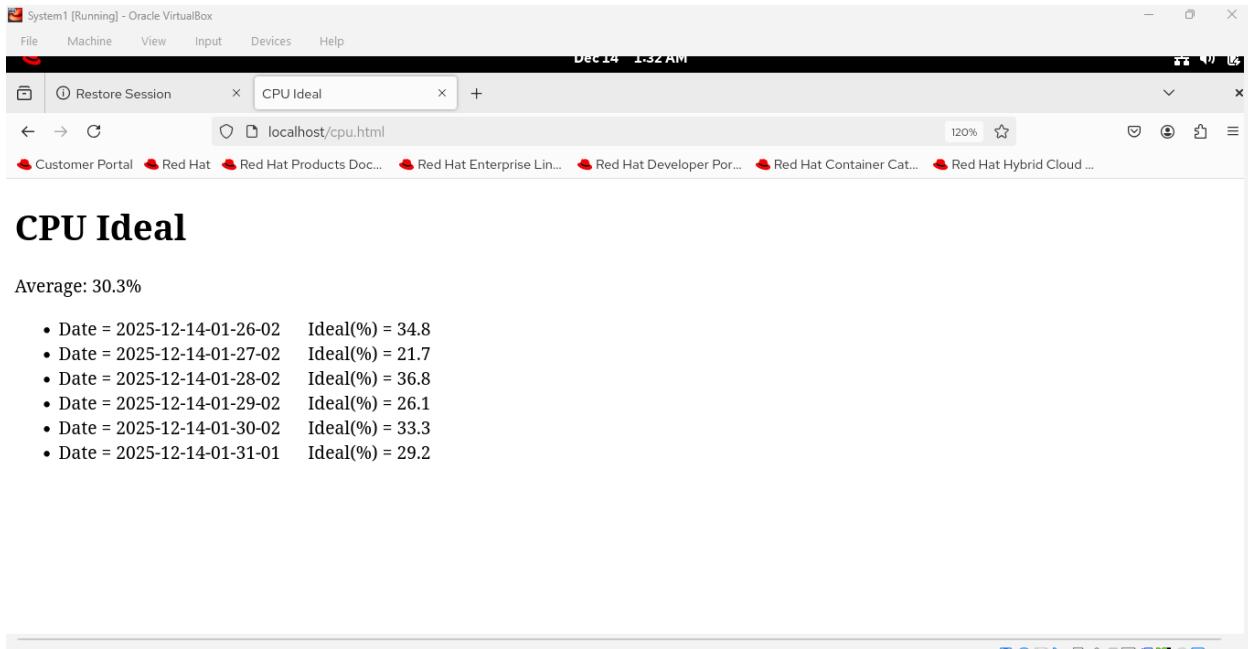
- Main Page



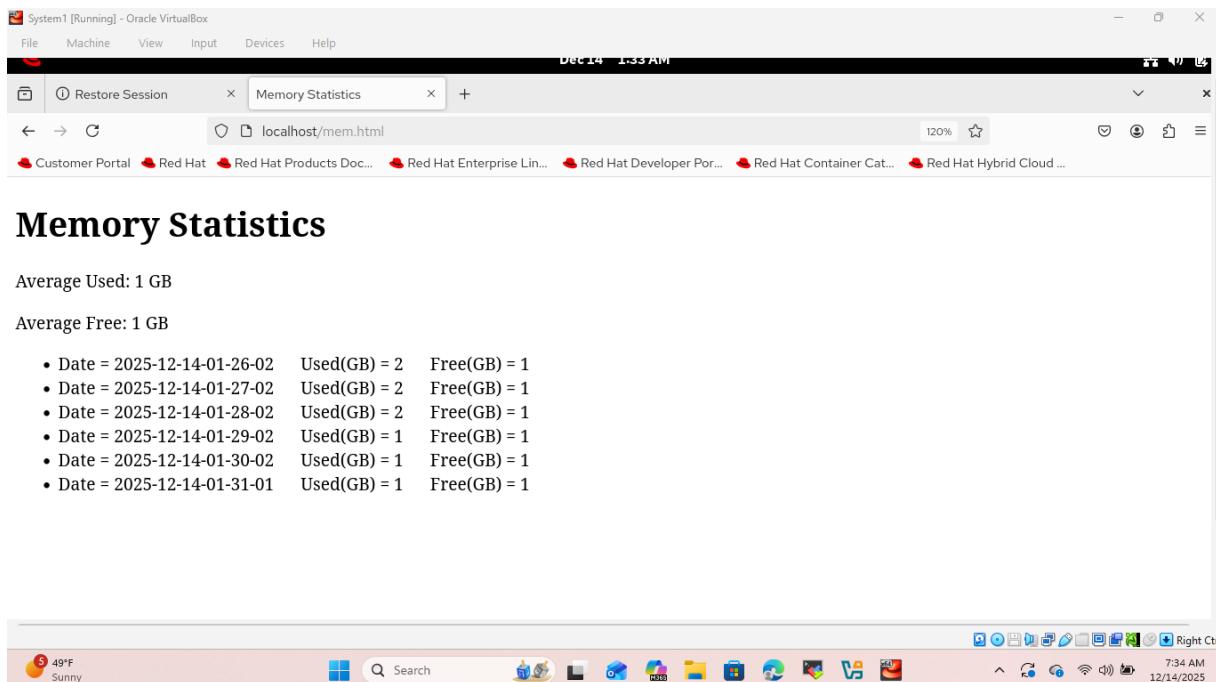
## System Statistics

- [CPU](#)
- [Memory](#)
- [Disk](#)

- CPU Ideal



- **Memory Usage**



- **Disk Usage**

System1 [Running] - Oracle VirtualBox

File Machine View Input Devices Help

Dec 14 1:34 AM

Disk Statistics

localhost/disk.html

Customer Portal Red Hat Red Hat Products Doc... Red Hat Enterprise Lin... Red Hat Developer Por... Red Hat Container Cat... Red Hat Hybrid Cloud ...

Average Used: 13 GB

Average Free: 13 GB

- Date = 2025-12-14-01-26-02 Used(GB) = 13 Free(GB) = 13
- Date = 2025-12-14-01-27-02 Used(GB) = 13 Free(GB) = 13
- Date = 2025-12-14-01-28-02 Used(GB) = 13 Free(GB) = 13
- Date = 2025-12-14-01-29-02 Used(GB) = 13 Free(GB) = 13
- Date = 2025-12-14-01-30-02 Used(GB) = 13 Free(GB) = 13
- Date = 2025-12-14-01-31-01 Used(GB) = 13 Free(GB) = 13
- Date = 2025-12-14-01-32-02 Used(GB) = 13 Free(GB) = 13

