

How to Display Server Memory Percentage on Linux?

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In general, sysadmins will use the **free -m** command to see how much server memory is on the Linux server and how much is used. However, I want to display the server memory percentage on my Linux.

Problem

How to display server memory percentage on Linux?

Solution

If you run **free -m** on your Linux server, you will see something like this in the image below:

```
sysadmin@ubuntu2404:~$ free -m
              total        used         free       shared  buff/cache   available
Mem:           3916         789          682           6         2699        3127
Swap:           511           0          511
sysadmin@ubuntu2404:~$
```

Display of RAM condition

a. Display the memory used

Use the command below to display the memory used in percent form:

```
free -m | grep Mem | awk '{print $3/$2 * 100.0}' | sed 's/$/ %/'
```

```
sysadmin@ubuntu2404:~$ free -m | grep Mem | awk '{print $3/$2 * 100.0}' | sed 's/$/ %/'
19.8927%
sysadmin@ubuntu2404:~$
```


Used memory in percentage

b. Display available free memory

Use the command below to display available free memory in percent form:

```
free -m | grep Mem | awk '{print $4/$2 * 100.0}' | sed 's/$/%/'
```

```
sysadmin@ubuntu2404:~$ free -m | grep Mem | awk '{print $4/$2 * 100.0}' | sed 's/$/%/'  
17.3136%  
sysadmin@ubuntu2404:~$
```




Free memory in percentage

c. Display the cache memory

Use the command below to display the cache memory in percent form:

```
free -m | grep Mem | awk '{print $6/$2 * 100.0}' | sed 's/$/%/'
```

```
sysadmin@ubuntu2404:~$ free -m | grep Mem | awk '{print $6/$2 * 100.0}' | sed 's/$/%/'  
70.046%  
sysadmin@ubuntu2404:~$
```



Cache memory in percentage

d. Integrate with bash script

If you want the percentage of memory to be put into the bash script for comparison, then the percentage should be changed from a fraction to an integer. Take a look at an example of a bash script below:

```
#!/bin/bash  
  
# Take the percentage of memory usage  
mem_usage=$(free -m | grep Mem | awk '{print $3/$2 * 100.0}')
```

echo Usage Memory: \$mem_usage

```
# Change to integer for comparison  
mem_usage_int=${mem_usage%.*}
```

```
# Check condition  
if [ $mem_usage_int -gt 80 ]; then  
    echo "High Memory: ${mem_usage_int}% used"  
else  
    echo "Low Memory: ${mem_usage_int}% used"  
fi
```

Note

Sysadmins, including me, often think that using the `free -m` command will display memory in Megabytes (MB), even though the command will display memory in Mebibytes. To display memory in Megabytes, run the `free --mega` command, where 1 Mebibyte (MiB) is the same as 1,048 Megabytes. Look at the image below to see the difference between Mebibytes and Megabytes:

```
sysadmin@ubuntu2404:~$ free -m Mebibytes
              total        used         free      shared  buff/cache   available
Mem:           3916          779          607           6       2785       3136
Swap:           511           0           511
sysadmin@ubuntu2404:~$
sysadmin@ubuntu2404:~$ free --mega MegaBytes
              total        used         free      shared  buff/cache   available
Mem:           4106          807          643           6       2923       3298
Swap:           536           0           536
sysadmin@ubuntu2404:~$
```

Difference between Mebibyte and Megabyte

References

stackoverflow.com

baeldung.com

mathda.com