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SysInfo Version 2

4/17/24

Description:

SysInfo is a small utility tool built in C. Its purpose is to provide basic system information. With the new Version 2 release, there are expanded tools included for CPU information.

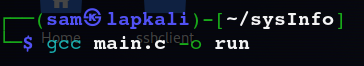
Setting it up:

The program must be ran on a Debian machine. The package “bc” is required to use option 8. If your machine does not have it, it will be automatically installed by the program, just make sure you have at least 1GB of free storage and an Internet connection.

To run the script, open your terminal and navigate to the folder containing the tool. This can be done through the use of the “cd” command. Then, compile the program using gcc.



Here’s an example: “gcc main.c -o run”



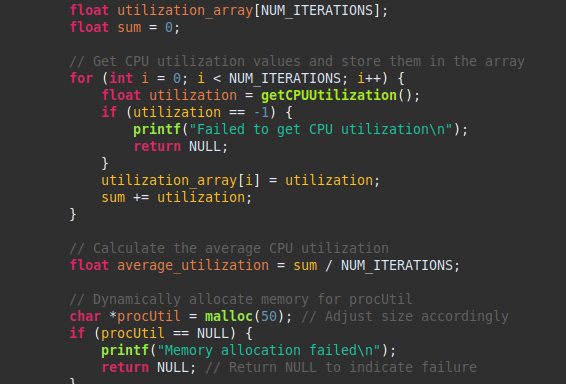
If you used the example above, you can run the script by running the command “./run”, however if you didn’t use that exact command, the format to run the script is “./[name of compiled file]”. Please note this is the name of the compiled file, *not* the original main.c file.

Bash Scripts:  
This program uses three Bash scripts to perform the CPU options (more on those later). The first is avgTemp.sh, which reads the /sys/class/thermal/thermal\_zone0/temp file to get the CPU’s temperature. It then converts this temperature from millidegrees to regular degrees Celsius.  
  
Next is coreCount.sh, which uses a mixture of lscpu and grep to grab the amount of cores on the system.  
  
Finally, there is procUtil. It’s purpose is to calculate the current CPU utilization of the system, but as it needs the “bc” package, it also checks for the package and installs it, if necessary. Of course, it has functionality built in to confirm there is enough storage space and and an Internet connection before attempting the installation.

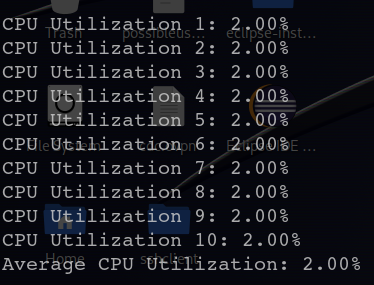
Array:

This program uses an array for option 8. This options runs a Bash script to acquire CPU utilization ten times, storing the outputs into an array. It then provides the array, as well as the average utilization.

Here is the array’s code:



Here is the output:

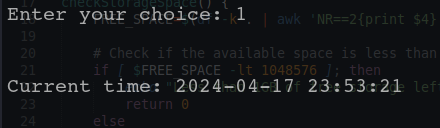


Options:

There are two main sections for the options, Miscellaneous, which include options 1-5, and CPU Options, which contains 6-8. Finally, there is option 9 outside of either section, which is used to exit the program.

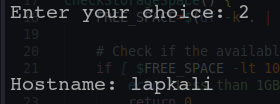
Option 1 – Time and Date:

This option grabs the current system time and date.



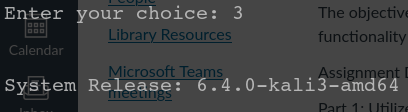
Option 2 – Hostname:

Option 2 grabs the hostname of the system, which can be thought of as an internal designator/name for the machine.



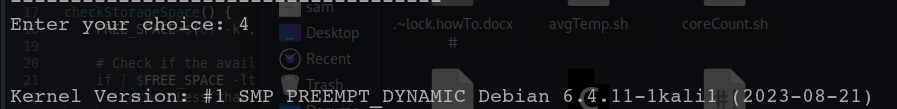
Option 3 – System Release Information:

This gives the information regarding what version the operating system is running. As this document is being written on a Kali Linux machine, this does not show up as Ubuntu.



Option 4 – Kernel Version:

Another simple option, this displays the kernel version.



**Please see the Bash section to see more details on how the following options work with their respective Bash scripts**

Option 5 – Total System Memory:  
This option displays the amount of memory (RAM) that is on the machine. This is not the amount that is available, this is the total.

Option 6 – CPU Core Count:  
Option 6 displays the number of cores on the system. This does not count threads, but individual cores.

Option 7 – Average CPU Temperature:  
This grabs and displays the CPU’s temperature.

Option 8 – Approximate CPU Total Utilization:

This generates an array of CPU utilization, as well as the average.

