

W.C

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Operating Systems





ORIGINAL IDEA

Change the w command to make it more readable and aesthetically pleasing to the user

what is the w command?

- The w command gives the user information about the current use of the computer
- It shows a quick summary of every user logged into the computer, what the user is currently doing, when they logged in, how long they have been logged in for, and what load all the activity is imposing on the computer itself
- Includes other Linux modules: who, uptime, and ps -a
- This includes the user, the time of the login, etc.

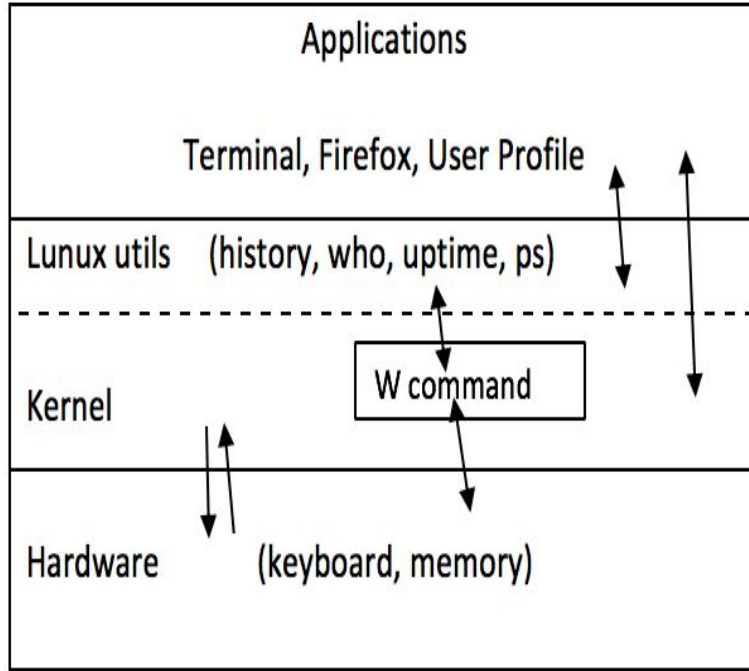
```
18:18 up 7:45, 2 users, load averages: 4.54 4.41 3.80
USER      TTY      FROM          LOGIN@  IDLE WHAT
Sophia    console  -             10:33   7:44 -
Sophia    s000     -             18:18   - w
```

desired output

- Our goal was to clean up the command output
 - Color code and fix spacing
- Make it easier for the user to find the information they are looking for

Current Time: 17:59; Current sys runtime: 7:27; # of users: 2;
Load Averages: (1 min) 7.51, (5 min) 3.93, (15 min) 3.28;

USER	TTY	REMOTE HOST	LOGIN TIME	IDLE TIME	CURRENT CL
Sophia	console	—	10:33	7:26	— cd FUZZ
Amelia	s000	—	10:33		— w



Class Diagram

our process:

Step 1

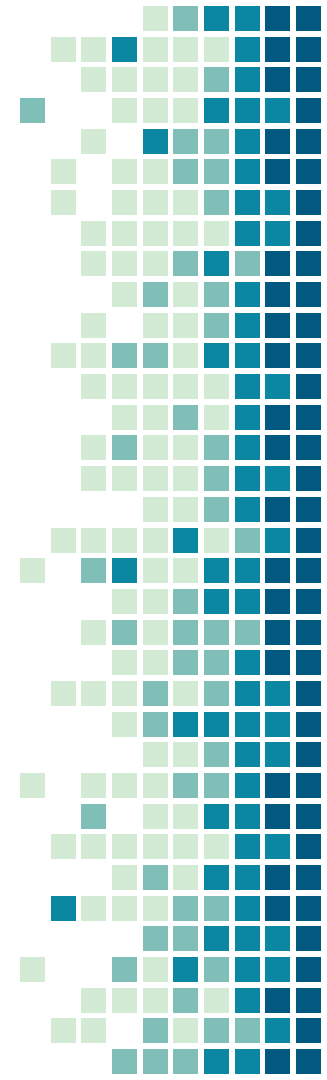
After all computers were finally able to download Ubuntu and VirtualBox, could not get the VB to run our operating system on any computer

Step 2

Finally, after trying multiple different times on all computers, Annie's began to work (we don't know why)

Step 3

After searching through countless kernel folders and enlisting the help of BJ, we learned that w.c is not downloaded when the kernel is copied but instead is located in a procps file that needs to be downloaded separately



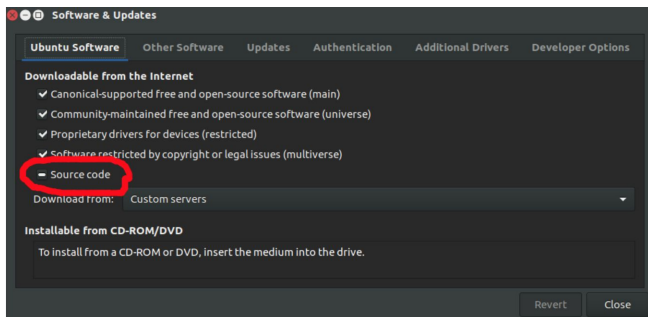
our process:

Step 4

After endless Googling, we found that we need to turn on the source code download from within the VirtualBox

using:

```
software-properties-gtk
```



Step 5

The procps was downloaded and we were able to access w.c

Step 6

However, when we attempted to run w.c without any modifications whatsoever, it would not even compile due to syntax errors in the original code / included files in w.c

our process:

Step 7

After changing the spelling mistakes and incorrect file paths, we were left with a semantic error in locale.h that we could not resolve

Step 8

Gave up

```
annie@annie-VirtualBox:~/Desktop/procps_3.3.15.orig/procps-3.3.15$ gcc w.c -o w
In file included from w.c:43:
/usr/include/locale.h:122:70: error: expected identifier or '(' before ';' token
extern char *setlocale (int __category, const char *__locale) __THROW;
                                                                    ^
```


our code

```
#include<stdio.h>
#define NRM  "\x1B[0m"
#define RED  "\x1B[31m"
#define GRN  "\x1B[32m"
#define YEL  "\x1B[33m"
#define BLU  "\x1B[34m"
#define MAG  "\x1B[35m"
#define CYN  "\x1B[36m"
#define WHT  "\x1B[37m"

int main()
{
    printf("\n");
    printf("Current Time: 17:59; Current System Runtime: 8:15; # of Users: 2;\n");
    printf("Load Averages: (1 min) 7.51, (5 min) 3.93, (15 min) 3.28\n");
    printf("%sUSER\t%sTTY\t%sREMOTE HOST\t%sLOGIN TIME\t%sIDLE TIME\t%sCURRENT CL\n", RED, CYN, YEL, GRN, BLU, MAG);
    printf("%sSophia\t%sconsole\t%s-\t\t%s10:30\t\t%s7:32\t\t%s- cd FUZZ\n", RED, CYN, YEL, GRN, BLU, MAG);
    printf("%sLina\t%s000\t%s-\t\t%s10:30\t\t\t\t\t%s-w\n", RED, CYN, YEL, GRN, MAG);
    printf("%s\n", NRM);
    return 0;
}
```

output

```
Current Time: 17:59; Current System Runtime: 8:15; # of Users: 2;  
Load Averages: (1 min) 7.51, (5 min) 3.93, (15 min) 3.28  
USER      TTY      REMOTE HOST      LOGIN TIME      IDLE TIME      CURRENT CL  
Sophia    console  -           10:30          7:32           - cd FUZZ  
Lina      s000    -           10:30          -w
```

THANKS!

Any questions?