

Jesse Knuckles

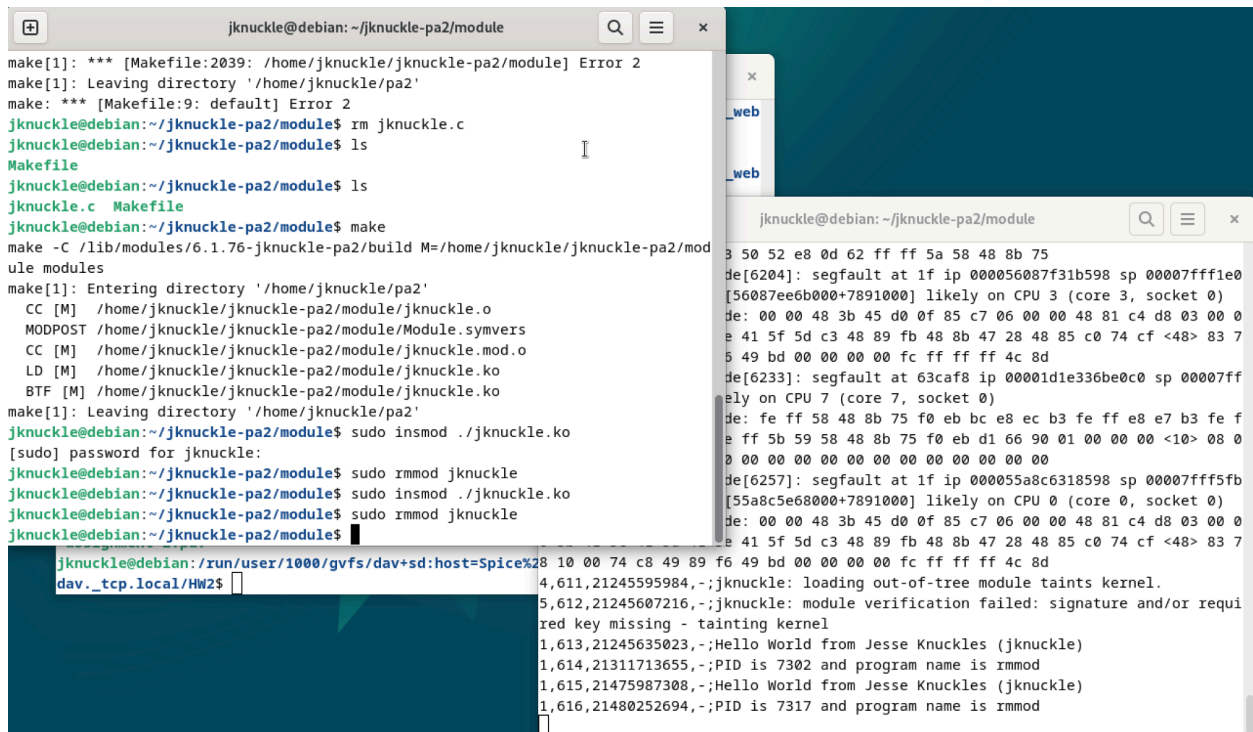
I pledge my honor that I have abided by the Stevens Honor System.

Below is the screenshot that shows that I have properly compiled my working kernel.



```
jknuckle@debian: ~$ uname -a
Linux debian 6.1.76-jknuckle-pa2 #1 SMP PREEMPT_DYNAMIC Wed Feb 14 04:59:10 EST
2024 x86_64 GNU/Linux
jknuckle@debian: ~$ id
uid=1000(jknuckle) gid=1000(jknuckle) groups=1000(jknuckle),24(cdrom),25(floppy)
,27(sudo),29(audio),30(dip),44(video),46(plugdev),100(users),106(netdev),111(blu
etooth),113(lpadmin),116(scanner)
jknuckle@debian: ~$
```

The picture below shows that I have properly compiled and installed a module to my working kernel.



```
jknuckle@debian: ~/jknuckle-pa2/module
make[1]: *** [Makefile:2039: /home/jknuckle/jknuckle-pa2/module] Error 2
make[1]: Leaving directory '/home/jknuckle/pa2'
make: *** [Makefile:9: default] Error 2
jknuckle@debian: ~/jknuckle-pa2/module$ rm jknuckle.c
jknuckle@debian: ~/jknuckle-pa2/module$ ls
Makefile
jknuckle@debian: ~/jknuckle-pa2/module$ ls
jknuckle.c Makefile
jknuckle@debian: ~/jknuckle-pa2/module$ make
make -C /lib/modules/6.1.76-jknuckle-pa2/build M=/home/jknuckle/jknuckle-pa2/mod
ule modules
make[1]: Entering directory '/home/jknuckle/pa2'
CC [M] /home/jknuckle/jknuckle-pa2/module/jknuckle.o
MODPOST /home/jknuckle/jknuckle-pa2/module/Module.symvers
CC [M] /home/jknuckle/jknuckle-pa2/module/jknuckle.mod.o
LD [M] /home/jknuckle/jknuckle-pa2/module/jknuckle.ko
BTF [M] /home/jknuckle/jknuckle-pa2/module/jknuckle.ko
make[1]: Leaving directory '/home/jknuckle/pa2'
jknuckle@debian: ~/jknuckle-pa2/module$ sudo insmod ./jknuckle.ko
[sudo] password for jknuckle:
jknuckle@debian: ~/jknuckle-pa2/module$ sudo rmmod jknuckle
jknuckle@debian: ~/jknuckle-pa2/module$ sudo insmod ./jknuckle.ko
jknuckle@debian: ~/jknuckle-pa2/module$ sudo rmmod jknuckle
jknuckle@debian: ~/jknuckle-pa2/module$

jknuckle@debian: /run/user/1000/gvfs/dav+sd:host=Spice28
dav._tcp.local/HW2$
```

And lastly, below is the screenshot showing the I properly compiled my own syscall into my working kernel, and that the syscall works as instructed to. Note, the \x0a character in the lines above the bottom two lines was from a problem with my user space c program, the problem was fixed right after and the proper output is printed to the kernel log at the very bottom.

```

Activities  Terminal  Feb 19 11:57
jknuckle@debian: ~/jknuckle-pa2

#include <sys/syscall.h>
#include <stdio.h>
#include <unistd.h>
int main(int argc, char **argv) {
    char str1[] = "abcdefghijklmnopqrstuvwxyz";
    printf("str1 before: %s\n", str1);
    long j = syscall(451, str1);
    printf("syscall result: %ld\n", j);
    printf("str1 after: %s\n", str1);
    char str2[] = "abcdefghijklmnopqrstuvwxyzabcdefghijklmnopqrstuvwxyz";
    printf("str2 before: %s\n", str2);
    long j2 = syscall(451, str2);
    printf("syscall result: %ld\n", j2);
    printf("str2 after: %s\n", str2);
    return 0;
}
jknuckle@debian:~/jknuckle-pa2$ gcc syscall.c -o syscall.out
jknuckle@debian:~/jknuckle-pa2$ ./syscall.out
str1 before: abcdefghijklmnopqrstuvwxyz
syscall result: 6
str1 after: JbcdJfghJjklmJpqrstJvwXJz
str2 before: abcdefghijklmnopqrstuvwxyzabcdefghijklmnopqrstuvwxyz
syscall result: -1
str2 after: abcdefghijklmnopqrstuvwxyzabcdefghijklmnopqrstuvwxyz
jknuckle@debian:~/jknuckle-pa2$

now_k8: Power state transitions not supported
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Registered PF_QIPCRTR protocol family
: enp0s1 NIC Link is Up 1000 Mbps Full Duplex, Flow Contro
ADDRCONF(NETDEV_CHANGE): enp0s1: link becomes ready
1: input handler disabled
: spice vdagent tablet as /devices/virtual/input/input5
1: input handler enabled
1: input handler disabled
6,592,56157120,-;input: spice vdagent tablet as /devices/virtual/input/input6
4,593,12758278545,-;kauditd_printk_skb: 15 callbacks suppressed
5,594,12758278662,-;audit: type=1400 audit(1708318804.805:27): apparmor="DENIED"
operation="capable" profile="/usr/sbin/cupsd" pid=2770 comm="cupsd" capability=
12 capname="net_admin"
1,595,52722858970,-;before: abcdefghijklmnopqrstuvwxyz\x0a
1,596,52722859606,-;after: JbcdJfghJjklmJpqrstJvwXJz\x0a
1,597,54640099150,-;before: abcdefghijklmnopqrstuvwxyz
1,598,54640099316,-;after: JbcdJfghJjklmJpqrstJvwXJz

```