Template Final Exam

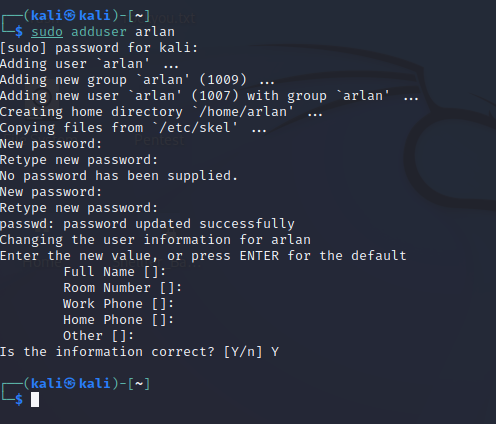
|  |  |  |
| --- | --- | --- |
| # | Full Name | Group |
|  | Nurmashev Arlan | CS-2107S |
|  |  |  |
|  |  |  |
|  |  |  |

|  |
| --- |
| Link to the repository:  https://github.com/Argoxan/modulevar |

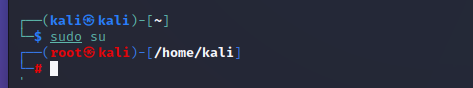
Step-by-step task completion:

Task 1:

Add a new user to the system



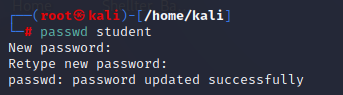
Log in as root



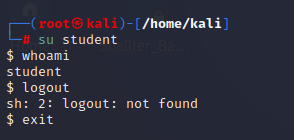
Add a user named student to the system



After entering the passwd student command

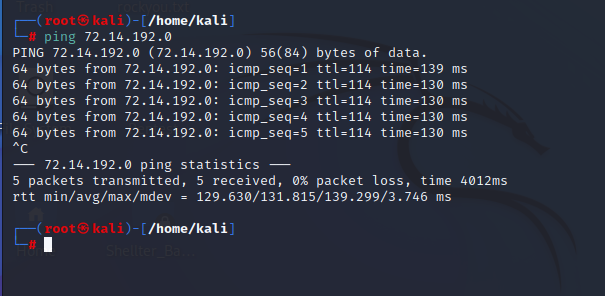


Enter the whoami command

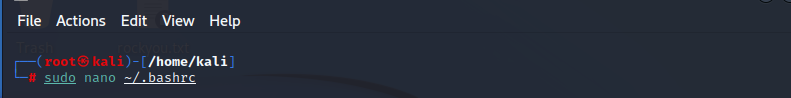


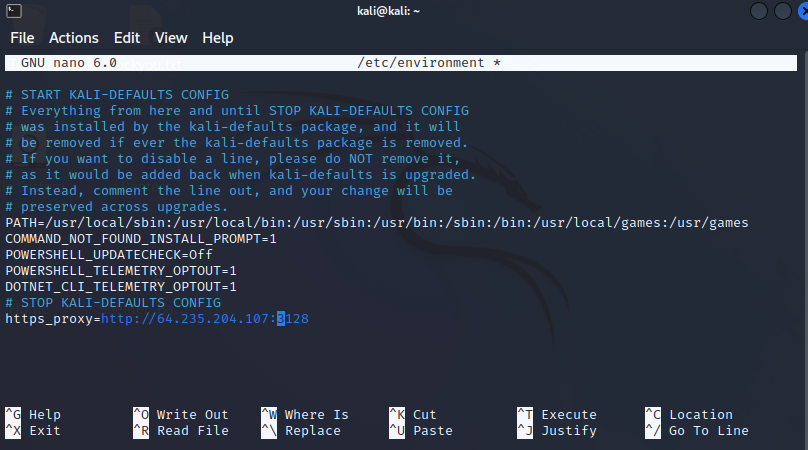
Task 2:

"Direct" IP connection (one of googles ip address)

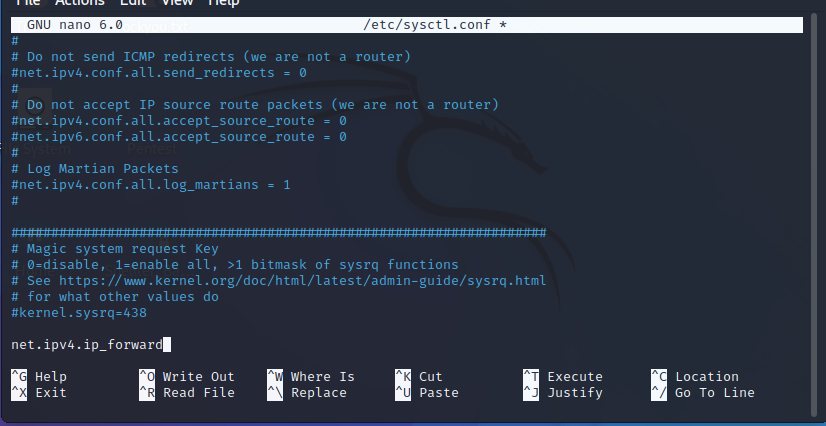


Proxy





NAT





Task 3:

**On kali it didn’t work, so I changed to Ubuntu from Cisco**

I am going to test out a module that stores a variable and allows it to be changed with sysfd.h

Created a new dir and inserted a module



#**include** <linux/fs.h>

#**include** <linux/init.h>

#**include** <linux/kobject.h>

#**include** <linux/module.h>

#**include** <linux/string.h>

#**include** <linux/sysfs.h>

**static** **struct** **kobject** \***mymodule**;

/\* Переменная, которую нужно будет изменять. \*/

**static** **int** myvariable = 0;

**static** **ssize\_t** **myvariable\_show**(struct kobject \*kobj,

struct kobj\_attribute \*attr, **char** \*buf)

{

**return** sprintf(buf, "%d\n", myvariable);

}

**static** **ssize\_t** **myvariable\_store**(struct kobject \*kobj,

struct kobj\_attribute \*attr, **char** \*buf,

**size\_t** count)

{

sscanf(buf, "%du", &myvariable);

**return** count;

}

**static** **struct** **kobj\_attribute** **myvariable\_attribute** =

\_\_ATTR(myvariable, 0660, myvariable\_show, (**void** \*)myvariable\_store);

**static** **int** \_\_init **mymodule\_init**(**void**)

{

**int** error = 0;

pr\_info("mymodule: initialised\n");

mymodule = kobject\_create\_and\_add("mymodule", kernel\_kobj);

**if** (!mymodule)

**return** -ENOMEM;

error = sysfs\_create\_file(mymodule, &myvariable\_attribute.attr);

**if** (error) {

pr\_info("failed to create the myvariable file "

"in /sys/kernel/mymodule\n");

}

**return** error;

}

**static** **void** \_\_exit **mymodule\_exit**(**void**)

{

pr\_info("mymodule: Exit success\n");

kobject\_put(mymodule);

}

module\_init(mymodule\_init);

module\_exit(mymodule\_exit);

MODULE\_LICENSE("GPL");

Then a create my Makefile



obj-m += hello-sysfs.o

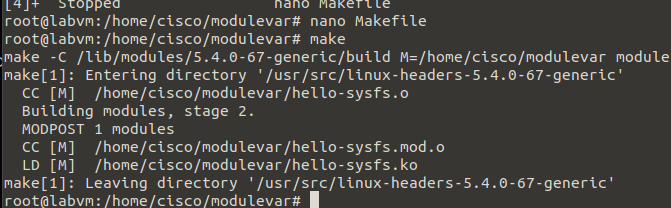
all:

make -C /lib/modules/$(shell uname -r)/build M=$(PWD) modules

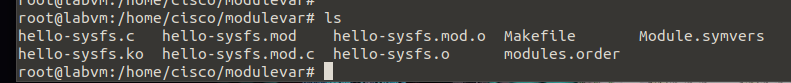
clean:

make -C /lib/modules/$(shell uname -r)/build M=$(PWD) clean

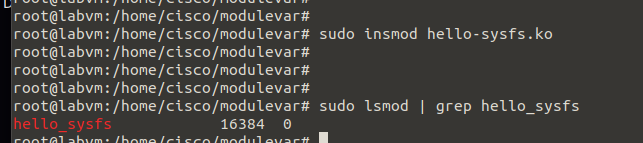
Next I executed make



We can see new generated files



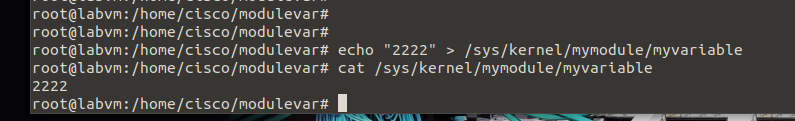
Execute ko file and check if its working



Myvaribale is equal to 0 right now



Lets change that and it works



And now lets remove the module

