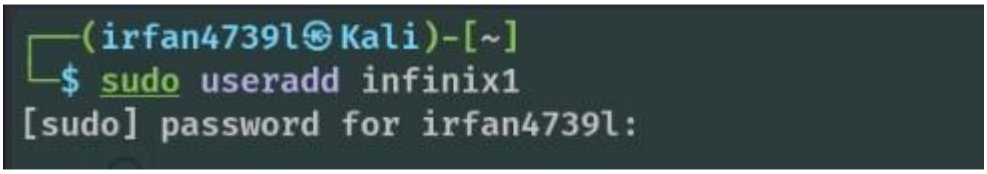
Task 1 : User & Permission Misconfigurations

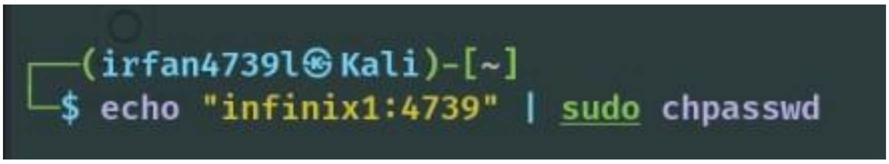
User permission and system misconfigurations:

1. First, we create a user named “**infinix1**” using the **sudo useradd** command.



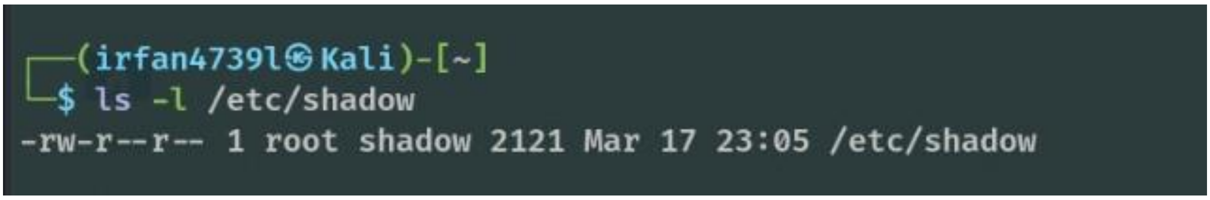
```
┌──(irfan4739l㉿Kali)-[~]
└─$ sudo useradd infinix1
[sudo] password for irfan4739l:
```

2. We assign the password “**4739**” by using the **echo** command to write it into the password file **chpassword** , with elevated privileges via **sudo .**



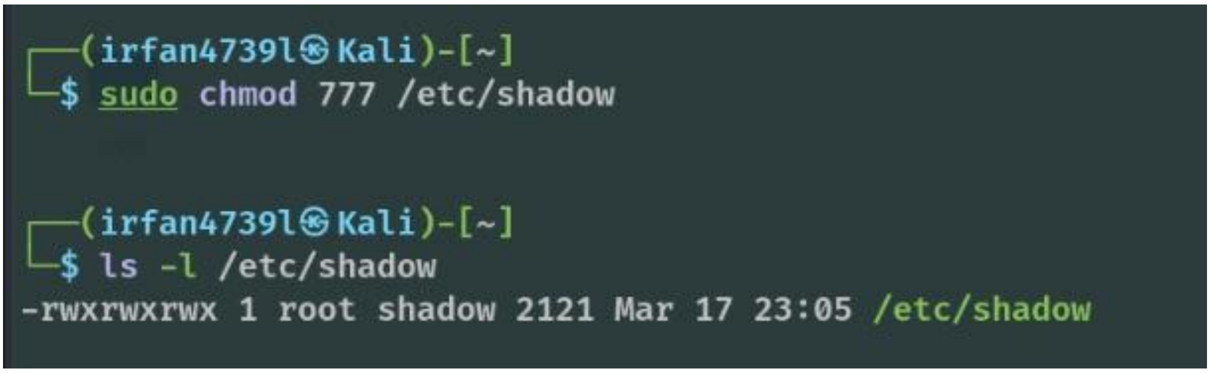
```
┌──(irfan4739l㉿Kali)-[~]
└─$ echo "infinix1:4739" | sudo chpasswd
```

3. We examine the permissions of the password file to identify and exploit any misconfigurations



```
┌──(irfan4739l㉿Kali)-[~]
└─$ ls -l /etc/shadow
-rw-r--r-- 1 root shadow 2121 Mar 17 23:05 /etc/shadow
```

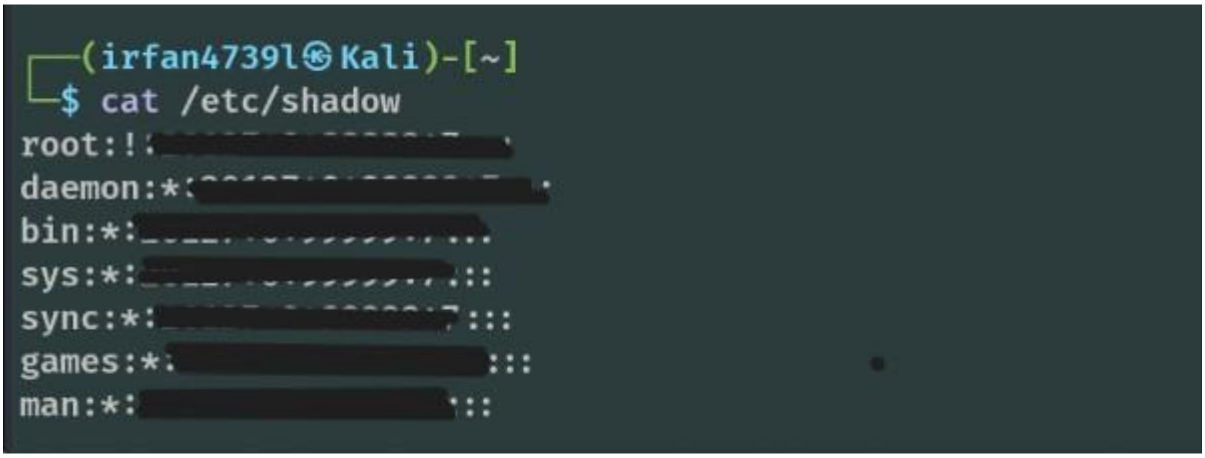
4. We modify the permissions of the shadow file using the **sudo chmod 777** command to grant full access. Then, we verify the updated permissions to confirm the ability to view the file.



```
┌──(irfan4739l㉿Kali)-[~]
└─$ sudo chmod 777 /etc/shadow


┌──(irfan4739l㉿Kali)-[~]
└─$ ls -l /etc/shadow
-rwxrwxrwx 1 root shadow 2121 Mar 17 23:05 /etc/shadow
```

5. As observed, we can now view the contents of the **/etc/shadow** file, which contains hashed passwords, even with normal user privileges.

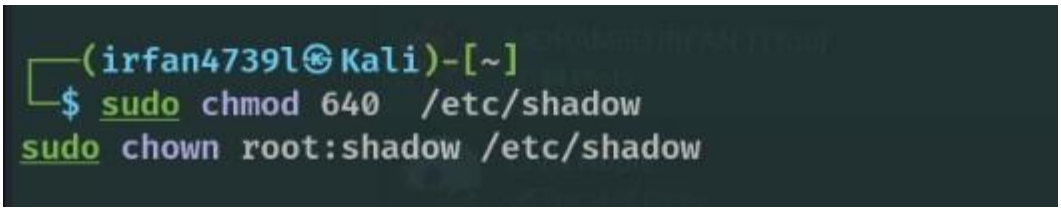


```
┌──(irfan4739l㉿Kali)-[~]
└─$ cat /etc/shadow
root:!:[redacted]
daemon:*:[redacted]
bin:*:[redacted]:::
sys:*:[redacted]::
sync:*:[redacted]:::
games:*:[redacted]:::
man:*:[redacted]::
```

6. We have successfully configured **/etc/shadow** to be accessible by normal users.

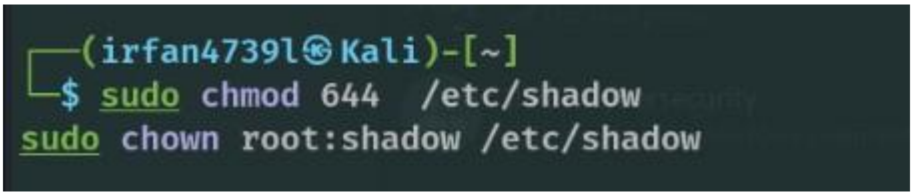
Securing permissions :

1. We secure the password file by setting its permissions to **640** using the **chmod** command. This ensures that only the root user and members of the shadow group can access it. The root user's password remains viewable only under superuser privileges.



```
┌──(irfan4739l㉿Kali)-[~]
└─$ sudo chmod 640  /etc/shadow
sudo chown root:shadow /etc/shadow
```

2. We modify the permissions of the **/etc/passwd** file using **sudo chmod 644** and set its ownership to **root:root** with **sudo chown root:root** . This ensures that regular users can read the file but cannot modify it.



```
┌──(irfan4739l㉿Kali)-[~]
└─$ sudo chmod 644  /etc/shadow
sudo chown root:shadow /etc/shadow
```

3. Finally we use sudo visudo to check permissions.

📌 Summary of Steps:

Step	Command	Purpose
Create Users	sudo useradd user1	Add new users
Set Passwords	`echo "user1:pass"	sudo chpasswd`
Break Security	sudo chmod 777 /etc/shadow	Make shadow file world-readable (BAD)
Exploit	su user1 && cat /etc/shadow	Access passwords as normal user
Fix Permissions	sudo chmod 640 /etc/shadow	Secure shadow file
Secure /etc/passwd	sudo chmod 644 /etc/passwd	Prevent unauthorized edits
Fix sudo Privileges	sudo visudo	Restrict sudo access