



# Lab 3

## CS 5-1 - BSCS – Operating System Lab

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### Task 1

A screenshot of a Kali Linux desktop environment. In the center, a terminal window titled "kali@kali: ~" displays a series of commands and their outputs. The commands include "date", "uptime", and "scp file.txt kali@10.0.2.15:/home/kali/". The desktop background shows a close-up of a blue keyboard. On the left, a dock contains icons for Home, File System, and Trash. A system tray at the top right shows the date and time as "Tue Sep 9 11:12:21 2025".

```
kali@10.0.2.15's password:  
Linux kali 6.12.25-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.25-1kali1 (2025-04-30) x86_64  
The programs included with the Kali GNU/Linux system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*copyright.  
Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent  
permitted by applicable law.  
Last login: Tue Sep 9 11:12:21 2025 from 10.0.0.15  
[kali㉿kali: ~]  
$ ssh kali@127.0.0.2 "date"  
kali@127.0.0.2's password:  
Tue Sep 9 11:13:38 AM EDT 2025  
[kali㉿kali: ~]  
$ ssh kali@127.0.0.2 "uptime"  
kali@127.0.0.2's password:  
11:13:51 up 3:03, 4 users, load average: 0.98, 0.57, 0.42  
[kali㉿kali: ~]  
$ scp file.txt kali@10.0.2.15:/home/kali/  
kali@10.0.2.15's password:  
file.txt 100% 0 0.0KB/s 00:00  
[kali㉿kali: ~]
```

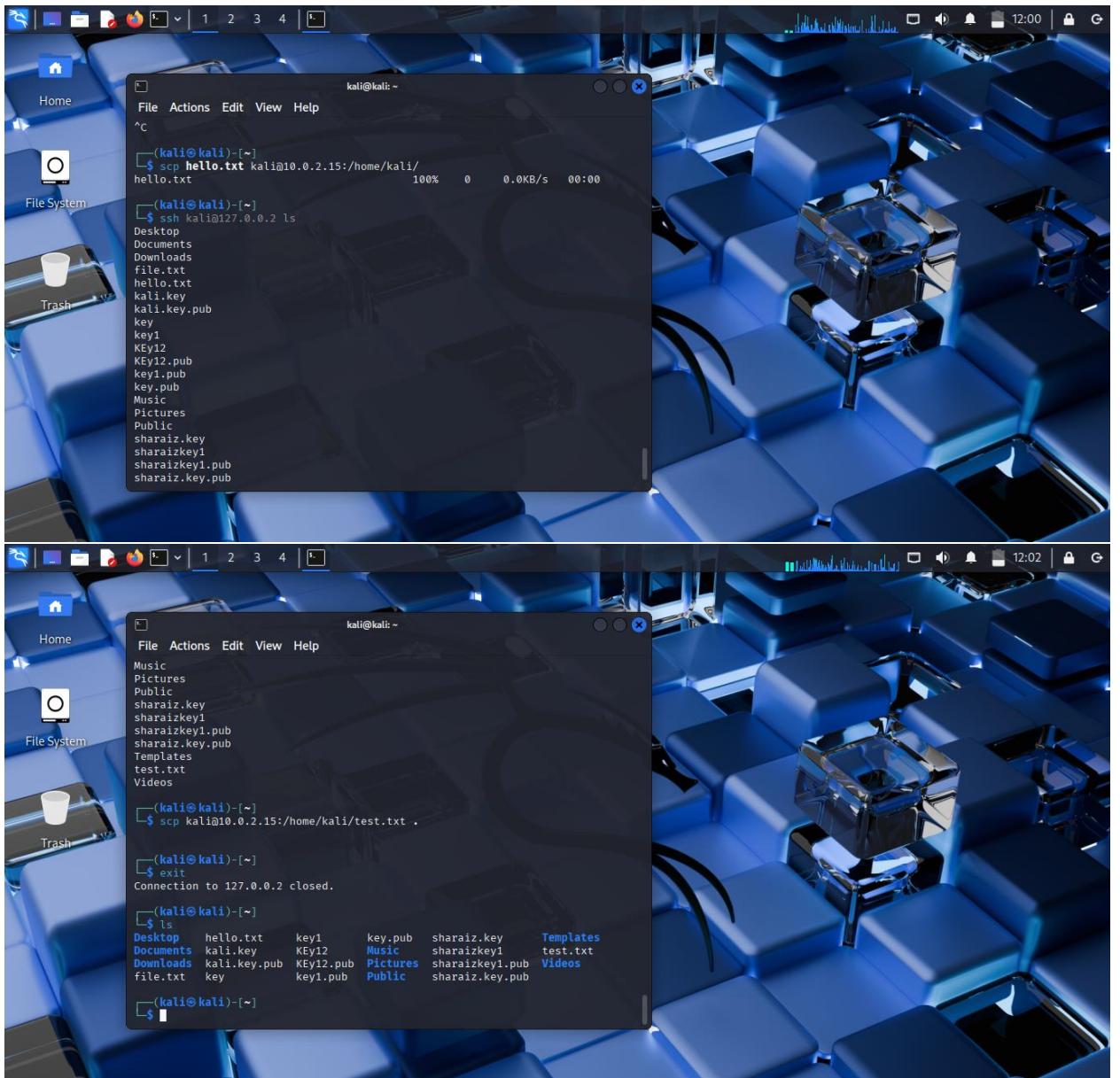
## Task 2

```
kali@kali: ~
File Actions Edit View Help
└$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/kali/.ssh/id_ed25519):
Enter passphrase for "/home/kali/.ssh/id_ed25519" (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/kali/.ssh/id_ed25519
Your public key has been saved in /home/kali/.ssh/id_ed25519.pub
The key fingerprint is:
SHA256:PPYzTXtojzVfm19Fu2ytXosYKq5Mx+aPfAKpHWvCok kali@kali
The key's randomart image is:
+--[ED25519 256]--+
|          .|
|          +.|
|          o.o|
|          =+|
|         .o.  o.*|
|        . = .o. .o+|
| E + .o o=o+.o+..|
| ...+o+r.=+*|
| ..oo=.o.+ |
+---[SHA256]---+
(kali㉿kali)-[~]
└$ ssh-copy-id kali@10.0.2.15
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/kali/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed
/usr/bin/ssh-copy-id: INFO: 1 key(s) remain to be installed -- if you are prompted now it is to install the new keys
kali@10.0.2.15's password:

Number of key(s) added: 1
```

### Task 3

## Task 4



## Task 5

```
Terminal Emulator Use the command line
(kali㉿kali)-[~]
$ ssh-keygen
Generating public/private ed25519 key pair.
Enter file in which to save the key (/home/kali/.ssh/id_ed25519): sharaiz
Enter passphrase for "sharaiz" (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in sharaiz
Your public key has been saved in sharaiz.pub
The key fingerprint is:
SHA256:7640bgQePG4CvdkQExs1fHmcuZDQJH+JYYRwLBx1bK kali@kali
The key's randomart image is:
+-- [ED25519 256] --+
|*++=|
|++..+|
|.B 0..o|
|E - B+=o..|
|= +.*=oS|
|. + **o.|
|. o ..*.|
| ..+..|
|..oo|
+--- [SHA256] ---+
(kali㉿kali)-[~]
$ ssh-copy-id kali@10.0.2.15
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/kali/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed

/usr/bin/ssh-copy-id: WARNING: All keys were skipped because they already exist on the remote system.
          (if you think this is a mistake, you may want to use -f option)
n)
```

```
File Actions Edit View Help
(kali㉿kali)-[~]
$ ssh-copy-id kali@10.0.2.15
/usr/bin/ssh-copy-id: INFO: Source of key(s) to be installed: "/home/kali/.ssh/id_ed25519.pub"
/usr/bin/ssh-copy-id: INFO: attempting to log in with the new key(s), to filter out any that are already installed

/usr/bin/ssh-copy-id: WARNING: All keys were skipped because they already exist on the remote system.
          (if you think this is a mistake, you may want to use -f option)
n)

(kali㉿kali)-[~]
$ ssh kali@10.0.2.15
Linux kali 6.12.25-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.25-1kali1 (2025-04-30) x86_64

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue Sep  9 11:56:37 2025 from 127.0.0.1
(kali㉿kali)-[~]
$
```

## Task 6

```
kali@kali: ~/myFolder
File Actions Edit View Help
st on the remote system.
(if you think this is a mistake, you may want to use -f option)

(kali㉿kali)-[~]
└─$ ssh kali@10.0.2.15
Linux kali 6.12.25-amd64 #1 SMP PREEMPT_DYNAMIC Kali 6.12.25-1kali1 (2025-04-30) x86_64

The programs included with the Kali GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Kali GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Tue Sep 9 11:56:37 2025 from 127.0.0.1
(kali㉿kali)-[~]
└─$ mkdir myFolder
(kali㉿kali)-[~]
└─$ cd myFolder
(kali㉿kali)-[~/myFolder]
└─$ echo "This is a test file inside the server." > file1.txt

(kali㉿kali)-[~/myFolder]
└─$ cat file.txt
cat: file.txt: No such file or directory
(kali㉿kali)-[~/myFolder]
└─$ ls
file1.txt

kali@kali: ~/myFolder
File Actions Edit View Help
└─$ cd.
Command 'cd.' not found, did you mean:
  command 'cdp' from deb ipras
  command 'cdl' from deb python3-datalab
  command 'cde' from deb cde
  command 'cdo' from deb cdo
  command 'cd5' from deb cd5
  command 'cdb' from deb tinycdb
  command 'cdv' from deb erlang-observer
  command 'cdl' from deb cdw
  command 'cdw' from deb cdw
Try: sudo apt install <deb name>
(kali㉿kali)-[~/myFolder]
└─$ cd/
zsh: no such file or directory: cd/
(kali㉿kali)-[~/myFolder]
└─$ cd\
>
(kali㉿kali)-[~/myFolder]
└─$ cat file1.txt
This is a test file inside the server.
(kali㉿kali)-[~/myFolder]
└─$ cp file1.txt file2.txt
(kali㉿kali)-[~/myFolder]
└─$ ls
file1.txt file2.txt
(kali㉿kali)-[~/myFolder]
└─$
```

## Task 7

scp kali@10.0.2.15:/home/kali/myFolder/file1.txt kali@10.0.2.15:/home/kali/myFolder/file2.txt  
[kali@10.0.2.15:/home/kali/myFolder/file3.txt](#)

```
kali@kali: ~
File Actions Edit View Help
[(kali㉿kali)-~/myFolder]
$ 
[(kali㉿kali)-~/myFolder]
$ scp kali@10.0.2.15:/home/kali/myFolder/file1.txt kali@10.0.2.15:/home/kali/
file1.txt
file2.txt
file3.txt

[(kali㉿kali)-~/myFolder]
$ scp file1.txt file2.txt file3.txt kali@10.0.4.15:/home/kali/
^C
[(kali㉿kali)-~/myFolder]
$ exit
Connection to 10.0.2.15 closed.

[(kali㉿kali)-~]
$ scp file1.txt file2.txt file3.txt kali@10.0.4.15:/home/kali/
scp: stat local "file1.txt": No such file or directory
[(kali㉿kali)-~]
$ ls
Desktop  Downloads  hello.txt  kali.key.pub  key1  KEy12.pub  key.pub  myF
Documents  file.txt  kali.key  key           KEY12  key1.pub   Music    Pic
```

scp file1.txt file2.txt file3.txt [kali@10.0.2.15:/home/kali/](http://kali@10.0.2.15:/home/kali/)

```
kali@kali: ~
File Actions Edit View Help
[(kali㉿kali)-~]
$ ls
Desktop  file3.txt  key      key.pub  sharaiz      sharaiz.pub
Documents  file.txt  key1    Music    sharaiz.key  Templates
Downloads  hello.txt  KEY12  myFolder  sharaizkey1 test.txt
file1.txt  kali.key  KEY12.pub Pictures  sharaizkey1.pub Videos
file2.txt  kali.key.pub  key1.pub  Public    sharaiz.key.pub

[(kali㉿kali)-~]
$ scp file1.txt file2.txt file3.txt kali@10.0.2.15:/home/kali/
file1.txt          100%   0     0.0KB/s  00:00
file2.txt          100%   0     0.0KB/s  00:00
file3.txt          100%   0     0.0KB/s  00:00

[(kali㉿kali)-~]
$
```

## Task 8

- ❖ Generate an SSH key pair on your local machine
- ❖ Copy the public key to the server
- ❖ Test passwordless login
- ❖ Run multiple remote commands in one SSH call
  - ssh kali@10.0.2.15 "whoami; hostname; uptime"

