

Running commands on other computers and transferring files between computers

Remote Login

- Login to remote computer and run programs on that computer
 - Once logged in to remote computer, everything you type is executed on that remote computer
- Old, insecure protocol: `telnet`
- Secure protocol: `ssh` (Secure Shell)
 - `ssh ADDRESS`
 - `ssh -l USERNAME ADDRESS`
 - `ssh ADDRESS 'COMMAND'`

Simple File Transfer

- Netcat (`nc`): opens TCP connection as client or server
- Example – transfer `file.txt` to `10.10.6.210`

- On server:

```
nc -l 12345 > file.txt
```

- On client:

```
cat file.txt | nc 10.10.6.210 12345
```

- Optional: time the transfer

```
time cat file.txt | nc 10.10.6.210 12345
```

Secure File Transfer

- SSH has a file transfer program

- Secure Copy: scp

```
scp file.txt 10.10.6.210:/home/student/
```

- OR

```
scp 10.10.6.210:/home/student/myfile.txt ./
```

Web Browsing on the Command Line

- Command line web page downloader

```
wget URL
```

- e.g wget <http://ict.siit.tu.ac.th/index.html> downloads and saves index.html to my computer
 - Reports the time to download
- Use as simple throughput measurement
 - Download a large file and see the throughput

Performance Testing

- iperf: Test throughput of link or network
- On server computer:
 - `iperf -s`
- On client:
 - `iperf -c SERVERADDRESS`
- Many options:
 - `-t`: time of test
 - `-u`: UDP test
 - `-b`: sending rate with UDP test