

```
csci3306jbzo@samanthajacksonlab1:~$ ssh a
Warning: Permanently added 'a' (ED25519) to the list of known hosts.
Linux a.infra.sjack.jacksonsamanthalab1.csci4306 5.10.0-29-amd64 #1 SMP Debian 5.10.216-1 (2024-05-03) x86_64
```

```
The programs included with the Debian GNU/Linux system are free software;
Progress: [ 80%] [#####] d in the
individual files in /usr/share/doc/*/copyright.
```

```
Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
```

```
csci3306jbzo@a:~$ ping b
PING b.exp.sjack.jacksonsamanthalab1.csci4306 (10.0.1.2) 56(84) bytes of data.
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=1 ttl=64 time=0.626 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=2 ttl=64 time=0.455 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=3 ttl=64 time=0.409 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=4 ttl=64 time=0.376 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=5 ttl=64 time=0.380 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=6 ttl=64 time=0.340 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=7 ttl=64 time=0.337 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=8 ttl=64 time=0.379 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=9 ttl=64 time=0.408 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=10 ttl=64 time=0.418 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=11 ttl=64 time=0.368 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=12 ttl=64 time=0.385 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=13 ttl=64 time=0.347 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=14 ttl=64 time=0.386 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=15 ttl=64 time=0.686 ms
64 bytes from 10.0.1.2 (10.0.1.2): icmp_seq=16 ttl=64 time=0.395 ms
^C
```

```
--- b.exp.sjack.jacksonsamanthalab1.csci4306 ping statistics ---
16 packets transmitted, 16 received, 0% packet loss, time 15028ms
rtt min/avg/max/mdev = 0.337/0.418/0.686/0.094 ms
```

```
csci3306jbzo@a:~$ iperf -s
```

```
-bash: iperf: command not found
```

```
csci3306jbzo@a:~$ sudo apt install iperf
```

```
Reading package lists... Done
```

```
Building dependency tree... Done
```

```
Reading state information... Done
```

```
The following NEW packages will be installed:
```

```
iperf
```

```
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
```

```
Need to get 102 kB of archives.
```

```
After this operation, 269 kB of additional disk space will be used.
```

```
Get:1 http://deb.debian.org/debian bullseye/main amd64 iperf amd64 2.0.14a+dfsg1-1 [102 kB]
```

```
Fetched 102 kB in 0s (5,011 kB/s)
```

```
csci3306jbzo@a:~$ iperf -s
```

```
[ 5] 0.0000-10.0013 sec 28.2 GBytes 24.2 Gbits/sec2 port 33020ftware;ebian 5.10.216-1 (2024-05-03) x86_64
```

```
^Ccsci3306jbzo@a:~$ iperf -s
```

```
Server listening on TCP port 5001
```

```
TCP window size: 128 KByte (default)
```

```
# su - csci3306jbzo
```

```
To run a command as administrator (user "root"), use "sudo <command>".
```

```
See "man sudo_root" for details.
```

```
csci3306jbzo@samanthajacksonlab1:~$ ssh b
```

```
Linux b.infra.sjack.jacksonsamanthalab1.csci4306 5.10.0-29-amd64 #1 SMP Debian 5.10.216-1 (2024-05-03) x86_64
```

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

```
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```

```
Last login: Tue Oct 1 20:07:51 2024 from 192.168.254.2
```

```
csci3306jbzo@b:~$ iperf -s
```

```
Server listening on TCP port 5001
```

```
TCP window size: 128 KByte (default)
```

```
C:\Users\eross\mrg>mrg.exe config set server grpc.sphere-testbed.net
C:\Users\eross\mrg>mrg login csci3306jbzo
Enter password for csci3306jbzo:
```

```
C:\Users\eross\mrg>mrg xdc scp download -x samanthajacksonlab1.csci4306 b:iperf.out output.txt
level=info msg="downloading b:iperf.out to output.txt via samanthajacksonlab1.csci4306 ..."
```

```
-----
Client connecting to a, TCP port 5001
TCP window size: 85.0 KByte (default)
-----
```

```
[ 3] local 10.0.1.2 port 33020 connected with 10.0.1.1 port 5001
[ ID] Interval      Transfer    Bandwidth
[ 3] 0.0000-10.0000 sec 28.2 GBytes 24.2 Gbits/sec
```

Image of the b:iperf.out output.txt file

```
# su - csci3306jbzo
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
```

```
csci3306jbzo@samanthajacksonlab1:~$ echo "Hello world" > hw.out
csci3306jbzo@samanthajacksonlab1:~$
```

```
C:\Users\eross\mrg>mrg xdc scp download samanthajacksonlab1.csci4306:hw.out .
level=info msg="downloading samanthajacksonlab1.csci4306:hw.out to . ..."
```

```
csci3306jbzo@b:~$ ls
hw.out iperf.out lf.out
```

You can see the lf.out file in the b node

```
C:\Users\eross\mrg>echo "Local file take two" > lftt.out
```

```
C:\Users\eross\mrg>mrg xdc scp upload lftt.out samanthajacksonlab1.csci4306:.
level=info msg="uploading lftt.out to samanthajacksonlab1.csci4306:. ..."
```

```
csci3306jbzo@samanthajacksonlab1:~$ ls
hw.out lftt.out pass.txt
```

You can see the lftt.out file in the xdc

In this lab, I learned how to use JupyterLab terminals with mrg.exe to connect my local computer to XDC files. I could exchange downloads and upload files between the XDC and my personal machine. I also learned how to use iperf to see the performance of nodes a and b.