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Grp -1

IT 305

Lab 11



Exercise 1:

To create Wifi-LAN using a router and ping other PC.

Solution:

Step 1: Open the terminal and write the command `cd Downloads`

Step 2: Go to dajict intranet and open tenda file to get the command

```
sudo mv ax300-wifi-adapter-linux-driver-deb
```

Step 3: Then change directory in terminal to /opt

Step 4: Then finally download the package by typing the command

```
sudo dpkg ax300-wifi-adapter-linux-driver-deb
```

[illegible]

Step 5: After the installation is successful, we connect the pc to the local wifi, which in our case was LAB13 wifi connection

```

gcc -c bt_test.c -o bt_test.o
gcc bt_test.o -lthread -o bt_test
sudo cp wifl_test /sbin
sudo cp bt_test /sbin
Install at8888 wifl driver successful!!!!
mlab@LAB100001:~$ ifconfig
enp3s1f6: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> ntu 1500
    inet 10.100.77.75 netmask 255.255.255.0 broadcast 10.100.77.255
    inet6 fe80::7a3d:f47f:e537:43d2 prefixlen 64 scopeid 0x20<link>
    ether a0:a1:59:dac:e:a2 txqueuelen 1000 (Ethernet)
    RX packets 78926 bytes 99130367 (99.1 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 23991 bytes 2397397 (2.5 MB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
    device interrupt 16 memory 0xa0a30000-0a020000

enp2s0: flags=4095<UP,BROADCAST,MULTICAST> ntu 1500
    ether 00:e0:4c:68:0d:e3 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

```

Step 6: We write the command `ip a/ ifconfig` in the terminal to know the `ip` address of the device.

```

mlab@LAB100001:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> ntu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp2s0: <NO-CARRIER,BROADCAST,MULTICAST,UP> ntu 1500 qdisc fq_codel state DOWN group default qlen 1000
    link/ether 00:e0:4c:68:0d:e3 brd ff:ff:ff:ff:ff:ff
3: enp3s1f6: <BROADCAST,MULTICAST,UP,LOWER_UP> ntu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether a0:a1:59:dac:e:a2 brd ff:ff:ff:ff:ff:ff
    inet 10.100.77.75/24 brd 10.100.77.255 scope global dynamic noprefixroute enp3s1f6
        valid_lft 690057sec preferred_lft 690057sec
    inet6 fe80::7a3d:f47f:e537:43d2/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
4: wlx865d4c27578: <BROADCAST,MULTICAST,UP,LOWER_UP> ntu 1500 qdisc mq state UP group default qlen 1000
    link/ether a0:65:d4:c2:75:78 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.13/24 brd 192.168.0.255 scope global dynamic noprefixroute wlx865d4c27578
        valid_lft 7143sec preferred_lft 7143sec
    inet6 fe80::8465:cb19:716:1fe2/64 scope link noprefixroute
        valid_lft forever preferred_lft forever

```

Step 7: The last step is to run the ping command in the terminal to check whether the device connected to the same router is reachable or not.

```

mlab@LAB100001:~$ ping 192.168.0.7
PING 192.168.0.7 (192.168.0.7) 56(84) bytes of data:
64 bytes from 192.168.0.7: icmp_seq=4 ttl=64 time=2.52 ms
64 bytes from 192.168.0.7: icmp_seq=6 ttl=64 time=513 ms
64 bytes from 192.168.0.7: icmp_seq=7 ttl=64 time=49.5 ms
64 bytes from 192.168.0.7: icmp_seq=8 ttl=64 time=161 ms
64 bytes from 192.168.0.7: icmp_seq=9 ttl=64 time=11.7 ms
64 bytes from 192.168.0.7: icmp_seq=10 ttl=64 time=517 ms
64 bytes from 192.168.0.7: icmp_seq=11 ttl=64 time=4.23 ms
64 bytes from 192.168.0.7: icmp_seq=12 ttl=64 time=3.40 ms
64 bytes from 192.168.0.7: icmp_seq=13 ttl=64 time=3.73 ms
64 bytes from 192.168.0.7: icmp_seq=14 ttl=64 time=3.45 ms
64 bytes from 192.168.0.7: icmp_seq=15 ttl=64 time=3.64 ms
64 bytes from 192.168.0.7: icmp_seq=16 ttl=64 time=41.4 ms
64 bytes from 192.168.0.7: icmp_seq=17 ttl=64 time=26.3 ms
^C
--- 192.168.0.7 ping statistics ---
17 packets transmitted, 13 received, 23.5294% packet loss, time 16147ms
rtt min/avg/max/mdev = 2.515/103.471/517.250/100.660 ms
mlab@LAB100001:~$

```

Exercise 2:

To connect multiple hubs via router and set up use wired and wireless configurations with hubs.

Note that you'll need to do this practical with another group combined.

Solution:

Step 1: We connect three pc in this exercise. Two pc are connected to the same wifi i.e. LAB13 are connected wirelessly and will have same configurations.

Step 2: The third one is connected to other wifi i.e. LAB133 wifi connection and then we connect the two pc using wire to the Hub. We then connect both the hubs using a router.

Step 3: Finally we return to the terminal to again run the command `ifconfig/ ip` a to know the ip address as it has got changed.

```
swlab@LAB130001:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp3s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:58:0a:2c brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.1/24 brd 192.168.0.255 scope global dynamic noprefroute enp3s0
        valid_lft 7162sec preferred_lft 7162sec
    inet6 fe80::1301:61c8:d9cf:b660/94 scope link noprefroute
        valid_lft forever preferred_lft forever
3: enp3s1f0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether a8:a1:59:dac:a2: brd ff:ff:ff:ff:ff:ff
    inet 10.100.77.75/24 brd 10.100.77.255 scope global dynamic noprefroute enp3s1f0
        valid_lft 687802sec preferred_lft 687802sec
    inet6 fe80::7a3d:f47f:e337:43d2/94 scope link noprefroute
        valid_lft forever preferred_lft forever
4: wlan0B564c27578: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether e8:05:d4:c2:75:78 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.4/24 brd 192.168.0.255 scope global dynamic noprefroute wlan0B564c27578
        valid_lft 7173sec preferred_lft 7173sec
    inet6 fe80::4574:2c1f:7c82:d5c9/94 scope link noprefroute
        valid_lft forever preferred_lft forever
```

Step 4: At last we run the ping command in the terminal and note the observations.

```
mlab@LAB100001:~$ ifconfig
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp2s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:00:0c:00:00:00 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.3/24 brd 192.168.0.255 scope global dynamic noprefixroute enp2s8
        valid_lft 7102sec preferred_lft 7102sec
    inet6 fe80::3301b1c0:00cf1b00:0000:00 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: enp0s1f0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:00:00:00 brd ff:ff:ff:ff:ff:ff
    inet 10.100.0.1/24 brd 10.100.0.255 scope global dynamic noprefixroute enp0s1f0
        valid_lft 88700sec preferred_lft 88700sec
    inet6 fe80::7a3d:f7f:ec37:42d2/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
4: wlan0s0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 08:00:27:00:00:00 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.4/24 brd 192.168.0.255 scope global dynamic noprefixroute wlan0s0
        valid_lft 7272sec preferred_lft 7272sec
    inet6 fe80::45f4:2137:7a3d:1d3c/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
mlab@LAB100001:~$ ping 192.168.0.7
PING 192.168.0.7 (192.168.0.7): 56(84) bytes of data.
64 bytes from 192.168.0.7: icmp_seq=1 ttl=64 time=0.792 ms
64 bytes from 192.168.0.7: icmp_seq=2 ttl=64 time=0.483 ms
64 bytes from 192.168.0.7: icmp_seq=3 ttl=64 time=0.490 ms
64 bytes from 192.168.0.7: icmp_seq=4 ttl=64 time=0.490 ms
64 bytes from 192.168.0.7: icmp_seq=5 ttl=64 time=0.311 ms
64 bytes from 192.168.0.7: icmp_seq=6 ttl=64 time=0.491 ms
^C
--- 192.168.0.7 ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 3150ms
rtt min/avg/max/mdev = 0.483/0.544/0.792/0.111 ms
mlab@LAB100001:~$
```

Observations :

We observe that when we used wireless connection for the packet transmission, the packet loss percentage was 23% whereas in the case of wired connection we observe that the packet transmission rate is 100% i.e. in other words the packet loss is zero percent. So in this exercise we performed both wireless and wired connections.