Guide for Lab 2 Network Configuration

Beginning

Restart networking in all the tuxes:

```
systemctl restart networking
```

Restart the **switch** and the **router**:

```
/system reset-configuration
    y
```

The user is **admin** and the password is blank.

Exp 1

Connect eth1 of tuxY3 and tuxY4 to the switch (ether3 & ether4).

tuxY3

Configure eth1 interface:

```
ifconfig eth1 up
ifconfig eth1 172.16.Y0.1/24
```

tuxY4

Configure eth1 interface:

```
ifconfig eth1 up
ifconfig eth1 172.16.Y0.254/24
```

Exp 2

Connect eth1 of tuxY2 to the switch (ether2).

tuxY2

Configure eth1 interface:

```
ifconfig eth1 up
ifconfig eth1 172.16.Y1.1/24
```

Switch

Remove ports from default bridge:
Ether2:

```
/interface bridge port print
/interface bridge port remove
    1
```

Ether3:

```
/interface bridge port print
/interface bridge port remove
    1
```

Ether4:

```
/interface bridge port print
/interface bridge port remove
    1
```

Create bridges **bridgeY0** and **bridgeY1**:

```
/interface bridge add name=bridge50
/interface bridge add name=bridge51
```

Assuming tuxY2, tuxY3, and tuxY4 are connected to ports ether2, ether3 and ether4, respectively. Add ports to bridges:

```
/interface bridge port add bridge=bridge50 interface=ether3
/interface bridge port add bridge=bridge50 interface=ether4
/interface bridge port add bridge=bridge51 interface=ether2
```

Exp 3

Connect eth2 of tuxY4 to the switch (ether10).

tuxY4

Configure eth2 interface:

```
ifconfig eth2 up
ifconfig eth2 172.16.Y1.253/24
```

Enable IP forwarding:

```
sysctl net.ipv4.ip_forward=1
```

Disable ICMP echo-ignore-broadcast:

```
sysctl net.ipv4.icmp_echo_ignore_broadcasts=0
```

Switch

Assuming eth2 interface of tuxY4 is connected to the switch on ether10. Remove ether10 from default bridge:

```
/interface bridge port remove
    6
```

Add eth2 of tuxY4 to bridgeY1:

```
/interface bridge port add bridge=bridge51 interface=ether10
```

tuxY2

Add route to bridgeY0 via eth2 of tuxY4:

```
route add -net 172.16.Y0.0/24 gw 172.16.Y1.253
```

tuxY3

Add route to bridgeY1 via eth1 of tuxY4:

```
route add -net 172.16.Y1.0/24 gw 172.16.Y0.254
```

Exp 4

IMPORTANT: Reset router, if not done yet!!

Connect ether1 of Rc to PY.12. Connect ether2 of RC to the switch (ether15).

Switch

Assuming ether2 of Rc is connected to the switch on ether15. Remove ether15 from default bridge:

```
/interface bridge port remove
    10
```

Add ether2 of Rc to bridgeY1:

```
/interface bridge port add bridge=bridge51 interface=ether15
```

Router

Configure IP addresses of Rc:

```
/ip address add address=172.16.1.Y1/24 interface=ether1
/ip address add address=172.16.Y1.254/24 interface=ether2
```

tuxY3

Route to bridgeY1 is already configured in Exp 3.

Add route to 172.16.1.0/24:

```
route add -net 172.16.1.0/24 gw 172.16.Y0.254
```

tuxY4

Add route to 172.16.1.0/24:

```
route add -net 172.16.1.0/24 gw 172.16.Y1.254
```

tuxY2

Route to bridgeY1 is already configured in Exp 3.

Add route to 172.16.1.0/24:

```
route add -net 172.16.1.0/24 gw 172.16.Y1.254
```

Router

Add route to bridgeY0:

```
/ip route add dst-address=172.16.50.0/24 gateway=172.16.51.253
```

Exp 5

tuxY2

Configure the DNS (with ip address of 10.225.20.3):

```
echo nameserver 10.227.20.3 >> /etc/resolv.conf
```

tuxY3

Configure the DNS (with ip address of 10.225.20.3):

```
echo nameserver 10.227.20.3 >> /etc/resolv.conf
```

tuxY4

Configure the DNS (with ip address of 10.225.20.3):

```
echo nameserver 10.227.20.3 >> /etc/resolv.conf
```

Exp 6

Compile the download application:

```
gcc download.c -o download
```

Run the download application:

```
./download <URL>
```

This URL is in the format ftp://[<user>:<password>@]<host>/<url-path>