TCP/IP Computer Networks

Laboratory guides — session 2

Session 2: Cisco IOS, Traffic Monitoring

TCP/IP Networks (Fall 2014)
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Cisco IOS, Traffic monitoring

TCP/IP Computer Networks Lab 2

Goals

Learn how to login in the switches and how to use some elementary Cisco IOS commands to set up their IP addresses, analyse the switch configuration and the status of interfaces, switching tables.

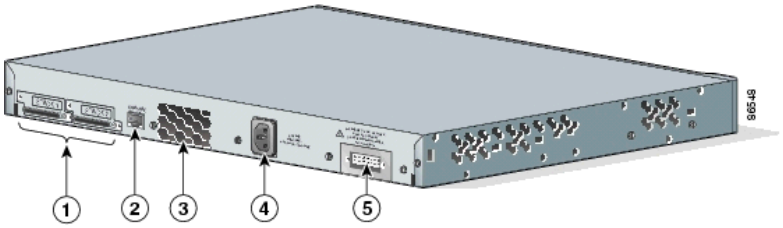
Report

Use this guide to take your notes during the lab class. If asked by the instructor, write a report on your most relevant findings and try to explain them. The report should have around 5 pages (double spaced, 11 dots) and must be delivered in the class (lab session) that follows the last class (lab session).

Initial Network Test-bed

Inspect the laboratory cables used to connect the benches switches and complete the diagram below with the true network topology. Verify which network interface in your computer is connected to the switch and set it to a static address according to addressing plan of previous laboratory session.

To connect the router to your PC you will need the serial interface cable (light-blue cable) attached to the console port placed at the back of the switch:



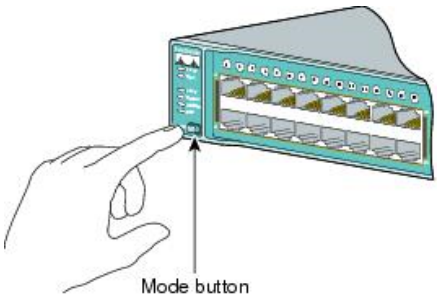
Start the terminal application

```
minicom –s    (putty or hyperterminal in Windows  or screen in Mac OS X)
```

and configure the interface as follows:

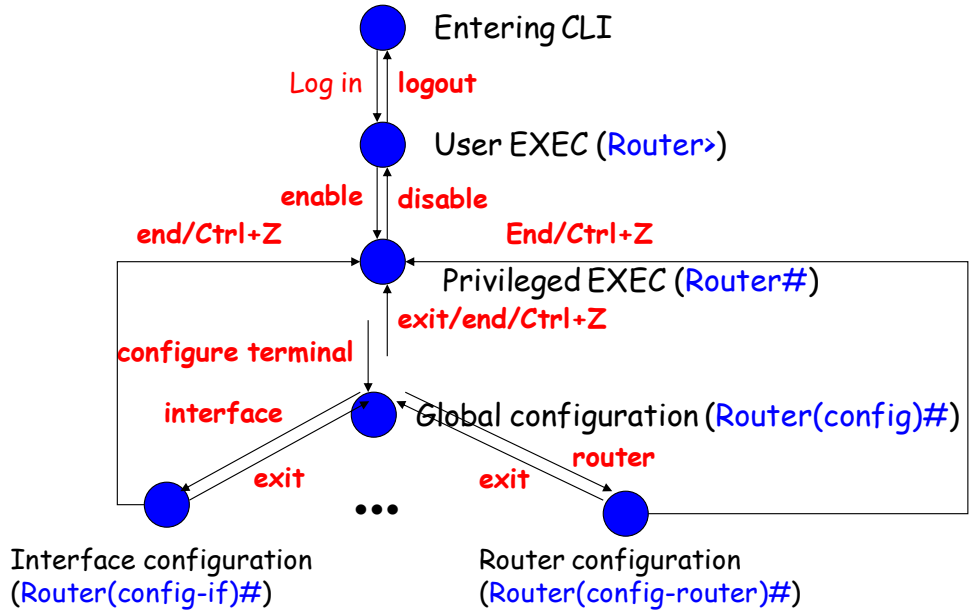
- Interface: /dev/ttySX (X=0, 1 or 2...) (use command dmesg to verify the number of serial ports). In Windows use COM1, 2, … and in the Mac OS X use /dev/uc.usb or /dev/usb.serial)
- 9600, 8 bits, 1 stop bit, no parity
- Hardware flow control
- VT100 terminal emulation
- Connect the cable to the console port
- Connect the cable to the PC

If you fail to see the Cisco IOS prompt reset the switch by pushing the modebutton for 3 seconds:



http://www.cisco.com/en/US/docs/switches/lan/catalyst3750/hardware/quick/guide/3750GSG3.html

Once you are in the Cisco IOS prompt the following modes of operation are available:



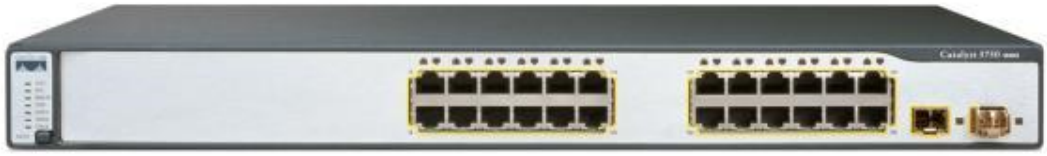
Before proceeding make sure the configuration of the router is cleaned by issuing the following commands:

```
> enable
#erase startup-config
#delete flash:vlan.dat
#reload
```

press enter in all questions. Once the router finishes rebooting, answer "NO" to the automatic configuration question.

Inspect the router status using the following commands and discuss the output of each command:

```
#show interfaces
```



#show mac-address-table

#show ip interface brief

#show vlan

#show VLAN brief

#show int trunk

```
#show running-config
```

```
#show flash|nvram
```

Copying a Configuration

Learn how to save a configuration and how to copy it from flash memory to the running configuration.

```
copy running-config nvram:startup-confg
```

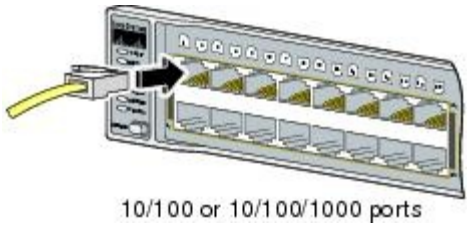
Reset the router and recover your previous configuration by issuing the command:

```
copy nvram:startup-confg running-config
```

in enable mode.

Traffic Snooping

Connect your PC to a switch port and configure the PC Ethernet interface to a static IP address.



A switch port can be configured as a Switched Port Analyser (SPAN) to monitor traffic that passes through the switch. The traffic is copied from one or more source ports (physical ports) in any VLAN or from one or more VLANs to a destination port for analysis (the SPAN port).

A SPAN monitoring session can be configured as follows:

```
(config)# no monitor session 1
(config)# monitor session 1 source interface fa1/0/1
(config)# monitor session 1 source vlan 10
(config)# monitor session 1 destination interface Fa1/0/2 encapsulation replicate
(config)# end
```