

Serial communications settings :

- COM Port:	COM[1-9]
- bps:	9600
- Data bits:	8
- Parity:	none
- Stop bits:	1
- Flow control:	No Flow control

Commands

1. Starting configuring

```
Cisco> enable (or 'ena')           (switching from User EXEC mode to Privileged mode)
Cisco#                             (prompt changes !)
Cisco# configure terminal (or 'conf t') (entering global config mode)
Cisco(config)#                  (global config mode)
```

2. Configuring the hostname

```
Cisco(config)# hostname switchA
switchA(config)# exit           (prompt changes !)
```

3. Creating a layer-3 vlan

```
...# ip routing           (enabling routing on the switch, disabled=layer2-switch)

...# vlan 301
...# name VL.301.Health.Sciences

...# interface vlan301
...# description VL.301.Health.Sciences
...# ip address 10.16.60.1 255.255.255.0
...# ip helper-address <IP address of DHCP server>
...# no shut
```

4. Creating a layer-2 vlan

```
...# vlan 999
...# name VL.999.Native

...# interface vlan999
...# description VL.999.Native
...# no ip address
...# no shut
```

5. Configuring a VLAN trunk (802.1Q=tagged traffic)

```
...# interface gi1/0/24
...# description IF.01024.Trunk.Healt.Sciences
(...# switchport trunk encapsulation dot1q)
...# switchport mode trunk
...# switchport trunk allowed vlan 301
...# switchport trunk native vlan 999
```

6. Configuring an access port (=untagged traffic)

```
...# interface range gi1/0/1-23
...# switchport mode access
...# spanning-tree portfast
...# switchport access vlan 301
```

7. Creating a port-channel (an aggregated link using LACP)

```
...# default int gi1/0/23
...# default int gi1/0/24

...# interface range gi1/0/23-24
...# channel-group 1 mode active

...# interface port-channel1
...# description PO.01.Trunk.Health.Sciences
(...# switchport trunk encapsulation dot1q)
...# switchport mode trunk
...# switchport trunk allowed vlan 301, 302
...# switchport trunk native vlan 999
```

8. Saving a configuration for boot and rebooting

```
switchA# copy running-config startup-config (or 'copy r s')
```

```
switchA# reload (reboots the device if necessary)
```

9. Showing running configuration

```
switchA# show running-config (or 'sho run')
```

10. Showing status, routing table, ...

switchA# show version (or 'sho ver')

show version

IOS version and descriptive information

Bootstrap ROM version

Boot ROM version

Switch up time

Last restart method

System image file and location

Switch platform

Configuration register setting

To identify a switch IOS image and boot source.

Hardware and device information.

switchA# show interface status (or 'sho int status')

switchA# show interfaces (or 'sho int')

show interfaces

Displays statistics for all interfaces on a L3-switch.

switchA# show controllers serial (or 'sho cont ser')

show controllers serial

Displays information that is specific to the interface hardware.

switchA# show ip route

show ip route

Shows routing table

11. Some network tools

Telnet

- Telnet [hostname]
- Show sessions

Ping & trace

- ping [protocol] {host | address}
- traceroute [ip adres]

12. Defaulting a switch configuration

- erase startup-config
- del vlan.dat
- reload
- setup
 - o Conf. Dialog ?: [Yes] **[No]**
- ...

13. Making a backup of the configuration

- Make backup of configuration (TFTP)
 - o Copy running-config TFTP
 - IP Nr.: X.X.X.X
 - Destination filename: Lab_A-Config
- Restore configuration thru TFTP
 - o Copy TFTP running-config
 - IP Nr.: X.X.X.X
 - Source filename: Lab_A-Config
 - Destination filename: Running config
- Setting startup config thru TFTP
 - o Copy TFTP running-config
 - IP Nr.: X.X.X.X
 - Source filename: Lab_A-Config
 - Destination filename: Running config
 - o Copy running-config startup-config

14. Securing the router/switch (basics)

```
routerA# conf t
routerA(config)# service password-encryption           (Enable password encryption)
routerA(config)# enable secret <enable secret>
routerA(config)# username <username> secret <password>
routerA(config)#
routerA(config)# ip domain name <FQDN domain name>
routerA(config)# ip ssh version 2
routerA(config)# crypto key generate rsa                (2048 bits !!!)
routerA(config)#
routerA(config)# line con 0
routerA(config-line)# login local                       (login with local user)
routerA(config-line)#
routerA(config-line)# line vty 0 4
routerA(config-line)# login local                       (login with local user)
routerA(config-line)# transport input ssh               (force SSH)
routerA(config-line)# access-class 3 in                 (limit access by subnet/host)
routerA(config-line)#
routerA(config-line)# line vty 5 15
routerA(config-line)# login local                       (login with local user)
routerA(config-line)# transport input ssh               (force SSH)
routerA(config-line)# access-class 3 in                 (limit access by subnet/host)
routerA(config-line)#
routerA(config-line)# access-list 3 permit <subnet> <address mask>
routerA(config)#
```