



Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and
Verification

Additional
Information

Lab 5:

Remote Network Management (Telnet)

Networks Management

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Lab 5:

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Management

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Step 3

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Tests and
Verification

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1 Objectives:

2 Step 1:

3 Step2

4 Step 3

5 Questions

6 Tests and Verification

7 Additional Information



Lab Objectives:

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and Verification

Additional Information

Configuration and Administration of a network equipment:

- Using the Packet-tracer interface (**CLI**) (already used in previous lab sessions),
- Then, through a console cable,
- And through any PC using the **Telnet** service.
- Use of certain testing and verification commands that the network Manager should use to manage the equipment on his network.



Step 1

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

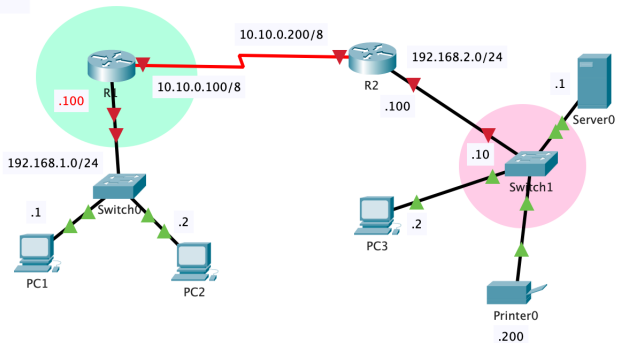
Step 3

Questions

Tests and Verification

Additional Information

Create the network shown in Figure 1 below:



- Use the configuration interface of the Packet-Tracer simulation tool,
- Configure the PCs, switches, and routers,
- Verify connectivity.



Step 2

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

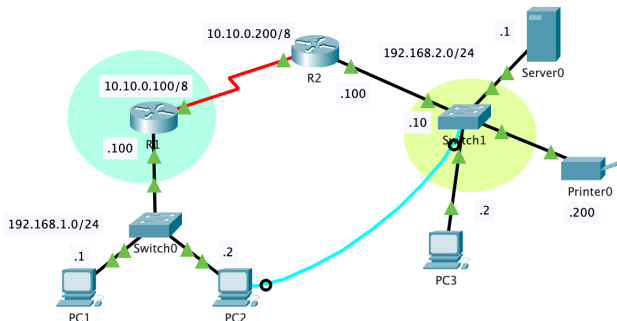
Step 3

Questions

Tests and Verification

Additional Information

- Connect a **console cable** between switch1 and PC2 as shown in the figure below.
- Open a terminal window from PC2 (figure on the next slide).
- Configure Switch1 by creating two VLANs: **Vlan10** and **Vlan20**.
- Verify by displaying the configuration of Switch1 on PC2.





Step 2

Lab 5:

Networks
Management

Plan:

Objectives:

Step 1:

Step 2

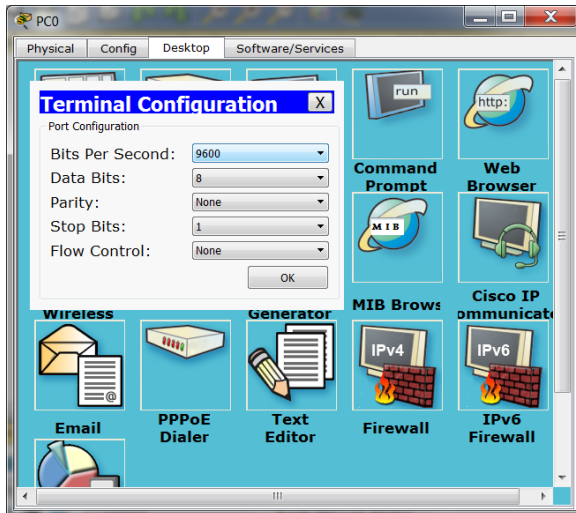
Step 3

Questions

Tests and
Verification

Additional
Information

Validate without changing these settings:





Step 3

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and Verification

Additional Information

- Use a remote machine such as a PC to configure a device.
- The **Telnet** application or *HyperTerminal* is used to open a dialogue (simply one or more virtual lines) on a remote device and allows it to be managed and configured.
- Before you can use Telnet, a Client account must be created on the destination machine.
- In this configuration, use a **Telnet** client with a password(see slide 11): "**licenceGL**" on the **R1** and **Switch1**, and access it :
 - 1 from **PC2** to create a **vlan 30** on **Switch1**.
 - 2 from **PC3** to create a **vlan 10** on the **R1** router.
 - 3 Display the configurations of both devices.



Questions:

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step 2

Step 3

Questions

Tests and Verification

Additional Information

Here are some questions that need to be answered:

- ❶ Which equipment can be configured from the terminal of PC2?
- ❷ What are the results of executing the following commands:
 - ❶ From the command prompt of PC1:
 - ❶ PC1> ipconfig
 - ❷ PC1> ping 10.0.0.100
 - ❸ PC1> Tracert 192.168.2.100
 - ❹ PC1> telnet 192.168.2.100
 - ❷ From the CLI of R1:
 - ❶ R1# ping 192.168.2.100
 - ❷ R1# show cdp neighbors
 - ❸ From the CLI of Switch1:
 - ❶ SW1# ping 192.168.2.100
 - ❷ SW1# show cdp neighbors



Via Console Cable

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step 2

Step 3

Questions

Tests and
Verification

Additional
Information

Access and administration via terminal:

The screenshot shows a PC2 desktop with a taskbar at the top containing icons for Physical, Config, Desktop, and Software/Services. The 'Config' tab is active. A 'Terminal' window is open, displaying the following text:

```
S2#
S2#
S2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
S2(config)#vlan 10
S2(config-vlan)#name vlan10
S2(config-vlan)#exit
S2(config)#vlan 20
S2(config-vlan)#name vlan20
S2(config-vlan)#
S2(config-vlan)#exit
S2(config)#sho
S2(config)#end
S2#
%SYS-5-CONFIG_I: Configured from console by console

S2#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
S2(config)#
```



Via Telnet Account

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and
Verification

Additional
Information

Access and administration via virtual terminal (telnet):

The screenshot shows a virtual terminal window titled "PC3" with tabs for "Physical", "Config", "Desktop", "Programming", and "Attributes". The "Desktop" tab is active, displaying a "Command Prompt" window. The terminal output shows a telnet session from a Windows command prompt to a Cisco router at 10.10.0.100. The session starts with a connection attempt, followed by user access verification (password prompt), and then the user enters 'en' to enter enable mode. In enable mode, the user enters 'vlan database' to enter VLAN configuration mode. A warning message is displayed: "% Warning: It is recommended to configure VLAN from config mode, as VLAN database mode is being deprecated. Please consult user documentation for configuring VTP/VLAN in config mode." The user then enters 'vlan 20 name vlan20', and the router responds with 'VLAN 20 added:' and 'Name: vlan20'. The session ends with the user entering '#'. A "Top" button is visible at the bottom left of the terminal window.

```
PC3
Physical | Config | Desktop | Programming | Attributes

Command Prompt

R1(vlan)#

[Connection to 10.10.0.100 closed by foreign host]
C:\>telnet 10.10.0.100
Trying 10.10.0.100 ...Open

User Access Verification

Password:
Password:
R1>en
Password:
R1#vlan database
% Warning: It is recommended to configure VLAN from config mode,
as VLAN database mode is being deprecated. Please consult user
documentation for configuring VTP/VLAN in config mode.

R1(vlan)#vlan 20 name vlan20
VLAN 20 added:
      Name: vlan20
R1(vlan)#

Top
```



Configuring a Telnet Client

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and Verification

Additional Information

- To configure a Telnet client, you need to follow the following commands in order (this is valid for a router or a switch).

```
Switch(config)# service password-encryption
```

```
Switch(config)# line vty 0 4
```

```
Switch(config-line)# password <your-password>
```

```
Switch(config-line)# login
```

```
Switch(config-line)# exit
```

- This command assign a password to **enable mode** (you can keep the same password given in the previous commands!)

```
Switch(config)# enable password <your-password>
```



Assigning an IP address to a Switch

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and Verification

Additional Information

To configure a Telnet client on a switch, you need to assign it an IP address. Since the physical interfaces of the switch are not configurable, you can assign an IP address to one of its VLANs.

This address must belong to the switch's network so that the router can route messages correctly. Therefore, you must first assign an address to the default VLAN, vlan1: Switch(config)#**interface vlan 1**

```
Switch(config-if)# ip address <IP-address> <subnet-mask>
```

```
Switch(config-if)# no shutdown
```

```
Switch(config)# ip default-gateway <IP-address>
```

```
Switch(config)# exit
```



Adding vlans to a router

Lab 5:

Networks Management

Plan:

Objectives:

Step 1:

Step2

Step 3

Questions

Tests and Verification

Additional Information

To add (delete or modify) a vlan to a router, you have to execute these commands:

Router#vlan database

Router(vlan)#vlan <vlan-number> name <vlan-name>