

Network Review

1 Introduction

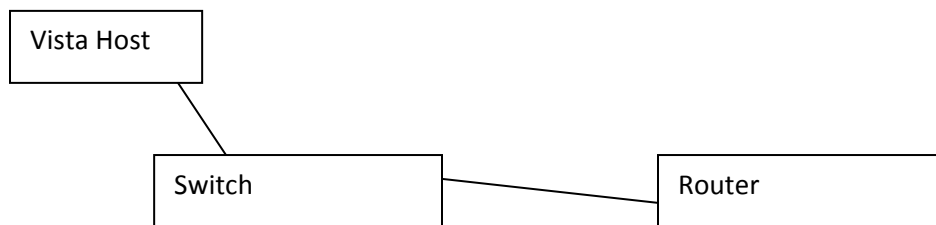
This lab is a collection of tasks from Part I of this course. These tasks are selected to help refresh your understanding of the basic networking equipment in the lab, as well as prepare these devices to support the advanced labs in Part II of the course.

2 Network Switch

To begin from scratch, you may want to run the “setup” program on the networking devices, to clear their old configurations and begin anew before continuing. Recall that “setup” will add to an existing configuration, so to start completely from scratch, you must “write erase” and “reload” to clear the NVRAM settings.

3 IOS

Recall that the networking equipment uses the Internetwork Operating System (IOS) for configuring the devices. IOS has various features that are highlighted below and becoming familiar with interacting with IOS will save considerable effort in performing the steps in the labs. Basic commands like `show` and `set` along with the help (?) features will assist in configuring the devices without constantly referring back to documentation for command syntax.



OR

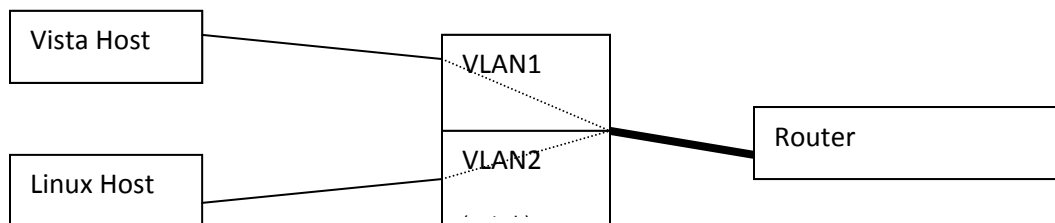


Figure 1: Example Wiring/Connection Schemes

4 CLI

The CLI is a De Facto standard among many networking company's devices. Experiment with some of the Entry/Editing/Etc. commands available to make using the CLI easier for Configuration, Control, and Management.

Help: The Help command gives hints on how to use help, especially the '?' usage (i.e. Type `show ?` and see how the '?' can greatly help in the CLI.)

Control-P: Text that you've previously entered into the CLI can be recalled and reused or edited to save repeated typing of the same or similar command lines.

Privileged / Non-privileged mode: Note how the prompt changes when you enter privileged mode with the `enable` command. Also, note that many more commands (privileged commands) are available in the CLI in privilege mode.

4.1 CLI Setup

When you connect through the CLI, you are connected as an un-privileged user. To enter the privileged mode, use the `enable` command. If a password has been set on the enable mode, it should be set to (and left at) 123. The basic setup needed on the switch can be done through the `setup` command. Setup your switch with the switch IP address for your Host, from the *lab_addressing* handout. Normally when first configuring a device, you have to connect to it out-of-band, usually over a Serial Port. On the lab computers, this is through the TeraTerm Pro program and desktop icons should be provided for each device. After IP connectivity is established, the CLI can be accessed alternatively via a Telnet connection.

4.2 CLI Configuration

We looked at configuring the switch through the CLI last Semester, entering the basic setup information to allow the switch to operate in a minimum capacity. Now we want to explore some additional configuration through the CLI, and the configuration file. See "Assigning Static-Access Ports to a VLAN" and "Configuring a Trunk Port" in Chapter 16 of the Catalyst2950 Switch Software Configuration Guide located in the User Manuals folder on the Desktop of the Linux Host.

5 Routing

Accessing the Router initially is much like the Switch. At first there may not be IP connectivity to the Router, therefore you must use out-of-band access to the CLI to initially configure the router.

See "Configuring Routing Among VLANs with IEEE 802.1Q Encapsulation" in the Cisco 1700 Series Router Software Configuration Guide located in the User Manuals folder on the Desktop of the Linux Host. You

may need some or all of the information to complete the setup for the lab (THESE ARE NOT THE EXACT COMMANDS TO FOLLOW, YOU NEED TO RUN COMMANDS FOR YOUR SETUP!!).

You'll need to set up Sub-Interfaces on the Router for each VLAN-ID that you've setup on the switch and are trunking to the Router for the bottom diagram of Figure 1.

6 Experiment

Login to the Linux host using username MISY and password MISY and open up a local terminal. Run the following command to change the Server's IP address to 10.10X.2.2.

```
misy@localhost ~ $ sudo /sbin/ifconfig eth0 10.10X.2.2 netmask
255.255.255.0
misy@localhost ~ $ sudo /sbin/route add default gw 10.10X.2.1
```

On the WindowsXP Host system, issue the following command:

```
C:\> route add 0.0.0.0 mask 0.0.0.0 10.10X.0.1 metric 1
```

Remembering to replace the 'X' and the with the proper value for your work area (lab addressing policies are posted at each station). The password you use for the sudo command is the same as the account password.

Once you've successfully configured the VLAN router for the 802.1q interface of the router, try to ping between the Linux Host on VLAN2 of the router, and the Vista Host on VLAN1 of the router. Use the `tracert` command between the Hosts as a test also.