**Department of Computer Science**
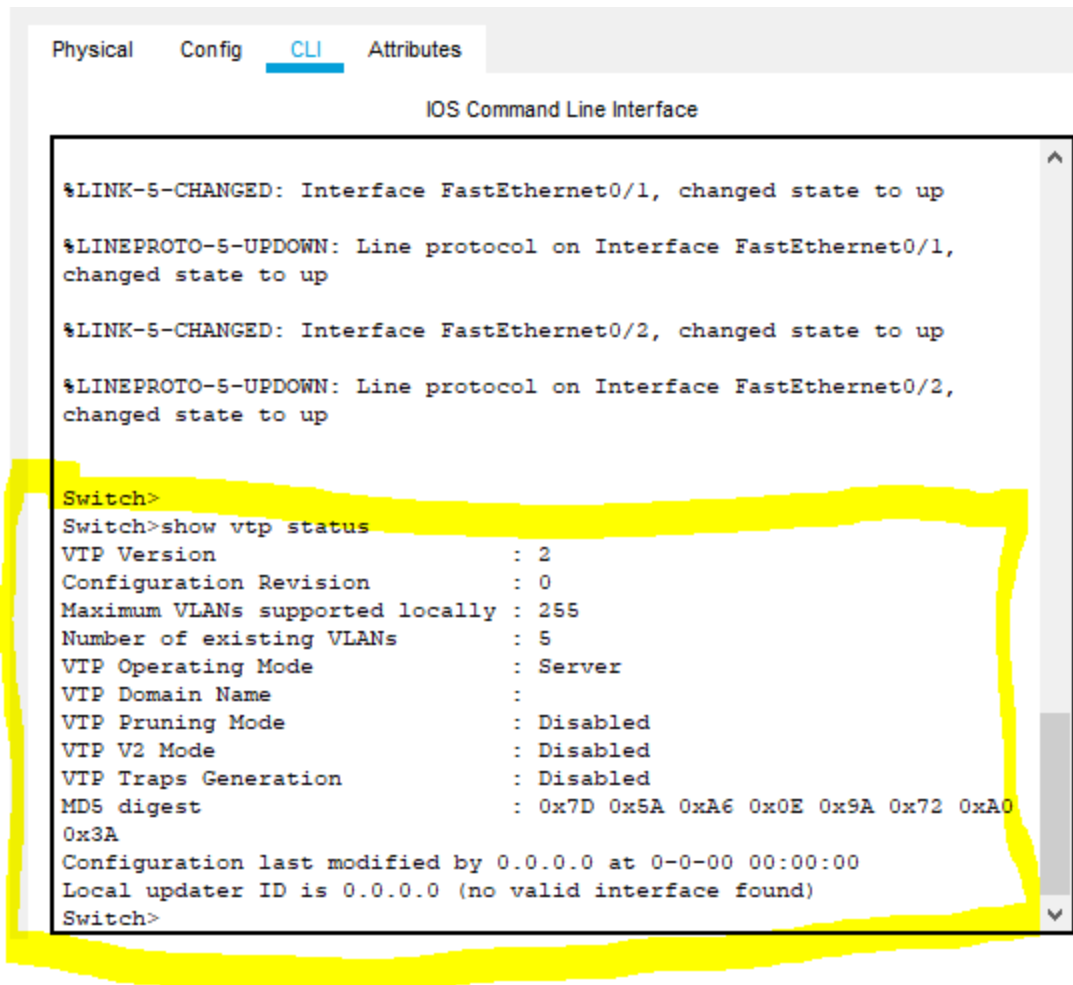**The University of Alabama at Birmingham**

CS 334/CS 534: Networking Lab – 5

## Switching Part 2

In the last lab we learned about switches, their place in the network, and how to configure basic VLANs. This lab will continue driving switches and common network deployment models. This lab aims to test your ability to configure VLAN and VTP. There will be two sections on this lab. The first section will be a learning/walkthrough section that will prepare you for the second section which is the practice section. Please see Lab 2 assignment for the practice section.

## Learning about VTP

1. Review this document about VTP architecture. It can be found here.

2. By default, all newly created switches start in VTP Server Mode.

3. Open the SAMPLE1 packets file that was included with this lab. If you have not already downloaded it from Canvas, please do so. Pay close attention to the cabling used between switches and the ports used.

4. Your file should have 3 switches on the screen. One should be labeled VTP Server. This will be your VTP Server, and the other2 will be labeled VTP Client x. We are now going to use the command line (which uses IOS commands) to configure our 2 VTP CLIENTS to VTP CLIENT MODE.

5. Open the CLI for VTP CLIENT 1 and type "**show vtp status**". It should look like this:

Physical   Config   CLI   Attributes

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2,
changed state to up

Switch>
Switch>show vtp status
VTP Version                     : 2
Configuration Revision          : 0
Maximum VLANs supported locally : 255
Number of existing VLANs        : 5
VTP Operating Mode              : Server
VTP Domain Name                 :
VTP Pruning Mode                : Disabled
VTP V2 Mode                     : Disabled
VTP Traps Generation            : Disabled
MD5 digest                      : 0x7D 0x5A 0xA6 0x0E 0x9A 0x72 0xA0
0x3A
Configuration last modified by 0.0.0.0 at 0-0-00 00:00:00
Local updater ID is 0.0.0.0 (no valid interface found)
Switch>
```

6.  We will now change the VTP Operating Mode to CLIENT by first entering the following commands:
    a.  Switch>**enable** (enable mode to privileged commands)
    b.  Switch#**config term** (Open the configuration of switch)
    c.  Switch(config)#**vtp mode client** (Change the vtp mode to client)
    d.  Sitch(config)#**exit** (to exit config mode)

7.  Repeat step 6 for other CLIENT Switches.

8.  Now that we have configured all of our switches, you can run the command "vtp show status" and it should now show the operating mode as client. If yours does not show in client mode, retry step 6.

    The next step is to configure each link between the switches as a "TRUNK" line. You may do this using the IOS Command Line commands or through the Graphical Config of each switch. For this walkthrough I will demonstrate using

the Graphical Config.

9.  On each switch, navigate to the config page and select the interface you would like to change to a TRUNK.
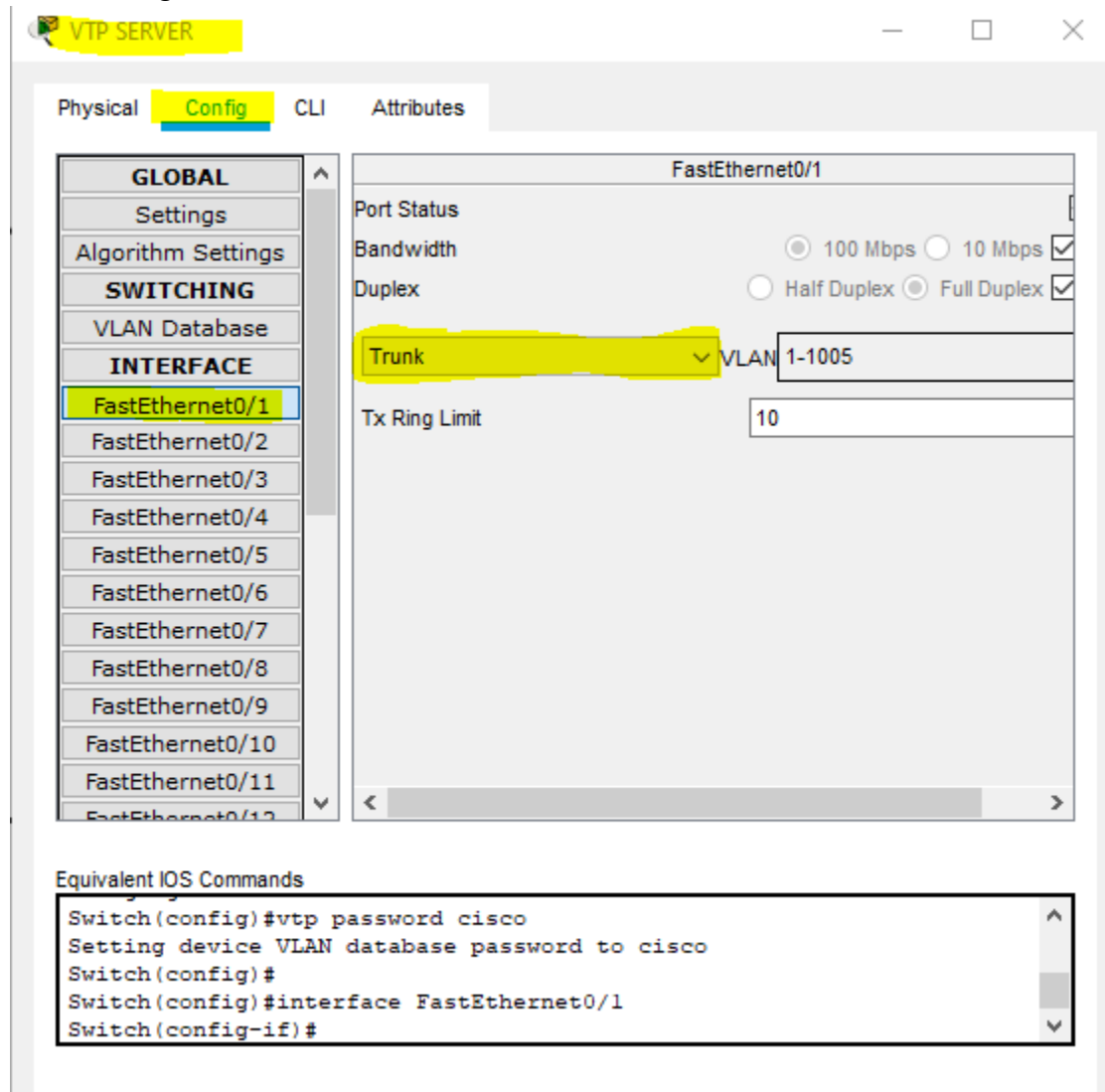


We will now make sure that each switch is configured to the right domain and has the correct password set. We will do this with IOS commands via the command line. **You should use the command "exit" (possibly multiple times) until your CLI says "Press RETURN to get started" in order to align with this next step.**

10. On the VTP Server, type the following commands:
    a.  Switch>**enable**

      **b.** Switch#**configure terminal**

      c. Switch(config)#**vtp domain UAB**

      d. Switch(config)#**vtp password 1234**

11. Run the commands a,b,c,and d on the CLIENT Switches.

    You can verify that all the Switches are on the correct VTP Domain by running the following command on all of the switches and looking at the VTP Domain Name field:

      a. Switch>**show vtp status**

12. Now from the VTP SERVER we can configure two new VLANs called "Students" and "Servers" with the ids of 20 and 50, respectively. When you create these on the VTP Server, you should see them appear in each of the client switches as well.