Skill Test 2 Router on a Stick March 17, 2010

The switches are connected with cross-over cables like this: sw1 port8 to sw2 port 8 and sw2 port 7 to sw3 port 8.
Use the command **`sh cdp nei`** to verify the connections.

1. On a switch, erase the vlan.dat by the privileged command "delete vlan.dat"
   Erase the configuration file by "wr er"
   Reload the switch.

2. Configure the switch with hostname sw{x}, enable secret cisco, enable telnet login, logging sync, etc., where {x} is the switch number, and will be used all over this test.

3. Shut down vlan 1

4. Assign VLAN's to the ports as follows:

VLAN	ports
10	1,2
20	3,4
30	5
trunk	6,7,8

5. Assign IP addresses 10.10.x.2/16, 10.20.x.2/16 and 10.30.x.2/16 to VLAN 10, 20 and 30, respectively.

6. Set up VTP domain CCNA3, password cisco.
   Add VLANs on your switch: 10x, 20x, 30x
   At this point, you should see more VLANs than you have assigned.

7. Connect your PC's 3Com NIC to the **third port** of your switch and configure your PC as 10.20.x.10/16.
   Add a static route 10.0.0.0/8 and next hop 10.20.x.1 to your PC. [**`route add 10.0.0.0 mask 255.0.0.0 10.20.x.1`**]
   At this point, you should be able to ping from your PC or switch to all 10.20.y.2 and 10.20.y.10. However, your PC cannot ping 10.10.y.2 or 10.30.y.2 at this point. Here, y can be substituted with 1, 2 or 3; while x means your switch number. Your PC should be able to telnet to your switch. (10.20.x.2)

8. Please connect fa0/6 to a router fa0/1 with a straight cable.
   If there exist sub-interfaces of fa0/1, remove them.
   At the router, configure router on a stick so that all vlan's on all switches can reach each other.

ping 10.10.x.1 from PC
ping 10.30.x.1 from PC

9. Layer 3 routing
   Disconnect the cable from switch to router or shut down the router.
   On the switch, enable ip routing by the global configuration command **`ip routing`**
   At PC, change the static route next hop from 10.20.x.1 to 10.20.x.2

ping 10.10.x.2 from PC
ping 10.30.x.2 from PC

After this skill test, if there is still time, please practice STP command in Chapter 5.

Ref Commands:

```
int vlan 1
    no ip addr
    shut
int vlan 10
    ip addr 10.10.x.2 255.255.0.0
    no shut
int vlan 20
    ip addr 10.20.x.2 255.255.0.0
    no shut
int vlan 30
    ip addr 10.30.x.2 255.255.0.0
    no shut
int range fa0/1 – 2
    sw mo ac
    sw ac vl 10
int range fa0/3 – 4
    sw mo ac
    sw ac vl 20
int range fa0/5
    sw mo ac
    sw ac vl 30
int range fa0/6 – 8
    sw tr en dot
    sw mo tr
vtp domain ccna3
vtp pass cisco
vlan 10x
vlan 20x
vlan 30x
sh ip int br
sh vtp status
sh vtp password
sh vlan br
```

Router commands:

```
no int fa0/1.100
no int fa0/1.200
no int fa0/1.300
int fa 0/1
   no shut
int fa0/1.10
   en do 10
   ip address 10.10.x.1 255.255.0.0
int fa0/1.20
   en do 20
   ip addr 10.20.x.1 255.255.0.0
int fa0/1.30
   en do 30
   ip addr 10.30.x.1 255.255.0.0
sh ip route
sh ip int br
```