ITEC350 Lab Exercise

[10 X 13 = 130 points + 40 points]
Before beginning, read this description and divide the duties among your pod-mates. You will be provided with installation CDs for Windows XP, Windows Server 2003, and Linux, and a drivers disc (4 CDs total). Please return these CDs after the lab is completed.

<u>**Core Requirements:**</u>
1. Connect the computers to the breakout box and cable the router, switch, and patch panel as shown in the lab diagram. Cables for the lab can be found in the locker for your pod.

2. Install operating systems on the three computers in your pod. Be sure to delete all existing partitions and manually create new ones when prompted during the installation process. On the Windows machines, you will need to install drivers for the network and graphics cards.
    a) Install Windows Server 2003 on the machine with the "Win2003 Key" label on top.
    b) Install Windows XP on another machine (use the GX620 model if one is available).
    c) Install Ubuntu Linux on the third machine.

3. Configure the network settings of each machine. Set the IP address to 190.111.<pod #>.1 on the server, .2 in XP, and .3 in Linux. The subnet mask should be 255.255.255.0. On the 2003 server, set the DNS server to the loopback address (127.0.0.1), on the other two machines use the 2003 server's IP address (190.111.<pod #>.1). Use pod<pod #>.edu (e.g. pod1.edu) as the DNS domain name. Make sure the firewall is disabled on the XP and Linux machines.

4. Setup the router. Configure and activate the two Ethernet interfaces (GigabitEthernet0/0, GigabitEthernet0/1). Set the IP address of Fa0/0 to 190.111.<pod #>.254 and Fa0/1 to 190.111.50.<pod #>. Configure each computer to use the router's IP address (from Fa0/0) as its default gateway. Confirm that router is forwarding packets between networks by pinging the lab server (190.111.50.100).

5. Enable RIP version 2 on the router and have it run on both networks.

6. On the router, create a default route (0.0.0.0) that points to the lab backbone router (190.111.50.55) to allow packets to reach the Internet. Confirm Internet connectivity by opening a web page from one of the workstations (DNS must be setup for this to work).

7. Configure Windows Server 2003 to be an Active Directory Domain Controller using the "Manage Your Server" application. Do not select the "typical roles" option if prompted. When warned that no DNS servers could be found, be sure to allow Active Directory to automatically configure DNS. Use pod<pod #>.edu as the name of the domain.

8. Setup the DNS server using "Administrative Tools->DNS." Add Host records to your domain (under Forward Zones) to map each machine's name to its IP address. Create a new Reverse Zone and add PTR records for each machine's IP address. Set your DNS server to use the lab server (190.111.50.100) as a forwarder for all DNS requests.

9. Have your Windows XP workstation join your pod's Active Directory domain using the "Control Panel->System" component. Reboot and log onto the domain using your Windows 2003 Administrator account. Note that the Linux machine cannot join an Active Directory domain.

10. Confirm basic network connectivity by pinging each machine's IP address. Confirm DNS name resolution by pinging each hostname and using the nslookup command. When checking hostnames, you might need to append the domain name (e.g., Pod1Server.pod1.edu).

11. Share a folder from the Windows 2003 server. Confirm access by users on the Windows XP workstation by using "My Computer" to connect to the share.

12. Install AdminPak (from the Windows 2003 CD) on the Windows XP workstation. Use the "Administrative Tools->Active Directory Users and Computers" component installed by AdminPak to add users to the domain from the Windows XP workstation. Create a non-administrative user for each person in your pod.

13. Use the "Administrative Tools->Computer management" component on the Windows XP workstation to remotely connect to the Windows 2003 server. Confirm by viewing the Device Manager.

Electives:

4 out of the following are mandatory. [4 X 10 = 40 points]. You can also do any extra 3 for extra credit of 30 points.

❖ Configure a mail server and clients. Add the mail server role to your Windows 2003 server and create a mailbox for each member of your pod (use their existing Active Directory accounts). Use Outlook express on Windows XP and Windows 2003 as clients. Setup each client with a different user/mailbox and exchange emails between them.

❖ Enable the SSH services on the Linux machine. Show that you can SSH into the Linux machine by using the putty SSH client from the Windows machine.

❖ Use the smbclient command on the Linux machine to access a shared directory. Put a test file in your shared folder on the Windows 2003 server and download it to your Linux machine. You may use the Administrator or a user account for the username and password. It is possible to access a share using a graphical tool, please use the command line instead.

❖ Add the "Application Server" role to your Windows 2003 server and create an index.htm page for the IIS web server. Confirm that the web page can be viewed by the workstations in your pod.

❖ Configure Terminal Services on the Windows 2003 server. Use "Administrative Tools->Remote Desktops" on the Windows XP workstation to control the server remotely.

❖ Establish an Organizational Unit within your domain using "Active Directory Users and Computers." Delegate control of the OU to a non-administrative user. Login as that user on the Windows XP workstation and add a user to the OU.

❖ Configure the DHCP service on the Windows 2003 server and set the workstations to obtain their IP address, subnet mask, gateway, and DNS information from the server. The scope should use a limited range of addresses that starts after the first ten. Confirm DHCP operation by setting the Windows XP workstation to obtain its IP address automatically.

❖ Configure the DHCP service on the router and set the workstations to obtain their IP address, subnet mask, gateway, and DNS information from the router. The first ten addresses should be excluded from the pool. Confirm DHCP operation by setting the Windows XP workstation to obtain its IP address automatically.

❖ Connect a printer to your pod's network using one of the print servers in the lab. Setup the printer on the Windows 2003 server as a "local printer" on a standard TCP/IP port. The print server uses DHCP to get an IP address. To have it obtain and print an IP address, hold the reset button for 5 seconds.

❖ Set the permissions on the shared directory to deny write and delete for one of your non-administrative users. Establish auditing of any failed attempts to delete files from the shared directory. Log on as the restricted user and attempt to delete a file from the shared directory. Confirm corresponding auditing entries in the Event Viewer security log.

❖ Set up an access-list on your router that will block all inbound traffic from a Linux machine in another pod and block telnet traffic from anywhere. Remember that access-lists have an implicit deny at the end so you must explicitly permit all other traffic at the end of the list. If the access-list is functioning, the Linux machine in the neighboring pod will not be able to ping into your pod, the XP or 2003 machine will be able to ping but not telnet.

❖ Work with another pod to share a single DHCP server. You will need to configure a second scope on the first pod's DHCP server. You will also need the "ip helper address" command on the second pod's router to forward DHCP requests to the first pod.

❖ Work with another pod to setup a connection between your Active Directory domains. Use "Administrative Tools->Active Directory Domains and Trusts" to establish a two-way trust between the two domains. Confirm the trust relationship by logging on to a user in the trusted pod's domain.