

Vanier College
Computer Science & Technology
Networks 420-421-VA section 00002

Task 2: Implementation
Networking addressing scheme Report

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Step1 - Configure the Wireless Router

- To configure the Vanier.edu DNS we had to activate the DNS service in the server. We went to “Services tab” then “DNS” and turned “DNS Records” ‘On’. After that in the “Resource Records” we added the 2 websites name “www.vanier.edu” and “www.networks.org”. The static IP for the DNS Server is 200.100.30.2.
- To configure the DHCP to assign dynamic IPs in the range of 192.168.1.5 to 192.168.1.15 in the yellow network (the router with the IP: 192.168.1.1), we had to go to the router’s GUI Tab, then make sure we are on Setup inner Tab, after that in the Network Setup section. First, we make sure that the DHCP Server is “Enabled”, then we set the “Start IP Address” to 5 and the “Maximum number of Users” to 15. Secondly, we input the DNS IP in the “Static DNS 1”. Finally, we need to make sure we press “Save Settings”.
- For setting the wireless authentication, it’s also in the “GUI tab”. We make sure to be on the “Wireless tab”, we choose the “Wireless Security” mini tab and in there we will need to set the “Security Mode” to ‘WPA2 Personal’, Encryption to “AES” and set a Passphrase (our passphrase is “yamanlogan”). We repeat this step to all the devices on the page.

Step 2 – Configure the Wireless Devices

To configure the wireless devices to receive a Secure wireless connection in the yellow network, we needed to double click on all the wireless devices in the yellow network, and we went to the “Config” tab, and we went into the “Wireless” tab, and we set the SSID as “DreamLand” (the one we set up for the wireless router of the yellow network). We also set the Authentication as “WPA2-PSK”, and the encryption type was set to AES. Finally, we wrote the passphrase in (yamanlogan), and we turned on the wireless NIC card.

To give a static IP address to the Server_Luo server, we double clicked on the Server_Luo server, and we went into the “Config” tab of the server, then into the “FastEthernet0” interface, and we gave a static IP address to the Server_Luo PC of 192.168.1.4. We also gave a subnet mask of 255.255.255.0 since the CIDR is /24. Since we do not use DHCP for the server, we needed to manually change the default gateway as well as the DNS server for this server. To do this, we went to the “Settings” tab, and we changed both the default gateway and the DNS server.

Step 3 – IP Configuration

To configure the devices except the server to use the DHCP in the yellow network, we double clicked on all the devices in the yellow network, and we went to the “Config” tab, and then into the “Wireless0” tab, then we changed the IP Configuration to use DHCP. In the “Settings” tab and in the “Gateway/DNS IPv4” section, we also set the DNS servers of all the devices in the yellow network to use the wireless router’s default DNS

server which is 200.100.30.2 which is set automatically by the DHCP. The automatically set IP address of the gateway of 192.168.1.1 can also be seen in this section. The subnet mask can also be seen here in the IP Configuration section which is 255.255.255.0.

To change the DNS server and the Default Gateway of the PCs in the orange network, we went into the “Config” tab, then into the “Settings” tab, then we changed the DNS server to 200.100.30.2 and their default gateway to 192.20.20.1.

To give a static IP address to both PCs in the orange network, we double clicked on the PCs, and we went into the same “Config” tab, and we clicked on the “FastEthernet0” to configure the NIC installed in the computer. We then changed the IP Configuration to use the “Static” configuration, and we changed the static IP address for the “Alhamamy” PC to use 192.20.20.2, and the “Yaman” PC uses 192.20.20.3 as its static IP address. It is also here that we configured the subnet mask of 255.255.255.240 for both PCs in the orange network.

[Step 4 - Servers Configuration:](#)

We gave a static IP address to the Vanier.edu WebServer and the Networks.org

WebServer by clicking on them and going to the “Config” tab and into the

“FastEthernet0” interface. In the IP Configuration section of this tab, we set the

configuration to be Static, and this is where we set the static IP address of 200.100.30.2

for the Vanier.edu web server and the static IP address of 200.100.30.3 for the Networks.org web server.

To configure the FTP service on the Server_Luo server, we double clicked on the Server_Luo server, and we clicked on the Services tab. We clicked on the FTP tab, and we turned the service on. We also added two users “logan” and “yaman” who have read and write permissions. To add these users, we typed their name and password in the text fields provided, and we clicked on the “Add” button. The user “logan” has password 54321 and the user “yaman” has password 12345.

To allow the Vanier.edu server to act as a DNS server to resolve the FQDN of the Vanier.edu web server and Networks.org web server to their IP address, we double clicked on the Vanier.edu web server, and we clicked on the Services tab. We then clicked on the DNS tab, and we turned on the DNS server. We added the A Records for the www.vanier.edu domain name which resolves to 200.100.30.2, and the www.networks.org domain name which resolves to 200.100.30.3.

To display a customized static HTML page on both the Vanier.edu webserver and the Networks.org webserver, we made sure that the HTTP and HTTPS services are enabled by double clicking on either one of the servers, and we went into the Services tab. To enable the HTTP and HTTPS services, you click “On” on the radio buttons for the HTTP and HTTPS services. To edit the index.html web page, you click on “Edit” on the index.html file under the File Manager section. For both Vanier.edu and

Networks.org web server index.html pages, we deleted every HTML tag in the default tag except the <html> tag, the tag and the <center> tag. For the Vanier.edu web server, we changed the color attribute of the font tag to make the color of the text red, and we edited the text in between the font tag to say “Welcome to Vanier Education”. For the Networks.org web server, we changed the color attribute of the font tag to make the color of the text blue, and we edited the text in between the font tag to say “Networks Web Server”.

Step 5 – Configure the Routing Protocol

To configure the routers to use RIP as a Routing protocol, we double-click on every backbone router (in our case it's ISP, Montreal, and Vancouver), and we repeat the coming steps. First, we go to the “Config” Tab, and then into the “ROUTING” section we choose “RIP”. Secondly, we input all the networks (network ID) that the router is connected to.

- The “ISP” router is connected to 2 networks, the “HomeNetwork” (yellow zone) on a network with a network ID of 200.168.20.0/30 and the “Montreal” router (light-blue zone) on a network with a network ID of 177.44.35.0/30. In the config file the network addresses are ‘177.44.0.0’ because it's a Class B and ‘200.168.20.0’ because it's Class C.
- The “Montreal” router is connected to 3 networks, the “ISP” on a network (light-blue zone) with a network ID of 177.44.35.0/30, the “orange zone” with a network ID of 192.20.20.0/28, and the “Vancouver” router (cyan zone) with a network ID of

150.80.60.0/30. In the config file, the network addresses are '177.44.0.0' because it's a Class B, '150.80.0.0' because it's Class B, and '192.20.20.0' because it's Class C.

- The "Vancouver" router is connected to 2 networks, the "Montreal" on a network (cyan zone) with a network ID of 150.80.60.0/30 and the "green zone" with a network ID of 200.100.30.0/29. In the config file, the network addresses are '200.100.30.0' because it's a Class C, '150.80.0.0' because it's Class B.

Step 6 – Troubleshoot Network Connectivity

- Local connectivity:
 - o To check that all end devices can connect to each other, we used the 'ping' command. We went to the Desktop Command Prompt of every device and tried to ping the other devices.
- File sharing:
 - o To share files between devices we had first to activate the FTP service in the Server (Server-Luo). To do so, after double-clicking on the server, we go "Services" Tab, and in the Services List, we click on FTP then we choose the 'On' radio button. Secondly, we added 2 usernames and passwords (logan : 54321, yaman : 12345) with Read and Write permissions that the devices will need to access any files on the Server.

- We tested it by creating a file on PC_Logan by going to Desktop and then into Text Editor, we saved the file in the name of “PCLogan_file.txt”. To put it on the Server, we went to the Desktop Command Prompt and used the “ftp” command that asks to input the username and password. Then to put the file in the server we basically write ‘put [file name]’ in our case it’s ‘put PC_Logan.txt’.
- Lastly, to access the file from any other device we simply go to the Desktop Command Prompt, then also we use the “ftp” command that will ask for the username and password, then we use the “get [file name]” to retrieve the file, in our case, we write ‘get PC_Logan.txt’.
- Internet connectivity:
 - To connect to the web services, we made sure that the devices can connect to the servers. Firstly, we used the “ping” command to check if all devices could ping, and thankfully they all were able to. We went to the Web browser of every device to check that they could access both websites, but we had an issue that we could only access one of them which was the “Networks.org” website. So we started troubleshooting, we checked the RIP in every router to make sure they all had the network addresses, and we used the “nslookup” command on every device to check if they had the domain name, then at the end, the issue was just that we miss-spelled the record. Instead of ‘www.vanier.edu’ it was “www.vanier.com”.

