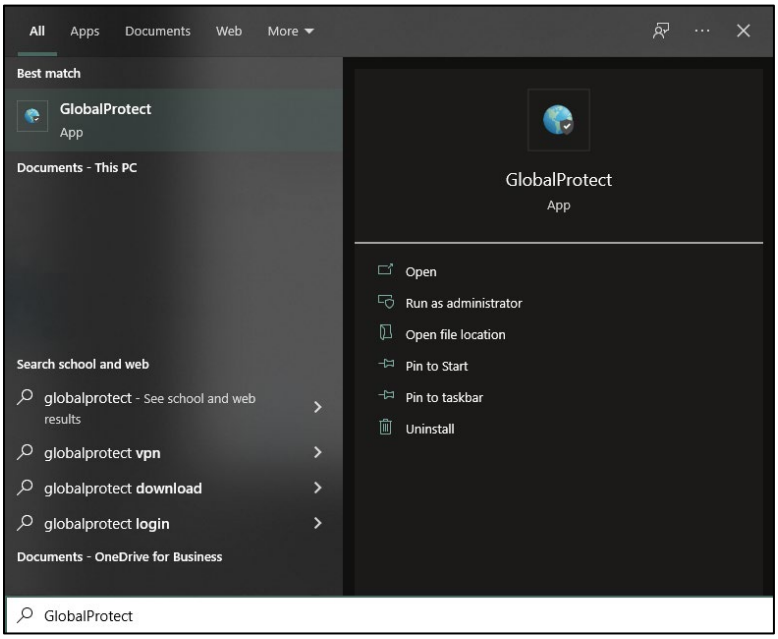
Lab 1 – Packet Tracer Introduction

Install the GlobalProtect VPN Agent and Connect

Browse to https://vpnservice.fanshawec.ca; you may need to sign-in with your FOL username and password. Download the Windows 64-bit GlobalProtect agent from the portal page and install the agent.

Once the agent is installed, open your stat menu and search for GlobalProtect



The agent will open near the system tray. Connect to the portal **vpnservice.fanshawec.ca**. Click Connect to establish a connection (only required if off-campus).

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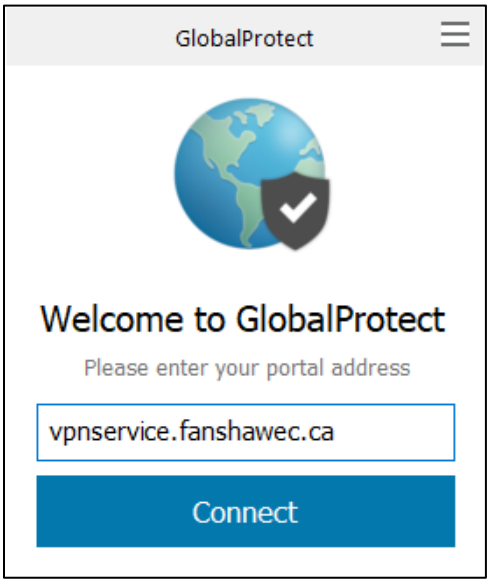
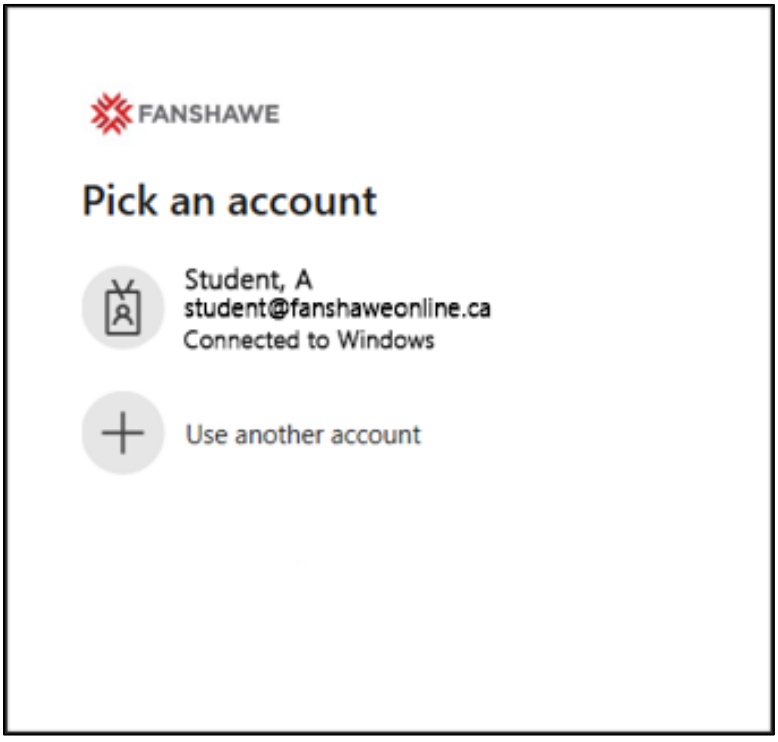


When you are asked to login, use your FOL email address and password to login.



Look for the Connected message on your screen.

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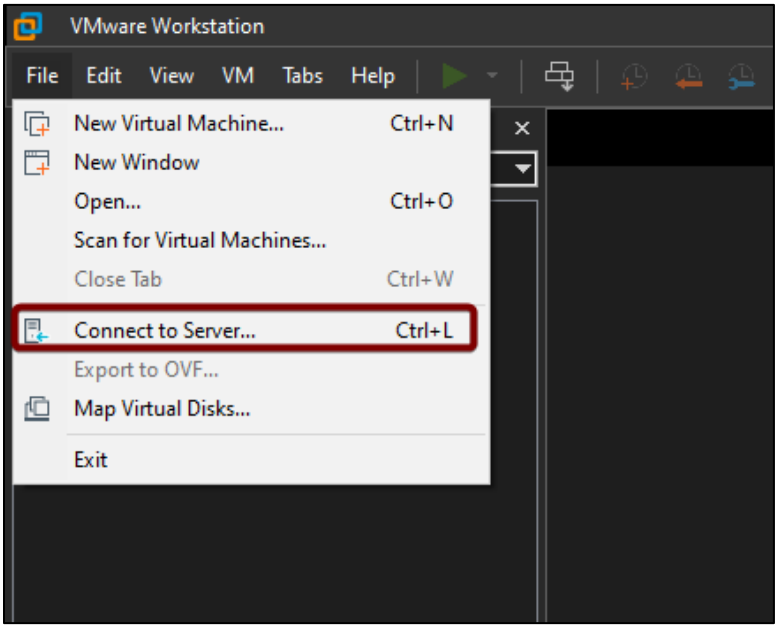
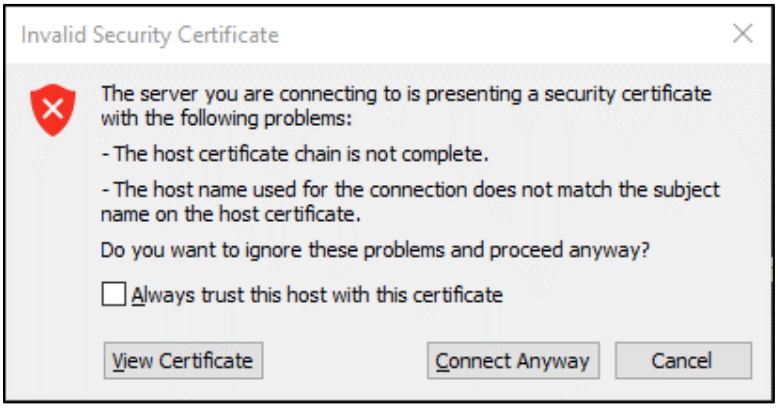
Connect to Remote Desktop in VMware Workstation

To connect to your remote desktop, you must be located on-campus or connected to the VPN.

Open VMware Workstation Pro and from the file menu, click **Connect to Server**.



Enter the server name vlabs1.ity.fanshawec.ca and provide your FOL email and password to login and click **Connect**. When prompted with the Invalid Server Certificate error, click **Connect Anyway**.



You can have VMware remember your login if you wish.

Expand out the folder structure until you see your assigned VM for INFO-6078. Click on the VM name to open the VM console. You can login to the student account on the VM with the password **Passw0rd!**

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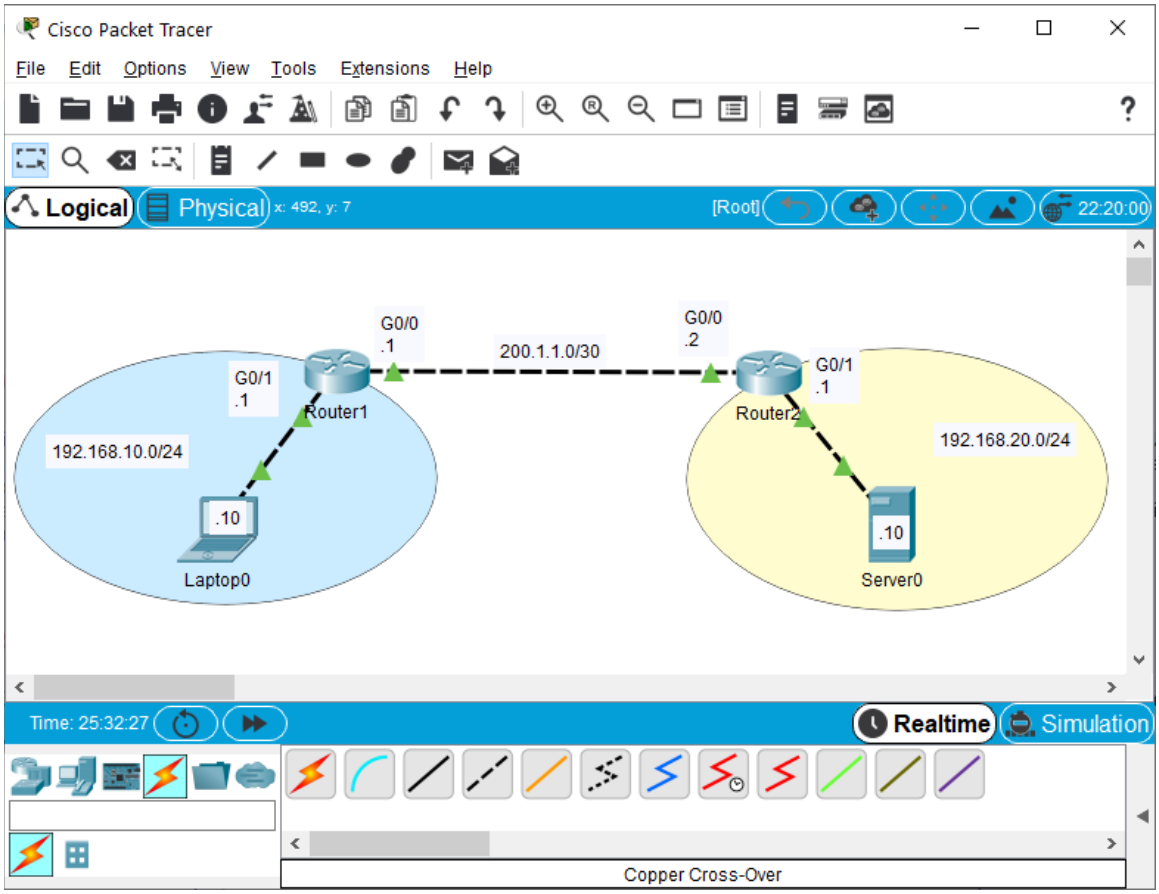
Explore the Packet Tracer Interface

Run Packet Tracer and login using your Network Academy credentials; next we will take a look at the functions of the interface



- From the panel at the bottom of the interface, add two **2901 routers** to the topology
- Select the **Connections** tab (lightning icon), connect the two routers via GigabitEthernet 0/0 on both routers, using a copper cross-over cable (dashed black line)
- Add a Laptop to the topology and connect it to Router 1 via G0/1
- Add a server to the topology and connect it to Router 2 via G0/1

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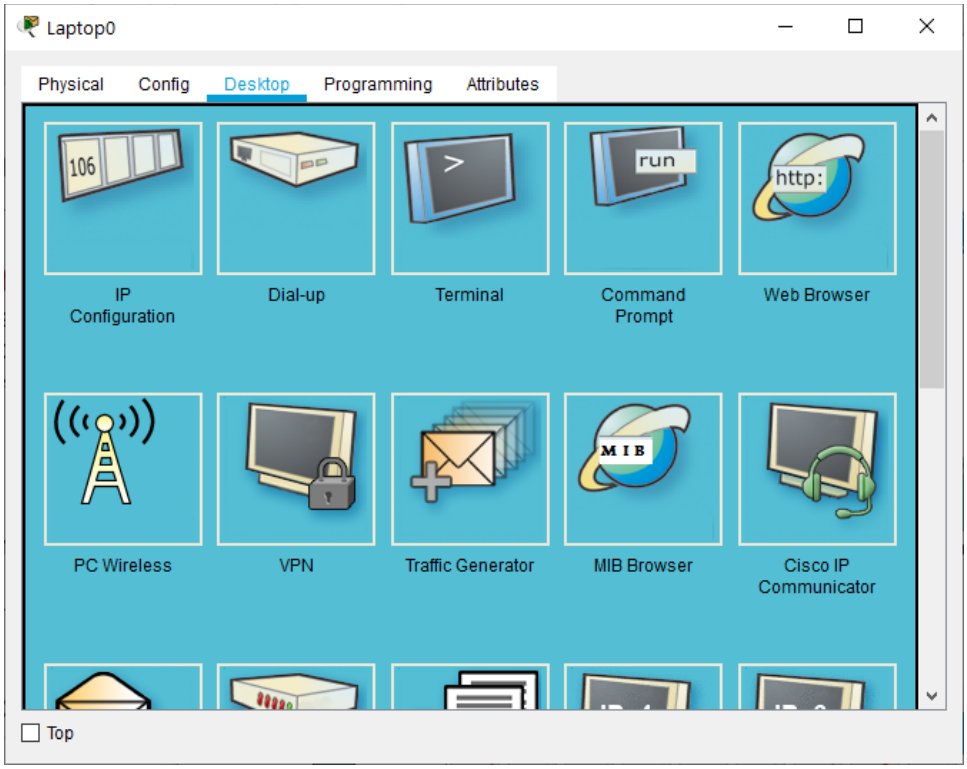
Configuring End Devices – Laptop



- Click on **Laptop 0** and switch to the **Desktop** tab
- Open the **IP Configuration** window and configure the following settings:
  - **IP Address**: 192.168.10.10
  - **Subnet Mask**: 255.255.255.0
  - **Default Gateway**: 192.168.10.1
  - **DNS Server**: 192.168.20.10
- Close the window for **Laptop 0**

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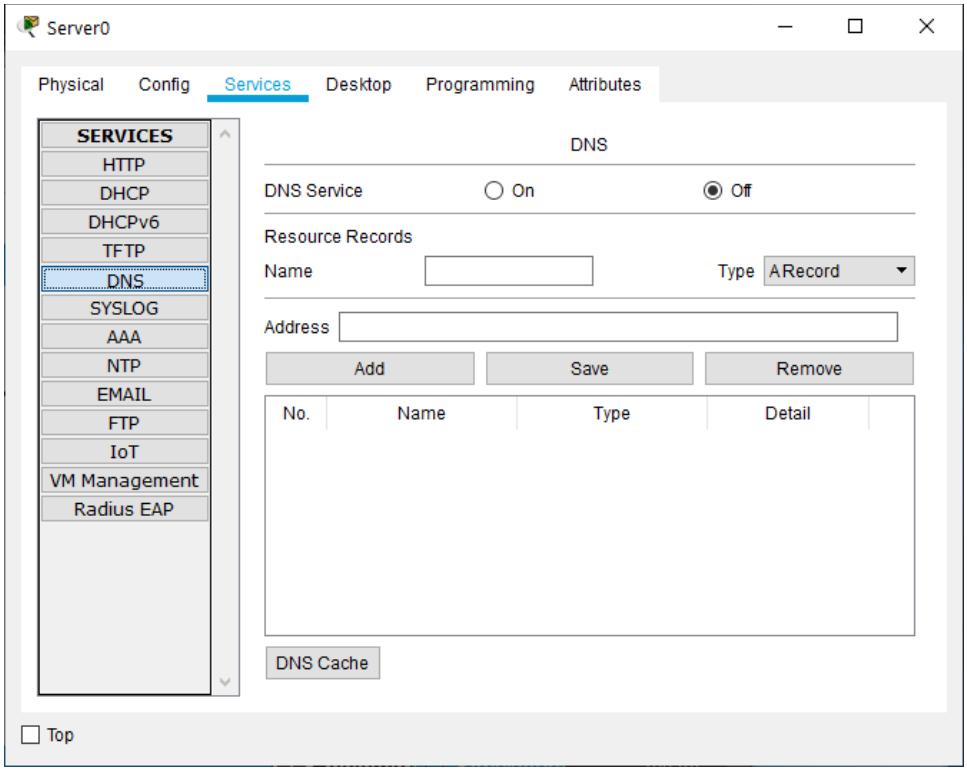
Configure End Devices – Server



- Click on **Server 0** and switch to the **Desktop** tab
- Open the **IP Configuration** window and configure the following settings:
  - **IP Address**: 192.168.20.10
  - **Subnet Mask**: 255.255.255.0
  - **Default Gateway**: 192.168.20.1
  - **DNS Server**: 127.0.0.1
- Close the **IP Configuration** window and switch to the **Services** tab
- View the state of the services available on the left of the window
- Open the **DNS** service settings, enable the service and add the following record:
  - **Name:** www.fanshawe.ca
  - **Type:** A Record
  - **Address:** 192.168.20.10
- Close the window for **Server 0**

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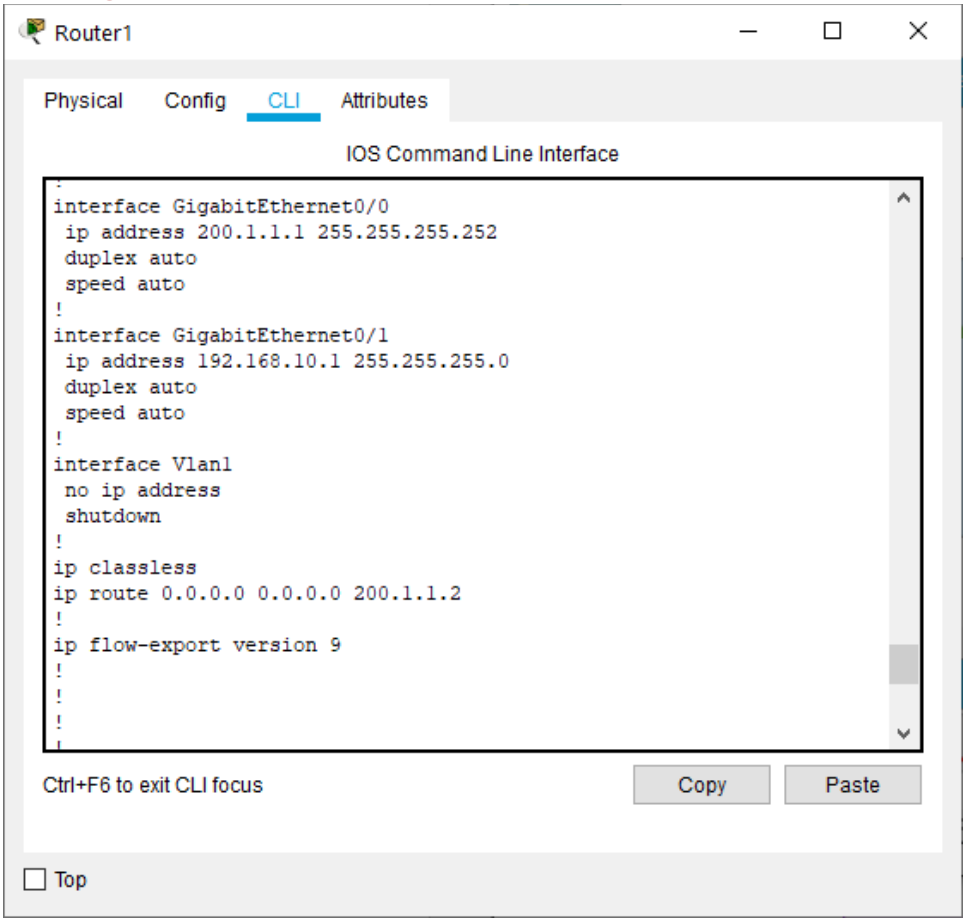
Configure Infrastructure Devices



Click on **Router 1** and switch to the **CLI** tab

You will see a prompt asking if you would like to enter the initial configuration dialog; at the prompt type **n**, then **enter**
Press enter to gain a prompt

You will now see a prompt in User EXEC mode
Router>

Enter Privileged EXEC mode
Router> enable

Note that the prompt has changed
Router#

Enter Global Configuration mode
Router# configure terminal

Configure the Hostname
Router(config)# hostname FOLID-Router1 *(substitute FOLID for your FOL username)*

Enter the Interface configuration mode for G0/0
FOLID-Router1(config)# interface gigabitEthernet 0/0

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Configure an IP address
FOLID-Router1(config-if)# ip address 200.1.1.1 255.255.255.252
Enable the interface
FOLID-Router1(config-if)# no shutdown

Return to Global Configuration mode
FOLID-Router1(config-if)# exit

Enter the Interface configuration mode for G0/1
FOLID-Router1(config)# interface gigabitEthernet 0/1

Configure an IP address
FOLID-Router1(config-if)# ip address 192.168.10.1 255.255.255.0
Enable the interface
FOLID-Router1(config-if)# no shutdown

Return to Global Configuration mode
Router(config-if)# exit

Configure a default route that points towards **Router 2**
FOLID-Router1(config)# ip route 0.0.0.0 0.0.0.0 200.1.1.2

Return to Privileged EXEC mode
FOLID-Router1(config)# end

View the configured settings
FOLID-Router1# show running-configuration

Save the current configuration
FOLID-Router1# write

Based on the topology, configure **Router 2** with the appropriate settings

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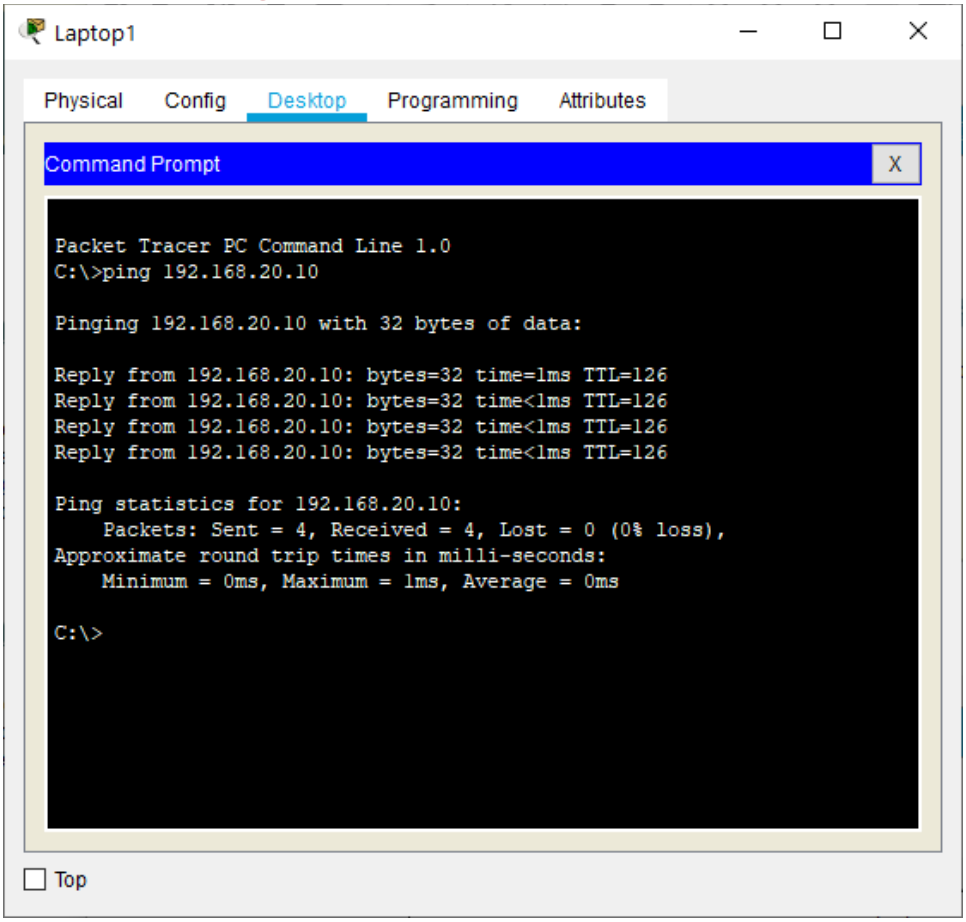
Test the Configuration



On **Laptop 0**, open the **Command Prompt** located on the **Desktop** tab

Test network connectivity with Server 0, troubleshoot as necessary
C:\> ping 192.168.20.10

Lab Submission 1:

Add a screenshot to the lab quiz that displays a successful connection from **Laptop0** to **Server0**. Include the VM tab that displays your FOL username in the screenshot.

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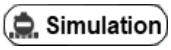
Simulation Mode

Packet Tracer includes a Simulation Mode that allow the inspection of "live" network traffic similar to a protocol analyzer like Wireshark

On the bottom-right of the screen, click the 

button to enter simulation mode

By default, simulation mode includes all traffic types; this can show many additional messages generated by automated protocols on infrastructure devices. To reduce the number of displayed messages, clear the **Event List Filters** by pressing the **Show All/None** button

Press the **Edit Filters** button and from the **IPv4** tab, add the **ICMP** and **DNS** filters; switch to the **Misc** tab and add the **HTTP** filter

Close the Filter window

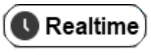
Go to the desktop on **Laptop 0** and open the **Web Browser**
Navigate to **www.fanshawe.ca**
Minimize the **Laptop 0** window and observe the envelope that has appeared next to laptop

Click the envelope to open the PDU details
On the **OSI Model** tab notice that the message is a **DNS** message

Switch to the **Outbound PDU Details** tab, this tab displays the headers for the various protocols operating on the network we will be learning more about headers in the coming weeks)
Close the PDU window

Test the **forward**, **backwards** and **play** controls, as well as the speed slider to understand how **Simulation Mode** operates

Progress the simulation until no new PDUs appear in the list, switch back to the desktop on **Laptop 0** and observe the web page that has loaded

To exit Simulation Mode, click the 

button

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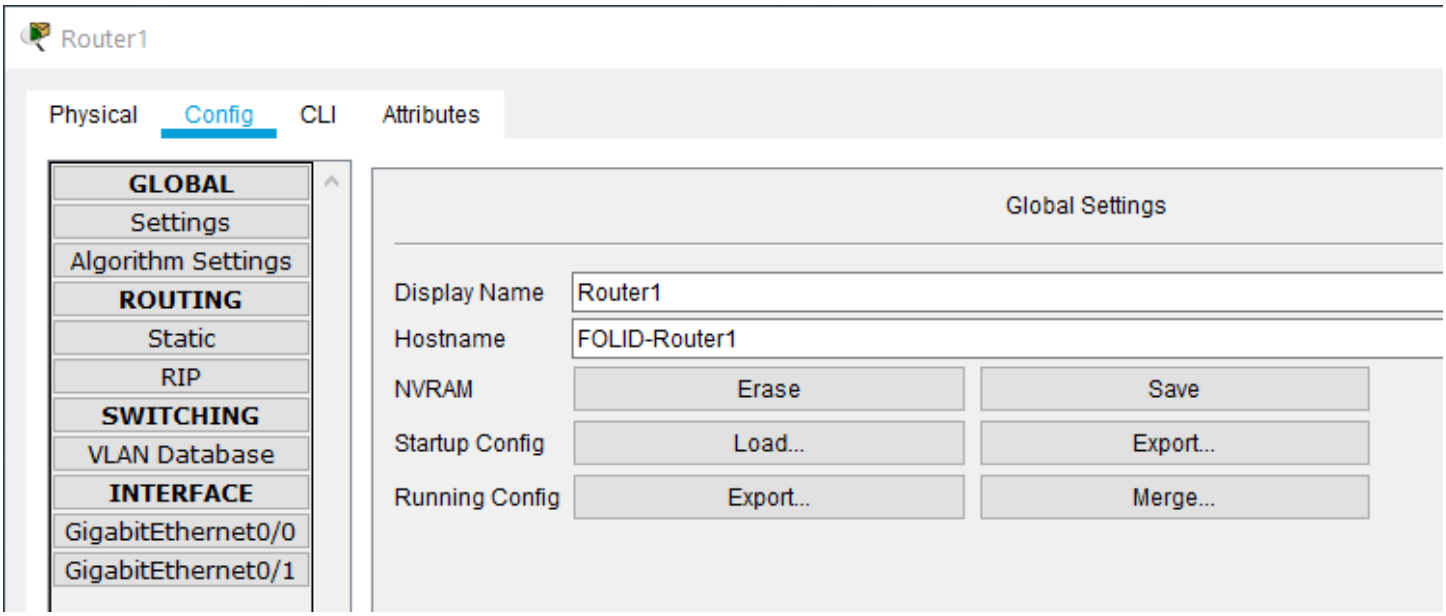
Submit Configuration to the Lab 1 Quiz

To extract the configuration for a router, open the configuration for **Router1**, select the **Export** button under the **Startup Configuration** section.



Save the configuration to the desktop.

Open the configuration text file, ensure that the file is not empty, then copy and paste the contents of the file to the Lab 1 quiz under the Router 1 section.

> **Lab Submission 2:**
> Copy and paste the contents of the **Router 1** file to Lab Submission 2 section.

Repeat the export process for Router 2.

> **Lab Submission 3:**
> Copy and paste the contents of the **Router 2** file to Lab Submission 3 section.

Lab 1 is complete.