

## Lab 3 ANSWERS

1. To open an Administrative Command Prompt, hover the mouse cursor of the upper or lower right corner of the screen. Select Search. Type Command Prompt. Right click Command Prompt and select Run as Administrator. **(Make sure you are using Command Prompt and NOT Powershell.)**

2. At the Command Prompt, type ipconfig and hit enter. Information about your TCP/IP configuration will display in the window. Notice your IP address, subnet mask and default gateway.

○ **Where did this TCP/IP configuration come from?**

*You cannot really determine where the IP address came from when using the ipconfig command all by itself. You will be able to see it when you use the /all*

○ **How do you know?**

*We know that we obtained the IP address from the DHCP server because we configured the server that way, but the ipconfig command does not tell us this.*

○ **What other information is displayed?**

*You only see IP address, subnet mask and default gateway*

3. Type ipconfig /all and hit enter.

○ **What is the HOST NAME?**

*Varies based on your SenecaID. It should be SenecaID-SI*

○ **What is the IP address of the DHCP server?**

*It should be something like 10.102.20.20*

○ **What is the IP address of your DNS server?**

*10.102.20.21 plus a few others*

4. Type ipconfig /? to display the help file for ipconfig. Notice all of the options and examples that are displayed (more than are in the introduction, above).

5. Type ipconfig /release and hit enter.

○ **What have you just done?**

*You have just released your IP address back to the server.*

6. Type ipconfig /renew and hit enter.

○ **What have you just done?**

*You have just requested a new IP address from the DHCP server.*

7. Type `ipconfig /all` again.

○ **Is your configuration information the same as it was before or is it different?**

*The DHCP server always tries to give you the same address, but it is not always possible. Your address might be the same as it was before or it could be different.*

○ **Why would you “release and renew” your IP configuration?**

*Release and Renew is useful if the DHCP server was not available when you booted your device. It can also be used when you move a device from one network to another.*

8. Type `ping localhost` and hit enter.

9. Type `ping loopback` and hit enter.

10. Type `ping 127.0.0.1` and hit enter.

○ **Is there any difference in the output of the 3 commands you used?**

*The output should be similar because all 3 commands are actually pinging your own computer.*

11. Find a classmate to do the next few steps with. Share your IP address and hostname with each other.

12. Type `ping [your partner's IP address]`

○ **What is the result?**

*If everything is configured correctly, you should receive 4 reply messages from your partner's Server 1.*

13. Type `ping [your partner's host name]`

○ **What is the result?**

*The ping may or may not work. It is more likely that it will not because there is no DNS server resolving each of your VMs' computer names. There are other ways that the computers can discover each others host names, so it is possible that it would work. If you were to ping the instructor podium's host name, DNS would resolve it and you could connect.*

○ **Why doesn't your computer recognize your partner's host name?**

*As noted above, there is no DNS server to resolve your host names.*

14. Type the command `ping -l 1500 [IP address]`

○ **Notice the bytes entry in the results and compare it to your previous pings.**

○ **What is the difference?**

*The size of the ping packet is larger (bytes=1500, instead of bytes=32).*

15. Type ping -n 10 [ip address]

- **Notice the results of the command.**
- **What did this ping command do differently from previous pings?**

*It pinged using 10 packets instead of 4.*

16. Use ping /? to obtain help and determine the command to use to continuously ping your partner's computer.

- **What is the command?**

*Ping -t*

- **How do you stop it?**

*Ctrl+Break or Ctrl+C*

## **5.0 Manual/Static IP Configuration on Server2.**

In this activity, you will change Server2 to have a manual TCP/IP configuration and you will use tools to test the configuration and connectivity.

### **5.1 Manually Configure TCP/IP**

1. In your Internet Protocol Version 4 Properties dialog box, change the IPV4 settings to:

IP Address 10.0.xxx.20 (xxx is the number you collected in your PreLab)

Subnet Mask 255.255.0.0

Leave the Default Gateway and DNS settings blank.

### **5.2 Use IPCONFIG and PING**

1. Open an Administrative Command Prompt and use ipconfig /all to verify your configuration.

- **What is different this time?**

*The output should not include DHCP Server information and DHCP-enabled should say NO*

2. Use ping to test your local configuration and share your Server2's IP address with a partner and use the ping command to test connectivity between VMs.

- **What happens?**

*You should be able to ping your partner's Server 2 IP address (assuming everything is configured correctly).*

- **Should you be able to access the Internet with your current configuration?**

*No. This static IP address is not a valid IP address on the Seneca network.*

- **Should you be able to ping another student's Server2?**

*Yes. If you are both configured correctly, you are technically both on the 10.0.x.x network.*

- **Should you be able to ping another student's Server1?**

*No. Server 1 is getting an IP address from the Seneca DHCP server and is NOT on the same network as any of the servers you manually configure.*

## **6.0 Configuring your Windows Client to connect to the Server**

1. Open your Client1 VM and login using the username you created in Lab 1. This user account will have Administrative privileges on this computer.
2. Open Control Panel (in Windows, you can always press the Windows Key on the keyboard and type the option you are looking for). From Network and Internet, select View network status and tasks.
3. On the left side of the window, select Change adapter settings. Right-click your Ethernet adapter and select Properties from the menu.
4. Open the properties for Internet Protocol Version 4 (TCP/IPv4).

**- What is the default setting for TCP/IP on your Windows Client?**

*You are automatically configured. You will get an IP address from the DHCP server.*

**- How do you find out your current TCP/IP configuration?**

*Ipconfig /all*

**- Will you be able to connect to both Server1 and Server2 with your current configuration? Explain.**

*No. You will be able to connect to Server 1 because it is also automatically configure. You will not currently be able to connect to Server 2 because it is manually configured.*

**- Can you access the Internet with this configuration?**

*Yes. You are getting an IP address from the Seneca DHCP server that is valid on the Seneca network and will allow you to access the Internet.*

5. Test your connection with each server using the **ping** command.

**- Which server can you connect to and why?**

*The results should match what was noted above in #4.*

6. View your IP configuration using **ipconfig /all**.
7. **Manually configure TCP/IP with the TCP/IP settings on the Prelab Chart.**
8. View your IP configuration using **ipconfig /all**.

**- Will you be able to connect to both Server1 and Server 2 with your current configuration? Explain.**

*No. Now you should be able to ping only Server 2 because it is manually configured and the client is manually configured and they have IP addresses on the same network. Server 1 is configured with DHCP and has an IP address valid on the Seneca network.*

**- Can you access the Internet with this configuration?**

*No. You can no longer access the Internet when you are manually configured with this IP address.*

9. Test your connection with each server using the **ping** command.

**- Can you connect to the server you thought you should be able to connect to?**

*Record your results. They should match the explanation in #8*

10. Leave the IPv4 configuration as manual/static, and log off your client.