This document recapitulates the presentation you learned in class today. Remember that Packet Tracer allows you to virtually simulate a network setup just by interacting on your computer. By the end of this lesson, you will be able to configure static routes between routers.

In our lesson, we will go through a typical network diagnostic similar to the challenge you would see during the Cisco Strut competition. For those of you who plan to compete in the Strut competition, this tutorial will be extremely beneficial for you. If you are not planning to compete, please still pay attention because you will ultimately need to use these skills throughout your Cisco curriculum.

Open Packet Tracer	Open your Internet Browser and download this file: **http://lifebeam.net/cisco/files/e2-232.pka** Go to **Start**. Type "Cisco Packet Tracer" and click the application to open it.
Router 1	1. Click **R1**, which is Router 1. 2. Go to the **CLI** tab. 3. Type **no** to reject configuration dialog. Hit **Enter**. 4. Type **enable** to enter "privileged execution mode". 5. Type **config t** to enter "global configuration mode". 6. We will now configure the static routes for R1. Enter **ip route 172.16.1.0 255.255.255.0 s0/0/0** *Configuring a static route to its "next hop" exit interface instead of its IP address can provide a more efficient route lookup process since the router does not have to resolve its IP address within its starting table. However, in certain situations you would want to configure static route with the "next hop" IP address instead of the exit interface. Since those situations are beyond the scope of this tutorial, we will omit them for now.* 7. Type **ip route 192.168.1.0 255.255.255.0 s0/0/0** 8. Type **ip route 192.168.2.0 255.255.255.0 s0/0/0** 9. Type **end**. Hit **Enter** to return to "privileged execution mode". 10. Hit **Enter** again. 11. Type **show ip route** to verify your 3 configured routes are there. *The static routes are denoted by an **S**. You may also want to verify that they exist.* We do this by typing **show running-config** *The static routes are listed in **ip classless*** 12. We will save the configuration to the NV RAM by typing **copy run start** Hit **Enter** to confirm.
Router 2	1. Click **R2**, which is Router 2. 2. Go to the **CLI** tab. 3. Type **enable** to enter "privileged execution mode". 4. Type **config t** to enter "global configuration mode". 5. We will now configure the static routes for R1. Enter **ip route 172.16.3.0 255.255.255.0 s0/0/0** 6. Type **ip route 192.168.2.0 255.255.255.0 s0/0/1** 7. Type **end**. Hit **Enter** to return to "privileged execution mode". 8. Hit **Enter** again. 9. Type **show ip route** to verify your 3 configured routes are there. *The static routes are denoted by an **S**. You may also want to verify that they exist.* We do this by typing **show running-config** *The static routes are listed in **ip classless*** 10. We will save the configuration to the NV RAM by typing **copy run start** Hit **Enter** to confirm.

Router 3	1. Click **R3**, which is Router 3. 2. Go to the **CLI** tab. 3. Type **enable** to enter "privileged execution mode". 4. Type **config t** to enter "global configuration mode". 5. We will now configure the static routes for R1. Enter **ip route 172.16.1.0 255.255.255.0 s0/0/1** 6. Type **ip route 172.16.2.0 255.255.255.0 s0/0/1** 7. Type **ip route 172.16.3.0 255.255.255.0 s0/0/1** 7. Type **end**. Hit **Enter** to return to "privileged execution mode". 8. Hit **Enter** again. 10. Type **show ip route** to verify your 3 configured routes are there. *The static routes are denoted by an **S**. You may also want to verify that they exist.* We do this by typing **show running-config** *The static routes are listed in **ip classless*** 11. We will save the configuration to the NV RAM by typing **copy run start** Hit **Enter** to confirm.
Testing Connectivity	1. Click on **PC-1** and click **Desktop**. 2. Click **Command Prompt**. 3. Type **ping 172.16.1.10** to ping PC-2. 4. Type **ping 192.168.2.10** to ping PC-3. *Both pings should be successful.*
Create Summary Static Routes	*Summarizing static routes reduces the size of the routing table, making the lookup process more efficient since there are fewer routes of search. To summarize multiple static routes, the destination networks must be summarized into a single network address. Also, they must all use the same "exit interface" or "next hop" IP address.* 1. Click router **R3**. Click **CLI**. 2. Type **enable** to enter "privileged execution mode". 3. Type **config t** to enter "global configuration mode". 4. *We are going to remove the static routes from the routing table.* Type **no ip route 172.16.1.0 255.255.255.0 s0/0/1** Type **no ip route 172.16.2.0 255.255.255.0 s0/0/1** Type **no ip route 172.16.3.0 255.255.255.0 s0/0/1** 5. Type **end**. Hit **Enter**. 6. Type **show ip route** to verify your 3 configured routes are no longer there. 7. Type **config t** to re-enter "global configuration mode". 8. Type **ip route 172.16.0.0 255.255.255.0 s0/0/1** 9. Type **end**. Hit **Enter**. 10. Type **show ip route** to verify its existence. *The summary route is denoted by an **S**.* 11. We are going to save the configuration. Type **copy run start**. 12. Hit **Enter** to confirm.
Test for Connectivity via Summary Route	To confirm that the summary works properly, we are going to ping **PC-3** from **PC-1**. 1. Click on **PC-1** and click **Desktop**. 2. Click **Command Prompt**. 3. Type **ping 192.168.2.10** to ping PC-3. *The ping should be successful.*