**Part 6: Troubleshooting Reflection** (include screen captures where applicable).

**The problem.**

I faced with 2 issues when I implemented the configuration of the IP address allocation, subnet, configure static routing and a default route and configuration RIPv2 dynamic routing in the network.

1. I was faced with troubleshooting a network connectivity issue where PC1 was unable to ping PCA and PCB.
2. I was tasked with troubleshooting a network connectivity issue where PCC was unable to ping PCA and PCB.

**Problem 1**

The symptom of the problem was that PC1 was unable to ping PCA and PCB. The root cause of this problem was the misconfigured default gateway on PCA and PCB.

**Troubleshooting Methodology**

I used a systematic approach to isolate and identify the problem. The methodology I used consisted of the following steps:

1. Define the problem: The problem was the inability of PC1 to ping PCA and PCB.
2. Gather information: I gathered information about the network topology, IP addressing, and default gateway configuration.
3. Analyse the information: I analysed the information and identified that the default gateway configuration on PCA and PCB might be incorrect.
4. Develop a hypothesis: Based on the analysis, I hypothesized that the default gateway configuration on PCA and PCB needed to be checked.
5. Test the hypothesis: I tested the hypothesis by verifying the default gateway configuration on PCA and PCB.
6. Solve the problem: Once I identified the misconfigured default gateway, I corrected it on PCA and PCB.

**Describe the steps taken.**

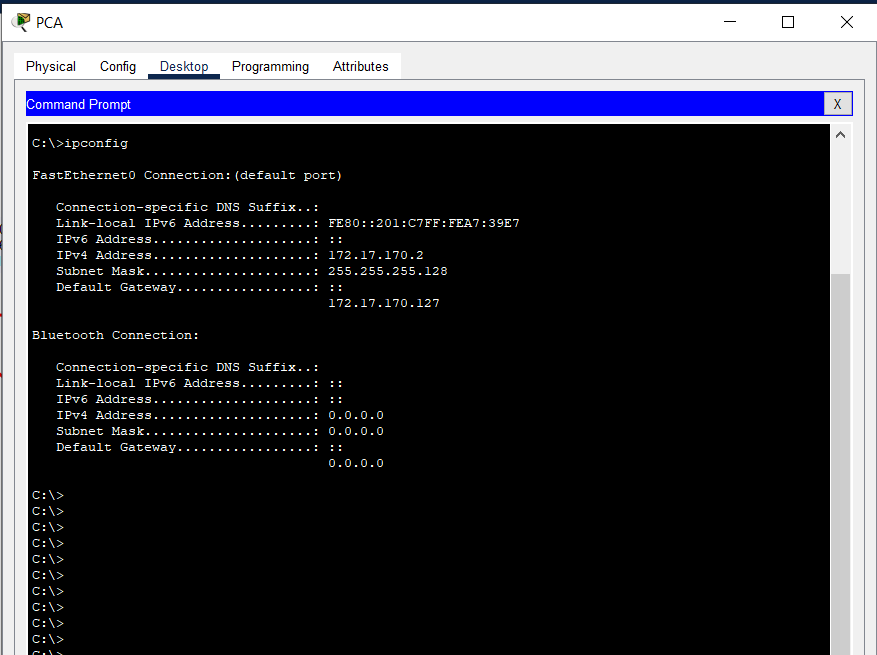
* Checked the IP configuration on PCA and PCB to verify the default gateway settings.
* Compared the default gateway settings on PCA and PCB with the correct configuration.
* Identified the misconfigured default gateway on PCA and PCB.
* Corrected the default gateway configuration on PCA and PCB to point to the correct router.

**Tools and Commands Used**

* Ipconfig (on PCA and PCB) - Used to check the IP configuration and default gateway settings.
* Show running-config (on Router 1 and Router 2) - Used to verify the correct default gateway configuration.
* Show ip interface brief command on Router 1 and Router 2 to make sure the IPs and subnets configuration of interfaces correctly.

**Screenshots**

**Before Troubleshooting**

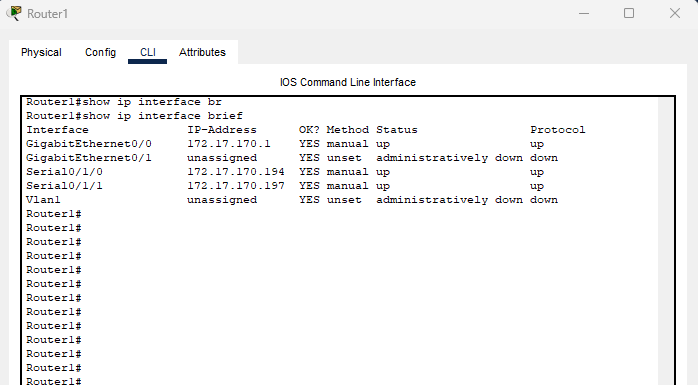
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Shows the output of the "ipconfig" command on PCA.

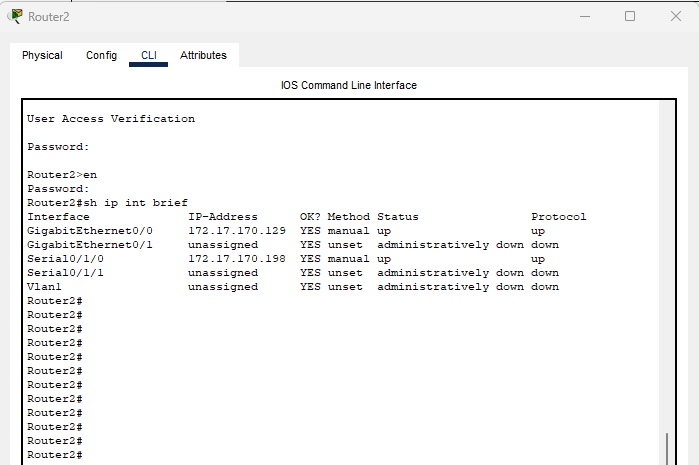
**A computer screen shot of a computer program

Description automatically generated**

Shows the output of the "ipconfig" command on PCB.

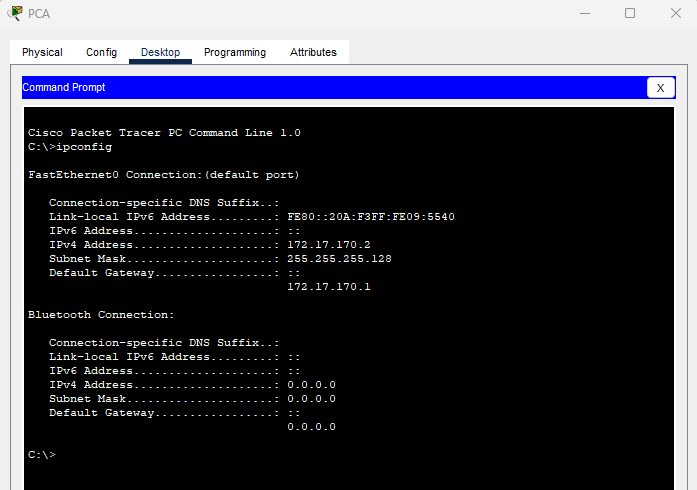
****

Show the output of the “show ip interface brief” command in Router 1. It shows that the interface gigabitEthernet0/0 is 172.17.170.1 (default gateway of PCA).

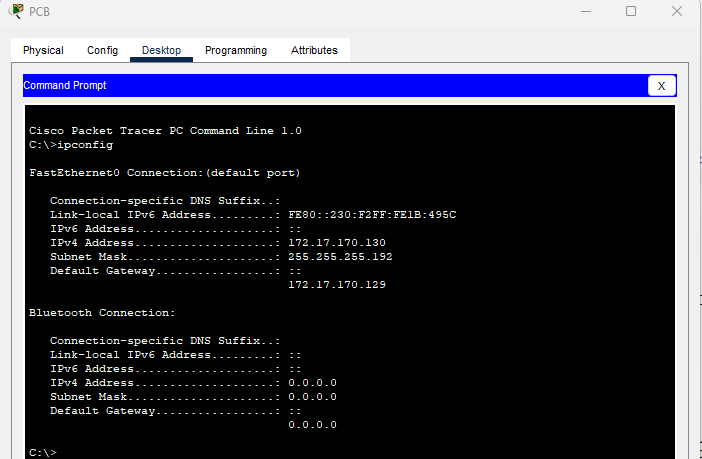
****

Show the output of the “show ip interface brief” command in Router 2. It shows that the interface gigabitEthernet0/0 is 172.17.170.129 (default gateway of PCB).

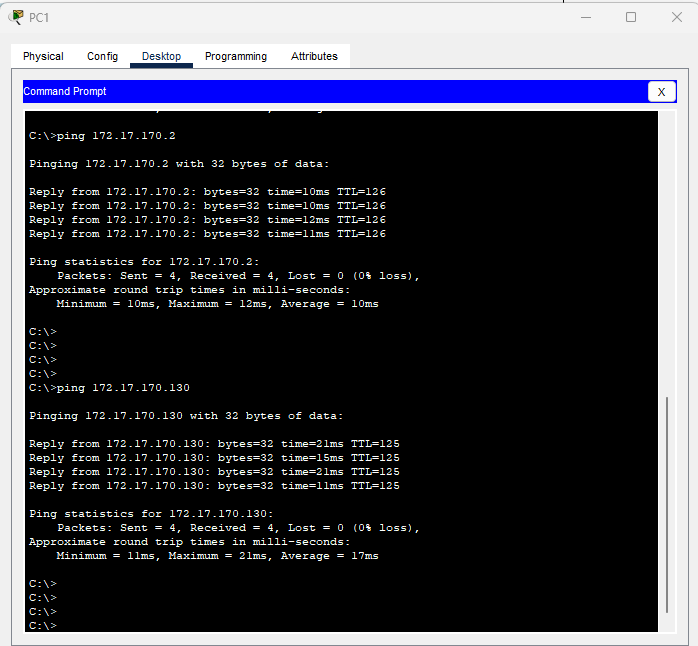
**After Troubleshooting**



Show the output of the "ipconfig" command on PCA.



Show the output of the "ipconfig" command on PCB.



PC1 can now successfully ping PCA and PCB.

**Problem 2**

The symptom of the problem was that PCC was unable to ping PCA and PCB. The root cause of this problem was the misconfigured default route on Router 1.

**Troubleshooting Methodology**

I used a systematic approach to isolate and identify the problem. The methodology I used consisted of the following steps:

1. Define the problem: The problem was the inability of PCC to ping PCA and PCB.
2. Gather information: I gathered information about the network topology, IP addressing, and routing protocols used.
3. Analyse the information: I analysed the information and identified that there might be a misconfigured default route on Router 1.
4. Develop a hypothesis: Based on the analysis, I hypothesized that there might be a misconfigured default route on Router 1.
5. Test the hypothesis: I tested the hypothesis by checking the default route configuration on Router 1.
6. Solve the problem: Once I identified the misconfigured default route, I corrected it on Router 1.

**Describe the steps taken.**

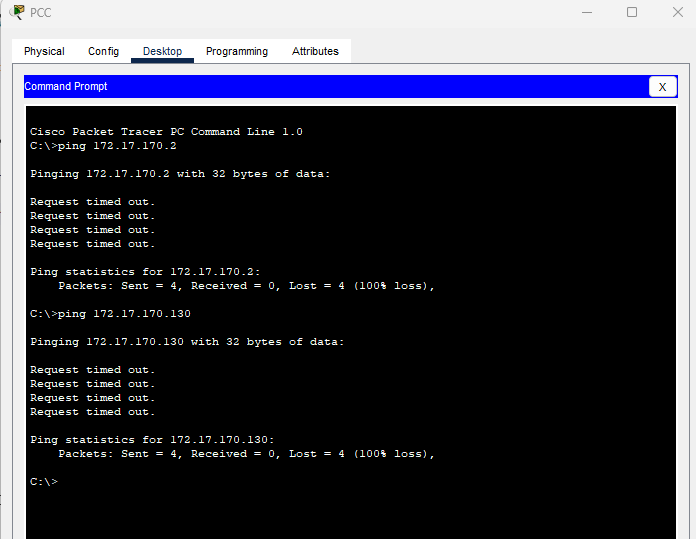
* Checked the routing table on Router 1 to verify the default route configuration.
* Compared the default route configuration on Router 1 with the correct configuration.
* Identified the misconfigured default route on Router 1.
* Corrected the default route configuration on Router 1 to point to the correct next-hop router.

**Tools and Commands Used**

* show ip route (on Router 1) - Used to check the routing table and default route and static route configuration.
* ping (from PCC) - Used to test connectivity to PCA and PCB.

**Screenshots:**

**Before Troubleshooting**

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PCC cannot ping PCA and PCB.

**A screenshot of a computer

Description automatically generated**

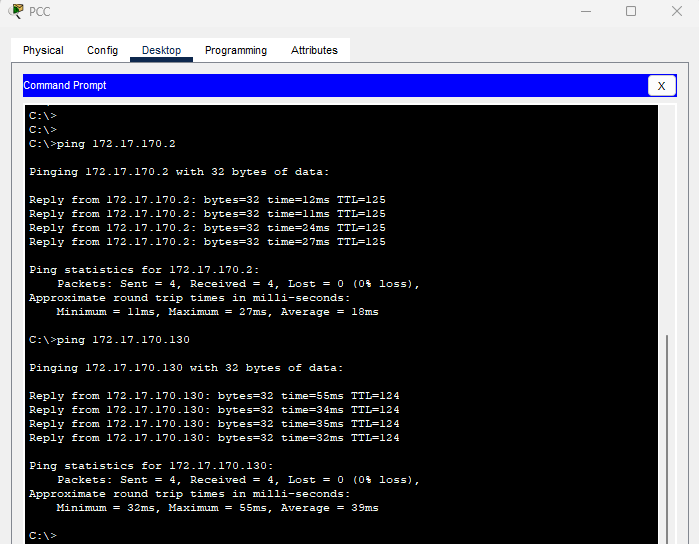
Show the output of the "show ip route" command on Router. It shows that there is a misconfigured default route.

**After Troubleshooting**

A screenshot of a computer

Description automatically generated

Show the output of the "show ip route" command on Router 1 after troubleshooting. It shows that the default route *0.0.0.0/0 Serial0/1/0* is corrected.



PCC can now successfully ping PCA and PCB.