

Report 5

Troubleshooting LAN & DNS

Utsav Shakya

Introduction

This assignment, we are working on a network topology with problems. We are troubleshooting the problem of three LANs not able to connect to the DNS server and the HTTP/FTP server.

In this Topology, we have LAN 1 of subnet 192.168.1.0/24 subnet with a DHCP server connected to a switch and the switch has 5 PCs and Router (R1). R1 is connected to 2 other Routers (R2, R3) and a switch with DNS server and HTTP server with subnet of 192.168.10.0/24. LAN 2 has a subnet of 192.168.20.0/24 with 5 PCs and DHCP and LAN3 with 2 PC with subnet 211.11.11.0/26.

LAN1

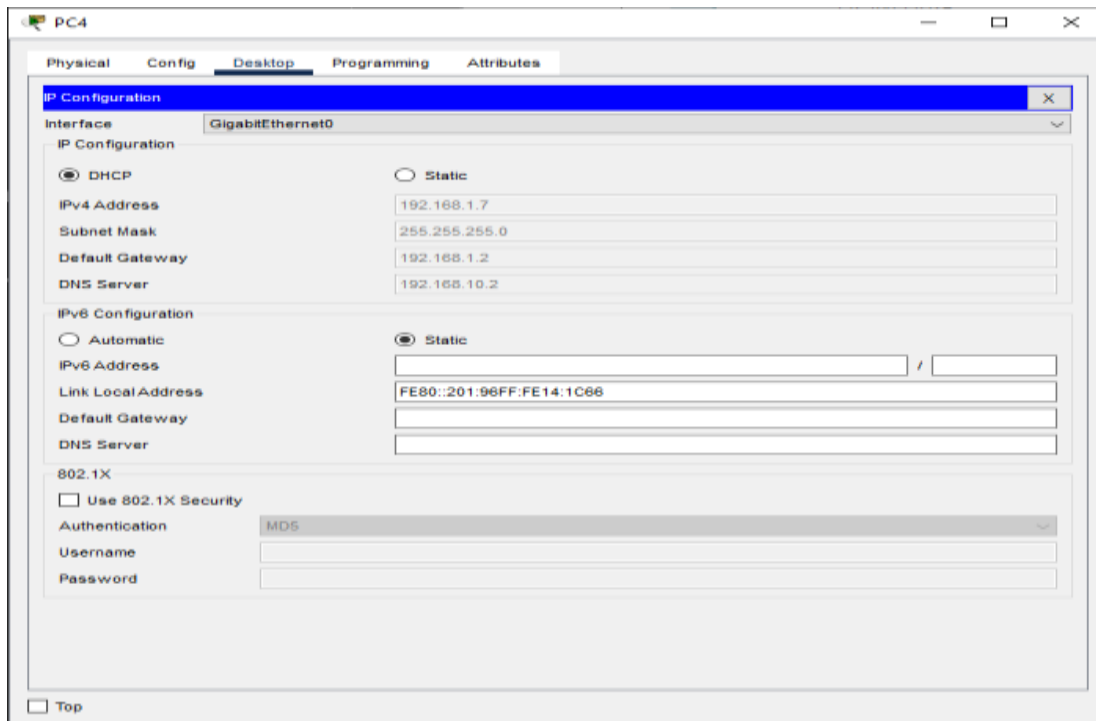
First of I checked in LAN1, I tried pinging to the DNS server and the HTTP server but was unable to. So the first thing I did was to check if all the devices were turned on. Since All switches were turned on. I checked if the DHCP server was working for all my PC in LAN1. I found out that PC4 was not connected the DHCP server because it was set on static. So, I changed it to DHCP, and after testing. It was working. Then Checking if devices or on or off:

All switches on in LAN1

All switches on in LAN2

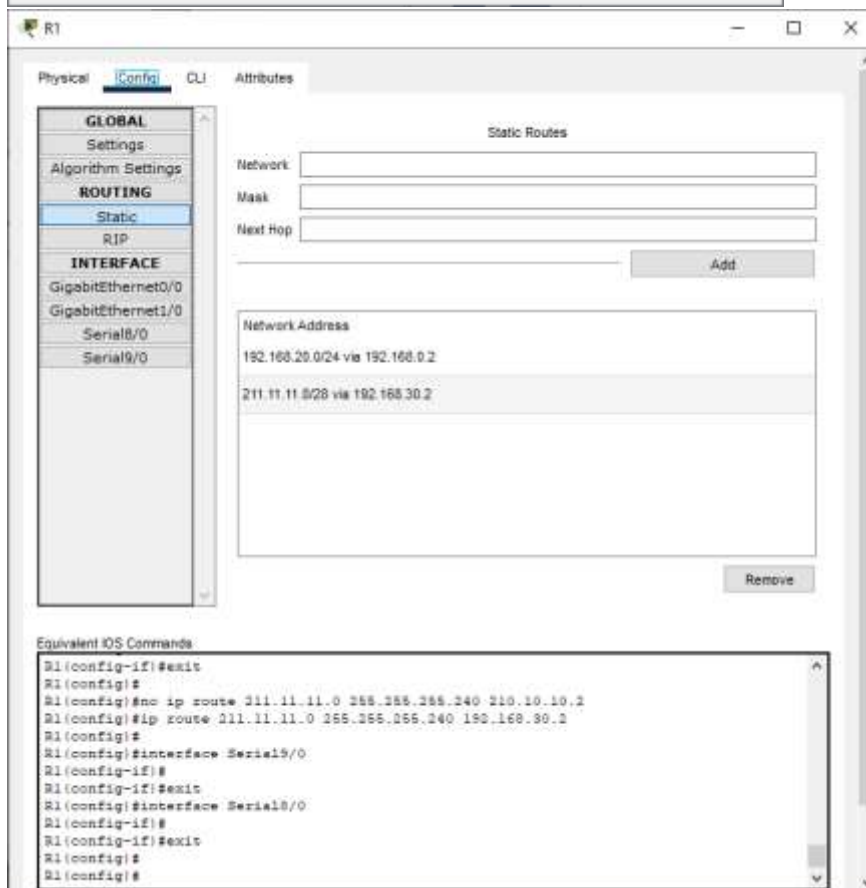
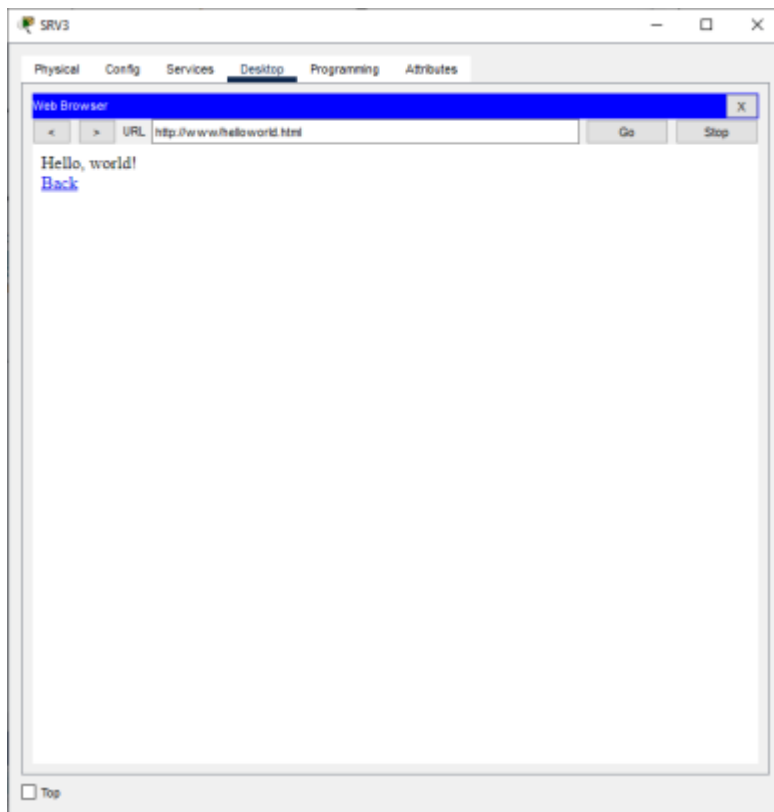
All switches on in LAN3 except the connected router, serial8/0 was not turned on: so, I turned it on

In Lan1: pc4 was not connected to DHCP server now has 192.168.1.7 IPv4 address, pinged all devices, and were pinging to each other, DHCP server was working.



Then when checking the DHCP server for the LAN1, I found that the gateway was set wrong, so I fixed it from 192.168.1.2 to 192.168.1.1. After that, I was able to ping DNS. Then I checked the static routing for R1. It was only connected to LAN2. So added a static routing to LAN3. After that, I checked if the DHCP server was properly connected. I found out that there was no DNS server in the DHCP server, so I added the DNS server to it, then refreshed all the PCs in it to update the DNS server. After that I was able to connect to both the DNS and the HTTP.

For Lan 3 again First, I checked if there was static routing or not. Since Router3 had no static routing, I added it to R1. After than I manually added the DNS server to each computer. Then I pinged to both NS and HTTP server and was able to connect



R3

Physical

Config

CLI

Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

GigabitEthernet7/0

Serial8/0

Serial9/0

Static Routes

Network

Mask

Next Hop

Add

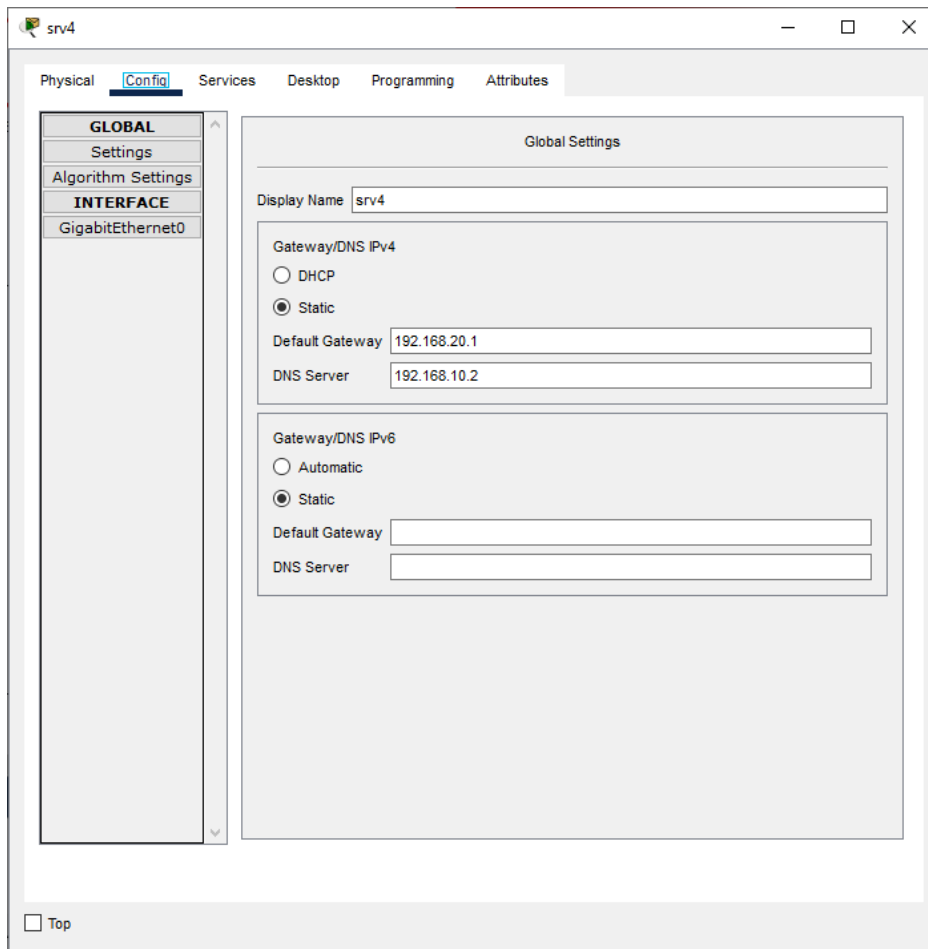
Network Address

192.168.10.0/24 via 192.168.30.1

Remove

Equivalent IOS Commands

R3(config-if)#ip address 192.168.30.2 255.255.255.0
R3(config-if)#
R3(config-if)#exit
R3(config)#interface Serial9/0
R3(config-if)#ip address 210.10.10.2 255.255.255.252
R3(config-if)#
R3(config-if)#exit
R3(config)#interface Serial8/0
R3(config-if)#ip address 192.168.30.2 255.255.255.0
R3(config-if)#
R3(config-if)#exit
R3(config)#
R3(config)#



After all of this, the problem was solved, the diagram below shows the working network topology

