

Name: Faria Hossain Borna

ID:19-40217-1

ID = ST-UVWXY-Z
19-40217-1

VLAN10	Y W V 7 2 0	$2^7 > 720 > 2^9$	1024	$x = 10$ $y = 32 - 10 = 22$	255.255.252.0	171.40.0.0 - 171.40.3.255/22
VLAN15	Z Z S 1 1 1	$2^7 > 111 > 2^6$	128	$x = 7$ $y = 25$	255.255.255.128	171.40.4.0 - 171.40.4.127/25
VLAN1 (Last Name web)	T X 9 1	$2^7 > 91 > 2^6$	128	$x = 7$ $y = 25$	255.255.255.128	171.40.4.128 - 171.40.4.255/25
Q	X W 1 2	$2^4 > 12 > 2^3$	16	$x = 4$ $y = 28$	255.255.255.240	171.40.5.0 - 171.40.5.15/28
R2 to R3 (WAN)	16	2^4	16	$x = 4$ $y = 28$	255.255.255.240	171.40.5.16 - 171.40.5.31/28
R1 to R2 (WAN)	4	2^2	4	$x = 2$ $y = 30$	255.255.255.252	171.40.5.32 - 171.40.5.35/30
P (Private network)	X Y 7 1	$2^7 > 71 > 2^6$	128	$x = 7$ $y = 25$	255.255.255.128	172.16.0.0 - 172.16.0.127/25

Figure 1:VLSM

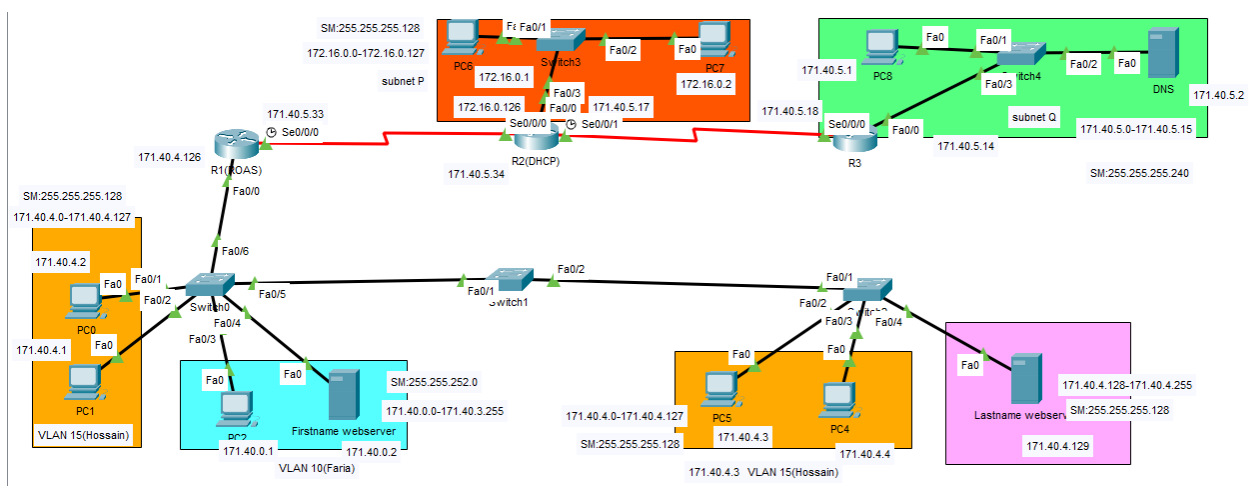


Figure 2:Table

Table 1: Interface configuration

<p>R1:</p> <p>Router(config)#interface fa0/0 Router(config-if)#ip address 171.40.4.126 255.255.255.128 no shut</p> <p>Router(config-if)#interface s0/0/0 Router(config-if)#ip add 171.40.5.33 255.255.255.252</p> <p>Router(config-if)#clock rate 64000 Router(config-if)#no shut</p>	<p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p> <p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p> <p>As DCE interface</p>
<p>R2:</p> <p>Router(config)#interface s0/0/0 Router(config-if)#ip add 171.40.5.34 255.255.255.252 Router(config-if)#no shut</p> <p>Router(config)#interface fa0/0 Router(config-if)#ip add 172.16.0.126 255.255.255.128 Router(config-if)#no shut</p> <p>Router(config)#interface s0/0/1 Router(config-if)#ip add 171.40.5.17 255.255.255.240</p> <p>Router(config-if)#clock rate 64000 Router(config-if)#no shut</p>	<p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p> <p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p> <p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p> <p>As DCE interface</p>
<p>R3:</p> <p>Router(config)#interface s0/0/0 Router(config-if)#ip add 171.40.5.18 255.255.255.240 Router(config-if)#no shut</p> <p>Router(config)#interface fa0/0 Router(config-if)#ip add 171.40.5.14 255.255.255.240 Router(config-if)#no shut</p>	<p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p> <p>Interface of network Network Ip address from which network will allocate ip to different client and subnet mask</p>

Table 2: Routing configuration

<p>R1:</p> <pre>Router(config)#router rip Router(config-router)#version 2 Router(config-router)#network 171.40.4.0 Router(config-router)#network 171.40.5.32 Router(config-router)#no auto-summary Router(config-router)#</pre>	<p>Network of VLAN Network of WAN(R1-R2)</p>
<p>R2:</p> <pre>Router>en Router#config t Enter configuration commands, one per line. End with CNTL/Z. Router(config)#router rip Router(config-router)#version 2 Router(config-router)#network 171.40.5.32 Router(config-router)#network 171.40.5.16 Router(config-router)#no auto summary Router(config-router)#</pre>	<p>Network of WAN(R1-R2) Network of WAN(R2-R3)</p>
<p>R3:</p> <pre>Router>en Router#config t Enter configuration commands, one per line. End with CNTL/Z. Router(config)#router rip Router(config-router)#version 2 Router(config-router)#network 171.40.5.16 Router(config-router)#network 171.40.5.0 Router(config-router)#no auto-summary Router(config-router)#</pre>	<p>Network of WAN(R2-R3) Network of Q</p>

Table 3: OSPF

<p>R1:</p> <pre>Router(config)#router ospf 15 Router(config-router)#network 171.40.4.0 0.0.0.127 area 0 Router(config-router)#network 171.40.5.32 0.0.0.3 area 0 Router(config-router)#</pre> <p>R2:</p> <pre>Router(config)#router ospf 15 Router(config-router)#network 171.40.5.32 0.0.0.3 area 0 Router(config-router)#network 172.16.0.0 0.0.0.127 area 0 Router(config-router)#network 171.40.5.16 0.0.0.15 area 0</pre> <p>R3:</p> <pre>Router(config)#router ospf 15 Router(config-router)#network 171.40.5.16 0.0.0.15 area 0 Router(config-router)#network 171.40.5.0 0.0.0.15 area 0</pre>	<p>Vlan network net ip and wildcard mask (255.255.255.255-SM) and area will be 0 WAN (R1-R2) network net ip and wildcard mask (255.255.255.255-SM) and area will be 0</p> <p>WAN (R1-R2) network net ip and wildcard mask (255.255.255.255-SM) and area will be 0 P network net ip and wildcard mask (255.255.255.255-SM) and area will be 0</p> <p>WAN (R2-R3) network net ip and wildcard mask (255.255.255.255-SM) and area will be 0</p> <p>WAN (R2-R3) network net ip and wildcard mask (255.255.255.255-SM) and area will be 0</p> <p>Q network net ip and wildcard mask (255.255.255.255-SM) and area will be 0</p>
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Table 4: DHCP

<p>R2:</p> <pre>Router(dhcp-config)#ip dhcp pool CSE Router(dhcp-config)#network 172.16.0.0 255.255.255.128 Router(dhcp-config)#default-router 172.16.0.126 Router(dhcp-config)#dns-server 171.40.5.2</pre> <p>R1:</p> <pre>Router(config)#ip dhcp pool EEE Router(dhcp-config)#network 171.40.4.0 255.255.255.128 Router(dhcp-config)#default-router 171.40.4.126 Router(dhcp-config)#dns-server 171.40.5.2</pre> <pre>Router(config-if)#interface fa0/0.15 Router(config-subif)#ip helper-address 171.40.5.34</pre>	<p>Q network net ip and subnet mask Provide default gateway ip address Provide dns-server ip address</p> <p>VLAN network net ip and subnet mask Provide default gateway ip address Provide dns-server ip address</p> <p>Interface of valn 15</p>
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Table 5: VLAN

<p>SW0:</p> <pre>Switch(config)#vlan 15 Switch(config-vlan)# name Hossain Switch(config-vlan)#interface range fa0/1-2 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 15 Switch(config-if-range)#do show vlan brief</pre> <p>Switch(config-if-range)#vlan 10</p> <pre>Switch(config-vlan)# name Faria Switch(config-vlan)#interface range fa0/3-4 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 10 Switch(config-if-range)#do show vlan brief Switch(config-vlan)#interface fa0/5 Switch(config-if)# switchport mode trunk</pre> <p>SW2:</p> <pre>Switch(config)#vlan 15 Switch(config-vlan)# name Hossain</pre>	<p>VLAN name can be given Interface fa0/1 and fa0/2</p> <p>VLAN created or not</p> <p>VLAN name can be given Interface fa0/3 and fa0/4</p> <p>VLAN created or not</p> <p>Trunk with another switch</p> <p>VLAN name can be given</p>
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Switch(config-vlan)#interface range fa0/2-3 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 15 Switch(config-if-range)#do show vlan brief Switch(config-if-range)#vlan 1 Switch(config-vlan)#name purple //not working Default VLAN 1 may not have its name changed. Switch(config-vlan)#interface range fa0/4 Switch(config-if-range)#switchport mode access Switch(config-if-range)#switchport access vlan 1 Switch(config-if-range)#do show vlan brief Switch(config-vlan)#interface fa0/2 Switch(config-if)#switchport mode trunk SW1: Switch(config)#interface fa0/1 Switch(config-if)#switchport mode trunk Switch(config-if)# Switch(config-if)#do show vlan brief Switch(config-if)#interface fa0/2 Switch(config-if)#switchport mode trunk Switch(config-if)#vlan 15 Switch(config-vlan)#name Hossain Switch(config-vlan)#interface fa0/5 Switch(config-if)#switchport mode access Switch(config-if)#vlan 10 Switch(config-vlan)#name Faria Switch(config-vlan)#interface fa0/5 Switch(config-if)#switchport mode access Switch(config-if)#do show vlan brief Switch(config-if)#switchport mode access Switch(config-if)# Switch(config-if)#do show vlan brief Switch(config-if)#interface fa0/1 Switch(config-if)#switchport mode trunk	Interface fa0/2 and fa0/3 VLAN created or not As this is default VLAN created or not Trunk with another switch VLAN created or not Trunk with another switch VLAN created or not VLAN created or not Trunk with another switch
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Table 6: ROAS

<p>Switch:</p> <p>Switch(config-if)#interface fa0/6</p> <p>Switch(config-if)#switchport mode trunk</p>	In switch 0
<p>Router:</p> <p>Router(config)#interface fa0/0.10</p> <p>Router(config-subif)#encapsulation dot1q 10</p> <p>Router(config-subif)#ip address 171.40.3.254 255.255.252.0</p>	<p>Create sub-interface</p> <p>Ip of VLAN 10 and subnet mask</p>
<p>Router(config)#interface fa0/0.15</p> <p>Router(config-subif)#encapsulation dot1q 15</p> <p>Router(config-subif)#ip address 171.40.4.126 255.255.255.128</p>	<p>Create sub-interface</p> <p>Ip of VLAN 15 and subnet mask</p>
<p>Router(config)#interface fa0/0.1</p> <p>Router(config-subif)#encapsulation dot1q 1</p> <p>Router(config-subif)#ip address 171.40.4.254 255.255.255.128</p> <p>Router(config-subif)#</p>	<p>Create sub-interface</p> <p>Ip of VLAN 1 and subnet mask</p>

Table 7: NAT

<p>NAT:</p> <pre>Router(config)#ip nat pool Faria 171.40.5.19 171.40.5.30 netmask 255.255.255.240 Router(config)# access-list 1 permit 172.16.0.0 0.0.0.127 Router(config)#interface fa0/0 Router(config-if)#ip nat inside Router(config-if)#interface s0/0/1 Router(config-if)#ip nat outside Router(config-if)#ip nat inside source list 1 pool Faria</pre>	<p>Create IP pool ,can given any name</p> <p>Access permit with ip address and WCM</p> <p>Private IP</p> <p>Public IP</p> <p>Can given any pool name</p>
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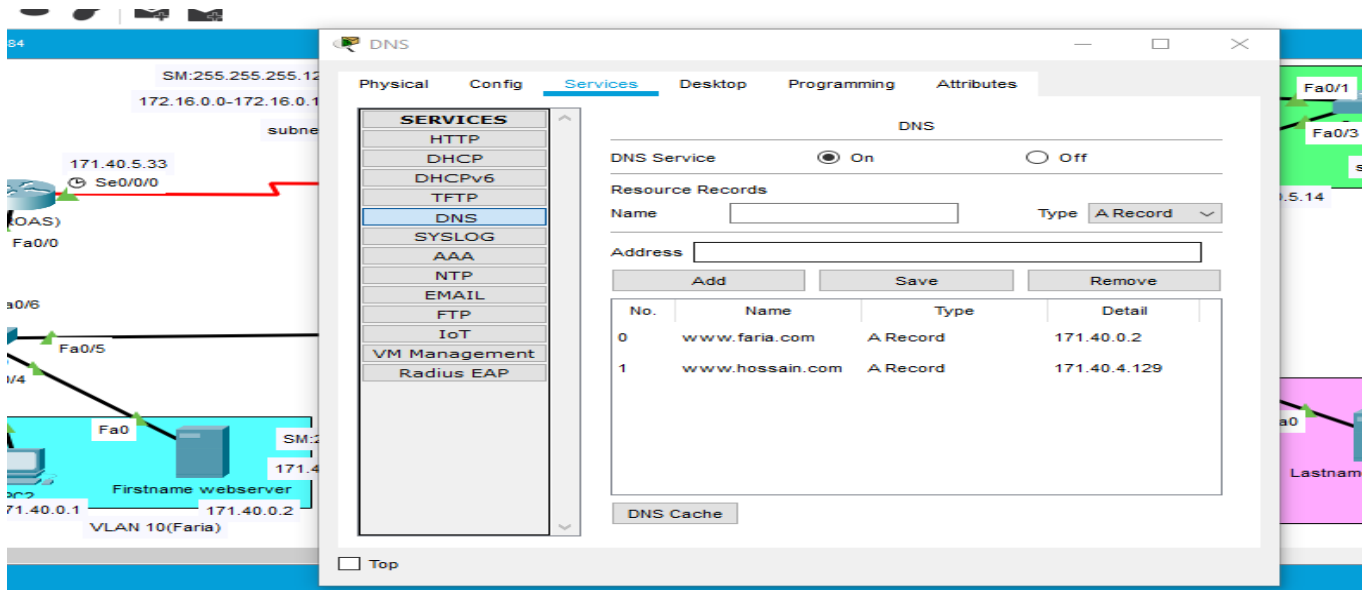


Figure 3: DNS Server

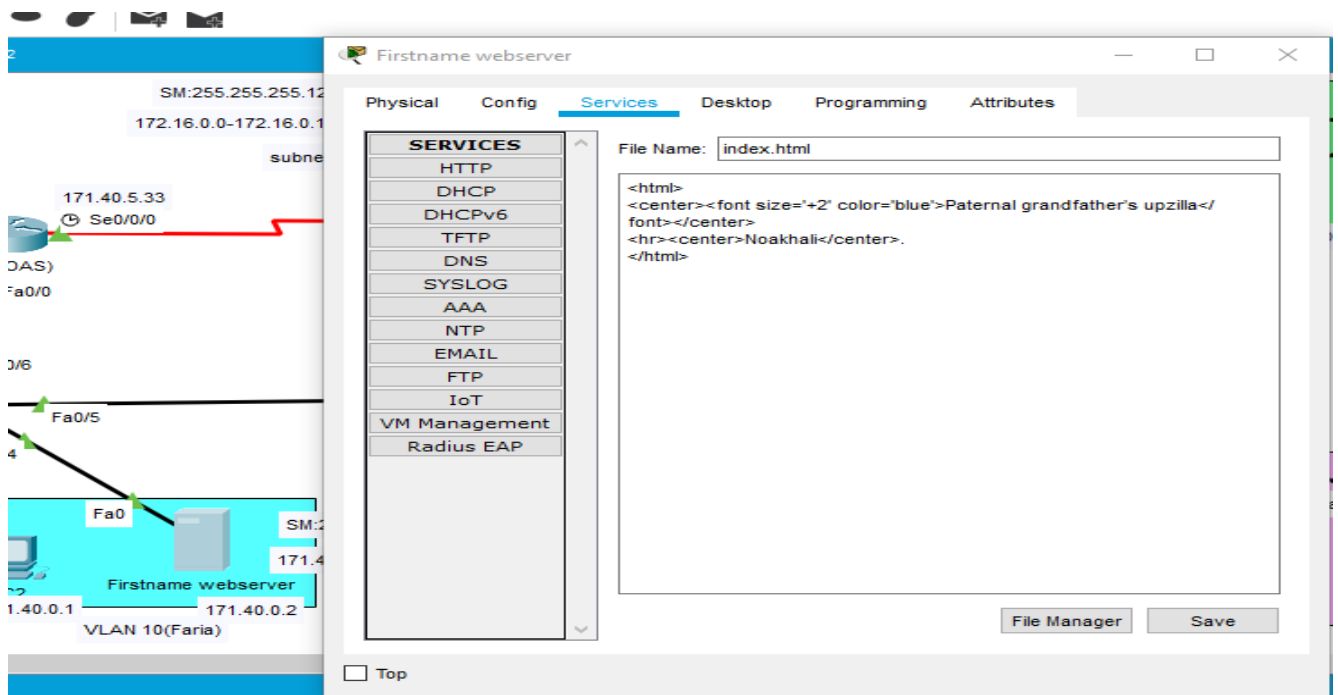


Figure 4: Web Server

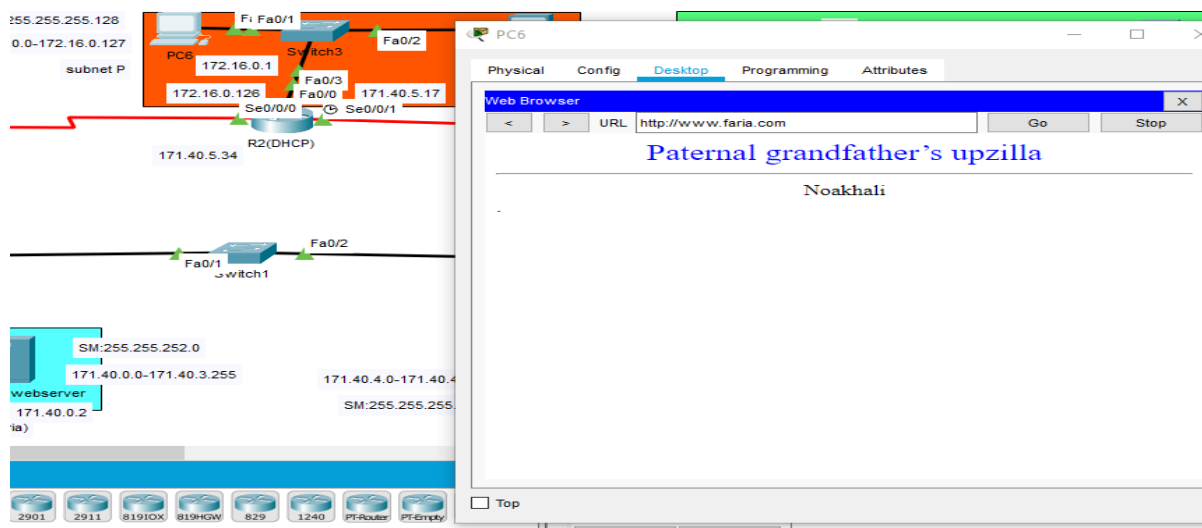


Figure 5: Web Server

Table 8: VTP

<p>SW0:</p> <pre>Switch(config)#vtp mode server Device mode already VTP SERVER. Switch(config)#vtp domain aiub Changing VTP domain name from NULL to aiub Switch(config)#vtp password 123 Setting device VLAN database password to 123 Switch(config)#</pre> <p>SW1:</p> <pre>Switch(config)#vtp mode client Setting device to VTP CLIENT mode. Switch(config)#vtp domain aiub Domain name already set to aiub. Switch(config)#vtp password 123 Setting device VLAN database password to 123 Switch(config)#</pre> <p>SW2:</p> <pre>Switch(config)#vtp mode client Setting device to VTP CLIENT mode. Switch(config)#vtp domain aiub Domain name already set to aiub. Switch(config)#vtp password 123 Setting device VLAN database password to 123 Switch(config)#</pre>	<p>Switch 0 as server</p> <p>Domain name has been given</p> <p>Password has been created</p> <p>Switch 1 as client</p> <p>Domain name is not mandatory as it created already to server</p> <p>Password has been created</p> <p>Switch 2 as client</p> <p>Domain name is not mandatory as it created already to server</p> <p>Password has been created</p>
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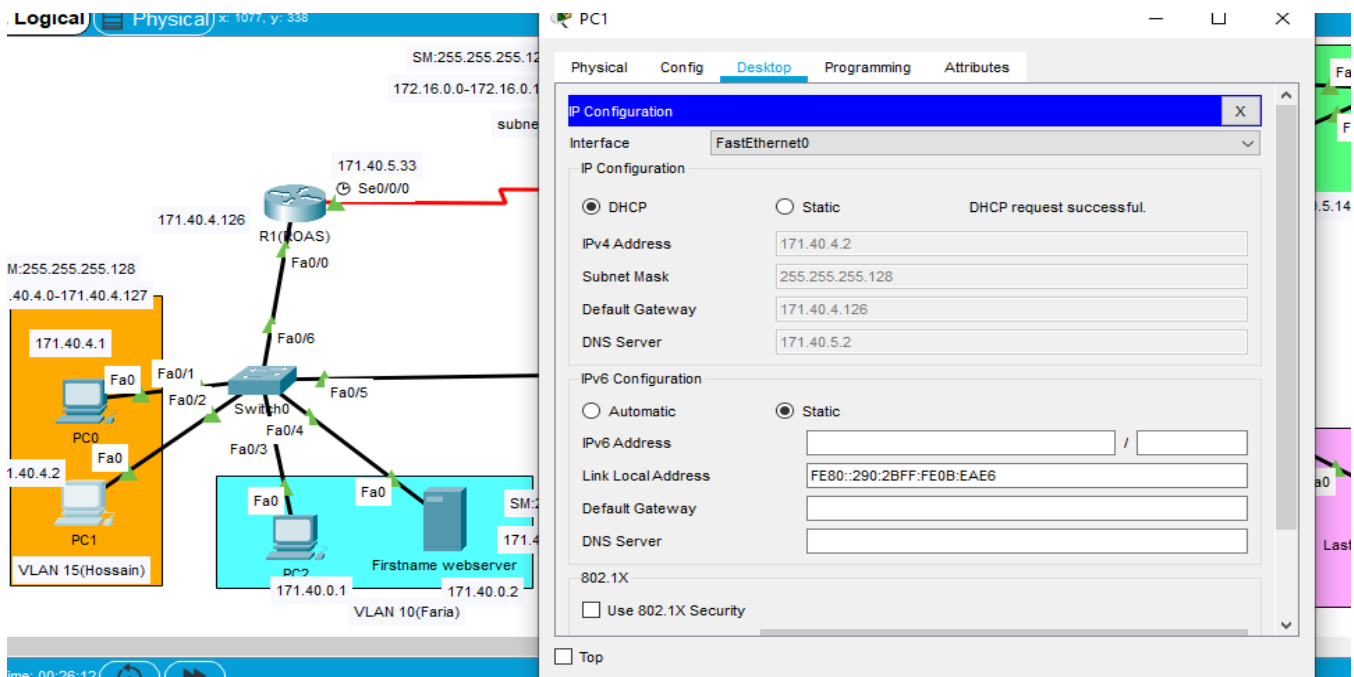


Figure 7: DHCP

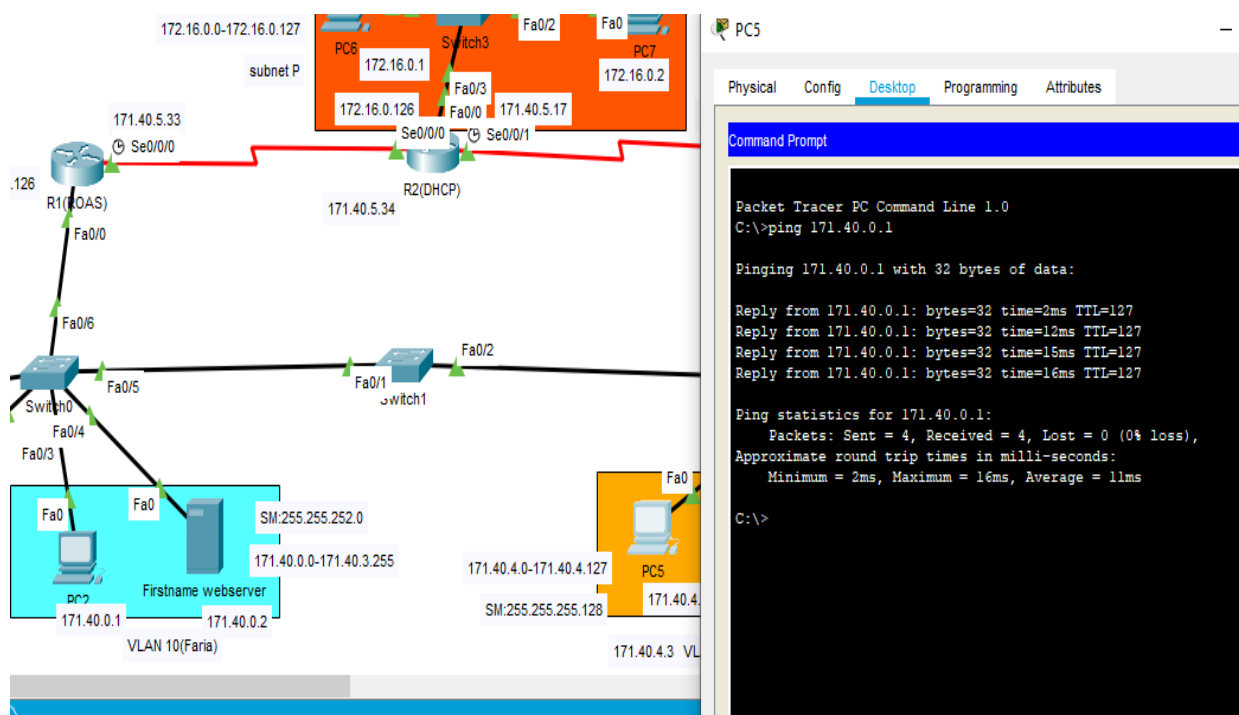


Figure 8: ROAS

