

HTTP, DNS and DHCP

Objective

To configure and understand the HTTP, DNS and DHCP service.

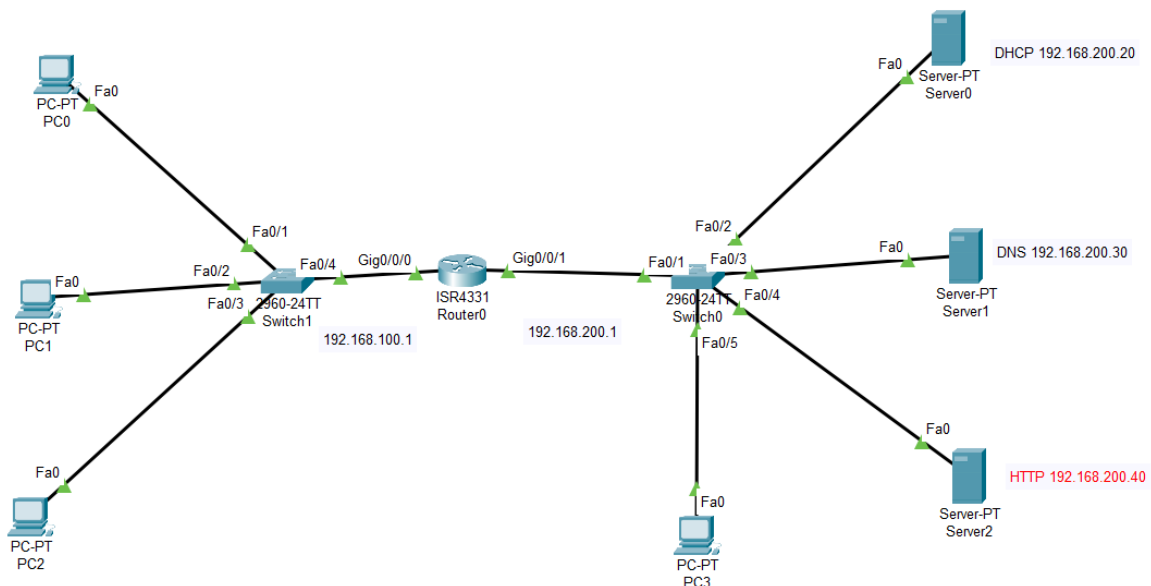
Devices Used

S. No.	Device	Model	Quantity
1.	PC	PC	4
2.	Switch	2960	2
3.	Router	4331	1
4.	Cable	Straight Through	9
5.	Server	PT Server	3

IP Addressing

Device	Interface	IP	Subnet Mask	DNS Server	Default gateway
Router 0	Gig 0/0/0	192.168.100.1	255.255.255.0	-	-
Router 0	Gig 0/0/1	192.168.200.1	255.255.255.0	-	-
Server 0	NIC	192.168.200.20	255.255.255.0	192.168.200.30	192.168.200.1
Server 1	NIC	192.168.200.30	255.255.255.0	192.168.200.30	192.168.200.1
Server 2	NIC	192.168.200.40	255.255.255.0	192.168.200.30	192.168.200.1

Topology



Procedure

1. Create the topology as shown above
2. Assign the IP address to each server as shown in IP table.
3. Set up the DHCP Server

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 192.168.200.1

DNS Server: 192.168.200.30

Start IP Address: 192 168 200 5

Subnet Mask: 255 255 255 0

Maximum Number of Users: 50

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.200.1	192.168.200...	192.168.200.5	255.255.255.0	50	0.0.0.0	0.0.0.0
serverPool1	192.168.100.1	192.168.200...	192.168.100.5	255.255.255.0	50	0.0.0.0	0.0.0.0

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4. Set up the DNS server

Server1

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DNS

DNS Service: ☒ On ☐ Off

Resource Records

Name: Type: A Record

Address:

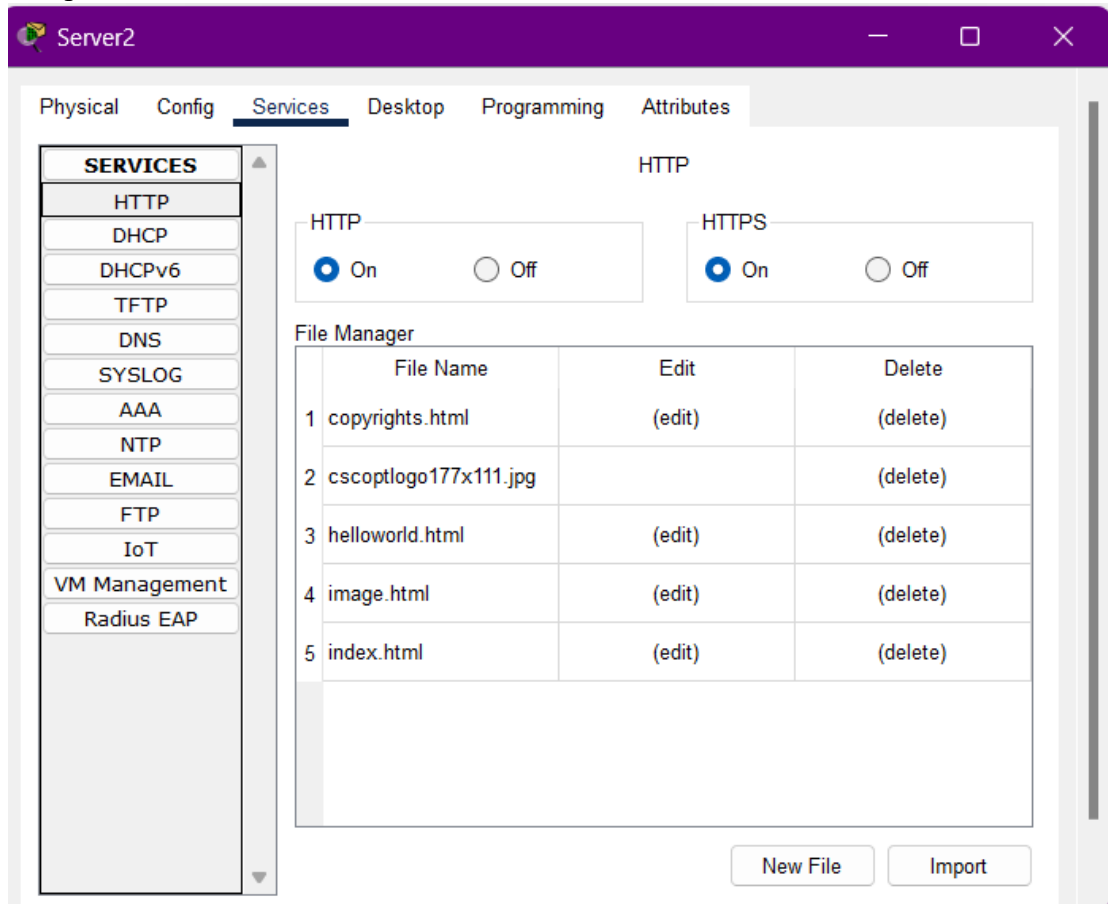
Add Save Remove

No.	Name	Type	Detail
0	subodhstha.com.np	A Record	192.168.200.40

DNS Cache

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5. Setup the Web server



6. Setup the router interface

```
Router>enable
```

```
Router#configure terminal
```

```
Router(config)#interface GigabitEthernet0/0/0
```

```
Router(config-if)#ip address 192.168.100.1 255.255.255.0
```

```
Router(config-if)#no shutdown
```

```
Router(config-if)#exit
```

```
Router(config)#interface GigabitEthernet0/0/1
```

```
Router(config-if)#ip address 192.168.200.1 255.255.255.0
```

```
Router(config-if)#no shutdown
```

```
Router(config-if)#exit
```

To forward broadcast message to DHCP server:

```
Router(config)#interface gig 0/0/0
```

```
Router(config-if)#ip helper-address 192.168.20.2
```

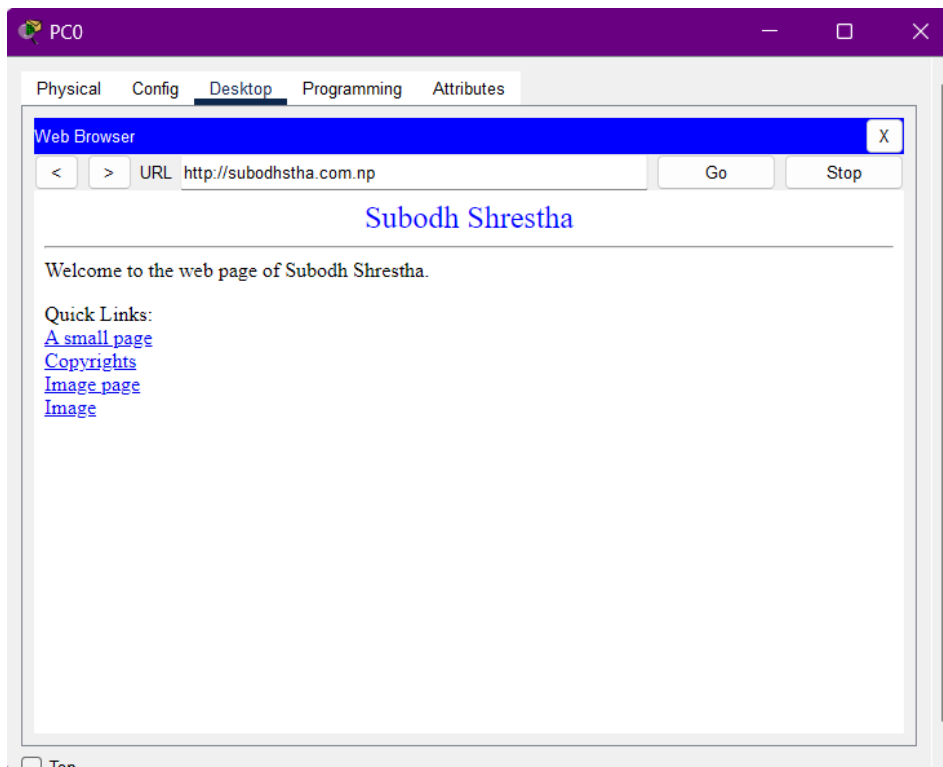
7. Get the IP in each PC by selecting DHCP Option as: click on PC-> click on desktop tab and the select the DHCP then DHCP request sent to the DHCP server and server will assign the IP

The screenshot shows the configuration window for PC0 in a network simulator. The window has a purple title bar with the text "PC0" and standard window controls. Below the title bar are tabs: "Physical", "Config", "Desktop" (selected), "Programming", and "Attributes". The "Desktop" tab is active, displaying the "IP Configuration" settings. At the top of the configuration area is a blue header bar with the text "IP Configuration" and a close button "X". Below this header, the "Interface" is set to "FastEthernet0". The "IP Configuration" section has two radio buttons: "DHCP" (selected) and "Static". Below these are fields for "IPv4 Address" (192.168.100.8), "Subnet Mask" (255.255.255.0), "Default Gateway" (192.168.100.1), and "DNS Server" (192.168.200.30). The "IPv6 Configuration" section has two radio buttons: "Automatic" and "Static" (selected). Below these are fields for "IPv6 Address" (empty), "Link Local Address" (FE80::260:5CFF:FE96:1204), "Default Gateway" (empty), and "DNS Server" (empty). The "802.1X" section has a checkbox "Use 802.1X Security" (unchecked), a dropdown menu "Authentication" set to "MD5", and fields for "Username" and "Password" (both empty). At the bottom left of the window is a "Top" button.

IP Configuration	
Interface	FastEthernet0
IP Configuration	
<input checked="" type="radio"/> DHCP	<input type="radio"/> Static
IPv4 Address	192.168.100.8
Subnet Mask	255.255.255.0
Default Gateway	192.168.100.1
DNS Server	192.168.200.30
IPv6 Configuration	
<input type="radio"/> Automatic	<input checked="" type="radio"/> Static
IPv6 Address	
Link Local Address	FE80::260:5CFF:FE96:1204
Default Gateway	
DNS Server	
802.1X	
<input type="checkbox"/> Use 802.1X Security	
Authentication	MD5
Username	
Password	

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Verification



Click in any one PC select desktop tab select web browser and then enter subodhstha.com.np then you will get the following response from the Web server after resolving domain name tek.com.np into ip address 192.168.200.40 by the DNS server.