

## Report of Day-9 (Network Services-DHCP & DNS)

DHCP (Dynamic Host Configuration Protocol) is a network management protocol used to dynamically assign an Internet Protocol (IP) address to any device on a network so it can communicate. DHCP automates and centrally manages these configurations rather than requiring network administrators to assign IP addresses manually to all network devices. Small local networks and large enterprise networks can both implement DHCP.

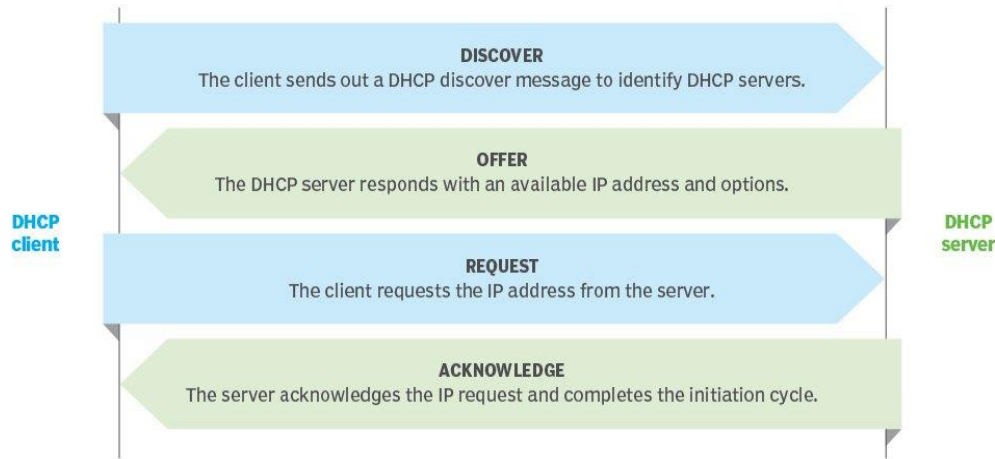
DHCP assigns new IP addresses in each location when devices move to a new location on the network. This means network administrators don't have to manually configure each device with a valid IP address or reconfigure the device with a new IP address if it moves to a new location.

### How DHCP Works?

DHCP runs at the application layer of the TCP/IP stack. It dynamically assigns IP addresses and allocates TCP/IP configuration information to DHCP clients. The configuration information includes the following:

- Subnet mask information.
- Default gateway IP addresses.
- Domain name system (DNS) addresses.

## DHCP handshake



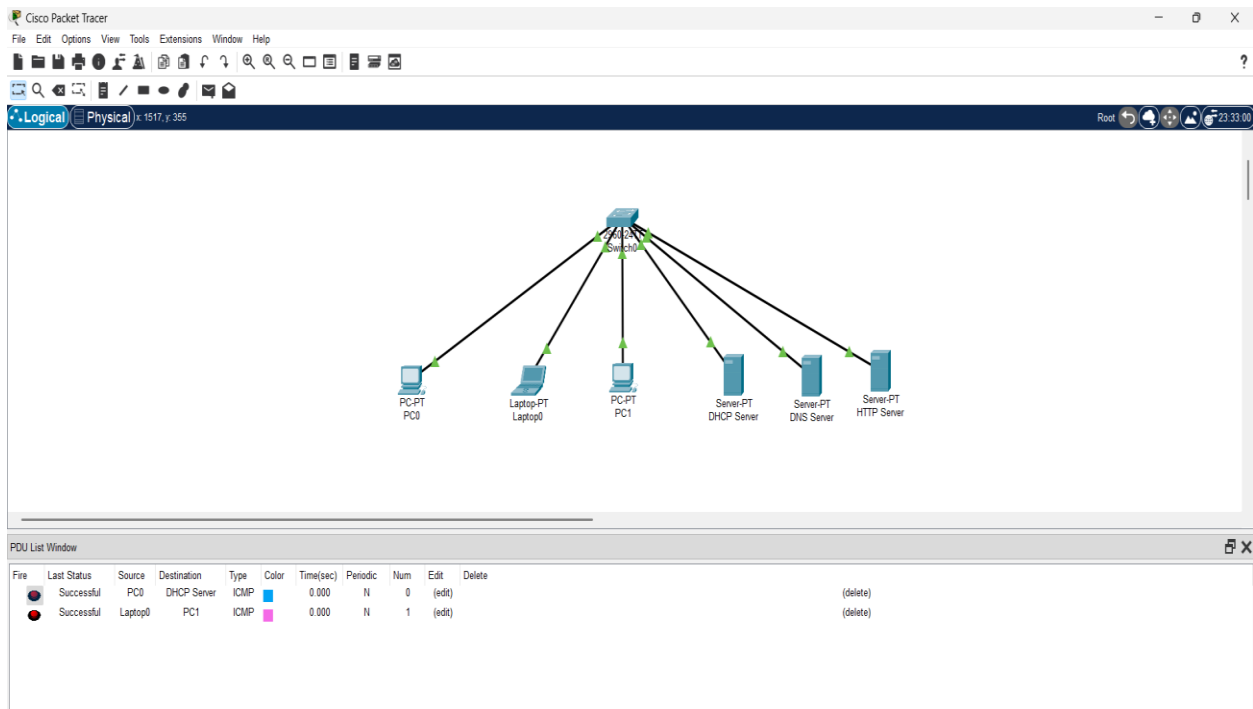
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## What is Hostname Resolution?

Hostname resolution is the process of converting a human-readable hostname (like "www.example.com") into a machine-readable IP address (like "192.0.2.1") that computers use to communicate on a network.

Practical:

# Network



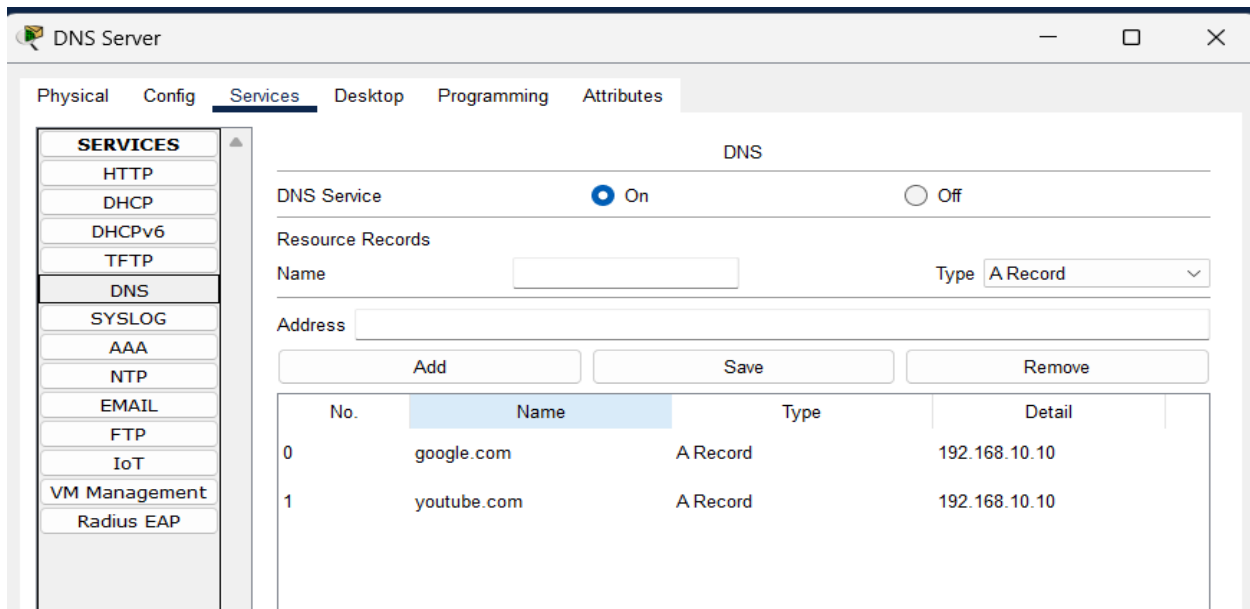
## Configuring DHCP on Server: DHCP Server

The DHCP Server configuration window shows the following settings:

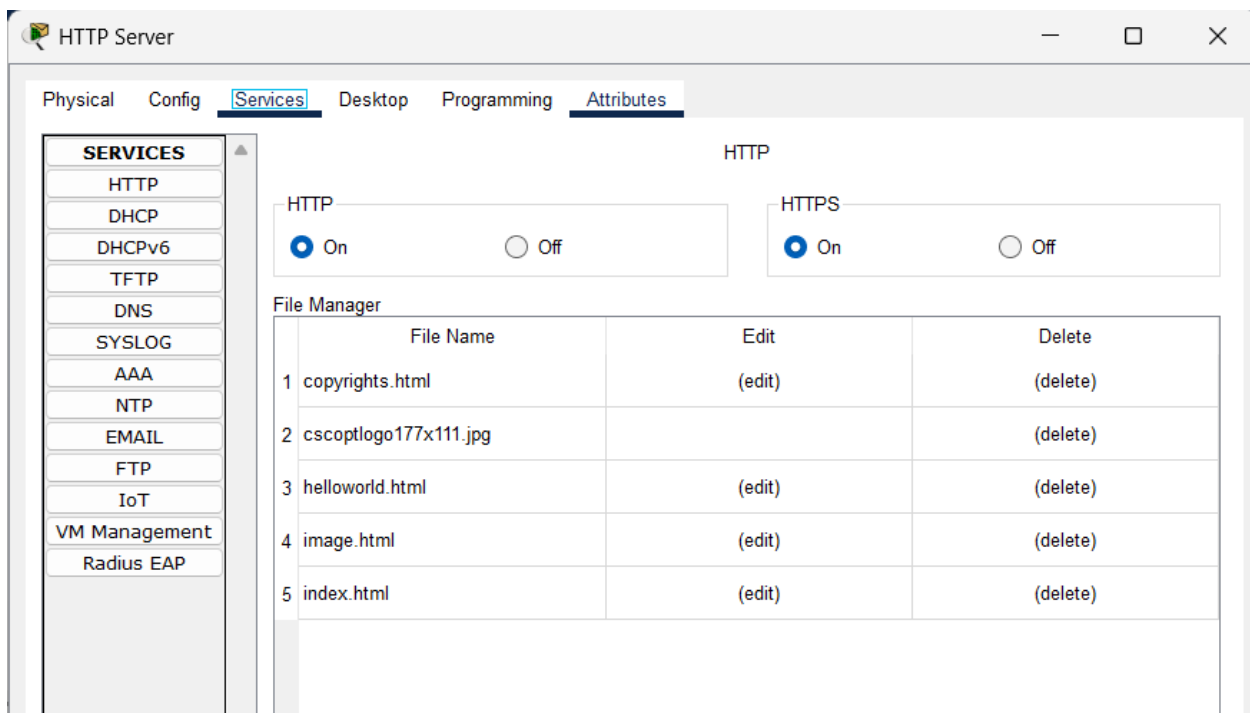
- Interface: FastEthernet0
- Service: On
- Pool Name: serverPool
- Default Gateway: 192.168.10.1
- DNS Server: 192.168.10.2
- Start IP Address: 192.168.10.10
- Subnet Mask: 255.255.255.0
- Maximum Number of Users: 50
- TFTP Server: 0.0.0.0
- WLC Address: 0.0.0.0

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.10.1	192.168.10.2	192.168.1...	255.255.2...	50	0.0.0.0	0.0.0.0

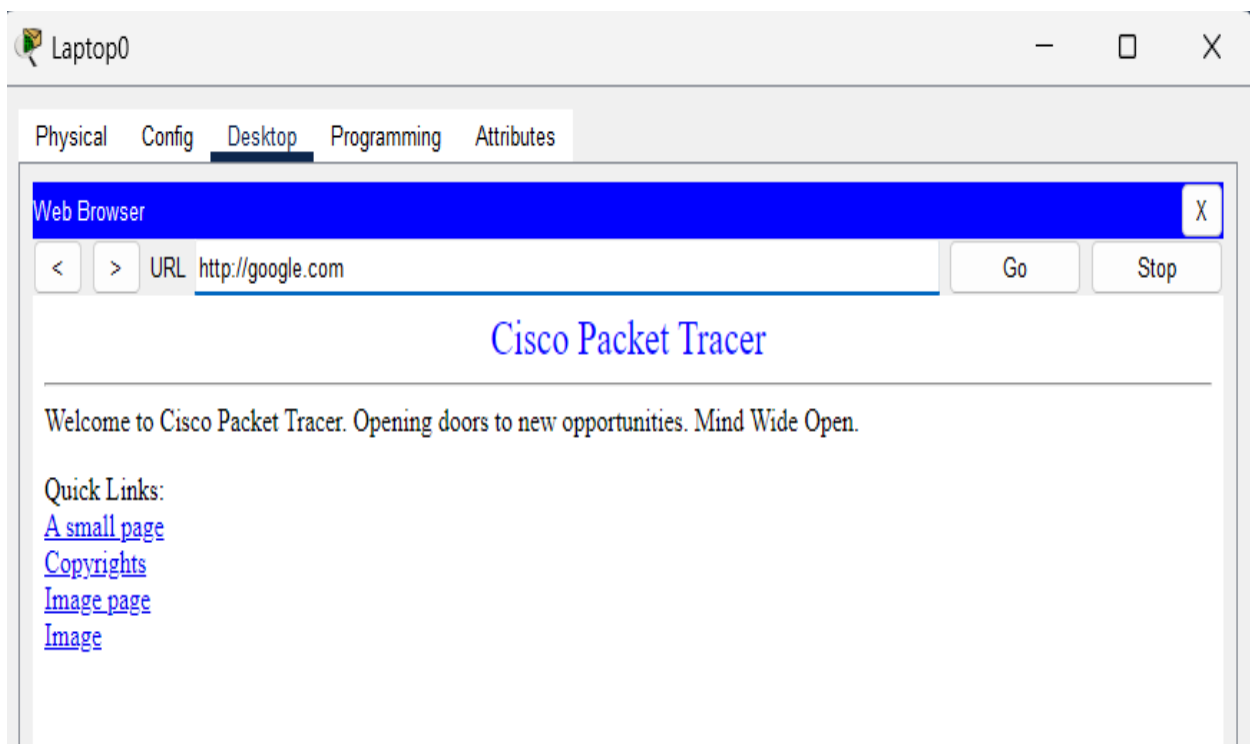
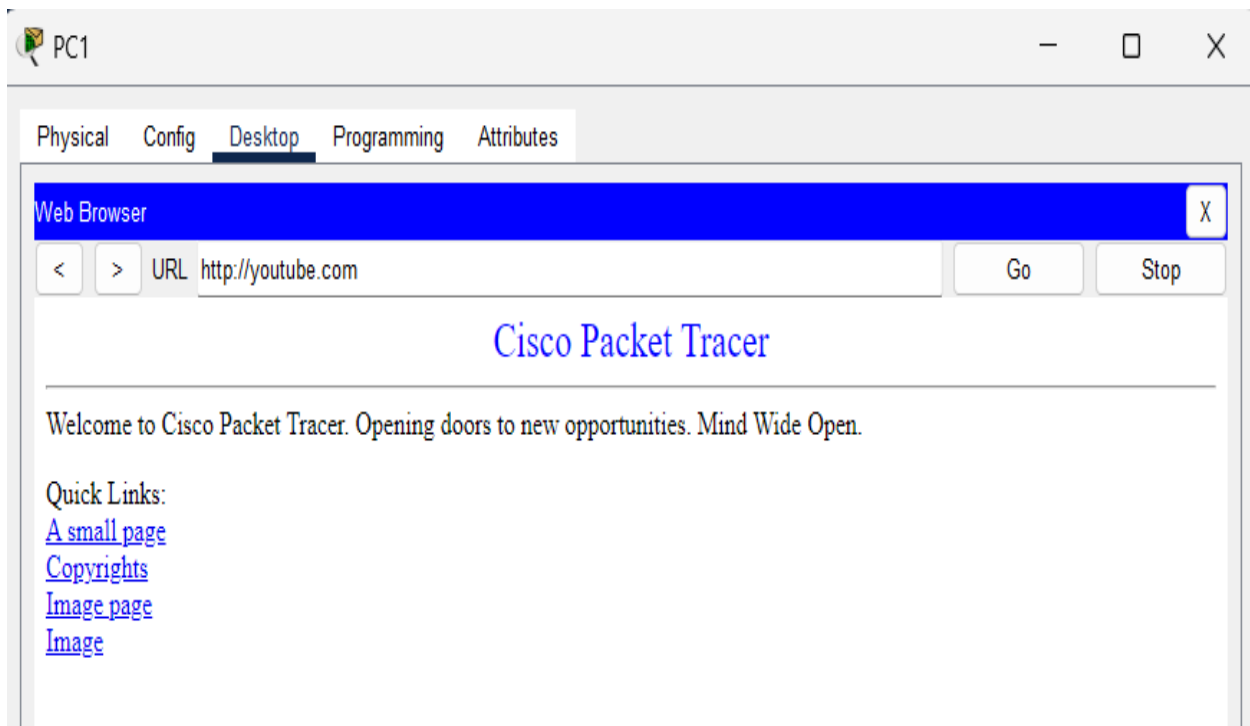
## DNS Server:



## HTTPS Server:



## Domain Name Resolution:



DHCP Server Assigning IP Address to end Devices:

PC0

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.10.11

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 192.168.10.2

IPv6 Configuration

Laptop0

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static

IPv4 Address 192.168.10.12

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 192.168.10.2