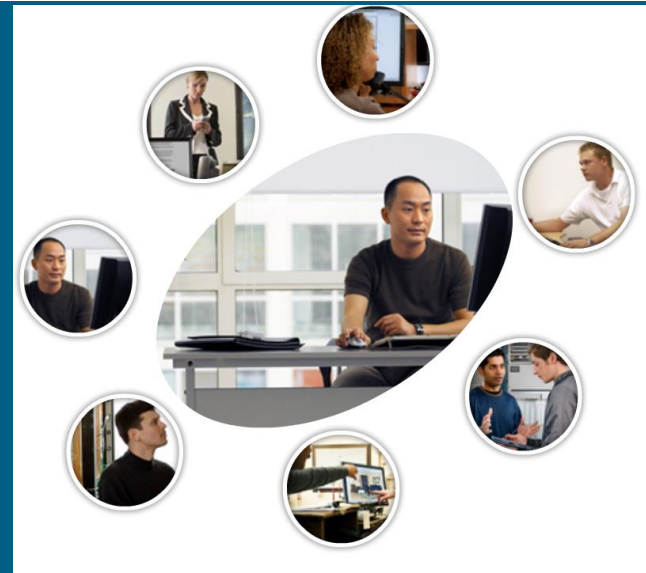


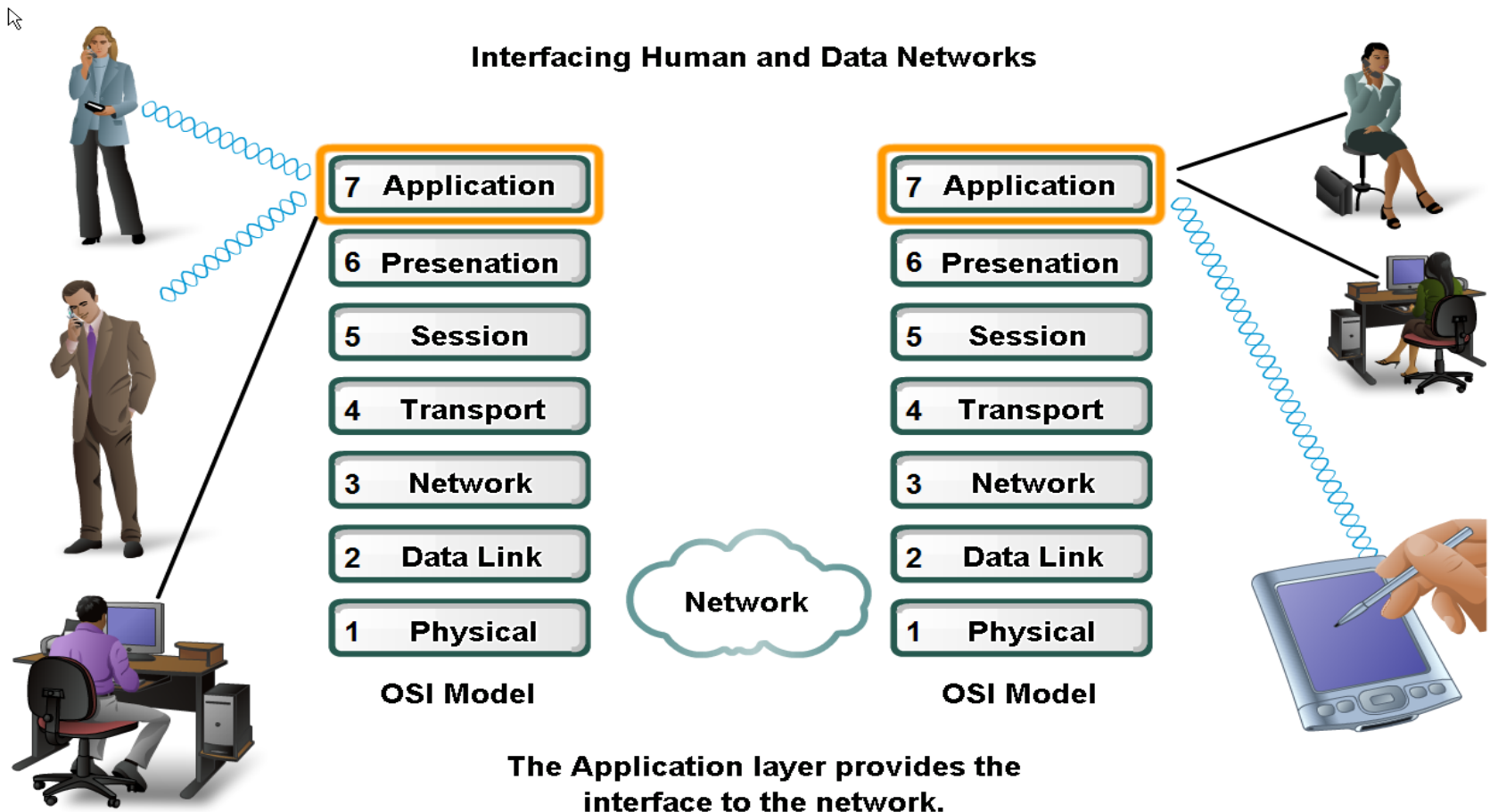


# Application Layer Functionality and Protocols



# Applications

- The Interface Between Human and Data Networks

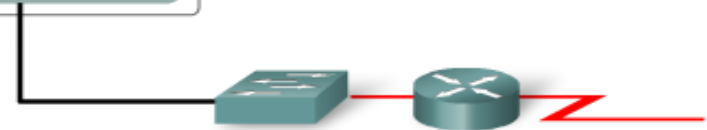


# Applications

The Human Network Generates Data



The Application layer prepares human communication for transmission over the data network.



Network



# Applications

## The Human Network Generates Data

People create the communication.



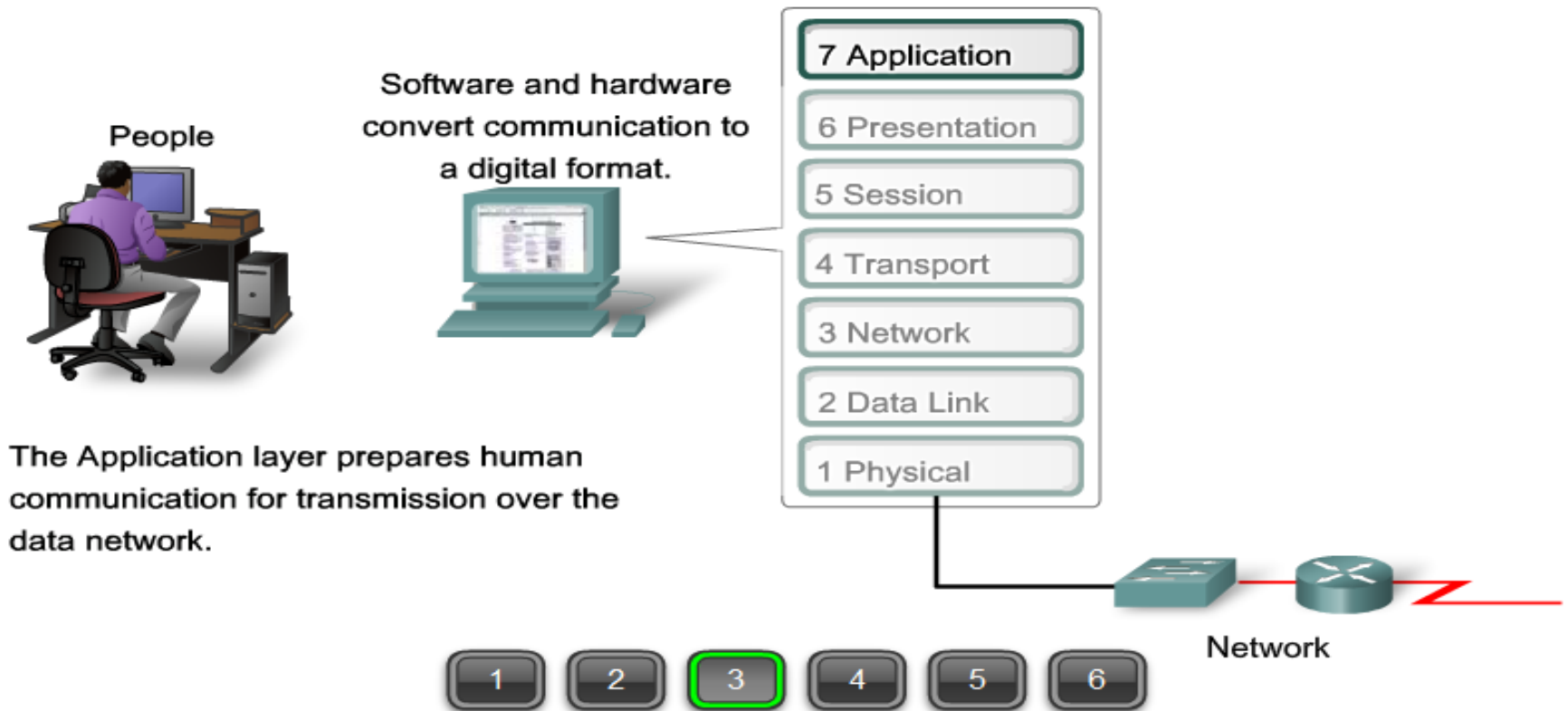
The Application layer prepares human communication for transmission over the data network.



Network

# Applications

## The Human Network Generates Data



# Applications

The Human Network Generates Data

Application layer services initiate the data transfer.

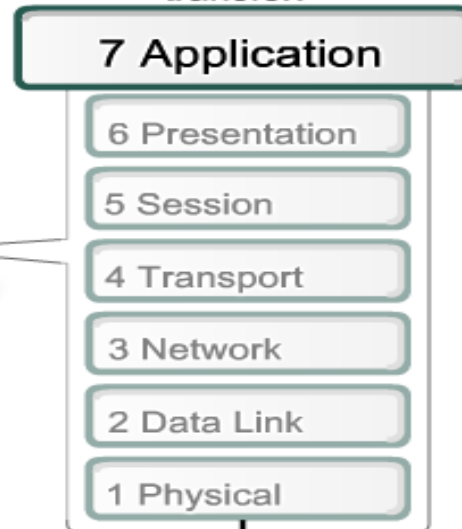


People

Software and hardware



The Application layer prepares human communication for transmission over the data network.

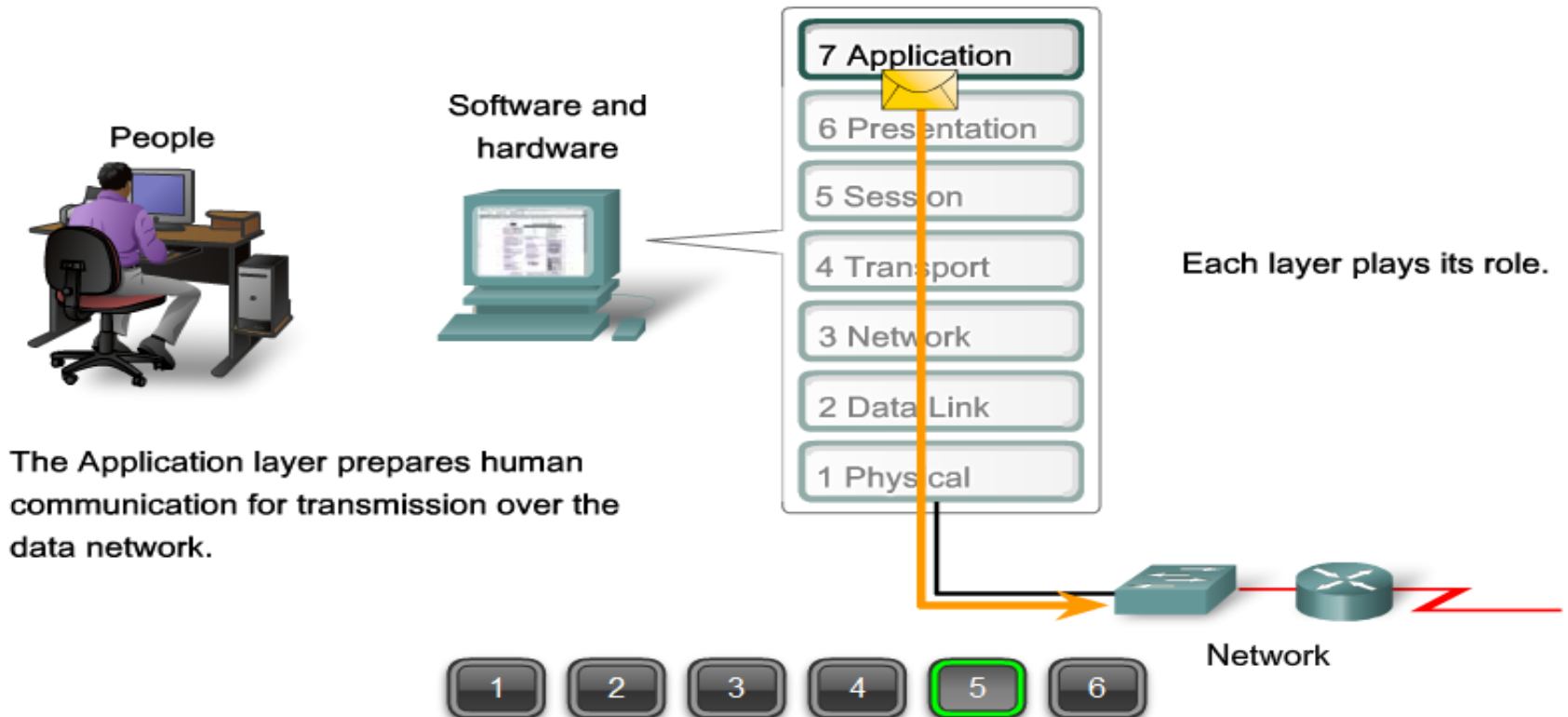


Network

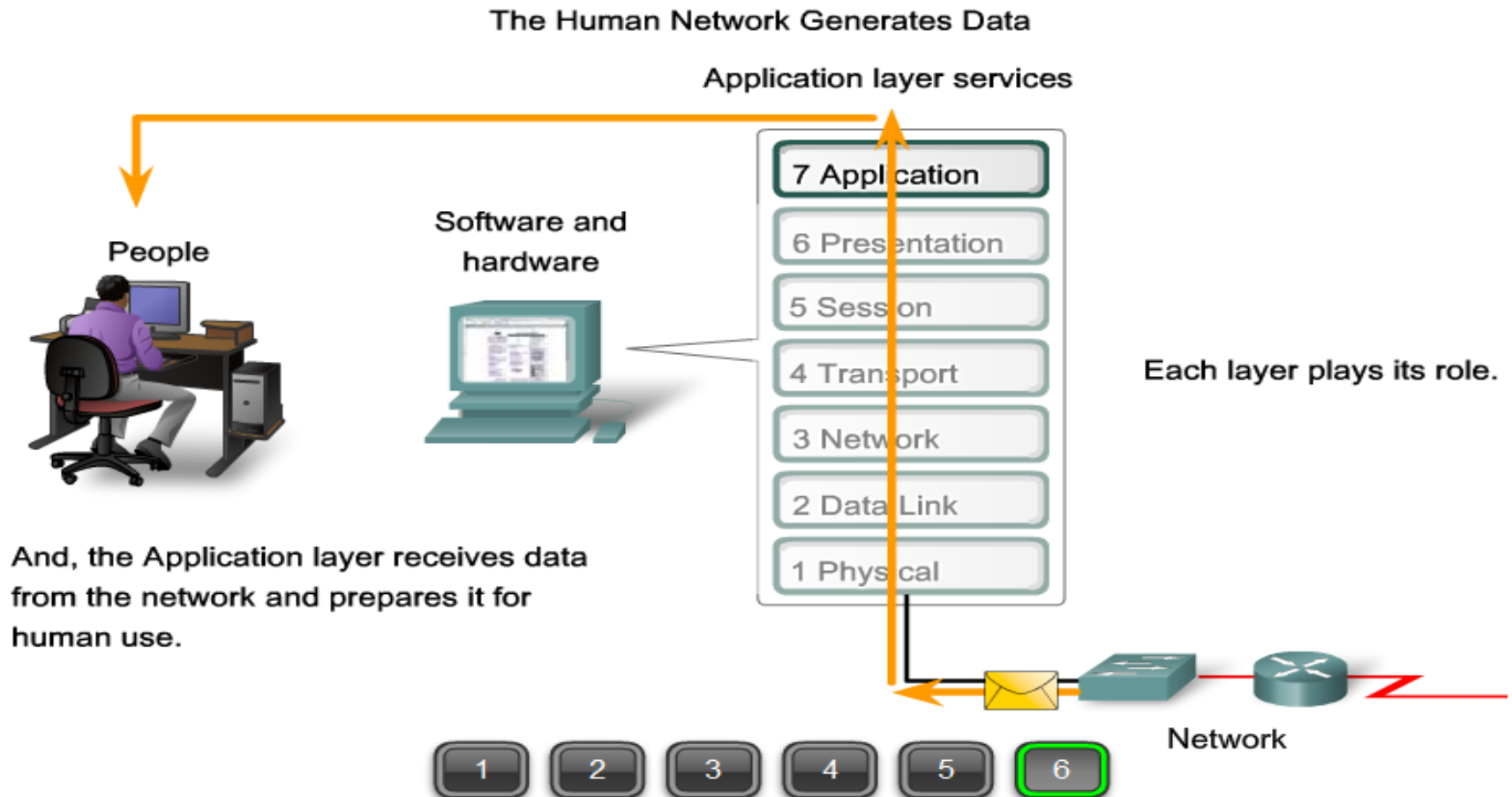
# Applications

The Human Network Generates Data

Application layer services



# Applications



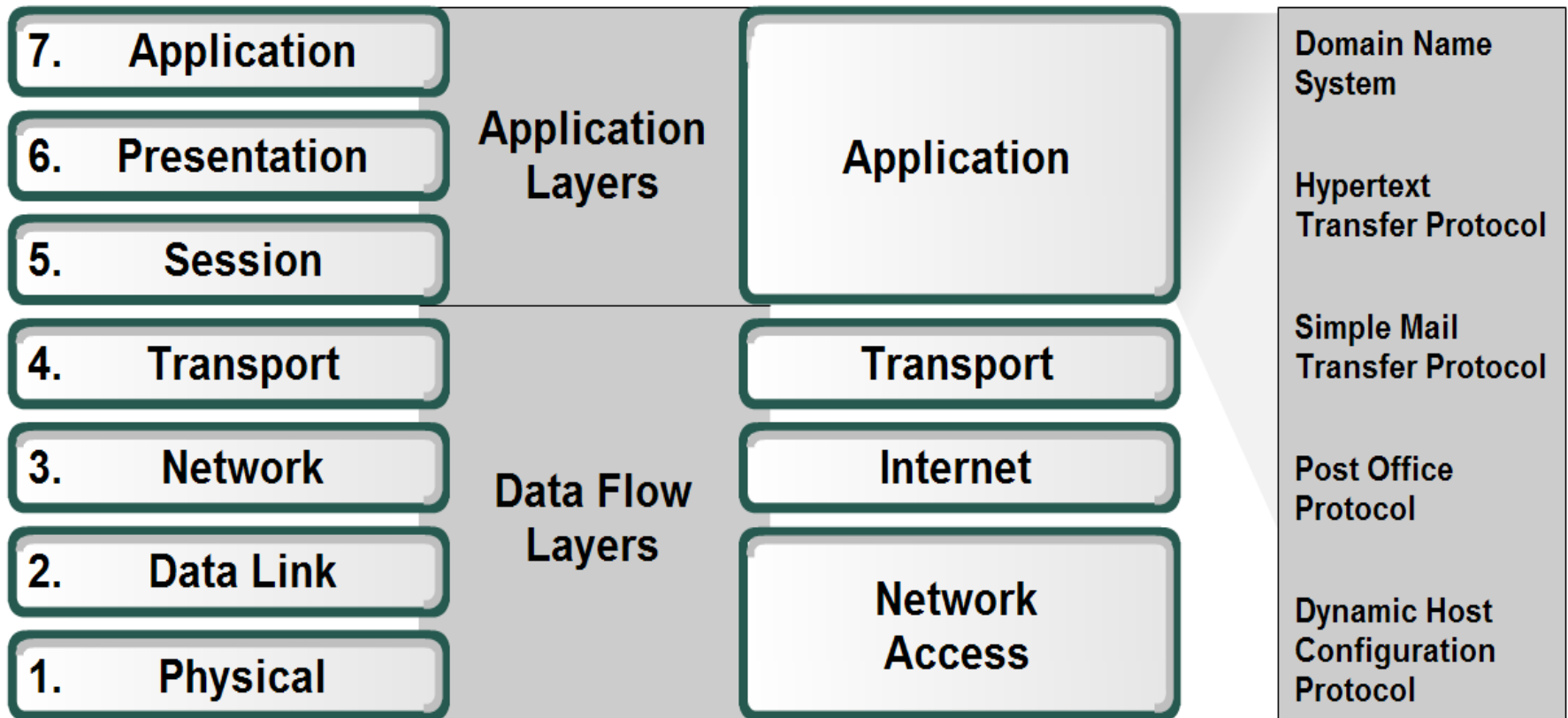


# Applications

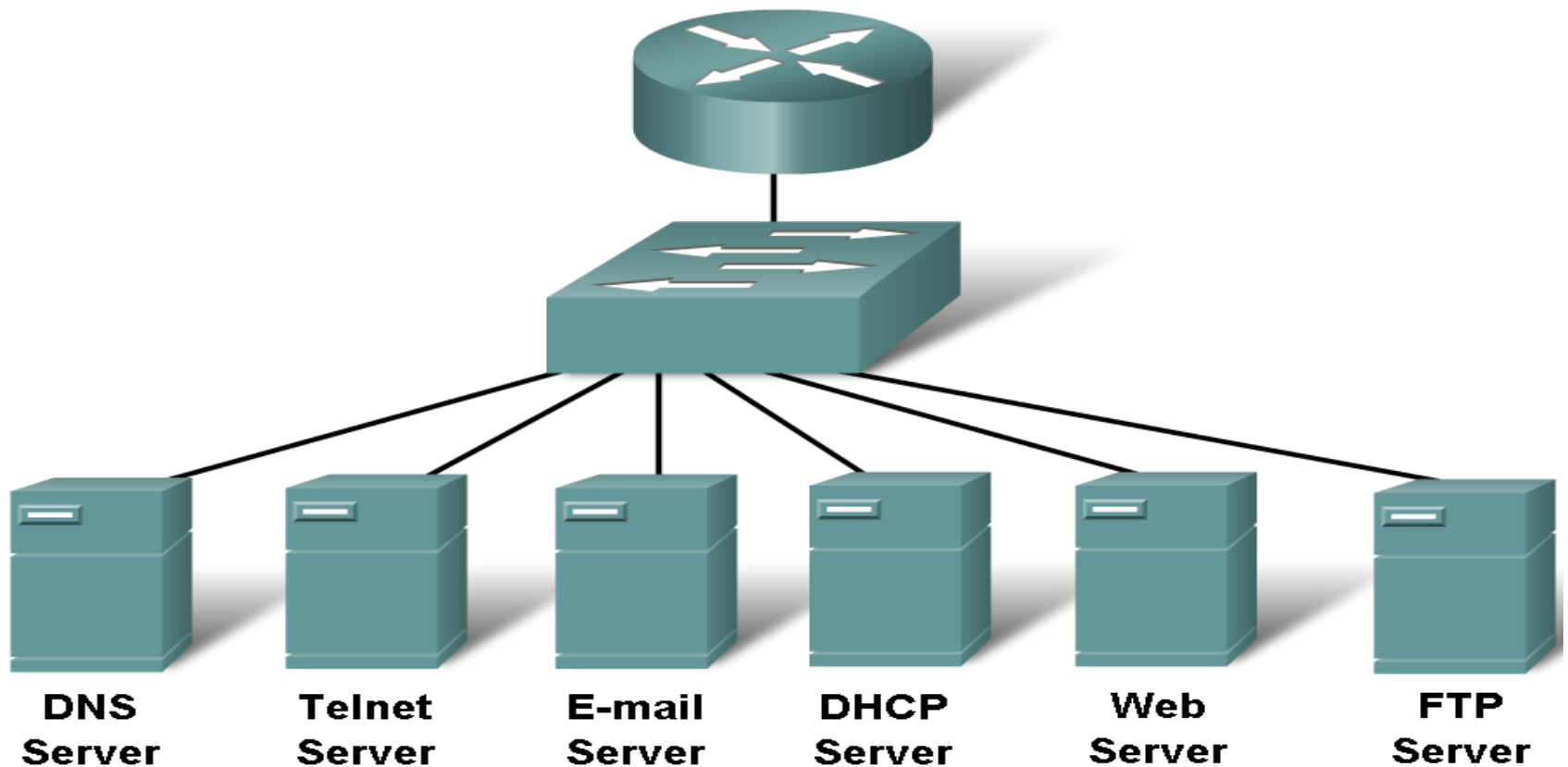


## OSI Model

## TCP/IP Model

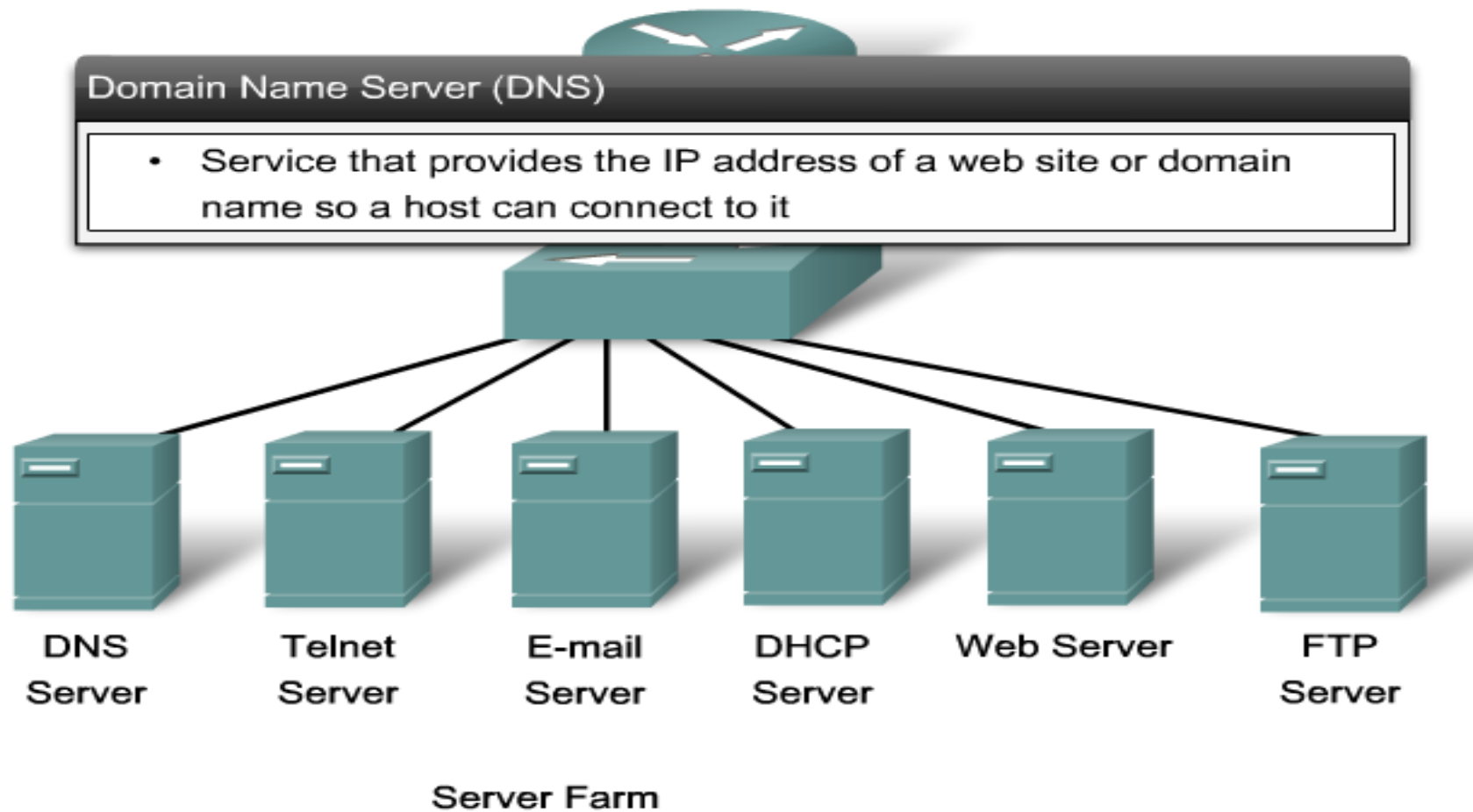


# Server Farm

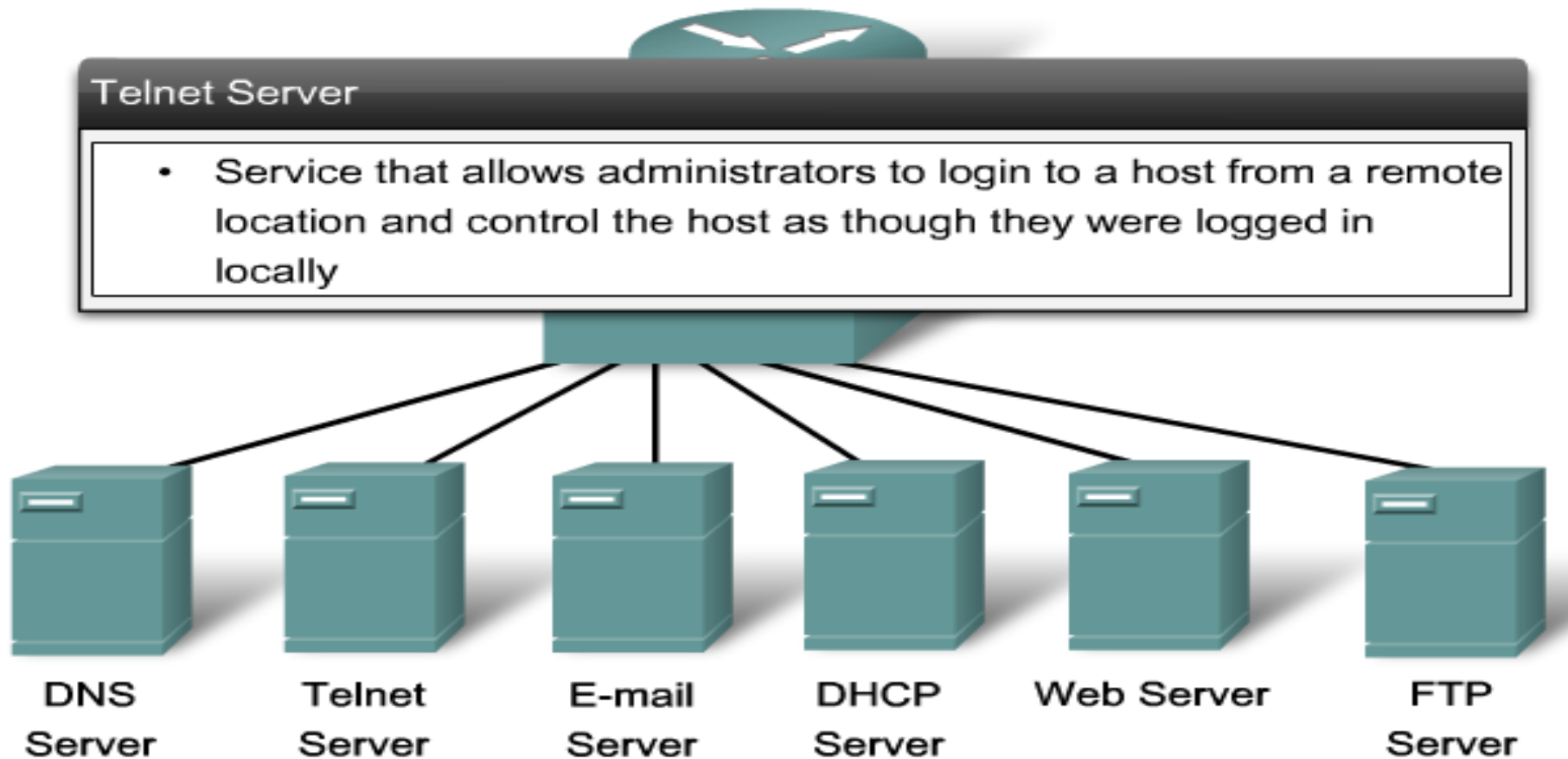


**Server Farm**

# Server Farm

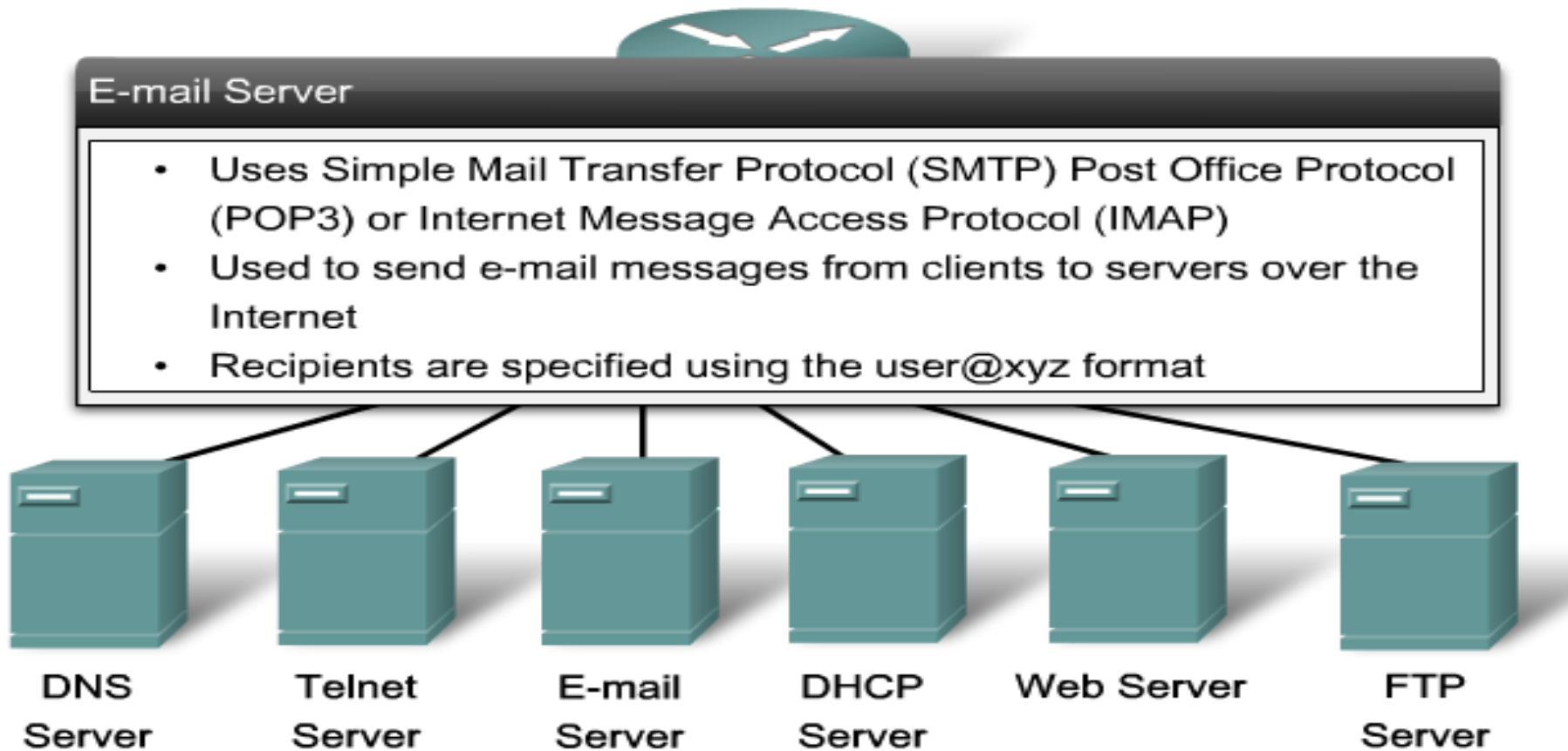


# Server Farm



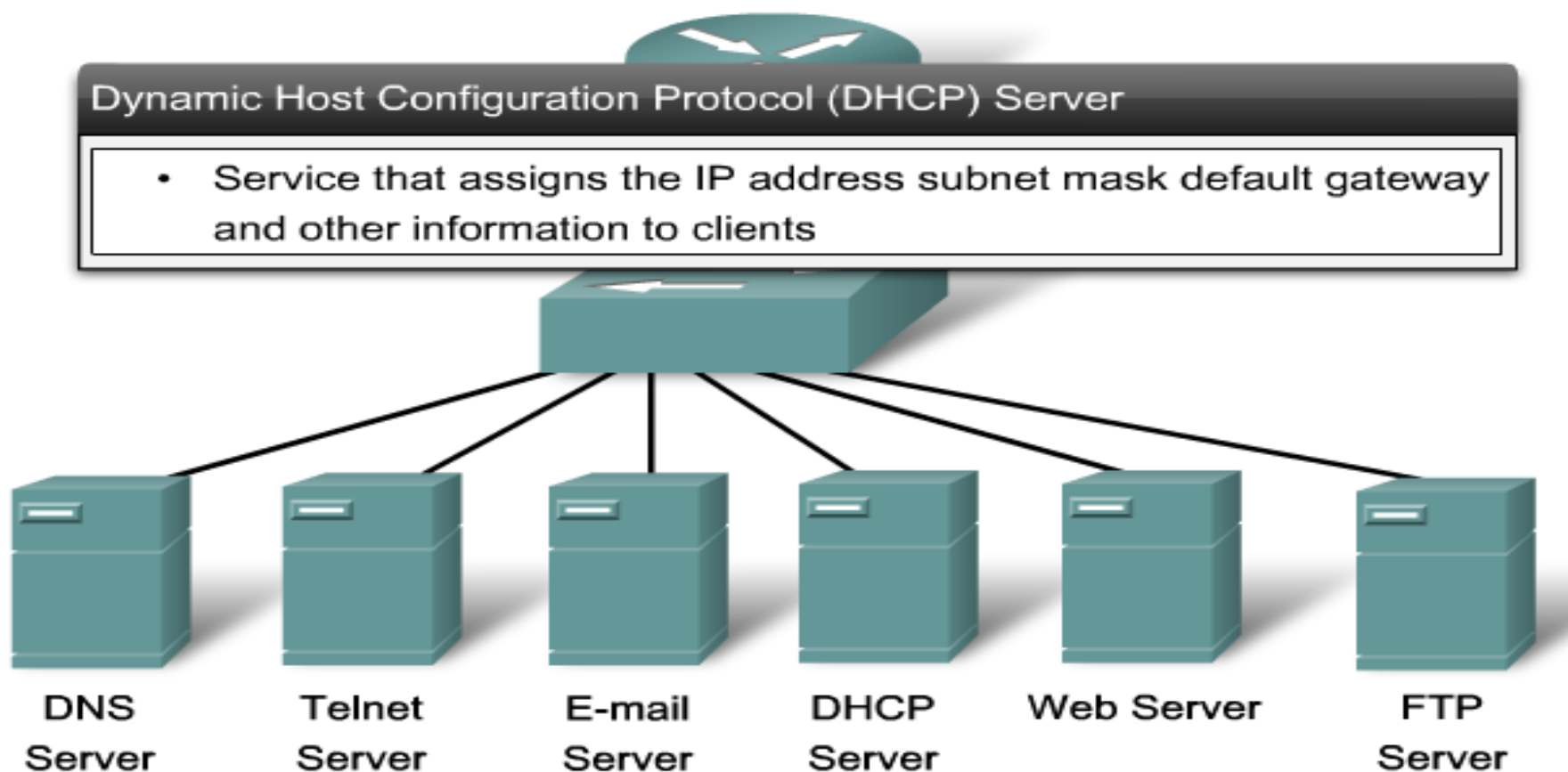
**Server Farm**

# Server Farm



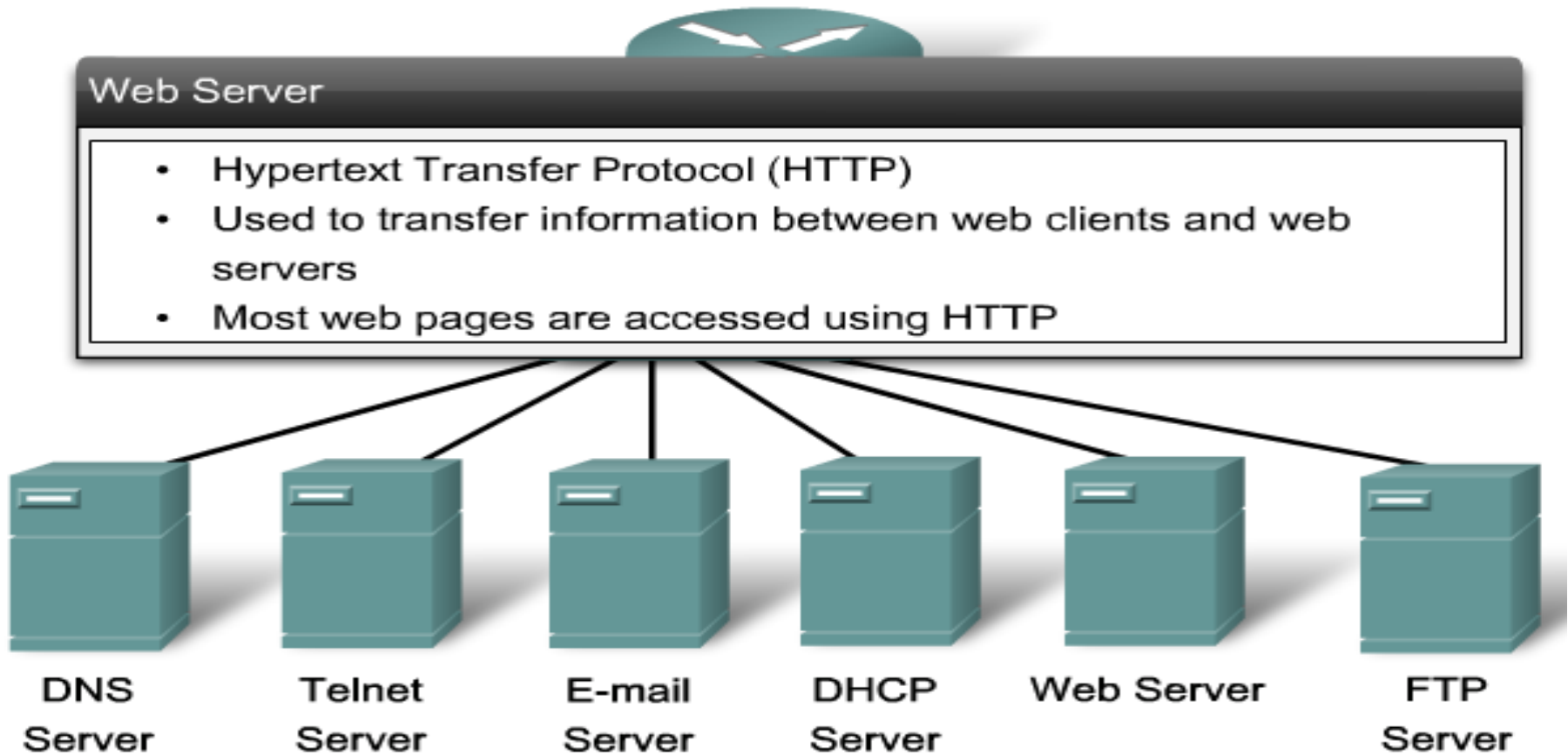
**Server Farm**

# Server Farm



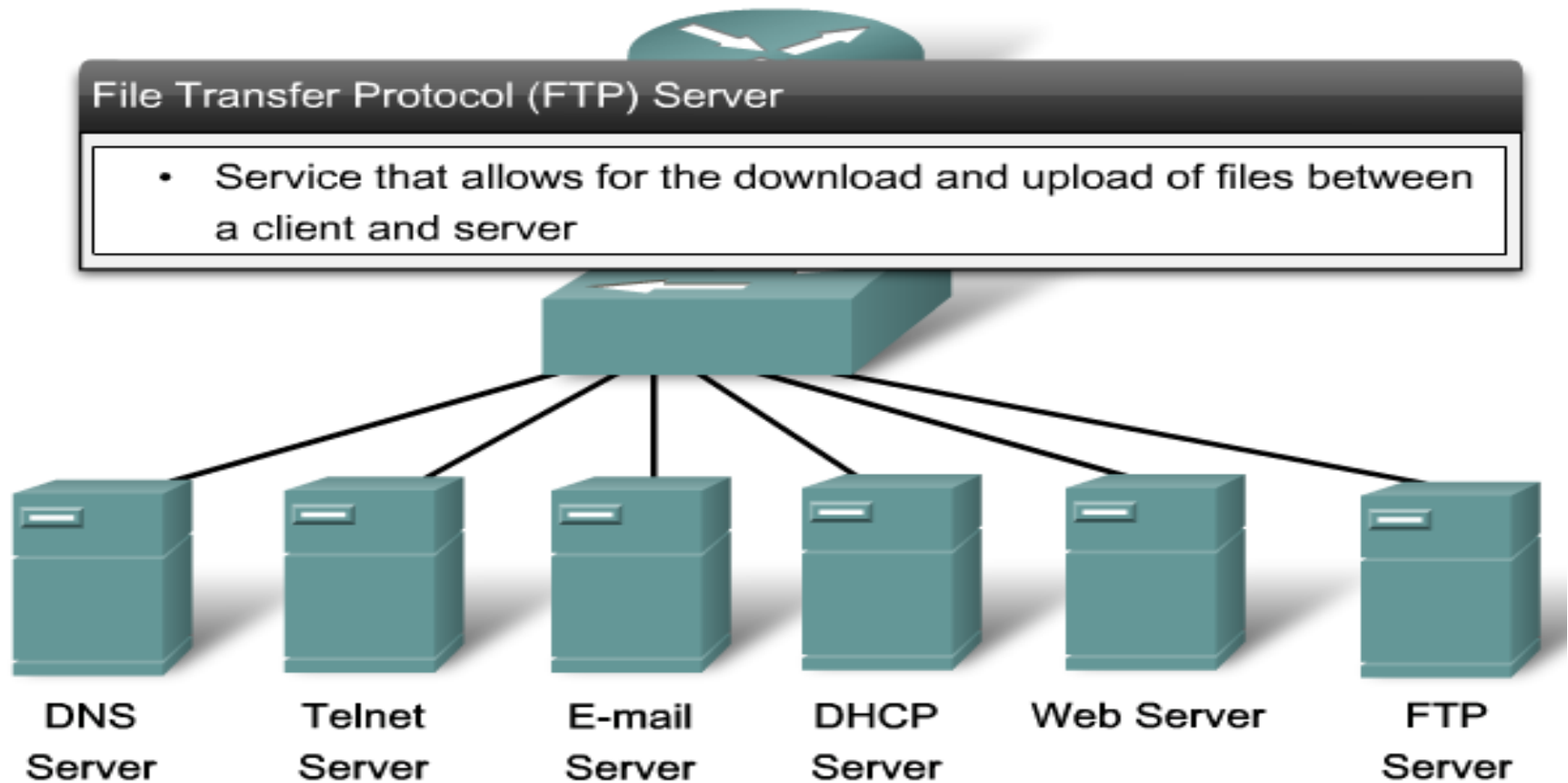
**Server Farm**

# Server Farm



Server Farm

# Server Farm

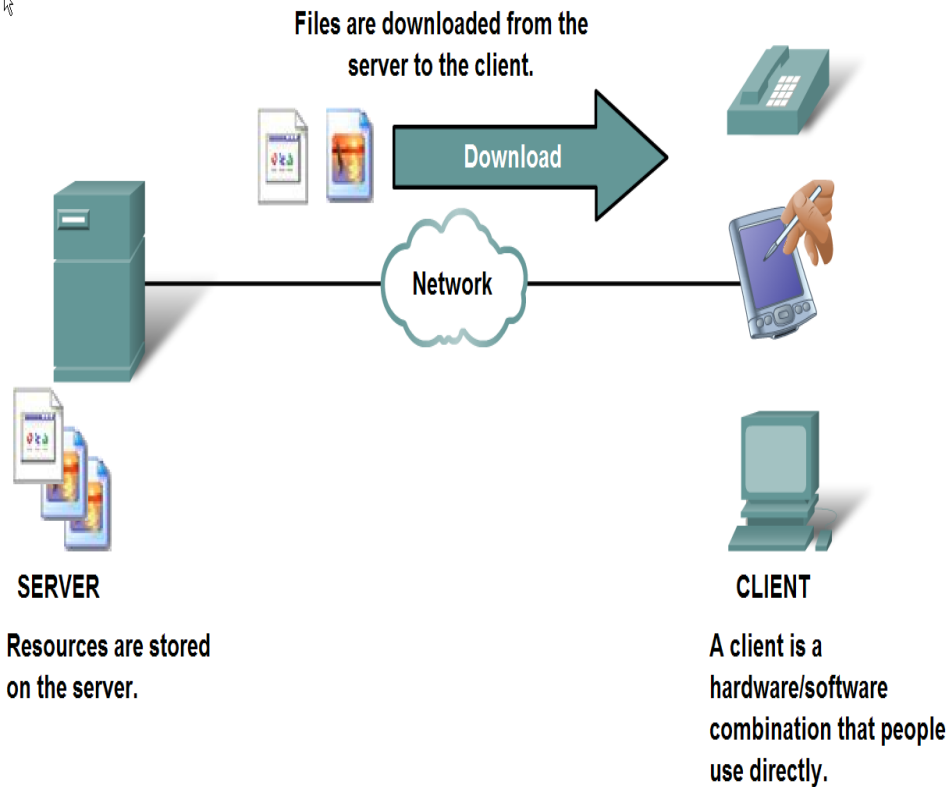


**Server Farm**

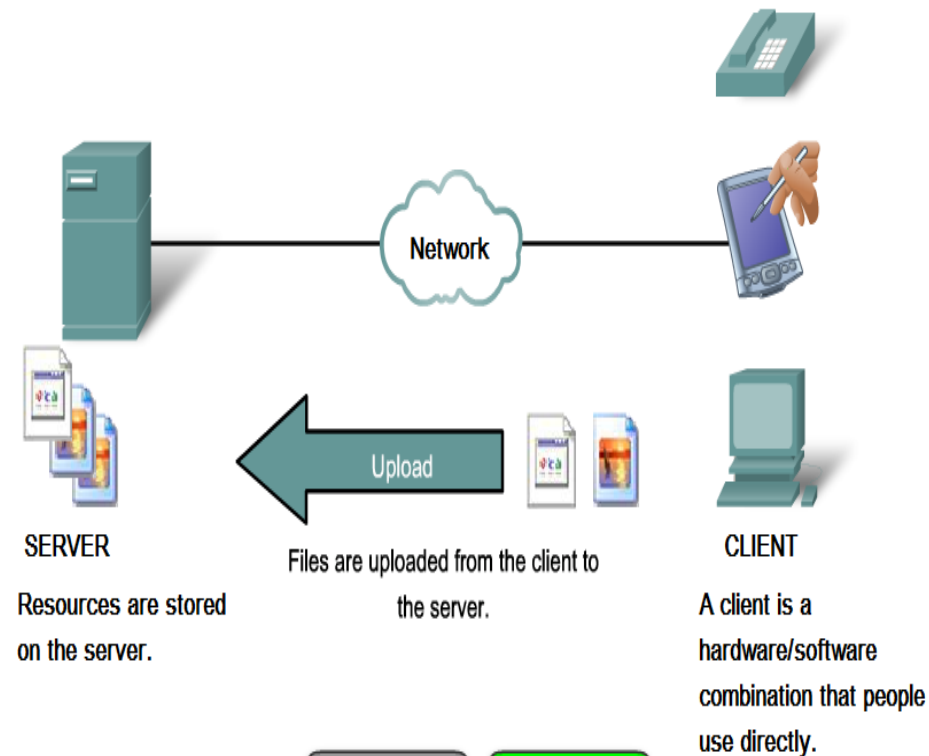


# Client/Server Model

Client/Server Model

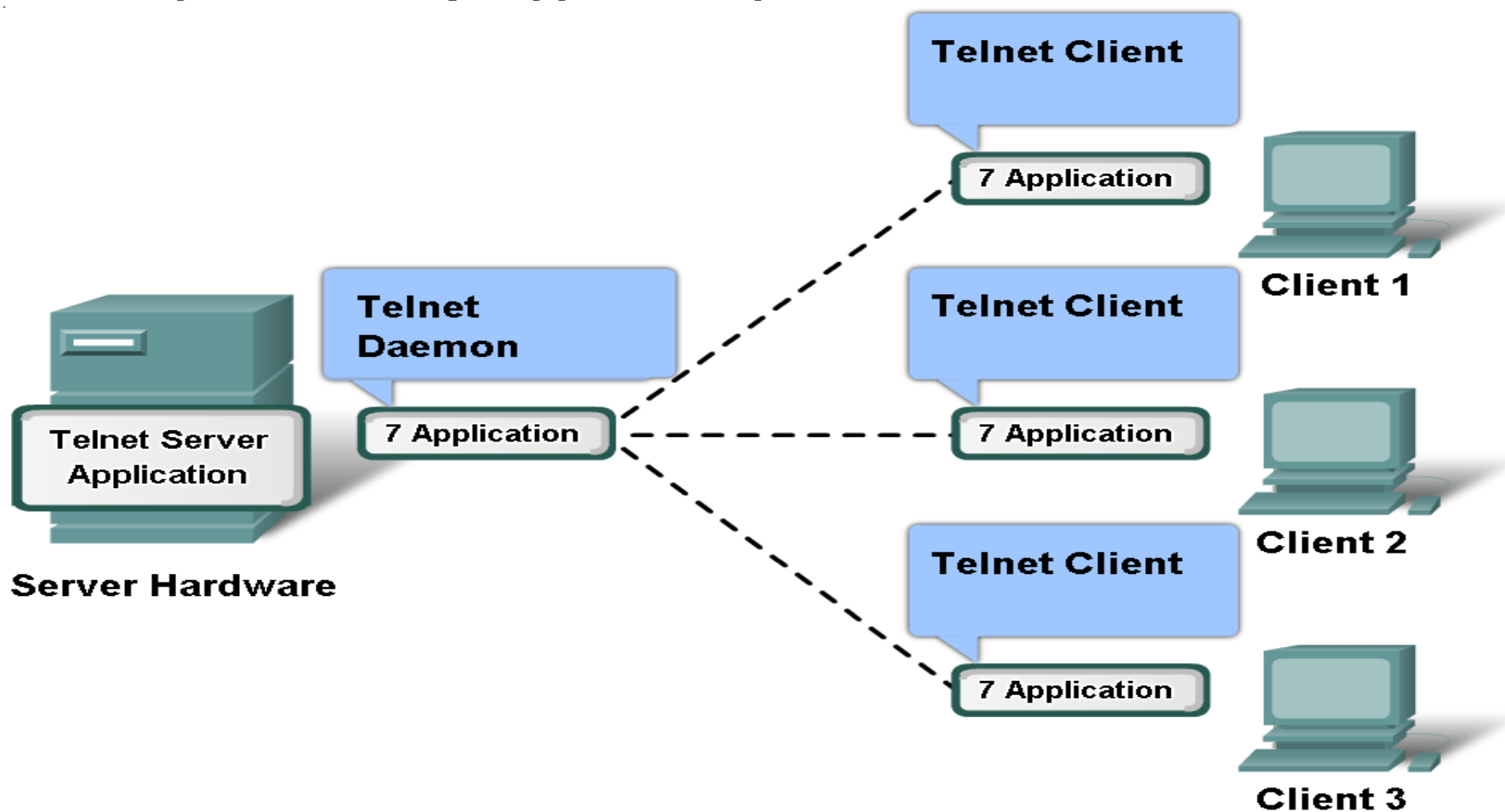


Client/Server Model



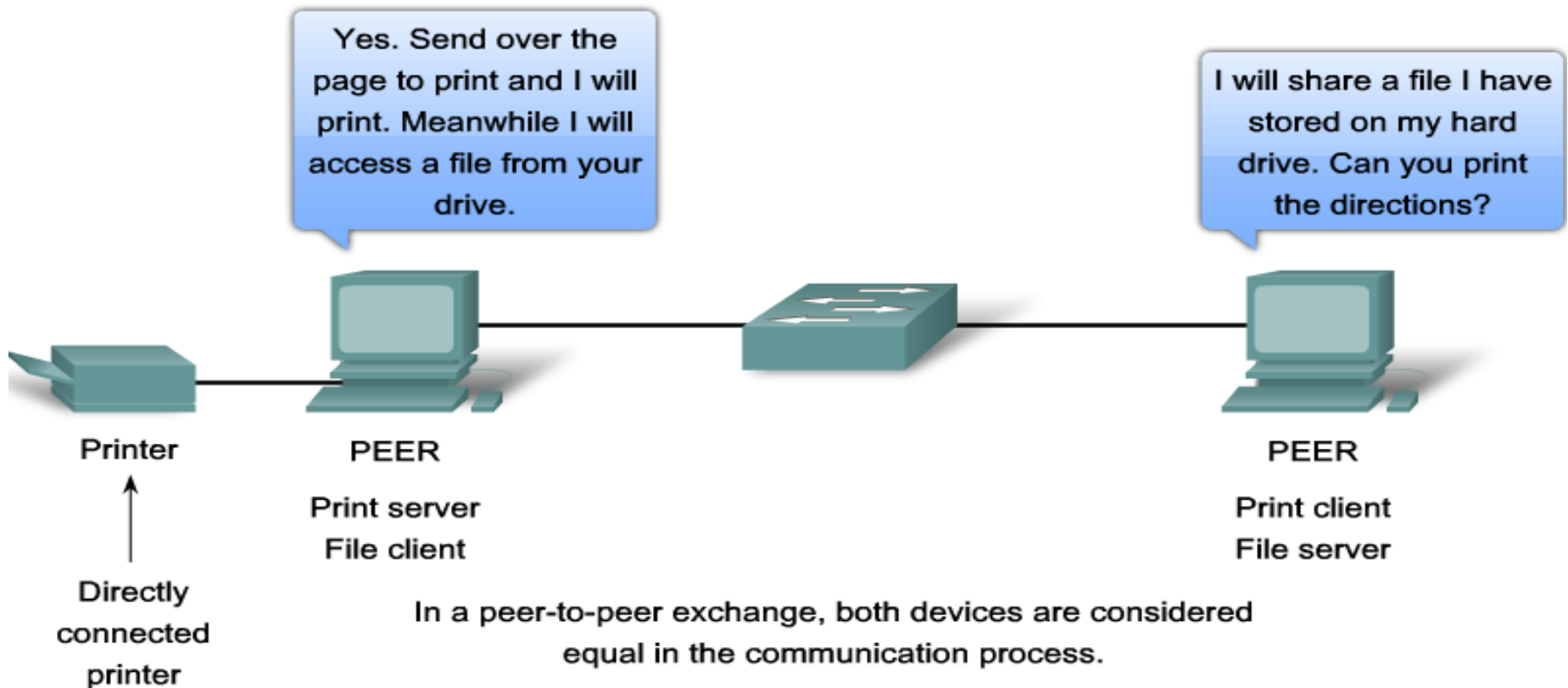
# Client/Server Model

**Server processes may support multiple clients.**

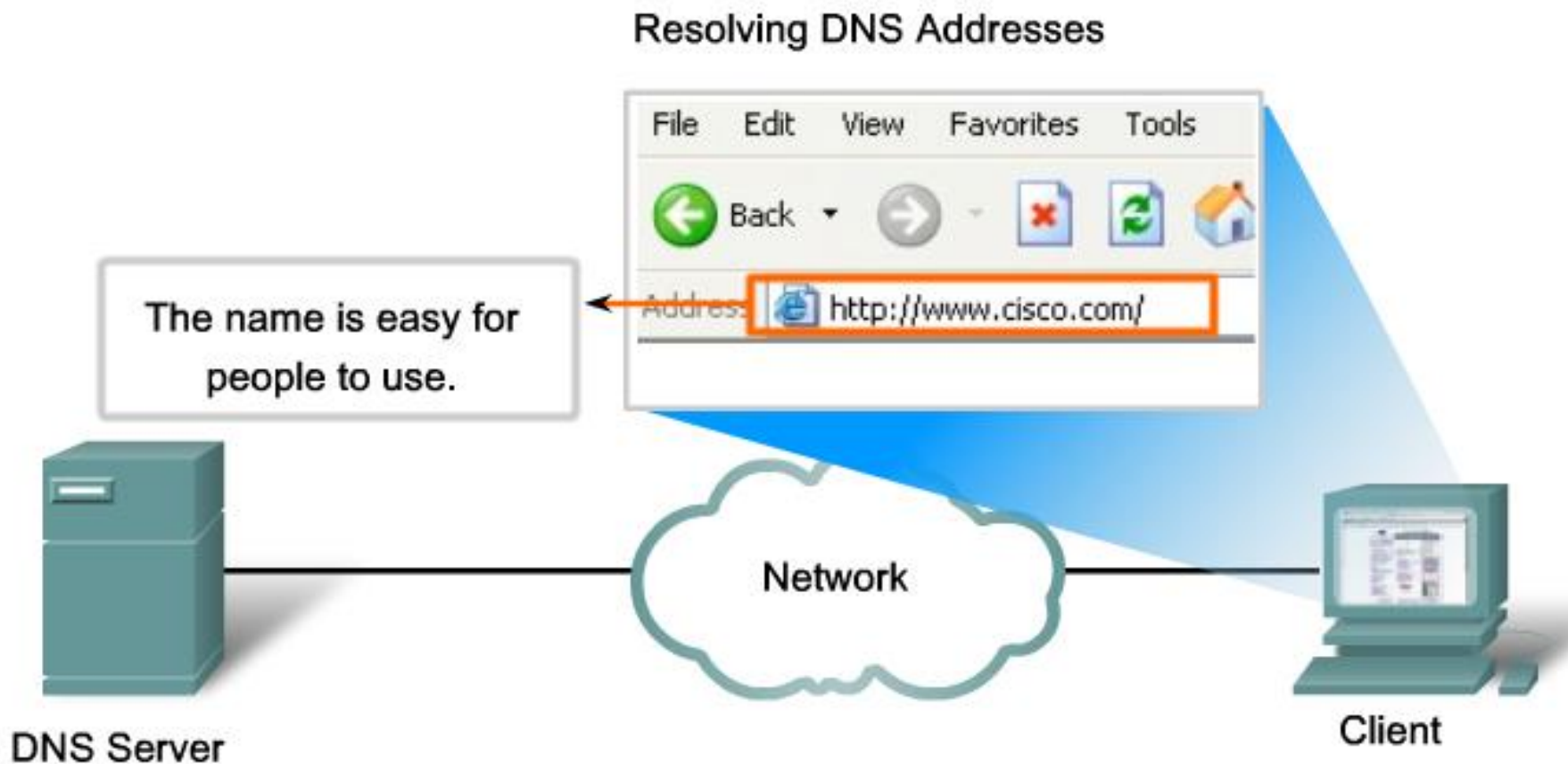


# Peer to Peer Applications

## Peer-to-Peer Networking

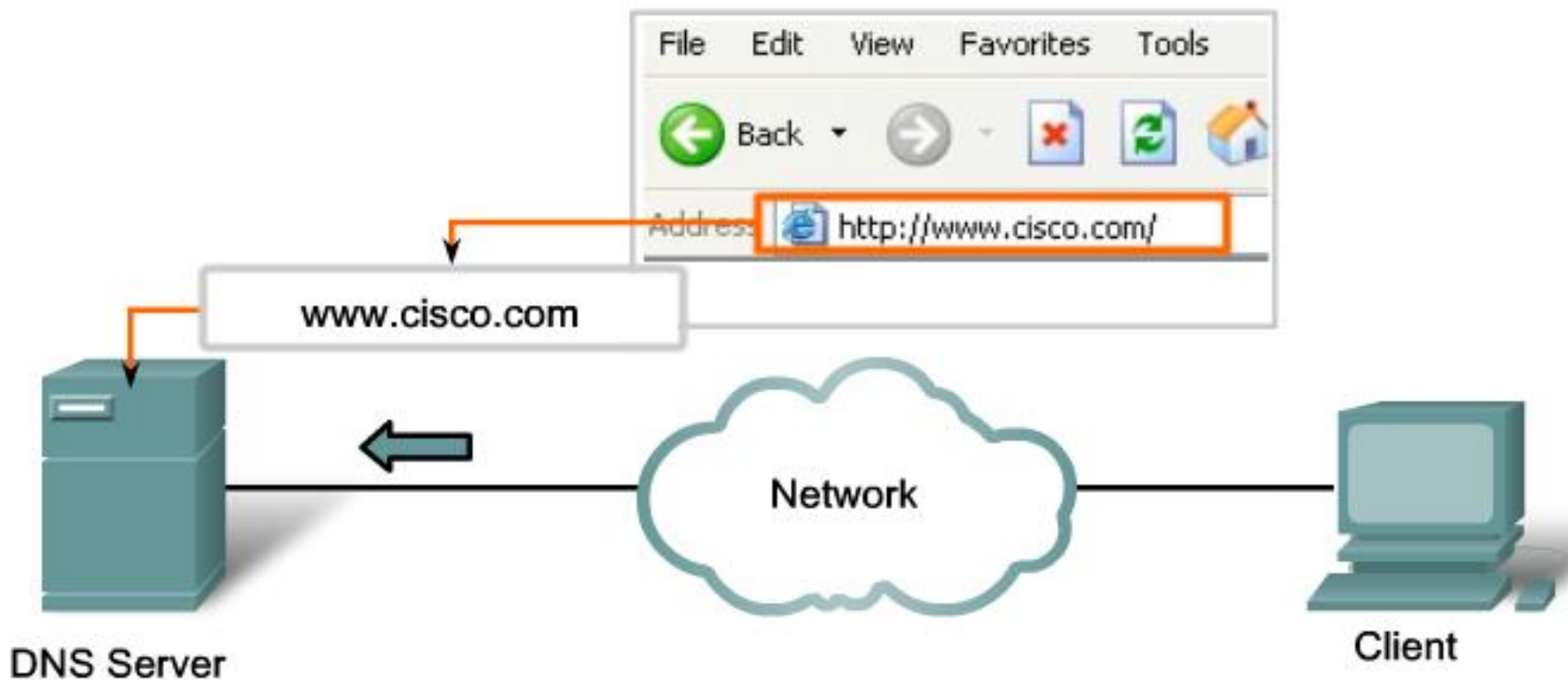


# Domain Name Server DNS



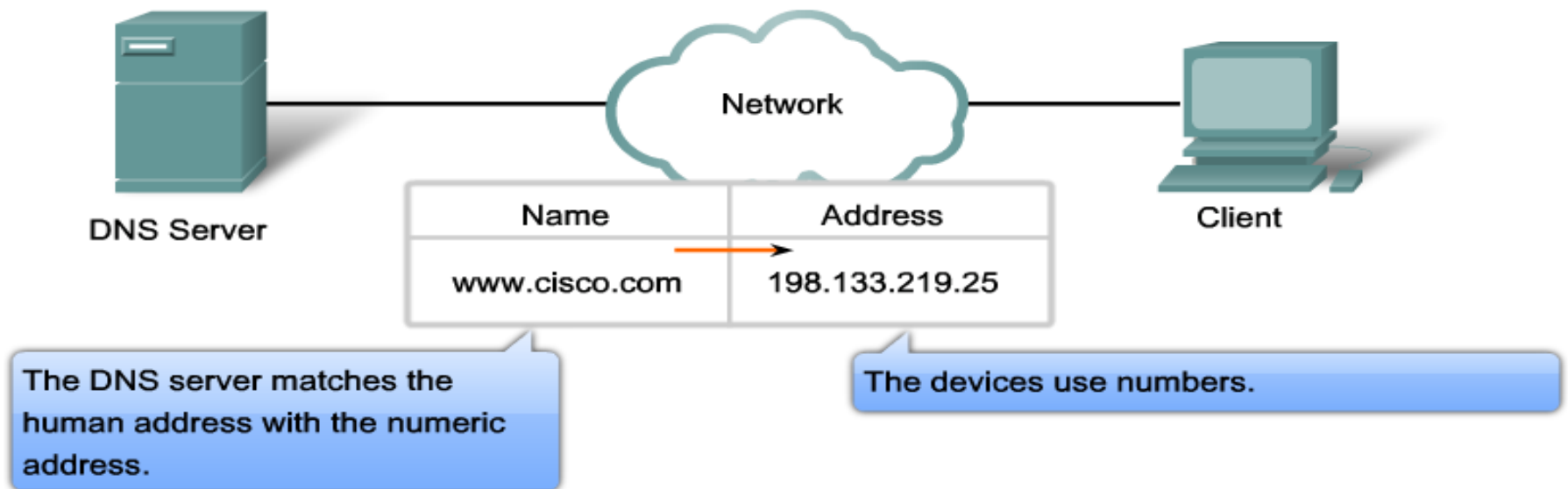
# Domain Name Server DNS

## Resolving DNS Addresses



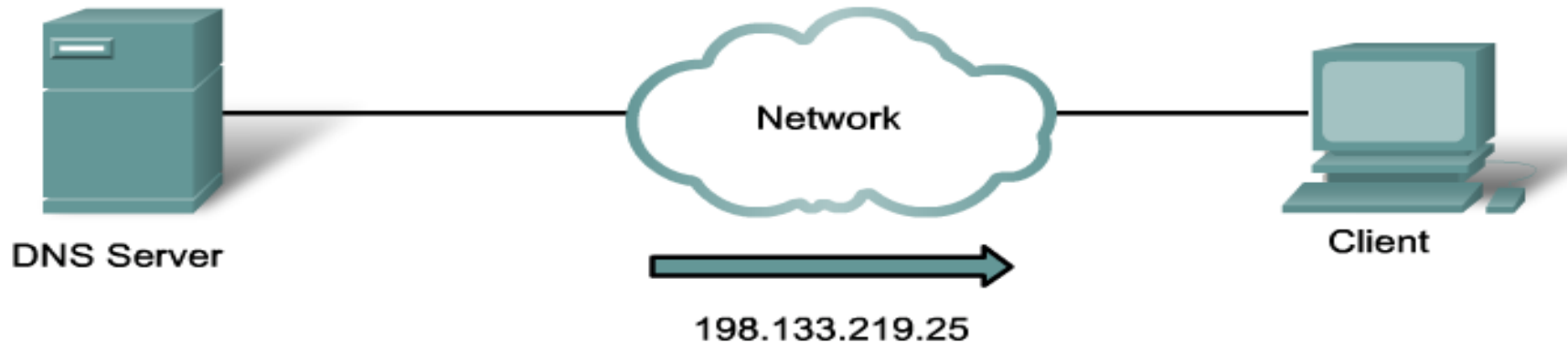
# Domain Name Server DNS

## Resolving DNS Addresses



# Domain Name Server DNS

Resolving DNS Addresses



The number is returned back to the client for use in making requests of the server.

# Domain Name Server DNS

Resolving DNS Addresses

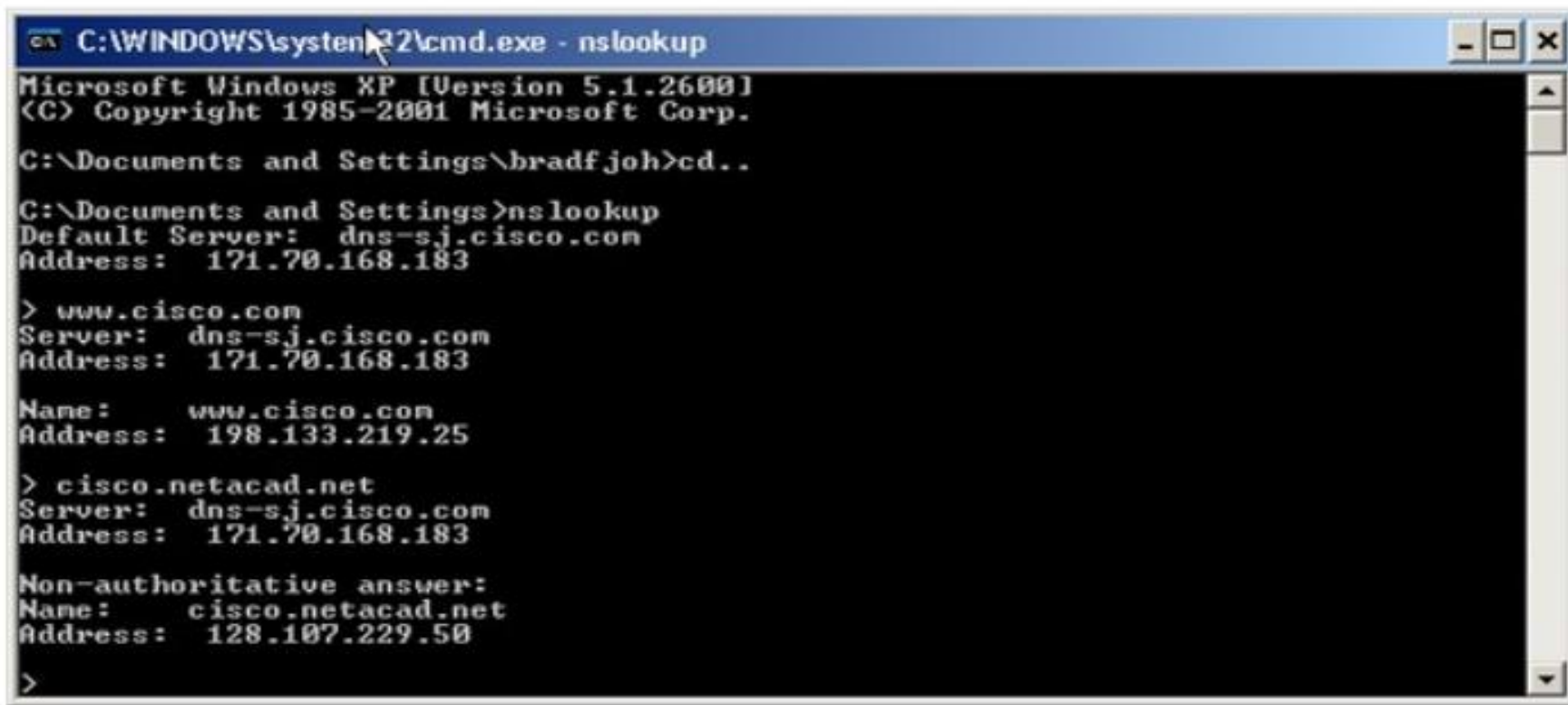


A human legible name is resolved to its numeric network device address by the DNS protocol.



# Domain Name Server DNS

Using nslookup



```
C:\WINDOWS\system32\cmd.exe - nslookup
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\bradfjoh>cd..

C:\Documents and Settings>nslookup
Default Server:  dns-sj.cisco.com
Address:  171.70.168.183

> www.cisco.com
Server:  dns-sj.cisco.com
Address:  171.70.168.183

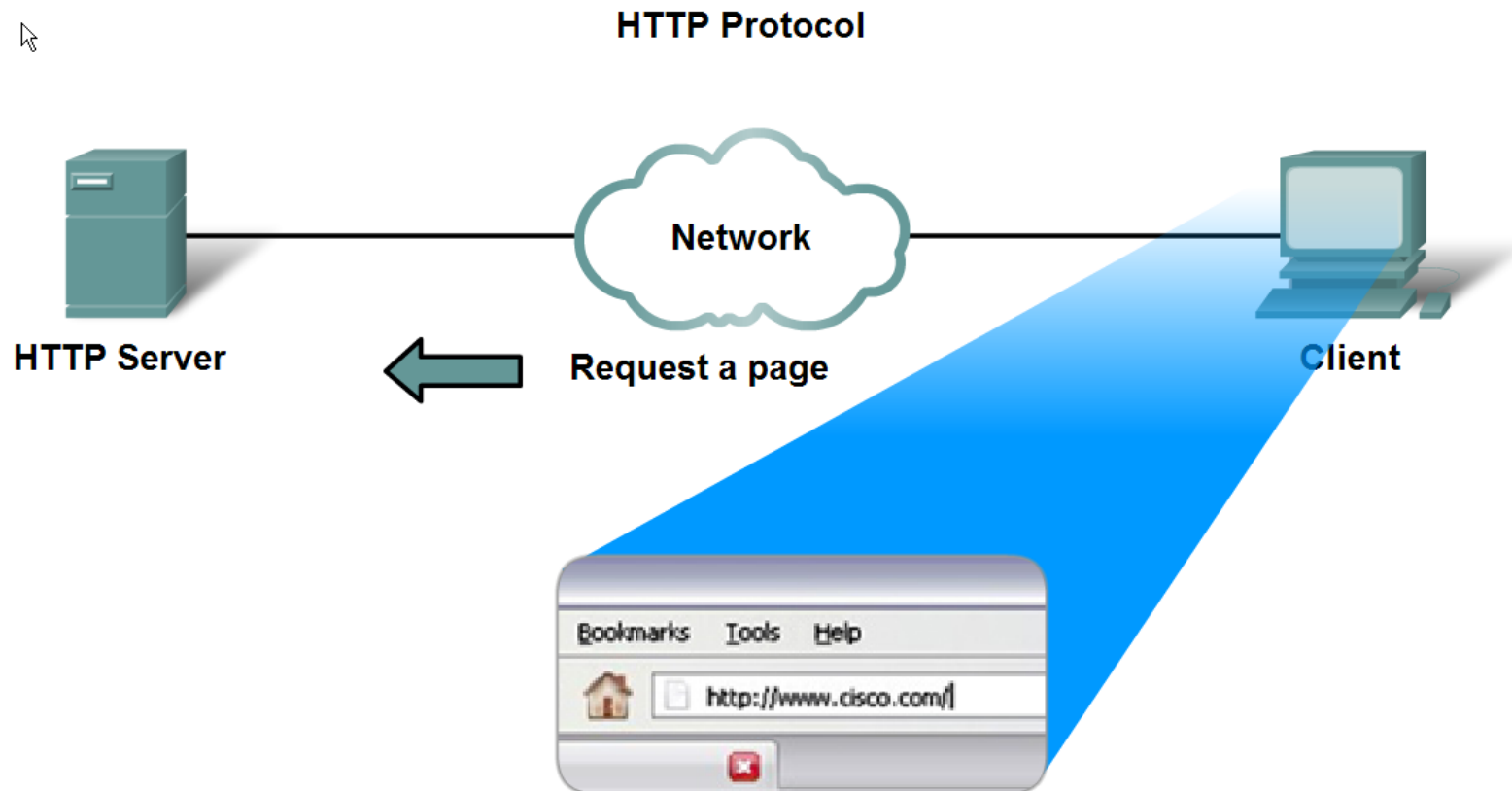
Name:    www.cisco.com
Address:  198.133.219.25

> cisco.netacad.net
Server:  dns-sj.cisco.com
Address:  171.70.168.183

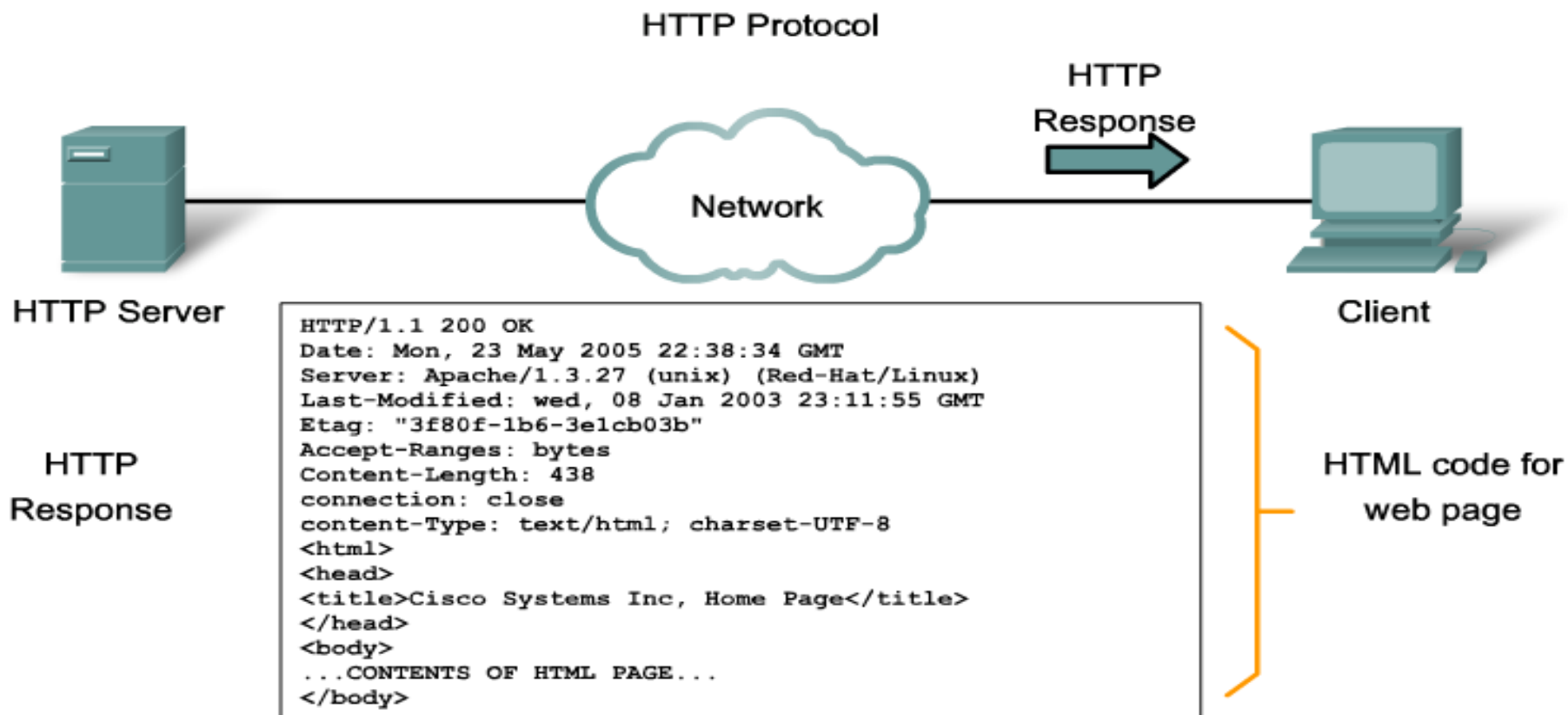
Non-authoritative answer:
Name:    cisco.netacad.net
Address:  128.107.229.50

>
```

# HyperText Transfere Protocol HTTP

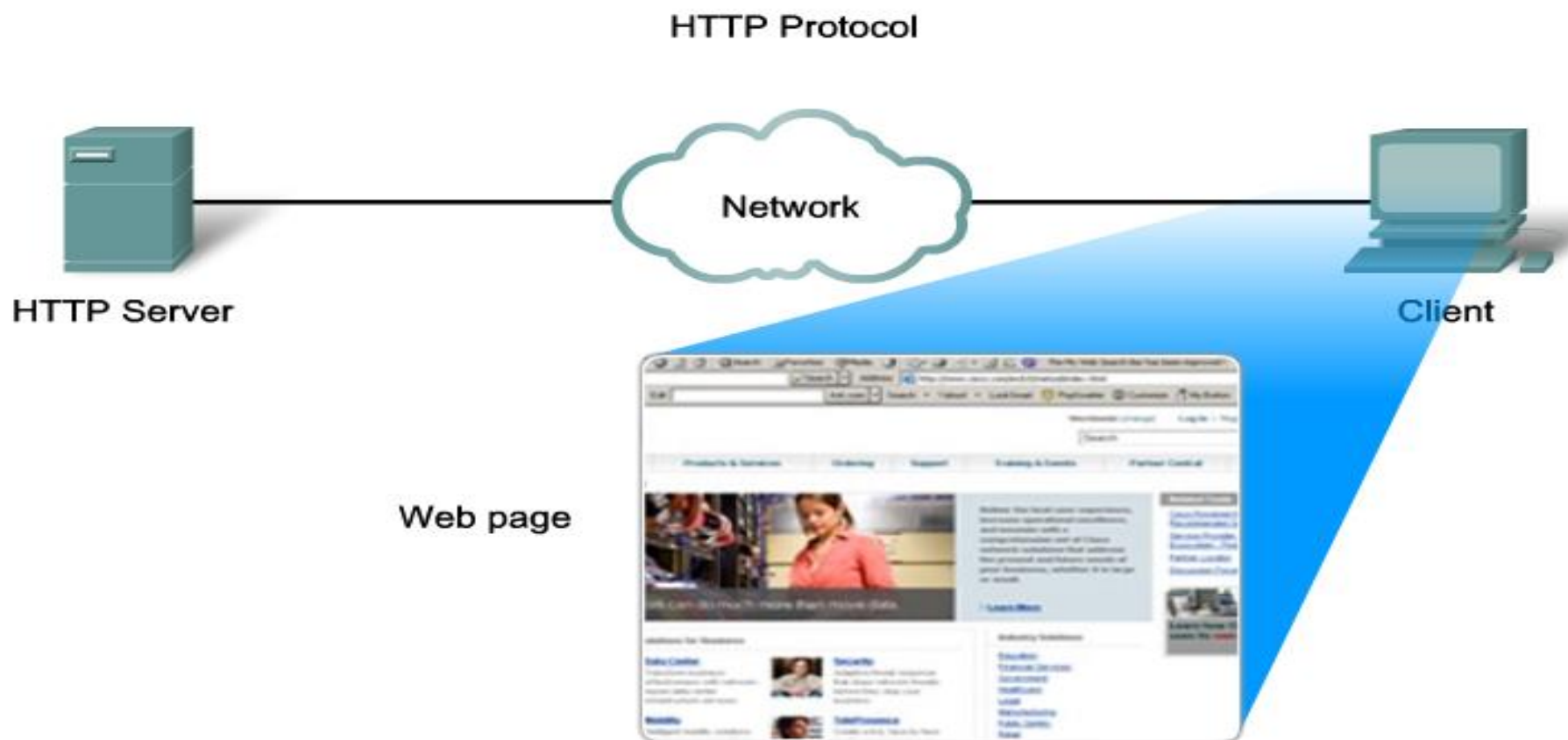


# HyperText Transfere Protocol HTTP



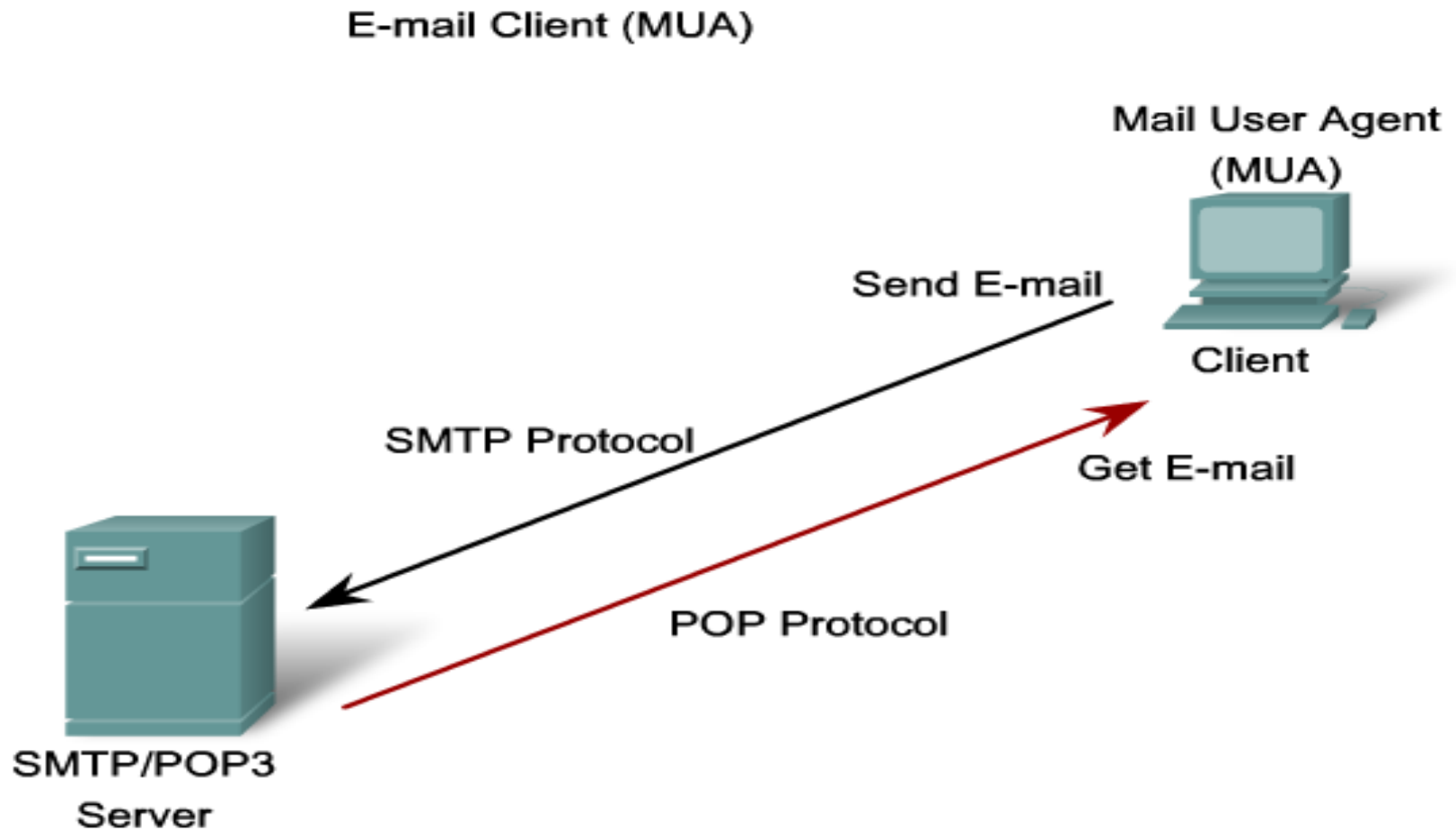
In response to the request, the HTTP server returns code for a web page.

# HyperText Transfere Protocol HTTP

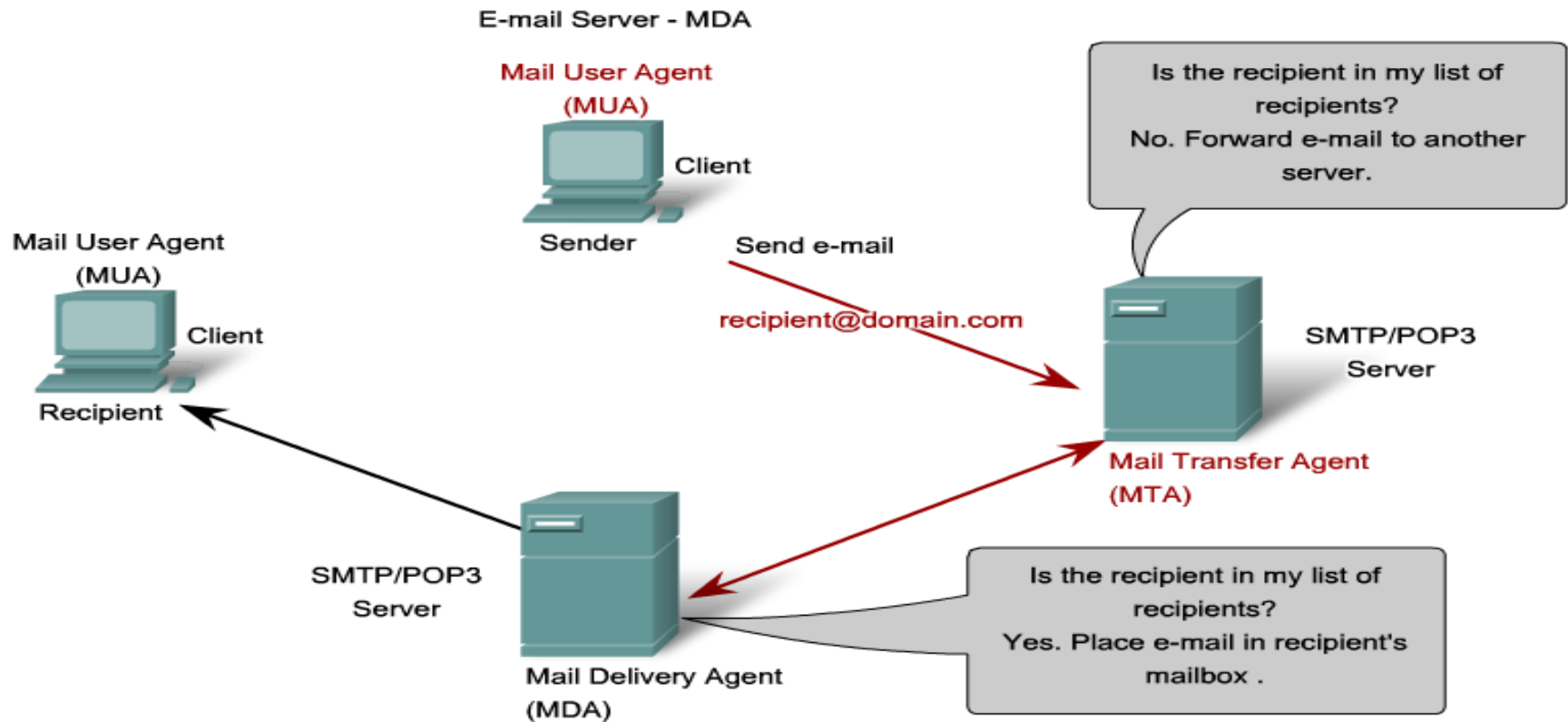


The browser interprets the HTML code and displays a web page.

# Post Office Protocol POP / Simple Mail Transfer Protocol SMTP

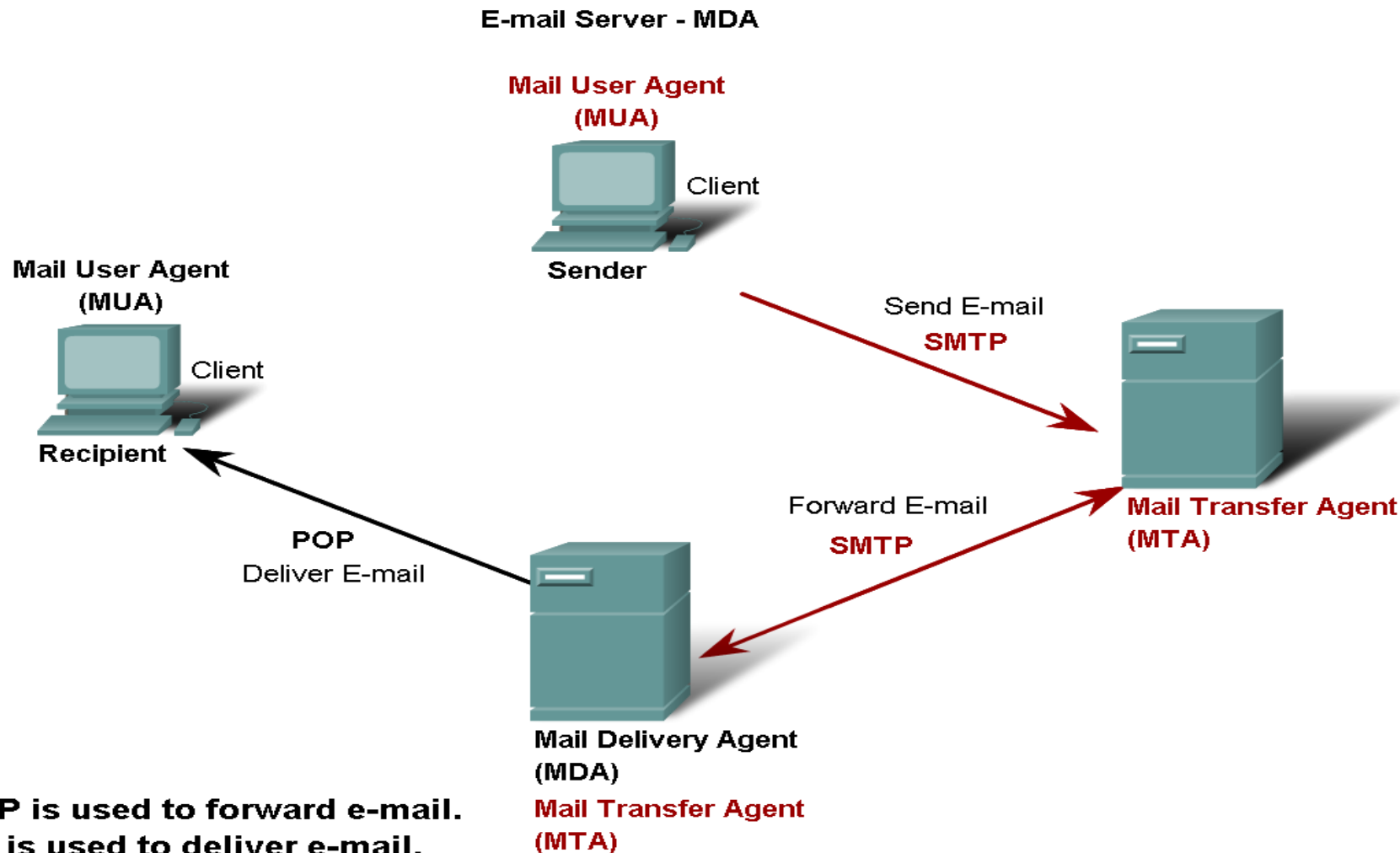


# Post Office Protocol POP / Simple Mail Transfer Protocol SMTP

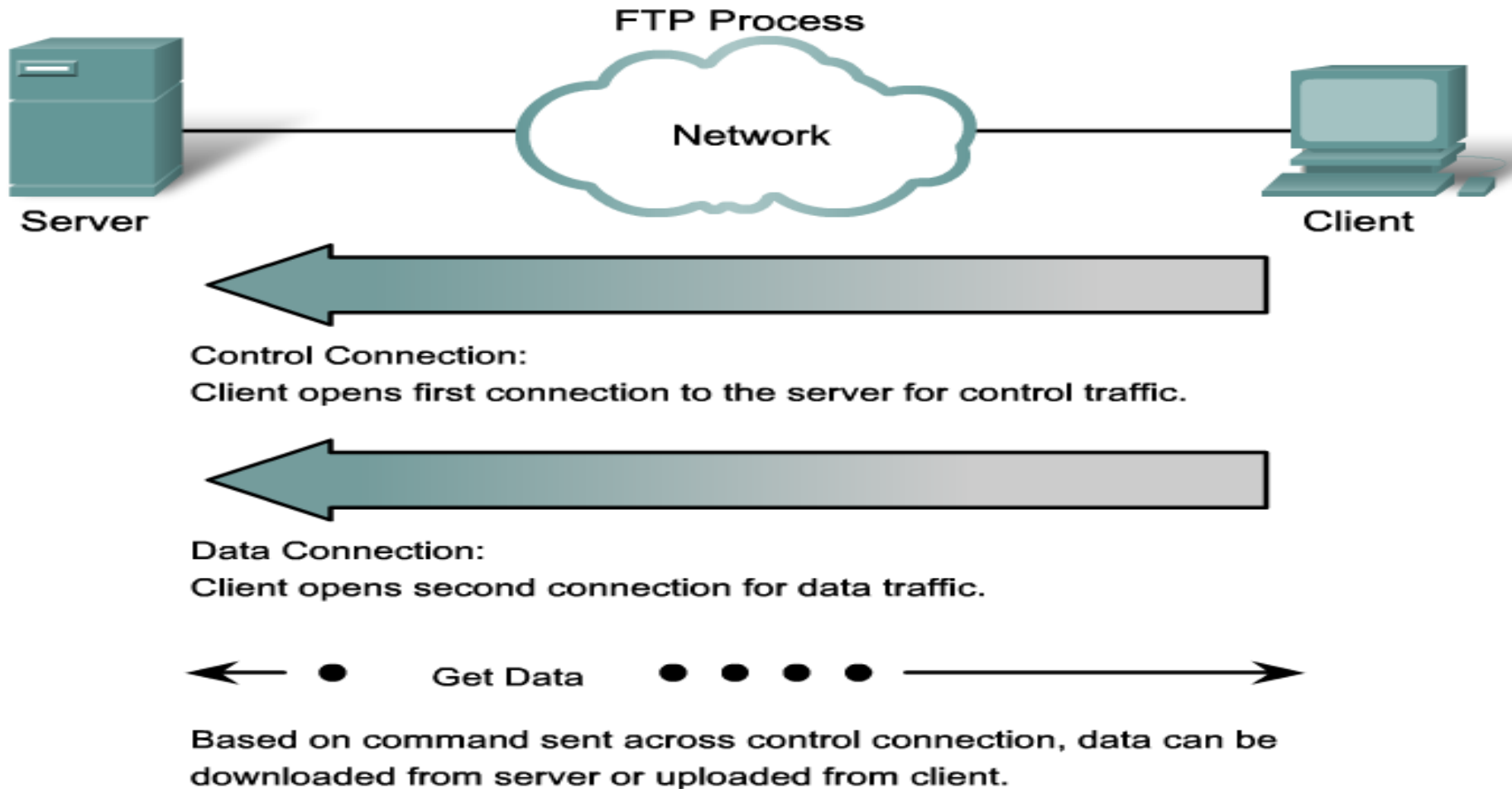


The Mail Delivery Agent process governs delivery of e-mail between servers and clients.

# Post Office Protocol POP / Simple Mail Transfer Protocol SMTP

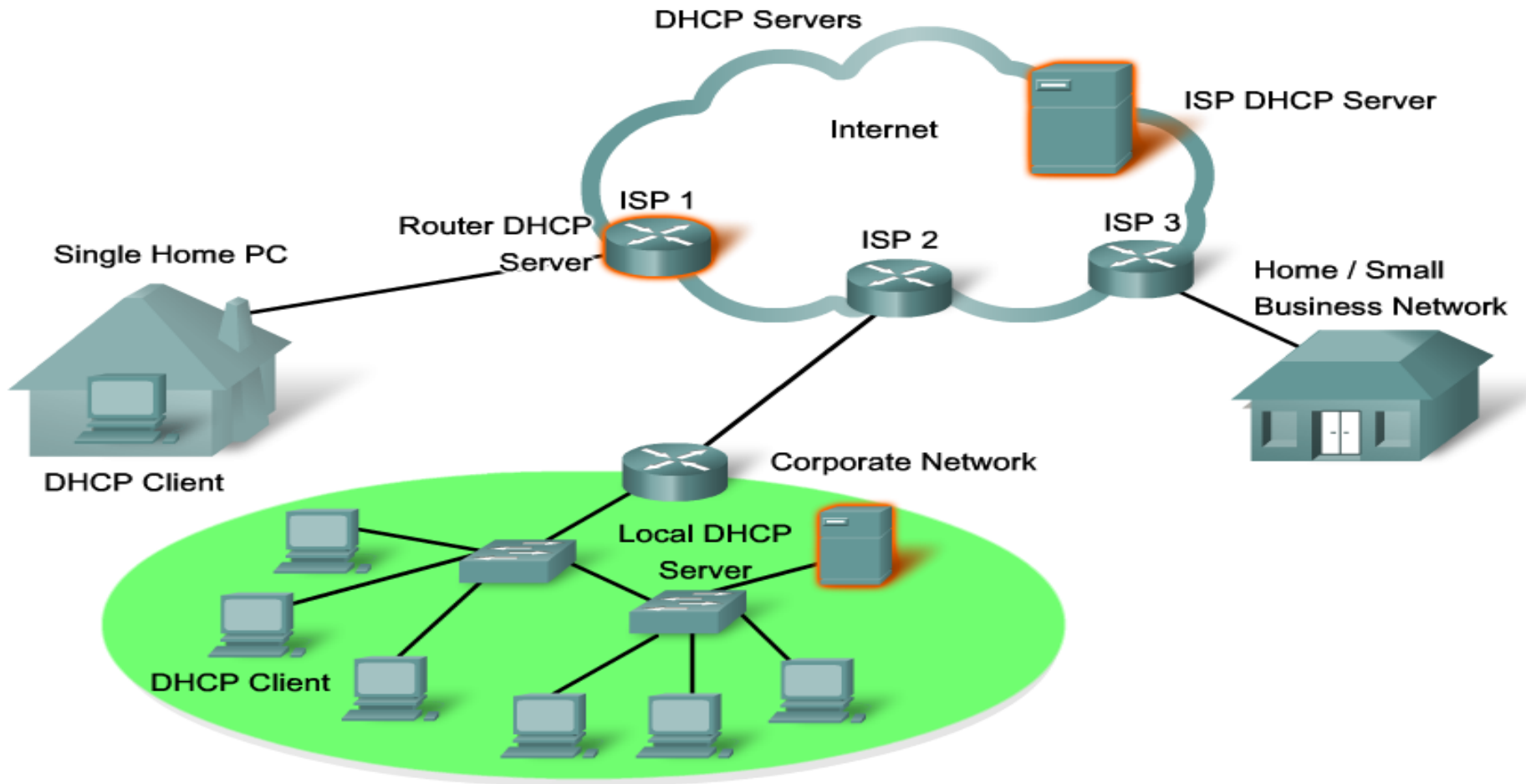


# File Transfer Protocol FTP

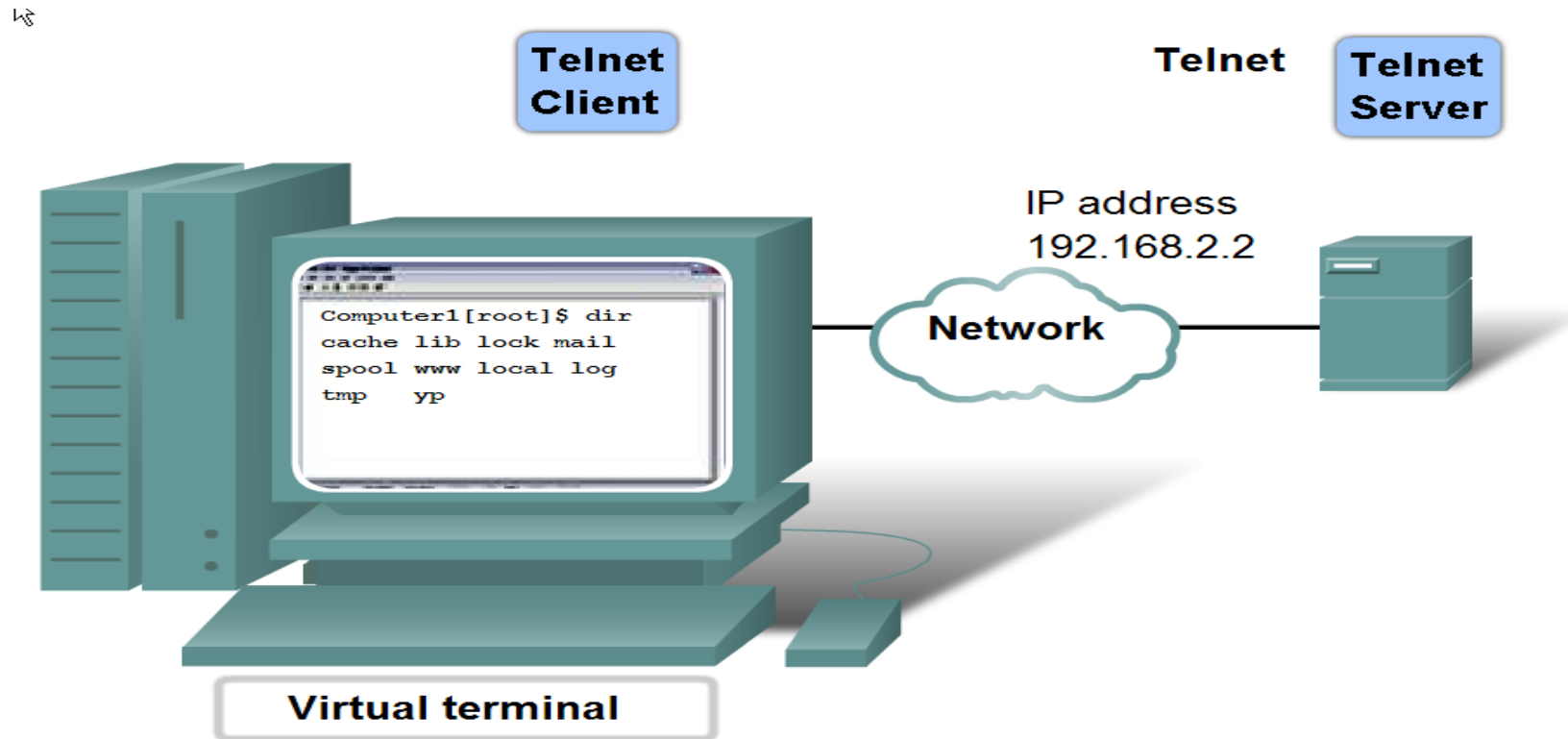




# Dynamic Host Configuration Protocol DHCP



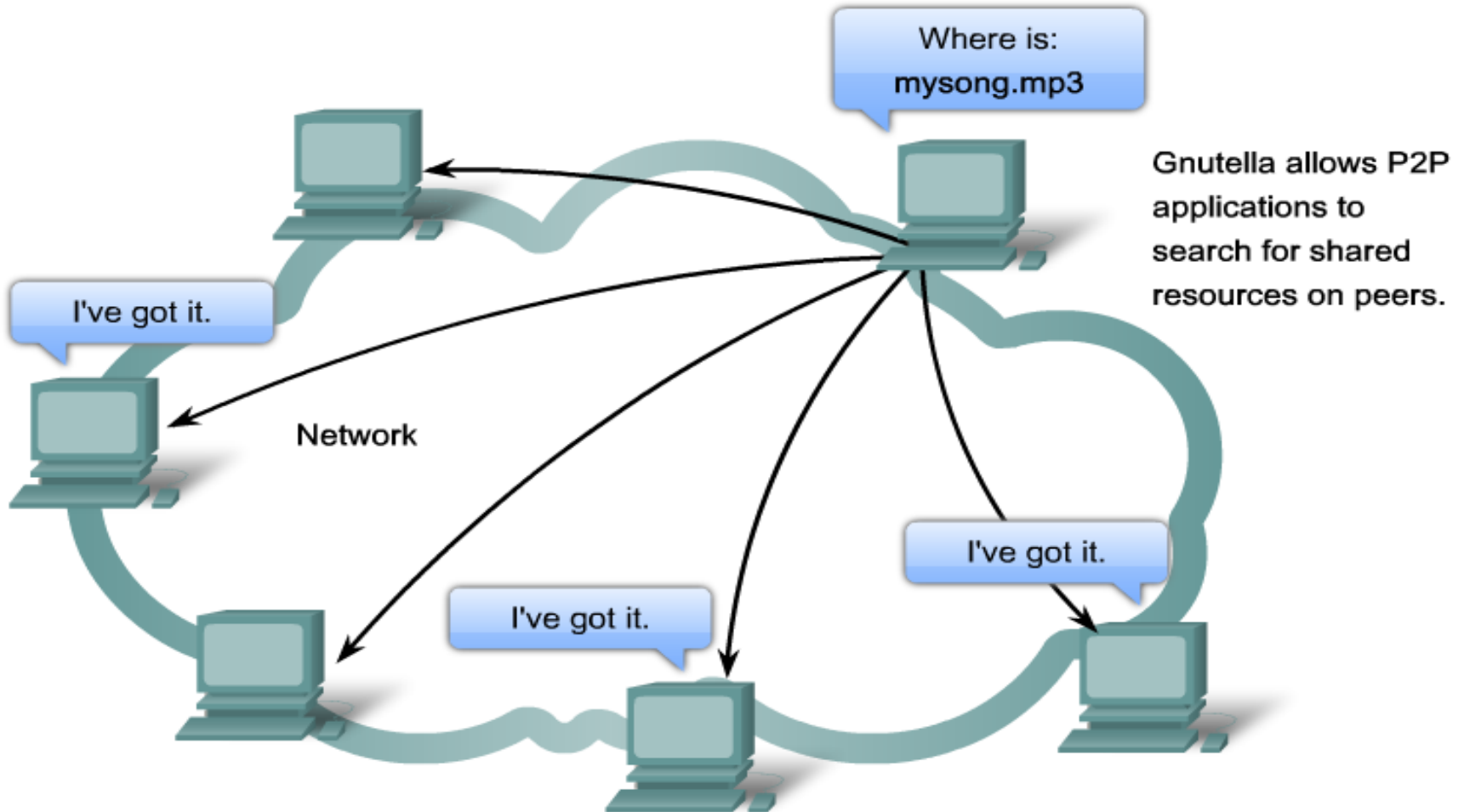
# Telecommunication Network Telnet



**Telnet provides a way to use a computer, connected via the network, to access a network device as if the keyboard and monitor were directly connected to the device.**

# Peer-To-Peer Application P2P

Gnutella Supports P2P Applications



# Features, Operation, and Use of TCP/IP Application Layer Services

- Describe the features of the Gnutella protocol and the role it plays in supporting P2P services

