Application Layer Functionality and Protocols

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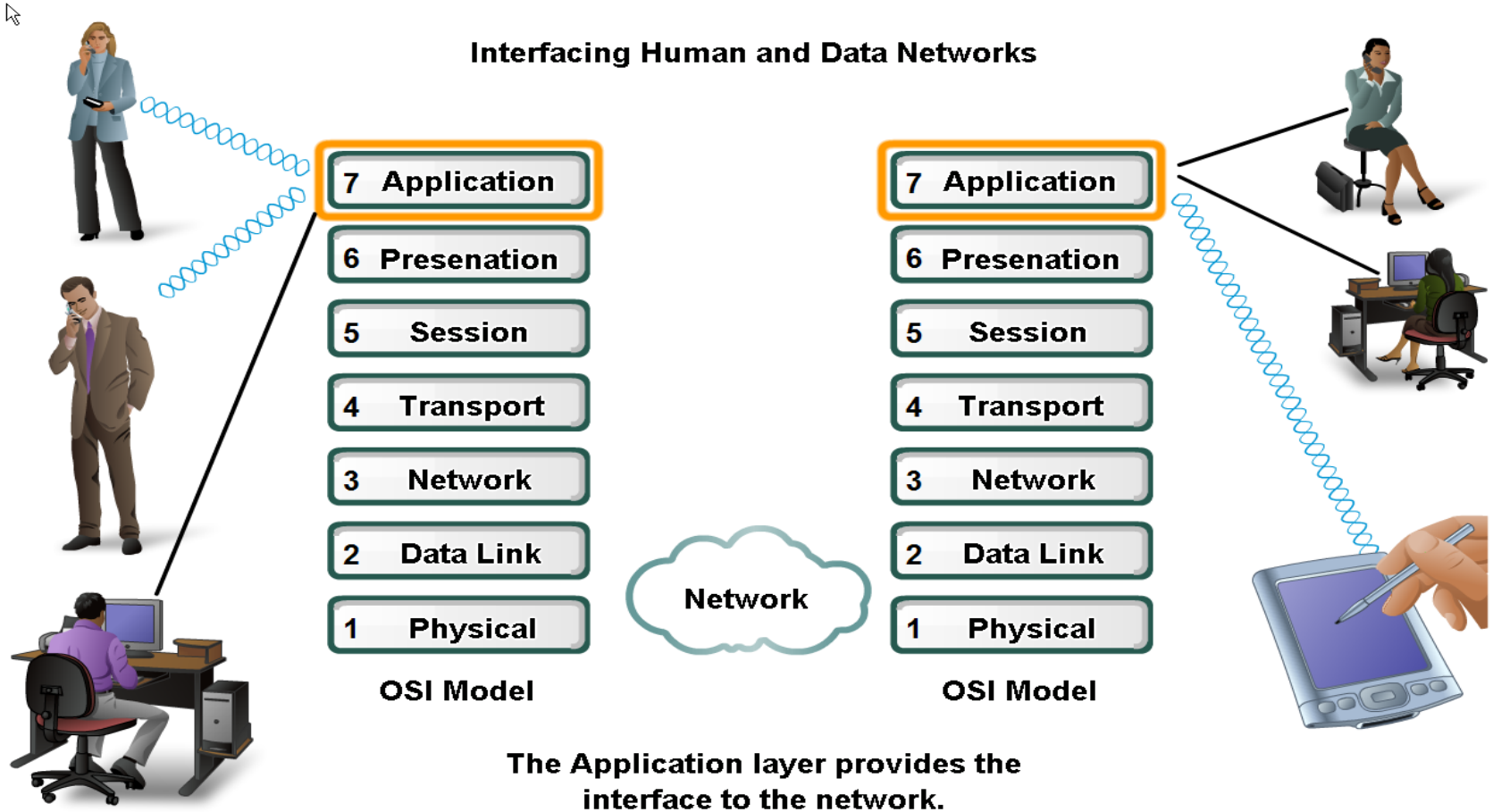
Applications

- The Interface Between Human and Data Networks



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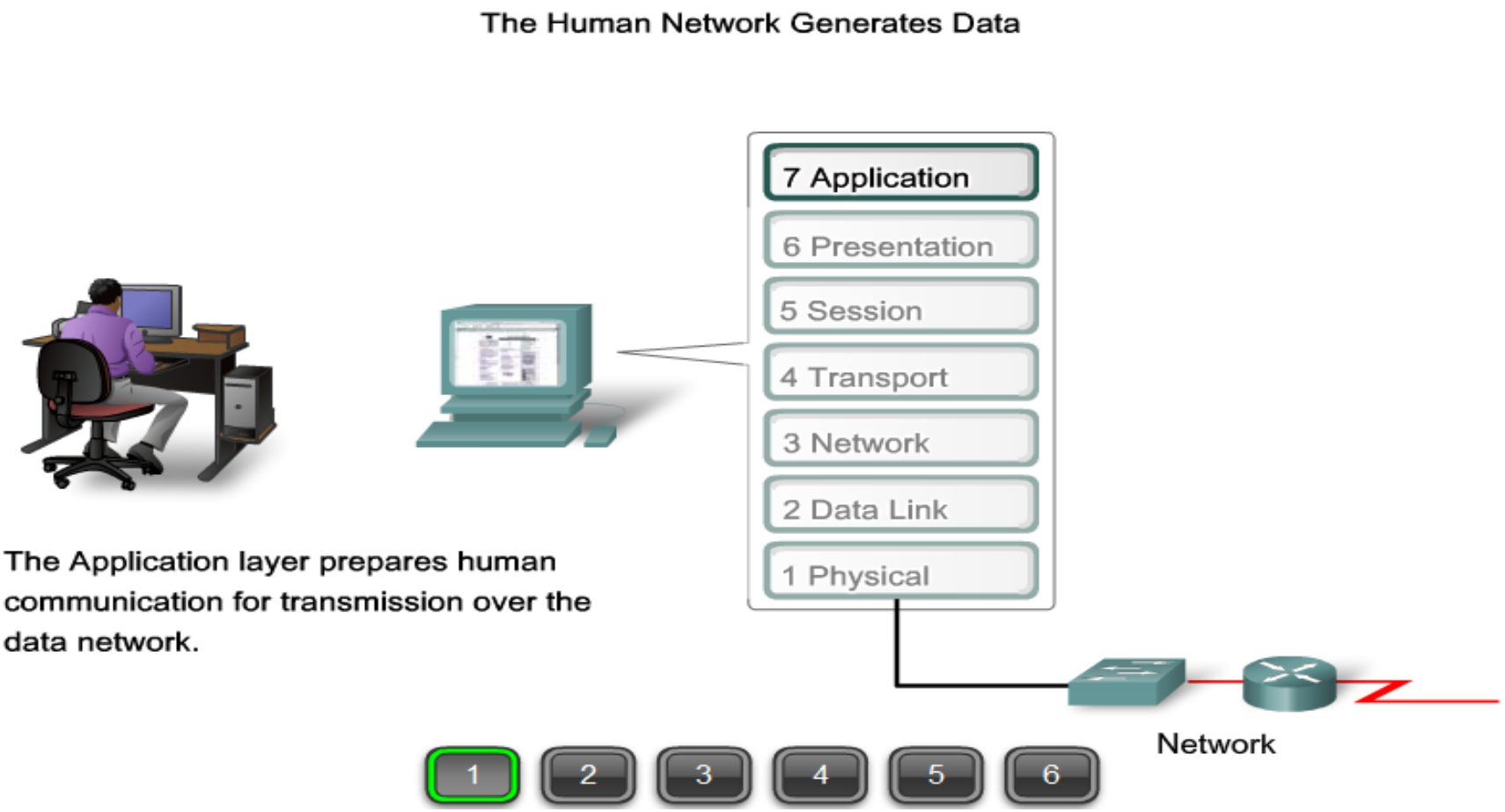
Applications



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Applications

The Human Network Generates Data

People create the communication.

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

Network

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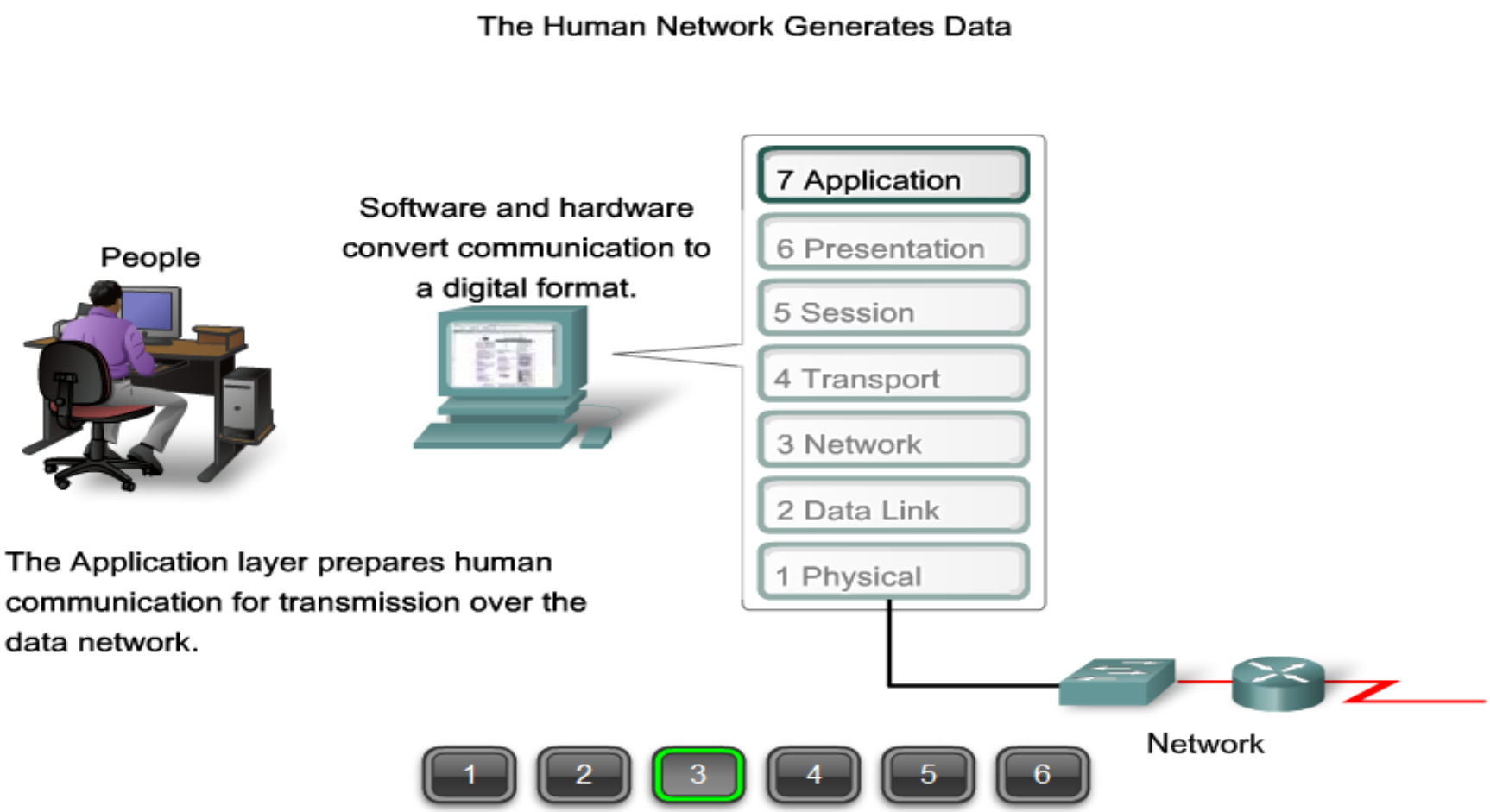
Applications



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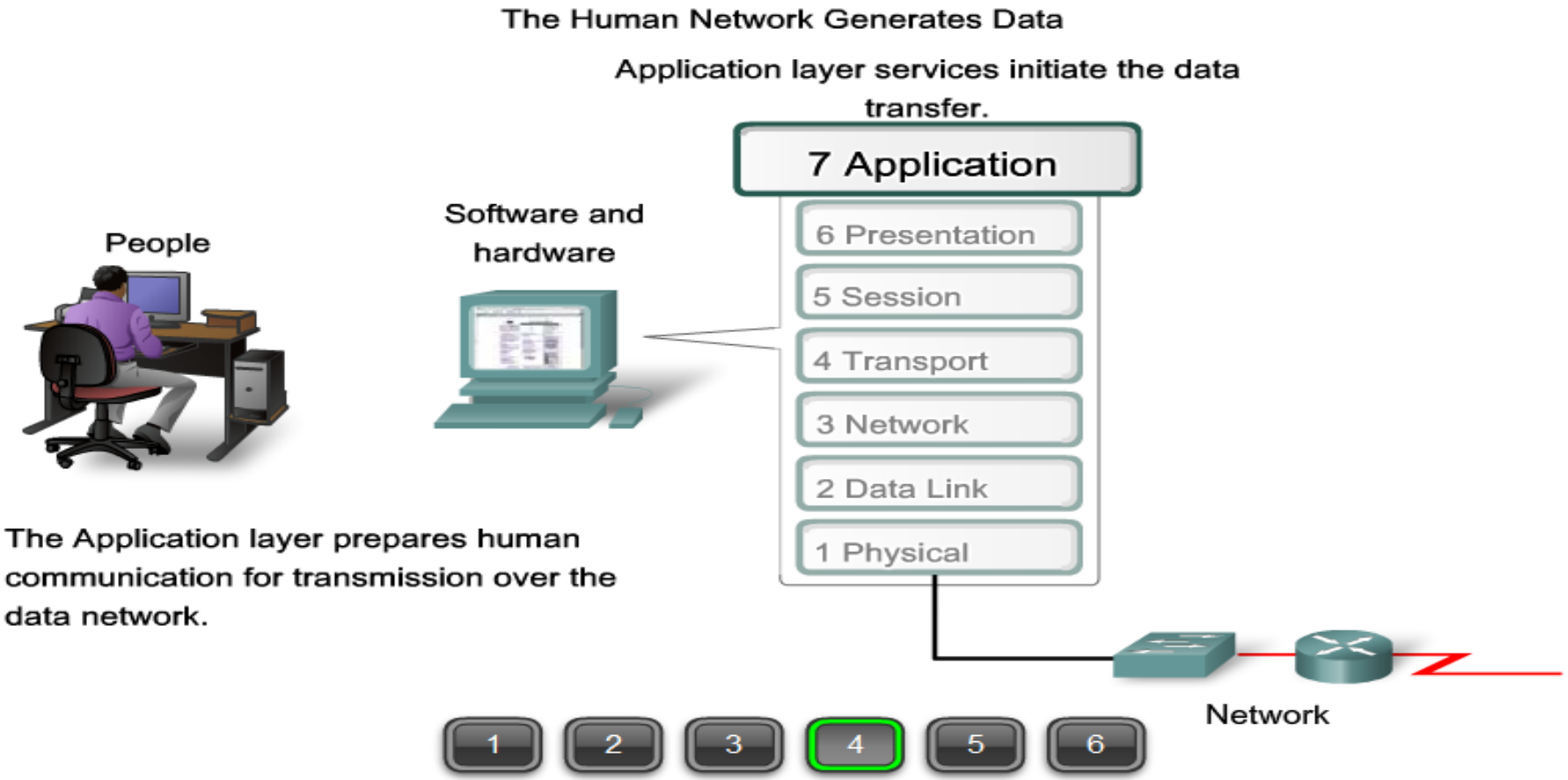
Applications



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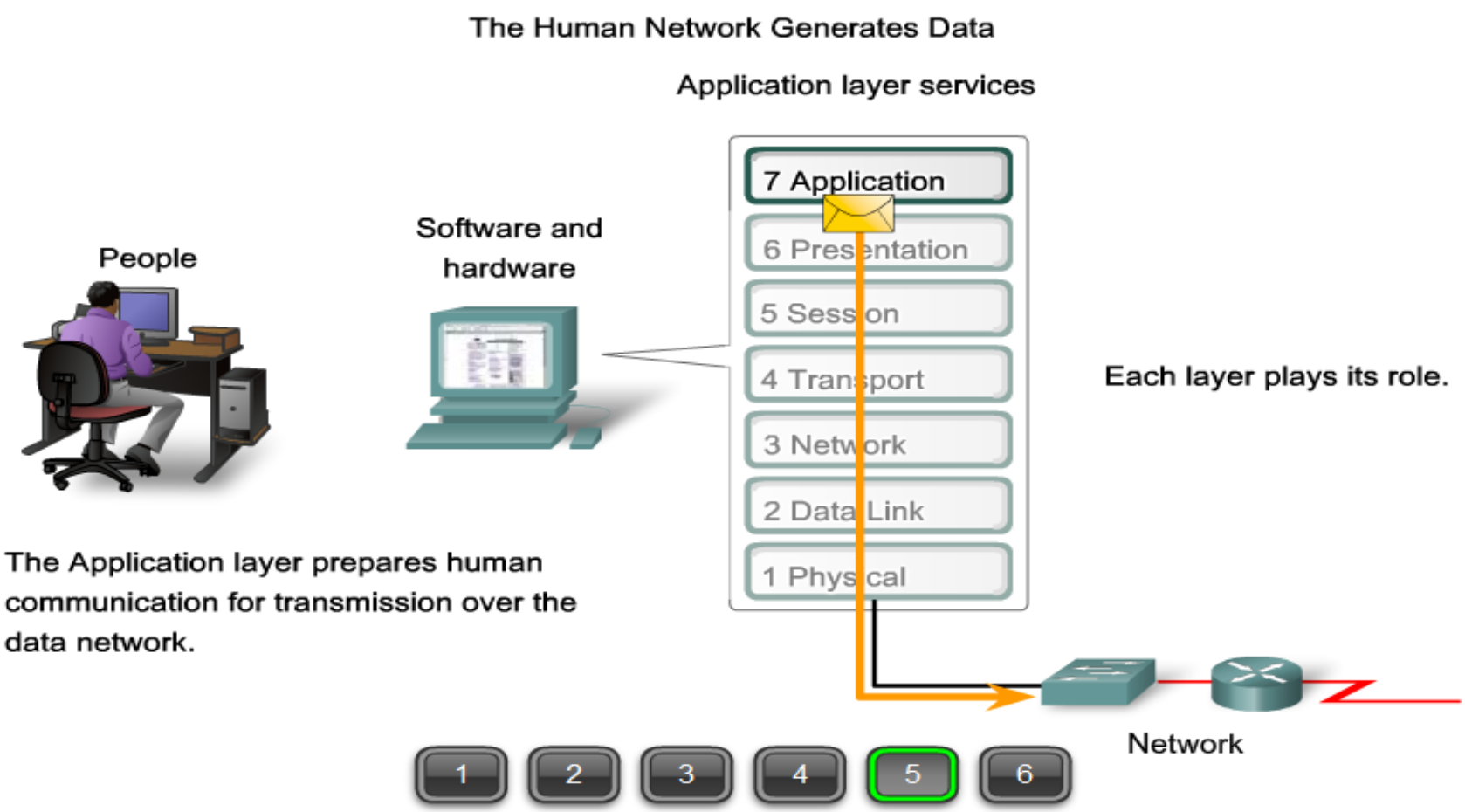
Applications



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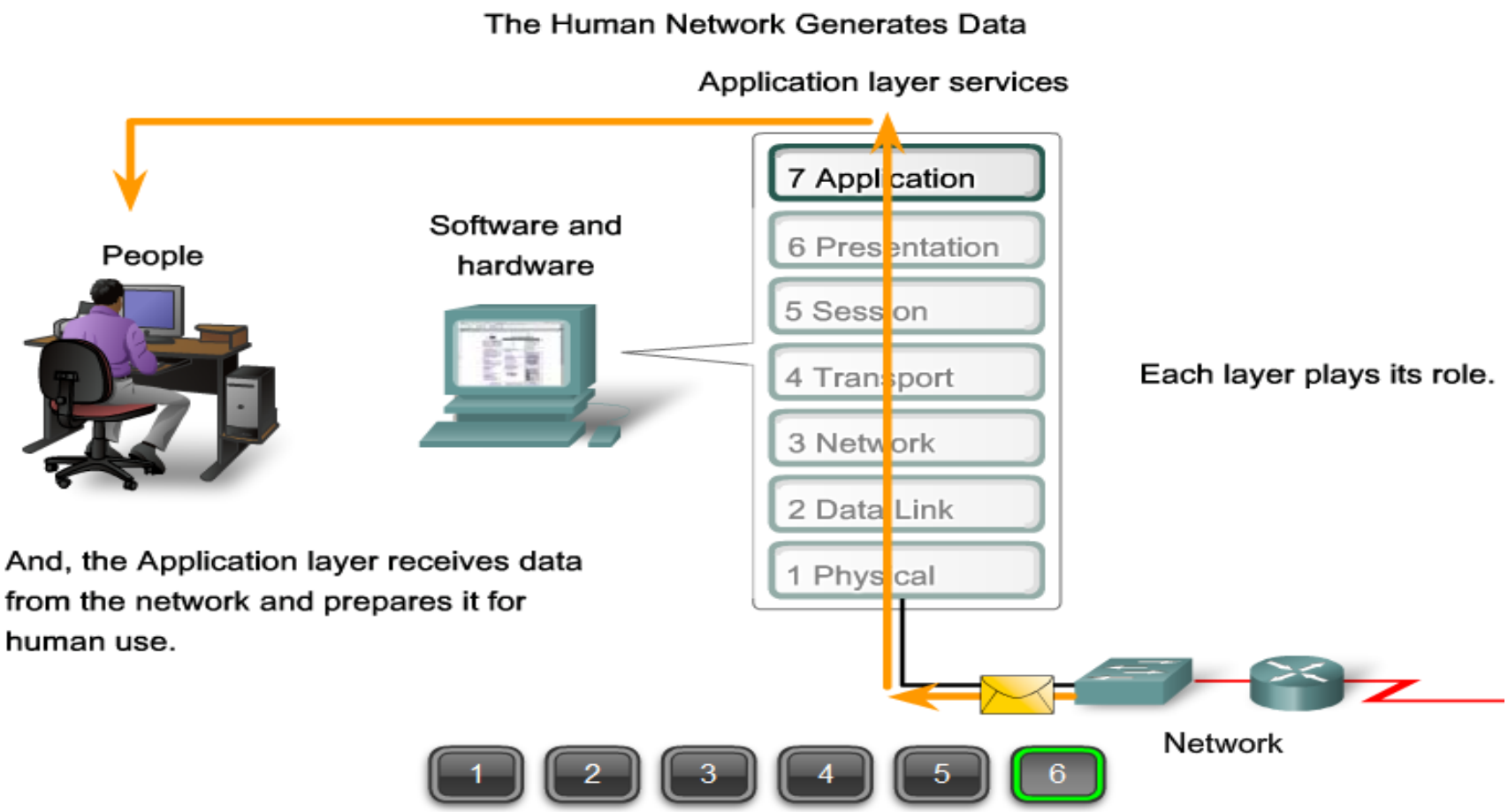
Applications



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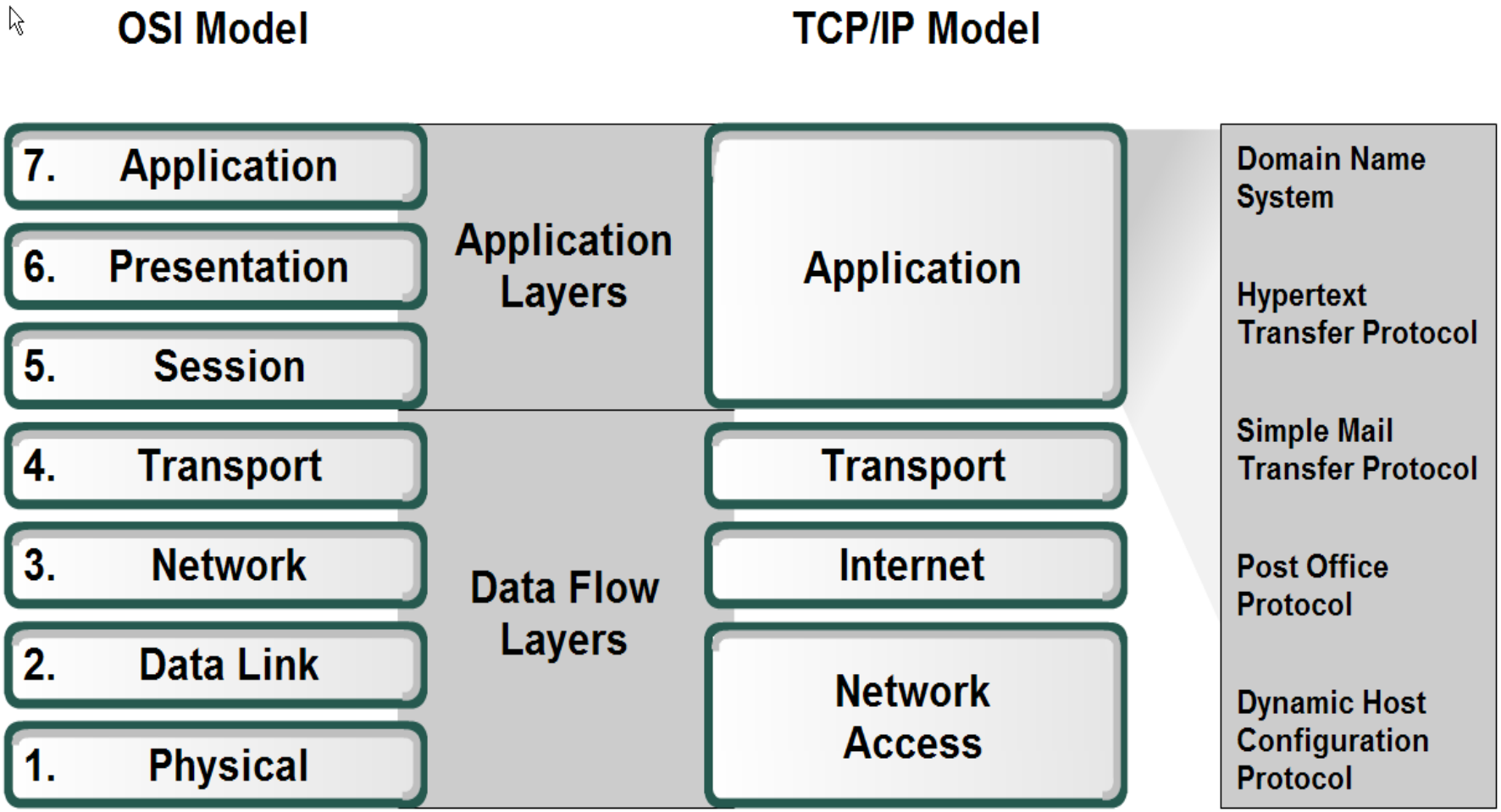
Applications



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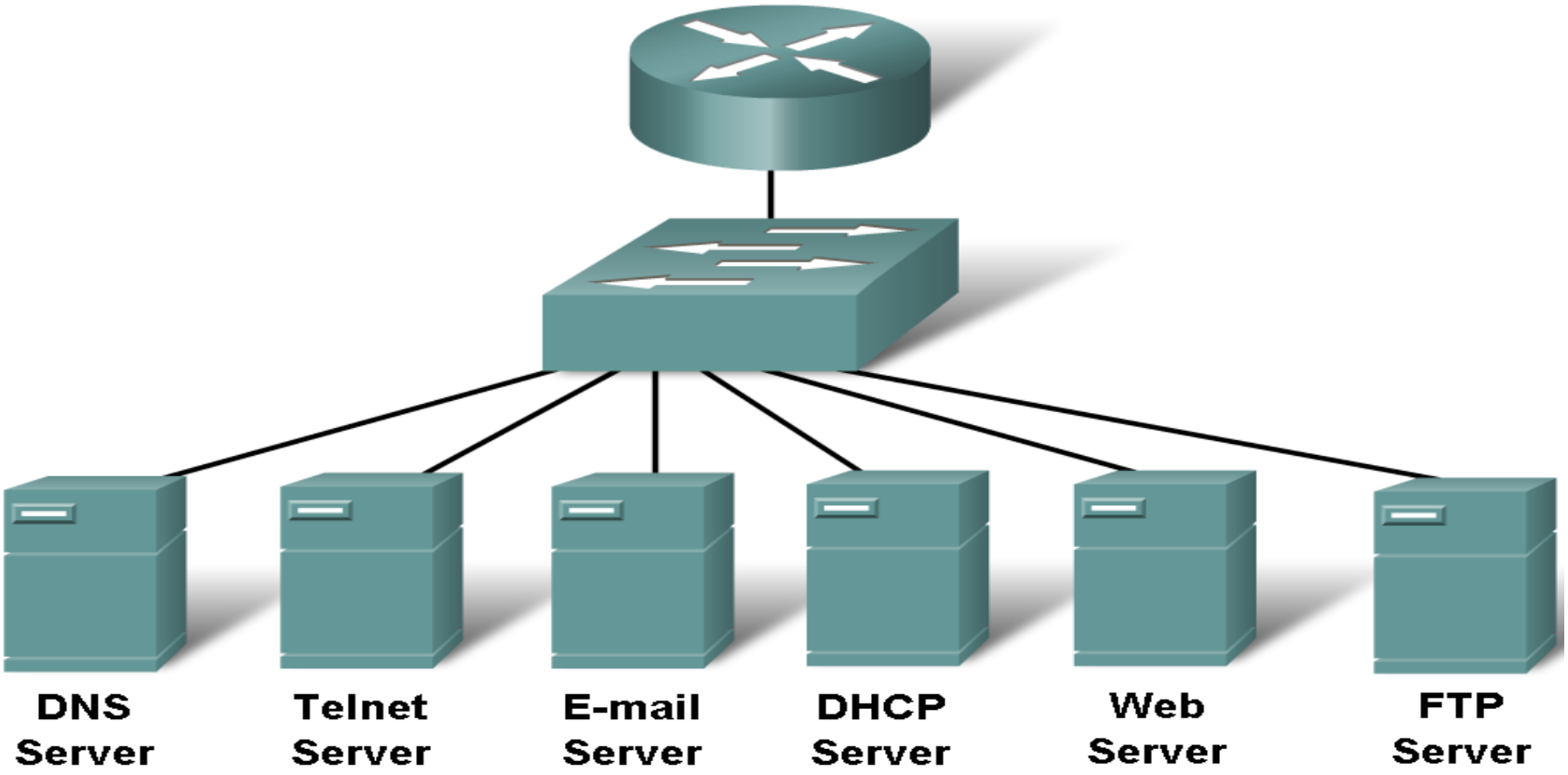
Server Farm



Server Farm

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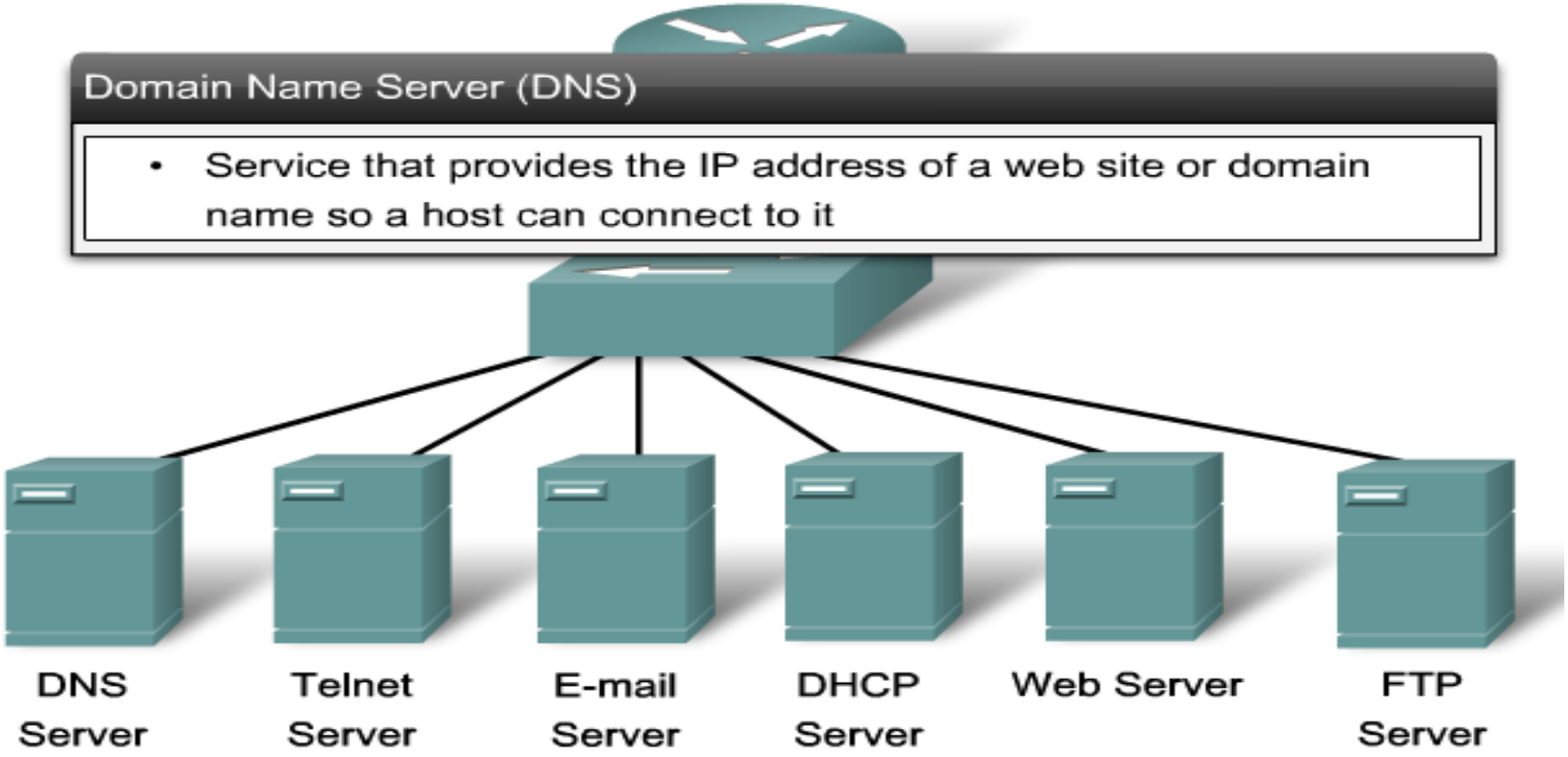
Server Farm



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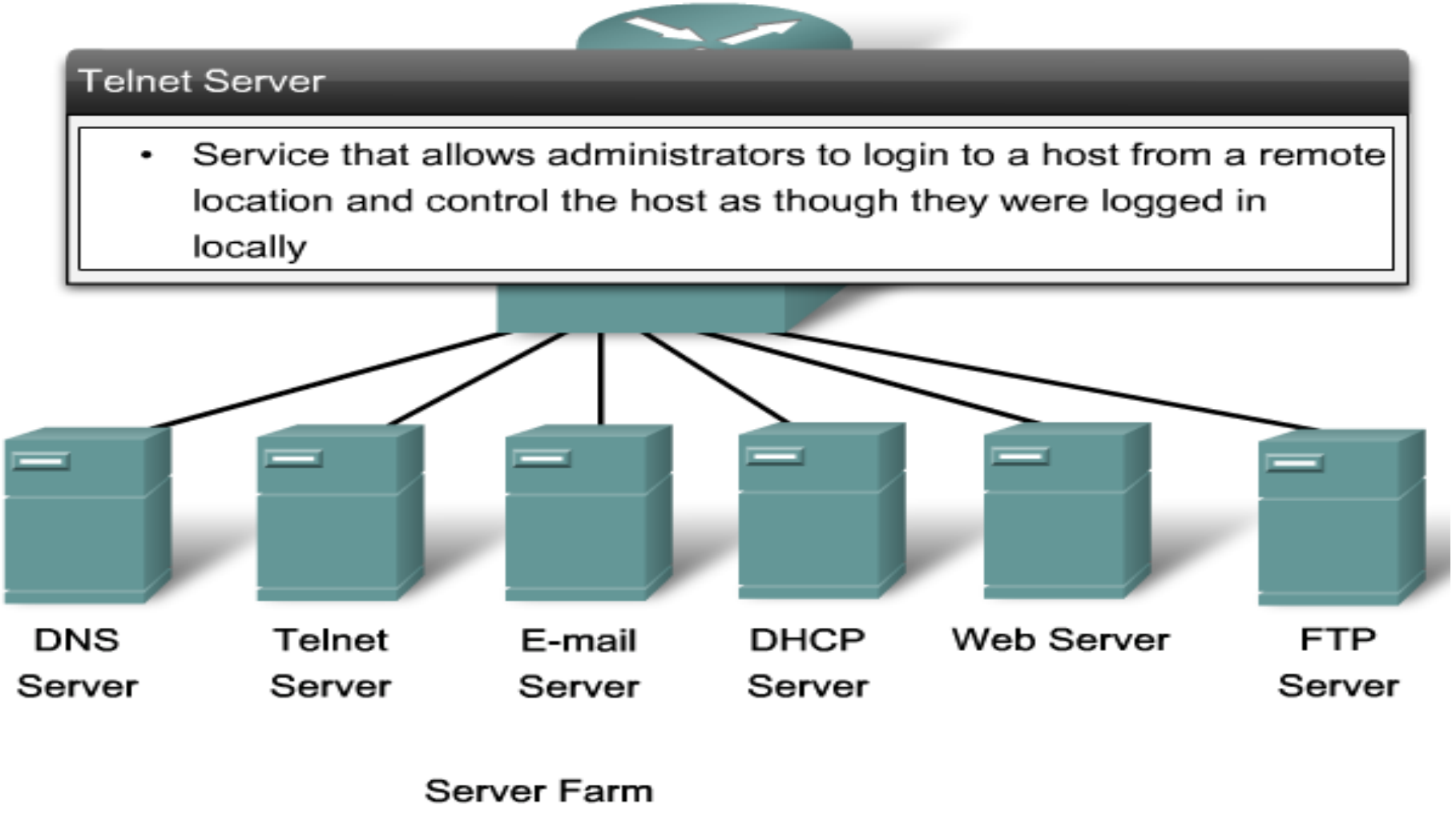
Server Farm



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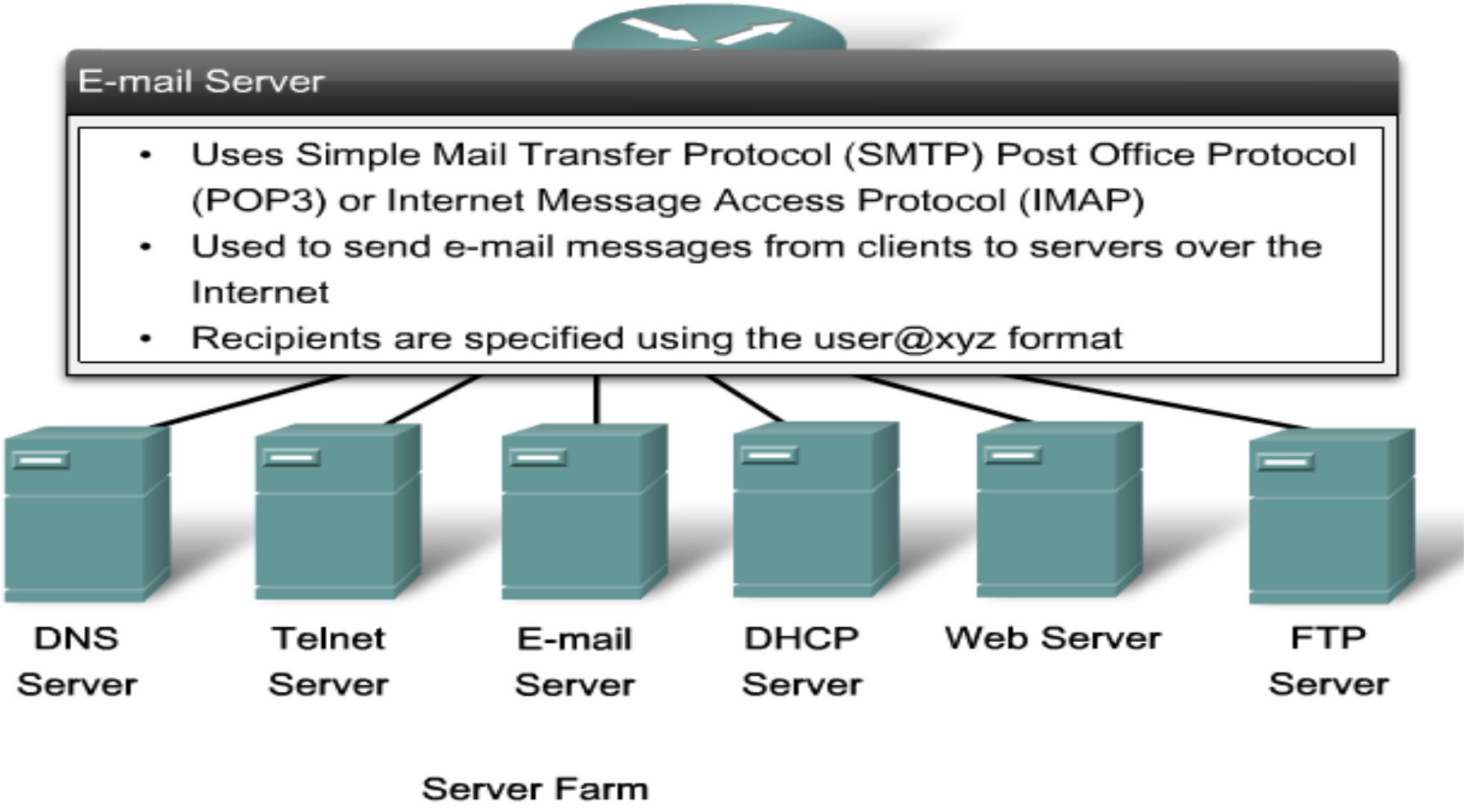
Server Farm



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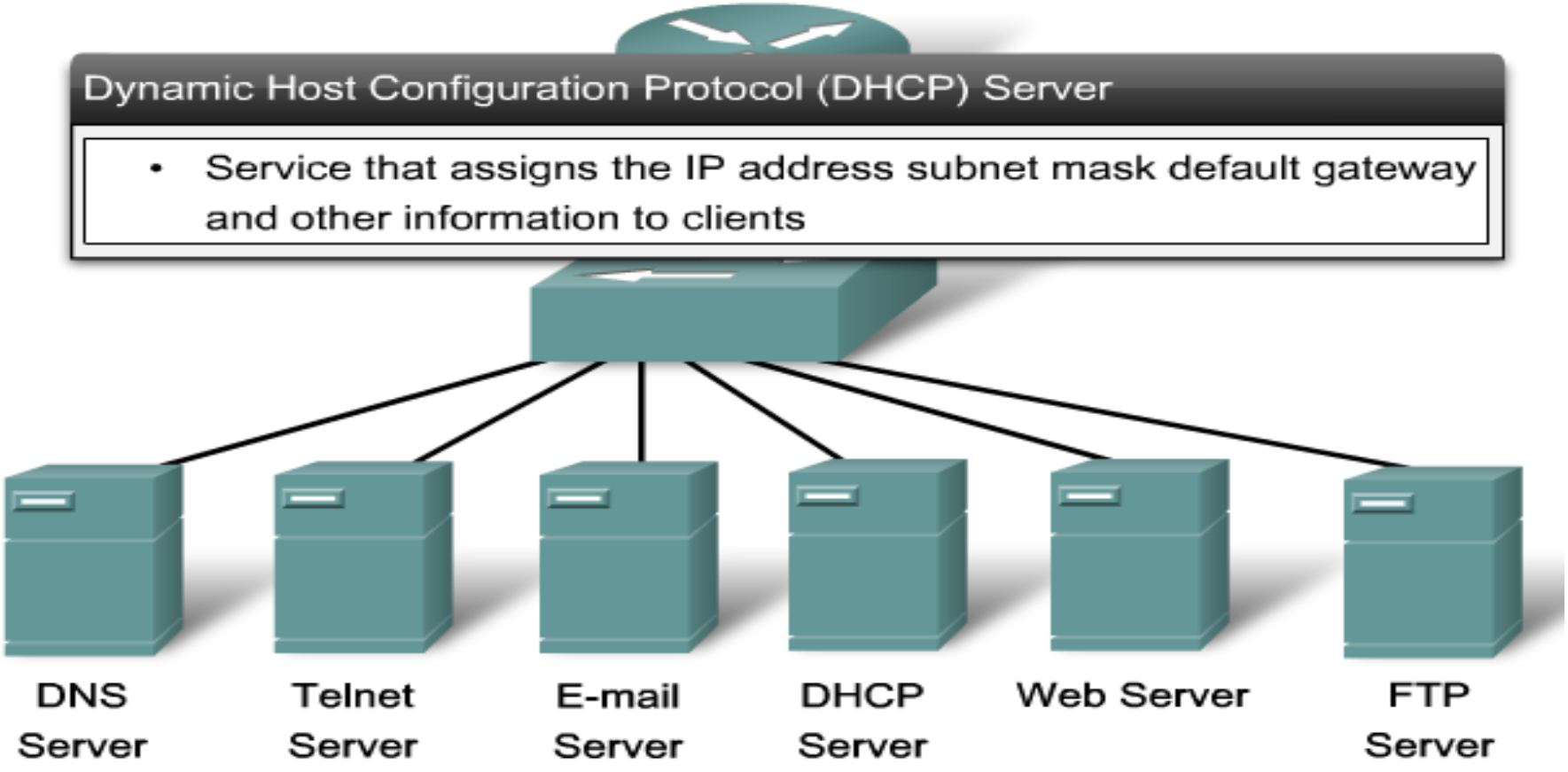
Server Farm



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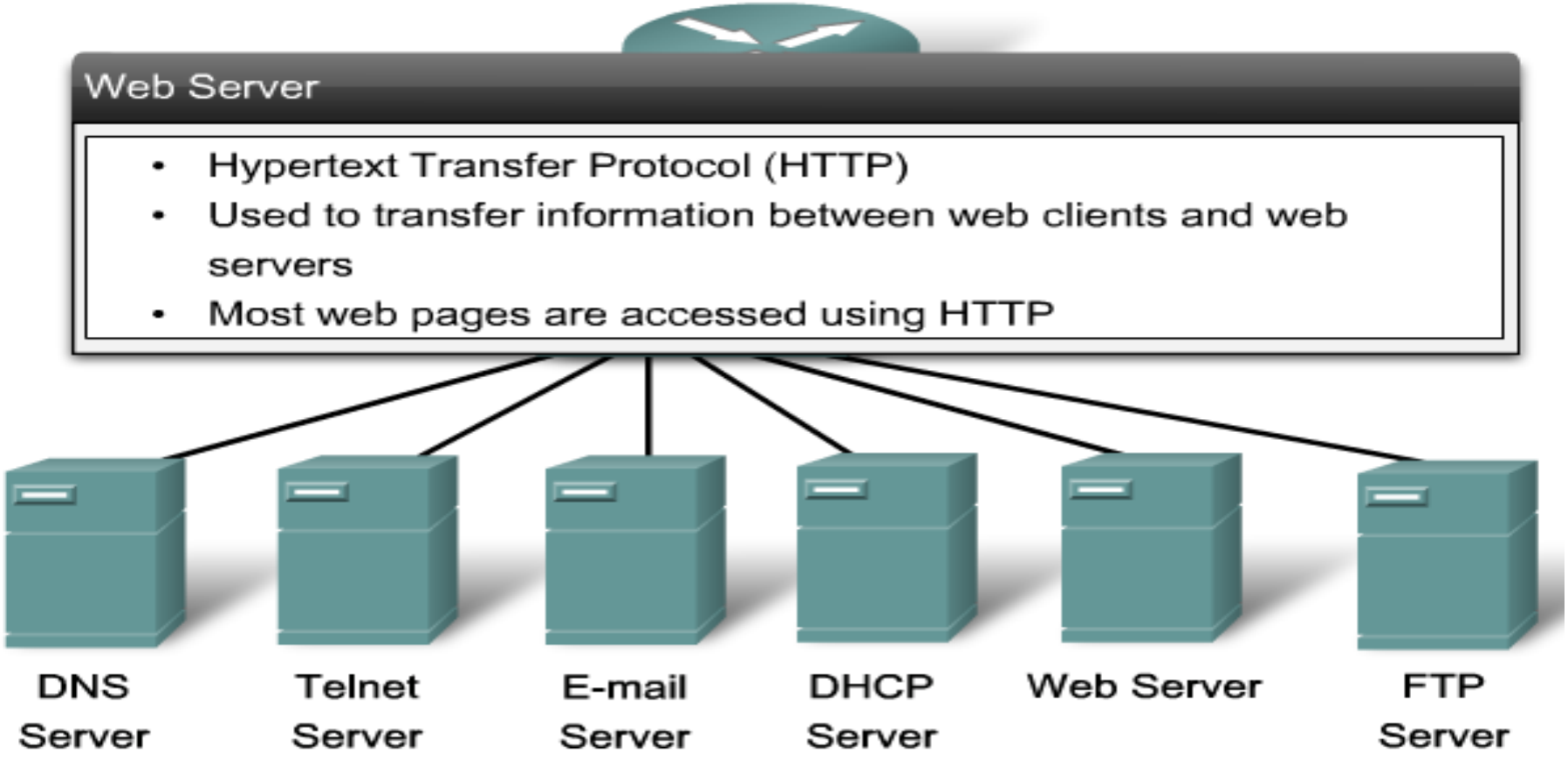
Server Farm



Server Farm

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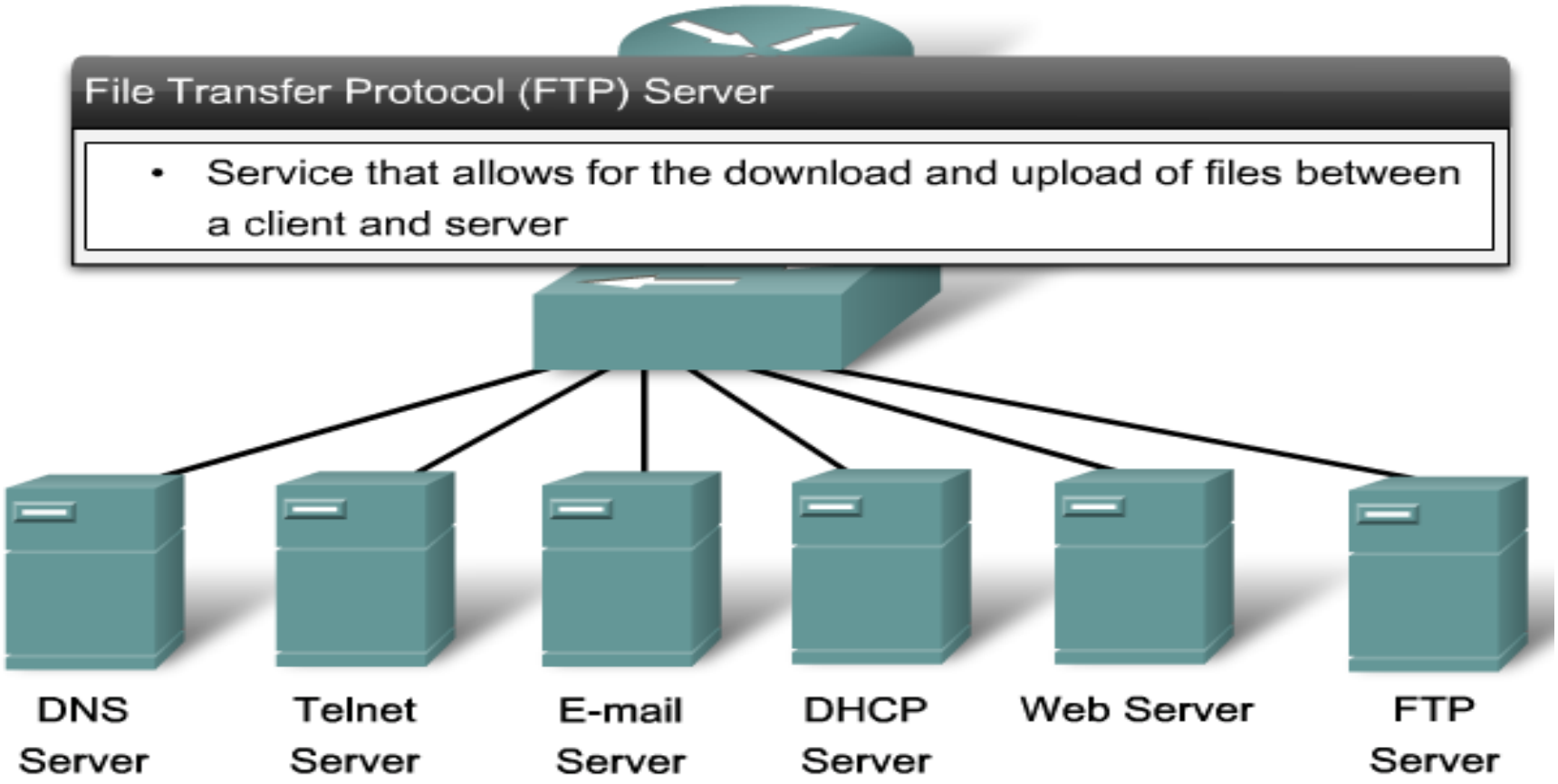
Server Farm



Server Farm

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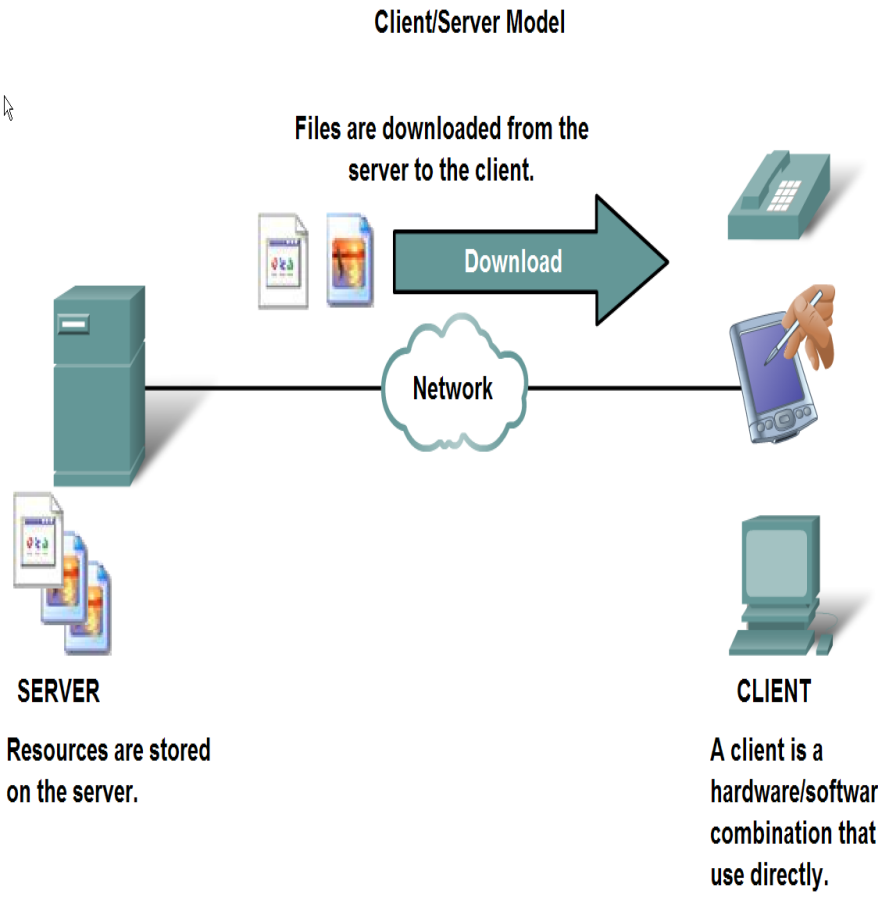
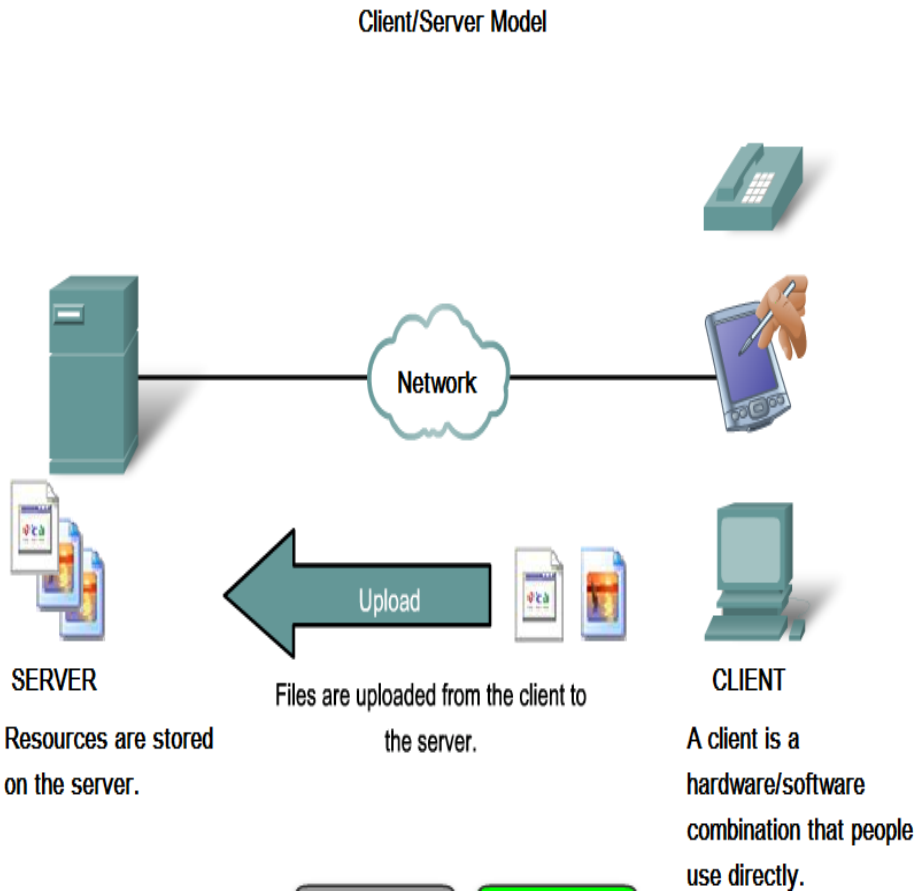
Client/Server Model





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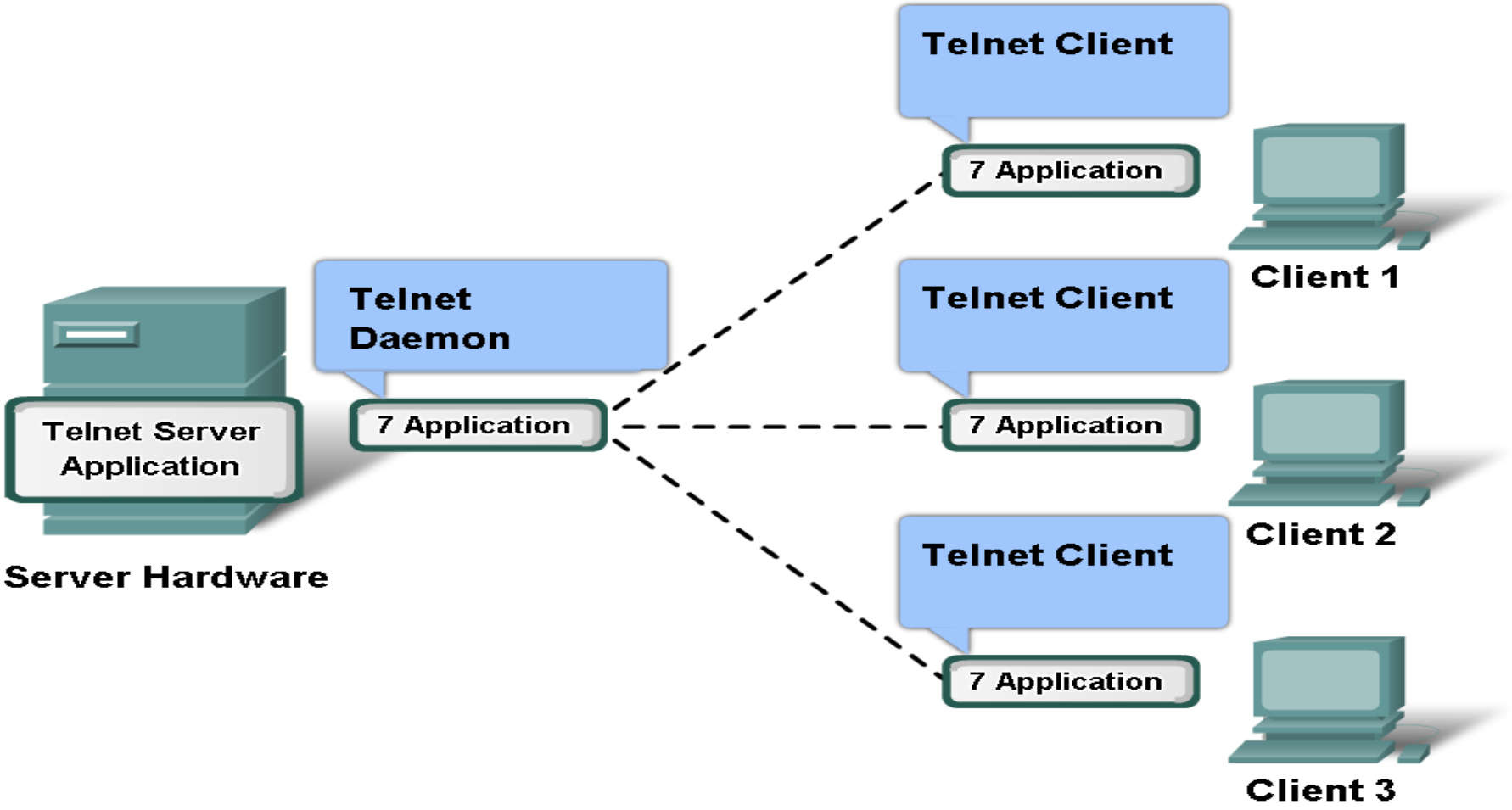
Client/Server Model

Server processes may support multiple clients.



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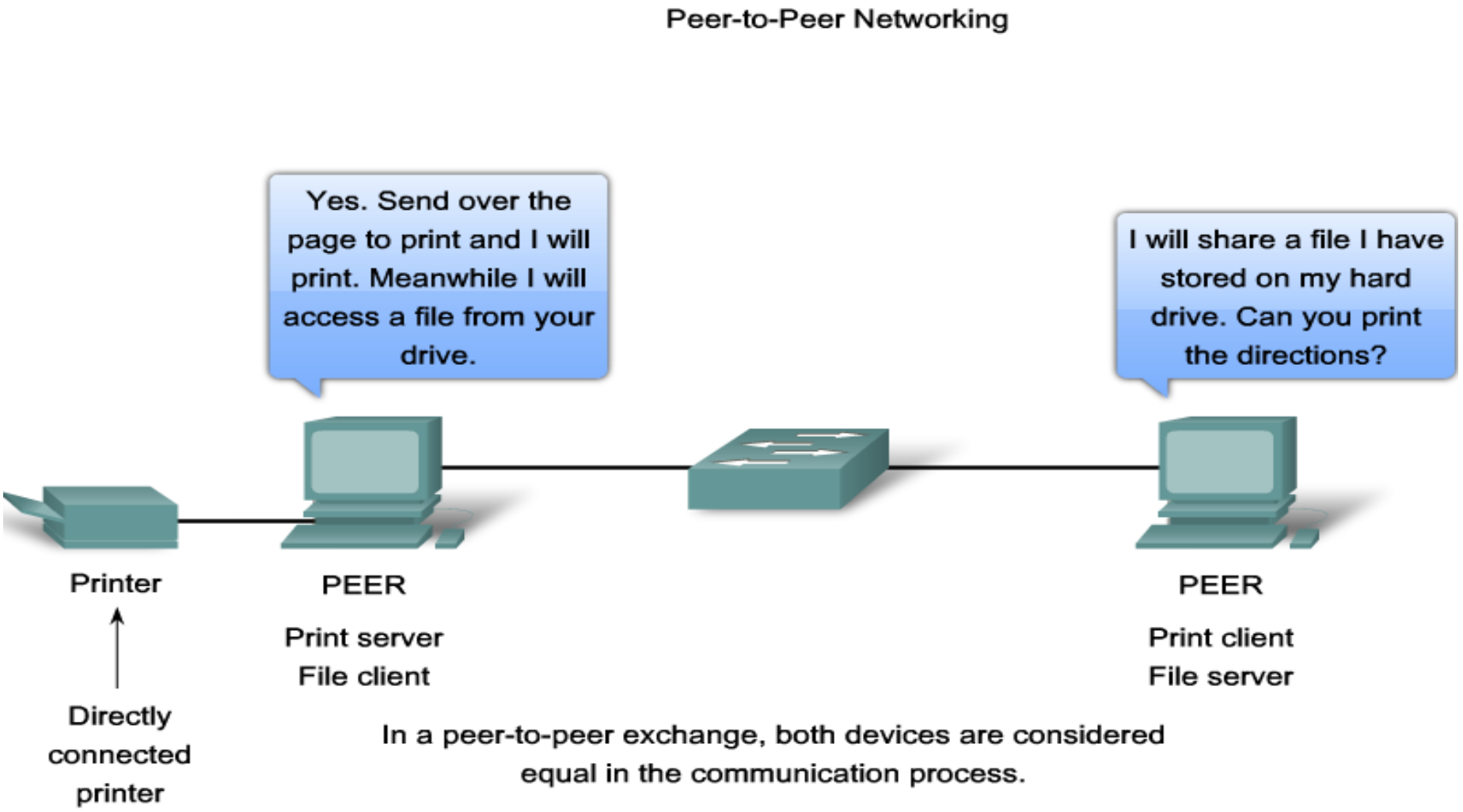
Peer to Peer Applications



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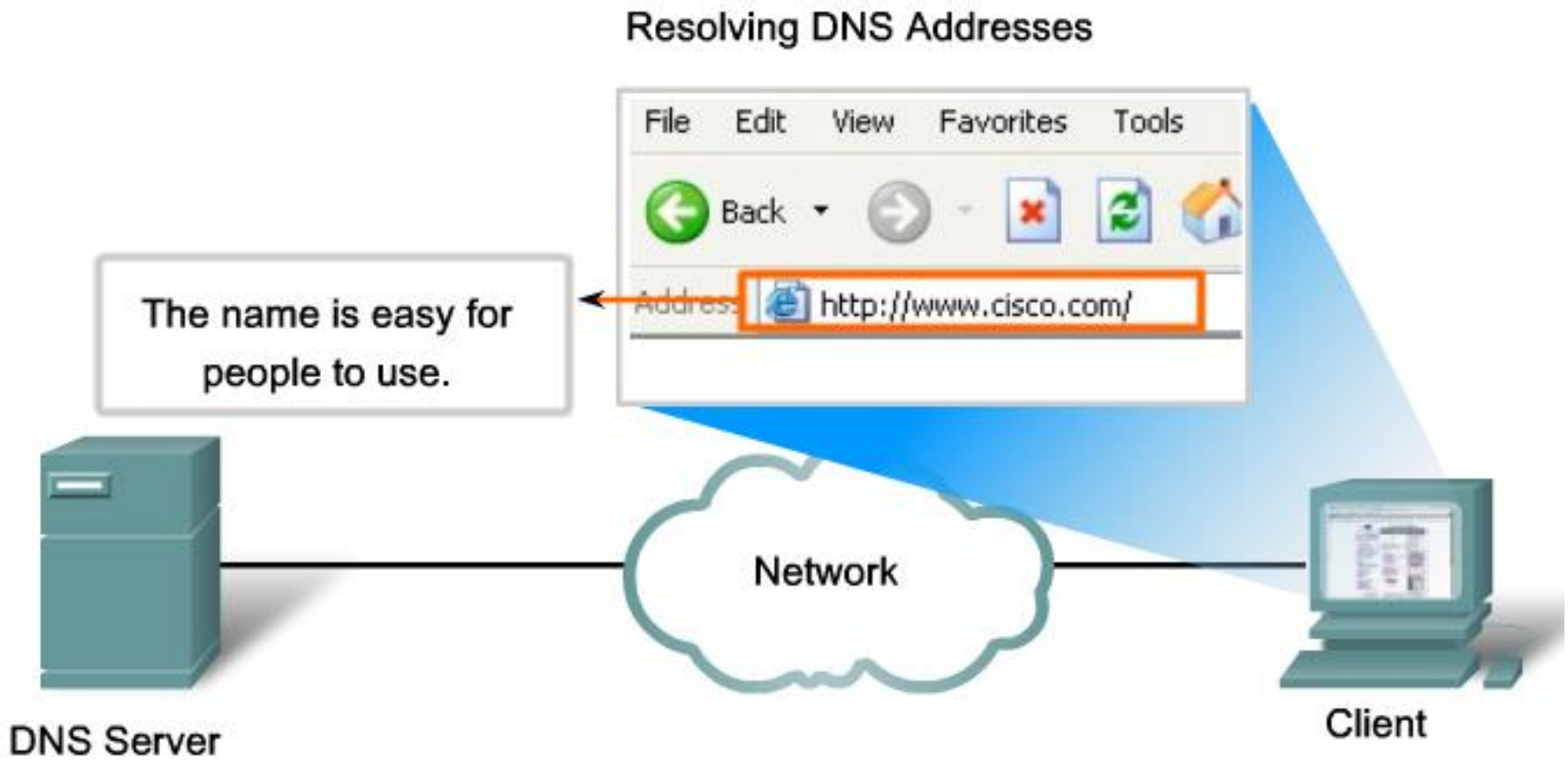
Domain Name Server DNS



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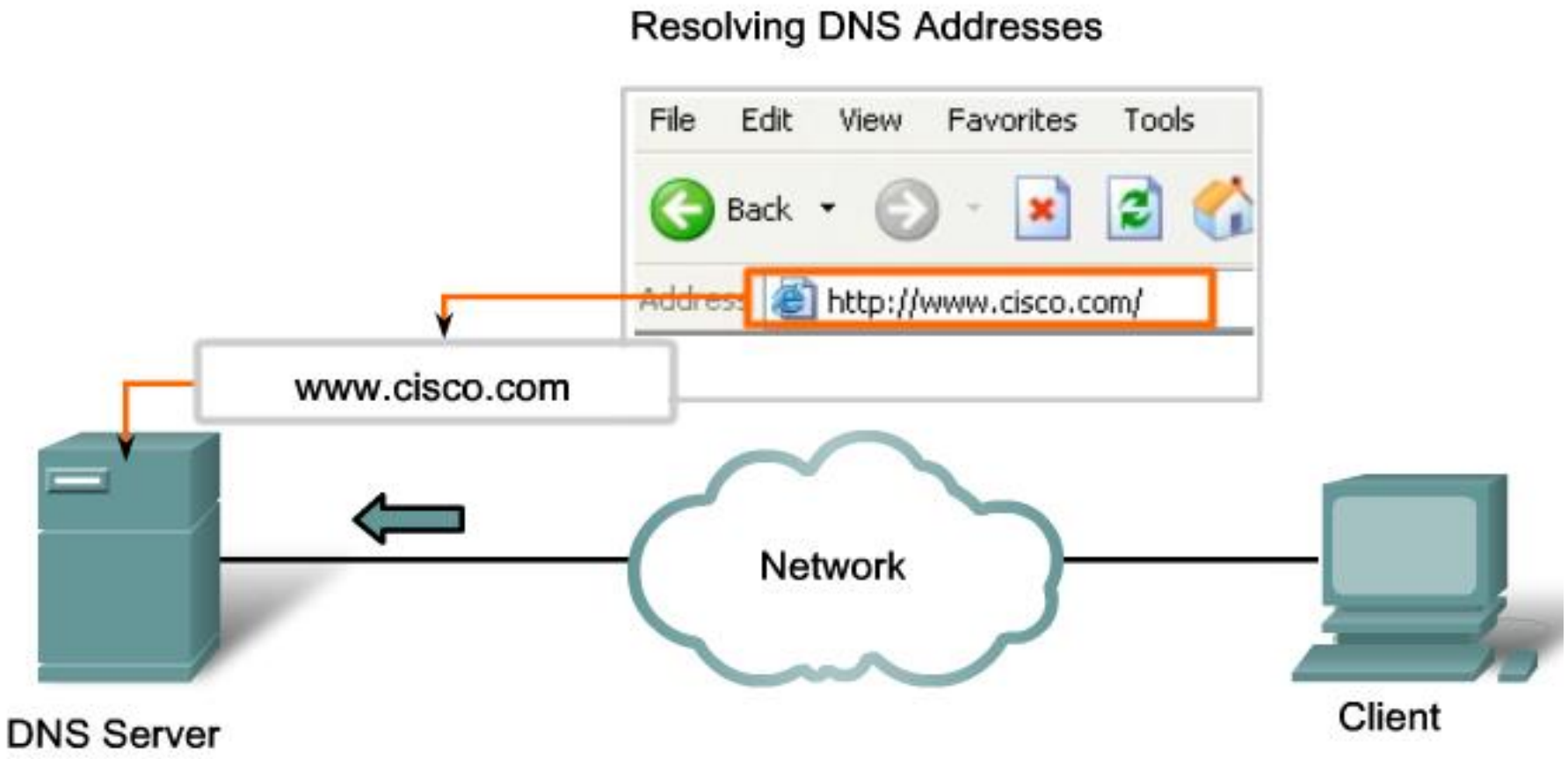
Domain Name Server DNS



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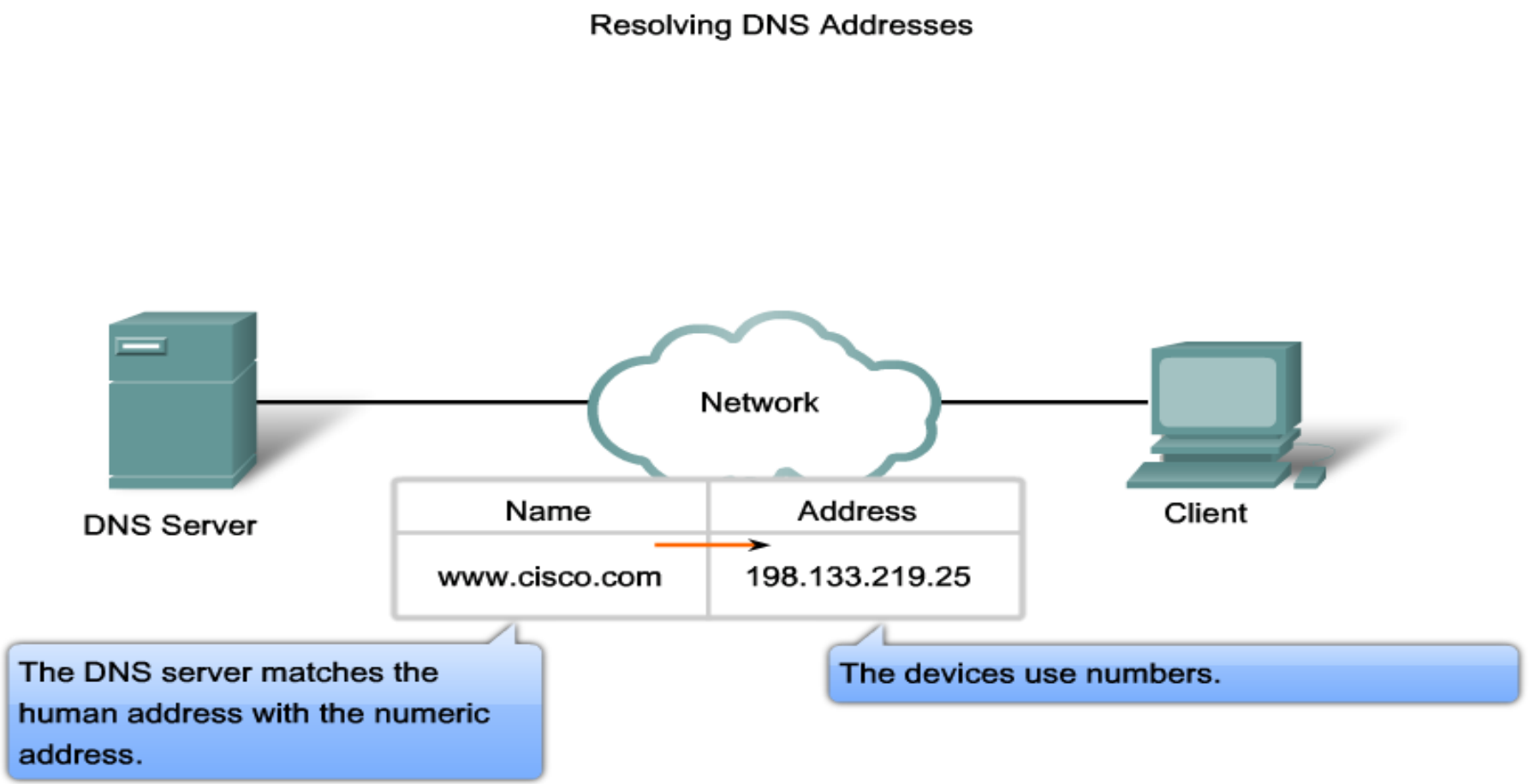
Domain Name Server DNS



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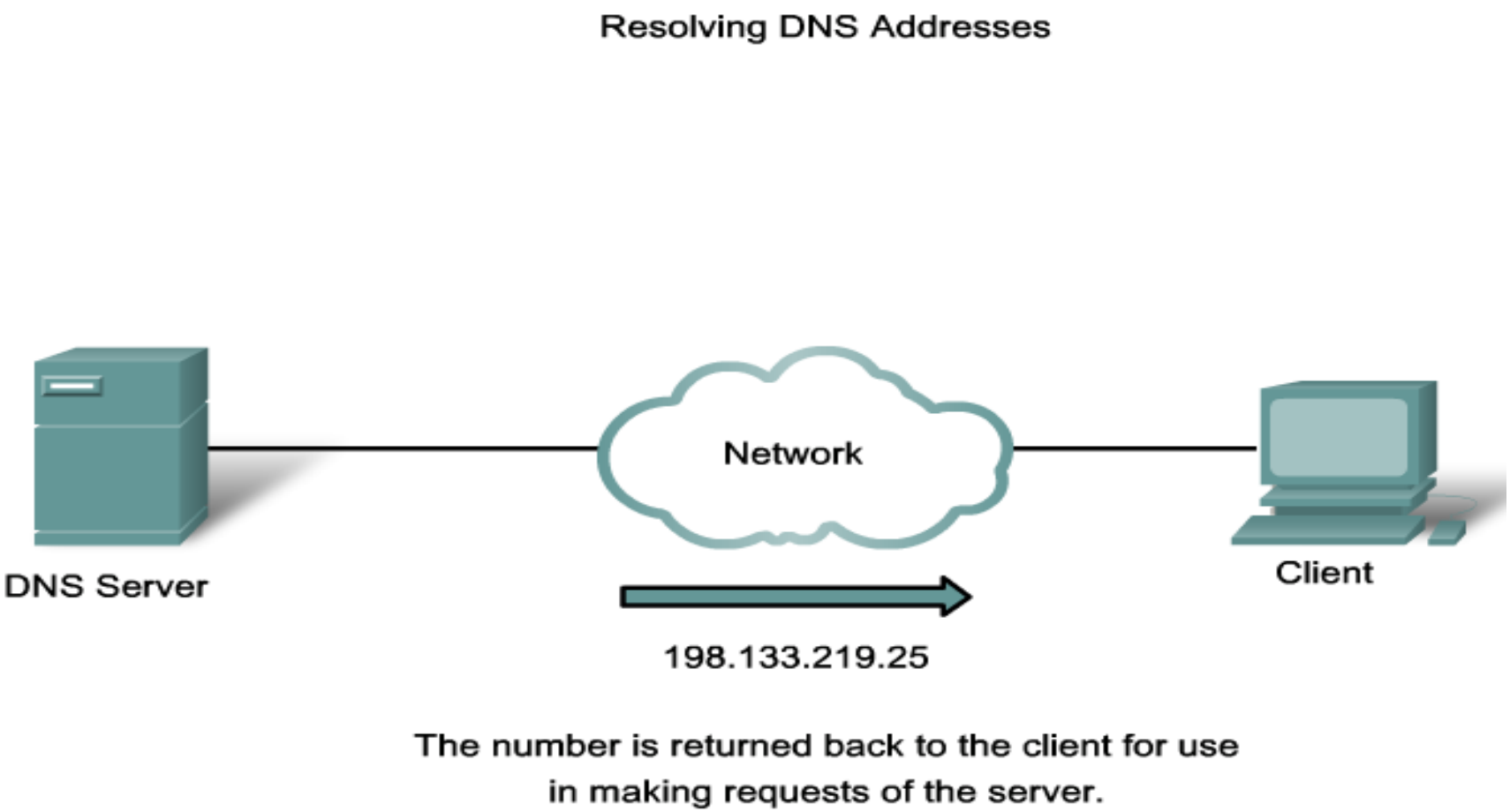
Domain Name Server DNS



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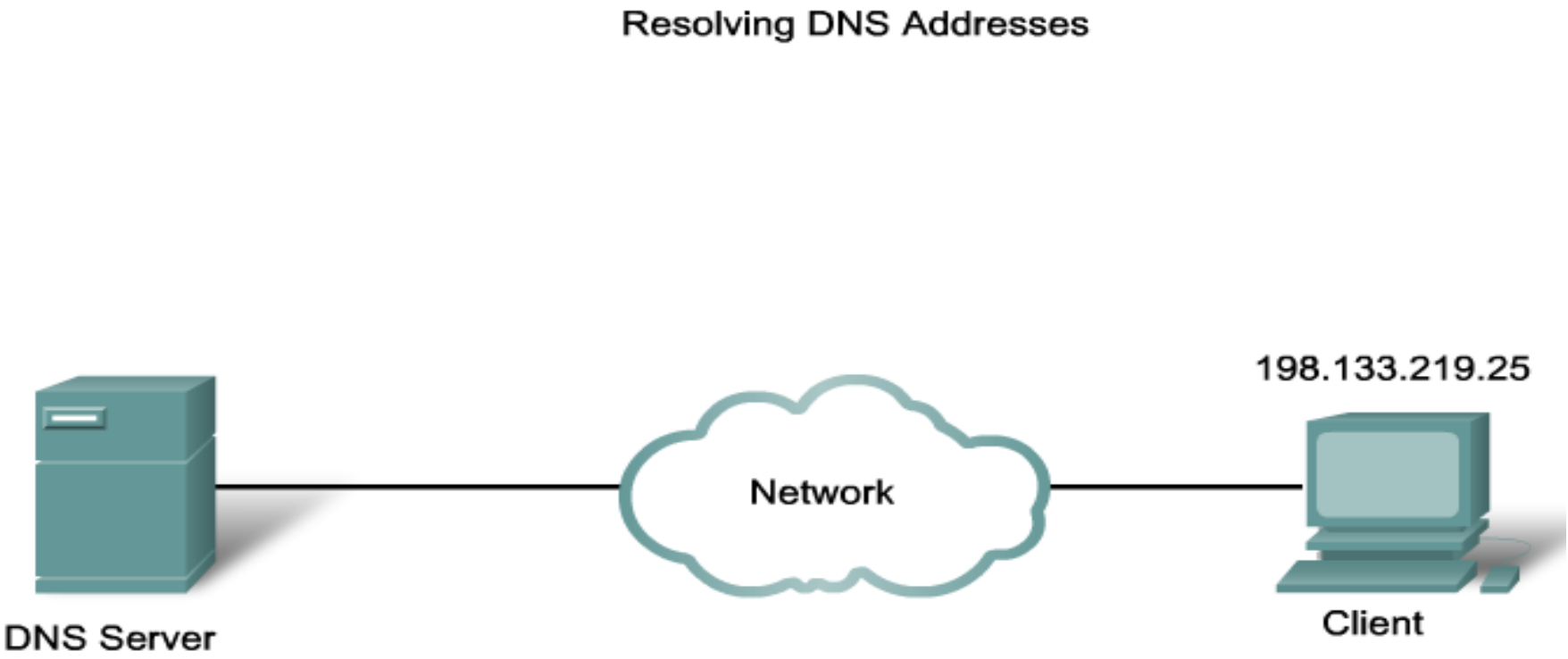
Domain Name Server DNS



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

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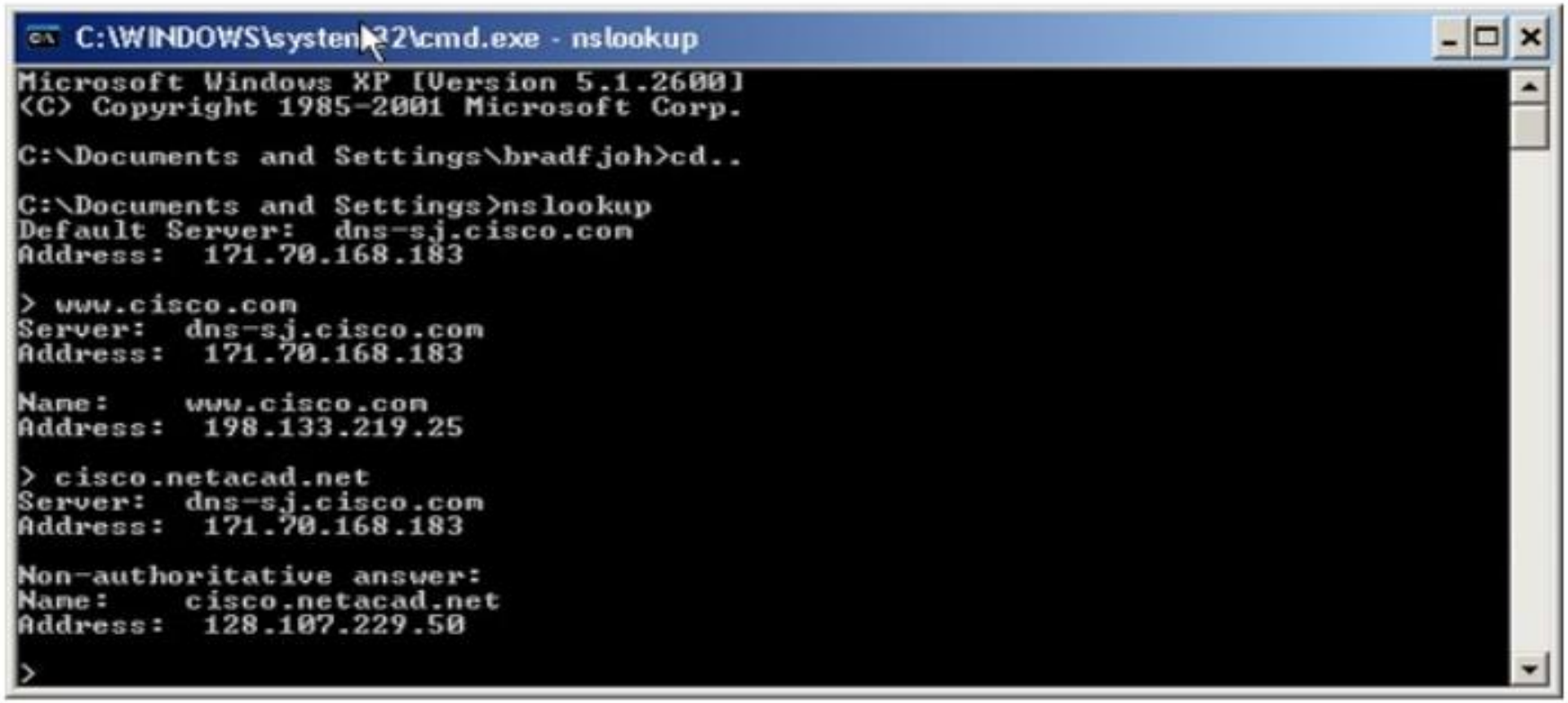
Domain Name Server DNS

Using nslookup



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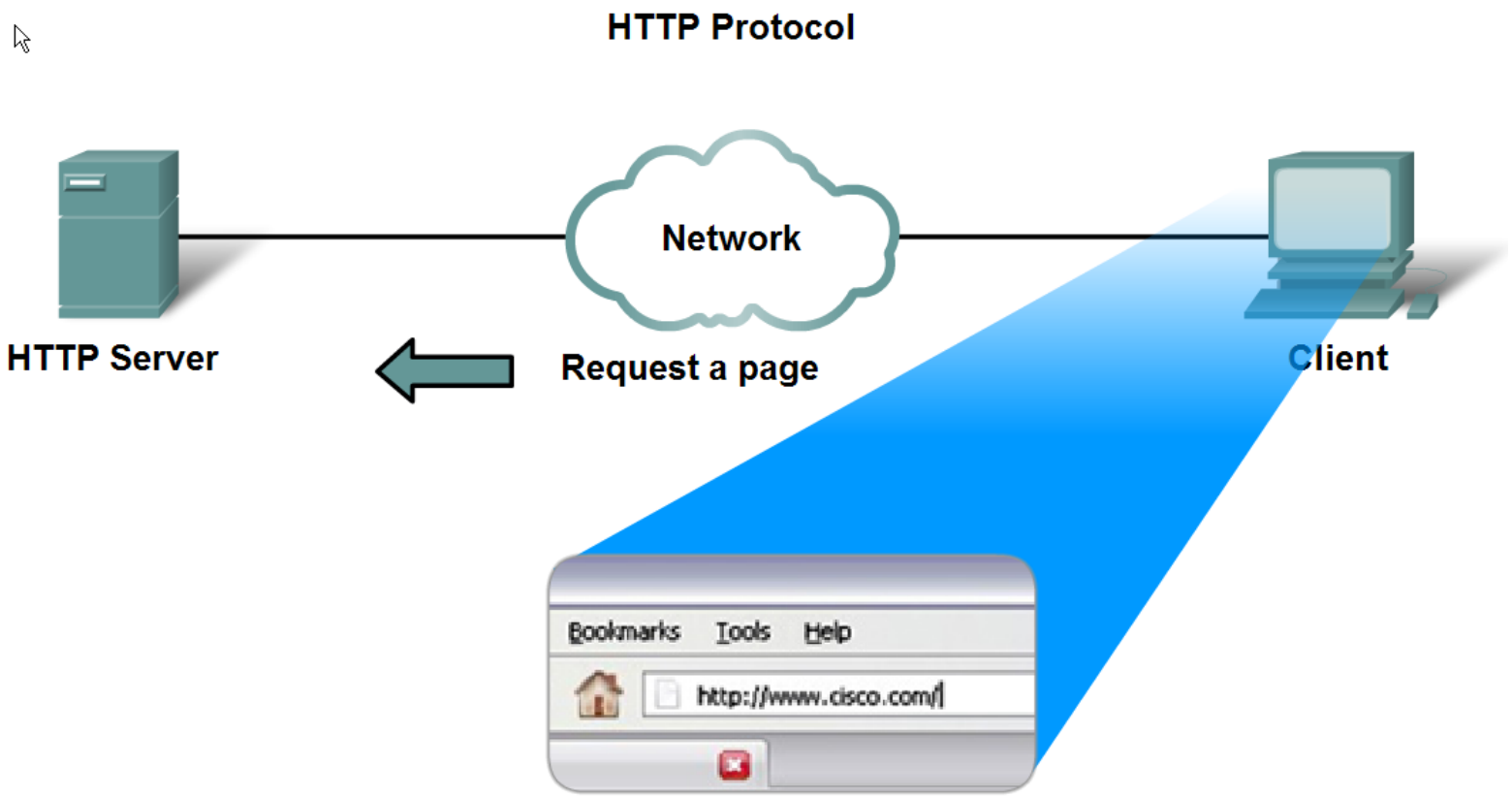
HyperText Transfere Protocol HTTP



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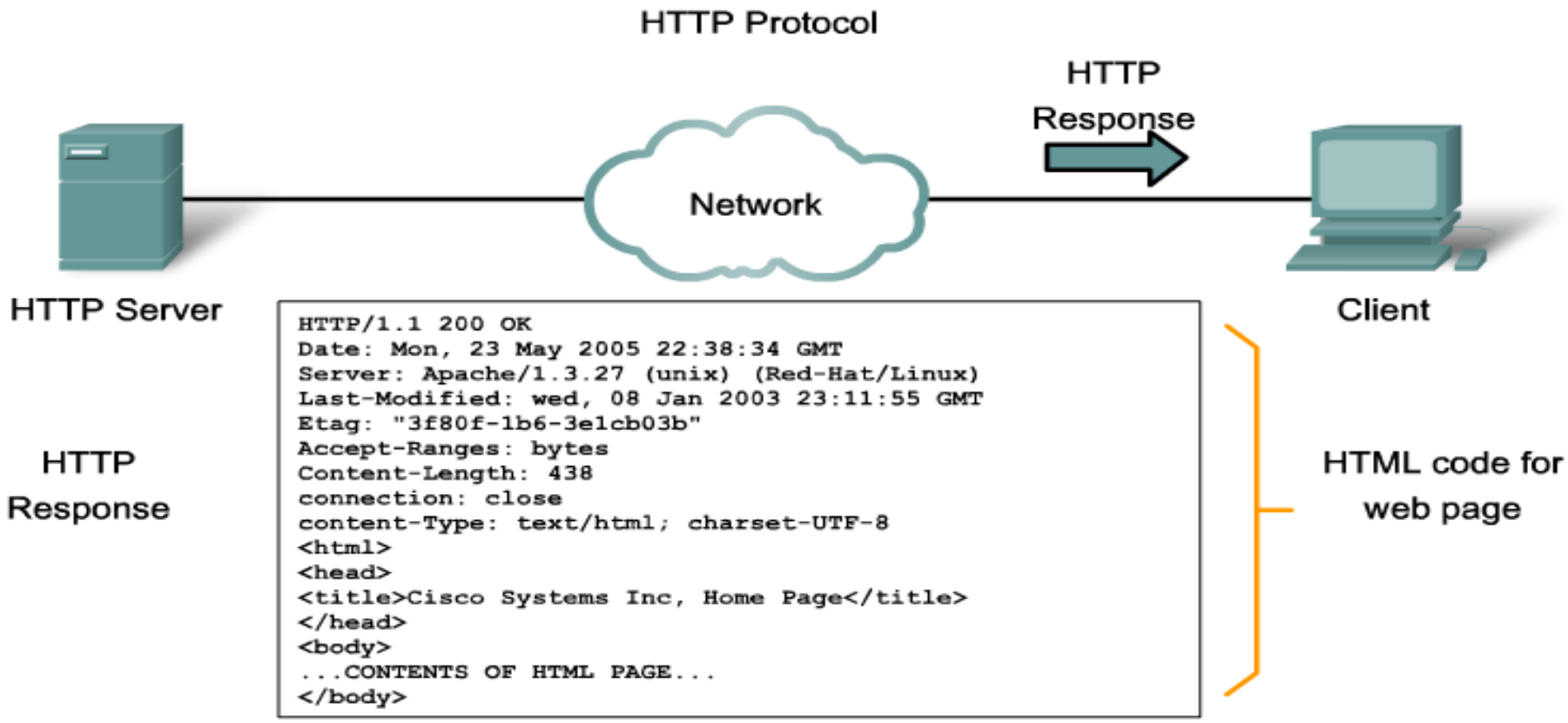
HyperText Transfere Protocol HTTP



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

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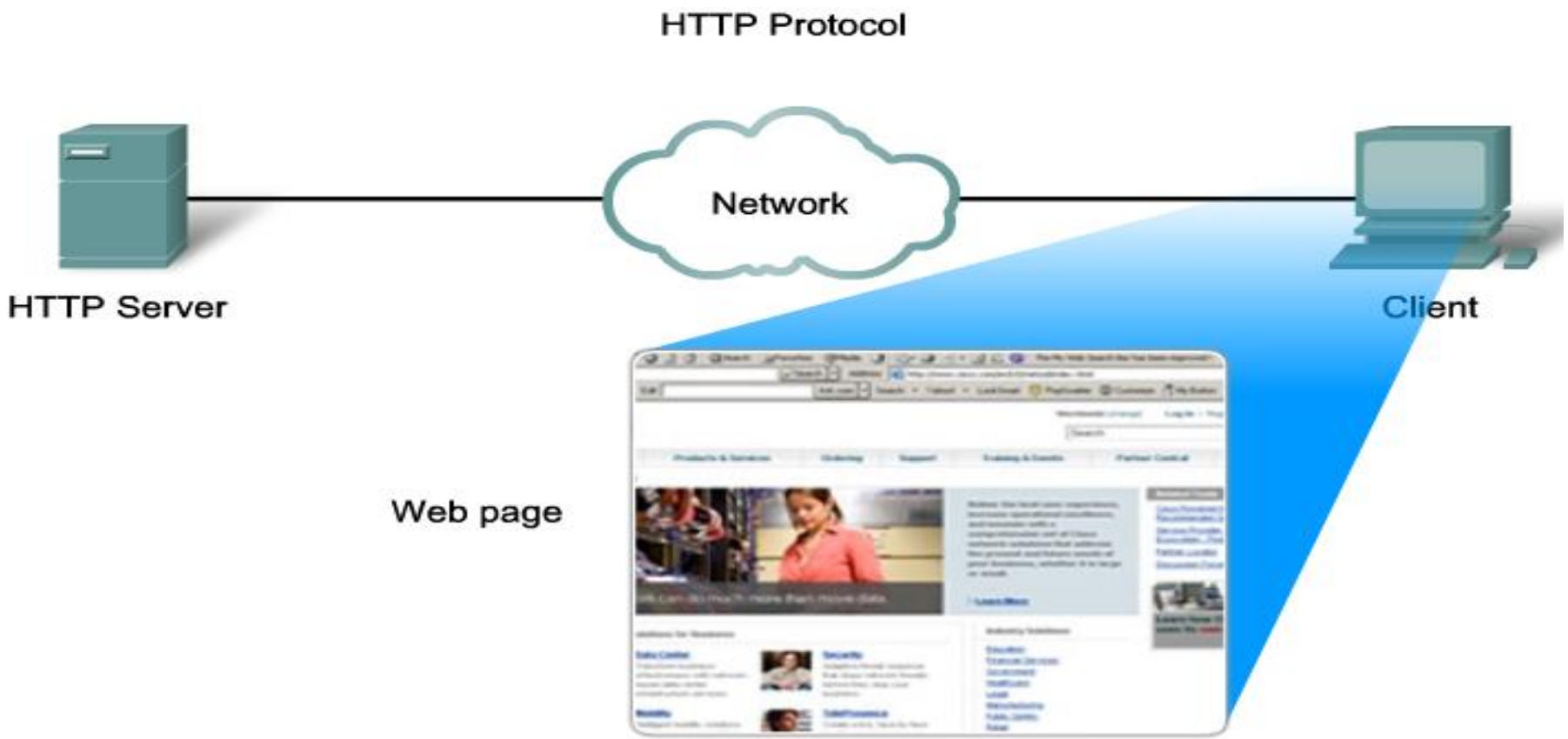
HyperText Transfere Protocol HTTP



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

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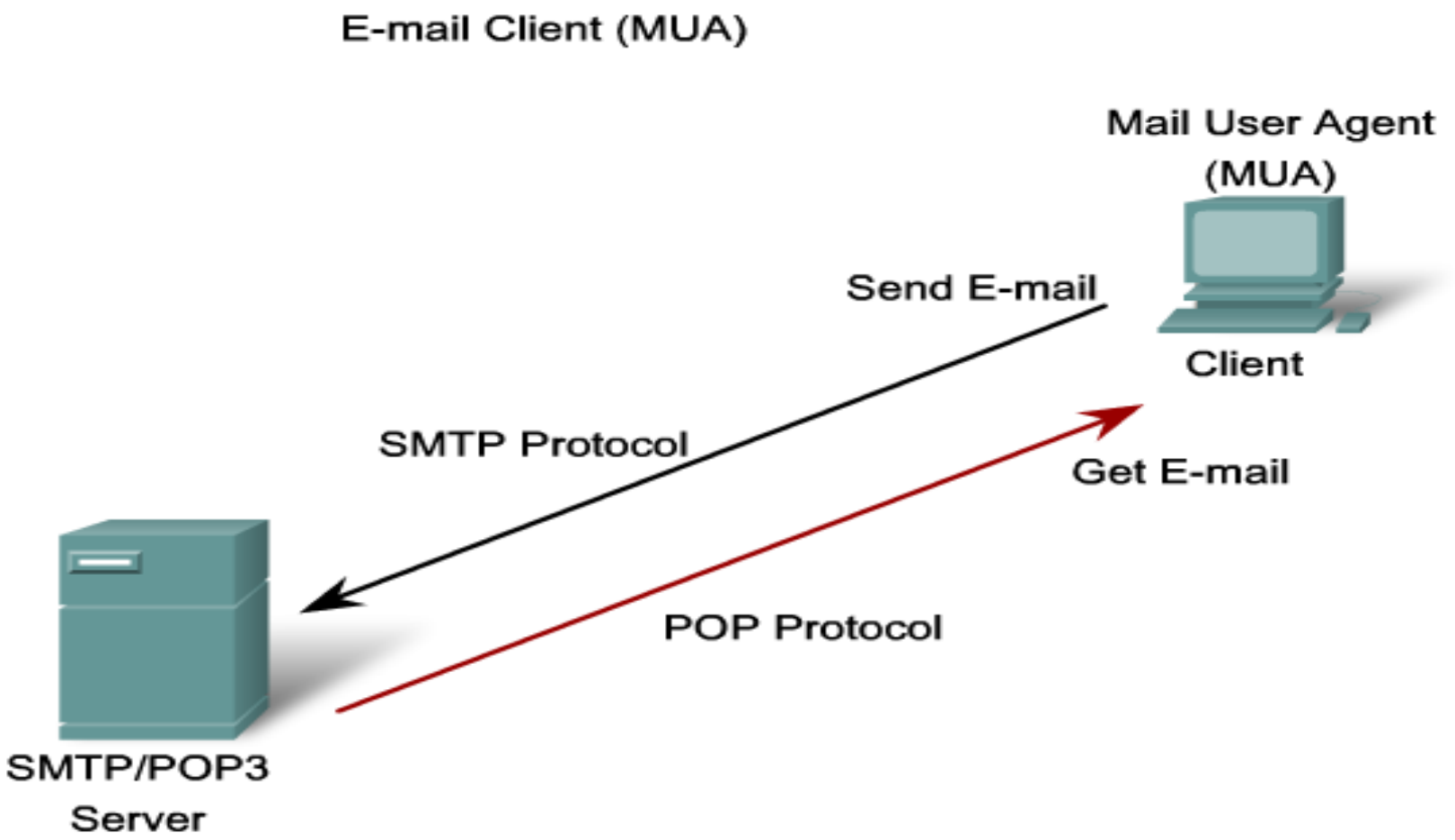
Post Office Protocol POP / Simple Mail Transfer Protocol SMTP



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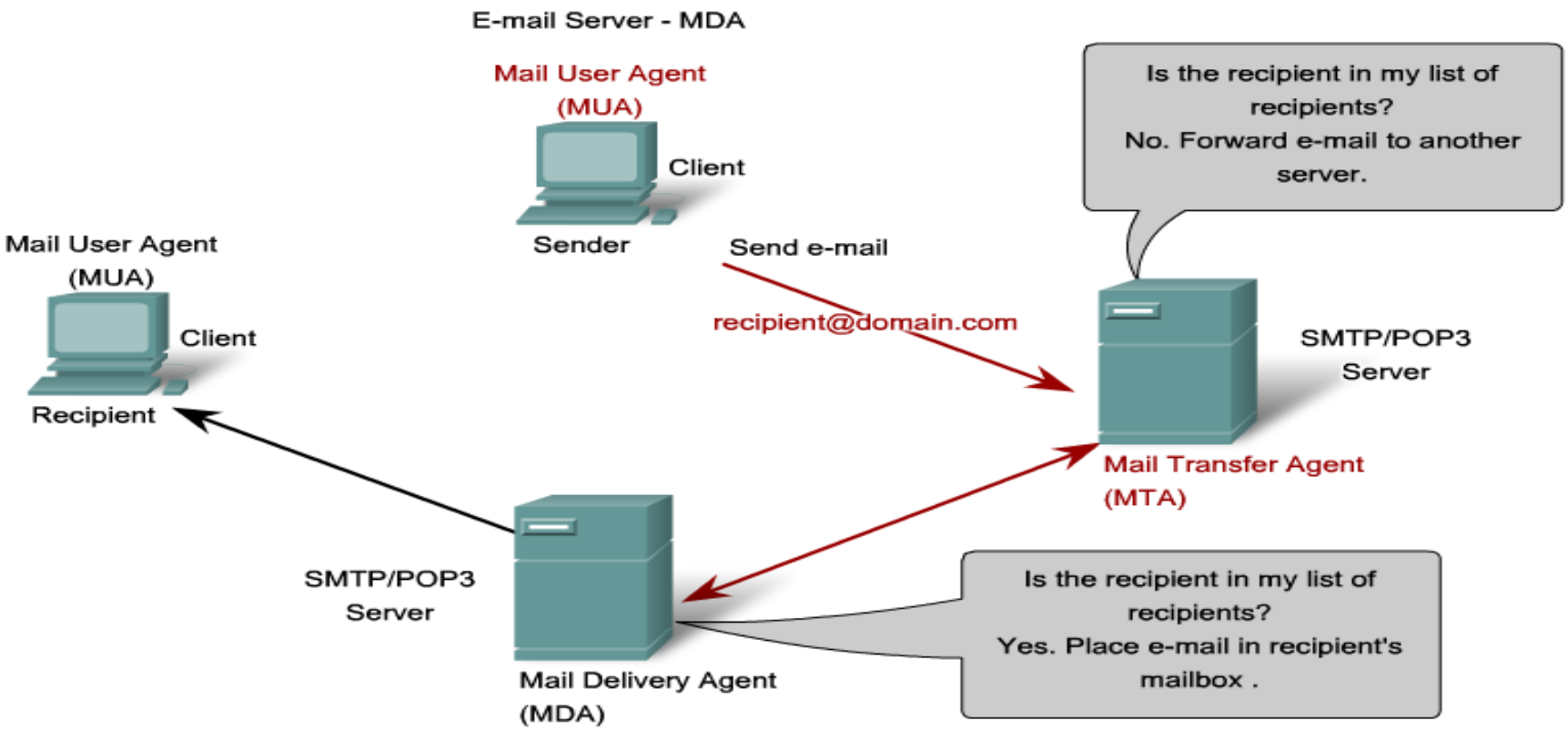
Post Office Protocol POP / Simple Mail Transfer Protocol SMTP



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

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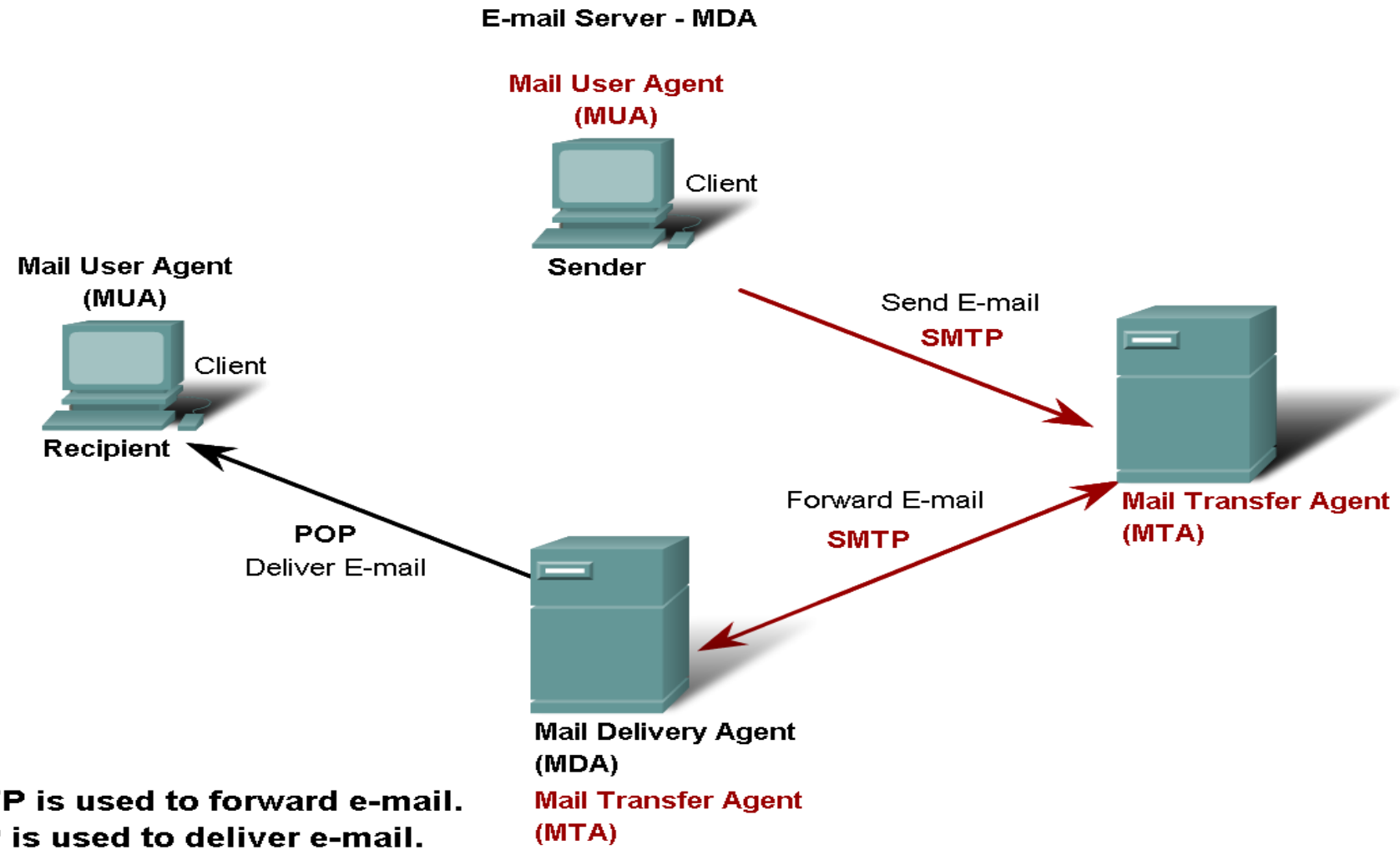
Post Office Protocol POP / Simple Mail Transfer Protocol SMTP



SMTP is used to forward e-mail.
POP is used to deliver e-mail.

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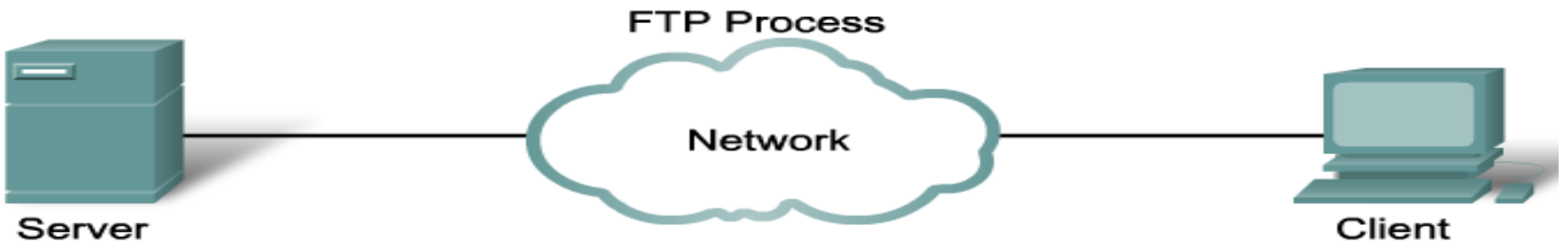
File Transfer Protocol FTP



Control Connection:
Client opens first connection to the server for control traffic.

Data Connection:
Client opens second connection for data traffic.

Get Data

Based on command sent across control connection, data can be downloaded from server or uploaded from client.

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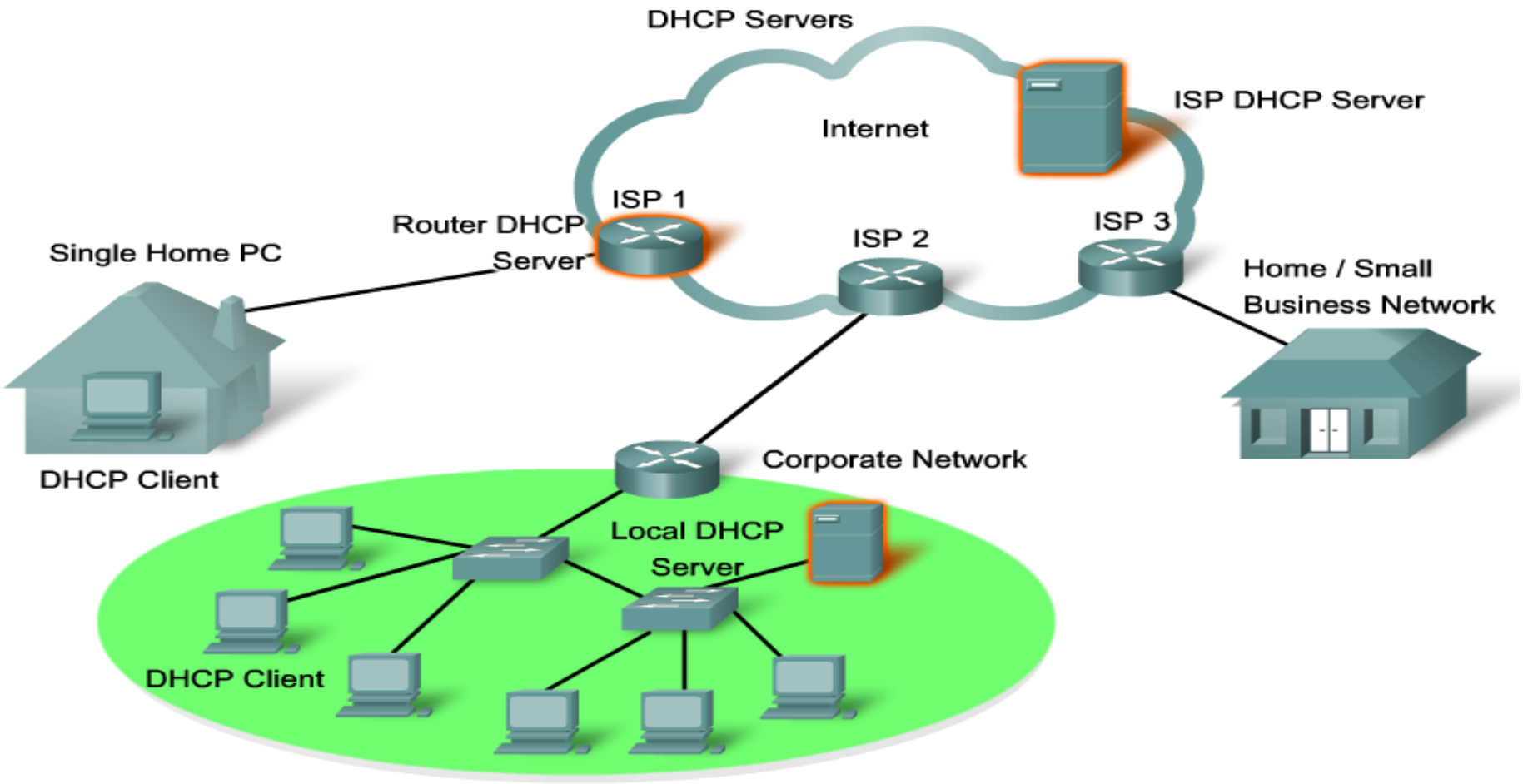
Dynamic Host Configuration Protocol DHCP



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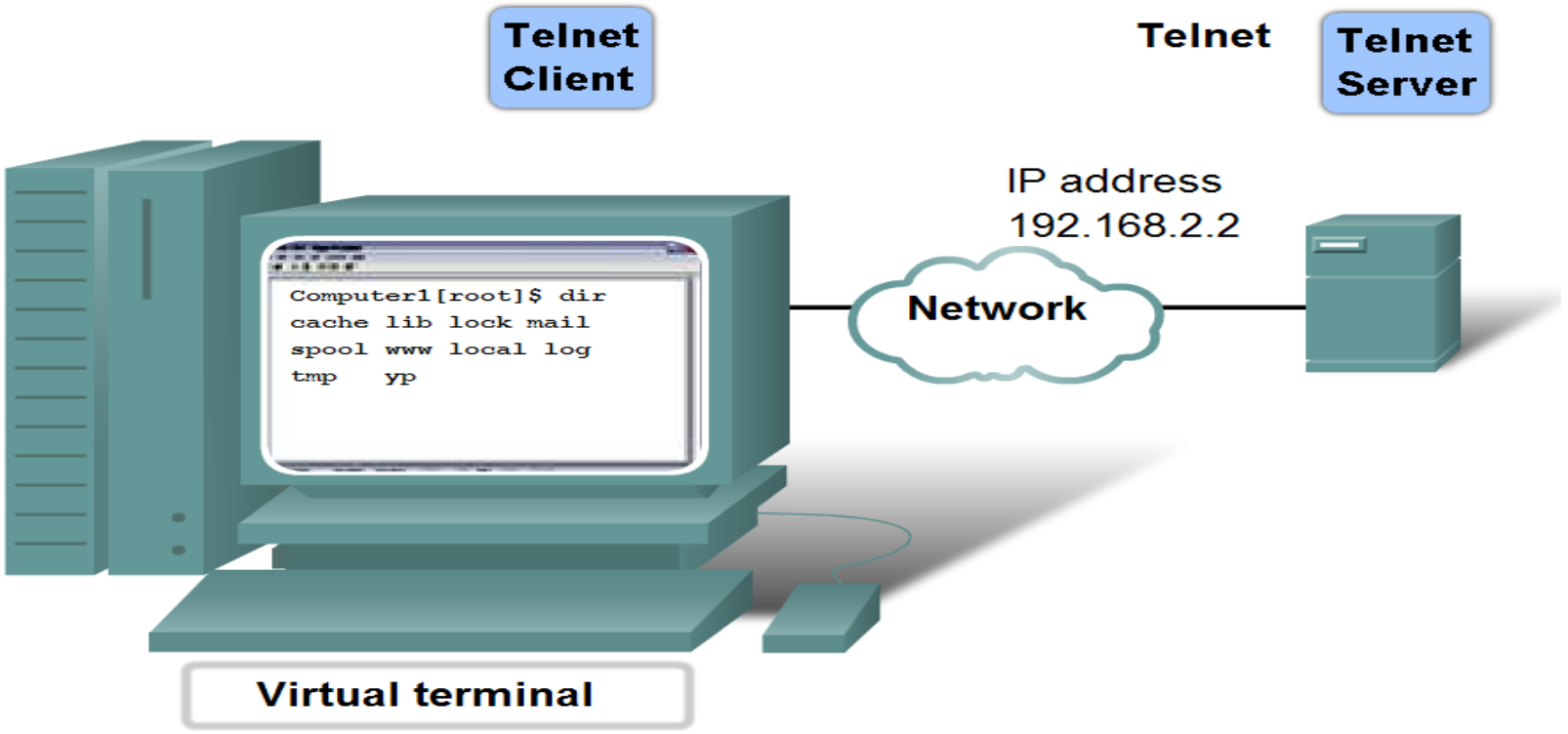
Telecommunication Network Telnet



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.

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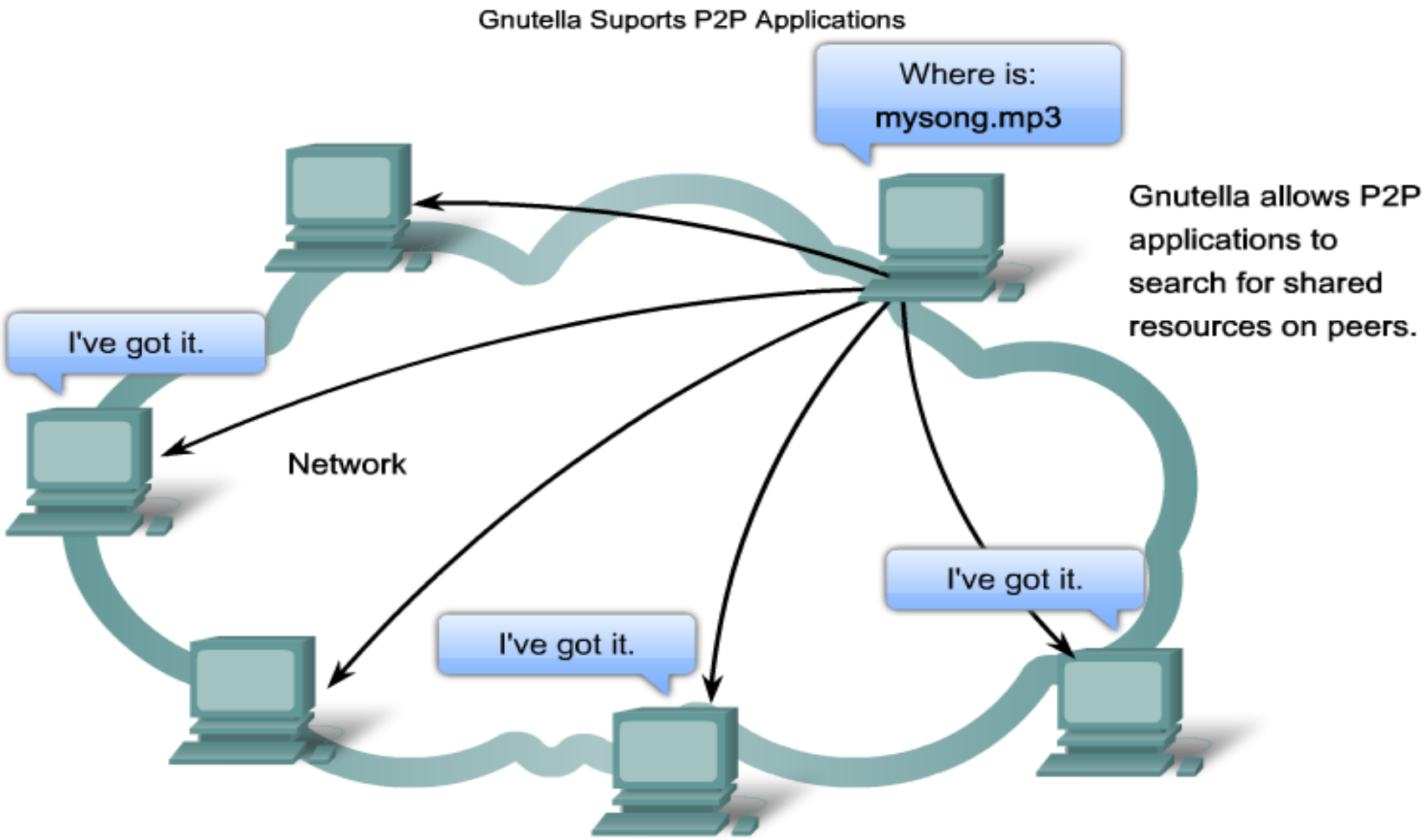
Peer-To-Peer Application P2P



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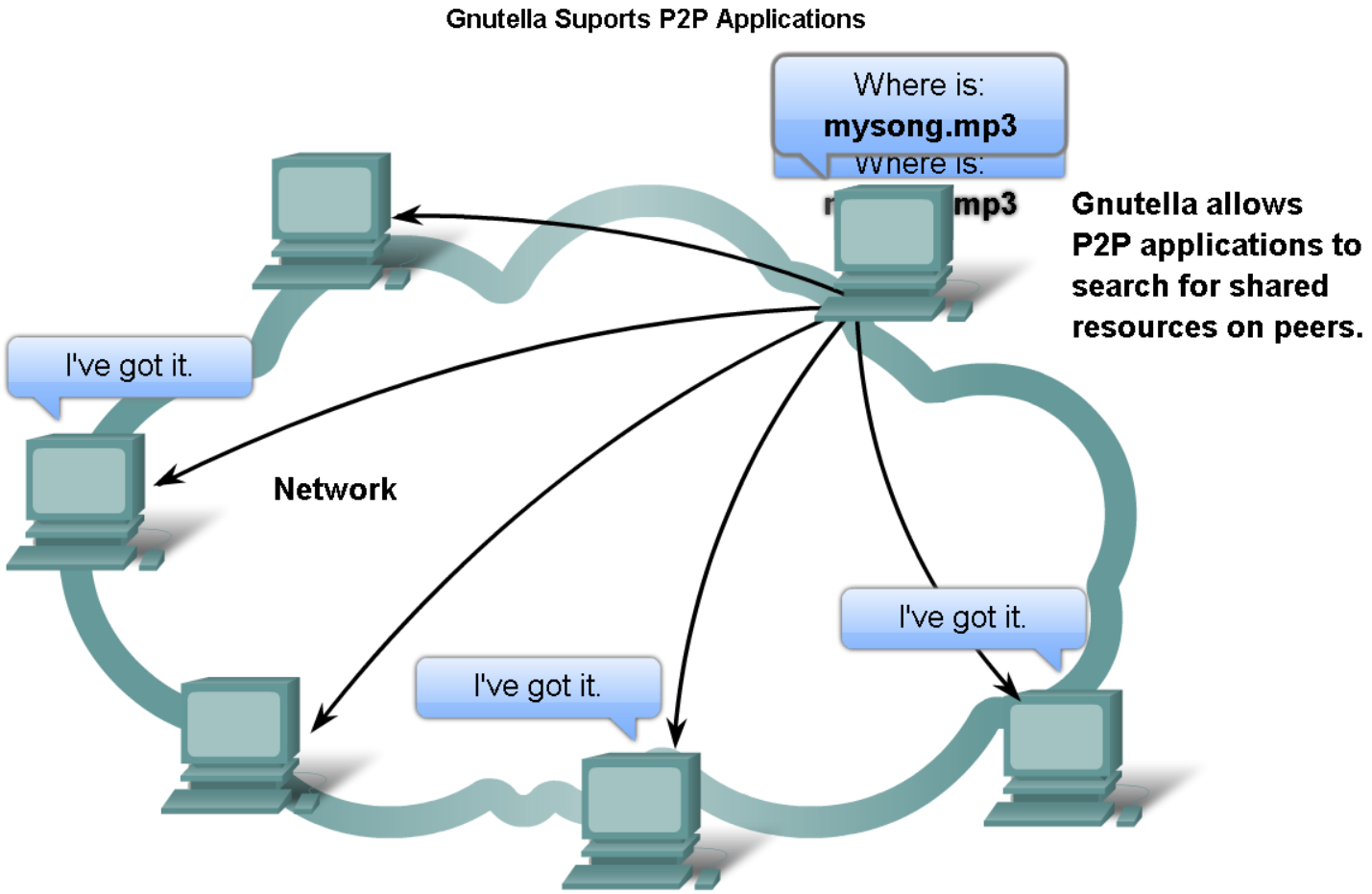
Features, Operation, and Use of TCP/IP Application Layer Services

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



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