

CCNA 1 v3.1 Module 11

TCP/IP Transport and Application Layers

Objectives

Upon completion of this module, the student will be able to perform tasks related to the following:

11.1 TCP/IP Transport Layer

11.2 The Application Layer

Transport Layer

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Reliable transport can accomplish the following:

- Ensure that segments delivered will be acknowledged to the sender
- Provide for retransmission of any segments that are not acknowledged
- Put segments back into their correct sequence at the destination
- Provide congestion avoidance and control

Transport Layer Analogies

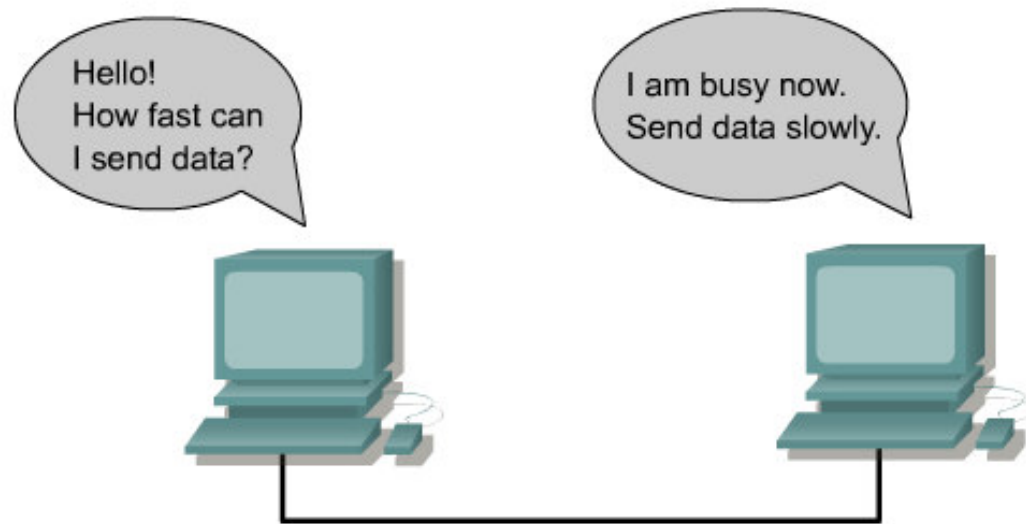
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**Spanish (primary language)
English (one year of study)**

**Slower language
comprehension speed**

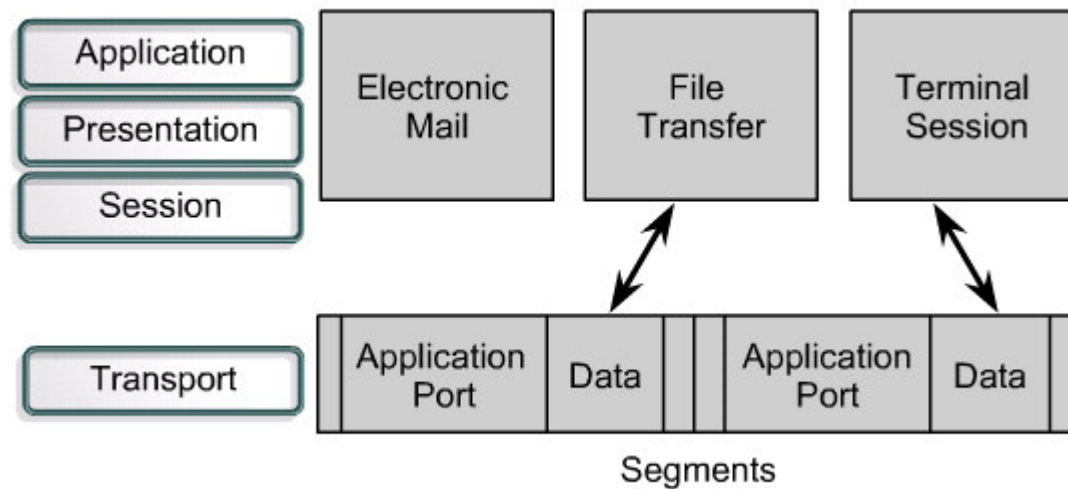
English (only language)

Flow Control



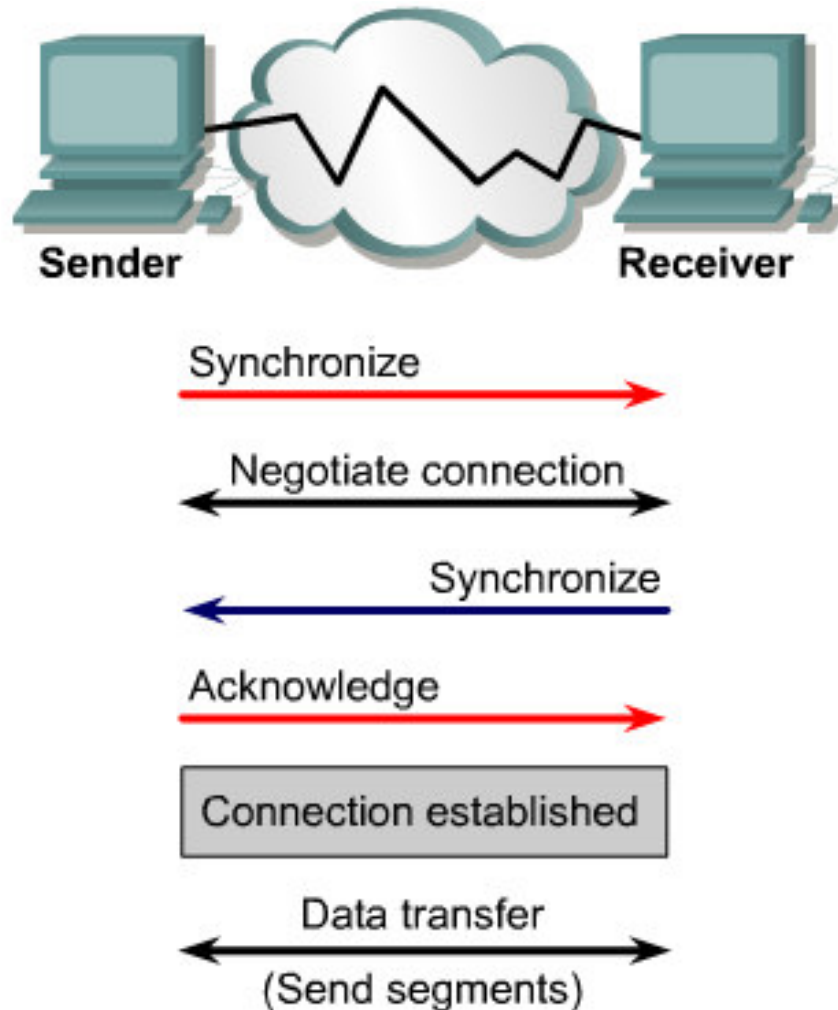
Multiplexing of Upper-Layer Conversations

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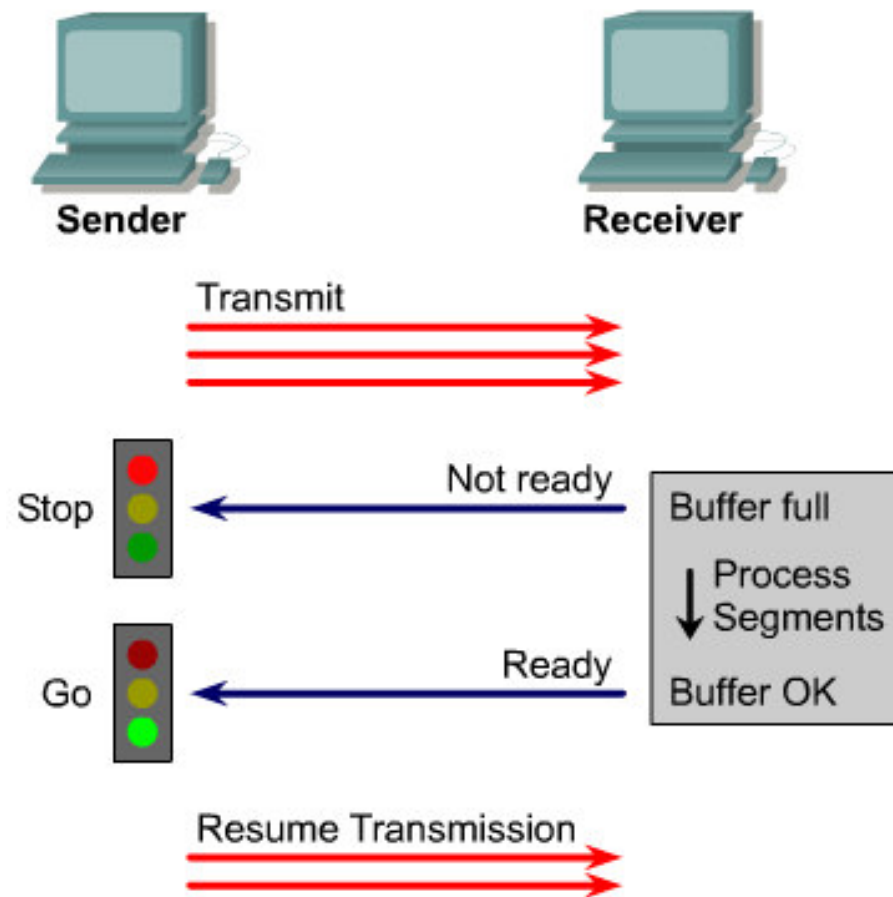
Establishing a Connection with a Peer System

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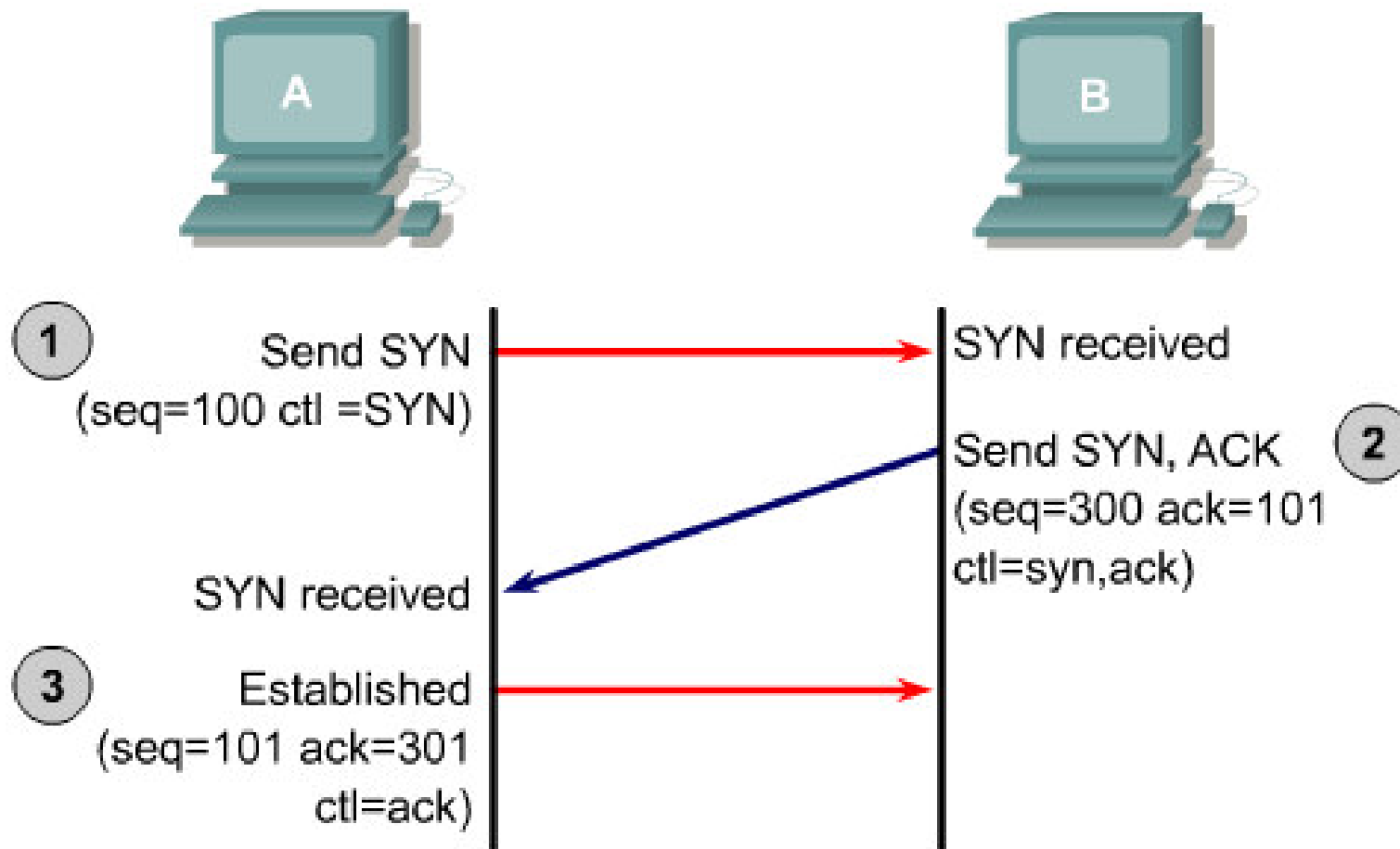
Session Maintenance and Termination

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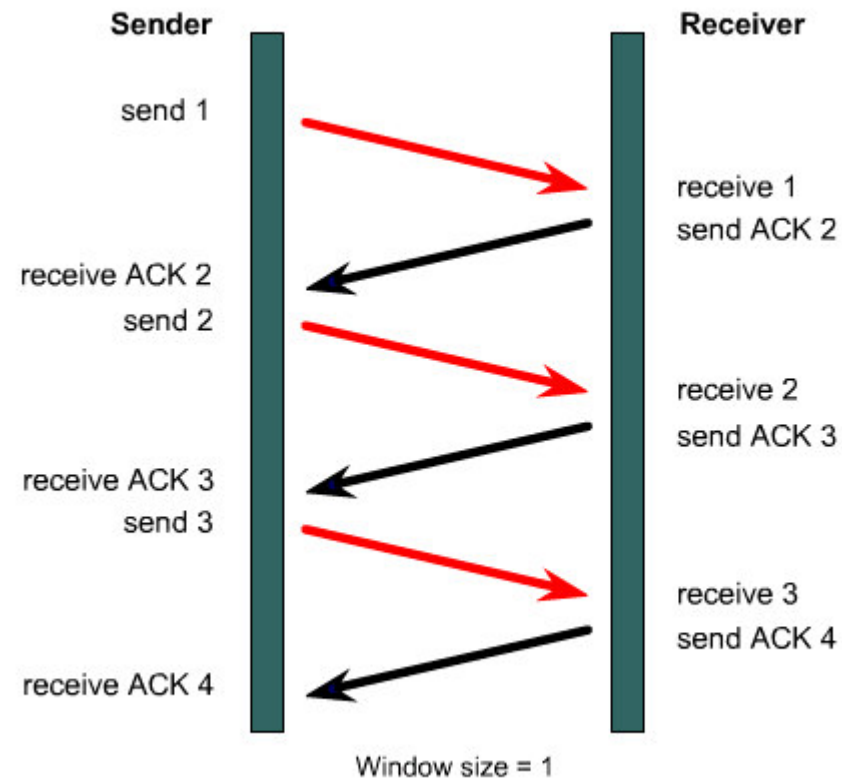
Three-Way Handshake

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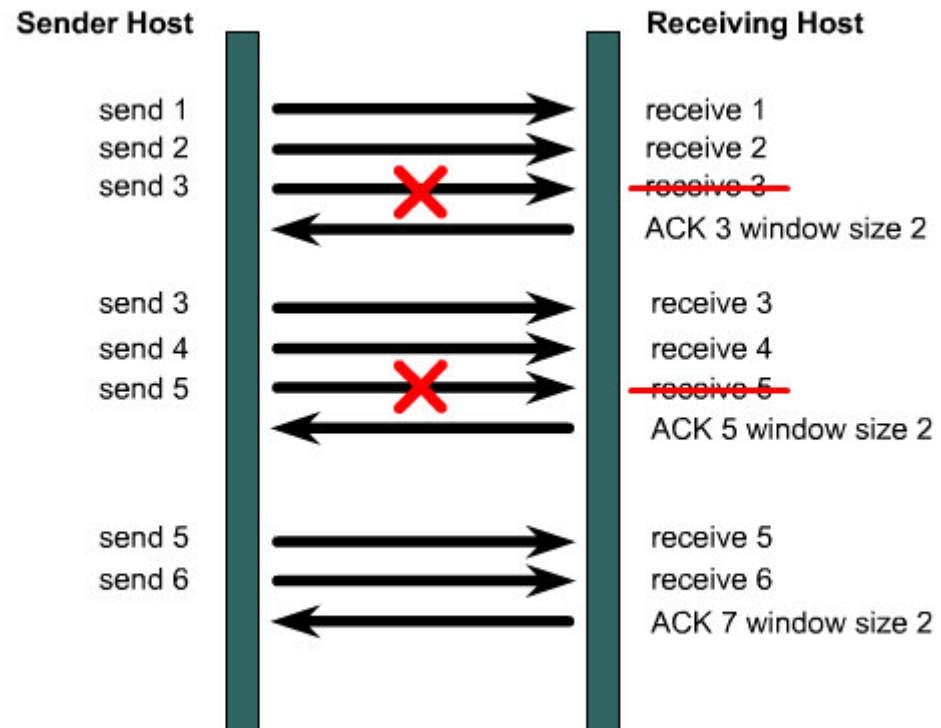
TCP Basic Window

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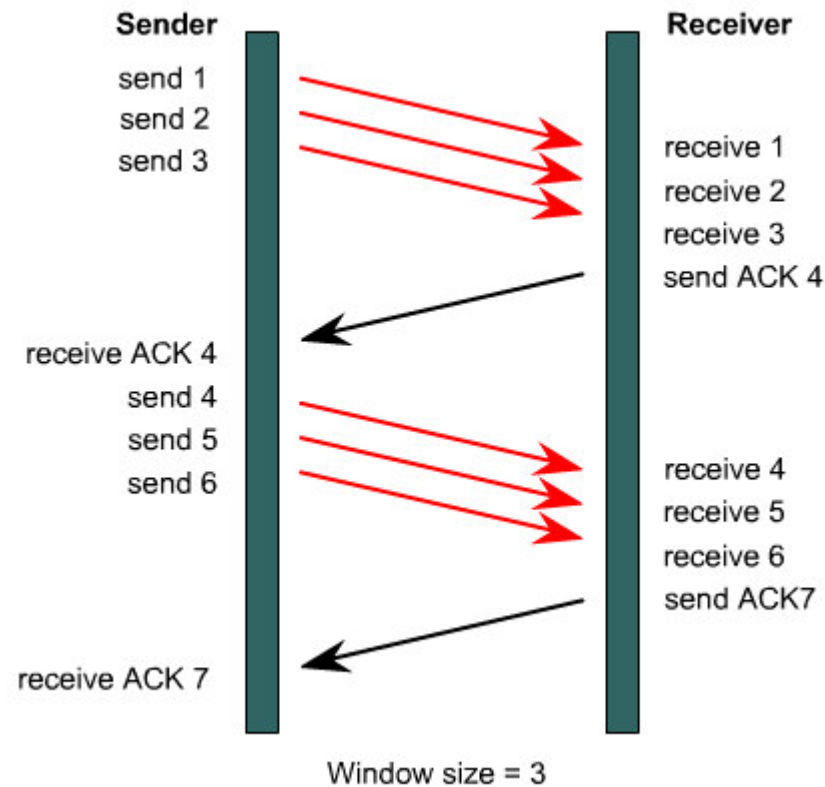
TCP Sliding Window

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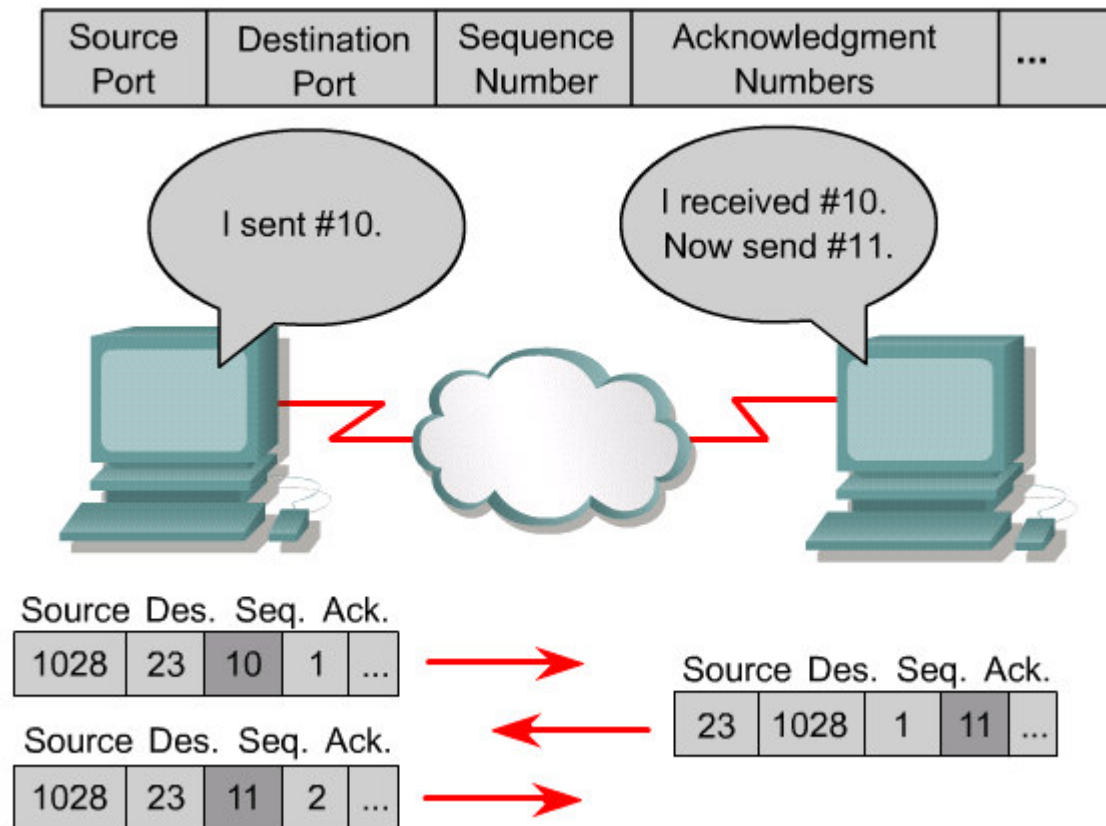
TCP Sliding Window

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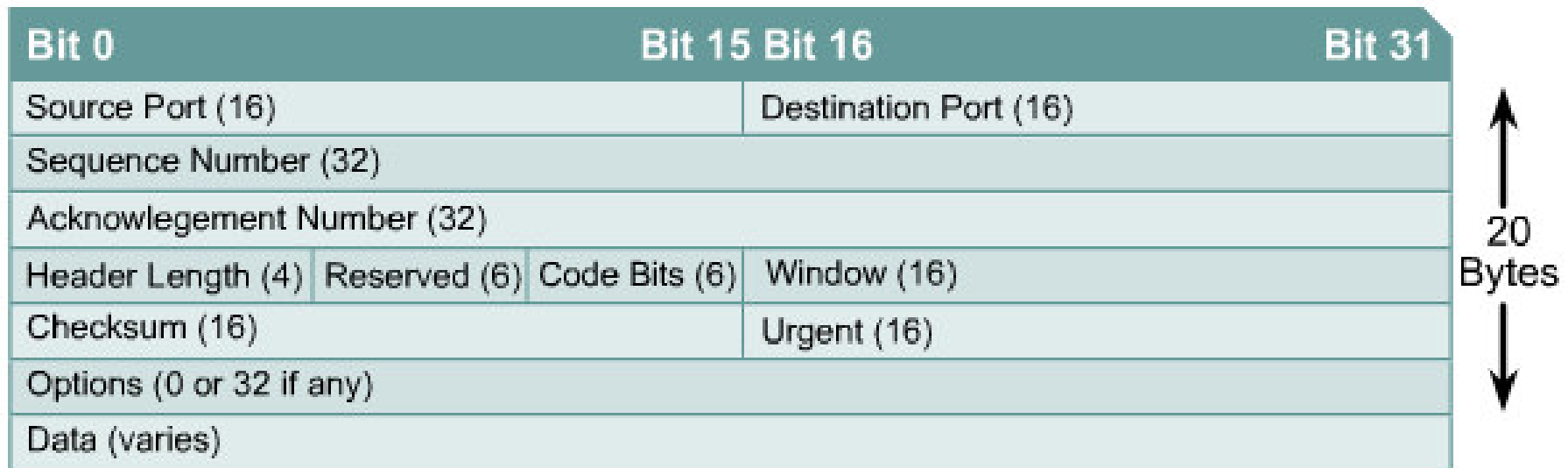
TCP Sequence and Acknowledgement

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TCP Segment Format

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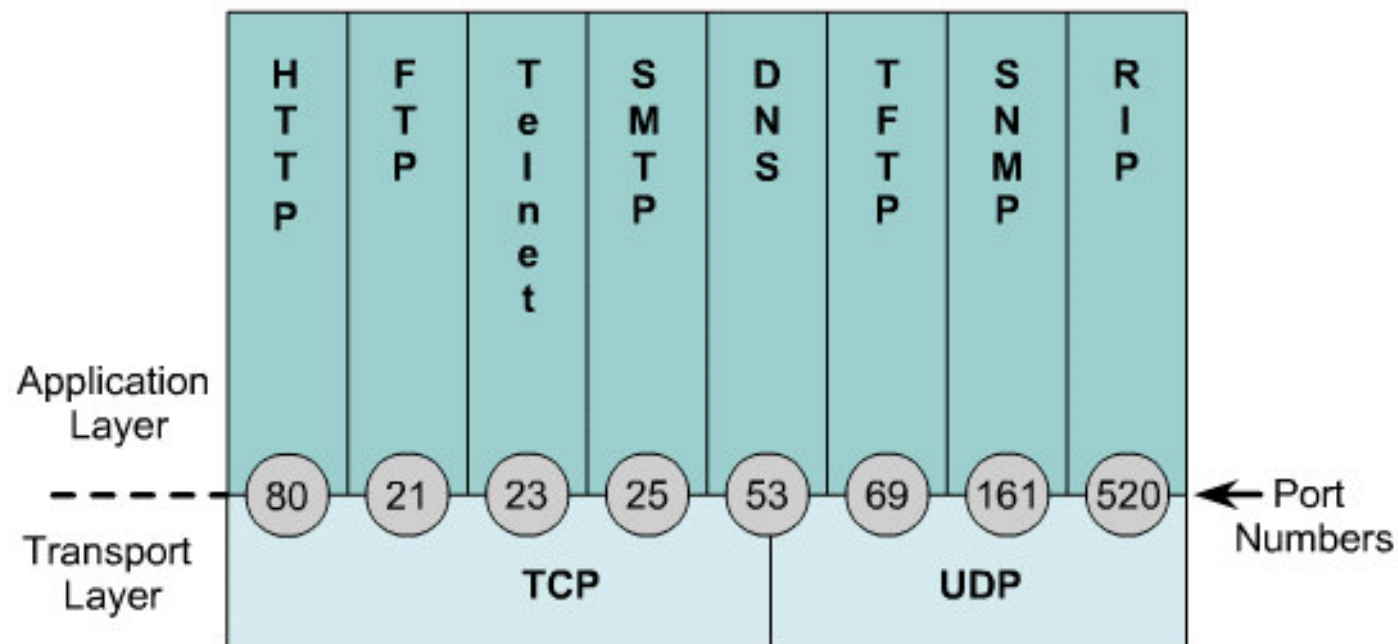
UDP Segment Format

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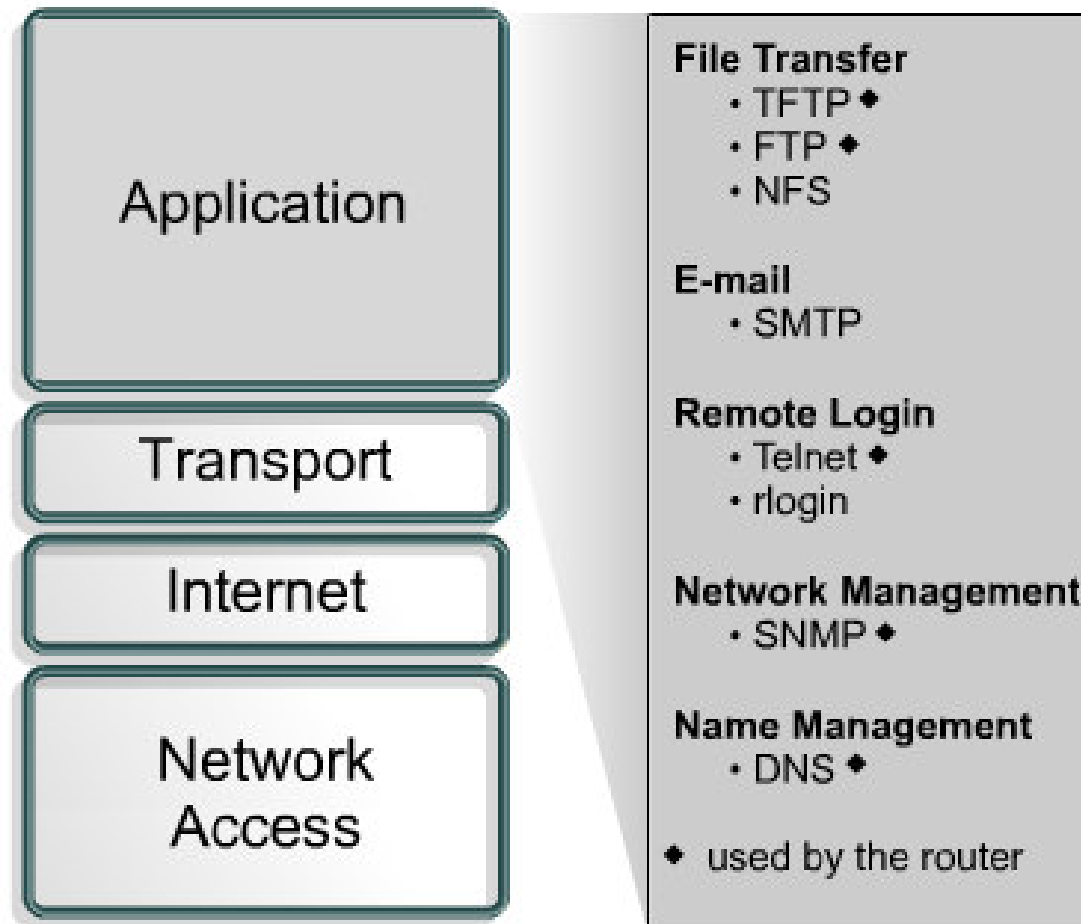
TCP and UDP Port Numbers

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Application Layer

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Application Layer

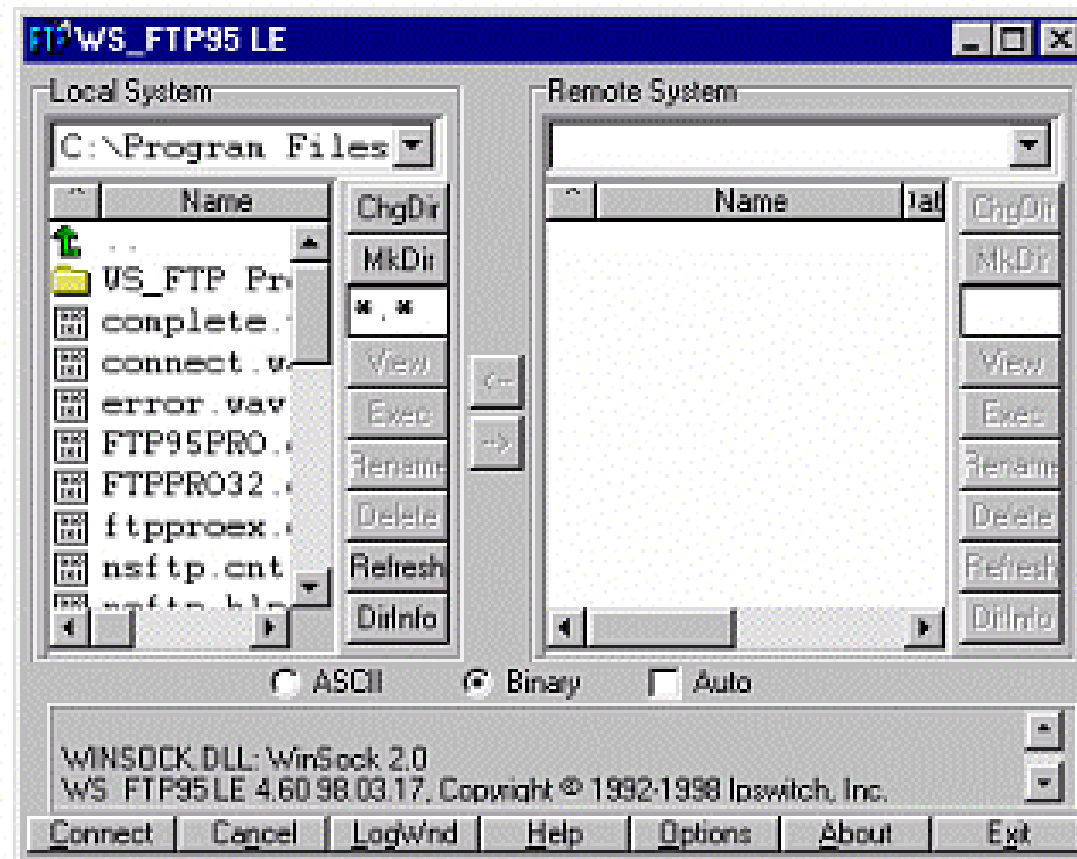
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World Wide Generic Domains

- COM** - This domain is intended for commercial entities, that is companies. This domain has grown very large and there is concern about the administrative load and system performance if the current growth pattern is continued. Consideration is being given to subdividing the COM domain and allowing future commercial registrations in subdomains.
- EDU** - This domain was originally intended for all educational institutions. Many universities, colleges, schools, educational services organizations, and educational consortia have registered here. More recently, a decision has been made to limit further registration to four year colleges and universities. Schools and two year colleges will be registered in the country domains (see U.S. Domain, especially K-12 and CC, below).
- NET** - This domain is intended to hold only the computers of network providers, that is the NIC and NOC computers, the administrative computers, and the network node computers. The customers of the network provider would have domain names of their own (not in the NET Top Level Domain [TLD]).
- ORG** - This domain is intended as the miscellaneous TLD for organizations that do not fit anywhere else. Some non-government organization may fit here.
- INT** - This domain is intended for organizations established by international treaties, or

FTP Application

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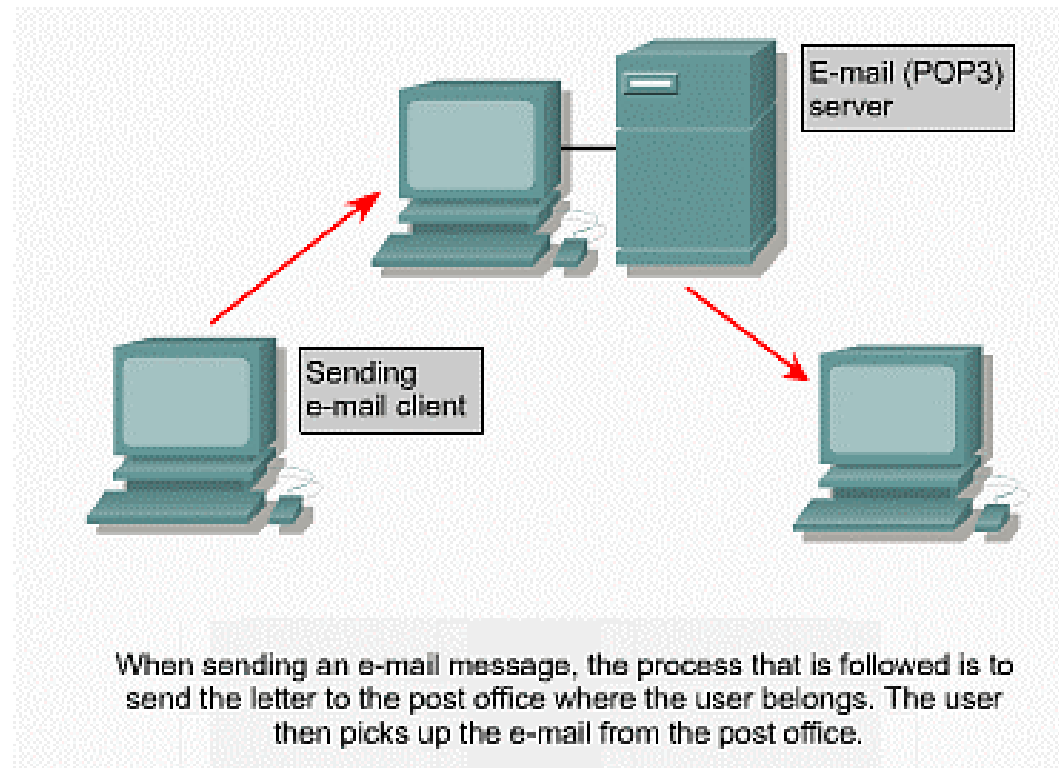
URL

http://	www.	cisco.com	/edu/
Identifies to the browser what protocol should be used.	Identifies the hostname or name of a specific machine.	Represents the domain entity of the website.	Identifies the folder where the Web page is located on the server. Also, since no name is specified, the browser will load the default page identified by the server.

This figure identifies the parts of a standard Uniform Resource Locator (URL) address.

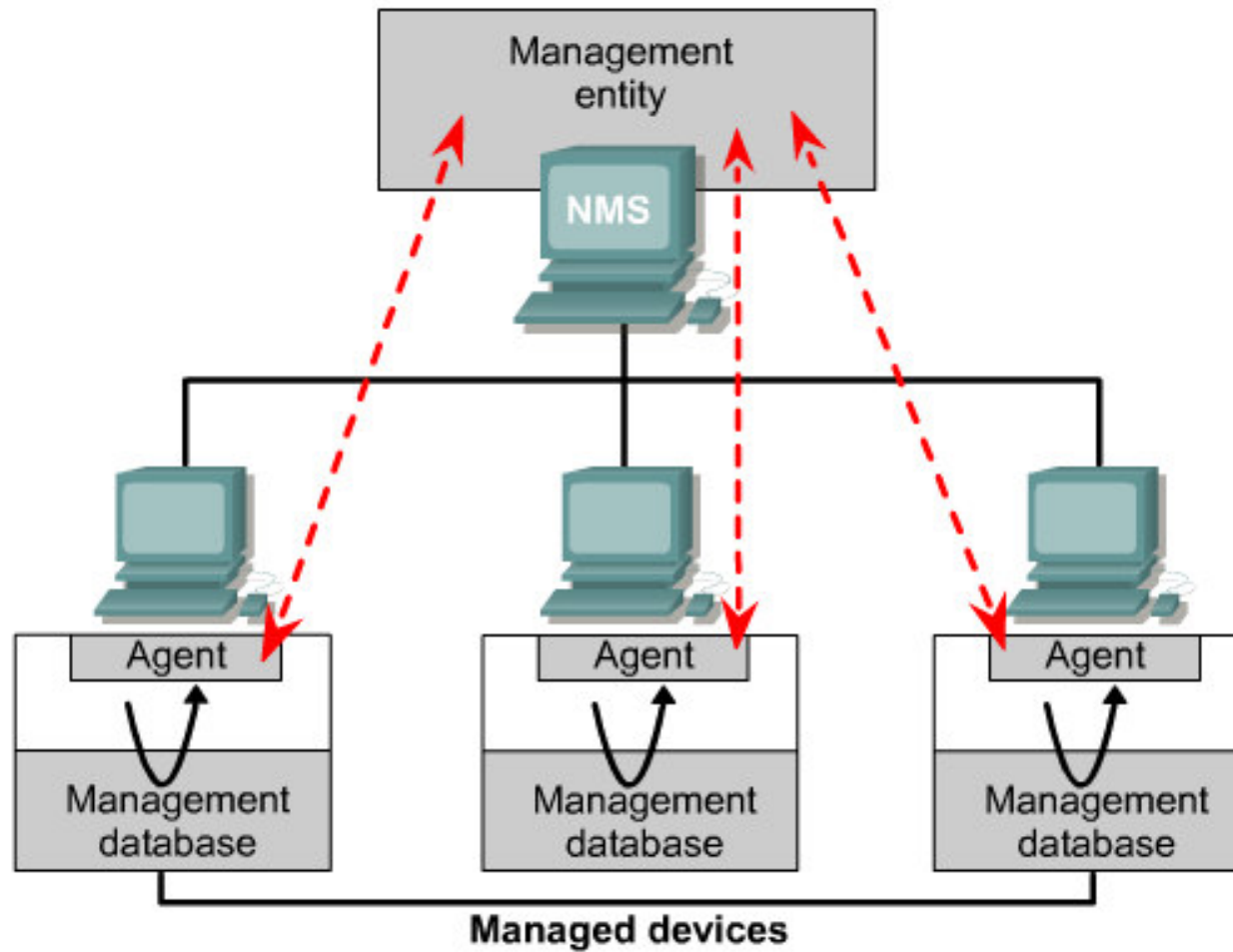
E-mail Message Path

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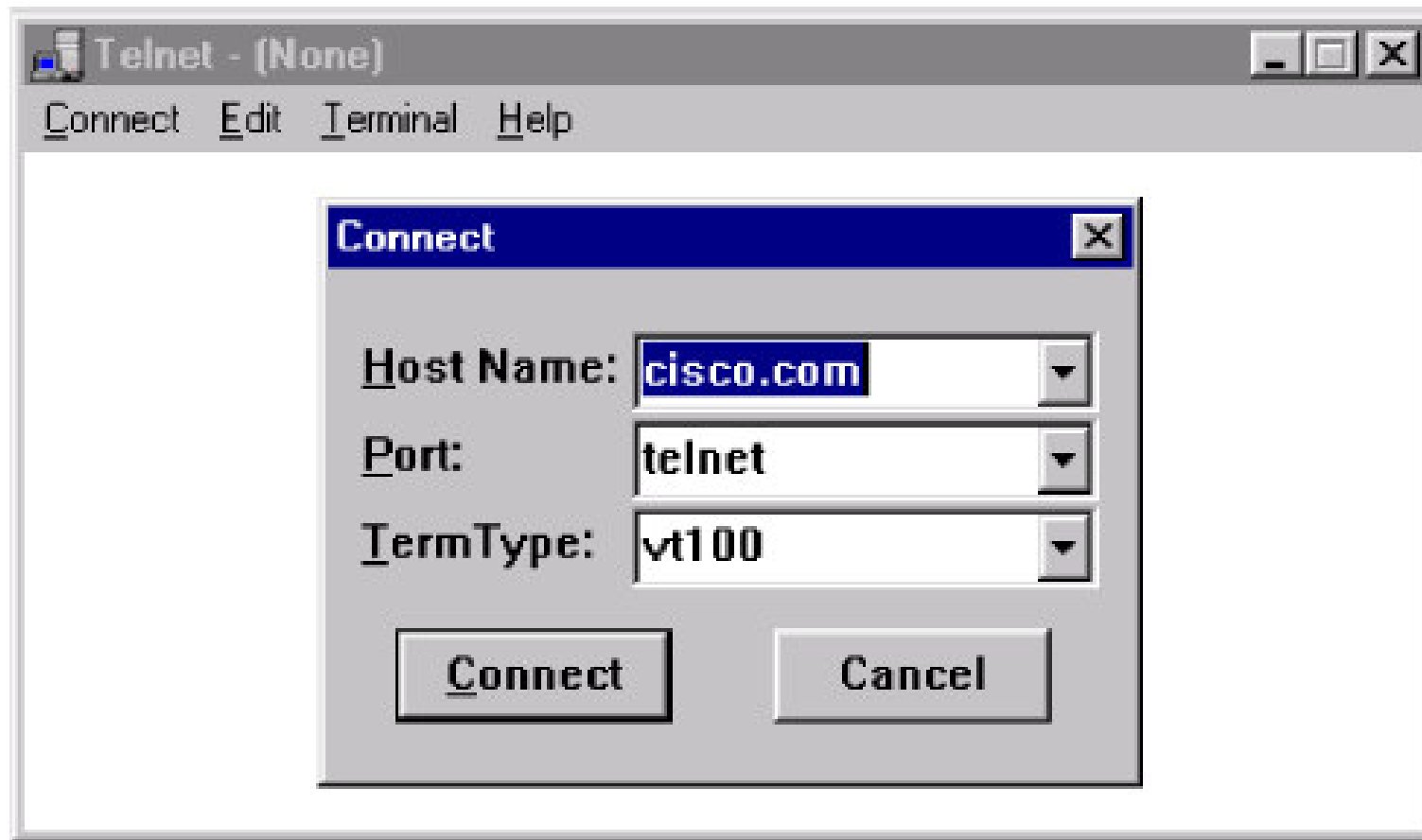


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Summary

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