DATA COMMUNICATIONS

LECTURE 2 / INTRODUCTION PART 2

اللهم صل على محمد وعلى آل محمد، كما صليت على إبراهيم وعلى آل إبراهيم
إنك حميد مجيد، اللهم بارك على محمد وعلى آل محمد كما باركت على إبراهيم
وعلى آل إبراهيم إنك حميد مجيد

AMR SHOUKRY

[ANSWERED]

1) Comprising a sequence of physical links with a dedicated logical channel
   a) Circuit Switching *
   b) Packet Switching
   (Slide 3)

2) Small chunks (packets) of data at a time
   a) Circuit Switching
   b) Packet Switching *
   (Slide 4)

3) Packets passed from node to node between source and destination
   a) Circuit Switching
   b) Packet Switching *
   (Slide 4)

4) No need to dedicate transmission capacity along a path through the network.
   a) Circuit Switching
   b) Packet Switching *
   (Slide 4)

5) Commonly used in traditional telephone networks
   a) Circuit Switching *
   b) Packet Switching
   (Slide 3)

6) Circuit segment idle if not used by call (no sharing)
   a) Circuit Switching *
   b) Packet Switching
   (Slide 3)

7) Used for terminal to computer and computer to computer communications
   a) Circuit Switching
   b) Packet Switching *
   (Slide 4)

8) (guaranteed) performance
   a) Circuit Switching *
   b) Packet Switching
   (Slide 3)

9) Dedicated resources during a conversation : no sharing
   a) Circuit Switching *
   b) Packet Switching
   (Slide 3)

10) Packet switching allows more users to use network!
   a) T *
   b) F
   (Slide 4)

11) Data sent out of sequence
   a) Circuit Switching
   b) Packet Switching *
   (Slide 4)

12) The Advanced Research Projects Agency Network (ARPANET) was an early packet-switching network and the first network to implement the TCP/IP protocol suite
   a) T *
   b) F
   (Slide 5)

13) ARPANET was founded by ARPA of United States Department of Defense
   a) T *
   b) F
   (Slide 5)

14) End systems connect to Internet via access ISPs (Internet Service Providers)
   a) T *
   b) F
   (Slide 7)

15) at center
   a) Tier-1 *
   b) Tier-2
   c) Tier-3
   (Slide 7)

16) Connect to one or more tier-1 ISPs, possibly other tier2 ISPs
   a) Tier-1
   b) Tier-2 *
   c) Tier-3
   (Slide 7)

17) national/international coverage
a) Tier-1 *
b) Tier-2
c) Tier-3
(Slide 7)

18) closest to end systems
a) Tier-1
b) Tier-2
c) Tier-3 *
(Slide 7)

19) last hop (“access”) network
a) Tier-1
b) Tier-2
c) Tier-3 *
(Slide 7)

20) often regional
a) Tier-1
b) Tier-2 *
c) Tier-3
(Slide 7)

21) Verizon, Sprint, AT&T, Cable and Wireless
a) Tier-1 *
b) Tier-2
c) Tier-3
(Slide 7)

22) local ISPs
a) Tier-1
b) Tier-2
c) Tier-3 *
(Slide 7)

23) treat each other as equals
a) Tier-1 *
b) Tier-2
c) Tier-3
(Slide 7)

24) Modern computer networks are designed in a highly structured way.
a) T *
b) F
(Slide 9)

25) To reduce their design complexity, most networks are organized as a series of layers, each one built upon its predecessor.
a) T *
b) F
(Slide 9)

26) There are 2 models, the more theoretically general, is
a) TCP/IP
b) ISO/OSI *
(Slide 9)

27) ISO/OSI deals with connecting open systems -that is, systems that are open for communication with other systems
a) T *
b) F
(Slide 9)

28) There are 2 models, the more practical is
a) TCP/IP *
b) ISO/OSI
(Slide 9)

29) minimizes the number of layers used and makes more focus on the practical issues than the theoretical issues
a) TCP/IP *
b) ISO/OSI
(Slide 9)

30) Layers: Application, Transport, Internet, Network access
a) TCP/IP *
b) ISO/OSI
(Slide 10)

31) Layers: Application, Presentation, Session, Transport, Network, Data link, Physical
a) TCP/IP
b) ISO/OSI *
(Slide 10)

32) model has seven layers
a) TCP/IP
b) ISO/OSI *
(Slide 9)

33) A layer should be created where a different level of abstraction is needed
a) T *
b) F
(Slide 11)

34) Each layer should perform a well-defined function.
a) T *
b) F
(Slide 11)

35) The function of each layer should be chosen with an eye toward defining internationally standardized protocols
a) T *
b) F
(Slide 11)

36) The layer boundaries should be chosen to maximize the information flow across the interfaces.
a) T
b) F *
(Slide 11)

37) Advantages of layers
a) It breaks network communication into smaller, simpler parts.
b) It standardizes network components to allow multiplevendor development and support.
c) It allows different types of network hardware and software to communicate with each other (Interoperability).
d) It prevents changes in one layer from affecting the other layers, so that they can develop more quickly.
e) It breaks network communication into smaller parts to make learning it easier to understand.
f) All of the above *
(Slide 12)

38) Provides an error-free communication link
a) Physical layer
b) Data Link layer *
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

39) anything not provided by any of the other layers
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer *
(Slide 14-21)

40) data encryption, data compression, data conversion
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer *
g) Application layer
(Slide 14-21)

41) Provides virtual end-to-end links between peer processes
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer *
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

42) Accept data from the session layer, split it up into smaller units if needed
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer *
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

43) Pass these to the network layer, and ensure that the pieces all arrive correctly at the other end in efficient way
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer *
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

44) determines what type of service to provide to the session layer
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer *
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

45) Subnet flow control and congestion control.
a) Physical layer
b) Data Link layer
c) Network layer *
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

46) Translation between different network types.
a) Physical layer
b) Data Link layer
c) Network layer *
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

47) Media Access Control (MAC) sub-layer for providing DLC with “virtual wires” on multi-access networks
a) Physical layer
b) Data Link layer *
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

48) Transmission of raw bits over a communication channel.
a) Physical layer *
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

49) Fragmentation & reassembly
a) Physical layer
b) Data Link layer
c) Network layer *
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

50) Path selection between end-systems (routing).
a) Physical layer
b) Data Link layer
c) Network layer *
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

51) Provides virtual end-to-end links between peer processes.
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer *
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

52) allows users on different machines to establish sessions between them.
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer *
f) Presentation layer
g) Application layer
(Slide 14-21)

53) establishes, manages, and terminates sessions between applications.
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer *
f) Presentation layer
g) Application layer
(Slide 14-21)

54) service location lookup
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer *
f) Presentation layer
g) Application layer
(Slide 14-21)

55) Many protocol suites do not include a session layer.
a) T *
b) F
(Slide 19)

56) Many protocol suites do not include a Presentation Layer
a) T *
b) F
(Slide 20)

57) Sessions can allow traffic to go in both directions at the same time, or in only one direction at a time
a) T *
b) F
(Slide 19)

58) Issues: Mechanical interfaces, Electrical or optical interfaces, Time per bit, Distances between nodes
a) Physical layer *
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

59) Issues: Physical Addressing & Error detection, framing
a) Physical layer
b) Data Link layer *
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

60) Issues: packet headers, virtual circuits
a) Physical layer
b) Data Link layer
c) Network layer *
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

61) Issues: application level protocols, appropriate selection of “type of service”
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer
e) Session layer
f) Presentation layer
g) Application layer *
(Slide 14-21)

62) Issues: Headers & error detection, Reliable communication
a) Physical layer
b) Data Link layer
c) Network layer
d) Transport layer *
e) Session layer
f) Presentation layer
g) Application layer
(Slide 14-21)

63) Transport Protocols are TCP and UDP
a) T *
b) F
(Slide 18)

64) Each layer needs to add some control information to the data in order to do it's job
a) T *
b) F
(Slide 24)

65) This information is typically prepended to the data before being given to the lower layer
a) T *
b) F
(Slide 24)

66) Once the lower layers deliver the data and control information - the peer layer uses the control information
a) T *
b) F
(Slide 24)

67) Hardware address of the receiving endpoints, Hardware address of the sending endpoint, length of the data, checksum
a) Physical
b) Data Link *
c) Network layer
(Slide 26)

68) protocol suite version, type of service, length of the data, packet identifier, time to live, Protocol, header checksum, source network address, destination net address
a) Physical
b) Data Link
c) Network layer *
(Slide 26)

69) no header - just a bunch of bits.
a) Physical *
b) Data Link
c) Network layer
(Slide 26)

70) Each communication endpoint must have an address.
a) T *
b) F
(Slide 26)

71) address must be able to provide information to enable routing
a) Physical Layer
b) Data Link Layer
c) Network Layer *
d) Transport Layer
(Slide 27)

72) address must identify the destination process.
a) Physical Layer
b) Data Link Layer
c) Network Layer
d) Transport Layer *
(Slide 27)

73) address must be able to select any host on the network
a) Physical Layer
b) Data Link Layer *
c) Network Layer
d) Transport Layer
(Slide 27)

74) no address necessary
a) Physical Layer *
b) Data Link Layer
c) Network Layer
d) Transport Layer
(Slide 27)

75) provides services to the presentation layer to organize its dialogue and to manage data exchange.
a) Application
b) Presentation
c) Session *
d) Transport
e) Network
f) Data Link
g) Physical
(Slide 28)

76) provides services to exchange the individual pieces of data over the network between identified end devices.
a) Application
b) Presentation
c) Session
d) Transport
e) Network *
f) Data Link
g) Physical
(Slide 28)

77) provides methods for exchanging data frames between devices over a common media.
a) Application
b) Presentation
c) Session
d) Transport
e) Network
f) Data Link *
g) Physical
(Slide 28)

78) defines services to segment, transfer, and reassemble the data.
a) Application
b) Presentation
c) Session
d) Transport *
e) Network
f) Data Link
g) Physical
(Slide 28)

79) provides for common representation of the data
a) Application
b) Presentation *
c) Session
d) Transport
e) Network
f) Data Link
g) Physical
(Slide 28)

80) contains protocols used for process-to-process communications.
a) Application *
b) Presentation
c) Session
d) Transport
e) Network
f) Data Link
g) Physical
(Slide 28)

81) describes the mechanical, electrical, functional, and procedural means to transmit bits across physical connections.
a) Application
b) Presentation
c) Session
d) Transport
e) Network
f) Data Link
g) Physical *
(Slide 28)

لا تنسونا من صالح دعائكم

اللهم صل على محمد وعلى آل محمد، كما صليت على إبراهيم وعلى آل إبراهيم إنك حميد مجيد، اللهم بارك على محمد وعلى آل محمد كما باركت على إبراهيم وعلى آل إبراهيم إنك حميد مجيد

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