Computer Networking: A Top-Down Approach

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1 Computer Networks and the Internet

- The Internet is a computer network that interconnects hundreds of millions of computing devices throughout the world.
- Indeed, the term *computer network* is beginning to sound a bit dated, given the many nontraditional devices that are being hooked up to the Internet. In Internet jargon, all of these devices are called **hosts** or **end systems**.
- End systems are connected together by a network of **communication links** and **packet switches**.
- Packet switches come in many shapes and flavors, but the two most prominent types in today's Internet are **routers** and **link-layer switches**.
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2 Application Layer

- The **application architecture**, on the other hand, is designed by the application developer and dictates how the application is structured over the various end systems.
- In a **client-server architecture**, there is an always-on host, called the server, which services requests from many other hosts, called clients.
- In a **P2P architecture**, there is minimal (or no) reliance on dedicated servers in data centers. Instead the application exploits direct communication between pairs of intermittently connected hosts, called peers.
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3 Transport Layer

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4 The Network Layer

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5 The Link Layer: Links, Access Networks, and LANs

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6 Wireless and Mobile Networks

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7 Multimedia Networks

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8 Security in Computer Networks

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9 Network Management

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