【CN】Day11(2)

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Materials	Transfer Services
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【Ch2】Application Layer

2.1 Principles of Network Applications(2)

2.1.3 Transport Services Available to Applications

A socket is the interface between the application process and the transport-layer protocol.

The application at the sending side pushes messages through the socket. At the other side of the socket, the transport-layer protocol gets the messages to the socket of the receiving process.

We can classify the services offered by transport-layer protocol along four dimensions: reliable data transfer, throughput, timing, and security.

Reliable Data Transfer

It a protocol provides a guaranteed data delivery service, it is said to provide reliable data transfer. One important service that a transport-layer protocol can potentially provide is process-to-process reliable data transfer.

When a transport-layer protocol doesn't provide reliable data transfer, some of the data my never arrive at the receiving process. This may be acceptable for loss-tolerant applications.

Throughput

The concept of available throughput is the rate at which the sending process can deliver bits to the receiving process.

Because other sessions will be sharing the bandwidth along the network path, and because these other sessions will be coming and going, the available throughput can fluctuate with time.

Some protocols also provide guaranteed available throughput at some specified rate.

Applications that have throughput requirements are said to be bandwidth-sensitive applications.(e.x., phone calls and video calls)

Elastic applications can, however, make use of as much, or as little throughput as happens to be available. E-mail, file transfer, and Web transfers are all elastic applications.

Timing

A transport-layer protocol can also provide timing guarantees. An example guarntee might be that every bit arrives at the receiver’s socket no more than 100 msc later.

Security

A transport protocol can provide with security services. For example, a transport protocol can encrypt all data transmitted by the sending process.