Chapter 3.4: Principles of Reliable Data Transfer

- Reliable data transfer ensures that data sent from one host to another arrives accurately and in the correct order, despite potential errors and network congestion.

- Techniques for achieving reliable data transfer include error detection, automatic repeat request (ARQ) mechanisms, and flow control.

- Error detection methods, such as checksums, enable the receiver to detect errors in transmitted data and request retransmission if necessary.

- Automatic repeat request (ARQ) mechanisms, such as Stop-and-Wait ARQ and Go-Back-N ARQ, enable the sender to retransmit lost or corrupted packets based on acknowledgments from the receiver.

- Flow control mechanisms regulate the rate of data transmission to prevent overwhelming the receiver, ensuring efficient use of network resources.