

Protocols in the Transport Layer (1/4)

1

Transport layer in the TCP/IP layer model:

TCP/IP stack



4	Application Layer
3	Transport Layer
2	Internet Layer
1	Link Layer
	(Hardware Layer)

Protocols in the Transport Layer (2/4)

2

- Protocols in the transport layer rely on the connectionless datagram service IP of the Internet layer
- The most prominent transport protocol is **TCP – Transmission Control Protocol**
- TCP makes possible what seems to be impossible:
 - On the basis of the unreliable Internet Protocol (IP) datagram service, TCP provides a reliable, assured transport service for exchanging data between two end systems
- Idea: TCP compensates for errors and malfunction of the IP
- Besides the IP, the success of the Internet can be attributed more than anything to the favorable design of the TCP protocol
→ **TCP/IP Protocol Suite**

Protocols in the Transport Layer (3/4)

3

In the TCP/IP protocol suite there are two fundamental transport protocols:

- **TCP – Transmission Control Protocol:**

- Provides reliable, connection-oriented full-duplex communication service in the Internet
- Is very complex and continuously subject to further development

- **UDP – User Datagram Protocol:**

- Offers very simple, unreliable, connectionless Internet communication service in the Internet. It has been subject to little change until now because of its simplicity.

Protocols in the Transport Layer (4/4)

4

Other transport protocols of the TCP/IP protocol family run on top of TCP or UDP:

- ISO/T1 to ISO/T4
- NetBIOS
- Real Time Protocol – RTP
- System Network Architecture - SNA