

Lecture 21: Transport Layer

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Contents

1 Introduction	1
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1 Introduction

The transport layer provides **end-to-end connectivity** in terms of a **transport protocol** (end-to-end protocol). The underlying network layer usually only provides a **best-effort host-to-host service** (e.g. IP):

- messages are dropped (due to congestion)
- messages are re-ordered
- messages are delivered several times (problem of duplicates)
- messages are limited to some finite size
- messages are delivered after some long delay

Different transport protocols address (some of) these limitations by offering different services:

- Simple (application) demultiplexing service (**User Datagram Protocol**)
- Reliable Byte-Stream Service (**Transmission Control Protocol**)