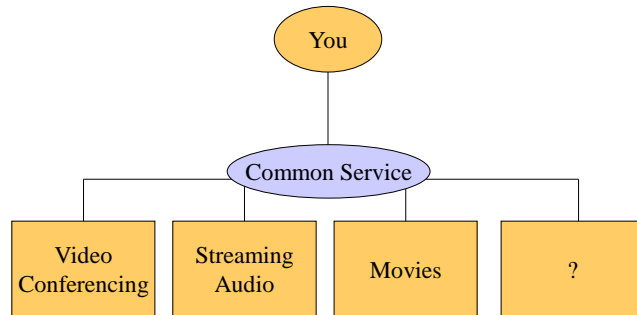


Fast-forward to the Year 2021



1

What is RTP

- *RTP stands for Real Time Protocol*
- *Design to support real time traffic*
- *Operates with unicast and multicast applications*
- *Normally works over User Datagram Protocol, and make use of UDP's multiplexing and checksum services.*
- *Provides standard packet format for real-time application*

2

Services it provide

- *Streaming Multimedia Applications*
- *Sequence Numbering*
- *Delivery Monitoring*
- *Supports traffic between sender and receiver*
- *Time stamping*
- *Multicasting*

3

Real-Time Protocol (RTP)

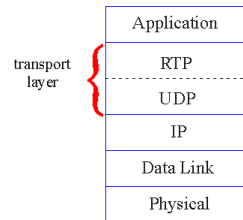
- RTP specifies a packet structure for packets carrying audio and video data.
- RTP runs in the end systems.
- RTP packets are encapsulated in UDP segments
- RTP packet provides
 - payload type identification
 - packet sequence numbering
 - timestamping

4

RTP runs on top of UDP

RTP libraries provide a transport-layer interface that extend UDP:

- port numbers, IP addresses
- payload type identification
- packet sequence numbering
- time-stamping



5

Some related Concepts

RTP Timestamp (TS)

- Time Stamping is used to order packets in correct timing order

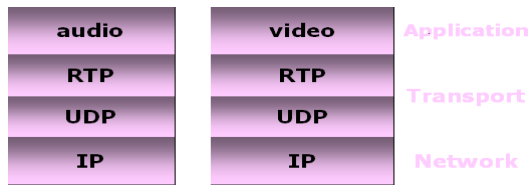
Sequence Number (SN)

- Sequence Numbering is used to detect packet loss.

6

- *RTP sits between UDP and Application*
- *It is considered as a Thin Protocol*

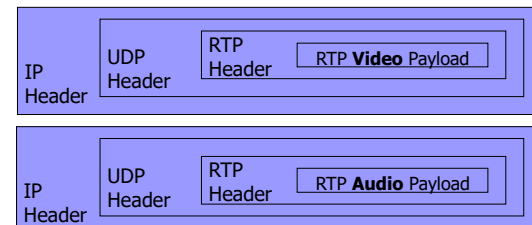
RTP in Layering Model



7

How Does RTP Packet Travel

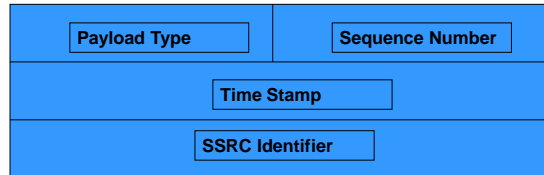
- *Video and audio payloads are sent separately*



- *Uses sequence number to synchronise audio and video once received*

8

RTP Header Format



Payload Type: 7 bits, providing 128 possible different types of encoding; eg PCM, MPEG2 video, etc.

Sequence Number: 16 bits; used to detect packet loss

9

RTP Header Format (Cont:)

Timestamp: 32 bytes; gives the sampling instant of the first audio/video byte in the packet; used to remove jitter introduced by the network.

Synchronization Source identifier (SSRC): 32 bits; an id for the source of a stream; assigned randomly by the source

Payload Type	Sequence Number	Timestamp	Synchronization Source Identifier	Miscellaneous Fields
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