

10. Bit streaming

- Sequence of digital signals
- Over a communication path / internet
- Transfer data at high speed
- Requires fast broadband connection
- Requires some form of buffering
- Bits arrive in the same order as sent
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- The data is compressed before transmission
- Data is transmitted continuously as a series of bits
- Video hosted on a media server
- On download, the server sends data to the buffer on the client computer
- The recipient receives bit streams from the buffer.

On-demand bit streaming

- Digital video tape/ digital files are converted to bit streaming format for broadcast on the net; this is known as encoding, these encoded streaming video files are then uploaded to a dedicated server.
- A link for the encoded video is placed on the website
- A user clicks on the link to download the encoded streaming video
- Then broadcast to the user when they require it
- Can be paused/ go back and rewatch/ fast-forward.

How is it possible for on-demand to not pause?

- User needs high speed broadband
- Data is streamed to a buffer
- Buffering stops video pausing as bits streamed
- As buffer is emptied, it fills up again so that viewing is continuous

Real-time bit streaming

- An event is captured live with a video camera
- The video camera is connected to a computer
- The video signal is converted to streaming media files on the computer
- Encoded feed is then uploaded from the computer to a dedicated streaming server.
- The server sends the encoded live videos to all users requesting it as real-time video.
- Cannot be paused.

Issue:

1. Bandwidth
2. Security
3. Copyright

Benefits

- No need to wait for the whole film to be downloaded
- No need to store large files on user's computer
- Allows on demand play back
- No specialist software is required for playback

Problems

- Video stop if very slow internet
- Video stop if inadequate buffering capacity
- Loss of internet means can't access films
- May require specific software to run the films
- Viruses can be downloaded from the website

Bit streaming to send video:

- The data is compressed before transmitting.
- The video is transmitted continuously as a series of bits.
- The video is hosted on a media server.
- The server sends the data to a buffer on the client computers.
- The user's software receives the bit stream from the buffer.

