
CHAPTER 29

Multimedia

Solutions to Odd-Numbered Review Questions and Exercises

Review Questions

1. In *streaming stored audio/video*, a client first downloads a compressed file and then listens to or watches it. In *streaming live audio/video*, a client listens to or watches a file while it is being downloaded.
3. A *metafile* contains information about a corresponding audio/video file.
5. *Jitter* manifests itself as a gap between what is heard or seen.
7. *JPEG* is used to compress images. *MPEG* is used to compress video.
9. The *DCT* reveals the number of redundancies of a block.

Exercises

11.
 - a. 9 packets played; 11 packets left
 - b. 12 packets played; 8 packets left
 - c. 17 packets played; 3 packets left
 - d. 22 packets played; 8 packets left
13. We can say that *UDP* plus *RTP* is more suitable than *TCP* for multimedia communication. The combination uses the appropriate features of UDP, such as timestamp, multicasting, and lack of retransmission, and appropriate features of *RTP* such as error control.
15. The *web server* and *media server* can be two distinct machines since it is the metafile-data file combination that is important.

17. Both *SIP* and *H.323* use the Internet as a telephone network. The main difference is that *H.323* uses a gateway to transform a telephone network message to an Internet message. See Table 29.1.

Table 29.1 *Solution to Exercise 17*

<i>Issues</i>	<i>SIP</i>	<i>H.323</i>
Transport layer	UDP or TCP	UDP for data, TCP for control
Address format	IP address, e-mail address, or phone number	IP address
Establishment	3-way handshake	H.225, Q.931, H.245
Data exchange	UDP, TCP	RTP, RTCP, UDP, TCP
Termination	BYE message	Q.931

19. *H.323* can also be used for video, but it requires the use of videophones. Currently most people don't have videophones.