CS158A Project 2: First Draft

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MAC Protocol:

The subset of MAC protocol that is simulated is the IEEE 802.11 (Wireless LAN) which was released in 1997. Wireless LAN is a type of LAN that uses radio waves to communicate between nodes instead of using wires. Using different types of acknowledgements such as Request to Send and Clear to Send, Wireless LAN focuses on collision avoidance.

Network Parameters:

The network parameters include: The number of nodes is 10, the number of transmissions is 20, and the network length is 100 meters. The traffic type is synchronous video with a constant bit rate. The data rate is 54 Mbps.

Simulation Settings:

In this simulation the settings are set to: Max back off attempts is 16 and the back off value is 51.2 microseconds. Bit rate is 1536 kbps for video and 64 kbps for voice.

The max frame size is 18.32815 kb with max payload 18.496 kb.

Throughput Performance:

Discussion of simulation results:

The throughput for this simulation is inconsistent. There is no pattern for the throughput for wireless. One reason for the inconsistency is handshaking and errors. When errors occur, more data is sent thus leading to varying throughput. Since the video traffic has a constant bit rate of only 1.5 mbps, it would not fully utilize the maximum bandwidth of 54 Mbps. As a result, throughput is very small compared to bandwidth.