Abstract

Multimedia presentation has been popular by used in the field of education, especially in online learning. The most common practice is to conduct a presentation by utilizing media player on web or native applications. However, this mode of operation belongs to a heavyweight practice which incurs poor performance. Considering smooth operation on all types of smartphone or PC platforms, a lightweight framework must be utilized. HTML5 and WebSocket provide good opportunities or technologies for lightweight implementation. Although both have been discussed in some papers, not any work in the literature is able to integrate these two technologies to handle multiple data types and process multimedia stream efficiently. In this study, the authors develop and implement a real-time synchronous Interactive Presentation System (IPS) which fulfills the above goal. The experimental result shows that the required bandwidth for video streaming in web applications which servicing 30 clients is around six times lower than that of native applications. CPU usage is five times lower. Memory size is ten times lower. Overall, this study provides a system framework for efficient online presentation of web applications.
IPS: A Lightweight Framework for Cross-Platform Multimedia Streaming Server

References


Index Terms

Computer Science

Information Sciences

Keywords

Multimedia, Streaming, WebSocket, HTML5, RTSP.