

I. INTRODUCTION

Network and communication technology is currently developing very rapidly, one of the technological developments is shown by the number of real time communication applications. Real time communication contained in applications usually uses SIP or WebRTC, both of which are very popular for applications that have real time communication features. With WebRTC, it is possible to communicate video and audio between browsers in real-time without the use of plugin. WebRTC has a component as mentioned in [1], namely MediaStream which functions to access the user's camera and microphone, RTCPeerConnection which functions to send data when browsers communicate with each other. WebRTC is supported by several browsers such as Google Chrome, Opera, and Mozilla Firefox [2]. WebRTC technology is one of the most extraordinary innovations, because with the WebRTC technology, real-time communication can be done via a browser without having to use plugins, it also makes it easier for developers to create real-time communication features using the web, WebRTC technology makes it easy from the user's side and developers because they both make things easier on both sides. WebRTC has been recognized by international organizations, namely the World Wide Web Consortium (W3C) and the Internet Engineering Task Force (IETF) [3]. SIP is a communication protocol that was often used before the existence of WebRTC, with the SIP protocol we can communicate in real-time using video, audio and text. There are two protocols for SIP, Session Description Protocol (SDP) and Transport Protocol (RTP) or Real-time Transport Control Protocol (RTCP) [4].

In this study the implementation of webRTC uses nodejs as a [5] server, while for SIP it uses FreePBX [6], which is an open source distribution based on web GUI (graphical user interface) that is able to control and manage Asterisk (PBX), an open source communication server. The test will be based on the calculation of the PSNR value to determine the video and audio quality.