ABSTRACT

Communication and information technology develops in all area including the area of education. One implementation in the field of education is the implementation of online examination. At SMK Telkom Bandung in the implementation of online examination conducted for daily examinations such as pre-test and post-test. However, the online examination system has a disadvantage of security system, which causes the exam participants can do cheating. Among them by exchanging answers through smartphone applications such as through social media applications, chat applications Line, Whatsapp, Telegram and searching for answers through a browser (browsing).

To overcome such problems in this final project authors perform a packet-based on firewall filtering on Layer7 protocol using whitelisting method for online examination security system. The author also did a firewall comparison Layer7 protocol with stateless firewall security system its purpose to know the reliability of the firewall security system that the author has designed. In addition, there is also a need for analysis of bandwidth needs used in the implementation of online exams to support the implementation of online exams with good performation.

In this final project, security system design testing of online firewall-based packet filtering on the Layer 7 protocol has been implemented and based on the results of a questionnaire on teachers and students.The results of the questionnaire showed that this security system is very reliable to restrict internet access applications and browsing activities that are not related to the google classroom site for exam activities. In this final project, the author also analyzes the minimum bandwidth required for online exam.

Keywords* : *Online Examination, Bandwidth, Firewall , Packet Filtering Firewall