# *ABSTRACT*

*Many companies or institutions that utilize computer networks do not yet possess effective network management. One of the issues is the absence of redundancy or alternative paths to address problems such as packet data loops and disruptions in the network system. To address this situation, the author employs Spanning Tree Protocol (STP) network management on switches to provide redundancy paths and prevent network loops. Additionally, the author implements Virtual Local Area Network (VLAN) to provide distinct domains for clients. Another common problem in computer network systems is unrestricted user access to servers. To tackle this, Extended Access Lists are utilized. The testing is conducted by accessing a web server and sending ping messages to the server. The tested protocols include ICMP and HTTP, assessing QoS parameters such as throughput and packet loss. The results of this study indicate that vlan10 cannot access the web server and can only send ping messages to one server, while vlan20 can access both servers. Throughput and packet loss values obtained are only applicable before the ACL is implemented. From these test outcomes, it can be concluded that Extended ACL has the capability to regulate traffic limitations to prevent passage through a network.*



*Keywords: Spanning Tree Protocol, Virtual Local Area Network, Extended Access List Control, Web server, QOS.*