ABSTRACT

Multiprotocol Label Switching (MPLS) is a technology for speeding up network traffic flow and making it easier to manage. MPLS involves setting up a specific path for a given sequence of packets, identified by a label put in each packet, which saves the time needed for a router to look up the address to the next node to forward the packet to. In addition to moving traffic faster overall, MPLS makes it easy to manage a network for quality of service (QoS). MPLS is called multiprotocol because it can be implemented over multiple different networks and protocols of IP network, ATM network. MPLS allows most packets to be forwarded at the layer 2 (switching) level rather than at the layer 3 (routing) level. In fact, the MPLS layer is in between the layer 2 and layer 3. Instead of IP routing the packet, a router in the MPLS network uses the label switching table (LST) to forward the packet. If a router in the MPLS network is an edge router and receives an IP packet from another network, it uses the label switching table to map the forwarding equivalence class (FEC) to a next hop label forwarding entry (NHLFE). The NHLFE contains the outgoing label, the interface through which the packet will be forwarded and the next hop IP address. If a router in the MPLS network receives an MPLS packet containing a label it maps the incoming label to a NHLFE using the LST which is also called as the incoming label mapping (ILM).

**Kata kunci**: Multiprotocol Label Switching (MPLS), QoS, NHLFE.