

ABSTRACT

Multi-Protocol Label Switching (MPLS) VPN (Virtual Private Network) is a method of forwarding data over a network by using the information in the label attached to the IP packet. With traffic-engineering function efficiently, the need for MPLS VPN is also increasing rapidly. But problems can occur if the network was damaged or lost.

Backdoor link is a low-bandwidth backup link is used when the backbone link is lost. Is the OSPF protocol (Open Shortes Path First). However, if the backbone link is still connected, and OSPF backdoor link connects two sites located in the same OSPF area, then the OSPF backdoor link is always preferred. Because OSPF backdoor link will be considered as a link intraarea. By default, OSPF will choose intraarea links, so that the backdoor link is considered as an active way. Such a situation is not what we expect because the backdoor link has low bandwidth and not the main point. To avoid this, use Sham Link (false links). Sham link is a fake link in the configuration of PE routers so that the link is considered as a link intraarea backbone.

In this final has been simulated backdoor link on MPLS VPN network using OSPF sham link. Simulations using GNS3 as MPLS VPN router. Backdoor link performance analysis based on the value of QoS for data transfer.

The result is a backdoor link can be used as a backup link, and able to maintain QoS, especially throughput, while still sending data packets if the backbone is not active. If there are two backdoor link, then the backdoor link with higher bandwidth will be used to route data packets, this is because the path has a greater bandwidth, has a smaller cost value.

Keywords: Backdoor links, OSPF, Sham links, MPLS VPN, GNS3