

# Border Gateway Protocol to provide failover in multihoming environment

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## Abstract

Nowadays Internet access across the globe is very crucial because of the huge size of useful data that the Internet stores. This stimulates most ISPs to choose a reliable routing protocol in order to preserve the security and guarantee of customer's data on the Internet. By multi-homing a network using BGP, a more control of balancing the traffic load and achieving redundancy becomes possible. This will enhance network performance, quality throughput and better routing policies on the Internet. Single-homed Internet communication link between networks' Internet service provider does not inspire with confidence because of excessive traffic and device or human error that may arise. We use BGP because of its ability to choose the best path to a destination particularly in a Multihoming environment. Our simulation results are achieved using GNS3 emulator and Wireshark network analyser. We carried out two simulations to run BGP Multihoming to the same service provider and to different service provider. In both scenarios we run the simulations in failover mode and in load-shearing mode. Simulation results show that BGP Multihoming to different service providers provides failover to ISP networks. For a home and enterprise network to have a certain level of failover or redundancy there is a need to employ the use of BGP Multihoming to different service provider.

**Keywords:** ISP, BGP, GNS3, Emulator, Wireshark multihoming, Failover, Load-shearing

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