Abstract

In this paper we simulate an office LAN using IT Guru Opnet 9.1 and then we calculate the performance of this network under 10BaseT and 100BaseT Ethernet wiring standards with different frame size and finally we compare the results i.e. which standard perform better for which frame size. We find that numbers of collision counts at hubs are always more in 10BaseT, because of the nature of this standard. Hubs are always more utilized in 10BaseT, because of more retransmission attempts due to high number collisions under 10BaseT. Initially when frame size is 1500 Bytes, we find that 100BaseT standard is performing well because the switch filters more traffic. We again reduce the frame size to 1024 Bytes in this case performances are equivalent. When we further reduce frame size to 512 Bytes we get a shocking result because 10BaseT standard performs well and the switch filters more traffic. Then we come to point that if we have a low traffic LAN and we fix frame size to 512 Bytes then we have to use 10BaseT Ethernet wiring standard in the implementation of LAN because it will give us good performance as compares to 100BaseT. To our best knowledge this is the first paper that calculates the performance of a LAN under these assumptions.
References

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**Index Terms**

Computer Science    Networks

**Keywords**

10baset  100baset  Lan And Wan