

An Overview of Gigabit Switch Routers

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It is clear that the Internet Protocol (IP) is the dominant Network Layer (NL) protocol and many killer networking applications are being developed using the TCP/IP protocol stack. It is not uncommon these days to find TCP/IP protocol stack even in small gadgets (e.g., PALM PILOT). The emergence of the World Wide Web has given a tremendous boost to the Internet and Internet has evolved from being a purely research network to a full fledged network used for electronic commerce and for mission critical applications. Statistics bear this out, showing that the Internet is on a geometric growth curve, doubling the number of hosts and domains approximately every nine months to a year. Traffic growth is doubling at an even faster rate, fueled by graphics-rich web pages and the beginnings of a multimedia explosion. This has resulted in enormous demands for bandwidth from the Internet and for the Internet Service Providers (ISPs), the challenge is to keep up with this growth in the core of their networks, while at the same time providing new services and capabilities to generate revenue and profits. ISPs are evaluating ways to evolve their infrastructure to meet the needs of their customers and new applications that will require some Quality of Service (QoS). This in turn puts demands on routers that must be QoS capable. In addition, the ISPs that wish to offer services such as frame relay and ATM along with Internet service, the problem is even more complex as they must spend enormous energies in their attempts to evolve the infrastructure to support new technologies and to satisfy the ever increasing demands from their customers.

This tutorial will the following topics:

1. Architecture of Existing Routers
2. Architecture of Gigabit Switch Routers
3. QoS Considerations in Gigabit Switch Routers
4. Players in Market developing Gigabit Switch Routers
5. Future Trends

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