

Routing based IP/WDM

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Abstract: The development of information and communication, especially the Internet in recent years make a revolution to many aspects of a life. Telecommunications networks have been developing new and advanced technologies, especially optical communications. Optical communication system is considered to be the most development potential in telecommunications now with the advantages of wide-band transmission and allowing for the necessary information in the form of digital signals, transmitted information doesn't effecting on the electromagnetic and high security.

Being a network layer technology used to route information on the network in OSI model, IP internet protocol became the popular standard protocol for new network services, which IP traffic will increase rapidly and replace for other networks. Advanced optical WDM technology is not only get a rise ability amount of bandwidth but also maintain the working status of network. It is also considered an optimum solution in term of cost for long haul networks. Although two protocols IP and WDM are independent of each other, they can integrate the IP traffic into transmission in WDM optical network, which has solved problems of network traffic and has created developmental momentum for the telecommunications networks and much kind of services. IP/WDM networks to comply with the multi-layer network protocols. Intermediate class will provide the functions as well as traffic engineering. How to control the flow of light-path when these functions come down WDM optical network? To solve this problem, routing and wavelength assignment have to be determined.

The last IP/WDM network developed in this thesis considers "performance analysis of WDM optical network" which uses in all optical network (AON). In all optical networks, the network construction is not successful and has some assume. This problem will mention by theoretical and modeling them based on simulation Matlab.

Keywords: *IP/ WDM: Internet protocol/ Wavelength Division Multiplexing.*

AON: All Optical Networks.