A QoS based virtual topology design algorithm for WDM networks

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ABSTRACT

Wavelength-division multiplexing (WDM) networks set up light-paths dynamically by reconfiguring the optical switches to provide single hop communications between end nodes. These light-paths established form a virtual topology. WDM networks adapt to the changes in various traffic of network by reconfiguring virtual topologies. There are many algorithms discussed the design and reconfiguration strategy for virtual topology. However, the approach of QoS is still lacked. In this thesis, we propose a QHVDA algorithm to let the high priority packages immediately accelerate high-speed transmissions, and a QICA algorithm to reserve high priority links on virtual topology reconfigurations to achieve QoS.

Keywords: Wavelength-division multiplexing (WDM) networks ; virtual topology ; Quality of Service(QoS)

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