

عنوان مقاله:

A Novel QoT-Aware Routing and Wavelength Assignment Algorithm in All-Optical Networks

محل انتشار:

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خلاصه مقاله:

In WDM all-optical networks, physical impairments degrade optical signal to noise ratio (OSNR). Therefore, the quality of a lightpath must be checked during connection setup. Since during a lightpath setup, it may inject crosstalk on all previously established lightpaths with which it shares links or nodes, OSNR for those lightpaths should be checked as well as the OSNR of the tentative lightpath. If the number of hops for a lightpath increases, the amount of OSNR degradation increases due to crosstalk. Hence, longer paths are subject to higher QoT degradation due to crosstalk. In this paper, we enhance OSNR degradation for different lightpaths with different hop numbers in such a way that OSNR degradation for long-hop lightpaths becomes closer to short-hop lightpaths, i.e., a fair OSNR degradation. We provide a mechanism to estimate crosstalk risk at the routing process by which we can find the nodes with positive crosstalk risk. Then, rerouting procedure is used to reduce the crosstalk risks of these nodes by migrating some of .lightpaths that pass through the nodes

کلمات کلیدی:

RWA, Quality of Transmission, Crosstalk, Rerouting, long-hop lightpaths, fairness

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