Abstract- This paper proposes the routing and wavelength assignment (RWA) in Wavelength Division Multiplexing (WDM) mesh network architecture which composed of node that has light path assignment (G-node) and none light path assignment (NG-node) and supporting both wavelength conversion and non-wavelength conversion systems. For routing, the shortest main route and the second shortest alternate route are used and wavelength assignment is random to reduce blocking probability. In addition, the proposed analytical models can also predict the blocking probability. The results show that the proposed grooming node is superior to the method with using only none grooming node. Moreover, the results obtained from the analytical model are agreed well with the numerical results.

Keywords- Wavelength Division Multiplexing, Routing and wavelength assignment, Fixed-Alternate Path Routing , Queueing Theory, Grooming node.

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Performance Analysis of Node Architecture in WDM Mesh Network

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