

EFFICIENCY ACCOMPLISHMENT STUDY OF WAVELENGTH DIVISION MULTIPLEXING (WDM) IN OPTICAL NETWORKS

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Abstract

This paper assesses the performance of chosen algorithms for assigning wavelength in optical networks. The algorithms selected for our study are First-Fit, Random, and our proposed version of Random - Optimized Random. The main aim of the experiment is to simulate the performance of these chosen algorithms in the related aspects: blocking probability, throughput by varying parameters like load (in Erlangs), number of channels, number of links and degree of conversion under the cases: no conversion, full conversion and partial or limited conversion. The above-specified three algorithms, which come under no conversion case, are going to be compared to, with conversion (full and limited). This article provides a review of the conclusions drawn from these investigations. At the end, a series of measurements were performed using simulation software - MATLAB to perform an analysis of the algorithms stated above under specified cases.

Keywords: RWA, WDM, Optical Network, Wavelength Division Multiplexing, Routing, networking, light path, Wavelength Assignment, First fit, Random, Optimized Random, Degree of conversion, Limited conversion, MATLAB WDM.