

505. Title:Performance evaluation of throughput in optical burst switching

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Source title:International Journal of Communication Systems

Volume:24

Issue:3

Issue date:March 2011

Publication year:2011

Pages:398-414

Language:English

Document type:Journal article (JA)

Abstract:Optical burst switching (OBS) provides a promising solution to utilize the huge terahertz bandwidth of optical wavelength division multiplexing (WDM) transmission technology. To exploit this bandwidth, several reservation schemes have been proposed that include just-in-time (JIT) signaling, just-enough-time (JET) signaling and burst segmentation (BS). It is necessary to investigate the performance of these schemes under the same constraints for a prescribed OBS application. Accordingly, in this paper, we analyzed and compared the performance of JIT, JET and BS techniques under various scenarios such as network size, delay variation and load variation in an OBS network using various performance metrics, such as the offset time and switch configuration time. Also, the performance of the network under various switching delays was also investigated. The modified BS reservation scheme has been found to yield significantly better performance and better throughput compared with the JIT and JET reservation schemes. Test results show that the effect of varying loads as well as delays significantly impacts the performance of the OBS network. The results presented in this paper are expected to lead further performance improvements in OBS networks using the BS reservation scheme.