

GSMP-based Connection Management for Optical Burst Switched Networks

JungYul Choi, JunKyun Choi, Minho Kang

Optical Internet Research Center, Information and Communications University,
P.O. Box 77, Yusong, Daejeon, Korea. Tel.+82-42-866-6208, Fax.+82-42-866-6230,

E-mail: [passjay](mailto:passjay@icu.ac.kr), [jkchoi](mailto:jkchoi@icu.ac.kr), [mhkang](mailto:mhkang@icu.ac.kr)@icu.ac.kr

ABSTRACT. We present a framework of connection management and control for data burst switching and transmission based on General Switch Management Protocol (GSMP). By using GSMP, an open interface between a control plane and data plane in optical burst switched (OBS) networks, we can manage and control data burst switching and transmission in centralized method. Centralized controller can manage and control emergency events such as transmission failure for data burst, congestion, and fault, more easily and efficiently, compared with distributed manner. We also propose survivable mechanisms based on GSMP controller for establishing working and recovery connection according to different types of recovery. These works are based on in part of our standardization activity in IETF GSMP working group. Finally we propose a retransmission scheme for blocked data burst in order to improve success rate of transmission for them, called as a dynamic back-off algorithm. This algorithm was proposed to decide retransmission instance and maximum number of retransmission for blocked data burst. By using it, we could improve the success rate of transmission for data burst and reduce waiting time for retransmission.

Keywords; Connect Management, Optical Burst Switching (OBS), General Switch Management Protocol (GSMP), Dynamic Back-Off