

# Bandwidth Allocation for Broadband Transport Network

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**Abstract**—This paper proposes a bandwidth allocation process for a single broadband network traffic source. In recent years, broadband traffic source has been proved that it has self-similarity and self-similar model that is well fit to the broadband network traffic sources. The bandwidth allocation problem is very important in network planning. The network planning problems such as call admission control and route selection have to consider the required bandwidth of network traffic. We use the equivalent bandwidth of two-state fluid-flow model and self-similar model to estimate the bandwidth of the traffic traces. The traffic traces are generated from the Poisson model and the self-similar model. In order to efficiently utilize the network resources, we analyze those traffic sources and bandwidth estimations, which are suitable for different network conditions as well as the influence of buffer sizes on different bandwidth estimations.

**Keywords**—Bandwidth Allocation; Self-Similar Model; B-ISDN; Quality of Service

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