

A Two-Component Spot Pricing Framework For Loss-Rate Guaranteed Internet Service Contracts

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Abstract

The technological advances in recent years are allowing Internet Service Providers (ISPs) to provide Quality of Service (QoS) assurance for traffic through their domains. This article develops a spot pricing framework for intra-domain expected bandwidth contract with a loss based QoS guarantee. The framework accounts for both the cost and the risks associated with QoS delivery. A nonlinear pricing scheme is used in pricing for cost recovery; a utility based options pricing approach is developed for risk related pricing. The application of options pricing in Internet services provides a mechanism for fair risk sharing between the provider and the customer, and may be extended to price other uncertainties in QoS guarantees.