



Storage Area Network Extension Solutions and Their Performance Assessment

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Outline

- Introduction
- Protocols used for Storage Area Networks
- Performance Analysis
- Conclusions



Introduction

- Fibre Channel, Internet SCSI, Internet Fibre Channel Protocol and Fibre Channel over TCP/IP are being proposed to enable storage area networking solutions over SONET-based and IP-based networks.
- The purpose of the paper is to model the latency and throughput performance of these SAN extension solutions under varying network conditions.



Protocols used for Storage Area

- The paper provides a brief description of four protocols commonly used for storage area networking.



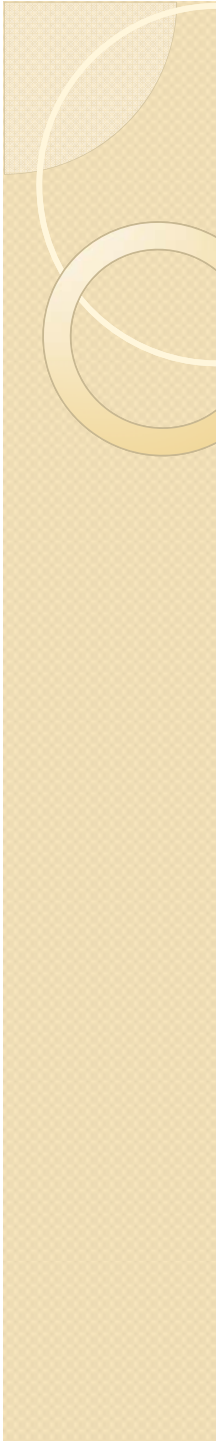
Performance Analysis

- The paper describes the analytical models developed for asynchronous replication based on the SCSI command sequence for a data write.
- Then it analyzes the impact of network parameters on the performance of SAN extensions.



Conclusions

- IP-based solutions are sensitive to packet loss. When implemented with default TCP features, they have high throughputs (> 10 Mbytes/s) up to a distance of 300 km, with realistic packet losses around $1e-03$. When implemented with advanced TCP features, they may exhibit higher throughputs with realistic packet losses than SONET-based extension solutions.
- The selection of any SAN extension solution, either SONET- or IP-based, should be based on application throughput requirements, availability of buffer credits for Fibre-Channel-based solutions, and the complexity of implementation.



Thank you!