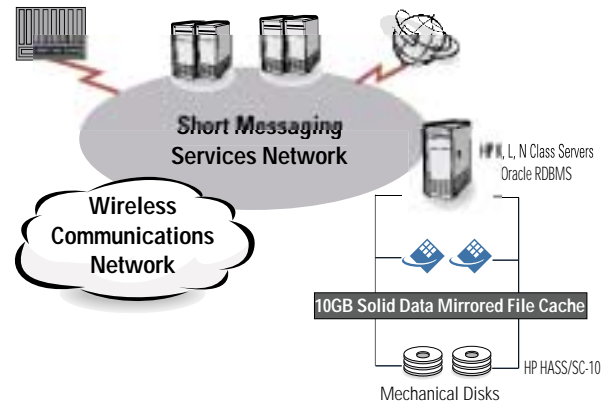


Customers in Action

SHORT MESSAGING SYSTEM

- 200% performance improvement
- Cost per message reduced by nearly two-thirds



SMS Architecture

File cache produced dramatic results, increasing message capacity per day by over 200% and reducing cost per message by 65%. This improvement was achieved with an incremental investment equal to 15% of the base cost.

Company

Integrator B is a diversified global provider of system integration, turnkey solutions, and business process outsourcing, with nearly \$2B in annual revenues and offices in over 30 countries. Its markets include telecommunications, energy, utilities, financial services, and transportation.

Mobile Networks Business Unit

Expected to exceed 100 billion messages per month by the end of 2002, Short Messaging System (SMS) traffic is growing explosively worldwide. The open SMS platform developed by Integrator B's Mobile Networks business unit (MNBU) enables its operator-customers to capitalize on this emerging trend.

SMS Solution

One of the world's leading SMS offerings, the platform provides a turnkey solution for Mobile Internet, WAP, GPRS, and 3G mobile networks, and is the only SMS product that supports major mobile technologies (e.g., TDMA and CDMA) worldwide. A comprehensive, best-of-breed offering, it's notable for reliability, scalability, and market-leading performance at minimum cost.

Architectural Challenges

Exceptionally high performance is mandatory for such features as real-time billing, account updates, and complete call-detail records for large wireless subscriber bases. The system must economically accommodate widely varying levels of network traffic, and, like any carrier-grade service, it must be highly reliable and always available.

Integrator B's ability to deliver many messaging services hinges on the update and management of a single database "messaging table," which not only captures the delivery status of messages, but is used to deliver real-time service usage and wireless account balances. The speed at which this table can be accessed and updated determines system performance under heavy loads.

	Before (Original System)	After (System with File Cache)
RDBMS	Ingres or Oracle HP-UX 10.2	Ingres or Oracle
Configuration	HP K, L, or N ServersHP-UX 11.0HP HASS (High Availability Storage System) - or -HP SC-10	HP K, L, or N ServersHP-UX 11.0HP HASS (High Availability Storage Systems)Mirrored Solid Data Systems Model 800 file cache <ul style="list-style-type: none"> • 10 GB capacity each • Ultra-Wide SCSI
Application Performance	Daily Message Throughput: 400,000 Messages per day Messaging table purge cycle: 9 hours	Daily Message Throughput: 1,300,000 Messages per day Messaging table purge cycle: 3 hours
Investment Cost/Daily message capacity	\$2.0 million 5.1 cents/message	\$2.3 million 1.8 cents/message

Solution: Solid Data File Cache

Integrator B's SMS system configuration delivers maximum performance and high availability using mirrored pairs of Solid Data file cache Model 800, each with 10GB capacity. In actual benchmarks at a major Asian wireless operator using a Hewlett-Packard K-Class server, this configuration increased daily message capacity from 400,000 to 1,300,000 by providing zero-latency random access to the messaging table data and elimination of "I/O wait" by the server processor, which was previously limited by the I/O subsystem.

Eliminating the I/O wait also improved other critical OA&M (Operation, Administration and Maintenance) functions. For example, file cache reduced the normal purge cycle of database records from nine to three hours.

Bill generation from SMS records requires data persistence, protection, and operational reliability. Here, Solid Data file cache offers speed approaching that of main memory, along with data persistence. Moreover, the system is more reliable because data access is electronic rather than mechanical.

Result

File cache clearly delivers a compelling payoff. With only a nominal incremental investment, Integrator B achieved more than 200% performance improvement and reduced per-message costs by nearly two-thirds, from 5.1 cents to 1.8 cents.

For additional information,
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