

“Our banking environment requires real time access to information with no room for data loss. We chose Hitachi Universal Storage Platform V storage systems because they provided us with enterprise-class functionality and data availability, which resonated with our business mission and provided the reliability we required for business continuity.”

Anantha Krishna  
 Chairman  
 Karnataka Bank Limited



## Karnataka Bank Limited

**INDUSTRY** Banking

**SOLUTIONS** [Business Continuity and Replication \(Three Data Center\), Enterprise Platform](#)  
**Hardware** — Hitachi Universal Storage Platform® V (Sun 9990V)  
**Software** — Hitachi In-System Replication software bundle (includes Hitachi ShadowImage® Heterogeneous Replication and Hitachi Copy-on-Write Snapshot software); Hitachi Virtual Partition Manager and Hitachi Tuning Manager software

---

## Karnataka Bank Sees Complete Data Availability and Improved Daily Banking Processes with Hitachi Storage

Karnataka Bank had a disaster recovery plan in place, as specified by the Reserve Bank of India, but the process took about three to four hours to complete. The bank turned to Hitachi Data Systems for a faster solution: a three way disaster recovery system to ensure zero data loss and a consolidated storage environment. The bank has now seen a 20 percent increase in its core banking system performance, simplified storage management and high availability of data.

Karnataka Bank Limited, one of the leading commercial banks in India, was founded in 1924 in the coastal town of Mangalore in southern India. The organization serves more than five million customers through a national network of 447 branches spread across 19 states and two union territories. The bank has more than 4900 employees.

### Business Problem

Karnataka Bank runs various critical applications, such as Oracle, Finacle and Microsoft® SQL Server®, which made the disaster recovery process very tedious and time-consuming. The bank's disaster recovery drill initiation, which handled the handover to the disaster site, application by application, with separate processes, took three to four hours to complete.

Seeking a disaster recovery plan that would be simpler and faster to execute, Karnataka Bank looked for a centralized approach, not an application-wise execution, which also had to ensure zero data loss. It also wanted a storage and disaster recovery infrastructure that would work for the next five years, without requiring fresh investments in between. The system had to deliver high performance as well as be completely scalable to support the bank's growth over the years.

With its existing infrastructure of distributed silos of storage, Karnataka Bank faced challenges that affected service delivery levels. Backups of a day's transaction would render the bank's database unavailable for four hours. The restore process would also take as long.

The bank also wanted to use some of its existing storage equipment, and wanted a new system that would be able to exploit the potential of this equipment as well.

### A Three Way Solution for Rapid and Effective Disaster Recovery

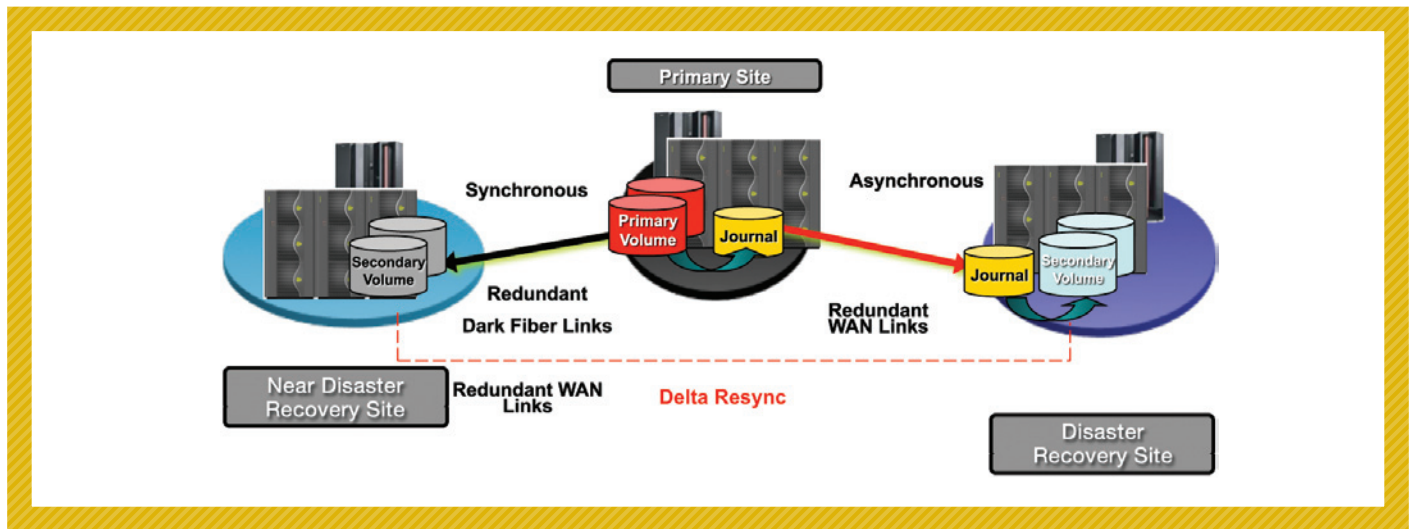
Karnataka Bank evaluated the solutions from EMC and IBM, as well as Hitachi Data Systems for price, support quality, performance, manageability, high availability and reliability. "We chose the Hitachi Data Systems solution as they were superior to other solutions techno commercially," says Assistant General Manager at Karnataka Bank, Anantha Padmanabha Upadhyay. Sun Microsystems was the partner of Hitachi Data Systems in this exercise.

Karnataka Bank consolidated its storage infrastructure and implemented a Hitachi tiered storage solution that provides a three way disaster recovery system to ensure zero data loss. The bank's main operations are now run from a data center in Bangalore. For the disaster recovery plan, a nearline data center has been established. This operates in a synchronous mode with the main data center, which means all transactions that happen are stored in the main data center as well as the nearline one at the same time. A remote data center in a different city runs in an asynchronous mode. This three data center operation works in such a way that there can be no data loss in the event of a disaster. If the main data center goes down, the nearline data center, which is always on standby,



"We chose the Hitachi solution as it was superior to other solutions techno commercially."

Anantha Padmanabha Upadhyay  
Assistant General Manager  
Karnataka Bank Limited



takes over. This also starts a syncing of data with the remote center. The bank continues to operate without missing a beat, but all the data transmission happens from the remote data center.

By building in redundancies at every level the system has been planned such that there is no single point of failure. The bank will continue to function even if failure occurs in any equipment anywhere.

The connectivity to the data centers is provided by Bharat Sanchar Nigam Limited (BSNL). Karnataka Bank is the first bank to use public infrastructure for disaster recovery activities. The entire project was completed within three months and saw a smooth implementation.

### Hitachi Data Systems Consolidates the Storage Setup

The solution used a range of Hitachi (re-branded by Sun) hardware and software for the disaster recovery and storage setup.

Each of the three data centers are equipped with the Hitachi Universal Storage Platform® V (Sun 9990V). With the Universal Storage Platform V, the Karnataka Bank gets a high performance and scalable solution that integrates storage virtualization, dynamic provisioning and logical partitioning features.

Hitachi Universal Replicator software is used to replicate data effectively among the three data center locations. Data is replicated between the bank's primary and nearline sites using synchronous replication, and between its nearline and disaster recovery sites asynchronously. With its ability to asynchronously replicate over any distance in a heterogeneous environment and multiple applications, Universal Replicator software helps the bank significantly lower the cache and resource consumption of its primary storage system. In addition, the delta resynch feature, when coupled with three data center multihop support, provides the bank with the most concurrent multisite replication capability and enhanced data protection available.

The bank uses the Hitachi In-System Replication software bundle (including Hitachi ShadowImage® Heterogeneous Replication and Hitachi Copy-on-Write software) for high speed, nondisruptive local mirroring. The process rapidly creates multiple copies of critical bank data within the Universal Storage Platforms that can be quickly recovered in the event of disaster or data corruption.

In addition, Hitachi Virtual Partition Manager software enables the logical partitioning of ports, cache and disk capacity

on the Universal Storage Platforms, while Hitachi Tuning Manager software helps the bank manage the storage network resources. This maximizes storage utilization and improves storage performance and capacity management, resulting in reduced total cost of ownership.

### Benefits

According to Karnataka Bank Chairman Anantha Krishna, "Our banking environment requires real time access to information with no room for data loss. We chose Hitachi Universal Storage Platform V storage systems because they provided us with enterprise-class functionality and data availability, which resonated with our business mission and provided the reliability we required for business continuity." The bank has seen benefits that start from zero data loss to improvements in daily functioning of the bank, including:

- **100 percent data availability with zero data loss.** With a three way disaster recovery setup, redundancies built in every level and use of replication software that ensures high speed data replication, the bank now has a disaster recovery setup that ensures zero data loss.

- **Ensured long distance data recovery.** Despite remote operations and working in multiple applications, the bank now has a system that ensures that data can be recovered quickly, with minimal or no downtime.
- **Significant reduction in disaster recovery initiation time.** From an existing disaster recovery initiation time of three to four hours following a tedious process, a disaster recovery drill now kicks off in just 15 minutes, with all applications and data being made available in this span. This plan ensures that work is not disrupted, and users don't even come to know that there has been a system change.
- **Meeting storage and recovery goals.** With the Hitachi solution-based disaster recovery system in place, the bank has met its recovery point objective of having zero data loss, and recovery time objective of under 30 minutes.
- **20 percent increase in performance.** The bank has seen a significant increase in performance in its core banking environment because of the replication of data happening synchronously. This is despite the fact that synchronous data replication requires the action of storing to two places simultaneously, which means a longer process time.
- **Faster backups, lower downtime.** Backups in the earlier distributed storage environment used to take four hours. Now backups happen in 15 minutes, thus leading to almost no downtime.
- **Simplified management.** With a centralized replication of data happening at the storage level rather than the existing mode of replication at the application level, storage management has become simple at the bank.
- **Investment protection.** Leveraging the integrated virtualization feature of the Universal Storage Platform V, Karnataka Bank has improved the utilization and flexibility of its legacy systems by aggregating a mix of internal and external storage systems into a single, flexible, virtual pool. This ensures that some of their existing infrastructure has been put to great use in the new system.

## Hitachi Data Systems Corporation

### Corporate Headquarters

750 Central Expressway  
Santa Clara, California 95050-2627 USA  
www.hds.com

### Regional Contact Information

**Americas:** +1 408 970 1000 or info@hds.com  
**Europe, Middle East and Africa:** +44 (0) 1753 618000 or info.emea@hds.com  
**Asia Pacific:** +852 3189 7900 or hds.marketing.apac@hds.com

Hitachi is a registered trademark of Hitachi, Ltd., in the United States and other countries. Hitachi Data Systems is a registered trademark and service mark of Hitachi, Ltd., in the United States and other countries.

All other trademarks, service marks and company names in this document or website are properties of their respective owners.

Notice: This document is for informational purposes only, and does not set forth any warranty, expressed or implied, concerning any equipment or service offered or to be offered by Hitachi Data Systems Corporation.

© Hitachi Data Systems Corporation 2010. All Rights Reserved. SS-183-C DG April 2010