



## Vodacom

### An EMC tiered storage infrastructure supports large-scale storage demands

A leading provider of cellular communications in South Africa, Vodacom is undergoing exceptional growth. An average of 500,000 new subscribers are signing on every month, and join a customer base of over 21.5 million—all who have come to rely on Vodacom's world-class mobile network services delivered via a 5,700 base station cellular network.

The company's investment in EMC® storage technology over the years has helped Vodacom support optimized information management to facilitate improved operations and unequalled customer service. In addition, EMC technology is seen as a key enabler in Vodacom's efforts to quickly develop, release, and support new products and services.

Providing approximately 2.4 petabytes of storage capacity, Vodacom's powerful, highly reliable, EMC tiered storage infrastructure includes a combination of EMC Symmetrix DMX™, CLARiiON®, and most recently, EMC Centera® systems, along with state-of-the-art EMC software solutions that allow for simplified management and unsurpassed business continuity.

“EMC understands what it takes to deal with large volumes of data,” says Derek Morgan, managing executive, Billing Systems Group. “They also understand the data availability and integrity needs that are required in this type of environment. EMC listens to its customers, giving them the opportunity to direct the development of future products.”

#### Storage designed for business-critical applications

Prior to the deployment of its EMC Symmetrix®-based SAN several years ago, Vodacom's operations were supported by a traditional direct-attached storage-to-server environment. As the company and its IT environment grew, so did its management challenges. The ability to quickly and economically adjust capacity for a growing number of business-critical applications had also become increasingly constrained.

At the time of the evaluation, the EMC Symmetrix DMX had not yet been released, but Vodacom wanted to conduct a proof-of-concept onsite, and they evaluated the EMC Symmetrix model 8830 and found it to be very competitive.

“EMC's professional approach was most impressive,” says Morgan. “The entire evaluation was marked by absolutely superb services—and ultimately, that's what made us choose EMC.”

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Today, a multiple-system EMC Symmetrix DMX-based SAN, supported by EMC PowerPath® software for automatic load balancing and path failover, flexibly and reliably address the growing and changing needs of applications vital to Vodacom's day-to-day operations.

"One of the biggest challenges in our previous environment was that storage utilization was only around 40 to 60 percent," says Morgan. "In terms of pure storage consolidation, the key advantages we have realized since the EMC deployment are much higher utilization rates, easier management of the storage environment, and the flexibility to adjust capacity as needed."

"One of the reasons for Vodacom's success is the passion and drive of our people—not just the technology. At Vodacom, we want to give to our customers simply the best customer experience. In EMC we've found that same passion and drive, and the customer experience that we've had with them has been tremendous."

**Derek Morgan, Managing Executive, Billing Systems Group**

Advanced storage and SAN management products, which include EMC SAN Manager™, EMC Connectrix® Manager, and EMC ControlCenter® provide Vodacom's technical staff with a comprehensive toolset for streamlined administration.

"We rely on all of them," says Morgan. "That's how we manage the 2.4-plus petabytes of storage. They provide a simplified approach and give us a single point-of-view."

Also deployed within Vodacom's production environment are over 30 EMC CLARiiON® systems which currently provide a high-performance, highly reliable, yet more economical alternative to the company's tier-one EMC Symmetrix DMX storage. Fast and easy administration at the mid-tier is supported by EMC Navisphere® management software.

"The first CLARiiON systems we deployed were meant for backup to ATA disk," says Morgan. "However, we've found them to be a very good alternative to the high-end Symmetrix for certain applications. The performance is excellent and they're a good value for the price."

### **EMC Centera helps enable compliance for call center records**

Vodacom's most recent EMC deployments include two mirrored 30-terabyte EMC Centera Compliance Edition Plus content-addressed storage systems housed in separate locations. These highly reliable, easily managed and scaled systems replace a demanding archive-to-tape process for NICE Systems voice recording and logging applications within the organization's call center environment. Fielding approximately 3,000 calls a day, Vodacom call centers from across the region now archive NICE records to the EMC Centera Compliance Edition Plus platform.

"Centera's integration with NICE applications was seamless, and users have commented that they've seen a performance improvement since deployment," says Morgan. "They can now retrieve an archived call quite fast. It's also a more manageable solution than tape."

In addition, EMC Centera's scalability, guaranteed content authenticity, object-level control of archived records, single-instance storage, and rapid accessibility make it well suited for Vodacom's growing volume of call center records which are governed by stringent regulations.

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“New regulatory requirements will have a big impact on storage,” says Morgan. “In South Africa we’ve recently implemented monitoring and interception. In the past, call data would have only been kept for six months, but now it needs to be retained for three years.”

## A comprehensive backup and recovery plan

For a company like Vodacom, even the smallest amount of downtime could have considerable impact. To help ensure that business-critical information is consistently and readily available, the company has implemented a comprehensive backup and recovery plan using advanced local and remote replication technology from EMC.

EMC TimeFinder® software’s ability to non-disruptively create mirror images or business continuance volumes (BCVs) of active production data from EMC Symmetrix DMX storage allows for fast, easy, and seamless local backup of Vodacom’s business-critical EMC Symmetrix systems. EMC NetWorker® is then used to transfer certain BCVs to CLARiiON ATA drives or CD-ROMs.

“Most of the mission-critical applications are deployed on Symmetrix,” explains Morgan. “The issue that normally arises is that there isn’t time to perform any type of backup because the system has to stay up and running. So in our case, the use of TimeFinder BCVs has made a considerable difference.”

EMC TimeFinder also is used to produce production content instantly and without disruption for test systems whenever required.

“Within our billing system, we have 10 different sets of BCVs,” says Morgan. “The fact that we can—very quickly—establish, split off, and mount BCVs on a test system, and go through all the test scenarios for the different test groups’ interfaces with different systems has been very advantageous.”

Key components of Vodacom’s disaster recovery initiatives include industry-leading EMC Symmetrix Remote Data Facility/Synchronous (SRDF®/S), Asynchronous (SRDF/A), and Cluster Enabler (SRDF/CE) solutions.

“The SRDF advantage is point-in-time recoverability on a different site,” says Morgan. “SRDF/Asynchronous gives you the added benefit that high-write I/O systems can also have disaster recovery in the same site without negatively impacting the host I/O. It doesn’t take up any of the server cycles to get the data across to the other site. It’s brilliant.”

EMC SnapView®, EMC SAN Copy™, and EMC MirrorView™/Synchronous are used to support local and remote replication of CLARiiON system data.

“We use MirrorView/Synchronous for cross-site replication, and we use SnapView created clones [point-in-time copies] quite extensively for backup, especially on those bigger systems such as a 60 terabyte database,” says Morgan. “We also use SAN Copy with clones in the same storage arrays, and then SAN Copy to a different box cross-site for disaster recovery.”

EMC Open Replicator for Symmetrix is also part of Vodacom’s backup and recovery strategy and allows the migration of storage from EMC Symmetrix to EMC CLARiiON and from Symmetrix-to-Symmetrix systems.

“If you use SRDF for migrations, it must be the exact same source and target configuration,” says Morgan. “With Open Replicator the source and target don’t have to be configured the same way so we’ve used it quite a bit in that space.”

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## Managing growth and costs through ILM

Considered a necessity, Vodacom has initiated an information lifecycle management (ILM) strategy guided by EMC's comprehensive ILM roadmap.

"EMC's vision for ILM is simply one of the best in the marketplace today," says Morgan. "We see ILM as the means to help us manage growth while keeping costs manageable."

Key ILM milestones for the company include the deployment of different tiers of storage to meet different application needs. Applications and information, such as data from the call center system, also have been analyzed and classified for placement on the most appropriate and cost-efficient storage tiers for the job. In addition, backup and archiving processes initially supported by tape now use online storage solutions which provide time, cost, and functional advantages through economical, easily scaled platforms; faster backups and simplified management; and greater accessibility for improved productivity and customer service. The next step for Vodacom will be to introduce policy-based information classification.

## EMC storage and VMware virtualization technology speed time-to-market

Vodacom's continued success is due in part to its ability to develop new and resourceful offerings and go to market quickly. The capability to rapidly roll out and support these new offerings is strengthened by the flexibility to quickly add storage capacity, as well as through VMware® virtualization technology which enables Vodacom to easily and cost-efficiently deploy virtual servers.

"When we tested the VMware solutions, we found that we were able to deploy a new virtual server within a few minutes," says Morgan. "If you take into account the storage and the server availability made possible through EMC technology, we can quickly release products today that we might not have been able to in the past."

## World-class service and support

EMC Global Services is credited with the rapid deployment of EMC solutions and facilitating integration with top proprietary operating systems.

"Everything was extremely well-handled," says Morgan. "EMC's professional approach was exceptional—not only in terms of attitude, but also from the technical standpoint of integrating these solutions with the proprietary operating systems we were using at the time. They would come in, know what to do, and make it work quickly, and that totally impressed us."

Today residency services are in place to provide ongoing onsite support. In addition two new proof-of-concept engagements are underway including an EMC Smarts® solution for improved root-cause analysis on the network side, and an EMC Invista™ application for networked storage virtualization to better support ILM initiatives.

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