

# Israel Electric Corporation

## EMC provides first-class disaster protection to a national power utility by capitalizing on legacy virtual environment



### Business overview

Israel Electric Corporation (IEC) is the sole national power utility for the State of Israel and generates, transmits, and distributes the overwhelming majority of the nation's electrical power. With its key computing management centers in Tel Aviv and Haifa, the IEC's data, applications, and network are critical components of the company and its ability to function effectively as a business. In addition, they are critical infrastructure components to the commercial and consumer environments of the entire nation.

### Challenges

Fewer things are taken for granted today than electricity—to power our homes, offices, computers, and lives. A national electric power utility can't accept downtime—not in power production, not in its computer network, and therefore not for its data and mission-critical applications.

For a national utility such as IEC, which has grown to depend on a diverse mixture of servers, operating systems, data formats, networks, vendors, and data center practices and protocols—spread across a country—providing a unified, central disaster recovery solution is no small challenge. The local environment threatened by missiles from unfriendly neighboring forces takes disaster recovery out of the realm of esoteric into something painfully tangible to consider. For all of these reasons, the IEC has two data centers—one in Haifa and one in Tel Aviv, each with UNIX, Linux, Microsoft Windows, and mainframe servers.

Recognizing these issues, IEC carefully analyzed their options and looked for a reliable partner to help design and implement a solution to support their extensive operations and virtualized infrastructure.

### Fail-proof disaster recovery protection

Facing tight budgets and exacting operational constraints, IEC needed fail-proof disaster recovery protection to maximize the use of already installed systems. Budgets never make business easy. The conservative thinking prevalent in utilities inclined IEC toward incremental change, not radical new concepts or design. Further, management directives mandated a short timeframe. And IEC preferred to capitalize on already-installed infrastructure whenever possible.

Fortunately, IEC had already worked with EMC for a national storage project that used VMware® for virtualization. A viable disaster recovery solution that could meet both their professional needs and operational constraints was designed by EMC® Israel staff together with IEC staff, relying heavily on the VMware infrastructure and EMC's strong integration points with VMware that were already in place.

“EMC has provided reliable solutions with creative thinking to meet our real disaster recovery needs for the virtual environment. That, coupled with EMC’s support and expertise, made us confident that we had made the right choice.”

Lea Kronenberg  
Storage Manager  
IEC Haifa Data Center

## The EMC solution

IEC staff had become quite proficient with their VMware solution. Shai Levi, the IEC Haifa Windows Administrator, led his team to make optimal use of the virtual machine capabilities for IEC’s top-priority Windows applications. But they realized that only replicating their Haifa data to Tel Aviv was not enough for IEC’s disaster recovery needs. Many applications were hardware and software specific; much time and effort had to be spent customizing system parameters and reinstalling applications. Levi’s team heard about VMware Site Recovery Manager and analyzed it for the IEC’s needs.

The EMC team, together with IEC staff, examined IEC’s needs and defined the disaster recovery requirements thoroughly. At the resulting seminar and proof-of-concept (PoC) testing for IEC staff, EMC staff demonstrated a level of professional knowledge, expertise, and adaptability that earned IEC’s confidence, despite their reluctance about a new product. Mission-critical applications such as the SAP Portal and MQ Broker were tested for the PoC and flawlessly reloaded to the disaster recovery site with zero impact on production.

EMC was chosen to provide the solution—with full responsibility to procure any requisite components needed to deploy it, integrate, train staff, and service and support the solution.

A joint IEC Haifa and EMC team scoped the disaster recovery needs in detail and put together a solution utilizing EMC SRDF® replication technology based on the an EMC Symmetrix® array and VMware vCenter™ Site Recovery Manager (SRM) as the disaster recovery automation tool.

IEC and EMC installed and expanded VMware clusters in Tel Aviv, linking the chosen virtual machines in Haifa with a disaster recovery cluster in the recovery site in Tel Aviv.

They tested some disaster recovery scenarios, including recovery for the needed applications. By using the VMware infrastructure, hardware dependence was eliminated. SRM scripting facilitates the extensive scripting required for the customization and definitions to be turned into automatic processes.

## IEC solution

This IEC solution included the following components:

**VMware vCenter SRM** delivers advanced capabilities for disaster recovery management, non-disruptive testing, and automated failover in a virtualized environment. VMware vCenter Site Recovery Manager can manage failover from production data centers to disaster recovery sites, as well as failover between two sites with active workloads. It also helps with planned data center failovers such as migrations.

**The Symmetrix platform**, the industry standard for high-end information storage systems, is the unsurpassed market leader for availability, consolidation, performance, application integration, power efficiency, and information-centric security.

**EMC SRDF** (Symmetrix Remote Data Facility) and EMC TimeFinder® product families deliver the most comprehensive and time-proven replication solutions available in the market, enabling businesses to balance performance, availability, functionality, and economic requirements to achieve required service levels for disaster recovery and business continuity.

**TimeFinder/Mirror**, which is a highly available, ultra-performance mirror BCV option for the most demanding environments.

**EMC VMware professional services**, delivered by highly skilled VMware professional solution architects and engineers, help maximize virtualization projects using EMC proven practices for VMware environments and EMC products. Extensive training and support have been provided, which is critical for the nearly 150 data center staff in the IEC Tel Aviv and Haifa sites.

**Supported systems and services** for an initial-phase scope included the Microsoft Windows and Linux-based SAP ERP Portal, MQ-EAI integration, and the SMS notification system. Later phases include application servers, web servers, MOS SharePoint Portal, micro-station, employee timecard system, and many others—using numerous platforms, operating systems, and databases.

## Testing, testing and more testing

Utilities tend to be highly conservative in their management and operations. Before a new system can be deployed, it must be tested to ensure it operates properly, integrates seamlessly, and meets all other relevant criteria. Of even greater importance, this testing must be accomplished without affecting mission-critical production systems. A disaster recovery solution must meet all criteria, both for itself and for each system it protects and recovers. This requires extensive testing of each system, especially to ensure zero effect on production during the testing and in the case of a disaster.

Once a disaster recovery plan is designed for a particular system, the SRM enables the operator/test manager to run automated tests. By replicating the requisites to non-volatility LUN at the recovery site, utilizing clones/snaps, tests can be run and rerun without any detrimental effects to production. Essentially, it has a safety valve to prevent virtual machines being tested on production port groups by default. Users create test VLANs with an override “bubble” and the graphic interface enables the user to easily review the scripts as they load.

## Summary

“IEC wants to shift more to virtual machines for important applications. To do this, we must have a good disaster recovery plan,” said Lea Kronenberg, storage manager of Haifa Data Center in Israel Electric Corporation. “EMC Global Services helped us reduce the complexity and time involved with our disaster recovery plan for our virtual environments—and most importantly to test our disaster recovery plans without affecting production. By helping us integrate VMware vCenter Site Recovery Manager into our Symmetrix SRDF remote replication infrastructure and apply our operational procedures for disaster recovery, we are now much more confident in our ability to ensure recovery.”

EMC staff displayed technical expertise and a sense of dedication that complemented the quality and completeness of their disaster recovery solution for IEC. By extensively utilizing the installed VMware base, the solution maintained respectable cost-containment without sacrificing functionality, reliability, or comprehensiveness. By serving as a single source for all aspects of the project, EMC was able to earn even greater respect and trust from IEC with all aspects of deployment, integration, training, and support within the requisite timeframes, budget, and operational constraints. IEC staff is actively integrating their systems into the disaster recovery solution, taking full advantage of the simple, yet comprehensive testing to ensure that their mission-critical data and applications are disaster-proof.



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