Software-defined Data Protection  
What is DR Prophet®?

DR Prophet® is the Business Continuity and Disaster Recovery (BC/DR) solution that provides local and remote block-level backup services for mission critical application servers. DR Prophet® backs up the entire disk with user-adjustable scheduled snapshots to meet even the most granular Recovery Time Objective (RTO) and Recovery Point Odjective (RPO) demanded by today’s challenging business operations.

Moving beyond traditional failure-prone, once-a-day tape backup strategies, DR Prophet® combines local and remote disk-level protection into an integrated and cost-effective solution. DR Prophet® allows enterprises to recover quickly from failures based on point-in-time snapshots and rapidly resume normal business operations either locally or from a remote DR site.

DR Prophet® in a glimpse!﻿

Architecture

DR Prophet® provides both local data protection (business continuity) and remote replication (disaster recovery). At the production site, DR Prophet® creates a thinly provisioned mirror volume (“SAN Mirror”) for each protected disk using a local storage server. An application-aware agent running on the application server ensures the consistency and integrity of the mirrored data. All subsequent backup or disaster recovery related activities such as snapshots and DR rehearsals are performed against the SAN Mirror to avoid any performance impact on the production system.

* [**Text Hover**](http://www.prophetstor.com/dr-prophet/)

DR Prophet® also creates a block-level remote replica (“Remote Replica”) of the SAN Mirror at the DR site. All IP traffic transmitted over the Internet is fully WAN-optimized with data compression, deduplication, and encryption. The DR Prophet® instance run at the DR site takes snapshots and performs DR rehearsals against the Remote Replica entirely independent of the production site.

This architecture also includes a complete set of standby servers that mimic the exact configurations at the production site. In case of a catastrophic failure of the production site, business operation can be quickly resumed at the DR site using these standby servers and the data on the Remote Replica.

DR Prophet® Client Agents

To protect an application server, a DR Prophet® client agent is required to monitor disk activities and transmit duplicated operations to the mirrored disk. The agent also coordinates the applications and the DR Prophet® management server to ensure data integrity and snapshot consistency. Furthermore, client agents collect vital application performance and system health data for monitoring and tuning purposes. DR Prophet® agents are compatible with both Fibre-Channel (IP-SAN) and iSCSI based IP-SAN.

For applications servers running as VMware VM’s, however, no client agents are required as DR Prophet® vSphere Module connects directly to vSphere via native VMware API’s to orchestrate snapshot operations including entering the applications and the guest OS into the quiescent mode.

**Key Features**

##### Automatic Protection Configuration

DR Prophet® can intelligently perform complicated configuration processes to protect the data on AIX, Windows, and VMware vSphere application servers with minimal human intervention. The protections are set up based on pre-defined policies and system performance requirements. It prevents human errors and guarantees that the important data is properly protected.

##### VMWare Protection and Recovery (DR Prophet® vSphere Module)

1. No client agents is needed 2. Support LAN 3. Support VMware native API’s 4. Bootable backup VM on vSphere after restore

##### Mirrored Disks for Fault Tolerance and Local Protection

As a first-line defense against system failures, DR Prophet® preserves the protected data on a local backup storage server. All data protection related disk operations are performed against the mirrored disks on the storage server without incurring any workload on the production system.

##### WAN-Optimized Remote Replication

In addition to local mirror backups, remote replications can be scheduled to transmit local data to a remote DR site. The WAN-optimized thin replication sends only changed data to save time and bandwidth consumption. In additionl, replication compression and encryption are also fully supported.

##### Windows Agent IO Throttling

Users can manually enter the bandwidth limit (throttling) on the DR Prophet® management server o prevent aggressive backup or restore activities that might adversely impact the normal production I/O traffic.

##### Application-Aware Data Protection

To guarantee data integrity and snapshot consistency, DR Prophet® runs a lightweight agent on the application server to collect system status and application states. It keeps track of any system configuration changes and communicates with active applications such as Microsoft SQL Server, Oracle Messaging Server, or Microsoft Exchange Server to ensure transactional data integrity, even across multiple storage volumes.

##### Snapshot for Data Protection and Instant Recovery

DR Prophet® can create as many as 1,024 periodic, scheduled or on-demand, delta snapshots per LUN to keep the point-in-time states of a volume. It features Direct-on-Write (DOT) technology to avoid write IO impact on the production system. Unlike Copy-on-Write (COT), DOT does not require any pre-allocated disk space to keep the snapshot data. The Snapshot Viewer feature allows administrators to create multiple instantaneous virtual copies of an active dataset that the primary application server can assign to additional servers with read/write access for concurrent and independent processing without affecting the activity on the original dataset.

##### Site Failback for Windows Disaster Recovery

When a physical Windows server becomes unavailable due to site failure, a snapshot of the remote replica is promoted as a storage target to be mounted on the spare application server at the DR site. As the production site recovers, the operator can select any snapshot at the DR site and restore the production server by failback reincarnation.

##### Non-Disruptive DR Rehearsal

DR rehearsal can be conducted any time on the mirror LUN at the storage server without introducing additional IO activity to the production server. The system can be recovered from any known-good snapshot by an automated validation and mounting process.

##### Centralized Management and Reports

DR Prophet® web console is a user-friendly graphical user interface provided by the management server to manage multiple application servers and storage servers. Through this management “dashboard”, system administrators can get a clear view of the protection relationship and gain vital system information such as performance statistics, replication status, backup scheduling, and system events. Also, detailed reports can be generated for system analysis, troubleshooting, performance tuning, filing, or maintenance.