## DataCore™ Advanced Site Recovery (ASR) Software

Description

ASR is a key component of DataCore's comprehensive business continuity portfolio. It automates and radically simplifies how one or more, smaller, remote IT facilities take over workloads from a central site in the event of a disaster or scheduled outage. Rather than attempt to fully recreate the central datacenter at another major site, ASR can distribute responsibilities for keeping the business going among a few remote offices and branch offices (ROBO) based on their computational, networking and storage capacities. ASR also takes care of returning control of the workloads to the central IT site when the main IT center is deemed capable of accepting them.

Unlike other approaches that can only address a subset of the IT environment, DataCore covers both virtual and physical Windows Servers without taxing applications, hosts, or hypervisors. Nor does ASR depend on duplicating expensive equipment offsite, such as top-of-the-line disk arrays and specialized networking gear. Only DataCore allows organizations to leverage readily available IT assets, often differing between sites, to minimize or eliminate the disruption and data loss attributed to planned and unforeseen site outages. In view of the fragmented and complicated alternatives, DataCore offers a refreshingly rational and cost-effective solution.


Low Cost Alternative: 1-to-Many DR
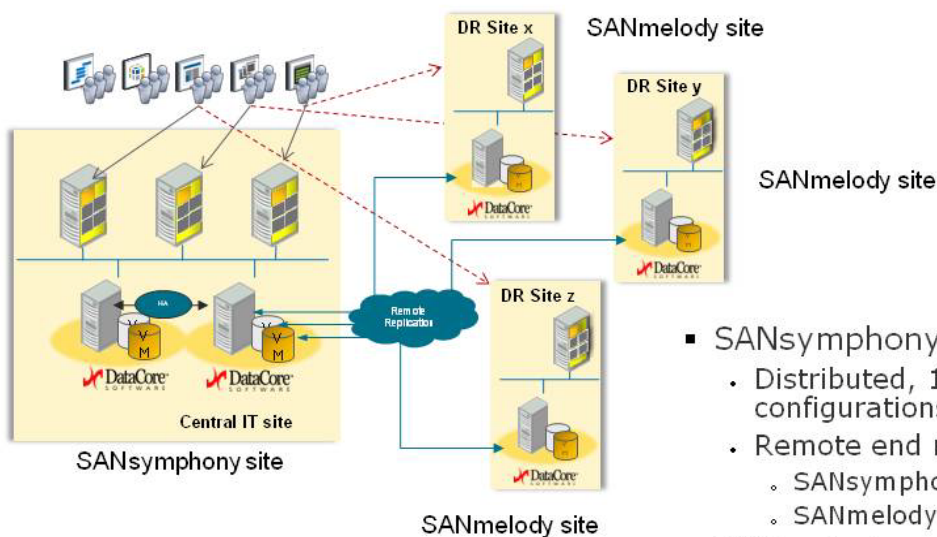
How Does ASR Work?

ASR builds on the virtual disk provisioning, asynchronous remote replication and online snapshot features of SANsymphony™ and SANmelody™ storage virtualization software to constantly update remote sites with changes occurring at the central datacenter. Once configured, the software automatically replicates specific virtual disks to selected destinations, maintaining their identities.

Planned Failover:

For planned cutover, perhaps in anticipation of a coming storm or facility maintenance, the authorized system administrator at the central site first suspends user activity against the selected virtual disks and simply clicks on the ASR failover button. The software waits for any in-flight disk updates to reach the remote end. It then restores operations at the disaster recovery site by bringing up the identical operating images with the latest changes. For ROBOs with adequate capacity, these added workloads may be absorbed along with their existing tasks. Otherwise, the central site failover completely takes the place of lower priority ROBO activities. Any external network connections (e.g. remote users) associated with the central site workloads are also redirected to the appropriate contingency sites.
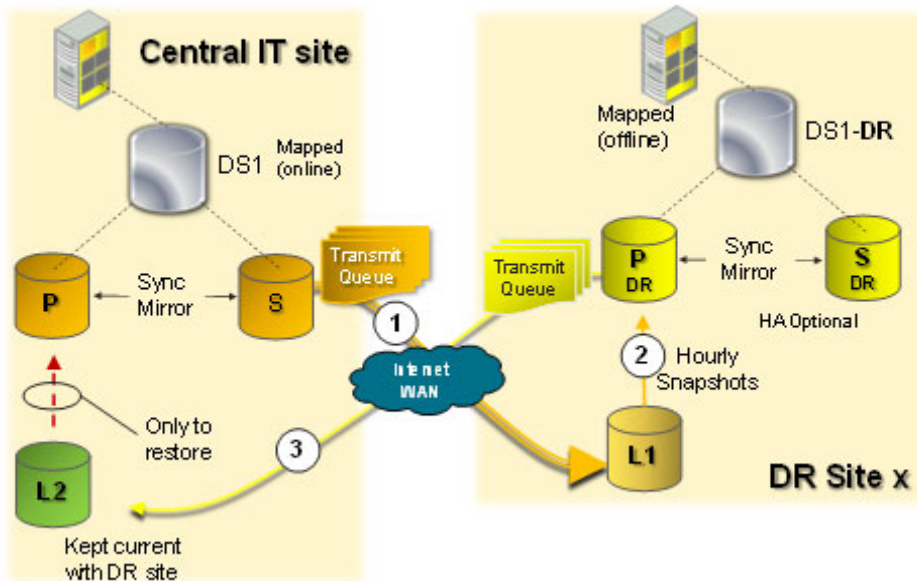
In order to expedite central site restoration, changes occurring at the disaster recovery site are regularly retransmitted back to separate virtual disks at the central IT site. When the storm threat passes or the maintenance work has finished, simply pressing the "Failback" button at the contingency site reverses the process. In this case, the changes that transpired while the central site was out of commission are applied to the suspended virtual disks to fully synchronize them with the latest conditions. Then the central site operations are restored. Those lower priority ROBO activities would then be restored.

Unplanned Failover:

Should the central site be subjected to an unexpected outage, such as a sudden but prolonged power failure or catastrophic facility damage, the system administrators at the contingency sites would press their respective ASR "Disaster Recovery Activation" button. That triggers the remote systems to bring up the latest replicated disk images from the central site. Tradeoffs between the volume of disk updates, network latencies between sites, and the frequency of periodic snapshots help to mitigate any data loss. The procedure for restoring the central site is similar to that used in the planned failover scenario. However, if the storage infrastructure at the central site was severely damaged, the resynchronization will understandably take longer, since some of the disks may need to be completely copied.

Why would you want to spread DR responsibilities across more than one contingency site?

The industry is conditioned to think of DR as a one-to-one proposition. This scheme places unreasonable demands on a single recovery site, asking one location to suddenly take over much larger workloads under very stressful conditions. But most organizations aren't structured this way. They look more like a hub and spoke, with smaller branches emanating from the central data center. For this reason, DataCore's Advanced Site Recovery solution distributes the disaster recovery workloads among these smaller entities, allowing each of them to accept a more manageable role in keeping the business going. The unique, one-to-many approach fits well within the networking, computational and storage capacity constraints found in branch locations. Moreover, this approach also factors in staff and real estate limitations.

How does ASR compare to VMware's Site Recovery Manager (SRM)?

ASR can complement VMware's SRM and/or provide a more comprehensive site recovery solution than VMware's SRM on several fronts:

a) ASR supports any of the popular server virtualization products, not just VMware.

b) ASR supports both virtual and physical machines.

c) ASR takes advantage of replication and snapshot features in SANsymphony and SANmelody software allowing any popular storage device to be used at either end. SRM, on the other hand, relies on embedded functions in specific disk arrays to handle remote replication and capture points-in time. Both sites must be equipped with compatible disk arrays.

d) SRM manages workflows and host level coordination. ASR operates strictly at the SAN-level.

Other Key ASR Characteristics

Same for Virtual and Physical Systems

As importantly, the ASR solution is not confined to virtual servers. It operates identically with the many physical systems that make up a large part of IT infrastructures today. Offering a congruent DR method for all of these environments eliminates catastrophic misalignments that plague divergent processes.

Central Site Restoration Built-in

DataCore's Advanced Site Recovery (ASR) solution also addresses the rapid restoration of the central IT site from the widely dispersed branches through ongoing bi-directional replication. Other DR alternatives don't account for this critical aspect. They end up prolonging the crippling effects of an outage long after the central machines could take over their original chores.

Universal Coverage for Heterogeneous Scenarios

ASR works whether the servers are purely physical, or have been virtualized with Citrix XenServer, Microsoft Hyper-V, VMware or other popular hypervisors. Moreover, it supports the use of dissimilar storage devices between the datacenter and its branches. In contrast, lack of such heterogeneous features in competing, and much pricier, disk array-based replication products makes them unsuitable for many customers.

Advanced Site Recovery (ASR)

Spread Disaster Recovery (DR) responsibility across multiple smaller sites

- Choose locations best suited to handle specific DR load
- Built-in central site restoration
- Universal coverage for heterogeneous scenarios
- Same automated process for Virtual & Physical systems
- Separately-priced option for:
  - SANsymphony
  - SANmelody

SANmelody	SANsymphony
1-to-1	1-to-many