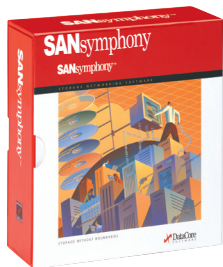


# DataCore™ Advanced Site Recovery Business Continuity Software

Distributes disaster recovery responsibilities among remote offices / branch offices



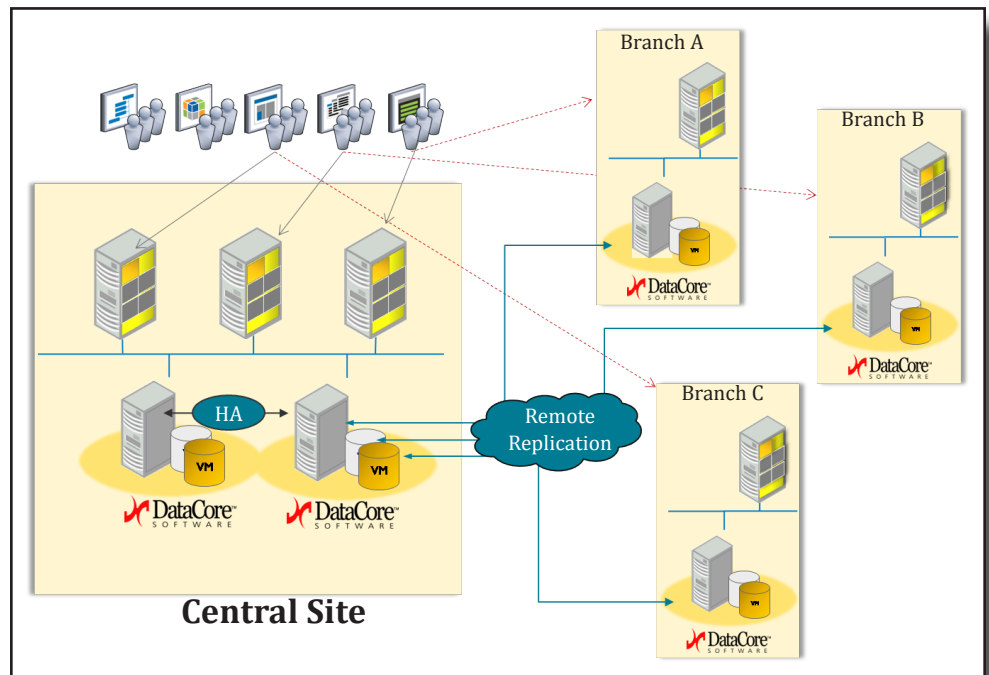
## Description

Advanced Site Recovery (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 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.

## Benefits

- Reduces business continuity costs.**  
 Eliminates huge expenses necessary to build out a duplicate contingency site to handle infrequent emergencies.
- Leverages existing infrastructure.**  
 Allows smaller IT facilities already in place to back up larger datacenter during central site outages.
- Reconciles Inter-site Hardware Differences.** Accommodates the use of unlike storage devices and servers at each end.
- Automates Offsite Cut-over.**  
 One-click switches operations to pre-defined locations.
- Restores Central Site.** Returns workloads to main IT facility when that site is deemed ready to take over its original responsibilities.
- Consolidates disaster recovery.**  
 Same solution covers datacenter-wide requirements with mixed operating systems and diverse applications spread across virtual and physical servers.



**Practical**

**Cost-Effective**

**Scalable**

**Universal**

**Step by Step Sequence**  
(Refer to adjacent figure)

- ① ASR sets up asynchronous remote replication between the central IT site and each of its disaster recovery sites to automatically transmit any disk updates over the IP WAN.
- ② Periodic snapshots automatically triggered from the central IT site ensure that each ROBO can bring up a consistent point-in-time when all associated updates have arrived.
- ③ When directed, each disaster recovery site boots up virtual machines or physical servers using the most recent snapshot of the corresponding Central IT site images.
- ④ Any changes occurring at the remote site while switched-over are also transmitted back to the Central IT site and held in a separate disk to speed up later restoration.
- ⑤ When the Central site is deemed capable of taking back its processing responsibilities, its disks are first resynchronized with the most recent images available from the remote site.

For additional information, please visit: [www.datacore.com](http://www.datacore.com) or e-mail: [info@datacore.com](mailto:info@datacore.com)

**How does ASR work?**

ASR builds on the virtual disk provisioning, asynchronous remote replication and online snapshot features of SANsymphony™ 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.

**Scheduled Switch-over**

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 Fail-over**

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.

**Prerequisites**

- Servers, storage and networking infrastructure to handle the production, replication and recovery workloads across sites.
- SANsymphony software licenses configured to manage the storage pool at the central IT site.
- SANsymphony software licenses configured to manage the storage pool at each remote IT site.
- Bi-directional IP connections between the central and remote IT sites. For best results, available bandwidth for replication in each direction should be 3 Mbps or higher.
- The central site should first be configured with DataCore’s standard high availability (HA) features to eliminate storage-related downtime in all but site-wide outages.

**General Data Flow**

