



Infortrend EonStor DS: Key System Features

Abstract

This document introduces Infortrend's EonStor DS systems and analyzes key features available on these systems.



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EonStor DS Storage Solution

The EonStor DS storage solution features advanced hardware design and provides comprehensive data services at affordable price points, making it an ideal storage solution for small and medium businesses (SMBs).

EonStor DS provides excellent data protection to ensure the highest data availability for the storage area network (SAN) and direct attached storage (DAS). Combined with modular architecture, thin provisioning, easy and intuitive management and exceptional price-performance, EonStor DS brings price-conscious businesses a decisive competitive edge by making IT efficiency keep up with growing storage needs.

For more information about Infotrend's EonStor DS storage systems, please visit our website: <http://www.infotrend.com/>

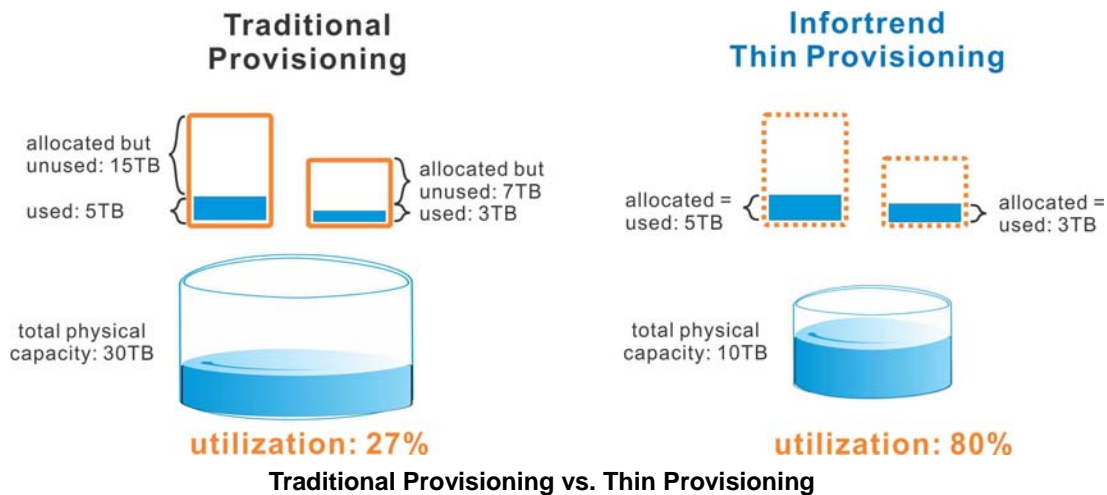


Key Features of EonStor DS Storage Systems

Thin Provisioning

Thin provisioning is a technology that allows storage resources to be used in the most flexible manner. By automatically allocating system capacity to applications as needed, thin provisioning technology can help achieve up to 80% storage utilization, while significantly reducing power consumption.

Thin provisioning technology allows users to allocate a large amount of virtual capacity for an application, regardless of the physical capacity actually available. At initial setup, thin provisioning does not physically allocate capacity to the prescribed data volume, and the actual space is used only when data writes occur. This on-demand method for capacity allocation not only optimizes storage utilization, but also greatly simplifies capacity planning and management tasks. In order to help users easily monitor capacity utilization, EonStor DS systems automatically issue notifications when the total capacity utilization is reaching the threshold set by the user. If users wish to expand capacity, they can do so non-disruptively.



Space Reclamation for Thin Provisioning

Thin provisioning on EonStor DS systems features space reclamation functionality. An often-seen phenomenon with thin provisioning is that the space of deleted data on the host system cannot be re-used by the storage system in thin-provisioned volumes due to a lack of communication between the host file system and the storage system. This could potentially lead to a situation whereby the storage space in the storage system is filled to capacity, while



on the host a large proportion of the equivalent storage space is still available for use.

With space reclamation on EonStor DS systems, the storage system is made aware of the actual space usage in the host and will reclaim space accordingly, thereby optimizing the utilization of available storage space.

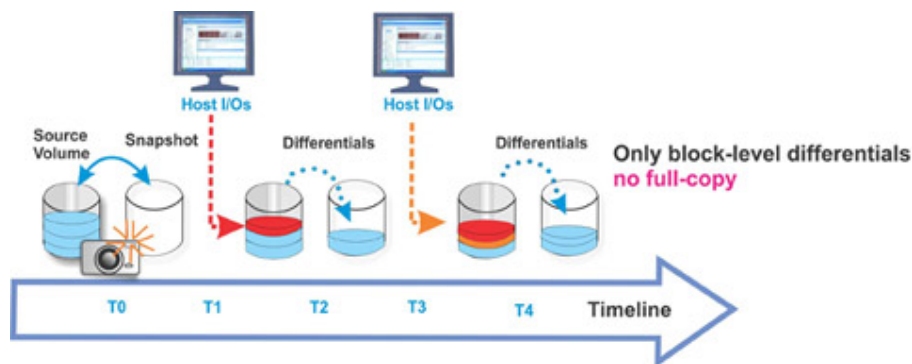
Currently, the space reclamation function is only supported in Microsoft Windows (NTFS) environments.

Capacity Scaling

Capacity scaling involves adding expansion enclosures to storage systems. These expansion enclosures provide large increases in capacity. EonStor DS systems can be scaled to a maximum of 224 drives and offer users significant flexibility in terms of capacity growth.

Local Replication

Local replication capabilities on EonStor DS systems include snapshot and volume copy/mirror. Snapshots allow users to perform instant, low-impact backups with space-efficient differential copies. In the instant of snapshot creation, a point-in-time data image is taken without disrupting online applications. Based on the image, data changes will be copied to the snapshot volume when new writes occur. With copy-on-write design, snapshots protect data from accidental modifications, deletions and corruptions with minimal capacity requirements and performance overhead. By accessing a snapshot copy as the desired recovery point, users can immediately restore system availability from data disruption.



EonStor DS Snapshot Feature



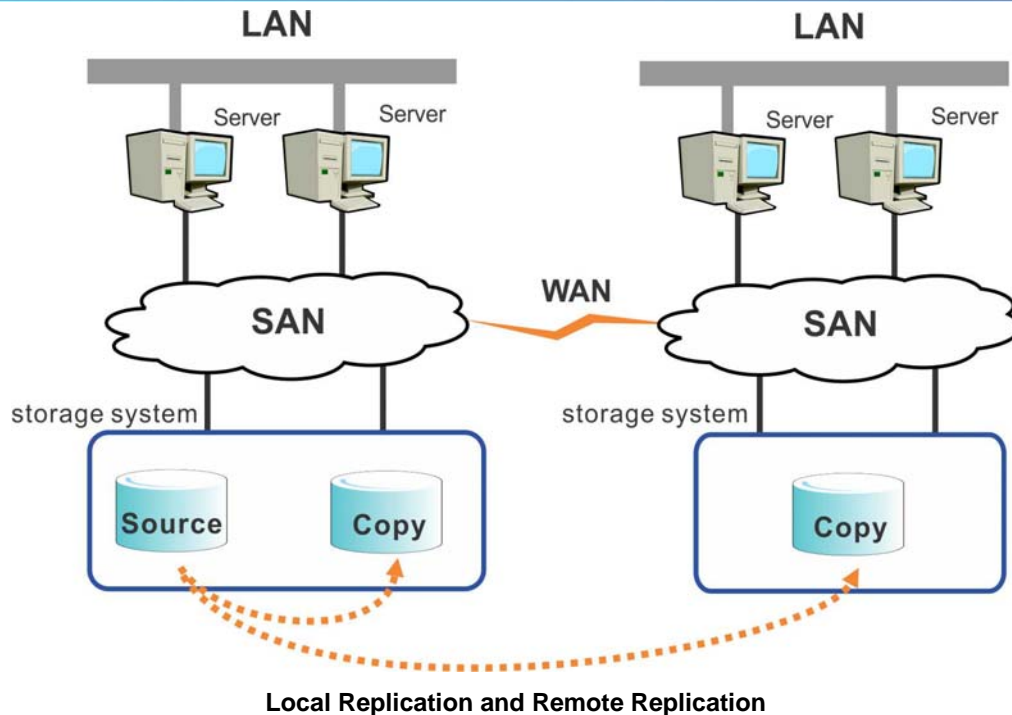
Volume mirror/copy allows users to non-disruptively create full data copies in a single storage pool. The copies created with volume mirror can be constantly synced with the source data or split as independent copies. When a volume fatally fails, these copies can be constantly synced and can be leveraged for quick recovery without any data loss. Split copies can be used to enhance operational resilience by allowing shared access of critical information among production and batch applications, such as testing, data mining, scientific analysis and tape backup. As business needs require, the split copies can be quickly re-synced with the source.

Users can also create copies independent from the source with volume copy technology. These copies are ideal for time-critical applications since they are immediately available for use even before the copying process is fully completed. Similar to split copies created by volume mirror, the editing of independent copies does not affect the service level of primary applications or their data integrity.

Remote Replication

Remote replication capability allows users to create full data copies across storage systems, either in synchronous or asynchronous mode. If source data fails due to system malfunctions or disasters, users can leverage the disk-based remote copy to restart service within only minutes. If the source needs to resume its role, it can be quickly synced with the remote copy for only differentials.

To further ensure the integrity of the remote data, remote replication allows users to protect the remote copy with snapshot technology. Granular snapshot images can help restore the corrupt remote copy in seconds when it needs to resume business service.



CacheSafe Technology

EonStor DS improves data protection even further with CacheSafe technology. This technology is achieved with a BBU (Battery Backup Unit) and FBM (Flash Backup Module). In the event of a power outage, the BBU automatically supplies power to allow cached data to be written into the FBM for permanent retention.

Hybrid Connectivity: Cost-effective Remote Replication and SAN Tiering

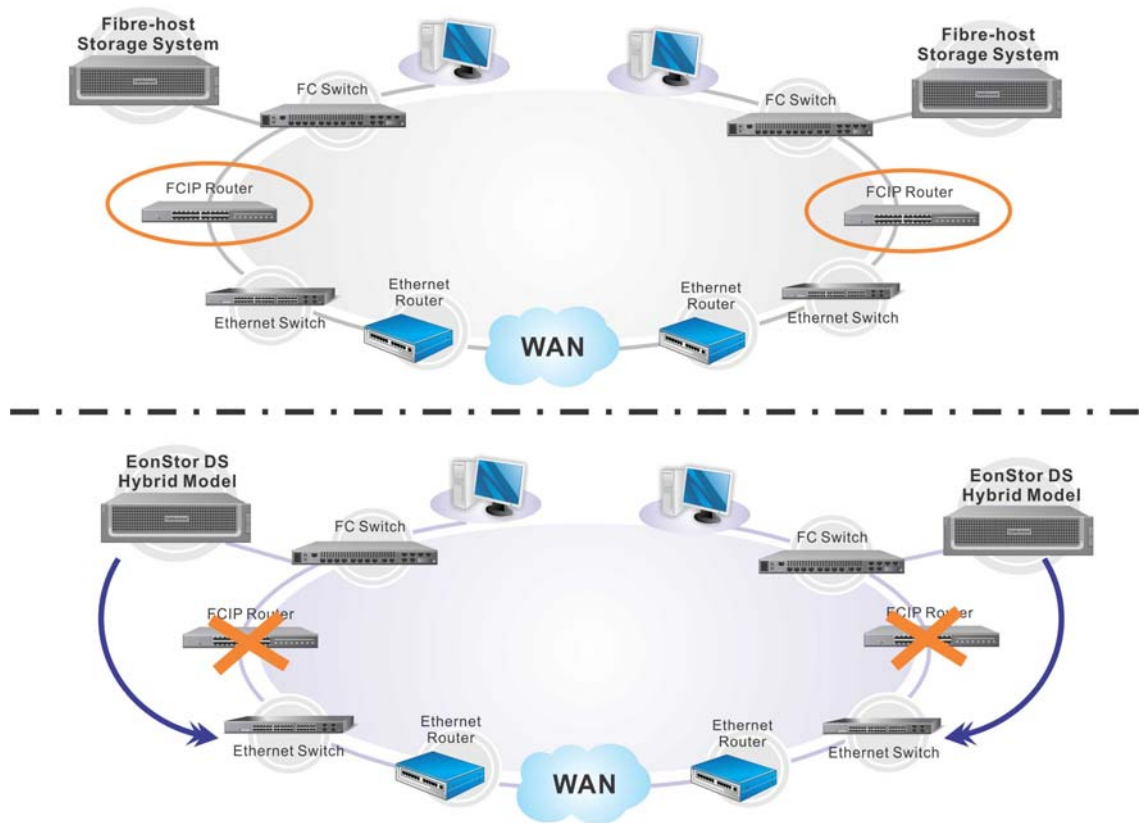
A number of models in the EonStor DS product family feature hybrid host connectivity, including Fibre Channel (FC) ports and iSCSI ports.

With hybrid connectivity, users are able to implement highly cost-effective remote data replication via the iSCSI ports on the system. Traditionally protocol converters, or FCIP routers, are required when users would like to replicate data sets on a FC-host storage system onto another FC-host storage system at a remote site over Ethernet. One router needs to be installed at the local site, while a second one needs to be installed at the remote site. These FCIP routers require significant investments.

Remote replication on the hybrid systems can be implemented via the iSCSI ports, which can be directly connected to the IP network. This allows users to skip the protocol conversion step described above and directly send the data

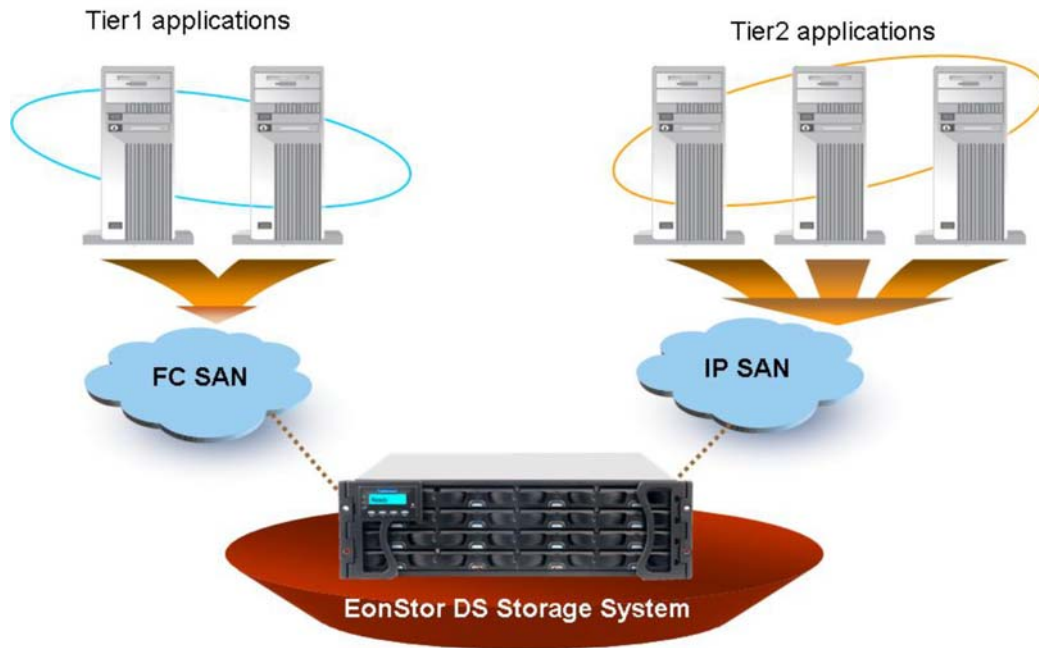


over Ethernet to the remote site. In this way, users do not need to separately buy two FCIP routers.



Remote Replication without (above) and with (below) Hybrid Connectivity

In addition, the hybrid connectivity enables users to deploy both FC and IP SAN and take advantage of consolidated SAN tiering. SAN tiering means that a single storage system can meet service level requirements on FC SAN and on IP SAN.



SAN Tiering