

SGI® InfiniteStorage Data Migration Facility (DMF)

Premier Solutions for Information Lifecycle Management

Features

- Lower TCO with reduced cost of capacity and administration
- Increase ROI with higher data access and productivity
- Optimize data management and control
- Reduce risk to data retention and accountability
- Protect investment with infinite scalability
- Integrate seamlessly with consolidation and data protection

Reduce Cost and Complexity Without Limiting Data Access

Today's most challenging computing environments require and generate mountains of data. This with the exponential growth of information across all industries intensifies the need for increasingly effective tools to manage this explosion of data.

Every environment does information lifecycle management (ILM), but most do it manually; an administrator moves less-critical or time-sensitive data from high-performance, more expensive storage media like Fibre Channel RAID to lower performance, less-expensive storage media like tape. This manual approach has several significant drawbacks including lack of optimization, limited accessibility and increased risk of data alteration. The result is an environment that pays more for capacity and administration, waits longer for data, and creates an unwarranted level of exposure for its most critical asset - data.

SGI's InfiniteStorage ILM solution – Data Migration Facility (DMF) – eliminates these problems by automating data migration for the highest possible capacity utilization, providing faster access to data than manual data migration, and removing the human error potential from the data movement itself.

Lower TCO with Reduced Cost of Capacity and Administration

DMF automatically moves data among storage devices with different performance and price characteristics. This means more expensive, faster storage can be augmented with less-expensive storage like tape and Serial ATA (SATA) significantly lowering costs versus an all-RAID environment. It is not unusual for a DMF environment to save 60 to 90% on capacity costs.

Most storage industry analysts place the lifetime cost of storage management at 8 to 10 times the original cost of acquisition on storage products. Because DMF removes manual data migration, a significant percentage of administrative overhead is immediately eliminated, breaking the cycle of ever-increasing storage management costs. This savings scales with DMF customers reporting no increase in ILM administrative costs even when data under management increased 20x.

Increase ROI with Higher Data Access and Productivity

DMF creates a virtualized storage pool across Fibre Channel RAID, SATA, Tape and other storage devices presenting a single view of data to applications and users. This means that, unlike manually implemented migration approaches, data is persistent and visible in the live environment – users and applications do not need to request and wait for an administrator to recall the file. This capability represents a time savings versus alternatives like manual data migration and archive, allowing DMF users to take advantage of ILM cost savings without the performance and productivity sacrifices imposed by manually implemented migration approaches. The result is increased productivity – analysts arrive at decisions faster, editors can identify content more efficiently, and applications can produce results faster.



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Optimize Data Management and Control

Data migration under DMF is based on user-defined policies. After data is classified and policies regarding how each class of data should be treated are determined, DMF automatically applies the correct migration policy to each piece of data, even down to the level of an individual or portion of an individual file. Data can be identified globally by standard criteria or by site unique classes so that environments can manage whatever outcome is most important. The benefit of this approach is that, not only does the level of possible customization ensure the maximum fit with any environment, but also that each environment can choose the speed of ILM implementation, starting simple and increasing granularity as needed.

Reduce Risk to Data Retention and Accountability

The most important concern for any migration strategy is "Will I be able to retrieve my data when I need it?", regardless of the age of the media or time since last use. Manual archiving introduces risk to data in the form of operator error, format changes and lack of tools to verify that data has not been modified in the copy process.

DMF is designed to emphatically prove that your trust in an automation tool is warranted with unique data integrity features. Through a two-step commit process, DMF ensures that files have safely arrived at the destination storage device before the primary storage is released to the free-space pool. And DMF automates the copy process, creating as many copies files on RAID and/or tape as the site's policies dictate. DMF offers data

integrity checks throughout the migration and recall process, ensuring the operation of storage devices and the integrity of the storage media, verifying that the original state of data is intact, and automating recovery if hardware and media should fail.

Protect Investment with Infinite Scalability

Finding out that the ILM system implemented today cannot scale to meet tomorrow's requirements can be an expensive and time-consuming mistake. The scalability of DMF guarantees investment protection in the face of data growth over long periods of time. DMF is a proven solution that can meet your capacity, connectivity and performance requirements today and in the future.

DMF can be deployed in DAS, NAS, SAN or SAN/NAS gateway configurations allowing for any number or type of connection scaling from a few terabytes to many petabytes in capacity. Because DMF environments can be configured to drive storage devices at their maximum speeds, DMF does not represent a performance bottleneck.

Deploy DMF with SGI® InfiniteStorage Shared Filesystem CXFS™, and you can even provide ILM services heterogeneously for IRIX®, Solaris™, AIX®, Windows®, Linux®, Mac OS X and other major operating systems ensuring DMF benefits are sustained even if your environment changes significantly over time.

Find Out More

Visit www.sgi.com/storage.

Supported Platforms

- DMF is currently supported on any IRIX® 6.5 platform, and on the SGI® Altix® 3000 family, SGI® Altix® 3000 series, SGI® Altix® XE, SGI® Altix® 450, SGI® Altix® 4000 series, SGI® Origin® 3000 series, SGI® Origin® 300 server, SGI® Onyx® 3000 series, SGI® 2000 series, SGI® Origin® 200 server
- When used with SGI InfiniteStorage Shared Filesystem CXFS, DMF manages data for all CXFS platforms including: IRIX, Solaris, Windows, Linux, AIX and Mac OS® X without network data transfers
 - When used in a multi-OS SAN environment without CXFS, DMF manages all data for all platforms accessible from other operating systems via NFS, FTP, and Samba®

Availability Features

- High availability configuration via SGI FailSafe™ for IRIX and Linux HA Heartbeat for Altix
- DMF filesystem: Journaled, Two-phase data base commit process, backup via standard utilities
- Data availability: manages from 1 to 63 copies of files, automated recovery from failed media

- Data integrity: DMF-generated checksums and tape positioning
- Media integrity and management: volume scan, error recovery, free-space consolidation

Management Features

- Persistent visibility of files
- Pre-emptive migration
- N-Tier storage hierarchy

APIs

DMF provides API's for both user-level access and custom policy implementation.

Supported Tape Drives and Libraries

Drives:

- StorageTek®: 9840 A/B/C, 9940 A/B, T1000A
- IBM®: 3590, 3592 J/E, LTO Generation 1-4 (SCSI & FC)
- HP® LTO Generation 2-4 (SCSI & FC)
- Sony®: SDX-300C/400C/500C/700C, SDZ-100/130, GY-2120/GY-8240
- Ampex® DIS-DST with 3rd party DCP from Ampex

Libraries:

- StorageTek®: All tape libraries controlled by ACSLS software, release 5.1 or later; L20, L40, L80, L180, SL500, L700/700e, and 9310s controlled via SCSI/FC; 9710/9714/9730/9740 controlled via SCSI
- SpectraLogic T50/T120/T950/200/380/680
- IBM®: 3494 LAN attached libraries controlled by IBM TLD software running on an RS6000; 3494 libraries controlled by TCP/IP control interface
- Quantum/ADIC®: All libraries controlled by DAS software including the AML-series, Scalar® 1000, Scalar® 10K, and dual-aisle Scalar 10K; ADIC® i500 & i2000, controlled via SCSI; Scalar 24/100/1000/10K controlled via SCSI
- Sony® DMS-B35, DMS-PSC Petasite and CSM libraries
- Ampex® 712 and other SCSI-attached libraries with 3rd party LCP from Ampex



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