Cisco MDS 9222i Data Mobility Manager Appliance

At-A-Glance

Product Highlights

The Cisco® MDS 9222i Data Mobility Manager (DMM) Appliance is a SAN fabric-based appliance that uses software on the Cisco MDS 9222i Multiservice Modular Switch to enable movement of blocks of data from a source storage device to a destination storage device. These storage devices may be heterogeneous.

Typically the Cisco DMM is enabled through a separate end-user software license. In the Cisco MDS 9222i DMM, this feature is enabled by default for 6 months, after which the license can be renewed. The default feature set of the Cisco MDS 9222i, including SAN extension features, is available in this appliance and requires no additional license. For more information about the Cisco MDS 9222i switch and features, see http://www.cisco.com/en/US/prod/collateral/ps4159/ps6409/ps5988/ps8420/product_at_a_glance0900aecd8068ec1e.pdf.

The Cisco MDS DMM uses the Cisco MDS 9222i switch and can be introduced transparently without the need to reconfigure or rewire the existing SAN infrastructure, and it can be enabled or disabled using software control from the configuration GUI. No configuration is required on the host as the host initiators do not know that the Cisco DMM service is inserted. Similarly, no reconfiguration is needed on the target as the target also does not know that the Cisco DMM service is inserted in the SAN. There is also no need for any SAN-based configuration such as zoning or virtual SAN (VSAN) configuration. Although the best-practice recommendation is that the card be placed in the switches to which the targets are connected, the network designer can install the card in any switch in the SAN.

This transparent insertion of service makes moving data from an existing storage device to a new storage device during upgrades, consolidation, or removal of existing storage devices easy.

The Cisco MDS DMM is competitively priced and offers enterprise-class capabilities. The Cisco MDS DMM is an online data migration solution (nondisruptive insertion) that requires no reconfiguration of existing SANs (no host-based agents) and is centrally managed across heterogeneous storage devices.

Features and Benefits

- **Exceptional flexibility and scalability:** The main component of the Cisco MDS DMM runs on the Cisco MDS 9222i switch. Neither the host initiator nor the target array needs to be directly connected to the card. Cisco MDS DMM does not require rewiring or reconfiguration of existing SANs, thereby enabling online migration of block data with little downtime. Enhanced scalability can be achieved by transparently adding the Cisco MDS 9222i DMM to the switching fabric.
- **Online data migration:** Server application downtime was one of the most important factors considered in defining the Cisco MDS DMM strategy. Prolonged periods of downtime are difficult to schedule because application availability is increasingly crucial to business success. The Cisco MDS DMM is designed to provide transparent online data migration. The existing storage will be available to the server applications when the switch performs the data migration. During migration, the read operations sent from the server are serviced from the existing storage, and the write operations are mirrored across both existing and new storage.
- **Deployment flexibility:** The Cisco MDS DMM is designed to perform data migration without any additional layer of virtualization between the server and the storage. The virtualization-free design of the Cisco MDS DMM increases deployment flexibility with a nondisruptive SAN rollout that does not require SAN rewiring or reconfiguration.
- **High performance:** The Cisco MDS DMM reduces server CPU utilization during data migration. Utilization of server CPU cycles for data migration reduces application performance. For example, in server-based migrations using a volume manager, the server I/O bandwidth is utilized to move data from existing to new storage with the involvement of the server CPU. The Cisco MDS 9222i DMM offloads the data movement function to the SAN and frees the server CPU cycles for use by applications.
- **Synchronous and asynchronous migration:** The Cisco MDS DMM can migrate data both synchronously and asynchronously. Data can be migrated asynchronously to remote data centers over FCIP or Dense Wavelength Division Multiplexing (DWDM) connectivity.
- **Comprehensive security and availability:** Because the Cisco MDS DMM runs on the Cisco MDS 9222i switch, it inherits all the basic capabilities of the Cisco MDS 9222i platform such as security using role-based access control (RBAC), required during data migration and high availability. RBAC allows the SAN administration functions to be partitioned by user and role to help ensure secure operation and configuration of the SAN.
- **VSAN support:** The Cisco MDS DMM reduces disruption of the existing production environment. The Cisco MDS DMM is an online process and does not require any rewiring or reconfiguration of zones or VSANs.
- The Cisco MDS DMM transparently interoperates with existing VSANs, SAN extensions, Inter-VSAN Routing (IVR), etc. in a heterogeneous SAN environment.

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- **Simplified management:** The Cisco MDS DMM can be enabled and disabled using simple software controls sent from a centralized management console integrated with the Cisco MDS 9000 Fabric Manager. The Cisco MDS DMM comes with its own configuration wizard that guides the user through a set of simple-to-understand steps, with drop-down menus available to facilitate the selection process. The wizard was designed with ease of use as its primary objective, a focus apparent to even first-time users. Additionally, the tool can be used to monitor the status of migration jobs. The Cisco MDS DMM also includes command-line interface (CLI) commands that advanced users can use to create scripts to configure and monitor their migration tasks.
- Since this appliance uses the Cisco MDS 9222i modular fabric switch, other intelligent fabric applications, such as SAN extension, can be used on the switch when it is not being used for Cisco MDS DMM (Figure 1).

Figure 1: Cisco MDS 9222i DMM Appliance

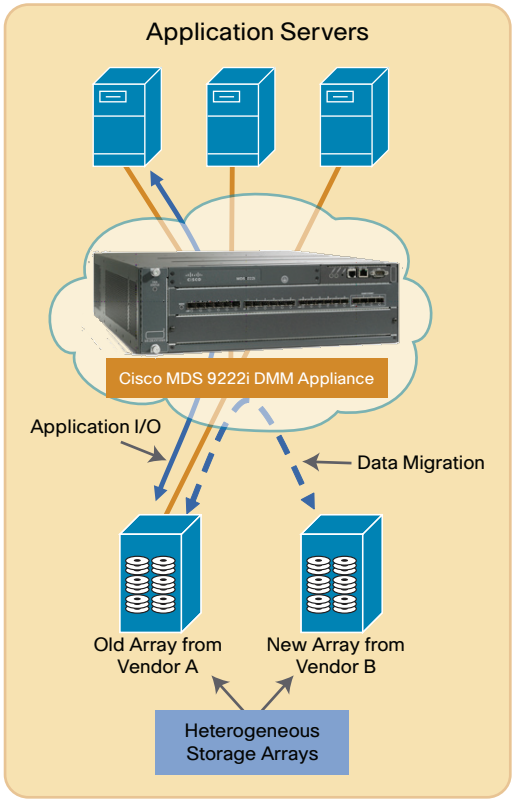

Table 1 lists the product specifications.

Table 1. Product Specifications

Item	Description
Cisco MDS 922i DMM features	• SAN fabric-based service • No need for physical reconfiguration of the existing Cisco MDS 9000 Family SAN other than the inclusion of Cisco MDS 9222i DMM Appliance; high-availability SANs encompassing 2 networks and multipath software on the hosts are supported • Transparent insertion of migration capability so that no reconfiguration is required on the host, target, or SAN • Cisco SAN device virtualization capability so that data can be moved from one array to another array without any server outage • Configuration wizard to facilitate completion of migration tasks • CLI for scripting by advanced users • Knob to control rate of migration • Unequal logical unit number (LUN) migration; migration allowed to a higher LUN • Heterogeneous array; migration performed across heterogeneous arrays • Synchronous and asynchronous migration • Server-based or storage array–level migration; administrators who want to complete migration for all LUNs on the array and do not want to do this on a per-server basis can use storage array–level migration as an alternative approach that reduces the number of migration jobs that must be configured • Local and remote migration; migration can be performed within a data center or asynchronously to a remote data center over FCIP or DWDM links • Verification capability
Cisco MDS 9000 NX-OS Software requirements	Cisco MDS 9000 NX-OS Software 4.1(3) is the first release that supports Cisco DMM on the Cisco MDS 9222i.

Ordering Information

Table 2 provides ordering information.

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Part Number	Description
DS-C9222I-DMMBDLT	Cisco MDS 9222i DMM Appliance (Cisco MDS 9222i switch, 9 SFPs and one 180-day Cisco DMM license)
M9222IDMMTSK9=	Cisco DMM 180-day temporary license on Cisco MDS 9222i (license only)
CON-SAU-92DMT	Software application support for Cisco MDS 9200 Series DMM software

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