



## CHAPTER 5

# Troubleshooting Cisco MDS DMM

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This chapter describes procedures used to troubleshoot the data migration feature in the Cisco MDS 9000 Family multilayer directors and fabric switches.

This chapter includes the following topics:

- [Information About DMM Troubleshooting, page 5-1](#)
- [Troubleshooting DMM Issues, page 5-3](#)
- [Licensing Requirements for Troubleshooting DMM, page 5-12](#)
- [Monitoring Troubleshooting DMM, page 5-12](#)
- [Field Descriptions for Troubleshooting DMM, page 5-13](#)

## Information About DMM Troubleshooting

This section includes the following topics:

- [Troubleshooting Overview](#)
- [Common Troubleshooting Tools](#)
- [Best Practices](#)
- [Initial Troubleshooting Checklist](#)
- [Common Troubleshooting Tools](#)

## Troubleshooting Overview

Cisco MDS DMM is an intelligent software application that runs on the MSM-18/4 module or MDS 9222i switch. With Cisco MDS DMM, no rewiring or reconfiguration is required for the server, the existing storage, or the SAN fabric. The MSM-18/4 module or MDS 9222i switch can be located anywhere in the fabric, as Cisco MDS DMM operates across the SAN. Data migrations are enabled and disabled by software control from the Cisco DCNM-SAN.

Cisco MDS DMM provides a graphical user interface (GUI) (integrated into DCNM-SAN) for configuring and executing data migrations. Cisco MDS DMM also provides CLI commands for configuring data migrations and displaying information about data migration jobs.

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## Best Practices

You can avoid possible problems when using DMM if you follow these best practices:

- Use the SLD tool.

The DMM feature includes the Array-Specific Library (ASL), which is a database of information about specific storage array products. DMM uses ASL to automatically correlate LUN maps between multipath port pairs.

Use the SLD CLI or GUI output to ensure that your storage devices are ASL classified.

For migration jobs involving active-passive arrays, use the SLD output to verify the mapping of active and passive LUNs to ports. Only ports with active LUNs should be included in migration jobs.

For more information about the SLD tool, refer to the [“Checking the Storage ASL Status” section on page 4-4](#).

- Create a migration plan.

Cisco MDS DMM is designed to minimize the dependency on multiple organizations, and is designed to minimize service disruption. However, even with Cisco MDS DMM, data migration is a fairly complex activity. We recommend that you create a plan to ensure a smooth data migration.

- Configure enclosures.

Before creating a migration job with the DMM GUI, you need to ensure that server and storage ports are included in enclosures. You need to create enclosures for server ports. If the server has multiple single-port HBAs, all of these ports need to be included in one enclosure. Enclosures for existing and new storage ports are typically created automatically.

- Follow the topology guidelines.

Restrictions and recommendations for DMM topology are described in the [“Guidelines and Limitations for DMM SAN Topologies” section on page 3-16](#).

- Ensure all required ports are included in the migration job.

When creating a data migration job, you must include all possible server HBA ports that access the LUNs being migrated. This is because all writes to a migrated LUN need to be mirrored to the new storage until the cutover occurs, so that no data writes are lost.

For additional information about selecting ports for server-based jobs, see the [“Ports for Server-Based Jobs” section on page 6-5](#)

## Initial Troubleshooting Checklist

Begin troubleshooting DMM issues by checking the troubleshooting checklist in [Table 5-1](#).

**Table 5-1 Initial Troubleshooting Checklist**

Checklist	Checkoff
Verify that an MSM-18/4 module or MDS 9222i switch is installed on each fabric and that DMM is enabled on the MSM-18/4 module or MDS 9222i switch.	<input type="checkbox"/>
Verify that your DMM licenses are valid.	<input type="checkbox"/>
Verify that DMM is the only intelligent application running on the MSM-18/4 module or MDS 9222i switch.	<input type="checkbox"/>

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**Table 5-1 Initial Troubleshooting Checklist (continued)**

Checklist	Checkoff
Verify that the existing and new storage devices are connected to a switch that supports FC-Redirect.	<input type="checkbox"/>
Verify that SAN OS 3.2(1) or NX-OS 4.1(1b) or later is running on the switches hosting the MSM-18/4 module or MDS 9222i switch and the storage.	<input type="checkbox"/>
Verify that IP connectivity exists between peer MSM-18/4 modules or MDS 9222i switches by using the <b>ping</b> command.	<input type="checkbox"/>
Verify that the default zone policy in the VSAN with FCR configuration is set to 'DENY'.	<input type="checkbox"/>

## Common Troubleshooting Tools

The following navigation paths may be useful in troubleshooting DMM issues using DCNM-SAN:

- Select **Intelligent Features > Data Mobility Manager** to access the DMM status and configuration.

The following CLI commands on the MSM-18/4 module or MDS 9222i switch may be useful in troubleshooting DMM issues:

- **show dmm job**
- **show dmm job job-id job-id details**
- **show dmm job job-id job-id session**



### Note

You need to connect to the MSM-18/4 module or MDS 9222i switch using the **attach module** command prior to using the **show dmm** commands.

## Troubleshooting DMM Issues

This section includes the following topics:

- [Troubleshooting Connectivity Issues, page 5-3](#)
- [Troubleshooting General Issues, page 5-5](#)
- [Troubleshooting Scenarios, page 5-5](#)
- [Troubleshooting Job Creation Issues, page 5-6](#)
- [Troubleshooting Job Execution Issues, page 5-10](#)

## Troubleshooting Connectivity Issues

This section includes the following topics:

- [Cannot Connect to the MSM-18/4 Module or MDS 9222i Switch, page 5-4](#)
- [No Peer-to-Peer Communication, page 5-4](#)
- [Connection Timeouts, page 5-4](#)

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## Cannot Connect to the MSM-18/4 Module or MDS 9222i Switch

Problems connecting the MSM-18/4 module or MDS 9222i switch can be caused by SSH, zoning, or routing configuration issues. [Table 5-2](#) lists possible solutions.

**Table 5-2** *Cannot Connect to the MSM-18/4 Module or MDS 9222i Switch*

Symptom	Possible Cause	Solution
Cannot connect to the MSM-18/4 module or MDS 9222i switch.	SSH not enabled on the supervisor module.	Enable SSH on the switch that hosts the MSM-18/4 module or MDS 9222i switch. See <a href="#">“Configuring SSH on the Switch”</a> section on page 2-2.
	Zoning configuration error.	If VSAN 1 default zoning is denied, ensure that the VSAN 1 interface (supervisor module) and the CPP IP/FC interface have the same zoning. See <a href="#">“Configuring IP Connectivity”</a> section on page 2-6.
	IP routing not enabled.	Ensure that IPv4 routing is enabled. Use the <b>ip routing</b> command in configuration mode.
	IP default gateway.	Configure the default gateway for the CPP IPFC interface to be the VSAN 1 IP address. See <a href="#">“Configuring IP Connectivity”</a> section on page 2-6.

## No Peer-to-Peer Communication

[Table 5-3](#) lists possible solutions to problems connecting to the peer MSM-18/4 module or MDS 9222i switch.

**Table 5-3** *No Peer-to-Peer Communication*

Symptom	Possible Cause	Solution
Cannot ping the peer MSM-18/4 module or MDS 9222i switch.	No route to the peer MSM-18/4 module or MDS 9222i switch.	Configure a static route to the peer MSM-18/4 module or MDS 9222i switch. See <a href="#">“Configuring IP Connectivity”</a> section on page 2-6.

## Connection Timeouts

If the DMM SSH connection is generating too many timeout errors, you can change the SSL and SSH timeout values. These properties are stored in the DCNM-SAN Server properties file (Cisco Systems/MDS 9000/conf/server.properties). You can edit this file with a text editor, or you can set the properties through the DCNM-SAN Web Services GUI, under the Admin tab.

The following server properties are related to DMM:

- **dmm.read.timeout**—Read timeout for job creation. The default value is 60 seconds. The value is displayed in milliseconds.
- **dmm.read.ini.timeout**—Read timeout for a job or session query. The default value is 5 seconds. The value is displayed in milliseconds.
- **dmm.connect.timeout**—SSH connection attempt timeout. The default value is 6 seconds. The value is displayed in milliseconds.
- **dmm.connection.retry**—If set to true, DMM will retry if the first connection attempt fails. By default, set to true.

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## Troubleshooting General Issues

If you need assistance with troubleshooting an issue, save the output from the relevant **show** commands.

You must connect to the MSM-18/4 module or MDS 9222i switch to execute DMM **show** commands. Use the **attach module slot** command to connect to the MSM-18/4 module or MDS 9222i switch.

The **show dmm job** command provides useful information for troubleshooting DMM issues. For detailed information about using this command, see the “Cisco DMM CLI Commands” appendix.

Always save the output of the **show dmm tech-support** command into a file when reporting a DMM problem to the technical support organization.

Capture the output of the **show tech-support fc-redirect** command on all switches with FC-Redirect entries and save the output into a file.

## Troubleshooting Scenarios

This section describes the following scenarios:

- [DMM storage based zone causes the active server-based job to fail.](#)
- [If a DMM job is configured and running in a dual fabric, a switch reboot will place the configured DMM job in reset mode and indicate one MSM-18/4 module or MDS 9222i switch as missing in Cisco DCNM-SAN.](#)
- [The DMM feature cannot be disabled from the MSM-18/4 module or MDS 9222i switch once the grace period has expired.](#)

### **DMM storage based zone causes the active server-based job to fail.**

The Method 2 job that is in progress goes to the failed state if any zone changes are made to the zone entries comprising the NS storage port in the active zone set.

The workaround is to place the optional DMM zone for the particular host and NS into the active zone set before making changes.

### **If a DMM job is configured and running in a dual fabric, a switch reboot will place the configured DMM job in reset mode and indicate one MSM-18/4 module or MDS 9222i switch as missing in Cisco DCNM-SAN.**

Even if the switch comes back up, the DMM job will continue to indicate that one MSM-18/4 module or MDS 9222i switch is missing because the switch does not have the information on the DMM job. The DMM job cannot be deleted from DCNM-SAN at this point in time.

You have to go to the CLI and explicitly enter the **destroy** command for that particular job ID to delete the job.

The exception to this rule is if the switch that was rebooted has the information on the DMM job. In such a scenario, DCNM-SAN will function normally.

### **The DMM feature cannot be disabled from the MSM-18/4 module or MDS 9222i switch once the grace period has expired.**

Use the **poweroff module** command and purge the information.

```
switch# config t
switch(config)# poweroff module 1
switch(config)# purge module 1 running-config
```

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## Troubleshooting Job Creation Issues

The DMM GUI displays error messages to help you troubleshoot basic configuration mistakes when using the job creation wizards. See [“Creating a Server-Based Migration Job” section on page 6-20](#). A list of potential configuration errors is included after the last step in the task.

The following sections describe other issues that may occur during job creation:

- [Failures During Job Creation, page 5-6](#)
- [DMM License Expires, page 5-6](#)
- [Failures When Creating a Session, page 5-7](#)
- [Failure When Destroying a Job, page 5-9](#)
- [Opening the Job Error Log, page 5-9](#)
- [Scheduled Job is Reset, page 5-10](#)

### Failures During Job Creation

If you make a configuration mistake while creating a job, the job creation wizard displays an error message to help you troubleshoot the problem. You need to correct your input before the wizard allows you to proceed.

[Table 5-4](#) lists types of failures that may occur during job creation.

**Table 5-4**      **Failures During Job Creation**

Symptom	Possible Cause	Solution
Create Job failures.	No MSM-18/4 module or MDS 9222i switch available.	Ensure that the fabric has an MSM-18/4 module or MDS 9222i switch with DMM enabled and a valid DMM license.
	Job infrastructure setup error. Possible causes are incorrect selection of server/storage port pairs, the server and existing storage ports are not zoned, or IP connectivity between the MSM-18/4 modules or MDS 9222i switches is not configured correctly.	The exact error is displayed in the job activity log. See the <a href="#">“Opening the Job Error Log” section on page 5-9</a> .
	LUN discovery failures.	Use the SLD command in the CLI to check that the LUNs are being discovered properly.

### DMM License Expires

If a time-bound license expires (or the default grace period expires), note the following behavior:

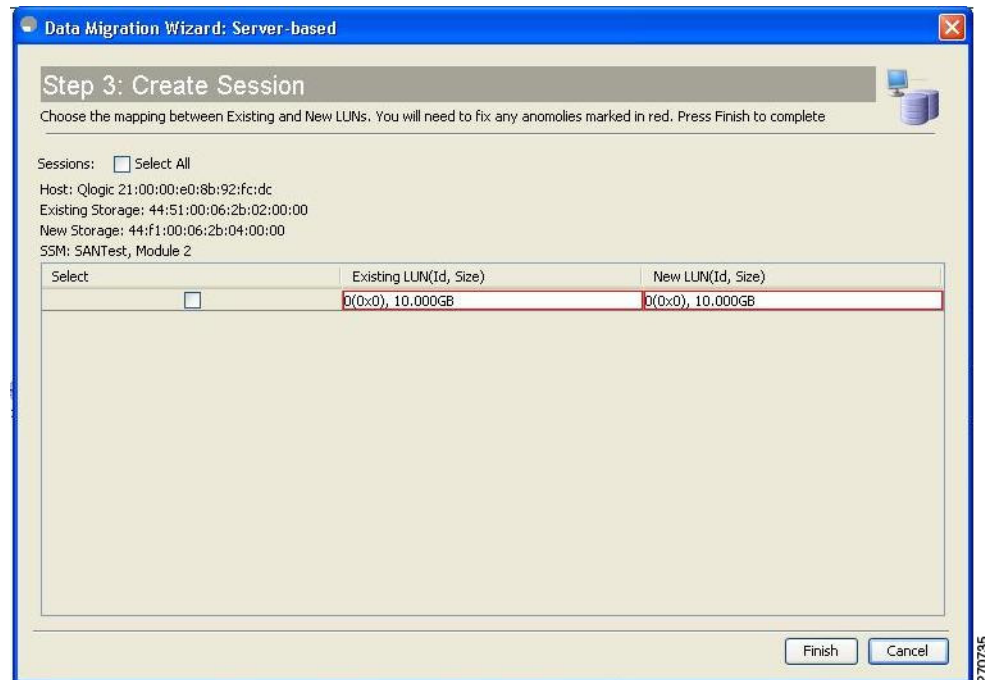
- All jobs currently in progress will continue to execute until they are finished.
- Jobs which are configured but not scheduled will run when the schedule starts.
- Jobs which are stopped or in a failure state can also be started and executed.
- If the MSM-18/4 module or the MDS 9222i switch performs a restart, the existing jobs cannot be restarted until the switch has a valid DMM license.
- To resolve issues related to an expired license, install a valid DMM license on the switch.

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## Failures When Creating a Session

This section helps you troubleshoot an error when the new storage is smaller in size than the existing storage. the DMM configuration wizard (Figure 5-1) allows you to configure sessions for the data migration job. The wizard displays a default session configuration. If any session is marked in red (Figure 5-1) it implies that the session LUN in the new storage is smaller in size than the session LUN in the existing storage.

**Figure 5-1** *Failures During Session Creation*



Although the LUN values displayed in the wizard are identical, the displayed LUN value in Gigabytes (GB) is rounded off to the third decimal.

The actual size of the LUNs can be verified using the **show** commands on the SSM CLI. To verify the size of the LUNs, follow these steps:

- Step 1** Note the host pWWN, existing storage pWWN and the new storage pWWN as displayed on the wizard screen. In Figure 5-1, the values are as follows:
  - Host: 21:00:00:e0:8b:92:fc:dc
  - Existing storage: 44:51:00:06:2b:02:00:00
  - New storage: 44:f1:00:06:2b:04:00:00
- Step 2** Note the MSM-18/4 module or the MDS 9222i switch information displayed on the wizard screen. In Figure 5-1, the MSM-18/4 module or the MDS 9222i switch chosen for the session is “,” where SANTest is the switch and the MSM-18/4 module or MDS 9222i switch is Module2 on that switch.
- Step 3** From the switch console, enter the **attach module** command to attach to the MSM-18/4 module or MDS 9222i switch console.

SANTest# **attach module 2**

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- Step 4** Enter the **show dmm job** command from the SSM CLI to display the job information. The following example shows the job information:

```
module-2# show dmm job
=====
Data Mobility Manager Job Information
=====
Num      Job Identifier  Name                               Type  Mode  Method DMM GUI IP Peer SSM switch DPP Session
Status
=====
1        1205521523      admin_2008/03/14-12:05            SRVR  ONL   METHOD-1 10.1.1.5 NOT_APPL          5 CREATED

Number of Jobs :1
```

- Step 5** Enter the **show dmm job job-id details** command to display the job details.

```
module-2# show dmm job job-id 1205521523 detail
```

- Step 6** Look for server information in the output and note the VI pWWN corresponding to the host port. The following example shows server information:

```
-----
Server Port List (Num Ports :1)
-----
Num  VSAN  Server pWWN                               Virtual Initiator pWWN
-----
1    4     21:00:00:e0:8b:92:fc:dc                   26:72:00:0d:ec:4a:63:82
```

- Step 7** Using the storage pWWN and the VI pWWN, enter the **show dmm job job-id storage tgt-pww vi-pwwn** command to get the LUN information for the existing and new storage. The following example shows the output of the existing storage. Note the Max LBA and Size values.

```
module-2# show dmm job job-id 1205521523 storage tgt-pwwn 44:51:00:06:2b:02:00:00 vi-pwwn
26:72:00:0d:ec:4a:63:82
show dmm job job-id 1205521523 storage tgt-pwwn 0x445100062b020000 vi-pwwn
0x2672000dec4a6382

Data Mobility Manager LUN Information
StoragePort: 00:00:02:2b:06:00:51:44 VI : 82:63:4a:ec:0d:00:72:26
-----
LUN Number: 0x0
VendorID   : SANBlaze
ProductID  : VLUN FC RAMDisk
SerialNum  : 2fff00062b0e445100000000
ID Len     : 32
ID         : 600062b0000e44510000000000000000
Block Len  : 512
Max LBA : 20973567
Size   : 10.000977 GB
```

The following example shows the output of the new storage. Note that the LBA and Size values are smaller than the comparable values in the existing storage.

```
module-2# show dmm job job-id 1205521523 storage tgt-pwwn 44:f1:00:06:2b:04:00:00 vi-pwwn
26:72:00:0d:ec:4a:63:82
show dmm job job-id 1205521523 storage tgt-pwwn 0x44f100062b040000 vi-pwwn
0x2672000dec4a6382

Data Mobility Manager LUN Information
StoragePort: 00:00:04:2b:06:00:f1:44 VI : 82:63:4a:ec:0d:00:72:26
-----
LUN Number: 0x0
```

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```
VendorID   : SANBlaze
ProductID  : VLUN FC RAMDisk
SerialNum  : 2fff00062b0e44f100000000
ID Len     : 32
ID         : 600062b0000e44f10000000000000000
Block Len  : 512
Max LBA   : 20971519
Size     : 10.000000 GB
```

- Step 8** Correct the LUN size of the new storage so that it matches the LUN size of the existing storage, and then reconfigure the job.
- 

## Failure When Destroying a Job

This section helps you troubleshoot an error when the **job destroy** command displays an error.

The following example shows the failure that may occur during job destruction:

```
switch(config)# dmm module 1 job 1 start
switch(config)# dmm module 1 job 2 stop

switch(config)# dmm module 1 job 2 destroy
DMM Config Destroy error
```

If the **job destroy** command displays an error, there is a possibility that the job is still in progress and has not stopped. You can enter the **job destroy** command again to destroy the job completely.

## Opening the Job Error Log

### Detailed Steps

To open the job activity log, follow these steps:

- 
- Step 1** Drag the wizard window to expose the Data Migration Status command bar.
  - Step 2** Click the **refresh** button.
  - Step 3** Select the job that you are troubleshooting from the list of jobs.
  - Step 4** Click the **Log** command to retrieve the job error log.
  - Step 5** The job information and error strings (if any) for each MSM-18/4 module or MDS 9222i switch are displayed.




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**Note** You must retrieve the job activity log before deleting the job.

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- Step 6** Click **Cancel** in the Wizard to delete the job.
-

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## Scheduled Job is Reset

### Detailed Steps

If the MSM-18/4 module or MDS 9222i switch or the switch performs a restart, all scheduled DMM jobs are placed in the Reset state. Use the **Modify** command to restore jobs to the Scheduled state.

To restore each job to the Scheduled state, follow these steps:

- 
- Step 1** Select the job to be verified from the job list in the Data Migration Status pane.
- Step 2** Click the **Modify** button in the Data Migration Status tool bar.
- You see the Reschedule Job pop-up window.
- Step 3** The originally configured values for migration rate and schedule are displayed. Modify the values if required.
- Step 4** Click **OK**.
- The job is automatically validated. If validation is successful, the job transitions into the scheduled state. If you selected the Now radio button, the job starts immediately.
- 

## Troubleshooting Job Execution Issues

If a failure occurs during the execution of a data migration job, DMM halts the migration job and the job is placed in the Failed or Reset state.

The data migration job needs to be validated before restarting it. If the DMM job is in the Reset state, FC-Redirect entries are removed. In the DMM GUI, validation occurs automatically when you restart the job. In the CLI, you must be in the Reset state to validate the job. You cannot validate the job in a failed state.



### Note

If a new port becomes active in the same zone where a migration job is in progress, DMM generates a warning message in the system logs.

Troubleshooting job execution failures is described in the following sections:

- [DMM Jobs in Fail State, page 5-10](#)
- [DMM Jobs in Reset State, page 5-11](#)

## DMM Jobs in Fail State

If DMM encounters an SSM I/O error to the storage, the job is placed in the Failed state. [Table 5-5](#) lists possible solutions for jobs in the Failed state.

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**Table 5-5 DMM Jobs in the Failed State**

Symptom	Possible Cause	Solution
DMM job status is Failed.	MSM-18/4 module or MDS 9222i switch failure	If the MSM-18/4 module or MDS 9222i switch has performed a reload, you must restart or reschedule all failed jobs when the MSM-18/4 module or MDS 9222i switch returns to an operational state.
	Server HBA port offline	Check the server status and server port status. When the server port is available, restart the migration.
	New storage port offline	Use Cisco DCNM-SAN to determine why the storage port is no longer online. When the storage port is available, restart the migration.
	Server I/O failure	Check the DMM Job log for server I/O failures.
	Migration I/O failure	Check the DMM Job log for migration I/O failures.
	Internal processing failure	Check the DMM Job log for internal processing errors.

## DMM Jobs in Reset State

Table 5-6 lists possible causes and solutions for jobs in the Reset state.

**Table 5-6 DMM Jobs in Reset State**

Symptom	Possible Cause	Solution
DMM Job fails to complete and is placed in the Reset state.	Server HBA port offline	Check the server status and server port status. When the server port is available, restart the migration.
	Existing or new storage port offline	Use DCNM-SAN to determine why the storage port is no longer online. When the storage port is available, restart the migration.
	Server or storage port is moved out of the zone	Correct the zone configuration and restart the data migration job.
	Existing Storage port is moved out of the zone	Correct the zone configuration and restart the data migration job.
	New Storage port is moved out of the zone	Correct the zone configuration and restart the data migration job.
	Loss of IP connectivity to the peer MSM-18/4 module or MDS 9222i switch	Restart the data migration job when IP connectivity has been restored.
	MSM-18/4 module or MDS 9222i switch failure	If the MSM-18/4 module or MDS 9222i switch has performed a reload, you must restart or reschedule all failed jobs when the MSM-18/4 module or MDS 9222i switch returns to the operational state.
	FC-Redirect failure	Default zone policy must be set to 'DENY' in the server storage port.

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## Licensing Requirements for Troubleshooting DMM

Each MSM-18/4 module or MDS 9222i switch with Cisco MDS DMM enabled requires a DMM license. DMM operates without a license for a grace period of 180 days.

## Monitoring Troubleshooting DMM

### DMM Error Reason Codes

If DMM encounters an error while running the job creation wizard, a popup window displays the error reason code. Error reason codes are also captured in the Job Activity Log. [Table 5-7](#) provides a description of the error codes.

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## Field Descriptions for Troubleshooting DMM

**Table 5-7 DMM Error Codes**

Error Code	Description
DMM_JOB_NOT_PRESENT	A job with specified job ID was not found on the MSM-18/4 module or MDS 9222i switch.
DMM_JOB_ID_DUPLICATE	Job creation using a job ID that already exists on the MSM-18/4 module or MDS 9222i switch.
DMM_JOB_ID_ZERO	Job ID 0 is a invalid job ID.
DMM_JOB_VSAN_MISMATCH	Server port VSAN number and corresponding storage port VSAN number is different.
DMM_JOB_TYPE_MISMATCH	MSM-18/4 module or MDS 9222i switch received a storage job query for a server-based job.
DMM_JOB_CREATION_ERROR	MSM-18/4 module or MDS 9222i switch failed while creating the data structures for the job, which could be a memory allocation failure.
DMM_JOB_INTERNAL_ERROR	MSM-18/4 module or MDS 9222i switch failed while creating the data structures for the job, which could be a memory allocation failure.
DMM_JOB_SESSION_EXEC	Attempting to delete a job while one or more sessions are in progress. Stop the job first before trying to delete it.
DMM_JOB_DPP_ALLOC_FAILURE	No DPP available to create a job. The maximum number of allowed jobs on a DPP exceeded.
DMM_JOB_INFRA_SETUP_ERROR	Failed to set up infrastructure for a job. Possible causes are incorrect selection of server/storage port pairs, the server and existing storage ports are not zoned, or IP connectivity between MSM-18/4 modules or MDS 9222i switches is not configured correctly.
DMM_JOB_INFRA_REMOTE_LMAP_ERR_TCP_DN	Failure to establish connection with the peer MSM-18/4 module or MDS 9222i switch during job creation.
DMM_JOB_INFRA_FC_REDIRECT_SETUP_ERR	Failed to install FC-Redirect entries for one or more server-storage pairs in the job.
DMM_JOB_INFRA_DPP_DIED	The DPP assigned to the job failed during job creation.
DMM_JOB_INFRA_NOT_ALLOWED	The MSM-18/4 module or MDS 9222i switch was unable to create the job. Retry the job creation.
DMM_JOB_SRC_LUN_INFO_NOT_PRESENT	A source LUN specified in the session was not discovered by the MSM-18/4 module or MDS 9222i switch. This error can occur when trying to restart or reschedule a job in the Reset state. A possible cause is a change in LUN inventory or LUN mapping on the storage device.

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**Table 5-7 DMM Error Codes (continued)**

Error Code	Description
DMM_JOB_DST_LUN_INFO_NOT_PRESENT	A destination LUN specified in the session was not discovered by the MSM-18/4 module or MDS 9222i switch. This error can occur when trying to restart or reschedule a job in the Reset state. A possible cause is a change in LUN inventory or LUN mapping on the storage device.
DMM_VT_VSAN_DOWN	The storage VSAN is not operational or was suspended during job creation.
DMM_VT_ISAPI_CREATION_FAILED	Failed to create a virtual target corresponding to the storage port.
DMM_FC_RDRT_NO_DNS_ENTRY	FC-Redirect configuration failure. Storage/Server port not visible in Fibre Channel name Server on the MSM-18/4 module or MDS 9222i switch.
DMM_FC_RDRT_NO_ZS_ENTRY	FC-Redirect configuration failure. The server and existing storage port are not zoned together.  Delete the old zones involving any of the storage/host ports being used in the current migration job. Recreate the job.
DMM_FC_RDRT_INSTALL_ERROR	FC-Redirect configuration could not be installed in the fabric. A possible cause is that Cisco Fabric Services is not enabled to distribute the FC-Redirect configuration.
DMM_FC_RDRT_LUXOR_ACL_ERROR	FC-Redirect failed to program a rewrite entry in the local MSM-18/4 module or MDS 9222i switch.
DMM_SRVR_VT_LOGIN_SRVR_LOGIN_ERROR	MSM-18/4 module or MDS 9222i switch failed to log or discover LUNs from the storage on behalf of the server. This can occur if the new storage access list is not programmed with the server pWWN, or there is no LUN mapping on the storage for the selected server.
DMM_SRVR_VT_LOGIN_VI_LOGIN_ERROR	MSM-18/4 module or MDS 9222i switch Failed to log discover LUNs from the storage on behalf of the storage-based job VI. This can occur if the storage access list is not programmed with the VI pWWN, or there is no LUN mapping on the storage for the VI.
DMM_SRVR_VT_NO_PRLI_SRVR	No PRLI was received from the server after a PLOGI from the server to the storage was accepted.
DMM_PREVIOUS_REQ_INPROGRESS	The MSM-18/4 module or MDS 9222i switch cannot process a request because a previous operation on the job has not yet completed.
DMM_ITL_NOT_FOUND	This error may be generated when the user is performing manual correlation of the paths to a LUN from the DMM GUI. It is generated if a specified path (ITL) in the manual correlation has not be discovered by the MSM-18/4 module or MDS 9222i switch.
DMM_ITL_NOT_FOUND_IN_NON_AS_LIST	Attempt to resolve a LUN path that has not been classified as NON ASL.

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**Table 5-7 DMM Error Codes (continued)**

Error Code	Description
DMM_ILLEGAL_REQ	The selected command cannot be performed in the current job state.
DMM_INIT_NOT_FOUND	Failed to create a session because the server port is invalid.
DMM_SRC_TGT_NOT_FOUND	Failed to create a session because the existing storage port is invalid.
DMM_DST_TGT_NOT_FOUND	Failed to create a session because the new storage port is invalid.
DMM_ITL_NOT_FOUND_IN_GUI_AS L_LIST	Attempt to update a LUN path that has not been classified as GUI ASL.
DMM_ITL_FOUND_IN_AUTO_AS L_LIST	Attempt to resolve a LUN path that has already been classified as AUTO ASL.
DMM_SRC_LUN_GREATER_THAN_ DST	Session creation failed because the source LUN has a greater size than the destination LUN.
DMM_TGT_NOT_REACHABLE	The storage port is offline.
DMM_SRC_TGT_NOT_AS L_CLASSIFIED	Failure returned when trying to create a session with an source LUN that has not been classified as AUTO ASL or GUI ASL. Manual correlation is required to resolve multipathing for the LUN.
DMM_DST_TGT_NOT_AS L_CLASSIFIED	Failure returned when trying to create a session with an destination LUN that has not been classified as AUTO ASL or GUI ASL. Manual correlation is required to resolve multipathing for the LUN.
DMM_SRC_LUN_ALREADY_EXISTS	Failure returned when trying to create a session with an source LUN that has already been used in another session in the job.
DMM_DST_LUN_ALREADY_EXISTS	Failure returned when trying to create a session with an destination LUN that has already been used in another session in the job.
DMM_VT_FC_REDIRECT_GET_CFG _ERR	The MSM-18/4 module or MDS 9222i switch failed to retrieve the existing configuration from FC-Redirect. The FC-Redirect process may no longer be running on the supervisor module.
DMM_NO_LICENSE	No active DMM license is available on the MSM-18/4 module or MDS 9222i switch where the job is being created.
DMM_VI_NOT_SEEING_ANY_LUNS	The storage job VI cannot see any LUNs from the existing and new storage ports. Possible causes – no access for VI pWWN on the storage ports or no LUN mapping for the VI on the storage ports.
DMM_VI_NOT_SEEING_ES_LUNS	The storage job VI cannot see any LUNs from the existing storage ports. Possible causes – no access for VI pWWN on the existing storage ports or no LUN Mapping for the VI on the existing storage ports.

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**Table 5-7 DMM Error Codes (continued)**

Error Code	Description
DMM_VI_NOT_SEEING_NS_LUNS	The storage job VI cannot see any LUNs from the new storage ports. Possible causes – no access for VI pWWN on the new storage ports or no LUN mapping for the VI on the new storage ports.
DMM_NO_RESOURCES_TRY_LATER	Failure returned for the verify operation if the shared MSM-18/4 module or MDS 9222i switch resources to verify are already being used by another job.
DMM_IT_PAIR_PRESENT_IN_ANOTHER_JOB	Failure returned for job create if the same server-storage port pair(s) is being used by an existing job.
DMM_JOB_NO_OFFLINE_FOR_ASYNC	Method-2 data migration does not support offline mode.
DMM_PEER_IP_CONNECT_FAILURE	Failure to establish IP connection with peer MSM-18/4 module or MDS 9222i switch. Check IP configuration on both MSM-18/4 modules or MDS 9222i switches.
DMM_VPORT_IN_EXISTING_ZONE: Remove old Storage Job Zones	A zone created for a old storage type DMM job still exists. Once a storage job is deleted, the corresponding zone needs to be removed from the zone set. Delete zones for DMM jobs that no longer exist.

## LUNs

Field	Description
Id	The number of this LUN.
Capacity (MB)	The capacity of this LUN.
SerialNum	The serial number of this LUN.
OS	The operating system for which this LUN was discovered.
FC ID	The Fibre Channel ID for this LUN.