# IBM 8260 Multiprotocol Intelligent Switching Hub DMM 2.3, T-MAC 3.0, E-MAC 3.0, RTCL 1.10, and T-MAC Chipset 3.0 Release Note

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This release note summarizes management-related issues for IBM products DMM, EC-DMM, E-MAC, and T-MAC for the Distributed Management Module (DMM) Version v2.3. This release note includes the following sections:

- Recommended Download Order
- New Module Support
- New Features
- Corrected Problems
- Token Ring MAC Address-to-Port Security Issues
- General DMM Issues
- RMON Issues
- Download Issues
- Trap Issues
- Warning Message Issues
- SNMP Issues
- Power Management Issues
- Statistics Issues
- T-MAC-Specific Issues
- Latest 8260 Module Code Versions.

Store this release note in the release notice section of your 8260 Reference Library.

## Recommended Download Order

When upgrading DMMs and MAC Cards from earlier versions, download modules in the following order:

1. Download Version 3.0 T-MAC and E-MAC code (boot and operational, if applicable).
2. Download DMM Version v2.3 or later code (boot and operational, if applicable).
3. Download T-MAC trchipset, if applicable.

**Warning:** Modules may not function properly if you do not use the specified download order.

**Warning:** Operational code for DMM v2.3 now spans two diskettes. Refer to the Installation Instructions (Part Number 29H4266), received with the code upgrade kit and follow the detailed download instructions carefully.

## New Module Support

DMM Version v2.3 adds support for the following previously-unsupported modules:

- 8235 DIALs and 8229 Bridge Modules based on the 8250 Token Ring Carrier Module
- Nways 8260 ATM 155 Mbps Flexible Concentration Module (Model Number A2-MB155).

DMM Version v2.2 added support for the following modules:

- 8260 36-Port 10BASE-T Module (Model Number E36CS-TP)
- 8260 Ethernet Flexible Concentration Module (Model Number E04M-MOD)
- 8250 RMON Probe Module (Model Number E-RMON)
- 8250 Token Ring Active Media Module (Model Number T18MSA).

# New Features

DMM Version v2.3 adds support for the following new features:

- Multiple default gateways
- Token Ring MAC address-to-port security
- BOOTP protocol support
- DMM redundancy
- Configuration file upload/download
- Embedded agent trap log
- T-MAC ARP Resolve Method Configuration
- Token Ring fan-out device support (requires Token Ring Media Module code v1.2)
- Port grouping (setting networks)
- Multiple module download
- Script download.

The *IBM 8260 Distributed Management Module User's Guide* describes these features in detail.

## Changed Functionality

The default setting for the Early Token Release option on the T-MAC has changed from Disabled to Enabled.

## Corrected Problems

The following problems have been corrected in DMM Version v2.3:

1. No configuration change traps are generated when the following port parameters are changed: SQUELCH, LINK INTEGRITY, AUTOPOLARITY, and SQE TEST.
2. The single-slot 8260 Ethernet Network Interconnect Module (Model Number E06XR) appears as a double-slot module when displayed in the Hub Manager Program.
3. If you issue a SET PORT REDUNDANT command on two FB/FL ports in separate Ethernet Flexible Concentration modules where the primary is active and the backup is standby and the primary link connection breaks, the status of the primary and backup link is reported incorrectly. Both the primary port and the backup port are reported as active. The primary port should be reported as standby and the backup should be reported as active.
4. When changing port redundancy settings using SNMP, allow 3 seconds for the changes to take effect before you issue further commands.
5. The RMON source route hop frame counter does not always increment correctly on the T-MAC.
6. The T-MAC may reboot itself when all rem_status flags are enabled. It immediately resumes normal operation.
7. If you assign a T-MAC to an isolated network, issue the SAVE ALL command, then physically remove the T-MAC, ports can no longer be assigned to the isolated network that the T-MAC had been assigned to. Resetting the module does not clear the condition. To correct the problem, set the network to BACKPLANE, then back to ISOLATED.
8. The DMM does not recognize the first authentication request made to a new community table entry. All subsequent requests are recognized.

# Token Ring MAC Address-to-Port Security Issues

Consider the following when using the MAC-Address-to-Port Security feature with 8260 Token Ring modules:

1. If your network has MAC-less stations or fan-out devices, exercises the beacon recovery mechanism, or goes through a series of configuration changes, the Token Ring map may become invalid. If this occurs, the network's port-to-address mapping becomes skewed and the MAC-Address-to-Port Security feature reports erroneous security violations.

   Because security violations may be reported erroneously, you should *not* set security to disable ports upon detecting a violation. Instead, set the SET SECURITY PORT ACTION_ON_INTRUSION value to trap_only.

2. You can use the SET SECURITY AUTOLEARN command to instruct the DMM to automatically learn MAC-Address-to-Port correlations. Issuing the command frequently helps to ensure that the DMM's list of valid MAC addresses is up-to-date.

# General DMM Issues

This section contains the following subsections:

- Operating Considerations
- Known Problems.

## Operating Considerations

Consider the following when using the DMM Version v2.3 terminal command interface:

1. DMM Version v2.3 is designed to work with T-MAC Version 3.0 or later and E-MAC Version 3.0 or later. Do not use DMM Version v2.3 with an earlier version of T-MAC or E-MAC. Do not use T-MAC Version 3.0 or later and E-MAC Version 3.0 or later with an earlier version of the DMM software.

   If you do not have the correct versions, contact your IBM Representative for an upgrade. Current code versions are listed in the 8260 Module Code Versions section later in this note.

2. To ensure reliable network connectivity, always set an active default gateway for the DMM.

3. If you define more than one default gateway, duplicate hubs might appear when you use the Hub Manager for AIX® management program.

4. If you issue the DMM TELNET command using an invalid IP address, there is no escape sequence to exit. Wait 60 seconds for the session to time out.

5. When a standby DMM becomes hub master, the new master may not have a default gateway assigned. Use the SET IP ACTIVE_DEFAULT_GATEWAY command to set a default gateway.

6. Ethernet MAC Card redundant probe mode is not redundant in DMM Version v2.3.

7. Ethernet MAC Card redundancy fails if the active MAC Card and the master DMM fail simultaneously (for example, if you remove an EC-DMM from the hub with the active MAC Card attached). Redundancy fails in this scenario because the master DMM carries the information required to configure the standby MAC Card.

8. If you remove an enabled MAC Card from the hub, and a standby MAC Card becomes active, the newly-active card remains active even if the removed card is re-inserted into the hub. This feature prevents unnecessary switchover when the modules are removed or reset. Issuing the REVERT command does not cause the previously-active card to become active again.

9. When you use a modem to initiate a Serial Line Internet Protocol (SLIP) connection, noise on the communication lines is sometimes interpreted as a break character. When this occurs, the connection breaks. To correct this situation:

   a. Re-establish the connection.

   b. Issue the SET LOGIN ACCESS command to regain super-user privileges.

10. The DMM displays RDY (ready) and the Login prompt appears on the DMM console *before* the DMM configures all of the modules in the hub. Allow a few minutes for the DMM to learn the hub configuration before you enter SET commands.

11. When a standby MAC assumes the role of active MAC, stations may be unable to communicate with the DMM until the stations clear their ARP (Address Resolution Protocol) caches. This happens because the standby MAC assumes the IP parameters of the card it replaced, but has a different MAC address. The communication problem corrects itself when either of the following occurs:

    - ❑ The station's ARP cache times out
    - ❑ The station receives a message (and therefore clears its ARP cache).

    Include relevant stations in the DMM community table to ensure the stations receive DMM messages.

12. After you reset a MAC Card (either individually or as part of a larger reset), Link Down and Link Up traps occur.

13. To map MAC addresses external to the 8260 module domain (stations connected to 8250 modules or third-party equipment using 8260 fiber or copper trunks), you must enable rmon_groups and rmon_ring_station_stats. All indirectly-connected stations are mapped to "external" in the logical map.

14. Set the SET MODULE ARP_RESOLVE_METHOD command to NON_SOURCE_ROUTE for IP communications across multiple rings connected by routers that do not support source routing for ARP. If you do not, you cannot perform IP communications across the router boundary.

## Known Problems

The following are known problems that occur in the DMM Version v2.3 software:

1. The DMM might not log out when you exit from a UNIX **tip** utility session. That is, when you restart the **tip** session, you may still have the same access rights you had upon exiting the previous session.

2. You cannot disable beacon recovery on an isolated network.

3. If you have previously-configured modules (8260 24-Port 10BASE-T and 10BASE-FB Version 1.00 only) in an unmanaged 8260 hub, adding a DMM to the hub overwrites the module's current configuration. To avoid this problem in the future, upgrade the media module software to the latest version.

4. Hot insertion of an 8250 MAU TR Media Module (Model Number 3820T) into the hub causes a mastership election.

5. If a DMM is installed in the same hub as an 8250 FDDI Management Module (prior to FMM Version 3.00), you must set the mastership priority of the DMM higher than 5. If an election occurs with the value set to less than 6, the management modules become stuck in the election process.

6. You must have TRMM Version v3.00 or later software to ensure proper Token Ring beacon recovery for 8250 modules from a slave TRMM in an 8260 hub. If you have an earlier TRMM version, the TRMM must be the master management module to ensure proper beacon recovery for 8250 modules.

7. When you download code to a TRMM prior to Version v3.3, set the TRMM the hub to master before the download. If you inadvertently download a TRMM without setting the TRMM to master, and the TRMM and DMM fail, reset both modules to correct the problem.

8. Problems may occur when you display an address-to-port map (for example, when you use the SHOW RING_MAP TOKEN RING LOGICAL command):

    a. The DMM may display an invalid map if you insert a MAC-less station in the highest-numbered active port.

    b. Stations may sometimes appear as "external" even though they are located in the same hub as the DMM.

    c. When you move stations between ports, invalid duplicate addresses may appear in the logical ring map.

    d. When all statistics groups are enabled and traffic levels are high, a null ring map may be returned, resetting the T-MAC or media modules on a specified ring.

9. You may not be able to view 8260 module repeater statistics on some Ethernet networks unless they have an E-MAC assigned to them.

10. Incorrect trap messages appear when you reset a standby DMM module.

11. The DMM may display debugging messages (for example, FILE = ...). If one of these messages appears, contact your service representative.

12. You cannot globally set certain port parameters (auto_polarity, link_integrity, squelch) on the E04M-MOD module using the SET PORT {*slot*}.ALL command.

13. If you enter SET PORT {*slot.port*} MODE REMOTE_DIAGNOSTICS ?, then press Enter, the list of possible completions appears as:

```
Possible completions:
        OR
(slot)
```

    The correct completion is simply (slot).

14. If an Ethernet Security Card is in the hub and you issue several RESET MASTERSHIP commands, the DMM may reset.

## RMON Issues

Consider the following when using the DMM Version v2.3 RMON feature:

1. According to the RMON specification, the MAC should create certain default entries when you enable host statistics on the MAC. MACs may not automatically create RMON host table entries when enabled, or delete RMON host table entries when disabled.

2. If you have difficulty obtaining RMON statistics from the DMM, ensure that you have enabled the RMON function and the appropriate RMON statistics, either using the command line or using SNMP (the oc62NNDMGTModTable group). An RMON manager cannot dynamically allocate any RMON group unless the data source and index match the T-MAC or E-MAC interface index.

3. If a station inserts into the ring and becomes the Active Monitor's NAUN, then de-inserts from the ring before participating in at least two ring poll cycles, the station may be incorrectly listed in the RMON ring station table as Active and be included in the number of Active Ring Stations listed in the Ring Station Control Table. This applies only to the T-MAC.

4. The RMON Host and Ring Station Tables do not contain any entries for a station with an address of 00-00-00-00-00-00. This applies to T-MAC only.

## Download Issues

Consider the following issues when downloading new software to 8260 modules:

**Note:** Instructions for performing software downloads are contained in the *8260 Distributed Management Module User's Guide* (Document Number SA33-0259). Follow these instructions carefully.

**Warning:** You must upgrade 8260 modules in a particular order! Refer to page 2 of this document for more information.

1. Remove 8250 FDDI media modules with firmware prior to Version 3.00 from the hub before downloading. If there are FDDI media modules (running software versions prior to Version 3.00) in the hub, the DMM initiates a mastership election during downloads. This causes the download to fail and the module stays in Download mode. To remedy this situation:
   - Remove any installed FDDI modules before downloading
   - Retry the download procedure

   If the download failure causes you to lose in-band connectivity, repeat the download out-of-band.
2. In general:
   - When the a DMM download mode fails repeatedly, retry the download
   - If the in-band download fails, try an out-of-band download

## Trap Issues

Consider the following when analyzing trap messages sent by DMM Version v2.3:

1. If an IBM 8250 FDDI Management Module (FMM) prior to Version v3.00 is installed in the hub and you remove any module from hub slot 1, the FMM displays module down traps continuously until you remove the FMM.
2. Traps are not displayed on TELNET-connected DMM sessions.
3. When you manage FDDI media modules running a code version before Version 3.00, the DMM may generate false port disable/off traps when you make changes to module or port parameters.
4. The DMM does not generate a trap when you use the olPortAlertMode MIB object.

5. The DMM does not support rptrHealthTraps.

6. If you set up a SLIP connection using the SET TERMINAL AUXILIARY MODE SLIP command, the trap contains the correct information. However, if you then issue the REVERT ALL command (effectively closing the SLIP connection), traps may not be reported as expected.

7. In REM or CRS traps, the segment number reported may not be accurate. This applies to T-MAC only.

## Warning Message Issues

If you request counter statistics on a port or network that is not being monitored currently, the DMM may report counters set to all zeros (rather than issuing a warning message).

## SNMP Issues

Consider the following when using SNMP to manage DMM Version v2.3:

1. If you configure a subnetwork mask for an inappropriate class (using the terminal interface), the DMM displays a warning. The terminal interface displays the incorrect setting, but the ipAdEntNetMask object returns a subnetwork mask that is appropriate for the class.

2. The DMM does not support the delete setting for the tcpConnState object.

3. A MAC address obtained using SNMP may appear as ASCII characters instead of hexadecimal digits. This error is caused by certain SNMP tools, not the DMM.

4. The valid values for the MIB variable etherStatsOwner object are 0-127. The terminal interface prints only 78 characters in response to this object

## Power Management Issues

Consider the following when using the DMM Version v2.3 power management feature:

1. If you power down the hub, then move or install modules while the hub is powered down, configured power management settings are lost for all installed 8260 modules.

2. If the hub exceeds its power budget because of newly-inserted 8250 modules, 8260 modules do not power down automatically, but the controller module *does* send a power threshold trap. The hub remains in power deficit until it power cycles, at which time the hub powers down 8260 modules according to module power class settings.

3. Double-fault scenarios in a mixed environment (8260 and 8250 modules) may cause all 8260 modules to be powered down. (Example of a double-fault scenario: a controller switchover occurs and a power supply failure follows within 30 seconds of the switchover.)

   To recover from a double-fault scenario:

   – Power down the hub

   – Remove an 8250 module

   Upon powerup, the controller reassesses the power budget. When the 8260 modules power up, all power values revert to their default values. In general, when 8260 modules are powered down by the controller, they lose their power management configuration.

## Statistics Issues

Consider the following when using DMM Version v2.3 to monitor network statistics:

1. The 8260 24-port 10BASE-T module repeater MIB statistics are not 100 percent accurate at high error rates. DMM statistics are sufficient for general network diagnostic analysis.

2. The 8260 Token Ring RMON statistics are not 100 percent accurate at high network traffic rates. DMM statistics are sufficient for general network diagnostic analysis.

3. Significant reconfiguration of the 8260 24-Port 10BASE-T module (such as removing or powering down the module) causes statistics counters to reset.

4. If you have assigned an 8260 36-Port 10BASE-T Module and an 8260 24-Port 10BASE-T Module to the same backplane network, the 24-Port module may not record repeater collision statistics. Issue the RESET DEVICE command to correct this problem.

5. When an E-MAC is monitoring Ethernet network 1, 2, or 3, and a collision occurs between two ports on a media module (one port receiving, followed by another starting to receive), the event is logged in the Runts field (displayed by the SHOW COUNTER REPEATER ETHERNET_(1,2,3) command). The error should be logged in the Transmit Collisions field. When an E-MAC is monitoring Ethernet networks 4 to 8, the DMM records transmit collisions properly.

## T-MAC-Specific Issues

Consider the following issues when using the T-MAC:

1. RMON events and alarms for the T-MAC using SNMP are now supported. However, no terminal configuration capability is available at this time.

2. The T-MAC does not support group addresses.

3. When you access 802.5 Token Ring Statistics to obtain the T-MAC functional address, the functional address value does not reflect when the T-MAC is the Active Monitor. Use the SHOW TR_SURROGATE *slot*.2 CRS_STATION command to view the T-MAC Active Monitor Status. To ensure correct functional address information from a T-MAC, use the SHOW TR_SURROGATE *slot*.2 CRS_STATION MAC_ADDRESS *mac_address* command, where *mac_address* is the address of the T-MAC.

4. When you enable a T-MAC and start a statistics-collection task, then disable the T-MAC, your SNMP application may still show statistics for the disabled interface. These statistics are not valid.

5. Some T-MAC modules have an intermittent condition which could cause the T-MAC to stop communicating with the DMM. When you use the SHOW MODULE command, the following message appears:

   ```
   WARNING - Module is not communicating. Failed or Initializing.
   ```

   The T-MAC may still be on the ring and participating in the ring poll process. The only way to remove a T-MAC in this state is to reset the host media module that is carrying the T-MAC. If this condition persists and is not due to the T-MAC experiencing receive congestion, the following is recommended:

   a. Reset the host media module that is carrying the T-MAC

   b. Once the T-MAC initializes, reset the T-MAC. Perform this step several times to execute diagnostics.

   c. If the T-MAC does not initialize within 25 seconds of being reset, call your service representative to have the T-MAC replaced.

# 8260 Module Code Versions

Table 1 lists the most recently released code versions for 8260 modules. If you need to upgrade to any of these versions, contact your IBM Representative.

***Table 1. Latest 8260 Module Code Versions***

| Version | Module Feature Code |
|---|---|
| 10BASE-FB Media card boot v1.00 | 1110, 1210, 1310 |
| 10BASE-FB Media card operational v1.05 | 1110, 1210, 1310 |
| TR Active Per Module card boot v1.00 | 3118 |
| TR Active Per Module card operational v1.12 | 3118 |
| TR Active Per Port card boot v1.00 | 3018 |
| TR Active Per Port card operational v1.11 | 3018 |
| TR Dual Fiber Repeater card boot v1.00 | 3010 |
| TR Dual Fiber Repeater card operational v1.11 | 3010 |
| DMM boot v1.01 | 1100, 1000 |
| DMM operational v2.30 | 1100, 1000 |
| Etherflex Flexible Concentration Module boot v1.00 | 1004 |
| Etherflex Flexible Concentration Module operational v1.00 | 1004 |
| EC-DMM boot v1.00 | 1100 (subslot 1) |
| EC-DMM operational v1.00 | 1100 (subslot 1) |
| Ethernet MAC Card boot v1.01 | 8918 |
| Ethernet MAC Card operational v3.00 | 8918 |
| Ethernet Security Card (E-SEC) boot v1.00 | 8915 |
| Ethernet Security Card (E-SEC) operational v1.01 | 8915 |
| 20-Port 10BASE-T Module boot v1.00 | 1020 |
| 20-Port 10BASE-T Module operational v1.00 | 1020 |
| 24-Port 10BASE-T Module boot v1.02 | 1024 |
| 24-Port 10BASE-T Module operational v1.04 | 1024 |
| 36-Port 10BASE-T Module boot v1.00 | 1036 |
| 36-Port 10BASE-T Module operational v1.01 | 1036 |
| 40-Port 10BASE-T Module | 1040 |
| TR Passive Per Module card boot v1.00 | 3020 |
| TR Passive Per Module card operational v1.11 | 3020 |

***Table 1. Latest 8260 Module Code Versions (Continued)***

| Version | Module Feature Code |
|---|---|
| Redundant Controller boot v1.01 | 8000 |
| Redundant Controller operational v1.10 | 8000 |
| T-MAC Card boot v2.00 | 8913 |
| T-MAC Card operational v3.00 | 8913 |
| T-MAC Card trchipset v3.00 | 8913 |
| Ethernet Flexible Concentration Module | 1004 |