



Release Notes

InfiniScale MT43132 Firmware

Rev 5.3.0

Mellanox Technologies

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InfiniScale MT43132 Firmware Release Notes

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1 Introduction

The firmware in this package complements the InfiniScale MT43132 chip architecture with a set of advanced features, enabling easy and remote management of all its relevant blocks. The set of features provided in this package covers not only the mandatory requirements defined by the IBTA regarding SMA and GSA services, but also includes some optional and vendor specific services beyond the specification.

Note: This firmware release supports only the InfiniScale MT43132 switch chip.

This document includes the following sections:

- “Mellanox Switches Supported” on page 3
- “Supported New Features” on page 3
- “UnSupported Features” on page 3
- “Requirements for Mellanox Tools” on page 4
- “SMA/GSA Attributes” on page 4
- “Fixed Bugs” on page 6
- “Known Issues” on page 7

2 Mellanox Switches Supported

The following table lists the switches that were tested with this firmware release and were approved by the MQAS (Mellanox QA System).

Table 1 - Mellanox Switch Systems Supported
Table 2 -

Board Name	Description
MTEVB43132-C08 (BUFFALO)	Eight port copper switch. Evaluation board
MTS9600 (GAZELLE)	Ninety-six port switch

The switch type is selected either by clicking the autodetect button in the EMT tool or by selecting the appropriate board from the boards list tab of EMT¹.

Under the “boards/images” directory you will find pre-built images for GNU and Gazelle.

3 Supported New Features

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4 UnSupported Features

The following features are not supported in this release:

1. The default boards list in EMT contains only the BUFFALO board. The other systems can be found in an XML file located in this release package under “boards/boards.xml”. Use the advance tab widget in EMT to load the boards configuration file.

- Baseboard Management Agent (BMA)

5 Requirements for Mellanox Tools

The following are the requirements for the MST tools running on switch platforms based on the InfiniScale MT43132 device.

- MST 1.4.4 and above
- Supported I2C cards (MTUSB-1 Dimux or ISA Calibre)

The Mellanox eburn tool additionally runs on the PPC_8XX and PPC platforms. For complete information about the requirements for Mellanox Software tools, see the Mellanox Software Tools Release Notes for MST version 1.4.8.

7 SMA/GSA Attributes

The following tables summarize the attributes supported by the management agents provided in this release.

Table 3 - SMA Supported Attributes

Attribute	Support
Notice	X
NodeDescription	X
NodeInfo	X
SwitchInfo	X
GUIDInfo	X
PortInfo	X
Partition Key Table	X
SLtoVLMappingTable	X
VLArbitration	X
LinearForwardingTable	X
RandomForwardingTable	
MulticastForwardingTable	X
SMInfo	
VendorDiag	X
LedInfo	X

Table 4 - Performance Management Supported Attributes

Attribute	Support
ClassPortInfo	X
PortSamplesControl	X
PortSamplesResult	X
PortCounters	X

Table 5 - Baseboard Management Supported Attributes

Attribute	Support
ClassPortInfo	X
TRAP	X
BkeyInfo	X
WriteVPD	X
ReadVPD	X
GetModuleStatus	X

8 Fixed Bugs

1 : Traps may cause a deadlock when working with receive queue

Keywords: SMA, TCARQ, TRAP

Description:

When an SMA runs on top of the PCI bus of a local InfiniScale using TCARQ firmware, trap packets are sent locally from the SMA to the TCA port. After sending the packet, firmware must clear the TCA buffer before being able to handle a new packet to be delivered to the TCA port. If a new packet is received and firmware attempts to process it prior to clearing the TCA buffer, firmware deadlocks. This is because firmware ends up stuck waiting for the buffer to be emptied in order to place the new packet, while firmware itself should empty the TCA buffer.

Impact:

The device hangs due to a firmware deadlock.

Fix:

The flow control update watchdog on all ports is disabled.

When a trap is sent from the local SMA to the local TCA, firmware disables all interrupts other than the incoming TCA packet. Thus the packet gets processed and the buffer gets emptied before any other event is handled.

Internal Reference: 24494

2 : SMA P_Key attribute handling may cause over-writing of unexpected registers

Keywords: SMA, P_Key attribute

Description:

When handling P_Key requests some un-expected registers are over-written

Impact:

Unexpected mode of device operation.

Fix:

The problem was due to an un-initialized register.

Internal Reference: 28783

9 Known Issues

1 : OpVL Change and Flow Control Update Watchdog

Keywords: OpVL watchdog errata

Description:

Whenever PortInfo:OperationalVLs is modified (by sending PortInfo.Set() SMP) such that the number of operational VLs is reduced, the corresponding InfiniBand port does not disable the flow control watchdog timers for the inactive VLs. For example, if the number of operational VLs is reduced from 8 to 4, the flow control watchdog timers for VLs4-7 remain active.

Impact:

Whenever PortInfo:OperationalVLs is modified (by sending PortInfo.Set() SMP) such that the number of operational VLs is reduced, the corresponding InfiniBand port will continuously retrain the link.

Workaround:

The flow control update watchdog on all ports is disabled.

Internal Reference: 10336

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