



**Release Notes**

# Mellanox IB Gold Distribution

Rev 1.7.0

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## Mellanox IB Gold Distribution Release Notes

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# 1 Overview

These are the release notes of Mellanox IB Gold Distribution (IBGD), Rev 1.7.0. The IBGD is a SW package of several modules that together comprise a complete InfiniBand solution for High Performance Computing (HPC), Enterprise Data Center (EDC), and storage.

Note: If you plan to upgrade IB Gold Distribution on your cluster, please upgrade *all* its nodes to this new version.

Currently, the IBGD package can be used on the following platforms:

- Linux IA32
- Linux IA64
- Linux AMD64 X86\_64
- Linux Intel EM64T

This document describes:

- IBGD package contents; changes from previous release; supported platforms and operating systems; supported hardware; and dependencies (Overview)
- “Limitations and Known Bugs” on page 7
- “Limitations and Known Bugs” on page 7

## 1.1 Mellanox IB Gold Distribution Rev 1.7.0 Contents

- FW-23108 InfiniHost Firmware revision 3.3.2
- FW-25208 InfiniHost III Ex (acting as an InfiniHost) Firmware revision 4.6.2
- FW-43132 InfiniScale Firmware revision 5.3.0
- FW-47396 InfiniScale III Firmware revision 0.5.0
- FW-25218 MemFree InfiniHost III Ex Firmware revision 5.0.1
- Open Subnet Manager: OpenSM 1.7.0
- Mellanox Software Tools: MST 4.0.3
- InfiniBand Administration Management package: IBADM 1.7.0
- Message Passing Interface (MPI) Stack supporting InfiniBand interface:
  - OSU: MVAPICH 0.9.4
  - NCSA: MPICH 1.2.5, VMI 2.0.1
- Transport Access Layer and Upper Layer Protocols (ULPs):
  - HCA Driver: VAPI 3.2.0 (kernel-level branch) and VAPI 4.0.3
  - IPoIB 1.7.0
  - Socket Direct Protocol: SDP 1.7.0
  - SCSI RDMA Protocol Initiator: SRP Initiator (Host) 1.7.0
  - User Direct Access Programming Layer: uDAPL 1.7.0
  - Kernel-level Direct Access Programming Layer: kDAPL 1.7.0
- Cluster Benchmarks: Presta 1.2, Pallas 2.2.1, B/L OSU 1.0

## **1.2 Main Changes from Previous Release (Rev 1.6.1)**

### **1.2.1 New Components**

- Added the kDAPL ULP (see kDAPL Release Notes - kDAPL\_Release\_Notes.pdf)

### **1.2.2 New Features**

- Added tools and features to the IBADM package (see IBADM Release Notes - IBADM\_Release\_Notes.pdf)
- Added VAPI (HCA Driver, rev 4.0.3) support for MemFree HCA cards (based on the InfiniHost III Ex device)
- Added features to the SRP Initiator ULP (see SRP\_Initiator\_Release\_Notes.pdf)
- Improved the performance of IPoIB, uDAPL, and SRP Initiator ULPs (see the respective Release Notes)

### **1.2.3 New Operating Systems Supported**

- Added support for Fedora Core 3 operating system (see Table 1 on page 5)

### **1.2.4 General**

- Bug fixes (See “Limitations and Known Bugs” on page 7 for summary of major bug fixes. Also see the ‘Fixed Bugs’ section of the Release Notes document per IBGD component)

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## 1.3 Supported Platforms and Operating Systems

The following table lists all supported platforms and operating systems by the tools and modules included in this IBGD package.

Table 1 - Supported platforms and Operating Systems

Platform	Operating System	Kernel
<b>X86</b>	Red Hat Enterprise Linux AS 3.0	2.4.21-20.ELsmp
	Red Hat Linux 9.0	kernel.org: 2.4.27 (smp)
	Red Hat Linux 9.0	2.4.20-8 (smp; bigmem)
	SuSe SLES 9.0	Update (2.6.5-7.111.xx-smp)
	SuSE Linux 9.1 Pro	2.6.9 / 2.6.10
	SuSE Linux 9.1 Pro	Update (2.6.5-7.111.xx-smp)
	Rocks 3.3.0	2.4.21-20.ELsmp
	Fedora Core 3 <sup>1</sup>	vanilla 2.6.9 (from kernel.org)
<b>IA-64</b> <sup>2</sup>	Red Hat Enterprise Linux AS 3.0	2.4.21-15.EL
	SuSE SLES 9.0	2.6.5-7.97-default
<b>AMD64 (X86_64)</b> <sup>2</sup>	Red Hat Enterprise Linux AS 3.0	2.4.21-20.ELsmp
	SuSE SLES 9.0	2.6.5-7.111.xx-smp
	SuSE 9.1 Pro	Update (2.6.5-7.111.xx-smp)
	SuSE 9.1 Pro	2.6.9/2.6.10
	Rocks 3.3.0	2.4.21-20.ELsmp
	Fedora Core 3	2.6.9-1.667smp
<b>Intel EM64T</b> <sup>2</sup>	Red Hat Enterprise Linux AS 3.0	2.4.21-20.EL
	SuSE SLES 9.0 RC5	2.6.5-7.97-smp / 2.6.5-7.111.xx-smp
	SuSE 9.1 Pro	2.6.10
	SuSE 9.1 Pro	Update (2.6.5-7.111.xx-smp)
	Rocks 3.3.0	2.4.21-20.ELsmp
	Fedora Core 3	2.6.9-1.667smp

1. Fedora Core 3 running kernel 2.6.9 requires applying a Fedora patch. For details, see Section 1.2.1, “Compiling ‘vanilla’ 2.6.9 (from kernel.org) on Fedora Core 3” in the document `vapi-linux_Release_Notes_4_0_3.pdf` (HCA Driver Release Notes). Furthermore, compiler gcc version 3.4.3 or later must be used.
2. The kDAPL ULP does not support 64-bit architectures.

### 1.3.1 Future Unsupported Operating Systems

The following operating system will not be supported in the next IB Gold Distribution release:

- Red Hat Linux 9.0

## 1.4 Supported HCA Hardware

This release of IB Gold Distribution was tested on the following HCA (Host Channel Adapter) boards:

- MHX-CEXXX-T<sup>1</sup> (previously MTPB23108) InfiniHost PCI-X HCA Adapter Card (Cougar)
- MHXL-CFXXX-T<sup>1</sup> (previously MTLP23108) Low Profile InfiniHost PCI-X HCA Adapter Card (Cougar Cub)
- MHEL-CFXXX-T<sup>1</sup> (previously MTLP25208) InfiniHost III Ex HCA Adapter Card (Lion Cub)
- MHEA28-XT MemFree InfiniHost III Ex HCA Adapter Card (Lion Mini)

## 1.5 Supported Switch Platforms

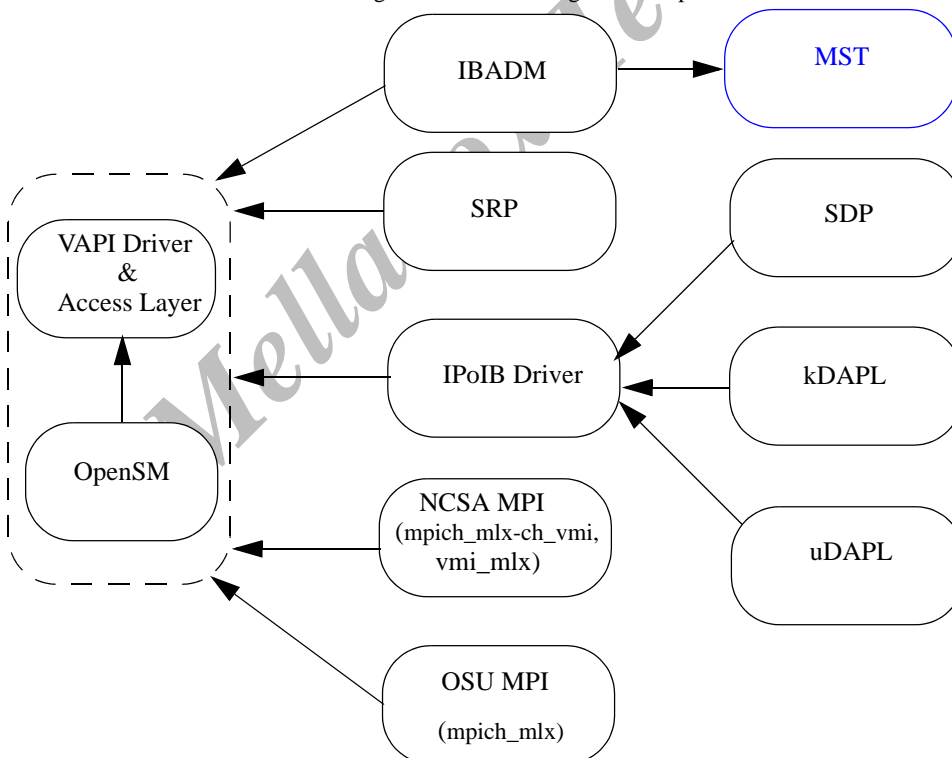
This release of IB Gold Distribution was tested on the following switch platforms:

- MTS2400 - 24 4X port switch platform
- MTS9600 - 96 4X port switch platform
- MTS14400 - 144 4X port switch platform

## 1.6 Inter-Package Dependencies

During the IBGD package installation, some dependencies between the package components must be observed. The Release Notes of each package component list these dependencies per component. Figure 1, “IBGD Package Inter-Dependencies” summarizes all dependencies together.

Figure 1: IBGD Package Inter-Dependencies



1. XXX reflects the size of on-board memory (in MB): 128, 256, or 512.

## 2 Limitations and Known Bugs

The following table provides major limitations and known issues of the various components of IBGD. Please refer to the component-specific release notes for more details.

Table 2 - Limitations and Known Bugs

	Title of Problem	Details
1.	Native Linux kernel support limitation	If you recompile the Linux kernel, you need to re-install the IBGD package.
2.	NCSA/OSU MPI limitation	A Fortran compiler (for example, gcc-g77) is required for build
3.	NCSA MPI limitation	NCSA MPI does not run on SuSE 9.x without starting the MPD daemon on all hosts. (See details in README.txt.)
4.	NCSA MPI limitation	NCSA MPI does not run on the operating system SuSE SLES 9.0 on Intel's IA-64 platform
5.	SRP limitation	Only the initiator part of the protocol is provided in this package. Please contact Mellanox for the target.
6.	OSU MPI limitation	Hardware multicast is not supported
7.	AMD 8131 chipset invalid configuration for PCI-X may cause system failure	<p>For details on the invalid configuration, see under <a href="http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_739_9004,00.html">http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_739_9004,00.html</a> Errata #56 and #58 in the document "AMD-8131™ HyperTransport™ PCI-X Tunnel Revision Guide"</p> <p>IB Gold provides two variables to enable or disable workarounds for these errata. These are: FIX_AMD_8131_ERR56 and FIX_AMD_8131_ERR58 in the configuration file /etc/infiniband/openib.conf.</p> <p>By default, both variables are set to YES to enable the workarounds. A change to either variable requires rebooting the system.</p>
8.	Fedora Core 3 operating system support limitation	<ol style="list-style-type: none"> <li>1. Fedora Core 3 running kernel 2.6.9 or later on an X86 platform requires applying a Fedora patch. See Section 1.2.1 in the VAPI Driver Release Notes (vapi-linux_Release_Notes_4_0_3.pdf).</li> <li>2. Use gcc compiler version 3.4.3 or later. The 3.4.2 version included with Fedora Core 3 has a bug (#17581) that prevents correct operation of the driver.</li> </ol>

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