



## **IBUtils2 Utility Release Notes v2.19.3**

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# Release Notes Update History

Revision	Date	Description
2.19.3	December 06, 2024	Initial release of this Release Notes version. This version introduces <a href="#">Changes and New Features</a> .

## Overview

ibdiagnet scans the fabric using directed route packets and extracts all the available information regarding its connectivity and devices. It then produces the following files in the output directory.

## Software Download

Please visit [InfiniBand Management Tools](#) page.

## Packages

Package	Version
MLNX_OFED	24.10-1.1.4.0
UFM	6.19.1-1

# Changes and New Features

v.2.19.3	
<b>General</b>	No changes and new features are introduced in this release.
v.2.19.0	
<b>XDR</b>	Added support for XDR.
<b>Validations</b>	Added support for automatic validation of SM configuration on HCAs.
<b>Counters</b>	Added support for Port Receive Data Histogram.
<b>Counters</b>	Excluded special ports from PortGeneralCounters fetch.
<b>Limitations</b>	Disabled BER validation for XDR devices (all devices of 5nm).
<b>Hierarchy Information</b>	Updated Physical Hierarchy Information (Template GUID 0x01).
v.2.18.0	
<b>Hierarchy Information</b>	Added support for Chassis Information.
<b>Counters</b>	Added support for Queue Depth Histograms.
<b>Counters</b>	Added support for Port General Counters (ICRC Payload Corruption Detection).
<b>PHY Plugin</b>	Updated 7nm registers.
<b>PHY Plugin</b>	Updated 5nm registers.
<b>PHY Plugin</b>	Updated PPCNT registers.
<b>PHY Plugin</b>	Updated MPCNT registers.
<b>PHY Plugin</b>	Updated PDDR registers.
<b>ibdiagnet</b>	Removed deprecated command line options.
v.2.17.0	
<b>NVLink5 MADs</b>	Added support for NVLink5 MADs.
<b>FLID</b>	Added support for compression ratio for FLIDs.
<b>FLID</b>	Added support PFRN for FLIDs.

v.2.19.3	
<b>Cables</b>	Enabled PRTL registers for calculation cable length.
<b>PHY Plugin</b>	Added support for MPCNT register.
<b>PHY Plugin</b>	Allowed MRCS register for HCAs.
<b>ibdiagpath</b>	Deprecated and removed ibdiagpath.
<b>ibdiagnet</b>	Added support for auto build scope by hosts list (--host_file & --node_descr_filter).
v.2.16.0	
<b>PHY Plugin</b>	Added support for MRCS register.
<b>PHY Plugin</b>	Added support for PRTL register.
<b>PHY Plugin</b>	Updated PDDR register.
<b>Cables</b>	Reduced false-positive errors about an invalid port in the cable plugin for splitted switches.
<b>Cables</b>	Changed cable info fetch priority from cable plugin to PHY plugin.
v.2.15.0	
<b>Counters</b>	Added support for PPCNT InfiniBand general counters.
<b>DGX-H100</b>	Added support for DGX-H100 systems in Rail Validation.
<b>db_csv File</b>	Added the option to report to the db_csv file if no BER threshold is found for a port.
<b>SLRG Register</b>	Excluded the SLRG register from the default PHY list.
<b>MSPS Register</b>	Updated MSPS register (added the <code>power_consumption</code> field to the dump).
v.2.14.0	
<b>PCIe Connectivity Health Report</b>	Introduced a new report on PCIe connectivity health based on a comparison of enabled/active speed and width.
<b>Cables</b>	Removed validation of transceiver firmware versions on the same cable.
v.2.13.0	
<b>Counters</b>	Added support for "Fast Link Recovery" counters.
<b>Counters</b>	Added support for On-Demand-Paging (ODP) counters.
<b>Reports</b>	Added reports for mismatch in cable firmware versions.

v2.19.3	
<b>Reports</b>	Added reports for cable length.
v2.12.0	
<b>Programmable Port Congestion Control</b>	Added support for fetching Programmable Port Congestion Control Counters (PPCC) at GA level.
<b>FLID</b>	Added support for FLID at GA level.
<b>SHARP</b>	Added support for “ad-hoc” trees for SHARP.
<b>iblinkinfo</b>	Added new dump file in format if iblinkinfo.
v2.11.0	
<b>Programmable Port Congestion Control</b>	Added support for fetching Programmable Port Congestion Control Counters (PPCC). This feature is at Technical Preview level.
<b>FLID</b>	Added support for FLID. This feature is at Technical Preview level.
<b>GMP MADs</b>	Added support for sending GMP MADs from user-space (Kernel bypass). This feature is at Alpha level.
<b>In-band auto-discovery</b>	In-band auto-discovery for switch management IP. This feature is available only in the UFM package.
<b>PHY plugin</b>	Added support for IB cable/transceiver diagnostics: SNR and EOM (PEMI).
<b>ibdiagnet's runtime statistics</b>	Added ibdiagnet's runtime statistics (CPU utilization, Stage duration, MAD statistics).
v2.10.0	
<b>Cable Information</b>	Fetching cable info from Common Management Interface Specification (CMIS) compatible cables connected to HCA.
<b>smparquery Utility</b>	The smparquery utility is moved from the deprecated package "ar_info" to the "ibutils2" package. Now, location of the binary file is "/usr/bin/smparquery", instead of "/usr/sbin/smparquery."

v2.19.3	
<b>topodiff Tool</b>	The topodiff tool supports now more than 4 HCA systems.
<b>Routers stage</b>	"Routers stage" will be launched by default.
<b>Auto-detection of Outgoing IB Port</b>	Improved the auto-detection of outgoing IB port.
v2.9.0	
<b>Proactive FRN (pFRN)</b>	Added support for Proactive FRN (pFRN) configuration and counters.
<b>HashBasedForwarding</b>	Added support for HashBasedForwarding (HBF).
<b>PortVLXmitWait</b>	Added support for vendor spec PortVLXmitWait 64bit.
<b>Hierarchy Info</b>	Added support for Hierarchy Info (A15 InfiniBand spec): <ul style="list-style-type: none"> <li>• Port Hierarchy Info</li> <li>• Physical Hierarchy Info</li> </ul>
<b>PHY plugin</b>	Added support for up to 16 fans (START_FANS_SPEED section).
<b>SHARP trees validation</b>	Added new validations for SHARP trees in fat-tree topology with "parallel" links between switches.
<b>VL Arbitration</b>	Added support for VL Arbitration.
<b>Cables</b>	Modified the format for temperature thresholds. How it uses human readable format.
<b>PMPortSamplesControl</b>	Added PMPortSamplesControl to db_csv.
<b>FDBS file</b>	Enabled FDBS file creation by default.
<b>DFP dump file</b>	Improved DFP dump file.
<b>Dump file</b>	Performance improvements in dump file creation
v2.8.0	
<b>Cables</b>	Added support for CMIS cable.
<b>PortVLXmit</b>	Added support for PortVLXmitFlowCtlUpdateErrors.
<b>PortVLXmit</b>	Added support for PortVLXmitWait.

v2.19.3	
<b>PHY plugin</b>	Updated SLRG_16 and SLTP_16 registers.
<b>PHY plugin</b>	Added support for PCI Diagnostic Data Pages.
<b>Adapter Cards: Socket-Direct</b>	Added a list of Socket-Direct HCAs to DB_CSV.
<b>Adapter Cards: Socket-Direct</b>	Socket-Direct HCAs are excluded from Rail-Optimized Topology validation.
<b>PM Stage Reports Overflow &amp; Threshold</b>	PM Stage reports overflow & threshold for 3 counters only: <ul style="list-style-type: none"> <li>• SyncHeaderErrorCounter</li> <li>• UnknownBlockCounter</li> <li>• port_fec_uncorrectable_block_counter</li> </ul>
<b>Fat Tree Validation</b>	Improved "Connectivity group" detection.
<b>ibnetdiscover</b>	ibnetdiscover file will not be generate in case of the scope file usage.
<b>Fabric Summary</b>	Fabric Summary now includes number of Socket-Direct HCAs
<b>Error/Warning Reporting</b>	Error/warning reporting to screen and log files is limited by 5 of each type, DB_CSV includes all errors
v2.7.0	
<b>Link Speed</b>	Added support for NDR InfiniBand link speed.
<b>Fat Tree Topology</b>	Enabled a new Fat Tree Topology validation tool.
<b>Virtualization Stage</b>	Redesigned the Virtualization stage to asynchronous mode.
<b>AGUID</b>	AGUID stage is disabled by default. To enable it, use the <code>'--aguid'</code> parameter.
<b>db_csv</b>	db_csv will now contain information about connected ports only.
v2.6.1	
<b>ibdiagnet</b>	<ul style="list-style-type: none"> <li>• Enabled Adaptive Routing validation</li> <li>• Performance improvement of routing checking</li> <li>• Added new counters and diagnostic information: <ul style="list-style-type: none"> <li>◦ SHARP: "SAT" ("Streaming Aggregation") counters</li> <li>◦ PHY: Maximum PLR per second field in PPCNT</li> </ul> </li> </ul>



v2.19.3	
	<ul style="list-style-type: none"> <li>◦ PHY: SLLM register</li> <li>◦ PHY: New SymbolBER thresholds</li> <li>◦ Adaptive Routing: PortARTrails counter</li> <li>• Added support for SHARP security (AMKEY)</li> <li>• Enabled reporting port counter differences when using <code>"-pm_pause_time"</code> (PM_DELTA section in db_csv)</li> <li>• Added Dragonfly+ Topology Validation (<code>--dfp, --dfp_opt [&lt;max_cas&gt;]</code>)</li> <li>• Added the option to report the version on the screen and in log file</li> </ul>
<b>ibtopodif</b>	Added support for “stable” names of RDMA devices based on PCI/slot/function location.
<b>ibnetdiscover dump file (created by ibdiagnet)</b>	Now the dump file includes Virtual Port info
v2.5.1	
<b>Rail Optimized Topology Validation</b>	Checks links between compute nodes and leaf switches to provide rail optimized topology ( <code>--rail_validation, --rail_validation_opt [&lt;regex&gt;]</code> ).
<b>Service Level</b>	Customization SL for GMP MADs in ibdiagnet ( <code>--sl</code> ).
<b>General</b>	<ul style="list-style-type: none"> <li>• Added output similar to the results of the "ibnetdiscover"</li> <li>• ibdiagnet: Disabled the output by default for AR/FDBS files in routing stage</li> <li>• Moved SHARP performance counters to db_csv</li> <li>• Dumped by default FEC_MODE section in db_csv</li> <li>• Improved AR connectivity check</li> </ul>
v2.4.0	
<b>General</b>	<ul style="list-style-type: none"> <li>• Flexible output control options (<code>--enable_output, --disable_output, --path</code>)</li> <li>• Discovery only mode (<code>-discovery_only</code>)</li> <li>• Support for MLNX Congestion Control counters</li> <li>• “Fabric Summary” is enabled by default.</li> <li>• Dates and versions in “nodes_info” file are printed in human-readable format.</li> <li>• Dump files include ibdiagnet version and command line parameters.</li> </ul>

v.2.19.3	
	<ul style="list-style-type: none"> <li>• Added split mode to IBNL for “InfiniBand Smart Director Switches” (CS8500)</li> </ul>
<b>Performance Improvements</b>	<p>The performance of following steps in ibdiagnet have been improved:</p> <ul style="list-style-type: none"> <li>• Routing validation</li> <li>• Network discovery</li> <li>• Virtualization stage</li> <li>• Dump creation</li> </ul>

## Changes in Command Line Parameters

Version	Tool	Parameter Name	Status	Description
2.16.0	ibdiag path	--lids_list	New	Using the lids utility for creating scope file.
2.15.0	ibdiagnet	--skip	Deprecated	vs_cap_smp & vs_cap_gmp values will be ignored. SMP & GMP capabilities will be retrieve every time.
	ibdiag path	--adaptive_routing	New	Using adaptive routing tables to look up for possible paths.
2.12.0	ibdiagnet	--sharp_opt	Changed	Added a new option "- [ad_hoc]" which indicates the ad-hoc trees support in SHARP, and prevents warnings for tree_id duplication in the fabric Value: <[csc][dsc][dscp][ad_hoc]>
2.11.0	ibdiagnet	--ppcc	New	This parameters enables fetching PPCC (Port Programable Congestion Control) counters. Possible values: <ul style="list-style-type: none"> <li>• File path: In this cases ibdiagnet loads from file PPCC Algorithms</li> <li>• Folder path: ibdiagnet loads all files from the directory</li> </ul>

Version	Tool	Parameter Name	Status	Description
				<ul style="list-style-type: none"> <li>Wildcard: ibdiagnet loads files according to wildcard matching.</li> </ul> <p>For more information on the supported wildcard syntax refer to the manual page by typing <code>`man 7 glob</code></p>
		--verbs	Experimental	Send and receive GMPs via ibverbs instead of ibumad library.
2.9.0	ibdiagnet	--r_opt	Deprecated	The same functionality is supported by --disable_output option Value: skip_far
			Removed	Values: vs, far, rn, drnc, crnc
		--pm_get_all	New	Get all PM counters by activate the following flags: --per_slvl_cntrs --sc --extended_speeds pm_per_lane
		--pm_clear_all	New	Clear all PM counters by activate the following flags: --scr --pc
		--ft_roots_regex_opt	New	Regular expression to select topology root nodes. To be applied to switch descriptions. Value: <regular expression>
2.8.0	--r_opt	dump_only_skip_routing_tables	Added	Skips routing tables (LFTs) retrieving
	rn	Deprecated	Dumps routing notification data to file (enabled by default)	
	drnc	Deprecated	Dumps routing notification port counters to file (enabled by default)	

Version	Tool	Parameter Name	Status	Description
2.7.0	ibdiagnet	--ft	New	Enables Fat Tree Topology Validation (default - disabled)
		--aguid	New	Collects AGUIDs
		--enable_spst	Removed	SPST mode is enabled by default. Option was deprecated in 2.6.1
2.6.1	ibdiagnet	--smp_window	Upper limit and default are changed	Max: 256; default: 16
		--gmp_window	Upper limit and default are changed	Max: 16384; default: 256
		--am_key	New	Specifies default AMKEY for the fabric
		--am_key_file	New	Specifies the path to file (AMKEY per GUID)
		--smdb	New	Specifies the path to OpenSM SMDB file (required for Adaptive Routing & Dragonfly+ Topology validation)
		--ber_threshold_table	New	Specifies the path to BER thresholds table file (BER per FEC)
		--create_ber_threshold_table	New	Creates template file of BER threshold table
		--enable_spst	Deprecated	SPST mode is enabled by default
		--dfp	New	Enabling DFP Topology Validation (default - disabled)
--dfp_opt	New	Specifies comma separated DFP Topology Validation options		

Version	Tool	Parameter Name	Status	Description
	dfp_opt	<max_cas>	-	Specifies max number of CAs for “Root” switch in Dragonfly+ island (default: 1). This parameter is mutual exclusive with --smdb
	ibdmcchk	--FAR	New	Adds support for input FAR file
2.5.1	ibdiagnet	--sl	New	Specifies the SL to be used (default=0)
		--rail_validation	New	Enabling Rail Optimized Topology Validation (default - disabled)
		--rail_validation_opt	New	Specifies comma separated Rail Optimized Topology Validation options
		--clear_congestion_counters	New	Dumping Congestion Counters and clearing them
		--fec_mode	Deprecated	FEC_MODE section will be dump to "db_csv" by default
	--rail_validation_opt	<regex>	-	Specifies regular expression to filter HCA nodes from reports. To be applied to HCAs node descriptions
2.4.0	ibdiagnet	--enable_output	New	Enable creation of specific dump file
		--disable_output	New	Disable specific dump file
		--path	New	Set custom path for specific dump file
		--discovery_only	New	Discover IB fabric, save topology information into “db_csv” file and exit

Version	Tool	Parameter Name	Status	Description
		--smp_window	Upper limit is changed	New max is 128
		--gmp_window	Upper limit is changed	New max is 8192
	ibtopo diff	--ibnl_dir	New	Set path for IBNL files

# Bug Fixes

Version	Description
2.19.3	<ul style="list-style-type: none"><li>• Fixed an issue with zero HCA GUIDs. HCAs with zero GUIDs will be excluded.</li></ul>
2.19.0	<ul style="list-style-type: none"><li>• Fixed HCA selection by the "Auto Scope Builder" (--host_file &amp; --node_descr_filter)</li></ul>
2.18.0	<ul style="list-style-type: none"><li>• Fixed an issue related to fetching PortVLXmitTimeCongExt counter</li><li>• Fixed FLIDs validation</li><li>• Fixed an issue related to unhealthy reporting mode</li><li>• Fixed dump dv_csv sections when the scope exists</li></ul>
2.17.0	<ul style="list-style-type: none"><li>• Fixed an issue related to the execute command from the switches</li><li>• Fixed an issue related to fetching multiple Congestion Control counters</li><li>• Fixed PEMI register handling</li><li>• Fixed SLRIP register</li><li>• Fixed PDDR registers layouts</li></ul>
2.16.0	<ul style="list-style-type: none"><li>• Fixed an issue related to the execute command from the switches</li><li>• Fixed an issue related to fetching multiple Congestion Control counters</li></ul>
2.15.0	<ul style="list-style-type: none"><li>• Fixed an issue related to loading the 'HWInfo.technology' field from a file.</li><li>• Removed 'PERF' records duplicates in the 'db_csv' file.</li></ul>
2.14.0	<ul style="list-style-type: none"><li>• Fixed an issue related to retrieving RX/TX Power fields in the cable report</li></ul>
2.13.0	<ul style="list-style-type: none"><li>• Fixed a crash in SHARP stage that occurred when one or more switches was reset</li></ul>
2.11.0	<ul style="list-style-type: none"><li>• Fixed the DB_CSV file which contained non-ASCII characters</li></ul>
2.9.0	<ul style="list-style-type: none"><li>• Fixed PCIe plugin behavior to support scope file</li><li>• Fixed the wrong number of SHARP active jobs in fabric summary</li></ul>

Version	Description
2.8.0	<ul style="list-style-type: none"> <li>• Fixed an unexpected exit when detected HCAs with invalid GUID in discovery stage</li> <li>• Fixed an issue that corrupted the ibdagnet reporting for other nodes when encountering an HCA with an invalid LID</li> <li>• Fixed a possible crash in SHARP validation mode when SHARP version is not specified in command line parameters</li> <li>• Fixed the wrong values in "switchguid" and in "remote port" fields in ibnetdiscover file</li> </ul>
2.6.1	<ul style="list-style-type: none"> <li>• Fixed an issue that caused ibtopodiff not to recognize IB Routers</li> <li>• Fixed the reset flow for PHY/PCI counters</li> </ul>
2.5.1	<ul style="list-style-type: none"> <li>• Fixed an issue that resulted in GUIDs being printed in Mkey Mmanager in HEX format</li> <li>• Fixed an issue that resulted in error messages being printed with the correct node GUID instead of the value "zero"</li> <li>• Fixed an issue that loaded duplicates and half links from the neighbors file of MKey manager</li> <li>• Fixed an issue that printed errors/warning status in stages</li> <li>• Fixed an issue that resulted in a critical error in case of duplicate names with HCA/mlx patterns</li> </ul>
2.4.0	<ul style="list-style-type: none"> <li>• Fixed an issue that caused ibdiagnet to skip PCIe counters for some HCAs, if more than one HCA was installed in the host.</li> <li>• Fixed an issue that caused ibdiagnet to report a wrong value for SLRG 16nm register.</li> <li>• Fixed an issue that caused ibdiagnet to report a wrong value in SMP access register.</li> <li>• Fixed an issue that caused ibdiagnet to report a wrong number of "Aggregation Nodes" in "Fabric Summary" table</li> </ul>



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ibutils2	2.19.3	<ul style="list-style-type: none"><li>• <a href="#">3rd Party Notice</a></li><li>• <a href="#">3rd Party Unify Notice</a></li></ul>

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