MLNXSM (InfiniBand Subnet Manager) Utility Release Notes v5.29.1

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1 Release Notes Update History

Revision	Date	Description
5.29.1	November, 2026	Initial release of this Release Notes version. This version introduces Changes and New Features and Bug Fixes.

2 Overview

MLNXSM is an InfiniBand Subnet Manager and Subnet Administrator based on OpenSM.

2.1 Software Download

Please visit InfiniBand Management Tools page.

2.2 Packages

Package	Version
DOCA-Host	3.6.0
UFM	6.27.0

3 Changes and New Features

v5.29.1	
General	Improved memory utilization.
	Added support for hexadecimal values in port group policy file.
Routing	Added support for disabling asymmetricity checks on 4th level when running with asym3 routing engine.
Logging and dump files	Improved error logging when failing to bind to local port.
	Added support for generating opensm-heldback-switches.dump after subnet configuration.
	Added support for peak RSS to opensm-perflog.json file.
v5.28.1	
General	Added support for writing SM status to a keep-alive status file. Feature control parameter: • *keep_alive_interval* - Seconds between periodic updates of the keep-alive status file. 0 - Disables the feature. Default value 30 seconds.
	Added a separate configuration file parameter for caching MEPI for switch ports.
	Improved memory utilization.
	Generated the held-back switches dump file with default verbosity.
Subnet Configuration	Optimistic discovery (fast discovery): Added support for skipping NodeInfo MAD which is sent to peers of ports in ACTIVE state during discovery. Feature control parameter: • *optimistic_discovery_validation_percent* - Percentage of devices to probe during sweeps. • 0 - Disables the feature. • 1-100 - Percentage of devices to probe during sweeps to discover faulty devices. Default value 0.
	Improved routing configuration time for empty AR groups.
	Avoided activating ports when failing to configure port PKeys.
Logging	Improved port resolution failure error logging.
Routing	Avoided zeroing routing tables of held-back switches.
v5.27.1	
SA	Added support for limiting SA queries. It allows configuring OpenSM to block selected SA query types. Feature control parameter: • • **sa_allowed_queries_policy** - Control which SA queries are allowed. • ALL - Allow all SA queries (default) • LIMITED - Block NodeRecord (NR) and PortInfoRecord (PIR) queries.
v5.26.1	
Routing	Improved runtime of ar_updn routing engine.

v5.29.1	
	Improved runtime of asym3 routing engine.
General	Added support for routers on planarized subnets.
	Changed default value of rediscovery_link_penalty_step from 2 to 3.
Logging	Added support for SM port interface name to SMDB.
	Added support for log rotation for SMDB.
	Added support for log source LID for VS,CC and N2N traps.
v5.25.1	
Routing	Improved routing calculation time on planarized networks.
	Reduced routing table updates on planarized networks.
General	Added support for SHARP multicast tress.
	Added support for writing port partition table to SMDB file.
	Added support for specifying BW limitation to devices connected to XDR switches.
	Added support for configuring SL2VL Mapping from device configuration file.
	Added information on whether a parameter can be changed during runtime to generated configuration file.
Logging	Added support for additional APort validity checks.
v5.24.0	
General	Added support for sending SwitchPortStateTable MADs during light sweep to identify topology changes.
	Removed the requirement for specifying FNM ports in topology file on planarized subnets.
Logging	Updated log messages related to APort validation.
	Added port numbers to port recovery trap log messages.
v5.23.0	
Security	Added support for setting m_key_protect_bits to 1 when M_Key per port feature is enabled.

	Added support for periodic management key updates.
	Generate and configure new random management keys for subnet devices.
	Supported management classes are: SM, VS, CC and N2N.
	Feature control parameters:
	• *periodic_key_update* - Key update interval in minutes.
	  • 0 - Feature is disabled.
	  • 10-71582 - Key update interval. Feature is applicable only for management classes on which key protection features is enabled.

Routing	Added support for specifying ranks for switches in root GUIDs file. When rank is specified next to switch GUID or switch port group, Subnet Manager will assign the rank to that switch. If the rank is not specified, Subnet Manager will mark the specified switches as roots (rank 0).
	Added support for 4 level tress and unbalanced tress in enhanced asymmetric routing algorithm.

v5.29.1	
Congestion Control/XDR	Added support for enabling Congestion Control per plane. Configurable via congestion control policy file. Feature is enabled by default for supporting devices.
Logging	Added support for logging trap 1257 and trap 1258 details.
	Added destination port GUID when logging trap repress for GMPs.
General	Added support for specifying GUIDs ranges in partitions file.
	Added the option to disable SA.
v5.22.11	

Port Recovery Policy	Added support for port recovery policy.
	Allow configuring port recovery profile settings. Port configuration settings are set using device configuration policy file. Feature control parameters:
	• *port_recovery_policy_enabled* - Enable/disable the feature
	  • 0 - SM will not change port recovery policy configuration (default)
	  • 1 - Disable the feature
	  • 2 - Enable the feature
	• *prp_override_allow_sm_port_reset*

Resiliency	Avoid dropping switches due to timeouts during discovery When encountering timeouts on switch devices during discovery phase, SM attempts to rediscover the device using alternative routes. Feature control parameters: • *rediscovery_max_link_penalty* - Maximal penalty given to port on timed out discovery MAD. Value of 0 disables the feature • *rediscovery_link_penalty_step* - Penalty given to port on timed out discovery MADs
Security	Added support for using random seed for M_Key/N2N_Key/CC_Key/VS_Key. When key protection per port is enabled and key is set to 0xFFFFFFFFFFFFFFFF, SM will use random number as seed.
Logging	Added support for log rotation in SM. Feature control parameter: • *log_num_backlogs* - Number of backlog files to keep. Valid only when log_max_size is non-zero 0. (default is 0)
Routing	Added support for avoiding logging errors on aggregation nodes and routers when added to root GUIDs file using port groups.
General	Added support for planarized topologies.
	Added support for dropping nodes not responding to NodeExtendedInfo MADs.
	Added support for using long transaction timeouts for CongestionHCAAlgoConfig MADs.
	Added support for including pid_file parameter in generated configuration file.
	Added support for reporting quick link flap events to events plugin.
	Added support for adding predefined port group for switch to compute link ports.
	Added support for setting cache files directory from configuration file.
v5.22.0	
General	Added support for ConnectX-8 SuperNic.

v5.29.1	
v5.21.0	
Quality of Service	Added support for configuring SL2VL and VL arbitration on switch-to-switch links.
SMDB	Added support for marking ports with no LID route to SM as "unreachable" in SMDB.
General	Added support for resetting partition table of inactive ports.
General	Removed redundant log messages when port is in "no discover" state.
v5.20.0	
Quality of Service	Added support for configuring VL Buffer sizes (QOSConfigVL). Feature control parameters: • • *qos_config_vl_enabled* - Enable/disable configuration per VL. TRUE - Enabled FALSE - Disabled (default) VL configuration via device configuration file
Routing Engines	Added support for excluding spines from routing to balance routes when using new asymmetric routing for trees. Feature is valid when running with *ar_tree_asymmetric_flow* set to *3.* Feature control parameters: • • *ar_tree_asymmetric_flow_threshold* - Threshold (percent) of bandwidth drop between spine and core links before excluding spines • ar_tree_asymmetric_flow_threshold_limit - Maximal number of spines to exclude from routing (default 2)
Routing Engines	Added support for hosts connected to non-leaf switches when running with AR_UPDN with asymmetric tree routes balancing (ar_tree_asymmetric_flow mode set to 3).
Subnet Configuration	Support Fabric Mode. Feature control parameters: • *none* - Feature is disabled, SM will not change device configuration (default) o/w, Use selected profile from fabric_mode_policy_file *fabric_mode_profile* - Selected fabric mode profile • *fabric_mode_policy_file* - Path to fabric mode policies file
Subnet Configuration	Added support for setting HOQ lifetime per port. Setting HOQ lifetime per port via device configuration file.
SMDB	Added SA Key to SMDB file.
SMDB	Added reachability indicator per port in SMDB.
General	Added option to respond or ignore traps from unknown source LIDs.
v5.19.0	
FLID	Added support for assigning single FLID to multiple leaf switches. It is enabled via router configuration file.
PFRN	Added support for PFRN over routers. The control parameters: *pfrn_over_router_enabled* - Enable/disable the feature. 0 - SM will not change PFRN over router related configuration. 1 - Disable the feature 2 - Enable the feature (default)
Routing Algorithm	Added support for new routing algorithm for asymmetric tree topologies. It supports asymmetric quasi fat-tree topologies. It is enabled by setting *ar_tree_asymmetric_flow* to *3.*

v5.29.1	
General	Add neighborhood ID to switch coordinates in SMDB when using ar_updn.
General	Select hub switch according to maximal number of reachable LIDs.
General	Log remove links due to timeouts.
General	Log switch rank changes.
v5.18.0	
Routing Engines	Added support for Asymmetric Routing for QFT topologies and Enhanced algorithm for routing asymmetric QFT topologies. It supports 2 and 3 level QFT without parallel links. Feature control parameters: • `ar_tree_asymmetric_flow` - When set to 3, algorithm is enabled.
Routing Engines	Added support for calculating missing routes between switches in dfp2 routing engine.
Debug Parameters	Added Warning notes about debug parameters in the generated configuration file. **Note:** It is not recommended to change these debug parameters.
Logging Improvements	Improved logging of trap 259, and discovery process.
Adaptive Routing Options	Added the option to enable and disable AR group copy optimization.
v5.17.0	
Tenant Managers	This new capability prevents a tenant from using GUIDs that were assigned to another tenant. Feature control parameters: • • `tenants_policy_enabled` - Enable/disable the feature • `tenants_policy_file` - Path to tenant manager policy file
Rank Adjustment	Enabled rank adjustment for mid-level switch with missing links to roots. Feature control parameters: • • `routing_flags` - Bit mask of routing engine related features. When bit 0 is set, Rank Adjustment feature is enabled.
PFRN	Enabled the option to configure PFRN even when not all devices support it.
'Well-Known SM GID' Support	Added support for handing 'Well-Known SM GID' in PathRecords.
v5.16.0	
Congestion Control	Added support for configuring CC buffer thresholds according to the switch capabilities.
Performance	Improved performance of routing calculation for routers.
Unicast Route Rebalancing	Added the option to avoid unicast route rebalancing when HBF is enabled on all SLs.
Port GUID	Added the option to write the destination port GUID when logging direct routed SMPs.
Systemd	Added support for Systemd.
v5.15.0	
Programmable Congestion Control	Extended IBCC to support programmable congestion control. Feature control parameters: • `ppcc_algo_dir` - Path to directory with PPCC algorithm profile files

v5.29.1	
Fast Recovery	Added Fast Recovery support to configure a policy on switches for reporting ports as unhealthy, and to support isolating the unhealthy ports. Feature control parameters: • `fast_recovery_enabled` - Enable Fast Recovery feature 0 - SM will not send configuration, and will not isolate ports reported by switch (default) 1 - Disable the feature 2 - Enable the feature • `fast_recovery_conf_file` - Path to fast recovery policy file
General	Added support for running SM with a topology specification file Feature control parameters: • `topo_config_enabled` - Enable/disable the feature • `topo_config_file` - Path to topology speciation file
General	Added support for generating SM performance report. the report file is created in the SM logs directory with the name `"opensm-perflog.json"`. Feature control parameters: • `enable_performance_logging` - Enable/disable the feature (enabled by default) • `osm_perflog_dump_limit` - Limit performance log file (20MB by default)
General	Added port label for supporting NDR switches and CAs.
General	Added support for additional predefined port groups: • `ALL_ANS` - All aggregation nodes • `ALL_SWITCH_TO_SWITCH` - All switch ports connected to other switches • `ALL_SWITCH_TO_CA` - All switch ports connected to CAs
General	Limited the number of simultaneous SL2VL and VLArb MADs sent per device.
General	Enabled dumping FLID ranges to the `opensm-router.dump` file
Routing	Added support for running an SM root detection algorithm when root GUIDs file is invalid.
Routing	Improved FLID routing calculation time.
v5.14.0	
General	Updated the subnet configuration flow as follow: • Switch-to-switch links are updated prior to updating routing tables • ARLFT tables are set prior to setting the AR Group tables • Routing tables of switches with topology changes are updated prior to tables of switches without topology changes
General	Added support for multithreaded SL2VL calculation.
Routers	Added support for AR over routers (FLIDs).
DFP Routing Engine	Added support for persistent AR groups for DF+ 1 (dfp) routing engine.
UPDN and AR UPDN Routing Engine	Improved UPDN minhop tables calculation times.
v5.13.0	
SL-to-VL Mapping Table	Added support for port masked optimized SLtoVLMappingTable programming.

v5.29.1	
DFP2 Routing Engine	Added support for PFRN on DFP2 routing engine.
PKey Validation Traps	Added support for suppressing multicast PKey validation traps.
General	Updated the default value of drop_event_subscriptions to TRUE.
General	Updated the default value of drop_subscr_on_report_fail to TRUE.
General	Enabled sending LFT/ARLFT entry for SMLID last.
MTU/Rate	Enabled MTU and Rate calculation for router PathRecords according to route.
v5.12.0	
Self Healing Network with PFRN	Self healing network with PFRN is now at GA level for AR_UPDN routing engine.
Hash Based Forwarding (HBF)	Hash Based Forwarding (HBF) is now at GA level
Adaptive Routing Engine	Improved routing calculation time for AR_UPDN routing engine.
Adaptive Routing	A dedicated AR group ID per leaf is now assigned also when SHIELD is disabled.
General	Added the option to avoid initializing links marked for port resets.
General	Updated root_guid_file parameter description.
General	Removed from guid2lid vPorts with LID required set to 0.
DragonFly+ Topologies	Improved root detection algorithm for DragonFly+ topologies to support leaf switches without hosts.
v5.11.0	
Self healing network with PFRN	**[Beta]** PFRN is used for fast link fault recovery. If a link fails or disconnects, switches send messages to the peer switches to update the routing tables. This feature is supported only on **ar_updn** and **ar_ftree** routing engine and if all fabric switches support PFRN (NVIDIA Quantum and NVIDIA Quantum-2 switch systems only). Feature control parameters: • pfrn_sl - SL for PFRN messages (default SL 0). • pfrn_mask_clear_timeout - Time-out since the last PFRN message received by the switch for an AR group, after which unused port masks will be cleared. The value is in multipliers of 30 seconds. (default 180) • pfrn_mask_force_clear_timeout - Time-out since last mask clear operation, after which unused port masks are cleared by the switch. The value is in multipliers of 240 seconds. (default 720) In order to disable PFRN, set **shield_mode** value to 2.
Multiport high availability	Allows SM to failover to another port in the case of SM link failure. It requires configuring more than one port GUID in the GUID parameter. Feature control parameter: • enable_sm_port_failover - Enable or disable failover (default FALSE).

v5.29.1	

Hash Based Forwarding (HBF)	Allows selection of the switch outgoing port for statically routed packets based on the packet's parameters (ECMP like).
	With `dfp2` routing engine, non-minhop routes will be used for static routing as well as for Adaptive Routing.
	Feature control parameters:
	• hbf_sl_mask - SLs supporting HBF (default 0).
	• hbf_hash_type - Hash function for HBF
	  • 0 - CRC (default).
	  • 1 - XOR.
	• *hbf_seed_type* - Hash seed type:
	  • 0 - Seed (default).
	  • 1 - Random.
	• hbf_seed - Hash seed, 32 bit number:
	  • 0xffffffff - Use switch GUID for seed (default).
	  • 0x0-0xfffffffe - Specific seed value.
	• hbf_hash_fields - Fields of packet for hash calculation (default 0x40F00C0F).
	hbf_weights - Weights ratio between ports of different AR sub-groups:
	  • auto - SM/routing engine decision (default).
	  • <sg0>,<sg1>,<sg2> - User defined weights for subgroup 0 to subgroup 2.

SA response time	Improved SA response time for multicast join requests during routing calculation.
Persistent mapping	Added support for persistent mapping between AR group ID and the destination switch GUID.
Switch SMA response MADs	Switch SMA response MADs are now routed using PLFT0 to overcome a firmware limitation in `dfp2.`
SM ports table	Added SM ports table to SMDB.
Log message verbosity	Changed verbosity of log message when toggling ports to INFO.
Port state report	Added the option to report to the log when failing to update port state from ARM to ACTIVE.
Virtualization traps	Added details for virtualization traps to the log file.
Statistics dump file per SM	Enabled statistics dump file per SM port by default.
Asymmetric flow algorithm for trees	Enabled asymmetric flow algorithm for trees (ar_updn and ar_ftree) by default.
v5.10.0	
Adaptive Timeout SL Mask	Added support for Adaptive Timeout SL mask. Feature control parameter: • `adaptive_timeout_sl_mask` - an adaptive timeout enabled SLs mask. (Default *0xFFFF*)
IB Router QoS	Extended the QoS policy file to support subnet prefixes and port GIDs for inter subnet QoS. This improvement enables the definition of SL/rate/MTU/packet-life for cross-subnet paths. For further information, refer to the doc/QoS_management_in_OpenSM.txt document.

v5.29.1	
Routing Engine	Added a new root detection algorithm in UPDN and ar_updn routing engines. Feature control parameters: • `find_roots_color_algorithm` - enables/disables the feature. (Default is TRUE) • `max_cas_on_spine` - sets the maximum number of CAs on a switch to allow considering it as a spine instead of a leaf by the routing algorithm.
Routing Engine	Changed the default routing engine to be `ar_updn` instead of `minhop`.

Vendor Specific (VS) Key	Added support for Vendor Specific (VS) key.
	The following are the parameters related to the feature:
	• vs_key_enable - enables VS key configuration:
	  • 0 - ignore
	  • 1 - disable
	  • 2 - enable
	• vs_key_lease_period - the lease period used for VS keys in [sec].
	• vs_key_ci_protect_bits - the protection level for the key:
	  • 1 - protected
	  • 0 - unprotected (The response Key Info exposes the key).
	• vs_max_outstanding_mads - the maximum number of outstanding VS MADs in the network at once.
	• key_mgr_seed - used by the key manager for VS key configuration.

SA Response Time	Improved SA response time during routing calculation. Feature control parameter: • `enable_queries_during_routing` - enables SA queries during routing calculation. (Default is TRUE)
Report Duplicated GUIDs	Added support for reporting duplicated GUIDs to UFM.
Switch Reboot	Added the option to report switch reboots to UFM.
Long Transaction Timeout	Enabled the option to use long transaction timeout for PI for port 0 MADs.
SMDB Dump File	Added subnet prefix to SMDB dump file.
SM Binding Port Information	Added SM binding port information to the MAD details in the timeout message, dumped to the SM log file.
OpenSM Start Time	Added SM start time to the SMDB dump file.
Dump MAD Statistics per SM Port	Added the option to enable dump MAD statistics per SM port. Feature control parameter: • `osm_stats_dump_per_sm_port` - enables/disables the feature. (Default is *FALSE*)
Adaptive Routing (AR) Group IDs	Made the process of selecting AR (Adaptive Routing) group IDs deterministic in each run of the SM on the same fabric.
v5.9.1	
Link Speed	Added support for NDR InfiniBand link speed in SM,
Configuration File Validation	Added a new command line option `"--validate_conf_files" to enable` SM to only validate configuration files and exit afterwards. **Note:** This version of the tool supports only the validation partition file part.

v5.29.1	
Persistent Multicast (MC) Trees	This capability enables reading MulticastForwardingTables tables upon SM startup/fail-over to ensure the new MASTER SM does not break multicast routing. To enable/disable it use the `"get_mft_tables"` parameter (default TRUE).
DragonFly+ Topologies	Added SHIELD support for dfp2 routing engine for DragonFly+ topologies.
SM Allowed GUIDs List	This new capability enables the user to specify the list of GUIDs allowed to run SM in the fabric. When the list is provided, the master SM will avoid handover to ports that are not specified in the list. To enable this feature use the `"allowed_sm_guids"` parameter. When set to "(null)", the feature disabled.
Limiting the Number of VLs for Long Distance Links	This new capability enables the user to set the maximum operational VL per port by a new file specified by the `"device_configutarion_file"` parameter in the OpenSM configuration file. To provide per port configuration use the "device_configutarion_file". For more information, see *doc/device_configuration.md*.
Send ClientReregister after Subnet Configuration	This new capability enables the user to send ClientReregister after subnet configuration to prevent the hosts from sending SA requests to the SM before the SM is ready to respond to them. This feature can be controlled using the following parameters: `client_rereg_mode` - Control modes of sending ClientRergister. Supported values: • 0 - Do not send client re-registration. • 1 - Send client re-registration during LID assignment (previous default behavior). • 2 - **[Default]** Send client re-registration after routing and QoS configuration from link manager. The new parameter replaces the depracated `"no_clients_rereg"` parameter.
kDOR Generalized Hypercube Engine	Added kDOR Generalized Hypercube engine.
General	• Added the option to print a summary of AR and DragonFly+ supported switches to the log • Improved performance of NR lookup by LID • Changed the verbosity of port group creation messages to be in INFO level • Added new statistics counters to opensm-statistics.dump • Added the option to consider affinity when calculating number of cores
v5.8.1	
Asymmetric trees	The feature is applicable to `ar_updn` and `ar_ftree` routing engines. It reduces congestion in asymmetric tree topologies with missing uplinks on leaf switches. To enable/disable the feature, use the `ar_tree_asymmetric_flow` parameter. The supported values are: • 0 - Disable the feature (default). • 1 - Enable the feature using single AR subgroup. **Note:** Recommended for asymmetric tree topologies with 1000-2000 leaf switches. • 2 - Enable the feature using two AR subgroups. **Note:** Recommended for asymmetric tree topologies with less than 1000 leaf switches.

v5.29.1	
Selecting LID for Master SM	This feature prevents SM LID changes upon fail-over. To set the LID for master SM, use the `master_sm_lid` parameter. The supported values are: • 0 - Disable the feature (default). • 1-0xBFFF - LID to set to SM port when in MASTER state.
Root GUIDs file for Dragonfly+ Routing Engines	This feature enables root GUIDs file for Dragonfly+ topology Routing Engines (`dfp` and `dfp2`). To set the file with GUIDs of root switches of the topology use the `root_guid_file` parameter.
Dragonfly+ Routing Engine	Added new routing engine (`dfp2`) for Dragonfly+ topologies. This engine supports Dragonfly+ topologies with any kind of tree topology islands. If the topology contains an island with more than 2 tree levels, the root GUIDs file, including the root switches of all Dragonfly+ islands should be provided. To add the dfp2 new Routing Engine, use the `routing_engine` parameter.
Maximum Operational VLs for Ca, Routers and Switches	This feature enables the user to configure different `max_op_vls` for CAs, Routers and Switches. To set the maximum operational VLs per device type, use the following parameters: • `max_op_vls_ca` - Maximum operational VLs for CAs. When 0, use value max_op_vls. (default 0) • `max_op_vls_rtr` - Maximum operational VLs for routers. When 0, use value max_op_vls. (default 0) • `max_op_vls_sw` - Maximum operational VLs for switches. When 0, use value max_op_vls. (default 0)
“VL packing” for Dragonfly+ and KDOR Routing Engines.	Added support for “VL packing” for Dragonfly+ and KDOR routing engines. This feature reduces the maximum operational VLs for CAs to half of subnet `max_op_vls` when using `dfp/dfp2/kdor_hc` routing engines. To enable/disable the feature, use the `enable_vl_packing` parameter. The following is an example of “VL packing”: • enable_vl_packing set to TRUE • max_op_vls set to 3 (Enable 4 VLs) • max_op_vls_ca set to 2 (Use 2 VLs for CAs)
Support SRP target on HCAs with Socket-Direct architecture/Virtual Machines.	Enabled returning PortInfoRecord and NodeRecord for virtual ports and reporting virtual port capability changes To enable/disable the feature (default TRUE), use the enable_virt_rec_ext parameter.

v5.29.1	
General	• Improved balancing of direct routes calculated for multi-port • Set HCA-grp in port groups parser to be an optional parameter • Added support for router alias GUIDs configuration for virtual ports • Added NDR speed port info capability bit to ib_types.h • Avoided sending client reregister to vport index 0 • Extended `rpg_byte_reset` to 19 bits in Congestion Control • Enabled `crashd` by default • Added report auxiliary port state changes • OpenSM now overrides the attributes of IPoIB multicast groups loaded from the SADB with broadcast group • Limited the number of PortInfo and MEPI MADs sent per device simultaneously • Configured switch AR SL mask according to the `ar_sl_mask` configuration parameter • Updated GeneralInfo device IDs list to include NVIDIA Quantum-2 and future ConnectX family devices • Updated the man page with AR routing engines • Avoided exiting OpenSM when failing to bind to auxiliary port
v5.7.2	
General	• Added support for MCMR join/leave requests with default subnet prefix • Set Enabled AR SL mask on switches according to ar_sl_mask.
v5.7.1	
Multiple ports	Allows MLNXSM to use multiple ports for sending Subnet configuration MADs. Feature control parameters: • guid - Comma separated list of MLNXSM port GUIDs. First port GUID specifies primary port which used for Subnet Management (discovery, traps) and Subnet Administration. Additional port GUIDs are used for sending subnet configuration (SMP Set MADs). Configuration file example: `guid 0x10001,0x10002`
Extend router selection algorithm	Supports specifying hash function, seed and additional hash function arguments for router selection during path records calculation. Feature control parameters: • rtr_selection_function - Hash function to be used by router selection algorithm. • Supported values - crc32 (default). • rtr_selection_seed - Seed for router selection algorithm. (default 0) • rtr_selection_algo_parameters - Comma separated list of parameters for router selection algorithm. Supported values: sgid, dgid. (default sgid, dgid)
LMC for routers and number of LIDs allowed per router for inter-subnet path records	Feature control parameters: • lids_per_rtr - Defines number of Router LIDs to be used for inter-subnet path records. When set to 0, MLNXSM will use number of LIDs per router according to global LMC. (default 0) When set to non-zero, MLNXSM will set LMC for router ports according to the value of this parameter (minimal N such that 2^N >= lids_per_rtr). If global LMC is not zero, lids_per_rtr is ignored. When lids_per_rtr is set to non-zero value, updn/ar_updn/ chain with updn routing engines should be used.

v5.29.1	
Congestion Control	Feature control parameters: • mlnx_congestion_control - Enabled/Disable Mellanox Congestion Control. Supported values: 0 - Do not configure congestion control (default). 1 - Disable congestion control on the subnet. 2 - Configure congestion control according to policy file. • congestion_control_policy_file - Path to congestion control policy file. For additional information, please review congestion_control.md file provided with MLNXSM.
LIDs range in Routing Chains	Replaces path-bit qualifier in routing chain configuration by min-path-bit and max-path-bit qualifiers. (path-bit is still supported for backward compatibility). Example of usage: • min-path-bit: 1 • max-path-bit: 3
Controlling maximum number of MADs on wire per destination	Feature control parameters: • max_wire_smps_per_device - Number of MADs on the wire per device. (default 2)
Configuring service keys to service name	Service keys' configuring service names. Feature control parameters: service_name2key_map_file - Path to service name to service key map file. File contains mapping from service name to service key which is specified in IPv6 format. For example, map service name <SERVICE NAME> service key 0::1 by adding the following line to the file: <SERVICE NAME> 0::1
General	• Disabled the option to send PortInfo MADs to switch ports that did not change their state from the previous sweep. • Enabled Adaptive Routing for all SLs on switches. • Set limit to SMInfo dispatcher queue. • Improved performance of missing routes calculation for trees. • Improved performance of ar_updn and ar_ftree routing engines. • Improved performance of inter-subnet path record calculation. • Added log number of link resets by MLNXSM at the end of heavy sweep. • Disabled creating subnet LST file as default. Feature control parameters: • **enable_lst_file** - Controls dumping subnet LST file of the topology If set to *TRUE*, LST file is created after heavy sweep. (default *FALSE*) • Removed LMC support from verbosity bypass. • Enabled empty port groups file in routing chains. • Aligned index table columns in SMDB file. • UPDN LID tracking - Added the option to give precedence to exit ports leading to switch with lower total number of routes over exit ports leading to switch with less routes to the switch of the destination LID. Feature control parameters: • • **updn_lid_tracking_prefer_total_routes** If set to *TRUE*, enable the feature. (default *FALSE*) • UPDN LID tracking - Improved routing algorithm to improve routing utilization and routes balancing. • UPDN LID tracking - Updated routing engine to support LMC.

v5.29.1	

Default Configuration Changes	• Changed the default values of:
	  • `max_topologies_per_sw` from 1 to 4
	  • `scatter_ports` from 0 (disabled) to 8
	  • `log_flash` from FALSE to TRUE
	• Disabled dumping subnet LST file by default.

3.1 Parameter Changes

Parameter Name	Status	Type	Description
5.18.0			
ar_tree_asymmetric_flow	Update	Numeric	Support enabling new asymmetric routing algorithm for QFT topologies
max_op_vls	Update	Numeric	Changed default from 3 (4 data VLs) to 2 (2 data VLs)
enable_ar_group_copy	New	Boolean	Debug option to allow controlling AR group copy optimization. (default TRUE)
5.17.0			
tenants_policy_enabled	New	Boolean	Enable tenants manager feature (default is FALSE)
tenant_policy_file	New	Path	Path to tenants manager policy file (default is /etc/opensm.tenants-policy.conf)
routing_flags	New	Mask	Control various routing engine options (default is 0)
5.15.0			
max_wire_smps	Update	Numeric	Change default value to 32
max_wire_smps2	Update	Numeric	Change default value to 32
hbf_sl_mask	Update	Numeric	Change default value to 0xffff
topo_config_enabled	New	Boolean	Enable running SM with topology spec file (default is FALSE)
topo_config_file	New	Path	Path to topology specification file (default is "(null)")
fast_recovery_enabled	New	Numeric	Enable fast recovery feature (default is 0)
fast_recovery_conf_file	New	Path	Path to fast recovery file (default is "(null)"
ppcc_algo_dir	New	Path	Path to directory with PPCC algorithm profile files (default is /etc/opensm/ppcc_algo_dir)

enable_performance_logging	New	Boolean	Enable generating SM performance report (default is TRUE)
osm_perflog_dump_limit	New	Numeric	Limit performance log file size in megabytes (default is 20)
max_seq_redisc	Update	Numeric	Change default value to 4
qos_policy_file	Update	Path	Change default value to "(null)"
routing_engine	Update	String	Update description that dfp2 is not experimental
5.14.0			
qos	Update	Boolean	Changed default to TRUE
use_optimized_slvl	Update	Boolean	Changed default to TRUE
use_optimized_port_mask_slvl	Update	Boolean	Changed default to TRUE
long_transaction_timeout	Update	Numeric	Changed default from 500 milliseconds to 1000 milliseconds
5.13.0			
root_guid_file	Update	Path	Updated description to include all supported routing engines
suppress_mc_pkey_traps	New	Boolean	Suppress Multicast PKey violation traps (default is TRUE)
drop_subscr_on_report_fail	Update	Boolean	Changed default to TRUE
drop_event_subscriptions	Update	Boolean	Changed default to TRUE
use_optimized_slvl	Update	Boolean	Updated description that parameter control wild carded optimization
use_optimized_port_mask_slvl	New	Boolean	Enable port masked optimized SLtoVLMappingTable programming (default is FALSE)
rtr_pr_mtu	Update	Numeric	Change default to 255 (Calculate PathRecord MTU according to route)
rtr_pr_rate	Update	Numeric	Change default to 255 (Calculate PathRecord Rate according to route)
5.12.0			
root_guid_file	Update	Path	Updated description to include all supported routing engines.
5.11.0			
pfrn_sl	New	Number	SL for PFRN messages. Default 0
pfrn_mask_clear_timeout	New	Number	Time since last PFRN for an AR group to clear unused port masks. Default 180

pfrn_mask_force_clear_timeout	New	Number	Time since last mask clear, after which unused port mask is cleared by the switch. Default 720
n2n_key_enable	New	Number	Enable Node-to-Node Key (management class 0xC) configuration. Default 0 (Ignore)
n2n_key_protect_bit	New	Number	Protection level for class 0xC. Default 1
n2n_key_lease_period	New	Number	Lease period for class 0xC key. Default 60
n2n_max_outstanding_mads	New	Number	Maximum number of N2N MADs in the network at once. Default 500
enable_sm_port_failover	New	Boolean	Enable SM fail over to another port in case of link failure. Default is False
hbf_sl_mask	New	Boolean	SL mask for HBF. Default 0x0000 (Disabled)
hbf_hash_type	New	Number	HBF hash type. Default 0 (CRC)
hbf_seed_type	New	Number	HBF seed type. Default 0 (User defined seed)
hbf_seed	New	Number	Seed for HBF. Default 0xFFFFFFFF (Use switch GUID)
hbf_hash_fields	New	Number	Fields of packet for hash calculation. Default 0x40F00C0F
hbf_weights	New	String	Weights ratio between ports of different groups. Default 'auto' (Routing algorithm decision)
cache_ar_group_id	New	Boolean	Load GUID to AR group ID cache file on startup. Default TRUE
ar_tree_asymmetric_flow	Update	Number	Changed default to 1.
sm_stats_dump_per_sm_port	Update	Boolean	Changed default to TRUE,
5.10.0			
adaptive_timeout_sl_mask	New	Number	Define a adaptive timeout SL mask of the port. Default 0xFFFF
routing_engine	Update	String	Changed default value from *(null)* to *ar_updn*
find_roots_color_algorithm	New	Boolean	Find root using coloring algorithm for tree based topologies. Default is TRUE.
max_cas_on_spine	New	Boolean	The maximum number of CAs on a switch to allow considering it as a spine instead of a leaf by the routing algorithm.
hm_num_traps	Update	Number	Changed default value from *250* to *60*.
hm_num_traps_period_secs	Update	Number	Changed default value from *60* to *90* seconds.
5.9.1			

allowed_sm_guids	New	String	Define list of allowed SM port GUIDs
device_configuration_file	New	String	Path to device configuration file
client_rereg_mode	New	Number	Control sending ClientReregister to devices
max_rate_enum	New	Number	Define maximal supported rate in SA records
gmp_traps_threads_num	New	Number	Number of threads for processing GMP traps
get_mft_tables	New	Boolean	Enable/Disable reading MFT tables on first master sweep
routing_engine	Update	String	Support *kdor-ghc* for Generalized Hypercube routing engine
mepi_cache_enabled	Update	Boolean	Changed default from *FALSE* to *TRUE*
no_clients_rereg	Update	Boolean	Deprecated by *client_rereg_mode*
use_original_extended_sa_rates_only	Update	Boolean	Deprecated by *max_rate_enum*
dfp_down_up_turns_mode	Update	Number	Changed default from *0* to *2* (disable down/up turns)
routing_threads_num	Update	Number	Changed default value from *1* to *0*
force_link_speed_ext	Update	Number	Support NDR speeds
5.8.1			
max_wire_smps	Update	Number	Change default from 4 to 16
max_wire_smps2	Update	Number	Change default from 4 to 16
max_smps_timeut	Update	Number	Change default from 600000 to 300000 milliseconds
max_msg_fifo_timeout	Update	Number	Change default from 10000 to 5000 milliseconds
transaction_timeout	Update	Number	Change default from 200 to 100 milliseconds
enable_crashd	Update	Boolean	Change default from FALSE to TRUE
routing_engine	Update	Text	Support *dfp2* routing engine
master_sm_lid	New	LID	LID for local SM when in MASTER state
enable_virt_rec_ext	New	Boolean	Enable PortInfoRecord/NodeRecord for virtual ports/nodes
ar_tree_asymmetric_flow	New	Number	AR Asymmetric trees max flow algorithm

max_op_vls_ca	New	Number	max_op_vl for CAs
max_op_vls_sw	New	Number	max_op_vl for switches
max_op_vls_rtr	New	Number	max_op_vl for routers
enable_vl_packing	New	Boolean	Enable VL packing
5.7.2			
ar_sl_mask	Existing	Number	Modified behavior: Parameter controls AR SL mask both in switches and HCAs
5.7.1			
enable_lst_file	New	Boolean	Control dumping subnet LST file of the topology
lids_per_rtr	New	Number	Control number of LIDs per router of inter-subnet path record
max_wire_smps_per_device	New	Number	Control maximum number of MADs on wire per device
service_name2key_map_file	New	Path	Path to service name to service key map file
rtr_selection_function	New	String	Hash function to be used by router selection algorithm
rtr_selection_seed	New	Number	Seed for router selection algorithm
rtr_selection_algo_parameters	New	String	Comma separated list of parameters for router selection algorithm
updn_lid_tracking_prefer_total_routes	New	Boolean	Control UPDN LID tracking exit port selection criteria
mlnx_congestion_control	New	Number	Control Mellanox Congestion Control enablement
congestion_control_policy_file	New	Path	Path to Congestion Control policy file
guid	Update	List	Changed the type from GUID to list of commas separated GUIDs
scatter_ports	Update	Number	Changed default value from 0 (disabled) to 8
log_flash	Update	Boolean	Changed default value from FALSE to TRUE
max_topologies_per_sw	Update	Number	Changed default value from 1 to 4

4 Bug Fixes

Version	Description
5.29.1	• Fixed an issue where CC/VS/N2N MADs were sent to devices even when the SM port was not in the ACTIVE state • Fixed an issue where `opensm-perflog.json` could be written non-atomically • Fixed an issue where `opensm-perflog.json` logged `ROUTER_MGR_PFRN_PROCESS` events when fLIDs were disabled • Fixed an issue where FAR file dumping failed when the `dump_ar` option was enabled • Fixed an issue with incorrect column names in the statistics dump file • Fixed an issue with incorrect reporting of restarting nodes in the unhealthy dump file • Fixed an issue that could cause a crash during shutdown after an initialization failure • Fixed an issue where lines could be omitted when dumping a stack trace to the SM log • Fixed an issue with QoS configuration applied after link activation • Fixed an issue where isolated switches could be incorrectly marked as leaf switches • Fixed an issue preventing SM from running without a configuration file when a topology file was provided • Fixed an issue where the process could hang under driver stress • Fixed an issue with routing when isolating a switch in planarized subnets • Fixed an issue with pFRN over a router when the AR group ID was used • Fixed an issue with pFRN when the switch ASIC was unresponsive
5.28.1	• Fixed race issue in routing table configuration for the DFP/DFP2 routing engine • Fixed an issue with retrying configuration of the HCA plane filter after timeout • Fixed an issue with handling devices with duplicate SystemGUIDs on XDR fabrics • Fixed a crash issue in Asym3 routing engine when the root GUIDs file is misconfigured • Fixed an issue with routing misconfiguration when failing to set the LID of the router • Fixed an issue with updating virtualization DB file on PKey sweeps • Fixed an issue with redundant GMP configuration MAD sends • Fixed AR tables update flow to allow PFRN convergence on fabrics with routers • Fixed an issue with re-querying MEPI after device reset • Fixed an issue with re-querying ExtendedNodeInfo after timeouts on configuration MADs • Fixed potential memory leak issue on SM port failover and fallback • Fixed potential issue with using an incorrect compression ratio parsed from the router configuration file • Fixed an issue with redundant routing tables reconfiguration due to a malfunctioning device • Fixed an issue with logging stack trace of the SM process to the log file on crash • Fixed logging issue due to redundant router LID table calculations when not needed • Fixed potential issue with temporary underflow of MAD sending counters • Fixed potential issue with MPLFT and PLFT configuration
5.27.1	• Fixed an issue where root switches are omitted from root GUIDs file • Fixed an issue related to routing failing to set the LID of a router device • Fixed an issue with updating opensm-virtualization.dump with virtual port partitions • Fixed an issue with failover to auxiliary port when SM peer device is unresponsive • Fixed an issue with redundant routing cache invalidation after host reset • Fixed an issue with not updating routes toward a host that becomes responsive • Fixed an issue with multicast tree calculation on mixed XDR and non-XDR subnets • Fixed an issue with ports stuck in INIT state when *PBLR* feature is enabled • Fixed an issue with running SM on device with more than 32 interfaces • Fixed an issue with building multicast trees on XDR subnets where only one member is receiver • Fixed an issue with using port groups in partitions configuration file • Fixed an issue with SM generating MGID for multicast groups

5.2 6.1	• Fixed an issue with multicast support on planarized subnets • Fixed an issue with the rate reported on PathRecord queries on planarized subnets • Fixed an issue with sending MEPI set requests after timeout on MEPI get requests • Fixed an issue with writing incorrect MAD name in log • Fixed an issue with incorrect times tamp in unhealthy port dump file for isolated APorts • Fixed an issue with sending MADs with obsolete direct route • Fixed an issue with sending redundant PFRNConfig set requests every sweep
5.2 5.1	• Fixed an issue with line breaks in Virtualization DB dump file • Fixed an issue with reconfiguring PFRN on routers when changing configuration during runtime • Fixed an issue with redundant HCA configuration on topology changes • Fixed trailing newlines from syslog messages • Fixed hang due to race when handling CC/VS/N2N KeyViolation MADs • Fixed an issue with failing DFP routing engine after failing to assign LID to CA • Fixed an issue with failing to configure routing tables on all switches • Fixed an issue with reporting APort attributes misalignment • Fixed an issue with multicast routing of SendOnly members in planarized networks • Fixed an issue with multicast routing of Aggregation Nodes
5.2 4.0	• Fixed an issue with routing calculation when using ar_tree_asymmetric_flow 3 • Fixed an issue with configuring routing using dfp2 routing engine • Fixed an issue with routing calculation to isolated switches and single switch system on planarized topologies • Fixed an issue with handling switches not responding to ARInfo on planarized topologies • Fixed an issue with routing calculation time on planarized topologies • Fixed an issue with recovering after parsing malformated configuration files • Fixed an issue with handling faulty devices when ISSU is activated • Fixed an issue with running SM with issu_mode 2 (passive mode) • Fixed an issue with ignoring devices due to M_Key mismatch after lease period expires • Fixed an issue with updating M_Key for new ports • Fixed an issue with logging port recovery traps and ISSU traps • Fixed an issue with logging topology changes when using routing chains • Fixed an incorrect trap name when logging key violation traps
5.2 3.0	• Fixed a crash issue when multiple switches fail to reply to MADs and ucast_cache is enabled • Fixed an issue with re-discovering device after timeouts when topology file is specified • Fixed a crash issue when enabling congestion control keys during runtime • Fixed clearing FLID of removed spines from router LID tables • Fixed an issue with configuring SL to VL mapping when using specific settings for switch-to-switch links • Fixed logging error when enhanced QoS file is empty • Fixed an issue with configuring trap P_Key for VS,CC and N2N management classes
5.2 2.1 1	• Fixed race condition while processing SA requests during heavy sweep • Fixed an issue with sending multiple optimized SL2VLMapping MADs to a single device • Fixed an issue with redundant router table updates on light sweeps • Fixed an issue with configuring pFRN on devices that does not support FRN
5.2 2.0	• No bug fixes are introduced in this release
5.2 1.0	• Fixed an issue with non optimal routing in enhanced asymmetric routing algorithm • Fixed an issue with sending client reregister to switches when not required • Fixed an issue with redundant sweep when restarting SM • Fixed potential crash when SMs device capability changes • Fixed a binding issue when UMAD returns invalid IB devices • Fixed a memory leak issue when parsing hexadecimal numbers in QoS configuration file
5.2 0.0	• Fixed an issue with setting incorrect ARGroupToRouterLIDTable block • Fixed an issue with setting incorrect value in RouterInfo.max_ar_group_id • Fixed an issue with configuring incorrect routes to switches in ar_minhop • Fixed an issue with configuring incorrect routes to routers after SM port reconnection

5.1 9.0	• Fixed an issue in root detection to identify roots on topologies with two switches • Fixed an issue with setting transaction_retries to 0 • Fixed an issue with not resending RouterLIDTable MADs after timeouts • Fixed a logging issue when handling invalid MC join requests
5.1 8.0	• Fixed an issue with supporting DF+ topologies with more than 341 leaf switches in dfp2 routing engine • Fixed an issue with assigning empty AR groups between AR group 0 • Fixed an issue in root detection algorithm related to selecting non-optimal roots • Fixed an issue of not resending routing tables to switches after switch restarts • Fixed an issue with incorrect port states in SMDB file of sub-topologies
5.1 7.0	• Fixed the process of marking peers of isolated ports as flapping ports • Fixed root detection algorithm to support additional cases of missing links • Fixed the process of sending N2N MADs to isolated devices • Fixed the process of sending CC MADs to isolated hosts • Fixed an issue that caused repeated heavy sweep when isolating HCA with two ports with the same node GUID • Fixed NDR port labels • Fixed an issue related to SM not resending MEPI after timeout
5.1 6.0	• Fixed a race condition when parsing configuration file that can result in SM crash • Fixed an issue with reconfiguring switch after removed from held-back list • Fixed a redundant heavy sweep when suspecting a port is unhealthy • Fixed the handling process of switches with all port marked as 'no_discover' • Fixed an issue with writing 'unknown vendor' to screen
5.1 5.0	• Fixed the reporting of PortInfo validation failure for rebooted HCA ports • Fixed the writing of VS and CC MADs in debug verbosity • Fixed an issue related to sending SL2VL MADs for unhealthy ports • Fixed an issue related to the initiating heavy sweep process when reporting new unhealthy port
5.1 4.0	• Fixed a crash that occurred when Incremental Multicast Routing was enabled • Fixed an issue related to the enabled PLFT2 on DF+2 when the "dive-ins" are not permitted • Marked ports that did not respond to the NI as unhealthy instead of entire node • Fixed root detection algorithm in trees with missing links • Fixed root detection algorithm in DF+ with roots without leaves
5.1 3.0	• Fixed an issue related to removing ServiceRecords when the port is disconnected. • Set threads affinity according to the scheduler affinity. • Enabled dumping SMDB file when ucast cache feature is enabled. • Fixed event reporting to untrusted subscribers. • Fixed an issue related to creating service records with P_Key 0. • Fixed the handling of routers marked as "unhealthy" when using fat-tree routing engine. • Fixed an issue related to creating a dump files directory when it did not exist on startup.
5.1 2.0	• Fixed a crash that occurred when *drop_subscr_on_report_fail* was enabled. • Fixed a case that caused FRN to fail when there were isolated/heldback switches. • Fixed a memory leak when changed the list of routing engines during runtime. • Fixed an issue that prevented from ports to be directly activated in INIT state. • Fixed an issue that prevented activating virtual ports on first time master sweep when running with *--once*. • Fixed a memory leak when parsing QoS policy file with errors. • Fixed an issue that prevented the incrementation of of outstanding AN2AN/VS/CC MADs when no response was expected. • Added support for routers in FTREE routing engine. • Fixed an issue related to AR LFT in trees that had entries with FREE state and empty group 0.

5.11.0	• Fixed unconditional jump on uninitialized value when in `dfp2` when `ar_sl_mask` is set to `0`. • Fixed a case of duplicated LIDs when persistent SM LID feature is enabled. • Fixed invalidating ucast cache when discovering faulty switch. • Fixed a crash when detecting two ports of the same node with different port GUID but the same port number. • Fixed traps 1310 and 1311 (duplicate GUIDs) type to 'security'. • Fixed reporting trap 1312 to UFM.
5.10.0	• Fixed a crash that occurred during a race between the LFT record get query and routing configuration. • Fixed a non-generic notices statistics counters in the dump file. • Fixed the postponing isolation and reporting process of the noisy ports. • Fixed an issue related to the selecting of the held back/isolated switches as roots for multicast trees. • Fixed an issue that caused the unresponsive links to to remain in Active state. • Fixed an issue that affected the writing of invalid AN2AN links to SMDB dump file. • Fixed the IPoIB traffic loss after changing the subnet prefix and loading the MC groups from SADB upon SM restart. • Fixed the SM build on Debian with libibumad from rdma-core. • Fixed the way how port capability changes are handled during runtime. • Fixed an incorrect endianness issue in error log message 0F29. • Fixed an incorrect log message when enabling SHARP on the device. • Fixed the statistics counters race condition with SM multi port. • RFixed rewriting of the statistics file when the existing file had different header than the current. In case the previous header is different from the current, a backup of the old file is created as well as the updated statistics file.

5.9.1	• Fixed a crash incident when isolating the switch using:
	  • the `"held_back_sw_guid"` file while running SM with updn/ar_updn
	  • using GUIDs order file with a port group that includes HCAs that are connected to a held-back switch
	• Fixed an issue that resulted in breaking routing for virtual port LIDs upon failover/restart
	• Fixed an issue that caused `ar_ftree` to create non-credit loop free routing between IO nodes
	• Fixed an issue that resulted in continuation of the discovery stage during subnet configuration stage
	• Fixed an issue that missed getting MEPI after switch reset
	• Fixed multicast group leak when handling leave of SendOnlyFullMembers of multicast groups
	• Fixed a leak when spoofing notice 144 for virtual ports

5.8.1	• Enabled SA requests with default subnet prefix in GRH on subnet with non-default subnet prefix • Fixed a crash when processing virtual ports after aborted heavy sweep • Fixed a wrong direct route for GeneralInfo MADs after coming out-of-standby • Fixed s crash in UPDN LID tracking that happened when multithreading was enabled • Fixed file descriptor leakage when running with crashd • Fixed an issue that resulted in setting default pkey at index 0 on invalid partitions.conf • Fixed an issue that prevented setting ar_sl_mask on hosts when running with armgr plugin • Freed alias GUIDs resources when deleting virtual port object • Fixed checking 2x link width capability • Enabled handling MCMemberRecord request with default subnet prefix on subnet with non-default subnet prefix

5.7.1	• Fixed memory overflow upon virtual ports removal from the Subnet when using Adaptive Routing. • Fixed handling `';'` and `':'` in nodes names in port groups policy file parser. • Fixed missing routes-to-routers after recovery the routing engine in Dragonfly+. • Fixed port_search_order usage when LMC is enabled. • Fixed SA LinkRecords and MultipathRecords LMC support. • Fixed partition checking for LinkRecord and PortInfoRecord queries. • Fixed dedicated groups calculation for switches with ANs when FRN enabled. • Fixed router support in port groups. • Fixed an issue that prevented SADB dumping when updating service records.

5 Parameter Changes

Parameter Name	Status	Type	Description
5.29.1			
optimistic_discovery_validation_percent	**Update**	**Numeric**	**Changed default value from 8 to 0**
mads_engine_stall_timeout_seconds	**New**	**Numeric**	**Maximal time to wait for stale transactions dropped by driver (default 60)**
5.28.1			
optimistic_discovery_validation_percent	**New**	**Numeric**	**Percentage of devices in the fabric to validate per sweep (default 0)**
keep_alive_interval	**New**	**Numeric**	**Seconds between keep-alive status file updates (default 30)**
mepi_cache_switches_enabled	**New**	**Boolean**	**Enable MEPI caching for switch external ports (default TRUE)**
5.27.1			
sa_allowed_queries_policy	New	String	Control which SA queries are allowed (default ALL)
5.26.1			
rediscovery_link_penalty_step	Update	Numeric	Changed default value from 2 to 3
5.25.1			
virt_max_ports_in_process	Update	Numeric	Set default to 512
osm_stats_interval	Update	Numeric	Set default to 10 minutes

issu_mode	Update	Numeric	Set default to 1 (enabled)
gmp_threads	Update	Numeric	Set default to 8
additional_gi_supporting_devices	Update	String	Set default to 'all'
sharp_multicast_enabled	New	Numeric	Enable SHARP multicast trees feature (not enabled by default)
sharp_mlid_start	New	Numeric	Start MLID range reserved for SHARP multicast trees
sharp_multicast_sl	New	Numeric	SL of SHARP multicast trees
5.24.0			
m_key_lease_period	Update	Numeric	Fix default to 60 seconds
dfp_down_up_turns_mode	Update	Numeric	Change default to 1 (disable down up turns)
additional_mepi_force_devices	Update	String	Support "all" keyword
additional_gi_supporting_devices	Update	String	Support "all" keyword
light_sweep_spst	New	Boolean	Enable/disable sending SPST MAD during light sweeps (default TRUE)
5.23.0			
periodic_key_update	New	Numeric	Management Key update interval in minutes (default 0 - feature disabled)
planarized_routing_enabled	New	Numeric	Controls whether to run routing algorithms for planarized subnets (default 1 - enabled)
drop_unreachable_ports_enabled	New	Boolean	Avoid configuring unreachable devices (default TRUE)
enable_sa	New	Boolean	Enable SubnetAdminstrator functionality in SM (default TRUE)
5.22.11			

port_recovery_policy_enabled	New	Numeric	Enable Port recovery policy (default is 0 ignored)
prp_override_allow_sm_port_reset	New	Boolean	Enable resting SM port when changing port recovery policy on SM ports
rediscovery_max_link_penalty	New	Numeric	Maximal link penalty on MAD timeout (default is 10)
rediscovery_link_penalty_step	New	Numeric	The penalty added to links on MAD timeout (default is 2)
m_key	Update	Numeric	Enable random seed when value set to 0xFFFFFFFFFFFFFFFF
key_mgr_seed	Update	Numeric	Enable random seed when value set to 0xFFFFFFFFFFFFFFFF
log_num_backlogs	New	Numeric	Number of backlog files to keep. Valid only when log_max_size is non-zero (default is 0)
cache_files_dir	New	Path	Path to SM cache files directory (default /var/cache/opensm)
5.20.0			
qos_config_vl_enabled	New	Boolean	Enable QOS config VL (default is False)
fabric_mode_profile	New	String	Fabric profile (default is none)
fabric_mode_policy_file	New	Path	Fabric mode policy file (default is /etc/opensm/fabric-mode-policy.conf)
5.19.0			
pfrn_over_router_enabled	New	Numeric	Enable PFRN over routers (default is 2 - enabled)
ar_tree_asymmetric_flow	Update	Numeric	Support new routing engine for asymmetric quasi fat-tree topologies
5.18.0			
ar_tree_asymmetric_flow	Update	Numeric	Support enabling new asymmetric routing algorithm for QFT topologies
max_op_vls	Update	Numeric	Changed default from 3 (4 data VLs) to 2 (2 data VLs)
enable_ar_group_copy	New	Boolean	Debug option to allow controlling AR group copy optimization. (default TRUE)
5.17.0			

tenants_policy_enabled	New	Boolean	Enable tenants manager feature (default is FALSE)
tenant_policy_file	New	Path	Path to tenants manager policy file (default is /etc/opensm.tenants-policy.conf)
routing_flags	New	Mask	Control various routing engine options (default is 0)
5.15.0			
max_wire_smps	Update	Numeric	Change default value to 32
max_wire_smps2	Update	Numeric	Change default value to 32
hbf_sl_mask	Update	Numeric	Change default value to 0xffff
topo_config_enabled	New	Boolean	Enable running SM with topology spec file (default is FALSE)
topo_config_file	New	Path	Path to topology specification file (default is "(null)")
fast_recovery_enabled	New	Numeric	Enable fast recovery feature (default is 0)
fast_recovery_conf_file	New	Path	Path to fast recovery file (default is "(null)"
ppcc_algo_dir	New	Path	Path to directory with PPCC algorithm profile files (default is /etc/opensm/ppcc_algo_dir)
enable_performance_logging	New	Boolean	Enable generating SM performance report (default is TRUE)
osm_perflog_dump_limit	New	Numeric	Limit performance log file size in megabytes (default is 20)
max_seq_redisc	Update	Numeric	Change default value to 4
qos_policy_file	Update	Path	Change default value to "(null)"
routing_engine	Update	String	Update description that dfp2 is not experimental
5.14.0			
qos	Update	Boolean	Changed default to TRUE
use_optimized_slvl	Update	Boolean	Changed default to TRUE

use_optimized_port_mask_slvl	Update	Boolean	Changed default to TRUE
long_transaction_timeout	Update	Numeric	Changed default from 500 milliseconds to 1000 milliseconds
5.13.0			
root_guid_file	Update	Path	Updated description to include all supported routing engines
suppress_mc_pkey_traps	New	Boolean	Suppress Multicast PKey violation traps (default is TRUE)
drop_subscr_on_report_fail	Update	Boolean	Changed default to TRUE
drop_event_subscriptions	Update	Boolean	Changed default to TRUE
use_optimized_slvl	Update	Boolean	Updated description that parameter control wild carded optimization
use_optimized_port_mask_slvl	New	Boolean	Enable port masked optimized SLtoVLMappingTable programming (default is FALSE)
rtr_pr_mtu	Update	Numeric	Change default to 255 (Calculate PathRecord MTU according to route)
rtr_pr_rate	Update	Numeric	Change default to 255 (Calculate PathRecord Rate according to route)
5.12.0			
root_guid_file	Update	Path	Updated description to include all supported routing engines.
5.11.0			
pfrn_sl	New	Number	SL for PFRN messages. Default 0
pfrn_mask_clear_timeout	New	Number	Time since last PFRN for an AR group to clear unused port masks. Default 180
pfrn_mask_force_clear_timeout	New	Number	Time since last mask clear, after which unused port mask is cleared by the switch. Default 720
n2n_key_enable	New	Number	Enable Node-to-Node Key (management class 0xC) configuration. Default 0 (Ignore)

n2n_key_protect_bit	New	Number	Protection level for class 0xC. Default 1
n2n_key_lease_period	New	Number	Lease period for class 0xC key. Default 60
n2n_max_outstanding_mads	New	Number	Maximum number of N2N MADs in the network at once. Default 500
enable_sm_port_failover	New	Boolean	Enable SM fail over to another port in case of link failure. Default is False
hbf_sl_mask	New	Boolean	SL mask for HBF. Default 0x0000 (Disabled)
hbf_hash_type	New	Number	HBF hash type. Default 0 (CRC)
hbf_seed_type	New	Number	HBF seed type. Default 0 (User defined seed)
hbf_seed	New	Number	Seed for HBF. Default 0xFFFFFFFF (Use switch GUID)
hbf_hash_fields	New	Number	Fields of packet for hash calculation. Default 0x40F00C0F
hbf_weights	New	String	Weights ratio between ports of different groups. Default 'auto' (Routing algorithm decision)
cache_ar_group_id	New	Boolean	Load GUID to AR group ID cache file on startup. Default TRUE
ar_tree_asymmetric_flow	Update	Number	Changed default to 1.
sm_stats_dump_per_sm_port	Update	Boolean	Changed default to TRUE,
5.10.0			
adaptive_timeout_sl_mask	New	Number	Define a adaptive timeout SL mask of the port. Default 0xFFFF
routing_engine	Update	String	Changed default value from *(null)* to *ar_updn*
find_roots_color_algorithm	New	Boolean	Find root using coloring algorithm for tree based topologies. Default is TRUE.
max_cas_on_spine	New	Boolean	The maximum number of CAs on a switch to allow considering it as a spine instead of a leaf by the routing algorithm.
hm_num_traps	Update	Number	Changed default value from *250* to *60*.

hm_num_traps_period_secs	Update	Number	Changed default value from *60* to *90* seconds.
5.9.1			
allowed_sm_guids	New	String	Define list of allowed SM port GUIDs
device_configuration_file	New	String	Path to device configuration file
client_rereg_mode	New	Number	Control sending ClientReregister to devices
max_rate_enum	New	Number	Define maximal supported rate in SA records
gmp_traps_threads_num	New	Number	Number of threads for processing GMP traps
get_mft_tables	New	Boolean	Enable/Disable reading MFT tables on first master sweep
routing_engine	Update	String	Support *kdor-ghc* for Generalized Hypercube routing engine
mepi_cache_enabled	Update	Boolean	Changed default from *FALSE* to *TRUE*
no_clients_rereg	Update	Boolean	Deprecated by *client_rereg_mode*
use_original_extended_sa_rates_only	Update	Boolean	Deprecated by *max_rate_enum*
dfp_down_up_turns_mode	Update	Number	Changed default from *0* to *2* (disable down/up turns)
routing_threads_num	Update	Number	Changed default value from *1* to *0*
force_link_speed_ext	Update	Number	Support NDR speeds
5.8.1			
max_wire_smps	Update	Number	Change default from 4 to 16
max_wire_smps2	Update	Number	Change default from 4 to 16
max_smps_timeut	Update	Number	Change default from 600000 to 300000 milliseconds

max_msg_fifo_timeout	Update	Number	Change default from 10000 to 5000 milliseconds
transaction_timeout	Update	Number	Change default from 200 to 100 milliseconds
enable_crashd	Update	Boolean	Change default from FALSE to TRUE
routing_engine	Update	Text	Support *dfp2* routing engine
master_sm_lid	New	LID	LID for local SM when in MASTER state
enable_virt_rec_ext	New	Boolean	Enable PortInfoRecord/NodeRecord for virtual ports/nodes
ar_tree_asymmetric_flow	New	Number	AR Asymmetric trees max flow algorithm
max_op_vls_ca	New	Number	max_op_vl for CAs
max_op_vls_sw	New	Number	max_op_vl for switches
max_op_vls_rtr	New	Number	max_op_vl for routers
enable_vl_packing	New	Boolean	Enable VL packing
5.7.2			
ar_sl_mask	Existing	Number	Modified behavior: Parameter controls AR SL mask both in switches and HCAs
5.7.1			
enable_lst_file	New	Boolean	Control dumping subnet LST file of the topology
lids_per_rtr	New	Number	Control number of LIDs per router of inter-subnet path record
max_wire_smps_per_device	New	Number	Control maximum number of MADs on wire per device
service_name2key_map_file	New	Path	Path to service name to service key map file
rtr_selection_function	New	String	Hash function to be used by router selection algorithm

rtr_selection_seed	New	Number	Seed for router selection algorithm
rtr_selection_algo_parameters	New	String	Comma separated list of parameters for router selection algorithm
updn_lid_tracking_prefer_total_routes	New	Boolean	Control UPDN LID tracking exit port selection criteria
mlnx_congestion_control	New	Number	Control Mellanox Congestion Control enablement
congestion_control_policy_file	New	Path	Path to Congestion Control policy file
guid	Update	List	Changed the type from GUID to list of commas separated GUIDs
scatter_ports	Update	Number	Changed default value from 0 (disabled) to 8
log_flash	Update	Boolean	Changed default value from FALSE to TRUE
max_topologies_per_sw	Update	Number	Changed default value from 1 to 4

6 Legal Notices and 3rd Party Licenses

Product	Version	Legal Notices and 3rd Party Licenses
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