



Subnet Manager Tab

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UFM is a management platform using a user-space application for InfiniBand fabric management. This application is developed within the context of an open-source environment. This application serves as an InfiniBand Subnet Manager and a Subnet Administration tool.

The UFM Subnet Manager (SM) is a centralized entity running on the server that discovers and configures all the InfiniBand fabric devices to enable traffic flow throughout the fabric.

To view and configure SM parameters in the **Subnet Manager** tab, select the relevant tab according to the required configuration.

For more information, please refer to [Appendix – Enhanced Quality of Service](#).

SM Keys Configuration

The SM Keys tab enables you to view the Subnet Manager Keys. You cannot change the configuration in this tab.

Keys	MKey	0x 0
Limits	SA Key	0x 1
Lossy	Subnet Prefix	0x fe80000000000000
SL2VL	SM Key	0x 1
Sweep	MKey Lease Period	60 (sec)
Handover	LMC	0
Threading	No Partition Enforcement	false
Logging		
Misc		
QoS		
Congestion Control		
Adaptive Routing		

Field	Description	Default
MKey	A field that allows you to view or edit the M_Key value sent to all ports to qualify all the set (PortInfo). Authentication	0x0000000000000000

Field	Description	Default
	is performed by the management entity at the destination port and is achieved by comparing the key contained in the SMP with the key (the M_Key Management key) residing at the destination port.	
SA Key	Shows the SM_Key value to qualify the receive SA queries as 'trusted'.	0x000000000000000001
Subnet Prefix	An identifier of the subnet. The subnet prefix is used as the most significant 64 bit of the GID of each InfiniBand node in the subnet.	0xfe80000000000000
SM Key	Read-only field that displays the Key of the Subnet Manager (SM).	0x000000000000000001
MKey Lease Period	A field that allows you to view or edit the lease period used for the M_Key on this subnet in [sec].	0
LMC	Defines the LID Mask Control value for the SM. Possible values are 0 to 7. LID Mask Control (LMC) allows you to assign more than one LID per port. NOTE: Changes to the LMC parameter require a UFM restart.	0
No Partition Enforcement	Disables partition enforcement by switches.	Disabled

SM Limits Configuration

The SM Limits tab enables you to view and set the Subnet Manager Limits.

Keys	Packet Life Time	0x 12
Limits	Subnet Timeout	18
Lossy	Maximal Operational VL	VL0-VL3
SL2VL	Head Of Queue Life Time	0x 12
Sweep	Leaf Head Of Queue Life Time	0x 10
Handover	VL Stall Count	0x 7
Threading	Leaf VL Stall Count	0x 7
Logging	Force Link Speed	Max Supported
Misc	Local Physical Error Threshold	0x 8
QoS	Overrun Errors Threshold	0x 8
Congestion Control		
Adaptive Routing		

To configure SM Limits, set the fields as described in the table below, and click "Save."

Field	Description	Default
Packet Life Time	A field that allows you to view and/or edit the code of maximum lifetime a packet in a switch. The actual time is $4.096 \text{ usec} * 2^{\langle \text{packet_life_time} \rangle}$. The value 0x14 disables this mechanism	0x12
Subnet Timeout	A field that allows you to view and/or edit the subnet_timeout code that will be set for all the ports. The actual timeout is $4.096 \text{ usec} * 2^{\langle \text{subnet_timeout} \rangle}$	18
Maximal Operational VL	A field that allows you to view and/or edit the limit of the maximal operational VLs: <ul style="list-style-type: none"> • 0: NO_CHANGE • 1: VL0 1 • 2: VL0_VL1 • 3: VL0_VL3 • 4: VL0_VL7 • 5: VL0_VL14 	3

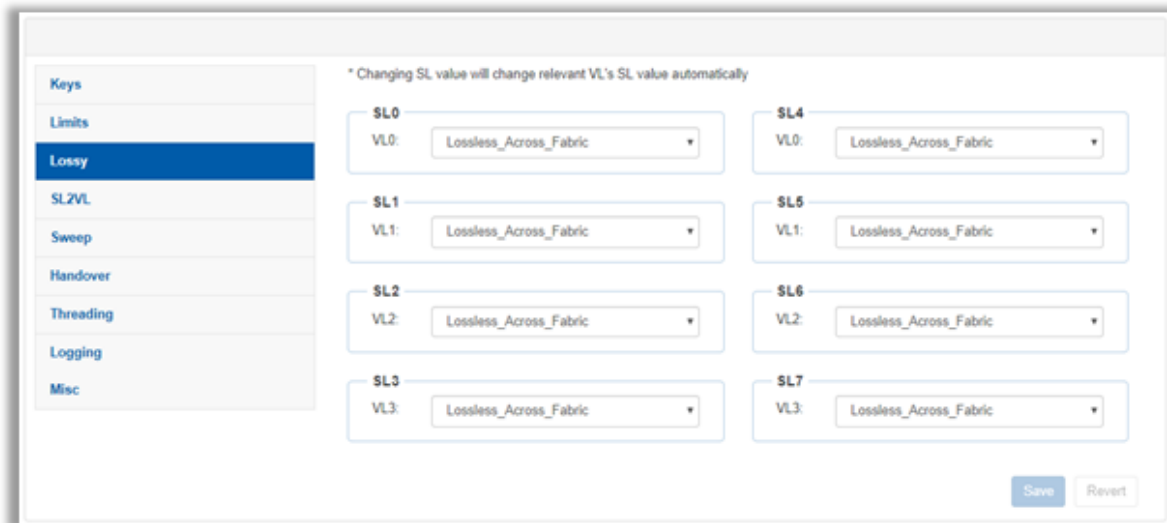
Field	Description	Default
Head of Queue Life Time	A field that allows you to view and/or edit the code of maximal time a packet can wait at the head of transmission queue. The actual time is $4.096\text{usec} * 2^{\langle\text{head of queue lifetime}\rangle}$ The value 0x14 disables this mechanism.	0x12
Leaf Head of Queue Life Time	A field that allows you to view and/or edit the maximum time a packet can wait at the head of queue on a switch port connected to a CA or gateway port.	0x10
VL Stall Count	A field that allows you to view the number of sequential packets dropped that cause the port to enter the VLStalled state. The result of setting this value to zero is undefined.	0x07
Leaf VL Stall Count	This field allows you to view the number of sequential packets dropped that cause the port to enter the VLStalled state. This value is for switch ports driving a CA or gateway port. The result of setting the parameter to zero is undefined.	0x07
Force Link Speed	A parameter that allows you to modify the PortInfo:LinkSpeedEnabled field on switch ports. If 0, do not modify. <ul style="list-style-type: none"> • Values are: • 1: 2.5 Gbps • 3: 2.5 or 5.0 Gbps • 5: 2.5 or 10.0 Gbps • 7: 2.5 or 5.0 or 10.0 Gbps • 2,4,6,8-14 Reserved • 15: set to PortInfo:LinkSpeedSupported 	15 By default, UFM sets the enabled link speed equal to the supported link speed.
Local Physical Error Threshold	A field that allows you to view and/or edit the threshold of local phy errors for sending Trap 129.	0x08
Overrun Errors Threshold	A field that allows you to view and/or edit the threshold of credit overrun errors for sending Trap 130.	0x08

SM Lossy Manager Configuration

Note

This tab is available to users with an advanced license only.

The SM Lossy tab enables you to view and set the Lossy Configuration Manager options after Lossy Configuration has been enabled.



SL	VL
SL0	VL0: Lossless_Across_Fabric
SL1	VL1: Lossless_Across_Fabric
SL2	VL2: Lossless_Across_Fabric
SL3	VL3: Lossless_Across_Fabric
SL4	VL0: Lossless_Across_Fabric
SL5	VL1: Lossless_Across_Fabric
SL6	VL2: Lossless_Across_Fabric
SL7	VL3: Lossless_Across_Fabric

SM SL2VL Mapping Configuration

The SM SL2VL tab enables you to view the SL (service level) to VL (virtual lane) mappings and the configured Lossy Management. You cannot change the configuration in this tab.

However, you can change it in the previous [SM Lossy Manager Configuration \(Advanced License only\)](#) tab.

Keys									
Limits									
Lossy									
SL2VL									
Sweep									
Handover									
Threading									
Logging									
Misc									
QoS									
Congestion Control									
Adaptive Routing									

Qos Option Type	SL0	SL1	SL2	SL3	SL4	SL5	SL6	SL7
Default	0	1	2	3	0	1	2	3
Hca	0	1	2	3	0	1	2	3
Switch Port 0	0	1	2	3	0	1	2	3
Switch External Ports	0	1	2	3	0	1	2	3
Router	0	1	2	3	0	1	2	3

SM Sweep Configuration

The Sweep tab enables you to view and/or set the Subnet Manager Sweep Configuration parameters.

Keys	Sweep Interval	<input type="text" value="10"/>	seconds
Limits	Reassign Lids	<input type="checkbox"/>	
Lossy	Sweep On Trap	<input checked="" type="checkbox"/>	
SL2VL	Force Heavy Sweep	<input type="text" value="false"/>	
Sweep			
Handover			
Threading			
Logging			
Misc			
QoS			
Congestion Control			
Adaptive Routing			

To configure SM Sweep, set the fields as described in the table below and click "Save."

Field/Box	Description	Default
Sweep Interval	A field that allows you to view and/or edit the number of seconds between light sweeps (0 disables it).	10
Reassign LIDs	If enabled, causes all LIDs to be reassigned.	Disabled
Sweep on Trap	If enabled, traps 128 and 144 will cause a heavy sweep.	Enabled
Force Heavy Sweep	If enabled, forces every sweep to be a heavy sweep.	Disabled

SM Handover Configuration

The SM Handover tab enables you to view the Subnet Manager Handover Configuration parameters. You cannot change the configuration in this tab.

Field/Box	Description	Default
Keys	SM Priority	15
Limits	Polling Timeout	5 (sec)
Lossy	Polling Retries	4
SL2VL	Honor GUID to LID File	false
Sweep	Ignore Other SMs	false
Handover		
Threading		
Logging		
Misc		
QoS		
Congestion Control		
Adaptive Routing		

Field/Box	Description	Default
SM Priority	A field that shows the SM priority used for determining the master. Range is 0 (lowest priority) to 15 (highest). Note: Currently, these settings may not be changed.	15

Field/Box	Description	Default
Polling Timeout	A field that shows the timeout in [sec] between two polls of active master SM.	Range=10000
Polling Retries	Number of failing polls of remote SM that declares it "not operational."	4
Honor GUID to LID File	If enabled, honor the guid2lid file when coming out of standby state, if the file exists and is valid.	Disabled
Ignore other SMs	If enabled, other SMs on the subnet are ignored.	Disabled

SM Threading Configuration

The SM Threading tab enables you to view the Subnet Manager Timing and Threading Configuration parameters. You cannot change the configuration in this tab.

Keys	Max Wire SMPs	8
Limits	Transaction Timeout	200 (ms)
Lossy	Max Message FIFO Timeout	10000
SL2VL	Single Thread	false
Sweep		
Handover		
Threading		
Logging		
Misc		
QoS		
Congestion Control		
Adaptive Routing		

Field/Box	Description	Default
Max Wire SMPs	A field that shows the maximum number of SMPs sent in parallel.	4

Field/Box	Description	Default
Transaction Timeout	A field that shows the maximum time in [msec] allowed for a transaction to complete.	200
Max Message FIFO Timeout	A field that shows the maximum time in [msec] a message can stay in the incoming message queue.	10000
Single Thread	When enabled, a single thread is used for handling SA queries.	Disabled

SM Logging Configuration

The SM Logging tab enables you to view and/or set the **Subnet Manager Logging Configuration** parameters.

To configure SM Logging, set the fields as described in the table below and click "Save."

Field/Box	Description	Default
Log File	Path of the Log file to be used.	cond/opt/ufm/files/log/opensm.log
Log Max Size	A field that allows you to view and/or edit the size limit of the log file in MB. If overrun, the log is restarted.	4096

Field/Box	Description	Default
Dump Files Directory	The directory that holds the SM dump file.	/opt/ufm/files/log
Force Log Flush	Force flush to the log file for each log message.	Disabled
Accumulate Log File	If enabled, the log accumulates over multiple SM sessions.	Enabled
Log Levels	Available log levels: Error, Info, Verbose, Debug, Funcs, Frames, Routing, and Sys.	Error and Info

SM Miscellaneous Settings

The Misc tab enables you to view additional **Subnet Manager Configuration** parameters. You cannot change the configuration in this tab.

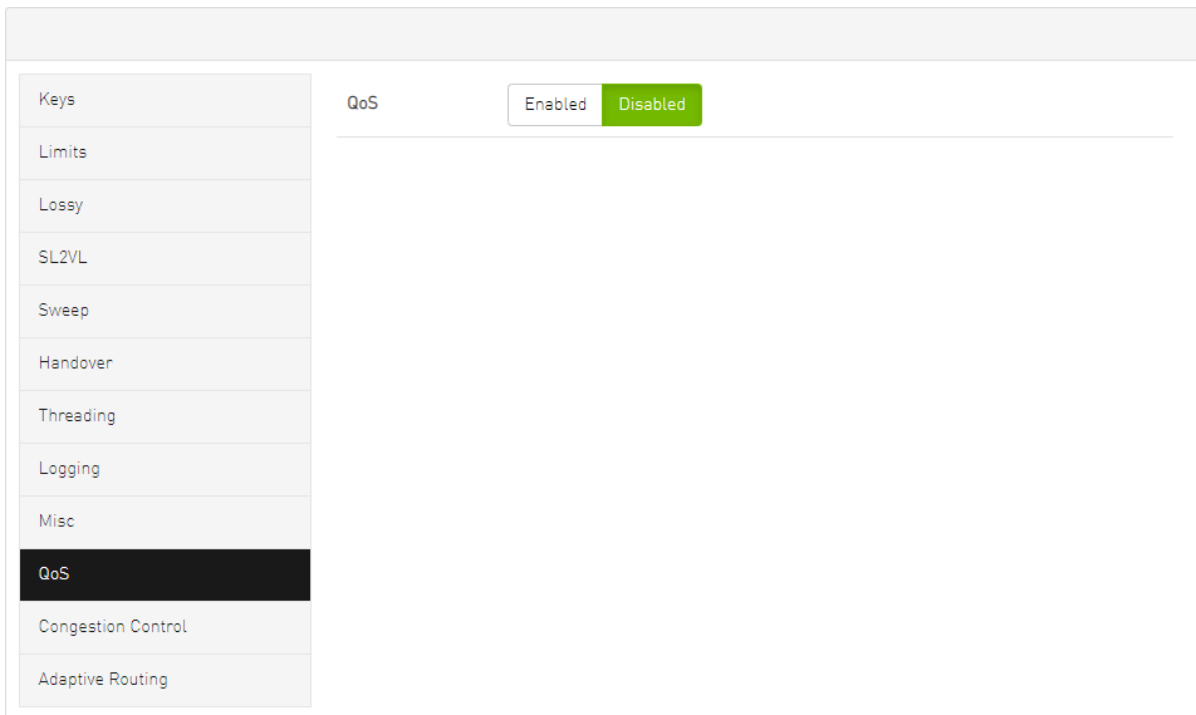
Keys	Node Names Map File	N/A
Limits	SA Database File	N/A
Lossy	No Clients Reregistration	false
SL2VL	Disable MultiCast	false
Sweep	Exit On Fatal Event	true
Handover		
Threading		
Logging		
Misc		
QoS		
Congestion Control		
Adaptive Routing		

Field/Box	Description	Default
Node Names Map File	A field that allows you to view and/or set the node name map for mapping nodes to more descriptive node descriptions.	None

Field/Box	Description	Default
SA Database File	SA database file name	None
No Clients Reregistration	If enabled, disables client re-registration.	Disabled
Disable Multicast	If enabled, the SM disables multicast support and no multicast routing is performed.	Disabled
Exit on Fatal Event	If enabled, the SM exits on fatal initialization issues.	Enabled

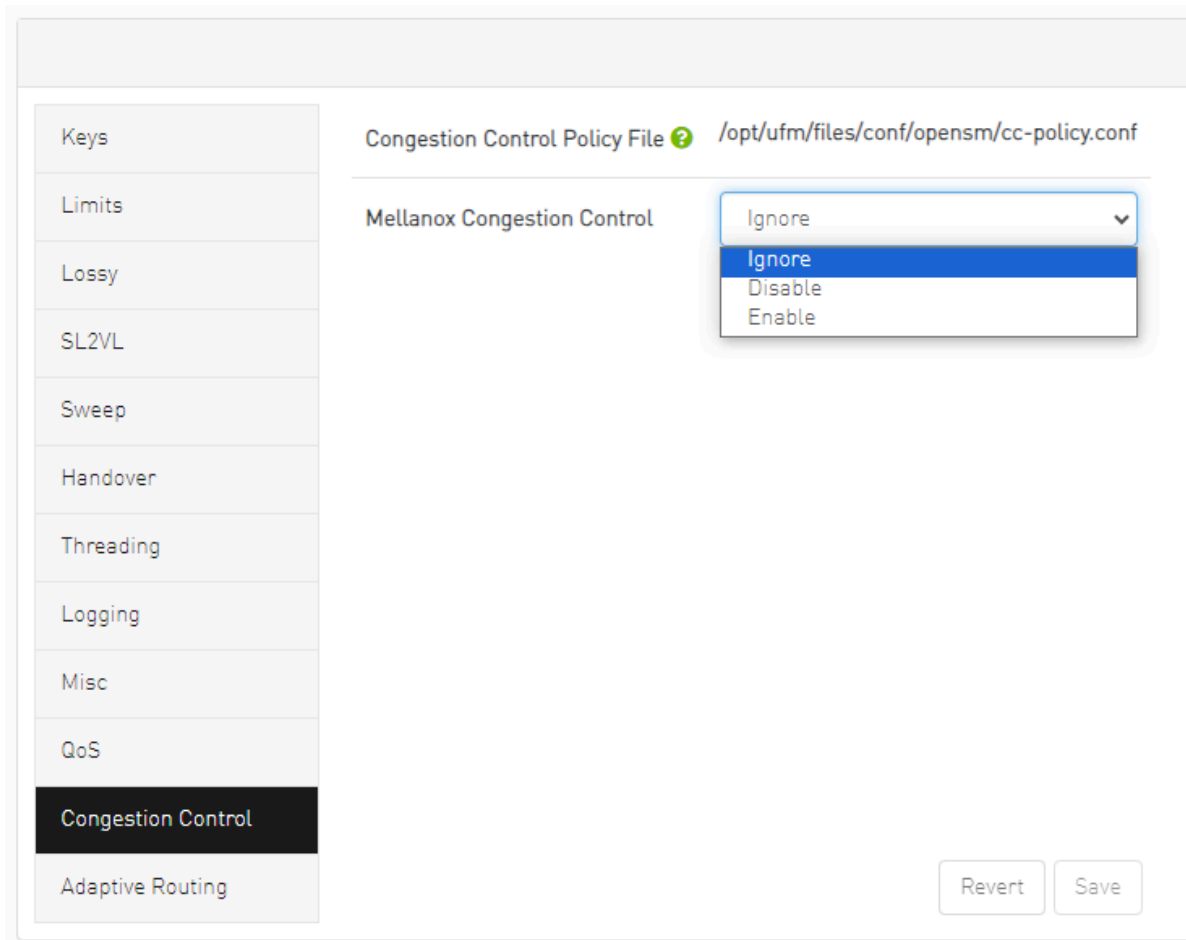
SM QoS Configuration

The QoS tab allows you to enable or disable QoS functionality. QoS is disabled by default.






SM Congestion Control Configuration

The Congestion Control tab allows you to enable, disable, or ignore congestion control.



SM Adaptive Routing Configuration

The Adaptive Routing tab allows you to configure adaptive routing parameters.

Keys	DFP Down Up Turns Mode 	<input type="text" value="0"/>
Limits		
Lossy		
SL2VL	DFP Max Cas On Spine 	<input type="text" value="2"/>
Sweep		
Handover		
Threading		
Logging		
Misc		
QoS		
Congestion Control		
Adaptive Routing	Adaptive Routing SL Mask 	<input type="text" value="0x FFFF"/>

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