



# CHAPTER 10

## InfiniBand Topology View Tasks

These topics describe the InfiniBand menu tasks that can be performed through the Element Manager Topology view:

- [Launching the Topology View, page 10-1](#)
- [Viewing Subnet Details, page 10-4](#)
- [Viewing Subnet Management Agents, page 10-11](#)



### Note

This section provides information to familiarize you with the InfiniBand technology. For hardware-specific information, consult the relevant hardware documentation.

## Launching the Topology View

This topic describes launching the topology view. To view specific server switch components or TCS, see “[Viewing Internal Server Switch Components and TCAs](#)” section on page 10-3

To launch the topology view, follow these steps:

- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column of any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.



### Note

Navigation icons appear at the top of the InfiniBand Topology window. [Table 10-1](#) describes these icons.

**Table 10-1** *InfiniBand Topology Navigation Icons*



Icon	Description
	The Refresh icon refreshes the topology display.
	The Layout icon evenly arranges the switch and HCA icons.

Table 10-1 InfiniBand Topology Navigation Icons (continued)







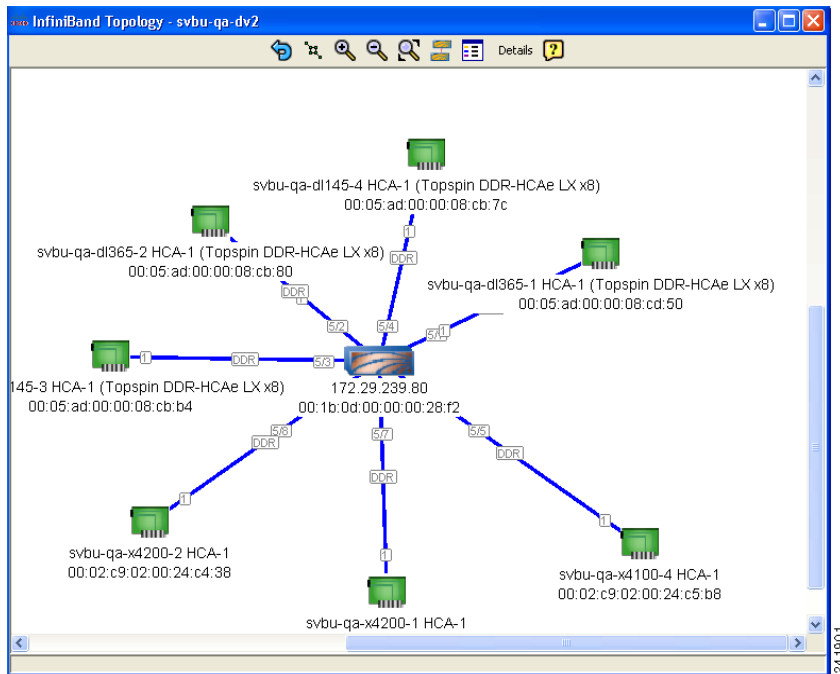
Icon	Description
	The Zoom In icon enlarges the display.
	The Zoom Out icon condenses the display.
	The Fit to Screen icon zooms in or out to fit the topology in the window.
	The Specify Cisco Devices icon opens the Specify Cisco Devices dialog box to add Server Switches to the display.
	The Legend icon displays the different colors that represent different types of links.
Details	The Subnet Details icon displays subnet details. For more information, see the <a href="#">“Viewing Subnet Details”</a> section on page 10-4.
	The Help icon launches the online help.

Figure 10-1 shows a sample topology view.

Figure 10-1 Topology View



## Viewing Internal Server Switch Components and TCAs

To view the internal server switch components and target channel adapters (TCAs) inside a server switch, follow these steps:

- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column of any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.



**Note** Navigation icons appear at the top of the InfiniBand Topology window. [Table 10-2](#) describes these icons.

**Table 10-2** Internal InfiniBand Topology Navigation Icons

Icon	Description
	The Layout icon evenly arranges the switch and HCA icons.
	The Zoom In icon enlarges the display.
	The Zoom Out icon condenses the display.
	The Fit to Screen icon zooms in or out to fit the topology in the window.
	The Layout icon evenly arranges the switch and HCA icons.
SMAs	The Subnet Management Agents icon displays Subnet Manager agent details. For information, see the <a href="#">“Viewing Subnet Management Agents”</a> section on page 10-11.
	The Help icon launches the online help.

# Viewing Subnet Details

These topics describe how to view subnet details:

- [Viewing Nodes, page 10-4](#)
- [Viewing Ports, page 10-5](#)
- [Viewing Switches, page 10-9](#)
- [Viewing Neighboring Ports, page 10-10](#)

## Viewing Nodes

To view the nodes in the topology view, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) In the Enabled column, check the check box of any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Click **Details**.  
The InfiniBand Subnet Details window opens.
- Step 5** Click the **Nodes** tab.  
[Table 10-3](#) describes the fields in this tab.

**Table 10-3** Nodes Tab Field Descriptions

Field	Description
SubnetPrefix	Subnet prefix of the node.
GUID	Global unique ID (GUID) of the node.
Description	Optional text string describing this node.
Type	Type of node being managed.
NumPorts	Number of physical ports on this node.
SystemImageGUID	System image GUID of this node. All nodes within a particular system (chassis) are assigned the same system image GUID.

---

## Viewing Ports

To view the ports in the topology view, follow these steps:

- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) In the Enabled column, check the check box of any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Click **Details**.  
The InfiniBand Subnet Details window opens.
- Step 5** Click the **Ports** tab.  
[Table 10-4](#) describes the fields in this tab.
- Step 6** Click **Show Advanced** to display additional port information. [Table 10-4](#) describes the information.

**Table 10-4** Ports Tab Field Descriptions

Field	Description
SubnetPrefix	Subnet prefix of the node.
NodeGUID	Global unique ID (GUID) of the node that includes the port.
Port	Local port number for this port.
LID	16-bit base LID of this port.
State	State of the port, as follows: <ul style="list-style-type: none"> <li>noStateChange</li> <li>sleep</li> <li>polling</li> <li>disabled</li> <li>portConfigurationTraining</li> <li>linkup</li> <li>linkErrorRecovery</li> <li>reserved</li> <li>active</li> <li>down</li> </ul>
LinkWidthActive	Active link width. Used in conjunction with LinkSpeedActive to determine the link rate between two nodes. The value appears as 1x, 4x, or 12x.
MKey	64-bit management key for this port. See section 14.2.4, “Management Key” and 3.5.3, “Keys,” in <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
GID Prefix	64-bit Global identifier prefix for this port. The subnet manager assigns this prefix based upon the port routes and the rules for local identifiers. See section 4.1.3, “Local Identifiers,” in <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
MasterSmLID	16-bit base LID of the master subnet manager managing this port.

Table 10-4 Ports Tab Field Descriptions (continued)

Field	Description
CapMask	The capability mask identifies the functions that the host supports. 32-bit bitmask that specifies the supported capabilities of the port. A bit value of 1 (one) indicates a supported capability. The bits are 0, 11-15, 18, 21-31 (Reserved and always 0.), 1 IsSM, 2 IsNoticeSupported, 3 IsTrapSupported, 4 IsResetSupported, 5 IsAutomaticMigrationSupported, 6 IsSLMappingSupported, 7 IsMKeyNVRAM (supports M_Key in NVRAM), 8 IsPKeyNVRAM (supports P_Key in NVRAM), 9 Is LED Info Supported, 10 IsSMdisabled, 16 IsConnectionManagementSupported, 17 IsSNMPTunnelingSupported, 19 IsDeviceManagementSupported, 20 IsVendorClassSupported. Values are expressed in hexadecimal.
DiagCode	16-bit diagnostic code. See section 14.2.5.6.1 “Interpretation of Diagcode,” in <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information. This field does not currently apply to your server switch.
MKeyLeasePeriod	Initial value of the lease-period timer, in seconds. The lease period is the length of time that the M_Key protection bits are to remain non zero after a SubnSet (PortInfo) fails an M_Key check. After the lease period expires, clearing the M_Key protection bits allows any subnet manager to read (and then set) the M_Key. Set this field to 0 to indicate that the lease period never expires. See <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, section 14.2.4, “Management Key.”
LinkWidthEnabled	Enabled link width (bandwidth). The value (an integer) indicates the enabled link-width sets for this port. The value can be one of the following: <ul style="list-style-type: none"> <li>• no state change</li> <li>• 1x</li> <li>• 4x</li> <li>• 1x, 4x</li> <li>• 8x</li> <li>• 1x, 8x</li> <li>• 4x, 8x</li> <li>• 1x, 4x, 8x</li> <li>• 12x</li> <li>• 1x, 12x</li> <li>• 4x, 12x</li> <li>• 1x, 4x, 12x</li> <li>• 8x, 12x</li> <li>• 1x, 8x, 12x</li> <li>• 4x, 8x, 12x</li> <li>• 1x, 4x, 8x, 12x</li> <li>• reserved</li> <li>• linkwidthsupported value</li> </ul>

**Table 10-4** Ports Tab Field Descriptions (continued)

Field	Description
LinkWidthSupported	Supported link width. The value appears as one of the following: <ul style="list-style-type: none"> <li>• 1x,</li> <li>• 1x, 4x</li> <li>• 1x, 4x, 8x</li> <li>• 1x, 4x, 12x,</li> <li>• 1x, 4x, 8x, 12x</li> <li>• reserved</li> </ul>
LinkSpeedSupported	Supported link speed. The value appears as one of the following: <ul style="list-style-type: none"> <li>• sdr</li> <li>• sdr, ddr</li> </ul>
PhyState	Indicates the physical state of the port, whether or not electricity flows between nodes and that they can perform a handshake. The value appears as noStateChange, sleeping, polling, disabled, portConfigurationTraining, linkup, or linkErrorRecovery. The state, upon power-up, defaults to polling.
LinkDownDefState	Default LinkDown state to return to. The value appears as noStateChange, sleeping, or polling. See section 5.5.2, “Status Outputs (MAD GET),” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
MKeyProtBits	Management key protection bits for the port. The bits are 0, 1, 2, and 3. See section 14.2.4.1, “Levels of Protection,” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
LMC	Local-identifier mask control (LMC) for multipath support. An LMC resides on each channel adapter and router port on the subnet. It provides multiple virtual ports within a single physical port. The value of the LMC specifies the number of path bits in the LID. A value of 0 (zero) indicates one LID can apply to this port. See sections 3.5.10, “Addressing,” and 4.1.3, “Local Identifiers,” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
LinkSpeedActive	Speed of an active link. The value appears as one of the following: <ul style="list-style-type: none"> <li>• sdr</li> <li>• ddr</li> </ul>
LinkSpeedEnabled	Maximum speed that the link can handle. The value appears as one of the following: <ul style="list-style-type: none"> <li>• sdr</li> <li>• ddr</li> <li>• sdr, ddr</li> </ul>
NeighborMTU	Active maximum transmission unit enabled on this port for transmit. Check the MTUCap value at both ends of every link and use the lesser speed. The value appears as 256, 512, 1024, 2048, or 4096.
MasterSmSL	Administrative service level required for this port to send a non-SMP message to the subnet manager.
VLCap	Maximum range of data virtual lanes supported by this port. The value appears as v10, v10-V11, v10-V13, v10-V17, or v10-V114. See also oper-VL. Each port can support up to 15 virtual lanes (VLs 0 to 15). The VL cap field displays the range of those lanes (for example, lanes 0 to 7) that the port currently supports.

**Table 10-4** Ports Tab Field Descriptions (continued)

Field	Description
VHighLimit	Maximum high-priority limit on the number of bytes allowed for transmitting high-priority packets when both ends of a link operate with multiple data virtual-lanes. Used with the virtual-lane arbitration table. The maximum high-limit matches the VLArbHighSap on the other side of the link and then negotiating downward.
VLArbHighCap	Highest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. See section 14.2.5.9, “VL Arbitration Table,” <i>InfiniBand Architecture</i> ®, Vol. 1, Release 1.1, for more information.
VLArbLowCap	Lowest arbitration value allowed by the arbiter in determining the next packet in a set of packets to send across the link. Used with the virtual-lane arbitration table and specified as a VL/Weight pair. See section 14.2.5.9, “VL Arbitration Table,” <i>InfiniBand Architecture</i> ®, Vol. 1, Release 1.1, for more information.
MTUCap	Used in conjunction with NeighborMTU to determine the maximum transmission size supported on this port. The lesser of MTUCap and NeighborMTU determines the actual MTU used. The value appears as 256, 512, 1024, 2048, or 4096.
VLStallCount	Number of sequentially dropped packets at which the port enters a VLStalled state. The virtual lane exits the VLStalled state (8 * HLL) units after entering it. See section 18.2.5.4, “Transmitter Queuing,” <i>InfiniBand Architecture</i> ®, Vol. 1, Release 1.1, for a description of HLL.
HOQLife	Maximum duration allowed to packets at the head of a virtual-lane queue. Used with VLStallCount to determine the outgoing packets to discard.
OperVL	Administrative limit for the number of virtual lanes allowed to the link. Do not set this above the VLCap value. The value appears as v10, v10-V11, v10-V13, v10-V17, or v10-V114.
InPartEnforce	Boolean value that indicates whether or not to support optional partition enforcement for the packets that were received by this port. No default value applies.
OutPartEnforce	Boolean value that indicates whether or not to support optional partition enforcement for the packets transmitted by this port. No default value applies.
InFilterRawPktEnforce	Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets that were received by this port. No default value applies.
OutFilterRawPktEnforce	Boolean value that indicates whether or not to support optional raw packet enforcement for the raw packets transmitted by this port. No default value applies.
MKeyViolation	Number of subnet management packets (SMPs) that have been received on this port with invalid M_Keys since initial power up or the last reset. See section 14.2.4, “Management Key,” <i>InfiniBand Architecture</i> ®, Vol. 1, Release 1.1, for more information.
PKeyViolation	Number of subnet management packets that have been received on this port with invalid P_Keys since initial power up or the last reset. See section 9.2.7, “Partition Key (P_KEY),” <i>InfiniBand Architecture</i> ®, Vol. 1, Release 1.1, for more information.



**Table 10-4** Ports Tab Field Descriptions (continued)

Field	Description
QKeyViolation	Number of subnet management packets that have been received on this port with invalid Q_Keys since initial power up or the last reset. See section 10.2.4, “Q Keys,” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
GUIDCap	Number of GUID entries allowed for this port in the port table. Any entries that exceed this value are ignored on write and read back as zero. See section 14.2.5.5, “GUIDCap,” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
SubnetTimeout	Maximum propagation delay allowed for this port to reach any other port in the subnet. This value also affects the maximum rate at which traps can be sent from this port. Switch configuration affects delay. Requestors can use this parameter to determine the interval to wait for a response to a request. Duration matches $(4.096 \text{ ms} * 2^{\text{SubnetTimeout}})$ .
RespTime	Maximum time allowed between the port reception of a subnet management packet and the transmission of the associated response. See section 13.4.6.2, “Timers and Timeouts,” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
LocalPhyError	Threshold at which ICRC, VCRC, FCCRC, and all physical errors result in an entry into the BAD PACKET or BAD PACKET DISCARD states of the local packet receiver. See section 7.12.2, “Error Recovery Procedures,” <i>InfiniBand Architecture®</i> , Vol. 1, Release 1.1, for more information.
LocalOverrunError	Threshold at which the count of buffer overruns, across consecutive flow-control update periods, result in an overrun error. A possible cause of such errors is when an earlier packet has physical errors and the buffers are not immediately reclaimed.

## Viewing Switches

To view the switches in the topology view, follow these steps:

- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column of additional InfiniBand devices to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Click **Details**.  
The InfiniBand Subnet Details window opens.
- Step 5** Click the **Switches** tab.

Table 10-5 describes the fields in this tab.

**Table 10-5 Switches Tab Field Descriptions**

Field	Description
SubnetPrefix	Subnet prefix of the node.
NodeGUID	Global unique ID (GUID) of the node that includes the switch.
LinearFdbCap	Number of entries supported in the Linear Unicast Forwarding table. Zero indicates that there is no Linear Forwarding Database.
RandomFdbCap	Number of entries supported in the Random Unicast Forwarding table. Zero indicates that there is no Random Forwarding Database.
McastFdbCap	Number of entries supported in the Multicast Forwarding table.
LinearFdbTop	Indicates the top of the linear forwarding table. Packets received with unicast DLIDs greater than this value are discarded by the switch. This component applies only to switches that implement linear forwarding tables and is ignored by switches that implement random forwarding tables.
DefaultPort	Forward to this port all the unicast packets from the other ports where DLID does not exist in the random forwarding table.
DefPriMcastPort	Forward to this port all the multicast packets from the other ports where DLID does not exist in the forwarding table.
DefNonPriMcastPort	Forward to this port all the multicast packets from the smDefPriMcastPort port where DLID does not exist in the forwarding table.
LifeTimeValue	Time a packet can live in the switch.
PortStateChange	Identifies whether or not the port is in transition.
LIDPerPort	Number of LID/LMC combinations that may be assigned to a given external port for switches that support the random forwarding table.
PartitionEnfCap	Number of entries in this partition enforcement table per physical port. Zero indicates that partition enforcement is not supported by the switch.
InEnfCap	Indicates switch is capable of partition enforcement on received packets.
OutEnfCap	Indicates switch is capable of partition enforcement on transmitted packets.
InFilterRawPktCap	Indicates switch is capable of raw packet enforcement on received packets.
OutFilterRawPktCap	Indicates switch is capable of raw packet enforcement on transmitted packets.

## Viewing Neighboring Ports

To view neighboring ports in the topology view, follow these steps:

- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column of any additional InfiniBand devices that you want to add to the Topology View display.

- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Click **Details**.  
The InfiniBand Subnet Details window opens.
- Step 5** Click the **Neighbors** tab.  
[Table 10-6](#) describes the fields in this tab.

**Table 10-6** *Neighbors Tab Field Descriptions*

Field	Description
SubnetPrefix	Used to identify InfiniBand subnet in which this InfiniBand node is located.
LocalNodeGuid	Global unique ID (GUID) of the InfiniBand node.
LocalPortId	Port ID of the InfiniBand node.
LocalNodeType	Identifies the node type of the InfiniBand node as follows: <ul style="list-style-type: none"> <li>channelAdapter</li> <li>switch</li> </ul>
RemoteNodeGuid	Global unique ID (GUID) of the remote InfiniBand node.
RemotePortId	Port ID of the remote InfiniBand node.
RemoteNodeType	Identifies the remote InfiniBand node's node-type, as follows: <ul style="list-style-type: none"> <li>channelAdapter</li> <li>switch</li> </ul>
LinkState	Identifies the state of the link connecting the neighbors, as follows: <ul style="list-style-type: none"> <li>noStateChange</li> <li>down</li> <li>initialize</li> <li>active</li> </ul>
LinkWidthActive	Width of the link connecting the neighbors.

## Viewing Subnet Management Agents

These topics describe how to view Subnet Manager Agent details:

- [Viewing Subnet Manager Node Details](#), page 10-12
- [Viewing Subnet Manager Switch Details](#), page 10-13
- [Viewing Subnet Manager Agent Switch Cap Details](#), page 10-14
- [Viewing Subnet Manager Agent Ports\(1\) Details](#), page 10-14
- [Viewing Subnet Manager Agent Ports \(2\) Details](#), page 10-16
- [Viewing Subnet Manager Multicast Details](#), page 10-18
- [Viewing Subnet Manager Agent Linear Forwarding Table Details](#), page 10-19

- [Viewing the Subnet Manager Agent Partition Details, page 10-19](#)
- [Viewing the Subnet Manager Agent SLVL Map, page 10-20](#)

## Viewing Subnet Manager Node Details

To view Subnet Manager Agent node details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.
- Step 5** The Internal InfiniBand Topology window opens.
- Step 6** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 7** Click the **Nodes** tab.  
[Table 10-7](#) describes the fields in this tab.

**Table 10-7** Nodes Tab Field Descriptions

Field	Description
Guid	Subnet prefix of this InfiniBand subnet.
BaseVersion	Supported base management datagram version.
ClassVersion	Supported subnet management class.
Type	Type of node being managed: channelAdapter or switch
PortGuid	GUID of this port. One port within a node can return the nodeGUID as its PortGUID if the port is an integral part of the node and is not field-replaceable.
PartitionCap	Number of entries in the partition table for CA, router, and the switch management port. This is at a minimum set to 1 for all nodes including switch.
DeviceId	Device ID information as assigned by the device manufacturer.
Revision	Device revision assigned by manufacturer.
LocalPortNum	The link port number that this SNMP packet came in on.
VendorId	Device vendor ID, per IEEE.
TrapBuffer	Special-purpose string buffer for InfiniBand Trap Data.
String	Description of the node.
NumPorts	Number of physical ports on this node.

---

## Viewing Subnet Manager Switch Details

To view Subnet Manager Agent switch details, follow these steps:

- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.
- Step 6** The Subnet Manager Agents window opens.
- Step 7** Click the **Switches** tab.

[Table 10-8](#) describes the fields in this tab.

**Table 10-8** *Switches Tab Field Descriptions*

Field	Description
Guid	Global unique ID of the switch.
LftTop	Top of the linear forwarding table. Packets received with unicast DLids greater than this value are discarded by the switch. This component applies only to switches that implement linear forwarding tables and is ignored by switches that implement random forwarding tables.
DefaultPort	Forward to this port all the unicast packets from the other ports where DLID does not exist in the random forwarding table.
DefMcastPriPort	Forward to this port all the multicast packets from the other ports where DLID does not exist in the forwarding table.
DefMcastNPPort	Forward to this port all the multicast packets from the Default Primary port where DLID does not exist in the forwarding table.
LifeTimeValue	Time that a packet can live in the switch.
PortStateChange	Set to one when the PortState component in the PortInfo of any ports transitions from Down to Initialize, Initialize to Down, Armed to Down, or Active to Down as a result of link state machine logic. Changes in Portstate resulting from SubnSet do not change this bit. This bit is cleared by writing one; writing zero is ignored.
LidsPerPort	Number of LID/LMC combinations that may be assigned to a given external port for switches that support the random forwarding table.

## Viewing Subnet Manager Agent Switch Cap Details

To view Subnet Manager Agent switch cap details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 6** Click the **Switch Cap** tab.  
[Table 10-9](#) describes the fields in this tab.

**Table 10-9** *Switch Cap Tab Field Descriptions*

Field	Description
LftCap	Number of entries supported in the linear unicast forwarding table.
RftCap	Number of entries supported in the random unicast forwarding table. RandomFDBCap = 0 indicates that there is no random forwarding database.
MftCap	Number of entries supported in the multicast forwarding table.
PartitionEnfCap	Number of entries in the partition enforcement table per physical port. Zero indicates that partition enforcement is not supported by the switch.
InboundEnfCap	Indicates switch is capable of partition enforcement on received packets.
OutboundEnfCap	Indicates switch is capable of partition enforcement on transmitted packets.
FilterRawPktInCap	Indicates switch is capable of raw packet enforcement on received packets.
FilterRawPktOutCap	Indicates switch is capable of raw enforcement on transmitted packets.

---

## Viewing Subnet Manager Agent Ports(1) Details

To view Subnet Manager Agent port details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column of any additional InfiniBand devices that you want to add to the Topology View display.

- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 6** Click the **Ports (1)** tab.  
[Table 10-10](#) describes the fields under this tab.

**Table 10-10 Ports (1) Tab Field Descriptions**

Field	Description
NodeGuid	64-bit GUID of the node that contains this port.
IbPort	Local port number of this port (relative to a particular node).
MKey	64-bit management key for this port.
GidPrefix	64-bit global ID prefix for this port.
Lid	16-bit base LID of this port.
MasterSMLid	16-bit base LID of the master Subnet Manager that is managing this port.
CapabilityMask	Supported capabilities of this node are as follows: <ul style="list-style-type: none"> <li>• 0- Reserved is zero</li> <li>• 1-IsSM</li> <li>• 2-IsNoticeSupported</li> <li>• 3-IsTrapSupported</li> <li>• 4-IsResetSupported</li> <li>• 5-IsAutomaticMigrationSupported</li> <li>• 6-IsSLMappingSupported</li> <li>• 7-IsMKeyNVRAM</li> <li>• 8-IsPKeyNVRAM</li> <li>• 9-IsLEDInfoSupported</li> <li>• 10-IsSMDdisabled</li> <li>• 11-15- Reserved is zero</li> <li>• 16-IsConnectionManagerSupported</li> <li>• 17-IsSNMPTunnelingSupported</li> <li>• 18-Reserved is zero</li> <li>• 19-IsDeviceManagementSupported</li> <li>• 20-IsVendorClassSupported</li> <li>• 21-31- Reserved is zero</li> </ul>
DiagCode	Port diagnostic code.
MKeyLeasePeriod	Timer value used to indicate how long the M_Key protection bits are to remain nonzero after a SubnSet(PortInfo) fails an M Key check. The value of the timer indicates the number of seconds for the lease period.
LocalPortNum	Local port number.
LinkWidthEnabled	Enabled link width (1x, 4x, or 12x).
LinkWidthSupported	Supported link width.

**Table 10-10** Ports (1) Tab Field Descriptions (continued)

Field	Description
LinkWidthActive	Currently active link width.
LinkSpeedSupported	Supported link speed (in Gbps).
State	State of the port is as follows: <ul style="list-style-type: none"> <li>• noStateChagne</li> <li>• down</li> <li>• initialize</li> <li>• armed</li> <li>• active</li> </ul>
PortPhys	State of the physical port is as follows: <ul style="list-style-type: none"> <li>• noStateChange(0),</li> <li>• sleep</li> <li>• polling</li> <li>• disabled</li> <li>• portConfigurationTraining</li> <li>• linkup</li> <li>• linkErrorRecovery</li> <li>• reserved</li> <li>• linkDownDef</li> </ul>
LinkDownDef	Port physical state link down.
MKeyProtectBits	Determines MADheader behavior.
LMC	LID mask for multipath support.
LSActive	Current active link speed.
LSActiveEnabled	Enabled link speed.
NeighborMTU	Active maximum MTU enabled on this port for transmission.
MasterSMSL	Administrative SL of the master Subnet Manager that is managing this port.

## Viewing Subnet Manager Agent Ports (2) Details

To view extended Subnet Manager Agent port details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.



- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 6** Click the **Ports (2)** tab.  
[Table 10-11](#) describes the fields in this tab.

**Table 10-11** Ports (2) Tab Field Descriptions

Field	Description
NodeGuid	64-bit GUID of the node that contains this port.
IbPort	Local port number of this port (relative to a particular node).
VLCap	Virtual lanes supported on this port.
VLHighLimit	Limit of high priority component of VL arbitration table.
VLArbitrationHighCap	VL/Weight pairs supported on this port in the smVLArbTable for high priority.
VLArbitrationLowCap	VL/Weight pairs supported on this port in the smVLArbTable for low priority.
MTUCap	Maximum MTU supported by this port.
VLStallCount	Number of sequential packets dropped that caused the port to enter the VLStalled state.
HoQLife	Time that a packet can live at the head of a VL queue.
OpVLS	Virtual lanes operational on this port.
PkeyEnfIn	Indicates support of optional partition enforcement on packets received from this port.
PkeyEnfOut	Indicates support of optional partition enforcement on packets transmitted from this port.
FilterRawPktIn	Indicates support of optional raw packet enforcement on raw packets received from this port.
FilterRawPktOut	Indicates support of optional raw packet enforcement on raw packets transmitted from this port.
MKeyViolations	Number of SMP packets that were received on the port and had an invalid M_Key since power-on or reset.
PKeyViolations	Number of packets that were received on the port and had an invalid P_Key since power-on or reset.
QKeyViolations	Number of packets that have been received on the port that have had an invalid Q_Key since power-on or reset.
GuidCap	Number of GUID entries supported in the GUIDInfo attribute for this port.
SubnetTimeout	Maximum expected subnet propagation delay.
RespTimeValue	Expected maximum time between the port reception of an SMP and the transmission of the associated response.

**Table 10-11** Ports (2) Tab Field Descriptions (continued)

Field	Description
LocalPhysErr	Threshold value. When the count of marginal link errors exceeds this threshold, the local link integrity error is detected.
OverrunErr	Overrun threshold value. When the count of buffer overruns exceeds the threshold, an excessive buffer overrun error occurs.

## Viewing Subnet Manager Multicast Details

To view Subnet Manager Agent multicast details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 6** Click the **Mcast** tab.  
[Table 10-12](#) describes the fields in this tab.

**Table 10-12** Mcast Tab Field Descriptions

Field	Description
NodeGuid	Global unique ID of the node.
TableBlockIndex	Index into the multicast block table. This index starts from 1 instead of 0.
TableBlock	List of 32 PortMask block elements. 16 bits starting at position 16*p of the port mask are associated with the particular LID. An incoming packet with this LID is forwarded to all ports for which the bit in the port mask is set to 1. An invalid LID is indicated with an all zero PortMask.

## Viewing Subnet Manager Agent Linear Forwarding Table Details

To view Subnet Manager Agent linear forwarding table details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 6** Click the **Linear Forwarding** tab.  
[Table 10-13](#) describes the fields in this tab.

**Table 10-13** *Linear Forwarding Tab Field Descriptions*

Field	Description
NodeGuid	Global unique ID of the node.
BlockIndex	Index into the linear forwarding table. This index starts from 1 instead of 0.
Block	Linear forwarding table block.

---

## Viewing the Subnet Manager Agent Partition Details

To view Subnet Manager Agent partition details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology** View.  
The Specify Cisco Devices dialog box opens.
- Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
- Step 3** Click **OK**.  
The InfiniBand Topology window appears.
- Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
- Step 5** Click **SMA**s.  
The Subnet Manager Agents window opens.
- Step 6** Click the **PK**ey tab.

Table 10-14 describes the fields in this tab.

**Table 10-14 PKey Tab Field Descriptions**

Field	Description
NodeGuid	Global unique ID of the node.
IbPort	Port number.
Index	PKEY table index.
TableVector	GUID assigned by the Subnet Manager on the subnet.

## Viewing the Subnet Manager Agent SLVL Map

To view Subnet Manager Agent SLVL details, follow these steps:

- 
- Step 1** From the InfiniBand menu, choose **Topology View**.  
The Specify Cisco Devices dialog box opens.
  - Step 2** (Optional) Check the check box in the Enabled column for any additional InfiniBand devices that you want to add to the Topology View display.
  - Step 3** Click **OK**.  
The InfiniBand Topology window appears.
  - Step 4** Double-click a server switch icon.  
The Internal InfiniBand Topology window opens.
  - Step 5** Click **SMAs**.  
The Subnet Manager Agents window opens.
  - Step 6** Click the **SLVL Map** tab.

Table 10-15 describes the fields in this tab.

**Table 10-15 SLVL Map Tab Field Descriptions**

Field	Description
NodeGuid	Global unique ID of the node.
InIbPort	Ingress port number.
OutIbPort	Egress port number.
Sl#toVI	SL# to VL mapping.