



## **Cable Installation**

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## Splitter (Breakout) Cables and Adapters

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All cables can be inserted or removed with the unit powered on.

To insert a cable, press the connector into the port receptacle until the connector is firmly seated. The LED indicator, corresponding to each data port, will light when the physical connection is established. When a logical connection is made, the relevant port LED will turn on.

To remove a cable, disengage the locks and slowly pull the connector away from the port receptacle. The LED indicator for that port will turn off when the cable is unseated.

For full cabling guidelines, ask your Mellanox representative for a copy of *Mellanox Cable Management Guidelines and FAQs Application Note*.

For more information about port LEDs, refer to [Port LEDs](#).

### **i Important**

Do not force the cable into the cage with more than 40 newtons / 9.0 pounds / 4kg force. Greater insertion force may cause damage to the cable or to the cage.

### **Cable Orientation**



### **Splitter (Breakout) Cables and Adapters**

### **⚠ Warning**

The breakout option is intended for users planning to run HDR100 using ConnectX-6 only.

The breakout cable is a unique capability, where a single physical quad-lane QSFP port is divided into 2 dual-lane ports. It maximizes flexibility by enabling end users to use a combination of dual-lane and quad-lane interfaces according to the specific requirements of their network. All system ports may be split into 2-lane ports. Splitting a port changes the notation of that port from x/y to x/y/z with “x/y” indicating the previous notation of the port prior to the split and “z” indicating the number of the resulting single-lane port (1,2). Each sub-physical port is then handled as an individual port. For example, splitting port 5 into 2 lanes gives the following new ports: 1/5/1 & 1/5/2. For the systems splitting options, see “QM8700/QM8790 Splitting Options” below.

### Sample Breakout Cable



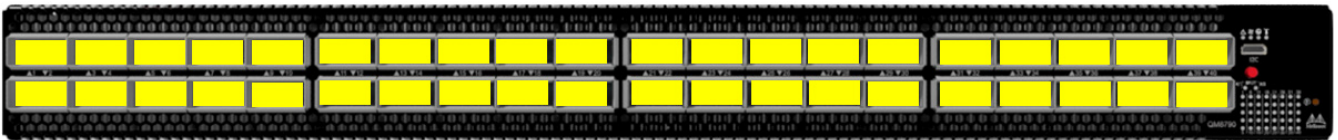
### Tip

- Splitting the interface deletes all configuration on that interface.
- This feature is available only for Quantum ASIC systems.

- In order to be able to use this feature, the system profile command must be activated with split-ready configuration (cross-reference to system profile command).

For more information on how to change the system's profile to allow Split-Ready configuration, how to change the module type to a split mode, and how to unsplit a split port, please refer to the "InfiniBand Switching" chapter in the latest *MLNX-OS® User Manual*.

## QM8700/QM8790 Splitting Options



**Split x2**

All QSFP56 ports are splittable. Each port can be split to 2xQSFP56 (HDR100) ports. There are no blocking requirements.

### Logical Port Numbering Schematic

Two profiles can be selected for the QM87x0 HDR switch systems. The first one defines the system as a pure 40-port HDR200 switch. The other profile permits any or all QSFP ports to be split into two 2X (HDR100) ports.

The following diagrams attempt to show how the logical ports map onto the physical QSFP ports, as viewed by the IB tools (e.g. ibnetdiscover):

#### Switch Profile: Non-Splittable (Suitable for L2/Spine Switches)

Physical Port #	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39
Logical 4X Port #	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39
Logical 4X Port #	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40
Physical Port #	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40



### Warning

The IB tools report 41 logical ports. Port 41 is an internal port used for the SHARP Aggregation Node when SHARP is enabled.

## Switch Profile: Splittable

Physical Port #	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39
Logical 2X Port #	1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	77
Logical 2X Port #	2	6	10	14	18	22	26	30	34	38	42	46	50	54	58	62	66	70	74	78
Logical 2X Port #	3	7	11	15	19	23	27	31	35	39	43	47	51	55	59	63	67	71	75	79
Logical 2X Port #	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
Physical Port #	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

### Warning

Note: MLNX-OS will use Ethernet port numbering for split QSFP ports. For example, 2X ports 25 and 26 above will be named '1/13/1' and '1/13/2'.

### Warning

Note: The IB tools will report 81 logical ports. Port 81 is an internal port used for the SHARP Aggregation Node when SHARP is enabled.

When the user wishes to keep a 4X port, rather than splitting it, from the IB tools view, the 4X port receives the odd port number, and the even-numbered port appears as disconnected. For example, if physical Port 13 is not split, in MLNX-OS it will be referred to as '13', and the following scheme will apply:

Physical Port #	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39
Logical 2X Port #	1	5	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	73	77
Logical 2X Port #	2	6	10	14	18	22	26	30	34	38	42	46	50	54	58	62	66	70	74	78
Logical 2X Port #	3	7	11	15	19	23	27	31	35	39	43	47	51	55	59	63	67	71	75	79
Logical 2X Port #	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
Physical Port #	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40

### Warning

MLNX-OS will refer to this 4X port as '1/13'.



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