



## Mellanox Skyway™ InfiniBand to Ethernet Gateway

### EDR/HDR InfiniBand to 100G/200G Ethernet Gateway for High Performance Compute and Storage Infrastructures

The need to analyze growing amounts of data, handle complex computational tasks, run simulations, and create intelligent data algorithms requires the ability to manage and carry out computational operations on the data as it is being transferred by the data center interconnect.

Mellanox InfiniBand solutions incorporate In-Network Computing technology that performs data algorithms within the network devices, delivering ten times higher performance, and enabling the era of “data-centric” data centers. By delivering the fastest data speed, extremely low latency, smart accelerations and the highest efficiency and resiliency, InfiniBand is the best choice for connecting the world’s top HPC and artificial intelligence (AI) supercomputers.

Many high-performance compute and storage infrastructures leverage the InfiniBand interconnect solution to connect both the compute and the storage portion together. However, in cases where the Storage elements reside on an external Ethernet network, or when outside connectivity to Ethernet is needed, a high-performance gateway between the InfiniBand and Ethernet networks can be used. By using Mellanox Skyway, one can ensure the lowest latency for the internal data center compute communications, and scale the external connectivity to Ethernet as needed via the gateway.

### Appliance-based InfiniBand to Ethernet Gateway

Mellanox Skyway GA100 is an appliance-based InfiniBand to Ethernet gateway, enabling Ethernet storage or other Ethernet based communications to access the InfiniBand datacenter. The solution, leveraging ConnectX’s hardware-based forwarding of IP packets and standard IP-routing protocols, supports 200Gb/s HDR connectivity today, and is future-ready to support 400Gb/s NDR and 800Gb/s XDR speeds.

Mellanox Skyway contains 8 ConnectX VPI dual-port Adapter cards which enable the hardware-based forwarding of IP packets from the InfiniBand to Ethernet, and vice versa. Mellanox Skyway also includes the Mellanox Gateway Operating System (MLNX-GW), which manages the appliance and handles the high availability and load balancing between the ConnectX cards, and between gateway appliances.



## HIGHLIGHTS

### BENEFITS

- Industry leading InfiniBand to Ethernet gateway
- Standard protocols
- High Availability and Load Balancing support
- Future-ready architecture

### KEY FEATURES

- Standard 2U appliance
- 1.6Tb/s solution
- 8-port HDR/HDR100/EDR
- 8-port 200/100Gb/s Ethernet

Network-wide configuration handles Ethernet Link Aggregation (LAG) and implements high availability and load balancing. The solution supports a maximum bandwidth of 1.6Tb/s, utilizing 16 ports with each exceeding 100Gb/s traffic. Connectivity-wise, the InfiniBand ports can be connected to the InfiniBand network via HDR/HDR100 or EDR; and the Ethernet ports using 200Gb/s, 100Gb/s Ethernet or lower speeds.

### MLNX-GW Management

Mellanox Gateway operating system, MLNX-GW, is the management software that handles the Mellanox Skyway. It controls the ConnectX adapters, as well as the high availability and load balancing between cards and between gateway appliances.

### UFM® Management

Mellanox Skyway is also managed by the external Unified Fabric Manager (UFM) software, which may reside either in the UFM appliance or on any host in the InfiniBand cluster. The UFM enables data center operators to efficiently provision, monitor and operate the state-of-the-art InfiniBand data center fabric.

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## Specifications

- 2U rackmount
  - 8 ConnectX-6 VPI (MCX653106A-HCAT) adapters
  - Dual Intel Xeon scalable processors
  - Power:
    - 80 Plus platinum 1+1 redundant power supply
    - 1000 W @ 100 ~ 127 V
    - 2000 W @ 200 ~ 240 V
  - Environmental
    - Operating temperature: 0 to 35 °C
    - Non-operating temperature: -20 to 60 °C
    - Operating Relative Humidity: 10~85% @ 40 °C (non-condensing)
    - Non-operating Relative Humidity: 10~95% @ 40 °C (non-condensing)
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Table 1 - Part Numbers and Descriptions

OPN	Description	Dimension
MGA100-HS2	Mellanox Skyway IB to Ethernet Gateway Appliance, 8x IB and 8x Ethernet ports, 2U server, 8x ConnectX-6 VPI dual-port HDR/200GbE adapters, 2 Power Supplies (AC)	2U server