

QUANTUM MLS400 MAESTRO LIGHTSPEED



Check Point Quantum MLS400 Lightspeed Next Generation Firewalls and Quantum Maestro Hyperscale Network Security enables enterprises to deploy security that performs at the speed of business to accelerate large file transfers, provides low latency for high frequency applications, and dynamically scales security on-demand as their business grows.



Secure Hi-speed Data Transfers

400 Gbps line-rate in a single firewall



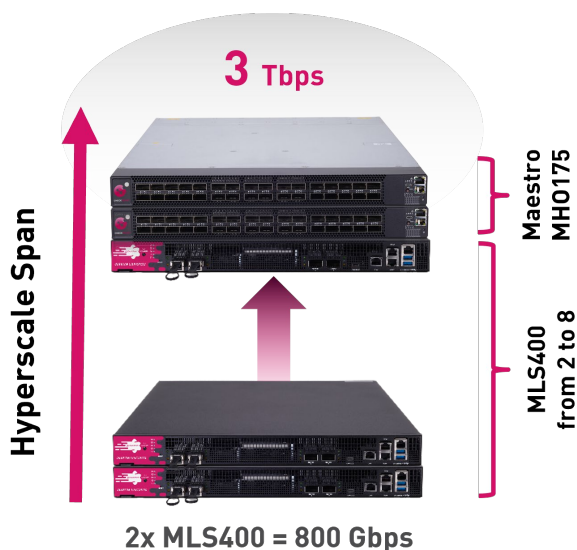
Protect Hi-frequency Trading Apps

Sub 3µSec ultra low latency



Scalable Throughput for Hyper-growth

Scale up to 3 Tbps of firewall throughput



QUANTUM SECURITY PLATFORM

MLS400 LIGHTSPEED FIREWALL



- | | |
|---|--------------------------------------|
| 1. RJ45 console port | 5. Lights-out Management port |
| 2. ConnectX NIC # 1: 2x 100G QSFP28 ports | 6. 2x USB 3.0 ports |
| 3. ConnectX NIC # 2: 2x 100G QSFP28 ports | 7. Redundant hot-swap power supplies |
| 4. USB Type-C console port | |

NVIDIA ConnectX

Quantum Lightspeed firewalls are equipped with one or more NVIDIA ConnectX network interface cards (NIC), each with 2x 100G QSFP28 ports. NVIDIA ConnectX NICs offload network processing from the host CPUs, freeing them to manage security. This provides substantial performance gains for trusted traffic that has long sessions. In addition, firewall latency is significantly reduced to a low 3µSec at nearly line rate ensuring access to data and higher throughput with minimal delay.

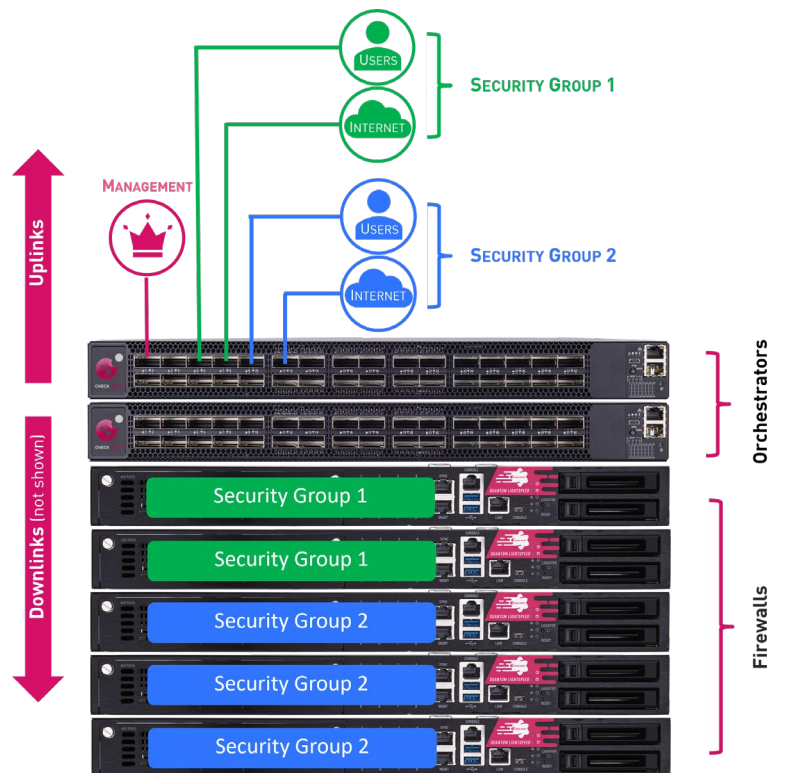
Maestro Hyperscale Lightspeed

Check Point Maestro brings scale, agility, and elasticity of the cloud on premise with efficient N+1 clustering based on Check Point HyperSync clustering technology, maximizing the capabilities of Lightspeed firewalls. Create up to 8 Security Groups, with up to 31 firewalls in a group sharing the same security feature set, policy and assets they protect.

When a gateway is added to the system, it gets all the configurations, the policy, even the software version, updated and aligned with the existing deployment, and is sharing the load within 6 minutes.

All-inclusive, Resilient Security Solutions

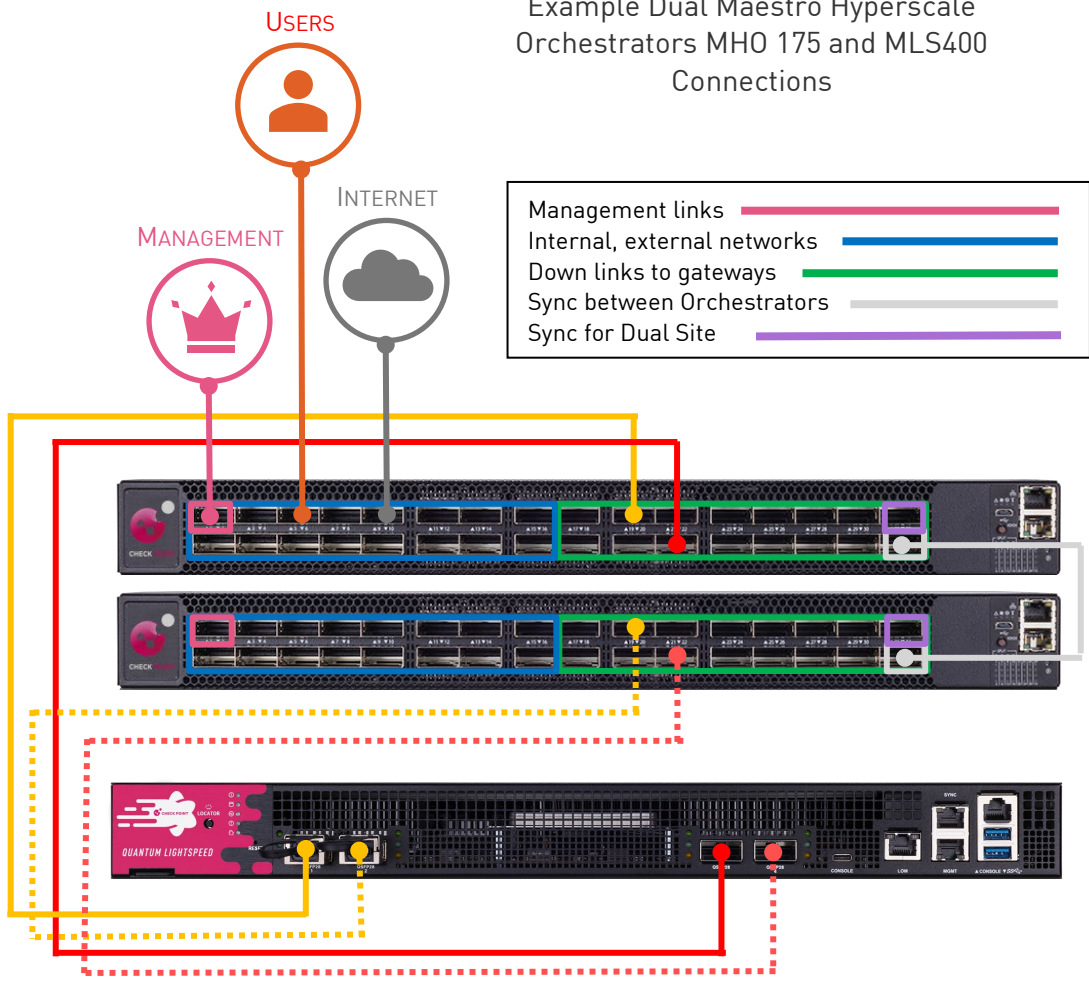
Check Point MLS400 firewalls include the Check Point stateful inspection firewall and are also available in all-inclusive security packages such as NGFW (Application Control with IPS), NGTP (NGFW with URL filtering, antivirus, and anti-bot) or SandBlast (NGTP with sandboxing and Threat Extraction, a Content Disarm & Reconstruction technology). In addition, the MLS400 includes two SSD drives in a RAID1 array and hot-swappable redundant power supplies, ensuring continuity when one unit fails.



Maestro with Lightspeed Firewalls

SCALABLE, RESILIENT FIREWALL CLUSTERS WITH MAESTRO

Example Dual Maestro Hyperscale Orchestrators MHO 175 and MLS400 Connections



The MLS400 Maestro package includes the Hyperscale Orchestrator 175 model with 32x 100GbE and a total fabric capacity of 3.2 Tbps. For redundancy, deploy two Orchestrators of the same model together.

MLS400 firewalls connect to the Orchestrator via 100 GbE Direct Attached Copper (DAC) cables. The Orchestrator's 400-nanosecond port-to-port latency deliver predictable wire speed performance with no packet loss for any packet size.

Note: The firewall's ConnectX dual port pairs are split across the dual Orchestrators (as shown by the solid and dotted lines of the same color). Odd number ports on the firewalls connect to orchestrator 1, even ports connect to orchestrator 2.

MHO 175

Fabric Capacity	3.2 Tbps
Latency	400 nsec port to port
Ports	32x 100GbE or 128x 10GbE ports using QSFP28 to 4x SFP+ splitter cables
Enclosure	1RU
Standard Dimensions (W x D x H)	16.84' 'x 27' x 1.72'', 427.83 x 686 x 43.8mm
Weight	24.5lb (11.1kg)
Power Input	100-127 VAC, 200-240VAC, 50-60Hz
Single Power Supply Rating	150W
Dual Power Supplies	Included
Airflow	Front to Back
Safety/Emissions/Environment	UL60950-1, CB IEC60950-1, CE LVD EN60950-1 / FCC, IC, CE, VCCI, RCM/C-Tick / RoHS, WEEE, REACH, *ISO14001

* Factory certificate

LIGHTSPEED SECURITY USE CASES

Any Enterprise with a Data Center, Hybrid Cloud or Distributed Data Centers

Secure High-Speed Transfers of Large Data Sets: Networks converge at the data center core and in high-speed interconnects between data centers and the hybrid cloud. Businesses routinely transfer large data sets across these networks for data analysis, disaster recovery planning and workload migration.

Quantum Lightspeed 100 gigabit network interfaces enables enterprises to accelerate these transfers of large data sets across data center core and data center interconnects — supporting up to 200 and 400 Gbps of single firewall throughput in the MLS200 and MLS400 respectively. Add redundancy and scale even higher using the unique Maestro Active-Active load sharing solution where multiple Quantum Lightspeed firewalls scale throughput nearly linearly with each additional firewall added to the cluster.

Banking and Financial Services

Secure Financial Transactions with Micro-second Latency: In the world of finance where trading and cryptocurrency algorithms generate millions of transactions, a fraction of a second makes a huge difference. In some reports 80% of trading on the stock market is done via algorithmic-based automated programs that execute software programs to buy, sell or hold assets.

High frequency trading firms need network security technology that does not introduce latency and satisfies regulatory and compliance security mandates. The Quantum Lightspeed NGFW series enables banking, insurance and investment firms to securely increase transaction capacity for high frequency applications by deploying network security that performs at the speed of business — with low 3 μ Sec latency.

The 100 gigabit QSFP28 network interfaces in the Quantum Lightspeed firewalls comfortably handle initial transfers of large data sets at the start of the trading day. They also support up to 100G elephant flows. These are characterized by a large, continuous flow that stays open and occupies a disproportionate share of the total bandwidth of a network link for a long duration.

Any Enterprise Requiring Investment Security

Support Hyper-growth with Scalable Security Throughput: Some businesses such as ecommerce see wide and seasonal requirements in online traffic. In 2020 all businesses saw a boost in traffic as workers moved to a work from home model. Other scenarios requiring scalable security are business mergers, data center consolidation and migrations to cloud, hybrid cloud and hybrid data center models.

The Quantum MLS200 and MLS400 Lightspeed firewalls support up to 200 and 400 Gbps of firewall throughput in a single firewall. When used in the unique Maestro Hyperscale Network Security solution, enterprises can scale to up to 3 Tbps of firewall throughput. Each additional firewall added to the Maestro Active-Active load sharing cluster, scales throughput nearly linearly. Furthermore customers can group multiple firewalls into Security Groups and move firewalls manually or dynamically as needed from one group to another as needed to meet changes in traffic demands. Security Groups are logical groups of appliances where each Security Group has dedicated internal and external interfaces and may have a different configuration set and policy. The Maestro Orchestrator MH0175 has a total fabric capacity of 3.2 Tbps with 400 nsec port to port latency and supports up to 32x 100GbE or 128x 10GbE network interfaces.

Telco Networks

Support Hyper-growth with Scalable Security Throughput: The demand for improved speeds, low latency, and connecting a larger number of devices has paved the path to 5G, fifth generation digital cellular networks. Telco mobile operator 5G networks are also expected to be widely used for private networks with applications in industrial IoT, enterprise networking, and critical communications. The network topology will be sliced with logical networks riding on top of the core infrastructure and previously unimaginable services will be created. These use cases require the ability for mobile operators to scale security functions with elasticity using Quantum Maestro in order to guarantee service continuity and availability.

SPECIFICATIONS

Performance

System Performance

Firewall 1518B UDP (Gbps)	400
Firewall latency (avg)	3µSec
IPS (Gbps)	145.3
NGFW (Gbps) ¹	94.5
Threat Prevention (Gbps) ²	33
VPN AES-128 (Gbps)	48.2
Connections/sec	814,000
Concurrent connections	48M

1: Includes Firewall, Application Control and IPS with logging enabled. 2: Includes Firewall, Application Control, URL Filtering, IPS, Antivirus, Anti-Bot and SandBlast Zero-Day Protection with logging enabled.

Additional Features

Highlights

- 2x CPUs, 36 physical cores, 72 virtual cores
- 2x 960 GB SSD storage
- 2x AC power supplies
- 192 GB memory
- Lights-Out-Management
- Virtual Systems (maximum): 250

Content Security

First Time Prevention Capabilities

- CPU-level, OS-level and static file analysis
- File disarm and reconstruction via Threat Extraction
- Average emulation time for unknown files that require full sandbox evaluation is under 100 seconds
- Maximal file size for Emulation is 100 MB
- Emulation OS Support: Windows XP, 7, 8.1, 10

Applications

- Use 10,000+ pre-defined or customize your own applications
- Accept, prevent, schedule, and apply traffic-shaping

Data Loss Prevention

- Classify 700+ pre-defined data types
- End user and data owner incident handling

Dynamic User-based Policy

- Integrates with Microsoft AD, LDAP, RADIUS, Cisco pxGrid, Terminal Servers and with 3rd parties via a Web API
- Enforce consistent policy for local and remote users on Windows, macOS, Linux, Android and Apple iOS platforms

Network

Network Connectivity

- Total physical and virtual (VLAN) interfaces per appliance: 1024/4096 (single gateway/with virtual systems)
- 802.3ad passive and active link aggregation
- Layer 2 (transparent) and Layer 3 (routing) mode

High Availability

- Session failover for routing change, device and link failure
- HyperSync

IPv6

- NAT66, NAT64, NAT46
- CoreXL, SecureXL

Unicast and Multicast Routing (see SK98226)

- OSPFv2 and v3, BGP, RIP
- Static routes, Multicast routes
- Policy-based routing
- PIM-SM, PIM-SSM, PIM-DM, IGMP v2, and v3

Physical

Power Requirements

- Single Power Supply rating: 850W
- AC power input: 100 to 240V (47-63Hz)
- Power consumption avg/max: 356W/696W
- Maximum thermal output: 2373 BTU/hr.

Dimensions

- Enclosure: 1RU
- Dimensions (WxDxH): 17.4 x 24 x 1.73 in. (442 x 610 x 44mm)
- Weight: 28.7 lbs. (13 kg)

Environmental Conditions

- Operating: 0° to 40°C, humidity 5 to 95%
- Storage: -20° to 70°C, humidity 5 to 95%

Certifications

- Safety: UL, CB, CE, TUV GS
- Emissions: FCC, CE, VCCI, RCM/C-Tick
- Environmental: RoHS, WEEE, REACH¹, ISO14001¹

¹. factory certificate

ORDERING QUANTUM MLS400

DEFAULT CONFIGURATION ¹	SKU
Maestro Solution with 2x MLS400 firewalls with one MHO-175 Orchestrator. Each firewall includes 4x 100G QSFP28 ConnectX ports, 2x 1GbE copper ports on-board, 192 GB RAM, 2x AC PSU, 2x 960GB SSD, LOM, telescopic rails, plus 4x 100G DAC cables (3m, 3m). MHO-175 includes 1x 100 G DAC (3m).	CPAP-SG-MLS402-MHS
Maestro Solution with 3x MLS400 firewalls with one MHO-175 Orchestrator. Each firewall includes 4x 100G QSFP28 ConnectX ports, 2x 1GbE copper ports on-board, 192 GB RAM, 2x AC PSU, 2x 960GB SSD, LOM, telescopic rails, plus 4x 100G DAC cables (3m, 3m). MHO-175 includes 1x 100 G DAC (3m).	CPAP-SG-MLS403-MHS
MLS400 Lightspeed firewall includes 4x 100G QSFP28 ConnectX ports, 2x 1GbE copper ports on-board, 192 GB RAM, 2x 960GB SSD, 2x AC PSU, Lights-out Management, telescopic rails, plus 4x 100G DAC cables (3m, 3m).	CPAP-SG-MLS400-MHS

The default package includes 2 trial virtual systems (VS). These are not additive or counted when adding additional VS licenses.

¹ Renewal NGFW, NGTP and SandBlast (SNBT) packages are available in the online product catalog.

MLS400 Accessories

MLS400 SPARES AND MISCELLANEOUS	SKU
Replacement AC power supply for 16600HS, 26000, 28000, 28600HS, MLS400 Security Gateways	CPAC-PSU-AC-26000/28000/MLS400
DC power supply for 16000, 26000, 28000, MLS400 Security Gateways	CPAC-PSU-DC-16000/26000/28000/MLS400
Dual DC power supplies for 16000, 26000, 28000, MLS400 Security Gateways	CPAC-PSU-DC-Dual16000/26000/28000/MLS400
Lights Out Management module	CPAC-NLOM-C
Telescopic slide rails for 28600 and MLS400 Security Appliances (24" - 36")	CPAC-RAILS-EXT-L

Maestro Accessories

MAESTRO HYPERSCALE ORCHESTRATORS	SKU
Maestro Hyperscale Orchestrator 175 with 32x 100 GbE ports, plus 1x 100 G DAC (3m).	CPAP-MHO-175
MAESTRO HYPERSCALE ORCHESTRATORS ACCESSORIES	SKU
Fan replacement for Maestro Hyperscale Orchestrator 175	CPAC-FAN-MHO175
AC power supply unit replacement for MHO 140 and 175, with front to back airflow	CPAC-PSU-AC-MHO140/175
Rail kit for Maestro Hyperscale Orchestrator 175	CPAC-RAIL-MHO175

MHO-175 TRANSCEIVERS	SKU
100G CWDM4, LC connector, 2Km/ single mode fiber	CPAC-TR-100CWDM4
100G SWDM4, LC connector, 75m/OM3 fiber	CPAC-TR-100SWDM4
QSFP28 transceiver module for 100G fiber ports - short range (100GBase-SR4)	CPAC-TR-100SR
QSFP28 transceiver module for 100G fiber ports - long range (100GBase-LR4)	CPAC-TR-100LR
QSFP+ transceiver for 40G fiber Ports - short range (40GBase-SR) OM3 fiber 100m, OM4 fiber 150m	CPAC-TR-40SR-QSFP-100m
QSFP+ transceiver module for 40G fiber ports - short range (40GBase-SR)	CPAC-TR-40SR-QSFP-300m
QSFP+ transceiver module for 40G fiber ports - long range (40GBase-LR)	CPAC-TR-40LR-QSFP-10Km
Bi-directional QSFP transceiver for 40G fiber Ports - short range (40GBase-SR-BD)	CPAC-TR-40SR-QSFP-BIDI
QSFP+ splitter for 40G fiber ports for Maestro (MHO140 and MHO175) - 3 meters	CPAC-TR-40SPLIT-QSFP-3M *
QSFP+ splitter for 40G fiber ports for Maestro (MHO140 and MHO175) - 6 meters	CPAC-TR-40SPLIT-QSFP-6M *
SFP+ transceiver module for 10G fiber ports with QSFP28 adaptor - short range (10GBase-SR)	CPAC-TR-25SR-ADP
SFP+ transceiver module for 10G fiber ports with QSFP28 adaptor - long range (10GBase-LR)	CPAC-TR-25LR-ADP

* It is recommended to use the CPAC-TR-40SR-QSFP-100m when using the splitters CPAC-TR-40SPLIT-QSFP-3M or CPAC-TR-40SPLIT-QSFP-6M

ORDERING QUANTUM MLS400 (continued)

DIRECT ATTACH COPPER (DAC) CABLES	SKU
100G QSFP28 Direct Attach Copper (DAC) cable, 3 meters	CPAC-DAC-100G-3M
40G QSFP+ Direct Attach Copper (DAC) cable, 3 meters	CPAC-DAC-40G-3M
Copper Splitter; 40G to 4x10G Direct Attach Copper (DAC) cable, 3 meters	CPAC-DAC-40/10G-3M

All-inclusive Security

	FW	NGFW	NGTP	SNBT (SandBlast)
	Firewall	Basic access control plus IPS	Prevent known threats	Prevent known and zero-day attacks
Firewall	✓	✓	✓	✓
VPN (IPsec)	✓	✓	✓	✓
Mobile Access	✓	✓	✓	✓
Identity Awareness	✓	✓	✓	✓
Content Awareness	✓	✓	✓	✓
Application Control		✓	✓	✓
IPS		✓	✓	✓
URL Filtering			✓	✓
Anti-Bot			✓	✓
Anti-Virus			✓	✓
Anti-Spam			✓	✓
DNS Security			✓	✓
SandBlast Threat Emulation				✓
SandBlast Threat Extraction				✓
Zero Phishing				✓

Each gateway requires a license for the enabled security feature. Security subscription extensions; NGFW, NGTP and SNBT are available for subsequent years.