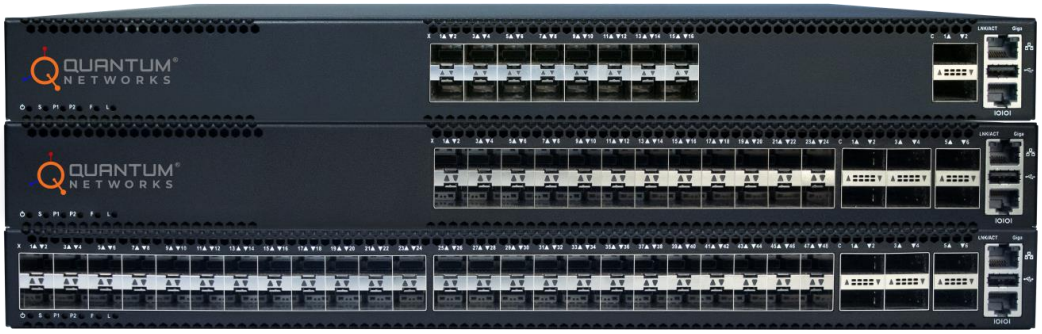
CORE SWITCHES



PRODUCT OVERVIEW

- The Quantum core switch series provides robust Layer 2 switching and advanced Layer 3 routing features to meet the mission-critical needs of data centre, enterprise and healthcare and education institution networks.
- Quantum Networks switches can be managed through Rudder controllers (cloud-hosted or on-prem), device GUI/CLI and SNMP.
- The core switches support multiple configurations – 16 to 48 ports of 10G/1G. In addition, they support 2 to 6 ports of 100G/40G uplinks.
- The switches support hot-swappable, redundant power supplies and fans; which are essential for fault tolerant environments like Data centre Top-of-Rack, Enterprise Core/Distribution and Cloud service provider network deployments.
- On-device management ports include a dedicated console port, an out-of-band management port and a USB flash drive port for storage.
- Quantum core switches offer high throughput, resiliency, and scalability, backed by a three-year limited manufacturer's warranty from day one.

HIGHLIGHTS

- **Simplified network management**
  Quantum Core Series Switches support redundant hot-swappable power supplies, fan redundancy, a choice of L2 and L3 multi-pathing designs and application-level performance monitoring and virtualization.
- **Centralized network observability**
  Dashboards and reporting logs for diverse network occurrences.
- **Reliable performance**
  Provides stability, scalability, and seamless management of varied workloads.
  - The Core switch supports up to 2160 Gbps of wire-speed switching capacity and up to 1607 Mpps of forwarding capacity, allowing it to handle a wide range of workloads.
  - For better network security, the switch supports multiple authentication methods, including 802.1x and MAC authentication. The switch provides identity-driven security and controls via granular Access Control Lists (ACLs).

KEY SPECIFICATION

Communication Ports	Specification					
Model	**1G/10G Fiber Downlinks**	**1G Fiber Downlinks**	**1G Combo Downlinks**	**100G/40G Fiber Uplinks**	**1G/10G Fiber Uplinks**	**100G/40G Fiber Dedicated stacking ports**
QN-CS-4810GF	48	NA	NA	4+2**	NA	2**
QN-CS-2410GF	24	NA	NA	4+2**	NA	2**
QN-CS-1610GF	16	NA	NA	2**	NA	2**
QN-CS-241GF	NA	16	8	NA	4	NA

Management Ports	QN-CS-4810GF	QN-CS-2410GF	QN-CS-1610GF	QN-CS-241GF
Management (OOB)	1	1	1	1
Console (RJ45)	1	1	1	1
Storage (USB Type A)	1	1	1	1

Capacity	QN-CS-4810GF	QN-CS-2410GF	QN-CS-1610GF	QN-CS-241GF
Switching capacity	2160 Gbps	1680 Gbps	720 Gbps	128 Gbps
Forwarding rate	1607 Mpps	1250 Mpps	536 Mpps	95.23 Mpps
MAC address table	32k	32k	32k	16k
Active VLAN support	4096	4096	4096	4096
IPv4 route	29700	29700	29700	29700
IPv6 route	7400	7400	7400	7400
Maximum jumbo frame size	9,216 bytes	9,216 bytes	9,216 bytes	9,216 bytes
Link Aggregation groups	Max 64	Max 64	Max 64	Max 64
Link aggregation ports per group	Max 8	Max 8	Max 8	Max 8
Qos Priority queues	8 per port	8 per port	8 per port	8 per port
ACL	3000	3000	3000	3000

Quality of Service	
Port and VLAN based QoS (802.1P)	Single Rate Three Color Marker (srTCM)
QoS based on IP/MAC/Port	Two Rate Three Color Marker (trTCM)
Traffic shaping	Strict priority support
DiffServ	Weighted Round Robin (WRR) support
Class-map & Policy-map	Queue assignment based on DSCP & CoS
QoS aggregate-policer	Traffic classification based on COS/DSCP
QoS Mapping on Queue	

Layer 3	
DHCP relay	ARP, Gratuitous ARP
DHCP server	IPv6 ND
DHCPv6 client	IPv6 Interface
IP source guard	IPv6 MTU path discovery
ISATAP	Route-only support

** Dedicated stacking ports can be configured as uplink ports.

IPv4Interface	VRRP
MLD snooping (v1, v2)	IGMP Proxy
Route-map	PIM-SM, SSM
Route redistribution	IP source guard
Layer 3 Routing	
Inter-VLAN routing	IPv4 static routing
RIPv2	IPv4 host routing
OSPFv2/v3	IPv6 static routing, IPv6 host routing
IPv6 Unicast routing	IPv4 and IPv6 Dual stack
Policy based routing	Border Gateway Protocol (BGP)
Layer 2	
STP, RSTP, MSTP	Port mirroring (Port, ACL, VLAN Based)
VLAN (MAC, Protocol, Port based)	BPDU filtering
Auto MDI/MDIX	Ping/Trace route/ICMPv6
BPDU guard, Root guard	Storm control (Broadcast, Multicast, Unicast)
IGMP/IGMP snooping v1/v2/v3*	GVRP
LLDP/LLDP MED	Loopback detection
802.1Q VLAN Tagging	802.1x(Guest VLAN)
Private VLAN	Dynamic VLAN
High Availability	
Stacking (Up-to 8 members)	Ring Redundancy Protocol (RRP)
Equal-cost multi path (ECMP)	Ethernet Ring Protection Switching (ERPS)
Storm control (Broadcast, Multicast, Unicast)	Virtual Router Redundancy Protocol (VRRP)
Security	
ACLs	Downloadable ACL
DHCP snooping	Dynamic ACL
802.1x authentication	Secure copy (SCP)
MAC authentication	DoS protection
Radius/Tacacs/Tacacs+	Local username/password
AAA, SSH	Protected ports
ARP inspection (DAI & SAI)	RA guard
802.1x authentication (Single Host, Multi Host, Multi session)	
Open-Source Support	
SONiC operating system	
Management	
Local GUI	NTP authentication
Industrial standard CLI	SPAN/RSPAN
Telnet support	SSHv1/v2
Storage & File management with USB	Firmware auto install support
TFTP support	Syslog server

SNMP v1/v2c/v3	RMON (All 4 Groups 1,2,3,9)
SNTP	sFlow
Management: RUDDER (Controller)/Standalone	REST API
NetConf/RestConf	Manual/schedule reboot
Standard Compliance	
IEEE Standards Compliance	
802.1AB LLDP/ LLDP-MED	802.3ae 10 Gigabit Ethernet
802.1D MAC bridging	802.3ad link aggregation (Dynamic and Static)
802.1p Mapping to priority queue	802.3u 100Base-TX
802.1s Multiple Spanning Tree (MST)	802.3x flow control
802.1w Rapid Reconfiguration of Spanning Tree (RSTP)	802.3z 1000Base-SX/LX
802.1x Port-based Network Access Control (PNAC)	802.3 MAU MIB (RFC 2239)
802.3 Carrier Sense Multiple Access/Collision Detection (CSMA/CD)	802.1Q VLAN tagging
802.3az Energy Efficient Ethernet	
Monitoring and Troubleshooting	
Errdisable detection and recovery	CPU utilization
Device temp/PSU/FAN/status display & alarm	User operation logs
Virtual cable test	Management logs, alarms
ICMPv4/v6	DDM (Digital Diagnostic Monitoring)
Traceroute	UDLD (Unidirectional Link Detection)
Environment	
Operating temperature	-5°C (23°F) to 65°C (149°F)
Humidity	5 % to 95 % RH, non-condensing
Voltage input	100-240V. Frequency: 50/60Hz
Power consumption	≤100W

Physical	QN-CS-4810GF	QN-CS-2410GF	QN-CS-1610GF	QN-CS-241GF
Net Weight	8.90 Kg	8.69 Kg	8.53 Kg	3.86 Kg
Dimensions (H x W x D)	44mm x 440mm x 470mm	44mm x 440mm x 470mm	44mm x 440mm x 470mm	44mm x440mm X 245mm
Fan	2+1, Hot pluggable	2+1, Hot pluggable	2+1, Hot pluggable	In-built
MTBF	1,00,000 hrs	1,00,000 hrs	1,00,000 hrs	1,00,000 hrs

CERTIFICATION & COMPLIANCES*					
Standards	**Certifications**	**QN-CS-4810GF**	**QN-CS-2410GF**	**QN-CS-1610GF**	**QN-CS-241GF**
Environmental Compliances	CE, RoHS	●	●	●	●
Regulatory (USA)	FCC	●	●	●	●
Regulatory (IN)	BIS	●	●	●	●
	IEC-62368				●
	MTCTE (ER) (EMI/EMC (IEC / EN-61000* & CISPR 32)) (Safety (IS-13252 & IEC-60950)) (Technical (IPv4 & IPv6))	●	●	●	●
	IPv6 Ready	●	●	●	●
	EN 55022:2010, EN 55024:2010				●
	EN 60825				●

*For more information on certifications apply to each model, please visit www.qntmnet.com/certification/ or email us at sales@qntmnet.com.

ORDERING INFORMATION

Part Number	Description
QN-CS-4810GF	Core Switch, 48×10G SFP+ ports, 6×100G QSFP28 uplink/stacking ports with two hot-swappable power supplies, includes 3-year online activation warranty.
QN-CS-2410GF	Core Switch, 24×10G SFP+ ports, 6×100G QSFP28 uplink/stacking ports with two hot-swappable power supplies, includes 3-year online activation warranty.
QN-CS-1610GF	Core Switch, 16×10G SFP+ ports, 2×100G QSFP28 uplink/stacking ports with two hot-swappable power supplies, includes 3-year online activation warranty.
QN-CS-241GF	Core Switch, 16x1G SFP Ports + 8×1G SFP/RJ45 combo ports +4x10G SFPP uplink/stacking ports with two hot-swappable AC+AC power supplies, USB, OOB, includes 3-year online activation warranty.