## **CORE SWITCHES**





#### **PRODUCT OVERVIEW**

- o 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.
- o 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.
- o 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.
- o On-device management ports include a dedicated console port, an out-of-band management port and a USB flash drive port for storage.
- o Quantum core switches offer high throughput, resiliency, and scalability, backed by a three-year limited manufacturer's warranty from day one.

## **HIGHLIGHTS**

### o 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.
- o 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 1G Fiber Fiber Downlinks Downlin		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-48	310GF (	QN-CS-2410GF	QN-CS-16	10GF	QN-CS-241GF	
Management (OOB)	1	1		1		1	
Console (RJ45)	1			1		1	
Storage (USB Type A)	1	1		1		1	
Capacity	QN-CS-48	10 <b>G</b> F	QN-CS-2410GF	QN-CS-161	0 <b>GF</b>	QN-CS-241GF	
Switching capacity	2160 Gbps		680 Gbps	720 Gbps		128 Gbps	
Forwarding rate	1607 Mpps		250 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			8000	
IPv6 route	7400		7400 7400			2000	
Maximum jumbo frame size	9,216 bytes		9,216 bytes 9,216 bytes			9,216 bytes	
Link Aggregation groups	Max 64		1ax 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	3 per port	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 Thre	e 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				

<sup>\*\*</sup> 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, Mu	ılti session)		
Open-Source Support			
SONiC operating system			
Management			
Local GUI	NetConf/RestConf		
Industrial standard CLI	NTP authentication		
Telnet support	SPAN/RSPAN		
Storage & File management with USB	SSHv1/v2		
TFTP support	Firmware auto install support		



Dual Flash Images OS		Syslog server				
SNMP v1/v2c/v3			RMON (All 4 Groups 1,2,3,9)			
SNTP			sFlow			
Management: RUDDER (Controller)/Standalone			REST API			
Manual/schedul	le reboot					
Standard Compliance						
IEEE Standard	ls Compliance					
802.1AB LLDP/	LLDP-MED		802.3ae 10 Gigabit Ethernet			
802.1D MAC bri	dging		802.3ad link aggregation (Dynamic and Static)			
802.1p Mapping	to priority queue		802.3u 100Ba	se-TX		
802.1s Multiple 9	Spanning Tree (MST)		802.3x flow co	ontrol		
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 an	d Troubleshooting					
Errdisable detection and recovery C			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	5-2410GF	QN-CS-1610GF	QN-CS-241GF	
Net Weight	8.90 Kg	8.69 K	g	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				

<sup>\*</sup>For more information on certifications apply to each model, please visit <a href="www.qntmnet.com/certification/">www.qntmnet.com/certification/</a> or email us at <a href="mailto:sales@qntmnet.com">sales@qntmnet.com</a>.

## **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.			
	Core Switch, 16x1G SFP Ports + 8×1G SFP/RJ45 combo ports +4x10G SFPP			
QN-CS-241GF	uplink/stacking ports with two hot-swappable AC+AC power supplies, USB, OOB, includes			
	3-year online activation warranty.			