

QCT Network Operating System (QNOS)



Best-In-Class Networking OS for Cloud

- VxLAN
- Multi-Chassis Link Aggregation (MLAG)
- OSPF, BGP4 with ECMP
- Network Automation
- OpenFlow

QCT Network Operating System (QNOS) is the modern software platform for data centers and cloud networks which is based on Broadcom's ICOS platform for tradition L2/L3 features as well as software-defined network (SDN) applications. Inherited from ICOS, QNOS is a proven protocol stack solution that can run on several control plane processors including PowerPC, x86, and ARM with robust operating performance and flexible deployment. For the fundamentals of modern data center networks such as network automation, virtualization, high availability and SDN, QNOS provides a comprehensive feature set to cover all types of applications.

Automation

With the rapid adoption of cloud computing and the proliferation of big data and parallel calculations, the need for data center network devices is growing exponentially, making network automation a critical factor. Supporting auto installation, RESFful, Ansible and PSME (Pooled System Management Engine), QNOS facilitates easy deployment to build-up a mass data center with Infrastructure-as-a-Service (IaaS).

Virtualization

Network virtualization is an important topic for today's data centers. QNOS offers VxLAN features on top of its hardware-based platform to support virtual machine mobility. Not limited by 4K VLANs, VxLAN enables network scale out across L3 subnets and can support up to 16.7M possible virtual networks.

High Availability

For data center network robust operations, QNOS eliminates single-point of failure with the following features:

- Spanning Tree with Guarding Features
- Up to 64 Groups of LACP with per Group 32 Member Ports
- Multi-chassis Link Aggregation (MLAG)
- Up to 48 paths ECMP routing for load balancing and redundancy
- Virtual Router Redundancy Protocol (VRRP)

Software Defined Network (SDN)

SDN has emerged as a new approach to support open, vendor-agnostic, and programmable networks. QNOS is equipped with OpenFlow v1.3 features to fulfill the needs of modern data center applications.

About QCT

Quanta Cloud Technology (QCT) is a global data center solution provider. We combine the efficiency of hyperscale hardware with infrastructure software from a diversity of industry leaders to solve next-generation data center design and operation challenges. QCT serves cloud service providers, telecoms and enterprises running public, hybrid and private clouds.

Product lines include hyper-converged and software-defined data center solutions as well as servers, storage, switches, integrated racks with a diverse ecosystem of hardware component and software partners. QCT designs, manufactures, integrates and services cutting edge offerings via its own global network. The parent of QCT is Quanta Computer, Inc., a Fortune Global 500 corporation.

QCT Network Operating System (QNOS)

Layer 2 Features

- **Switching Mode:** Store-and-Forward
- **Spanning Tree:**
 - 802.1w
 - 802.1s
 - Auto Edge
- **VLAN :**
 - IEEE 802.1Q Tagged Base
 - Port-Based
 - QinQ (802.1ad)
- **Storm Control:**
 - Broadcast
 - Unknown Multicast
 - DLF (Unknown Unicast)
- **IGMP Snooping:**
 - v1/v2/v3
 - v1/v2 Querier
 - Immediate Leave
- **MLD Snooping v1/v2**
- **Link Aggregation:**
 - 802.3ad with LACP
 - Static Trunk
 - Unicast/Multicast Traffic Balance over Trunking Port
 - LACP Falback
- **Link State Tracking**
- **Port Backup**
- **Loopback Detection**
- **Private VLAN**

QoS Features

- **Scheduling for priority queue:**
 - WRR, Strict, Hybrid
- **COS:** 802.1p, IP TOS precedence, DSCP
- **DiffServ**
- **iSCSI optimization**

Security Features

- **Static and dynamic port security (MAC-based)**
- **802.1x (MD5, MS-CHAPv2):**
 - Port-based
 - MAC-based
 - Auto VLAN assignment
 - Guest VLAN
 - Unauthenticated VLAN
- **Access Control List:** L2/L3/L4
- **IPv6 ACL:** L3/L4
- **RADIUS:** Authentication, Authorization, Accounting
- **TACACS+:** Authentication
- **SSH 1.5/V2.0**
- **User name and password:**
 - Local Authentication
 - Remote Authentication via RADIUS/TACACS+, AAA
- **Management IP filtering:**
 - SNMP

- Telnet
- SSH
- **IP Source Guard**
- **Dynamic ARP inspection (DAI)**
- **DHCP snooping:** IPv4, IPv6
- **Control Plane Policing (CoPP)**
- **Service Prohibit Access**
- **Role Base Access Control (RBAC)**

Layer 3 Features

- **IP Multinetting/CIDR**
- **/31 subnets**
- **Proxy ARP**
- **Static route:** IPv4, IPv6
- **OSPFv2/v3**
- **ECMP**
- **BGP4**
- **IGMP v1/v2/v3**
- **PIM-SM/-SM6**
- **MLD v1/v2**
- **VRRPv2**
- **Policy-Based Routing (PBR)**
- **BFD***
- **VRF Lite***

Management Features

- **Industrial command-line interface**
- **CLI filtering**
- **CLI scheduler**
- **Telnet/SSH**
- **Software update:**
 - TFTP, FTP, SCP, SFTP
- **Configuration download/upload:**
 - TFTP, FTP, SCP, SFTP
- **Dual Images**
- **SNMP v1/v2c/v3**
- **SNMP inform v2**
- **RMON1 Groups: 1, 2, 3, & 9**
- **BOOTP:** client/relay
- **DHCP client**
- **DHCP relay**
- **EVENT/Error log**
- **DNS client**
- **Remote PING**
- **Traceroute**
- **SNTPv4**
- **LLDP:**
 - 802.1ab
 - 802.MED
 - Potential error detection
- **UDLD**
- **Port mirroring:** SPAN, RSPAN
- **sFlow v5**
- **Email alerting:** SMTP
- **Error-Disable Recovery**
- **Fluentd**

IPv6 Management

- **IPv4/IPv6 Dual Protocol Stack**
- **ICMPv6**
- **ICMPv6 Redirect**
- **IPv6 Neighbor Discovery**
- **Stateless Autoconfiguration**
- **Manual Configuration**
- **DHCPv6 client**
- **SNMP over IPv6**
- **SSH over IPv6**
- **IPv6 Telnet Support**
- **IPv6 DNS Resolver**
- **IPv6 RADIUS Support**
- **IPv6 TACACS+ Support**
- **IPv6 Syslog Support**
- **IPv6 SNTP Support**
- **IPv6 TFTP Support**

High Availability

- **Multi-Chassis Link Aggregation (MLAG)**

Data Center Features

- **Enhanced Transmission Selection (802.1Qaz)**
- **Priority-based Flow Control (802.1Qbb)**
- **DCBX:** DCBX for ETS, DCBX for PFC
- **FCoE Initiation Protocol (FIP) snooping**

Automation

- **Auto Installation**
- **RESTful API**
- **Ansible**
- **Pooled System Management Engine (PSME)*****

Virtualization Features

- **VxLAN**

SDN

- **OpenFlow v1.3****



Found at: www.QCT.io/wheretobuy

United States

QCT LLC., Silicon Valley office
1010 Rincon Circle, San Jose, CA 95131
TOLL-FREE: 1-855-QCT-MUST
TEL: +1-510-270-6111
FAX: +1-510-270-6161
Support: +1-510-270-6216

China

云达科技, 北京办公室
(Quanta Cloud Technology)
北京市朝阳区东大桥路 12 号润诚中心 2 号楼
TEL: +86-10-5920-7600
FAX: +86-10-5981-7958

云达科技, 杭州办公室

(Quanta Cloud Technology)
浙江省杭州市西湖区古墩路
浙商财富中心 4 号楼 303 室
TEL: +86-571-2819-8650

Japan

Quanta Cloud Technology Japan 株式会社
日本国東京都港区芝大門二丁目五番八号牧田ビル 3 階
TEL: +81-3-5777-0818
FAX: +81-3-5777-0819

Taiwan

雲達科技 (Quanta Cloud Technology)
桃園市龜山區文化二路 211 號 1 樓
TEL: +886-3-286-0707
FAX: +886-3-327-0001

Germany

Quanta Cloud Technology Germany GmbH
Hamborner Str. 55, 40472 Düsseldorf
TEL: +49-2405-4083-1300

Other regions

Quanta Cloud Technology
No. 211 Wenhua 2nd Rd., Guishan Dist.,
Taoyuan City 33377, Taiwan
TEL: +886-3-327-2345
FAX: +886-3-397-4770



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*: Not support in T1048-LB9

***: Not support in T7032-IX1

***: Supported in T7032-IX1, T5032-LY6, T3048-LY8, T3048-LY9 and T1048-LB9