QuantaMesh T7032-IX7D

The Next Wave
100G Ethernet Switch for
Data Center and
Cloud Computing

- **32 x 40/100GbE QSFP28**
- **In-Service Software Upgrade (ISSU)**
- **VxLAN Switching/Routing and BGP-EVPN Route Support**
- **Multi-Chassis Link Aggregation (MLAG)**
- **OSPF, BGP4 with ECMP**
- **Network Automation**
- **RoCEv1/v2,DCBX, and FIP SNP**

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

Germany
Quanta Cloud Technology Germany GmbH
Rurbenden 48, 52353 Düren
TEL: +49-2421-386-3400

Korea
QCT Korea, Inc. (주식회사 큐씨티코리아)
서울특별시 영등포구 의사당대로 97 교보증권빌딩 10층, 07327
TEL: +82-10-5397-1412
FAX: +82-2-6336-6710

Singapore
Quanta Cloud Technology Singapore Pte. Ltd.
5 Shenton Way, #10/11-01, UIC Building, Singapore 068808
TEL: +65-6911-6781

Taiwan/ Other Regions
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

Rear view

QCT T7032-IX7D is a high-performance and low- latency layer 3 managed switches deployed as the Data Center Leaf Switch to connect to 100G servers or deployed as Data Center Spine Switch to aggregate 100G connections from Leaf Switches to expend the network scalability. T7032-IX7D supports 32 QSFP28 (10/25/40/50/100GbE speed) equipped with BMC in a 1-Rack-Unit (1RU) switch that supports 3.2 Terabits per second (Tbps) of bandwidth. By levering merchant silicon chip, T7032-IX7D is a high performance and high density Ethernet switch with advanced features such as a smart table, dynamic load balancing, and VXLAN/RIOT support. T7032-IX7D also supports larger tables size, improves the performance for larger packet buffers and reduces the latency. QNOS (Quanta Network OS) is the best choice for Data Center applications.

Automation

With the rapid adoption of cloud computing and the proliferation of big data and parallel computing, the need for data center network devices is growing exponentially, making network automation a critical factor. Supporting auto installation, Zero Touch Provision (ZTP), RESTful API, NETCONF/RESTCONF, and Ansible, QNOS facilitates easy deployment to build-up a mass data center with Infrastructure-as-a-Service (IaaS).

Virtualization

Virtualization technology has been booming up fast and widely required in data center for the Cloud computing and virtual machines (VMs) applications. To provide the scalability and stretched ability of L2 environment, QNOS supports Virtual eXtensible LAN (VXLAN) Switching/Routing running over the existing L3 network infrastructure. BGP-EVPN Route Support is also introduced in QNOS to support the VXLAN tunnel creation automatically and reduce network overhead by protocol-based MAC address and ARP learning.

High Availability

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

- ・Multi-chassis Link Aggregation (MLAG)
- ・Virtual Router Redundancy Protocol (VRRP) and BidirectionalForwarding Detection (BFD)
- ・In-Service Software Upgrade (ISSU)
- ・Up to 48 paths ECMP routing for load balancing and redundancy
- ・Spanning Tree with Guarding Features

Data-Center Orientated

To build up a network infrastructure with a high bandwidth and low latency for network storage or high computing requirements, QNOS supports ROCEv1/v2, DCBX, and FIP SNP for the service differentiation to fulfill the needs of modern data center applications.
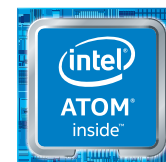
About QCT

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.

Found at: www.QCT.io/wheretobuy   Powered by Intel Atom® processors

QuantaMesh T7032-IX7D Specifications

Physical ports
- **Port configuration:** 32 40/100GbE QSFP28 ports
- **Management Port:**
  Out-of-band management port
  (RJ-45, 10/100/1000Base-T)
- **Console Port:** 1 (RJ-45)
- **USB:** USB 2.0

Performance
- **Switching capacity:** 6.4Tbps
- **Maximum forwarding rate:** 3.3Bpps
- **Latency:** Ultra-low latency

Major Components
- **ASIC:** Broadcom TD3 56870
- **CPU:** Intel® Atom® Denverton, TPM 2.0
- **Memory:** 8GB DDR4 with ECC
- **Storage:** 128GB M.2 SATA for storage

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)
- **802.3x Flow Control (Pause Frames)**
- **Storm Control:**
  - Broadcast
  - Unknown Multicast
  - DLF (Unknown Unicast)
- **IGMP Snooping:**
  - v1/v2/v3
  - v1/v2 Querier
  - Immediate Leave
- **MLD Snooping v1/v2**
- **Link Aggregation:**
  - Auto-lag and Auto-trunk
  - Dynamic Load Balancing (DLB)
  - 802.3ad with LACP
  - Static Trunk
  - Unicast/Multicast Traffic Balance over
    Trunking Port
  - LACP Fallback
- **Link State Tracking**
- **Port Backup**
- **Loopback Detection**
- **Private VLAN**
- **Link Debounce**

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

Security Features
- **VLAN 0 Attack Protection**
- **SNMP brute-force login protection**
- **Support encrypted configuration files**
- **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
- **IPv4/IPv6 ACL:** L3/L4
- **RADIUS/TACACS+:** Authentication,
  Authorization, Accounting
- **SSH V2.0**
- **User name and password:**
  - Local Authentication
- **Management IP filtering:**
  - SNMP
  - Telnet
  - SSH
- **IP Source Guard**
- **Dynamic ARP inspection (DAI)**
- **DHCP snooping:** IPv4, IPv6

- **SSH Public Key Authentication**
- **Control Plane Policing / CoPP**
- **Service Prohibit Access**
- **Role Base Access Control (RBAC)**
- **Signed firmware image**
- **VxLAN with port-security**
- **Diffie-Hellman 2048-Bit Key**
- **Hardware Protocol Checker**
- **L2 table update Notification**
- **Port Blocking**

Layer 3 Features
- **IPv4 unnumbered interfaces**
- **IP Multinetting/CIDR**
- **/31 subnets**
- **Proxy ARP**
- **Static route:** IPv4, IPv6
- **OSPF v2/v3**
- **ECMP**
  - Dynamic Load Balancing (DLB)
- **BGP4**
- **IGMP v1/v2/v3**
- **PIM-SM/-SM6**
- **SSM**
- **MLD v1/v2**
- **VRRP v2**
- **Policy-Based Routing (PBR)**
- **BFD**
- **VRF Lite**
- **Black Hole Detection (BHD)**
- **VRRPv3**
- **IP SLA**

Management Features
- **MAC flapping Notification**
- **Bus Monitor and Recovery**
- **Two Way Active Measurement Protocol**
- **VRRP aware PIMSM**
- **IP helper**
- **IPv4 Device Tracking**
- **PTP TC 1-Step E2E (1588 1-Step end-to-end
  transparent clock)**
- **Industrial standard command-line interface**
- **CLI filtering**
- **CLI schedule**
- **SSH**
- **Software update:** TFTP, SCP, SFTP
- **Configuration Update:** TFTP, SCP, SFTP
- **Dual Images**
- **SNMP v1/v2c/v3**
- **SNMP inform v2**
- **RMON1 Groups: 1, 2, 3, & 9**
- **DHCP client/relay**
- **DNS client/relay**
- **Remote PING**
- **Traceroute**
- **NTPv4**
- **LLDP:**
  - 802.1ab
  - 802.MED
  - Potential error detection
- **UDLD**
- **Port mirroring:** SPAN, RSPAN
- **EVENT / Error log**
- **sFlow v5**
- **Email alerting:** SMTP
- **Error-Disable Recovery**

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

High Availability

- **Multi-Chassis Link Aggregation (MLAG)**
  - IGMPv1/v2/v3 SNP and MLDv1/v2 SNP
  - Standalone mode
  - L2/L3 unicast
  - RSTP/MSTP
  - VXLAN
- **In-Service Software Upgrade (ISSU)**

Data Center Features
- **PFC watchdog**
- **Anycast gateways**
- **Priority-based Flow Control (802.1Qbb)**
  - 802.1p
  - IP-DSCP
- **DCBX:**
  - DCBX for ETS
  - DCBX for PFC
  - PCBX for Application Priority
- **FCoE Initiation Protocol (FIP) snooping**
- **RoCEv1/v2**

Automation
- **Zero Touch Provision (ZTP)**
- **Auto installation**
- **RESTful API**
- **Ansible**
- **NETCONF/RESTCONF**

Virtualization Features
- **VxLAN Switching/Routing**
- **BGP EVPN Route Support**
  - Ethernet autodiscovery Route (Type-1)
  - MAC with IP advertisement Route (Type-2)
  - Inclusive multicast Ethernet tag Route (Type-3)
  - Ethernet segment Route (Type-4)
  - IP prefix Route (Type-5)
- **Multihoming Designated Forwarder election
  enhancement (RFC8584)**

SDN
- **OpenFlow v1.3**

Mechanical
- **Dimension (HxWxD):** 44 x 440 x 508mm
- **Weight:** 9.33kg/20.55lbs (NET)

Environmental Specifications
- **Operating temperature:** 0~45°C
- **Operating humidity:** 90% maximum relative humidity

Electrical
- **PSU:** 750W x 2, 1+1 Redundant,
  100~240VAC, 50/60Hz
- **Power consumption:** Idle Mode: 217W
  Normal Mode: 293W

Safety
- **UL, cUL, CB**

EMC
- **CE, FCC, VCCI, CCC**

RoHS
- **Reduction of Hazardous Substances (RoHS) 6**

Supported Optics and Cables
- **DAC cable (QSFP+):** 1m, 3m, and 5m
- **DAC cable (QSFP+, fan-out):** 1m, 3m, and 5m
- **DAC cable (QSFP28):** 1m, 3m, and 5m
- **DAC cable (QSFP28, fan-out):** 3m
- **AOC cable (QSFP+, 850nm, MMF):**
  7m and 10m
- **AOC cable (QSFP28, 850m, MMF):**
  1m, 3m, 5m, and 10m
- **40G optic (QSFP+, MPO, 850nm, MMF):**
  40GBASE-SR4
- **40G optic (QSFP+, LC, 1310nm, SMF):**
  40GBASE-LR4
- **100G optic (QSFP28, MPO, 850nm, MMF):**
  100GBASE-SR4
- **100G optic (QSFP28, MPO, 1310nm, SMF):**
  100GBASE-PSM4
- **100G optic
  (QSFP28, LC, 1310nm, SMF):**
  100GBASE-LR4

Order Information
- **T7032-IX7D (1IX7U7Z0002)
  Front to Back, with Rail Kit**
- **T7032-IX7D (1IX7U7Z0003)
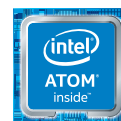 Back to Front, with Rail Kit**