N3K-C3064TQ-10GT Datasheet



Overview

The Cisco Nexus[®] 3064-X, 3064-T, and 3064-32T Switches are high-performance, high-density Ethernet switches that are part of the Cisco Nexus 3000 Series Switches portfolio. These compact one-Rack-Unit (1RU) form-factor 10 Gigabit Ethernet switches provide line-rate Layer 2 and 3 switching. They run the industry- leading Cisco[®] NX-OS Software operating system, providing customers with comprehensive features and functions that are widely deployed globally. They support both forward and reverse airflow schemes with AC and DC power inputs. The Cisco Nexus 3064 switches are well suited for data centers that require cost- effective, power-efficient, line-rate Layer 2 and 3 Top-of-Rack (ToR) switches.

Three Cisco Nexus 3064 switches are available:

- Cisco Nexus 3064-X (Figure 1): This 10-Gbps Enhanced Small Form-Factor Pluggable (SFP+)-based top-of-rack switch has 48 SFP+ ports and 4 Quad SFP+ (QSFP+) ports. Each SFP+ port can operate in 100-Mbps, 1-Gbps, or 10-Gbps mode, and each QSFP+ port can operate in native 40-Gbps or 4 x 10-Gbps mode. This switch is a true phy-less switch that is optimized for low latency and low power consumption.
- Cisco Nexus 3064-T (Figure 2): This 10GBASE-T switch has 48 10GBASE-T RJ-45 ports and 4 QSFP+ ports. This switch is well suited for customers who want to reuse existing copper cabling while migrating from 1-Gbps to 10-Gbps servers.
- Cisco Nexus 3064-32T (Figure 2): This switch is the Cisco Nexus 3064-T with 32 10GBASE-T ports and 4 QSFP+ ports enabled. The ports are enabled through software licensing. This switch provides a costeffective solution for customers who require up to 32 10GBASE-T ports per rack. This switch comes with a 32-10GBASE-T port license preinstalled. To enable the remaining 16 10GBASE-T ports, the customer installs the 16-port upgrade license.

Part Number	Description
QSFP-4X10G-AC10M	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ direct-attach breakout cable, 10m, active
QSFP-4X10G-AC7M	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ direct-attach breakout cable, 7m, active
QSFP-4SFP10G-CU5M	QSFP to 4xSFP10G passive copper splitter cable, 5m
QSFP-4SFP10G-CU3M	QSFP to 4xSFP10G passive copper splitter cable, 3m
QSFP-4SFP10G-CU1M	QSFP to 4xSFP10G passive copper splitter cable, 1m
QSFP-H40G-ACU10M	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 10m, active
QSFP-H40G-ACU7M	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 7m, active
QSFP-H40G-CU5M	40GBASE-CR4 passive copper cable, 5m
QSFP-H40G-CU3M	40GBASE-CR4 passive copper cable, 3m
QSFP-H40G-CU1M	40GBASE-CR4 passive copper cable, 1m
QSFP-40G-SR4	40GBASE-SR4 QSFP transceiver module with MPO connector
QSFP-40G-CSR4	Cisco 40GBASE-CSR4 transceiver module, MPO, 300m

Table 1. Cisco Nexus 3064 QSFP Transceiver Support Matrix

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Table 6.Specifications

Description	Specification
Physical	 1RU fixed form factor Cisco Nexus 3064-X: 64 10 Gigabit Ethernet ports (48 SFP+ and 4 QSFP+) 48 SFP ports support 1 and 10 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet each Cisco Nexus 3064-T: 64 x 10 Gigabit Ethernet ports (48 10GBASE-T and 4 QSFP+) 48 RJ-45 ports support 100 Mbps and 1 and 10 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 32 RJ-45 ports support 100 Mbps and 1 and 10 Gigabit Ethernet 32 RJ-45 ports support 100 Mbps and 1 and 10 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet ports (32 10GBASE-T and 4 QSFP+) 32 RJ-45 ports support 100 Mbps and 1 and 10 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 5 a QSFP ports support 4 x 10 Gigabit Ethernet ports (32 10GBASE-T and 4 QSFP+) 5 a RJ-45 ports support 100 Mbps and 1 and 10 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 5 a RJ-45 ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 5 a RJ-45 ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 4 QSFP ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet 5 a RJ-45 ports support 4 x 10 Gigabit Ethernet or 40 Gigabit Ethernet
Performance	 1.28-Tbps switching capacity Forwarding rate of 950 mpps Line-rate traffic throughput (both Layer 2 and 3) on all ports Configurable Maximum Transmission Units (MTUs) of up to 9216 bytes (jumbo frames)

Description	Specification	
Hardware tables and	MAC addresses	128,000
scalability	Number of VLANS	4096
	Spanning-tree instances	 Rapid Spanning Tree Protocol (RSTP): 512 Multiple Spanning Tree (MST) Protocol: 64
	ACL entries	 2000 ingress 1000 egress
	Routing table	16,000 prefixes and 16,000 host entries*8000 multicast routes*
	Number of EtherChannels	64 (with vPC)
	Number of ports per EtherChannel	32
	Buffers	9 MB shared
	Boot flash memory	2 GB
Power	Number of power supplies	 2 Cisco Nexus 3064-X: Redundant for AC and DC power Cisco 3064-T and 3064-32T: Redundant for AC power
	Power supply types	AC (forward and reversed airflow)DC (forward and reversed airflow)
	Typical operating power	 Cisco Nexus 3064-X 143 watts (W; 64p with Twinax at 100% load; 2 power supply units [PSUs]) 177W (64p with SR optics at 100% load; 2 PSUs) Cisco Nexus 3064-T 362W (48p with 3m cables; 4 SR4 at 100% load)
	Maximum power	Cisco Nexus 3064-X: 199WCisco Nexus 3064-T
	AC PSUs Input voltage Frequency Efficiency 	 100 to 240 VAC 50 to 60 Hz 89 to 91% at 220V
	DC PSUs Input voltage Maximum current Efficiency 	 -40 to -72 VDC 33A 85 to 88%
	Typical heat dissipation	 Cisco Nexus 3064-X 488 BTU/hr (64p with Twinax at 100% load; 2 PSUs) 605 BTU/hr (64p with SR optics at 100% load; 2 PSUs) Cisco Nexus 3064-T 1235 BTU/hr (48p with 3m cables; 4 SR4 at 100% load)

Description	Specification	
	Maximum heat dissipation	 Cisco Nexus 3064-X: 683 BTU/hr Cisco Nexus 3064-T: 1553 BTU/hr
Cooling	 Forward and reversed airflow schemes: Forward airflow: Port-side exhaust (air entroports) Reversed airflow: Port-side intake (air entroports) Single fan tray with redundant fans Hot swappable (must swap within 1 min) 	ers through fan-tray and power supplies and exits through rs through ports and exits through fan-tray and power
Sound	 Measured sound power (maximum) Fan speed: 40% duty cycle Fan speed: 60% duty cycle Fan speed: 100% duty cycle 	 59.7 dBA 66.4 dBA 71.0 dBA
Environment	Dimensions (height x width x depth)	 Cisco Nexus 3064-X: 1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm) Cisco Nexus 3064-T and 3064-32T: 1.72 x 17.3 x 22.45 in.(4.4 x 43.9 x 57.0 cm)
	Weight	 Cisco Nexus 3064-X: 20.5 lb (9.3 kg) Cisco Nexus 3064-T and 3064-32T: 20.8 lb (9.5 kg)
	Operating temperature	32 to 104°F (0 to 40°C)
	Storage temperature	-40 to 158°F (-40 to 70°C)
	Operating relative humidity	 10 to 85% noncondensing Up to 5 days at maximum (85%) humidity Recommend ASHRAE data center environment
	Storage relative humidity	5 to 95% noncondensing
	Altitude	0 to 10,000 ft (0 to 3000m)

Table 7.Software features

Description	Specification
Layer 2	 Layer 2 switch ports and VLAN trunks IEEE 802.1Q VLAN encapsulation Support for up to 4096 VLANs Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible) Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances Spanning Tree PortFast Spanning Tree Root Guard Spanning Tree Bridge Assurance Cisco EtherChannel technology (up to 32 ports per EtherChannel) Link Aggregation Control Protocol (LACP): IEEE 802.3ad Advanced PortChannel hashing based on Layer 2, 3, and 4 information vPC Jumbo frames on all ports (up to 9216 bytes) Storm control (unicast, multicast, and broadcast) Private VLANs
Layer 3	 Layer 3 interfaces: Routed ports on interfaces, Switch Virtual Interfaces (SVIs), PortChannels, and subinterfaces (total: 1024) 64-way ECMP 2000 ingress and 1000 egress ACL entries IPv6 routing: Static, OSPFv3, and BGPv6 Routing protocols: Static, RIPv2, EIGRP, OSPF, and BGP Bidirectional Flow Detection (BFD) for BGP, OSPF and ipv4 Static routes HSRP and VRRP ACL: Routed ACL with Layer 3 and 4 options to match ingress and egress ACLs VRF: VRF-lite (IP VPN), VRF-aware unicast (BGP, OSPF, and RIP), and VRF-aware multicast Unicast Reverse-Path Forwarding (uRPF) with ACL; strict and loose modes Jumbo frame support (up to 9216 bytes) Generic Routing Encapsulation (GRE) tunneling
Multicast	Multicast: PIMv2, PIM-SM, and SSM Bootstrap Router (BSR), Auto-RP, and Static RP Multicast Source Discovery Protocol (MSDP) and Anycast RP Internet Group Management Protocol (IGMP) Versions 2 and 3
Quality of Service (QoS)	Layer 2 IEEE 802.1p (Class of Service [CoS]) 8 hardware queues per port Per-port QoS configuration CoS trust Port-based CoS assignment Modular QoS CLI (MQC) compliance ACL-based QoS classification (Layers 2, 3, and 4) MQC CoS marking

Description	Specification
	Differentiated services code point (DSCP) marking Weighted Random Early Detection (WRED) CoS-based egress queuing Egress strict-priority queuing Egress port-based scheduling: Weighted Round-Robin (WRR) Explicit Congestion Notification (ECN) Configurable ECN (Marking) per port
Security	 Ingress ACLs (standard and extended) on Ethernet Standard and extended Layer 3 to 4 ACLs include IPv4, Internet Control Message Protocol (ICMP), TCP, and User Datagram Protocol (UDP) VLAN-based ACLs (VACLs) Port-based ACLs (PACLs) Named ACLs ACLs on virtual terminals (vtys) DHCP snooping with Option 82 Port number in DHCP Option 82 DHCP relay Dynamic Address Resolution Protocol (ARP) inspection Configurable CoPP
Cisco Nexus Data Broker	 Topology support for tap and SPAN aggregation Support for QinQ to tag input source tap and SPAN ports Traffic load balancing to multiple monitoring tools Traffic filtering based on Layer 1 through Layer 4 header information Traffic replication and forwarding to multiple monitoring tools Robust RBAC Northbound Representational State Transfer (REST) API for all programmability support
Management	 POAP Python scripting Cisco EEM Switch management using 10/100/1000-Mbps management or console ports CLI-based console to provide detailed out-of-band management In-band switch management Locator and beacon LEDs Configuration rollback SSHv2 Secure Copy (SCP) server Telnet AAA AAA with RBAC RADIUS TACACS+ Syslog Syslog generation on system resources (for example, FIB tables)

Description	Specification
	Embedded packet analyzer
	• SNMP v1, v2, and v3
	Enhanced SNMP MIB support
	XML (NETCONF) support
	Remote monitoring (RMON)
	 Advanced Encryption Standard (AES) for management traffic
	• Unified username and passwords across CLI and SNMP
	Microsoft Challenge Handshake Authentication Protocol (MS-CHAP)
	 Digital certificates for management between switch and RADIUS server
	Cisco Discovery Protocol Versions 1 and 2
	• RBAC
	Switched Port Analyzer (SPAN) on physical layer, PortChannel, and VLAN
	Tunable Buffer Allocation for SPAN
	• Encapsulated Remote SPAN (ERSPAN)
	 Ingress and egress packet counters per interface
	PTP (IEEE 1588) boundary clock
	Network Time Protocol (NTP)
	Cisco OHMS
	Comprehensive bootup diagnostic tests
	Cisco Call Home
	Cisco DCNM
	Advanced buffer utilization monitoring
	• sFlow

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