

## Коммутатор Cisco Nexus N3K-C3048TP-1GE

N3K-C3048TP-1GE



### Описание

#### Комплектация коммутатора

#### Обзор продукта

Коммутаторы серии Cisco Nexus C3048, поставляются с широким набором возможностей и дополнительных функций. Это оборудование успешно зарекомендовало себя в тысячах центрах обработки данных по всему миру. Идеально подходит для обработки большого объема данных, требующих Gigabit Ethernet ToR с локальной коммутацией. Набор функций программного обеспечения Cisco NX-OS.

#### Основные особенности

- 48 портов 10/100/1000Base-T RJ-45
- 4 порта ап-linkа 1/10 Гбит/с SFP+
- Пропускная способность 176 Гбит/с
- Передача до 132 миллионов пакетов в секунду (Mpps)
- Таблица MAC 128000
- Буфер 9 МВ
- Память DRAM 4 GB
- Boot flash память 2 GB
- MTU до 9216 байт (jumbo frames)
- 2 блока питания

### Общие

Размещение

Монтируемые в стойку

### Тип коммутатора

Тип коммутатора

Управляемый L3

Линейка Cisco

Nexus 3000

### Интерфейсы

Тип основных портов

GigabitEthernet RJ45

Интерфейсы 10GBase-X SFP+

4

Консольный порт	RS232
Количество основных портов	4
Тип Uplink портов	40GigabitEthernet QSFP+

## Питание

Напряжение питания	~220V AC
Допустимое напряжение питания	100-240V AC

## L2 функционал

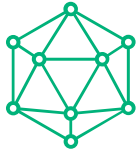
Количество VLAN	4096
Размер таблицы MAC адресов	128000
Количество правил ACL	2000
Агрегирование портов	LACP

## L3 функционал

Размер таблицы маршрутизации	16000
Протоколы маршрутизации	RIP; OSPF; BGP; PIM; EIGRP

## Доп. описание

Product specifications	Software features
<p><b>Physical</b></p> <ul style="list-style-type: none"> <li>1RU fixed form-factor switch</li> <li>48 10/100/1000-Mbps RJ-45 ports</li> <li>4 1/10 Gbps SFP+ uplink ports</li> <li>2 redundant power supplies</li> <li>1 fan tray with redundant fans</li> <li>1 I/O module with management, console, and USB flash memory ports</li> </ul> <p><b>Performance</b></p> <ul style="list-style-type: none"> <li>176-Gbps switching capacity</li> <li>Forwarding rate of 132 mpps</li> <li>Line-rate traffic throughput (both Layer 2 and 3) on all ports</li> <li>Configurable Maximum Transmission Units (MTUs) of up to 9216 bytes (jumbo frames)</li> </ul> <p><b>Hardware tables and scalability</b></p> <ul style="list-style-type: none"> <li>MAC addresses: 128,000</li> <li>Number of VLANs: 4096</li> <li>Spanning-tree instances: RSTP: 512, MSTP: 64</li> <li>ACL entries: 2000 inaccess. 1000 egress</li> </ul>	<p><b>Layer 2</b></p> <ul style="list-style-type: none"> <li>Layer 2 switch ports and VLAN trunks</li> <li>IEEE 802.1Q VLAN encapsulation</li> <li>Support for up to 4096 VLANs</li> <li>Rapid per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible)</li> <li>MSTP (IEEE 802.1s): 64 instances</li> <li>Spanning Tree PortFast</li> <li>Spanning Tree Root Guard</li> <li>Spanning Tree Bridge Assurance</li> <li>vPC</li> <li>Cisco EtherChannel technology (up to 16 ports per EtherChannel)</li> <li>LACP: IEEE 802.3ad</li> <li>Advanced PortChannel hashing based on Layer 2, 3, and 4 information</li> <li>Jumbo frames on all ports (up to 9216 bytes)</li> <li>Storm control (unicast, multicast, and broadcast)</li> <li>PVLANs</li> </ul> <p><b>Layer 3</b></p>



Routing table: 16,000 prefixes and 16,000 host entries, 8000 multicast routes  
Number of EtherChannels: 52 (with vPC)  
Number of ports per EtherChannel: 16  
Buffers 9 MB shared  
Boot flash memory 2 GB

### Power

Number of power supplies: 2 (redundant)  
Typical operating power: 120 watts (W) (48p of 1G and 4p of 10G/SR at 100% load, with 2 Power Supply Units [PSUs])  
Maximum power: 124W  
AC PSUs: Input voltage 100 to 240 VAC, Frequency 50 to 60 Hz, Efficiency 89 to 91% at 220V  
DC PSUs: Input voltage -40 to -72 VDC, Maximum current 33A, Efficiency 85 to 88%  
Typical heat dissipation: 409 BTU/hr (48p of 1G and 4p of 10G/SR at 100% load, with 2 PSUs)  
Maximum heat dissipation: 423 BTU/hr

### Cooling

Forward and reversed airflow schemes  
Forward airflow: Port-side exhaust (air enters through fan-tray and power supplies and exits through ports)  
Reversed airflow: Port-side intake (air enters through ports and exits through fan tray and power supplies)  
Single fan tray with redundant fans  
Hot swappable (must swap within 1 minute)

### Sound

Measured sound power (maximum):  
Fan speed: 40% duty cycle - 63.9 dBA  
Fan speed: 60% duty cycle - 64.7 dBA  
Fan speed: 100% duty cycle - 66.4 dBA

### Environment

Dimensions (height x width x depth): 1.72 x 17.3 x 19.7 in. (4.4 x 43.9 x 50.5 cm)  
Weight 20.5 lb (9.3 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: to 10,000 ft (0 to 3000m)

Layer 3 interfaces: Routed ports on interfaces, Switch Virtual Interfaces (SVIs), PortChannels, and subinterfaces (total = 1024)  
32-way ECMP  
2000 ingress and 1000 egress ACL entries  
Routing protocols: Static, RIP v2, EIGRP, OSPFv2, and BGP  
Bidirectional Flow Detection (BFD) for BGP  
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  
uRPF with ACL; strict and loose modes  
Jumbo frame support (up to 9216 bytes)

### Multicast

Multicast: PIM-SM Version 2 and SSM  
Bootstrap Router (BSR), Automatic Rendezvous Point (Auto-RP), and Static RP  
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  
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)

### Security

Ingress ACLs (standard and extended) on Ethernet  
Standard and extended Layer 3 to 4 ACLs: IPv4, Internet Control Message Protocol (ICMP), TCP, User Datagram Protocol (UDP), etc.  
VLAN-based ACLs (VACLs)  
Port-based ACLs (PACLs)  
Named ACLs  
ACLs on virtual terminals (vty)  
DHCP snooping with Option 82  
Port number in DHCP Option 82  
DHCP relay



Dynamic Address Resolution Protocol (ARP) inspection  
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**

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  
Port-based locator and beacon LEDs  
Configuration rollback  
SSHv2  
Telnet  
AAA  
AAA with RBAC  
RADIUS  
TACACS+  
Syslog  
Syslog generation on system resources (for example, FIB tables)  
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  
Cisco Switched Port Analyzer (SPAN) on physical, PortChannel and VLAN interfaces  
Encapsulated Remote Switched Port Analyzer (ERSPAN)



**nag**  
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Ingress and egress packet counters per interface  
PTP (IEEE1588) boundary clock  
Network Time Protocol (NTP)  
Cisco OHMS  
Comprehensive bootup diagnostic tests  
Cisco Call Home  
Cisco DCNM  
Advanced buffer monitoring