Naddod N9200-64DC Datasheet

AI Data Center 64*400GE Switch

NADDOD Pte.Ltd.

1. Product Overview

The N9200-64DC is a next-generation, high-performance, and high-density fixed switch launched by Naddod for high-end data centers and AI-generated content (AIGC) intelligent computing scenarios.

The N9200-64DC features an advanced hardware architecture design, offering 64 x 400GE ports with support for line rate forwarding. Additionally, it is equipped with redundant pluggable power supplies and fans. The switch seamlessly integrates into the Naddod AI Fabric solution, incorporating Dynamic Load Balancing (DLB) and Global Load Balancing (GLB) technologies to enhance bandwidth for AIGC intelligent computing networks and accelerate AI training. In a typical 2-tier networking scenario, it supports up to 2,000 x 400GE ports, while in a typical 3-tier network scenario, it supports up to 8,000 x 400GE ports. Furthermore, the switch supports quick RoCE configuration and allows the import of complex settings such as priority-based flow control (PFC) and explicit congestion notification (ECN) on RDMA networks with a single click, facilitating fast deployment.

2. Product Pictures

N9200-64DC

Front View
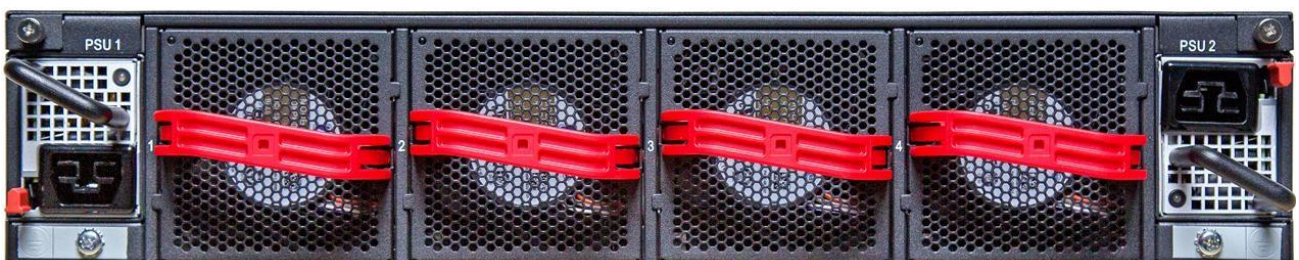
Rear View

Isometric View

3. Product Features

Building Next-Generation Data Center Networks

The rapid development of AI and machine learning (ML), big data, high-performance computing, distributed storage, and other applications is driving the evolution of next-generation data center networks to 400GE/800GE networks. To satisfy the demand for higher performance and greater bandwidth within confined spaces, the N9200-64DC provides up to 64 x 400GE ports in a 2 RU rack space, meeting the evolution requirements of next-generation data center networks.

Building High-Performance and Low-Delay Data Center Networks

The N9200-64DC works to build an end-to-end, lossless, and low-latency Remote Direct Memory Access (RDMA) network, leveraging advanced flow control technologies such as PFC and ECN, as well as memory management unit (MMU) tuning. Moreover, it seamlessly integrates into the Naddod AI Fabric solution, incorporating DLB technology to mitigate the equal-cost multi-path (ECMP) problems inherent in traditional flow-based load balancing. This improves the bandwidth for AI computing scenarios and accelerate AI training. Additionally, the switch meets the network deployment requirements of AI and ML, high-performance computing, distributed storage, big data, and other application scenarios.

Carrier-Class Reliability Protection

The N9200-64DC supports 1+1 power redundancy and 3+1 fan redundancy, guaranteeing hot-swappable functionality for all power and fan modules without disrupting the switch's normal operation. Additionally, it features fault detection and alarm capabilities for power supplies and fans, and automatically adjusts fan speed according to ambient temperature changes within the data center. The switch provides device-level reliability protection, including overcurrent, overvoltage, and overheat protection.

The switch also integrates various link-level reliability mechanisms, such as dual-homed access, graceful restart (GR), and bidirectional forwarding detection (BFD). When multiple services and heavy traffic are carried over the network, these mechanisms can reduce the impact of exceptions on network services and enhance the overall reliability.

Quick Deployment

The Zero-Touch Provisioning (ZTP) automates the process of installing or upgrading software images, and installing configuration files on Naddod N9200-64DC switches..

IPv4/IPv6 Dual-Stack Protocols and Multilayer Switching

The N9200-64DC supports IPv4/IPv6 dual stack and implements multi-layer line rate switching. It distinguishes between IPv4 and IPv6 packets and integrates multiple tunneling technologies such as manual tunneling. You can flexibly work out communication solutions by using this switch based on IPv6 network planning and network conditions. The switch accommodates a wide variety of IPv4 routing protocols, including static routing, Routing Information Protocol (RIP), RIPv2, Open Shortest Path First (OSPF), and Border Gateway Protocol version 4 (BGP4). In addition, it supports an extensive array of IPv6 routing protocols, including static routing, Routing Information Protocol next generation (RIPng), OSPFv3, and BGP4+. You can flexibly select an IPv6 routing protocol to upgrade the live network to an IPv6 network or establish a new IPv6 network.

All-Round Management Performance

The N9200-64DC provides various management ports, including the console port, management port, and USB port. It supports Simple Network Management Protocol (SNMP) v1/v2c/v3 and integrates with the universal network management platform. It facilitates device management through CLI-based management, Telnet, and cluster management. The supported encryption modes such as SSH2.0 and SSL ensure secure management.

Additionally, the switch supports Switched Port Analyzer (SPAN), Remote Switched Port Analyzer (RSPAN), and multiple SPAN monitoring ports, providing clear visibility into network service traffic. It can generate various traffic analysis reports, enabling users to optimize network structure and adjust resource deployment promptly.

4. Product Specifications

Hardware Specifications

System Specifications	N9200-64DC
Ports	64 × 400GE ports (QSFP-DD), up to 128 x 200GE ports
Expansion Module Slots	Not supported
Expansion Modules	Two power supply module slots Four fan module slots
Management Port	One management port, one console port, and one USB port, compliant with the USB2.0 standard
Switching Capacity	25.6 Tbps
Packet Forwarding Rate	10,420 Mpps
802.1Q VLAN	4,094
Dimensions and Weight	**N9200-64DC**
Dimensions (W × D × H)	440 mm x 649.2 mm x 87mm (2RU)
Weight	21.5 kg (including eight fan modules and four power supply modules)
Power Supply and Consumption	**N9200-64DC**
Power Consumption	Max: 2,400 W
Environment and Reliability	**N9200-64DC**
Operating Temperature	0ºC to 40ºC (32ºF to 104ºF)
Storage Temperature	−40 °C to +70 °C (−40 °F to +158 °F)
Operating Humidity	5% RH to 95% RH (Non-condensing)
Storage Humidity	5% to 95% RH (non-condensing)

| Altitude | Operating altitude: up to 5,000 m (16,404.20 ft.) |
| | Storage altitude: up to 5,000 m (16,404.20 ft.) |

Software Specifications

Software Specifications	N9200-64DC
Layer 2 Protocols	IEEE 802.3ae (10GBase), IEEE 802.3ak, IEEE 802.3an, IEEE 802.3x, IEEE 802.3ad (Link Aggregation Control Protocol), IEEE 802.1p, IEEE 802.1Q, IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s (MSTP), jumbo frame (9 KB)
Layer 3 Protocols (IPv4)	BGP4, OSPFv2, RIPv1, RIPv2, LPM routing, PBR, routing policy, ECMP, WCMP, VRRP
IPv6 Protocols	Neighbor discovery, ICMPv6, path MTU discovery, DNSv6, DHCPv6, ICMPv6, ICMPv6 redirection, ACLv6, TCP/UDP for IPv6, SNMP v6, Ping/Traceroute v6, IPv6 RADIUS, Telnet/SSH v6, FTP/TFTP v6, NTP v6, IPv6 MIB support for SNMP, VRRP for IPv6, IPv6 QoS
IPv6 Features	Static routing, ECMP, PBR, OSPFv3, RIPng, BGP4+
Data Center Features	PFC, ECN VXLAN, BGP-EVPN PFC deadlock prevention
Visualization	sFlow
QoS	802.1p, DSCP, and ToS mapping ACL-based traffic classification Priority marking/remarking Multiple queue scheduling mechanisms, including SP, WRR, WFQ, DRR, SP+WRR, SP+WFQ, and SP+DRR Congestion avoidance mechanisms such as WRED and tail discarding
High Availability Design	GR for RIP/OSPF/BGP, BFD, DLDP, REUP dual-link fast switching, RLDP unidirectional link detection, 2+2 power redundancy and fan redundancy, and hot swappable line cards and power modules
Security Features	Network Foundation Protection Policy (NFPP), CPU Protection Policy (CPP), RADIUS/TACACS, IPv4/v6 packet filtering by basic ACL, extended

Software Specifications	N9200-64DC
	ACL or VLAN-based ACL, cleartext and MD5-based authentication for OSPF, RIPv2, and BGPv4 packets, Telnet login from specified IP addresses, broadcast packet suppression, hierarchical user management
Management Mode	SNMP v1/v2c/v3, telnet, console, MGMT, RMON, SSHv1/v2, FTP/TFTP, NTP, Syslog, SPAN/RSPAN/ERSPAN, ZTP, NETCONF, Python, fan and power alarm, and overheat alarm
Other Protocols	DHCP client, DHCP relay, DHCP server, DNS client, proxy ARP, and Syslog

5. Typical Applications

AIGC Network Scenario
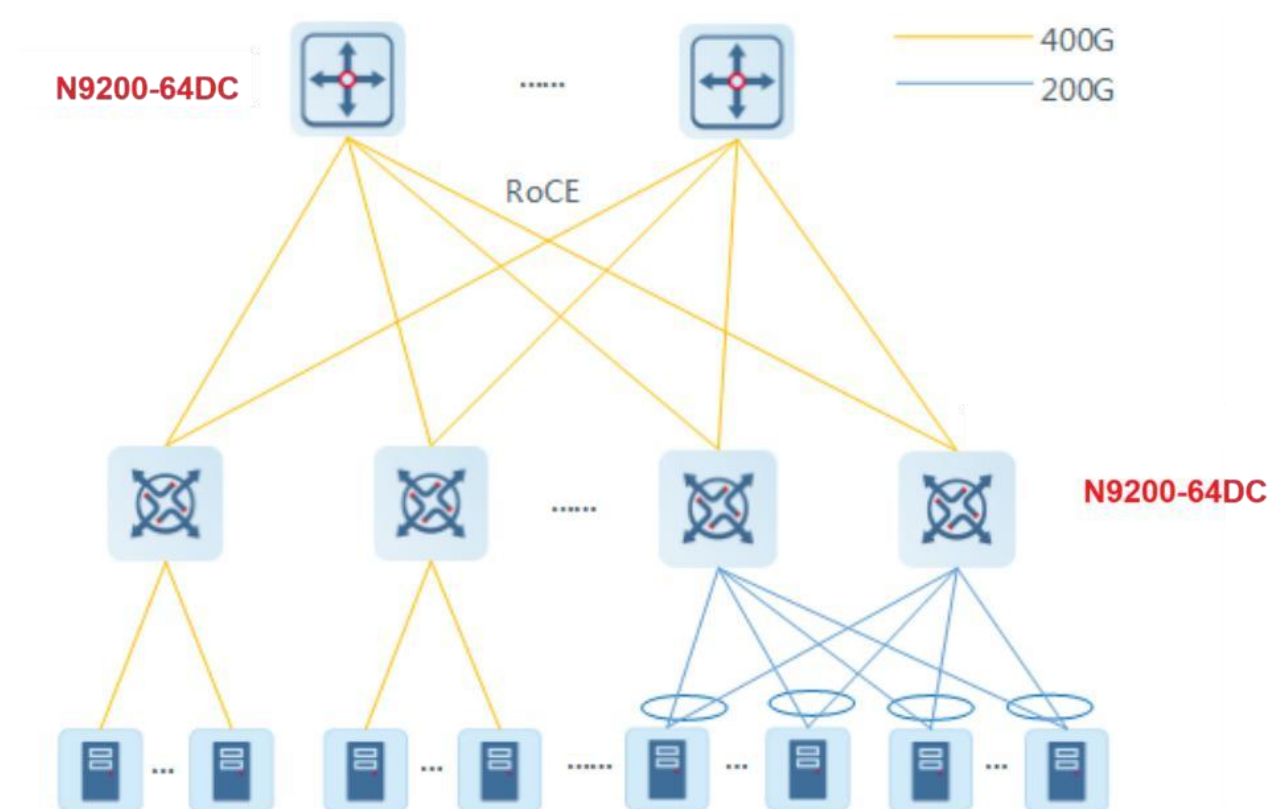
6. Ordering Guide

Take the following steps to order an N9200-64DC switch:
- Select the chassis.
- Select optical transceivers based on port requirements.

* in Ordering Information indicates that the product will be available in the future.

7. Ordering Information

Chassis, Fan Modules, and Power Modules

Model	Description
N9200-64DC	64 x 400GE QSFP-DD ports, four power supply module slots, eight fan slots

400GBASE Series Optical Transceivers

Model	Description
QDD-400G-SR4	400GBASE-SR4 QSFP-DD PAM4 850nm 100m MTP/MPO-12 MMF Optical Transceiver Module
QDD-400G-SR8	400GBASE-SR8 QSFP-DD PAM4 850nm 100m MTP/MPO FEC Optical Transceiver Module
QDD-400G-DR4	400GBASE-DR4 QSFP-DD PAM4 1310nm 500m FEC MTP/MPO-12 APC SMF Optical Transceiver Module
QDD-400G-XDR4	400G QSFP-DD XDR4 PAM4 1310nm 2km FEC DOM MTP/MPO-12 SMF Optical Transceiver Module
QDD-400G-FR4	400GBASE-FR4 QSFP-DD PAM4 1310nm 2km DDM/DOM Duplex LC SMF Optical Transceiver Module
QDD-400G-LR4	400GBASE-LR4 QSFP-DD PAM4 CWDM4 Duplex LC 10km SMF FEC Optical Transceiver Module
QDD-400G-ER4	400GBASE-ER4 QSFP-DD PAM4 LWDM4 1310nm 40km SMF Duplex LC DOM/DDM Optical Transceiver Module
QDD-400G-ZR	400GBASE DCO QSFP-DD DWDM Tunable Coherent 120km DDM/DOM Duplex LC SMF Optical Transceiver Module
QDD-400G-ZR+	100-400GbE DCO QSFP-DD DWDM Tunable Coherent >120km DDM/DOM Duplex LC SMF Optical Transceiver Module
QDD-400G-ZRP+	100-400GbE High-Power (Bright) DCO QSFP-DD DWDM Tunable

	Coherent > 120km DDM/DOM Duplex LC SMF Optical Transceiver Module
QDD-400G-A	400G QSFP-DD Active Optical Cable
OSFP-QDD-A	400G OSFP to QSFP-DD Active Optical Cable
Q2Q56-400G-A	400G QSFP-DD to 2X200G QSFP56 Breakout Active Optical Cable
Q4Q56-400G-A	400G QSFP-DD to 4X100G QSFP56 Breakout Active Optical Cable
QDD-400G-CU	400G QSFP-DD Passive Direct Attach Copper Twinax Cable
Q2Q56-400G-CU	400G QSFP-DD to 2X200G QSFP56 Passive Direct Attach Copper Breakout Cable
Q4Q56-400G-CU	400G QSFP-DD to 4X100G QSFP56 Passive Direct Attach Copper Breakout Cable

8. Warranty

For more information about warranty terms and period:

● Warranty terms&period: https://www.Naddod.com/support/

Note: The warranty terms are subject to the terms of different countries and distributors.

9. More Information

For more information about Naddod, visit the official Naddod website or contact us:

● Naddod official website: https://www.Naddod.com/
● Online support: https://www.Naddod.com/support
● Email support: support@Naddod.com