



# Naddod N9500-64OC Datasheet

**AI Data Center 64\*800G Switch**

NADDOD Pte.Ltd.

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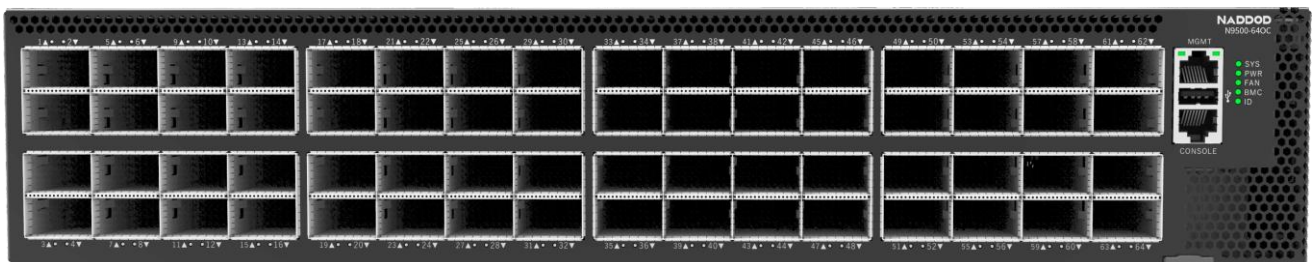
# 1. Product Overview

The N9500-64OC is a next-generation, high-performance, and high-density fixed switch launched by Naddod Networks for high-end data centers and AI-generated content (AIGC) intelligent computing scenarios.

The N9500-64OC features an advanced hardware architecture design, offering 64 x 800GE 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 8,000 x 400GE ports, while in a typical 3-tier network scenario, it supports up to 32,000 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

## N9500-64OC



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 N9500-64OC provides up to 64 x 800GE 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 N9500-64OC works to build an end-to-end, lossless, and low-latency Remote Direct Memory Access (RDMA) bearer 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 N9500-64OC 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 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 N9500-64OC switches..

## **Intelligent O&M**

The N9500-64OC features automatic parameter adjustment through AI ECN, real-time RoCE telemetry, visibility of end-side status and RoCE services, and congestion and packet loss analysis.

## **IPv4/IPv6 Dual-Stack Protocols and Multilayer Switching**

The N9500-64OC 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 N9500-64OC 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 N9500-64OC 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	N9500-64OC
Ports	64 × 800GE ports (OSFP), up to 128 x 400GE ports
Expansion Module Slots	Not supported
Expansion Modules	Two power module slots Four fan module slots
Management Port	One management port, one console port, and one USB port, compliant with the USB3.0 standard
Switching Capacity	51.2 Tbps
CPU	Intel Ice Lake-D D1734NT 8C Processor
Packet Forwarding Rate	21,000 Mpps
Dimensions and Weight	N9500-64OC
Dimensions (W × D × H)	440 mm x 650 mm x 87 mm (2RU)
Weight	23 kg (including four fan modules and two power supply modules)
Power Supply and Consumption	N9500-64OC

Maximum Power Consumption	3000 W
AC	AC input rating: 200-240 VAC at 50-60Hz (16 A/3000 W max.)
<b>Environment and Reliability</b>	<b>N9500-64OC</b>
Operating Temperature	0°C to 40°C (32°F to 104°F)
Operating Humidity	5% RH to 95% RH (Non-condensing)

## Software Specifications

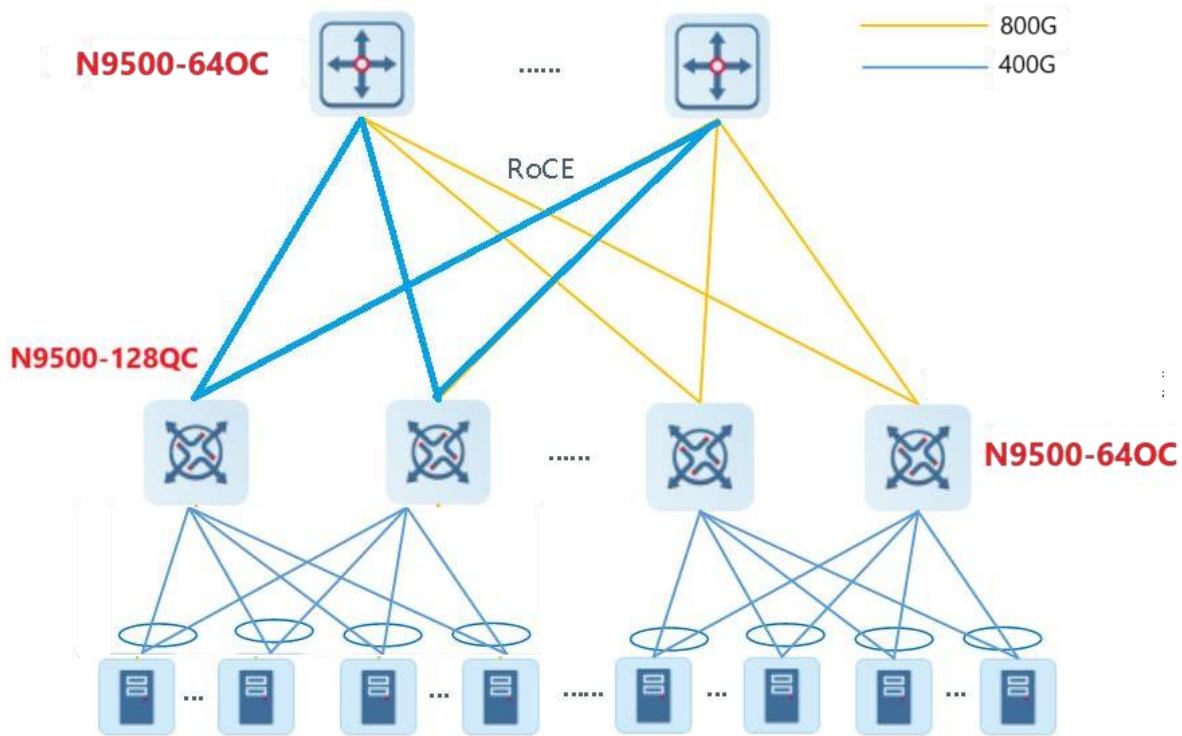
<b>Software Specifications</b>	<b>N9500-64OC</b>
Layer 2 Protocols	IEEE 802.3ae (10GBase), IEEE 802.3ak, IEEE 802.3an, IEEE 802.3x, IEEE 802.3ad (Link Aggregation Control Protocol), IEEE 802.1p, IEEE 802.1Q, IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE 802.1s (MSTP), jumbo frame (9 KB)
Layer 3 Protocols (IPv4)	BGP4, OSPFv2, RIPv1, RIPv2, LPM routing, PBR, routing policy, ECMP, WCMP, VRRP, VRF, SAG, VRF, ISIS, ISIS6
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, RIPv6, BGP4+
Data Center Features	PFC, PFC-WD ECN * VXLAN, BGP-EVPN
Visualization	Telemetry

Software Specifications	N9500-64OC
	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
Security Features	RADIUS/TACACS, ACL, RIPv2, AAA, CACL, COPP
Management Mode	SNMP v1/v2c/v3, Telnet, console, MGMT, RMON, SSHv1/v2, FTP/TFTP, NTP, Syslog, SPAN/ERSPAN, ZTP, NETCONF, Python, Restful API
Other Protocols	DHCP client, DHCP relay, DHCP server, DNS client, proxy ARP, and syslog

\* indicates that the feature will be available in the future.

## 5. Typical Applications

### AIGC Network Scenario



## 6. Configuration Guide

Take the following steps to order an N9500-64OC switch:

- Select the chassis.
- Select optical transceivers based on port requirements.

## 7. Ordering Information

### Chassis, Fan Modules, and Power Modules

Product Model	Description
N9500-64OC	64 × 800GE OSFP ports, two power module slots, and four fan module slots



## 800GBASE Series Optical Transceivers

Model	Description
OSFP-800G-2xSR4	800G OSFP 2xSR4/SR8 850nm 50m PAM4 DOM MPO/MTP MMF Transceiver Module
OSFP-800G-2xDR4	800G OSFP 2xDR4/DR8 1310nm 500m PAM4 DDM Dual MPO/MTP-12 SMF Optical Transceiver Module
OSFP-800G-2xFR4	OSFP 2xFR4/FR8 1310nm 2km PAM4 DDM Dual LC Duplex SMF Optical Transceiver Module
OSFP-800G-CU	Twin-port 800Gb/s OSFP Finned Top to 800Gb/s OSFP Finned Top Passive Copper Cable
O2Q112-800G-CU	Twin-port 2x400Gb/s OSFP Finned Top to 2x400Gb/s QSFP112 Flat Top Passive Copper Splitter Cable
O2O112-800G-CU	Twin-port 800Gb/s OSFP Finned Top to 2x400Gb/s OSFP Flat Top Passive Copper Splitter Cable
O4Q112-800G-CU	Twin-port 2x400Gb/s OSFP Finned Top to 4x200Gb/s QSFP112 Flat Top Passive Copper Splitter Cable
O4O112-800G-CU	Twin-port 800Gb/s OSFP Finned Top to 4x200Gb/s OSFP Flat Top Passive Copper Splitter Cable

## 400GBASE Series Optical Transceivers

Model	Description
OSFP-400G-SR4	400GBASE-SR4 OSFP PAM4 850nm 50m MTP/MPO-12 APC MMF Optical Transceiver Module
OSFP-400G-DR4	400GBASE-DR4 OSFP PAM4 1310nm 500m MTP/MPO-12 APC SMF Optical Transceiver Module

## 8. Warranty

For more information about warranty terms and period, contact your local sales agency:

- Warranty terms: <https://www.naddod.com/support/>
- Warranty 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](mailto:support@Naddod.com)