

Cisco Catalyst C8300-1N1S-4T2X

Next-Generation Cloud Edge SD-WAN Router (1RU Modular Platform)

Executive Summary: The Cisco Catalyst 8300 Series Edge Platforms are cloud-edge hybrid routers designed for enterprise branch requirements. The C8300-1N1S-4T2X provides high-density WAN throughput, integrated multi-gigabit security, dynamic cloud connectivity, and flexible slot modularity (1 NIM + 1 SM).

19.7 Gbps

MAX CEF THROUGHPUT

Up to 18 Gbps

IPSEC SD-WAN PERF.

4,000

MAX OVERLAY TUNNELS

16 GB

DEFAULT DRAM (UP TO 64GB)

1. PRIMARY PLATFORM SPECIFICATIONS

PARAMETER	TECHNICAL SPECIFICATION
Model Architecture	Cisco Catalyst C8300-1N1S-4T2X Edge Router
Form Factor	1 Rack Unit (1RU), Modular Chassis
Integrated Fixed WAN Ports	4x 1G RJ-45 Copper + 2x 10G SFP+ Optical/Copper
Modular Expansion Slots	1x Network Interface Module (NIM) + 1x Service Module (SM)
Onboard System Memory	16 GB Default DDR4 (Upgradable to 32 GB or 64 GB)
Flash Storage & NVMe	16 GB eMMC onboard; 1x M.2 NVMe SSD slot (Supports up to 480GB)
Crypto Acceleration	Hardware-based Integrated Crypto Engine (IPsec, MACsec)

2. INTERFACE & SLOT BREAKDOWN

Fixed WAN/LAN Connectivity:

- 1G Ports** 4x Gigabit Ethernet (RJ-45) auto-sensing ports.
- 10G Ports** 2x 10-Gigabit Ethernet SFP+ high-speed uplinks.
- Console** 1x RJ-45 & 1x Micro-USB console interface.
- USB** 1x USB 3.0 Type-A port for external storage.

Expansion Capabilities:

- 1x Single-wide NIM Slot:** Supports high-speed WAN, T1/E1, Voice, or Serial modules.
- 1x Single-wide Service Module (SM) Slot:** Supports high-density Gigabit Ethernet switching or compute blades.
- Internal Services:** Dedicated compute engine slot for containers and microservices.

3. SCALABILITY & PERFORMANCE METRICS

FEATURE / METRIC	DEFAULT MEMORY (16 GB)	UPGRADED MEMORY (32/64 GB)
Cisco Express Forwarding (CEF)	Up to 19.7 Gbps aggregate	Up to 19.7 Gbps aggregate
IPsec VPN Performance (SD-WAN)	Up to 18 Gbps aggregate	Up to 18 Gbps aggregate
Maximum Concurrent Overlay Tunnels	2,500 Tunnels	4,000 Tunnels
IPv4 Route Table Capacity	800,000 Routes	1,600,000 Routes
IPv6 Route Table Capacity	800,000 Routes	1,600,000 Routes
Access Control Lists (ACLs)	50,000 Entries	100,000 Entries

4. ADVANCED SOFTWARE & SECURITY FEATURES

Cisco IOS XE SD-WAN:

- Centralized orchestrations via vManage, vSmart, and vBond.
- Application-Aware Routing (AAR) for optimal SaaS transport.
- Zero Touch Provisioning (ZTP) for automated branch deployments.
- Dynamic multi-path optimization across MPLS, Internet, and 5G/LTE.

On-Platform Security Services:

- Enterprise Firewall with Application Visibility & Control (AVC).
- Snort IPS (Intrusion Prevention System) & URL Filtering.
- Cisco Advanced Malware Protection (AMP) & Threat Grid integration.
- Hardware MACsec link encryption support.

5. PHYSICAL, POWER & ENVIRONMENTAL SPECIFICATIONS

ATTRIBUTE	SPECIFICATION DETAILS
Physical Dimensions (H x W x D)	1.73 in x 17.5 in x 18.25 in (4.4 cm x 44.5 cm x 46.4 cm)
Rack Space	1RU (Standard 19-inch rack mounting kit included)
Power Supply Configuration	Dual Redundant, Hot-Swappable Power Supplies (AC, DC, or PoE models)
Input Power Voltage	100 to 240 VAC auto-ranging (50-60 Hz) / -48 to -60 VDC
Thermal & Fan Architecture	Redundant variable-speed internal cooling fans (Front-to-back airflow)
Operating Temperature	32°F to 104°F (0°C to 40°C) at sea level
Operating Humidity	10% to 90% relative humidity (non-condensing)
Safety & Regulatory Compliance	UL 60950-1, CAN/CSA C22.2 No. 60950-1, EN 60950-1, FCC Part 15 Class A