

C9400X-SUP-2XL

Catalyst 9400 Gen-2 XL Supervisor Engine with 4x SFP28 + 4x QSFP28 built-in uplinks, 480 Gbps/slot centralized forwarding for core / aggregation.

Cisco Catalyst 9400 Series Supervisor 2 Module (Gen-2 UADP-class ASIC)

The Cisco Catalyst 9400 Series is the leading modular enterprise access and aggregation switching platform, with up to 9.6 Tbps of centralized switching capacity per chassis. The Series supports the new generation Gen-2 Supervisor engines (C9400X-SUP-2 / C9400X-SUP-2XL) and the Catalyst 9400X line cards that deliver 25G SFP28 and 100G QSFP28 connectivity for modern campus backbones. Supervisors route and forward all traffic; line cards are functionally transparent switching elements that occupy a single slot in the chassis. The C9400X-SUP-2XL is the high-bandwidth Gen-2 supervisor engine for Catalyst 9400 chassis. It doubles per-slot bandwidth to 480 Gbps compared with the SUP-2, delivering the throughput required for enterprise campus core and aggregation layers. Built-in uplinks are identical (4x 1/10/25G SFP28 + 4x 40/100G QSFP28), and the supervisor supports SSO/NSF dual-supervisor redundancy.

Specification	Value
Series / role	Catalyst 9400 Supervisor 2XL (Gen-2 XL)
Built-in uplinks	4x 1/10/25GE SFP28 + 4x 40/100GE QSFP28
Centralized forwarding	Up to 9.6 Tbps system capacity
Per-slot bandwidth	480 Gbps (C9404R/C9407R/C9410R) - 2x SUP-2
Forwarding rate	3 Bpps (IPv4 and IPv6)
DRAM / flash	16 GB / 20 GB
Software	Cisco IOS XE 17.7.1 minimum
Warranty	Cisco Enhanced Limited Lifetime Hardware (E-LLW)

- Gen-2 supervisor engine for Catalyst 9400 chassis (C9404R/C9407R/C9410R).
- Built-in 4x 1/10/25G SFP28 + 4x 40/100G QSFP28 uplinks - 100G/40G flexible uplink choices.
- Centralized forwarding up to 9.6 Tbps; 240 Gbps per slot in single-supervisor chassis.
- 16 GB DRAM / 20 GB flash for high-scale route and FIB tables; optional M.2 SSD storage.
- Runs Cisco IOS XE 17.7.1+ for consistent feature parity with the Catalyst 9000 family.
- Redundant operation: dual supervisors in SSO/NSF mode for hitless failover.

Specification	C9400X-SUP-2
Per-slot bandwidth	240 Gbps (C9404R/C9407R/C9410R)
Centralized forwarding	Up to 9.6 Tbps
Forwarding rate	3 Bpps (IPv4 and IPv6)
MAC addresses	Up to 128,000 (with Custom SDM ASIC template)

Specification	C9400X-SUP-2
IPv4 routes	Up to 256,000 (ARP + learned, with Custom SDM)
IPv6 routes	Up to 256,000 (with Custom SDM)
VLAN IDs / PVST / SVIs	4,096 / 300 / 1,000
Multicast routes	Up to 32,000 (IPv4 + IPv6)
NetFlow entries	384,000 IPv4 / 192,000 IPv6 (FNF)

Component	Specification
DRAM	16 GB
Flash	20 GB
Optional SSD	M.2 SATA SSD up to 960 GB
Built-in uplinks	4x 1/10/25GE SFP28 + 4x 40/100GE QSFP28
Console / management	Standard RJ-45 console and management ports
Maximum power	650 W (active or standby supervisor)
Heat dissipation	2,464 BTU/hr
Chassis compatibility	C9404R, C9407R, C9410R

Property	Value
Dimensions (H x W x D)	1.6 x 14.92 x 14.57 in (4.06 x 37.90 x 37.00 cm)
Weight	11.5 lb (5.2 kg)
Operating temperature	-5 C to +45 C up to 6,000 ft; -5 C to +40 C up to 10,000 ft
Storage temperature	-40 C to +70 C
Relative humidity	10% to 95% non-condensing
MTBF	304,315 hours
Operating temperature	-5 C to +45 C up to 1,800 m; -5 C to +40 C up to 3,000 m (cold start 0 C)
Storage temperature	-40 C to +70 C
Relative humidity	10% to 95% non-condensing
Operating altitude	-60 to 3,000 m

Compared with the SUP-2, the SUP-2XL doubles per-slot bandwidth from 240 Gbps to 480 Gbps to support higher-density line cards at non-blocking rates.

Specification	C9400X-SUP-2XL
Per-slot bandwidth	480 Gbps

Specification	C9400X-SUP-2XL
Doubling	2x the SUP-2 supervisor
Target use	Campus core / aggregation layers with non-blocking oversubscription

Catalyst 9000 platforms run Cisco IOS XE and provide a consistent set of high-scale Layer 2 and Layer 3 switching services. The capabilities below apply across the Catalyst 9300/9400/9500/9600 family and are enabled in software on the platform.

Feature	Description
VLANs / VTP	Up to 4,094 VLANs per switch; VTP v2/v3 transparent and server/client modes
Spanning Tree	PVST+, Rapid PVST+, MST (802.1s); BPDU Guard, Root Guard, Loop Guard
MAC address table	32,000 entries (depending on platform); MACsec with IEEE 802.1AE
IPv4/IPv6 routing	OSPFv2/v3, IS-IS, EIGRP, BGP-4, MP-BGP, EIGRPv6, IS-ISv6, static v4/v6
VRF-Lite / MPLS	Multi-VRF (VRF-Lite) and segment routing awareness (platform dependent)
First-hop redundancy	HSRP v1/v2, VRRP, GLBP (IPv4/IPv6)
Multicast	PIM Sparse Mode / Dense Mode / SSM, IGMPv3, MLDv2, mroute hardware scale
QoS	8 queues per port (Cisco-class QoS), 802.1p, DSCP, policing/shaping, auto-QoS
Security	Port security, DHCP snooping, Dynamic ARP Inspection, IP Source Guard, 802.1x
TrustSec / SGACL	Cisco TrustSec SGT/SGACL tagging and segmentation (platform capable)
NetFlow / IPFIX	Flexible NetFlow v9 / IPFIX on all uplink and downlink ports
MACsec	AES-128/256-GCM 802.1AE link-layer encryption (Cisco ASIC)

Cisco publishes per-platform performance figures for common workload mixes. The indicative numbers below summarize how the platform behaves under load; refer to the official datasheet for the exact test methodology.

Workload / Metric	Reference value
64-byte L2 forwarding	Wire-rate at all port densities on supported platforms
64-byte L3 IPv4 forwarding	Wire-rate with services enabled on supported models
IMIX mixed packet workload	Reported per-platform in the official datasheet
MACsec encrypted forwarding	Wire-rate AES-128/256-GCM with no throughput penalty (ASIC)
Routing convergence	Sub-second OSPF/IS-IS/BGP convergence on GR/NSF-capable platforms
NetFlow / IPFIX records	Up to 384,000 IPv4 + 192,000 IPv6 records (per-platform SDM)
MAC address table	Up to 128,000 (custom SDM templates available on newer platforms)
IPv4 route scale	Up to 256,000 routes (custom SDM template; varies by model)

Workload / Metric	Reference value
IPv6 route scale	Up to 256,000 routes (custom SDM template; varies by model)
ACL scale	Up to 72,000 ACEs (Ingress + Egress) on supported models
VLAN / SVI scale	Up to 4,094 VLANs; up to 1,000 SVIs
QoS queues per port	8 hardware queues per port (Cisco-class QoS)

The Catalyst platform supports a comprehensive ecosystem of pluggable optics, stacking kits, and accessories. The following tables summarize the most commonly deployed options for C9400X-SUP-2XL.

Module / Accessory	Description
Cisco SFP/SFP+ optics	GLC-T (1G copper), GLC-SX-MMD / -LX-SMD / -LH-SMD / -ZX-SMD (1G SX/LX)
Cisco SFP+ 10G optics	SFP-10G-SR, SFP-10G-LR, SFP-10G-ER, SFP-10G-ZR, SFP-10G-T (copper)
Cisco 25G SFP28 optics	SFP-25G-SR-S, SFP-25G-LR-S (where 25G uplinks available)
Cisco 40G/100G QSFP optics	QSFP-40G-SR4 / -LR4, QSFP-100G-SR4-S / -LR4-S (where applicable)
Stacking cables/kits	StackWise cabling kits (per platform; e.g. STACK-T1-50CM)
Spare power supply	Platform-matched AC PSU (e.g. PWR-C1-1100WAC-P) for redundancy
Spare fan tray	Platform-matched fan module (FRU) for hot-swap maintenance
Console cable	CAB-CONSOLE-RJ45 / CAB-CONSOLE-USB for CLI management access
Rack-mount kit	Standard 19-in four-post EIA-310-D rack-mount brackets included
Cisco DNA / Network Advantage	Cisco subscription license tier for the switch model

Power and acoustic performance for the platform is published in the Cisco official datasheet. Indicative values are summarized below; consult the datasheet for the exact test methodology and ATIS weighted-average measurements.

Metric	Indicative value
ATIS no-link power (115 VAC)	Reported per-platform in the official datasheet
ATIS weighted average (115 VAC)	Reported per-platform in the official datasheet
ATIS 100% traffic (115 VAC)	Reported per-platform in the official datasheet
100% PoE budget test	Reported per-platform in the official datasheet
AC input	100-240 VAC, autoranging, 50-60 Hz
DC input (where supported)	-40 to -72 VDC; high-voltage DC where supported
PSU redundancy	1+1 redundant AC/DC power supplies (hot-swappable, where dual bays)
Airflow	Front-to-back or back-to-front, depending on fan model (where supported)
Acoustic noise	LpA reported in the datasheet (typically 43-58 dB for enterprise)

Metric	Indicative value
Heat dissipation	Reported in BTU/hr at full load
Operating altitude	Up to 3,000 m (10,000 ft); derating above 1,500 m on some platforms
ENERGY STAR / 80 PLUS	Platinum efficiency on supported PSUs

The platform is built to the following interoperability, safety and environmental standards. Compliance is verified by independent testing laboratories (UL, CSA, TUV).

Category	Standard
Layer 2	IEEE 802.1Q, 802.1D, 802.1w (RSTP), 802.1s (MSTP), 802.1p, 802.1x, 802.3ad LACP
Layer 3	RFC 1812 IPv4, RFC 4291 IPv6; OSPFv2 (RFC 2328) / v3 (RFC 5340), IS-IS, BGP-4, EIGRP
VLAN / VPN	802.1Q VLAN tagging; VXLAN EVPN (platform capable); L2TPv3, MPLS awareness
Security	802.1AE MACsec, 802.1X, RADIUS (RFC 2865), TACACS+ (RFC 8907), SSHv2
QoS	802.1p, DSCP (RFC 2474), RFC 2598 Assured Forwarding PHB
Management	SNMPv2c/v3, NETCONF (RFC 6241), RESTCONF, YANG (RFC 6020/7950)
Time sync	IEEE 1588v2 PTP, NTPv4, GPS antenna input (where applicable)
Safety	UL 60950-1, CAN/CSA C22.2 No. 60950-1, IEC 60950-1, AS/NZS 60950.1, UL/IEC/EN 62368-1
EMC	FCC 47 CFR Part 15 Class A, EN 55032/CISPR 32 Class A, EN 55024/55035, EN 300 386
Environmental	RoHS 2011/65/EU, WEEE 2012/19/EU, REACH; operating/storage altitude as per datasheet

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