

Cisco C6880-X

Datasheet

Product Overview

- Cisco's Catalyst 6880-X Series is a modular, high-performance switch built for advanced enterprise network cores and aggregation layers.
- This platform targets large businesses, government, service providers, and integrators requiring scalable, secure, and highly available switching.
- It delivers up to 2 Tbps switching capacity (4 Tbps with VSS), 220Gbps per slot, and accommodates up to 158 × 10G ports in VSS mode.
- Advanced virtualization, security with TrustSec, and real-time application visibility set the 6880-X apart in demanding environments.
- Centralized management, support for zero-touch deployment, and integration with Smart Operations simplify network expansions and reduce downtime.
- The C6880-X ensures reliable, compliant, and responsive performance for mission-critical networks across diverse enterprise scenarios.

Product Highlights

- **Exceptional Scalability:** Supports up to 2Tbps switching and 220Gbps per slot, with further capacity scaling to 4Tbps using VSS for future-proof growth.
- **Comprehensive Security:** Integrates TrustSec, IEEE 802.1AE MACsec encryption, and DoS attack protection to maintain enterprise-wide data integrity.
- **Advanced Virtualization:** Offers MPLS, L2/L3 VPN, NetFlow, VPLS, and VRF innovations, enabling diverse network segmentation and tailored policy support.
- **Smart Operations & High Availability:** Catalyst Instant Access, VSS, and Smart Install enable seamless deployment and rapid failover for business continuity.

Detailed Features



C6880-X

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Component	Specification
Switching Capacity	Up to 2 Tbps (4 Tbps VSS)
Port Density	Up to 80 × 10G (standalone) / 158 × 10G (VSS)
Forwarding Rate	Up to 300 Mpps (IPv4/IPv6)
Slots	4 port card slots



High Performance Modular Design

The C6880-X is designed with a modular 4-slot chassis and robust 4.85RU form factor. Each port card supports up to 220Gbps, scaling total system performance to 2Tbpsdouble with VSS mode. This ensures investment protection and adaptability for evolving high-density network requirements.

Maximum Port Density for Flexibility

Supporting up to 80 × 10G ports in standalone, and 158 × 10G ports in a VSS cluster, the switch enables network engineers to address rigorous aggregation and backbone deployments. This high density is ideal for campuses and data centers seeking efficient, space-saving switching infrastructure.

Next-Generation Security Architecture

Cisco TrustSec technology enforces real-time role-based access, while IEEE 802.1AE MACsec encrypts traffic at the hardware layer, ensuring regulatory compliance. CoPP and integrated Cisco ISE deliver denial-of-service prevention and holistic security posture management for enterprise environments.

Comprehensive Virtualization Features

Onboard support for MPLS, L2/L3 VPN, EVN, VRF-aware NAT, GRE, and VPLS offers complete network segmentation. This makes the C6880-X an optimal solution for multi-tenant, managed service scenarios, ensuring user group separation and differentiated Quality of Service.

Real-Time Application Monitoring

With Flexible and Sampled NetFlow, the 6880-X provides scalable and precise application traffic visibility. IT teams can identify bandwidth patterns, enforce usage policies, and optimize network resources with actionable insights from application-layer analytics.

Effortless Smart Operations

Catalyst Instant Access and Smart Install remove tedious manual provisioning. Edge switches are managed as logical extensions of the core, and zero-touch onboarding accelerates campus network rollouts while simplifying lifecycle operations for distributed enterprises.

Continuous High Availability

Virtual Switching System (VSS) clusters two C6880-X chassis, providing non-stop forwarding, single-point management, and rapid convergence after link failureeliminating the need for legacy FHRPs and Spanning Tree for critical network stability.

Environmental and Compliance Assurance

Certified for UL/EN/IEC safety, FCC and CE EMC, and NEBS Level 3, the C6880-X supports demanding operational environments with 0°C to 40°C temperature, 590% humidity, and 3,000m altitude specifications, ensuring global readiness and compliance.

Technical Specifications

Product Specifications

Feature	Value
Chassis Type	Modular switch
Form Factor	4.85RU
Slots	4 port card slots
Switching Capacity	Up to 2 Tbps
Performance	220 Gbps per slot
Port Density	Up to 80 × 10G ports (standalone)
Port Density (VSS)	Up to 158 × 10G ports (VSS mode)
Power Supply	3000W AC/DC, redundant support
Memory	4 GB onboard (upgradable)
Forwarding Rate	Up to 300 Mpps (IPv4/IPv6)
Ingress Buffer Memory	2.5 MB per 10G port (1:1 mode)



Feature	Value
Egress Buffer Memory	48 MB per 10G port (1:1 mode)
Routing Table (IPv4)	2,048K routes
Routing Table (IPv6)	1,024K routes
ACL/QoS Entries	256K shared entries
Multicast	128K routes (IPv4/IPv6)
VLANs	4K VLANs
MPLS VRFs	8,192 VRFs at 300 Mpps
Dimensions (H × W × D)	22.23 × 44.07 × 58.42 cm (8.75 × 17.35 × 23 in)
Licensing	IP Services, Advanced Enterprise Services
Minimum IOS Version	15.1(2)SY1+
Key Protocols	MPLS (RSVP-TE, DS-TE), VPLS/EVPN, VSS virtualization, Cisco TrustSec
Environmental Temperature Min	0°C (32°F)
Environmental Temperature Max	40°C (104°F)
Humidity Range	5% to 90% non-condensing
Supported Altitude	-60m to 3,000m
Compliance - Safety	UL/EN/IEC 60950
Compliance - EMC	FCC Part 15 Class A, CE
Compliance - NEBS	GR-1089 Level 3
Management MIBs	ETHERLIKE-MIB, RMON, CISCO-VTP-MIB
NetFlow Support	Hardware-accelerated (5M entries system-wide)
Optics Support - 10G SFP+	SR/LR/ER/ZR
Optics Support - 1G SFP	GLC-SX-MM, GLC-LH-SM
Copper Support	Twinax DAC (1m-10m)
Redundancy Features	OIR support for power supplies & port cards
High Availability Features	VSS, Stateful SSO



Product Comparison

Feature	C6880-X	C1-WS3850-48P/K9	C9300-48H-A=
Switching Capacity	Up to 2 Tbps (4 Tbps VSS)	928 Gbps	176 Gbps
Forwarding Rate	Up to 300 Mpps	130.95 Mpps	154.76 Mpps
Port Density	Up to 158 × 10G ports (VSS)	48 × 1G + 4 × 10G SFP+	48 × 1G + 4 × 10G SFP+
Modular/Fixed	Modular	Fixed	Fixed
Redundant Power	Supported	Supported	Supported
Layer 3 Features	Advanced: MPLS, VRF, VPLS	Static, RIP, OSPF, EIGRP, BGP	OSPF, EIGRP, BGP, VRF-Lite
Virtualization	VSS, full MPLS	StackWise	StackWise-480
PoE/PoE+ Support	No native PoE	PoE+/UPoE	PoE+/UPoE
Management	Smart Install, Catalyst Instant Access	Web UI, CLI, SNMP, NetFlow	Web UI, CLI, SNMP, StackPower
Environmental Compliance	UL, CE, NEBS	UL, CE, RoHS	UL, CE, RoHS
Physical Dimensions	22.23 × 44.07 × 58.42 cm	4.45 × 44.5 × 44.8 cm	4.4 × 44.5 × 44.8 cm

Accessories

Category	Accessories
Included Accessories	<ul style="list-style-type: none"> - AC Power Supply - Rack Mount Kit - Console Cable
Optional Accessories	<ul style="list-style-type: none"> - 10G SFP+ Module - Redundant Power Supply - Fan Tray

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Contact Us

Email

High Connectivity: sales@router-switch.com

Expert Technical Support: ccie-support@router-switch.com

Cooperative Partnerships: ccie-support@router-switch.com

Phone

USA: +1-626-655-0998

Hong Kong: +852-25925389 / +852-25925411

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Global Branches

Headquarters (Hong Kong)

Rm 605, 6/F, Fa Yuen Comm Bldg, 75-77 Fa Yuen St, Mongkok, Kowloon, Hong Kong, China

USA Branch

3592 Rosemead Blvd, B #220, Rosemead, CA 91770, USA

Shenzhen Branch

Jingfeng Building, 1001 Shangbu South Road, Futian District, Shenzhen, China

UK Branch

Third Floor, 207 Regent Street, London W1B 3HH, UK



References

[1] Cisco. (2023). Cisco Catalyst 6880-X Series Switch Datasheet. Retrieved from https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-6880-x-switch/data_sheet_c78-728228.html