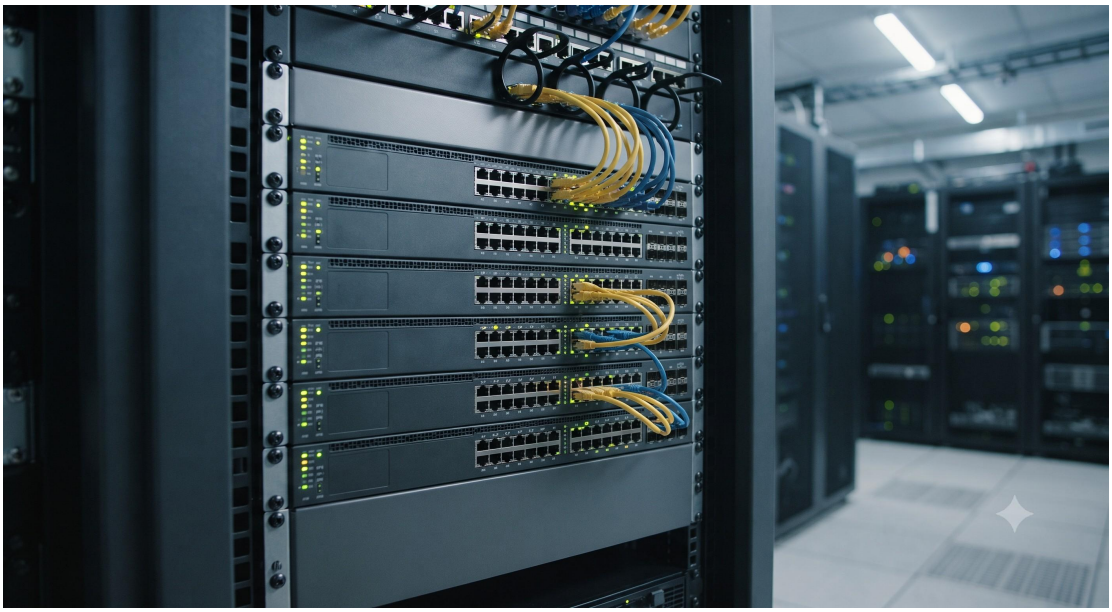
Cisco Catalyst 9300 UPOE Switch Total PoE Power Budget Configuration Matrix - Official Technical Overview & Hardware Datasheet

CISCO CATALYST 9300 UPOE SWITCH: TOTAL POE POWER BUDGET CONFIGURATION MATRIX

EXECUTIVE SUMMARY

The Cisco Catalyst 9300 Series represents a paradigm shift in enterprise access switching, engineered specifically to meet the escalating power and bandwidth demands of next-generation IoT, smart building, and Wi-Fi 6/6E deployments . As the foundational element of Cisco's Software-Defined Access (SD-Access) architecture, the Catalyst 9300 Series delivers industry-leading Universal Power Over Ethernet (UPOE) capabilities, providing up to 90W per port and supporting an unprecedented scale of up to 384 ports of 60W PoE across a stack . This datasheet provides a comprehensive technical overview of the Catalyst 9300 UPOE switching platform, with a specific focus on the Total PoE Power Budget Configuration Matrix. It delineates the critical parameters, power supply options, and architectural considerations necessary for designing robust, high-density, power-aware enterprise networks that guarantee non-blocking performance and operational resilience .



HARDWARE ARCHITECTURE & SILICON

The Cisco Catalyst 9300 Series is built on the Cisco Unified Access Data Plane (UADP) Application-Specific Integrated Circuit (ASIC), a purpose-built programmable engine that delivers deterministic, line-rate performance with sub-microsecond latency . The architecture integrates a powerful CPU subsystem and an optional hardware-based encryption engine for MACsec and IPsec, enabling secure transport without compromising forwarding performance. The platform supports advanced programmable pipeline capabilities through the UADP ASIC, allowing for the integration of new features and protocols via software updates, ensuring investment protection and long-term architectural agility. The modular design provides for flexible uplink configurations, including 1G, 10G, 25G, 40G, and 100G options, and integrates with the Cisco StackWise-480 and StackPower technologies for

unified management and power stacking .

KEY FEATURES & ROUTING LOGIC

- Universal Power Over Ethernet (UPOE/UPOE+): The Catalyst 9300 Series offers unparalleled PoE density and flexibility. Select models deliver up to 60W per port (Cisco UPOE) and up to 90W per port (Cisco UPOE+) based on the IEEE 802.3bt standard. This high-wattage capability enables the direct powering of high-performance endpoints such as pan-tilt-zoom (PTZ) cameras, digital signage, and Wi-Fi 6/6E access points, simplifying campus deployments and reducing infrastructure costs .

- Cisco StackWise-480: This stacking technology provides up to 480 Gbps of stack throughput, enabling the virtualization of up to eight physical switches into a single logical entity. This simplifies management, enhances resiliency with stateful failover, and increases aggregate PoE power budget and port density .

- Cisco StackPower: An innovative power-stacking technology that allows multiple switches in a stack to share a common power pool. This feature provides power redundancy, enabling the power supply of one switch to back up another, maximizing uptime and simplifying power infrastructure design .

- Modular Uplinks and High-Density Ports: The platform offers a wide range of models, from 24-port to 48-port configurations, supporting 1G copper, Multigigabit Ethernet (100M/1G/2.5G/5G/10G), and SFP/SFP+ fiber. The modular uplink architecture supports up to 100G/40G/25G/10G/1G fiber, allowing for flexible integration into diverse network topologies, including campus aggregation and data center leaf-spine fabrics .

- Hardware-Based Security: The Catalyst 9300 integrates a hardware trust anchor that provides secure boot and runtime defense against malicious software. The platform also supports hardware-based IPsec and MACsec encryption for secure data-in-motion, which is critical for enterprise and carrier-grade deployments .

COMPLIANCE & STANDARDS

The Cisco Catalyst 9300 Series is rigorously tested and certified to meet the industry’ s most stringent standards. The platform guarantees interoperability and regulatory compliance, providing a future-proof foundation for mission-critical enterprise networks.

- IEEE Standards: IEEE 802.3af (PoE), IEEE 802.3at (PoE+), IEEE 802.3bt (UPOE/UPOE+), IEEE 802.1Q (VLAN), IEEE 802.1D (STP), IEEE 802.1w (RSTP), IEEE

802.1s (MSTP), and IEEE 1588 (Precision Time Protocol) .

- Ethernet Standards: IEEE 802.3ae (10 Gigabit Ethernet), IEEE 802.3an (10GBASE-T), IEEE 802.3bz (2.5G/5G Multigigabit Ethernet), and IEEE 802.3ab (1000BASE-T) .

- Security: Extensive support for 802.1X, MACsec (IEEE 802.1AE), and hardware-based IPsec encryption.

- Environmental: The platform is compliant with the EU RoHS Directive and other leading environmental and safety standards globally. Select models are available in compliant variants for ETSI and NEBS environments.

TECHNICAL SPECIFICATIONS

For complete, up-to-date technical specifications for all models, please consult the official Cisco documentation.

- Form Factor: Fixed 1RU chassis. Depth options include standard and shallow-depth variants .

- Switching Capacity: Up to 1 Tbps in stacking configurations, delivering a

non-blocking, line-rate forwarding architecture .

- Stacking Bandwidth: Up to 480 Gbps (StackWise-480) .

- CPU: High-performance multi-core x86 processor running Cisco IOS XE.

- Memory: 8 GB DDR4 (default), with optional expansion. 8 GB Flash (default).

- Management: Cisco IOS XE CLI, Web UI, NETCONF/RESTCONF, gRPC Telemetry, and Cisco DNA Center integration.

- MTBF: > 300,000 hours at 25°C based on Telcordia SR-332 methodology.

Parameter	**Specification**
Form Factor	1RU Fixed Chassis (Standard and Shallow-Depth variants available)
Switching Capacity (Stack)	Up to 1 Tbps
Stack Bandwidth	480 Gbps (Cisco StackWise-480)
Port Types (Selected Models)	1G Copper, Multigigabit (100M/1G/2.5G/5G/10G), 1G/10G/25G/40G/100G SFP/SFP+/QSFP+

PoE Standards	IEEE 802.3af (PoE), IEEE 802.3at (PoE+), IEEE 802.3bt (Cisco UPOE/UPOE+)
Maximum PoE Per Port	Up to 90W (Power Supply Dependent)
Maximum PoE Budget (Stack)	Configurable up to 384 ports of 60W UPOE
Memory	8 GB DDR4 (Default), 8 GB Flash (Default)
Power Supply	Dual Hot-Swappable Redundant AC/DC, Cisco StackPower
Management	Cisco IOS XE CLI, Web UI, RESTCONF/NETCONF, gRPC Telemetry, Cisco DNA Center
MTBF	> 300,000 Hours (Telcordia SR-332)



ORDERING SKU INFORMATION

Cisco Catalyst 9300 Series switches are ordered using a modular naming convention that specifies port density, PoE capabilities, and licensing. Below is a representative list of the most common SKUs. For a complete list and for configuring network modules, power supplies, and accessories, please contact your Cisco account representative or Cisco partner.

Base Switch Models (Selected)

- C9300-24U: 24-port 1G, 60W UPOE . Default PSU: PWR-C1-1100WAC-P. Available PoE Power: 830W .

- C9300-48U: 48-port 1G, 60W UPOE .

- C9300-24UX: 24-port Multigigabit (10G/5G/2.5G/1G), 60W UPOE .

- C9300-48UXM: 36-port 2.5G and 12-port 10G Multigigabit, 60W UPOE .

- C9300-24H: 24-port 1G, 90W UPOE+ .

- C9300-48H: 48-port 1G, 90W UPOE+ .

- C9300X-24HX: 24-port 10G Multigigabit, 90W UPOE+ .

- C9300X-48HX: 48-port 10G Multigigabit, 90W UPOE+ .

- C9300X-48TX: 48-port 10G Multigigabit, Data only (no PoE) .

Default AC Power Supply

- C9300-24U: Default 1100W AC .

- C9300X-48HX: Default 1100W AC .

- C9300X-48TX: Default 715W AC .

Software Licenses

- C9300-DNA-xxx-x: Cisco DNA Essentials and Advantage licenses are required for full SD-Access functionality.

- C9300-NW-A-xx: Network Advantage license for advanced Layer 3 and routing features.

- C9300-NW-E-xx: Network Essentials license for baseline Layer 2 and basic Layer 3 features.

Power Supplies

- PWR-C1-1100WAC-P/2: 1100W AC Power Supply .

- PWR-C1-715WAC-P/2: 715W AC Power Supply .

- Additional AC and DC power supplies are available, including models for NEBS compliance.