Typical Power Consumption of Core Switches



Overview

Learn about the power consumption of network switches and how to calculate the wattage usage for your specific networking setup.

Key Takeaways

A core network switch typically consumes between 100 and 1,100 watts, depending on model, port density, and PoE usage.

Overview

Core switches, designed for enterprise or data center environments, generally consume significantly more power than small office or home switches. Basic unmanaged switches may use only 2–10 watts, while larger managed switches with 24–48 ports can consume 10–100 watts or more under normal operation. High-end core switches, especially those supporting Power over Ethernet (PoE), can draw several hundred watts, with some models like the Cisco C9300-48U reaching 135 watts typical without PoE and up to over 700 watts when PoE devices are connected.

Factors Affecting Power Consumption

Port Density: More ports increase power usage, particularly if all ports are active.

Po

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

E Support: PoE switches consume additional power to supply connected devices, sometimes exceeding the base switch consumption by hundreds of watts. Switch Type and Features: Managed switches with advanced features (VLANs, QoS, monitoring) require more processing power and thus more energy than unmanaged switches. Port Speed: Gigabit and 10-Gigabit ports consume more power than 10/100 Mbps ports.

Utilization and Traffic Load: High network activity increases power draw, while idle periods reduce it. Environmental Conditions: Temperature, ventilation, and cooling efficiency can affect overall power usage.

Practical Examples

Small enterprise switch (24–48 ports, non-PoE): 30–100 watts typical.

High-end Po

E core switch: 135 watts typical without PoE; total power can exceed 700 watts when powering multiple devices. Home or small office switch (5–8 ports): 2–10 watts.

Planning Considerations

When designing power and cooling for a server room or data center, it is important to consider both the base switch consumption and any PoE load. Using the maximum rated power of the switch's power supply ensures sufficient capacity, while typical consumption values help estimate average energy usage and operational costs. In summary, core switches are energy-intensive compared to small switches, and their power consumption varies widely based on features, port count, PoE usage, and network load.

Proper planning should account for both typical and peak power requirements.

Article Content

How Much Wattage Does A Network Switch Use

Learn about the power consumption of network switches and how to calculate the wattage usage for your specific networking setup. Understand the factors that influence energy

Detailed power consumption values of Ethernet

We assess the impact of traffic variations on energy consumption and devices lifetime in a core network. Specifically, we first define a model to control the

How much power does a network switch use? (Guide on 2 Best Models)

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

This data sheet provides detailed information about the Cisco C9350 Series Smart Switches including port and PoE options, power supplies, fans, and unified licensing.

Do network switches use a lot of electricity?

You can measure the power consumption of your network switch using a power meter or a smart power strip that measures energy usage. Some managed switches also provide built-in power

Network Switch Power Consumption Explanation and How to Choose

Learn how many watts a network switch typically uses, the differences between low and high power Ethernet switches, and how to choose the right industrial switch based on performance,

What is the typical power consumption of a 24-port PoE switch?

The typical power consumption of a 24-port PoE switch varies depending on several factors, such as the model, the power budget (how much power it can deliver to devices), and

total switch power consumption

Hi everyone, using cisco power calculator for C9300-48U model and by adding few POE devices, the results shows that the switch typical power consumption without POE is 135W, and

What is the power budget of a 48-port PoE switch, and how many

The power budget of a 48-port PoE switch depends on the PoE standard and specific model, typically ranging from 370W for basic PoE switches to 4,800W for advanced PoE++ switches.

Network Switch Power Consumption Explained

The energy consumed per unit by a switch is an important factor for a buyer to know. Power used by a switch differs not only based on its type and configuration but also on the IEEE

OSFP 800G 2xSR4 Accelerates the Interconnection of AI and HPC

Utilizing Broadcom''s 7nm DSP chip, it consumes ≤14W, a 35–40% reduction compared to typical traditional chips. Intelligent "dynamic power regulation" is supported at the firmware level,

Network Switch Power Consumption Explained

Network Switch Power Consumption Explained The energy consumed per unit by a switch is an important factor for a buyer to know. Power used by a switch differs not only based on its

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Energy Efficiency and Cisco Switches

Overview In today''s business, when considering energy eficiency and power consumption in the context of networking and communications equipment, two areas are in sharp focus:

Carbon aware network

Switch devices power optimization Focus on power reduction and optimizations Enable long term power consumption reduction Measured in Watts per 100Gbps As appears on previous slides Architecture

Network switch: reduce power consumption and save costs

Network switch: Power consumption How much are your electricity costs being used? How can you save AND protect the environment? Read now.

Network Switch Power Requirements

The standard power supply for this switch is 350 watts. The Cisco catalyst 9300 Series Switches datasheet document shows table 22 Power Consumption of Standalone 9300 Series

How many watts is a c9500 48y4c?

Typical Power Consumption: While the maximum power rating of the power supplies provides an upper limit, the typical power consumption of a C9500-48Y4C switch

Ethernet Power Study of Cisco and Competitive Products

A 100W switch running 24 hours a day emits close to 569 lb of CO2 every year. Such emissions increase the carbon footprint of an organization drastically. Thus, there exists a strong business and

24 Port PoE Switch Power Consumption: 400W vs 600W

For buying gigabit PoE switch, we usually concern about port numbers. However, power consumption is often linked with port number to cater

© 2026 CJC FIBRE CONSULTANTS - All rights reserved

Contact Us

Continue your research online:

Website: https://cjcconsultants.co.za
Technical inquiry: https://cjcconsultants.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 CJC FIBRE CONSULTANTS - All rights reserved