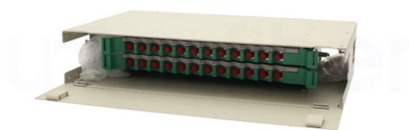


Can PoE ports on a PoE switch be cascaded



Overview

A PoE switch is a network switch that can provide Power over Ethernet from each interface while still being able to forward frames.

Key Takeaways

Yes, PoE ports on a PoE switch can be cascaded under certain conditions, typically using standard PoE switches or PoE Power Forwarding, but care must be taken to avoid overloading or damaging devices. How PoE Cascading Works

Cascading PoE switches involves connecting one switch to another to extend both network connectivity and, in some cases, power delivery. Standard PoE switches with compliant chips can safely detect powered devices (PDs) and supply power only when needed, allowing serial connections without damaging devices. This is often done using either normal Ethernet ports or dedicated uplink ports, depending on the switch design.

PoE Power Forwarding

A more controlled method is PoE Power Forwarding, where a powered device (PD) connected to a PoE switch can pass unused power to another PD downstream. For example, a PoE access point consuming 40W from a 90W PoE port can forward remaining power to an IP camera, enabling daisy-chaining and extending Ethernet runs beyond 100 meters. This method ensures that each device receives adequate power while maintaining network connectivity.

Considerations and Limitations

- **Power Budget:** Ensure the upstream PoE switch has sufficient power to support all cascaded devices. Exceeding the power budget can cause devices to malfunction or fail .
- **Standards Compliance:** Only standard PoE switches (IEEE 802.3af/at/bt) should be cascaded. Non-standard PoE ports may damage connected devices if misused .
- **Cable Length:** Each Ethernet segment should not exceed 100 meters to maintain signal integrity .
- **Data Bandwidth:** Cascading multiple switches can create bottlenecks if the uplink port cannot handle combined traffic from all downstream devices .
- **Device Compatibility:** PoE only powers devices designed to accept it. Connecting a non-PoE device to a PoE port will not provide power, but connecting a non-standard PoE device incorrectly can cause damage .

Practical Tips

- Use uplink or dedicated cascade ports when available to simplify connections and reduce configuration issues .
- Monitor the power consumption of all connected devices to avoid exceeding the switch's total PoE budget .
- For Gigabit Ethernet, PoE uses phantom power over all four pairs, so standard CAT5e or CAT6 cabling is required to maintain both data and power transmission . In summary, PoE ports can be cascaded safely if using standard PoE switches or PoE Power Forwarding devices, with attention to power budgets, cable lengths, and device compatibility. This allows network expansion and flexible device placement without additional power infrastructure.

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Power over Ethernet (PoE) Installation Best Practices Written by Don Schultz, trueCABLE Technical Manager, Fluke

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