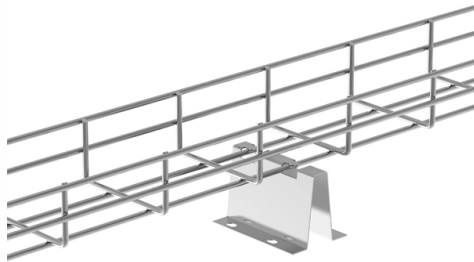


Power Private Network Liquid-Cooled Switch Anti-Static



AI Overview

Liquid-cooled switches for high-performance networks offer superior thermal management, energy efficiency, and reliability, with anti-static design enhancing operational safety.

Overview of Liquid-Cooled Switches

Liquid-cooled switches are designed to directly extract heat from high-power components, such as ASICs and network processing units (MPUs), enabling higher throughput and port densities without thermal throttling (Cisco). By replacing traditional air cooling with direct-to-chip liquid cooling, these switches can achieve 5–10% power savings, reduce vibration, and improve reliability, particularly in AI and high-density data center environments (Arista).

Key Benefits

- 1. Thermal Efficiency and Performance** Direct liquid cooling removes heat more effectively than air, allowing switches to maintain maximum throughput even at 400G, 800G, or higher port speeds. Reduced component stress extends switch lifespan and improves network uptime.
- 2. Energy Savings** Eliminating fans and using liquid cooling can save up to 30–50% of energy compared to air-cooled systems in high-density deployments. Lower power consumption also reduces operational costs and environmental impact.
- 3. High-Density Rack Integration** Vendors like Arista and Cisco are developing fully liquid-cooled racks that support multiple switches, patch panels, and power shelves in a compact footprint. Tight liquid fittings and optimized rack designs allow up to 32 switches per rack, enabling scale-out networking for AI clusters.
- 4. Reliability and Anti-Static Protection** Liquid-cooled switches reduce vibration, which is beneficial for sensitive optical components and helps prevent static discharge issues. Advanced monitoring, leak detection, and corrosion prevention are integrated to safeguard infrastructure and maintain operational stability.

Vendor Implementations

Cisco 51.2...

Article Content

Flex: Liquid-Cooled Racks for Data Centers with JetCool

Scalable, Vertically-Integrated Liquid-Cooled Racks for AI Accelerating deployment at scale With the increasing complexity and scale of computing in the AI era, integrated system rack designs that bring

BT to test liquid cooling, including a Juniper/Iceotope network switch ...

BT is testing liquid cooling techniques including network switches provided by Iceotope and Juniper, and new immersion players. The tests include a version of the widely-used Juniper QFX

Iceotope and Mellanox present first ever liquid-cooled switches

British cooling specialist Iceotope and American-Israeli networking vendor Mellanox have joined forces to create industry's first network switches to be cooled by liquid immersion. The

What Are Next-Generation Liquid-cooled Switches Like?

The focus of network is on switch liquid cooling, and the focus of server is on GPU liquid cooling. Over the past 12 years, the power consumption

Interesting. Cisco shows off its liquid-cooled switch. | Rich Miller

By amalgamating cutting-edge performance with robust protective measures, Cisco's pioneering switch heralds a new era for high-density networking.

Alpha : Unveils 1.6T Liquid-Cooled Switch at COMPUTEX 2025

Alpha Networks Inc. (TWSE: 3380), a leading provider of networking solutions, is set to showcase its latest innovations at COMPUTEX 2025, including its debut of the 1.6T liquid-cooled

Industry First 1.6T Liquid Cooled Switch: QFX5250-64OE-L

Built for Modern Data Centers The QFX5250-64OE-L liquid-cooled switch uses direct-to-chip cooling and meets Open Compute ORv3 standards, helping manage the power and thermal

Deep Dive: Liquid-Cooled AI Switches for the Next Generation

As the demand for AI computing grows, liquid cooling technology has become the key to guaranteeing heat dissipation for high-power switches. This article delves into the design difficulties and solutions

Arista developing liquid-cooled network switches

Networking firm Arista is developing liquid-cooled switches and racks. As reported by NetworkWorld and Converge Digest, the company outlined its plans at the recent Hot Interconnects

Liquid cooling solutions for AI and high-density data centers ...

Explore our end-to-end liquid cooling solutions for AI, high-density IT, and sustainable thermal performance.

Cooling the Network Revolution: Edgecore's Liquid and Immersion ...

In one Edgecore proof-of-concept, direct liquid cooling dropped a switch's CPU temperature by 10°C and the switch ASIC by 6°C, while cutting fan power usage by 25%.

Arista Innovations: Harnessing Liquid Cooling and Optical Technology

Emphasizing the need for liquid-cooled switches in AI data centers, Bechtolsheim stated that this technology not only lowers power consumption but also decreases failure rates and

Ruijie Networks Released Near-packaged Optics (NPO) & Cold-plate Liquid ...

At the optical fiber communication conference and exhibit (OFC) 2022, Ruijie Networks released 51.2T silicon photonics NPO cold-plate liquid-cooling switch based on the 800G NPO

Power and Cooling Products | Flex

We deliver reliable, high-quality liquid cooling solutions plus critical, embedded, and custom power products to power the data center.

Q3450-LD Liquid-Cooling System

The Q3450-LD liquid-cooling system features two parallel cooling loops operating concurrently. Liquid enters via two separate inlet ports and exits

Direct liquid cooling solutions | HPE

Learn about innovative 100% fanless direct liquid cooling and other liquid cooling solutions from HPE for demanding AI and HPC workload efficiency.

Exploring the Future of AI Networking: Liquid-Cooled Switches ...

Exploring the Future of AI Networking: Liquid-Cooled Switches on the Horizon Imagine a data center where even the most powerful switches run cool and stable— without noise, thermal throttling, or

Industry First 1.6T Liquid Cooled Switch: QFX5250-64OE-L

Designed for 100% liquid-cooled operation with direct-to-chip cooling in an ORv3 rack environment, the system initiates leak monitoring immediately upon receiving DC power from the

Redefining liquid cooling from the server to the switch

BT kicked off the trials with a network switch cooled using Iceotope's Precision Liquid Cooling technology and Juniper Networks QFX Series Switches. With

Arista touts liquid cooling, optical tech to reduce power consumption ...

Arista Networks shared some of its plans to deliver liquid-cooled switches and racks that can significantly reduce power consumption in enterprise AI networks. At Arista's recent Analyst Day

Cisco's Liquid-Cooled 51.2T Switch: Next-Generation Data Center ...

Cisco's 51.2T liquid-cooled switch represents a significant leap forward in data center technology. By integrating direct-to-chip liquid cooling, the company is not only pushing the

Marvell TX9190 Liquid-Cooled CPO Switch at OCP 2025

Not only were these demo switches using co-packaged optics, but they were also designed to be liquid-cooled. Warning,

Contact Us

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