New Czech Liquid-Cooled Switch



Overview

Hotter Than a Hot Tub: The 45°C Breakthrough to Cool AI's Biggest. NVIDIA's latest AI servers can run on coolant warmer than a hot tub — and that counter.

Key Takeaways

Liquid-cooled switches, including emerging models in Europe, offer high-density, energy-efficient performance for AI and high-throughput data centers.

Overview of Liquid-

Cooled Switch TechnologyLiquid-cooled switches use direct-to-chip or immersion cooling to remove heat from high-power components like ASICs, enabling higher bandwidth and port densities without thermal throttling. This technology is particularly important for 400G, 800G, and AI-focused switches, where traditional air cooling reaches its limits, potentially causing bottlenecks and increased operating costs (Cisco).

Key Benefits

Enhanced Performance: By extracting heat directly from chips, liquid cooling allows switches to maintain maximum throughput even under heavy workloads, supporting dense AI clusters and high-speed fabrics. Energy Efficiency: Liquid-cooled systems can reduce power consumption by 5–50% compared to air-cooled equivalents, depending on design and deployment, contributing to greener operations. Reliability and Reduced Vibration: Removing fans and using liquid cooling reduces mechanical stress, vibration, and failure rates, improving long-term reliability.

Density Optimization: Liquid cooling enables denser switch racks, allowing more switches per rack without overheating, which is critical for AI and HPC data centers.

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Deployment Considerations

Rack Design: Modern liquid-cooled switches often require specialized racks with integrated coolant distribution units (CDUs) or centralized facility distribution units (FDUs) to manage high-density cooling efficiently. Cooling Infrastructure: Options include two-phase direct-to-chip systems, single-phase immersion tanks, and experimental fluids, which are increasingly available in European data centers like Global Switch London. Integration with Existing Systems: Liquid-cooled switches can be deployed alongside traditional air-cooled systems, but planning for coolant loops, leak prevention, and maintenance access is essential.

European Context

While specific Czech models are not detailed in the sources, Global Switch and other European facilities are already demonstrating liquid-cooled technologies, making it feasible for Czech data centers to adopt or develop similar solutions. These systems are particularly suited for AI workloads, high-density fabrics, and energy-conscious operations.

Conclusion

A new Czech liquid-cooled switch would likely leverage direct-to-chip or immersion cooling to achieve high throughput, energy efficiency, and reliability. Such switches are ideal for AI-driven data centers, offering scalable performance while reducing operational costs and environmental impact. Planning for specialized racks and cooling infrastructure is critical for successful deployment.

Article Content

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GB200 NVL72 | NVIDIA

Energy-Efficient Infrastructure Liquid-cooled GB200 NVL72 racks reduce a data center''s carbon footprint and energy consumption. Liquid cooling increases compute density, reduces the amount of floor

Solutions

Cisco is leading this innovation with ongoing R&D into direct-to-chip liquid-cooled switching platforms. By connecting you to this technology path before launch, we invite you to

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The QFX5250-64OE-L liquid-cooled switch uses direct-to-chip cooling and meets Open Compute ORv3 standards, helping manage the power and thermal demands of 1.6T-scale networking.

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With passion and engineering rigor, they are developing advanced liquid cooling and immersion cooling solutions that vastly improve heat removal for high-performance switches and

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

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Rising power densities in embedded computing continue to challenge traditional thermal management. Modern processors, FPGAs, and high-performance modules routinely exceed 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,

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Cisco''s INSANE Liquid-Cooled Switch

Big thank you to Cisco for sponsoring my trip to the Cisco Partner Summit and for sponsoring this video! See how Cisco uses direct-to-chip liquid cooling to manage 2000W of heat in this 51.2T switch.

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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.

Switch deploys new hybrid air and liquid cooling design, claims to ...

US data center firm Switch has launched a new data center design it claims can support up to 2MW per rack. The company has also expanded its available debt financing to $10 billion.

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Arista executives discuss liquid-cooled networking gear and support for Linear Pluggable Optics to achieve power and cost optimization for AI data centers.

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

With high-performance chips now entering the kilowatt-class era, conventional air-cooling systems face significant limitations in terms of size, cost, efficiency, and energy consumption. Alpha

Liquid Cooling

The different thermal management solutions for cooling the high-power components in electronic systems (HPCs/Servers and network

Global Switch brings direct liquid cooling to Hong Kong data center

Global Switch has introduced direct liquid cooling at its Hong Kong data center to cater to the increasing demand for AI services from Chinese clients. The liquid cooling option is available

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