

Gulf Region Stockpiled Liquid-Cooled Switches SFP



AI Overview

The Gulf region is actively adopting liquid-cooled switches with SFP modules to support high-density AI and HPC workloads, with proof-of-concept deployments underway in the UAE and broader GCC infrastructure planning. Regional Adoption and Proof-of-Concepts Gulf states, particularly the UAE and Saudi Arabia, are rapidly expanding AI-focused data center capacity. Traditional air cooling is increasingly insufficient due to high rack densities and extreme heat, prompting a shift to direct-to-chip liquid cooling for switches and servers. A notable initiative involves INNOVO, Castrol ON, and LiquidStack, which are collaborating on the UAE's first modular, AI-ready liquid-cooled data center. This proof-of-concept unit integrates direct-to-chip cooling technology, specialized thermal fluids, and modular design, enabling testing of cooling efficiency and operational readiness before full-scale deployment. Technology and Performance Liquid-cooled switches, such as those under development by Cisco, are designed to handle 400G, 800G, and higher bandwidths without thermal throttling. Direct-to-chip cooling extracts heat from ASICs and high-power components, improving efficiency and enabling denser switch fabrics. This approach can reduce energy consumption by 30–50% compared to air cooling, while maintaining optimal SFP module performance under high throughput conditions. These switches are critical for AI clusters where high port density and low latency are essential. Supply Chain and Stockpiling The Gulf region is establishing a sovereign supply chain for liquid cooling, leveraging local materials such as copper and polymers, and taking advantage of the expiration of key patents to democratize manufacturing. This enables regional stockpiling of liquid-cooled switches and associated SFP modules, ensuring readiness for rapid AI infrastructure expansion. M...

Article Content

Liquid Cooling

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

HPE Launches Advanced Data Center Hosting Service

This purpose-built infrastructure includes compute, accelerated compute, software, networking, and direct liquid-cooling (DLC) capabilities,

Training AI at 50 °C: The Gulf Data Centre Engineering

The design engineers have been steadily pushing supply temperatures upward, towards 12 to 14 °C for high-density liquid-cooling campuses, to reduce both the chiller lift and the transport heat gain.

Spent fuel pool

Spent fuel pools (SFP) are storage pools (or "ponds" in the United Kingdom) for spent fuel from nuclear reactors. They are typically 40 or more feet (12 m) deep,

High cooling water temperature effects on design and

An interesting work conducted by Kim and Jeong (2013) highlighted using simplified model the effect of high cooling water temperature of the Gulf

Iceotope and Mellanox present first ever liquid-cooled

British cooling specialist Iceotope and American-Israeli networking vendor Mellanox have joined forces to create industry's first network switches to

Middle East Data Center Immersion Cooling Fluid

Cargill and TotalEnergies added Gulf distribution points in 2025, improving supply resilience and lowering freight surcharges. Mineral oil retains

Localizing Renewable Energy Supply Chains in the Gulf:

Despite their abundant oil and gas wealth, the member states of the Gulf Cooperation Council (GCC) are cautiously navigating the energy transition.

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

All high-speed ports support ORHS form-factor optics designed for efficient thermal operation in liquid-cooled environments. In addition, the system includes 2 SFP28 ports (ports

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

Alpha Networks switch supports up to 100,000 GPU

The 1.6T switch from Alpha Networks employs a liquid-cooled solution that delivers more than 1.8 KW of cooling capacity per liquid-cooled board. The

Cooling the Network Revolution: Edgecore's Liquid and

With passion and engineering rigor, they are developing advanced liquid cooling and immersion cooling solutions that vastly improve heat removal

7 Ways to Keep Data Centres Cool in the Gulf Heat

Operating data centres in the Gulf region presents unique challenges, primarily due to the extreme heat and harsh climate conditions that can push

From Airflow to Liquid Cooling: A Deep Dive into 800G

The OSFP (Octal Small Form Factor Pluggable) has become one of the most widely adopted pluggable form factors for 800G optical modules in high

Gulf switches to more energy efficient cooling solutions

Average cooling energy costs would be almost halved and, combined with cleaner power sources, can radically reduce overall emissions.

Energy transition strategies in the Gulf Cooperation Council countries

During the last two decades, Gulf Cooperation Council (GCC) countries have seen their population, economies and energy production growing steeply with

INNOVO, Castrol ON, and LiquidStack launch UAE's

Innovo, Castrol ON, and LiquidStack collaborate on a proof-of-concept unit aimed at meeting rising AI and high-performance computing

Liquid-Cooled Optical Transceivers for 800G/1.6T

Liquid-cooled optical transceivers enable efficient 400G–1.6T interconnects for data centers, AI clusters, and HPC.

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

Submer Brings Next-Generation, Liquid-Cooled AI

Submer, a global leader in sustainable datacenter infrastructure, announced the strengthening of its operations in the region with the presence of

Desert Bytes: Why Gulf AI Ambitions Must Align with

AI data center expansion in the Gulf faces critical water and energy constraints. Explore sustainable solutions for digital infrastructure in extreme

UAE's First Liquid-Cooled AI Data Center Launched

In conclusion, the launch of the UAE's first liquid-cooled AI data center by HPE and Khazna represents a significant leap forward in the region's

du and NextGenAI unveil Middle East's most advanced

du today announced a partnership with NextGenAI to launch the region's most powerful AI supercluster, representing a quantum leap in AI

Liquid Cooling: The Inevitable Future of UAE Data Centers

With GPU TPDs exceeding 700W and ambient temperatures hitting 45°C, air cooling is dead. Here is how to retrofit your facility for the liquid era.

Scaling Data Centers & AI Infrastructure: Lessons from

After retrofitting high-density zones with closed-loop liquid cooling, the facility maintained consistent performance regardless of external

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

Gulf Liquid Cooling Localization 2026: AI Data Center Thermal ...

This report provides the blueprint for establishing a sovereign, end-to-end liquid cooling supply chain in Saudi Arabia and the UAE, leveraging local copper, polymer chemistry (OQ Chemicals/SABIC), and

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