ZUTACORE

Direct-on-chip, Waterless, Liquid Cooling for the Mainstream

From the Data Center to the Edge with ZutaCore

Solution Brief

The Perfect Heat Storm

Data industry sustainability has risen to the top for decision makers, calling for significant technology transitions to use less water, power, and land. Data centers account for about 1-1.5% of the global electricity consumption. Several energy consumption models predict that data center energy usage could engulf over 10% of the global electricity supply by 2030.[1]

The exponential growth of computing power has increased the space requirements and heat emissions of chips to unsustainable levels. As a result, data centers have more computing power packed into smaller spaces to accommodate processing-intensive applications and consolidate workloads. In addition, industrial manufacturers and others are bringing computing power and storage close to the source to enable them to generate real-time insights needed for critical decision-making. Each machine in these data centers consumes more energy and generates more heat, putting greater pressure on cooling systems to ensure safe and efficient operations.

The global data center liquid cooling market is expected to reach USD 6.4 billion by 2027, growing at a CAGR of 24.8% during 2022-2027.[1]

Liquid Cooling for the Mainstream

Air cooling has hit its limit, unable to cool CPUs above 400W, whereas direct liquid cooling (DLC) provides greater heat removal and is able to cool CPUs with power of 600W and above.

With the power requirements of CPUs and GPUs pushing steadily towards 1000 watts, a new solution is required to address their cooling needs and enable higher computing densities of next-gen data centers.

With these challenges in mind, ZutaCore® is leading the transformation to an zero emission data industry, delivering a direct-on-chip, waterless, dielectric liquid cooling solution based on Dell PowerEdge servers for the mainstream.

[1] MarketsandMarkets™ Data Center Liquid Cooling Global Forecast to 2027, May 2022

POWERED BY DELL Technologies

ZutaCore HyperCool Benefits

- More compute power in less space
- Reduce TCO – lower transmission cost, lowering the grid, reusing the heat
- Reduces server downtime
- Reduction in carbon footprint
- Noise-free solution

ZutaCore® HyperCool®: Dielectric Liquid Cooling, Without Water

Using a highly efficient two-phase boiling and condensation process, HyperCool based on Dell PowerEdge Servers uses a direct-on-chip method, the most effective form of cooling, to apply coolants directly to the chips to extract and disperse heat. No water is used to cool the servers, so equipment is protected from corrosion and other water-related threats.

HyperCool is scalable and can be deployed in new or retrofitted data centers. It supports up to 100kW per rack of computing power when used with a 2U water or 6U air in-rack Heat Rejection Unit (HRU).

The innovative design of HyperCool on PowerEdge Servers allows heat re-use in the data center producing the lowest PUE and highest efficiency in any climate.

With ZutaCore HyperCool customers can access the resources they need for turnkey direct-on-chip, dielectric liquid cooled deployments. Liquid cooling from ZutaCore designed on Dell servers can help drive transformational outcomes for the data industry.

To discover how, contact your sales representative or visit www.Dell.com/OEM.

Early Adopters Driving New, Innovative Use Cases

"We've joined forces with ZutaCore for our first install into our production environment of their dielectric direct-to-chip (non-water) liquid-cooling technology. Their HyperCool solution is a simple, quick and easy to scale way to help us advance our climate neutral data center goal."

Zac Smith, Global Head of Edge Infrastructure Services at Equinix

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