jetcool

DELL-JETCOOL LIQUID COOLING SOLUTION

Maximize Efficiency and Compute Per Floor Tile with Self-Contained Liquid Cooling

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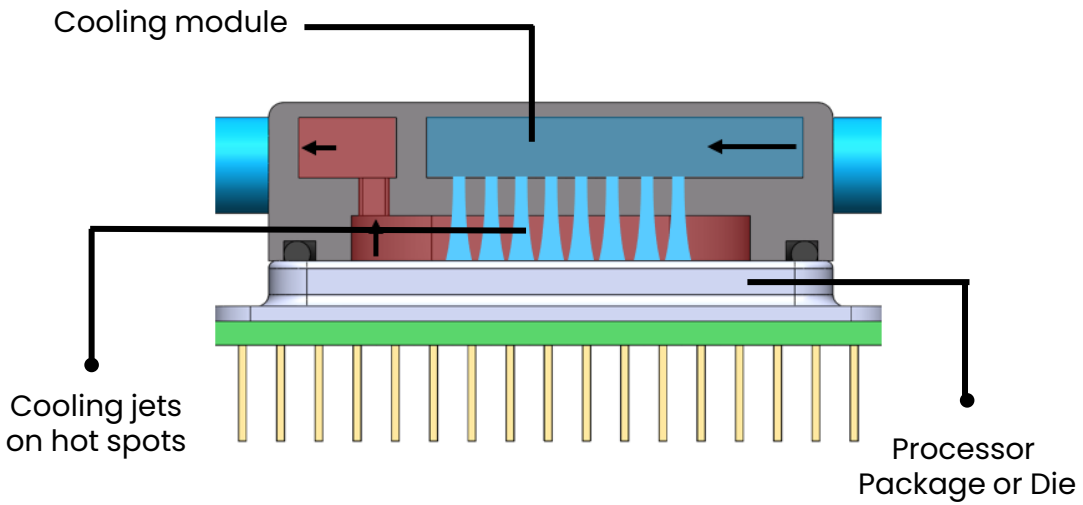
JetCool Technologies

Microconvective Liquid Cooling®

Single-Phase, Direct-to-Chip Liquid Cooling

We build arrays of small fluid jets into cooling modules that target hot spots on the processor to provide exceptional cooling for compute applications



MICROCONVECTIVE COOLING ARCHITECTURE

1. Boost Cooling Performance
Higher heat transfer allows processors over 1,000W TDP

2. Eliminate Hot Spots
Proprietary nozzles target device hot spots

3. Increase Efficiency
Use 50% less energy on cooling, nearly 18% overall

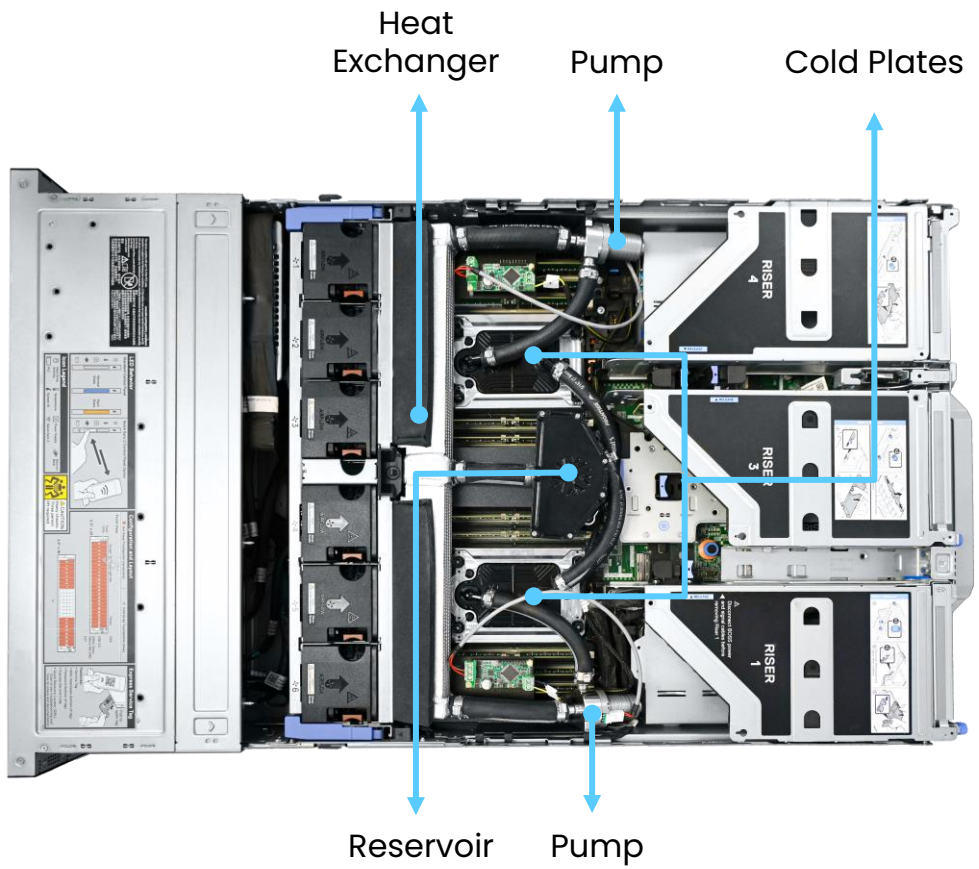
4. Use Warmer Coolants
Eliminate evaporative coolers, saving 10,000 gallons/day

SmartPlate System™: Liquid Cooling with No Plumbing

Self-Contained Liquid Cooled Servers

Experience the performance and efficiency benefits of liquid cooling anywhere:

- ✓ **No plumbing required,** use in any air-cooled data center
- ✓ **Get more compute** in your power budget
- ✓ Reduce fan speeds and **cut server power by 15%,** overnight
- ✓ **No maintenance** for the lifetime of the server
- ✓ Supports the latest chipsets from **Intel, AMD, NVIDIA**
- ✓ **Rapid time-to-deployment** as an upgrade available on select 1U and 2U Dell PowerEdge servers



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DELL Technologies

SmartPlate System Performance Testing

Performance testing compared a Dell PowerEdge R760 equipped with SmartPlate System to the stock air-cooled solution, with the following results:

- **Server power savings** over **120W** per server
- **Thermal performance increased** by **17%** over air
- **CPU temperature reduced** from **6°C to 10°C**
- Driven by lower fan speed, **server noise** was **13dBA quieter**, resulting in a **4X reduction** in noise

Thermal Resistance [K/W]

SmartPlate System vs Air Cooling

	SPS	Air	% Difference
Measurement Result	**0.083**	**0.100**	**17%**

CPU Chip Temperature Comparison (T_{max}°C)

SmartPlate System vs Air Cooling

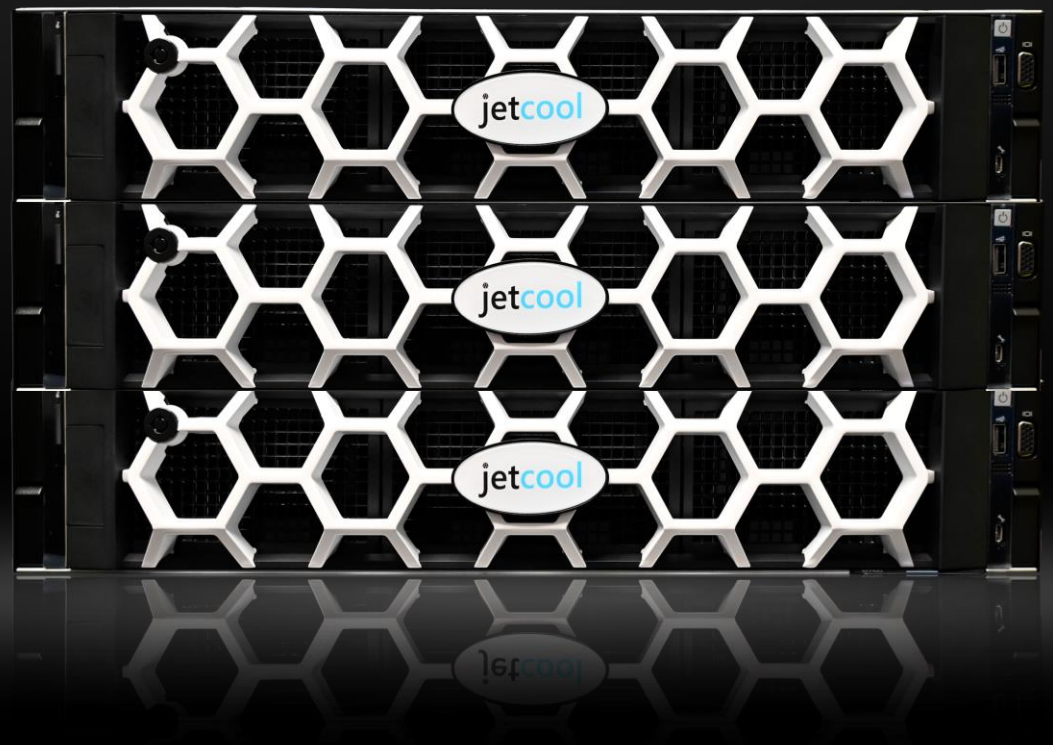
At 23C ambient 350W TDP x 2	SPS	Air	ΔT
Result at 100% Fans	**52.0**	**58.0**	**6°C**
Result at 70% Fans	**66.0**	**76.0**	**10°C**

Server Power Consumption

SmartPlate System vs Air Cooling

	SPS	Air	Power Savings
Server Power (T_{air} < 26°C)	**1,014 W**	**1,081 W**	**67 W**
Server Power (T_{air} > 26°C)	**1,058 W**	**1,181 W**	**123 W**

Uncomplicate Liquid Cooling



SmartPlate System Helps Our Customers

- Deploy liquid cooling anywhere – no plumbing required
- Reduce power consumption by an average of 15%
- Run chipsets 30% cooler
- Enable deployments in environments over 35^{O}C

For more information, visit jetcool.com or drop by our table in the expo hall