ECS

EQUUS COMPUTE SOLUTIONS®

ECS & RAVEL: Complete Solution for High-Performance Computing in Immersion-Cooled Data Centers

Powered by ECS Servers in Immersion Cooling Tanks in Immersion-Cooled Data Centers

Introduction

Immersion cooling is fast becoming a critical consideration for managing the heat generated by the latest advances in high-performance computing, artificial intelligence, deep learning, and machine learning infrastructure. For data centers looking to liquid cooling techniques to effectively reduce energy consumption and enhance IT performance, five primary challenges must be addressed:

- **Infrastructure performance:** Improving thermal management, TCO, and server longevity via immersion cooling.
- **Adequate computing power:** Powerful machines, workstations, or servers are essential to handle complex computational requirements.
- **Data and workflow management:** Effectively managing the data and image workflows associated with workloads.
- **Orchestration layer:** An orchestration layer is needed to enable seamless communication and coordination between the infrastructure and the workflow, yielding desired results.
- **Turnkey approach:** Guaranteeing a complete solution made up of a myriad of different parts and providers, from tanks and chips, to OEMs and orchestration.

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RAVEL

ECS and RAVEL collaborated to deliver a complete solution for immersion-cooled data centers, designed specifically for Artificial Intelligence and Machine Learning workloads. This solution is immersion tank and chip agnostic, and provides a guaranteed end-to-end immersion-cooled solution for teams building next-generation data centers.

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DIGITAL INNOVATION AT YOUR SERVICE.

Solution

ECS submersible servers are specifically designed for immersion cooling configurations, offering unrivaled efficiency in heat dissipation. Additionally, these servers offer exceptional density enabling data centers to optimize their floor space and scale their operations effectively.

RAVEL Orchestrate is an advanced orchestration platform tailored for optimizing AI and machine learning workloads in data centers. It efficiently manages resource allocation, workload scheduling, and infrastructure scaling for high-performance computing environments.

Combined, ECS servers in immersion cooling tanks and RAVEL Orchestrate provide a complete solution for maximizing computing power while minimizing operational costs.

How it works:

- **Immersion cooling for efficiency:** ECS servers in immersion cooling tanks significantly lower energy consumption while maintaining high performance, an ideal setup for AI and ML tasks that generate substantial heat. Immersion cooling reduces cooling costs by up to 40% and extends hardware longevity by operating in more stable thermal environments.
- **Dynamic workload orchestration:** RAVEL Orchestrate automates the assembly, deployment, and management of the resources needed for demanding AI and ML workloads, ensuring that processing power is optimized when training models, and delivering complex computational tasks. While also providing real-time, actionable telemetry data to support better decision making.

Benefits

- **Performance boost:** The combination of ECS servers and immersion cooling, managed by RAVEL Orchestrate, ensures optimal workload performance for AI and ML workloads.
- **Cost efficiency:** Immersion cooling lowers operational costs by reducing the energy needed for traditional cooling solutions, while RAVEL's orchestration optimizes resource usage, cutting down on unnecessary expenditures.

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Benefits

- **Scalability:** RAVEL Orchestrate allows seamless scaling of AI and ML workloads, ensuring models can be seamlessly deployed and compute resources efficiently managed. This flexibility is vital for data centers handling growing AI and ML operations.
- **Eco-friendliness:** By utilizing hardware submerged in cooling fluids ECS helps you reduce energy consumption and can even work with you to develop solutions for heat reuse.

The ECS and RAVEL collaboration provides a guaranteed, cutting-edge, immersion-cooled solution for data centers handling AI and ML applications. Ensuring optimized performance, cost efficiency, and scalability — ideal for modern AI-driven industries.

ABOUT ECS

ECS designs, builds and deploys the digital infrastructure that keeps companies relevant, viable and growing. From individualized computing, data center infrastructure and liquid cooling to AI enablement, telecom systems and 5G management, our customer-first approach delivers solutions that form, fit, and function seamlessly.