

UP TO **1.11X** more performance vs. DRAM when the size of dataset increases to a scale factor of 0.5.¹

“Scientific computing tasks often include a large number of intermediate processes with hard disk I/O, leading to performance degradation. Intel® Optane™ Persistent Memory can accelerate data I/O process, significantly improving computing efficiency of distributed scientific computing.”

Li Ruibo, Senior Technical Specialist, Alibaba

Alibaba Cloud Accelerates Mars Performance for More Efficient Scientific Computing

Mars is Alibaba’s distributed computing framework based on tensors. It can efficiently accelerate scientific computing tasks through parallelization and distribution. In the process of computing, Mars mainly stores data in memory. When memory is not enough, the temporarily-not-used data is stored in disk. Scientific computing tasks often include a large number of intermediate processes with hard disk I/O, leading to performance degradation. Intel® Optane™ persistent memory addresses the issues of increased I/O overheads and decreased computing performance as data spills to traditional hard disk drive. Tests prove that with the same total cost of ownership Intel Optane PMem can effectively improve the scientific computing performance of Mars.

Products and Solutions

[2nd Gen Intel® Xeon® Scalable processors](#)
[Intel® Optane™ persistent memory](#)

Industry
Cloud

Organization Size
10,001+

Country
China

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¹ For more complete information about performance and benchmark results, visit <https://www.intel.com/content/www/us/en/customer-spotlight/stories/alibaba-cloud-optane-pmem-customer-story.html>