Boost Computational Fluid Dynamics Workload Performance for by Selecting New Oracle® Cloud Infrastructure Bare Metal Instances

HPC-CFD

Reap up to 1.30x the CFD Performance with M.Optimized3.36 instances

vs. older BM.HPC2.36 instances

Get Better Performance for the Same Price by Choosing New Oracle Cloud Infrastructure Bare Metal HPC Instances Featuring 3rd Gen Intel Xeon Scalable Processors

Oracle BM.Optimized3.36 Instances Featuring 3rd Gen Intel® Xeon® Scalable Processors Deliver Greater Value to High Performance Computing Environments

Computational fluid dynamics (CFD) workloads simulate the way that fluid flows around structures. These workloads, which automotive engineers use to investigate air flow over vehicles, demand a great deal of computational resources. Consequently, many users rely on high performance computing (HPC) clusters for these simulations.

New Oracle Cloud Infrastructure (OCI) BM.Optimized3.36 instances, a bare-metal HPC solution featuring 3rd Gen Intel® Xeon® Scalable processors, are well-suited CFD workloads. By choosing these instances rather than older BM.HPC2.36 instances, organizations can take advantage of the optimized processors, low-latency networks, and fast local storage. All of these can reduce the amount of time that CFD tasks take to complete.

The f1_racecar_140m model in Ansys Fluent CFD benchmark software provides a real-world simulation that models the flow over a Formula-1 race car with around 140 million Hex-core cells. In tests, OCI BM.Optimized3.36 instances enabled by 3rd Gen Intel Xeon Scalable processors achieved higher scores, delivering up to 1.30x the performance of the older instances (see Figure 1).

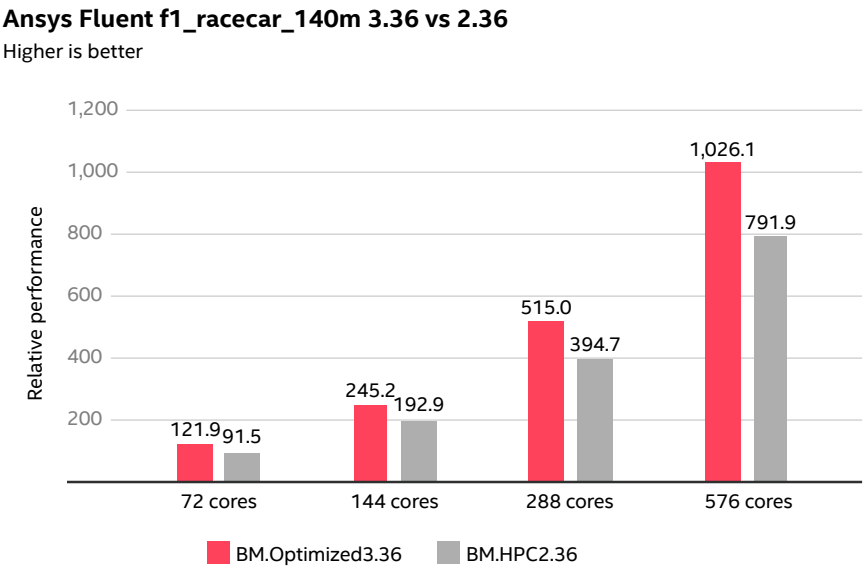

Figure 1. Performance rating for the f1_racecar_140m model in Ansys Fluent for both instance types at various core counts.

Get Greater Performance at the Same Price with New OCI BM.Optimized3.36 Instances

Increasing performance is a win, but it's important to factor in how much extra you must pay to get that boost. In the case of new OCI BM.Optimized3.36 instances, there is no additional cost: pricing is identical to that of the older instances. This makes selecting these new bare metal OCI instances with 3rd Gen Intel® Xeon® Scalable processors—which offer new technology, better performance, and improved security features—an easy choice.

Oracle and Intel Are Working Together

Oracle has partnered with Intel to offer bare metal 3rd Gen Intel Xeon processor-powered instances featuring new flexible compute capabilities that let admins select core and memory requirements to best meet their specific workload needs. New OCI bare metal instances give organizations all of the benefits of bare metal computing along with the flexibility and convenience of the cloud.

Conclusion

Those who run complex CFD workloads in HPC cloud instances can speed time to complete complex simulations by choosing new OCI BM.Optimized3.36 instances with 3rd Gen Intel Xeon Scalable processors over older BM.HPC2.36 instances. With the two types of instances priced the same, but the newer ones delivering up to 1.30x the performance on Ansys Fluent CFD simulations, choosing the new instances makes excellent business sense. For high-powered CFD HPC clusters, OCI BM.Optimized3.36 instances give businesses a way to solve engineering problems faster than before without increasing operational costs.

Learn More

To start running your computational fluid dynamics simulations on Oracle Cloud Infrastructure Bare Metal HPC Instances with 3rd Gen Intel Xeon Scalable processors, visit https://www.oracle.com/cloud/hpc/.

To read more about the OCI HPC testing, visit this Oracle blog.

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