

EXECUTIVE SUMMARY



FASTEST SQL SERVER PERFORMANCE AT THE LOWEST TCO ON DIAMANTI - SNEAK PEEK

Context

The proliferation of Microsoft SQL Server as an enterprise database has accelerated over the years. With the new era of containerization and Kubernetes, Microsoft is putting a great deal of effort into bringing Microsoft SQL Server 2019 to Linux containers. Companies are eager to adopt this new approach.

Containerization enables IT departments to provision applications quickly without traditional complexities. For many companies, to boost time to value and operational efficiency, containerized application development starts with the departments focused on deploying business-critical software. In the past couple of years, Diamanti's customers have voiced their need for a solution to best deploy containerized Microsoft SQL Server across hybrid cloud. Given the strength of our hybrid cloud platform, Diamanti's customers are asking us for a recommended solution to this problem. As part of this effort, we've commissioned the McKnight Group, an independent consulting firm, to conduct an unbiased benchmark study of SQL Server 2019 running on the most promising Kubernetes platforms available on the market today. Our goal is to help each customer determine the better-suited platform to run Microsoft SQL Server based on their individual requirements.

This summary provides a preview of the full TPC-H* benchmark report, which will be available in January 2021. Below are highlights from the report, providing some key data points to help IT professionals, DevOps engineers, platform architects and information security practitioners evaluate a Kubernetes platform optimal for running I/O intensive Microsoft SQL Server applications.

Result Highlights

The benchmark report focused on the performance of I/O-intensive workloads on containerized relational databases, because the incidence of these deployments are at an all-time high and are poised to expand dramatically in enterprises. While the report discussed some of the features and advantages of the tested platforms, the main focus was to compare the performance of Microsoft SQL Server 2019 on the best possible configurations of various Kubernetes platforms. Additionally, the report also compared the workload in worst-case scenarios based on real-world environments. Here is the list of platform tested in this study:

-
- Diamanti Enterprise Kubernetes Platform
 - Amazon Web Services Elastic Kubernetes Service (AWS EKS)
 - Azure Kubernetes Service (AKS)
-

The goal was to provide insights and results to companies looking to invest in a platform that delivers the optimal return on total-cost-of-ownership with the highest performance while maintaining low and consistent latency to run business-critical applications (i.e. Microsoft SQL Server). To this end, here are a few highlights based on performance and total-cost-of-ownership:

- Diamanti is ten times (10x) cheaper and four times (4x) faster while running Microsoft SQL server compared to Azure with Azure Ultra disks.
- Diamanti is thirteen times (13x) cheaper and six times (6x) faster while running Microsoft SQL server compared to AWS Nitro with IO2 disks.
- Diamanti was able to achieve more than 1M IOPS, while AWS saturated 200K IOPS, Azure at 192K IOPS.
- Diamanti exhibited near zero I/O wait time. As a result, this eliminates any I/O bottleneck when running I/O intensive applications like MSSQL Server 2019 on Diamanti.
- Diamanti showcased low and consistent latency, even with higher workloads.

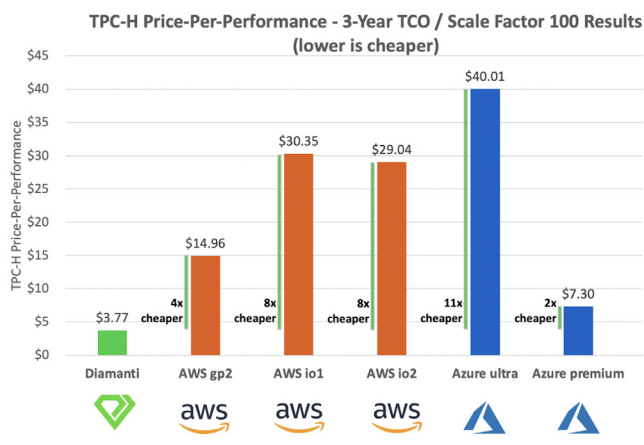
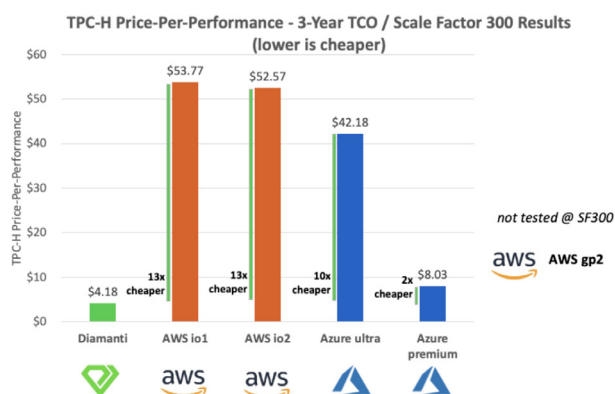


Figure 1: Illustrates TPC-H Price-Per-Performance results over 3-year total-cost-of-ownership (TCO) based on a scale factor of 100



*AWS GP2 was not tested for SF300 as they were slowest in SF100 and would have taken a long time to finish these tests.

Figure 2: Illustrates TPC-H Price-Per-Performance results over 3-year total-cost-of-ownership (TCO) based on a scale factor of 300

Benchmark Methodology

Extensive reviews of the various methodologies were completed prior to selecting TPC-H*. The criteria in choosing TPC-H were a) it is an industry-standard benchmark for analytical workload and simulates real-world use cases, and b) for its emphasis on applications with intensive I/O, which is often a pain point for most organizations.

To learn more about the study or to speak with a product expert, please visit www.diamanti.com or call (408) 645-5111.



Diamanti is solving the challenge of container-based hybrid clouds with a simple and cost-effective platform that addresses enterprise requirements for managing Kubernetes data at any scale.

www.Diamanti.com
408.645.5111