Executive summary

Get MongoDB database-driven insights for less with Dell EMC PowerEdge R6515 servers powered by 3rd Gen AMD EPYC 75F3 processors

A cluster of these servers running VMware vSphere 7.0 Update 1 and vSAN delivered better value than a cluster of the same servers with 2nd Gen AMD EPYC 7542 processors

Distributed MongoDB databases can help your business by bringing together information from a variety of sources. Servers that run these databases more quickly can give decision makers the freshest information sooner, whereas slower servers can take longer to generate actionable insights.

Running read-intensive big data MongoDB workloads in our data center, a VMware vSphere® 7.0 Update 1 cluster of four single-socket Dell EMC™ PowerEdge™ R6515 servers powered by 3rd Gen AMD EPYC™ 75F3 processors executed 20 percent more Yahoo Cloud Serving Benchmark (YCSB) operations per second (OPS) compared to a cluster of the same servers with 2nd Gen AMD EPYC 7542 processors. When we coupled the better performance with the hardware and support cost for both solutions, we saw a performance-per-dollar difference of 8.7 percent.

20% more
operations per second*

8.7% better
performance per dollar*†

*vs. the same server with the AMD EPYC 7542 processor   †Based on the total hardware cost with 3 years of Basic Next Business Day support

Get MongoDB database-driven insights sooner with Dell EMC PowerEdge R6515 servers powered by 3rd Gen AMD EPYC 75F3 processors

March 2021

We used Workload C of the YCSB tool, which consisted entirely of read operations, to measure the performance of two virtualized MongoDB clusters:

- A VMware vSphere 7 cluster with vSAN™ comprising four single-socket Dell EMC PowerEdge R6515 servers powered by 32-core 3rd Gen AMD EPYC 75F3 processors. The list price of hardware plus support for a single server was $36,977.00, for a total of $147,908.00 (USD) for the four-server cluster.[1]

- A VMware vSphere 7 cluster with vSAN™ comprising four single-socket Dell EMC PowerEdge R6515 servers powered by 32-core 2nd Gen AMD EPYC 7542 processors. The list price of hardware plus support for a single server was $33,407.00, for a total of $133,628.00 (USD) for the four-server cluster.[2]

More operations per second

The Dell EMC PowerEdge R6515 cluster with 3rd Gen AMD EPYC 75F3 processors outperformed the same cluster with 2nd Gen AMD EPYC 7542 processors by 20 percent on our read-only MongoDB workload (see Figure 1).

More performance per dollar

When we divided the number of OPS each cluster achieved by the price for hardware plus support, we found that the Dell EMC PowerEdge R6515 cluster with AMD EPYC 75F3 processors provided 8.7 percent better performance per dollar (see Figure 2).

More value for your company

By supporting your virtualized MongoDB environment with Dell EMC PowerEdge R6515 servers powered by AMD EPYC 75F3 processors, you could do more of this database work for every dollar you spend on hardware and support than you could if you chose the same servers powered by AMD EPYC 7542 processors.

Total OPS on the Yahoo Cloud Serving Benchmark (higher is better)
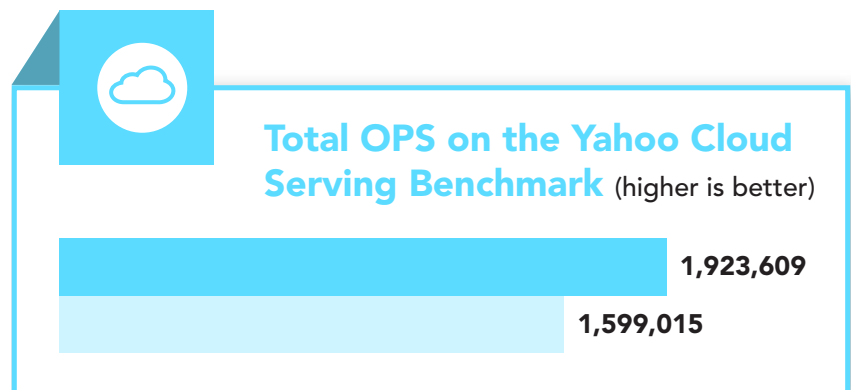
1,923,609

1,599,015

Figure 1: Total number of operations per second each cluster achieved in testing on YCSB Workload C. Higher is better.
Source: Principled Technologies.

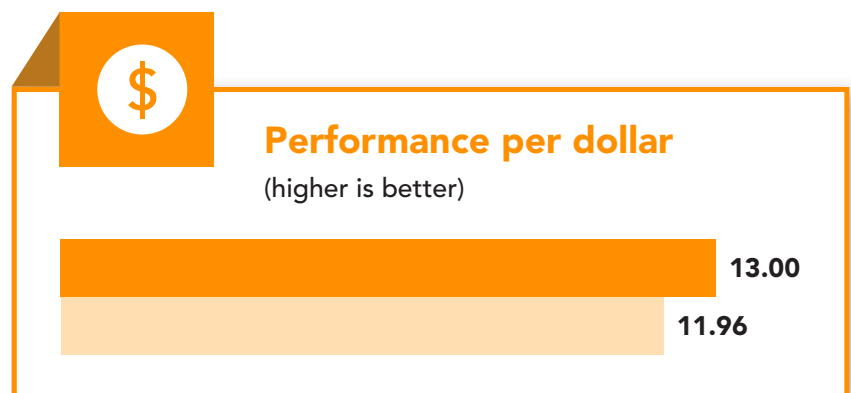**Performance per dollar**
(higher is better)

13.00

11.96

Figure 2: Total number of YCSB operations per second each cluster achieved in testing divided by total hardware cost of cluster. Higher is better. Source: Principled Technologies.

■ Dell EMC PowerEdge R6515 cluster with 3rd Gen AMD EPYC 75F3 processors

■ Dell EMC PowerEdge R6515 cluster with 2nd Gen AMD EPYC 7542 processors

Read the report at http://facts.pt/DkVleZ5 ▶

Principled Technologies®

Facts matter.®

Get MongoDB database-driven insights sooner with Dell EMC PowerEdge R6515 servers powered by 3rd Gen AMD EPYC 75F3 processors

March 2021 | 2