Move your private cloud to Dell EMC PowerEdge C6420 server nodes and boost Apache Cassandra database analysis

Powered by 2nd Generation Intel Xeon Scalable processors, Dell EMC PowerEdge C6420 server nodes handled 2X the operations per second of HPE ProLiant XL170r Gen9 nodes

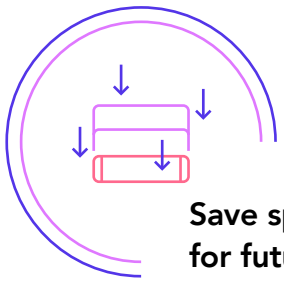
In an era in which critical business decisions can depend on getting the right answers as quickly as possible, aging modular solutions in your organization's private cloud can slow you down. Business units may be able to retrieve the data they need today, but what they need tomorrow could demand too much of your older server nodes.

If your private cloud runs Apache Cassandra workloads, the bump in performance from moving to new nodes could help put more in-depth actionable insight into the hands of decision makers.

Running read-intensive big data workloads in our data center, a current-generation modular solution of Dell EMC™ PowerEdge™ C6420 server nodes powered by 2nd Generation Intel® Xeon® Scalable processors outperformed an older modular solution of HPE ProLiant XL170r Gen9 nodes. Handling more operations helps generate more detailed analysis, and doing so in the same amount of rack space means you can also limit data center sprawl.

Retrieve more data

More than twice the operations per second



Save space for future endeavors

Twice the work in the same amount of rack space

How moving your private cloud to new servers can help you

A private cloud of new Dell EMC PowerEdge C6420 server nodes could lead to better and faster trend analysis, cost forecasting, and competitor performance analysis. But moving to new nodes can deliver more than a performance boost. A private cloud of new PowerEdge C6420 nodes could offer advantages in the following areas:

- **Server management**: Especially compared to older nodes, new nodes often have new or improved management features that make it easier for IT staff to update firmware, monitor server and VM health, and install new applications and software.
- **Security**: Private clouds can benefit organizations that need to provision resources across multiple departments or units but don't want to give up data protection to a third party. New servers can offer security advantages that older servers lack, likely supporting newer security tools and software.
- **Infrastructure consolidation**: Faster and more powerful compute, storage, and networking resources play a role in big data analytics performance improvements. But the new and improved technology of these resources can also help make consolidating workloads simpler. For example, greater processing power allows workloads to support more users querying and compiling data.
- **IT and application initiatives**: New nodes could reduce the time IT staff spend supporting the business units that use your private cloud, allowing IT to focus more on organizational transformation. They could also explore the future of your cloud architecture and help developers get the resources they need.

About 2nd Generation Intel Xeon Scalable processors

The latest from Intel, the 2nd Generation Intel Xeon Scalable processor platform features a wide range of processors to support your workloads, including Bronze, Silver, Gold, and Platinum. According to Intel, the 2nd Generation Intel Xeon Scalable platform can handle a variety of workloads, including enterprise, cloud, HPC, storage, and communications.[1] This processor line also supports a new memory and storage technology to further accelerate workloads, Intel Optane™ DC persistent memory.

To learn more about the 2nd Generation Intel Xeon Scalable processor family, visit https://www.intel.com/content/www/us/en/products/docs/processors/xeon/2nd-gen-xeon-scalable-processors-brief.html.

Dell EMC PowerEdge C6400 enclosure with four Dell EMC PowerEdge C6420 servers

About the Dell EMC PowerEdge C6420

The Dell EMC PowerEdge C6420 is a two-socket server node for the Dell EMC PowerEdge C6400 chassis. The chassis can house up to four PowerEdge C6420 nodes. Each node features 16 DDR4 DIMM slots and can support up to 30 TB of storage.

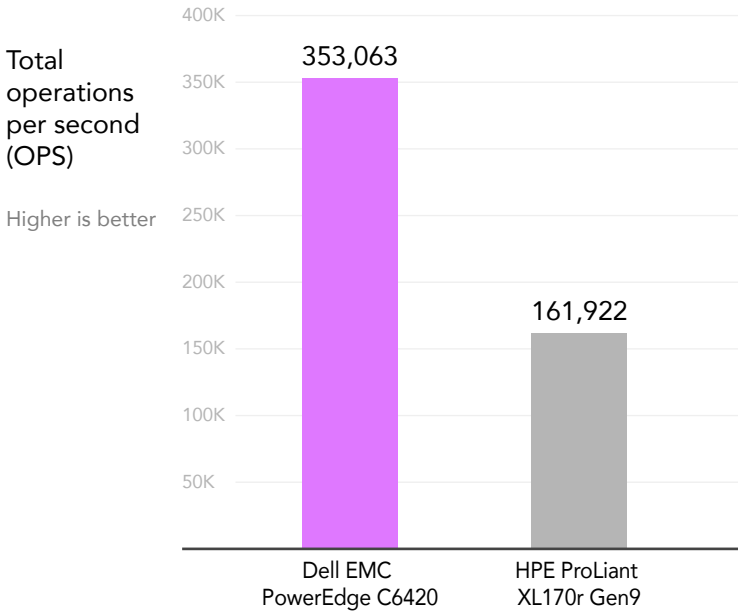
To learn more about the Dell EMC PowerEdge C6420, visit https://www.dell.com/en-us/work/shop/povw/poweredge-c6420.

Find more of what you're looking for in unstructured data

We ran Yahoo Cloud Serving Benchmark (YCSB) workload B on each four-node solution with four YCSB driver VMs to generate the test load. The newer Dell EMC PowerEdge C6420 solution powered by 2nd Generation Intel Xeon Scalable processors delivered more than twice the median operations per second (OPS) of the older HPE ProLiant XL170r Gen9. This kind of boost means a private cloud could handle the work of several older nodes while helping organizations prepare for data growth and increased analytic complexity.

Retrieve more data

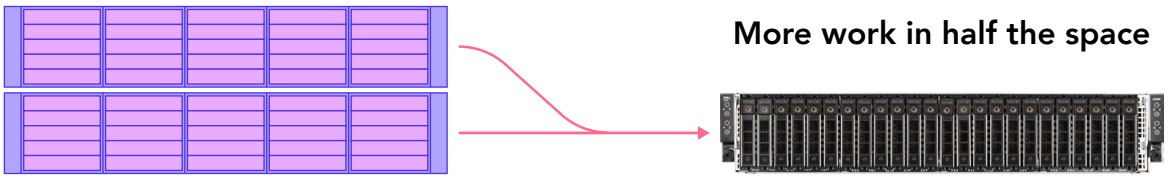
More than twice the operations per second



Save rack space for future projects

The newer Dell EMC PowerEdge C6420 solution powered by 2nd Generation Intel Xeon Scalable processors and the older HPE ProLiant XL170r Gen9 occupied the same amount of rack space (2U). Handling twice the OPS in the same amount of rack space means your organization can preserve space for future data center initiatives by replacing older ProLiant XL170r Gen9 solutions. Replacing the servers could help control the power, cooling, and licensing costs of your private cloud, too, because you could replace two 2U older HPE solutions each handling 161K OPS with a single 2U PowerEdge C6420 solution.

More work in half the space



2 HPE Apollo r2600 Gen9 chassis with 4 HPE ProLiant XL170r Gen9 servers in each

vs.

Dell EMC PowerEdge C6400 enclosure with 4 Dell EMC PowerEdge C6420 servers

About Yahoo Cloud Serving Benchmark

According to Yahoo!, "the goal of the Yahoo Cloud Serving Benchmark (YCSB) project is to develop a framework and common set of workloads for evaluating the performance of different 'key-value' and 'cloud' serving stores."[2] The benchmark serves many databases including Apache HBase and Cassandra, two NoSQL databases that can handle large datasets.

For more information on YCSB, visit https://research.yahoo.com/news/yahoo-cloud-serving-benchmark.

Conclusion

As speedy, in-depth data analysis becomes more relevant, aging server nodes in private clouds might be unable to keep up with demand. We found that Dell EMC PowerEdge C6420 server nodes handled more OPS for data analysis Cassandra workloads than older HPE ProLiant XL170r Gen9 server nodes. This performance boost could help business units in your organization mine unstructured data for more in-depth actionable intelligence more quickly.

1 Intel, "2nd Gen Intel Xeon Scalable Processors Brief," accessed September 18, 2019, https://www.intel.com/content/www/us/en/products/docs/processors/xeon/2nd-gen-xeon-scalable-processors-brief.html.

2 "Yahoo Cloud Serving Benchmark," accessed September 18, 2019, https://research.yahoo.com/news/yahoo-cloud-serving-benchmark.

Read the science behind this report at http://facts.pt/dfhsdvk ▶

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