Executive summary

142,214 operations per second

Process a large number of transactions

1.64ms average read latency

Drive productivity

95 TB of storage in just 3U

Maximize storage density

Support high-performance business applications with a powerful Dell EMC, Nutanix, and Toshiba solution

A Dell EMC XC Series cluster featuring Nutanix software and powered by Toshiba PX05S SAS SSDs delivered strong database performance with a blend of structured and unstructured data

The document-based MongoDB, one of the most popular database engines available,[1] allows developers to create dynamic, responsive enterprise applications and bring together structured and unstructured data. To work at optimal levels, MongoDB projects require a solution with copious storage and fast processing.

Toshiba, Nutanix®, and Dell EMC™ offer such a solution, supporting high usage environments while minimizing wait times. Short wait times keep users from getting distracted or frustrated and increase the likelihood of repeat usage, making your initiative more successful. In addition, a Toshiba, Nutanix, and Dell EMC solution offers high storage density that not only supports massive datastores but keeps datacenter sprawl in check as well.

In the Principled Technologies datacenter, we configured a Dell EMC XC Series cluster, featuring Nutanix software paired with VMware vSphere® ESXi™ as the hypervisor, with Toshiba PX05S SAS SSDs and ran a heavy workload against a MongoDB database. The solution delivered high performance, which can mean a smooth and quick experience with your app, whether viewing search results, finding a tagged photo, or doing a host of other operations.

Make your great app idea a success with Toshiba, Nutanix, and Dell EMC

NoSQL databases, such as MongoDB, power data-driven apps that can effectively process and store disparate datasets regardless of structure, format, or source. This capability enables users to conduct comprehensive searches of the data, analyze patterns, and formulate actionable recommendations. Your users can take full advantage of your apps by taking these actions with the Dell EMC, Toshiba, and Nutanix solution we tested.

Handle peak loads of app activity

We set up a Dell EMC XC Series cluster featuring Toshiba SAS SSDs with Nutanix software to pool the storage together. The Toshiba, Dell EMC, and Nutanix solution delivered 142,214 operations per second with an average CPU utilization at 65 percent. These results show the solution is well suited for running a read-heavy MongoDB workload with sufficient horsepower to scale and support more demanding workloads. Read-heavy workloads include online travel searches or social media photo tagging, where there is only a small amount of write activity. Using this solution, you can serve more concurrent users with a large storage capacity to handle growth.

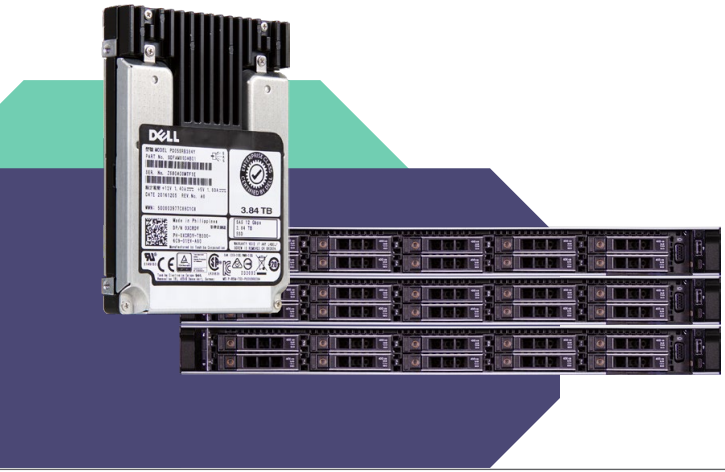
Enable user efficiency with minimal wait times

The old adage "time is money" still rings true, especially for online sales and e-commerce sites. In our testing, the average latency for the Toshiba, Nutanix, and Dell EMC solution remained under two milliseconds. When the storage delivers such low latencies, it's more likely MongoDB app users won't experience noticeable wait times for an app. The faster apps respond to users, the better their experience with your product and the more likely they might be to turn into a returning customer.

Maximize storage density

The XC Series cluster we tested held ten 3.84TB Toshiba SAS SSDs, which translates into 31.76 TB of available storage in a 1U chassis. Our test environment used three appliances with a total of 95.29 TB within a 3U configuration available for the MongoDB database. When you can pack that much storage into such a minimal amount of rack space, you're decreasing the need to add racks or consume more physical floor space.

To find out more about the Dell EMC and Toshiba partnership, visit http://www.dell.com/toshiba and https://storage.toshiba.com/dell



1. "DB-Engines Ranking," accessed March 27, 2018, https://db-engines.com/en/ranking

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