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Modernize Applications with Dell EMC VxRail and Intel

Optimize performance and modernize the data center

Dell EMC VxRail hyperconverged infrastructure with Intel® Optane™ technology

Maintaining a cost-effective IT infrastructure isn't easy. That's why companies are turning to hyperconverged infrastructure (HCI):

Flexibility and scalability

Transform business by adding applications and virtual machines (VMs) quickly in response to immediate needs.

Simplicity

Consolidate compute, storage, and networking in a centrally managed system for evaluation, testing, and implementation of new technologies.

DELL Technologies

Dell EMC VxRail HCI is the only fully integrated, preconfigured, and pretested HCI that is jointly engineered with VMware. It's why more companies are turning to Dell Technologies for HCI solutions than any other provider.[1]

A high-performing, turnkey HCI system

With powerful Intel® Optane™ persistent memory (PMem), Intel® Optane™ Solid State Drives (SSDs), and 2nd Gen Intel® Xeon® Scalable processors, Dell EMC VxRail provides even more benefits:

Storage performance

Dell EMC VxRail HCI showed a **61% increase** in transactions per minute (TPM), **22% more input/output operations per second (IOPS)**, and up to **59% lower latency** with Intel Optane SSDs.[2]

Total cost of ownership (TCO)

Companies achieved **52% lower** operating expenses (OpEx) over five years compared to refreshing their legacy environments.[3] Costs are as much as **43% lower** than with a do-it-yourself (DIY) HCI system.[4]

Memory performance

Adding Intel Optane PMem to VMware vSAN on Dell EMC VxRail delivers up to **80x more** read IOPS and **28x more** throughput for mission-critical databases and applications, compared to an all-flash system.[5]

Integration

Get a **single point of support for hardware and VMware software**, including VMware vSAN, VMware Cloud Foundation, and more.

Dell Technologies:

- Rated #1 in hyperconverged systems.[1]
- Received customer recognition for VxRail with a 4.5 out of 5 overall rating as of February 28, 2020.[6]

Intel Optane technology takes the data center to new heights

Intel Optane PMem shatters DRAM capacity limitations to help lower overall TCO through server consolidation, increased database capacity, and improved CPU, memory, and storage utilization.[7]

High capacity + **Persistence** + **Affordability**

Intel Optane SSDs break through storage bottlenecks to unleash unprecedented levels of predictable fast performance that helps deliver faster time to revenue and insights.

High throughput and low latency + **High endurance** + **Consistent responsiveness**

An industry-leading combination

Choose a Dell EMC VxRail system that includes Intel Optane PMem and Intel Optane SSDs

VxRail P Series, E Series, and G Series systems come configured with **375 GB of fast cache** using an Intel Optane SSD with NVM Express (NVMe).

The VxRail P580N all-NVMe four-socket (4S) platform delivers **2x the CPU and up to 5x the memory capacity** per system over the prior generation.[8]

The VxRail P570N includes Intel Optane PMem to **support higher VM and workload densities** and accelerated performance for modern databases and applications.[9]

Innovate faster with HCI

Learn more about Dell EMC VxRail HCI with Intel Optane SSDs.

Learn more about Intel Optane persistent memory.

Read more about Intel Optane SSDs.

Learn more about Dell EMC VxRail HCI.

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[1] IDC. "Worldwide Converged Systems Market Declines 4.5% Year Over Year During the Second Quarter of 2020, According to IDC." September 2020. idc.com/getdoc.jsp?containerId=prUS46868220.

[2] Enterprise Strategy Group (ESG). "Dell EMC VxRail with Intel Xeon Scalable Processors and Intel Optane SSDs." Commissioned by Dell Technologies. August 2019. esg-global.com/hubfs/images/LabReports/Dell-EMC-VxRail-with-Intel-Optane-Aug19/ESG-Technical-Validation-Dell-EMC-VxRail-with-Intel-Optane-Aug-2019.pdf.

[3] IDC. "Delivering Efficient Business Expansion with Dell EMC VMware-Based HCI." Sponsored by Dell Technologies. October 2018. vmware.com/content/dam/digitalmarketing/vmware/en/pdf/whitepaper/vmw-delivering-efficient-business-expansion-with-dell-emc-vmware-based-hci-idc-whitepaper.pdf.

[4] Dell Technologies. "VxRail Overview Video." delltechnologies.com/en-us/video-collateral/demos/microsites/mediaplayer-video/vxrail-interactive-overview.htm.

[5] ESG. "Dell EMC VxRail and Intel Optane Persistent Memory." July 2, 2020. esg-global.com/validation/dell-emc-vxrail-and-intel-optane-persistent-memory.

[6] Gartner Peer Insights. "Hyperconverged Infrastructure Market." February 28, 2020. gartner.com/reviews/market/hyperconverged-infrastructure. Gartner Peer Insights reviews constitute the subjective opinions of individual end users based on their own experiences, and do not represent the views of Gartner or its affiliates.

[7] Intel. "The Challenge of Keeping Up with Data." April 2019. intel.com/content/dam/www/public/us/en/documents/product-briefs/optane-dc-persistent-memory-brief.pdf.

[8] The VxRail P580N with Intel Optane PMem offers 4 CPUs and 15 TB, compared to previous-generation VxRail with DRAM that offers 2 CPUs and 3 TB with DRAM, resulting in 2x the CPU and up to 5x the memory capacity. Source: Dell Technologies. "Expand HCI Possibilities with New VxRail Automation, Analytics and Workload Support." November 2019. blog.dellemc.com/en-us/expand-hci-new-vxrail-automation-analytics-workload-support/.

[9] ESG ran a 100 percent sequential 64 KB workload with a 1.2 TB working set per node for 75 minutes. Dell EMC VxRail with Intel Optane SSDs sustained heavy write workload throughput—even during aggressive cache destaging, where Serial-Attached SCSI (SAS) SSD performance dropped by 39 percent and stayed there for the remaining hour of the test. Source: ESG. "Dell EMC VxRail with Intel Xeon Scalable Processors and Intel Optane SSDs." Commissioned by Dell Technologies. August 2019. dellemc.com/resources/en-us/asset/white-papers/products/converged-infrastructure/esg-technical-validation-dell-emc-vxrail-with-intel-optane.pdf.

Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors.

Performance tests, such as SYSmark and MobileMark, are measured using specific computer systems, components, software, operations and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products. For more complete information visit intel.com/benchmarks.

Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. **No product or component can be absolutely secure**.

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