DELL Technologies

Solution Brief

DELL EMC VXRAIL

The only HCI solution built for VMware, with VMware, to enhance VMware.

Transform with Dell EMC VxRail

- Proven to dramatically reduce OPEX, deliver up to **51%** lower cost of operations over build your own HCI, and reduce unplanned downtime by **92%[1].**
- Intelligent lifecycle management (LCM) delivers rapid, automated full stack single click patching and upgrading to ensure clusters are in a **continuously validated state.**
- **>25,000** test hours run on major new releases ensure customers can upgrade with certainty and significantly improve IT productivity.
- **Over $60M** invested in VxRail labs and 100+ staff dedicated to system and ecosystem testing.
- The flagship HCI foundation for APEX Cloud Services, VxRail is the only jointly engineered HCI system with deep VMware Cloud Foundation integration.
- Supports **any HCI use case**, including graphics intensive VDI, AI/ML, remote office, cloud native application development, high performance computing and deployments in extreme environments.
- Flexible deployment models with VxRail dynamic nodes and satellite nodes.
- **Single point of global support 24x7** for both the hardware and software through the entire lifecycle.

Agility is a key element to accelerating IT transformation. The agility, scalability and simplicity of hyperconverged infrastructure (HCI) drives IT transformation and operational efficiencies. A recent survey by industry analyst firm ESG illustrates that of the vast majority of organizations that have adopted HCI, 87% say that HCI has made their organization more agile.

Dell EMC VxRail™ accelerates and simplifies IT transformation through standardization and automation. With VxRail, you don't just deploy a server, you transform your infrastructure.

The VxRail Advantage

Whether you are accelerating data center modernization, deploying a hybrid cloud or creating a developer-ready Kubernetes platform, VxRail delivers a turnkey experience that enables users to automate operations, innovate with seamless technology integration, and accelerate business value.

VxRail, powered by Dell EMC PowerEdge server platforms and VxRail HCI System Software, features next generation technology to future proof your infrastructure and enable deep integration across the VMware ecosystem. VxRail invests in the complete lifecycle, including advanced automation, making it easier for you from day one forward, allowing you to further simplify IT infrastructure and operations.

VxRail is the only fully integrated, pre-configured, and tested HCI system optimized for VMware vSAN and is the standard for transforming VMware environments. VxRail provides a simple, cost effective hyperconverged solution that solves a wide range of your operational and environmental challenges and supports almost any use case, including tier-one applications, cloud native and mixed workloads.

VMware Tanzu on VxRail enables choice of the best infrastructure to fit your organization's operating model and level of Kubernetes expertise. Develop on a validated PaaS or CaaS platform with Tanzu Architecture for VxRail, rapidly get started with a Kubernetes deployment of vSphere with Tanzu on VxRail, or deploy Kubernetes at scale on a fully integrated, secure private cloud deployment with VMware Cloud Foundation with Tanzu on VxRail.

VxRail HCI System Software

VxRail HCI System Software, a suite of integrated software elements that sits between infrastructure components such as vSAN and VMware Cloud Foundation, delivers a seamless and automated operational experience.

VxRail offers 100% native integration between VxRail Manager and vCenter, all VxRail management is done within the familiar vCenter Server interface. Intelligent lifecycle management (LCM) automates non-disruptive upgrades, patches, node addition or retirement while keeping the VxRail infrastructure in a continuously validated state to ensure workloads are running and clusters are optimized.

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VxRail HCI System Software includes SaaS multi-cluster management and orchestration for centralized data collection and analytics that uses machine learning and AI to help customers keep their HCI stack operating at peak performance and ready for future workloads. IT teams benefit from actionable insights to optimize infrastructure performance and improve serviceability. Plus, experienced customers can utilize the Configuration Portal to self-deploy VxRail on their own timeline.

VxRail on the Latest PowerEdge Servers

VxRail on the latest industry-leading PowerEdge servers offers next generation technologies that accelerate IT transformation and future proof your infrastructure. With multiple configuration options including choice of Intel Xeon Scalable processors or AMD EPYC processors, VxRail offers millions of configuration options to optimize the platform for your workload requirements. NVMe drives and Intel Optane SSDs provide additional caching options to dramatically bolster application response time. Support for Intel Optane Persistent Memory offers high performance and significantly increased memory capacity for select VxRail platforms. Additionally, NVIDIA graphic cards are used for scaling high performance virtual graphics and compute.

Scalability and Networking

VxRail offers flexible deployment options including a single-node satellite node or two-node cluster for the edge, three-node clusters at the core, and entry level four node or standard eight node on-premise cloud with VMware Cloud Foundation on VxRail. For those needing more storage flexibility, VxRail dynamic nodes – compute nodes with full VxRail LCM, can utilize VMware HCI Mesh or external storage arrays to address data centric workloads. There's also an option for an integrated rack deployment with networking flexibility. Mixed generations of hardware in the same cluster, non-disruptive scaling and storage expansion provide a simple, predictable, “pay-as-you-grow” approach for future scale up and out as your requirements evolve. Additionally, enterprise capabilities such as batch node expansion, REST APIs for cloud extensibility, and flexible object renaming, accelerate growth and save time.

SmartFabric Services, now available on Dell EMC OS10 Enterprise Edition switches, offers autonomous fabric deployment, expansion, and lifecycle management to reduce time-to-market by simplifying and automating network configuration in VxRail cluster deployments. SmartFabric Services for VxRail is the first solution to deliver fully automated network awareness and configuration during set up, cluster expansion, and during day-to-day management across multiple racks.

Direct Path to Hybrid Cloud

VxRail, the flagship HCI foundation for APEX Cloud Services, is the first hyperconverged system fully integrated with VMware Cloud Foundation SDDC Manager to deliver a simple and direct path to the hybrid cloud with one, complete, automated platform. Full stack integration means VxRail Manager and SDDC Manager have been integrated to allow for an automated and seamless update and upgrade process orchestrated by SDDC Manager. This means the HCI infrastructure layer and VMware cloud software stack lifecycle are managed as one, complete, automated, turnkey hybrid cloud platform, significantly reducing risk and increasing operational efficiencies.

VCF on VxRail enables consistent management and orchestration between private and partner public clouds, allowing organizations to run, manage, connect and secure their entire application portfolio across multiple clouds. VCF on VxRail supports remote clusters, enabling customers to extend existing VCF operational capabilities to the edge.

Data Services, Security and Resiliency

Security is built into every level of the VxRail HCI stack, starting with each processor and PowerEdge server through the VxRail HCI System Software including the integrated VMware software, to efficiently minimize risk and create a secure infrastructure foundation. Enhanced security includes FIPS 140-2 validated cryptography and automated hardening scripts and VxRail Security Technical Implementation Guide (STIG) for customers who want to comply with DISA and STIG requirements.

Industry-leading enterprise data services, including HCI-native data-at rest encryption, in-transit encryption, replication, backup, and file services make VxRail ready for the most demanding application or workload. All flash models can leverage compression, deduplication, and erasure coding for further efficiency. VxRail supports 2-factor authentication (SecurID and CAC), allowing you to avoid limited options and high cost of self-encrypting drives. vSAN encryption is built for compliance requirements and simple key management with support for vSphere compatible KMIP compliant key managers.

[1]IDC Business Value White Paper, sponsored by Dell Technologies and Intel, "The Business Value of Dell EMC VxRail and VMware Cloud Foundation on Dell EMC VxRail," December 2020. Actual results will vary.

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