

Introducing Infrastructure Machine Learning to VxRail

VxRail Analytical Consulting Engine (ACE)

Artificial Intelligence for IT operations (AI Ops) will accelerate organizations' digital business transformation.

- AI-derived business value will reach nearly \$3.9 trillion by 2022ⁱ
- Exclusive use of AI Ops and digital experience monitoring tools to monitor applications and infrastructure will rise from 5% in 2018 to 30% in 2023ⁱⁱ

VxRail ACE delivers a blend of operational intelligence and AI Ops to VxRail clusters with:

- Centralized monitoring and reporting of VxRail clusters
- Health scoring
- Performance metrics reporting with anomaly detection
- Resource forecasting
- Multi-cluster management

Crossing the Digital Business Transformation Chasm

While shopping online, how long would you wait for a webpage to load before you decide to take your business elsewhere? For most people, it's mere seconds and decreasing as we become more wired for instant gratification. Likewise, the necessity to act on demand has become more critical to how companies run their businesses. More than ever, companies recognize that the status quo of their IT infrastructure is not going to keep pace with the growing needs of their business. Companies are making investments in smarter, more efficient infrastructure to do more at a faster pace.

Dell EMC's VxRail Hyperconverged Infrastructure (HCI) platform delivers infrastructure operational excellence for applications and services. The VxRail platform reduces IT administrative efforts by leveraging automation and orchestration to perform in an optimal state. A key contributor to operational efficiency is the simplicity enabled by VxRail's HCI System Software which provides a turnkey management experience. Reaching an optimal state can be accelerated by combining the power of machine learning and artificial intelligence with the simplicity of VxRail.

According to Gartner, IT operations is in the midst of a revolution spurred by organizations' business operations and path toward digital business transformation. While the amount of data continues to grow exponentially, the economics of compute and memory as well as expertise of machine learning have improved immensely. We are quickly approaching an inflection point where Artificial intelligence for IT operations (AI Ops) will fuel organizations' digital business transformation to the next level of impacting business outcomes and operations.

In a recent study, CIOs were surveyed and shared their insights on the primary consumers of their IT staff resources.ⁱⁱⁱ

- 32% of the IT staff time was spent on troubleshooting performance and availability issues
- 15% of their time was used for hardware and software change control
- Only 16% of their time was left for developing and implementing their hybrid cloud strategy

Over the next three years, the market share for workloads running on hyperconverged infrastructure will grow by 50%.^{iv} The combination of AI Ops and global infrastructure management for HCI will be the enabling force for IT organizations.

Complementing VxRail's operational simplicity with operational intelligence

VxRail is a hyperconverged platform designed to help organizations modernize their data center infrastructure. Its software-defined architecture provides agility, scalability, and simplicity. The architecture is designed to allow organizations to start with a small footprint and provide the ability to rapidly scale up or out as needs grow. VxRail is differentiated by providing an automated lifecycle management experience that delivers on the operational simplicity that IT operations teams require.



VxRail Analytical Consulting Engine (ACE) complements the built-in operational simplicity with operational intelligence for the VxRail clusters. The combination of ACE and the automated lifecycle management experience can greatly benefit IT staffs struggling to balance their resources between infrastructure administration and efforts to transition to hybrid cloud. Built on Pivotal Cloud Foundry, it is a cloud-based analytics platform that provides monitoring, reporting, and resource forecasting capabilities for VxRail clusters. VxRail ACE provides the following features:

- Centralized monitoring and reporting for all VxRail clusters in the environment
- Health scoring for a quick assessment of the environment
- Advanced performance metrics with anomaly detection for troubleshooting
- Resource forecasting for future capacity planning
- Multi-cluster management that facilitates update bundle transfers to all VxRail clusters

VxRail ACE is a trusted advisor to the IT operations team. It's designed to not only provide monitoring and reporting capabilities, but the intelligence to understand usage and behavior to detect anomalies and forecast capacity usage. As VxRail ACE matures, multi-cluster management capabilities will expand so that VxRail ACE can enable smarter and more efficient VxRail clusters with streamlined upgrade experience and self-remediation at scale.

As a cloud-based SaaS offering, VxRail ACE will have the flexibility to introduce new functionality more frequently providing an exceptional customer experience. Its neural network for deep learning will continually improve its predictive capabilities as it ingests the wealth of metadata VxRail can collect about its clusters.

VxRail users can access VxRail ACE at <https://vxrailace.emc.com> using their Dell EMC support credentials.

Building on VxRail's architecture

VxRail ACE builds upon the value of the VxRail cluster. The VxRail HCI System Software uniquely sets VxRail apart from other vendors in this market segment. Its ability to provide compelling operational simplicity, like lifecycle management, relies on backend communication to the infrastructure components such as the vSAN cluster, PowerEdge server, and network switches. These same connectors also are used to collect performance metrics, health and alerts, object relationships, basic and advanced telemetry data that provides the fuel to VxRail ACE.

Through a secure connection to Dell EMC, the same connection used to communicate to Dell EMC technical support, this metadata is bundled and transferred to the VxRail ACE Data Lake. The metadata can then be visualized into logical and physical topology views for easier organization. VxRail ACE can learn from the advanced telemetry data to provide recommendations for optimal performance. With inputted knowledge of Dell EMC best practices and common issues, VxRail ACE can use its infrastructure machine learning to deliver insight on potential health issues and project resource usage.

VxRail ACE together with VxRail HCI System Software delivers a combination of operational simplicity and operational intelligence that enables companies' pursuit to transform their IT infrastructure.

ⁱ Gartner, <https://www.gartner.com/smarterwithgartner/top-10-trends-impacting-infrastructure-and-operations-for-2019/>, December 2018

ⁱⁱ Gartner, <https://www.gartner.com/smarterwithgartner/how-to-get-started-with-aiops/>, March 2019

ⁱⁱⁱ Gartner, Survey Results for Consumption of Staff Resources, June 2019

^{iv} 451 Research Voice of the Enterprise, Compute Infrastructure Workloads and Key Projects, Q1 2019