Microsoft SQL Server on Dell EMC VxRail

Powered by VMware Cloud Foundation™ and VMware vSAN™
Table of contents

Delivering the needs of your Microsoft SQL Server applications, the right way. ....... 3
Solution Architecture ........................................................................................................ 3
Dell EMC VxRail P570F .................................................................................................. 3
VMware Cloud Foundation and VMware vSAN ............................................................ 4
Key Benefits of Running Microsoft SQL Server on Dell EMC VxRail ......................... 4
Takeaway .......................................................................................................................... 4
About the Author .............................................................................................................. 5
Microsoft SQL Server on Dell EMC VxRail

Delivering the needs of your Microsoft SQL Server applications, the right way.

The Microsoft SQL Server 2017 on Dell EMC VxRail solution depicts an overall strategy for running SQL Server workloads on the hyperconverged infrastructure with the high performance and efficiency benefits.

SQL Server consistently leads in performance benchmarks, such as TPC-E and TPC-H, and in real-world application performance. Gartner recently rated SQL Server as having the most complete vision of any operational database management system. Microsoft SQL Server 2017 enables users to build modern applications using the language of your choice, on-premises and in the cloud, now on Windows, Linux and Docker containers.

VxRail, powered by Dell EMC PowerEdge server platforms, features next-generation technology to future proof your infrastructure and enable deep integration across the VMware ecosystem. Advanced VMware hybrid cloud integration and automation simplifies deployment of a secure VxRail cloud infrastructure.

Dell EMC VxRail systems deliver high, consistent and predictable performance for OLTP workloads running SQL Server databases. In addition, you can select from a broad set of configuration options at a variety of price and scale points based on application requirements, to achieve exceptional scalability.

Solution Architecture

A VxRail P570F is deployed to support the Microsoft SQL Server environment. Each Dell EMC VxRail appliance is deployed with an identical configuration and ESXi booted from the local disk.

Dell EMC VxRail P570F

The Dell EMC VxRail P570F is performance-oriented and is based on single node 2U PowerEdge R740xd servers. PowerEdge servers offer a slew of benefits for customers who are looking to deploy HCI, and the VxRail platform makes it easier than ever for customers to stay up to date with a complete known good state of software and hardware level firmwares inclusive of the latest VMware releases. As with most Dell EMC offerings, there is a massive variety of configurations, giving it the flexibility to hit just about any need. Being aimed at performance, the Dell EMC VxRail P570F can be outfitted with up
to 3TB of memory per node, supports NVMe cache storage, and networking up to 25GbE.

**VMware Cloud Foundation and VMware vSAN**

VMware Cloud Foundation™ is a unified SDDC platform that brings together VMware ESXi™, VMware vSAN™, VMware NSX® and components of the VMware vRealize® Suite, into a natively integrated stack to deliver enterprise-ready cloud infrastructure for the private and public cloud.

Cloud Foundation delivers best-in-class lifecycle automation for VMware software stack—from tasks that include deployment, configuration of the environment, provisioning infrastructure pools, and one of the biggest pain points for our customers – automated patching and upgrading.

VMware vSAN is one of the key components in VMware Cloud Foundation. vSAN is the market leader in hyperconverged Infrastructure (HCI), enables low cost and high-performance next-generation HCI solutions, converges traditional IT infrastructure silos onto industry-standard servers and virtualizes physical infrastructure to help customers easily evolve their infrastructure without risk, improve TCO over traditional resource silos, and scale to tomorrow with support for new hardware, applications, and cloud strategies.

**Key Benefits of Running Microsoft SQL Server on Dell EMC VxRail**

- **High, consistent, and predictable performance**
  
  Various sized databases with heavy workloads are validated and proved that the OLTP performance can fully meet different business requirements.

- **Scalability and flexibility**

  Dell EMC VxRail systems allow you to cost-effectively deploy at the right size for your organization and scale as your SQL Server database applications evolve. With near-linear IO performance scaling for VMware vSAN deployments, VxRail is purpose-built for each customer to match current SQL Server consumption with an easy path to expansion as data grows.

- **Deployment agility**

  VxRail with VMware vCenter provides centralized management of vSphere virtual infrastructure, allowing IT administrators to ensure security and availability, simplify day-to-day tasks, and reduce the complexity of managing virtual infrastructure.

- **Increased data protection**

  Dell EMC VxRail includes RecoverPoint for VM with backup and replication built into the appliance for fast and reliable backups at the VM level without affecting performance.

**Takeaway**

- **VMware Cloud Foundation makes it easy to deploy and run a hybrid cloud.** VMware Cloud Foundation provides integrated cloud infrastructure (compute, storage, networking, and security) and cloud management services to run enterprise applications in both private and public environments.

- **Dell EMC VxRail is available in multiple models and configurations, including all-flash options that support enterprise-class data efficiency services, including**
Microsoft SQL Server on Dell EMC VxRail

deduplication, compression, and erasure coding, which enhance performance and offer greater effective capacity.

• Dell EMC VxRail P570F delivers predictable and consistent performance for Microsoft SQL Server. For your mission critical application deployments, choose appropriately sized Dell EMC VxRail Appliance to build a cluster which will meet your application requirements.

For more details, stay tuned for the complete solution reference architecture.

About the Author

Tony Wu, Senior Solution Architect in the Solutions Architecture team of the HCI Business Unit in VMware wrote the original version of this paper.

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• Dell EMC VxRail Hyperconverged Infrastructure
• VirtualBlocks – VMware’s blog site for all topics related to storage and availability
• StorageHub – The one-stop location for all documentation on storage and availability

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