Power Your VMware Horizon VDI with Dell EMC PowerStore

Designed for the modern data needs, PowerStore's data-centric design with NVMe and hardware-enabled, inline data reduction delivers critical performance and storage efficiency for VMware Horizon Virtual Desktop Infrastructure (VDI) deployments.

Dell EMC PowerStore

Dell EMC PowerStore is a new storage appliance that delivers new levels of operational simplicity and agility.

PowerStore also provides the flexibility to host virtualized applications directly on the appliance with its available AppsON capability.

Benefits

- Integrated into the VMware management paradigm – improving administrator efficiency.

- Run virtualized applications co-resident with data - reducing latency.

- Linear scale-out and scale up increasing both storage capacity and performance for VMware Horizon desktops.

- Optimized for NVMe and SCM – the latest in modern data storage technology.

- Always inline data reduction – both compression and deduplication improving vVols storage footprint.

Overview

Within End User Computing, Virtual Desktop Infrastructure (VDI) holds the promise of not only consolidating desktops for improved manageability, efficiency, and security, but also evolving next-generation services such as bring-your-own-device (BYOD) and device mobility. A VDI solution must be simple to deploy, manage, and scale with substantial cost savings over physical desktops. Storage plays a critical role in an effective VDI solution.

VMware Horizon, an industry-standard solution for virtualizing desktops, runs over 30% of desktop deployments in many different industries[1]. It provides advanced control and great flexibility for even the largest VDI environments. The size and type of I/O traffic generated from VDI environments are noticeably different than most business applications and require a modern storage design for proper management and scaling of the deployment.

Dell EMC PowerStore is an ideal platform to support VDI deployments – it delivers consistent I/O performance ensuring that every virtual desktop provides the best user experience. Applications respond instantly and consistently, typically faster than on physical desktops. The user experience is unaffected by boot storms, antivirus scans, suspend/resume operations, application peak demands, user activity, or used capacity on the storage array. PowerStore can deliver any desired level of performance, from hundreds of IOPS to peak rates of thousands of IOPS per desktop[2].

PowerStore is built with VMware in mind and natively integrates into VMware management frameworks making it easy for VMware and Horizon administrators to manage desktops and storage while improving their efficiency. It automatically manages the underlying storage for maximum performance and capacity, eliminating the need for administrators to configure RAID or storage pool, as configuration and drive management are done automatically.

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[1] https://www.smartprofile.io/analytics-papers/vmware-further-expands-market-share-server-virtualization/
[2] H18239: Dell EMC PowerStore 3,600 VMware Horizon VDI Users Whitepaper.

The density of data on VDI tends to be very high because many Horizon virtual desktops use the same "base" or gold master image. However, there is no significant increase in space needed to store pools of these instant desktop clones, thanks to PowerStore's hardware-enabled, inline, always-on data efficiencies such as deduplication and compression. Keeping the VMs small and clean improves performance and recovery time, and PowerStore automatically manages the underlying storage for maximum performance and capacity. A single PowerStore appliance can host up to 3,600 VDI desktops. Additionally, many applications have data encryption requirements, specifically for data at rest. PowerStore's native Data-at-Rest Encryption (D@RE) can be used as an encryption solution for VDI without requiring any VM changes, and with no performance impact on either the applications or the array.

PowerStore embodies Dell Technologies' learning from decades of working with VMware around storage platforms. It provides independent scaling of storage performance and storage capacity, and a ML engine advising the best data placement for application data. Additionally, PowerStore X ships with VMware ESXi installed and provides highly available VMware services for hosted virtual applications and containers through its AppsON feature.

Most data today is centrally handled[3]; however, the greater amount of data is being created outside of the data center with IoT and edge devices like sensors. Changing nature of data requires a new storage platform architecture. As organizations are increasingly running virtual desktop environments where these new data types are being utilized, an agile storage array is needed. PowerStore is an ideal storage appliance for this changing data landscape, as it provides not only the scalability and efficiency needed for storing these data but also the ability to process this data locally with VMware virtualized applications running on the array itself, thanks to its AppsON feature.

PowerStore VDI Use Cases:

- **Remote Office/Branch Office:** The modern workforce is far from limited to one location; larger organizations may have teams in locations around the country or even in various regional offices across the globe. VDI utilizing PowerStore paves the way for all team members to stay connected and have access to the same company network and resources.
- **Contractor/Partner Access:** Contractors and partners pose a challenge for organizations. When access to corporate information is required, organizations need to either supply contractors with company-owned devices or deal with multiple environments presented by other devices. VDI provides the ideal solution – partners and contractors receive secure access to the corporate applications and data through VDI, from their own devices.
- **Graphics-Intensive Applications**: Graphic-intensive applications made for design work can be a serious weight on business systems, usually requiring specialized hardware. Advancements in VDI technology make it the perfect solution for both 2D and 3D design applications. Virtual Desktops with PowerStore allow for data sharing and low overhead while still providing the performance power necessary for sizable tools like the Adobe Creative Suite and AutoCAD.

Benefits

The combination of Dell EMC PowerStore and VMware Horizon has the following benefits:

- **Reduce TCO:** By leveraging existing storage investments, people skills, and operational procedures, the overall cost of application deployments can be reduced by utilizing PowerStore in VMware Horizon VDI environments.
- **Leverage unique functionality of enterprise storage:** Customers can now leverage the advanced and unique functionality of PowerStore in the same way they have relied on Dell EMC enterprise class storage, including highly available storage architectures, advanced snapshot and data reduction capabilities, and with PowerStore, the ability to run applications co-resident with their needed data.

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[3] *The Future of Software-Defined Storage in Data Center, Edge and Hybrid Cloud*, ID G00354839

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- **Provide more granular performance and scale:** PowerStore can scale independently from the compute infrastructure. When application usage demands high-I/O density solutions, PowerStore can provide that flexibility and it is designed to provide performance and scalability for VDI environments.

Key Items

- **PowerStore X:** Dell EMC's latest storage platform takes storage in a bold new direction, combining the fundamental benefits of enterprise shared storage with the capabilities of an on-board hypervisor. Integrating the PowerStore's container-based software architecture with VMware ESXi to provide unmatched operational and management integration between storage and the virtualized compute environment. For data centers this results in a seamless migration capability for applications which can be deployed on external VMware servers or directly on PowerStore with AppsON as requirements dictate, while simultaneously supporting their bare-metal server and legacy applications. For a variety of edge, ROBO, IoT and tactical environments, the option to collapse the hardware stack with PowerStore X, while maintaining the full functionality of a scalable storage platform, provides organizations with new infrastructure consolidation options.

- **PowerStore T:** Dell EMC's mid-range storage platform provides unified storage for block, file, and vVols data. It enables flexible growth through its intelligent scale-up and scale-out capability allowing growth not only of capacity but also performance. In addition, automated management of resources across the cluster results in superior storage utilization and simplified administration. PowerStore enables application storage for VMware Cloud Foundation (VCF) with both block and file protocols, supporting needs for portability across today's hybrid cloud environments.
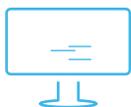
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