

Dell EMC PowerFlex Software-Defined Storage for Modern Datacenters

PowerFlex enables flexibility and simplicity while ensuring consistent performance and resiliency at scale

Customer Benefits

Unmatched Flexibility and Scale

- Extreme flexibility with architectural freedom, broad environment support and flexible consumption and scaling options
- Scales from a few nodes to hundreds, linearly and non-disruptively

Enterprise-Class Performance and Resiliency

- Massive performance and sub-millisecond latency with large resource pools and uniform data distribution
- Mission-critical availability with extensive fault-tolerance and fast rebuild
- Validated and optimized for a wide range of high-value workloads

Simple and Efficient Operations

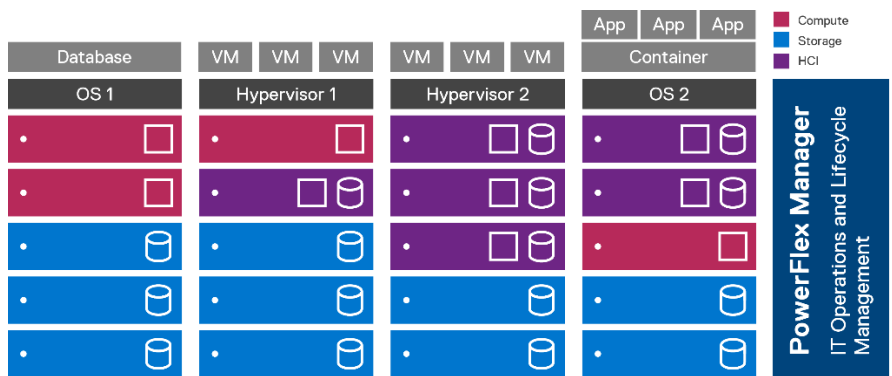
- Fully engineered and integrated system that combines high-performance storage, compute and networking.
- Deployed, managed and supported as a single system by Dell Technologies
- Uncomplicated IT operations and lifecycle management, automation and orchestration with PowerFlex Manager
- Extensive ecosystem of cloud and container management tools

Information Technology has become central to the functioning of businesses, enabling critical competitive advantages. As a result, IT organizations must deliver dynamic and complex services at an unprecedented pace. Yet, they often struggle with inflexible, outdated, and siloed infrastructure. To cope with the demands, many organizations are looking to modernize their datacenters. Software-defined approaches provide a compelling choice to deliver organizational agility. They combine industry-standard hardware components and protocols with software to pool and manage resources.

When selecting a software-defined platform there are some critical aspects to consider. The platform must offer extensive flexibility by supporting broad architectural choices and scaling needs. It must deliver predictable performance to key workloads and it must do so at scale. It must be able to offer enterprise reliability, security and critical data services. Finally, it must enhance the simplicity and agility of the environment by empowering administrators to automate and orchestrate infrastructure workflows.

PowerFlex Software-Defined Storage

PowerFlex software-defined storage empowers organizations to harness the power of software so they can embrace change while achieving consistent predictable outcomes. PowerFlex is designed to deliver flexibility, elasticity, and simplicity with predictable performance and resiliency at scale by combining compute and high-performance storage resources in a managed unified fabric. In addition to delivering high-performance block storage with rich data services, PowerFlex offers simple yet comprehensive tool-set for IT operations and lifecycle management of the entire infrastructure, helping automate infrastructure workflows. PowerFlex is ideal for high-value databases and workloads, agile private cloud deployments and datacenter consolidation.



Flexible Scalable PowerFlex Deployment

Unmatched Flexibility and Scale

PowerFlex offers extreme flexibility and massive scalability. It offers deployment flexibility with two-layer (Server SAN), single-layer (HCI), storage-only, or mixed architectures. A Server SAN architecture disaggregates compute and storage resources and may be ideal for minimizing licensing expenses for applications like Oracle, and to separate application performance from the datasets. In an HCI architecture, each node contributes compute and storage resources, hosting both applications and datasets. This may be optimal for general consolidation, allowing you to scale with a predefined building block. A storage-only architecture is optimal when the compute workload resides on a non-PowerFlex node but benefits from the high-performance resilient storage services provided by PowerFlex. By allowing you to flexibly mix these architectures in a single deployment, PowerFlex enables you to deploy and scale to meet your exact needs.

PowerFlex also supports a broad set of operating environments that include multiple hypervisors, bare-metal OSs, and container management tools. This allows you to flexibly transition your application architectures while supporting multiple generations of applications with disparate architectures on a single system. PowerFlex has an extensive ecosystem of container and cloud automation platforms and tools that include Kubernetes, Red Hat OpenShift, Rancher, Docker, Google Anthos, vRealize Operations and VMware Cloud Foundation (VCF) among others.

With PowerFlex, resources such as storage and compute can be scaled together or separately, non-disruptively, and in small increments. The system can scale from just a few nodes to hundreds in a cluster, linearly scaling IO performance and throughput. PowerFlex also offers consumption flexibility with appliance, rack or Ready Node options.

PowerFlex Manager

Comprehensive IT Operations Management (ITOM) software; manages all the compute, networking, and operations which support the PowerFlex software



PowerFlex rack

Compute & high performance storage with integrated networking at rack scale. Scales to hundreds of nodes and racks.

PowerFlex appliance

Compute & high performance storage. Scales to hundreds of nodes. Add to customer's existing networking



PowerFlex

Software-defined block-storage service that enables a scale-out storage infrastructure using X86 hardware nodes.

Dell EMC PowerFlex Family

Enterprise-class Performance and Resiliency

PowerFlex is designed ground-up for delivering massive performance with enterprise-class resiliency. PowerFlex delivers scale-out storage services by pooling resources from a large number of nodes. Data is distributed across all available nodes, with multiple high-performance ethernet connections to each of the nodes. PowerFlex supports up to 100Gbps network infrastructure. With large pools of resources, uniform data distribution, and no network bottleneck, PowerFlex provides massive IO performance that scales linearly with storage resources and nodes. This makes it a perfect platform for IO intensive, performance and latency sensitive workloads. Additionally, PowerFlex allows easy isolation of key workloads with multiple

protection groups. This isolation helps ensure predictable and uninterrupted performance of high-value performance hungry workloads while ensuring enterprise resiliency and availability.

In recent Dell Technologies lab testing, a 6 node PowerFlex cluster running Oracle RAC database was able to deliver over 1 million IOPs with less than 1 millisecond latency, while an 8-node cluster was able to deliver over 10 million transaction per minute with average latency below 1 millisecond. PowerFlex is validated and optimized for a broad set of enterprise workloads including Oracle database, Microsoft SQL Server, SAP HANA, SAS, Splunk, Elastic Stack and Epic.

Workload	PowerFlex Performance Outcomes
Oracle RAC	10 Million TPM with average latency of 1 millisecond with 8RU 1 Million IOPs with average latency of 1 millisecond with 6RU
Microsoft SQL Server	8 Million TPM with average latency of 1 millisecond with 8RU
Elastic Stack	1 Billion indexing events in 3 hours with 7RU
Cassandra DB with Kubernetes	300,000 operations/sec with 8RU

Simple and Efficient Operations

PowerFlex offers robust tool-set for simplifying IT operations for the entire infrastructure. PowerFlex Manager, a key component of the PowerFlex family, offers tools for IT operations and lifecycle management that automate infrastructure workflows from BIOS and firmware to nodes, hypervisors and networking.

Additionally, PowerFlex includes critical data services with its all-inclusive software licensing. They include high-availability with quick rebuilds, native data replication and snapshots, integrated hardware-based encryption, and data reduction. These services further simplify how administrators manage, protect and secure data.

PowerFlex utilizes standards-based hardware nodes based on industry-leading PowerEdge servers that are rigorously tested and integrated into the PowerFlex system. PowerFlex rack offers integrated networking with professional deployment, simplifying deployment operations. Further, PowerFlex supports standards-based open APIs, making it a breeze to integrate with third party tools and custom workflows.

Summary

PowerFlex delivers the flexibility, scalability, performance and agility necessary for your modern datacenter, so you can optimize your high-value workloads and infrastructure consolidation projects while embracing agile cloud service delivery.

For more information, please visit DellTechnologies.com/PowerFlex



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PowerFlex solutions



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