DELL EMC POWERFLEX

Software-Defined Infrastructure for Modern Datacenters
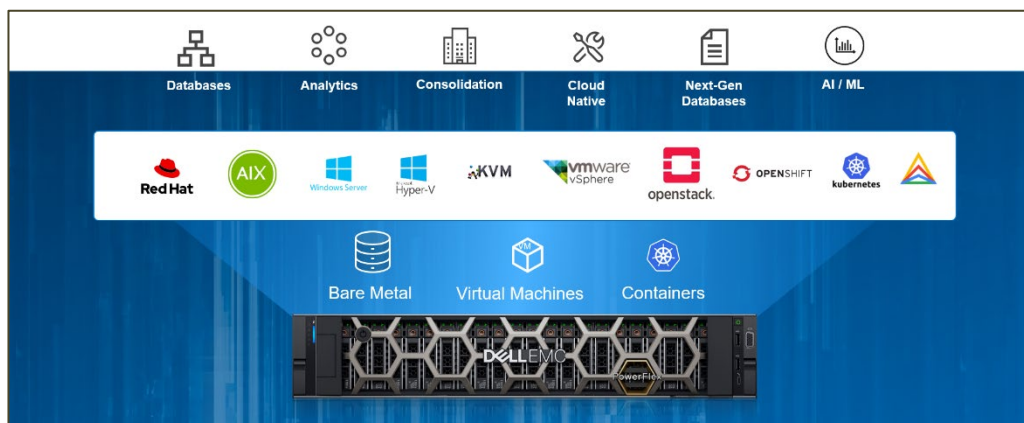
Specification Sheet

PowerFlex Software-Defined Infrastructure

PowerFlex empowers organizations to harness the power of software and embrace change while achieving consistently predictable outcomes for mission-critical workloads. PowerFlex is a modern foundation that delivers extreme flexibility, massive performance and linear scalability while simplifying complete infrastructure management and boosting IT agility. It's the ideal foundation for organizations to modernize their mission-critical applications, consolidate heterogeneous workloads and build agile private and hybrid clouds.

Extreme Flexibility for Agile Enterprises

PowerFlex offers extreme flexibility to meet the diverse and rapidly evolving needs of modern enterprises. It offers unprecedented choice for customers to architect their mission-critical IT environments.

Mix and match storage, compute and HCI nodes in a dynamic deployment, allowing users to scale storage and compute resources together or independently, one node at a time, as needs dictate.
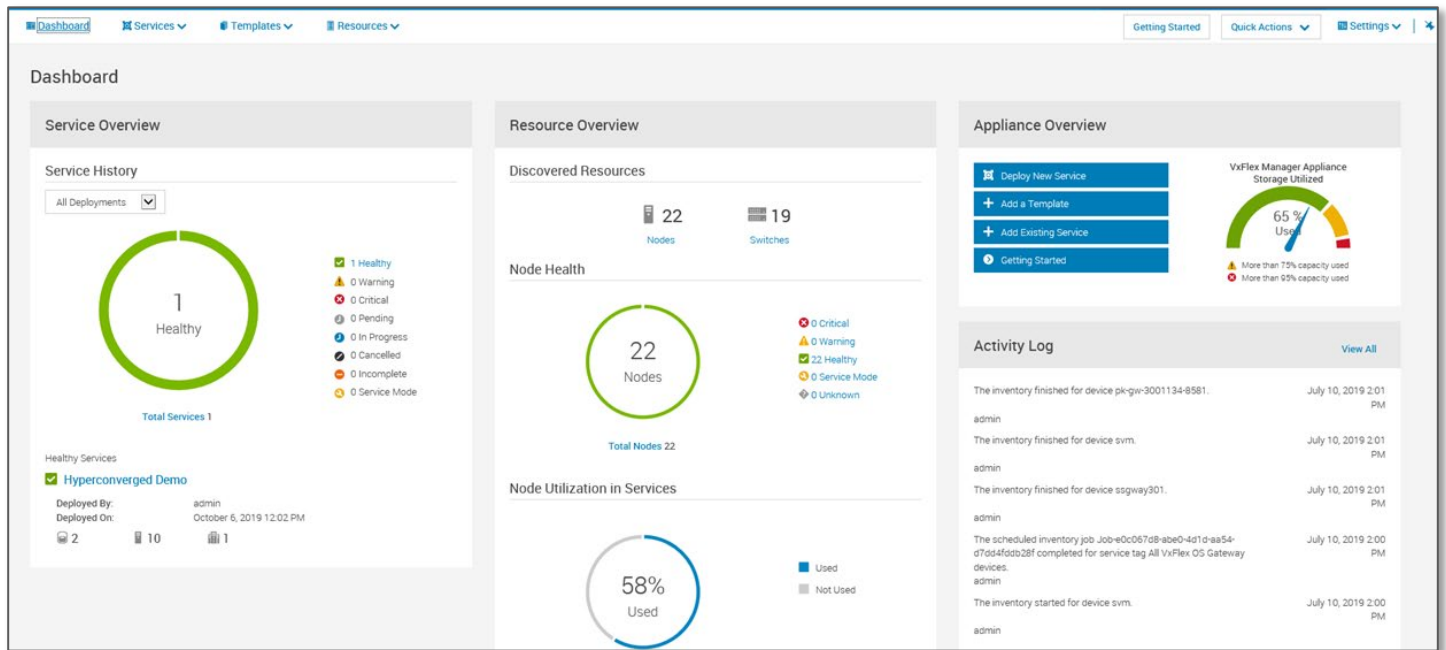

The platform can also support a broad range of operating environments – bare metal operating systems, hypervisors as well as container platforms – simultaneously with a unified infrastructure platform and management. By allowing you to flexibly mix these architectures in a single deployment, PowerFlex enables you to deploy, scale, and evolve all your applications to meet your business objectives.

Consistent Predictable Outcomes

PowerFlex offers a robust toolset for simplifying IT operations for the entire infrastructure with PowerFlex Manager, which automates complex LCM and IT operations tasks, boosting IT productivity and infrastructure predictability. PowerFlex Manager also offers standards-based open APIs and custom Ansible modules, making it simple to integrate with third party tools and custom workflows. Further, with CloudIQ, PowerFlex leverages an AI/ML-based approach to

infrastructure monitoring and management, ensuring simplicity and consistency at scale. PowerFlex is also optimized for a broad range of enterprise workloads with documented best practices, so you can deploy the most mission-critical workloads with ease while ensuring extraordinary outcomes.

PowerFlex Consumption Options

With PowerFlex, you have choice and flexibility in how you choose to consume the PowerFlex architecture:
- PowerFlex rack is a fully engineered system with integrated networking. It is designed to simplify deployment and accelerate time to value.
- PowerFlex appliance is a flexible solution with a small starting point and massive scale potential. PowerFlex appliance provides a broad choice of supported networking.
- PowerFlex is also available with OpEx-based consumption options with APEX Custom Solutions. Customers can choose between APEX Flex on Demand and APEX Datacenter Utility based on their unique requirements.

	PowerFlex R640	PowerFlex R740xd	PowerFlex R840
Compute, Storage and Memory (per Node)			
Chassis	1 RU	2 RU	
Intel™ Xeon™ Scalable Gen 1 and Gen 2 Processors			
CPU sockets	Two		Four
CPU cores (total)	8 – 56		16 - 112
CPU frequency	2.1 GHz - 3.8 GHz		2.1 GHz - 3.8 GHz
RAM*	96 GB - 3072 GB		384 GB - 6144 GB
All flash storage capacity	up to 76 TB SAS up to 38 TB SATA up to 76 TB NVMe	up to 122 TB SAS up to 92 TB SATA up to 122 TB NVMe	
Drive bays	10 x 2.5"	24 x 2.5"	
NVDIMM + RDIMM Support	Yes[†]	Yes	
Boot/OS solution	240 GB SATA M.2 (RAID1) "BOSS"		
GPU Options	T4	Nvidia V100S, RTX 6000, RTX 8000, A40, A100	
Node network connectivity	Intel X710/I350 NDC Intel X710[‡] Mellanox CX4 NDC Mellanox CX4 Mellanox CX6		
Management port	iDRAC 9 Out of Band Management		

* Adding NVDIMM changes max RAM configuration: 736GB for R640 & R740xd
[†] R640 does not support both NVMe and NVDIMM together
[‡] 10Gb NIC only supported on PowerFlex rack

PowerFlex Clustering, Scaling and Management	
Min Nodes Per Cluster (integrated rack, Two Layer Configuration)	4 Storage Only Nodes Minimum (6 or more recommended), 3 Compute Only Nodes
Min Nodes Per Cluster (integrated rack, HCI Configuration)	4 HCI Nodes minimum (6 or more recommended)
Min Nodes Per Cluster (appliance, Two Layer Configuration)	4 Storage Only Nodes, 1 Compute Only Nodes (6 or more Storage Only Nodes, 3 or more Compute Only Nodes recommended)
Min Nodes Per Cluster (appliance, HCI Configuration)	4 HCI Nodes minimum*
Scaling Increments	1 Node (HCI, Compute Only or Storage Only) [†]
PowerFlex Manager Management Node Requirements[‡]	PowerFlex Manager: 8 vCPU, 32G RAM, 300GB disk space minimum PowerFlex Gateway: 2 vCPU, 4GB RAM SRS: 2 vCPU, 4 GB RAM Jump server: 2 vCPU, 4 GB RAM (These may reside on physical servers or as VMs)

* In 2-layer environments where existing compute nodes are to be utilized or compute nodes are running an operating system not supported by PowerFlex Manager, the minimum requirement is for four storage nodes only.

[†] A single node is the minimum scaling required to expand an existing Storage Pool. Creation of a net new Storage Pool requires the addition of a minimum of 3 Storage or HCI Nodes.

[‡] A PowerFlex Management Node will be required for new appliance installation at customer sites that do not have an existing management server. A Management Node is not required with PowerFlex integrated rack, as PowerFlex Manager is installed onto the controller nodes.

	PowerFlex R640	PowerFlex R740xd	PowerFlex R840
Networking (per node)			
Appliance Connectivity*	4x10/25 GbE SFP28 or 4x10 GbE RJ45[†]	4x10/25 GbE SFP28 or 4x10 GbE RJ45[†]	4x10/25 GbE SFP28 or 4x10 GbE RJ45[†]
Management Ports	2x 1GbE (via rNDC)	2x 1GbE (via rNDC)	2x 1GbE (via rNDC)

PowerFlex Manager Supported Switches	
Management Switches*	Cisco Nexus 3172, Cisco Nexus 31108TC-V, Dell EMC S4148T-ON
Access or Leaf Switches	Cisco Nexus 3132QX, Cisco Nexus 3164Q, Cisco Nexus 93180YC-EX, Cisco Nexus 93180YC-FX, Cisco Nexus 93240YC-FX2, Dell S5048F-ON, Dell S5248F-ON, Dell S5296F-ON[‡], Dell S5224F-ON[‡], Dell S4148F-ON[‡]
Aggregation or Spine Switches	Cisco Nexus 9236C, Cisco Nexus 9336C-FX2, Cisco Nexus 9332-PQ, Cisco Nexus 9364C, Cisco Nexus 9364C-GX, Dell EMC S5232F-ON

* For PowerFlex appliance, the management switch can be "bring your own".

[†] RJ45 only supported on PowerFlex rack
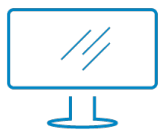
[‡] PowerFlex appliance only

	PowerFlex R640	PowerFlex R740xd	PowerFlex R840
Power and Dimensions			
High-efficiency dual redundant PSU*	1100W -48V DC 750W 100 - 240V AC 1100W 100V – 240V AC 1600W 100V – 240V AC	1100W 100 - 240V AC 1600W100 - 240V AC 2000W 200V – 240V AC 2400W 200V – 240V AC	1600W 200V – 240V AC 2000W 200V – 240V AC 2400W 200V – 240V AC
Redundant cooling fans	8	6	4 or 6
Physical dimensions	42.8mm/1.68in H 434.0mm/17.09in W 733.82mm/29.61in D 21.9kg/48.28lb	86.8mm/3.42in H 434mm/17.09in W 678.8mm/26.72in D 28.1kg/61.95lb	86.8mm/3.42in H 434mm/17.09in W 678.8mm/26.72in D 28.1kg/61.95lb

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Environmental and Certifications			
Ambient operating temperature	10°C to 30°C 50°F to 86°F	10°C to 30°C 50°F to 86°F	10°C to 30°C 50°F to 86°F
Storage temperature range	-40°C to +65°C -40°F to +149°F	-40°C to +65°C -40°F to +149°F	-40°C to +65°C -40°F to +149°F
Operating relative humidity	10% to 80% (non-condensing)	10% to 80% (non-condensing)	10% to 80% (non-condensing)
Operating altitude with no deratings	3048m approx. 10,000 ft	3048m approx. 10,000 ft	3048m approx. 10,000 ft

STATEMENT OF COMPLIANCE

Dell EMC Information Technology Equipment is compliant with all currently applicable regulatory requirements for Electromagnetic Compatibility, Product Safety, and Environmental Regulations where placed on market.

Detailed regulatory information and verification of compliance is available at the Dell Regulatory Compliance website. http://dell.com/regulatory_compliance

Learn more about Dell EMC PowerFlex solutions

Contact a Dell Technologies expert
1-866-438-3622