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.
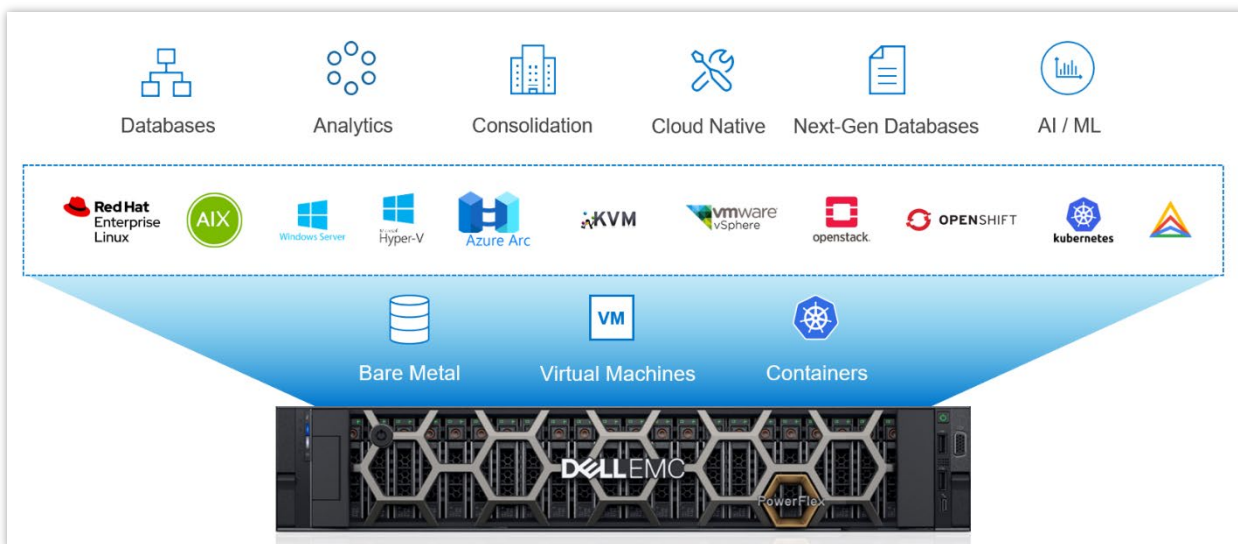
The platform can also support a broad range of operating environments – bare metal operating systems, hypervisors as well as container platforms – simultaneously with a unified infrastructure platform and management. By allowing you to flexibly mix these architectures in a single deployment, PowerFlex 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.
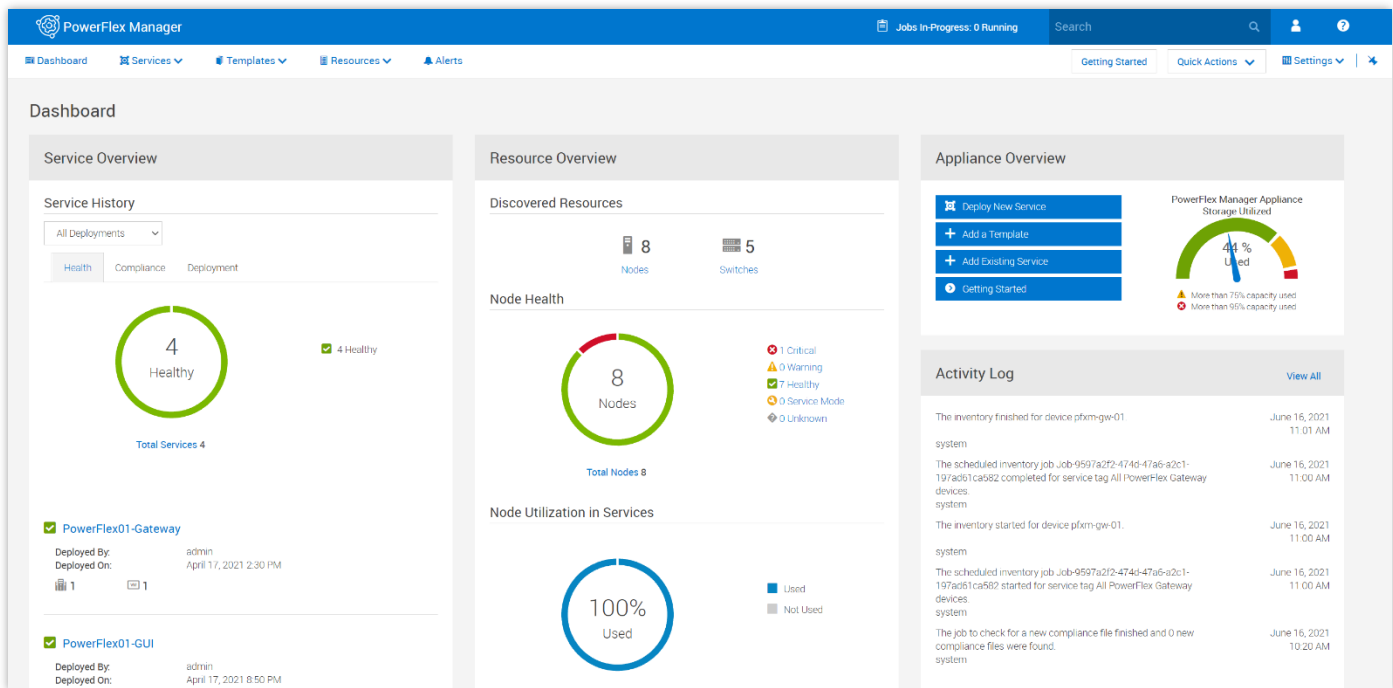
PowerFlex Deployment Options

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 acceleratetime to value.
- PowerFlex appliance is a flexible solution with a small starting point and massive scale potential. PowerFlex applianceprovides a broad choice of supported networking.
- PowerFlex is also available with OpEx-based consumption options with APEX Custom Solutions. Customers can choosebetween 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	
CPU technology	2nd Gen Intel Xeon		
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
Maximum storage capacity (raw TB)	76TB SAS 38TB SATA 76TB NVMe	128TB SAS 92TB SATA 128TB NVMe	
Drive bays	10 x 2.5"	24 x 2.5"	
NVDIMM + RDIMM Support	Yes†	Yes	
Boot solution	240 GB SATA M.2 (RAID1) "BOSS"		
Nvidia GPU Options	T4	M10, A100, A30, A40, T4	
PowerFlex network connectivity (standard 4x 25Gb)	Intel X710‡ rNDC Mellanox ConnectX-4 rNDC Mellanox ConnectX-4 Mellanox ConnectX-6		
Management port	iDRAC 9 Out of Band Management		

	PowerFlex R650	PowerFlex R750	PowerFlex R6525
Compute, Storage and Memory (per Node)			
Chassis	1 RU	2 RU	1 RU
CPU technology	3rd Gen Intel Xeon		3rd Gen AMD EPIC
CPU sockets	Two		
CPU cores (total)	16 - 80		16 - 124
CPU frequency	2.00 GHz - 3.60 GHz		2.00 GHz - 3.70 GHz
RAM*	256 GB - 8192 GB		
Maximum storage capacity (raw TB)	76TB SAS 38TB SATA 76TB NVMe	128TB SAS 92TB SATA 128TB NVMe	diskless
Drive bays	10 x 2.5"	24 x 2.5"	
NVDIMM + RDIMM Support	Yes		No
Boot solution	240 GB SATA M.2 (RAID1) "BOSS"		
Nvidia GPU Options	T4	M10, A100, A30, A40, T4	T4
PowerFlex network connectivity (standard 4x 25Gb)	Mellanox ConnectX-5 OCP Mellanox ConnectX-5 PCIe Mellanox ConnectX-6 PCIe		
Management port	iDRAC 9 Out of Band Management		

* Adding NVDIMM reduces maximum memory capacity
† 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 (Two-Layer Configuration)	4 Storage Only nodes minimum (6 or more recommended), 1 to 3 Compute Only nodes (depending on host OS)
Min Nodes Per Cluster (HCI Configuration)	4 HCI Nodes minimum (6 or more recommended)
Scaling Increments	1 Node (HCI, Compute Only or Storage Only) [†]
PowerFlex Manager Management Node Requirements[‡]	Jump Server 4GB RAM, 2 vCPU, 300GB storage PowerFlex Gateway 8GB RAM, 2 vCPU, 16GB storage PowerFlex UI 6GB RAM, 2 vCPU, 16GB storage SRS 4GB RAM, 2 vCPU, 16GB storage PowerFlex Manager 32GB RAM, 8 vCPU, 200GB storage CloudLink (optional) 6GB RAM, 4 vCPU, 64GB storage (These are all supplied as virtual machines)

* 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.

[‡] New PowerFlex appliance deployments include a single-node management controller (with an option for three-node for larger systems). New PowerFlex integrated rack deployments include a three-node management controller. Both PowerFlex Management Controller options are ESXi based.

PowerFlex Manager Supported Switches

Management Switches*	Cisco Nexus 3172TQ, Cisco Nexus 31108TC-V, Cisco Nexus 92348GC-X, 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	H 42.8mm W 434mm D 734mm Wgt 21.9kg	H 86.8mm W 434mm D 679mm Wgt 28.1kg	H 86.8mm W 434mm D 679mm Wgt 28.1kg

|	PowerFlex R650	PowerFlex R750	PowerFlex R6525
Power and Dimensions			
High-efficiency dual redundant PSU	800W 100-240Vac / 240Vdc 1100W 100-240Vac / 240Vdc 1400W 100-240Vac / 240Vdc 1100W 48-60Vdc	800W 100-240Vac / 240Vdc 1100W 100-240Vac / 240Vdc 1400W 100-240Vac / 240Vdc 2400W 100-240Vac / 240Vdc 1100W 48-60Vdc	800W 100-240Vac / 240Vdc 1100W 100-240Vac / 240Vdc 1400W 100-240Vac / 240Vdc 1100W 48-60Vdc
Redundant cooling fans	8	6	8
Physical dimensions	H 42.8mm W 434mm D 751mm Wgt 21.2kg	H 86.8mm W 434mm D 700mm Wgt 35.3kg	H 42.8mm W 434mm D 751mm Wgt 21.2kg

	PowerFlex R640	PowerFlex R740xd	PowerFlex R840
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

	PowerFlex R650	PowerFlex R750	PowerFlex R6525
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	8% to 80% (non-condensing)	8% to 80% (non-condensing)	8% 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
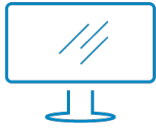
Learn more about Dell EMC
PowerFlex solutions

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