Dell EMC PowerEdge Rack Servers

DELLTechnologies

Quick Reference Guide

Dell EMC PowerEdge rack servers help you build a modern infrastructure that minimizes IT challenges and drives business success. Choose from a complete portfolio of 1, 2, and 4-socket rack servers to deliver high core density for your traditional applications, virtualization, and cloud-native workloads. Enhanced memory speeds, faster NVMe storage options,[1] and BIOS tuning allows you to match performance to your workload for ultimate efficiency.

15th generation of PowerEdge Servers

Rack Server	R750	R750xa	R650	R7525	R6525	R7515	R6515	R750xs	R650xs	R450	R550	XR11	XR12	R350	R250
Key attributes	Outstanding performance for the most demanding workloads	Highly intensive GPU workloads	High scalability, optimized workload performance	Powerful performance and flexibility	Dense virtualization	Powerful performance and scalability	High density compute	Purpose-built 2U server for growing scale-out solutions	Purpose-built, full performance 1U server for dense, fast growing scale-out solutions	Value and density-focused, built for general purpose IT	Versatile, value-optimized, virtualization-ready, built for general purpose IT	Edge-centric, short depth and rugged with reverse mounting options	Edge-centric, short depth and rugged with reverse mounting options	Powerful performance in 1U server for productivity and data intensive applications	Powerful compute for common business applications and streamlines productivity
Target workloads	Database and analytics, HPC, traditional corporate IT, VDI, AI, or ML environments	AI, ML or DL training or inferencing, HPC, and vitualization environments	Mixed workload standardization, database and analytics, HFT, traditional corporate IT, VDI, HPC, AI, or ML environments	All flash SDS, VDI, and data analytics	HPC, Dense VDI, and Virtualization	SDS, Virtualization, and Data Analytics	Virtualization, HCI and NFV	Virtualization, medium VM density or VDI, and scale-out database workloads	Virtualization, cloud, scale-out database and highperformance compute workloads	Small IT infrastructure, light VM, small business specific workloads	Small IT infrastructure, light VM density, small business specific workloads	Telco/5G (MEC, CDN, vRAN), Military, Retail (Analytics - video surveillance/ POS/IOT aggregation)	Telco/5G (MEC, CDN, vRAN), Military, Retail (Analytics - video surveillance/POS/ IOT aggregation)	Small mid-sized businesses, remote office/branch office, collaboration and sharing, data analytics and virtualization workloads	Small mid-sized businesses, remote office/branch office, collaboration and sharing, mail/messaging and file/print workloads
Type of processor	2 x 3rd Generation Intel® Xeon® Scalable processors; up to 40 cores per processor			2 x 2nd or 3rd Generation AMD EPYC™ processors; up to 64 cores per processor		1 x 2nd or 3rd Generation AMD EPYC™ processor; up to 64 cores per processor		2 x 3rd Generation Intel® Xeon® Scalable processors; up to 32 cores per processor		2 x 3rd Generation Intel® Xeon® Scalable processors; up to 24 cores per processor		1 x 3rd Generation Intel® Xeon® Scalable processors; up to 36 cores per processor		1 x Intel Xeon E-2300 series processors with up to 8 cores or 1 x Intel Pentium processor with up to 2 cores	
Memory (DDR4 DIMM slots & max)	32 (8 TB)		32 (4 TB)			16 (2 TB)		16 (1 TB)				8 (1 TB)		4 (128 GB)	
Disk drives up to:	8 x 2.5" 16 x 2.5" 24 x 2.5" 12 x 3.5" 2 x 2.5" or 4 x 2.5" (rear)	6 x 2.5" 8 x 2.5"	4 x 3.5" 8 x 2.5" 10 x 2.5" 2 x 2.5" (rear)	26 x 2.5" 12 x 3.5"	12 x 2.5" 4 x 3.5"	24 x 2.5" 12 x 3.5"	8 x 2.5" 4 x 3.5"	8 x 2.5" 16 x 2.5" 24 x 2.5" 12 x 3.5" 8 x 3.5"	4 x 3.5" 8 x 2.5" 10 x 2.5" 2 x 2.5" (rear)	4 x 3.5" 8 x 2.5"	16 x 2.5" 8 x 2.5" 8 x 3.5"	4 x 2.5"	6 x 2.5"	4 x 3.5" 8 x 2.5"	4 x 3.5" 2 x 3.5" (cabled) 4 x 3.5" (cabled)
NVMe drives up to:	24	8	12	24	12	24	10	8	10	N/A		4	6	N/A	
Gen4 PCIe slots up to:	8	8	3	8	3	2	1	5	3	2	3	3	5	3	2
Gen3 PCIe slots up to:	N/A		3	N/A		2	1	1	N/A			1	N/A		
Accelerator support up to:	2 x 300 W DW or 4 x 150 W SW or 6 x 75 W SW	4 x 150 W SW or 4 x 300 W DW 2 x 75 W SW	3 x 75 W SW	3 x 300 W DW or 6 x 75 W SW	3 x SW	4 x SW; 1 x DW; 1 x FPGA	1 x SW	N/A				2 x 75 W SW	2 x 75 W or 150 W SW 2 x 300 W DW	N/A	
Rack height (U)	2	2	1	2	1	2	1	2	1	1	2	1	2	1	1
Integrated security	TPM 1.2/2.0 FIPS, CC-TCG certified, TPM 2.0 China NationZ, Cryptographically Signed Firmware, Chassis Intrusion Alert, and Secure Boot being standard security on all racks. Integrated security features such as Silicon Root of Trust, System Lockdown (requires iDRAC9 Enterprise or Datacenter), and System Erase on all racks														

14th generation of PowerEdge Servers

Rack Server	R940	R940xa	R840	R740xd	R740	R740xd2	R640	R540	R440	R340	R240
Key attributes	Powerful performance	Extreme acceleration	Turbocharge data analytics	Scalable storage performance	Optimal application performance	Enterprise content server	Performance and density	Balanced and adaptable	Scale-out computing	Accelerate business growth	Compute made simple
Target workloads	In-memory databases	GPU database acceleration and machine learning	Data-intensive workloads, HFT, and dense virtualization	SDS, service providers, and big data servers	VDI and cloud workloads	Media streaming and SDS	Dense scale-out data center computing and storage	Mail messaging and virtualization	HPC, web tech, and scale-out infrastructure	ROBO productivity and data-intensive applications	Small business and service provider workloads
Type of processor	4 x 2nd Generation Intel® Xeon® Scalable processors			2 x 2nd Generation Intel® Xeon® Scalable processors						1 x Intel Xeon E-2200, Intel Core i3®, Intel Pentium®, or Intel Celeron® processor	
Memory (DDR4 DIMM slots & max)	48 (15.36 TB)			24 (7.68 TB)		16 (1 TB)	24 (7.68 TB)	16 (1 TB)		4 (64 GB)	
Disk drives up to:	24 x 2.5"	32 x 2.5"	26 x 2.5"	32 x 2.5" 18 x 3.5"	16 x 2.5" 8 x 3.5"	26 x 3.5" 16 x 3.5" + 10 x 2.5"[2]	12 x 2.5" 4 x 3.5"	14 x 3.5"	10 x 2.5" 4 x 3.5"	8 x 2.5" 4 x 3.5"	4 x 2.5"[2] 4 x 3.5"
NVMe drives up to:	12	4	24	N/A			10	N/A	4	N/A	
Gen4 PCIe slots up to:	N/A										
Gen3 PCIe slots up to:	13	12	6	8	5		3	5	2	2	
Accelerator support up to:	N/A	4 x DW GPUs or 4 x DW or 8 x SW FPGAs	2 x DW GPUs or 2 x SW or DW FPGAs	3 x DW or 6 x SW GPUs or 3 x DW or 4 x SW FPGAs		N/A	1 x SW GPU or 1 x SW FPGA	N/A			
Rack height (U)	3	4	2				1	2	1	1	
Integrated security	TPM 1.2/2.0 FIPS, CC-TCG certified, TPM 2.0 China NationZ, Cryptographically Signed Firmware, Chassis Intrusion Alert, and Secure Boot being standard security on all racks. Integrated security features such as Silicon Root of Trust, System Lockdown (requires iDRAC9 Enterprise or Datacenter), and System Erase on all racks										

[1] Not all features are available on all platforms.

[2] Drives use hybrid carrier to fit in 3.5" drive bay. (For the R740xd2 - a hybrid configuration is available with up to 10 2.5" SSDs)

"We'll save 35 percent on a five-year TCO with the Dell EMC VDI solution. The PowerEdge rack servers were ready to go out of the box for hosting our storage requirements. We saved 30 percent compared to a standalone SAN."
- Bruce Salisbury IT Director, Capital Area Human Services

"We can deploy our PowerEdge servers in minutes because iDRAC is always on and integrates with Dell EMC OpenManage…"
- Aldo Armiento, Chief Technology Officer, Immobiliare.it

"Dell EMC PowerEdge servers are the foundation of the work we do here. They provide the automation, the security, the flexibility, and the reliability to make sure that we can continue to focus on what we do best as a company."
- Ryan Gariepy Co-founder and Chief Technology Officer, OTTO Motors

Dell EMC Solutions

When you buy a Dell EMC server, you get more than just hardware. You get access to IT solutions end-to-end. Dell and EMC bring together industry-leading expertise into a common platform to help you transform your data center. Dell EMC can deliver PowerEdge technology at any level of integration – from a best-in-breed platform, to a pre-integrated fully turnkey hybrid cloud implementation or any step in-between. Combining the PowerEdge server infrastructure with Dell Services and Financial Solutions allows you to modernize your data center faster, more affordably and with less risk.
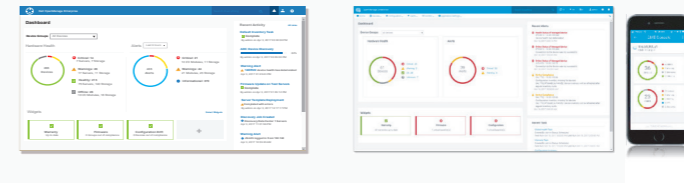
Dell EMC Data Center Infrastructure

Dell EMC Data Center Infrastructure (DCI) simplifies and manages critical infrastructure in and around the data center serving the needs of your business. A complete portfolio of racks, power and cooling solutions lets you scale as your data center needs grow.

Dell EMC Services

To fully implement a modern infrastructure, organizations require reliable, comprehensive IT services to drive IT transformations, accelerate adoption of new technologies and maximize productivity.

Architect: Get started with our IT Transformation Workshop to accelerate your transformation to becoming an agile business partner and broker of services to the business.

Implement: The ProDeploy Enterprise Suite helps you get more out of your new technology starting day one. Trust Dell EMC experts to lead deployments from basic hardware installations through planning, configuration and complex integrations.

Manage: The ProSupport Enterprise Suite ensures 24x7 access to senior ProSupport engineers along with automated proactive and predictive service enabled by SupportAssist. Our personalized service and preventative measures help you get ahead of problems before they happen.

OpenManage Systems Management

Increase the productivity, reliability and cost effectiveness of your Dell EMC PowerEdge servers while making your IT operations more efficient as well. Designed for use by today's IT Professionals, the Dell EMC OpenManage Enterprise console simplifies, intelligently automates and unifies infrastructure management tasks. Though primarily designed to monitor, configure and update tower, rack and modular PowerEdge servers, OpenManage Enterprise also provides end-to-end infrastructure monitoring capabilities for Dell EMC storage and networking devices plus third-party hardware too. Add OpenManage Mobile to enable your IT Pros to receive and take action on both Dell EMC and third-party hardware events anytime, anywhere. OpenManage Integrations enables both hardware and software infrastructure management without leaving third party consoles such as VMware vCenter and Microsoft System Center.

Learn more about
Dell EMC server solutions

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Tower Servers

Dell EMC PowerEdge tower servers offer powerful performance, versatility and quiet operations to small and home offices, remote offices, and data centers. Tower servers come in a wide range of sizes, from mini-towers to rack-capable platforms and can adapt to changing workloads with flexible expansion options. Build a strong, scalable, and modern IT infrastructure with the PowerEdge tower servers portfolio.

Specifications	T550	T350	T150	T640	T440	T340	T140	T40
PowerEdge Tower Servers								
Key attributes	Performance and expandability	Streamlined productivity, high-speed memory and capacity, easy-to-manage	Streamlined productivity, high-speed memory and capacity, powerful	Powerful and scalable	Flexible and expandable	Reliable and scalable	Easy to use and secure	Dependable and efficient
Target workloads	SDS, VDI, and data analytics	Small to mid-sized business, remote office/branch office, collaboration and sharing, real-time database management	Small to mid-sized business, remote office/branch office, Collaboration and sharing, mail/messaging and file/print	Business intelligence, ERP, and HPC	Virtualization, web serving, and server consolidation	Collaboration, sharing, and database applications	Mail/messaging, file/print, and point of sale	File sharing and print
Type of processor:	Up to two 3rd Generation Intel Xeon Scalable processors	Up to one of the following processors: Intel Xeon E-2300 Series processor, or Intel Pentium processor		Up to two 2nd Generation Intel® Xeon® Scalable processors		Up to one of the following processors: Intel® Xeon® E-2200 product family, Intel® Pentium® G5420 processor, Intel® Core i3® 9100, Intel® Celeron® G4930		Up to one Intel® Xeon® E-2224G processor
Memory (DDR4 DIMM slots (& max)):	16 (2 TB)	4 (128 GB)		24 (3 TB)	16 (1 TB)	4 (64 GB)		
Speeds up to (MT/s):	3200	3200 **Note:** For Pentium processor, maximum memory speed supported is 2666 MT/s.		2993	2666			
Drives up to:	8 x 2.5" or 16 x 2.5" or 24 x 2.5" or 8 x 3.5" or 8 x 3.5 " + 8 x 2.5"	4 x 3.5" or 8 x 3.5"	4 x 3.5"	32 x 2.5" or 18 x 3.5"	16 x 2.5" or 8 x 3.5"	8 x 3.5" [1]	4 x 3.5"	3 x 3.5" [2]
NVMe drives up to:	8	N/A		8	N/A			
Gen 4 PCIe slots up to:	6	2	2	N/A				
Gen 3 PCIe slots up to:	N/A	2	2	8	5	4		3
GPU support up to:	2 x 300 W or 5 x 70 W	N/A		4 x 300 W or 8 x 150 W	Up to 1 x 150 W	N/A		
Power Supplies (PSU):	Single or dual 600 W, 800 W, 1100 W, 1400 W, or 2400 W hot swap	Single or dual 600 W hot swap, or single 450 W cabled	300 W or 400 W cabled	Single or dual 495 W, 750 W, 1100 W, 1600 W, 2000 W or 2400 W hot swap	Single or dual 495 W, 750 W, 1100 W hot swap PSU or 450 W cabled	Single or dual 495 W hot swap, or single 350 W cabled	365 W cabled	300 W cabled
Form factor:	5U tower	4.5U tower	4U tower	5U rack or tower		Tower	Mini-tower	
Max depth (mm):	680.5	581.12	453.75	750	594.8	603	454	359.5
Integrated security:	TPM 1.2/2.0 FIPS, CC-TCG certified, TPM 2.0 China NationZ, Digitally Signed Firmware, and Secure Boot being standard security on all towers. Integrated security features such as Silicon Root of Trust, System Lockdown (requires iDRAC Enterprise or Datacenter), Chassis Intrusion Alert, and System Erase come standard on all racks except T40.							

[1] 4 x 3.5" plus 2 x 2.5" with expansion kit

[2] Available with customer kit

Dell EMC Solutions

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"Between the motherboards, solid-state storage, GPUs, and Intel CPUs, the Dell PowerEdge T630s provide the fastest available performance… When you add the network, users are realizing up to **200 percent improvements** in application response times."
— *Hurf Sheldon, Director of Research Systems for the Program of Computer Graphics, Cornell University*

"We can leverage Dell EMC OEM to **greatly accelerate our business growth** and bring GenomePilot to more customers,"
— *Michael Groner Chief Architect and Co-Founder, Appistry*

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