

# POWEREDGE R840

## Turbocharge your data analytics

Designed to drive faster insights, the PowerEdge R840 delivers four-socket performance in a dense 2U design. Power your business-critical workloads with up to 24 direct-attached NVMe drives.



### Maximize performance for demanding workloads

The R840 delivers consistent, high performance results for data-intensive applications and data analytic workloads. With powerful 2<sup>nd</sup> Generation Intel® Xeon® Scalable processors and up to 112 cores, the R840 can quickly turn analytics into insights to drive your business forward faster. Create an optimal configuration of NVMe, SSD, HDD and GPU resources to address your most demanding workloads - all in a 2U chassis.

- Scale capacity and performance with up to 26 2.5" HDDs and SSDs, 62% more than the previous generation.<sup>1</sup>
- Accelerate applications with up to 2 double-width GPUs or up to 2 FPGAs.
- Speed data transfers with a fully integrated ultra path interconnect across all four sockets.
- Eliminate bottlenecks with up to 48 DIMMs, including up to 24 DCPMMs or 12 NVDIMMs.

### Automate everyday tasks with Dell EMC OpenManage

The Dell EMC OpenManage™ portfolio helps deliver peak efficiency for PowerEdge server customers, delivering intelligent, automated management of routine tasks. Combined with unique agent-free management capabilities, the R840 is easy to manage, and by doing routine work automatically, you can free up time for higher-value projects.

- Unify monitoring and management of your IT infrastructure with OpenManage Enterprise.
- Utilize a variety of OpenManage integrations and connections to take advantage of your existing IT management platform.
- Take advantage of QuickSync 2 capabilities and gain access to your servers easily through your phone or tablet.

### Safeguard your data center with built-in security

Every PowerEdge server is made with a cyber-resilient architecture, delivering security into all parts of a server's life cycle. The R840 uses these new security features so you can reliably and securely deliver the right data to where your customers are, no matter where they are. Dell EMC considers each part of system security, from design to end of life, to ensure trust and deliver worry-free systems.

- Rely on a secure component supply chain to ensure protection from factory to the data center.
- Maintain data safety with cryptographically signed firmware packages and Secure Boot.
- Prevent unauthorized or malicious change with Server Lockdown.
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

### PowerEdge R840

Boost performance and minimize latency:

- Choose an all-flash configuration with up to 24 direct-attached NVMe drives
- Add up to 24 DCPMMs of memory

<sup>1</sup> Based on Dell EMC internal analysis, Jan 2018, comparing to the previous Dell EMC PowerEdge R830.

# PowerEdge R840

Features	Technical Specification	
Processor	Up to four 2 <sup>nd</sup> Generation Intel® Xeon® Scalable processors, up to 28 cores each	
Memory	48 DDR4 DIMM slots, Supports RDIMM /LRDIMM, up to 2933MT/s, 6TB max Up to 12 NVDIMM, 384GB Max Up to 24 Intel® Optane™ DC persistent memory DCPMM, max 12.28TB, (15.36TB max with DCPMM and LRDIMM) Supports registered ECC DDR4 DIMMs only	
Storage controllers	Internal Controllers: PERC H730P, H740P, H330 Software RAID (SWRAID) S140 Boot Optimized Storage Subsystem: HWRAID 2 x M.2 SSDs 240GB or 480GB External PERC (RAID): H840 12Gbps SAS HBAs (non-RAID): External-12Gbps SAS HBA (non-RAID), Internal- HBA330 (non-RAID)	
Drive bays	Front drive bays: Up to 8 x 2.5" SAS SATA (HDDs/SSDs) max 61.44TB, or up to 24 x 2.5" SAS/SATA (HDDs/SSDs) with up to 12 NVMe PCIe SSDs max 184.32TB, or up to 24 NVMe PCIe SSDs max 153TB Rear drive bays: Up to 2 x 2.5" SAS/SATA (HDDs/SSDs), max 15.36TB	
Power supplies	Gold: 1100W - 48VDC, Platinum: 750W, 750W 240VDC <sup>1</sup> , 1100W, 1100W 240VDC <sup>1</sup> 1600W, 2000W, 2400W	Titanium: 750W Hot plug power supplies with full redundancy option 6 hot plugs fans with N +1 redundancy
Dimensions	Form factor: Rack (2U)	Height: 86.8mm (3.4") Width*: 434.0mm (17.08") Depth*: 835.9mm (32.9") Weight: 36.6kg (80.7lbs.) *Dimensions do not include bezel, brackets or PSU handles
Embedded management	iDRAC9 iDRAC Direct	iDRAC RESTful API with Redfish Quick Sync 2 BLE/wireless
Bezel	Optional LCD bezel or security bezel	
OpenManage™ Software	OpenManage Enterprise OpenManage Essentials	OpenManage Mobile OpenManage Power Center
Integrations and connections	Integrations: Microsoft® System Center, VMware® vCenter™, BMC Truesight®, Red Hat® Ansible® Modules	Connections: Nagios® Core & Nagios® XI, Microfocus Operations Manager 1, IBM Tivoli Netcool/OMNibus
Tools	Dell EMC Repository Manager Dell EMC Update Package Dell EMC System Update Dell EMC Server Update Utility	iDRAC Service Module OpenManage Server Administrator OpenManage Storage Services
Security	TPM 1.2/2.0, TCM 2.0 optional Cryptographically signed firmware Secure Boot	Secure Boot System Lockdown (requires OpenManage Enterprise) Silicon Root of Trust Secure Erase
I/O & Ports	Network Daughter Card Options 4 x 1GbE, 4 x 10GbE, 2 x 10GbE+2 x 1GbE, or 2 x 25GbE Front ports: 1 x Dedicated iDRAC Direct Micro USB, 1 x USB 2.0, 1 x VGA. (Optional 1 x USB 3.0 only offered on the 8-drive configuration)	Rear ports: 1 x Dedicated iDRAC port, 1 x Serial, 2 x USB 3.0, 1 x VGA Internal port: 1 x USB 3.0 Video card: 2 x VGA PCIe: Up to 6 x Gen3 slots, (4x16 slots or 2x16 + 4x8 slots)
Accelerator Options	Up to 2 doublewidth GPUs or up to 2 full-height FPGAs <sup>2</sup>	See Dell.com/GPU for latest information.
Supported operating systems	Canonical® Ubuntu® Server LTS Citrix® Hypervisor Microsoft Windows Server® LTSC with Hyper-V Red Hat® Enterprise Linux Oracle® Linux	SUSE® Linux Enterprise Server VMware® ESXi For specifications and interoperability details, see <a href="http://Dell.com/OSsupport">Dell.com/OSsupport</a>
OEM-ready version available	From bezel to BIOS to packaging, your servers can look and feel as if they were designed and built by you. For more information, visit <a href="http://Dell.com/OEM">Dell.com/OEM</a> .	
Recommended support	Dell ProSupport Plus for critical systems or Dell ProSupport for premium hardware and software support for your PowerEdge solution. Consulting and deployment offerings are also available. Contact your Dell representative today for more information. Availability and terms of Dell Services vary by region. For more information, visit <a href="http://Dell.com/ServiceDescriptions">Dell.com/ServiceDescriptions</a> .	

## Learn more at [Dell.com/PowerEdge](http://Dell.com/PowerEdge)

### End-to-end technology solutions

Reduce IT complexity, lower costs and eliminate inefficiencies by making IT and business solutions work harder for you. You can count on Dell EMC for end-to-end solutions to maximize your performance and uptime. A proven leader in Servers, Storage and Networking, Dell EMC Services deliver innovation at any scale. And if you're looking to preserve cash or increase operational efficiency, Dell Financial Services TM has a wide range of options to make technology acquisition easy and affordable. Contact your Dell Sales Representative for more information.\*

<sup>1</sup> Available in China only.

<sup>2</sup> GPUs/FPGAs not available with the 2 x 2.5" rear drive bay.

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# POWEREDGE R940

## Scale-up powerhouse for mission critical workloads



The PowerEdge R940 is designed to power your mission critical applications and real-time decisions. With four sockets and up to 12 NVMe drives, the R940 provides scalable performance in just 3U.

### Breathtaking performance for mission-critical workloads

The scalable business architecture of the Dell EMC PowerEdge R940 can deliver the most mission critical workloads. With automatic workload tuning for many workloads, configuration is quick. Combined with up to 15.36TB of memory and 13 PCIe Gen 3 slots, the R940 has all the resources to maximize application performance and scale for future demands.

- Maximize storage performance with up to 12 NVMe drives and ensure application performance scales easily.
- Optimized for software defined storage with a special 2-socket configuration delivering 50% more UPI bandwidth compared to a regular 2-socket server.
- Free up storage space using internal M.2 SSDs optimized for boot.
- Eliminate bottlenecks with up to 15.36TB of memory in 48 DIMMS, 24 of which can be Intel® Optane™ DC persistent memory DCPMMs.

### Automate maintenance with Dell EMC OpenManage

The Dell EMC OpenManage™ portfolio helps deliver peak efficiency for PowerEdge servers, delivering intelligent, automated management of routine tasks. Combined with unique agent-free management capabilities, the PowerEdge R940 is simply managed, freeing up time for high profile projects.

- Simplify management with the OpenManage Enterprise™ console, with customized reporting and automatic discovery.
- Take advantage of QuickSync 2 capabilities and gain access to your servers easily through your phone or tablet.

### Rely on PowerEdge with built-in security

Every PowerEdge server is designed as part of a cyber resilient architecture, integrating security into the full server life cycle. The R940 leverages new security features built-into every new PowerEdge server strengthening protection so you can reliably and securely deliver accurate data to your customers no matter where they are. By considering each aspect of system security, from design to retirement, Dell EMC ensures trust and delivers a worry-free, secure infrastructure without compromise.

- Rely on a secure component supply chain to ensure protection from factory to the data center.
- Maintain data safety with cryptographically signed firmware package and Secure Boot.
- Prevent unauthorized or malicious change with Server Lockdown.
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

#### PowerEdge R940

- High bandwidth dual socket option optimized for virtualized environments
- 13 PCIe Gen. 3 slots

# PowerEdge R940

Features	Technical Specification	
Processor	Up to four 2 <sup>nd</sup> Generation Intel® Xeon® Scalable processors, up to 28 cores each	
Memory	48 DDR4 DIMM slots, Supports RDIMM /LRDIMM, up to 2933MT/s, 6TB max Up to 12 NVDIMM, 384GB Max Up to 24 Intel® Optane™ DC persistent memory DCPMM, max 12.28TB, (15.36TB max with DCPMM and LDRIMM) Supports registered ECC DDR4 DIMMs only	
Storage controllers	Internal controllers: PERC S140, H330, H740P Boot optimized Storage Subsystem External HBAs (RAID): H840 External HBAs (non-RAID): 12 Gbps SAS HBA	
Drive bays	Front drive bays: Up to 24 x 2.5" SAS/SATA (HDD/SSD) with up to 12 NVMe PCIe SSD, max 184.32TB	
Power supplies	Platinum 1100W, 1100W 380VDC, 1600W, 2000W, 2400W Gold 1100W-48VDC	Hot plug power supplies with full redundancy option 8 hot plugs fans with full redundancy
Dimensions	Form factor: Rack (3U)	Height: 130.3mm (5.13") Width: 434mm (17.08") Depth: 784.2mm (30.8") Weight: 49.9kg (110lbs.) *Dimensions do not include bezel
Embedded management	IPMI 2.0 compliant iDRAC9, iDRAC Direct, iDRAC RESTful with Redfish Quick Sync 2 wireless module optional	
Bezel	Optional LCD or security bezel	
OpenManage™ Software	OpenManage Enterprise OpenManage Essentials	OpenManage Mobile OpenManage Power Center
Integrations and connections	Integrations: Microsoft® System Center VMware® vCenter™ BMC Truesight Red® Hat Ansible Modules	Connections: Nagios Core & Nagios XI Micro Focus Operations Manager I IBM Tivoli Netcool/OMNIBus
Security	TPM 1.2/2.0 optional Cryptographically signed firmware Secure Boot	Silicon Root of Trust System Lockdown (requires OpenManage Enterprise) Secure erase
I/O & Ports	Network daughter card options 4x 1GbE, 4x 10GbE, 2x 10GbE+2x 1GbE, or 2x 25GbE Front ports: 1 x Dedicated iDRAC Direct USB, 2 x USB 3.0, 1 x VGA Rear ports: 1 x Dedicated iDRAC network port, 1 x Serial, 2 x USB 3.0, 1 x VGA Video card: 2 x VGA Up to 13 x Gen3 slots, (3 x8 + 10 x16)	
Supported operating systems	Canonical® Ubuntu® Server LTS Citrix® Hypervisor Microsoft Windows Server® LTSC with Hyper-V Oracle® Linux	Red Hat® Enterprise Linux SUSE® Linux Enterprise Server VMware® ESXi For specifications and interoperability details, see <a href="http://Dell.com/OSsupport">Dell.com/OSsupport</a>
OEM-ready version available	From bezel to BIOS to packaging, your servers can look and feel as if they were designed and built by you. For more information, visit <a href="http://Dell.com/OEM">Dell.com/OEM</a> .	
Recommended support	Dell ProSupport Plus for critical systems or Dell ProSupport for premium hardware and software support for your PowerEdge solution. Consulting and deployment offerings are also available. Contact your Dell representative today for more information.	

## Recommended services

ProSupport Plus with SupportAssist provides proactive and predictive support for critical systems. ProSupport provides comprehensive hardware and software support. Get more from your technology starting on day one with ProDeploy Enterprise Suite deployment offers. For more information, visit [Dell.com/itlifecycleservices](http://Dell.com/itlifecycleservices).

## End-to-end technology solutions

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# POWEREDGE R940xa

## Extreme acceleration for Artificial Intelligence and Machine Learning

Rapidly transform data insights into business outcomes with the PowerEdge R940xa. The R940xa accelerates applications with powerful four-socket performance in a scalable 4U design.

### Accelerate application performance

The PowerEdge R940xa drives GPU database acceleration to deliver real-time decisions for compute-intensive applications. By combining four CPUs with four GPUs, the R940xa delivers consistent high performance for demanding applications. The R940xa allows you to dynamically scale capacity and performance as your business-critical workloads evolve including:

- Maximizing performance with 2<sup>nd</sup> Generation Intel® Xeon® Scalable processors, up to 112 cores.
- Choosing up to 4 double-width GPUs or up to 4 double-width or 8 single-width FPGAs for application acceleration.
- Supporting large data sets with up to 48 DIMMs (24 of which can be DCPMMs) and up to 15.36TB of memory.
- Scaling on-premise capacity with up to 32 x 2.5" HDDs/SSDs and up to 4 direct-attached NVMe drives.
- Expanding quickly with up to 12 PCIe slots for external device connections.

### Streamline operations with Dell EMC OpenManage

The Dell EMC OpenManage™ portfolio helps simplify IT operations across your data center, delivering intelligent, automated management of routine tasks. Combined with unique agent-free management capabilities, the R940xa is simply managed, freeing up time for high profile projects.

- Utilize a variety of OpenManage integrations and connections to take advantage of your existing IT management platform.
- Take advantage of QuickSync 2 capabilities and gain access to your servers easily through your phone or tablet.

### Deliver comprehensive data center protection with built-in security

Every PowerEdge server is made with a cyber-resilient architecture, delivering security into all parts of a server's life cycle. The R940xa uses these new security features so you can reliably and securely deliver the right data to where your customers are, no matter where they are. Dell EMC considers each part of system security, from design to end of life, to ensure trust and deliver worry-free systems. Rely on a secure component supply chain to ensure protection from factory to the data center.

- Maintain data safety with cryptographically signed firmware packages and Secure Boot.
- Prevent unauthorized or malicious change with Server Lockdown.
- Wipe all data from storage media including hard drives, SSDs and system memory quickly and securely with System Erase.

### PowerEdge R940xa

Combines four CPUs with four GPUs in a powerful 1:1 ratio to drive database acceleration

# PowerEdge R940xa

Features	Technical Specification	
Processor	Up to four 2 <sup>nd</sup> Generation Intel® Xeon® Scalable processors, up to 28 cores each	
Memory	48 DDR4 DIMM slots, Supports RDIMM /LRDIMM, up to 2933MT/s, 6TB max Up to 12 NVDIMM, 384GB Max Up to 24 Intel® Optane™ DC persistent memory DCPMM, max 12.28TB, (15.36TB max with DCPMM and LRDIMM) Supports registered ECC DDR4 DIMMs only	
Storage controllers	Internal Controllers: PERC H730P, H740P, H330 Software RAID (SWRAID) S140 Boot Optimized Storage Subsystem: HWRAID 2 x M.2 SSDs 240GB or 480GB External PERC (RAID): H840 12Gbps SAS HBAs (non-RAID): External-12Gbps SAS HBA (non-RAID). Internal-HBA330 (non-RAID)	
Drive bays	Front drive bays: Up to 8x 2.5" SAS SATA (HDD/SSD) max 61.44TB, or up to 24 x 2.5" SAS/SATA (HDD/SSD) max 184.32TB, or up to 32 SAS/SATA (HDD/SSD) with up to 4 NVME PCIe SSD max 245.76TB	
Power supplies	Gold 1100W -48VDC Platinum: 1100W, 1100W 240VDC <sup>1</sup> 1600W, 2000W, 2400W	Hot plug power supplies with full redundancy option 6 hot plugs fans with N +1 redundancy
Dimensions	Form factor: Rack (4U)	Height: 174.3 mm (6.87") Width: 441.16 mm (17.37") Depth: 835.9mm (32.9") Weight: 56.0kg (123.5lbs.) <small>*Dimensions do not include bezel</small>
Embedded management	iDRAC9 iDRAC Direct	iDRAC RESTful API with Redfish Quick Sync 2 BLE/wireless
Bezel	Optional LCD bezel or security bezel	
OpenManage™ Software	OpenManage Enterprise OpenManage Essentials	OpenManage Mobile OpenManage Power Center
Integrations and connections	Integrations: Microsoft® System Center, VMware® vCenter™, BMC Truesight, Red Hat® Ansible® Modules	Connections: Nagios® Core & Nagios® XI, Microfocus Operations Manager I, IBM Tivoli Netcool/OMNIBus
Tools	Dell EMC Repository Manager Dell EMC Update Package Dell EMC System Update Dell EMC Server Update Utility	iDRAC Service Module OpenManage Server Administrator OpenManage Storage Services
Security	TPM 1.2/2.0 optional Cryptographically signed firmware Secure Boot	Secure Boot System Lockdown (requires OpenManage Enterprise) Silicon Root of Trust Secure Erase
I/O & Ports	Network Daughter Card Options 4 x 1GbE, 4 x 10GbE, 2 x 10GbE+2 x 1GbE, or 2 x 25GbE Front ports: 1 x Dedicated iDRAC Direct Micro-USB, 2 x USB 2.0, 1 x VGA. (Optional 1 x USB 3.0 only offered on the 8-drive configuration)	Rear ports: 1 x Dedicated iDRAC port, 1 x Serial, 2 x USB 3.0, 1 x VGA Internal port: 1 x USB 3.0 Video card: 2 x VGA PCIe: Up to 12 x Gen3 slots, (6x16 slots or 2x16 + 10x8 slots)
Accelerator Options	Up to 4 doublewidth GPUs or up to 4 double-width or 8 single-width full-height FPGAs	See Dell.com/GPU for latest information.
Supported operating systems	Canonical® Ubuntu® LTS Citrix® Hypervisor Oracle® Linux Microsoft Windows Server® LTSC with Hyper-V Red Hat® Enterprise Linux	SUSE® Linux Enterprise Server VMware® ESXi For specifications and interoperability details, see <a href="http://Dell.com/OSsupport">Dell.com/OSsupport</a>
OEM-ready version available	From bezel to BIOS to packaging, your servers can look and feel as if they were designed and built by you. For more information, visit <a href="http://Dell.com/OEM">Dell.com/OEM</a> .	
Recommended support	Dell ProSupport Plus for critical systems or Dell ProSupport for premium hardware and software support for your PowerEdge solution. Consulting and deployment offerings are also available. Contact your Dell representative today for more information. Availability and terms of Dell Services vary by region. For more information, visit <a href="http://Dell.com/ServiceDescriptions">Dell.com/ServiceDescriptions</a> .	

<sup>1</sup> Available in China only.

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