

**DELL**Technologies

# Introducing the Latest Generation of Dell PowerEdge Servers

Your innovation engine



## Innovate, adapt and grow with the latest generation of compute.

Our more connected, data-driven world has created an uncharted digital territory. Yesterday's infrastructure can't keep pace with today's rapidly evolving demands, especially when they can change overnight. In this environment, digital transformation is an imperative. The future requires an adaptable, scalable and secure IT foundation that's ready for anything.



The new PowerEdge server portfolio is built to power your innovation engine to meet the challenges of digital transformation with a secure infrastructure that supports a full range of modern workloads and objectives. Paired with Dell OpenManage and systems management solutions, PowerEdge servers deliver the productivity and performance you need to power your innovation. Together, they stop at nothing, so nothing's in your way.

The new portfolio is built on three pillars:

- **Adaptive compute:** Address evolving compute demands with a platform engineered to optimize the latest technology advancements for predictable profitable outcomes while easily scaling to address your data at the point of need, from edge to hybrid cloud.
- **Autonomous compute infrastructure:** Respond rapidly to business opportunities with intelligent systems that work together and independently, enabling rapid digital transformation and productivity to deliver outcomes aligned with business priorities, freeing IT to stop managing and start innovating. These systems help you adapt to a changing environment, enable rapid digital transformation, and position you to grow, scale and evolve.
- **Proactive resilience:** Embed trust into your digital transformation with an infrastructure and IT environment designed for secure interactions and the capability to anticipate potential threats. This security starts at design and continues through the supply chain and lifecycle to decommissioning.

## Dell OpenManage Systems Management solutions

Tame IT complexity with intuitive tools that work together to deliver automated, repeatable processes based on your unique policies.

- **IT management for any environment:** Manage PowerEdge servers in virtual, physical, local and remote environments.

## PowerEdge innovations

Dell Technologies believes in continuous innovation, so we constantly make enhancements to our server portfolio to improve performance and efficiency and to lower total cost of ownership (TCO). The following are some of the innovations included in our latest generation of PowerEdge servers.

### Intrinsic security

Proactive resilience is anchored by an immutable, silicon-based root of trust and enables security functions like end-to-end boot verification including UEFI Secure Boot Customization, trusted BIOS, firmware chain of trust, and verified OS bootloader. Firmware is protected using NIST guidelines including signed firmware updates and certificate management is simplified through automatic renewal. PowerEdge servers also provide data-at-rest protection using Secure Enterprise Key Manager (SEKM) and data-in-use protection with Confidential Compute CPU technologies.

To mitigate against threats like counterfeit components, malware and firmware tampering, our comprehensive approach to supply chain security utilizes tools for counterfeit avoidance, manufacture chain of custody, code signing, chassis intrusion and tamper-evident packaging. Further, Secured Component Verification (SCV) extends supply chain security by verifying server component integrity, to deliver solutions you can trust.

### Thoughtful cooling designs

To enable the increasing density required to empower innovation, Dell Technologies tailored new designs to address the cooling needs of today's denser data centers.

- **Dell Multi-Vector Cooling 2.0**, part of the Thermal Manage suite, is an advanced thermal design that streamlines airflow pathways for superior cooling.
- **Dell Direct Liquid Cooling (DLC)** is a new option that leverages the superior thermal capacity of water to remove heat more efficiently.
- **Dell Leak Sense** detection capability protects liquid cooled servers and is fully managed by the integrated Dell Remote Access controller (iDRAC).

### Focus on acceleration

The new PowerEdge portfolio supports a complete stack of GPUs to optimize performance for the entire spectrum of workloads:

- High performance computing (HPC)
- Training and inferencing for artificial intelligence (AI), machine learning (ML) and deep learning (DL)
- Data analytics
- Virtual desktop infrastructure (VDI) and dense virtualization

### New server connectivity standard for Ethernet

Dell Technologies was an integral member in defining a new form factor for Ethernet: OCP NIC 3.0, which will replace the Rack Network Daughter Card (rNDC) with an open, non-proprietary industry standard that provides the option of iDRAC Shared LOM and delivers better maximum adapter density.

### Broader supportability for PSU

The latest generation of Dell PowerEdge power supply units (PSUs) will introduce Mixed Mode support and an enhanced extended power range (EPR) that allows for higher powered configurations to take advantage of longer peak power periods.

- **Accomplish more with intelligent automation:** Integrated automation tools free up your time, so you can accomplish more.
- **Manage with clarity:** Modern, intuitive interfaces display real-time information you need to make critical decisions.
- **Support extensive management needs:** The OpenManage Enterprise one-to-many console enables:
  - Integration with SupportAssist for automated ticket creation and faster incident resolution
  - Streamlined updates and change management using Repository Manager
  - Power monitoring and management with Power Manager
  - One console management of Dell rack, tower and modular servers
  - Integration with scripting tools like Red Hat® Ansible® and RESTful API Redfish
  - Mobile management capabilities from your device of choice using OpenManage Mobile

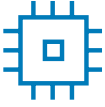
## Find the right compute and server for your use case and workloads.

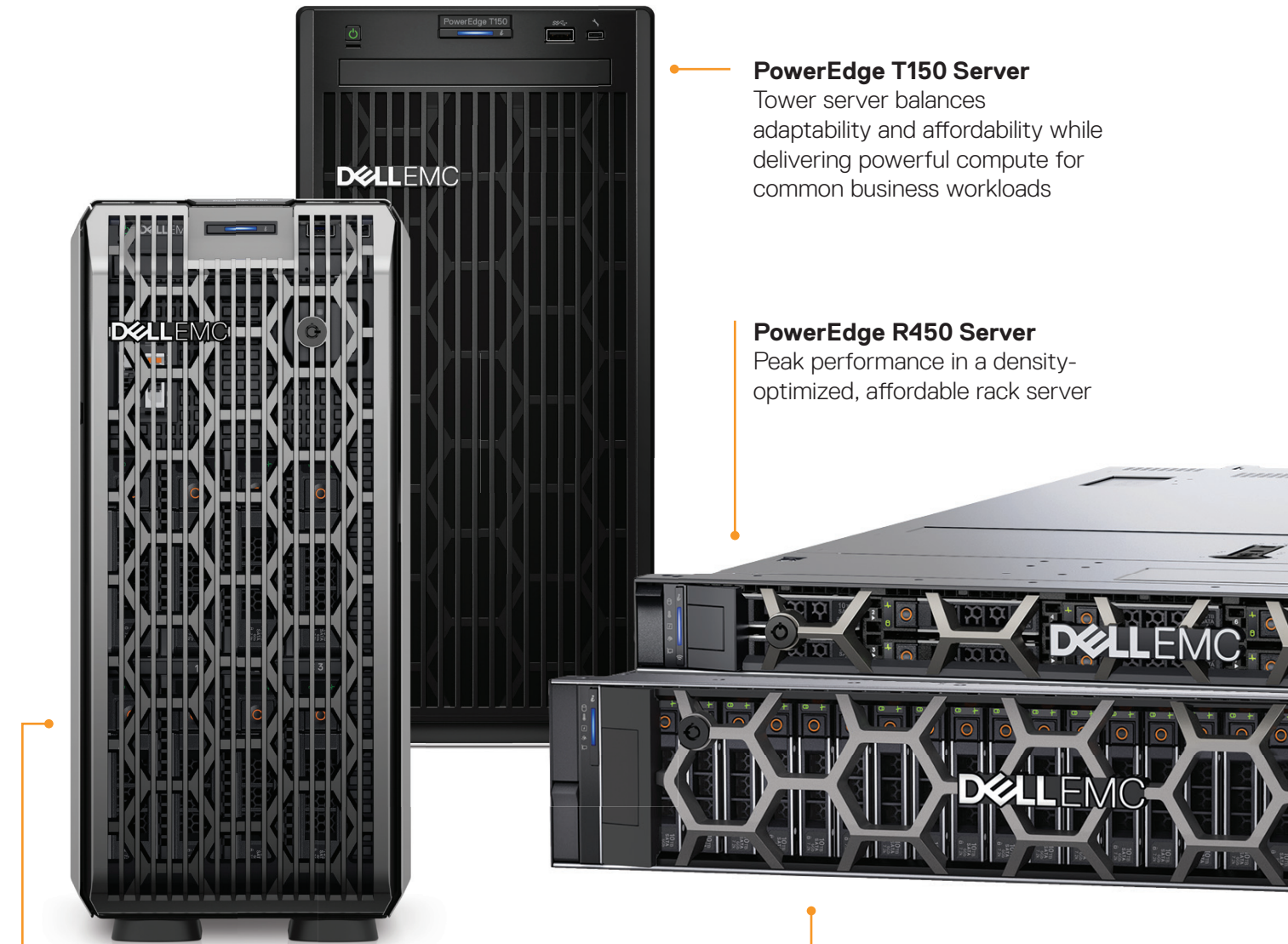
The latest generation of PowerEdge servers are optimized for a wide spectrum of modern workloads, so you can easily meet your price/performance goals.

Deployment	Essential	Scalable	Mainstream	Specialized
<b>Description</b>	Entry-level technology with essential features, limited scalability, and enterprise-class management	Performance technology that balances capability and capacity with enterprise features	Latest technology, designed for best-in-class performance	Latest technology, focused on specialized compute needs
<b>Use cases</b>	Enterprise-class capabilities for small to medium business (SMB) and remote office / branch office (ROBO) deployments	Right-sized compute for enterprise workloads	High performance for XaaS providers and enterprise data center workloads	Extreme performance and density for emerging workloads and usage models
<b>Specific workload examples</b>	<ul style="list-style-type: none"> <li>General IT infrastructure for file and print</li> </ul>	<ul style="list-style-type: none"> <li>VDI</li> <li>Cloud applications</li> <li>Software-defined storage (SDS)</li> <li>Anything-as-a-Service (XaaS)</li> </ul>	<ul style="list-style-type: none"> <li>Virtualization</li> <li>Big data analytics</li> <li>SDS</li> <li>In-memory databases</li> <li>Data center infrastructure</li> <li>Financial applications</li> <li>Customer relationship management (CRM)</li> <li>Enterprise resource management (ERM)</li> </ul>	<ul style="list-style-type: none"> <li>HPC</li> <li>AI/ML</li> <li>Object storage</li> <li>Cloud storage</li> <li>Databases</li> <li>Edge computing</li> <li>Rugged environments</li> <li>Scale-out storage for structured databases</li> <li>Web tech</li> </ul>
<b>Recommended Dell PowerEdge servers</b>	<ul style="list-style-type: none"> <li>R550</li> <li>R450</li> <li>T350</li> <li>T150</li> </ul>	<ul style="list-style-type: none"> <li>R750xs</li> <li>R650xs</li> <li>R7515</li> <li>R6515</li> </ul>	<ul style="list-style-type: none"> <li>R750</li> <li>R650</li> <li>R7525</li> <li>R6525</li> <li>MX750c</li> </ul>	<ul style="list-style-type: none"> <li>XE8545</li> <li>XR11</li> <li>XR12</li> <li>R750xa</li> <li>C6525</li> <li>C6520</li> </ul>

## Essential servers

Entry-level technology with essential features, limited scalability, and enterprise-class management

 **Up to two third-generation Intel® Xeon® Scalable processors** with up to 24 cores



**PowerEdge T150 Server**  
Tower server balances adaptability and affordability while delivering powerful compute for common business workloads

**PowerEdge R450 Server**  
Peak performance in a density-optimized, affordable rack server

**PowerEdge T350 Server**  
Affordable, easy-to-manage tower server designed for productivity and data-intensive applications

**PowerEdge R550 Server**  
A versatile, affordable, virtualization-ready rack server



### Target workloads

**PowerEdge R450/R550 servers:** small business infrastructure and applications, low-density virtualization

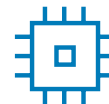
**PowerEdge T150/T350 servers:** file and print, mail and messaging, collaboration and sharing, and database (T350 only)

## Scalable servers

Advanced technology that balances capability and capacity with enterprise features

*“The PowerEdge rack servers with NVMe provide very fast I/O with a parallel file system that reads and writes data to disk very quickly... improving the efficiency of the cluster. That means we can really concentrate on the core computation rather than waiting for files to be saved.”*

— Alastair Basden, Technical Manager, Durham University

 **Up to two third-generation Intel Xeon Scalable processors** with up to 32 cores

### PowerEdge R750xs Server

Feature-optimized full-performance enterprise server designed to offer the latest performance with ideal memory, CPU, I/O, and storage offering for scale-out environments

### PowerEdge R7515 Server

A server designed to handle workloads like SDS, virtualization and data analytics

 **One second- or third-generation AMD® EPYC™ processor** with up to 64 cores



### PowerEdge R650xs Server

Purpose-built 1U, dual-socket server, combining right-sized enterprise features, performance and scalability to drive application performance for dense scale-out data center computing

### Target workloads

**PowerEdge R750xs Server:** virtualization, medium VM/VDI, scale-out databases

**PowerEdge R7515 Server:** SDS, virtualization, data analytics

**PowerEdge R650xs Server:** virtualization/cloud, scale-out databases, HPC

**PowerEdge R6515 Server:** virtualization, HCI, network functions virtualization (NFV)

### PowerEdge R6515 Server

The single-socket server designed to handle workloads like virtualization, hyperconverged infrastructure (HCI) and OpenStack® Ready Architecture

The PowerEdge R6515 **accelerates data processing capabilities by up to 60%** in Apache® Hadoop® databases, speeding time to insights.<sup>1</sup>

<sup>1</sup> Based on Dell analysis of the best TPCx-HS benchmark result for 17-node 3TB configurations of 21.52HSph on the TPCx-HS page as of March 3, 2021, and the score submitted by Dell to TPC of 34.52HSph approved for publication on March 15, 2021.

## Mainstream servers

Latest technology, designed for best-in-class performance

*“It’s really important to have vendor partners like Dell Technologies to enable us... to physically push the envelope. Frankly, if Dell Technologies wasn’t there to do that, we’d have to build it ourselves. We’re used to doing that, but we have become comfortable with the way Dell Technologies supports the type of innovation that Verne Global is all about.”*

— Tate Cantrell, CTO, Verne Global



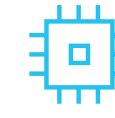
**PowerEdge MX750c Server**  
Full-featured, high performance, modular and dense compute for exceptional scalability

 **Up to two third-generation Intel Xeon Scalable processors** with up to 40 cores

<sup>2</sup> Based on Dell Technologies internal testing comparing max. configuration benchmarks with max. configuration R750 compared to max. perf. R740, March 2021.

**PowerEdge R750 Server**  
Full-featured enterprise server, delivering outstanding performance for the most demanding workloads

The PowerEdge R750 delivers up to **43% greater performance in solving massively parallel linear equations**, supporting your most computationally heavy workloads.<sup>2</sup>

 **Up to two second- or third-generation AMD EPYC processors** with up to 64 cores

**PowerEdge R7525 Server**  
A highly scalable two-socket 2U rack server that delivers powerful performance and flexible configuration that is ideal for all-flash SDS, VDI and data analytics workloads

**PowerEdge R650 Server**  
Full-featured enterprise server designed to optimize application performance and data center density

**PowerEdge R6525 Server**  
Dual-socket 1U server that delivers performance and innovation to handle workloads like HPC, VDI and virtualization

### Target workloads

**PowerEdge R750 Server:**  
database and analytics, VDI, mixed workload standardization

**PowerEdge R650 Server:**  
mixed workload and data center standardization, high density virtualization, dense data analytics

**PowerEdge MX750c Server:**  
general-purpose IT, virtualization and containers, business applications, SDS, SDN, databases, analytics

**PowerEdge R7525 Server:**  
data analytics, all-flash SDS and VDI

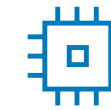
**PowerEdge R6525 Server:**  
HPC, dense VDI, virtualization

## Specialized servers

Latest technology, focused on specialized compute needs

*“The acceleration market is growing rapidly and opens doors to solve the most complex workloads in the industry. We want to make it easy for our customers to deploy GPU systems and unlock the full power of acceleration workloads with one platform that can do it all: it's the R750xa.”*

— Rajesh Pohani, Vice President, PowerEdge Product Management



**Up to two third-generation Intel Xeon Scalable processors**  
with up to 40 cores



### PowerEdge R750xa Server

The flagship server for GPU-optimized workloads is purpose-built to boost acceleration performance across the widest range of needs.

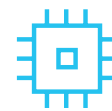
### PowerEdge XR11 Server

A single-socket 1U ruggedized, compact server offering enterprise performance and security for edge-based workloads

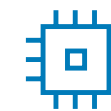


### PowerEdge XE8545 Server

GPU-optimized design supporting four next-gen NVIDIA® GPUs with exceptional NVLink™ peer-to-peer bandwidth



**Two third-generation AMD EPYC processors**  
with up to 64 cores



**One third-generation Intel Xeon Scalable processor**  
with up to 36 cores



### Target workloads

**PowerEdge R750xa Server:**  
AI/ML training and inferencing, HPC, render farms, virtualization

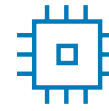
**PowerEdge XE8545 Server:**  
ML/DL, HPC, GPU virtualization

**PowerEdge XR11 Server:**  
edge workloads for telecommunications, government/military, ROBO, retail and restaurants

**PowerEdge XR12 Server:**  
edge workloads for telecommunications, government/military, ROBO, retail and restaurants

## Specialized servers

Latest technology, focused on specialized compute needs



**Up to two third-generation Intel Xeon Scalable processors**  
with up to 40 cores

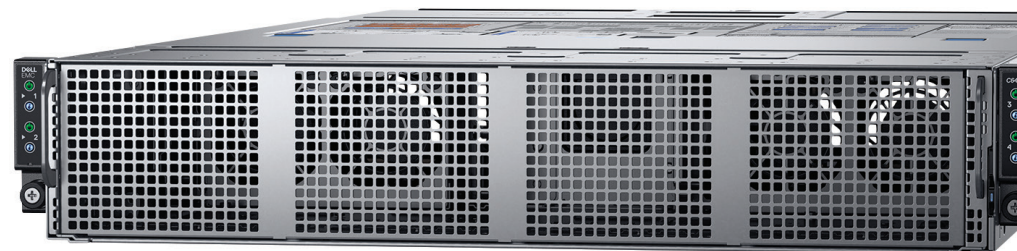


### PowerEdge C6520 Server

Compute-dense server designed to boost data center performance and provide extreme compute at scale

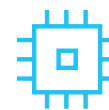
*“PowerEdge servers handled 9,000 remote access connections without a blip, which made the transition to virtual teaching easier.”*

— Andy Seymour, ICT Services Manager, Northampton College



### PowerEdge C6525 Server

A compute-dense server designed to boost data center performance to tackle a variety of HPC workload and applications like digital manufacturing, research and web tech



**Up to two second- or third-generation AMD EPYC processors**  
with up to 64 cores



#### Target workloads

**PowerEdge C6520 Server:** HPC, financial analysis / high-frequency trading, hyper-performance compute

**PowerEdge C6525 Server:** HPC workloads for verticals such as digital manufacturing, research, and web tech

*“At Dell Technologies we listen to our customer needs and solve for them using the latest innovations in technology. This approach has led to the introduction of two new rugged rack servers completely redesigned from the ground up, to effectively manage localized data sources outside at the edge. These devices are specifically designed to operate in smaller spaces and ideally suited for telco, retail, restaurants and government applications.”*

— Tracy Troyer, Vice President, Global Product Group, Dell Technologies

## Sustainability in Dell PowerEdge

Our power, thermal and cooling innovations and asset resale and recycling services reduce our carbon footprint.

### Power efficiency

Since 2013, engineering advancements have helped us reduce PowerEdge **energy intensity (EI) by 83%**! OME Power Manager also makes it easier for you to manage your power budgets with data-driven insights.



**34 EPEAT**  
Bronze registered products

**3.0 ENERGY STAR®**  
throughout most of the server portfolio

### Thermal design and cooling

Improving the energy and cooling needs of data centers is one of the biggest challenges in IT today. We address it with PowerEdge multi-vector cooling, liquid cooling, and thermal design.

### Sustainable materials

We make every effort to reduce waste and reuse available resources. Dell PowerEdge products contain up to **35% recycled plastic**.

### Data sanitization with asset resale and recycle

Assets are removed from the business' environment, sanitized at a secure location and evaluated for resale/reuse.



## Flexible payment solutions

Dell Technologies offers payment solutions with a wealth of options to help you align and scale the cost of IT solutions with technology consumption and budget availability. Whether you're looking to pay for technology as you use it, rotate your technology every few years, manage your cash flow or finance your software purchases, Dell Technologies has a solution for you. For example:

- **Payment Solutions** from Dell Financial Services help you maximize your IT budget and get the technology you need today. Our portfolio includes traditional leasing and financing options, as well as advanced flexible consumption products.
- **APEX Flex On Demand** is a pay-per-use consumption model that enables you to scale capacity up or down, with payments that rise and fall accordingly, so you only pay for the technology you use.

## Dell Technologies leads in server security, being the first server vendor with a cross-portfolio solution for cryptographically verified hardware integrity with Dell Technologies Secured Component Verification.<sup>3</sup>

## Services and support

Dell Technologies is with you every step of the way, linking people, processes and technology to accelerate innovation and enable optimal business outcomes.

- **Support Services** driven by AI and DL will change the way you think about support with smart, ground-breaking technology backed by experts to help you maximize productivity, uptime and convenience. Experience more than fast problem resolution — our AI engine proactively detects and prevents issues before they impact performance.
- **Deployment Services** help you streamline complexity and bring new IT investments online as quickly as possible. Leverage our 30-plus years of experience for efficient and reliable solution deployment to accelerate adoption and return on investment (ROI) while freeing IT staff for more strategic work.
- **Managed Services** can help reduce the cost, complexity and risk of managing IT so you can focus your resources on digital innovation and transformation while our experts help optimize your IT operations and investment.
- **Residency Services** provide the expertise needed to drive effective IT transformation and keep IT infrastructure running at its peak. Resident experts work tirelessly to address challenges and requirements, with the ability to adjust as priorities shift.
- **Data Security Services** provide secure retention of parts, data destruction, and data sanitization plus redeployment and retirement of assets to help keep your data from falling into the wrong hands.

## Get ready to innovate, adapt and grow.

Make Dell PowerEdge servers the engine you use to drive your business forward. Our latest generation portfolio is ready to take you wherever you need to go.

## Why Dell Technologies?

As your innovation engine, Dell PowerEdge servers deliver technologies and solutions to help you innovate, adapt and grow.

### Take full advantage of a portfolio optimized for the latest applications and purpose-built for AI.

Dell Technologies delivers a portfolio of servers to meet organizations' changing compute demands.

### Reduce the burden on IT by making strides towards full infrastructure automation.

Get your system up and running with automated server and OS deployment, scale without disruption, and maintain the infrastructure with a comprehensive view of the system data and analytics.

### Achieve confidence with servers designed with a security-first approach to mitigate threats.

As a leader in server security, Dell Technologies builds on our heritage of a strong silicon-based root of trust. Our Secure Development Lifecycle begins with cyber resilience from design through delivery and support, and extends through the supply chain with world-class physical, personnel and cybersecurity controls. A new cross-portfolio solution, Secured Component Verification, cryptographically verifies hardware integrity from factory to customer site.

## Dell Technologies makes it easy to build automation in your organization, with extensive existing capabilities that can deliver time savings of up to 85% and eliminate dozens of steps.<sup>4</sup>

## Learn more.

Visit [dell.com/en-us/dt/servers/index.htm](https://dell.com/en-us/dt/servers/index.htm).

<sup>3</sup> Based on Dell analysis of publicly available data, October 2020. Available on PowerEdge 14G and 15G, except for PowerEdge XE7100, XE7420, XE7220, C6420 and C6525.

<sup>4</sup> Based on a Principled Technologies Report commissioned by Dell Technologies, "Performing Common Systems Management Tasks with Dell OpenManage Enterprise 3.5 vs Manual Approaches", March 2021. Actual results may vary.





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781.826.7989 | [sales@newcomglobal.com](mailto:sales@newcomglobal.com)

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