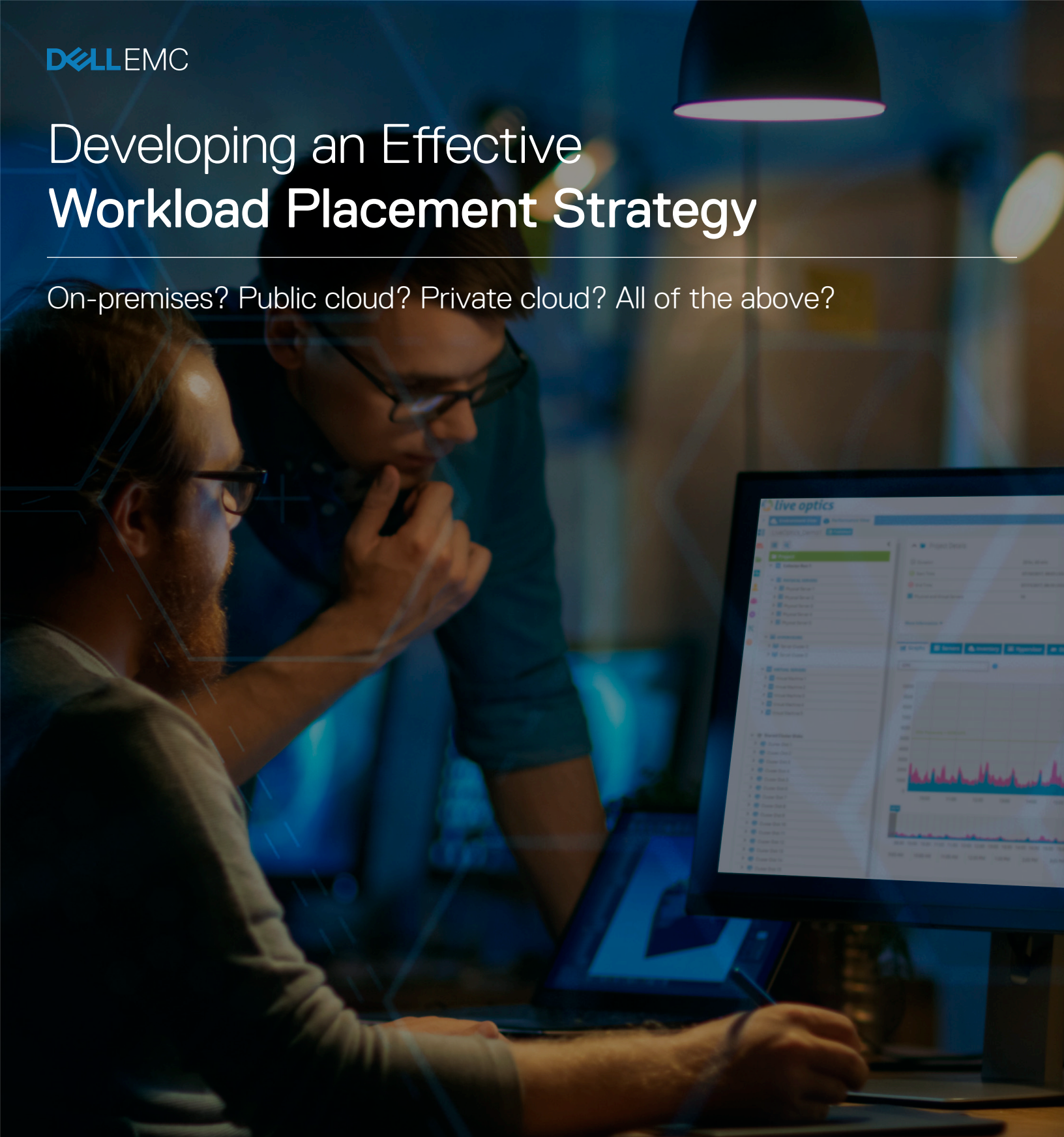
DELL EMC

Developing an Effective **Workload Placement Strategy**

On-premises? Public cloud? Private cloud? All of the above?



Determining where to run your workloads is a top challenge for today's IT. With so many considerations and unique requirements there is never a one-size-fits-all answer. Particularly with mission-critical or sensitive workloads, the ability to easily adapt while maintaining security, increasing performance and maximizing efficiency is key.

Hybrid IT is a mix of on-premises and public cloud infrastructure. It's workload-centric and business-first as it delivers optimal placement options for each workload. The Dell EMC PowerEdge server portfolio can help your organization deliver the best hybrid infrastructure for powering the workloads that power your business.

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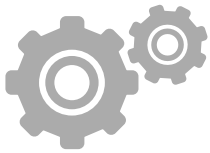
Your Organization is Unique - Your Workload Placement Strategy Should Be, Too



The most evolved IT leaders understand that moving their firm's entire IT infrastructure to the public cloud deprives them of the ability to customize their strategy and adapt to the accelerated rate of business change.

Source: Workload Placement Separates the Winners from the Losers in IT, an IDC White Paper Sponsored by Dell EMC

Determining where to run your workloads - whether on-premises, in the public cloud, private cloud, or a hybrid mix of the above - remains a top challenge for today's IT leaders. The decisions require careful consideration and research, as different applications have different requirements. Plus, committing to the wrong strategy without doing your homework can increase risk and create major problems down the line. Although there is no one-size-fits-all answer, there are specific things that IT leaders should consider in order to make the best decisions for their organizations.



Customization is Key

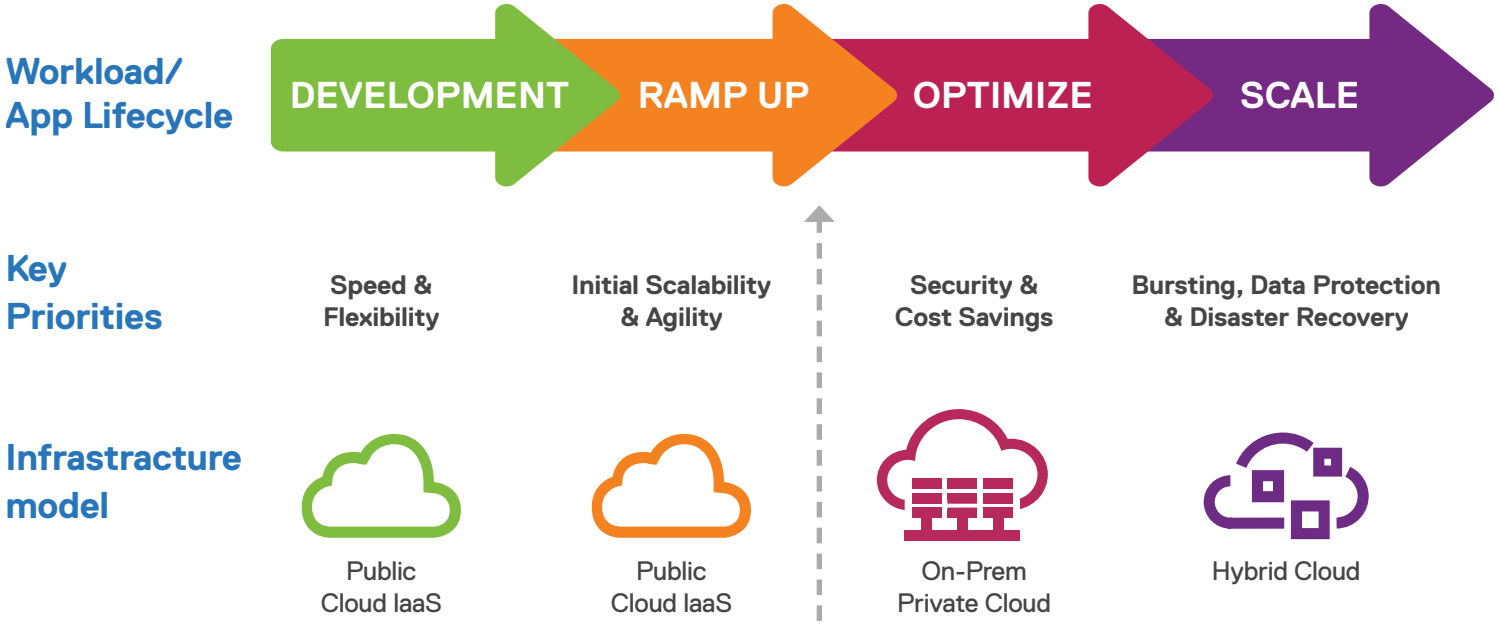
Even within your industry, your needs are different than your competitor's. You have specific workload and application requirements, so naturally you have different considerations. Not to mention, your needs can change as your business grows, so you must have the ability to adapt quickly.

Running 100% of workloads in the public cloud or on-premises is the best option for only a select few. For almost all organizations, the right answer comes in a strategic mix of on-prem and cloud infrastructure. But knowing which workloads to run where – or when to shift from one location to another – is not always easy. A hybrid infrastructure allows users to strategically choose where to run their workloads. IT departments can adapt, react and respond quickly to new workloads, applications and deployment methods, giving them a huge advantage over their competitors.

Particularly when it comes to mission-critical and core workloads, figuring out the best placement strategy is crucial. When security, performance, and compliance are top concerns, it makes sense to run certain workloads on-premises. Additionally, the workload lifecycle often dictates certain infrastructure needs, depending on key priorities and shifting costs.

Application Lifecycle Plays Key Role in Workload Placement Strategy

As workload/application lifecycles change, an organization's priorities shift. Therefore, the workload placement strategy must shift, too. For example, in the development phase, where speed and flexibility are top priorities, public Cloud IaaS may be the best choice. As things ramp up, organizations typically prioritize scalability and agility, and the costs of running in the public cloud increase. Then, as the workload lifecycle continues into the optimization phase, security and cost savings often become top priorities. Finally, to scale and be able to handle burst, data protection, and disaster recovery, a hybrid IT infrastructure makes the most sense.





Hybrid Infrastructure - Workload Centric and Customizable

With a hybrid approach, workload placement is based on location and deployment capabilities (as well as limitations). Infrastructure can be customized, so that certain workloads remain on-prem, while others run in the cloud.

Of course, there are some workloads, such as mission-critical applications and those involving sensitive data, that make sense to run on-premises. When businesses need to maintain tight control, or when even a small breakdown has huge repercussions, running those workloads on-premises is not only the safest bet, but it's the most efficient and often the most cost effective as well.

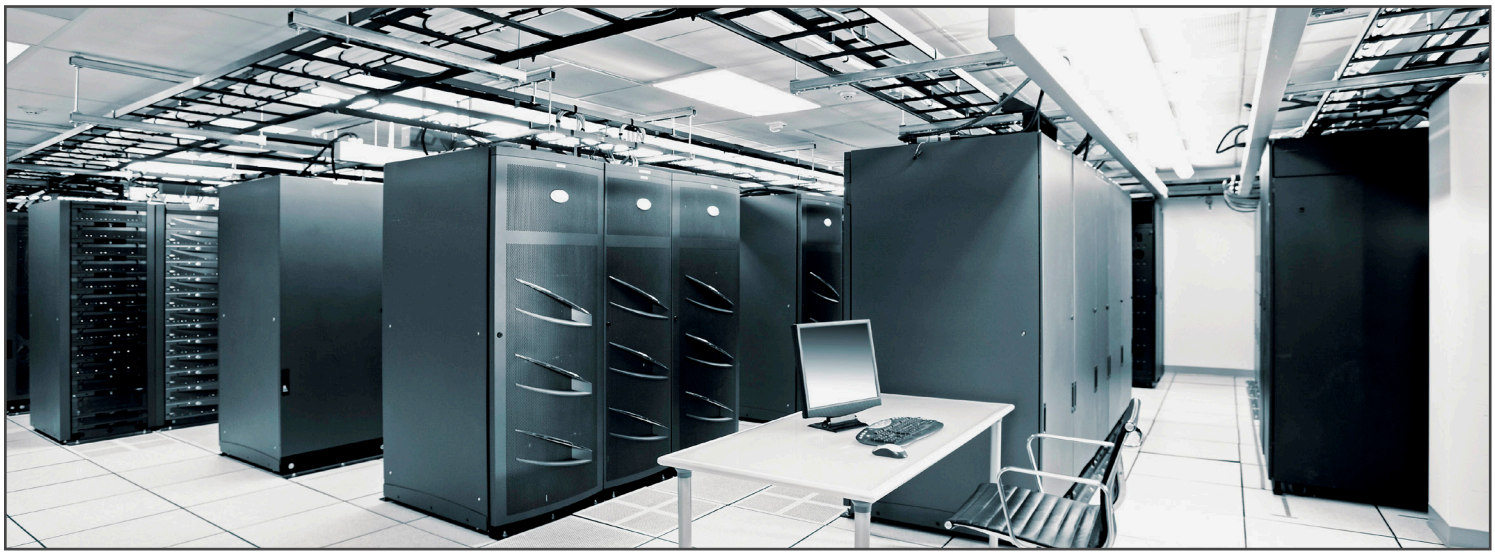
Placement of Mission-Critical & Data Sensitive Applications

Even in today's cloud-friendly world, certain workloads are growing on-premises. For example, workloads that are critical to your business (if they go down, even for a brief time, it means big trouble for your business). Also, applications that deal with sensitive customer and employee information or compliance/regulatory issues are best left on-prem.

Specific workloads/applications that many choose to run on-premises include:

- **Unstructured Data Analytics**
- **Structured Data Analytics**
- **Structured Data Management**
- **Businesses Applications (including CRM & ERM)**
- **Engineering/Technical**

We'll explore these workloads more closely over the next few pages.



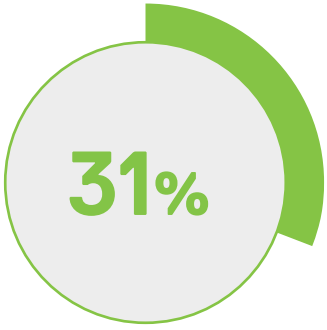
Unstructured Data Analytics

Cognitive/AI systems and content analytics software analyze, organize, access, and provide advisory services based on a range of unstructured information and provide a platform for the development of analytic and cognitive applications.

Unstructured data analytics includes point-in-time, batch, or streaming data analytics of data generated from sensors and endpoints, log data, user preferences, and other data that does not conform to a predefined structure or schema. (examples include: Hadoop and Splunk)



Top 3 Reasons why hybrid IT organizations choose to run unstructured data applications on-prem (shown as a percentage of respondents):



Our on-premises IT infrastructure is more secure



Running on-premises allows us to respond faster to business needs



Workload has historically run on-premises

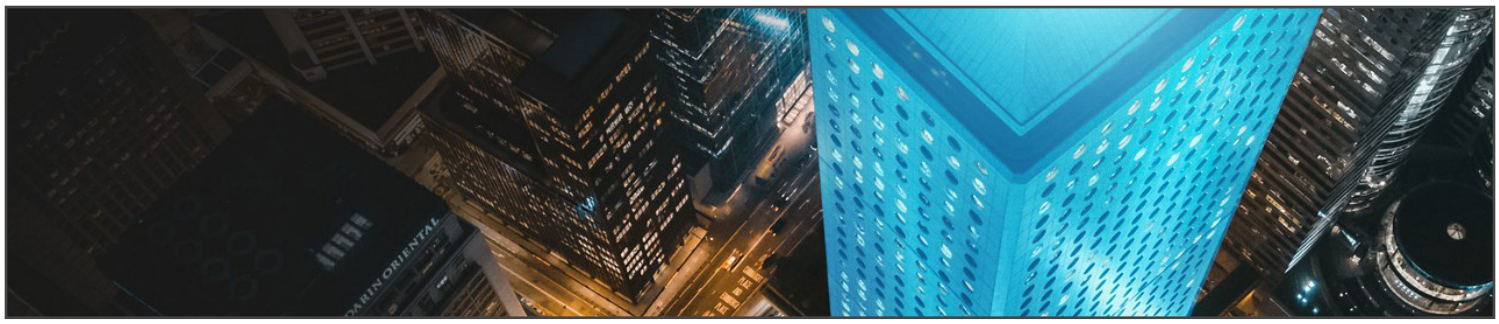
*Source: *Workload Placement Separates the Winners from the Losers in IT,* an IDC White Paper Sponsored by Dell EMC

Structured Data Management & Analytics

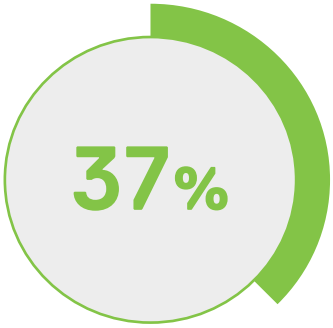
Most organizations today collect an overwhelming amount of data. If used properly, that data can be a firm's most valuable asset. But managing and storing all that data is a major undertaking. Structured data management software includes products that manage a common set of defined data kept in one or more databases. It's driven by a set of rules and involves data access, analysis and reporting, and includes applications such as:

- Relational & nonrelational database management systems
- Dynamic data management systems
- Database development and management tools
- Dynamic data grid managers
- Data integration and integrity software
- End-user query, reporting and analysis software
- Advanced and predictive analytics software
- Spatial information management software

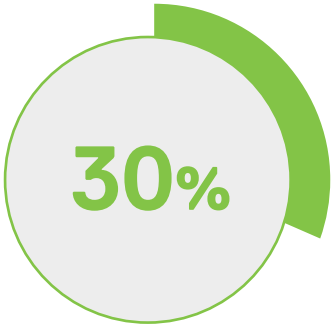
Structured data management and analytics workloads use sensitive information, so running in the public cloud increases the risk of inadvertent data exposure. With regulatory and compliance considerations, on-prem can be more secure and provide IT leaders greater peace of mind.



Top 3 Reasons why hybrid IT organizations choose to run structured data applications on-prem (shown as a percentage of respondents):



Our on-premises IT infrastructure is more secure



More cost efficient to run the workload on-premises



Regulatory and compliance considerations

*Source: *Workload Placement Separates the Winners from the Losers in IT*, an IDC White Paper Sponsored by Dell EMC

Business Applications

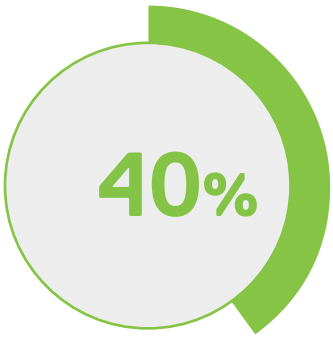
Business applications are often considered “mission-critical.” They are the backbone of many businesses and include important, revenue-generating operations such as:

» Enterprise resource management (ERM)
» Supply chain management
» Customer relationship management (CRM)
» Operations & manufacturing

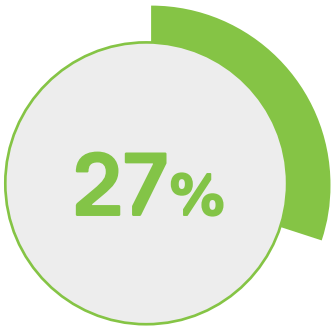
Because these workloads are so crucial to business operations, reliability is an absolute must. They need to run on a secure, customized infrastructure designed specifically for these applications.



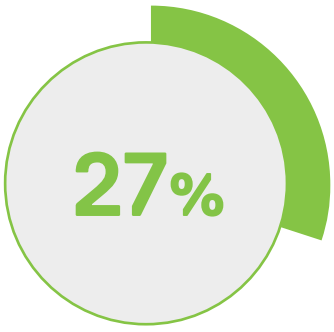
Top 3 Reasons why hybrid IT organizations choose to run business applications on-prem (shown as a percentage of respondents):



Our on-premises IT infrastructure is more secure



The workload is considered mission critical to the business



Workload has historically run on-premises

*Source: *Workload Placement Separates the Winners from the Losers in IT*, an IDC White Paper Sponsored by Dell EMC

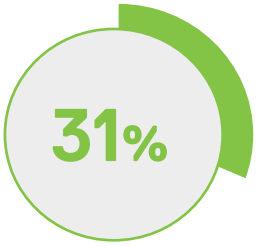
Engineering/Technical Applications

Engineering applications automate the business processes and data management activities specific to ideas management, concept planning, and design and handoff of the design to execution (manufacturing, construction, or other). These include:

- Mechanical computer-aided design (MCAD)
- Mechanical computer-aided engineering (MCAE)
- Mechanical computer-aided manufacturing (MCAM)
- Collaborative product data management (cPDM)

Engineering and technical workloads often have custom requirements that need trained staff with specific knowledge and expertise. Also, many of these workloads are subject to regulatory and compliance laws, so security is critical.

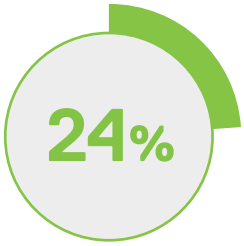
Top Reasons why hybrid IT organizations choose to run engineering/ technical applications on-premises (shown as a percentage of respondents):



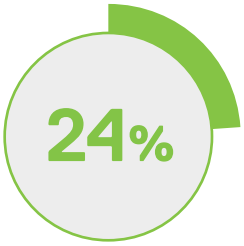
The workload is for innovation or R&D testing (intellectual property)



Regulatory and compliance considerations



Our on-premises IT infrastructure is more secure



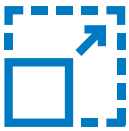
Application availability requires that the workload run at the location



*Source: *Workload Placement Separates the Winners from the Losers in IT*, an IDC White Paper Sponsored by Dell EMC

Dell EMC PowerEdge Server Portfolio

Dell EMC PowerEdge servers are designed to meet your most demanding workloads. With a wide range of servers that can be configured to meet your needs – both now and in the future – you can develop the best workload placement strategy based on your specific workloads.



Scalable Business Architecture

Maximize performance across the widest range of applications with highly scalable architectures and flexible internal storage.



Intelligent Automation

Automate the entire server lifecycle from deployment to retirement with embedded intelligence that dramatically increases your productivity.



Integrated Security

Protect your customers and your business with a deep layer of defense built into the hardware and firmware of every server.

Effective Workload Placement + Modern Compute Environment = Better Business Results

A well-designed hybrid infrastructure uses modern computing environments, automated management and software-defined technologies. When paired with strategic workload placement, organizations realize improved performance and increased overall business benefits.

Dell EMC PowerEdge servers are the bedrock of the modern data center. The PowerEdge server portfolio includes rack servers, tower servers, modular infrastructure and systems management software.

PowerEdge Rack Servers

PowerEdge Rack servers drive demanding workloads including VDI, AI/machine learning and private cloud with workhorse servers that deliver the optimum balance of storage, I/O application acceleration and configuration flexibility.



A complete portfolio of rack servers designed to accelerate application performance and ensure a secure, worry free environment.

Tower Servers

PowerEdge Tower servers grow with your organization as your needs and workloads change.



Operate reliably, manage easily, and scale your business. Ideal for growing businesses with remote offices focused on collaboration and file sharing.

Modular Infrastructure

PowerEdge Modular Infrastructure helps you create an agile, future-ready data center with flexible, easily expandable compute, networking and storage. You can precisely tailor, quickly deploy and easily manage infrastructure while lowering operation costs.



Dell EMC PowerEdge MX

Modular, 7U integrated solutions designed for enterprise data center density and future extensibility with easy deployment and management.



Dell EMC PowerEdge FX Series

Hybrid 2U rack integrated solution delivering scalable performance with rack flexibility for demanding workloads.



Dell EMC PowerEdge VRTX

Single, compact tower- and rack-capable integrated server solutions optimized for small, remote and branch offices.



Dell EMC PowerEdge C Series

Server node providing a dense, accelerated computing platform for high-performance cognitive workloads.

Systems Management Software

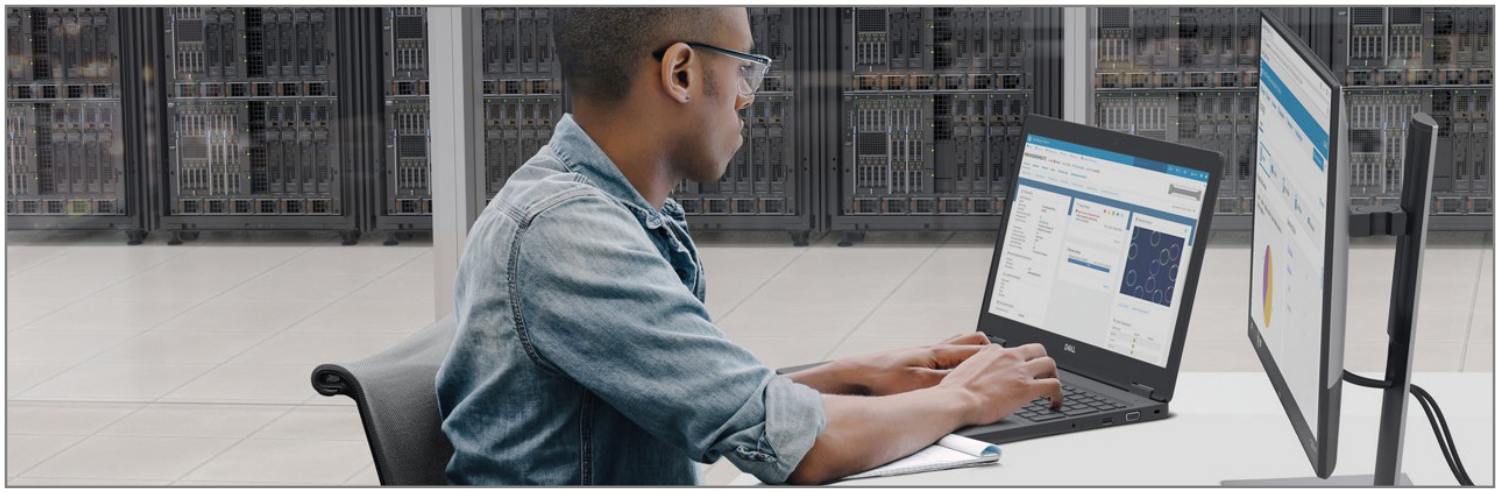
The OpenManage portfolio helps you take control and automate the full IT lifecycle. You can increase productivity, reliability and cost effectiveness of your servers while making IT operations more efficient.

OpenManage Enterprise

OpenManage Enterprise is a simple, one-to-many systems management that helps you easily manage small and large-scale IT implementations.

- Enables unified server lifecycle management capabilities that return value through real-time efficiencies and cost-savings.
- Utilizes an elastic search engine capable of accessing all information within the console.
- Deploys as a virtual appliance supporting ESXi, Hyper-V and KVM environments.

OpenManage Enterprise is easy to install, simple-to-use and requires minimal training.



OpenManage Mobile

OpenManage Mobile provides visibility into your hardware infrastructure using Android or iOS devices and quickly alerts IT Pros to critical events – anywhere, anytime. Use OpenManage Mobile to maximize hardware infrastructure uptime and respond rapidly to changing priorities or unexpected events.



Case Study: New Belgium Brewery Returns to On-Prem to Produce World-Class Beer

Based in Colorado, New Belgium Brewing is the fourth largest craft brewer in the United States, producing nearly one million barrels of beer annually. Since its founding in 1988, New Belgium has continued to evolve and leverage the latest technology at all stages of the process – from brewing to logistics to business operations.

After experiencing double-digit percentage growth annually, the company decided to open a second brewery in Asheville, North Carolina. To meet its expanding technology needs, it initially tried running everything in the cloud. But after experiencing a variety of challenges, New Belgium ultimately chose to return to an on-premises solution using Dell EMC PowerEdge servers.

The decision to return to a high-performance, on premise solution led to **a 66% reduction in operating costs** and **a 25% increase in production capacity.**

Adam Little, Senior Systems Administrator at New Belgium Brewing explains, "Our most mission-critical workloads simply must be run locally. This includes programmable logic control and process automation for brewing—right down to opening and closing valves. We can't risk running that over a WAN link. That's why we chose Dell EMC PowerEdge servers."

The Dell EMC PowerEdge Portfolio helps New Belgium Brewing because it:

- **Significantly reduces costs compared with cloud options**
- **Minimizes the latency inherent in off-site solutions**
- **Simplifies management through easy-to-use tools**
- **Ensures high safety, security and data integrity**





PowerEdge servers help New Belgium handle exponential increases in data, while maintaining high data integrity, safety and security together with the lowest latency. Workloads range from production applications to ERP and CRM systems, SQL databases, SharePoint, and Skype for Business.

New Belgium's on-premise servers and timesaving management tools—including Dell EMC OpenManage and iDRAC—have also cut costs substantially compared to an off-site cloud facility. Further, the company has overcome production constraints to meet rapidly rising demand. "With PowerEdge's outstanding data analytics, we decreased production downtime and boosted capacity on our bottling line by 25%," notes Ray Matthews, an automation engineer who supports New Belgium's production applications.



> "Our most mission-critical workloads simply must be run locally. That's why we chose Dell EMC PowerEdge servers."
>
> ***Adam Little,***
>
> *Senior Systems Administrator New Belgium Brewing*

Dell EMC Awards & Reviews

PowerEdge MX740c: The 10 Hottest Enterprise And Business Servers Of 2018



"The two-socket blade delivers a fully configurable compute modular server with high performance and a rich set of storage options." **- CRN®**

PowerEdge T640: "Best Tower Server Winner"



"This tower server has huge expansion potential and supports dual-socket configurations of Intel's whole Xeon Scalable range." **- IT Pro**

PowerEdge R940xa: 10 Hottest Enterprise And Business Servers of 2018



"Designed to accelerate applications to deliver real-time decisions for GPU database workloads." **- CRN®**

PowerEdge R840: Editor's Choice



"Dell EMC PowerEdge R840: "A small rack server with a huge Xeon Scalable heart." **- IT Pro**

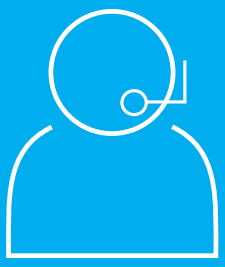
IT leaders understand that different workloads have different requirements, and there is no "one-size-fits-all" solution. So, it's crucial for organizations to take the time to understand their workload requirements before making changes or committing to a new strategy. It's not easy, and there are many factors to consider – security, compliance, resources, financial investment and more. But if done right the first time, the long-term payoff for the business will be well worth it.

To learn more about the importance of an effective workload placement strategy, download the IDC white paper, Workload Placement Separates the Winners from the Losers in IT.

To learn more about the Dell EMC PowerEdge portfolio, visit the PowerEdge server page.



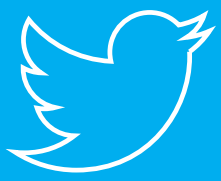
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View more resources



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