

ESG SHOWCASE

Dell PowerEdge with AMD

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ABSTRACT: IT organizations that are struggling with increased complexity and feeling pressure to operate faster should be looking at server solutions that offer more than just great performance. IT decision makers are well-advised to evaluate the combined Dell/AMD architecture for a wider variety of workloads as they plan out their IT modernization strategies.

Overview

Today, the level of importance of IT to a modern, digital business is absolutely clear. Fifty-nine percent of organizations surveyed by ESG now derive at least some of their revenue from information-based products and services,¹ which points to the fact that IT organizations and the applications/infrastructures they support have become not just business enablers, but the prime catalyst of new revenue creation. Already, three-quarters of IT organizations say that infrastructure modernization is extremely or very important to their digital transformation efforts, with 65% calling infrastructure modernization a top-five investment priority for them.²

However, as digital and application demands increase (fueled by the increase in modern DevOps practices and the rise of container-based applications), the need for a higher-performing compute infrastructure grows. Therefore, IT decision makers should be rethinking their infrastructure-related architectures to put a high priority on server modernization.

Specifically, IT decision makers should be assessing how they can maximize the **utilization** and **optimization** of their infrastructure in regard to the compute environment. An increased need for application performance means it is imperative to increase both VM and container density and optimize compute power “per dollar.” Those steps will not only help keep costs under control, but will also allow existing IT budgets to support as many new digital initiatives as possible.

[Dell Technologies](#) with its PowerEdge portfolio holds a premier position as a leader in compute technology. Powering the heart of Dell’s PowerEdge systems are processors from [AMD](#). Like Dell, AMD is a technology leader. Its next-generation EPYC processors are designed to support highly challenging workloads that demand the highest-performing compute technology available. IT decision makers are well-advised to evaluate the combined Dell/AMD architecture for a wider variety of workloads as they plan out their IT modernization strategies.

Rethinking the Role of Compute in a Digital Enterprise

ESG research shows that nine out of ten IT organizations have had to accelerate the pace of their daily operations. Almost everyone is moving faster than three years ago. In fact, 41% of survey respondents report that they have had to accelerate their operational speed in that timeframe by more than 50% when deploying applications, infrastructure, and

¹ Source: ESG Research Report, [Data Infrastructure Trends](#), November 2021.

² Source: ESG Complete Survey Results, [Application Infrastructure Modernization Trends](#), to be published.

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services. Specifically, 67% say they are under pressure to accelerate IT infrastructure provisioning and deployment to better support developers and line-of-business teams.³

To move faster, businesses have to automate many tasks, putting further stress on IT infrastructure. According to ESG research on infrastructure modernization priorities, 32% of respondents are prioritizing AIOps, 31% are looking to increase their usage of monitoring tools, and 21% want to increase their usage of automation tools—often in the hope of combatting complexity. (This is ironic, as 37% of the respondents also report having problematic skills shortages in the area of automation.)⁴

ESG research also shows that:

- 64% of IT decision makers agree that the complexity of their IT infrastructure slows down both ongoing IT operations and strategic digital initiatives.
- 63% agree that it is often challenging to properly size workloads optimally for the infrastructure.⁵
- 64% view data center design as strategic and believe it can lead to a competitive advantage.⁶

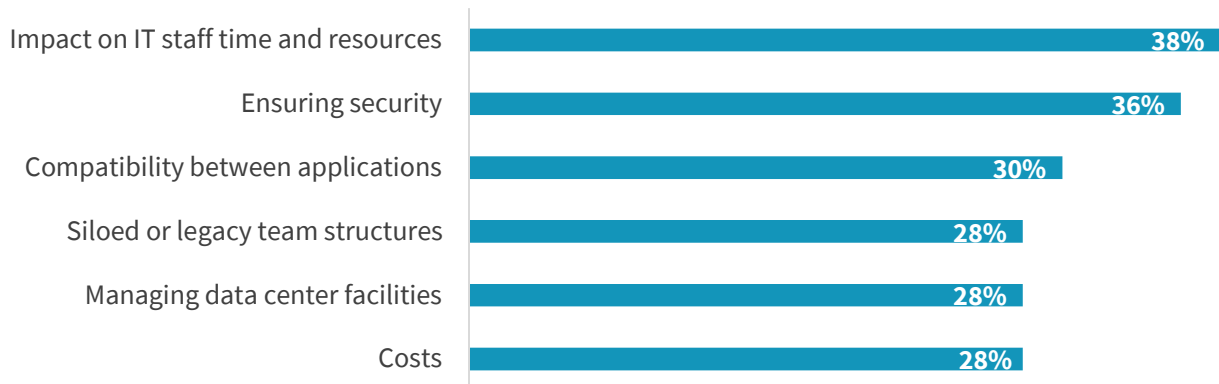
That final bullet encapsulates the upside. When the right on-premises infrastructure is in place, it can and should deliver a sustained, macro-level competitive advantage. It’s a bit like exercise. People may feel uncomfortable and sore after a workout, but they have the instant gratification that comes with knowing they are doing what’s best for their health. And because they are pursuing a long-term investment in wellness, they end up with enduring fitness.

Infrastructure Priorities to Establish When IT Modernization Is the Goal

Pursuing IT modernization is a great way to reduce impacts on IT staff time, ensure better security, and lessen the burden of managing IT teams and data centers. Of course, modernization helps to control costs as well. Those are all challenges that real-world IT organizations are facing right now (see Figure 1).⁷

Figure 1. Top Six Challenges in Supporting Production Application Environments

What are the greatest challenges your organization faces when supporting its production application infrastructure? (Percent of respondents, N=372, multiple responses accepted)



Source: ESG, a division of TechTarget, Inc.

³ Source: ESG Research Report, [Data Infrastructure Trends](#), November 2021.

⁴ Source: ESG Research Report, [2022 Technology Spending Intentions Survey](#), November 2021.

⁵ Source: ESG Research Report, [Data Infrastructure Trends](#), November 2021.

⁶ Source: ESG Complete Survey Results, [2021 Data Infrastructure Trends](#), September 2021.

⁷ Source: ESG Complete Survey Results, [Application Infrastructure Modernization Trends](#), to be published.

To overcome those challenges, IT decision makers should prioritize several essential capabilities for their compute environments. Specifically, they should:

- Increase performance by adjusting the power/cost ratio. With the increased scale of today's application environments, proliferating virtual machines, and the increased adoption of microservices and container-based applications, investing in room to grow can be incredibly valuable. Remember, price-performance is not just about reducing cost; it's also about accelerating innovation.
- Focus on enhancing the security of the environment.
- Reduce the burden on IT resources, both human and machine.

Dell PowerEdge with AMD processors can help to achieve those priorities.

Dell PowerEdge with AMD

Dell PowerEdge is able to serve modern, fast-scaling enterprise application environments, even transforming those environments to deliver superior results. Designed to be the foundation for innovation by contemporary enterprises, this compute infrastructure is designed to leverage automation to simplify and accelerate IT operations. It is also secure, with built-in protection from the silicon root of trust all the way to asset retirement.

Within the system, the 3rd Gen AMD EPYC processors (PCIe Gen 4 support and L3 cache are also available) deliver faster time to results for containers, virtual machines, and bare metal. AMD's security advances—SEV-SNP Secure Nested Paging and SEV-ES Encrypted State Memory—offer enhanced virtualization security.

Importantly, AMD processor technology provides value beyond specialized application environments such as HPC or AI. The performance advances also apply to virtualized environments and the bulk of enterprise application environments. For example, to support increasing in e-commerce and OLTP-related demands, Dell and AMD engineered the PowerEdge R6525 rack server to offer:

- **51% more** transactions per minute.
- **61% better** performance per dollar.

Essentially, the AMD EPYC 7F72 high-frequency CPU enables organizations to seamlessly adapt to even significant increases in online transactions. Notably, Dell Technologies also offers tested solutions for HPC life sciences, manufacturing, AI retail loss prevention, and vSAN environments.

The key benefits of combined Dell PowerEdge and AMD solutions include:

- **Simplicity and manageability** through Dell's PowerEdge Autonomous compute infrastructure. With Dell EMC OpenManage systems management, IT operations become easier and more efficient. According to Dell, PowerEdge servers and systems management can deliver, on average, an 85% savings in time by eliminating dozens of steps with automation.
- **Security and proactive resilience** that IT can deploy without increasing risk. Dell and AMD offer a hardware root of trust, which helps protect against malicious firmware and BIOS modifications. AMD full system memory encryption helps defend data against cold boots and physical attacks. Secure encrypted virtualization protects against unauthorized tampering and untrusted hypervisors by encrypting and isolating VMs.

- **Performance** to modernize application environments for virtual machines, containers, and AI. According to Dell, PowerEdge R7525 with AMD EPYC 7763 processors connected to Dell PowerMax storage achieved 15% higher VM density compared with the previous world-record result. PowerEdge R6515, featuring 3rd Gen AMD EPYC processors, accelerates data processing capabilities by up to 60% in big-data Hadoop databases, speeding an organization's time to insight.

The Bigger Truth

A lot of businesses seek out AMD-equipped servers for their high-performance computing environments. But Dell PowerEdge with AMD is not just a performance play. These servers are also quite helpful when it comes to hiccup-free implementation, fast/efficient provisioning, compute-resource scaling, configuration flexibility, better integration with cloud resources, more overall data center management ease, lowering costs, and more.

As you are architecting or modernizing your data center, don't just default to a "processor standardization" mindset. Think outside the box instead—consider what is best for your specific application environment. Don't think just about risk aversion; focus on opportunity. Remember that although performance is vital, aspects beyond performance really do matter just as much.

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