

SHIFTING FROM A “CLOUD FIRST” TO A “CLOUD IF” ENTERPRISE MINDSET

EXECUTIVE SUMMARY – IT DEXTERITY SEPARATES THE WINNERS FROM THE LOSERS

Organizations that quickly respond to the customer and the market usually outperform their competitors. Technology is the key to enabling that responsiveness. An IT department that can enable responsiveness through new workloads, applications, and deployment methodologies is invaluable. IT transformation is how most companies deliver true IT responsiveness.

IT transformation fundamentally shifts the relationship between the business and IT. The business dictates the application and workloads required for success and partners with IT to build and deploy services. For IT to achieve dexterity through this new “as-a-service” model, it must fundamentally change. People, processes, and technology must shift.

Many organizations hail the public cloud as the end-all, be-all path for successful IT transformation, but wholesale public cloud adoption effectively cuts off the right hand of IT. Modern IT must be able to respond quickly to ever-changing workload needs of the business. Only in a hybrid infrastructure model are IT organizations able to choose strategically where to run their workloads.

This white paper discusses why you should maintain an on-premises IT infrastructure to meet particular workload requirements. The paper also explores the importance of a workload placement strategy and concludes with an examination of Dell EMC’s PowerEdge portfolio of servers.

THE GREAT CLOUD RUSH – THE GREAT CLOUD RETREAT

The tech market hailed the public cloud as the quick and easy path to IT transformation, but many companies discovered that it was not the answer for everything. For some organizations, the public cloud frenzy led to even more IT headaches. In the aftermath, many organizations are repatriating applications and data that proved too costly and complex to manage in the public cloud.

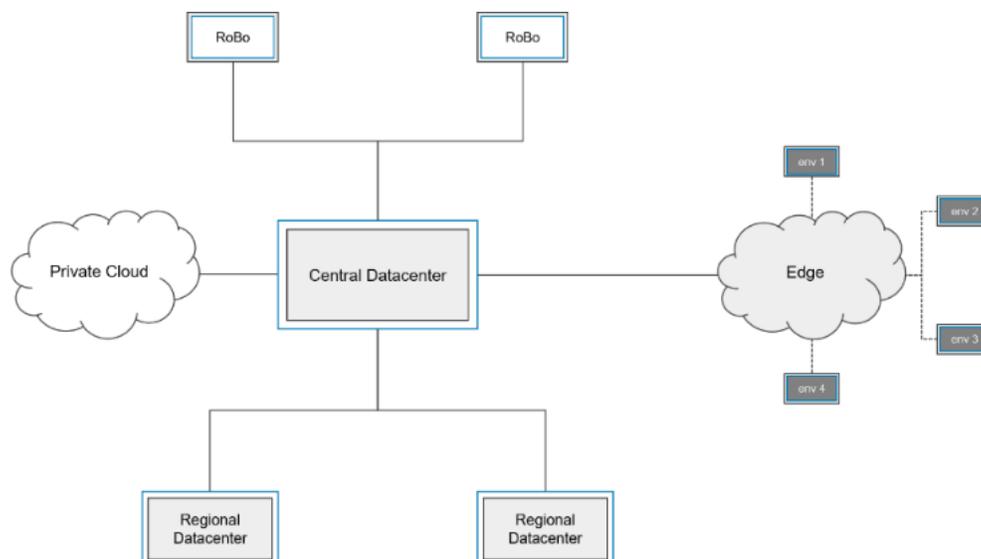
Public cloud has its place, but many organizations have viewed it as the **de facto response** to the needs of the organization, instead of the **outcome** of a well-considered workload placement strategy. Not every workload is a good candidate for public cloud, nor is every use case. This “de facto standard” approach will cost in the long run, both directly and indirectly. Costs associated with a public cloud-only approach include unpredictable operational expense (OpEx), management complexity, security, and lack of control.

The public cloud is a tool, not a strategy. Modern IT organizations use the public cloud as one option within their hybrid IT operating model.

MODERNIZATION – BEYOND THE TRADITIONAL DATACENTER

What’s the alternative to “all in” on the public cloud? A hybrid IT model offers maximum flexibility, cost-efficiency, and workload optimization. Hybrid IT is defined as consuming resources from public cloud and on-premises infrastructure and resources. This model is also called multi-cloud, hybrid cloud, or hybrid infrastructure. However, the modern on-premises datacenter is anything but truly on-premises. As edge computing begins to impact datacenter design, the boundaries extend beyond physical constraints.

FIGURE 1: THE MODERN DATACENTER EXISTS BEYOND PHYSICAL BOUNDARIES



Source: Moor Insights & Strategy

These usage models and use cases for hybrid IT are diverse. The workloads and applications that power these scenarios are unique in their performance characteristics and resource requirements. Scalable performance, strong security, and automation must be a foundational part of any hardware deployed in the datacenter, which is necessary to achieve efficiency, management simplicity, and cost optimization.

IT organizations need versatile on-premises infrastructure in addition to the public cloud. Combined, these resources will enable organizations to achieve IT dexterity and enable the modern business.

WORKLOAD PLACEMENT STRATEGY – GETTING IT RIGHT

The successfully transformed IT organization balances public cloud and on-premises infrastructure. Achieving this balance enables the levels of versatility required to anticipate and proactively respond to business needs. In other words, organizations that embrace a hybrid IT model are best positioned for success.

Moor Insights & Strategy recommends pragmatism when it comes to cloud deployments. Cloud first policies should be “cloud if” deployment practices and never “cloud always”. Rushing to bring outdated and antiquated applications to the clouds doesn’t fix anything. In some cases, it can exacerbate performance and support issues.

To reiterate, the public cloud is a tool, not a strategy. This mantra seems simple, but is rarely followed. IT organizations that understand this will avoid the long-term direct and indirect costs that result from a poor workload placement strategy.

If there is one cloud deployment rule to live by, it’s this: Let your workload requirements dictate cloud adoption—don’t let the cloud frenzy impede your IT dexterity.

To be successful in the digitally transformed business, IT leaders must create and implement a workload placement strategy for the hybrid IT environment. Workload placement is unique to each individual organization so there is no recipe that can be applied across-the-board. It will take time and significant collaboration with the line of business (LoB) to create a successful workload placement strategy, but the long-term benefits are significant.

DEXTEROUS IT ORGANIZATIONS REQUIRE ON-PREMISES INFRASTRUCTURE

Perform due diligence on workload placement and it should be clear that public and private resources are both required to drive IT transformation. Moor Insights & Strategy is a firm believer in the need for on-premises infrastructure for five reasons:

1. *Workload criticality:*

The performance, availability, and security requirements associated with tier-1 enterprise applications should dictate the need for on-premise infrastructure. Enterprise organizations can ill afford to have such an application underperform or, worse, fail.

2. *Performance:*

On-premises infrastructure allows IT organizations to fine-tune the allocation of resources by hosting workloads, applications, and tasks with greater levels of control than the public cloud. Additionally, IT organizations can ensure their infrastructure delivers the best performance to mission critical applications.

3. *Data management:*

Data management is a multi-vectored factor. The volume of data generated today is unprecedented. The locality of data generated at the edge will be critical to its usefulness because it requires transformation and analysis in real time. This latency requirement rules out cloud as a real alternative.

4. *Security:*

Data is now a recognized business asset and should be protected and invested in strategically. Additionally, government regulations continue to tighten around protecting consumer information. Health Insurance Portability and Accountability Act (HIPAA) in the United States and General Data Protection Regulation (GDPR) in the European Union are two regulations that impact the security and sovereignty of personal data. Deploying on-premises servers opens up options for companies who are struggling to comply with an ever-changing regulatory environment.

5. Cost:

Ultimately, utilizing on-premises infrastructure is about mitigating cost - the cost associated with underperforming mission critical LoB applications, unmanaged cloud sprawl, unwanted redundancy, shadow IT and runaway deployments, and unmanaged data stores that continue to grow at unprecedented levels. Lastly, and perhaps most seriously, it's about the cost of data exploitation and theft.

FIGURE 2: DRIVERS FOR ON-PREMISES INFRASTRUCTURE



Source: Moor Insights & Strategy

**THE MODERN DATACENTER IS BUILT ON MODERN INFRASTRUCTURE
AND NOT ALL INFRASTRUCTURE IS CREATED EQUAL**

IT must make the necessary investments to modernize the infrastructure that comprises the datacenter. Hardware has never mattered more in these days of “software-defined”. Outdated infrastructure is costly as many organizations are running underperforming applications and workloads on sub-optimal server hardware that consumes too much power and lacks necessary security.

Hardware matters. Not all servers are created equal and an IT organization’s desire to save by deploying “white boxes” due to the “commoditization of servers” will end up costing more in the end. We believe Dell EMC PowerEdge servers are a smart choice for IT organizations looking to fully embrace a hybrid IT model. The performance, security, and management toolkit of the PowerEdge lineup, combined with the breadth and depth of the Dell Technologies product portfolio, can benefit every IT organization.

POWEREDGE – THE BEDROCK OF THE MODERN DATACENTER

IT dexterity – the ability to both respond to the needs of today and position the business for tomorrow – starts with dexterous infrastructure. Specifically, it starts with servers that can support the needs of the organization from the core datacenter to the cloud, to remote locations, and to the edge. Moor Insights & Strategy believes the PowerEdge portfolio fits these needs.

The latest generation of PowerEdge servers offer both depth and breadth. The lineup ranges from a single-socket server powered by AMD EPYC to high-end four socket servers powering analytics tools running on Intel Xeon processors. This also includes the two-socket servers that are the foundation for virtualized farms and bare metal servers inside the datacenter.

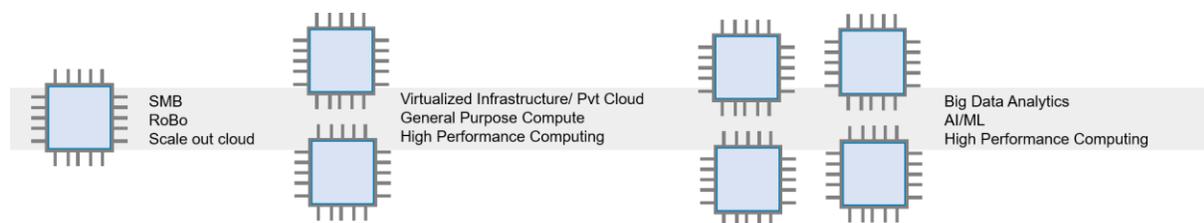
We believe Dell EMC’s pragmatic approach to server design and development has led to a family of servers that delivers a scalable business architecture to meet a variety of customer-specific workload needs.

Enabling a broad set of workloads while simultaneously tailoring for specific use cases is extremely difficult, but that is Dell EMC’s goal. The company builds its servers with three design principles: scalability, security, and intelligent automation.

SCALABILITY

The PowerEdge portfolio is powered by both Intel and AMD central processing units (CPUs). The entry-level features single socket platforms based on Intel chipsets that target small business with an AMD-based platform that targets scale-out cloud providers.

FIGURE 3: SCALABILITY FOR DIVERSE NEEDS



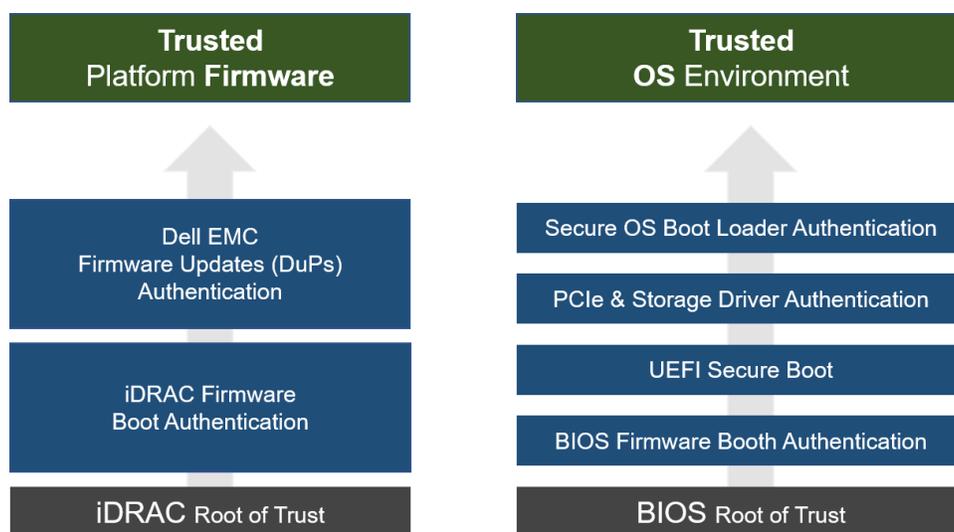
Source: Moor Insights & Strategy

At the highest end of the performance spectrum, the PowerEdge four-socket servers showcase real power. Designed for compute intensive workloads such as big data analytics and machine learning, these servers support Intel Xeon Platinum processors with extremely large memory footprints and support for accelerators (graphics processing units or GPUs and field-programmable gate arrays or FPGAs).

SECURITY

Moor Insights & Strategy believes security and performance are now equal factors when selecting a server vendor. Data is the new currency. Servers are not just the banks that process transactions – they are the vaults that protect your capital.

FIGURE 4: DELL EMC SILICON ROOT OF TRUST



Source: Moor Insights & Strategy

The Dell EMC PowerEdge security portfolio spans silicon to firmware to physical protections. Its silicon root of trust assures an immutable boot image, which prevents the more insidious rootkit attacks from embedding in the system. It also verifies signed firmware. And PowerEdge servers are shipped with chassis intrusion detection to protect from physical attacks.

Protection is only one half of the equation when it comes to cybersecurity. The PowerEdge security offering is also able to quickly detect any intrusions and immediately respond by removing the threat and returning the Dell EMC PowerEdge server to its last known good state.

INTELLIGENT AUTOMATION

The third pillar of Dell EMC's design philosophy cannot be understated. What keeps IT from being proactive is IT being reactive. Based on our estimates, server management consumes up to 70 percent of an IT professional's day. Furthermore, that 70 percent of the day comes in fits and starts, which prevents any kind of real proactive efforts to enable the business.

Dell EMC claims to greatly reduce the burden of server management with its OpenManage Enterprise software, in conjunction with iDRAC or Dell EMC Remote Access Controller (Dell EMC's baseboard management controller). The design of OpenManage Enterprise seems quite simple: reduce the human touchpoints with provisioning, monitoring, and maintaining servers.

From a real-world perspective, the positioning of OpenManage Enterprise resonates. The software's documented functionality addresses a large portion of the mundane tasks that make up the average IT professional's day. As a result, this should enable a greater level of focus and versatility in support of the business.

THE BUILDING BLOCKS FOR THE BROADER DELL TECHNOLOGIES IP PORTFOLIO

The PowerEdge lineup is part of a broader Dell Technologies portfolio that ranges from hyper-converged infrastructure (HCI) solutions to reference architectures and bundled solutions. The portfolio powers the enterprise from the core datacenter to the edge. We believe the company's completeness of point products and solutions in the product portfolio is what makes Dell EMC an end-to-end IT infrastructure provider.

CALL TO ACTION

While public cloud plays a role in IT transformation, true success will only be achieved by understanding the balance between cloud deployments and on-premises. While the term hybrid IT is perhaps overused, it is nonetheless the ideal model for the modern enterprise. Modern infrastructure designed for the software-defined datacenter (SDDC) is the necessary foundation for that hybrid IT strategy.

Pragmatism in workload placement is key. Many of the workloads and applications that drive the modern business are well-suited for on-premises placement due to performance, security, and data management requirements.

For several reasons, Moor Insights & Strategy believes Dell EMC should be strongly considered as a foundational building block of a hybrid IT strategy:

- *Scalability:* The Dell EMC PowerEdge server portfolio scales from single socket enterprise-class servers, to high-end, four socket servers for power hungry applications such as analytics, artificial intelligence (AI) and machine learning (ML), and high-performance computing (HPC).
- *Security:* PowerEdge servers come with built-in security features starting at the firmware level and extend out to the hardware. They are built to protect customers across the security life cycle, helping not only to detect and prevent cyberattacks, but to assist with recovery should a breach occur.
- *Automation:* From provisioning to configuring, to monitoring and maintaining, Dell EMC demonstrates a real understanding of the problems enterprise IT organizations face in maintaining server hardware. The Dell EMC OpenManage portfolio of systems management software delivers tools that automate the mundane and resolve failures before they occur.
- *End-to-End Infrastructure Provider.* The Dell EMC product and solutions portfolio is robust that encompasses storage, servers, networking, security, and virtualization. It boasts standard rack servers, converged infrastructure (CI), and HCI, and its solutions span from the core datacenter to the cloud to the edge. This end-to-end portfolio offers enterprise IT customers confidence in Dell EMC's ability to deliver optimizations in performance, security, and cost.

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