Leverage scalable platforms for mixed workloads across cloud

Organizations are facing more demands to meet business and end-customer needs while making the most of their infrastructure to drive workloads. Data has fast become king and is being processed at a faster rate across what used to be considered as emerging workloads, and are now becoming the norm.

The server has been the workhorse of traditional workloads such as delivering the IT infrastructure to power collaboration and users across the organizations as well as databases and business apps. Now, Specialized workloads drive higher demands for resilient server foundations.

Types of Workloads in
20th Century

Traditional
IT Infrastructure
Business Apps
Database Management
Desktop Virtualization

Specialized

Types of Workloads in
2020 & beyond

Traditional
IT Infrastructure
Business Apps
Database Management
Desktop Virtualization
S/W Defined Storage

Specialized
Big Data / Data Analytics
HPC / Acceleration
Datacenter Virtualization
In-Database Memory Apps
AI / ML / DL

A workloads-focused approach supports mixed workload placement

Today's infrastructure approaches is already transforming the business as they struggle to evolve and support the newer specialized, **emerging workloads including data analytics, high-performance computing, dense virtualization and artificial intelligence.** The requirement to now support **mixed workloads** on a consistent infrastructure is forcing IT organizations to rethink their strategy.

The popularity of cloud and alternate consumption models is also appealing to businesses as they seek to drive more output from their workloads to optimize costs and usage. The change is forcing IT to ensure the infrastructure also scales with the business and tackles multiple workloads. Relocating or moving data-demanding mixed workloads from an on-premise environment to public cloud may not always result in the best business outcome.

How can a business leverage its infrastructure to support growth with mixed workloads while looking to adopt cloud? What do businesses need to ensure workload operations are optimized while not impacting business performance?

Evaluate criteria for workload scaling

With diverse, mixed workloads running in the infrastructure and the shift of many services and operations to alternate licensing models and cloud, IT organizations need server platforms that also enable seamless operations and workloads regardless of location, on-premise, cloud or both. Some criteria to consider include:

- **Optimal performance** for workloads, ideally placed closest to servers and data storage
- **Virtualized environments**, optimizing server resource usage and automating management
- **Secure platforms**, ensuring data integrity and protected operations
- **Flexible configurations** to customize servers across all aspects for fine-tuned operations
- **Remote management**, reducing the need for on-site operations and monitoring

As all workloads are no longer equal and with operations across on-premise, hybrid cloud and public cloud, IT administrators can make decisions with this criteria to determine how the infrastructure can grow and options to scale for future demands.

Enter scalable platforms for on-premise and hybrid cloud

Scalable platforms bring agility and streamline infrastructure growth. Servers can be deployed in a number of environments and operating systems to extend an on-premise environment and even connect to a public cloud set of operations with data.

On-prem Performance for mixed workloads

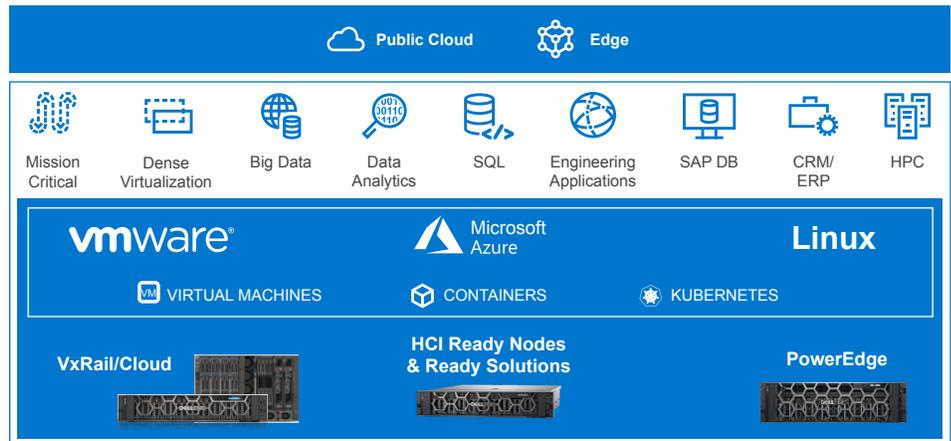Analyzed and retrieved data **over 2x** faster from Cassandra databases[1]

Delivered SAP HANA performance up to **31% lower cost** over 3 years than public cloud[2]

Processed machine learning images in container workloads in **56%** less time[3]

Scalable Server solutions accelerate business transformation by:

- Adding agility to meet new demands and accelerate mixed workloads
- Optimizing server resources (pools of compute, storage) for faster workload bring-up
- Providing a stable platform to run virtual machines as well as containers and modern application development
- Delivering an approach to drive consistent operations, security and compliance policies
- Enabling IT with options, from purpose-built configurations to turnkey cloud-ready solutions and appliances
- Connect with and integrate with public cloud environments, enabling data and workload mobility

Public Cloud   **Edge**

Mission Critical · Dense Virtualization · Big Data · Data Analytics · SQL · Engineering Applications · SAP DB · CRM/ERP · HPC

vmware · **Microsoft Azure** · **Linux**

VIRTUAL MACHINES · CONTAINERS · KUBERNETES

VxRail/Cloud · **HCI Ready Nodes & Ready Solutions** · **PowerEdge**

Extend on-premises mixed workloads into public cloud and Edge

Dell Technologies and Dell EMC PowerEdge servers are the workhorse of the business, running mixed workloads including SAP, SQL and Machine-learning on-premise and into cloud, via a hybrid approach.

PowerEdge servers and PowerEdge-based solutions deliver these scalable platforms and benefits for faster on-premise to cloud adoption:

- Cloud-ready, enabling IT organizations assurance that they can leverage their on-premise investment
- High performance with low latency operations, ensuring faster business results
- Scale up into Turnkey private and hybrid cloud with VMware vSAN Ready Nodes, VMware Cloud Foundation on VxRail and Validated Designs, as well as Microsoft Azure Stack HCI ready nodes - and with no data transfer fees within private clouds
- Enable build-your-own cloud with Linux and validated designs, for self-servicing

Foundation for future-ready business

PowerEdge servers enable businesses to modernize and enable IT transformation with next-generation platforms ready for different deployment and consumption models. The traditional on-premise architecture extends to the cloud with a number of solutions and approaches, while preserving key attributes including performance, workload processing, security, management and agility.

From discrete servers to hyperconverged ready nodes to full-turnkey solutions and appliances, Dell PowerEdge servers drive multiple workloads on a consistent infrastructure that enables IT organizations to seamlessly scale to meet business demands.

[1] Move your private cloud and boost Cassandra database analysis with PowerEdge C6420, Principled Technologies, October 2019, https://www.principledtechnologies.com/Dell/PowerEdge-C6420-Apache-Cassandra-1019-v2.pdf

[2] Dell Technologies CSP SAP HANA Workload report, 2020, Krystalize". Report compares PowerEdge R940 vs two cloud approaches.

[3] Finish machine learning preparation tasks on Kubernetes containers, with PowerEdge 7525, April 2020 https://www.principledtechnologies.com/Dell/R7525-EPYC-7502-Kubernetes-report-0420.pdf

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