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Micron Unleashes the Full Power of NVMe Storage, Unlocking Unused Capacity and Performance

Micron SolidScale Platform Architecture Ushers in the Era of Shared Accelerated Storage for Data Intensive Workloads and Next-Generation Cloud Native Applications

News Highlights

- Micron introduces the Micron SolidScale architecture for low-latency, high-performance access to compute and storage resources
- New Micron software-defined storage architecture innovates ahead of the NVMe over fabric (NVMeF) standard to unlock the benefits of shared storage, with the performance of server-side flash
- Integrated platform architecture enables true innovation and agility, designed for tomorrow's cloud-native environment while supporting today's legacy applications
- Further details of this announcement will be expanded on during a live webcast of the Micron Summit taking place in New York city today. The webcast begins at 11 A.M. Eastern. Register and watch online: https://cube365.net/micron/summit

NEW YORK, May 03, 2017 (GLOBE NEWSWIRE) -- Micron Technology, Inc. (Nasdaq:MU) today introduced the Micron SolidScale architecture, an integrated platform that delivers breakthrough low-latency and high performance access to compute and storage. The Micron SolidScale architecture provides customers with the agility to deploy next-generation, cloud-native applications while supporting legacy applications that run the enterprises of today — and tomorrow. From online transaction processing, to virtual platforms and analytics, to machine learning, Micron's innovative architecture not only delivers data quickly due to its extremely high throughput, but it delivers faster time to results because of its unprecedented low latency.

"We estimate that companies using NVMe SSDs deployed in application servers today are on average using less than 50% of their IOPS and capacity. With the new Micron SolidScale architecture, capacity is shared across application servers, unlocking capacity customers have already paid for so that they can do more with less and unleash flash's true performance," said Darren Thomas, vice president, Storage Business Unit, Micron Technology, Inc. "At Micron, we consider the impact of every workload, application and environment as we design the technology, products and systems that allow our customers to deploy applications faster and scale without limits."

It's estimated that the total amount of digital data created worldwide will reach 163 zettabytes per year by 2025. As enterprises move toward a scale-out data center, they need a way to unleash more potential out of their data in a flexible architecture that can integrate with their growing storage and compute needs. Simply replacing old storage without also modernizing the interfaces, protocols and networks only shifts the bottleneck elsewhere within the system. Micron has coupled flash storage with PCIe NVMe in a platform using converged a NVMe over fabric infrastructure that performs like server-based storage with the ability to scale at near linear performance rates.

Be Revolutionary with Micron SolidScale Platform Architecture
Designed to unleash the potential of NVMe SSDs and to mainstream NVMe SSDs, the Micron SolidScale platform allows companies to build a scale-out storage infrastructure that provides all the benefits of a centralized single pool of storage with the performance of local in-server SSDs. The SolidScale platform connects multiple nodes using high-speed RDMA over Converged Ethernet (RoCE) fabric with low-latency software that provides a crafted set of data services - delivering a converged infrastructure that performs like local direct attached storage.

Initially launching for Linux environments, with future generations extending to other software-defined storage (SDS) applications, SolidScale is a dual-purpose design that provides customers with a scalable, high performance block storage SDS architecture. Designed for the most demanding application workloads including big data and analytics, database acceleration and high-performance computing, among others, it can also be used as a foundational NVMe over fabric infrastructure for next-generation data centers, forming the backbone for multi-faceted file systems.

Delivering breakthrough performance, latency and workload optimized capacity, the SolidScale architecture stands up in a 2U node configuration in a 24U server rack enclosure. Key features of the new architecture include:

- *Flexible Infrastructure:* The logical volume feature of the SolidScale platform provides flexibility to create and manage a single, centralized pool of storage that allows customers to create right size volumes for each server's data repository.

- *Optimized Performance:* The speed of Micron NVMe SSDs coupled with high-bandwidth Mellanox fabric delivers performance that scales by adding an average of five microseconds of additional latency to an application's data path when compared to a local in-server NVMe. Micron SolidScale architecture is expected to reduce end-to-end latency under 200 microseconds. Preliminary tests of the Micron SolidScale platform measured over 10.9M IOPS with only three 2U SolidScale nodes.

- *Simple Manageability:* The Web-based management interface of the SolidScale platform provides a simple, graphical setup and configuration for key data services.

- *Seamless Scalability:* Micron SolidScale architecture enables customers to easily scale storage capacity with, or independently from, compute; in addition, performance scales efficiently as more nodes are added.

- *Breakthrough Data Center Efficiency:* The SolidScale architecture pools the available storage together, providing a platform that can either do the same work with fewer servers or more work in the same number of servers. Overall, this allows compute servers to be thinner, allowing storage to scale independently of compute.

Supporting Quotes
"NVMeoF is a much faster way of connecting to the CPU by using the high-speed interconnects of the RoCE fabric, making this architecture ideal for a range of low-latency, robust data needs spanning real time data analytics, high performance computing and hyperscale database use cases," said Laura DuBois, group vice president for IDC's Enterprise Storage, Server and System Infrastructure Software research. "Micron is taking an early mover position by pushing the envelope of software and hardware to enable low latency, reduced costs and high performance to tackle data intensive workloads."

"The performance benefits of NVMe flash are impressive but traditional storage architectures are not optimized to leverage such performance over a network. Micron has taken the innovation lead by designing a fully integrated Shared Accelerated Storage architecture, that combines Micron NVMe and Excelero software-defined storage innovations," said Lior Gal, CEO and co-founder of Excelero. "Micron's SolidScale architecture allows customers to deploy NVMe storage at data center scale, without compromising on performance or efficiency."

"Faster storage needs faster networks - in terms of bandwidth, latency, and advanced protocols like NVMe over Fabrics," said Kevin Deierling, vice president of marketing at Mellanox Technologies. "We are proud to connect Micron's innovative SolidScale solution with our end-to-end 100G Ethernet RoCE networking solutions. The combination of Spectrum™ switches, ConnectX-4® adapters and LinkX™ cables enables SolidScale to maximize performance and total infrastructure efficiency."

Availability
The Micron SolidScale architecture is currently available to key Micron customers and partners to test their own application workloads within existing data center environments. Based on customer validation & testing of the architecture, volume production of the Micron SolidScale platform is expected to begin in early 2018. For customers interested in participating in the SolidScale early access program or OEM companies interested in partnering with Micron to extend SolidScale across their hardware platforms, visit www.micron.com/solidscale.

Resources:

- SolidScale Media Kit: http://bit.ly/solidscale
- Blog: www.micron.com/about/blogs
- Twitter: www.twitter.com/MicronStorage
- LinkedIn: www.linkedin.com/company/micron-storage
- YouTube: www.youtube.com/microntechnology

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