Nominee: Excelero

Nomination title: Excelero offers NVMesh, an innovative software-defined block storage solution

Excelero has developed a software-defined block storage solution called NVMesh. The result of 10 patents/pending patents, this innovative technology enables customers to benefit from the performance of local flash, with the convenience of centralised storage and the cost savings of standard hardware, meeting the performance and scalability requirements of the largest web-scale and enterprise applications.

It is the only virtual SAN approach for shared NVMe and is 100% software-only, which means customers have the flexibility of choosing any standard servers and state-of-the-art flash drives that meets all their storage requirements. It is also the industry's only NVMe sharing technology that scales performance linearly at near 100% efficiency.

NVMesh allows enterprises to run unmodified applications that enjoy the low latency, high throughput and high IOPs of a local NVMe device while benefiting from centralised, redundant storage. Distributed NVMe storage resources are pooled with the ability to create arbitrary, dynamic block volumes usable by any host running the NVMesh block client. These virtual volumes can be striped, mirrored or both while enjoying centralised management, monitoring and administration. The solution also supports persistent container storage for hyper-scale architectures utilising Kubernetes.

With NVMe flash, it is not possible to level out utilisation across an entire infrastructure, resulting in NVMe capacity and performance waste. Excelero's NVMesh is designed to addresses this limitation and helps enterprises achieve flexibility, efficiency and scalability in their datacentre. By deploying NVMe in a distributed architecture like NVMesh, companies typically increase their utilisation from 25% to an estimated 85% in early deployment, optimising the ROI of their NVMe investment.

EMEA Market

Excelero was founded in 2014 and launched at the beginning of 2017. The vendor has been working with key prospects in EMEA since summer 2016 that are soon to become customers.

These prospects include a large financial enterprise in Germany and two hyper-scale online travel companies.

Accreditations

Excelero's innovative approach has attracted the interest of storage giants such as Micron and Samsung. Micron's SolidScale platform, an all-flash, scale-out NVMe over Fabrics access array, relies on Excelero's software to pool the NVMe storage and enable users to create logical volumes.

Samsung has issued a paper (available at http://bit.ly/2f6PVzz) on a joint solution with Excelero. The Excelero Reference Architecture consists of NVMesh running on Samsung NVMe SSDs and provides a unified pool of high-speed NVMe storage that can deliver almost 5 million random read 4K IOPs and 24 GB/s of bandwidth.

In addition, Excelero has been validated on both Broadcom and Mellanox NICs, giving enterprise IT architects alternatives for storage in hyper-scale data centres that harness the latest innovations in NVMe.

Projects & endorsements

The unique solution has been deployed for hyper-scale Industrial IoT services, machine learning applications and massive-scale simulation visualization and it is already in use at GE Predix, NASA Ames and other large Media & Entertainment firms as well as hybrid cloud service provider VIVAVO.

In the pilot test at GE Predix, Excelero's innovative approach to solving the issues around data locality increased storage utilisation and improved performance along with a lowering Total Cost of Ownership (TCO). GE Digital's David Haas explained, "The storage industry has struggled for years to harness unused SSD capacity and take advantage of its far more favourable economics over all flash arrays. Excelero has created a unique software-only architecture that allows the industry to use NVMe to the full potential, at cloud scale. With the results it delivered during limited pilot use, we are looking to what it can bring to our architecture in the future".

Furthermore, VIVAVO has standardised on Excelero's NVMesh® server SAN as the foundation of a new line of cloud-based analytics business solutions. The first to debut is the Vivavo Video System (VVS), an intelligent video analytics platform for CCTV use that delivers valuable insights from on-site camera footage. These insights can enable improved security along with a host of applications for better customer service and marketing through situational and behavioural analytics. Provided both to mid-size enterprises and via its telecom company partners, VVS demands low-latency, high IOPs storage at scale, which is made possible by NVMesh's architecture and its ability to deliver shared NVMe that scales performance linearly at near 100% efficiency.

Francis Au, VIVAVO CEO explained, "Analytics make incredible demands of the storage infrastructure, and even our new and leading-edge software-defined storage architecture wasn't built for this level of speed and performance. Excelero provided exactly what was missing and uniquely matched our needs and direction. Its NVMesh has dramatically shortened the time it takes to complete analytics on large data sets – allowing us to accelerate the analytics process for our users, and making our solution far more competitive."

Excelero was also deployed at NASA Ames with the use case of large scale modelling, and visualisation of supercomputer simulation data on 128 monitors from a 128 node cluster. NVMesh enabled NASA to create a petabyte-scale unified pool of high-performance flash distributed retaining the speeds and latencies of directly-attached media.

On the joint solution with Broadcom, George Crump, president and founder of Storage Switzerland said, "Effective storage for hyper-scale data centres has been a significant limitation for quite some time, making Broadcom and Excelero's work together especially impactful. By using Broadcom's new NetXtreme Ethernet NIC with Excelero's server SAN, enterprises can make sure their applications can enjoy the latency, throughput and IOPs of a local NVMe device while getting the benefits of centralised, redundant storage."

Why nominee should win

1. Excelero's innovative approach is based on 10 patents and pending patents.

2. This innovative technology is the only NVMe sharing solution that is 100% software-only, allowing customers to build high-performance block storage (SAN) with standard hardware.

3. NVMesh has been deployed for hyper-scale Industrial IoT services, machine learning applications and massive-scale simulation visualisation and has been validated by major storage vendors.

4. Excelero addresses a key drawback of NVMe flash, and enables enterprises to level out NVMe utilisation across the entire IT environment, avoiding capacity and performance waste.