REPORT REPRINT

# MayaData unleashes open source, cloud-native container storage built on OpenEBS

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The company is addressing the challenges of storage management for container-based workloads by offering open source, cloud-native containerized storage. In doing so, it is seeking to provide superior granularity and efficiency over conventional storage arrays.



MayaData is addressing the challenges of storage management through a microservices- and container-oriented approach by offering container-attached storage (CAS) that uses an open source architecture. The company is one of several startups focusing on the need to maintain persistent data in conjunction with container use. It does so by aiming for a higher level of granularity in control of storage, while also benefiting from the community created around the OpenEBS project that is at the core of its container storage offering.

## THE 451 TAKE

The CAS offered by MayaData provides users with granular control over the storage associated with individual workloads. As generalists become the predominant population in the workforce at many organizations and specialists shrink in numbers, enabling non-storage administrators (admins) to manage storage effectively becomes increasingly important. In terms of its product, one factor working in MayaData's favor is that the use of block storage over file creates the potential for a performance advantage. The cross-cloud aspect of MayaOnline that enables workloads to be replicated from one cloud to another is an added value as many customers are concerned about vendor lock-in when it comes to public clouds. The active contributor and user community for OpenEBS is a valuable asset as it ultimately helps to improve MayaData's end product while also helping to ensure that the features are tailored to the actual challenges being faced by users. The pace of container adoption is in the relatively early stages for many organizations, but this creates opportunities for startups in related sectors like container storage, compared with markets where incumbent players are already more entrenched.

## CONTEXT

San Jose-based MayaData was previously known as CloudByte, which was founded in 2011. The company became MayaData in late 2017. Chairman and CEO Evan Powell is an industry veteran and aside from coming on as CEO of CloudByte, was previously the founding CEO of software-defined storage (SDS) vendor Nexenta Systems as well as CEO of DevOps startup StackStorm (which was acquired by Brocade in 2016). MayaData currently has 60 employees, with the majority of them being in engineering. The engineering team is located in Bangalore.

The company is a sponsor of OpenEBS, which is an open source, cloud-native containerized storage project that focuses on the management of storage at scale for stateful workloads running on containers. The open source OpenEBS framework has thousands of users and more than 500,000 Docker pulls for the core storage engine. So far, MayaData has raised just over $20m, with investors including Fidelity Investments and Nexus Partners, and is working on raising additional funding via a series A round within the next year.

Container adoption has been gradual, but is increasing. In 451 Research's Voice of the Enterprise: Storage, Workloads and Key Projects 2018 survey, 19% of respondents have containers currently in use and another 19% are in the discovery/proof of concept (POC) stage. As organizations continue to employ containers and they make their way out of pilot projects and into production use with stateful applications, there will be a need to accompany them with persistent storage.

## STRATEGY

As with any open source endeavor, the strength of the community supporting it can be a valuable asset that can provide insight into the way the software is being deployed and what features are relevant to users. By continuing to release features like its chaos engine for testing as open source, OpenEBS can further build the strength of this community. Additionally, OpenEBS is a member of the Cloud Native Computing Foundation, an organization that focuses on advancing open source, cloud-native software. OpenEBS is also a part of the Amazon Partner Network and Docker Partner Program, and has technology partnerships with Google and Kubernetes. Additionally, MayaData has a partnership with Red Hat around OpenShift, Red Hat having certified OpenEBS for its Kubernetes-

based management platform. Red Hat has container-native storage, but it leverages the file-based Gluster Storage, presenting an opportunity for the block-based OpenEBS.

MayaData is mostly targeting users in DevOps roles who likely lack the experience of a storage admin, with the intent of offering them more granular control of storage on a team-by-team basis as well as greater visibility into deployments using Kubernetes. For most enterprises that are engaging with container technology, it is developers that are driving this use through pilot and POC projects, so this is a logical starting point. Providing added value to such users, such as through the introduction of the Litmus end-to-end testing tool, is one way the company is engaging with and strengthening the developer community around OpenEBS. Docker Volume or Kubernetes plug-ins are offered by several hardware-centric storage vendors, but the value proposition for MayaData is in providing software that doesn't simply leverage generic file systems and resides between the array and the containers to achieve greater resiliency and granularity in control.

## PRODUCTS

Created in 2017 and with production use starting in the fourth quarter of last year, OpenEBS is an integral part of MayaData's product. It also works in conjunction with container orchestraters so that tools like Kubernetes can automate the management of storage. The OpenEBS architecture containerized the storage controller itself, thus resulting in 'containerized container storage.' The block-level storage feeds into the controller running on a container, which then controls the subsequent containers in use.

MayaData's offering is MayaOnline, which is a storage management and monitoring tool for cloud-based Kubernetes deployments. It is intended to provide complementary functionality to OpenEBS by further simplifying the management of OpenEBS-based systems by incorporating features such as analytics, cross-cloud replication and ChatOps via an application dubbed Mulebot, which integrates with Slack. It had a soft launch in the first quarter and is currently in beta with just over 500 users. General availability (GA) for MayaOnline is anticipated in the third quarter. There will be a free tier for basic use, although GA will introduce a paid tier. Additionally, OpenEBS has launched Litmus, an open source framework for end-to-end testing that employs chaos engineering so users can test stateful workloads running on Kubernetes.

## COMPETITION

When it comes to container storage, there is a mix of vendors targeting this specific market and SDS providers that offer this functionality as part of their platforms. The main competitors for MayaData and other startups in the space are the traditional storage players that already have strong ties with customers. Some of the larger storage vendors offer container storage functionality. Dell EMC has some functionality via vSphere Integrated Containers being deployed in conjunction with VxRack or VxRail, and the company is also involved with open source container orchestration engine REX-Ray for persistent storage for workloads that are cloud-native. Meanwhile, NetApp offers Docker volume plug-in support in ONTAP and HPE provides a Docker volume plug-in for use with 3PAR and Nimble Storage products.

Startups in this space include Asigra, Diamanti, Elastifile, Hedvig, MapR, Nexenta, Portworx, StorageOS and Virtuozzo. Portworx and StorageOS in particular also emphasize cloud nativity and are members of the Cloud Native Computing Foundation as well. Although it is a partner of MayaData, Red Hat provides container-native storage via Gluster Storage and the OpenShift Container Platform – the company's OpenShift revenue has tripled over the past year.

## SWOT ANALYSIS

**STRENGTHS**
MayaData is backed by leadership with much experience in the industry and it has already established a growing open source user community as well as multiple partnerships.

**WEAKNESSES**
It is a small company with limited presence in the market and will need to foster additional partnerships and carve out a place for itself in a competitive landscape.

**OPPORTUNITIES**
While it is common for containers to be thought of as ephemeral, the perception in the sector is changing and there are expectations that containers will have an edge in performance and resiliency compared with VMs.

**THREATS**
Container adoption is still in the early stages and for many enterprises their use is relegated to pilot projects and POCs for now, thus limiting the need for persistent storage for containers.