INSIGHT

Reduxio Private Vendor Watchlist Profile: A Hybrid Flash Array Making Snapshots Obsolete

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IDC OPINION

Hybrid flash arrays (HFAs) offer the performance of SSDs and the inexpensive capacity of HDDs, storing data at the most appropriate tier based on real-time usage, and thus achieving the required performance while reducing costs. However, many current HFA systems have inherent shortcomings. For example, HFAs offered by traditional storage vendors were originally designed for spinning disk media and were flash optimized over time. As such, they do not support advanced features such as inline compression and deduplication. Other HFAs available in the market today were built from scratch for SSD but only as a cache for achieving improved performance, which may result in capacity and cost trade-offs. Additionally, they typically use generic caching algorithms, applying a one-size-fits-all approach that treats all workloads and all reads and writes in the same manner. As a result, customers do not have the flexibility to prioritize specific workloads and dynamically allocate SSD resources for serving specific workloads with intensive writes such as virtualization and databases.

Hybrid storage start-up Reduxio aims to address these shortcomings with a purposely designed HFA that utilizes a proprietary metadata architecture to provide advanced features for data management and protection while achieving improved performance and cost-effectiveness.

We believe Reduxio is a company to watch because:

- Reduxio's system removes schedule-based snapshots, enabling customers to restore any volume in 1 second intervals while eliminating the management and scheduling complexity associated with traditional snapshots
- The company offers a data tiering engine that continuously and autonomously moves data between multiple tiers

IN THIS INSIGHT

Overall Score: 17/20

This IDC Insight analyzes Reduxio, a company playing in the hybrid flash array market, and reviews key success factors: market potential, products and services, competitive edge, customers, and corporate strategy. Detailed subquestions make up each of the five success factors, which are assigned a value from 1 (weak) to 4 (strong). Leveraging IDC's expert understanding of the competitive landscape and future outlook, this document provides insight into private companies based on IDC's unique watch score system:

- **Market potential:** Market growth potential, strength of competition, and current stage of market (early adopters versus late majority)

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- **Products and services:** Level of differentiation, disruptive capability, and scalability
- **Competitive edge:** Competitive landscape and peer assessment
- **Customers:** Number of existing customers, quality of existing customer base, geographic reach, and size of addressable market in the coming years, given the vendor's current capabilities
- **Corporate strategy:** Go-to-market strategy, management pedigree, and financial status (running on venture capital with insignificant revenue versus self-sustaining and not seeking additional rounds of funding)

SITUATION OVERVIEW

I. Market Potential

Score: 3/4

Market

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Reduxio plays in the hybrid flash array market. According to IDC's definition, HFA is an external storage system that can (but does not necessarily) use a mix of SSDs and HDDs to meet performance and capacity requirements. The HFA market was estimated at more than $10 billion in 2014, and it is expected to grow to nearly $14.12 billion in 2018.

Reduxio officially launched its product in September 2015, focusing on both the midmarket and large enterprise, and already generates revenue. The company plans to boost sales by using a combined strategy of direct and indirect sales through channel partners.

II. Products and Services

Score: 4/4

Reduxio HX550 Flash Hybrid Storage System

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Reduxio HX550 is an enterprise iSCSI-based storage array that uses dual controller in a 2U chassis with 16 2TB HDDs, 8 800GB SSDs, and 256GB of DRAM cache, offering maximum raw capacity of 38.4TB and over 120TB of effective capacity (factoring in Reduxio's dedupe and compression features). One of the main goals in the system's design is to provide advanced data management and protection capabilities while easing the burden of handling vast amounts of non-primary data including snapshots, clones, and replicas. This data typically consumes the majority of a company's storage capacity, resulting in management complexities and limited granularity of recovery points, which may expose application data to increased risk for long periods of time.

To tackle this challenge, HX550 includes several features including BackDating, which clones or restores any volume of application data to any second in the system's history in 1 second intervals. With BackDating, Reduxio offers an alternative to traditional snapshot technologies that allow for creating a limited number of point-in-time copies while eliminating the complexity associated with managing snapshots. The clones are independent of the source volume and consistent with each other, thus eliminating the need for consistency groups (simultaneous snapshots of multiple volumes managed as one entity).

HX550 features Reduxio's NoDup, an inline in-memory compression technology that enables global data reduction across cache, volumes, clones, and history. NoDup operates by deduplicating and compressing write data to the system as soon as it arrives. After data is chunked, and then

fingerprinted using a secure hash algorithm, the system then searches for matching fingerprints, so only unique data blocks are written to the system. The new data is compressed and stored in cache. By only storing a single copy of block data, HX550 can hold large amounts of data in DRAM cache, thus optimizing its utilization. This capability is highly relevant for facilitating the management of virtual environments as multiple VMs can be served right from the cache.

HX550 was designed to provide continuous and autonomous data migration between multiple media tiers. Deduped and compressed data from cache is destaged to the SSD tier without rehydration, which is configured to support large active data sets. Inactive data on the SSD tier is relocated to the HDD tier. Using advanced algorithms, the system coalesces data as it moves between the tiers to adapt to specific media characteristics and provides optimal read latency thereafter.

III. Competitive Edge

Score: 3/4

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Competitive Landscape

The market for HFA has become increasingly competitive over the past few years with offerings from traditional storage vendors and emerging HFA start-up companies. As mentioned previously, native HFA players claim to provide improved capabilities compared with the HFA offerings of traditional storage vendors such as Dell, EMC, HPE, HDS, IBM, and NetApp. Specific to Reduxio, the BackDating, NoDup, and real-time tiering functionalities are the main differentiators compared with these competitors.

Among HFA pure players, Reduxio competes with other well-funded companies that aim to provide an alternative to traditional storage systems using a native hybrid storage architecture. Companies in this group include Coho Data, Datrium, Nimble Storage, NexGen, Tegile, and Tintri, which are similarly targeting the midmarket. Also in this space is INFINIDAT, which is focused on high-end enterprises but has recently launched a midrange product. To a lesser extent, Reduxio also competes with emerging providers of hyperconverged systems, which natively collapse core storage, compute, and storage networking functions into a single software solution or appliance. Companies in this space (e.g., Maxta, Nutanix, and SimpliVity) as well as VMware's RAIL hyperconverged appliance are offering some of the capabilities provided by HFA players, but typically target other use cases.

Partners

Reduxio's partners include VMWare, Microsoft, Seagate, Mellanox, Intel, Veeam, Progress Software and Splunk.

IV. Customers

Score: 3/4

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Within one year of shipping its product, Reduxio has garnered approximately 70 paying customers across a wide range of industries and use cases. Reduxio's clients cover a broad array of vertical markets and span the following:

- Manufacturing
- Food and Beverage
- Biotech
- Aerospace and Defense

- Finance
- Elementary and Higher Education
- State and Local Government

Geographic reach: Currently active across major markets in North America, Europe, and Israel

Company Size and Use Case: Both midmarket and large enterprises in use cases including databases, virtualization infrastructure (VMWare, Microsoft, KVM and Openstack, among others), VDI, DevOps, enterprise applications (SAP), engineering applications (EDA, AutoCAD,3D modeling, and malware/ransomware data recovery

V. Corporate Strategy

Score: 4/4

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Leadership

The executive team of Reduxio consists of individuals with lengthy and varied backgrounds in IT and storage.

Mark Weiner, Reduxio's cofounder and CEO, was previously CEO at Exanet (acquired by Dell in 2010 for $12 million), executive chairman at StorAge (acquired by LSI in 2006 for $55 million), and VP, Western EMEA, at NetApp.

John Williams, president, was previously VP of Europe for NetApp where he built a $1 billion annual revenue business.

Jacob Cherian, VP Product and Product Strategy, was a former Distinguished Engineer at Dell, with 30 patents granted and 20 additional patents pending.

Mike Grandinetti, Chief Marketing and Corporate Strategy Officer, is a former McKinsey strategy consultant, HP engineer and MIT senior lecturer. He is an 8-time, VC-backed enterprise entrepreneur with exits that include 2 NASDAQ and 5 strategic trade sales to ATT, IBM, Iron Mountain, Oracle, Symantec and Synopsys.

Dror Granot, VP Engineering, was formerly a Software Project Director at Precise Software and Dell, overseeing the development of Dell FluidFS Clustered NAS core architecture from its early days at Exanet.

Nir Peleg, Reduxio's cofounder and CTO, was previously founder and CTO at Montilio and founder and CTO at Exanet.

Amnon Strasser, Reduxio's cofounder and VP Research, was previously founder and VP Software Development at Exanet.

Key Acquisitions

Reduxio has not made any acquisitions.

Current Investors

Reduxio raised a total of $33 million in three funding rounds from JVP, Carmel Ventures, Intel Capital, and Seagate. In addition, it received $1.5 million in governmental grants from the Office of the Chief

Scientist (OCS), Israel. The company plans to raise additional funding to accelerate delivery of its road map and expand its field footprint.

Company Overview

TABLE 1

Reduxio Company Snapshot

Category	Details
Functional and secondary markets	Storage
Founding year	2012
Number of employees	50–100
Number of customers	70+
Company location	San Francisco, California; Petah Tikva, Israel
Web site	**www.reduxio.com**
Revenue estimate	$1 million to $10 million

Source: IDC, 2016

TABLE 2

Reduxio Detailed Funding History

Round	Date	Amount	Investors
Seed	2012	$2 million	JVP
A	2013	$10 million	JVP, Carmel Ventures, and Intel Capital
B	2014	$21 million	JVP, Carmel Ventures, Intel Capital, and Seagate

Source: IDC, 2016

TABLE 3

Reduxio Peers

Company Name	Revenue Estimate	Investors
Nimble Storage	$227.67 million	Raised nearly $100 million in private funding from Accel, Sequoia Capital, and ARTIS Ventures; went public on 2013
Tegile	NA	Raised $117.5 million from August Capital, Capricorn Investment Group, Cross Creek Advisors, Meritech, Pine River Capital Management, SanDisk Ventures, West, and Western Digital Capital
Tintri	NA	Raised $260 million from Insight Venture Partners, Lightspeed Venture Partners, Menlo Ventures, New Enterprise Associates, SharesPost Investment Management, and Sliver Lake Kraftwerk

Source: IDC, 2016

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