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Coverage Initiation: ZEDEDA seeks to orchestrate the ever-growing edge

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Is the edge mature enough for the open source vs. proprietary systems conversation? ZEDEDA believes it is, but the market has yet to catch up to the need for openness, so in addition to selling its own value proposition, the company will need to persuade prospects of the benefits of an open source approach.

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Introduction

Edge computing has progressed from early field trials to volume deployments in the last three years, highlighting the challenges of scaling edge devices in the areas of security, application and device management. ZEDEDATA has chosen to focus on the juncture of edge hardware and software with its orchestration offering. The eponymous ZEDEDATA product addresses a subsection of the workloads that are being analyzed at the edge, which were in excess of 44% of those workloads among respondents to 451 Research's Voice of the Enterprise, Internet of Things, Workloads and Key Projects 2020 survey.

451 TAKE

ZEDEDATA fills an important role in the evolution of the edge from closed, proprietary systems to open and interoperable edges, orchestrated from a single point. The market has yet to catch up to the need for openness, however, so in addition to selling its own value proposition, the company will need to persuade prospects of the benefits of an open source (LF Edge/EVE/EdgeX Foundry) approach as opposed to those packaged with broader offerings from incumbent OT or cloud vendors. With operational technology (OT) teams' influence of the sales cycle and vendor selection in digital transformation efforts, pure-IT players like ZEDEDATA will need to strike partnerships with incumbent vendors that see the benefit of the company's suite of capabilities to gain a seat at the table.

Context

Edge computing is a rapidly developing segment of the broader computing market that has catalyzed an explosion of options for edge computing approaches from do-it-yourself compute-constrained devices, embedded computing assets within equipment, gateways, converged appliances, edge servers and multi-access edge equipment within network operator infrastructure. Many of these devices are bundled with or incorporated within operational technology equipment and tightly controlled by the OEM. The number and diversity of edge venues presents a challenge to secure and orchestrate, and also an opportunity for those companies with the right combination of technology and relationships.

Company overview

ZEDEDATA was founded in 2016 by Said Ouissal, who had previously held leadership positions at Violin Memory and Juniper Networks; Roman Shaposhnik of the Linux Foundation and Apache Software Foundation; Vijay Tapaskar, previously in engineering roles at Skyport Systems and Juniper Networks; and Erik Nordmark, previously in engineering roles at Arista Networks and Cisco. The company has raised \$19m between a \$3m 2018 seed round and a \$16m 2019 series A round, led by Wild West Capital and Almaz Capital in both cases.

The company leadership remains very active in the Linux Foundation (Shaposhnik continues to hold an active role there) in the many active edge efforts the organization has underway. LF Edge is the Linux Foundation coordinating function between eight edge-focused projects including Akraino Edge Stack, EdgeX Foundry, Project EVE, Home Edge, Baetyl, Fledge, Open Horizon and Secure Device Onboard. Project EVE was contributed to the Linux Foundation by ZEDEDATA with the objective of creating an open operating system for the IoT edge, providing application developers with a single interface that abstracts the complexity of hardware and the mechanics of security, application and device management.

Product

ZEDEDA interfaces with EVE to provide a distributed firewall, integrated security and encryption leveraging trusted platform module (TPM) hardware, device management and critical orchestration of applications. The company states that it supports any hardware (CPU, GPU, FPGA), listing Intel, NVIDIA and ARM, and deployment of any app via virtual machines, containers and clusters. The product aims to simplify field deployment through zero-touch provisioning and features an app marketplace that enables simple bulk deployment of both BYO applications and offerings from ZEDEDA partners. EVE can run on an edge node with as little as 512MB of RAM; however, a gigabyte is recommended for dual partitioning and applications. This provides considerable flexibility for greenfield deployments using new hardware platforms that support abstractions such as EVE but does not typically apply to brownfield equipment that may not have sufficient compute capability or is locked down by the original equipment manufacturer.

The offering addresses a number of the top priorities among respondents to the 451 Research Voice of the Enterprise, Internet of Things Workloads and Key Projects 2020 survey. The top priorities for edge products and vendors identified by survey respondents were (in order) security, cost, availability of sufficient networking, expertise of staff, resiliency of infrastructure and latency requirements of the workloads in question. The respondents also identified value for money and reliability/manageability at scale as the top two most important attributes when selecting IoT edge vendors.

Another key value proposition espoused by ZEDEDA is that the open APIs established by open source EVE-OS within LF Edge significantly reduces the risk of single-vendor lock-in. Third parties could theoretically leverage the open EVE API to develop a competitive approach to ZEDEDA and eliminate the potential risk if ZEDEDA were acquired or became insolvent. This is a subset of the much broader value proposition of open source edge efforts including those of the Linux Foundation and Eclipse Foundation, with well-defined interfaces and the potential of an open, competitive marketplace of mix-and-match components.

ZEDEDA has also integrated with Microsoft Azure IoT Edge runtime, enabling those modules to run on top of ZEDEDA's orchestration engine. The device and workload management area has been less of a focus for Microsoft, Google and AWS so this capability may help address this challenge. Integrations with hyperscale cloud providers also provide two benefits in the form of the potential for partnerships with these dominant firms in the IoT space to accelerate sales efforts, as well as potentially cultivating an acquisition partner.

Competition

When it comes to edge, the competitive landscape is fractured among different types of edge compute companies. Leading edge vendors used by respondents to the 451 Research Voice of the Enterprise, Internet of Things, Vendor Evaluations 2019 survey include Microsoft, IBM, Google and Cisco. These vendors have proprietary operating systems and interfaces to third-party applications, as well as either prescriptive (Microsoft, IBM, Google) or proprietary (Cisco) hardware requirements. There are additional startups looking at solving edge orchestration, including Pixeom (acquired by Siemens in October 2019), IoTium, Edgeworx and Canonical Ubuntu (Snaps).

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SWOT Analysis

STRENGTHS

With edge adoption rapidly growing, the need for approaches like ZEDED A's will only increase, positioning the company in the right place with a market-ready product.

WEAKNESSES

The edge market has yet to adopt open source technologies in any volume and is more focused on solving business problems than technical architectures.

OPPORTUNITIES

Partnering with larger incumbents and key application analytics vendors could entrench the company within the suite of broader solution sales.

THREATS

A key consideration among edge adopters today is compatibility with their existing cloud(s) and platforms, with the dominant cloud and platform vendors endorsing their own technologies and not openness.