



Market Insight Report Reprint

Zededa standing out among giants enabling open-edge computing systems

April 25 2022

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The company promotes an open, edge-native approach to enabling edge apps and services. This is important at a time when it is widely recognized that distributed edges will play a key role in the hybrid IT continuum, presenting a core enabler of digital transformation.

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Introduction

Edge computing (the distribution of digital infrastructure closer to users and devices) is necessary and inevitable. In the past two years, discourse around edge computing within enterprise IT leadership has generally moved from “why” to “how.” The headline driver of demand for edge computing is the digital transformation of global industries, but it also plays a critical role in enabling adjacent technologies (e.g., IoT workloads and business models, OT/IT convergence, cloud-native technologies, machine-learning algorithms, 5G and multi-access edge computing).

The sheer volume and mix of distributed edge hardware present major challenges to virtualize, secure and centrally orchestrate – challenges that public cloud architecture has since overcome. Zededa has emerged onto the scene with the familiar “any, any, any” (e.g., hardware, application, cloud) positioning we have long heard from virtualization vendors, but in this case for a platform crafted specifically for highly distributed edge infrastructure. The firm seeks to make orchestrating the distributed edge as simple as what is done on public clouds.

THE TAKE

Zededa has developed a platform for virtualizing, orchestrating, securing, and controlling highly distributed and heterogeneous edge infrastructure systems. This is important at a time when it is widely recognized that distributed edges will play a key role on the hybrid IT continuum and present a core enabler of digital transformation. Enterprises serious about edge computing might be attracted to the Zededa architecture for its ecosystem flexibility, the benefits that come with using open-source software, and its approach to disaggregating digital infrastructure from data/applications. This is especially true for customers worried about being locked into any one specific hyperscale cloud approach or that see the potential for high costs of using a proprietary virtualization platform in the long run. While it is encouraging to see several new paying Global 500 customers, Zededa will need to ensure that its partnerships with OT-centric digital change agents like PTC and Rockwell Automation are nurtured because they hold critical sway with the types of customers Zededa is positioning to support. Building its mindshare and successful go-to market motions with these partners will be crucial given its current resources.

Context

Zededa was founded in 2016 by Said Ouissal, previously of Violin Memory, Ericsson and Juniper Networks Inc.; Roman Shaposhnik, previously of Pivotal and active in the Linux Foundation (LF) 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 Inc., Cisco Systems Inc. and Sun. The company has raised \$31.5 million over a series A (2019) and seed round (2018). Zededa is a vocal and active proponent of the value of open-source software for edge deployments and contributed its EVE-OS to the Linux Foundation's LF Edge organization. The company reported that during CY 2021, Samsung NEXT joined as an investor. It has secured half dozen multi-year deals during CY21 and has 65 full-time employees and growing.

Product

The two major architectural components of the Zededa Edge solution include EVE-OS (developed within LF Edge Project Eve) and ZEDCloud. The attributes of EVE-OS include support for “any” hardware (CPU, GPU, FPGA) including popular choices from AMD, Intel, NVIDIA, Xilinx and ARM. In fact, EVE-OS is verified to run on 80 different hardware models today and a basic open-source controller available within Project EVE. Zededa leverages the operating system as-is from the open-source community and provides commercial support when used by ZEDCloud subscribers with approved hardware.

Support for “any” application can be accomplished with the customer’s choice of abstraction and virtualization techniques (virtual machines, containers and/or clusters). Field deployments are simplified through zero-touch provisioning and feature an application marketplace that enables simple bulk deployment of custom or BYO applications and offerings from ecosystem partners. EVE-OS is very lightweight and can run on an edge node with as little as 512MB of RAM. A major advantage of EVE-OS is its zero-trust security operating model that includes crypto-based hardware ID, measured boot, remote attestation, distributed firewall, data encryption and more.

The centralized management and control plane, ZEDCloud, uses an open orchestration API to interface with EVE-OS running on distributed edge hardware. ZEDCloud takes responsibility for all edge orchestration, visibility and control and remote management and interfaces with EVE-OS to provide the distributed firewall, integrated security and encryption services. ZEDCloud supports role-based access controls (RBAC) and certificate management and has systems and organization controls (SOC 2) certification.

A key selling point for Zededa, as a startup selling to multi-billion-dollar enterprises, is that the use of open APIs established by open-source EVE-OS within LF Edge reduces the risk of single-vendor lock-in and stranded investments in the event of Zededa becoming insolvent, acquired or the like. The last “any” of the pitch is any hyperscale cloud. Zededa’s integrations with hyperscale cloud providers like AWS and Microsoft Azure enable Zededa to piggyback on their momentum in areas like IoT while adding value in areas where they have focused less such as distributed edge device and workload management. Frankly, this work also raises its visibility as an acquisition target as well.

Strategy/partnerships

Zededa recognizes that now that its software platforms are stable and viable, its ability to attract partnerships and ecosystems will be germane to its relevance and market revenue growth. Even the most elegant and open edge infrastructure is useless without developers creating apps and services that can make use of it. To build and educate its potential ecosystem and end-user clients, the company launched a successful “Transform” virtual conference, which was held in August 2020 and 2021. The events were well received and Transform 2022 Developer Day is planned for May. This year’s event includes topical discussions such as deploying Azure IoT Edge and K3s, data confidence fabrics and deep dives unpacking real-world case studies. Zededa has a small direct selling force of about a dozen reps, which calls on end-user prospects directly or via indirect steering from large OEM customers, partners or via the Azure IoT Marketplace. Zededa has chosen to leverage a sales model that insists on paid proofs of concept, which it reports has dramatically improved conversion rates. Sales cycles are long, given the profile of customers, overall complexity and scale involved but have been trending down from 18 months to ~12 months in past year, which is a positive sign of progress and some opportunities have emerged that can be closed in weeks if the underlying business case is sound.

During CY21, Zededa developed several promising partnerships including household names like Microsoft Azure, Google Cloud Platform and PTC. In terms of potential, the Azure partnership is arguably the most important, given Azure’s dominant position in cloud services, in support of IoT. In the partnership Zededa is now offering native integration with Microsoft Azure IoT, which is widely used in edge-centric industries. As part of the partnership Zededa was also able to secure “co-sell ready” status as part of the One Commercial Partner Program. The Google partnership was focused on addressing Google Cloud customers in the energy sector, to securely scale and orchestrate edge applications.

In late 2021, Zededa joined the ThingWorx Ready program, which validates interoperability with the ThingWorx IIoT platform. The PTC partnership is high-upside and should be prioritized by Zededa, given PTC’s unique position straddling IoT/OT and visibility into edge projects matriculating within its client base. Zededa has also been working with Dianomic, which develops an edge application platform for industrial IoT use cases including those in energy. Another important partnership is Advantech, which is a hardware leader in the industrial/embedded computing space. Additionally, Zededa is a member of the Open Subsurface Data Universe (OSDU) forum, where companies from the oil & gas and utilities participate to accelerate the digital transformation of the industry and to which it provides reference architectures.

Competition

The emerging edge landscape is populated with a wide swath of emerging and established vendors targeting edge-driven market disruptions and opportunity. The competition for edge workload orchestration includes a wide variety of approaches that plot on a continuum between open source to closed/proprietary. This is a market where “co-opetition” will be rampant; for instance, Microsoft Corp. (Azure) is key ally for Zededa because it supports Azure IoT, while other parts of Azure are focused on selling integrated edge stacks to customers.

The same dynamic exists at companies like VMware Inc., where different units will view Zededa as friend or foe depending on deployment context and business unit involved. Zededa does not view the Red Hat Open Shift offering as direct competition because it is optimized for datacenter and hybrid cloud workloads, but we believe that the Red Hat Edge solution will become a competitor given the multicloud, multi-hardware messaging and open-source foundations and well-developed ecosystems with OT specialist and systems integrators.

Zededa reports also bumping into HCI firms pivoting their infrastructure virtualization systems towards edge, including Nutanix and Sunlight, and long-time open-source software proponent Canonical, which positions Ubuntu Core for IoT and edge deployment support. In manufacturing and other industrial accounts, Zededa might compete with Siemens’ Industrial Edge built on the 2019 acquisition of Pixeom.

SWOT Analysis

<p>STRENGTHS</p> <p>The attributes of openness are becoming more important to edge infrastructure decisions as enterprises seek to avoid any single vendor locking them in. Zededa has executed well in developing its initial ecosystem and customer activity is beginning to take hold.</p>	<p>WEAKNESSES</p> <p>Trusting a startup with fewer than 100 employees to help drive a strategic digital initiative can be difficult proposition for multibillion-dollar industrial enterprises, which are more risk adverse than “born in the cloud” digital natives. The prominent use of open-source technology is helpful in overcoming this objection.</p>
<p>OPPORTUNITIES</p> <p>The opportunity for Zededa is to focus limited resources on replicating its early success with validated solution blueprints and finding win/win/win opportunities between itself, OT-partners and incumbent IT infrastructure providers.</p>	<p>THREATS</p> <p>The edge computing management and orchestration landscape is now noisy and populated by the titans of IT virtualization including hyperscaler cloud providers that would prefer to see customers willingly follow them down a proprietary path to deploying edge systems.</p>

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