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DATA SHEET

Z-COS – ZeroStack's Cloud Operating System

ZeroStack Delivers

ZeroStack's Intelligent Cloud Platform is a fully integrated cloud solution that delivers a private cloud with the ease of use of a public cloud at a fraction of the cost. This solution is fully integrated with public clouds to offer seamless migration between clouds.

Three Key Innovations

Z-COS: ZeroStack's cloud operating system converts servers in to a hyper-converged cloud faster than any other vendor, and with integrated intelligence works in tandem with Z-Brain to build the world's first self-driving cloud. Z-COS is a fully integrated stack and includes software-defined storage (SDS), software-defined networking (SDN), a full-functioned hypervisor and a distributed, self-healing control plane.

Z-Brain: ZeroStack's intelligent software dramatically reduces operational tasks, and learns by leveraging a big-data layer that stores and analyzes rich telemetry using AI and machine learning which take the guesswork out of capacity planning, upgrades, ongoing management and troubleshooting. The on-premises infrastructure is consumed via a SaaS-based user interface, running in the cloud.

Z-AppStore: The integrated App Store enables 1-click deployment of many applications for rapid application development and deployment.

ZeroStack's Cloud Operating System (Z-COS) can run on existing servers or can be procured from ZeroStack as Z-Blocks which are hyper-converged hardware cloud building blocks that are preloaded with the latest Z-COS.

What is Z-Block?

A Z-Block is the smallest unit of hyper-converged hardware, available in multiple flavors and configurations that can easily adapt to application needs.

A standard Z-Block comes in a 2U enclosure with four server nodes, with standard configuration of 64 CPU cores, 512 GB RAM, 6.4 TB of SSD, and 16 TB of HDD. Multiple configurations are available.

Z-Blocks can be deployed in a symmetric self-healing, scale-out architecture to build and scale a cloud to any size. Customers can start with a few Z-Blocks and scale based on demand.

Key Functionality

- Full-functioned built-in KVM-based hypervisor
- Clustering & pooling of resources
- Software defined storage (storage pools)
- Software defined networking (network overlays & segmentation)
- Self-healing, controller-less design
- Standards-based APIs & CLI support
- Object store with S3 compatible API
- Built-in support for AD/LDAP

Functionality	Description
Full-functioned built-in KVM-based hypervisor	A highly optimized and high performing version of KVM hypervisor is built in to the Z-COS. It runs on each server and provides the capability to run VMs on that server
Clustering & pooling of resources	Z-COS contains distributed control plane that allows seamless addition and removal of servers in the cloud cluster. Any new server is automatically configured when it joins the cluster and is sent the information about other servers in the cluster. The resources on the server in terms of CPU, memory, storage and networking are all pooled together and the performance and capacity of the cloud is increased proportionately. The membership information for the cluster is stored across multiple servers in a highly resilient manner. If a server dies or is disconnected, other nodes can detect it almost instantaneously and mark the server as down.
Software defined storage (storage pools)	ZeroStack offers a distributed, scale-out storage solution with four different storage classes: SSD, HDD, SSD with Replication, and HDD with Replication. The scale-out solution allows customers to execute a wide variety of workloads ranging from traditional workloads that can use volumes with replication to cloud-native work-loads that do not need a replication factor. Additional Cloud Building Blocks can be added very simply when the utilization approaches storage limit, to scale the storage capacity and performance, extending all four pools.
Software defined networking (network overlays & segmentation)	ZeroStack's SDN layer offers performance and reliability at cloud scale. The solution implements distributed virtual router (DVR) mode with Open vSwitch that provides services like simple point-and-click internetworking, built-in firewalls, and load balancers.
Self-healing, controller-less design	ZeroStack's reliable, always-on control plane layer is symmetric and self-healing. The platform is highly available (HA) by default, so the typical costs and hassles of HA deployments (software, hardware, and maintenance) are eliminated. ZeroStack's architecture removes the need to run additional controller nodes, saving customers from the operational overhead of protecting the management platform.
Standards-based APIs & CLI support	ZeroStack provides historical data of all inventory resources and user actions that can be readily used for reporting and monitoring via RESTful APIs. APIs allow users to pull data from ZeroStack and feed it to other management systems like logging and ticketing. ZeroStack supports 100% standards compliant OpenStack RESTful APIs that enable building cloud-native apps rapidly. Being 100% OpenStack compliant, all popular orchestration frameworks like Puppet, Chef, and Ansible that have predefined recipes that can be used to spin up work-loads. In this way, ZeroStack integrates easily into any existing orchestration frameworks.
Object store with S3 compatible API	ZeroStack provides a built-in object store that runs across all servers in a distributed manner. The object store provides a 100% S3 compatible API and its size can be configured during the cloud set up process.
Built-in support for AD/LDAP	ZeroStack is designed to readily t into an enterprise set-up. It has out-of-the-box support for AD/LDAP and popular orchestration frameworks like Puppet, Chef, and Ansible.