Zesty Disk

Scale Storage Up & Down to Boost Performance and Reduce Cost

Power your block storage infrastructure to be dynamic. Zesty Disk optimizes performance, ensures stability, and saves up to 70% on cloud storage costs by automatically shrinking and expanding volumes according to real-time application storage needs. Offering the full flexibility of the cloud, Zesty Disk resolves the need to excessively over-provision volumes to ensure application performance and eliminates the risks associated with thin provisioning to achieve cost savings.

The Problem

Performance is Limited and Cost Always Loses

When it comes to storage, one size never fits all. Block storage is often allocated to services without really knowing how much volume is needed. To be fair there is no clear way to determine how much to allocate and the only thing you can be sure of is whatever that amount is - it's likely to change.

Insufficient storage will make your service vulnerable to spikey traffic peaks, cause application failure and unwelcome alerts to extend disk space. While provisioning excess storage typically causes organizations to pay two to three times more than what's needed. It's a cost versus performance dilemma where the organization almost always loses.

Zesty's Solution

Autoscaling that improves performance and cuts costs

With Zesty Disks' unique auto-scaling technology, you'll never need to choose between performance and cost again. It automatically responds to changing application demand by adding or removing capacity to the volume. This process generates a boost in performance with an **improvement in throughput and IOPS by roughly 300%.**

The leading solution in the market to automatically expand and shrink disk space to match changes in demand, it eliminates the need to make manual adjustments, either over time or in response to unexpected peaks in activity. Ensuring the ongoing stability and performance of applications.

> *Zesty Disk ticks two vital boxes; efficiently right-sizing EBS volumes and maintaining stability and performance.*
> *It totally knocked out our requirement for an internal disk alert system and put an end to unwelcome 3am wake-up calls.*

Ofir Nir • VP R&D at Singular

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So, why Dynamic Block Storage?

Automatic Right-Sizing: Block volumes shrink and expand in line with dynamic and fluctuating application storage needs, without requiring any downtime to extend or release space. Your engineers no longer have to babysit the cloud.

Reduce Block Storage Costs by up to 70%: By optimizing disk utilization, users dramatically reduce cloud storage costs without any human input.

Efficient Utilization: Relieve engineers from "guessing" how much data will be needed to run applications. As Zesty Disk scales in sync with your application, the necessity to guess capacity needs becomes obsolete.

Improved IOPS Performance: Get an IOPS and throughput performance boost by leveraging multiple smaller-sized storage volumes that each have their own burst capacity, instead of one large storage volume.

Prevent Block Storage Failure: No more "out of disk "failures or downtime to extend disk space for jobs that create sporadic loads of data or when there is unexpected fluctuation. Once the system has dramatically increased the disk, an alert will be sent.

Real-Time Monitoring and Visibility: With granular visibility into cloud infrastructure, remove idle or rarely used object storage and monitor block storage for volume fluctuations.

No Impact on Application Performance: The process of extending and shrinking the disk requires minimal CPU and doesn't cause any discernable impact on application performance.
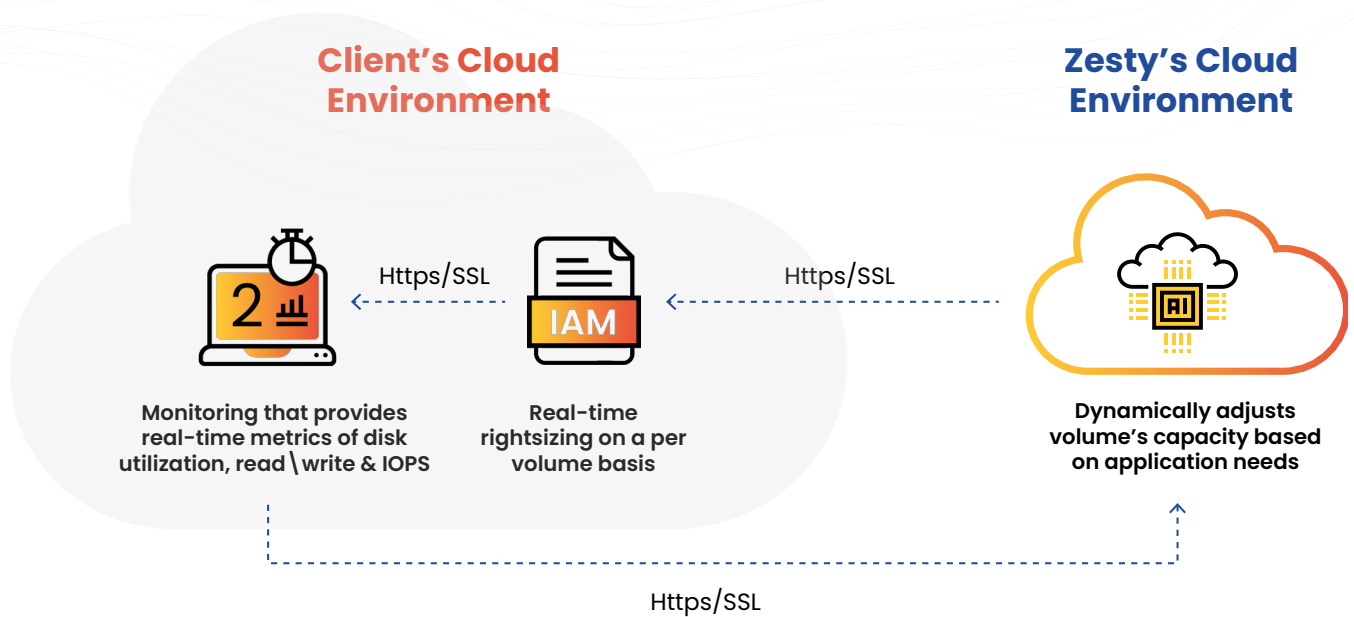
Highly Secure: Firstly, Zesty Disk never reads data in storage, only meta-data and usage metrics are collected, which is sent unidirectionally to Zesty's back-end. Secondly, when action needs to be taken, the command is sent using the appropriate IAM role on the Instance. Zesty is SOC2, GDPR, and CCPA compliant.

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How does Zesty Disk Work?

1 Zesty creates a virtual disk for the storage file system which consists of several small storage volumes. Since Zesty Disk leverages the native cloud provider block storage devices (AWS EBS/Azure Managed disk), your native tools, procedures, and SLAs are unchanged, while you remain the owner of your data and the only one that has control over it.

2 Zesty Disk continuously tracks usage metrics (Capacity, IOPS, and Read/Write Throughput) as well as Instance and disk metadata (such as instance type, disk type, volume names, etc) which are sent unidirectionally to Zesty's backend.

Client's Cloud Environment

Zesty's Cloud Environment

Https/SSL

Https/SSL

Https/SSL

Monitoring that provides real-time metrics of disk utilization, read \ write & IOPS

Real-time rightsizing on a per volume basis

Dynamically adjusts volume's capacity based on application needs

3 The usage and metadata metrics are then processed by an AI model which generates a behavioral profile on the instance volume. It uses this profile to predict the usage patterns and fluctuations of the disk to ensure that it is perfectly sized in any scenario.

4 When the instance dictates that a change in capacity is required, Zesty's backend issues an API command to the cloud provider with the appropriate action. It then sends an update request to the Zesty Disk collector on the instance to adjust capacity.

Zesty Disk

How does Zesty Disk Work?

5 As the application needs more storage another small disk can be added or the disk can be extended. When the application requires less storage, the small volume is detached, shrinking the available capacity.

6 Zesty Disk continuously balances disk volumes to ensure that the storage capacity is maintained. So for example, a disk volume of 100GB is replaced with multiple disks of smaller volumes, say of 50GB, 35GB, and 15GB. Where a smaller volume can be moved out, it will move its data over to the other disks before evicting it.
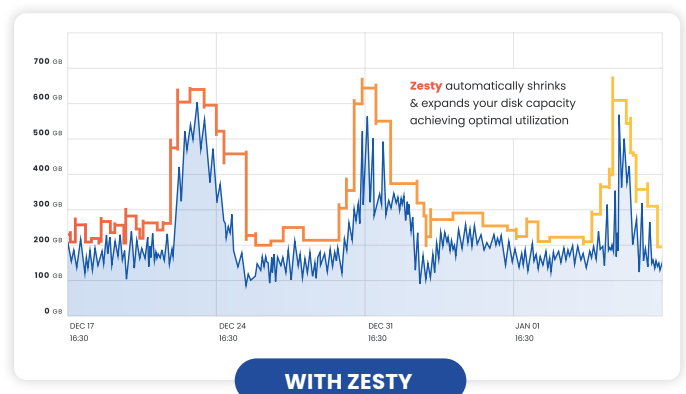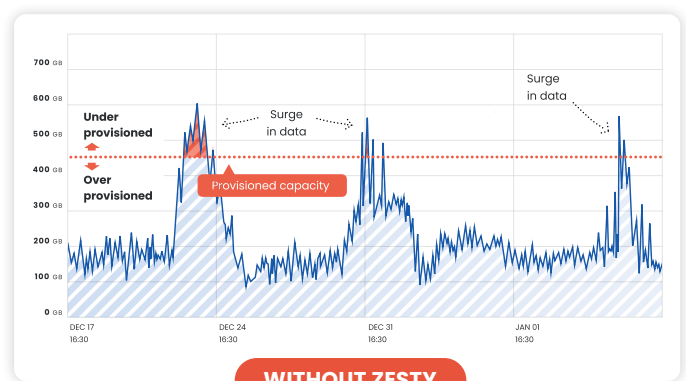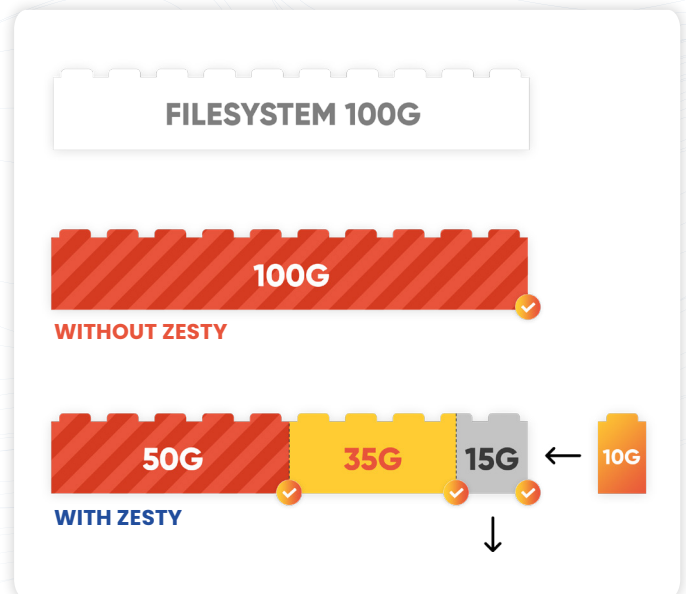
7 **A buffer is maintained above the needed capacity, so there is no concern of insufficient storage. This buffer is based on previous trends and is usually 10-15% of capacity.**

8 Every action is logged in the audit log and an alert can be sent to the environment's Slack or Teams channel.

Zesty Disk's algorithm continues to constantly monitor the environment and responds to fluctuations in minutes.

Supports AWS Azure

FILESYSTEM 100G

100G
WITHOUT ZESTY

50G 35G 15G ← 10G
WITH ZESTY

Under provisioned
Surge in data
Over provisioned
Provisioned capacity
Surge in data
DEC 17 16:30 DEC 24 16:30 DEC 31 16:30 JAN 01 16:30
WITHOUT ZESTY

Zesty automatically shrinks & expands your disk capacity achieving optimal utilization
DEC 17 16:30 DEC 24 16:30 DEC 31 16:30 JAN 01 16:30
WITH ZESTY

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Deployment Specifications

OS Type	Version	Processor Type
Ubuntu	16.04 / 18.04 / 20.04	Intel/ARM
CentOS	7.X	Intel
AMZ Linux	1/2	Intel/ARM (AMZL2)
Debian	9/10/11	Intel
Suse	15 SP1/3	Intel/ARM
RedHat	7.2-7.9	Intel
Windows	Server '16/'19/'22	Intel