



Datasheet

The Kubernetes Native Data Platform for AWS

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AWS Elastic File System Challenges

Elastic File System (EFS) is a massively scalable filesystem designed for multi-tenant solutions. As a filesystem, EFS is well suited to handling unstructured data, such as content management, media processing, and applications where up-time and performance are not a business-critical factor. A shared, multi-tenant filesystem can deal with millions of concurrent file system requests from multiple applications. But to achieve this, the filesystem must necessarily introduce an additional layer of latency into the data flow, and tenants must compete for filesystem resources within a shared data service lane. Low-latency, transactional business systems typically demand a different data architecture with application-specific databases hosted directly on resilient, highly performant block-level storage.

AWS Elastic Block Storage Challenges

Elastic Block Storage (EBS) is one of the fundamental parts of the AWS EC2 offering. At its core, EBS is a network-attached block storage solution that provides a way for potentially ephemeral EC2 instances to store data reliably.

While EBS is the default storage option for most stateful Kubernetes applications and databases utilizing the CSI driver, used on its own, EBS can have a severe limiting impact on the efficiency and resilience of the core Kubernetes architecture and the performance of stateful applications running on the platform:

- EBS instances are tied to a single Kubernetes node, crippling the effectiveness of the Kubernetes scheduler. This limits the ability of Kubernetes to dynamically schedule workload efficiently across clusters and results in slow attach and detach operation times for persistent volumes in the event of node failure. The potential impact on failover times and overall platform efficiency can be several orders of magnitude, pushing platform costs and performance metrics well outside the acceptable levels for business-critical applications.
- Direct use of EBS through the CSI driver also limits the possible number of volumes per host and restricts storage performance to the speed of the network interface.



Ondat Solution

Ondat is a leading Kube-native data services platform. Layered on top of EBS, Ondat's innovative data mesh delivers the missing resilience, performance and cost efficiency needed to run stateful business applications at scale, as well as dramatically reducing costs for both storage and other compute resources.

Deliver a serverless experience in your Kubernetes environments with Ondat. Providing deterministic performance, data availability and business continuity, whilst significantly reducing your EBS costs up to 75%

Key Features



Stateful Kubernetes as it should be

The Ondat data mesh ensures persistent volumes are replicated and available across all available nodes in a Kubernetes cluster. This enables stateful applications to take full advantage of Kubernetes' core scheduling capabilities.



Instant failover

In the event of a node failure, stateful workloads can be instantly rescheduled with persistent volumes instantly available wherever containers are moved.



Workload density

Workloads can be distributed efficiently across the cluster, dramatically reducing resource utilization. By aggregating EBS volumes, Ondat also removes the limit of 40 volumes for your applications, enabling users to run 1000's stateful applications per host.



Efficiency savings

- Up to 75% cost savings on underlying EBS storage
- Reduce other compute costs by as much as 90%



High availability

Ondat makes data available across multiple Availability Zones:

- A disaster recovery prerequisite for many business-critical applications, Ondat makes data available across AZ's to provide highly available services and disaster recovery in an Amazon region or Outpost. Delivering transparent failover and HA for Kubernetes applications.



Reduce costs – Free your apps

Ondat's flexible software dataplane ensures your choice of storage can be made available as persistent volumes to any Kubernetes instance running anywhere.

- Remove data lock-in. Move applications freely between EKS, EKS Anywhere, or any other public, private and hybrid cloud instance. Use Kubernetes on-premises and run bare metal instances.

Comply with data governance and data residency regulations with the ability to locate application data in different regions

Using Ondat AWS i3 instances offer

15x Capacity

10x Storage performance

@significantly lower cost

The graphic includes an icon of a server rack with a clock and a gear, symbolizing performance and efficiency.

All prices are calculated directly from the AWS cost calculator and correct at the time of publishing.

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AWS Integrations



EKS



EKS-A - Run your
K8s anywhere



EBS



EC2 Instance
Volumes

Conclusion

As organizations continue to drive deployment, velocity and new applications, stateful workloads hinder the acceleration, leaving organizations to consume managed databases at ever-increasing costs.

Ondat enables organizations to realize all the benefits of CI/CD and Gitops investment for their stateful applications, delivering a Kube-native experience for all containerised applications, while dramatically reducing infrastructure and operations costs.

This is why organizations like Accenture, Amarena, Interconnect and more trust Ondat to manage data for mission-critical Kube-native applications.

By abstracting the cloud infrastructure, Ondat reduces compute costs of stateful applications by up to 90% and reduces storage costs by 30% or more.

Highlights

Reduce compute costs by up to 90%

- Spot Instances
- Reserved instances
- Increased density

Reduce storage costs by up to 60%

- Virtualise EBs increased performance and density per node
- Use instance store volume

Reduce operational costs

- Automatic failover
- Cross availability zones
- Abstracted infrastructure means no management

Run Anywhere

- EKS Anywhere
- On Premise
- Public Cloud

Schedule a demo with Ondat today at ondat.io/request-demo