OpenIO

Case Study

IIJ
Internet Initiative Japan

ABOUT IIJ

- Global Service Provider
- More than 11000 customers
- Mission-critical SLAs for its cloud services
- 3000 employees

IIJ Chooses OpenIO SDS to Build a High-Performance Object Store for their Email Service for Secure Sensitive Organizations

OpenIO's performance, no-rebalancing, and open source philosophy lower overall TCO while improving infrastructure flexibility and quality of service.

QUICK DATA

2 M managed mailboxes	1400+ MX service customers
5500 indexed emails / sec	100% flash object store

IIJ (Internet Initiative Japan) is an enterprise-grade cloud service provider based in Tokyo (Japan), with customers ranging from enterprises to public sector and finance. Their goal is to provide best-in-class services and SLAs for demanding customers with strong security and compliancy requirements. IIJ has selected **OpenIO SDS** because of its proven and flexible scale-out architecture, the fact that it is open source software, and for its flexible licensing model based on support subscriptions

> “Our service is growing quickly, therefore we need to increase performance and capacity accordingly. With OpenIO SDS we can add a new node and increase infrastructure capacity with no downtime or impact on production in just a few minutes.”
>
> → Takashi Koido, Manager, IIJ

The context

Founded in 1992, Internet Initiative Japan (IIJ) was the first internet service provider in the country. As its technological expertise in connectivity services matured, it expanded its business portfolio, becoming a 360-degree solution provider offering connectivity, value-added outsourcing, and system integration.

Today, with 3,000 employees worldwide, of which 70% are engineers, and presence on three continents, IIJ serves approximately 11,000 enterprise customers worldwide.

The type of customer IIJ serves demands very high-end services with stringent SLAs. In order to ensure that they can meet these customer needs, they have adopted OpenIO SDS as the backend for business-critical solutions like email.

IIJ's secure MX service is designed for maximum uptime with best-of-breed security features aimed at protecting users from external and internal threats including ransomware, viruses, spam, phishing, scamming, and sensitive information leakages. Currently, more than 1,400 organizations are using this service worldwide, with 2 million users protected.

In order to increase the uptime and reliability of the MX services, IIJ wanted to build a rock-solid infrastructure distributed in two datacenters separated by 800 km, with the ability to scale quickly and react promptly when traffic peaks or business requests increase. To realize this, they built a next-generation scale-out infrastructure based on all-flash nodes organized in two clusters running OpenIO SDS software.

The combination of OpenIO SDS's key features and its consistent performance allowed IIJ to achieve its goals quickly without compromising future expansions or resiliency. At the same time, Japanese enterprises and organizations demand high standards when it comes to disaster recovery, and thanks to the asynchronous replication features available in OpenIO SDS, IIJ is now able to store data safely with outstanding RPO (recovery point objective) and RTO (recovery time objective) in case of disasters.

Furthermore, OpenIO SDS is an open source software solution, and IIJ wanted full code visibility and the ability to contribute to its development or perform code audits to minimize security risks for its customers.

Why Object Storage

Object storage offers superior data protection and resiliency when compared to other solutions. It can sustain multiple concurrent failures without compromising data availability, and has different protection schemes, including erasure coding and multiple data replicas, enabling it to protect objects of any size efficiently without wasting resources.

Object storage has unparalleled functionalities when it comes to disaster recovery. Object stores can be granularly configured to spread data across multiple datacenters efficiently with geo-distributed erasure coding or sync/async remote replication. This makes it possible to optimize bandwidth while providing flexibility on PTO and RTO depending on user needs.

Object storage provides better scalability and multitenancy than file system solutions. Object storage can easily scale up to several billion objects per user and manage many millions of concurrent users in the same namespace.

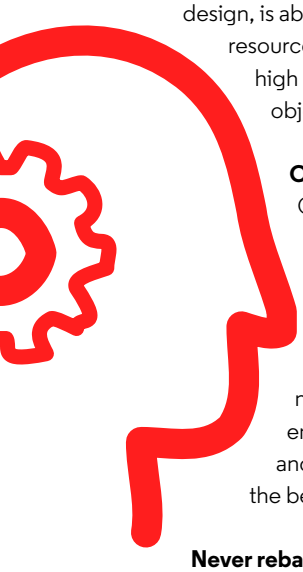
> “We have many kinds of risks in Japan, notably earthquakes. OpenIO SDS is able to replicate data to a secondary site seamlessly, allowing us to keep the service up even if a disaster of this kind occurs.”
>
> → Isamu Koga, Lead Engineer, IIJ

> OpenIO is open source. Code observability is key for us to assure our customers about the quality of the solution. We can even participate in the discussion and development.
>
> → Isamu Koga, Lead Engineer, IIJ

> OpenIO SDS is hardware agnostic and doesn't need a lot of resources to run smoothly and efficiently. We are free to choose the hardware that best meets our needs, and we can be sure that it will always be used to its full capacity. This is key for our business and overall infrastructure TCO.

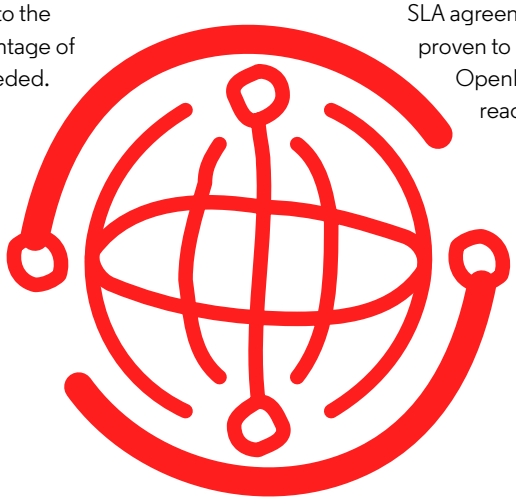
Why OpenIO SDS

Performance
OpenIO SDS, thanks to its lightweight and efficient design, is able to take full advantage of all available resources in the cluster, consistently delivering very high performance, regardless of the workload, size of objects, or throughput requested by applications.



Conscience technology
OpenIO's Conscience technology is a set of services and algorithms that continuously monitors the nodes in the cluster, assigning a quality score to each of them in real-time. More resources available mean a higher score, and each operation on the cluster is assigned to the most available nodes at that precise moment. This enables IIJ to mix nodes of different generations and configuration in the same cluster while assuring the best response and availability for each operation.

Never rebalance
OpenIO's Conscience technology also provides additional advantages. New nodes can be added to the cluster without rebalancing data, avoiding any performance impact or service disruption. New nodes will have better scores than older ones because they are underutilized when new and are able to accept more data. This feature simplifies IIJ's capacity planning, allowing them to add new resources to the infrastructure and take advantage of them immediately when needed.



Open source
OpenIO SDS is an open source software-defined storage solution. For an ISP like IIJ, the ability to examine the code to ensure that there are no backdoors or bugs that can compromise system security is fundamental. The company also wants to contribute and be part of the open source project to influence its roadmap to meet the evolving requirements of its customers. At the same time, leveraging open-source software avoids any form of lock-in and vendor dependency over the long term. OpenIO SDS is free to download; support subscriptions are based on net usable capacity, regardless of the layout of the cluster or the number of local and remote copies for data protection. This allows customers like IIJ to ease the procurement process and buy only what and when is needed without hidden costs, in a pay-as-you-go fashion, which is compatible with their business model.

Support
IIJ requires the best support to comply with the stringent SLA agreements in place with its customers, and OpenIO has proven to be up to the task. With Offices in Tokyo, Japan, OpenIO has demonstrated quick response time and reactivity.

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> “With peak requests that can easily reach 5,500 emails/sec, we needed a high performance object store.
> With OpenIO we were able to build a very high performance all-flash storage system.”
>
> → Yuuki Wakisaka, Engineer, IIJ

Key takeaways

OpenIO SDS is an open source next-generation object storage solution that combines unmatched flexibility, ease of use, and performance.

Unique features like Conscience technology allow end users to think of their business first and adapt their infrastructure accordingly, not the other way around. The never-rebalance approach ensures that the software is always ready for a cluster expansion without performance impacts or delays, while dynamic load balancing ensures consistent high performance.

Thanks to its lightweight design and efficiency, OpenIO SDS can be installed in all-flash, hybrid or all-disk configurations, adapting to customer needs for the best possible ROI.

Support subscriptions, based on net capacity available per year, give total freedom of choice to the customer when it comes to cluster layout, data protection policies, and multi-site installations, and allow companies to move their storage software expenses from CAPEX to OPEX.

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Learn more at
openio.io