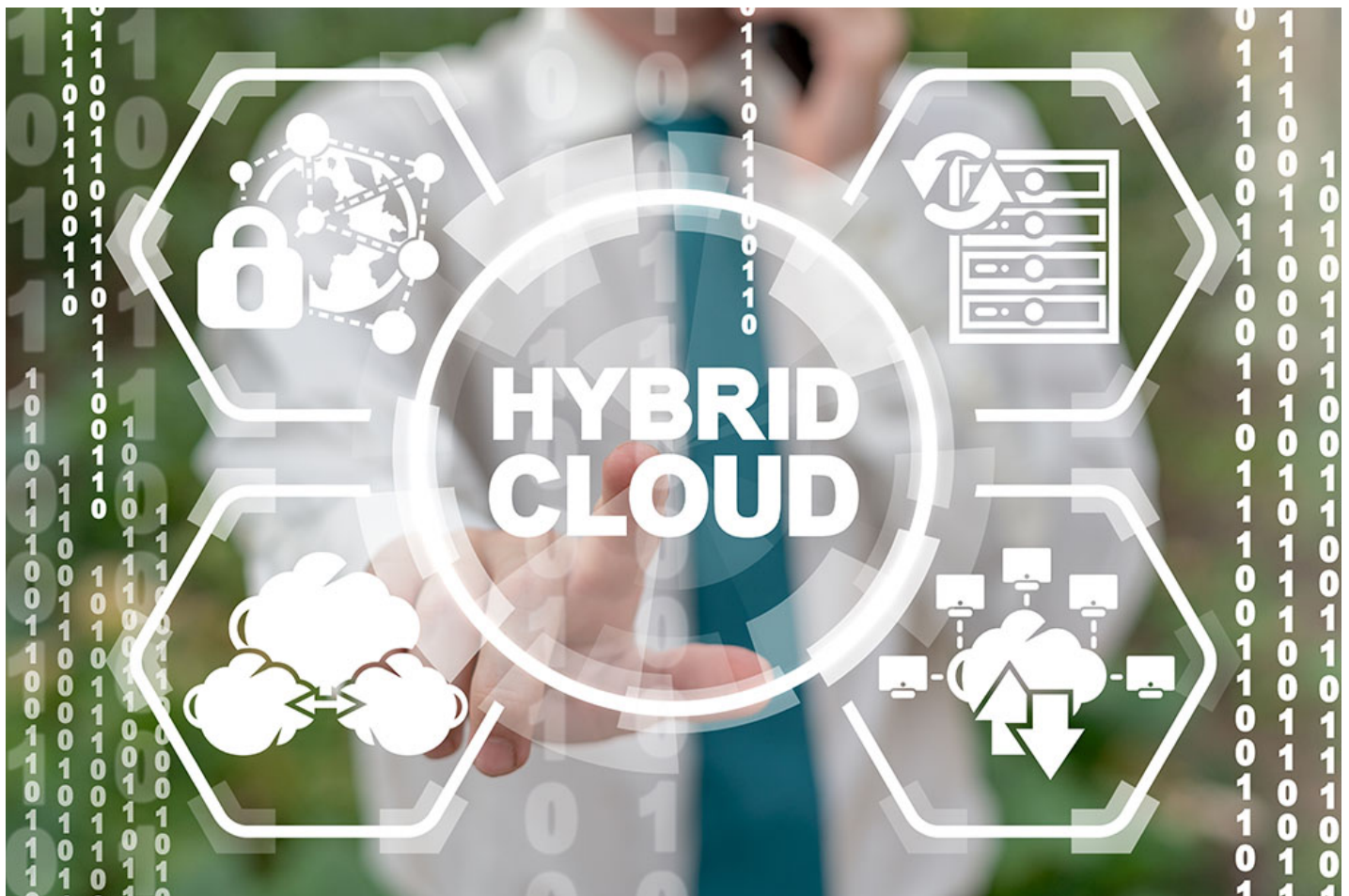


Selecting the Right SSD for Hybrid Cloud



What Is Hybrid Cloud?

Hybrid cloud is an information technology (IT) architecture and environment that incorporates at least one

public cloud and one private cloud. A public cloud service is when the computing is outsourced such as with Amazon's Web Services (AWS), Microsoft's Azure, Google Cloud, IBM Cloud, etc. A private cloud is an on-premises computing solution with local hardware. The idea with hybrid cloud is to get the advantages of both cloud types in a single infrastructure with the ability to move workloads freely between private and public instances. This tends to be more flexible and ultimately cheaper than either solution on its own.

Public cloud services have many advantages such as with scalability – whether the need to go larger or smaller – while generally being more reliable with fallback, all with a lower capital expenditure (CapEx) to spin up. However, companies have less control over their data's security and there may ultimately be a higher operating expenditure (OpEx). A private cloud will have better security and a lower total cost of ownership (TCO) or OpEx along with greater control. However, it can have higher initial costs with more responsibility and less flexibility. Hybrid cloud bridges these two in an infrastructure as a service (IaaS) environment.

What Are the Advantages and Disadvantages of Hybrid Cloud?

Hybrid cloud allows flexibility in dealing with dynamic or frequently-changing workloads. The hybrid nature also means that workloads can be segregated based on importance. It's a good solution for both ends of cloud deployment: it assists when moving to the cloud incrementally while also allowing flexibility for the future. The "best of both worlds" approach means it can handle any type of workload, whether with big data processing as with private or with temporary processing capacity needs as with public. It helps companies that are transitioning to digital, it offers robust disaster recovery options, and it is useful in both development and testing, all while allowing organizations to dip their toes into cloud technology.

Of course, there can be compatibility issues between the distinct public and private cloud architectures. For example, handling of data can be complicated including with access management. Privacy and security issues may exist on top of increased overall complexity. The private end of hybrid cloud can have a high upfront cost and moving data to the public end can be slow. As such, hybrid cloud may not be ideal

for workloads with strict latency requirements or other mission-critical factors. Management of hybrid cloud requires a specific skill set and implementation to operate properly, as well.

Hybrid Cloud Implementation

Hybrid cloud often comes as a prepackaged solution or with enterprise middleware to integrate the two types of cloud. On the private side, this means security and regulatory compliance with the public side being used for less-sensitive data. The public side is more scalable, for example, to handle unplanned spikes with so-called “cloud bursting” and the adoption of new software as a service (SaaS) solutions. Often it is necessary to update legacy applications and migrate virtual machines (VMs) to the public cloud, reducing private data center utilization in the process. The public cloud end is also, for example, more useful for less-predictable workloads, so automation of deployment is key.

Moving forward, applications will be developed with more portability via lightweight containers with virtualized dependencies. Further, a focus on microservices architecture allows for modular applications and enhanced flexibility. Combined with virtual private networks (VPN) and cloud (VPC), this creates infrastructure virtualization or infrastructure as code so that developers can create environments on-demand regardless of where the resources are located. Cloud-native applications designed for a shared OS and container platform will assist with automated deployment as applications allow for superior granularity, to improve scalability and load balancing. This unification means greater overall efficiency as an organization can leverage resources in an optimal and abstracted manner.

Selecting the Right SSD

Regardless of cloud type, there is an ever-growing need for high storage density. However, this must be balanced with performance and cost as well. Ultimately for the private side of hybrid cloud, there is a desire for something compact with an efficient form factor (FF) to reduce on-premises cost. Getting the

highest CPU utilization rate means more work with fewer servers, through software-designed storage (SDS) for example, to more greatly reduce the physical footprint. Also important is the need to minimize power and cooling costs to lower TCO.

Also on the private end, data security is a must, along with general standards support. Reliability is also a key factor, for example with power loss protection (PLP) or imminent (PLI) capabilities. All of this must be balanced with consistency of performance with the ability to expand if needed, the latter especially with the public end. Agility of storage – for example, through current and forthcoming NVMe® capabilities – is universally useful with hybrid cloud. Ultimately there is also a need for the highest quality of service (QoS) with predictable latency and bandwidth, especially for the private end.

Summary

Our SSDs can fit perfectly into the hybrid cloud framework by meeting the needs of either the public or private side – or both at once. Standards-compliance including with NVMe® and form factor plus a range of capacities means that the needs of any-sized organization can benefit from storage modernization. Whether you need the flexibility of a public cloud or the security of a private cloud, our SSDs have you covered – although to get the best performance for your applications and workloads it is important to understand the benefits of hybrid cloud. The private data center wants high-capacity drives with optimal CPU utilization, buoyed by security and power loss features to protect your data; the public side needs to be more flexible with storage that can respond to new software technologies that will improve automation and deployment. Together, our SSD solutions with hybrid cloud technology can help your business transition and integrate into a cloud-based solution capable of efficiently fulfilling all of your compute needs.

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Series is a powerful, high performance SSD made for edge storage applications. It comes in M.2 and U.2 form factors.



SATA - Our ER2 SSD

Series delivers affordability and performance with superior random read/write speeds of up to 90,000/45,000 IOPS. It comes in M.2 and 2.5" form factors.

Please contact our [Solid State Storage Technology Corp. expert](#) for more information.

*Specifications and features are subject to change without prior notice. Images are samples only, not actual products.



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A subsidiary of KIOXIA Corporation, **Solid State Storage Technology Corporation** is a global leader in the design, development, and manufacturing of digital storage solutions. We offer a comprehensive lineup of high-performance customizable SSDs for the Enterprise, Industrial, and Business Client markets. With various form factors and interfaces, our SSD solutions help businesses simplify their storage infrastructures accelerating variable workloads, improving efficiency, and reducing total cost of ownership.

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