

HOW TO DEVELOP A MULTI-CLOUD DATA MANAGEMENT STRATEGY



Most data centers already have several clouds that they are managing and the number of clouds they use is expected to rise. In most cases, the organization has several on-premises clouds built on VMware and possibly a cloud built on a hyperconverged solution like Nutanix (either VMware or Acropolis). The organization's use of multi-cloud may be as straightforward as using public cloud storage as a backup target to automatically off-site data. The organization may also be considering using the public cloud to perform disaster recovery.

The cloud, though, can offer much more than backup mirroring and disaster recovery. Increasingly, organizations are looking to move workloads into the cloud. The goal may be to leverage cloud resources for Dev/Test, or they may want to "lift and shift" an application to the cloud and run it natively. In order to enable these various cloud options, it is critical that organizations develop a multi-cloud data management strategy.

The primary goal of a multi-cloud data management strategy is to supply data, either via copying or moving data to the various multi-cloud use cases. A key enabler of this movement is the data management software applications. In theory, data protection applications can perform both of the copy and move functions. A key consideration is how the multi-cloud data management experience is unified. In most cases, data protection applications ignore the user experience of each cloud and use their proprietary interface as the unifying entity, which increases complexity.

An alternative is to leverage solutions purpose-built for each cloud so that the interface and overall experience is identical to how the administrator manages other tasks. Purpose-built solutions, though, require an overlay that enables communication and management of each purpose-built tool and to facilitate the copying and moving of data across cloud domains.

The result of using purpose-built solutions with an overlay is day-to-day operations, are easier on each cloud administrator. Cloud-to-Cloud activities, thanks to the overlay software, do not require that someone in the organization have expertise in all of the clouds the organization is using.

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THE IMPORTANCE OF THE OVERLAY

There are a variety of reasons organizations may want to leverage multiple clouds. The first use case is to use public cloud storage as a backup mirror to an on-premises data protection process. Using public cloud storage as a backup mirror enables the organization to automatically off-site data. It also sets up many of the more advanced use cases.

For example, the organization may want to evolve beyond mirroring the data to using the cloud as an archive repository for older data, lowering the cost of on-premises data protection storage. The organization can choose to keep only thirty days of backup data on-premises, enough to meet most immediate recovery requirements, and then use public cloud storage for long term retention.

An essential aspect of the backup to cloud use case is the ability to switch clouds. The challenge when switching public cloud backup targets is what to do with the data in the original public cloud provider. Pulling all the historical data from that first cloud provider may be cost-prohibitive because of egress fees. Instead, the data management solution needs to support multiple cloud targets simultaneously. It should be able to facilitate restores from either cloud while directing new backup copies to the new cloud. Then, as data fulfills its retention requirements, IT can remove it from the old cloud, avoiding egress fees.

Another use case is using the cloud for disaster recovery. Since the data protection solution is already sending backup data to the cloud, the software only needs to manage the movement of that data from low-cost cloud storage to more production class storage. In most cases, either the software or the user needs to transform the virtual machine into a format native to the cloud provider's hypervisor.

The data management solution, in addition to data protection, should also be able to position data so the organization can use it in Dev/Test use cases. These use cases require the solution to copy the data to the cloud and position it for use. It leverages steps similar to using the cloud for disaster recovery. The data management software should also automatically update the Dev/Test data set on a scheduled basis so that these teams are working with a recent copy of the data.

Another use case is "Lift and Shift," which means the organization wants to run the application in the cloud natively. Initial steps in the "lift and shift" use case are similar to Dev/Test, but now the workload is storing unique data in the cloud. The organization needs to make sure that data is protected. Using a purpose-built solution for that particular cloud makes in-cloud data protection easy, but makes the overlay component even more valuable. The overlay provides IT oversight to make sure data protection is occurring and to facilitate movement out of the cloud if the need arises. The overlay also enables the organization to create a cloud to cloud disaster recovery plan so that if one provider goes down, IT can restart the workloads in another cloud.



WHAT ARE THE MULTI-CLOUD USE CASES?

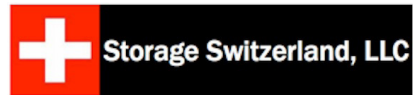
The value of purpose-built data management solutions is, they are easy for administrators of the specific cloud platform to learn and operate. It enables the organization to delegate data protection to an administrator with domain expertise on that particular cloud. It also provides organizations with better scaling of the data management process since the purpose-built approach distributes the function across multiple team members.

Multi-cloud, by definition, requires cross-cloud operations. It seems at this point, however, that the purpose-built method becomes a hindrance. At the same time, organizations typically want to avoid the legacy approach of a unique backup application interface that has little in common with any of the clouds the organization has in operation. The increase in complexity and training time is more than most organizations can tolerate.

The overlay approach provides a bridge between the various purpose-built solutions. It enables day-to-day operations, those within the particular cloud domain, to be run by that domain's administrator. Multi-cloud operations, regardless of use case, are driven by the overlay's administrator. That administrator does not need to develop domain expertise in every cloud the organization is using, just the overlay software, which facilitates the data copies or movement.

CONCLUSION

Multi-cloud is a reality now for most organizations and managing the movement of data between these clouds is critical. However, organizations want to avoid requiring administrators to learn interfaces outside of their domain expertise. A strategy of continuing to leverage purpose-built solutions within each cloud and using an overlay solution to facilitate the movement of data between clouds, gives an organization the best of all worlds. It provides them simplicity within the domain and across the domain while enabling capabilities most solutions can't offer.



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