Protecting Data with a Unified Platform

The Essentials Series

Dan Sullivan

Introduction to Realtime Publishers

by Don Jones, Series Editor

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Data Protection and the Cloud

Enterprises are adopting cloud computing strategies to control costs and enable more agile business service delivery. There are a number of ways to use cloud computing and storage in your business, but regardless of your implementation details, it is important to consider data protection for your cloud-based applications. The cloud also offers a new option for offsite storage of backups. In addition to onsite backups on tape and disk, businesses now have the option to store backups in the cloud. This final article in the series examines how cloud computing changes the data protection landscape. In particular, the article will consider:

- Two sides of cloud data protection

- Challenges with backing up data in the cloud

- Integrating cloud backups with a unified platform

- Addressing mobile device backup with the cloud

Let's begin with the cloud as both a resource that requires data protection and a resource to be used in data protection.

Two Sides of Cloud Data Protection

The cloud can be used as a storage and disaster recovery resource, but it can also be storage for your applications and general storage needs. Public cloud providers can be a good option for storing your organization's backups offsite.

There are several advantages to using the cloud. With cloud storage, you will not need to maintain additional disk storage in-house. In cases where you use tapes for backup, there is no need to ship tapes to offsite storage. With the cloud, you also have access to computing resources, so the cloud could become your default site, saving the cost of maintaining dedicate disaster recovery resources.

Public cloud storage can be a good fit for many use cases. If you need large volumes of storage for short periods of time, run applications in the cloud, or find the cost of long-term cloud storage is a better option than maintaining in--house storage, then the cloud is a reasonable option. One challenge public cloud storage presents is in backing up data stored in the cloud, or more precisely, clouds.

The three generally referenced cloud models are:

- Private clouds

- Public clouds

- Hybrid clouds

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Private clouds are maintained within an organization for its own use. Servers and storage systems run cloud frameworks that allow for virtualization of large numbers of servers and access to shared storage.

Public clouds, as the name implies, are open to use to a wide range of customers. Public cloud providers, such as Amazon, Microsoft, and Rackspace, provide computing and storage on-demand to customers around the world.

Hybrid clouds leverage the benefits of private and public clouds by closely coupling the two. An enterprise with a hybrid cloud can maintain a private cloud that meets most computing and storage demands but is closely linked to a public cloud. With this configuration, virtual machines can be launched in the public cloud when the private cloud is at capacity.

Challenges with Backing Up Data in the Cloud

One of the advantages of using cloud storage is that providers offer replicated storage. When you store a block of data in the cloud, it is typically written to multiple storage devices. If one device fails, the cloud storage systems will simply retrieve it from one of the replicated copies. You have to ask yourself if this setup is sufficient. Even if the chances are small that all copies of a block of data are unreadable, you need to consider other possibilities. For example, a human could accidently delete the data or a software bug could corrupt it and render it useless. It is situations such as this that require backups.

You have a number of options. You could make copies of data in the cloud and store them in the same cloud. Simple scripts using copy commands might work in some cases, but if the data is updated during the copy operation, you will end up with inconsistent copies. Another option is to use cloud-enabled backup software to back up your data from the cloud and store it in the cloud. This setup avoids the problem of potential inconsistencies but leaves you vulnerable to cloud provider–level problems, such as a service outage or an account dispute that leave you locked out.

An alternative is to back up across cloud providers. For example, if you are using a hybrid cloud, you could back up public cloud data to your private cloud and vice versa. Alternatively, you could work with multiple cloud providers and store backups from one provider on the storage provided by another. Working with multiple providers can help to mitigate the risk of disruptions to cloud services, but it introduces the need to implement data protection services across multiple providers.

Integrating Cloud Backups with a Unified Platform

A unified backup platform can address many of the challenges and opportunities that come with cloud computing. Policy-driven backups, for example, can be designed according to business requirements and applied to in-house and cloud-based storage. With a unified platform, you could target backups for storage where it makes the most sense: local disk, tape, or cloud storage. A unified platform could also help to mitigate some of the overhead of working with multiple clouds by providing a single point of access and management for backup administrators. A unified backup platform would also benefit disaster recovery operations because multiple platforms could be restored to a disaster recovery site, or the cloud, from a single application.

As more businesses and individuals turn to mobile devices for work and personal use, the cloud is becoming a useful mechanism for multi-device access to data. Mobile devices can also be backed up to the cloud. Consider if employees were to replicate business data from their mobile devices to a cloud storage system. That storage system could then be backed up by the unified backup solution, allowing a business to protect the data on the mobile devices.

Summary

The cloud presents both opportunities and challenges for data protection. Cloud storage might be an effective option for enterprises looking to reduce the amount of disk storage they maintain onsite or to eliminate the need for physically transferring tapes offsite. When you use the cloud to host applications, you are putting your data in the cloud as well. A unified backup platform can streamline backup across multiple platforms, including the cloud, and help to bring sound data protection practices to all enterprise data.

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