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Cloud Storage: 7 Services Creating Opportunities for Channel

Cloud providers offer a wealth of storage services that partners can wrap business services around to mine valuable business information for customers.

By Kurt Marko for Channel Partners Online

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About the Author

KURT MARKO is an IT industry analyst, consultant and regular contributor to a number of technology publications, pursuing his passion for communications after a varied career that has spanned virtually the entire high-tech food chain from chips to systems. Upon graduating from Stanford University with bachelor's and master's degrees in electrical engineering, Marko spent several years as a semiconductor device physicist, doing process design, modeling and testing. He then joined AT&T Bell Laboratories as a memory chip designer and CAD and simulation developer. Moving to Hewlett-Packard, he started in the laser printer R&D lab doing electrophotography development, for which he earned a patent, but his love of computers eventually led him to join HP's nascent technical IT group. Marko spent 15 years as an IT engineer and was a lead architect for several enterprisewide infrastructure projects at HP, including the Windows domain infrastructure, remote access service, Exchange email infrastructure and managed web services.

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Cloud Storage: 7 Services Creating Opportunities for Channel

D ata has been called "the world's most valuable resource" and "the new oil," which explains why the largest cloud services are in a perpetual arms race to deliver new, massively scalable storage services, while simultaneously reducing prices and simplifying the migration of enterprise data repositories to their platforms. With object storage costing pennies per gigabyte per month and long-term archival services like AWS Glacier costing even less, it's easy to see why organizations turn to the cloud for storage-centric use cases. However, commodifying the services and continuing to cut service rates leave partners and other MSPs in a quandary, wondering whether there's any money to be made in value-added services.

We think there is, and in this update on the state of cloud storage, we'll explain why and where.

The fundamental reason partners can't write off cloud storage is the same as the rationale for their other offerings: Someone needs to turn the raw material of cloud infrastructure into refined, usable business services. If data is the new oil, then cloud storage is the new tank farm, the repository for raw material. Just as oil still needs to be refined into usable products, enterprise data must be processed, managed and categorized before it's usable by business applications. Partners can play the role of data refinery to help their customers turn cloud storage into valuable, curated, secured business information.

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The Cloud Storage Landscape

Cloud storage is a mix of raw infrastructure, network filers and structured data services, which we categorize in the chart at right.

Cloud storage services continue to evolve with more specialized products. While portfolios were once limited to object and block storage, the major providers now offer storage services for every need. Indeed, Amazon now offers storage migration products like Snowball and Snowball Edge that combine hardware and software to facilitate the bulk movement of hundred terabyte or larger datasets to the cloud.

The table on Page 7 summarizes the products in each category available from the three largest cloud providers. Other large infrastructure-as-a-service (IaaS) vendors have similar offerings, which give partners ample options when choosing cloud providers for their storage-centric managed services.

With each cloud provider having nearly a dozen different storage and database products, cloud customers can easily get confused trying to determine the best fit for a particular application or use case. Herein lies an opportunity for partners to wrap valuable business services around the raw material provided by the various cloud storage offerings.

Service category	Properties and features	Usage
Object storage	A non-hierarchical format, i.e., without a directory tree, in which storage elements are managed as individual data objects, not part of a file or database. Objects consist of a unique identifier along with associated metadata like creation date, ownership and content tags used for indexing, management and security. Object storage eliminates the need to manage logical volumes or directory trees and is the most scalable, flexible and highly available storage type.	Cloud-native application storage, particularly systems that don't require high IOPS. Unstructured data, and data lakes for analytics systems. Also useful for data archives, including cold storage, WORM and DR systems.
Block volumes	A virtual hard drive that acts like a physical or SAN-attached block-level device that can be formatted, partitioned and mounted to a virtual compute instance or attached to a database. Their redundant hardware implementation means that cloud block services are far more reliable (AWS claims 20x) than a typical disk.	Applications requiring low-latency, high IOPS data access. Also, legacy software not designed for the cloud such as ERP or financial management systems. Block volumes can also be used as part of a BC/DR solution that clones on-premises systems to the cloud.
File storage	A cloud NAS that provides a file system and standard network file interface like NFS or SMB (CIFS). Like a NAS array, file services can be mounted to the file systems of a Linux or Windows compute instance.	File-based enterprise applications such as collaboration or content management systems, media processing, hosted software development environments and user home directories for VDI.
Databases	Includes a variety of SQL, noSQL, caching and data warehouse applications delivered as managed, on-demand services.	Replacement for on-premises RDBMS and noSQL servers with support for popular implementations including Oracle, SQL Server and Postgres SQL.
Archival storage	A form of object storage designed for long-term retention that delivers very high durability and security at much lower cost than standard object storage services. Intended for cold storage, archival services typically have slow access times and are designed for bulk retrievals.	Long-term data retention, often done to meet regulatory requirements. Archival services can be used to replace on-premises tape libraries.

Partner Service Opportunities

Storage, whether on-premises or in the cloud, is a secondary resource or service, something that is required to deliver a more valuable, primary function. When it comes to delivering raw IT infrastructure such as storage or standard databases, the scale, security, reliability and service variety of the hyperscale cloud providers are impossible to beat. Thus, the business opportunity for partners centers on exploiting the cloud vendors' expertise by incorporating their storage services into managed business services. There are many storage-centric applications. However, we feel the following are the categories with the broadest customer needs.

Service category	AWS	Azure	Google Cloud
Object storage	S3 (Simple Storage Service)	Azure Blobs	Cloud Storage
Block volumes	EBS (Elastic Block Store)	Azure Disk	Persistent Disk
File storage	EFS (Elastic File System)	Azure Files	Cloud Filestore (beta)
Databases	• RDS (conventional relational DB), • Aurora (proprietary RDMS) • DynamoDB (noSQL) • ElastiCache (caching) • Redshift (data warehouse)	• Azure SQL (SQL Server) • Azure Database (Postgres, MySQL) • Azure Tables (noSQL) • Azure Cache • Azure Table (key-value store) • Cosmos DB (globally distributed noSQL)	• Cloud SQL (Postgres, MySQL) • Cloud Bigtable (NoSQL) • Cloud Datastore (NoSQL) • Cloud Memorystore (caching) • Cloud Spanner (globally relational SQL)
Archival storage	Glacier	Azure Archive	Cloud Storage Nearline and Coldline

1. Data Backup and Recovery

The cloud has long been a popular destination for backup data due to its inherent reliability, data durability, geographic diversification and yes, security. Regularly lowered rates for both nearline and offline services make the cloud even more enticing. For example, archiving 50TB to AWS Glacier costs $200 per month, and every terabyte retrieved costs $10 or, using a cheaper bulk transfer service, $125 for the entire 50TB archive. However, the downside of using Glacier or one of the other cloud object stores is the need to interact with them via APIs, not through network file shares or a conventional disk interface.

While some backup applications support cloud services as a target, they require the cloud infrastructure to be set up and managed independently. The interplay between cloud infrastructure and backup software is an area where partners can add value by wrapping a managed backup service around the various technology components. The task is made easier by a category of cloud-aware backup titles from companies such as Druva, Unitrends, Veeam and others that can write to AWS, Azure and other cloud services. These products can also automate storage tiering policies to use faster, more expensive cloud services for nearline data and slower, cheaper options for archival cold storage.

2. Long-Term Data Archive and Regulatory Compliance

The line between backup and data management software has blurred, with many of the previously mentioned cloud-capable titles also adding more

sophisticated archival features that provide data deduplication and enforce information retention, target replication and access security policies. As data retention and privacy regulations become more stringent and onerous, the implementation of automated archival policies becomes crucial to an organization's IT operations. The combination of negative business consequences for doing it wrong and the complexity of doing it right means that providing managed data archive and compliance services is a ripe opportunity for partners.

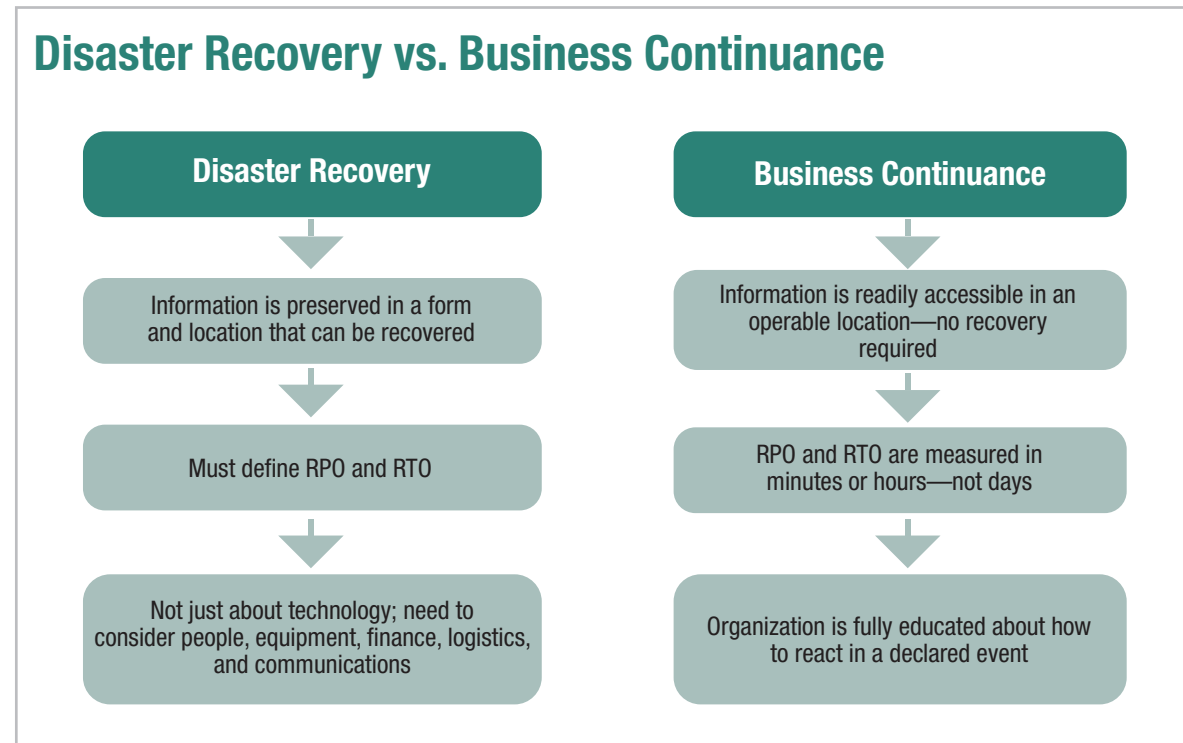## 3. Application Disaster Recovery and Business Continuity

Data backup and disaster recovery are two sides of the same coin, since the whole point of copying data to a remote location is to provide a ready replica should the original be destroyed, whether by a fat-fingered mishap or a natural disaster. DR is a more complex process however, since it requires a mix of technology and process that caps the data loss within a known parameter (RPO) and offers foolproof restoration within a set amount of time (RTO).

Business continuity adds another layer of complexity by using one of the backup locations as a secondary operating site should the primary site be lost, with the ability to rapidly fail over and back when the primary site is restored. Once again, these are processes best automated in software, often provided by the backup vendors mentioned above, along with DR specialists such as Datto, SolarWinds, Zerto and others.

4. Data Lakes for Cloud-Based Analytics Applications

The mega cloud providers have the scale and technical sophistication to develop and operate extremely complicated data analytics systems that require a multitude of subsystems and dependencies. These provide a significant competitive advantage to the businesses using them to mine customer, transaction and machine log data to inform decisions, detect fraud, hone product and marketing plans, and improve security. Unfortunately, the cost and complexity of implementing such data platforms put them

Disaster Recovery vs. Business Continuance

Disaster Recovery	Business Continuance
Information is preserved in a form and location that can be recovered	Information is readily accessible in an operable location—no recovery required
Must define RPO and RTO	RPO and RTO are measured in minutes or hours—not days
Not just about technology; need to consider people, equipment, finance, logistics, and communications	Organization is fully educated about how to react in a declared event

Source: Olafe

out of reach of many organizations, that is, until cloud services democratized access to the raw technology. The opportunity for partners is in building services that package the data transfer from on-premises or other remote sources to the cloud and its subsequent filtering, transformation and storage into data lakes that feed cloud-based analytics applications.

5. Software Development and Test Environments

Cloud instances entered many enterprises as targets for development and test systems. However, many DevOps teams now use the cloud for their entire software development environments, including to power automated tool chains, host developer workstations and code/application image repositories. Partners with expertise in the needs of developers can build services around the variety of cloud storage offerings and developer tools. These allow partners to deliver ready-to-use environments that provide a range of automation tools that are particularly useful for organizations using continuous integration and delivery processes.

6. Information Sharing and Collaboration

Cloud file sharing services are ubiquitous and have replaced email and physical media as the platform of choice for sharing documents and rich media. While SaaS products like Dropbox are easy to use, many organizations want to integrate file sharing with other document-centric business processes. Services like Box, Google Drive and Office 365 deliver APIs and software development kits (SDKs) that provide the hooks for using cloud file sharing as a back-end service and storage platform for complex workflows. These can be used alone or with raw storage services like S3.

However, they require custom development and assembly, meaning that they aren't do-it-yourself activities for most organizations. The market is ripe for partners that can build custom systems that integrate cloud IaaS and SaaS products with a customer's on-premises systems and data repositories.

7. IoT Data Collection, Filtering and Analysis

Smart, connected devices are being used in every industry to improve manufacturing processes, predict problems and proactively fix equipment, track inventory and equipment, record customer behavior, and control HVAC and physical security systems. Each of these devices spews a steady stream of data that, while useful in isolation, is extremely powerful when aggregated and analyzed en masse. Cloud services are well-suited to Internet of Things (IoT) data collection and analysis, since they combine a large portfolio of storage and data streaming products with database and analytics services. Building a multitier IoT data storage and analysis system is another complicated task where partners can provide significant value by packaging the right cloud services with their custom-developed automation tools into IoT products.

> **Cloud services are well-suited to Internet of Things data collection and analysis, since they combine a large portfolio of storage and data streaming products with database and analytics services.**

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Recommendation and Starting Points

As with any new product portfolio, partners building services on cloud storage and database offerings should start with the basics and add sophistication as they gain expertise. In storage-centric services, this means starting with backup and archiving before working into disaster recovery and business continuity. Those with cloud-savvy software development personnel will find ample demand for custom services that integrate multiple cloud products into systems solving particular business problems. The key to success is not spreading these precious resources thin, but instead to focus on the areas where existing customers have expressed a pressing need or that target particular industries or market verticals where you have unique expertise.

Think of cloud storage now as a rich palette of services on demand that can be mixed into compelling business systems that solve business problems that enrich your customers.

Industrial IoT Applications
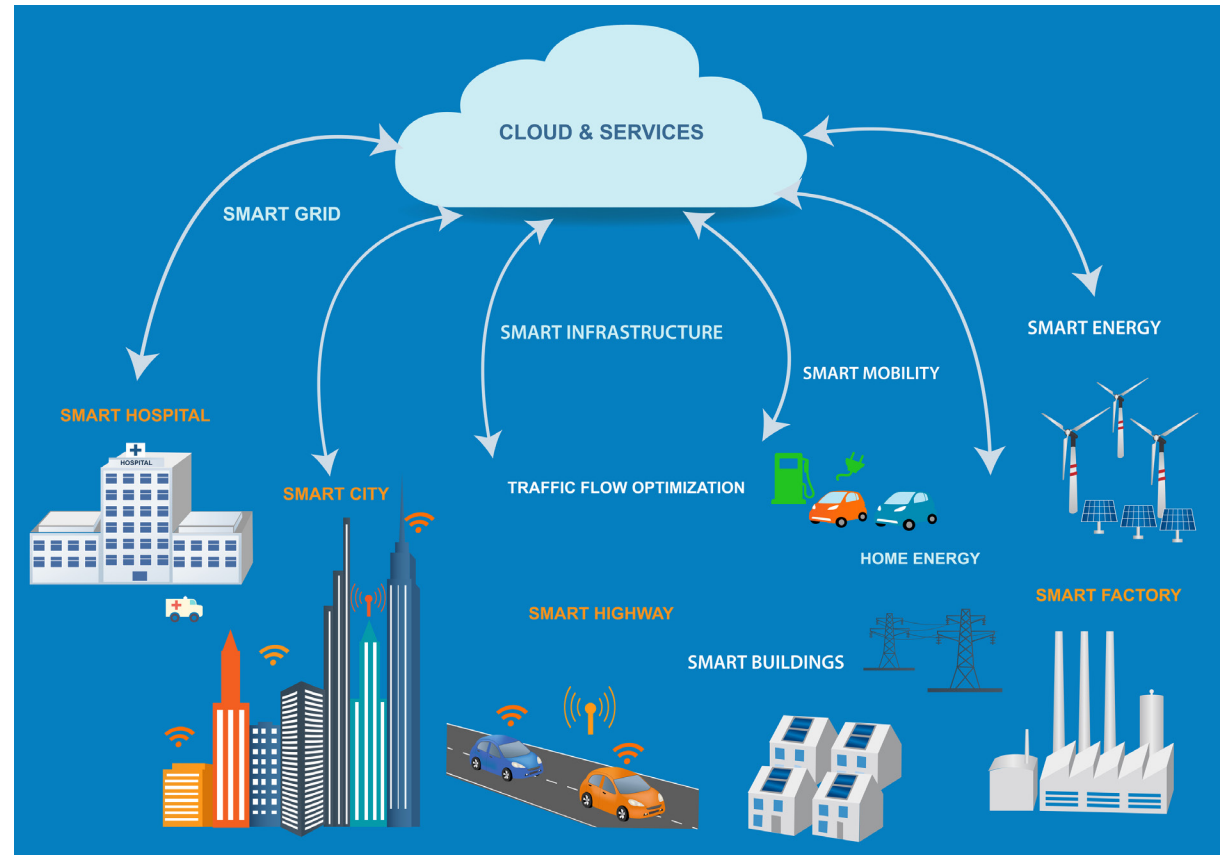
Source: Delkin Devices

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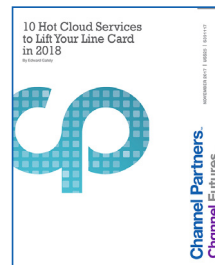
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