Using the cloud to improve business resilience

Choose the right managed services provider to limit reputational risk

IBM

Introduction

Organizations today use cloud computing in ever more innovative ways: to run mission-critical production workloads, to analyze big data for true business insight, to develop and manage mobile applications. All this is vital. But none of it means anything if a disruption or outage shuts down a business.

A few years ago, organizations could feel satisfied with recovery time objectives of several hours. Now, any outage can be reported on social media within minutes, damaging brand reputation and affecting an organization's bottom line.[1] Because availability and resiliency have never been more critical, and because cloud computing can dramatically reduce recovery point objectives (RPOs) and recovery time objectives (RTOs), resiliency improvement is often the first, best use of cloud technologies.

But designing, building and deploying cloud resiliency solutions in-house is a challenging process, demanding significant capital expenditures, proven methodologies, specialized skills and tools, and the time to continually examine and revamp cloud solutions to keep pace with evolving threats. Because of these hurdles, many organizations prefer to work with a trusted third-party technology provider for the development and management of their cloud resiliency solutions. However, finding the right provider can itself be difficult.
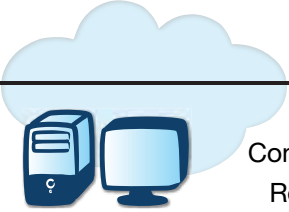
Read the rest of this paper to learn more about what cloud computing can do to improve your organization's availability and resiliency operations, and how to choose a third-party provider for managed cloud services.

Why cloud resilience?

Cloud computing can improve availability and resiliency by speeding and easing the restoration of servers, applications and data. It can also improve the security of data and applications while helping organizations control resiliency costs.

Today's data centers typically consist of a mix of physical and virtualized servers and applications, along with a mix of operating systems and hardware. These heterogeneous environments can be particularly difficult to restore. For example, the architecture needed for the restoration of an entirely virtualized environment is in itself difficult to design, engineer, implement and manage. These challenges are heightened, sometimes becoming impossible to meet, when trying to recover data and applications running in a mixed physical and virtual environment, on hardware from a variety of manufacturers running a variety of operating systems. Traditional backup methods for these types of environments often take too long and carry a significant risk of restoration failures.

Managed cloud solutions that incorporate the latest virtualization technologies can help an organization more quickly and accurately recover servers, applications and data. By eliminating many of the complex, manual steps required by traditional recovery solutions, managed cloud solutions can help organizations bring workloads back online within minutes after an outage, with disk volumes and data that are only seconds old at the time of the outage. This is a significant improvement over traditional, tape-based recovery solutions (see Figure 1). In IBM's experience supporting clients, best-case time for full recovery from tape backup typically runs about 20 hours. In worst-case scenarios, backup can take up to 80 hours.

	Requirements	From traditional	To cloud
System and data availability	On-boarding	Complex	Straightforward
	Continuity and reliability	Variable	Assured
	Release management	Weeks-months	Minutes-hours
System and data recovery	Time to recovery	Days	Minutes-hours
	Self-service administration	None	Unlimited
	Travel requirements	High	None
System and data backup	Capital expenditure	High	Low
	Provisioning/scalability	Fixed	Granular
	Cost	Unpredictable	Predictable
Data virtualization	Document accessibility	Stored in silos	Common repository
	Document retrieval	Hours or days	Minutes
	Storage costs, multiple copies	Increasing	Managed, single copy

Source: Based on IBM and client experience

Figure 1: As illustrated here, cloud resiliency can improve over traditional resiliency and recovery operations in several key ways. For example, cloud computing can reduce recovery times from days to hours, while reducing capital expenditures.

Of course, the systems, applications and information backed up to the cloud must be secure. Encryption tools and technologies, such as those required by organizations working in the banking industry, can be used in a managed virtual or managed private cloud deployment to protect both the cloud itself and the virtual private networks via which information is transferred to the cloud from the organization's data center. For shared multitenant deployment models—models in which a business's cloud is hosted in a third-party service provider's data center, on a platform that is shared by other organizations—these same technologies can be augmented with tools that isolate organizations sharing the cloud.

Finally, many organizations find that they save money by using managed cloud resiliency solutions. Typically, cloud solutions are offered on a "pay as you go" pricing model, requiring organizations to pay only for the capacity and services needed. This billing model can control resiliency costs while helping organizations more easily scale resiliency solutions as necessary to accommodate growth.

What to look for in a managed cloud services provider

In a crowded cloud marketplace offering everything from bare-bones cloud infrastructures with little or no support to highly secure enterprise-level private clouds, organizations can sometimes find it hard to know what to look for in a managed cloud services provider. IBM suggests choosing a technology provider with acknowledged expertise in strategic visioning and cloud migration, along with the ability to provide a flexible, secure, enterprise-class cloud infrastructure. The provider should be dexterous enough to handle the client's operating system of choice (UNIX, Windows, Linux and others) and to easily mesh cloud and non-cloud environments. The provider should deploy analytics and automation as appropriate to bulk-migrate simple workloads, while offering high-touch services to migrate more difficult applications.

Deployment models are important, and the technology provider should offer a variety of cloud models, including private (dedicated), shared (multitenant) or a hybrid model which merges traditional IT with private or public cloud infrastructures. The technology provider should also provide tiered service levels, so that recovery time—and the cost of the services—can be selected based on the tolerance for downtime of a particular application or data set. Service level agreements should align with the client's specific business and usage requirements and cover levels of support, performance and security needed.

Since many organizations will also need help once the cloud environment is up and running, IBM believes it is best to choose a technology provider that offers cloud management services. Ideally, the provider can also offer alternate solutions—traditional server environment management services, as an example—for those computing challenges that cannot be solved by cloud.

What IBM offers

Managed cloud services offered by IBM have been developed to meet the standards discussed above. **IBM High Availability Services for Resilient Infrastructure** offers an end-to-end approach to improving availability. IBM begins this service by conducting a comprehensive assessment of an organization's availability environment. IBM then develops and implements a tailored, cloud-based availability solution to meet the organization's business objectives. IBM assigns an availability manager to oversee availability operations and provides service level agreements for multiple availability levels.

IBM Cloud Virtualized Server Recovery (VSR) is designed for organizations that need faster, more reliable and more affordable recovery of their IT infrastructures. VSR provides industry-leading failover and failback capabilities, allowing organizations to quickly failover production servers to the IBM cloud. In doing so, this around-the-clock service dramatically improves RTOs and RPOs. VSR can bring workloads back online in minutes after an outage, with disk volumes and data that are only seconds old at the time of the outage. Further, VSR helps recover heterogeneous server environments—

including those with a mix of virtualized and physical servers. Organizations can manage their cloud via a web-based portal that allows them to perform resiliency tests as frequently as required, including whenever the production environment changes. Tiered service levels help organizations strike a balance between performance and economy for different servers and applications.

The ability to quickly recover servers, though, is only part of a resiliency solution. Organizations must also be able to quickly recover applications and data. With **IBM Cloud Application Resiliency**, IBM hosts and manages mission-critical applications—including enterprise resource planning, supply chain management and customer relationship management applications. The service uses IBM best practices and skills to provide dramatically improved RTOs and RPOs for applications. It can also free organizations from the capital outlays and staffing burdens required to hone their application resiliency programs to meet the challenges of today's threat landscape. As with VSR, application resiliency offers tiered service levels, allowing organizations to differentiate applications based on their tolerance for downtime.

What application resiliency does for apps, **IBM Cloud Managed Backup** does for data. This service offers data protection solutions for organizations that need cross-enterprise information resiliency and data recovery. Cloud Managed Backup is a security-rich and highly scalable solution that helps organizations simplify backup with automated and standardized tools and processes that consolidate dispersed information onto a single cloud infrastructure. Solutions can be tailored to meet backup priorities and retention, retrieval and security goals.

A closely related offering is **IBM Cloud Data Virtualization**. This service enhances data protection by using cloud and snapshot technologies to provide virtually instant recovery of critical data without generating multiple copies of it. One data copy can be used for data backup, data and application recovery, server replication, analytics, development and testing, and many other use cases. Available on a pay-as-you-go basis on your premises or an IBM recovery center, the service can also help save network bandwidth, decrease application lags and lessen dependence on tape for backup and recovery.

Why IBM?

The threat of business disruption is forever present, as is the harm these outages can do to a business and its reputation. In fact, according to the IBM Global Study on the Economic Impact of IT Risk, an outage of less than 20 minutes can cost an organization more than US$1 million. A major disruption, one lasting seven hours or more, typically costs more than US$14.2 million.[2] The bulk of these costs—more than 75 percent—come from damage done to the business itself: from lost productivity, lost revenue and damage to business reputation and brand image. Only about 25 percent can be attributed to technical costs, such as forensics and IT support.

Only by designing, developing and implementing a business resiliency plan that will safeguard data, applications, and IT systems can organizations obtain the near-constant availability and near-zero RTOs and RPOs needed to conquer the challenges presented by today's threat landscape. But many organizations will need outside help implementing cloud-based business resiliency solutions.

IBM has more than 50 years' experience in business continuity and resilience. Our 1,800 resiliency professionals currently serve more than 9,000 business resiliency and continuity clients worldwide and have completed more than five million backups. Very few organizations operating in the continuity and resiliency field can match this track record.

Our portfolio of cloud-based availability and resiliency services combines deep expertise with cutting-edge technological innovation to protect and recover data, applications and infrastructures. Our cloud services can provide the type of resiliency solutions needed to provide near-constant availability, protecting an organization and its reputation in the process. And should a business ever need it, our cloud portfolio also offers the type of data analytics, social media services and mobility services that that can help you not just protect your business, but expand it.

For more information

To learn more about using the cloud to improve business resilience, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:

ibm.com/services/continuity

[1,2] *Understanding the economics of IT risk and reputation—Implications of the IBM Global Study on the economic impact of IT risk*, IBM, 2013.

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