



Business Continuity and Disaster Recovery in the Cloud Era

Know Your Options

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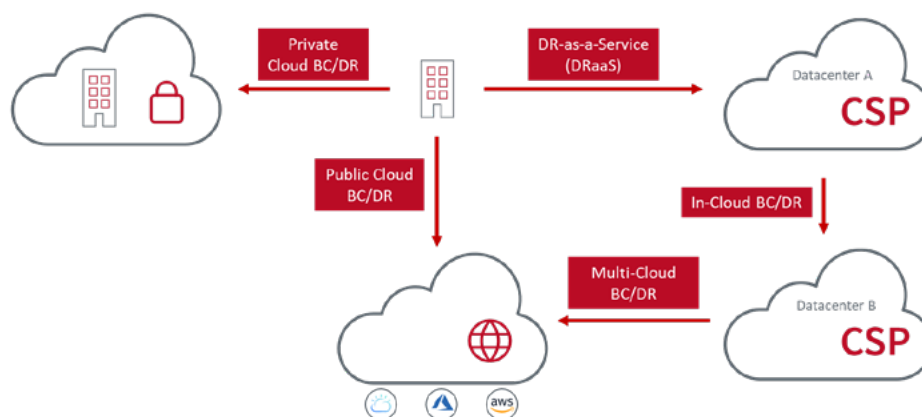


Business Continuity and Disaster Recovery (BC/DR) in the Cloud Era

The benefits of leveraging the cloud and virtualized environments are many, including greater flexibility and scale without incremental hardware costs coupled with agility to increase availability, business continuity and disaster recovery to protect an “always on” customer experience for digital business. Today, enterprises of all sizes have virtualized their mission-critical applications, either within their own datacenters, or with an external cloud provider.

With cloud popularity ever increasing, companies of all sizes are looking for the cloud, be it public, hybrid or private, to become part of their BC/DR solution. However, depending on the tool, these options do not always exist. Virtualization creates the opportunity, but depending on the solution, there can still be a significant technology gap. Mission-critical applications can be effectively virtualized and managed, but if you use the wrong solution for BC/DR, they cannot be effectively protected in a cloud environment.

Zerto is the industry’s first IT Resilience Platform™ that is multi-hypervisor and public cloud capable, protecting applications within the cloud and moving to the cloud, and has become the standard that all others are measured against.



Overview

In this paper, we’ll outline the different types of Cloud BC/DR solutions along with their pros and cons. Then, we’ll discuss how Zerto addresses these challenges and improves upon many of the traditional solutions that leave gaps in cloud-based BC/DR.

Different Forms of Cloud BC/DR

Before we discuss the pros and cons, let’s briefly define the different forms cloud BC/DR can take:

Cloud	Description
Private Cloud BC/DR	Business continuity and disaster recovery between two or more geographically separate sites, with underlying hardware dedicated to the organization and often all under the control of their own IT team.
Public Cloud BC/DR	Business continuity and disaster recovery between one or more sites under the control of the organization’s IT team and one or more public cloud platforms utilized as the recovery site. In this deployment the BC/DR implementation is also managed by the organization’s IT team internally.

Cloud	Description
Disaster Recovery-as-a-Service (DRaaS)	The production environment is within the enterprise's datacenter; however, a cloud service provider is used as the recovery site and replication target.
In-Cloud BC/DR	Production applications have been moved to a public cloud and are protected by the cloud provider with full disaster recovery to another geographical site.
Multi-Cloud BC/DR	Production applications have been moved to a public cloud and are protected with full disaster recovery to another public cloud platform in another geographical region.

Private Cloud BC/DR

Private cloud BC/DR is very much the traditional approach from the early days of virtualization, mainly because the original approach to BC/DR here relied upon storage level replication. This typically required identical hardware on both sides. Because all hardware is dedicated to the organization and often managed by it too, capital expenditure is high and speed to scale is slow, with downsizing environments resulting in the writing off of hardware. Often a recovery site will exist with the sole purpose of being utilized in a disaster scenario only, creating inefficient spending. With this type of environment, IT teams are geared towards keeping the lights on, through management of the datacenters, hardware and networks. This being said, there are some key reasons why private cloud BC/DR still exists. At the top of this list is control. With all hardware dedicated to the organization, absolute control is guaranteed and can be beneficial in scenarios where compliance and regulation are tightly managed. Another important factor to consider is performance. Some applications need huge amounts of resources and being able to align these to specific hardware can help provide the performance guarantees these applications require.

Public Cloud BC/DR

Public cloud BC/DR is something that has seen significant uptake as the popularity of public cloud has grown over the past few years. While in this scenario production remains under the control of the organization, often on-premises and with the same caveats around scale and cost as mentioned previously, it provides some significant advantages too. With deployment in the public cloud, the cost of the recovery site can be drastically reduced, with a dedicated environment no longer required and running for the purposes of recovery in the event of any potential disaster. Instead the benefits of public cloud can be utilized to provide a much more efficient cost for the recovery site. For example, with Zerto only storage is utilized on the target site until a recovery is required, removing the day to day cost of compute. One of the main reasons this solution has seen so much growth is because it has delivered enterprise-class BC/DR to smaller organizations who previously couldn't justify the cost of a dedicated second site. There are, however, other considerations to this model. Control is lost as the underlying platform is managed by the cloud provider meaning outages here are out of your hands, albeit this can be a positive attribute depending on your point of view. Public cloud platforms are also multi-tenanted, so "noisy neighbors" do have the potential to impact the platform. All in all, this is often a very effective first step to cloud adoption for many organizations.

Disaster Recovery-as-a-Service

Disaster Recovery-as-a-Service (DRaaS) allows organizations to host and manage their production environment within their own datacenter but use a cloud service provider (CSP) to deliver BC/DR as a service to a cloud site. This has a lot of the same benefits as the previous model, with pay as you go compute pricing that eliminates the need for capital expenditure and a managed platform, however it also takes it a step further. With DRaaS, CSPs will provide management of the BC/DR solution providing organizations with SLAs around Recovery Point Objectives (RPOs) and

Recovery Time Objectives (RTOs), providing contracted guarantees and removing the overhead of managing this themselves. Because of this there is often a strong working relationship between the CSP and organization, not to mention the fact that most organizations will choose a local CSP in country.

“We offer many DRaaS solutions but were looking for something that protected data at the VM-level and also offered very aggressive service levels. Zerto delivers RPOs of seconds and RTOs of minutes and with continuous data protection built in, our DR solution with Zerto along with our internal team of experts gives us a clear competitive advantage.”

— Dante Orsini, **SVP Business Development, iland**

In-Cloud BC/DR

In-Cloud BC/DR is again an additional step forward from DRaaS. Instead of the organization running and managing their production environment on dedicated hardware in their own datacenter, this too is moved to the cloud providers platform. BC/DR is then provided by protecting production from one of the CSPs datacenters to another geographically distant datacenter. BC/DR is then often fully managed by the CSP, as well as potentially providing management where needed for the organization’s production environment. This then replicates all of the benefits of moving a recovery site to the cloud but applies also for the production site as well. Pay as you go pricing delivers cost efficiencies for production, while the organization’s IT teams can focus more on business innovations rather than the day to day running of a datacenter. In addition, CSPs will be delivering SLAs for the production environment as well as BC/DR, with a close, often personal working relationship.

“One of our core philosophies is that we do not want to pigeonhole customers into a solution. We work with them to understand their business needs fully and then customize an offering for them. Zerto is flexible and agile and can be integrated into any environment without making any significant changes, supporting our ability to deliver an aligned infrastructure for each of our clients.”

— Natalie Stewart, **Product Manager, Node4**

Multi-Cloud BC/DR

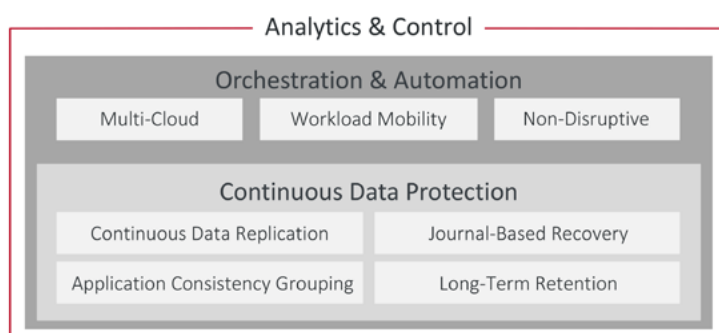
Multi-Cloud BC/DR is a model that has grown in popularity recently for a couple of reasons. First, the key driver has been cloud adoption globally, with more and more organizations taking to the cloud. However, it is not unheard of for an organization to maintain a vendor agnostic approach for resilience reasons when looking at their BC/DR strategy. Essentially rather than taking the in-cloud BC/DR approach, the multi-cloud BC/DR model allows organizations to place their production and recovery site on different cloud platforms. Should an issue ever take one cloud platform provider offline, this solution would still provide the organization the ability to keep on doing business. The other factor driving this approach is the realization that not all cloud platforms suit all applications, some may need greater regulation than others, which not all cloud platforms can meet for example, and so protecting these to different cloud platforms can ensure maximum efficiency.

Zerto Overview

Zerto first introduced hypervisor-based replication in 2011 and revolutionized disaster recovery for VMWare and Microsoft Hyper-V environments. Taking it into the Cloud, Zerto added support for Microsoft Azure, IBM Cloud and Amazon Web Services (AWS). Expanding its vision, Zerto now converges disaster recovery, backup and cloud mobility into a single IT Resilience Platform™. This allows you to replace multiple legacy solutions with a single, simple and scalable platform that delivers a continuous, “always on” customer experience. Simplified workload mobility protects, recovers and moves applications freely across hybrid and multi-cloud environments with over 7,000 customers globally now relying on Zerto’s platform.

Zerto IT Resilience Platform™

Zerto's IT Resilience Platform converges disaster recovery, backup, and workload mobility whether on-premises or to, from and between hybrid and multi-cloud environments. With support for VMware vSphere, Microsoft Hyper-V, Microsoft Azure, AWS, IBM Cloud and over 400 other Cloud Service Providers globally, Zerto's agnostic approach can deliver on any of the above models. Built on a foundation of continuous data protection (CDP) with built-in orchestration and automation capabilities, the platform provides you with simplicity, enterprise scale, and agile data protection to save time, resources and costs. Analytics, with intelligent dashboards and live reports, gives you complete visibility across multi-site and multi-cloud environments and instills confidence that business service levels and compliance requirements are met.



Continuous Data Protection (CDP)

- **Continuous Data Replication** – Zerto delivers recovery point objectives (RPOs) of seconds by replicating every change that is generated in near real-time. Performed at the platform level, this enables continuous capability by removing any production impact, as well as providing a hardware and vendor agnostic approach.
- **Journal-Based Recovery** – All replicated changes are stored in a journal for up to 30 days providing incredible recovery granularity through checkpoints inserted every few seconds. This reduces data loss to just seconds by enabling recovery of files, VMs, applications or entire sites, either to the latest point-in-time or, for example, when the virtual machine (VM) is attacked by a virus or ransomware, to a point-in-time before the attack.
- **Application Consistency** – Today's applications are rarely run on a single VM, but instead most applications have multiple VM dependencies. Traditional methods of protecting VMs individually result in significant challenges to recovering complete applications quickly. Zerto resolves this by using our Virtual Protection Group (VPG) capability. VPGs allow you to protect multiple VMs together in a consistent fashion, ensuring every point in time that is inserted into the Zerto Journal is from the same point in time for all VMs within the VPG. This allows consistent recovery of an entire application, and all its VM dependencies, to a consistent point in time.
- **Long-Term Retention** – Compliance standards often require you to keep, and ultimately recover data, for longer than 30-days. Long-term retention utilizes your existing journal to store data from any point in time for days, weeks, months or even years with no production impact.
- **Scalability** – Zerto simplifies scaling the infrastructure to support disaster recovery. As a new virtual host is added, simply install a new virtual appliance. Although Zerto scales to support very large environments, it provides the same granularity for environments of all sizes, with the same capabilities and no production impact.

Orchestration & Automation

Built in orchestration and automation enables faster management of workloads at scale with minimal touch, allowing IT resources to shift their focus toward innovation and services that help your business run more efficiently.

- Zerto's platform supports your multi-cloud and hybrid cloud strategy, including VMware, Hyper-V, Azure, IBM Cloud, AWS and hundreds of Cloud Service Providers (CSPs).
- All recovery settings are configured up-front, such as boot order and re-IP failover, well before any disaster or other event occurs, thus greatly simplifying the recovery process. In fact, it's so simple, any member of your IT team could perform it in just 3 clicks.
- You can configure different settings for test failovers, ensuring that test failovers/moves can be run at any time with zero impact on production or protection.

Analytics & Control

Zerto Analytics, included in the IT Resilience Platform, provides one single, comprehensive view of your entire multi-site, multi-cloud environment. Built-in intelligent dashboards provide real-time and historical analysis of the health and protection status of your applications and data. Metrics such as average RPO, network performance, and storage consumption, help you spot trends, identify anomalies, and troubleshoot issues. The powerful resource planning capability continuously monitors and analyses compute, storage and network resources across on-premises environments and public, private and hybrid clouds to give you confidence of your resource requirement needs. 'What-if' scenario modelling delivers accurate planning of future storage, compute and network resources. Zerto Analytics helps you make better informed decisions and plans, to achieve an efficient, IT resilient mode of operation.

To learn more, visit the [Zerto for Azure on demand lab](#) or request a [demo](#).

About Zerto

Zerto helps customers accelerate IT transformation by eliminating the risk and complexity of modernization and cloud adoption. By replacing multiple legacy solutions with a single IT Resilience Platform, Zerto is changing the way disaster recovery, data protection and cloud are managed. With enterprise scale, Zerto's software platform delivers continuous availability for an always-on customer experience while simplifying workload mobility to protect, recover and move applications freely across hybrid and multi-clouds. www.zerto.com

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