ZERODOWN
S O F T W A R E

High Availability as a Service for Multi-Cloud Environments

How ZeroDown® Software provides a safe and rapid pathway to cloud adoption with its High Availability solution for multi-cloud

The Business Assurance Challenge

For the past decade, the increasing adoption of scalable, on-demand access to shared computing resources, commonly known as cloud migration, has been the topic grabbing all the headlines. This paradigm shift in consumption models has spawned a whole host of acronyms defining all things IT "as a Service"—SaaS (Software as a Service), PaaS (Platform as a Service), IaaS (Infrastructure as a Service), MaaS (Monitoring as a Service), and XaaS (Anything as a Service) – to name a few. The availability of scalable public cloud ecosystems and enterprise-level IaaS offerings such as Microsoft Azure (Azure), Amazon Web Services (AWS), and Oracle Cloud Infrastructure (OCI), has extended the choice of destinations whether it be public cloud, hosted cloud, or onsite private clouds. For most large organizations, the best option has proven to be a blend of services spread across a mix of on-premises and off-premises cloud environments.

Lost in the buzz and excitement of discovering the most attractive destinations, however, is the below-the-radar question posed by IT organizations everywhere: How can we keep our planes (workloads) flying while arranging their different flight paths to the cloud? How can I migrate to a new cloud environment without disruption to my customers? How can I move my mission critical applications to the cloud? And what assurances do I have of uninterrupted services once I get there? One of the most critical concerns, amidst a sea of changes, is managing business risk. More often than not, the inability to come up with a rapid and watertight plan for essential workloads, keeps planes stranded on the runway, not yet cleared for take-off.

Disaster Recovery as a Service

In an effort to target the business assurance challenge, the IT industry has coined another acronym, DRaaS (Disaster Recovery as a Service), to usher in cloud-based solutions for backup and recovery, real-time replication, and data protection. But before we can begin mapping DR solutions to new cloud implementations, we must acknowledge the fact that many of those in the know remain unconvinced by their existing DR plans even for established flight paths or legacy systems. A recent survey of IT professionals shows this to be a widespread and serious problem impacting small and medium-sized businesses as well as large enterprises[1]:

- 85% were less than confident that their Disaster Recovery plan was complete and tested
- 47% had experienced a failure requiring the use of their HA/DR solution
- Over 75% reported down times of greater than 30 mins
- 39% of IT pros reported losing data after a failure

The financial impacts of downtime are severe with over 10% of the IT pros surveyed estimating losses of $100,000 per hour, and more than 25% estimating losses of up to $50,000 per hour. Cloud migration tends to compound these downtime risks, introducing additional hazards such as outdated system state snapshots, loss of in-flight transactions, human errors, inadequate planning, and other unforeseen outcomes when transitioning to a new IT infrastructure. The need for mitigation measures adds to cycle times. Even a well-defined DR plan, designed to enable rapid recovery of systems in the event of disaster, at best serves to reduce loss of revenues and profits rather than eliminate those losses entirely. Needless to say, the implications of extended delays due to cloud system outages do not bear thinking about. According to a 2018 report, if major cloud providers were to go offline for 3-6 days, US customers would lose $6.9-$14.7B in potential business.[2]

A Better Alternative: High Availability as a Service

When moving to cloud environments, DRaaS does not provide an adequate answer to the challenges of business assurance. ZeroDown's solution uses an entirely different model to ensure application availability and data integrity no matter which platform or platforms are pressed into action. Our patented High Availability as a Service (HAaaS™) technology addresses the cloud's weakest points–migration risk and business continuity–reducing cycle times and ensuring uptime so that revenues and profits are not put at risk. ZeroDown® Software comes in an easy-to-deploy package that provides genuine active-active real-time operations in multiple sites or zones. This makes migration to the cloud a far safer proposition because one or more cloud instances can be rapidly brought online while legacy systems continue to process transactions as usual. Downtime risks due to systems failures or unplanned outages that would typically disrupt applications are virtually eliminated.

How it Works

ZeroDown® Software HA technology enables companies to run applications in an active/active configuration from their environment to a Cloud Service Provider (CSP), or from one cloud instance to another. Rather than replicating processed data from one location to the next, ZeroDown® Software allows the transaction to be processed in the secondary site, maintaining the processing state of the transaction in two (or more) locations at the same time.
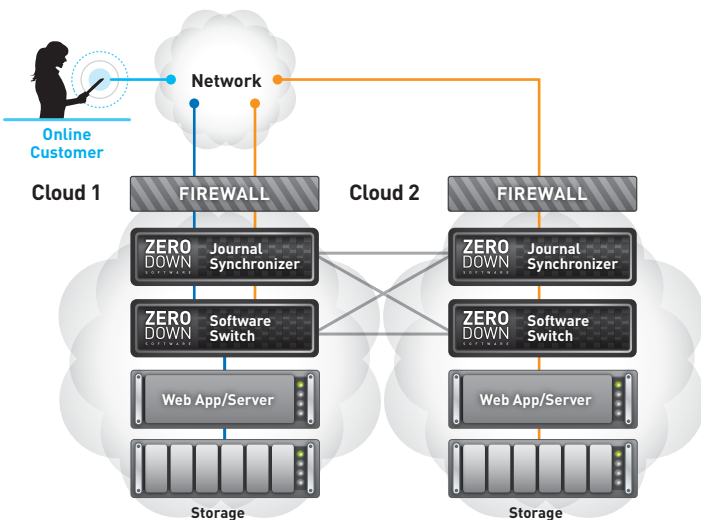
Features and benefits of this unique approach include:

- Enables simultaneous processing of transactions between two app deployments
- Each deployment is a replicated image of the application and backend infrastructure
- Transactions are independently processed at each location providing an active-active infrastructure
- ZeroDown® Software is agentless, focused on application transactions, as opposed to block replication, and can be installed as a Virtual Machine image
- Eliminates loss of in-flight data during migrations
- The software uses a planned and repeatable process
- HA works on multiple cloud platforms (including AWS, Azure, Google, Oracle, and Alibaba)

ZENVAULT MEDICAL

Use Case: ZenVault Medical
→ ZenVaultMedical.com

ZenVault Medical is a Personal Health Records (PHR) portal that allows thousands of consumers to manage their complete personal health-care records online. Its success depends upon availability and security. Use of the cloud is vital to the business model, since no other hosting paradigm offers the flexibility and low cost required. Development of the portal was originally postponed due to doubts about cloud reliability, availability, and safety. ZeroDown® Software has removed those doubts entirely.

The ability of ZeroDown® Software technology to deliver absolute business assurance is now well established. ZenVault Medical was rolled out to the public in September 2010 and has experienced complete business continuity, with no interruption of service, ever since! The BCaaS™ paradigm has enabled ZenVault Medical's cloud-based services to maintain full uptime, even during disasters such as hardware failure, software failure, earthquakes, fires, storms, and cloud outages. If one node, server, or application instance goes offline, the others continue to process. During initial cloud migration, there was no one-time, do-or-die switch to the cloud, where problems with application startup or integration could have knocked the portal offline. The company's in-house Primary network continued to function as usual during the entire process. Ever since then, the service has gone through many maintenance, repair, and upgrade cycles without ever needing to go offline.

"There could be no ZenVault Medical without ZeroDown Software. The cloud gives us flexibility, expandability, and low cost, and ZeroDown adds application uptime and data security. As a business, ZenVault Medical can't survive without that reliability."

Josephine Zhao, Lead Developer and Co-Founder, ZenVault, Inc.

For a demonstration of these always available capabilities within and across different cloud platforms, check out the ZeroDown Video Demo "Business Continuity in a Multi-Cloud Environment":

→ https://youtu.be/YbAo1N4Wy7c

How to Introduce ZeroDown® Software into your environment

When the ZeroDown® Software is installed, it prompts the user to identify the URL for the Source Site (the data center or service provider location) and Target Site (for example, AWS, Microsoft Azure, or OCI). While the application and its data are being migrated, the tool allows the source location (VM or server) to continue operations. Once the application has been migrated to the target system, the ZeroDown software recognizes the availability of services and begins to replay transactions processed at the source location to the target site. This activity fully synchronizes both the source and target environments. The complete end-to-end process is transparent to any online customers who may use the application during the migration exercise, introducing zero downtime or loss of in-flight transactions.

Compare ZeroDown® to the Competition

The big difference between ZeroDown's high availability solution compared with disaster recovery services is that ZeroDown supports active live-live transactions in multiple locations, eliminating the downtime risks typically associated with moving operations and workloads to the Cloud. To understand what a game changing difference that represents, here are some of the leading cloud migration solutions compared with ZeroDown.

Product Features Compare with ZeroDown Software	ZeroDown Software High-Availability for Web Apps/Services	Storage Based Migration AWS, Azure	Hypervisor Migration ASR, Cloud Endure, Racemi, VMware SRM
Eliminates downtime during migration	✔	X	X
App. based High Availability →99.999%	✔	X	X
Guaranteed rapid disaster recovery	Does Not Apply	X	X
Eliminates single points of failure	✔	X	X
Hardware agnostic	✔	?	✔
Protects transactions/data in flight	✔	?	?
Continuous truly synchronous replication	✔	X	?
Eliminates time-sensitive "snapshots"	✔	X	?
Scalability: Zones, Servers, VMs	✔	X	X
Active-Active at any distance	✔	X	X
Software-only solution	✔	X	✔
Transaction-level replication	✔	X	?
Prevents cascading failures	✔	?	?
Low, controlled costs	✔	?	?
Supports Open Source Community	✔	?	X
Agentless	✔	X	X
Supports Containers	✔	?	X
Mixed environment (Multi-Cloud)	✔	X	X

FIND OUT HOW ZERODOWN SOFTWARE WORKS

Visit http://www.ZeroDownSoftware.com for a short tour and downloadable documents that describe in more detail how ZeroDown technology delivers true HA for multiple cloud environments with zero disruption, no data loss, and absolute Business Assurance.

If you are an ISV, MSP, CSP, OEM or cloud provider partner seeking a High Availability solution for your customers' cloud implementations, **Contact us at** Sales@ZeroNines.com

Contact ZeroDown Software Today **Sales@ZeroDownSoftware.com** • **844-ZRO-DOWN**

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