



ZeroDown Software embraces and extends ASR (Azure Site Recovery) to provide failsafe migration to the Cloud

Don't Plan for Downtime during Migration: **Prevent It Instead**

Would you rather plan on downtime during migration or prevent it happening altogether?

ZeroDown software embraces and extends migration to Azure with ASR by providing genuine active-active real-time replication in multiple sites or zones. This new paradigm for mitigating migration risk, enables companies to move applications from their data center or other hosting platforms to Azure with zero downtime. No matter what the scale or extent of operations, applications can be migrated seamlessly, delivering continuous service with no loss of data from in-flight transactions.

The Downtime Risks of Cloud Migration

The benefits of moving data-intensive workloads to the Cloud are reflected in the accelerating pace of cloud adoption by enterprises large and small. Stemming the flow, however, is the need for companies to understand or manage the inherent or perceived risks of protecting or preserving their data when transitioning from one platform to another. With services such as ASR designed to protect critical workloads once they are up and running, many of the toughest customer questions focus on the risks of migration itself:

- How do I manage failures and ensure application uptime during the migration process?
- Can I use site recovery between my existing operations and Azure?
- If a server or VMware VM is corrupted, how can I roll back to a point where there is no corruption?
- How can I avoid loss of data due to time-sensitive "snapshots"?
- What can I do to protect in-flight transactions during cutover?
- How do I synchronize data between zones (regions), servers, and VMs?
- How can I reduce the costs, complexities, and logistics of planning a migration project?

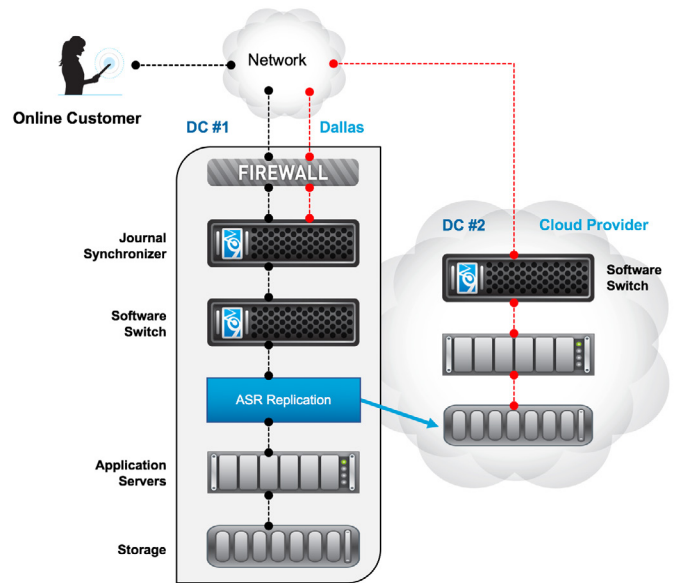
Many providers claim high availability can be almost guaranteed by ensuring servers or VMs at either end of the migration process are replicated to secondary locations. However, the questions about how to keep apps/workloads running during migration itself reveal that this is an incomplete answer to the planned and unplanned outages that may occur while moving critical data and active workloads from one IT infrastructure to another. Data, transactions, and business services all remain highly vulnerable. Even if application migration is successful, downtime can still occur due to equipment failure, data loss, outdated system state "snapshots," loss of in-flight transactions, and other reasons.

ZeroDown does not see data replication, restoration and recovery as a satisfactory answer at all. Our migration solution uses an entirely different model to ensure application availability, data integrity, and continuous service.

ZeroDown: A Completely New Architecture for Managing Migration Risk

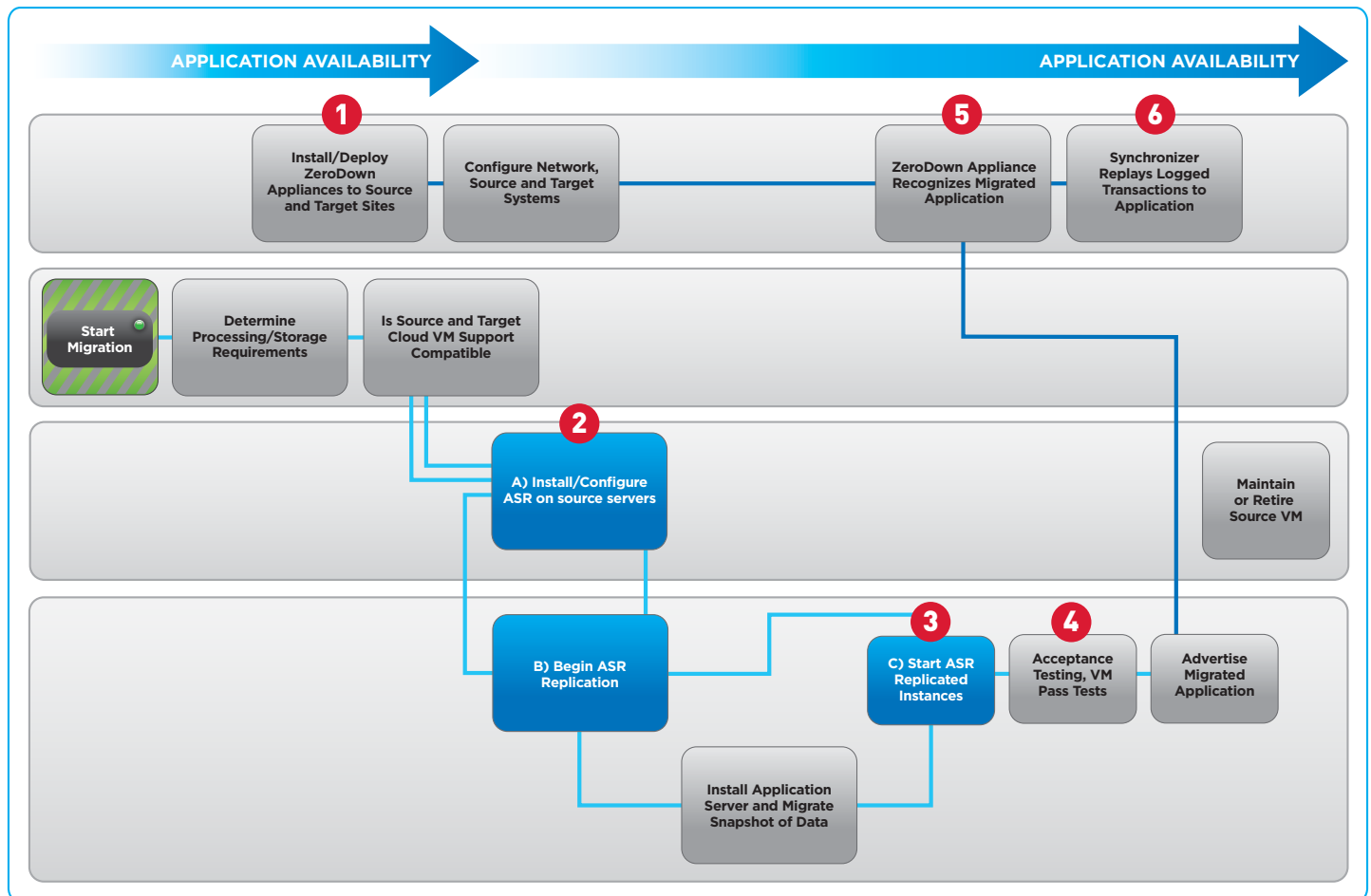
Instead of trying to switch processing on the fly to replicated VMs, ZeroDown simply runs multiple instances of the same VMs, apps, and servers in multiple zones. All are hot, and all are active. They process everything equally and simultaneously in real time. So if one crashes, the others simply continue operating. There is no do-or-die migration, no knife-edge cutover, and most importantly, no downtime. The illustration shows how the ZeroDown application can be easily integrated into dual (or multiple) locations using a lightweight infrastructure and active-active deployment model to span different hosted environments.

To embrace and extend ASR for a secure migration to Azure involves a simple and easy to manage workflow. The ZeroDown software is layered on top of the standard process for site recovery and capacity planning for both the source and target environments. Application availability is maintained at all times.



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 (Azure). While the application and its data are migrated to Azure, the tool allows the source location (VM or server) to continue operations. ASR replication can also be run concurrently. Once the application is migrated to the Azure environment, 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, and introduces no downtime or risk of data loss.



Our active-active migration solution prevents any business downtime, overcoming one of the most costly obstacles to rapid cloud adoption.

Comparing ZeroDown with other Migration Solutions

ZeroDown is different from other migration solutions that fail to eliminate downtime risks associated with moving online applications and data to a new hosting platform. Here's how we look compared to alternative storage-based and hypervisor solutions.

ZeroDown Migration	Storage-based Migration	Hypervisor Migration
<ul style="list-style-type: none"> • Hardware agnostic 	<ul style="list-style-type: none"> • Azure • AWS 	<ul style="list-style-type: none"> • ASR • Cloud Endure • Racemi • VMware SRM
<p>Provides active-active application availability across multiple availability zones, eliminating the need to take customers off-line during migration. It doesn't matter if one VM or an entire server zone fails, because the other zones continue to process everything. The software embraces and extends ASR allowing site replication to occur concurrently. Automatic synchronization of all journal transactions prevents any in-flight losses during migration.</p>	<p>Snapshots of VMs are written to shared storage, for access through a hypervisor on different physical servers in the event of disaster. Drawbacks are that the snapshots are outdated seconds after they are made. If shared storage is lost or damaged, recovery may be difficult and time consuming. During emergency failover, incomplete, latent, or corrupted storage replication may cause lost data and lost transactions. Incompatibility between shared storage devices may complicate configurations and deployment.</p>	<p>Data replication takes place at the hypervisor level, so it is agnostic in regard to storage hardware, vendors, and so forth. Snapshots of VMs and storage are sent periodically to Secondary locations, which means the snapshot is obsolete the moment the next transaction takes place or the data in the Primary changes. During a failover, the system will be reading slightly old data on the Secondary.</p>

Compare ZeroDown with other High Availability and Migration Services

The big difference between ZeroDown and other migration solutions is that ZeroDown does not rely on replication of data from source to target locations while transactions are taking place in the live production environment. To help you compare, 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.co/> for a short tour and downloadable documents that describe in more detail how ZeroDown technology enables high availability and cloud migration in a flash with zero disruption and no data loss.

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ZeroDown™ Software is created by founder Alan Gin and co-founder Keith Fukuhara of ZeroNines Technology Inc., based in Denver, Colorado. ZeroDown's patented Business Continuity as a Service (BCaaS™) architecture provides businesses with continuous access to their company data across multiple platforms, lowering barriers to entry for cloud-based applications and infrastructure by eliminating downtime and lost-in-flight transactions inherent in other cloud migration systems. With this new business continuity solution for hybrid IT and multi-cloud environments, ZeroDown empowers organizations of any size to complete rapid cloud migration using easy to

manage, instantly deployable software. ZeroDown's technology leverages and maximizes customers' current processing and storage infrastructure by operating agnostically across multiple platforms, thereby shifting the paradigm to true multi-cloud with one-click, containerized migration and deployment. 70917

Contact ZeroDown today to find out how your business can be Always Available!