



Reflecting on the most significant IT trends for 2018 and beyond, the aphorism “a rising tide lifts all boats” has never been more applicable to describe the rapid elevation of IT operations to the cloud. Opportunities abound. While businesses across the board are benefiting from increased agility and scalability and new ways to cut their data storage and infrastructure costs, Independent Service Vendors (ISVs), Cloud Service Providers (CSPs) and OEMs continue to roll out products and services apace to fuel and future-proof investments. Top line growth indicators are good. Microsoft’s public cloud platform, Azure, recently reported close to triple digit annual growth. Meanwhile, Azure Stack, Microsoft’s hybrid cloud platform that allows users to deliver Azure services from their organization’s datacenter, is ready for primetime. According to a CIO survey commissioned by Piper Jaffray, “an incredible 72% of Azure customers see themselves deploying workloads in Azure Stack over the next three years”.

That makes it sound like a tidal wave is now underway. But all is not blue skies and plain sailing...just yet. Far from it in fact. An inquiry into most businesses, large and small, reveals that, in the galleys below deck, digital transformation is not occurring as rapidly or as smoothly as the numbers might indicate. At ZeroDown® Software, we empower organizations of any size to complete rapid migration to the cloud and have learned from experience that, while there is undoubtedly broad agreement on the vision, there remains little consensus as to how and when the shift to a cloud-based business model can be executed or at what scale. Moving workloads and data from one infrastructure to another is a significant logistical challenge requiring new skills and capabilities. It also involves **risk**. When engaging with business leaders and IT organizations around the globe on Azure Stack deployments, we meet with the same questions everywhere: how can I migrate without disruption to my customers? How can I reduce the business risk of moving business critical applications to the cloud? And what assurances do I have of uninterrupted services once I get there?

If you are an ISV, MSP, CSP, Microsoft OEM or Partner with customers asking similar questions of you, then read on to find out more about how **HA for Azure Stack** provides a safety net for migration and beyond. This is where things start to get technical. But first, a brief overview of ZeroDown Software, our background and relationships with Microsoft.

What ZeroDown® Software Does

ZeroDown® Software enables customers to migrate to Azure and Azure Stack with zero downtime, protecting their operations from outages throughout their cloud journey. Our patented technology eliminates the downtime risks inherent in typical migration solutions and provides an end-to-end solution to run/operate customers’ critical apps in hybrid and multi-cloud environments. Our approach makes sense for any businesses who rely on software applications to serve their customers, manage operations, and communicate, and who cannot tolerate the high costs and severe business impacts of downtime.

When partnering with us, you will be able to leverage not only our tools and technologies to help drive migration and cloud adoption, but also our long-standing relationship with Microsoft: ZeroDown® Software is an Azure Stack Technology Partner; EAI Partner; Co-Sell Ready (on the OCP and Partner Sales Connect portals); and a select ISV P2P Pilot Charter Member. Our Business Continuity as a Service (BCaaS™) software offering in the Azure Marketplace is available for Azure and for syndication on Azure Stack. Since we do not sell directly to customers, we are seeking to grow and establish partnerships with best-of-breed Systems Integrators and Microsoft partners who are ready to capitalize on the cloud market opportunity that is here today.

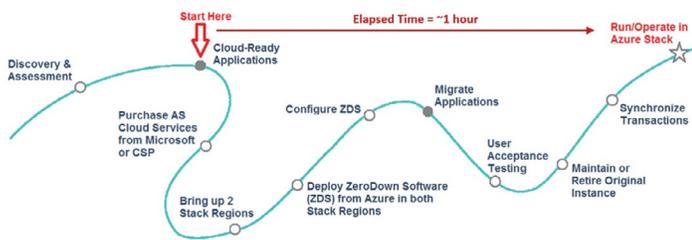
*72% of Azure customers see themselves
deploying workloads in Azure Stack
over the next three years.*

CIO survey, Piper Jaffrey

HA for Azure Stack Solution

Many companies, who have recognized the need to run secure and consistent services using cloud functionality for modern applications, have already installed Azure Stack in their data centers. Once the pipes are in place, it then becomes a matter of prioritizing workloads and enabling them to flow through the system. For this phase to be more than an exercise or proof of concept, things have to be ready to move from development to production, ideally with no noticeable user impacts. This is where delays can suddenly rear their head in the shape of organizational or IT disruption, taking systems and customers offline, and loss of business continuity (with no fallback). To overcome such obstacles, this is also where HA for Azure Stack can also enter the picture shortening application cycle times from a matter of weeks or months to failsafe migration in less than a day. In terms of the customer's cloud journey, HA for Azure Stack paves the last mile of a secure and rapid pathway to the cloud.

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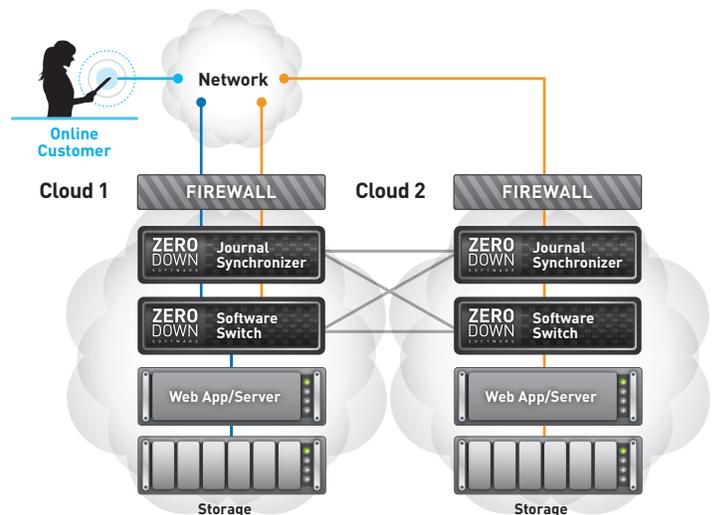


While the business application and its data are being migrated, ZeroDown® Software (ZDS) allows the source location (VM, container, or server) to continue operations. Once an app has been migrated, ZDS recognizes the availability of services and automatically begins to replay transactions processed at the Source site to the Target site. This activity fully synchronizes the source and target environments. The complete end-to-end process is transparent to any online customer who may be using the application during the migration, with zero downtime and zero loss of in-flight transactions.

Our approach makes sense for any business who cannot tolerate the high costs and severe business impacts of downtime.

How it Works

What makes HA for Azure Stack distinct from other solutions is our patented technology, designed to minimize the risk of data lost in flight. ZeroDown Software enables companies to run applications in an active/active configuration from their environment to a Cloud Service Provider (CSP), from one cloud to another, or from one Azure Stack stamp 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:

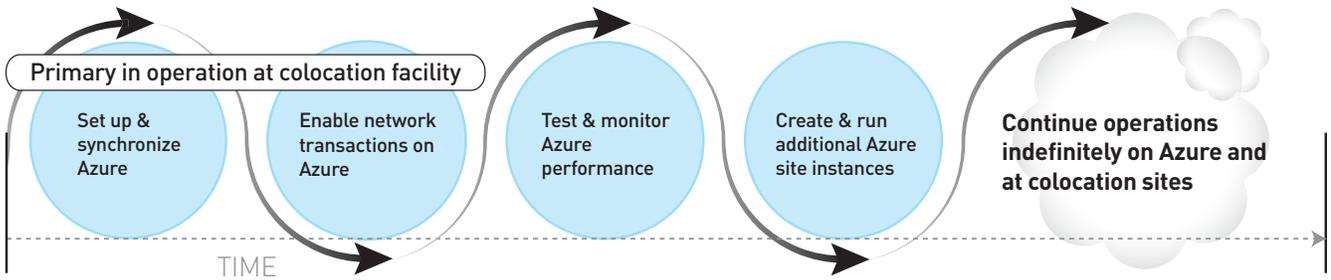
- Enables simultaneous processing of transactions between two app deployments
- Each deployment is a replicated image of the application and backend infrastructure
- Transactions are independently processed at each location providing an active-active infrastructure
- ZeroDown® Software is agentless, focused on application transactions, as opposed to block replication, can be installed in Azure as a Virtual Machine image
- The software uses a planned and repeatable process

Use Cases and Benefits

An essential benefit of partnering with ZeroDown® Software on cloud migration and modernization for your clients, is that we create 1+1=3 cloud solutions for your customers. We embrace and extend Microsoft and partner tools, technologies and methodologies to deploy modern cloud-based applications. See some examples below.

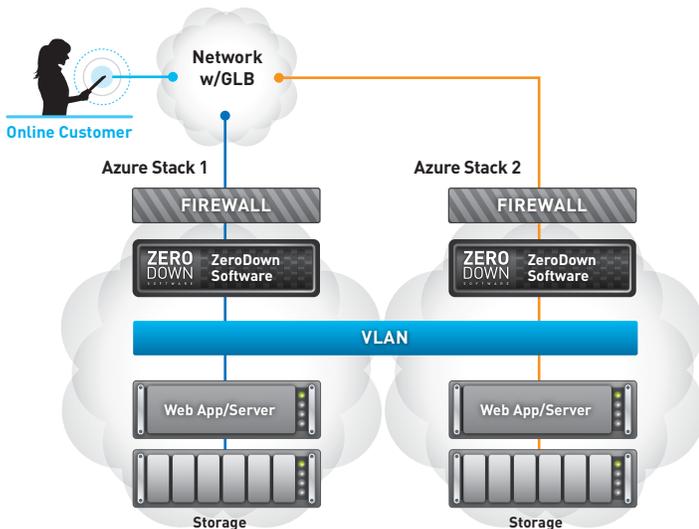
Azure Stack Consumption and Adoption

ZeroDown® Software offers easy and safe cloud migration leading to uninterrupted run/operate on Azure Stack. We use a scalable and repeatable methodology that dramatically reduces the cycle times that are typically associated with application migration.



Bypass Lift and Shift

When moving existing VM workloads to an Azure Stack virtual machine, ZeroDown® Software enables you to dispense entirely with the pain and delay of developing a migration using lift and shift scenarios. If the current architecture has, as is typical, already deployed WebServices, then you can move to Azure Stack in a hybrid fashion.



By deploying AppServices to one or more Azure Stack stamps you can scale up and/or provision more high availability protection whenever this is needed. The third or fourth nodes could be either another Azure Stack stamp or, for a hybrid operation and set up,

an Azure cloud. For businesses who are looking to accelerate digital transformation and enable new development methodologies for continuous integration and deployment (CI/CD) a PaaS-based application architecture can also be deployed.

App Modernization

When it comes to deploying modern cloud-based applications, we have partners utilizing our software through container orchestration technology such as Swarm or Kubernetes to create a set of microservices. We also work with application modernization partners as part of a hybrid cloud configuration, enabling HA features at the application layer.

Data Sovereignty and Multi-cloud

Another experience that partners have is that their clients are asking and soliciting HA services, whereby they can utilize cloud platforms (whether it be AWS, Azure, Azure Stack, Google, Oracle, or Alibaba) as an alternative location to their own. For this type of scenario, we are currently working with service providers that are deploying cloud services in their prospective countries, restricted by data sovereignty concerns with public clouds. In cases such as these, where data sovereignty concerns are primary, the client's definition of hybrid cloud revolves around extending operations from their premises to the cloud service offering and not beyond.

Compare ZeroDown with other Migration Solutions

The big difference between ZeroDown and other leading migration solutions is that ZeroDown supports active live-live transactions in multiple locations, eliminating the downtime risks typically associated with standard lift and shift operations. The following table highlights some essential differences.

ZeroDown Software eliminates the downtime risks commonly associated with standard lift and shift operations.

| 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 More about HA for Azure Stack

To find out more about how HA for Azure Stack can help you drive adoption and accelerate consumption by providing a safety net for cloud migration and more, visit <http://www.zerodownsoftware.com/>

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ZeroDown® Software provides businesses with continuous access to their company data via their Business Continuity as a Service (BCaaS™) architecture, protecting applications, and transactions in the event of network interruptions that would normally cripple the enterprise. ZeroDown breaks away from traditional disaster recovery by empowering organizations of any size with a new business continuity standard: virtually unbroken continuous uptime, delivered in an easy to manage, instantly deployable package. 102218