



# VIRTUALNINES™

## Always Available™ Reliability for Consolidated & Virtual Servers



### Mitigating the Risks of Virtualization

Businesses of all sizes are flocking to server consolidation and virtualization, seeking to reduce costs and increase flexibility. However, an unpleasant reality often goes unrecognized: server consolidation and virtualization increase the risk from catastrophic failures and downtime, and from the consequent loss of data, transactions, productivity, and revenue. Though promising effectiveness and efficiency, virtualized servers tend to put "all your eggs in one basket," and a single disaster can bring your business to a halt.

Such disasters include application failures, software failures, and physical traumas like fires and natural disasters. Cutover events and everyday server maintenance can cause unplanned outages. Even a quickly rectified outage could lead to cascading application failure. Disaster recovery will get you up and running again, but the damage has been done. You need to ensure business continuity by preventing the damage in the first place.

### Microsoft | Virtualization

ZeroNines participates in the Microsoft Virtualization Partner Program.

*Your virtualized environment can operate at full efficiency and with no interruptions, despite disasters or provider outages that cripple part of it. All virtual servers are hot, and all virtual apps are active. All transactions process in parallel in 1:many sessions.*

### The ZeroNines® Solution

#### VirtualNines: Assuring Uptime for Virtualized Environments

VirtualNines™ removes the uncertainty from server consolidation and virtualization by applying patented Always Available™ technology to your network. It enables an entirely new level of reliability and security. VirtualNines protects against catastrophic downtime, providing continuous access to data and applications hosted at multiple sites and by multiple service providers, even in the event of network or Internet threats that would normally shut down access and cripple your business. VirtualNines breaks away from traditional disaster recovery by empowering you with a new business continuity standard: virtually 100% uptime, anytime, all the time.

Our patented technology is fully compatible with leading virtualization products and works with your existing applications, servers, and network infrastructure. It creates a unique networking paradigm, where the loss of access to any part of your network will not hinder performance for your end users. Your transactions continue, your people have access to the same applications, and your information flows as normal.

### VirtualNines Moves Beyond Disaster Recovery

You can lose access to the information and applications on virtualized servers for a number of reasons: virtualization service provider outages, storms, construction accidents, and many others. Standard disaster recovery methods only come into play after the damage has been done, when it is too late to protect your business' revenue and reputation. All standard disaster recovery techniques – failover, remote vaulting, tape backups – are expensive, unreliable, and can't prevent outages in the first place.

### Benefits of VIRTUALNINES:

- Provides unprecedented network availability of virtually 100%.
- Protects against financial losses by preventing loss of data, transactions, and productivity.
- Proactively prevents disasters like fires, floods, and equipment failures from bringing your business to a halt.
- Increases network power and flexibility by synchronizing consolidated and virtual servers hosted by multiple service providers.
- Avoids costs for disaster recovery systems that leave you vulnerable.
- Helps meet many of the requirements for compliance with strict federal standards, including Sarbanes-Oxley and HIPAA.
- Leverages current investments in hardware, applications, and service providers.
- Compatible with Windows Server® 2008 Hyper-V®, Hyper-V™ Server, and other Microsoft virtualization products.

It may take hours or days for these techniques to restore applications and get your business going again, even if your network was down for just a few minutes. Some information and transactions will be lost or damaged. Your applications may suffer cascading failures, requiring extensive recovery work. If your business operates under Sarbanes-Oxley, HIPAA, or other regulations, there is the real risk that you may be thrown out of compliance.

ZeroNines can't stop a hurricane, but it does prevent one from becoming a disaster for your business. Our technology was built under the assumption that part of your network will fail sometime, and that your systems must work in spite of this. We keep your virtualized environment up and operating at full efficiency and with no interruptions, regardless of what happens to any part of it. It's not disaster recovery. **It's disaster prevention.**

## How VirtualNines™ Technology Works

At the core of VirtualNines™ is the ZeroNines® patented Always Available™ technology. Always Available enables all your transactions, data exchanges, and other network activities to occur equally and simultaneously on multiple consolidated or virtual servers. In IT parlance, all virtual servers are hot, and all are active. There is no hierarchy, and thus no single point of failure.

If a virtual server, server cluster, virtualization provider, or their locale suffers from an outage or disaster, all activities continue uninterrupted via the virtual applications on other servers. There is no need for failover or recovery because continuity is maintained.

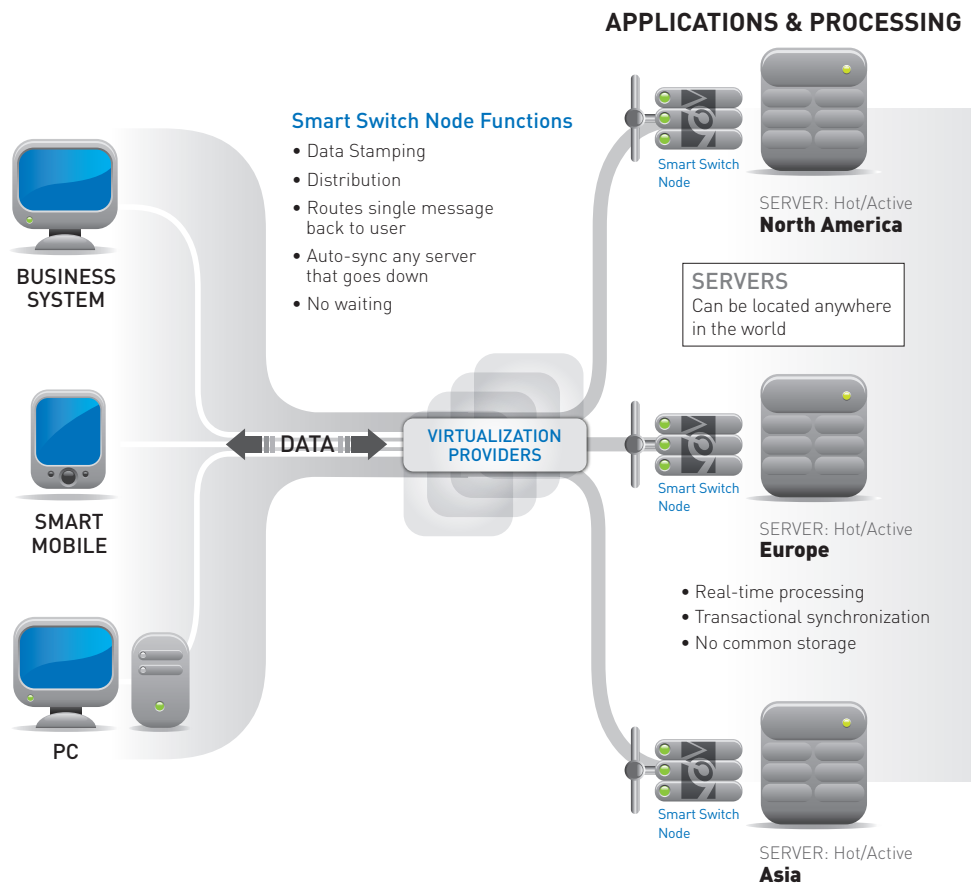
### Here's What Happens:

1. Server calls are originated by networked clients: computers, email, PDAs, phones, business software, databases, etc.
2. Each transaction passes through the ZeroNines Smart Switch Nodes, which route it simultaneously to all virtual servers in a one-to-many (1:m) session.
3. Processing and storage take place equally in all servers. All servers and their apps are hot, and all are active. There are no primary or secondary servers.
4. All transactions and data exchanges are recorded, verified, and subjected to security measures.
5. Each virtual server sends its responses back through the Smart Switch Nodes.
6. The Smart Switch Nodes cooperatively eliminate duplicate responses and return a single response to the client that originated it.

Safeguards are in place for guaranteed message delivery, data authorization, journaling, and synchronization to make sure that every transaction is secured, translated, completed, recorded, and communicated to the other networked virtual servers. If one part of your network goes offline, the Journaling feature and Smart Switch Nodes automatically update it once it comes back online, enabling it to function at full capacity and to take over for the others if necessary. This capability is unavailable through any other source.

VirtualNines' architecture is fully compatible with server virtualization products from Microsoft and other leading providers. It is agnostic regarding virtualization providers, applications, operating systems, and platforms, accommodating your existing infrastructure and way of doing business. You can mix and match old and new hardware without compromising network integrity.

The ZeroNines Always Available architecture natively supports HTTP, POP3, and SMTP protocols. A protocol interface development kit enables easy creation of interfaces for applications that use other protocols.



### Corporate HQ

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ZeroNines® Technology, Inc. provides a new standard in network disaster recovery, shifting the paradigm from reactive recovery to proactive business continuity. Our Always Available™ information security and availability technology pushes application uptime beyond five nines (99.999%) to virtually 100% anytime, all the time – zero nines. This enables uninterrupted access to business data, applications, and transactions despite disasters or network disruptions that would otherwise cripple the enterprise. Always Available™ processes all transactions in parallel on geographically dispersed servers that are all hot and all active, eliminating single points of failure. It operates agnostically across multiple platforms, leveraging existing processing and storage infrastructure. We also offer enterprise infrastructure assessment, program management

and project implementations. Founded in 2000 and based in Denver, Colorado, ZeroNines' primary target customer base includes Global 2000 companies.

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

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