

I D C V E N D O R S P O T L I G H T

True High Availability: Business Advantage Through Continuous User Productivity

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A company must ensure continued user and business operations to maintain or increase its financial or competitive position, satisfy key stakeholders, and sustain its corporate reputation. Increasingly, a company also must respond to and mitigate security threats and regulatory compliance risks. To achieve these business, operational, and regulatory goals, user productivity and application continuity cannot be compromised. If user productivity is compromised due to lack of transparent application or network services connectivity, the result can include transaction loss, delays in time to market, supply chain disruptions, customer attrition, cost penalties, negative publicity, and regulatory fines.

Business advantages of continued user productivity and connectivity with critical applications and services can be sustained through true high availability. True high availability offerings have emerged that deliver on the next generation of innovation — integrating and unifying historically distinct and separate availability models. This document examines how true high availability provides a company's business users with continued and transparent access to applications and services, despite the underlying physical or logical failures that may occur and impact the IT infrastructure. The document also looks at the role of software vendor Neverfail in this strategically important market.

Innovation Leads to True High Availability

A true high availability model expands the concept of availability beyond an infrastructure perspective in terms of system or servers, and ensures that users remain seamlessly connected to critical applications and services. A true high availability solution integrates and unifies historically distinct and separate availability models — replication services and failover services — and eliminates the need to recover from backups. This integrated level of offering provides a company's users with continued application services and data availability through the automated detection of different failures and seamless, automated failover of business operations to an alternate source in the event an underlying problem is detected.

Traditional approaches to providing system availability or data availability, such as replication services, failover services, and data backup, have focused on recovery of the data from some failure event versus focusing on keeping the application, network services, and business running and providing transparency to any event that occurred. Challenges with traditional replication services have included lack of user and application transparency, long failover times to an alternate source, as well as no configuration information at the alternate source for automated application services failover and continued operations.

Challenges with a failover services model have included a focus on hardware failures only, with no application awareness or integration, and required application restarts impacting application and user business continuity. Historical challenges with the tape-backup model have included unsatisfactory recovery times and recovery points from tape media, shrinking backup windows unable to meet data growth rates, and the high IT overhead, manual processes, and tape failure rates limiting recovery and availability.

These traditional availability methods have not taken into account the perspective of the user and the transparency in which the system stays connected to applications to sustain operational productivity and continuity of work processes and communications.

True high availability refers to applications and services that are continuously operational and accessible by users, irrespective of failure type. True high availability addresses availability of user connectivity to applications in a seamless fashion by proactively monitoring for errors, continually keeping local and remote configurations cloned or consistent, and eliminating manual processes such as scripting and reboots. True high availability can be defined as an approach to keep the user seamlessly connected to a working application and the latest data set — irrespective of hardware, software, operating system, or network failure, which includes complete site failure. A true high availability approach ensures:

- **User uptime.** Provides continued user and application availability and business operations continuity.
- **No recovery required.** True high availability eliminates the need to do time-consuming and costly recovery processes.
- **Transparency.** Seamlessly keeps users connected to applications and the business operations and processes running, minimizing, or eliminating IT intervention or application reboots; also, not just IT, but intervention by the user — many products require the user to reboot their application after a switchback.

Business Drivers for True High Availability

C-level executives and IT organizations are increasingly focusing on what the business requires or needs from IT in the way of service levels around application availability and compliance with corporate policies, regulations, and information infrastructure standards. This increased level of focus on true high availability is being driven by both macro and micro trends, as well as by the overall competitive business dynamics that companies face today, including the following:

- **Expanding communications.** The availability of communication services such as email, instant messaging, and networking are being used for business processes, customer transactions, and client communications. Consider a financial services organization whose broker dealers conduct trades via email, in which case the email application services have higher recovery time objective (RTO) requirements than the older email data itself.
- **Regulatory compliance.** Governing regulatory bodies such as the SEC, FDA, DHHS, and the EU are more frequently and strictly monitoring compliance with industry-specific regulations around IT and information management processes — especially as some industries go through a convergence from paper to digital communications and operations. For example, healthcare providers and government organizations are driving to meet requirements on business continuity in the event of a disaster.
- **Follow-the-sun, 24x7x365 business environments.** Fueled by the pervasiveness and competitive advantage of technology, companies are increasing their dependence upon technology such as collaboration tools, ecommerce, supply chain integration, as well as RFID and wireless technology. Consider a retailer with customer-facing Web applications that must provide around-the-clock access and availability to those applications. Every minute the Web app is not available could mean a lost sale.

- **Remote or distributed operations.** Expanding operations, mergers and acquisitions, off-shoring of business processes, supply chain integration, globalization of new markets, and an increase in the mobile worker population have all brought about an increased focus on availability at remote or branch-office locations, as well as on data consistency and availability between central datacenters and ROBO locations. Information must be consistent, and application continuity must be provided for ongoing operations and risk mitigation. For example, an ERP system for a food distributor is a critical component in avoiding stranding tons of food and billions of dollars in inventory.
- **Information runs the business.** Data criticality will vary by application, as will the resulting recovery point objective (RPO) and RTO priorities for the application. For example, some applications, such as credit card processing, ERP systems, and email, may require less than 1 minute to recover, while for other applications, 1 hour or greater is acceptable. However, with between 50–100% data growth year over year and 24x7 requirements, shrinking maintenance, migration, upgrade, and backup windows, and flat administration resources to manage increasing capacities at higher RTO and RPO levels are all factors forcing a need for true high availability approaches.
- **Availability during unplanned outages.** Unplanned outages such as physical disasters (fires, floods, hurricanes, tornadoes, terrorist attacks), logical attacks due to security vulnerabilities, and user error such as tripping over the power plug to the server are all real-world scenarios where the risks to application and business continuity must be mitigated. It's no longer acceptable to provide availability and recovery from only some failure conditions.

Benefits of a True High Availability Approach

A true high availability approach allows a company to continue business processing and, therefore, to:

- **Maintain its financial and /or competitive position by avoiding loss of revenue or employee productivity.** Cost of downtime statistics vary by industry and company, but can mean billions of dollars in lost revenue. Increasingly, companies also are measuring the cost of loss of productivity that can impact their financial picture as well.
- **Preserve customer, partner, or shareholder satisfaction as well as brand/corporate reputation.** Eliminating the risk of customer attrition, losing partner business, compromising to shareholder satisfaction, or tarnishing the corporate brand or reputation are all soft impacts that can yield considerable damage.
- **Proactively respond to regulatory, corporate governance, and internal service-level requirements around business continuity, data availability, and recovery.** Focusing on what the business unit, compliance, risk, legal, and finance departments require from IT and then delivering on those requirements place the IT organization in a more strategic position for the future.

Considering Neverfail

Neverfail's software portfolio includes affordable data protection, true high availability, and disaster recovery solutions designed to keep users connected to business-critical applications. Neverfail has more than a decade of experience in providing businesses with continuous operations and ensuring that critical business processes are always available to every user.

The company strategically recognized the opportunity to integrate disparate availability approaches to satisfy the demand for interruption-free IT environments, and has innovated to provide business continuity products to eliminate business downtime — regardless of the cause or scale of the failure.

Available in a modular packaging model, Neverfail products are easy to install and configure and operate high availability features that provide automated, transparent replication, failover, switchover, failback, and rollback services for Windows 2000- and 2003-based communications, configuration, and application data. Running atop the foundational Neverfail Heartbeat platform, Neverfail application-specific product modules include Neverfail for Exchange, SharePoint, SQL Server, File Server, Progress, IIS, Blackberry, Oracle, and Lotus.

The company's true high availability approach is unique in providing organizations with the following features and benefits:

- **Integrated approach.** A single solution that incorporates standalone replication and failover cluster-class services in a common architecture, providing automatic, seamless failover of application services and data.
- **Pre-emptive checking.** Conducts a complete assessment of a server's configuration and environment automatically, identifying issues that could lead to failure.
- **Detect errors along entire data path.** Monitors the entire environment including applications, operating systems, server hardware, and operating system configurations and network services. Keeps all users seamlessly connected to key applications, regardless of what type of a disruption occurs.
- **Automated switchovers.** Enables seamless switchover between servers through the use of a unique cloning process; eliminates the need for an application reboot on switchover.
- **Proactive performance monitoring and correction.** Proactively monitors the health of the entire environment, identifying when overall performance begins to degrade and dynamically addresses potential problems without resorting to a full-system failover.
- **Transparent, automatic failover.** Provides capabilities for automatic failover that are invisible to the end user, ensuring continuous application availability and no change to the user interface — all without involvement of the IT staff, eliminating the need for an application reboot on switchback.
- **Transparent switchback resync.** Features seamless switchback following a failover with a click of a button, resynchronizing servers when the primary server comes back online, eliminating the need for an application reboot on switchback.
- **Point-in-time roll back.** Provides protection from data corruption by rapidly restoring application data and configuration to a previous point in time.
- **Local and remote configurations.** Can easily be configured for either a LAN or WAN environment.
- **Ease of use.** Requires minimal IT skills to install, configure, manage, and operate.

IDC Analysis

Neverfail foresaw the rapid growth in the demand for interruption-free IT environments several years ago and began developing a range of application-continuity solutions for true high availability in Windows environments. IDC sees this market as a double-digit growth market, and it believes that users want cost-effective, feature-rich alternatives to traditional high availability approaches. Windows represents an increasingly large portion of computing environments in today's datacenters and remote offices, particularly in mid-size companies. However, the true high availability market expands beyond the current scope of Windows environments. To fully capitalize on the true high availability market, Neverfail should consider the following:

- Consider expansion of its core Windows operating environment and focus on other growth operating systems, such as the x86-based Linux computing environment and associated applications.
- Locate strategic points of integration between Neverfail true high availability products and x86-based virtualized server environments to allow customers to maximize efficiency and minimize cost.

Conclusion

High availability in the context of application and business continuity is a top priority for IT organizations in companies of all sizes. IDC research shows that priorities and spending intentions are aligned around the central theme of improving application availability and recovery from different failure types on increasing numbers of applications and services. True high availability is top of mind at the highest levels of the organization, and it's not uncommon for availability and business continuity requirements to be published in a company's corporate goals — driving home the importance of the integration of IT services with business requirements.

A company must ensure continued user and business operations to maintain or increase its financial or competitive position, satisfy key stakeholders, and sustain its corporate reputation. Risks associated with lack of business continuity cannot be tolerated. True high availability offerings that have emerged can deliver on these business needs and provide a company's business users with continued and transparent access to applications and services, despite the underlying physical or logical failures that may occur and impact the IT infrastructure. IT organizations facing the challenges of business and application continuity should consider true high availability solutions from Neverfail to deliver stronger partnerships with and service levels to both internal and external customers.

A B O U T T H I S P U B L I C A T I O N

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