

# The v-Available Initiative – Bridging the Gap Between Virtualization and Availability

## EXECUTIVE SUMMARY

Virtualization brings many IT benefits: better server utilization, lower capital and operating expenses, and greater flexibility to meet business needs among them. But virtualization also brings with it some unintended consequences. One of the unintended consequences is that virtualization dramatically increases the need for rock-solid availability. Because server consolidation can result in the server becoming the single point of failure for multiple applications, the implications of downtime are much greater.

The current availability solutions don't provide the rock-solid availability and simplicity of management needed to broaden virtualization beyond non-critical applications in large companies. Marathon Technologies Corp.'s v-Available™ initiative bridges the gap between virtualization and availability to remove first-generation barriers such as cost, complexity, and reliability. Combined with XenSource's XenEnterprise hypervisor, v-Available will provides an ideal combination of price/performance, ease of use, and fault-tolerant class availability for mid-sized and smaller enterprises.

**v-Available™: Bringing fault tolerant-class availability to server virtualization.**

## THE COMPELLING PROMISE

In too many data centers, massive investments in hardware infrastructure lie underutilized. Embracing the single server-per-application paradigm, IT suffers from "server sprawl," an inflexible and costly infrastructure that has been an expensive drag on performance.

In response, many companies are rapidly seeking new and smart strategies to consolidate their servers, accelerate provisioning, improve business continuity, and lower capital and operating expenses. The central element of these initiatives:

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virtualization.

Virtualization abstracts and separates the logical resources from the underlying physical infrastructure (i.e. the servers themselves). Just as PCs have used virtual memory that page-swaps data to and from disks, virtualization applies the same paradigm to other infrastructure components: servers, networks, operating systems, and applications. In a virtual infrastructure, the pooled resources are transparent to the application or end-user and can be dynamically administered or configured as needed. The benefits of this approach are substantial:

- **Higher Utilization** – Virtualization can tap into idle cycles and processing capacity. Where today's enterprise servers dedicated to a single application may use 10-20 percent of their capacity, a virtualization layer can increase utilization to 70-80 percent. Instead of 50 servers running at 30 percent of capacity, you can have 20 or 25 servers running at 70-80 percent utilization [IDC, Virtualization 2.0: The Next Phase in Customer Adoption].
- **Lower Capital Expenses** - By leveraging the unused capacity, virtualization efforts can dramatically reduce capital purchases of new server hardware – by as much as 50 percent [Forrester, Mar 2007 XenSource webinar].
- **Lower Operating Expenses** – With fewer servers to operate, you can achieve far lower costs for power consumption, cooling, real-estate, and maintenance.
- **Faster Provisioning** – One of the many challenges in IT application deployment (or reconfiguration) is rolling out new, dedicated servers. With virtualization, you can provision a server in days, not weeks. That improves IT productivity and gives you greater managerial flexibility and options [Forrester, Mar 2007 XenSource webinar].
- **Higher Service Levels** – In a virtualization environment, IT can be more responsive to business needs by providing new services faster - and a greater number of service options.

## THE UNINTENDED CONSEQUENCES

Despite these compelling advantages, adoption of virtualization has been restricted for the most part to Fortune 500 organizations. IDC estimates that virtualization has been achieved on less than 10 percent of x86-class servers to date. The vast majority of these implementations have been in development and testing environments and consolidation of non-critical production systems.

That's because virtualization is a newer technology that presents a range of significant obstacles to be addressed. For instance, many companies are struggling with cultural resistance. Sharing systems across multiple applications, departments, and divisions requires a higher level of trust that performance won't be impacted. Manageability is also a key concern. Buyers want the assurance that they'll have the tools to manage the virtual environment, including migrations, policy management,

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and more. IDC also cites a lack of in-house expertise and concerns about how to budget across departments as key issues relating to virtualization adoption [IDC, Virtualization 2.0: The Next Phase in Customer Adoption].

Business-critical or mission-critical applications have not been virtualized in x86 environments due to an understandable unwillingness to commit those vital applications to an environment that lacks true availability. When an enterprise aggregates multiple applications on fewer servers, it creates an “all eggs in one basket” single-point of failure that is harder to protect and maintain. The whole environment becomes as critical as the most important application running on it. And that also makes it difficult to find appropriate maintenance or planned downtime windows for all applications supported by that physical server.

Despite virtualization’s benefits, mid-sized companies and distributed locations of large companies have been slow to adopt virtualization for any of their applications because of the cost and resources required to manage today’s virtualization solutions.

## THE SHORTCOMINGS OF MANY AVAILABILITY SOLUTIONS FOR VIRTUAL ENVIRONMENTS

For pervasive deployment of virtualization, both IT and users must be confident that applications in virtual environments are highly available, secure and easy to manage. The current virtual machine (VM) migration techniques are very good for planned maintenance, but they are completely inadequate for unexpected, unplanned downtime.

Unfortunately, today’s availability solutions for unplanned downtime in virtual environments are complex retrofits based on traditional clustering/failover approaches used on physical servers – approaches that are complex, costly, and generally unreliable. These failover approaches are challenging enough on physical servers; applying them to virtual servers compounds the challenges dramatically. For instance, current VM availability solutions deliver rudimentary failover via a heartbeat ping. During the failover, data is lost – *for all applications* on the virtual server.

Even assuming a few minutes of data loss are acceptable, it could result in corruption of the underlying database due to missing transactions. This corruption can take hours to manually recover from, during which time the application is unavailable to employees and customers. Multiply the data lost by the number of database applications on the virtual server and you have the potential for excessive downtime and manual data recovery.

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Additionally, most of today's availability solutions for virtual environments require a Storage Area Network. As opposed to direct-attached storage, a SAN is costly and doesn't easily allow for disaster tolerance in the event of site-wide failures.

## BRIDGING THE GAP BETWEEN VIRTUALIZATION AND AVAILABILITY

### THE everRun DIFFERENCE

#### Fault Tolerant-Class Availability

- No loss of application state
- ComputeThru vs. failover
- Assured continuity of operations

#### Automated Application Availability

- Turnkey installation & maintenance
- Fully automated fault handling & policy management

#### Non-Intrusive

- Supports any Windows application without modifications
- Uses standard x86 servers & blades

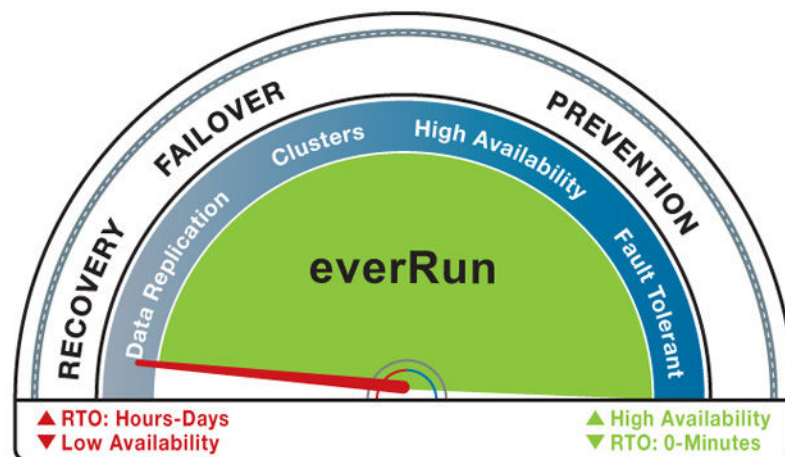
#### Lower Cost

- Maintenance costs are up to 55% lower than HA clusters
- Doesn't require a SAN

To address the lack of effective availability technology for virtual environments, Marathon Technologies has launched its v-Available™ initiative, which is designed to bring fault tolerant-class availability to virtual environments. v-Available is the launching pad for the industry's first solutions that will provide enterprises of all sizes with reliable protection for critical virtual workloads.

Marathon's vision is to make highly available virtual environments simple, non-disruptive, and cost-effective – so that almost any Microsoft Windows or Linux application in your enterprise portfolio can comfortably run in a highly protected, highly available virtualized infrastructure.

Since one size doesn't fit all, everRun provides dynamically configurable “dial-up” availability levels based on each application's unique requirements, whether it's fault tolerance, high availability, remote availability, or disaster-recovery. There's only one application environment to manage and no failover configuration setup or management headaches.



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## 1 + 1 = 3

### THE XenSource DIFFERENCE

#### Performance

- Bare metal performance
- Virtualization pure-play: no OS agenda
- Highest performance virtualization platform

#### Openness & Choice

- Avoid proprietary lock in
- Open source results in rapid innovation industry wide
- Broadest hardware support; optimized for Intel VT and AMD-V

#### Simplicity & Ease of Use

- Simple to install & use
- Lightweight unified architecture for easy updates
- Multi-server management console included
- **Use your existing storage architecture, backup and other tools**

There is huge market appeal for technology providers that can deliver solutions that can address both planned and unplanned downtime in virtual environments – especially for mid-market and smaller companies."

John Humphreys,  
Program Director of IDC's  
Enterprise Virtualization  
program

Delivering on the promise of v-Available – bringing Marathon's proven everRun™ fault tolerant-class technology to virtual environments – Marathon has partnered with XenSource, the leader in infrastructure virtualization solutions based on the open source Xen™ hypervisor. The integration of Marathon's everRun and XenSource's XenEnterprise™ software leap-frogs today's high availability offerings for virtual environments by providing fault tolerant-class availability solutions that are simple, comprehensive and cost-effective.

Marathon selected to XenSource because of their expertise in virtualization. XenSource, the inventors of Xen and the leaders of the Xen open source project, delivers virtualization products designed to help enterprises increase server utilization, support server consolidation, and reduce total cost of ownership. XenSource's flagship product, XenEnterprise™, delivers a stable and high performance virtualization platform that excels on both Windows and Linux, and interoperates with leading operating systems from Microsoft, Novell and Red Hat.

## HOW XenEnterprise AND everRun WILL DELIVER PERFORMANCE, SIMPLICITY AND AVAILABILITY

Marathon is OEMing XenSource and offering the combined XenEnterprise and everRun solution as a complete package that is fully integrated, fully tested and fully supported by Marathon.

everRun software sits above XenEnterprise and integrates with it to join virtual machines from two physical XenEnterprise hosts. Each fault tolerant virtual machine (VM) appears as a single environment, making two physical servers appear as a single environment.

In contrast to today's high availability solutions for virtual environments that require you to manage an active VM on one host and a standby VM on another host – with all of the inherent complexity and risk – each virtual machine in our XenEnterprise and everRun solution is only exposed to one operating environment.

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## MARATHON AND XENSOURCE – ENABLING BROADER SERVER ADOPTION

The combination of a high-performance, easy-to-use virtualization hypervisor from XenSource with the proven fault tolerant-class availability of everRun enables far more enterprises to deploy virtualization across a much broader array of applications. No longer just the province of Fortune 500 companies, virtualization is now within the grasp of mid-sized businesses and smaller who can achieve significant cost savings and operational improvements.

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*Want to achieve fault-tolerant class availability in your virtual environments? Contact us for more information.*

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