



# AppAssure

LEVERAGING VIRTUALIZATION FOR  
APPLICATION ASSURANCE



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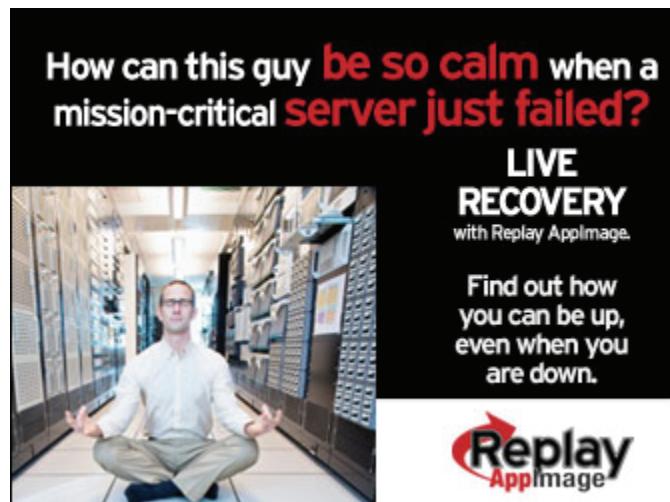


Leveraging Virtualization for Application Assurance

# LEVERAGING VIRTUALIZATION FOR APPLICATION ASSURANCE

*Business continuity. Application assurance. Virtualization. Consider that a mission-critical progression. Business continuity is essential for business productivity. Bluntly put, if people can't get their work done, it's impossible to realize revenue. The applications that are most central to the productivity of every staff person in your organization are e-mail and SQL databases. They need reliable and consistent access to those applications in order to communicate with work peers, customers, and partners.*

*The problem is that application assurance, particularly the assurance of e-mail in Windows-based environments, is challenging. And it can be easy to become complacent when outages are sporadic at best. However, every outage presents such negative business impact that complacency is irresponsible. Virtualization answers the need for business continuity and challenge of application assurance enabling companies to quickly and seamlessly recover from e-mail outages and keep business on track.*



How can this guy **be so calm** when a mission-critical **server just failed?**

**LIVE RECOVERY**  
with Replay ApplImage.

Find out how you can be up, even when you are down.

**Replay ApplImage**

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- Actual Replay AppImage Customer Quote

 Learn how **Replay AppImage** can give your career a boost.

# CHAPTER ONE

## ENSURING BUSINESS CONTINUITY IN A WINDOWS-BASED ENVIRONMENT

What happens when your employees can't access e-mail? First, your phone starts ringing. Then, as the outage continues, productivity and commerce begin to slow and then halt. Price quotes and invoices don't go out. Contract edits sit. Meeting notices never reach meeting participants.

Business continuity relies on constant access to your company's most critical form of communication, e-mail. Messaging environments built on Microsoft Windows are prevalent in organizations around the world. They are complex environments and present business continuity challenges.

Growth in storage for email is, according to Osterman Research, the leading problem in managing mission critical messaging systems. Osterman has found this to be the consistently biggest problem for the past several years with three out of five decision makers stating they believe that growth in messaging storage is a serious or very serious problem in multiple quantitative surveys since 2006. IT administrators are almost as considered about the related issues of increasing backup and restore times (57%), increasing message size (47%) and increasing employee use of attachments (47%).

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### The Challenge

Recovering mission-critical, Windows-based applications like Exchange always presents a challenge. Exchange environments are complex and commonly used tape back up solutions only add to the complexity. Of course, the word "complex" often means "expensive" and that's true of Exchange restoration when tape backups are in play.

Exchange recovery using tape backups typically requires these steps:

- configure new hardware
- install the operating system
- install Exchange
- install the backup agent
- restore Exchange data from backup tapes
- start Exchange



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That process can take over a full work day – if everything goes well. It's not unusual for backup tapes to contain corrupt or missing data. Restoring Exchange using corrupt data only leads immediately to the next outage. And if the outage is caused by a server hardware problem, there can be a scramble to find a spare. The long process time and required hardware can also make it difficult if not impossible to test application recovery meaning that when a disaster does occur, you're starting a learning curve.

Given all that, it's not hard to believe Microsoft's finding that "42% of all attempted Exchange recoveries from tape fail."

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## Application Assurance

Application assurance means knowing that your mission critical application servers can be restored quickly to anywhere regardless of the type of failure. The two key parts of that equation are "quickly to anywhere" and "regardless of the type of failure."

Application outages can be caused by a server or disk failure or data corruption. In the first two cases, fast restoration of the application and its associated data requires new hardware. The application has to move to another "place" in order to be up and running quickly. And, since failure can be caused by any number of things, your recovery solution has to address a wide variety of conditions.

Last, knowing that your application assurance solution is going to work requires test runs. Reliable access to your application is not assured if you're not confident that you can execute a quick restore.



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# CHAPTER TWO

## LEVERAGING VIRTUALIZATION

Fast restoration of mission-critical applications, including messaging and database services, is possible but not with tape backup. Virtualization technologies allow organizations to run many application workloads on a single VMware ESX server enabling single-click “power on” restoration of multiple workloads in the event of any type of outage. The time required for recovery reduces from days and hours to minutes, radically improving both recovery time objectives (RTO). The use of frequent application snapshots rather than daily or weekly backups dramatically improves recovery point objectives (RPO). And virtualization dramatically lowers costs by consolidating servers and storage while improving disaster resiliency.

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### Understanding the Opportunities of Virtualization

You’ve probably heard the buzz word, but if you are like two-thirds of IT decision-makers, you are “no more than mostly aware of the existence of commercial or open-source virtual appliances.”<sup>1</sup> So what does Virtualization actually mean? To virtualize is simply to separate an application or service from the physical infrastructure required to make that service available. There are everyday examples of virtualization include running Windows on a Mac as with Parallels<sup>2</sup>, or MS Office on Linux with CrossOver Office for Linux<sup>3</sup>. Even running multiple instances of an email server on a single hardware platform is virtualization at work. In fact, the first instances of virtualization were in the first mainframe environments nearly half a century ago. This technology has been coupled with newer offerings like Hyper V and VMware make virtualization easier and more reliable.

Many IT decision makers are seriously considering virtualization for a variety of applications because virtualization can reduce hardware, energy and facility costs exponentially by allowing multiple virtual “machines” to run a single box. Virtualization also gives

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<sup>1</sup> Osterman Research, [Messaging Virtualization Market Trends, 2008-2011](#). March 2008, pg. 2.

<sup>2</sup> <http://www.parallels.com/products/desktop/>

<sup>3</sup> <http://www.codeweavers.com/>



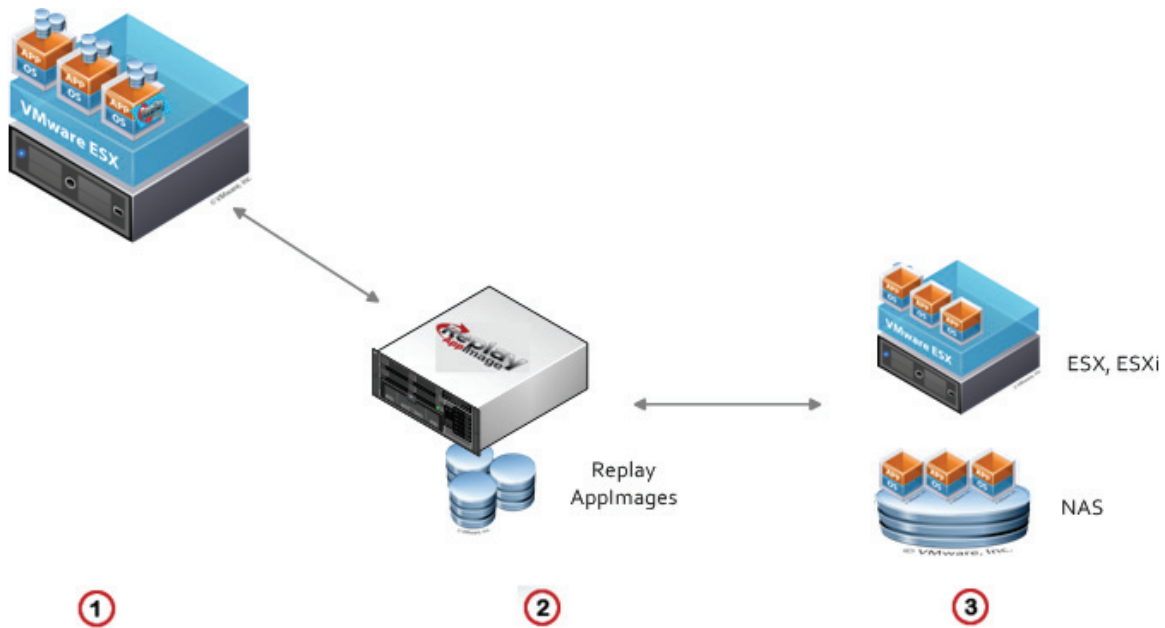
organizations increased flexibility to add capacity quickly and inexpensively, and robust disaster recovery can be implemented at reasonable rates.

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### Continuous Application Assurance

When virtualization is blended with a process for taking application-aware snapshots, business continuity becomes very portable and cost-effective. Application-aware snapshots are those that include all configuration settings for the application, Exchange for example, the application itself and all application data (messages, calendars, folders, etc. for each mailbox). When snapshots are taken frequently, say every 15-30 minutes, the corporation gains a very current mirror image of the application that's running and data that's being used.

A simple architecture that uses Replay AppImage from AppAssure to take continuous Exchange snapshots and export them to a virtual server would look like this:



**Figure 1. Replay AppImage Hot Standby Architecture**

The disaster recovery (DR) site can be anywhere. Application-aware snapshots are highly portable to accommodate off-site data centers without adding complexity.



Continuous application virtualization makes recovery from data corruption, server failure, or a disaster fast. Recovery time objectives move from hours to minutes as seen in this recent Gartner comparison of traditional backup to virtual failover:

Recovery point objectives are also significantly smaller than in traditional tape backup. Application-aware snapshots are typically taken every 15 minutes meaning that end-users return to an application that looks just like it did – data and all – just minutes before the outage occurred.

Reliability and affordability are other key benefits of continuous application virtualization. Tape backup solutions copy corrupt data, sometimes over and over, while snapshots only collect changes in data or configuration settings and then check for data corruption.

Meanwhile, the ability to test recovery without having to take an application down builds confidence in restoration processes. Eliminating redundant hardware and simplifying the overall infrastructure required by applications reduces hard equipment and software licensing costs and management overhead.

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## Disaster Preparedness and Migration

You can't know that your disaster recovery solution and plan is going to allow you to recover quickly and reliably if you can't test it. That's another place that continuous application virtualization offers huge benefits over traditional backup. Since virtualization doesn't require one server to be dedicated to one application, failover processes can be easily tested with taking systems down and without impacting production environments.

The ease of testing also reduces the time commitment and risks associated with Exchange and SQL migrations and patch and update implementation. All of those processes require a careful roll-out plan that guards against any number of system failures caused by big changes in application configuration. With virtualization in place, tests of application migration and patch and update implementation can be conducted without shutting down the production environment. And, if something goes wrong during the either the test phase or environment-wide roll-out, restoration of a working application is possible in minutes.



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## CHAPTER THREE

# CONFIDENT BUSINESS CONTINUITY WITH APPASSURE

Companies that are confident in their disaster recovery plans know that their recovery plans are fast, reliable, and affordable. Those companies measure RPO and RTO in minutes. They save thousands of dollars on every type of recovery – individual objects to bare metal restore. They protect many production servers with one virtual ESX server, saving even more money on hardware and software. They test application, update, and patch rollouts quickly and easily. And with all that comes peace of mind.

AppAssure develops application protection solutions that leverage virtualized environments and gives IT administrators confidence in any disaster recovery situation. AppAssure's Replay Appliance is known for its ability to ensure business continuity with users reporting 99.99% uptime.

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### Replay Appliance

Replay Appliance is an application-aware backup and recovery solution that automatically and continuously images Windows workloads for Microsoft Exchange, SQL, and SharePoint. Simple to implement, Replay Appliance requires an agent to be installed on any Windows workload that it protects. Those workloads are added to the management console and Replay Appliance begins taking incremental image snapshots every 15 minutes. The images are checked for corruption, deduped and compressed and, if determined to be clean, updated directly to a standby virtual machine in any location.

Standby virtual machines are integrated into VMware Virtual Center® and automatically created and directly maintained on an ESX™ VMFS file system. That eliminates the need to migrate virtual machines in a disaster scenario.

Replay Appliance is software only solution that installs a quiet host based agent that delivers really fast backups of Windows workloads from centralized Microsoft Windows 2003 or Windows 2008 Replay Server.

Replay Appliance features include:

- ✓ Eliminate the backup window with continuous point-in-time images. (Killer RPO.)
- ✓ Allow users to access applications (including e-mail) during a live recovery. (Killer RTO.)



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- ✓ Push button failover to standby virtual machines.
- ✓ Reduce disk space with built-in data de-dupe and compression.
- ✓ Recover entire applications from bare-metal in just a few clicks.

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## About AppAssure

AppAssure Software is a provider of innovative backup and disaster recovery software that has been purpose-built for Windows applications. Designed to protect the whole application, not just the data, AppAssure solutions deliver high-value features for reliable data protection that is corruption-free. AppAssure's flagship product, Replay AppImage, is the only solution that eliminates the backup window and continuously checks for corruption. It also uniquely leverages virtualization to automatically create and continuously update standby virtual machines. As a result, IT administrators can have the confidence that their Windows applications are completely protected and easily recoverable in the event of data loss or disaster. AppAssure is a Gold Certified Microsoft partner, and a member of VMware and Blackberry alliance programs.



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**FREE TRIAL!**

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