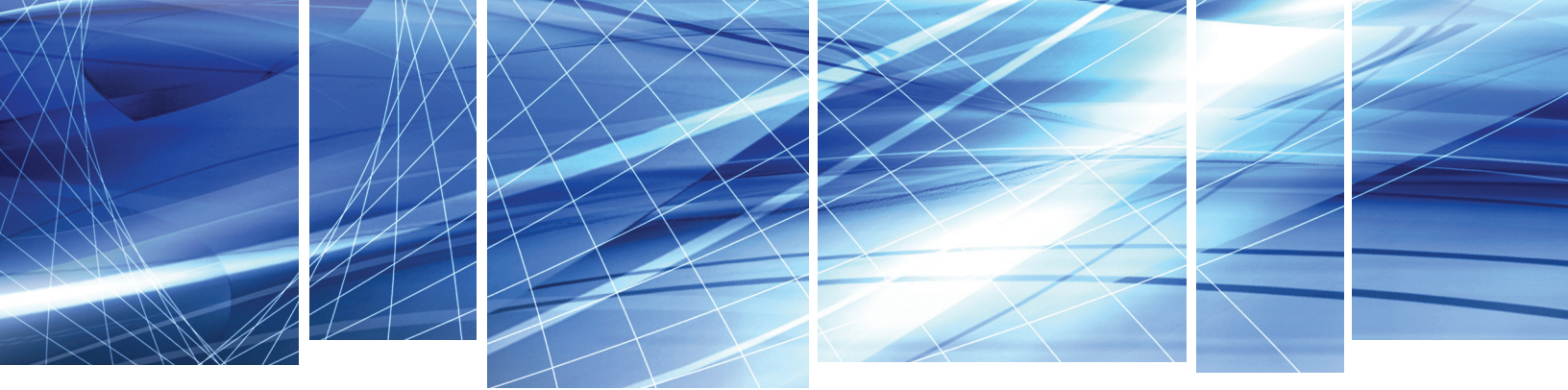


# How to Avoid the Coming Backup Crunch

**Big data and other drivers are pushing traditional backup products beyond their capabilities. A new approach led by Dell AppAssure is helping companies slash costs and avoid recovery point delays.**

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## How to Avoid the Coming Backup Crunch

**Big data and other drivers are pushing traditional backup products beyond their capabilities. A new approach led by Dell AppAssure is helping companies slash costs and avoid recovery point delays.**

Data is exploding. Tolerances for data loss are approaching zero. And IT can't afford to keep throwing more time and money at backup when so many potentially higher-value projects require its attention. Simply put, backup has become a resource drain that threatens to cripple IT if it continues with "business as usual."

Fortunately, there is an alternative. Dell's field-proven, critically acclaimed AppAssure solution enables IT organizations to capture continuous backup snapshots, automate recoverability testing and offload data deduplication/compression tasks. As a result, they can successfully fulfill rapidly escalating data protection requirements using minimal infrastructure and human resources — allowing them to redirect resources to genuinely strategic technology initiatives.

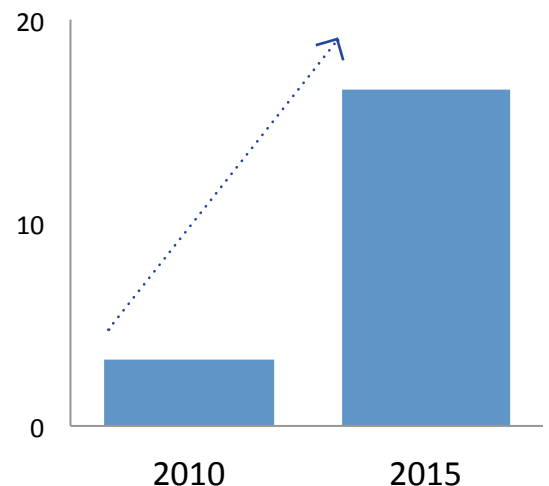
### The Coming Crunch

Backup and recovery have always been staple activities for IT. Data has always required protection. And, over time, IT has adopted a variety of technologies to incrementally improve the efficiency of its backup-and-recovery operations.

Several factors, however, are threatening to create a data protection crisis that will affect companies of all sizes in all industries. These factors include:

**The explosion in data volume and diversity.** Companies are experiencing data growth of 60 percent or more annually. To make matters worse, this data is becoming increasingly diverse — including everything from traditional structured databases

### Big Data Spending in Billions of Dollars<sup>1</sup>



**The growth and importance of data has pushed traditional backup products beyond their limits, and "Big Data" is a major driver.**

and unstructured text to new capacity-straining multimedia content. This massive deluge of data will only accelerate as phenomena such as social media and telemetry from intelligent devices drive data volume to previously inconceivable levels.

**Diminishing tolerances for data loss and downtime.** Businesses continue to become increasingly dependent on IT services, including customer-facing transaction systems and internal productivity applications. If they lose data — or if they can't get systems back up and running quickly

1. IDC Study of the Big Data market, as reported in [www.eweek.com](http://www.eweek.com) March 3, 2012 by Darrell Taft



*Dell AppAssure enables IT to fulfill rapidly escalating data protection requirements using minimal infrastructure and human resources.*

enough — they lose revenue, productivity and goodwill in the marketplace. So IT is under more pressure than ever to ensure that services can immediately be restored to the exact state they were the moment before a service failure occurred.

#### **Limited staff and infrastructure resources.**

No IT organization has an unlimited budget for people and storage. In fact, with so many other business demands competing for IT's limited resources, it's more important than ever for IT become highly efficient when it comes to backup and recovery. Otherwise, massive data volume and the pressure to aggressively minimize data-related risks will completely overwhelm IT.

The declining cost of storage media and the availability of cloud-based storage are insufficient to address this threefold problem, since data volume is growing faster than storage prices are shrinking, and cheaper raw capacity alone does not address the need for increasingly up-to-date recovery points.

Simply put, traditional approaches to data backup and recovery are rapidly becoming untenable. If IT does not proactively reengineer its data protection processes, it will soon wind up either wastefully allocating excessive resources to backup or leaving the business excessively vulnerable to data-related risk — or both.

#### **The Dell AppAssure Solution**

Dell AppAssure — a key element of Dell's industry-leading Fluid Data™ architecture — directly addresses the backup crunch being faced by today's IT organizations. Among the capabilities that make AppAssure a compelling solution in a world of rapidly exploding data, diminishing tolerances for loss and constrained IT resources are:

**Continuous incremental snapshots.** After capturing a full initial baseline image of the data on target systems, AppAssure then executes continual updates of that image — moving only data blocks that have been changed from the target system to the backup media. The frequency of these incremental updates can be adjusted to as little as five minutes, enabling IT to achieve whatever recovery point objectives (RPOs) are appropriate for any given application.

**Live Recovery™.** With AppAssure, users can

instantly begin to run applications directly from backup media without waiting for a full restore of physical or virtual machines to the production environment. AppAssure's performance further allows Live Recovery to be executed for large numbers of backed-up machines. This enables IT to achieve previously unattainable recovery time objectives (RTOs).

**Inline global deduplication and compression.** AppAssure's inline deduplication eliminates redundant data across the entire target environ-

### **CITY OF SAFFORD REAPS COST AND TIME SAVINGS WITH APPASSURE**

Hit with severe cutbacks, local governments are under major pressure to do more with less. And they're finding that their existing backup solutions are simply not up to the task. "A while ago, we used Symantec's Backup Exec and did backups to tape," recalls Derek Kruger, IT Supervisor for the city of Safford, Ariz. "But we had so much data, I just couldn't back it all up in the amount of time we had at night." Kruger also tried disk imaging with Asempa (which got too expensive) and Drobo (which proved to be unreliable).

Then Kruger moved to Dell AppAssure. Instead of nightly backups, Kruger now takes continuous snapshots of data — without any adverse impact on the end-user experience. Random restore testing has gone from four hours to just five minutes. And the disk space savings has been huge, including:

- Space needed to protect four SQL Server instances and one Hyper-V host dropped to 5.7GB from 677GB.
- Space needed to protect the city's Microsoft Exchange server dropped to 2GB from 354GB.
- Space needed to protect a data server and Hyper-V host box with a cluster shared volume dropped to 12.42GB from 5.7TB.

Kruger is also seeing a savings of \$95,500 on the licensing, hardware, software and maintenance.

"We've gained at least a 2x ROI [return on investment] here," says Kruger. "And I have full confidence that we can restore what we need to restore, where we need to restore it."



*AppAssure greatly reduces the exposure of the business to data loss and downtime by ensuring both much more up-to-the-minute recovery points and much faster recovery times.*

ment — rather than just within each server’s data set. Combined with AppAssure’s compression capabilities, this global deduplication can reduce backup storage media requirements by as much as 80 percent.

**Automated recovery assurance.** Rather than requiring administrators to perform constant, repetitive manual tests of the recoverability of backup data, AppAssure automatically tests and verifies recoverability as a background task — continuously monitoring data for corruption. If it discovers that corrupt data has made it into a backup, AppAssure fixes the problem by using previously backed-up blocks to restore the environment to its most recent, noncorrupt point in time.

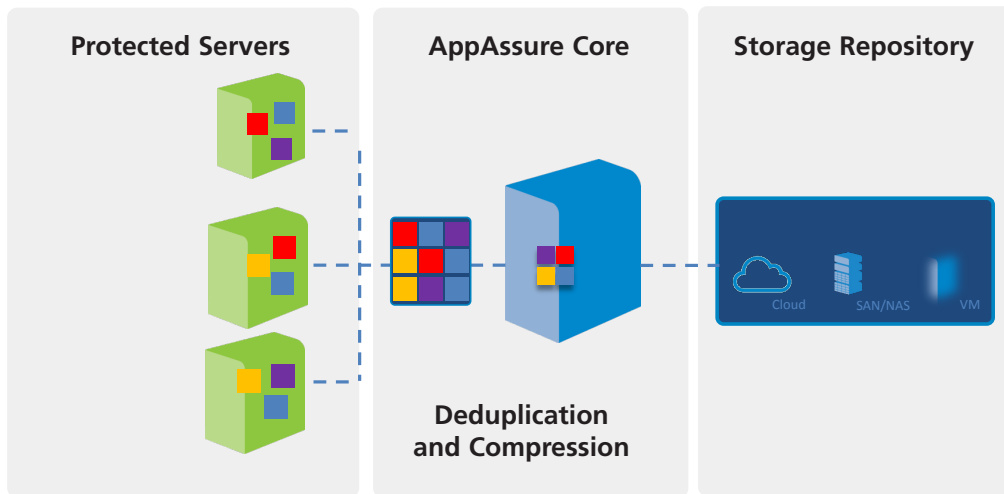
**Universal recovery.** AppAssure provides full any-to-any, bare-metal recovery of all types of physical and virtual servers (including VMware, Hyper-V and XenServer) residing in an on-site data center, a private cloud environment and/or an off-site disaster recovery facility — giving IT complete flexibility in executing backup and restore processes. AppAssure also provides object-level recovery that is granular enough to restore a single email message from a single inbox.

AppAssure delivers this functionality using an optimized multicore pipeline architecture that scales to deliver line-speed performance — allowing IT to support big data and other volume-intensive applications without an unacceptable impact on the

production environment. Retention policies can be customized for different compliance requirements, and data-at-rest can be encrypted at line speed using 256-bit advanced encryption standard (AES). AppAssure also provides Web-based management capabilities that let IT administrators keep an eye on critical backup processes and respond to any anomalies before they compromise data protection SLAs.

**Efficient replication.** Offsite data protection used to require tape, because backup data was too large to replicate over a wide-area network (WAN) — and it would take about 14 hours to move each terabyte of data across an OC-3 connection. With AppAssure’s improved data flow, however, backup data can now be replicated over the smallest of WAN connections. Since AppAssure sends only changed blocks after the initial base image is created, very little data actually has to be sent over the WAN. This makes it much more practical to replicate data offsite for business continuity purposes.

**Cloud-based replication.** For organizations that don’t have a secondary facility for offsite data replication, Dell offers subscription-based replication via the Dell Cloud. This economical cloud solution allows organizations to replicate their data offsite via an Internet connection, eliminating the need to depend on slow-to-restore, hard-to-manage tape backups. It also enables organizations to run their workloads in the cloud in the event of a disaster by immediately provisioning the necessary virtual machines and restoring their applications to the state of the most recent snapshot. Then, when the primary data center is up and running again, they can reverse the replication and smoothly restore operations in their own data center.





*With AppAssure, backup data can be replicated over the smallest of WAN connections.*

### Benefits for IT and the Business

By implementing AppAssure, IT organizations can transform their backup and recovery processes in ways that specifically address the “crunch” being created by massive data volume, diminishing business tolerances and constrained resources.

**Dramatically improved operational efficiency.** With AppAssure, IT can protect much higher volumes of more diverse data using far less storage and less staff time. This improved efficiency does more than just allow IT to achieve incremental savings. By dramatically improving the efficiency of backup and recovery processes, AppAssure safeguards the ability to profitably scale the business and minimizes the adverse impact of data protection operations on service levels for other business-critical applications.

**Significantly reduced business risk.** AppAssure greatly reduces the exposure of the business to the risks associated with data loss and application downtime by ensuring both much

more up-to-the-minute recovery points and much faster recovery times. AppAssure’s fast, granular recovery capabilities also make it easier for IT to help the business address all kinds of other common problems — from accidentally deleted email and new data retention mandates to e-discovery and project documentation.

**Improved resource allocation.** Perhaps most important: By substantially reducing the time and money that have to be dedicated to low-value, “just keeping the lights on” data protection tasks, AppAssure frees IT resources for allocation to more strategic innovations. And, in today’s information-driven market environment, it is innovation that often spells the difference between business success and business failure.

As data protection challenges continue to intensify, no IT organization can afford to remain complacent about how it performs data backup, how it tests the recoverability of its backups and how it responds in the event of an actual business emergency. Every IT decision maker with responsibility for data protection policies and processes should therefore carefully evaluate the Dell AppAssure solution and the powerful, practical advantages it delivers. ■

## ABOUT DELL BURR

The Dell storage portfolio enables you to minimize the cost and complexity of data management, optimize utilization and build an agile foundation for growth. With capabilities designed to automatically and intelligently optimize data storage, the Dell Fluid Data™ architecture delivers improved storage efficiency, greater IT agility and superior business resiliency — slashing the cost of storing, managing and protecting data by up to 80 percent. With storage powered by choices, not consequences, customers can meet change with confidence by putting the right data in the right place at the right time for the right cost. To learn more, visit [www.DellStorage.com](http://www.DellStorage.com).