

BakBone Introduces NetVault: TrueCDP – Integrated, Continuous Data Protection

October 2007



For many years the focus in the IT suite has been data recovery. This is not a bad thing; when it comes to critical information, losing data equals losing the company. To support this focus, vendors have developed scads of supporting technologies including disk-to-disk backup, replication, snapshots, and related technologies. These data protection technologies are good and often necessary, but by themselves they do not go far enough. The missing piece of the data protection puzzle is Continuous Data Protection, or CDP. CDP captures changes to data and stores them locally on disk for faster recovery than backup tapes can provide. Some CDP technology is known as “true CDP,” where changes are captured continuously and stored. Other CDP types are called “near-CDP,” using snapshots to store data images. Near-CDP can be perfectly acceptable in non-critical or slower environments. But true CDP captures every change, making it ideal for critical and high-performance environments. This process is called any-point-in-time (APIT) recovery, and is fast becoming a vital data recovery operation for critical data.

Yet the story does not end there. Even with true CDP, many vendors have concentrated on data Recovery Point Objectives (RPO) – how granular data recovery is, and at what stage IT can select data to recover. However, Taneja Group believes that RPO is not enough. In the name of meeting application recovery and continuous availability, CDP must also observe intelligent Recovery Time Objectives (RTO). Together, RPO and RTO grant the ability to 1) restore data from highly granular points in time, and also 2) to restore it quickly, enabling servers and end-users to continue processing their data in the shortest possible period of time.

As important as data recovery RTO and RPO are, there is an even more important consideration: *Application Recovery Time Objective*. We believe that it is Application RTO that must rule the data recovery roost: data recovery means little if the application is unavailable, meaning that the closer data recovery comes to restoring consistent data to the application, the better it serves Application RTO. In the following profile we will review this challenge of fast and granular data recoverability, the role of CDP, and the advantage of BakBone’s NetVault: TrueCDP for fast and consistent file recovery in environments running the BakBone suite of data protection products.

Data Availability -- and Beyond

Without question, data availability and recovery management are crucial to business

survival. Customer and product data, financial and HR data, regulated and litigated data: fast-growing volumes of critical data whose loss is simply

S O L U T I O N P R O F I L E

unthinkable. But IT must evolve beyond straightforward data recovery. Restoring data from backup is all well and good, but if the server or end-user that needs the file has lost 12 hours of work – because they lost data at 4pm and the last good file was backed up at 4am -- then what is the point? Yet IT's primary data recovery mode is restoring from last night's (or last week's) tape backup. Tape backup still has some good points, but restoring a critical file that was overwritten five minutes ago is not one of them.

IT must become proactive when it comes to its part in continuous availability: protecting data with an eye to both granular and speedy recovery. And the only way to accomplish both of these things is with a highly granular, APIT CDP application that quickly recovers data from real-time captured changes.

Not every CDP application out there fills the bill. To qualify as a true CDP, we believe that it should offer the following capabilities:

1. CDP provides seamless and highly granular data capture across a given production server and application environment.
2. CDP can match data changes to the application by maintaining an ongoing historical chronology of captured changes.
3. CDP creates an unlimited number of user-defined (APIT) data images, which allows for fine granular recovery.

4. CDP can present the APIT data images across multiple platforms and applications.

Meeting the Challenge with Integrated Data Protection

One of the challenges to busy server environments is the speed at which data and applications can be restored. In order to accomplish this, the IT toolset should include continuous data protection that is seamlessly integrated with the backup application and with replication. These three – CDP, backup and replication – make up the three pillars of data protection of a continuous availability strategy. Backup enables long-term viability and recoverability of application data, replication protects critical data against loss, and CDP enables IT to rollback to the nearest possible moment of known good data to support application availability.

In response to the challenge, BakBone has developed a strategic approach to data protection called Integrated Data Protection, or IDP. IDP runs on a foundation of core service managers including Control, Scheduling, Reporting, Security, and Policy Managers. The Core Service Managers coordinate and manage the data protection technologies running below them: backup and recovery, replication, reporting, and now continuous data protection. With IDP, customers can use individual BakBone technologies or integrate them into a cross-platform, centrally managed environment.

S O L U T I O N P R O F I L E

NetVault: TrueCDP for Continuous Data Protection

The newest entrant in BakBone's IDP suite is continuous data protection with BakBone NetVault: TrueCDP. As a plug-in with NetVault: Backup 8.0, NetVault: TrueCDP emphasizes not only Recovery Point Objectives (RPO) for granular recovery at any point in time, but also Recovery Time Objectives (RTO) with the ability to recover quickly and get back up and running with the data intact.

NetVault: TrueCDP's high level of cross-platform data protection and availability should be welcome news to IT, which must fully protect critical data and applications in mixed environments. And since NetVault: TrueCDP is fully integrated because of IDP, BakBone users do not need to rip-and-replace or add another layer of complexity in order to add CDP functionality -- an all too common requirement with other CDP products.

NetVault: TrueCDP includes integrated, cross-platform continuous data protection with real-time, byte-level capture of data changes for Linux and Windows file systems. This ability to capture changes at any-point-in-time (APIT) is crucial to making files continuously available in busy file server and web server environments.

NetVault: TrueCDP is an evolution of NetVault: Replicator's cross-platform code base. NetVault: Replicator's kernel driver monitors byte-level changes and journals them synchronously at the local level, and each journal is then asynchronously

replicated in the background to the remote target. It was obvious to BakBone that this capability should serve as the code base for its CDP product. Fundamental integration with NetVault: Backup is integral to NetVault: TrueCDP. At the same time that NetVault: TrueCDP is capturing and journaling byte-level changes, it is also taking fixed-point-in-time (FPIT) snapshots of the data, which is streamed in real-time to a file system on the NetVault: Backup system. Recovering these FPIT snapshots happens through NetVault: Backup's intuitive GUI.

By fully integrating NetVault: TrueCDP with NetVault: Backup, BakBone enables IT to meet both RPO and RTO for byte-level changes to files and file systems.

DATA PROTECTION

NetVault: TrueCDP also meets common challenges around optimizing data protection products for continuous availability.

- **Seamless product integration.** When it comes to data protection, one of the most perplexing problems is trying to integrate point products. Backup and recovery (BAR) remains the bedrock of data protection, but businesses also require other technologies to protect critical data including replication and CDP. Vendors can overuse the "seamless integration" phrase, but in BakBone's case it really delivers. NetVault: TrueCDP adds continuous data protection without requiring a rip-and-replace.
- **Cross-platform integration.** As if integrating different products was not

S O L U T I O N P R O F I L E

challenging enough, IT must also integrate them across mixed environments. Many of these products are made for same-platform environments and cannot carry out operations on the mixed Linux/Windows/Unix platforms that are the reality of many data centers. Linux, in particular, suffers with many data protection vendors slow to protect Linux platforms, even given Linux's large growth rate. NetVault: TrueCDP is not restricted to a single platform. This has long been one of BakBone's claims to fame: that its data protection suite runs on the Linux, Windows, Unix, and Mac OS platforms as well as supporting a multitude of applications and databases via the NetVault: Backup Application Plugin Modules.

- **Clearing the high recovery bar.** IT administrators must focus data protection towards business demands for higher levels of performance, availability and granularity. This is not always possible given their data protection products, which put IT under constant pressure to meet service levels in the face of growing data volumes and inadequate data protection plans. NetVault: TrueCDP offers fast and granular APIT recovery of consistent data. High RPO, RTO and file consistency make CDP a natural companion to replication as well as backup and recovery, and illustrates that BakBone understands how vital preserving data consistency is to the ultimate goal of Application RTO.

Taneja Group Opinion

CDP is without question a key technology for data recovery, and is rapidly becoming mission-critical in production environments that cannot afford to lose their applications because of missing or corrupted data. (To read more about the mission-critical nature of CDP you can visit www.tanejagroup.com to read our expanded report "Continuous Data Technologies: A New Paradigm.")

One of the key CDP trends is to observe not only increasing RPO demands but also RTO, and to match both recovery and time objectives with restoring ever-changing, time-sensitive data. BakBone understands that, and has developed NetVault: TrueCDP for true any-point-in-time level data capture along with fixed-point-in-time snapshots for even stronger data protection. These abilities, along with NetVault: TrueCDP's product and platform integration in BakBone environments, make it a strong contender for mission-critical mid-range on up to small enterprise data centers. And its ability to practice remote FPIT also allows it to support the distributed enterprise's remote office data protection.

Since NetVault: TrueCDP only works within the BakBone product suite it does not have the broader reach of some other CDP packages, but there are advantages to having that kind of functionality within an integrated data protection family. BakBone primarily focuses on companies and environments who are likely to stay with a single backup vendor and who appreciate sophisticated functionality within the product line. And NetVault: TrueCDP offers

S O L U T I O N P R O F I L E

multiple platform support, giving it a flexible advantage within NetVault: Backup environments running Linux and Windows now. While BakBone's technology provides sophisticated and scalable data protection options, the technology is easy to use and simple to navigate.

Finally, and in our view most importantly, is BakBone's ability to recover consistent data to file and web servers. We consider consistent recovery a crucial point in the recovery continuum, because the ultimate recovery goal of IT must not be data, but the application. In this strategy, IT treats application and data availability as an inseparable unit and CDP is a valuable tool to carry out that strategy.

The reason for our insistence is that recovering data alone – while obviously a necessary step in the recovery continuum – is insufficient by itself. Only when the application is recovered is the task of recovery complete. In spite of this, some CDP products have only weak ties to applications. They recover data strictly by points in time but do not check for consistency with the application, meaning that the recovered data may have been mid-transaction and thus incomplete. Now the application administrator is left with the arduous task of

restoring data to the application only to find out that the data is inconsistent. This forces them to make multiple attempts to restore good data from earlier and earlier points in time, wasting valuable time and losing completed saves and transactions in the process. The upshot is a poor Application RTO, which guts the usefulness of data recovery RTO. CDP products that offer good RPO and RTO for data recovery but not for applications, are simply not as valuable as those CDP products that help to bring up the application as soon as possible.

With NetVault:TrueCDP, BakBone has made a good start towards achieving Application RTO in file and web servers by supporting file consistency in addition to granular recovery points. As far as we are concerned it cannot happen too soon, and we are glad to see that BakBone's roadmap includes plans to expand NetVault: TrueCDP to include additional application-based CDP data recovery in future releases.

We certainly believe that BakBone is already making a significant contribution to integrated continuous data protection strategies, and that their contribution will expand to accomplish this mission within an integrated data protection – or rather, application protection – framework.

***NOTICE:** The information and product recommendations made by the TANEJA GROUP are based upon public information and sources and may also include personal opinions both of the TANEJA GROUP and others, all of which we believe to be accurate and reliable. However, as market conditions change and not within our control, the information and recommendations are made without warranty of any kind. All product names used and mentioned herein are the trademarks of their respective owners. The TANEJA GROUP, Inc. assumes no responsibility or liability for any damages whatsoever (including incidental, consequential or otherwise), caused by your use of, or reliance upon, the information and recommendations presented herein, nor for any inadvertent errors which may appear in this document.*