

Recovery Management for DB2



Benefits

- > Reduces down time and associated costs
- > Ensures data integrity
- > Speeds recovery time
- > Reduces staff resource requirements
- > Verifies resource availability and recoverability
- > Reduces disaster recovery errors and costs
- > Provides world class support

Features

- > Exclusive inflight recovery technology that eliminates the need for application quiesces
- > Exclusive backout recovery strategy
- > Exclusive backup and recovery avoidance
- > Exclusive disaster recovery data collection and analysis
- > Exclusive Online Consistent Copy technology
- > Disaster recovery simulation and estimation
- > Instant Snapshot copy and recovery
- > DR mirror management
- > Automatic drop recoveries

YOUR BUSINESS CHALLENGE

Your primary concern is keeping your mission-critical data available. Being able to recover quickly from an unexpected user error, hardware failure, or even a disaster is vital to your organization. However, maintaining availability is becoming increasingly complex as the amount of data increases while resources shrink. To recover at optimal speed and efficiency, you need answers to these questions:

- > How can you compensate for shrinking IT staff and decreasing levels of experience?
- > How can you maintain maximum data availability while keeping costs under control?
- > How can you ensure that you can maintain data integrity?
- > How can you reduce the costs associated with backups and recoveries?
- > How can you recover as quickly and efficiently as possible?

BMC SOFTWARE ANSWERS THE CHALLENGE

The Recovery Management for DB2 solution is a unique product that integrates exclusive BMC Software technology to provide targeted, rapid backup and recovery techniques that are unmatched in the industry. Only BMC Software offers inflight recovery technology to any timestamp or logpoint, high-speed transaction recovery, backout recovery, and instant recovery using intelligent hardware. Using these unique features, you can achieve a positive return on your investment quickly with Recovery Management for DB2.

DB2 8.1 EXPLOITATION

The Recovery Management for DB2 solution supports DB2 8.1 by providing support for the following features::

- > UNICODE names
- > 4096 partitions
- > data-partitioned secondary indexes (DPSIs)
- > table-controlled partitioning
- > online schema evolution
- > long keys (up to 2000 bytes) and nonpadded varying-length index keys
- > variable CISIZE
- > long names (up to 128 characters) for creator, table, index, and STOGROUP names

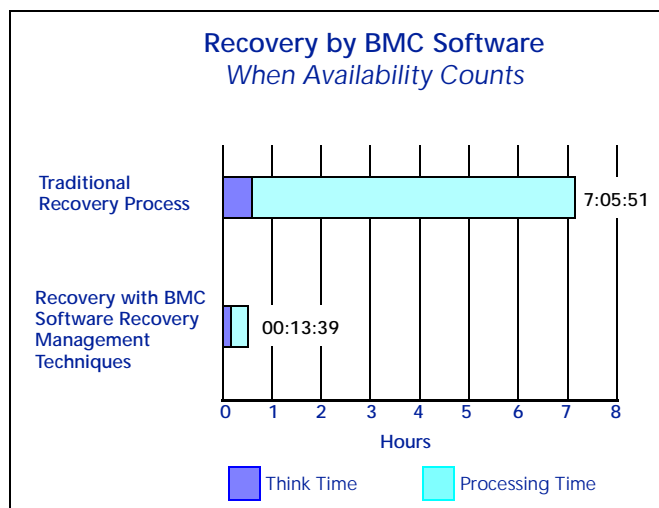
EXCLUSIVE INFLIGHT RECOVERY TECHNOLOGY

The inflight resolution technology of the Recovery Management for DB2 solution eliminates the need for application quiesces by enabling you to perform a consistent recovery to any user-specified timestamp or logpoint. Inflight resolution technology identifies and resolves uncommitted units of work while performing a backout recovery or a traditional forward recovery to a timestamp or a log point. No quiesce is required to create a point of consistency.

EXCLUSIVE BACKOUT RECOVERY

The exclusive backout recovery capability enables you to recover your table spaces and indexes many times faster than traditional forward recovery, while significantly reducing CPU time. With backout recovery, you recover to a point in time without first restoring image copies. Instead, you start the recovery process with the database in its current state and back out updates by using the DB2 log.

For example, the most recent copy of a shipping database was made 24 hours ago; but, for the last hour, an application error has been tagging all shipments to go to Chicago. The fastest way to return the database to the point before the application error is to remove one hour of records, rather than restoring 23 hours of records.



EXCLUSIVE DATA COLLECTION

The Recovery Management solution automatically collects and stores statistical data from all actual, simulated, and estimated disaster recoveries. This data includes a list of objects that require the most recovery time, total elapsed time for recoveries, and more.

The collected data can enable you to compare different recoveries, determine whether you are meeting your service level agreements, and even generate a number of scenarios to assist you in reducing disaster recovery time or in justifying more resources.

EXCLUSIVE ONLINE CONSISTENT COPY

Online Consistent Copy is a new technology that enables you to make consistent copies of table spaces and index spaces without any outage. The standard method of making consistent image copies requires that you quiesce the table space, start the table space as read-only, or lock the tables. This method is usually impractical or impossible on busy systems. With Online Consistent Copy, the spaces being copied are continuously available for read and write access while the copy is being made. Online Consistent Copy does

this by making SHRLEVEL CHANGE Instant Snapshot copies. It then uses the log to externalize changes to the copies for all complete transactions and backs out changes in the copies for any in-flight transactions. Online Consistent Copy

- > minimizes the impact on production applications
- > requires minimal CPU and I/O on the production system
- > can be used for both data migration and to-copy recovery
- > makes consistent copies of production data at virtually any time, because no outage is required

MIRROR MANAGEMENT

If mirroring is part of your recovery solution, Recovery Management for DB2 can streamline your backup and recovery processes. The mirror management functions recognize EMC TimeFinder and SRDF, HTC ShadowImage and HRC, and generic PPRC mirror pairs (including multiple pairings) on all hardware, regardless of vendor.

Recovery Management performs the following functions in a mirrored environment:

- > identifies the volumes on which your system resources are located and identifies mirrored application data and the volumes on which the mirrored objects are located
- > verifies that the identified volumes for system resources and application data are being mirrored actively, and reports exceptions
- > generates jobs to recover non-mirrored resources at the remote site (objects which have been identified as mirrored but which are not on actively-mirrored volumes are included in the recovery job automatically)

EXCLUSIVE HIGH-SPEED TRANSACTION RECOVERY

Only the Recovery Management for DB2 solution from BMC Software features high-speed transaction recovery capability, a more sophisticated technique for correcting bad transactions than a standard point-in-time recovery.

For example, an application programmer for a major bank discovers that a new account activation transaction has been miscalculating fees for more than a week. No one caught the error except the customer who was incorrectly billed for \$4,000. The programmer realizes that every other new account set up during the past 10 days is also bad. Instead of stopping the database to manually adjust the new account records, the senior DBA suggests using high-speed transaction recovery.

The Recovery Management for DB2 solution identifies all the accounts that are affected by the bad transaction, then produces a report of the accounts that need to be repaired. With high-speed transaction recovery, the erroneous updates are removed, and the valid updates are reapplied while the database remains online.

EXCLUSIVE INSTANT SNAPSHOT

The Recovery Management solution Instant Snapshot technology enables you to leverage your investment in intelligent storage to obtain fast backup and recovery of large spaces. Instant Snapshot uses hardware-specific interfaces to replicate large data sets (of any size) in as little as 2 seconds. Hardware support includes EMC Symmetrix, IBM RAMAC Virtual Array (RVA), and StorageTek Shared Virtual Array (SVA).

Instant Snapshots are physical data copies that are almost instantaneous because they require no I/O. In addition to a near-instantaneous copy process, Instant Snapshots offer a near-instant restoration phase during database recovery. If an Instant Snapshot cannot be made, Recovery Management provides the capability for the copy utility to fall back automatically to a mirror-based hardware snapshot or a traditional cache-based software snapshot.

COMPREHENSIVE SNAPSHOT COPY CAPABILITY

Additional Snapshot Copy features in the Recovery Management solution also enable you to make consistent copies by using hardware- or software-based cache without interrupting updates to the data. This support is transparent and automated. Recovery Management enables you to take advantage of Snapshot Copies when possible, while automatically falling back to standard copies if necessary. Flexible and vendor-neutral, the Recovery Management Snapshot Copy features reduce the time and complexity of backups.

EXCLUSIVE AUTOMATION

The Recovery Management for DB2 solution automates key processes to produce the fastest possible recoveries.

Exclusive backout to forward recovery strategy

The Recovery Management for DB2 solution enables the automatic backout to forward recovery strategy. Because of the speed of backout recoveries, the solution backs out as many objects as possible. Objects that cannot be backed out are recovered automatically by using the forward recovery method. This strategy ensures that all objects are recovered with maximum speed without intervention from the user.

Exclusive automatic index copies

Because large indexes can be recovered more quickly than they can be rebuilt, the Recovery Management for DB2 solution can be configured to automatically copy indexes that meet or exceed a user-specified size threshold.

Exclusive automatic index recovery to rebuild strategy

The Recovery Management for DB2 solution recovers indexes from copies and logs when possible, then automatically rebuilds any indexes that cannot be recovered.

Exclusive drop recoveries

The Recovery Management for DB2 solution automatically recovers objects that have been dropped from the DB2 catalog erroneously. Because DB2 does not recognize traditional copies or log entries for dropped objects, ordinary recovery methods for those objects do not work. The Recovery Management for DB2 solution enables you to recover data automatically by combining the copies and log records to populate the database, then translating the old object ID to a new object ID.

DISASTER RECOVERY SIMULATION

Recovery simulation enables you to perform the following tasks for both disaster recovery and local group recovery:

- > prove that you can recover the application data in a disaster recovery or local environment
- > verify that required recovery resources are valid and available and that log apply can be performed
- > work on your local site and disaster recovery plans before you run expensive recovery tests

By using recovery simulation, you can reduce the number of times that you need to run a full offsite disaster recovery scenario and ensure that those tests will be successful.

DISASTER RECOVERY ESTIMATION

The recovery estimation feature can provide an estimate in hours, minutes, and seconds for the amount of time that is required to perform a complete disaster recovery, including system and application resources. By using recovery estimation, you can deal with problem objects and fine-tune your recovery strategy before running a full offsite disaster recovery.

Recovery estimation enables you to perform the following tasks:

- > identify the objects that take the longest time to recover
- > use different scenarios to determine what changes reduce recovery time before performing a disaster recovery test
- > improve your disaster recovery plans before you run an expensive offsite disaster recovery

TARGETED RECOVERY BASED ON UNIQUE APPLICATION DEFINITION

The Recovery Management for DB2 solution manages recovery at the application level. As a result, your DB2 recovery is faster and less disruptive because it affects only the application with the error. By creating and revalidating application groups, Recovery Management for DB2 ensures that all objects within an application are recovered successfully and that referential integrity is maintained.

AUTOMATION OF BACKUP AND RECOVERY JOB CREATION

Recovery automation reduces downtime and eliminates errors; fewer manual steps mean less “think time” in planning. The Recovery Management for DB2 solution enhances recovery efficiency in several ways:

- > automates job streams to reduce data outages
- > simplifies recovery by building control statements, and reducing tape handling by recognizing backups on stacked tapes
- > identifies objects that have not changed between the recovery point and the current time, and excludes the unchanged objects from the recovery

HIGH-SPEED BACKUP AND RECOVERY UTILITY FUNCTIONS

The most impressive reductions in elapsed time come from features that are exclusive to the BMC Software Recovery Management for DB2 solution. Instant Snapshot reduces copy and recover time by as much as 98 percent, and backout recovery is up to 11 times faster than traditional forward recovery.

ENHANCED RECOVERY POINT SELECTION

Quickly restoring DB2 is not enough. Successful recovery is not complete until the database is recovered to the desired point in time. The Recovery Management for DB2 solution offers the most options for recovery point selection, enabling you to avoid losing valuable application data. In addition to traditional quiesce points, the solution locates additional possible recovery points where no transactions are in-flight. With the unique Instant Snapshot functions, even hardware copies can be recovered to any point in time that you specify.

LOB SUPPORT

Recovery Management for DB2 supports the backup and recovery of DB2 Large Object (LOB) and LOB-related table spaces.

About BMC Software

BMC Software, Inc. [NYSE:BMC], is a leading provider of enterprise management solutions that empower companies to manage their IT infrastructure from a business perspective. Delivering Business Service Management, BMC Software solutions span enterprise systems, applications, databases, and service management. Founded in 1980, BMC Software has offices worldwide and fiscal 2004 revenues of more than \$1.4 billion. For more information about BMC Software, visit www.bmc.com.

RECOVERY MANAGEMENT FOR DB2 SOLUTION

The Recovery Management for DB2 solution comprises the following components:

- > RECOVERY MANAGER for DB2
- > RECOVER PLUS for DB2
- > COPY PLUS for DB2
- > Log Master for DB2
- > SNAPSHOT UPGRADE FEATURE for DB2

The Recovery Management for DB2 solution provides the features of the individual components and integrates exclusive component technologies into more powerful and robust methods for backup and recovery of your data.

Helping you maintain advantage

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