



BMC APPLICATION RESTART CONTROL

Control checkpoints and restart batch jobs with no application changes.

Key Benefits

- » Improves data availability and data integrity by reducing errors
- » Maximizes availability by reducing or eliminating batch re-run time
- » Ensures data integrity by keeping all data repositories in sync
- » Allows you to quickly quiesce jobs just before a scheduled outage by ending them at a checkpoint
- » Minimizes implementation requirements by ensuring easy retrofit into existing applications
- » Supports application programs written in COBOL, PL/1, and Assembler

Products

- » BMC APPLICATION RESTART CONTROL for DB2 (AR/CTL for DB2)
- » BMC APPLICATION RESTART CONTROL for IMS (AR/CTL for IMS)
- » BMC APPLICATION RESTART CONTROL for VSAM (AR/CTL for VSAM)

Business Challenge

Many organizations run a significant amount of work in batch mode, but shrinking windows shorten the time available to run batch jobs. When a batch job fails, it must be restarted at the point of failure or at the beginning of the job (after recovery of affected databases and files). It is not practical to back out everything and start from the beginning because backing out updates from can take twice as long as running the application. Nor is it practical to restart from the wrong point, then back out errors and start over again. The only way to restart at the point of failure is to ensure that the application takes periodic checkpoints of the contents of application working storage areas. Taking too many checkpoints wastes CPU resources, but taking too few lengthens the time required to recover the failed job.

The BMC Solution

BMC APPLICATION RESTART CONTROL (AR/CTL) enables you to resume failed or interrupted batch applications from the most recent checkpoint rather than from the beginning of the job step. Faster restarts minimize contention between batch jobs and online processing. You can often implement checkpoint/restart functionality with no changes to application code or jobs. AR/CTL helps you determine the best balance between performance, restart time, and checkpoint overhead by controlling the checkpoint frequency outside the application.

Ensuring data integrity is the primary reason for automating restarts. Manually searching for the last checkpoint is time-consuming and error prone. Restarting from the wrong checkpoint can result in errors, duplicate entries, omitted updates, or other problems. Recovering from an inaccurate restart can be even more complex and confusing than the original problem. AR/CTL products select the right checkpoint every time, eliminating errors and the need to restart your restart. AR/CTL products provide the following features:

- » Automatic restart checkpoint selection – ensures integrity and shorten restart time
- » Application working storage – can capture and restore an application program's working storage areas in main memory, which allows the program to resume processing at the last checkpoint. It can capture and restore saved areas of virtual storage for subprograms executing under the main program.
- » Application reattach – improves the operational stability of many application environments by providing automation to react to certain types of abend conditions. Abends often result from lock contention. Many times, this makes it possible to schedule update processes to run in parallel rather than serially.
- » Checkpoint and restart coordination for DB2, IMS, and CICS/VSAM restarts
- » Automatic checkpoint – simplifies and speeds the process of implementing checkpoint/restart logic into application programs
- » Program exception handling – automatically redirects "bad" input data that causes S0C7 abends into a reject file and lets the application continue. Redirected records can be cleaned up the later.
- » Flat files – automatically manages flat files and ensures that the contents of the files are synchronized with database activity when checkpoints are issued. During restart processing, the files are automatically repositioned to their state as of the latest checkpoint.

- » Suspend and resume processing for the following products to obtain a point of consistency required for reorganization or recovery:
 - BMC Backup and Recovery Solution for IMS
 - BMC MAXM Reorg/Online for IMS
 - BMC IMAGE COPY PLUS
 - BMC RECOVERY MANAGER for IMS
 - BMC REORG PLUS for DB2 Online Feature
 - BMC Fast Path Online Restructure/EP

AR/CTL for DB2

AR/CTL provides DB2-oriented features:

- » SQL return code handling – can intercept a defined SQL return code received during application program processing and issue a user-defined user abend code and reason code. This can be used to standardize 911 processing throughout an entire application environment.
- » Cursor repositioning – any checkpoint restart solution can effectively save working storage, but only AR/CTL for DB2 can return the application to the proper position within the cursor. You no longer need to add logic to your DB2 applications to track and store the cursor position for use in checkpoint restart.
- » Batch Attachment facility – performs the attachment to DB2 on behalf of the application; can run in an “Attach Only” mode to provide the DB2 attach for programs not using Checkpoint/Restart services

AR/CTL for IMS

AR/CTL provides IMS-oriented features:

- » Restart with no code changes – fully supports and enhances the IMS Extended Restart Facility, Requires no application code or JCL changes; eliminates the need to change application code to call a third-party restart program
- » Flat file management – supports and manages IMS GSAM files and native file techniques; there is no need to convert flat files to GSAM
- » Checkpoint management – externally filters excessive checkpoint activity to provide significant savings in elapsed time and CPU consumption. Many legacy applications were developed to run on slower processors and the checkpoint intervals were never recalibrated for hardware upgrades.
- » DBRC conversion aid – can automatically provide a logging environment to avoid having to retrofit DL/I JCL when converting an application to run under DBRC

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Business thrives when IT runs smarter, faster, and stronger. That’s why the most demanding IT organizations in the world rely on BMC Software across both distributed and mainframe environments. Recognized as the leader in Business Service Management, BMC provides a comprehensive and unified platform that helps IT organizations cut cost, reduce risk, and drive business profit. For the four fiscal quarters ended September 30, 2009, BMC revenue was approximately \$1.88 billion.

AR/CTL for VSAM

AR/CTL provides VSAM-oriented features:

- » Local VSAM access services for VSAM data sets that are accessed exclusively by a batch VSAM application program – provides checkpoint support and automatic backout support for VSAM files
- » DBMS synchronization – automatically synchronizes VSAM Checkpoint/Restart activity with DB2 or IMS checkpoint processing
- » VSAM file sharing – supports remote VSAM file sharing between batch applications and CICS regions executing on the same or different z/OS images. This allows batch application programs to update VSAM files while they are online to CICS and in full update mode and makes it possible to avoid converting a VSAM file to DB2 or IMS to provide 24x7 type access to the file.

For More Information

To learn more, please visit www.bmc.com.