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DB2 for z/OS Application Data Recovery
Information

Length: 3.0 Days
Ref: CV891G-X
Delivery method: Classroom
Price: AUD

Overview

Learn how data and index recovery is supported by DB2 for z/OS in order to develop the knowledge and skills you need to design and implement backup and recovery procedures for your installations.

Practice using the utility functions and techniques included in the lecture material during extensive interactive machine lab exercises on a z/OS system.

Course Materials

The course materials cover DB2 for z/OS V9. The content is also appropriate for those who are working on DB2 10 for z/OS.

Hands-On Labs

Six labs are included to address functionality of DB2 for z/OS application recovery.

Public

This intermediate course is for individuals who support and implement application data backup and recovery procedures for DB2 9 or DB2 10 for z/OS.

Prerequisites

You should complete:

- *DB2 9 for z/OS Database Administration Workshop - Part 1 (CV830)***or**
- *DB2 9 for z/OS Database Administration Workshop - Part 1 - Instructor Led Online (3V830)***or**
- possess equivalent knowledge.

Objective

- Design and implement application data backup and recovery procedures for their installations.

Topics

Backup and recovery basics

- Describe the major situations requiring the recovery of data
- Explain the basic DB2 logging concept
- Explain the basic DB2 backup and recovery concept
- Describe the restrictive and advisory states relevant for backup and recovery
- Explain the purpose of the Logical Page List and of Write Error Page Ranges

Normal backup of table and index spaces (normal backup in this context means the creation of DB2 image copies using the COPY utility)

- Create full and incremental image copies or inline copies for table spaces
- Create conditional image copies for table spaces
- Create image copies for indexes
- Establish additional copies of image copies
- Merge full and incremental image copies to obtain new full or incremental image copies
- Delete image copies no longer needed

Normal recovery of table and index spaces (normal recovery in this context means the recovery using DB2 image copies and the RECOVER utility)

- Prepare the recovery of a table space or index space
- Recover a table space or COPY enabled index space to current
 - An entire table space or index space
 - A partition or data set
 - An error range
- Replace defective volumes during recovery
- Relate the fallback recovery concept
- Rebuild indexes

Point-in-time recovery (normal recovery to an earlier point in time for table spaces and index spaces)

- Plan for point-in-time recoveries
- Prepare point-in-time recoveries
- Perform point-in-time recoveries involving table spaces other than LOB table spaces

Generic utility jobs (LISTDEF, TEMPLATE, and OPTIONS as far as they are relevant for backup and recovery)

- Provide reusable list definitions for use by the DB2 utilities
- Use list definitions in utility control statements and understand how they expand

- Describe the concept and working of templates replacing utility Dataset Definition (DD) statements
- Use templates in utility jobs to simplify Job Control Language (JCL)
- Use templates together with list definitions
- Use the OPTIONS utility control statement to control execution parameters for utility jobs

Using nonstandard copies (for the backup and recovery of table spaces or index spaces)

- Establish DB2 Data Facility Storage Management Subsystem (DFSMS) concurrent copies using the CONCURRENT option of the COPY utility
- Restore DB2 DFSMS concurrent copies established using the CONCURRENT option
- Understand the prerequisites for establishing nonstandard copies
- Establish and restore nonstandard copies using the DSN1COPY stand-alone utility
- Establish and restore nonstandard copies using native DFSMS Data Set Services (DFSMSdss)
- Apply log changes to restored copies

Special recovery situations (including down-level data, the recovery of dropped objects, and the repair of pages)

- Handle down-level data
- Prevent the accidental dropping of tables, table spaces, or databases
- Recover accidentally dropped table spaces
- Recover accidentally dropped tables
- Print and analyze pages of table spaces or partitions
- Repair pages of table spaces if necessary

Application recovery (how application programs should be structured to preclude recovery problems and what can be done if they do not follow these recommendations)

- Convince application programmers to structure programs into committable units
- Teach application programmers how to make programs restartable
- Advise system programmers in canceling threads without backout being performed
- Instruct system programmers how to postpone backout work during DB2 restarts
- Cancel the postponed backout for objects being recovered or replaced

Daily Agenda

Day 1

- Backup and recovery basics
- Normal backup of table and index spaces
- Exercises: normal backup of table and index spaces
- Review exercises: normal backup of table and index spaces
- Normal recovery of table and index spaces

- Exercises: normal recovery of table and index spaces
- Review exercises: normal recovery of table and index spaces

Day 2

- Point-in-time recovery
- Exercises: point-in-time recovery
- Review exercises: point-in-time recovery
- Generic utility jobs
- Exercises: generic utility jobs
- Review exercises: generic utility jobs

Day 3

- Using nonstandard copies
- Exercises: using nonstandard copies
- Review exercises: using nonstandard copies
- Special recovery situations
- Exercises: special recovery situations
- Review exercises: special recovery situations
- Application recovery