DB2 9 for LUW Multiple Partition Environment for Single Partition DBAs

Information

Length:	3.0 Days
__Ref:	CL250G-X
Delivery method:	Classroom
Price:	EUR

Overview

This course replaced *(CG242)*.

This course teaches you how to perform database administration tasks using IBM DB2 Enterprise 9 with the Database Partitioning Feature. This course provides a fast path to DB2 Enterprise 9 partitioned database administration skills for experienced DB2 single partition database administrators. These tasks include customization for the DB2 Enterprise 9 with DPF system, creating and populating partitioned databases, designing a database for parallel use, and using partitioned DB2 utilities. There is no actual installation of DB2 Enterprise software in this workshop. A DB2 for Linux system is used to exercise various administrative functions.

Course Materials

The course materials address DB2 9.7 for Linux, UNIX, and Windows.

Hands-On Labs

Eleven labs are included to address DB2 9.7 for Linux, UNIX, and Windows.

Certification

Prepare for IBM Certification Test 731: DB2 9 for Linux, UNIX, and Windows Database Administration.

Training Path

This course is part of an IBM Training Path. Taking this course in the recommended sequence allows you to maximize the benefits from your education.

Public

This intermediate course is for DB2 for Linux, UNIX and Windows single partition experienced database administrators involved in planning, implementing, or maintaining DB2 multi partitioned DPF databases.

Prerequisits

You should be able to:

- Use basic UNIX functions such as utilities, file permissions, hierarchical file system, commands, and the vi editor
- Administer a DB2 for Linux, UNIX and Windows single partition database

Objective

- Describe the steps to install and customize DB2 Enterprise 9 in a DPF partitioned environment
- Load data on DB2 Enterprise 9 in a partitioned environment
- Define a DB2 DPF partitioned recovery strategy and perform the tasks necessary to support the strategy
- Identify how a database should be designed to take advantage of the parallel architecture
- Use the DB2 utilities to manage data and maintain your DPF partitioned database

Topics

DB2 DPF Partitioned Database Components and Concepts

- Identify the kinds of business applications that use parallel databases
- Describe the basic architecture of each of the hardware platforms on which parallel databases may run
- Define the strengths of the DB2 DPF partitioned architecture
- Identify the key features that set DB2 in a DPF partitioned environment apart from other members of the DB2 family

Getting Started with DB2

- Describe the purpose of DAS

Installation

- Identify the steps to install and customize DB2 in a partitioned environment
- Use db2_all and rah commands

Creating a Partitioned DB2 Database

- Describe DB2 database partitioning
- Create a database in a DB2 partitioned environment with or without Automatic Storage enabled
- List the three types of Storage Management for table spaces
- Describe the three default system table spaces
- Access and update the database manager configuration file and the database configuration files

- Access and update the system database directory and list the local database directory
- Use tools to issue commands and SQL statements

Partitioning and Database Partition Groups

- Identify considerations when choosing a distribution key
- Describe join strategies in partitioned databases
- Identify the syntax for creating database partition groups

Data Placement on the Partitions

- List the advantages and disadvantages for each type of table space management
- Create SMS table spaces
- Create DMS tablespaces
- Create Automatic Storage managed table spaces
- Use the GET SNAPSHOT commands and db2pd commands to check table space status
- Use SQL functions specific to the partitioned environment
- Identify catalog views that contain information about your partitioned environment

Moving Data

- Utilize the EXPORT Utility to extract data from a DB2 database
- Identify the different methods for inputting data, including the Import Utility, using buffered and unbuffered SQL INSERT and the LOAD Utility
- Describe the process of partitioning and loading data
- Identify how the partitioned database options on the LOAD command can be used to control the data partitioning and load processing

Partitioned Database Backup and Recovery

- Describe the three types of recovery support provided by DB2
- Explain the principles DB2 uses for its recovery/restart functions
- Describe the configuration options for DB2 logging and explain the differences between circular and archive logs
- Use the BACKUP, RESTORE and ROLLFORWARD commands to back up and recover a DPF partitioned database
- Recover the database to a prior point in time using the RECOVER DATABASE command
- State general considerations regarding disaster recovery and implementation of a server cluster for high availability

Scaling the Database

- Identify how the partitioned database configuration can be scaled by adding new database partitions

- Differentiate between the three options on the REDISTRIBUTE command
- Utilize the REDISTRIBUTE command to add or remove database partitions from a database partition group
- Troubleshoot problems that may occur during redistribution

Database and Application Performance

- Describe the steps used by the DB2 Optimizer to generate access plans
- List the major influences for SQL optimization, including Catalog statistics, database memory configuration, optimization class selection and database partition groups
- Utilize the RUNSTATS utility to collect detailed table and index statistics
- Explain the major goals for table and index reorganization
- Use the REORGCHK report to plan effective use of the REORG utility
- Describe the use of the DB2 explain tools to analyze access strategies for SQL statements

Monitoring and Problem Determination

- Use error logs
- Identify the different monitor types
- Identify how to use the independent trace facility (db2trc)
- Use the dp2pd problem determination tool to obtain statistics from a running instance
- Identify additional commands for listing application information

Locks and Concurrency

- List objects that may be locked by the database manager
- Discuss available lock modes and their compatibility
- Influence locking strategies used by the database manager

Agenda

Day 1

- Welcome
- DB2 DPF Partitioned Database Components and Concepts
- Getting Started with DB2
- Installation
- Installation Lab
- Creating a Partitioned Database
- Creating Database Lab
- Partitioning and Database Partition Groups
- Partitioning and Database Partition Groups Lab

Day 2

- Data Placement on the Partitions
- Creating Tablespaces Lab
- Create Objects Lab
- Moving Data - Part 1
- Moving Data Lab - Import and Load
- Moving Data - Part 2
- Moving Data Lab - Partitioned Load

Day 3

- Partitioned Database Backup and Recovery
- Recovery Lab
- Scaling the Database
- Scaling the Database Lab
- Database and Application Performance
- Database and Application Performance Lab
- Monitoring and Problem Determination
- Locks and Concurrency
- Monitoring and Problem Determination Lab