

HP Education Services

NonStop SQL/MX Database Management (U8617S)



This 5-day course introduces tasks used by database administrators or system managers to manage and protect a NonStop SQL/MX database and applications that access the database.

Audience

- Database administrators
- System managers
- Personnel responsible for the availability of NonStop SQL/MX databases and applications

Prerequisites

- NonStop SQL/MX Basics (U4184S)
- NonStop SQL/MX Quick Start (U4185S)

Course Objective

- Describe HP NonStop SQL/MX Release 2 architecture
- Install SQL/MX Release 2 and migrate SQL/MX Release 1.x metadata to SQL/MX Release 2
- Create, alter, and drop SQL/MX Release 2 database objects (catalogs, schemas, tables, constraints, indexes, views, and triggers)
- Grant and revoke access privileges to SQL/MX database objects
- Importing data into SQL/MX non-partitioned and range and hash partitioned tables
- Protecting and recovering SQL/MX database objects with HP NonStop Transaction Management Facility
- Use the MODIFY utility to add, split, merge, and drop SQL/MX range and hash partitioned tables
- Describe and use the SQL/MX utilities (DUP, import, migrate, MODIFY, mxtool, mxexportddl, MXGNAMES, POPULATE INDEX, and PURGEDATA)
- Describe the SQL.MX Release 2.0 distributed database architecture

Benefits to You

- Create and manage SQL/MX Release 2 objects
- Become familiar with the SQL/MX Release 2 architecture using SQL/MX native tables

Why education services from HP?

- Focus on job-specific skills
- Comprehensive student materials
- More than 80 training locations worldwide
- Online instructor-led and self-paced training at <http://www.hp.com/education>
- State-of-the-art classroom facilities
- Hands-on practice
- Experienced and best-in-the-field HP instructors
- Customized on-site delivery

Course Title: NonStop SQL/MX Database Management

HP Product Number: U8617S

Category/Subcategory: NonStop/Application Design and Development

Course Length: 5 days

Level: Intermediate

Delivery Language: English

Detailed Course Outline

Module 1 Overview of SQL/MX Release 2

Architecture

- SQL/MX logical structure, catalogs, schemas, and objects
- SQL/MX physical structure: SMD volumes, schema subvolumes, data forks and resource forks
- SQL/MX processes and utilities
- Lab exercise: Overview of SQL/MX Release 2 Architecture
- Identify the system catalog, schemas, and objects
- Identify user catalogs, schemas, and objects
- Locate the underlying files for SQL/MX objects

Module 2 SQL/MX Release 2 Installation

- Hardware and software requirements for installing SQL/MX Release 2
- Installing SQL/MX Release 2 with the InstallSqlmx utility
- Install the SQL/MX sample database
- Lab exercise: SQL/MX Installation
- Run the InstallSqlmx utility

Module 3 Metadata Migration from SQL/MX Release

1.8 to SQL/MX Release 2.0

- Migrating SQL/MX Release 1.8 metadata, MP Aliases, defaults, ODBC/MX metadata, and stored procedures (procs and params) to SQL/MX Release 2.0
- Migrate Utility
- Lab exercise: Metadata migration from SQL/MX R1.8 to SQL/MX R2.0
- Run the migrate utility

Module 4 Creating SQL/MX Objects

- Creating catalogs, schemas, tables, constraints, indexes, and views
- Viewing object metadata

- Lab exercise: Creating SQL/MX Objects with mxci or NSM/web

Module 5 Referential Integrity Constraints

- Referential Integrity
- Creating referential integrity constraints as column or table constraints
- Lab exercise: Creating Referential Integrity constraints with mxci or NSM/web

Module 6 Creating SQL/MX Partitioned Tables and Indexes

- Range and hash partitioned tables
- Creating range and hash partitioned tables and indexes
- Decoupled keys, copartitioned tables, and colocated partitions
- Lab exercise: Creating range and hash partitioned tables with mxci or NSM/web

Module 7 Creating SQL/MX Triggers

- Trigger terminology
- Creating BEFORE and AFTER triggers
- Cascading and conflicting triggers
- Lab exercise: Creating SQL/MX Triggers

Module 8 SQL/MX Security

- Object ownership and security rules
- Object Privileges
- SQL/MX GRANT and REVOKE commands
- Lab exercise: Granting and Revoking Privileges with mxci or NSM/web

Module 9 Import and Populate Index Utilities

- Importing fixed and delimited data with the import utility
- Importing data in parallel
- Populating (loading) indexes
- Lab exercise: Importing Data into Range and Hash

- Partitioned Tables and Indexes

Module 10 Reorganizing SQL/MX Tables and Indexes

- Reorganizing data
- Determining file fragmentation
- FUP RELOAD and INFO commands
- Lab exercise: Reorganizing Data

Module 11 Updating Statistics

- Histogram Statistics and histogram metadata tables
- Generating single column and multicolumn statistics
- Using sampling with the update statistics utility
- Lab exercise: Updating and Viewing Statistics

Module 12 Database Protection and Recovery with TMF

- TMF Protection and Recovery Strategies
- MXGNAMES Utility
- Performing Online Dumps
- Recovering dropped SQL/MX Objects
- Lab exercise: SQL/MX Protection and Recovery Using TMF

Module 13 Compiling SQL/MX Programs in the OSS Environment

- Compiling SQL/MX Release 2.0 and 1.x Programs
- Preprocessing source files for SQL/MX Release 2 or SQL/MX Release 1.x
- Language compiling SQL/MX annotated source files
- SQL/MX compiling Release 2 module definitions or SQL/MX Release 1.x module definition files
- Global or local module files
- Lab exercise: Compiling Embedded SQL/MX C or COBOL Programs in the OSS environment

Module 14 PURGEDATA Command and MODIFY Utility

- Purging data from range and hash partitioned tables

- Adding, splitting, merging, and dropping range partitions
- Adding and dropping hash partitions
- Lab exercise: PURGEDATA Command and MODIFY Utility

Module 15 SQL/MX Utilities

- DUP tables, indexes, and constraints
- RECOVER utility
- mxtool (INFO, VERIFY, FIXUP, and GOAWAY) utility
- Lab exercise: SQL/MX Utilities

Module 16 Managing SQL/MX Applications

- Name references in programs
- Compile time and late name resolution
- Similarity checking
- Automatic recompilation
- Methods for moving SQL/MX applications
- Lab exercise: Managing Embedded SQL/MX Programs

Module 17 SQL/MX Distributed Databases

- Distributed databases
- Transparency, visibility, and availability
- ANSI name translation for local and remote objects
- REGISTER and UNREGISTER CATALOG commands
- Lab exercise: SQL/MX Distributed Database

Module 18 Adding, Altering, and Dropping SQL/MX Objects

- Authorization for adding, altering, and dropping SQL/MX objects
- Adding SQL/MX objects
- Altering SQL/MX objects
- Dropping SQL/MX objects
- Lab exercise: Altering and dropping SQL/MX objects

Onsite-Delivery Equipment Requirements

- HP NonStop S72000 Server or later that supports 1 GB of memory and IEEE floating point
- G06.25 or later Operating System and DDL Licensing Product T0394
- Projecting equipment, computer to display MS Power Point slides and access to a TAFL process
- Student computers with access to a TAFL process

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