

# HP Education Services

HP NonStop SQL/MX Database for SQL/MP Users (U4185S)



This 5 day course is to help SQL/MP users transition to SQL/MX. The course describes the HP NonStop SQL/MX Release 2.0 architecture and processes.

## Audience

- Persons with practical experience creating databases, and generating queries using the NonStop SQL/MP product wanting to develop new applications using the ANSI-92 features of the NonStop SQL/MX product

## Prerequisites

- NonStop SQL/MP experience in a production environment
- Concepts and Facilities course (U4147S)
- HP NonStop SQL/MP Essentials course (U4181S)

## Course Objective

- Describe how to run an mxci session and basic mxci commands
- Describe how to start an mxci session, use ANSI names to access SQL/MX objects and Guardian names, SQL/MP aliases, and DEFINEs to access NonStop objects
- Describe SQL/MX DLM statements, data types, identifiers, functions, and isolation levels
- Describe how to compile embedded SQL/MX C/C++ and COBOL programs
- Describe how to use SQL/MX compound statements, Rowsets, and Publish and Subscribe services in embedded SQL/MX programs
- Describe SQL/MX module management features: targeting, versioning, and grouping
- Describe and use SQL/MX late name resolution, similarity checking, and auto-recompiling
- Describe and use SQL/MX data mining functions: transpose, sampling, and sequence functions
- Describe SQL/MX optimization, operators, plan fragments and use EXPLAIN function and Visual Query Planner to display query plans

## Benefits to You

- SQL/MX DML statements and ANSI 92 features
- Overview of the NonStop SQL/MX Release 2 Architecture
- SQL/MX compilation of COBOL and C applications
- SQL/MX Rowsets and Publish and Subscribe extensions

## Why education services from HP?

- Hands-on practice
- Experienced and best-in-the-field HP instructors
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- Customized on-site delivery

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**Course Title:** HP NonStop SQL/MX Database for SQL/MP Users

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**HP Product Number:** U4185S

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**Category/Subcategory:** NonStop/Application Design and Development

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**Course Length:** 5 days

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**Level:** Advanced

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**Delivery Language:** English

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**To Order:** You can order this course online at <http://www.hp.com/learn>. At the site, select a country, then choose "registration" or "Book a course" and fill out the online registration form.

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**Next Steps:** HP NonStop SQL/MX Database Management (U8617S)  
HP NonStop SQL/MX Query Analysis and Tuning (U8529S)

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## Detailed Course Outline

### Module 1 Overview of NonStop SQL/MX Release

#### 2.0 Architecture

- SQL/MX Release 2 Architecture – ANSI Catalogs and Schemas
- Underlying physical files that support the SQL/Mx objects
- SQL/MX Release 2 objects, processes, and utilities.
- Lab exercise:  
Lab 1.1 Overview of SQL/MX Release 2.0 Architecture Using mxci  
Lab 1.2 Overview of SQL/MX Release 2.0 Architecture Using NSM/web

### Module 2 Running an mxci Session

- Running an mxci session and accessing SQL/MX and SQL/MP objects
- SQL/MX object naming methods
- mxci commands
- Lab exercise: Lab 2 Running an mxci Session

### Module 3 SQL/MX DML Statements and Options

- SQL/MX Data types and functions
- DML statements and options
- SQL/MX Join operations
- SQL/MX access options and isolation levels
- SQL/MX implicit and explicit transaction management
- Lab exercise: Lab 3 DML Statements

### Module 4 Compiling Embedded SQL/MX Programs in the OSS Environment

- Module Directive and embedding SQL/MX statements
- Preprocessing, language compiling and SQL/MX compiling embedded SQL/MX COBOL and C programs
- Lab exercise:  
Lab 4.1 Compiling SQL/MX COBOL Programs  
Lab 4.1 Compiling SQL/MX C Programs

### Module 5 Preprocessing SQL/MX Programs on a Windows NT/2000/XP Workstation

- Preprocessing embedded SQL/MX COBOL and C programs

### Module 6 SQL/MX Compound Statements

- Compound statement
- Assignment statement
- IF statement
- Lab exercise:  
Lab 6.1 Compound Statements in an SQL/MX COBOL Program  
Lab 6.2 Compound Statements in an SQL/XM C Program

### Module 7 SQL/MX Rowsets

- Describe and implement rowsets in embedded DML statements in SQL/MX COBOL and C programs
- Lab exercise:  
Lab 7.2 Rowsets in an SQL/MX C Program  
Lab 7.1 Rowsets in an SQL/MX COBOL Program

### Module 8 SQL/MX Queuing and Publish and Subscribe Services

- Describe publish and subscribe services and transactional queuing
- Create publishing, subscribing, and dequeuing applications
- Lab exercise:  
Lab 8.1 SQL/MX Queuing and Publish/Subscribe Services in an SQL/MX COBOL Program  
Lab 8.2 Dequeuing Services in an SQL/MX COBOL program  
Lab 8.3 SQL/MX Queuing and

### Module 9 SQL/MX Module Management

- Describe module management
- Use targeting, versioning, and grouping module management options
- Lab exercise:  
Lab 9.1 Module Management Using an SQL/MX COBOL Program  
Lab 9.2 Module Management Using an SQL/MX C Program

### Module 10 Managing SQL/MX Applications

- Compile-time name resolution

- Late-name resolution
- Automatic recompilation
- Lab exercise:  
Lab 10.1 Managing Embedded SQL/MX  
COBOL Applications  
Lab 10.2 Managing Embedded SQL/MX C  
Applications

#### **Module 11 SQL/MX Transpose Clause**

- Transpose clause syntax and semantics
- Lab exercise: Lab 11 SQL/MX Transpose  
Clause

#### **Module 12 SQL/MX Sample Clause**

- Sample clause and semantics
- Sampling methods: Random, First, and  
Periodic
- Lab exercise: Lab 12 Sample Clause

#### **Module 13 SQL/MX Sequence Functions**

- OFFSET, DIFF, RUNNING and MOVING  
functions
- Lab exercise: Lab 13 Sequence Functions

#### **Module 14 NonStop SQL/MX Query Optimization**

- Compilation phases
- Data flow model
- Physical operators
- Type 1 and type 2 joins
- Query analysis tools
- Methods for influencing the optimizer
- Lab exercise: Lab 14 SQL/MX Query  
Optimization

#### **Onsite-Delivery Equipment Requirements**

- NonStop Server with G06-25 or later  
operating system installed
- Instructor PC with:  
Windows 2000 or XP  
PowerPoint software  
OutsideView
- Projection system to display PowerPoint slides  
from the instructor PC

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