BC490

ABAP Performance Tuning

COURSE OUTLINE

Course Version: 10
Course Duration: 5 Day(s)
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# Typographic Conventions

American English is the standard used in this handbook. The following typographic conventions are also used.

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TARGET AUDIENCE
This course is intended for the following audiences:

- Developer
- Development Consultant
- Technology Consultant
Lesson 1: Outlining the SAP NetWeaver AS ABAP Architecture

Lesson Objectives
After completing this lesson, you will be able to:

- Describe the architecture of SAP NetWeaver Application Server (AS) ABAP
- Describe the role of work processes in SAP NetWeaver AS ABAP
Lesson 1: Identifying the Memory Areas Used in SAP Systems

Lesson Objectives
After completing this lesson, you will be able to:

● Identify the memory areas used in SAP systems

Lesson 2: Analyzing Memory Allocation

Lesson Objectives
After completing this lesson, you will be able to:

● Describe memory allocation during ABAP processing
● Analyze the memory allocation of an SAP instance
● Describe additional topics in memory allocation

Lesson 3: Defining the Architecture of a Work Process

Lesson Objectives
After completing this lesson, you will be able to:

● Define the architecture of a work process

Lesson 4: Analyzing Memory Consumption Using the ABAP Debugger

Lesson Objectives
After completing this lesson, you will be able to:

● Analyze memory consumption using the ABAP debugger

Lesson 5: Analyzing ABAP Reports at Design Time

Lesson Objectives
After completing this lesson, you will be able to:

● Analyze ABAP reports at design time
Lesson 1: Outlining the Components of a Dialog Step

Lesson Objectives
After completing this lesson, you will be able to:

- Describe the elements of the dialog response time
- Describe the aspects of Remote Function Call (RFC)
- Explain first performance rules for evaluating dialog steps

Lesson 2: Analyzing the Components of a Dialog Step Using Transaction STAD

Lesson Objectives
After completing this lesson, you will be able to:

- Analyze statistical records
- Display statistical records using transaction STAD
- Analyze a statistical record in the overview screen of transaction STAD
- Analyze a dialog step in transaction STAD subscreens

Lesson 3: Creating a Framework for Time Measurement

Lesson Objectives
After completing this lesson, you will be able to:

- Create a framework for time measurement
Lesson 1: Measuring Performance Aspects of a Database

Lesson Objectives
After completing this lesson, you will be able to:

- Describe the architecture of a relational database
- Describe database analysis
- Describe SQL request processing in an Oracle database

Lesson 2: Analyzing SQL Usage with SQL Monitor

Lesson Objectives
After completing this lesson, you will be able to:

- Analyze SQL usage with SQL Monitor

Lesson 3: Analyzing Expensive SQL Statements

Lesson Objectives
After completing this lesson, you will be able to:

- Prepare critical SQL statements
- Record critical SQL statements
- Analyze critical SQL statements

Lesson 4: Using Database Indexes

Lesson Objectives
After completing this lesson, you will be able to:

- Describe index access
- Describe the advantage of indexes for access to database data

Lesson 5: Analyzing Database Indexes

Lesson Objectives
After completing this lesson, you will be able to:

- Program with database indexes
- Analyze database indexes

**Lesson 6: Creating Database Indexes**

**Lesson Objectives**
After completing this lesson, you will be able to:

- Define the rules for creating indexes
- Explain selectivity analysis for indexes
- Create database indexes

**Lesson 7: Analyzing Database Accesses**

**Lesson Objectives**
After completing this lesson, you will be able to:

- Analyze expensive SQL statements in the shared cursor cache
- Describe the types of expensive SQL statements
- Identify the ABAP coding causing expensive SQL statements
Lesson 1: Accessing Single Database Tables

Lesson Objectives
After completing this lesson, you will be able to:

- List the statements that read data in OPEN SQL
- Optimize database read access
- Optimize updates to the database

Lesson 2: Accessing Multiple Database Tables

Lesson Objectives
After completing this lesson, you will be able to:

- Access database views
- Create ABAP Joins
- Use logical databases

Lesson 3: Analyzing Performance When Accessing Multiple Database Tables

Lesson Objectives
After completing this lesson, you will be able to:

- Analyze performance for database views and ABAP joins
- Explain the compare nested SELECTs
Lesson 1: Defining Buffering on Database Tables

Lesson Objectives
After completing this lesson, you will be able to:

- Identify data buffering in the memory
- Differentiate how database tables can be buffered

Lesson 2: Performing Buffering on Database Tables

Lesson Objectives
After completing this lesson, you will be able to:

- Describe the buffer synchronization mechanism
- Describe the criteria for table buffering
- Explain when the buffer is bypassed
- Evaluate table buffering

Lesson 3: Analyzing Database Table Buffering

Lesson Objectives
After completing this lesson, you will be able to:

- Outline the tools for analyzing table buffering
- Analyze table buffer properties

Lesson 4: Analyzing the Content of the Table Buffers

Lesson Objectives
After completing this lesson, you will be able to:

- Analyze the content of the table buffers
UNIT 7
Data Object Buffering

Lesson 1: Creating Buffer Modules
Lesson Objectives
After completing this lesson, you will be able to:
- Use program internal buffer modules for transactional data

Lesson 2: Using Shared Memory and Shared Buffer
Lesson Objectives
After completing this lesson, you will be able to:
- Use shared memory and shared buffer

Lesson 3: Using ABAP Shared Objects
Lesson Objectives
After completing this lesson, you will be able to:
- Create ABAP shared objects
- Use ABAP shared objects
Lesson 1: Defining Internal Tables

Lesson Objectives
After completing this lesson, you will be able to:

- Describe the different types of internal tables

Lesson 2: Accessing Internal Tables

Lesson Objectives
After completing this lesson, you will be able to:

- List access strategies to internal tables
- Explain scaling behavior
- Analyze nested operations and nonlinearity
- Create efficient program access

Lesson 3: Outlining Additional Topics with Internal Tables

Lesson Objectives
After completing this lesson, you will be able to:

- Use secondary keys for internal tables
- Compare work area to field symbol

Lesson 4: Analyzing ABAP Reports at Runtime

Lesson Objectives
After completing this lesson, you will be able to:

- Prepare an ABAP trace
- Record an ABAP trace
- Analyze an ABAP trace
Lesson 1: Outlining the Basics of Remote Function Calls (RFCs)

Lesson Objectives
After completing this lesson, you will be able to:
• Outline the basics of Remote Function Calls (RFCs)

Lesson 2: Analyzing Synchronous RFCs

Lesson Objectives
After completing this lesson, you will be able to:
• Analyze synchronous RFCs (sRFCs)

Lesson 3: Analyzing UI-Related RFCs

Lesson Objectives
After completing this lesson, you will be able to:
• Analyze UI-related RFCs

Lesson 4: Analyzing Asynchronous RFCs (aRFCs)

Lesson Objectives
After completing this lesson, you will be able to:
• Analyze Asynchronous RFCs (aRFCs)