Cel szkolenia:

In the Oracle Database 12c: Performance Management and Tuning course, learn about the performance analysis and tuning tasks expected of a DBA: proactive management through built-in performance analysis features and tools, diagnosis and tuning of the Oracle Database instance components, and diagnosis and tuning of SQL-related performance issues.

Plan szkolenia:

- Introduction
  - Course Objectives
  - Course Organization
  - Course Agenda
  - Topics Not Included in the Course
  - Who Tunes?
  - What Does the DBA Tune?
  - How to Tune
  - Tuning Methodology
- Basic Tuning Diagnostics
  - Performance Tuning Diagnostics
  - Performance Tuning Tools
  - Tuning Objectives
○ Top Timed Events
○ DB Time
○ CPU and Wait Time Tuning Dimensions
○ Time Model
○ Dynamic Performance Views
○ Using Automatic Workload Repository
  ○ Automatic Workload Repository Overview
  ○ Automatic Workload Repository Data
  ○ Enterprise Manager Cloud Control and AWR
  ○ Snapshots
  ○ Reports
  ○ Compare Periods
○ Defining the Scope of Performance Issues
  ○ Defining the Problem
  ○ Limiting the Scope
  ○ Setting the Priority
  ○ Top SQL Reports
  ○ Common Tuning Problems
  ○ Tuning During the Life Cycle
  ○ ADDM Tuning Session
  ○ Performance Versus Business Requirements
○ Using Metrics and Alerts
  ○ Metrics and Alerts Overview
  ○ Limitation of Base Statistics
  ○ Benefits of Metrics
  ○ Viewing Metric History Information
  ○ Viewing Histograms
  ○ Server-Generated Alerts
  ○ Setting Thresholds
  ○ Metrics and Alerts Views
○ Using Baselines
  ○ Comparative Performance Analysis with AWR Baselines
  ○ Automatic Workload Repository Baselines
  ○ Moving Window Baseline
  ○ Baselines in Performance Page Settings
  ○ Baseline Templates
- AWR Baseslines
- Creating AWR Baselines
- Managing Baselines with PL/SQL

- Using AWR-Based Tools
  - Automatic Maintenance Tasks
  - ADDM Performance Monitoring
  - Using Compare Periods ADDM
  - Active Session History
  - New or Enhanced Automatic Workload Repository Views
  - Emergency Monitoring
  - Real-time ADDM

- Real-Time Database Operation Monitoring
  - Overview
  - Use Cases
  - Defining a Database Operation
  - Scope of a Composite Database Operation
  - Database Operation Concepts
  - Identifying a Database Operation
  - Enabling Monitoring of Database Operations
  - Identifying, Starting, and Completing a Database Operation

- Monitoring Applications
  - What is a Service?
  - Service Attributes
  - Service Types
  - Creating Services
  - Managing Services in a Single-Instance Environment
  - Where are Services Used?
  - Using Services with Client Applications
  - Services and Pluggable Databases

- Identifying Problem SQL Statements
  - SQL Statement Processing Phases
  - Role of the Oracle Optimizer
  - Identifying Bad SQL
  - Top SQL Reports
  - SQL Monitoring
  - What is an Execution Plan?
Methods for Viewing Execution Plans
Uses of Execution Plans

Influencing the Optimizer
- Functions of the Query Optimizer
- Selectivity
- Cardinality and Cost
- Changing Optimizer Behavior
- Optimizer Statistics
- Extended Statistics
- Controlling the Behavior of the Optimizer with Parameters
- Enabling Query Optimizer Features

Reducing the Cost of SQL Operations
- Reducing the Cost
- Index Maintenance
- SQL Access Advisor
- Table Maintenance for Performance
- Table Reorganization Methods
- Space Management
- Extent Management
- Data Storage

Using SQL Performance Analyzer
- Real Application Testing: Overview
- Real Application Testing: Use Cases
- SQL Performance Analyzer: Process
- Capturing the SQL Workload
- Creating a SQL Performance Analyzer Task
- SQL Performance Analyzer: Tasks
- Parameter Change
- SQL Performance Analyzer Task Page

SQL Performance Management
- Maintaining SQL Performance
- Maintaining Optimizer Statistics
- Automated Maintenance Tasks
- Statistic Gathering Options
- Setting Statistic Preferences
- Restore Statistics
Deferred Statistics Publishing
Automatic SQL Tuning

Using Database Replay
- Using Database Replay
- The Big Picture
- System Architecture
- Capture Considerations
- Replay Considerations: Preparation
- Replay Considerations
- Replay Options
- Replay Analysis

Tuning the Shared Pool
- Shared Pool Architecture
- Shared Pool Operation
- The Library Cache
- Latch and Mutex
- Diagnostic Tools for Tuning the Shared Pool
- Avoiding Hard Parses
- Reducing the Cost of Soft Parses
- Sizing the Shared Pool

Tuning the Buffer Cache
- Oracle Database Architecture: Buffer Cache
- Buffer Cache: Highlights
- Database Buffers
- Buffer Hash Table for Lookups
- Working Sets
- Buffer Cache Tuning Goals and Techniques
- Buffer Cache Performance Symptoms
- Buffer Cache Performance Solutions

Tuning PGA and Temporary Space
- SQL Memory Usage
- Performance Impact
- Automatic PGA Memory
- SQL Memory Manager
- Configuring Automatic PGA Memory
- Setting PGA_AGGREGATE_TARGET Initially
- Limiting the size of the Program Global Area (PGA)
- SQL Memory Usage
- Automatic Memory
  - Oracle Database Architecture
  - Dynamic SGA
  - Granule
  - Memory Advisories
  - Manually Adding Granules to Components
  - Increasing the Size of an SGA Component
  - Automatic Shared Memory Management: Overview
  - SGA Sizing Parameters: Overview
- Performance Tuning Summary with Waits
  - Commonly Observed Wait Events
  - Additional Statistics
  - Top 10 Mistakes Found in Customer Systems
  - Symptoms

Wymagania:

Wymagane prerekwizyty:

- Oracle Database 12c: Administration Workshop

Sugerowane prerekwizyty:

- Oracle Database 12c: Install and Upgrade Workshop

Poziom trudności

Certyfikaty:

Uczestnicy szkoleń otrzymują zaświadczenia o ukończeniu kursu sygnowane przez firmę Oracle.

Prowadzący:

Autoryzowany wykładowca Oracle.