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 otrzymają zaświadczenia o ukończeniu kursu sygnowane przez firmę Oracle.

Prowadzący:

Autoryzowany wykładowca Oracle.