„Oracle OCA - Oracle Certified Associate”

Course description:

Oracle OCA training - Oracle Certified Associate is addressed to users preparing for OCA DBA Oracle Certificate (OCA Administrator Certified Associate - 1 exam 1Z0-042), and self-administration of Oracle databases. This course runs an Oracle database expert with many years of experience.

Training program:

I) ORACLE Server (the first day)

- **1) Oracle Server Architecture**
  - Introduction
    - Description of the structure and operation principle of the Oracle database server
  - Oracle Server Instance
    - SGA - System Global Area
      - Description of memory structure and its use (Buffet Cache, Shared Pool, Redo log Buffet, Java Pool, Large Pool, Streams Pool)
      - Memory structures, and LRU algorithm
      - The size of "pots" of memory
      - Database startup files (PFILE, SPFILE), description of the basic parameters of the instance
    - PGA - Program Global Area
    - Supporting processes
      - Detailed description of the processes (SMON, PMON, DBWN*, LGWR, CKPT)
      - Description of optional processes (ARCn, RECO, MMAN, MMON, MMNL, RVWR, CTWR)
  - The physical structure of the Oracle database
    - Control File
    - Data File
    - Redo Log
    - Parameter File
    - Password File

        - Oracle NET
    - The logical structure of Oracle database
        - Description of logical database partitioning on: (TABLESPACE), Segments, Extents, Blocks
        - Building a data block and the way to save it

- **2) Installing the software and creating database using DBCA tool**
    - Workshops where learners will install the Oracle Database software and then by using the DBCA (Database Configuration Assistant) they will create their own database.

- **3) Managing Instance and the physical structure of the database**
    - Oracle Enterprise Manager - introduction
    - Starting and stopping databases with the EM tool
    - Description of the states when running the database (UNMOUNT, MOUNT, OPEN)
    - Description of database shutdown options
    - Modifying instance parameters
    - Tablespaces
        - Managing
        - Creating
        - Deleting
        - Modifying
    - ASM - Automatic Storage Management, what it is and what it is for

II) Management (the second day)

1) Rollback segments and network services

- Rollback segments
    - How they work and what they are
    - Difference between "Redo Data" and "Undo Data"
    - Monitoring
    - Managing
    - Undo Advisor
- Network services
    - Configuring the Listener
    - Client configuration (Easy Connect, Local Naming, Directory Naming, External Naming)
    - Advanced options (Connect-time failover, Load balancing, Source routing)
    - Shared Server (what it is and what it is for, what is a difference between Shared Server and Dedicated Server)

2) Users and Schemas

- Users
  - Creating, managing, deleting
  - Granting and revoking permissions
  - Managing database roles
  - Managing profiles
- Schemas
  - Introduction
  - Tables (creating, deleting, modifying)
  - Preview of structure and table data (SELECT command)
  - Perspectives (creating)
  - Integrity constraints
  - Indices (creating, deleting)
  - Sequences (creating, deleting, modifying)
  - Database dictionaries

3) Access to data, lock, deadlock

- Records (inserting, deleting, modifying)
- MARGE command
- Procedures, functions, packages
- Triggers
- Mechanism of locking records
  - Principles of operations
  - Preventing
  - Solving problems
- Deadlocks

4) Optimization

- Statistics
- AWR- Automatic Workload Repository
- ADDM - Automatic Database Diagnostic Monitor
- Advisors
- Messages in alert.log file
- Threshold

III) Backup and running by using Enterprise Manager (EM) tool (the third day)

1) Introduction

- Admin task

- What is Archivelog mode and what it is for
- CKPT and ARC process description
- Categories of "failures" (Statement failure, User process failure, Network failure, User error, Instance failure, Media failure)

2) Backup

- Introduction
- Types of backups
- Database Backup (EM)
- Automatic Backup Configuration (EM)

3. Recovering

- Introduction
- Recovering scenarios depending on the data loss (Control file, Redo log file, Non-Critical data file, System-critical data file)

4) Flashback

Methodology:

- PowerPoint mini lectures
- working on computers (each participant works on a separate computer)
- mini training videos

Organizational information:

Number of training hours: 21 hours / 3 days
Time of training 9:15-16:15
Place of training: Łódź, Piotrkowska 125 – KM Studio - trainings