

- COURSE CODE:** DWUDBA
- COURSE TITLE:** DB2 for LUW Database Administration
- CURRENCY:** V9 – V9.7
- AUDIENCE:** Database Administrators and System Administrators.
- PREREQUISITES:** Completion of our course 'DB2 for LUW Fundamentals' (DWUFUN) or equivalent knowledge.
- DURATION:** 4 days
- SUMMARY:** This workshop-based course focuses on how to exploit the following DB2 facilities in the management of DB2 data:
- IMPORT
 - EXPORT
 - LOAD
 - REORG
 - RUNSTATS
 - db2look
 - Database backup
 - Database restore
 - Rollforward
 - Logging
- While emphasis is placed on planning and implementing sound DB2 backup, restore and recovery policies and procedures, deliberate attention is given to high availability and data integrity issues.
- OBJECTIVES:** Upon completion of this presentation, the participant should be competent to organise and invoke DB2 utilities and commands to:
- Manage DB2 and application data resources
 - Recover from transaction failures
 - Recover from system failures
 - Recover from media (disk) failures
 - Use a variety of commands to monitor and manage recoverable resources, such as logs.

1. REVIEW OF DB2 DATABASE TERMS & CONCEPTS

2. DB2 ARCHITECTURE & USE

- Directories
- Client
- Server
- Memory
- Agents
- Sub-agents
- I/O services
- Buffer pools
- I/O devices (including RAID devices)
- Logs

3. COMMAND LINE PROCESSOR (CLP) VS. CONTROL CENTER

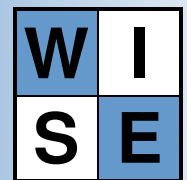
- Purpose
- Advantages
- Disadvantages
- Control Center limitations
- Script considerations
- CLP Plus vs. CLP

4. EXPORT UTILITY

- Overview
- Restrictions
- Table recreation
- Large objects (LOBs)
- Parallelism
- Usage and performance guidelines
- File type considerations
- Workshop

5. IMPORT UTILITY

- Overview
- Restrictions
- Pending states (RI & check constraints)
- IMPORT vs. LOAD
- Buffered inserts
- Identity columns considerations
- Generated columns considerations
- Recreation of imported table
- Concurrency (locking)
- File type considerations
- Usage and performance guidelines
- Workshop



6. LOAD UTILITY

- Overview
- Restrictions
- Load phases and recovery
- Parallelism
- Application concurrency
- Index build options
- Identity columns considerations
- Generated columns considerations
- Data integrity (RI & check constraints)
- Restart considerations
- LOAD QUERY usage
- Exception tables
- Locking and concurrency considerations
- Table states (normal, check pending, etc.)
- Partition database considerations
- Statistics options
- Usage and performance guidelines
- Workshop

7. db2look

- Overview
- Extract DDL & statistics
- Invocation options
- Workshop

8. REORG UTILITY – TABLE

- Overview
- Why reorg?
- How to reduce the need to reorg
- How to determine when to reorg
- Clustered index considerations
- Classic vs. In-place reorg
- Usage and performance guidelines
- Workshop

9. REORG UTILITY – INDEX

- Overview
- Why reorg?
- Online index reorg
- Online index defragmentation
- Usage and performance guidelines
- Workshop

10. RUNSTATS UTILITY

- Overview
- When to run
- Distribution statistics
- Index statistics
- Usage and performance guidelines
- Workshop

11. DATABASE BACKUP & RECOVERY CONCEPTS & FACILITIES

- Overview
- Circular logging
- Archival logging
- Dual logging
- Offline backup
- Online backup
- Database backup
- Table space backup
- Recovery history files
- Crash recovery
- Version recovery
- Database roll-forward recovery
- Table space roll-forward recovery
- Incremental backup
- Incremental recovery
- Workshop

12. RECOVERY LOG MANAGEMENT

- Overview
- LOGRETAIN/USEREXIT
- LOGPRIMARY
- LOGSECOND
- LOGFILSIZ
- LOGBUFSZ
- MINCOMMIT
- NEWLOGPATH
- OVERFLOWLOGPATH
- Log mirroring
- How to reduce logging
- Log truncation and removal
- How to avoid losing logs
- How to recover a damaged table space
- How to minimise impact of media failure
- How to guard against disk failure
- Partition considerations
- PRUNE LOGFILE & HISTORY
- LIST HISTORY command
- Workshop

13. DATABASE BACKUP UTILITY

- Overview
- Restrictions
- Tape backup
- Full backup
- Incremental vs. DELTA backup
- Usage and performance guidelines
- Workshop

14. DATABASE RESTORE UTILITY

- Overview
- Restrictions
- Incremental restore
- Database restore
- Table space restore
- Redirected restore
- Usage and performance guidelines
- Workshop

15. ROLLFORWARD RECOVERY UTILITY

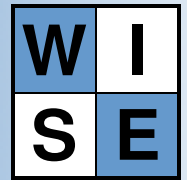
- Overview
- Restrictions
- Table space changes
- Dropped table recovery
- Use of DB2LOADREC registry variable
- Usage and performance guidelines
- Workshop

16. PRUNEing

- Overview
- HISTORY file
- LOG file
- UPDATE HISTORY file
- Usage guidelines
- Workshop

17. COMPRESSION

- Dictionary
- Indexes
- Tables
- Temporary tables



18. PARTITIONING

- Database
- Tables
- Multi-Dimensional Clustering (MDC)
- Parallelism
- Managing
- Indexes

19. SOME USEFUL DB2 COMMANDS

- db2ckbkp: check backup
- db2ckrst: check incremental restore image sequence
- db2flsn: find log sequence number
- db2inidb: initialise a mirrored database
- INSPECT (i.e., database integrity)
- Workshop