

# Performing Database Recovery

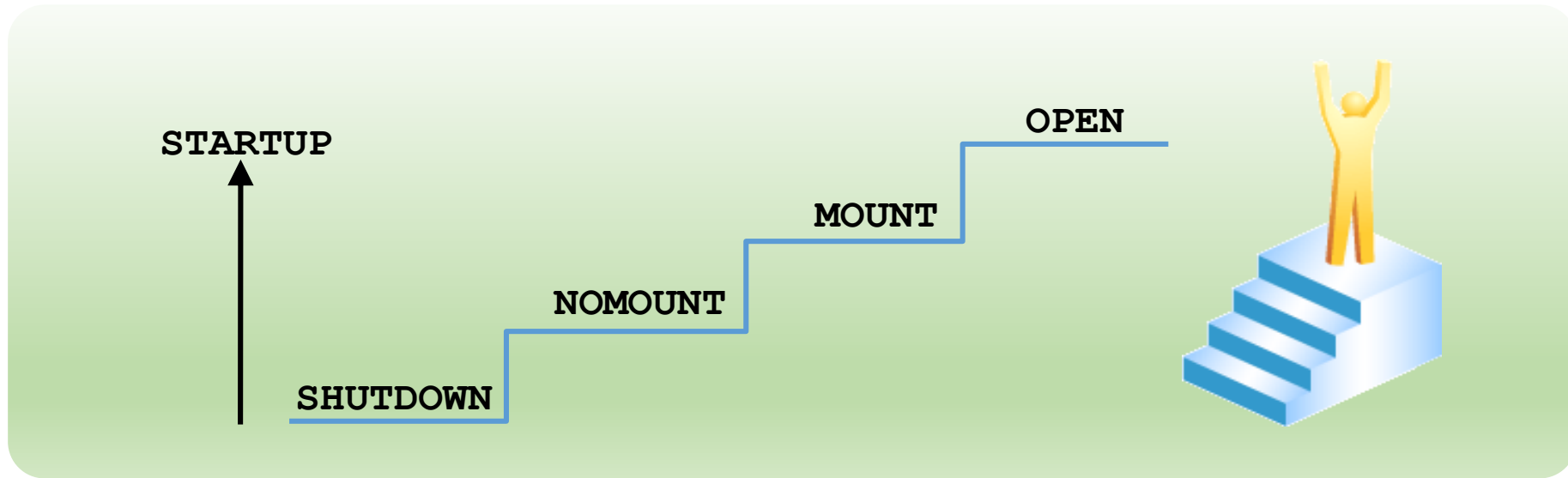
# Objectives

- After completing this lesson, you should be able to:
  - Determine the need for performing recovery
  - Describe and use available options, such as Recovery Manager (RMAN) and the Data Recovery Advisor
  - Recover data files
  - Restore and recover a DBCS database



# Opening a Database

- To open a database:
  - All control files must be present and synchronized
  - All online data files must be present and synchronized
  - At least one member of each redo log group must be present



# Keeping a Database Open

- After the database is open, it fails in case of the loss of:
  - Any control file
  - A data file belonging to the system or undo tablespaces
  - An entire redo log group (as long as at least one member of the group is available, the instance remains open)

# Data Recovery Advisor

- Fast detection, analysis, and repair of failures
- Handling of down time and run time failures
- Minimizing disruptions for users
- User interfaces:
  - Enterprise Manager Cloud Control
  - RMAN command line

# Loss of a Control File

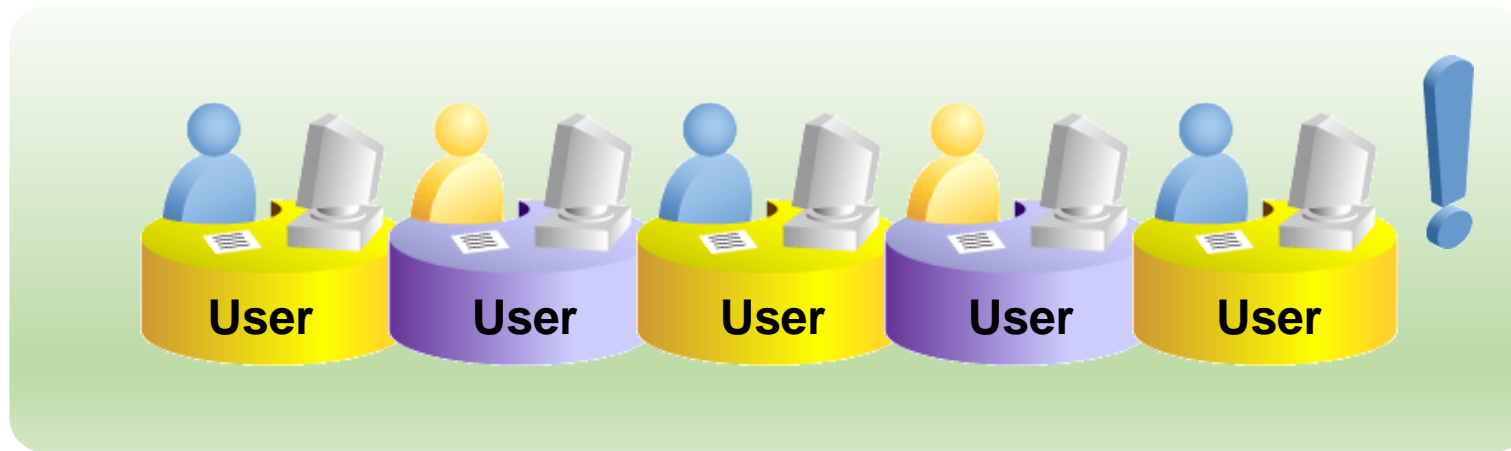
- If a control file is lost or corrupted, the instance normally aborts.
- If control files are stored as regular file system files:
  - Shut down the database
  - Copy an existing control file to replace the lost control file
- After the control file is successfully restored, open the database.

# Loss of a Redo Log File

- If a member of a redo log file group is lost and if the group still has at least one member, note the following results:
  - Normal operation of the instance is not affected.
  - You receive a message in the alert log notifying you that a member cannot be found.
  - You can restore the missing log file by dropping the lost redo log member and adding a new member.
  - If the group with the missing log file has been archived, you can clear the log group to re-create the missing file.

# Loss of a Data File in NOARCHIVELOG Mode

- If the database is in NOARCHIVELOG mode and if any data file is lost, perform the following tasks:
  - 1.Shut down the instance if it is not already down.
  - 2.Restore the entire database, including all data and control files, from the backup.
  - 3.Open the database.
  - 4.Have users re-enter all the changes that were made since the last backup.





# Loss of a Noncritical Data File in ARCHIVELOG Mode

- If a data file is lost or corrupted, and if that file does not belong to the `SYSTEM` or `UNDO` tablespace, you restore and recover the missing data file.
- The other database files are available for users.

# Loss of a System-Critical Data File in ARCHIVELOG Mode

- If a data file is lost or corrupted, and if that file belongs to the `SYSTEM` or `UNDO` tablespace, perform the following tasks:
  - 1.The instance may or may not shut down automatically. If it does not, use `SHUTDOWN ABORT` to bring the instance down.
  - 2.Mount the database.
  - 3.Restore and recover the missing data file.
  - 4.Open the database.

# DBCS: Performing Recovery by Using the Console



- Restore from the most recent backup and perform complete recovery.
- Restore from a backup and recover to a specific data and time.
- Restore from a backup and recover to a specific system change number (SCN).

# DBCS: Performing Recovery by Using the dbaascli Utility



- Use the `orec` subcommand of the `dbaascli` utility to restore and recover the database:
  - Restoring from the most recent backup and performing complete recovery

```
# dbaascli orec --args -latest
```

- Restoring from a specific backup and performing point-in-time recovery

```
# dbaascli orec --args -pitr backup-tag
```

- Restoring from the most recent backup and performing recovery through the specified system change number (SCN)

```
# dbaascli orec --args -scn SCN
```

- Restoring from a specific long-term backup and performing point-in-time recovery

```
# dbaascli orec --args -keep -tag backup-tag
```

# Summary

- In this lesson, you should have learned how to:
  - Determine the need for performing recovery
  - Describe and use available options, such as Recovery Manager (RMAN) and the Data Recovery Advisor
  - Recover data files
  - Restore and recover a DBCS database



# Practice 19: Overview

- 19-1: Recovering from an Essential Data File Loss
- 19-2: Recovering from an Application Data File Loss