15

Performing Database Backups

Objectives

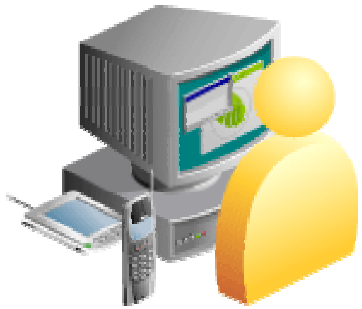
After completing this lesson, you should be able to do the following:

- Create consistent database backups
- Back up your database without shutting it down
- Create incremental backups
- Automate database backups
- Monitor the flash recovery area

Backup Solutions: Overview

Backups can be performed by using:

- **Recovery Manager**
- **Oracle Secure Backup**
- **A user-managed scenario**



Oracle Secure Backup

- Oracle Secure Backup and RMAN provide an end-to-end backup solution for Oracle environments:
  - Centralized tape backup management for file system data and the Oracle database
  - Most well-integrated media management layer for RMAN backups
  - Backup of any data anywhere on the network
- A single technical support resource for the entire backup solution expedites problem resolution.
- This ensures reliable data protection at lower cost and complexity.

User-Managed Backup

A user-managed scenario:

- Is a manual process of tracking backup needs and status.
- Requires the DBA to write scripts.
- Requires that database files be put in the correct mode for backup.
- Relies on operating system commands to make backups of files.

Terminology

- Backup strategy may include:
  - The entire database (whole)
  - A portion of the database (partial)
- Backup type may indicate inclusion of:
  - All information from all data files (full)
  - Only information that has changed since some previous backup (incremental)
- Backups mode may be:
  - Offline (consistent, cold)
  - Online (inconsistent, hot)

Terminology

Backups may be stored as:

- **Image copies**
- **Backup sets**

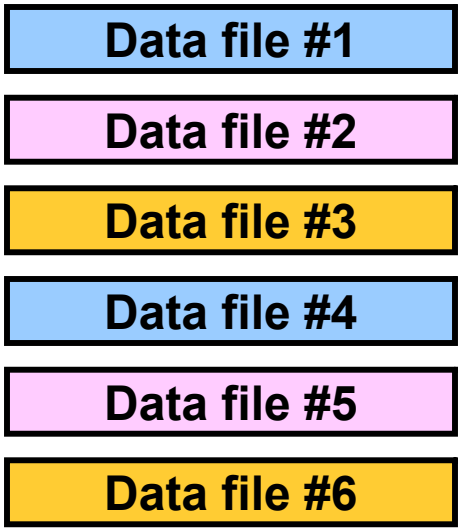
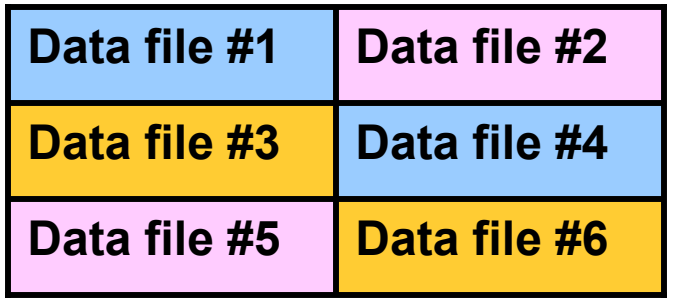


Image copies

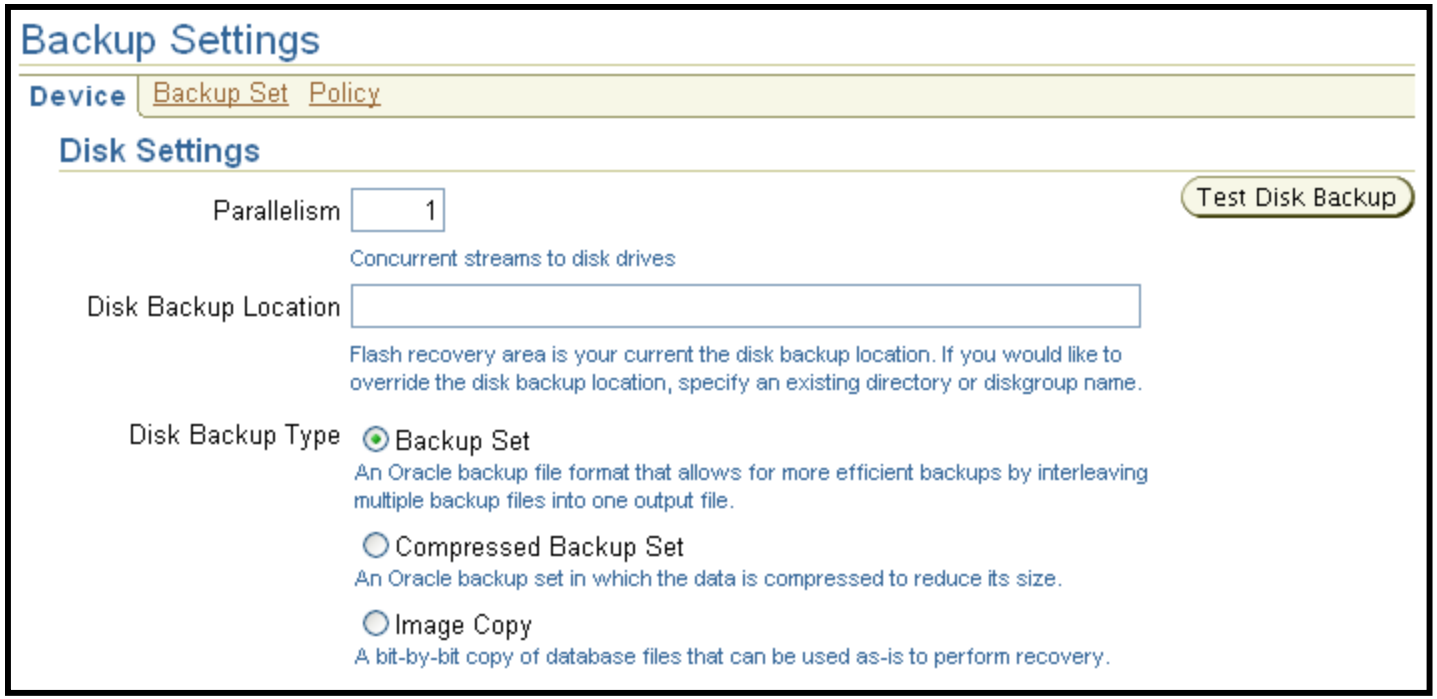


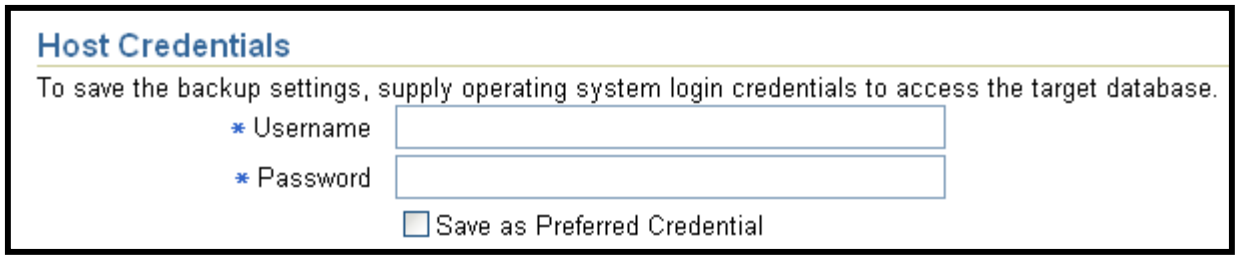
Backup set

Recovery Manager (RMAN)

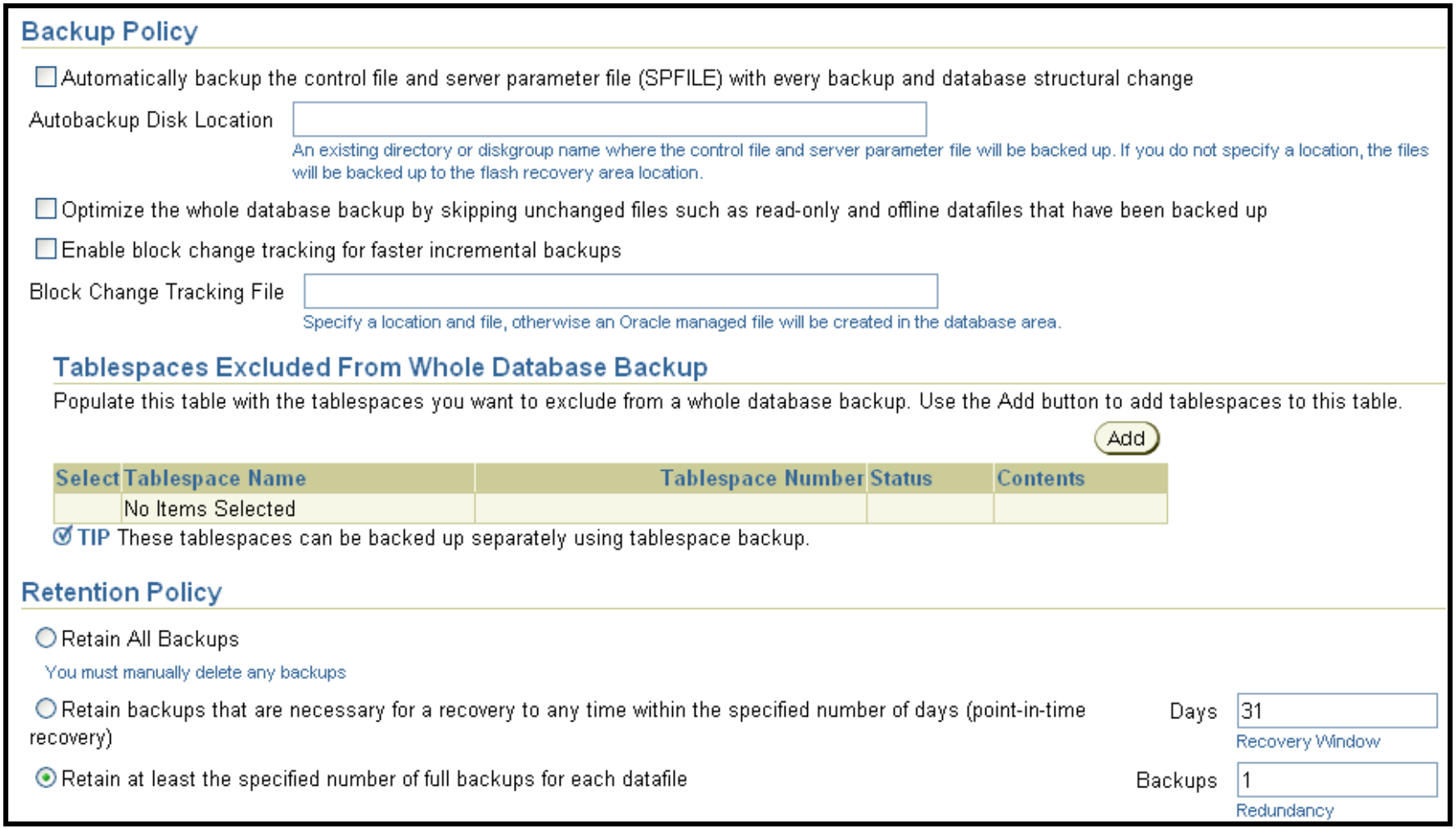
- Enterprise Manager uses Recovery Manager (RMAN) to perform backup and recovery operations.
- RMAN:
  - Is a command-line client for advanced functions
  - Has powerful control and scripting language
  - Has a published API that enables interface with most popular backup software
  - Backs up data, control, archived log, and server parameter files
  - Backs up files to the disk or tape

Configuring Backup Settings



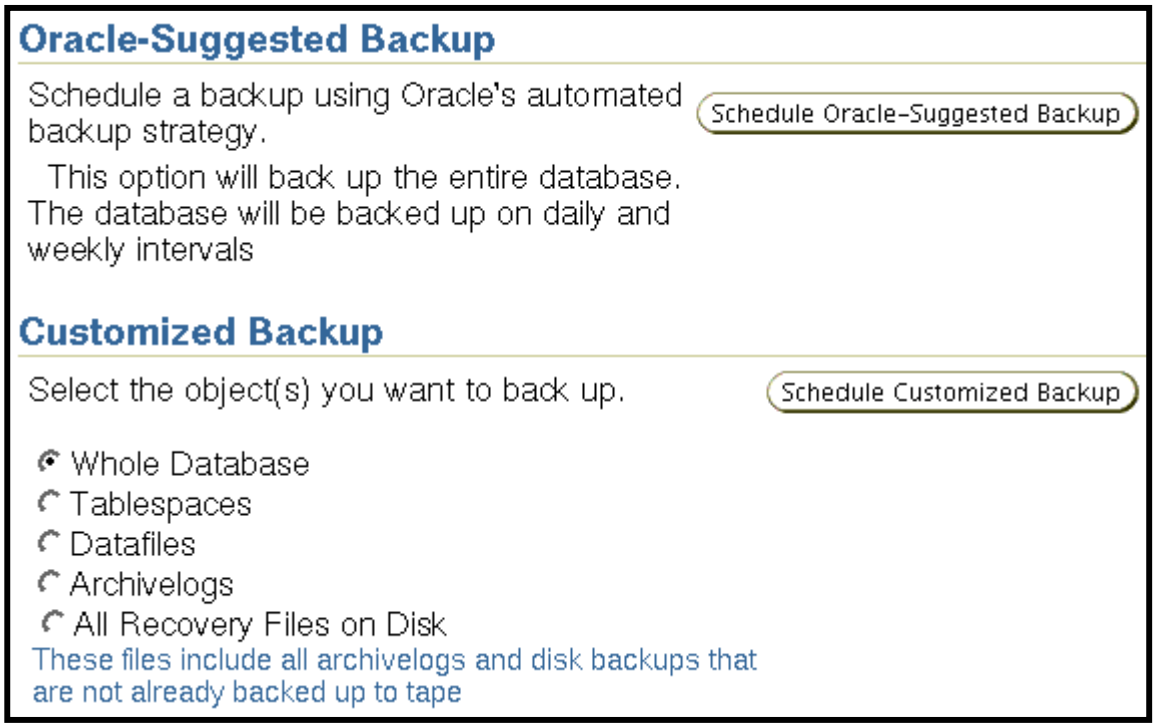


Configuring Backup Settings

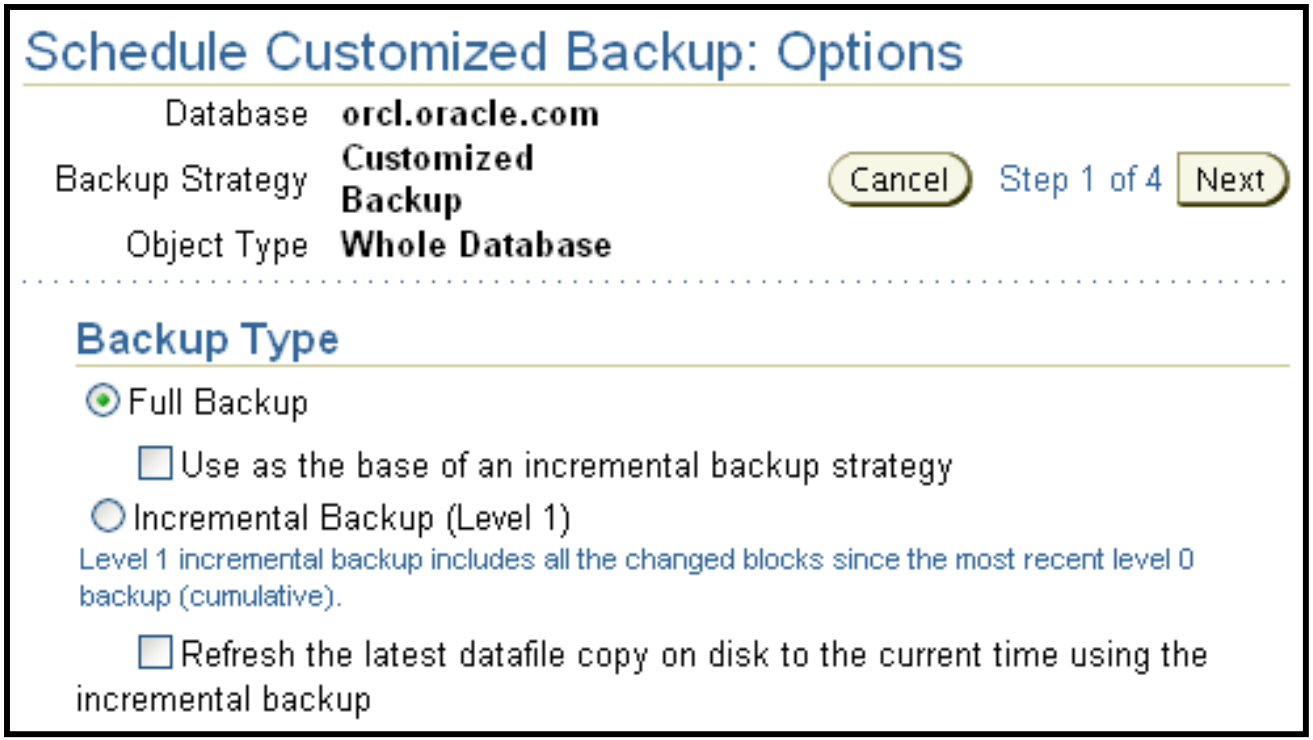


Scheduling Backups: Strategy

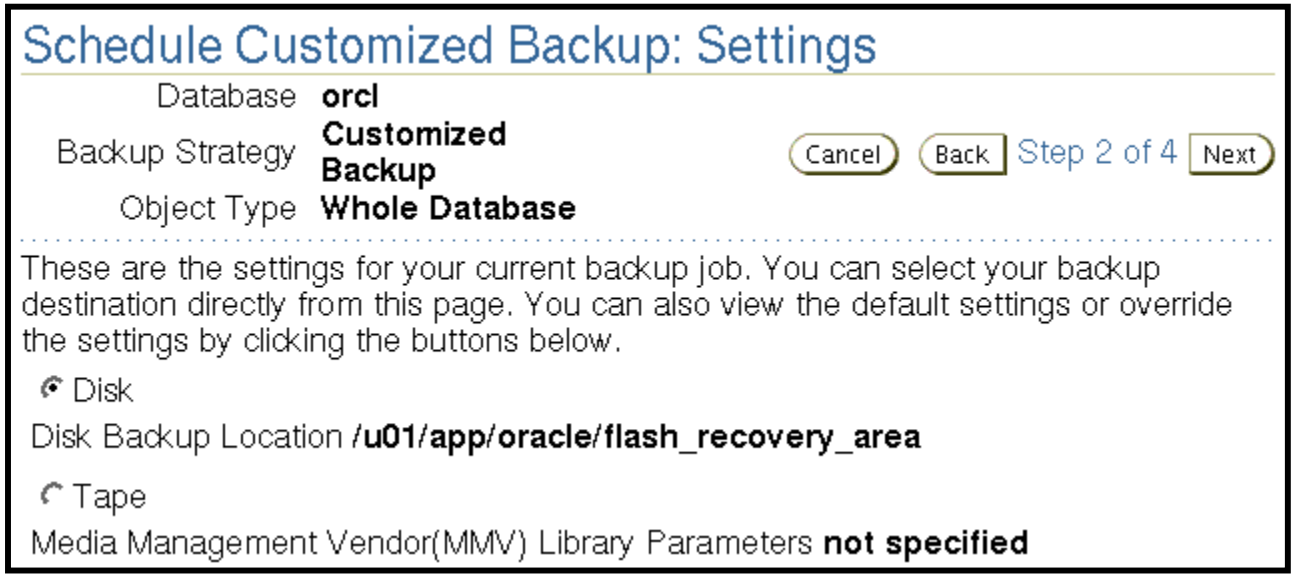
Select whole or partial database backup.



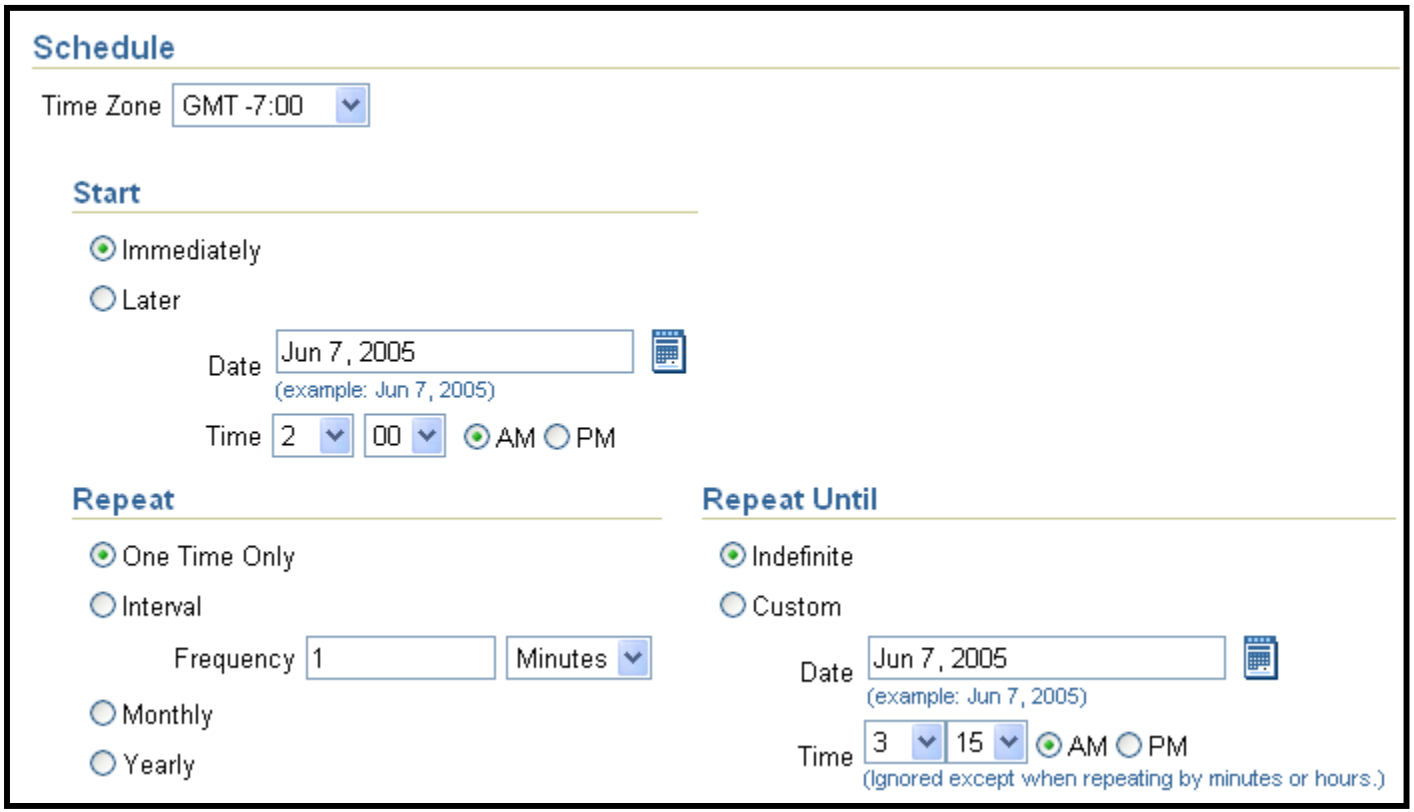
Scheduling Backups: Options



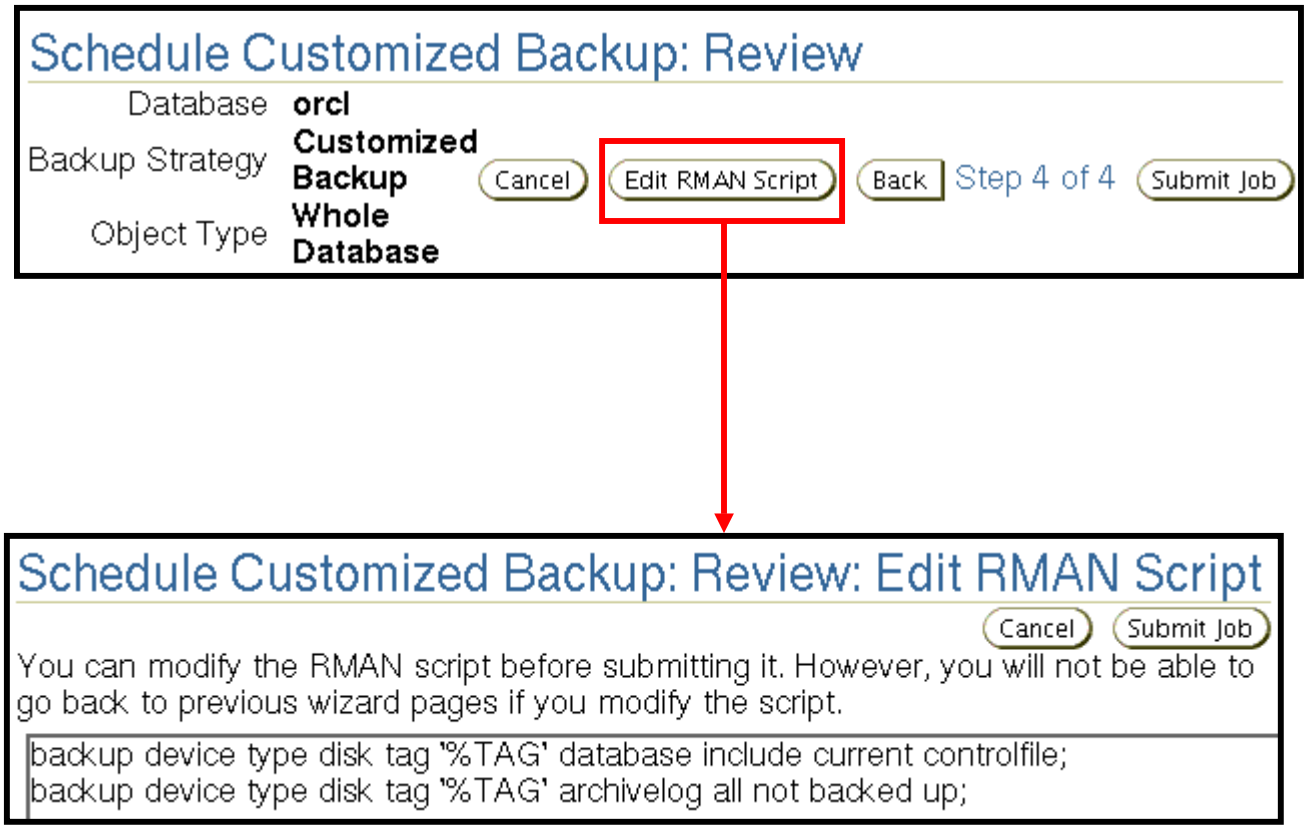
Scheduling Backups: Settings



Scheduling Backups: Schedule



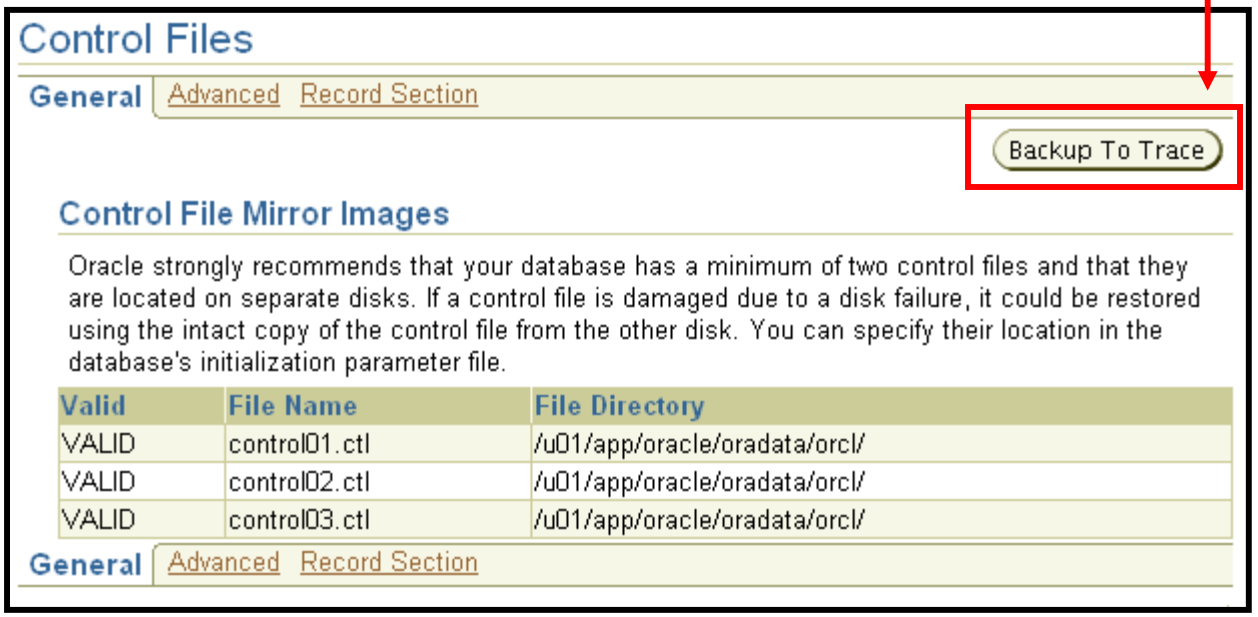
Scheduling Backups: Review



Click Edit RMAN Script to review RMAN commands.

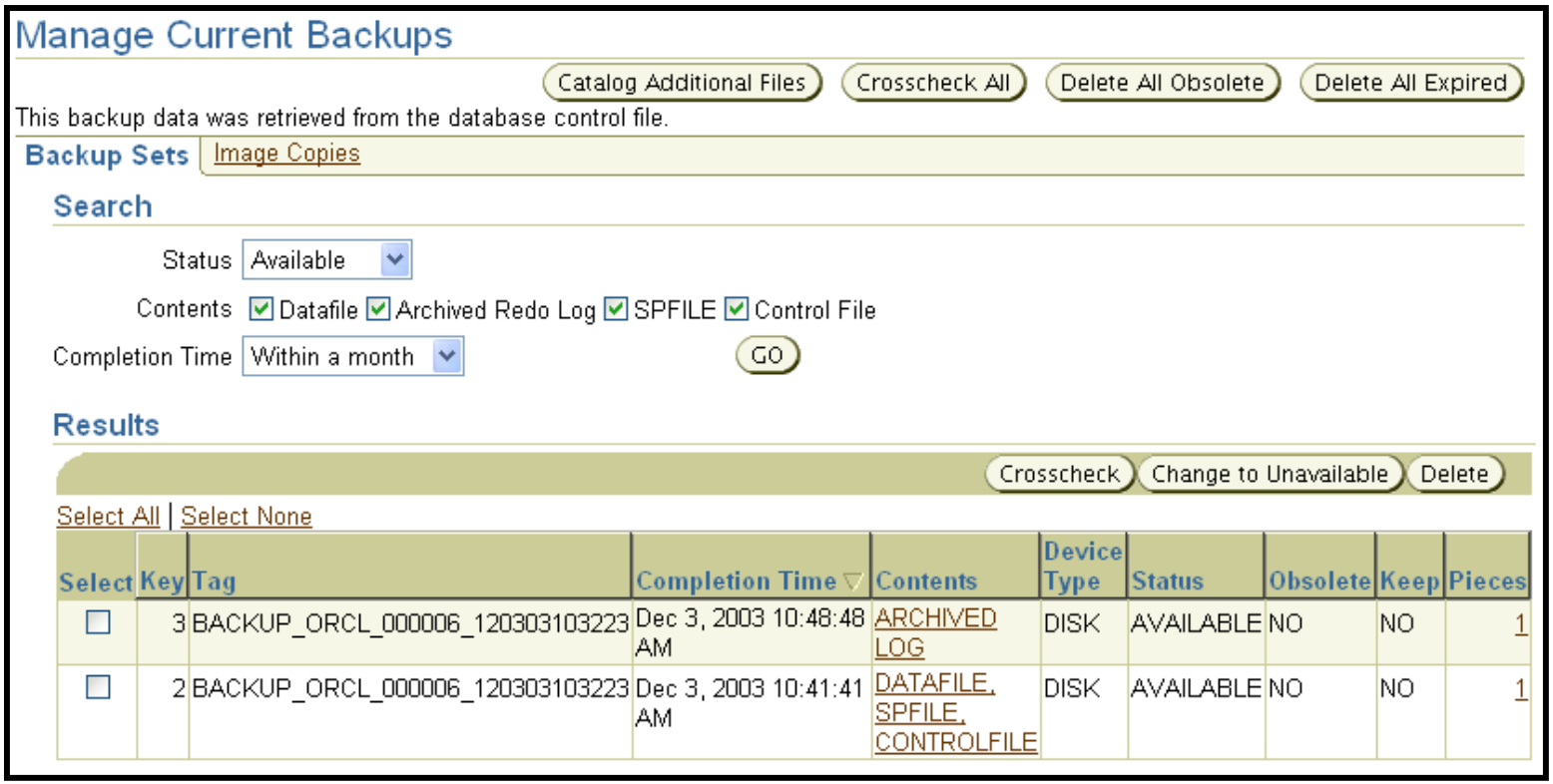
Backing Up the Control File to a Trace File

Control files have an additional backup option.



Control file trace backups may be used to recover from loss of all control files.

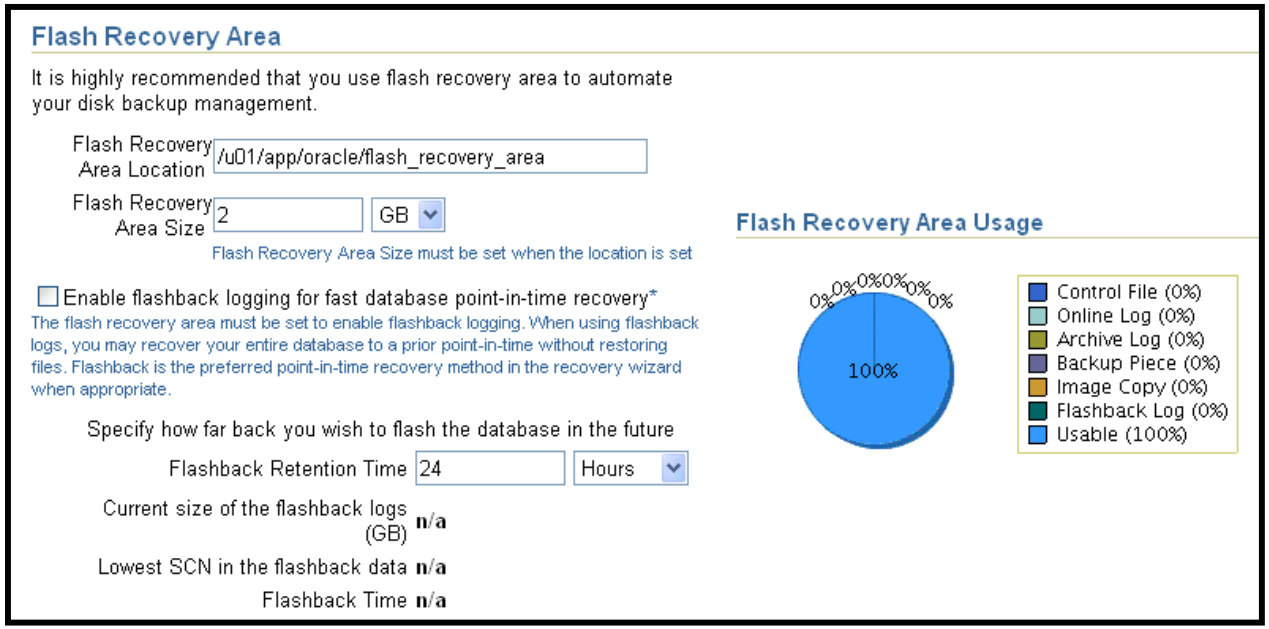
Managing Backups



Flash Recovery Area

Monitor the flash recovery area to:

- **Configure flashback logging**
- **Size the recovery area**
- **View current space consumption**



Summary

In this lesson, you should have learned how to:

- Create consistent database backups
- Back up your database without shutting it down
- Create incremental backups
- Automate database backups
- Monitor the flash recovery area

Practice Overview: Creating Database Backups

This practice covers the following topics:

- Configuring your database for backups
- Backing up your database while the database is open for user activity
- Scheduling automatic nightly incremental backups for your database