

Switching To Simple Database Recovery Mode

Introduction

SQL Server supports three different recovery modes: Simple, Full, and Bulk-Logged. Each mode defines how SQL Server handles database transactions (inserting data, updating data, etc.) so that the database can be recovered when the database is corrupted. More information on database recovery modes can be found on Microsoft's website. This note describes how to switch RDS Intranet to Simple Recovery Mode.

Full Recovery Mode

RDS Intranet is delivered with a database configured in Full Recovery Mode, thus providing the highest protection against data loss. In this mode, a transaction log is continually updated and is used to recover the database up to the last logged transaction. If a database disk file is corrupted before a scheduled backup, the transaction log is used to recover the lost data. However, the transaction log is backed up many times per day in high volume test environments. As a result, this recovery mode uses more disk space than other recovery modes and has poorer database performance.

Bulk-Logged Recovery Mode

Because of how the RDS Intranet application inserts data, the Bulk-Logged Recovery Mode is not useful, so it will not be covered in this document.

Simple Recovery Mode

In Simple Recovery Mode, transactions are applied immediately to the database, so there is no transaction log file that needs to be backed up. This mode is attractive if there is limited disk drive space on the database server and/or when transaction log backups hinder database performance. However, in Simple Recovery Mode, data can only be recovered up to the last backup. If backups are done daily, a full day of data is at risk of being lost. For some customers, the risk is overshadowed by performance gains.

Recommended Backup Scheme

Before switching to Simple Recovery Mode to improve performance, the database maintenance plan should be examined to ensure that:

- Backups are made to local server hard disk, not directly to tape or to USB hard disk.
- A separate batch file copies backups from the local hard disk to tape, USB hard disk, or network folder daily.
- Main database file backups occur daily, with transaction log backups occurring every eight hours or more often if needed.

If the present backup scheme is different than the recommended one, adequate performance might be achieved by changing the scheme plus increasing free disk space. If so, the risk of changing from Full Recovery Mode would be avoided.

Changing to Simple Recovery Mode

As described in detail below, before changing recovery modes, all connections (test systems and user desktops) are logged out and the database is switched to single-user mode. Then the database transaction log is backed up to avoid potential data loss.

A) Taking Database to Single-User Mode

- 1) All database users are disconnected, otherwise a warning message will appear.
- 2) Enterprise Manager (SQL 2000) or SQL Studio (2005/2008) is opened.
- 3) Left panel tree is navigated to RIWEBSQL, then RIWEBSQL is right-clicked and the properties option selected.
- 4) Options tab is selected.
- 5) Restrict access option is checked and single user option is selected.

B) Backing Up Transaction Log

- 1) While still in Manager or Studio, RIWEBSQL is right-clicked and all tasks option is selected.
- 2) Backup database option is selected.
- 3) Transaction log backup option is selected.
- 4) If destination is empty, desired target folder is selected (default is C:\Reedholm Backups).
- 5) Ok is clicked to start backup.

C) Switching Recovery Modes

- 1) While still in Manager or Studio, RIWEBSQL is right-clicked and properties option is selected.
- 2) Options tab is selected.
- 3) In the recovery section under model, simple mode is selected.
- 4) Ok is clicked to accept change.

D) Taking Database to Multi-User Mode

After the recovery mode has been changed, the database is re-configured to accept multiple users again. This is done by following the same steps used to switch to single user mode, except that the restrict access option is unchecked. The server is rebooted before users are notified to re-connect.

E) Setting Up New Backup Scheme

Since a transaction log is no longer generated, it no longer needs to be backed up. The database maintenance plan is modified to not execute a transaction log backup.

If backups of the transaction log continue, there will be no impact on the database, but job failure messages will be recorded in the system event log.