

Backup and Restore of SQL Server Databases

SQL Server 2012 Books Online

Summary: This book describes the benefits of backing up SQL Server databases, basic backup and restore terms, and introduces backup and restore strategies for SQL Server and security considerations for SQL Server backup and restore.

Category: Reference

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Contents

Backup and Restore of SQL Server Databases.....	6
Recovery Models.....	13
View or Change the Recovery Model of a Database.....	16
Backup Overview.....	19
Restore and Recovery Overview.....	23
Plan and Perform Restore Sequences (Full Recovery Model).....	30
Restart an Interrupted Restore Operation (Transact-SQL).....	32
Backup Compression.....	33
Configure Backup Compression.....	35
Use Resource Governor to Limit CPU Usage by Backup Compression (Transact-SQL).....	36
Full Database Backups.....	43
Create a Full Database Backup.....	46
Back Up Database (General Page).....	54
Back Up Database (Options Page).....	57
Select Backup Destination.....	61
Partial Backups.....	63
Full File Backups.....	64
Back Up Files and Filegroups.....	67
Differential Backups.....	73
Create a Differential Database Backup.....	76
Restore a Differential Database Backup.....	81
Copy-Only Backups.....	86
Transaction Log Backups.....	87
Back Up a Transaction Log.....	89
Tail-Log Backups.....	93
Back Up the Transaction Log When the Database Is Damaged.....	96
Backup Devices.....	100
Define a Logical Backup Device for a Disk File.....	108
Define a Logical Backup Device for a Tape Drive.....	110
View the Contents of a Backup Tape or File.....	112
Specify a Disk or Tape As a Backup Destination.....	114
Device Contents.....	115
Backup Device (Media Contents Page).....	117
Backup Device (General Page).....	119

Restore a Backup from a Device.....	121
Delete a Backup Device	123
Media Sets, Media Families, and Backup Sets.....	125
Set the Expiration Date on a Backup	134
View the Data and Log Files in a Backup Set.....	136
Mirrored Backup Media Sets	138
Back Up to a Mirrored Media Set (Transact-SQL).....	140
Backup History and Header Information	141
View the Properties and Contents of a Logical Backup Device.....	148
Possible Media Errors During Backup and Restore.....	150
Enable or Disable Backup Checksums During Backup or Restore.....	152
Specify Whether a Backup or Restore Operation Continues or Stops After Encountering an Error.....	155
Complete Database Restores (Simple Recovery Model).....	157
Restore a Database Backup Under the Simple Recovery Model (Transact-SQL).....	161
Restore a Database Backup (SQL Server Management Studio)	163
Backup Timeline.....	167
Restore Database (General Page).....	168
Restore Database (Options Page).....	175
Restore Database (Files Page)	178
Continue with Restore	179
Select Backup Device	180
Restore a Database to a New Location.....	180
Complete Database Restores (Full Recovery Model)	187
Restore a Database to the Point of Failure Under the Full Recovery Model (Transact-SQL) ...	192
File Restores (Simple Recovery Model).....	195
Restore Files and Filegroups over Existing Files	197
Restore Files to a New Location	201
Restore Files and Filegroups.....	206
File Restores (Full Recovery Model)	212
Apply Transaction Log Backups.....	216
Restore a Transaction Log Backup.....	219
Restore a SQL Server Database to a Point in Time (Full Recovery Model).....	227
Recovery of Related Databases That Contain Marked Transaction.....	232
Use Marked Transactions to Recover Related Databases Consistently (Full Recovery Model)	234
Restore a Database to a Marked Transaction (SQL Server Management Studio).....	239
Recover to a Log Sequence Number.....	240
Online Restore.....	242

Deferred Transactions	245
Remove Defunct Filegroups.....	247
Example: Online Restore of a Read/Write File (Full Recovery Model).....	250
Example: Online Restore of a Read-Only File (Full Recovery Model).....	251
Example: Online Restore of a Read-Only File (Simple Recovery Model)	252
Example: Offline Restore of Primary and One Other Filegroup (Full Recovery Model).....	253
Restore Pages.....	254
Manage the suspect_pages Table.....	262
Piecemeal Restores.....	266
Example: Piecemeal Restore of Database (Full Recovery Model)	271
Example: Piecemeal Restore of Database (Simple Recovery Model).....	272
Example: Piecemeal Restore of Only Some Filegroups (Full Recovery Model).....	274
Example: Piecemeal Restore of Only Some Filegroups (Simple Recovery Model).....	275
Recover a Database Without Restoring Data (Transact-SQL)	277
Back Up and Restore of System Databases.....	279
Restore the master Database (Transact-SQL).....	283
Backup and Restore: Interoperability and Coexistence	284

Backup and Restore of SQL Server Databases

This topic describes the benefits of backing up SQL Server databases, basic backup and restore terms, and introduces backup and restore strategies for SQL Server and security considerations for SQL Server backup and restore.

The SQL Server backup and restore component provides an essential safeguard for protecting critical data stored in your SQL Server databases. To minimize the risk of catastrophic data loss, you need to back up your databases to preserve modifications to your data on a regular basis. A well-planned backup and restore strategy helps protect databases against data loss caused by a variety of failures. Test your strategy by restoring a set of backups and then recovering your database to prepare you to respond effectively to a disaster.

In this Topic:

- Benefits
- Components and Concepts
- Introduction to Backup and Restore Strategies
- Related Tasks

Benefits

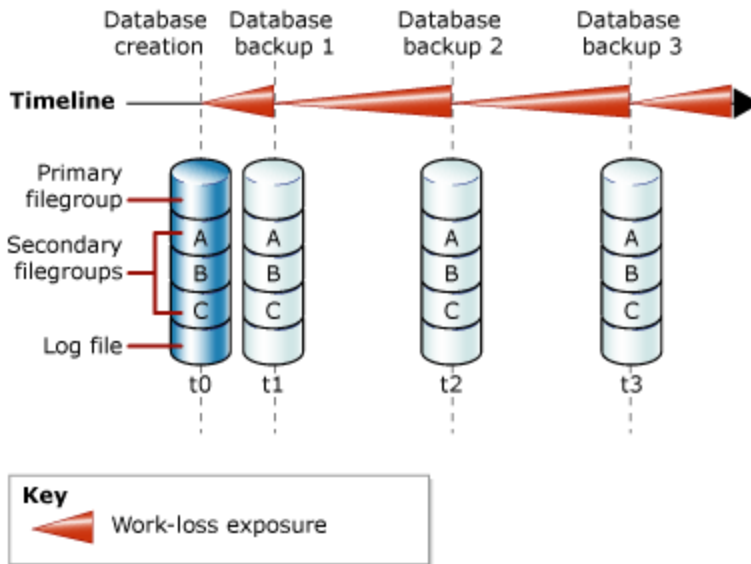
- Backing up your SQL Server databases, running test restores procedures on your backups, and storing copies of backups in a safe, off-site location protects you from potentially catastrophic data loss.

Important

This is the only way to reliably protect your SQL Server data.

With valid backups of a database, you can recover your data from many failures, such as:

- Media failure.
 - User errors, for example, dropping a table by mistake.
 - Hardware failures, for example, a damaged disk drive or permanent loss of a server.
 - Natural disasters.
- Additionally, backups of a database are useful for routine administrative purposes, such as copying a database from one server to another, setting up AlwaysOn Availability Groups or database mirroring, and archiving.



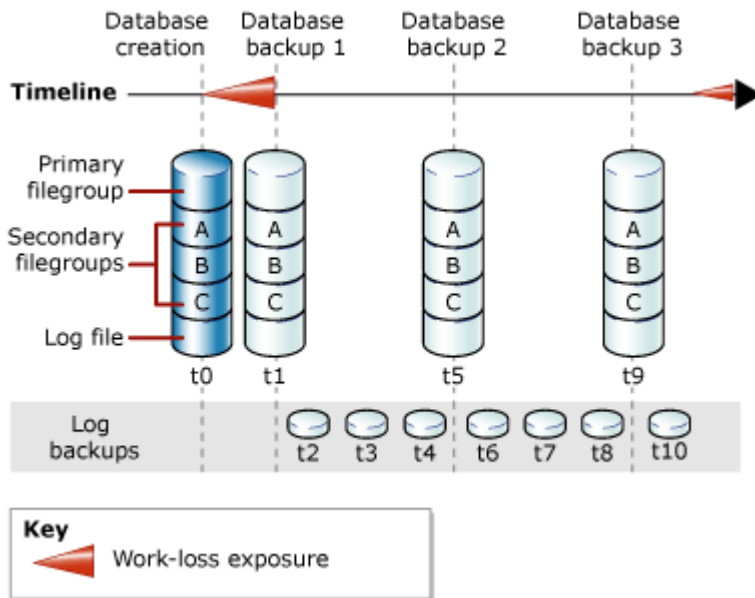
Example (Transact-SQL)

The following example shows how to create a full database backup by using WITH FORMAT to overwrite any existing backups and create a new media set.

```
-- Back up the AdventureWorks2012 database to new media set.
BACKUP DATABASE AdventureWorks2012
    TO DISK = 'Z:\SQLServerBackups\AdventureWorksSimpleRM.bak'
    WITH FORMAT;
GO
```

Database Backups Under the Full Recovery Model

For databases that use full and bulk-logged recovery, database backups are necessary but not sufficient. Transaction log backups are also required. The following illustration shows the least complex backup strategy that is possible under the full recovery model.



For information about how to create log backups, see [Create Transaction Log Backups \(SQL Server\)](#).

Example (Transact-SQL)

The following example shows how to create a full database backup by using WITH FORMAT to overwrite any existing backups and create a new media set. Then, the example backs up the transaction log. In a real-life situation, you would have to perform a series of regular log backups. For this example, the sample database is set to use the full recovery model.

```
USE master;
ALTER DATABASE AdventureWorks2012 SET RECOVERY FULL;
GO
-- Back up the AdventureWorks2012 database to new media set (backup set 1).
BACKUP DATABASE AdventureWorks2012
    TO DISK = 'Z:\SQLServerBackups\AdventureWorks2012FullRM.bak'
    WITH FORMAT;
GO
--Create a routine log backup (backup set 2).
BACKUP LOG AdventureWorks2012 TO DISK =
    'Z:\SQLServerBackups\AdventureWorks2012FullRM.bak';
GO
```