BACKUP AND RECOVERY

Types of Backups

Full

Differential

Incremental – SQL Server does not do this one

Three Recovery Models – used to control amount of logging

Simple/Snapshot – not for production – data warehouse

Minimum logging

No point-in-time restore (last full backup only)

Does not disable logging – just truncates once a minute

Bulk-Logged – Seldom used

Some commands bulk logged

Log cleared when trans log backed up

Point-in-time recovery supported – except for bulk operations

Full – not on data warehouse (bulk loading would be slow)

Every operation logged

Full Data Protection – Point-In-Time supported

**CREATING A BACKUP**

**FULL BACKUP**

**BACKUP DATABASE AdventureWorks2012**

**TO DISK = 'Z:\SQLServerBackups\AdventureWorks2012.Bak'**

**WITH FORMAT, //formats and overwrites existing data**

**MEDIANAME = 'Z\_SQLServerBackups', //gives it a name**

**NAME = 'Full Backup of AdventureWorks2012'; //gives it a description**

RESTORING A FULL BACKUP

Returns to state of DB when backup was COMPLETED (not started)

Includes transactions that happened while backing up

Drops the existing DB before the restore starts

No reason to create it first

**RESTORE DATABASE [AdventureWorks2012]**

**FROM DISK = ‘c:\backup\AW.bak’**

**WITH REPLACE, STATS=10**

(Replace existing DB, show stats every 10 seconds)

CREATE DIFFERENTIAL BACKUP

**BACKUP DATABASE MyAdvWorks**

**TO MyAdvWorks\_1**

**WITH INIT;**

**-- Time elapses.**

**-- Create a differential database backup, appending the backup**

**-- to the backup device containing the full database backup.**

**BACKUP DATABASE MyAdvWorks**

**TO MyAdvWorks\_1**

**WITH DIFFERENTIAL;**

Restore Differential Backup

Can’t be restored by itself

Restored on top of a full backup

Full restore must use NORECOVERY or STANDBY

Then restore the most current differential

**RESTORE DATABASE [AdventureWorks2012]**

**FROM DISK = ‘c:\backup\AW.bak’**

**WITH REPLACE, STATS=10, NORECOVERY**

**GO**

**RESTORE DATABASE [AdventureWorks2012]**

**FROM DISK = ‘c:\backup\diff.bak’**

**WITH STATS=10**

**GO**

INCREMENTAL BACKUP – SQL SERVER doesn’t do them!!!

Transaction Log Restore

Can restore transactions since last differential from log backup

Must restore in order – Full – Differential – Trans logs IN ORDER

SSMS BACUP AND RESTORE LINKS

Full Backup

<https://msdn.microsoft.com/en-us/library/ms187510.aspx>

Differential Backup

<https://msdn.microsoft.com/en-us/library/ms188248.aspx>

*Assignment:*

*Perform a Full Backup your database. Screenshot!*

*Create a new table with data.*

*Perform a Differential backup of your database. Screenshot!*

*Delete your database. Screenshot!*

*Restore your database from the full and differential backups. Screenshot!*

*Send your screenshots showing successful completion of backup and restores.*