SQL Server: Myths and Misconceptions

Module 8: Restore

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Introduction

- **Restore is usually a time-critical operation**
  - Disaster recovery
  - Preparing a development/testing environment
- **Mistakes can be costly**

- **In this module:**
  - Five myths around restore

Restore Myth #1

UNTRUE!!

- **Myth: Filegroups from different databases can be combined**

- **All filegroups in a restore must be from the same database**
- **A filegroup is not a self-contained entity**
  - E.g. the system catalogs describing the contents of the filegroup are only located in the primary filegroup
- **Database files are linked using a GUID**
- **Additionally, all restored filegroups must be at the same point in time**
- **To restore a small portion of a database:**
  - Use Enterprise Edition
  - Restore the primary filegroup using the WITH PARTIAL option
  - Restore any additional desired filegroups
  - Bring the database online using 'partial database availability'

Restore Myth #2

YES AND NO!!

- **Myth: The WITH STOPAT option can be used when restoring a full or differential backup**

- **The WITH STOPAT option can be used when restoring data backups, but it has no effect**
- **Data backups provide a single point-in-time for restore**
  - The end of the data-reading portion of the backup operation
- **WITH STOPAT is recommended for all restore operations in the restore sequence to avoid accidentally going past the desired point**
  - Its use is permitted for data backups as a syntactical nicety

Restore Myth #3

UNTRUE!!

- **Myth: A database backup can be restored to an earlier version of SQL Server**

- **SQL Server is not up-level compatible**
  - E.g. a SQL Server 2012 database cannot be restored on SQL Server 2008 R2
- **Each version of SQL Server has a minimum and maximum database physical version number it can understand**
- **Upgrading a database irrevocably increases the physical version number of the database**
- **Compatibility level/mode is not the same as physical version number**
  - E.g. setting a SQL Server 2012 database to the 100 compatibility level does not allow it to be restored to SQL Server 2008

Restore Myth #4

UNTRUE!!

- **Myth: It is always possible to restore a database to any Edition of SQL Server (provided the version remains the same)**

- **Some features make the database Enterprise-only**
  - i.e. the database can only be restored on Enterprise Edition
- **SQL Server 2005 has one: partitioning**
- **SQL Server 2008 onwards has four:**
  - Partitioning
  - Transparent Data Encryption
  - Change Data Capture
  - Data Compression

Restore Myth #4 (continued)

- **Data compression only requires ALTER TABLE permissions to enable**
  - I.e. a table owner can enable data compression in the database, making the database Enterprise-only
- **A database with any of those four features cannot be restored to a non-Enterprise Edition SQL Server instance**
  - The restore fails at the end of the restore operation
- **This could be bad if the disaster recovery strategy is to restore to a much cheaper, Standard Edition SQL Server instance**
- **Use the sys.dm_db_persisted_sku_features Dynamic Management View to check if any of these features are enabled**

Restore Myth #5

UNTRUE!!

- **Myth: 32-bit SQL Server data files, log files, and backups are NOT compatible with 64-bit SQL Server, and vice-versa**

- **There are no differences between 32-bit and 64-bit SQL Server file formats**
- **This applies to:**
  - Database data files
  - Database log files
  - All kinds of backup files
- **None of these files make note of the CPU architecture**

- **However, there are differences in certain operational limits between 32-bit and 64-bit SQL Server**
  - E.g. maximum number of mirrored databases per SQL Server instance