

Understanding SQL Server Backup and Restore

Cloud Data Platform Virtual Group
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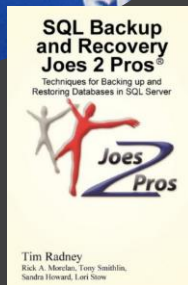
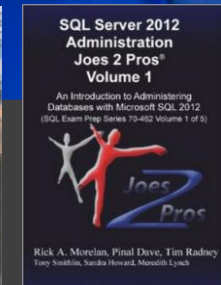
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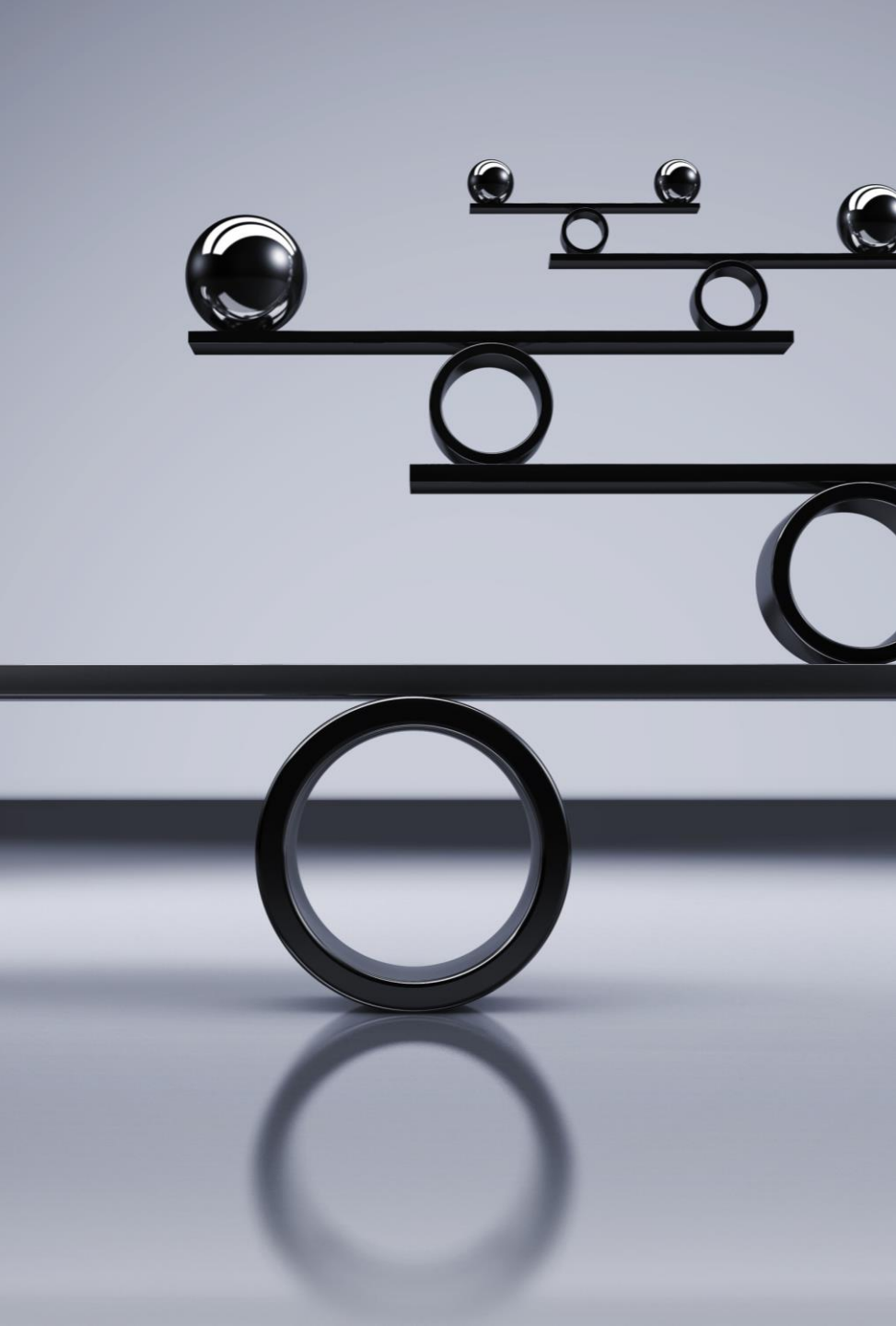
Key technology areas:

- Azure SQL Virtual Machine and storage
- SQL Server performance, tuning and optimization
- Azure Data Services Security
- Disaster Recovery
- Azure SQL DB / Managed Instance



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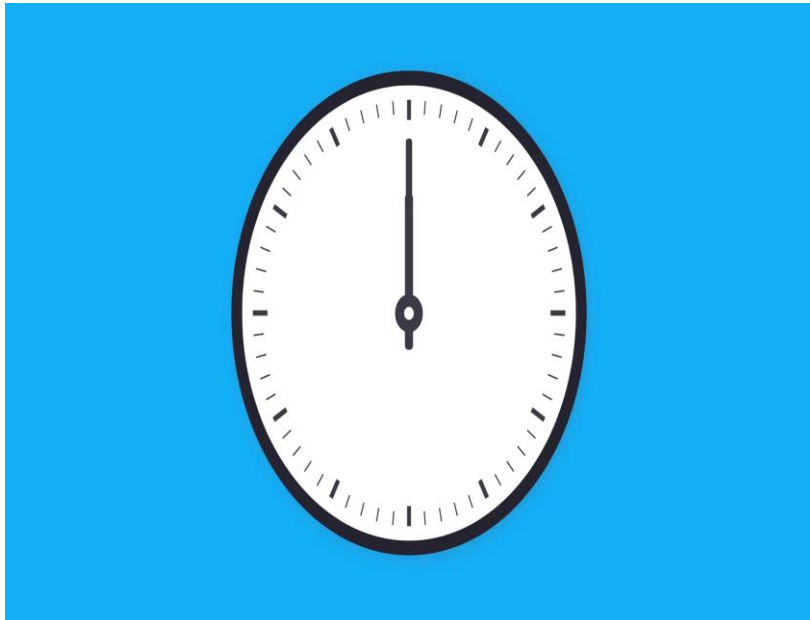




Backup and Restore Overview

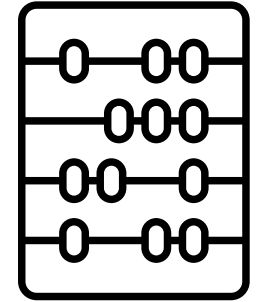
- Know your backup types
 - SLAs matter
 - Which is correct for you
 - Know your backups are valid
 - An approach for backing up large databases
- Know how to restore your backups
 - Have a restore strategy
 - Performing point in time restores
 - Performing piecemeal restores
- Have a plan
 - Have a solid restore strategy
 - Have a proven disaster recovery plan

Service Level Agreements - SLA



- Recovery Point Objective
 - RPO - How much data can you afford to lose?
- Recovery Time Objective
 - RTO - How long can you be down?
- Time starts when the incident occurred, not how long you have to restore SQL Server
- Depending on RTO, you may need better HA solutions!

Backup Types



- Which is the correct choice for you?
 - Full
 - Differential
 - Filegroup
 - File
 - Log
 - COPY_ONLY
- A combination of the above is usually warranted to meet your SLAs
- Check for recent backups
 - <https://www.timradney.com/backups>

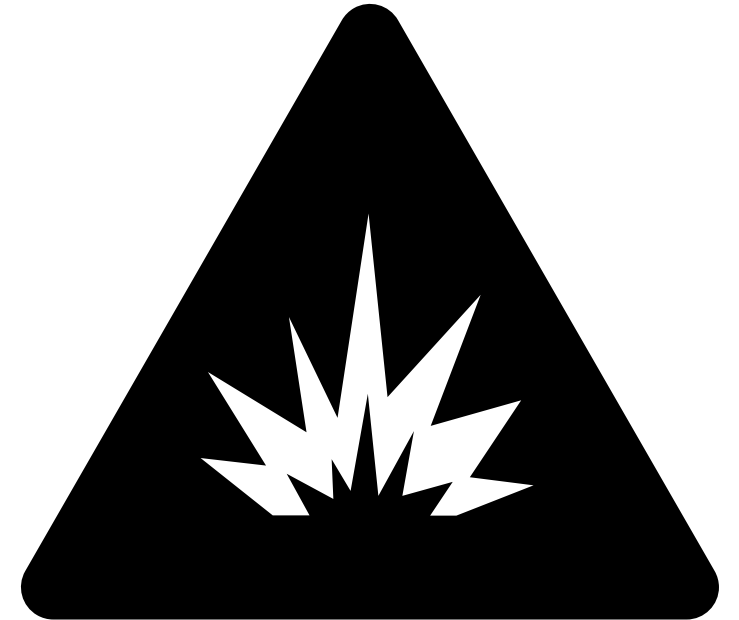
VLDBs

- A good approach for Very Large Databases (100s of GBs or more)
 - Split data into multiple filegroups
 - Partitioned views
 - Sliding window using partitioning
- Allows for partial restores
 - Restore active partitions/filegroups more quickly



Recovering Transactions

- You must restore, now what do you do?
 - Do you need to perform a tail-log backup?
 - <http://www.timradney.com/taillogrestore>
 - Restore last known good full backup
 - Restore most recent differential backup, if you have them
 - Restore transaction log backups
 - (Restore tail-of-the-log backup?)



Have a Plan



- Know how to recover
 - Test that your backups restore
 - Have a disaster recovery plan
 - Test your disaster recovery plans frequently
 - Have user objects scripted out
 - <http://support.microsoft.com/kb/918992>
- Know your facts
 - Know how long restores take

The background features a gradient from dark blue on the left to light blue on the right. Scattered throughout are numerous glowing yellow circles of varying sizes, some connected to thin, dark lines that curve upwards, resembling stylized plants or light trails.

Demo: Various Backup & Restores

Full, Diff, Transaction Log, Partial, Hack Attach



Thank You!
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