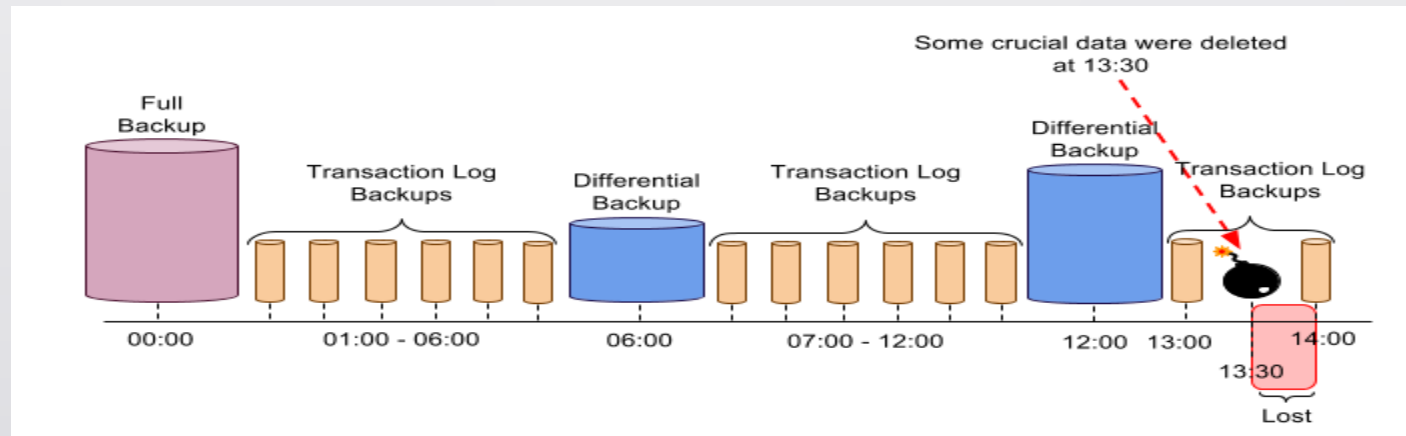




Point in Time restore of a database

Point in Time restore

- Point-in-time recovery allows to restore a database into a state it was in any point of time.
- This type of recovery is applicable only to databases that run under the full or bulk-logged recovery model.
- If the database runs under the bulk-logged recovery model and transaction log backup contains bulk-logged changes, the recovery to a point-in-time is not possible.
- Assume some crucial data were deleted at 13:30 and the last transaction log backup was made at 14:00. The transaction log backup from 14:00 gives us the opportunity to restore the database to its state at 13:29:59. In this case, only 30 minutes of updates will be lost.





Point in Time restore (contd..)

- To recover a database to a point-in-time it is necessary to start from restoring the full database backup using the following syntax:
- `RESTORE DATABASE AdventureWorks2016 FROM DISK = 'AdventureWorks2016_full.bak' WITH NORECOVERY, REPLACE`
- After the full backup is restored it is time to restore the last differential backup. In our case – the last differential backup was made at 12:00. Differential backup can be recovered with the help of this syntax:
- `RESTORE DATABASE AdventureWorks2016 FROM DISK = 'AdventureWorks2016_diff.diff' WITH NORECOVERY`
- This differential backup includes all changes that were made to the database since the last full backup.
- And the last step is to apply all transaction log backups that were made after the differential backup.
- Apply all transaction log backups in the same sequence in which they were created. It is crucial to remember to specify the time to which database should be restored with the help of STOPAT option when you restore the last log backup (in our case the database should be restored as of 13:29:59).



Point in Time restore (contd..)

- All backups, except the last one, are restored with NORECOVERY option, while the last one should be restored with RECOVERY option recovering the database into its working state:
- `RESTORE LOG AdventureWorks2016 FROM DISK = 'AdventureWorks2016_log_013.trn' WITH NORECOVERY`
- `RESTORE LOG AdventureWorks2016 FROM DISK = 'AdventureWorks2016_log_014.trn' WITH STOPAT = '2020-11-19 13:29:59.000', RECOVERY`