# DATABASE GOES INTO RECOVERY PENDING STATE

***Objective:*** This document shows when database undergoes into ‘Recovery Pending’ state what are the steps we need to follow to bring that database online, how to troubleshoot the issue, root cause responsible for this and preventive measures to not occur in future.

***Implementation steps:***

1. Identify the cause:

* Check SQL Server error logs for any specific errors related to the database.
* Common causes include corrupt data or log files, insufficient disk space, hardware issues or incomplete transactions that can't be recovered.

1. Attempt to bring the database online:

* Try to bring the database online using the following command:

ALTER DATABASE [DatabaseName] SET ONLINE;

* If this fails, note the error message for further troubleshooting.

1. Check for disk space issues:

* Ensure there's enough free space on the drives hosting data and log files.
* If space is an issue, free up space or expand the drive.

1. Verify file integrity

* Run DBCC CHECKDB to check for database corruption:

DBCC CHECKDB ([DatabaseName]) WITH NO\_INFOMSGS, ALL\_ERRORMSGS;

1. Attempt to recover it (1st method):

* Check if you have database backup file just before the database went into recovery pending state.
* If yes, then simply restore this database with the backup file and this will resolve the issue.

1. Attempt to recover it (2nd method):

* Set the database to emergency mode:

ALTER DATABASE [DatabaseName] SET EMERGENCY;

* Then put database from emergency mode to Single user mode:

ALTER DATABASE [DatabaseName] SET Single user;

* Then set the database to multi user mode:

ALTER DATABASE [DatabaseName] SET multi user;

* Sometime above 3 steps may resolve the issue. If not proceed with another method.

1. Attempt to recover it (3rd method):

* Set the database to emergency mode:

ALTER DATABASE [DatabaseName] SET EMERGENCY;

* Then put database from emergency mode to Single user mode:

ALTER DATABASE [DatabaseName] SET Single user;

* Create a new log file (if log file is corrupted):

1. Detach the respective database.
2. Delete the old log file.
3. Attach the data file to the instance, it creates the new log file. [make sure while attaching the data file remove the log entries from wizard.]

* Then set the database to multi user mode:

ALTER DATABASE [DatabaseName] SET multi user;

* Most of the time above 4 steps will resolve this type of issue. If not proceed with another step.

1. Attempt to recover it (4th method):

* Set the database to emergency mode:

ALTER DATABASE [DatabaseName] SET EMERGENCY;

* Then try to repair:

DBCC CHECKDB ([DatabaseName], REPAIR\_ALLOW\_DATA\_LOSS);

* Note: This is a last resort as it may result in data loss.

1. Attempt to recover it (5th method):

* Rebuild log: In some cases, you may need to rebuild logs

USE master;

ALTER DATABASE [DatabaseName] SET SINGLE\_USER WITH ROLLBACK IMMEDIATE;

DBCC SHRINKFILE ([LogFileName], 1);

BACKUP LOG [DatabaseName] WITH TRUNCATE\_ONLY;

DBCC SHRINKFILE ([LogFileName], 1);

ALTER DATABASE [DatabaseName] SET MULTI\_USER;

* Note: It's important to note that this procedure should be used cautiously, as it can break the log backup chain and should only be done when absolutely necessary and with a full understanding of the implications.

1. Attempt to recover it (6th method):

* If problems persist, investigate potential hardware failures, especially in storage systems.