**Log Space Threshold:**

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**Warning** (Log file usage >75% and <= 85%) : SQL Alert (Warning)

**Critical** ( Log file usage >=85%) : SQL Alert (Critical)

**Issue Description:** Whenever the Transaction log file of a database auto grows an alert is triggered. Below is a sample alert for TLog Auto growth. Alert clearly has the server’s name and the database name details. The Alert also includes the reason why the log growth happened under “log\_reuse\_wait\_desc”.

Sample alert here

Log space usage can be checked by the command below. Log file should have sufficient free space to log the transactions.

DBCC SQLPERF(logspace)

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Checks can be done on why the log space is not being used using below command.

select log\_reuse\_wait\_desc, \* from sys.databases where name = 'DBName'

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The column **Log\_Reuse\_wait\_desc** determines the reason for the issues.

**NOTHING**- There is no issues with the log growth.

**LOG\_BACKUP**- The file is waiting for the log backup to be completed to re-use.

**AVAILABILITY\_REPLICA**-  see both the primary and secondary database both synced in the Always ON Group.

**Scenario 1** **(Reuse the Log space)**:

**Step 1:** Check whether the **log backups** are happening regularly for the database. By using below command.

Place the database name in place of DB\_NAME (highlighted in red)

SELECT DISTINCT b.database\_name,b.type,b.backup\_start\_date,b.backup\_finish\_date,f.physical\_device\_name  
from msdb..backupset b join msdb..backupmediafamily f  
on b.media\_set\_id=f.media\_set\_id  
and b.type IN ('L')  
and b.database\_name='**DB\_NAME**'  
ORDER BY 3 DESC

[Note: For databases in AG please check the backups on the preferred server if backups are set to be taken from a preferred backup. Preferred server can be found out by

Right Click on AG group → Properties--> Backup Preferences -->]

If the backups are running fine, try to invoke a couple of times and generate the log backup. Check the log space usage after invoking the log backup couple of times. If the log usage is back to normal, then the issue resolved and the TLog auto growth alerts should subside. The log usage can be checked by the command below.

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If the backups are not happening, please troubleshoot further and fix the backups to re-use the log file.

Fixing log backup should resolve TLog Auto growth and the log file space will be reused, thereby avoid TLog Auto growth.

Check the log usage by running below command. The log usage should be fine with free space.

DBCC SQLPERF(logspace)

**Step 2**: Check the **AG health** if the databases are part of AG. If the AG is unhealthy then the log keeps on growing despite regular log backups. Please fix AG health.

Once the AG is healthy, the log space will be re-used and auto growth events on log file should subside.

Check the log usage by running below command. The log usage should be fine with free space.

DBCC SQLPERF(logspace)

**Step 3:** Check the **Long running Queries** on the server which might be the reason for the Log space not being reused.

**Scenario 2 (Manually extend the log file):** In cases where regular log backups are completing fine and AG is healthy and due to activity on the server , SQL server demands for additional space in the transaction log file to log the transactions and hence an auto growth is triggered.

During such cases generally the log file usage is close to 100, and SQL server keeps on auto growing the log file based on need.

Most of our servers have plenty of free space, hence it is advisable to grow the log file manually either in 2 GB or 5 GB chunks.

Below is the command, please replace database\_name with the database name and Logical\_Filename\_of\_Log with log file logical name of log file and new\_size with the final size.

If we wish to increment log file of a database which is currently at **21 GB size by 1 GB** , the **new\_size** value would be **22**

USE [master]  
GO  
ALTER DATABASE [Database\_Name] MODIFY FILE ( NAME = N’Logical\_Filename\_of\_Log', SIZE = **new\_size**GB )  
GO

→ ALTER DATABASE [Database\_Name] MODIFY FILE ( NAME = N'Logical\_Log\_Filename', SIZE = 22GB )  
GO

Logical file name of the log file can be found out by using sp\_helpfile on the database.

USE ITSM\_Remedy\_DN2  
go  
SP\_HELPFILE

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Please increase the log file in 1 GB increments to add additional space. Depending on load, if the usage is low repeat the command to increase the log file by 10 GB.

Check the log usage by running below command. The log usage should be fine with free space more than 20%. If not please add more space by repeating above steps.

DBCC SQLPERF(logspace)