How to shrink a transaction log

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Before starting a shrink

Overview of transaction log used and allocated space

Before trying to shrink, make sure that there is in fact space to be reclaimed. This can be done using T-SQL or Kusto:

Kusto:

```
MonDmIoVirtualFileStats
| where LogicalServerName =~ "azuresqlmi2" //server name
| where db_name =~ "9a17224c-26aa-49da-80d8-30bee7ea686a" //on MI the database name is equal to the physical_d
| where type_desc == "LOG" //looking only for data only
| where is_primary_replica == 1
| summarize sum(spaceused_mb), sum(size_on_disk_mb =(size_on_disk_bytes/1024/1024)) by TIMESTAMP
| render timechart
```

T-SQL:

```
SELECT
distinct
sf.groupname as Filegroup,
a.name,
case maxsize when 268435456 then -1 else maxsize*8 /1024 end as MaxSize ,
CONVERT(Decimal(15,2),ROUND(a.Size/128.000,2)) [Currently Allocated Space (MB)],
CONVERT(Decimal(15,2),ROUND(FILEPROPERTY(a.Name,'SpaceUsed')/128.000,2)) AS [Space Used (MB)],
CONVERT(Decimal(15,2),ROUND((a.Size-FILEPROPERTY(a.Name,'SpaceUsed'))/128.000,2)) AS [Available Space (MB)],
growth *8 /1024  as [Growth (MB)],
a.filename
FROM sys.sysfiles AS a with (nolock)
left join sysfilegroups sf with (nolock) on a.groupid = sf.groupid
where sf.groupname is NULL
order by 2 asc
```

Also, if you are on a presence of a Managed Instance on General Purpose tier, make sure / alert customer that there is a relation between file size and IOPS

Log reuse wait desc

If the log is actually full, check what is holding up the log by running

```
select name, log_reuse_wait_desc from sys.databases where name = 'database_name'
```

Check Factors that delay log truncation for a description of each state.

Shrink File

Shrink File with TRUNCATEONLY

DBCC SHRINKFILE with TRUNCATEONLY will not move any pages, only shrinking until the last allocated extent, like mentioned on the public documentation.

DBCC Shrinkfile

Transaction is shrunk (when it can be shrunk) just like datafiles.

Note that, since the shrink of the transaction log can fail while transaction log backups are running, the process might fail due to this reason. Like so you might find in some cases that shrinking in batches is more effective.

Internal reference

368795102