

T-SQL queries for space troubleshooting

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Size of all databases

Look at column db_size (sum of allocated size for all datafiles + transaction log)

```
sp_helpdb
```

Size of all databases, ordered by size

```
SELECT d.NAME
      ,ROUND(SUM(CAST(mf.size AS bigint)) * 8 / 1024, 0) Size_MBs
      ,(SUM(CAST(mf.size AS bigint)) * 8 / 1024) / 1024 AS Size_GB
FROM sys.master_files mf
INNER JOIN sys.databases d ON d.database_id = mf.database_id
WHERE d.database_id > 4 -- Skip system databases
GROUP BY d.NAME
ORDER BY ROUND(SUM(CAST(mf.size AS bigint)) * 8 / 1024, 0) desc
```

For a specific database return total data and index size

```
sp_spaceused
```

For a specific database, size of datafiles and transaction log

```

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
order by 2 asc

```

Size of all tables, for a specific database

```

SELECT
t.NAME AS TableName,
s.Name AS SchemaName,
p.rows,
SUM(a.total_pages) * 8 AS TotalSpaceKB,
CAST(ROUND(((SUM(a.total_pages) * 8) / 1024.00), 2) AS NUMERIC(36, 2)) AS TotalSpaceMB,
SUM(a.used_pages) * 8 AS UsedSpaceKB,
CAST(ROUND(((SUM(a.used_pages) * 8) / 1024.00), 2) AS NUMERIC(36, 2)) AS UsedSpaceMB,
(SUM(a.total_pages) - SUM(a.used_pages)) * 8 AS UnusedSpaceKB,
CAST(ROUND(((SUM(a.total_pages) - SUM(a.used_pages)) * 8) / 1024.00, 2) AS NUMERIC(36, 2)) AS UnusedSpaceM
FROM
sys.tables t
INNER JOIN
sys.indexes i ON t.OBJECT_ID = i.object_id
INNER JOIN
sys.partitions p ON i.object_id = p.OBJECT_ID AND i.index_id = p.index_id
INNER JOIN
sys.allocation_units a ON p.partition_id = a.container_id
LEFT OUTER JOIN
sys.schemas s ON t.schema_id = s.schema_id
WHERE
t.NAME NOT LIKE 'dt%'
AND t.is_ms_shipped = 0
AND i.OBJECT_ID > 255
GROUP BY
t.Name, s.Name, p.Rows
ORDER BY
TotalSpaceMB DESC, t.Name

```

Size of all indexes on a database

note: When NULL is a Heap:

```

SELECT tn.[name] AS [Table name], ix.[name] AS [Index name],
SUM(sz.[used_page_count]) * 8 AS [Index size (KB)]
FROM sys.dm_db_partition_stats AS sz
INNER JOIN sys.indexes AS ix ON sz.[object_id] = ix.[object_id]
AND sz.[index_id] = ix.[index_id]
INNER JOIN sys.tables tn ON tn.OBJECT_ID = ix.object_id
GROUP BY tn.[name], ix.[name]
ORDER BY tn.[name]

```

For a specific table get data and index total size and unallocated space

```
sp_spaceused 'schema.tablename'
```