SQL-DBA-Concepts-PocketGuide

Sl No	Incident/Question		Solution/Answer/Comment
116	Important Database Admin Qry's set 2		DB file specific bottlenecks ----------

```
SELECT  DB_NAME(vfs.database_id) AS
[DBName] ,

        smf.physical_name ,

        io_stall_read_ms ,

        num_of_reads ,

        CAST(io_stall_read_ms / ( 1.0 +
num_of_reads ) AS NUMERIC(10, 1)) AS
[avg_read_stall_ms] ,

        io_stall_write_ms ,

        num_of_writes ,

        CAST(io_stall_write_ms / ( 1.0
+ num_of_writes ) AS NUMERIC(10, 1)) AS
[avg_write_stall_ms] ,

        io_stall_read_ms +
io_stall_write_ms AS [io_stalls] ,

        num_of_reads + num_of_writes AS
[total_io] ,

        CAST(( io_stall_read_ms +
io_stall_write_ms ) / ( 1.0 +
num_of_reads


                    + num_of_writes ) AS
NUMERIC(10,


                         1)) AS
[avg_io_stall_ms]

FROM    sys.dm_io_virtual_file_stats(NU
LL, NULL) AS vfs
```

```
        INNER JOIN sys.master_files AS
smf WITH ( NOLOCK ) ON vfs.database_id
= smf.database_id


                        AND vfs.[file_id]
= smf.[file_id]

ORDER BY avg_io_stall_ms DESC

OPTION  (RECOMPILE)

To check log details
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select * from fn_dblog(NULL,NULL)

Table size along with  Index sizes
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;with cte as (

SELECT

scm.name as SchemaName,

tnm.name as TableName,

SUM (s.used_page_count) as
used_pages_count,

SUM (CASE

            WHEN (i.index_id < 2) THEN
(in_row_data_page_count +
lob_used_page_count +
row_overflow_used_page_count)

            ELSE lob_used_page_count +
row_overflow_used_page_count

        END) as pages

FROM sys.dm_db_partition_stats  AS s

JOIN sys.tables AS tnm ON s.object_id =
tnm.object_id
```

```
JOIN sys.indexes AS i ON i.[object_id]
= tnm.[object_id] AND s.index_id =
i.index_id

JOIN sys.schemas AS scm ON
scm.schema_id = tnm.schema_id

GROUP BY scm.name, tnm.name

)

select

    cte.SchemaName,

    cte.TableName,

    cast((cte.pages * 8.)/1024 as
decimal(10,3)) as TableSizeInMB,

    cast(((CASE WHEN
cte.used_pages_count > cte.pages

                THEN
cte.used_pages_count - cte.pages

                ELSE 0

          END) * 8./1024) as
decimal(10,3)) as IndexSizeInMB

from cte

order by 2 desc

Queries to get tables with row count
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SELECT

    sm.name +'.'+ tb.name TableName,
SUM(pt.rows) RowCnt

FROM

    sys.tables tb

INNER JOIN sys.partitions pt
```

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    ON pt.OBJECT_ID = tb.OBJECT_ID

INNER JOIN sys.schemas sm

    ON tb.schema_id = sm.schema_id

WHERE tb.is_ms_shipped = 0 AND
pt.index_id IN (1,0)

GROUP BY sm.name,tb.name

ORDER BY SUM(pt.rows) DESC


Fragmentation details

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```

```
USE [DBNAME];
GO
SELECT ips.index_id, name,ips.object_na
FROM sys.dm_db_index_physical_stats (DB
     NULL, NULL, NULL) AS ips
    JOIN sys.indexes AS i ON ips.object
= i.index_id;
GO


      □□□ With schema and table name
      □□□-----------------------------
SELECT a.index_id,object_schema_name(a.
OBJECT_NAME(a.object_id) as 'Table', av
FROM sys.dm_db_index_physical_stats (DB
     NULL, NULL, NULL) AS a
    JOIN sys.indexes AS b ON a.object_i
b.index_id;
GO


      □□□Get index name ,schema , tabler
```

```
SELECT b.name,object_schema_name(a.object_id) A
OBJECT_NAME(a.object_id) as 'Table', avg_fragme
FROM sys.dm_db_index_physical_stats (DB_ID(14),
     NULL, NULL, NULL) AS a
    JOIN sys.indexes AS b ON a.object_id = b.ob
b.index_id
    where avg_fragmentation_in_percent >30
GO


------  To get the scans and Avg Fragmentataior

USE DBNAME
GO
SELECT sum(Total_Scans) as
Total_Scans,name,[schema],[Table],avg_fragmenta
FROM
(
SELECT u.user_scans as
Total_Scans,b.name,object_schema_name(p.object_
OBJECT_NAME(p.object_id) as [Table],avg_fragmen
FROM sys.dm_db_index_physical_stats (70, NULL,
     NULL, NULL, NULL) AS p
    INNER JOIN sys.indexes AS b ON p.object_id
p.index_id = b.index_id
    INNER JOIN sys.dm_db_index_usage_stats u on
and u.object_id = b.object_id and u.object_id =
    INNER JOIN sys.objects o on p.object_id = o
    INNER JOIN sys.sysdatabases d on p.database
)SRC
group by name,[schema],[Table],avg_fragmentatio
GO


Reference Query



USE ISSUER

GO

SELECT ips.database_id

,ips.index_id
```

```
,ips.object_id

,d.name AS 'dbName'

,object_schema_name(ips.object_id) AS 'schema'

,OBJECT_NAME(ips.object_id) AS tblName

,i.name AS 'indexName'

,i.type_desc

,ips.avg_fragmentation_in_percent AS 'frag%'

,ips.page_count AS 'pageCount'

,ips.avg_page_space_used_in_percent

,d.filename

--,p.*

FROM sys.dm_db_index_physical_stats(DB_ID(14),
'DETAILED') AS ips

JOIN sys.sysdatabases AS d ON ips.database_id =

LEFT OUTER JOIN sys.indexes AS i ON ips.object_
ips.index_id = i.index_id

LEFT OUTER JOIN sys.dm_db_index_usage_stats AS
u.object_id

WHERE ips.avg_fragmentation_in_percent >= 30

AND ips.page_count >= 0

--AND i.name IS NOT NULL

--i.name = 'AK_Document_rowguid'

ORDER BY ips.avg_fragmentation_in_percent DESC-
ips.filename, ips.index_id, ips.object_id
```

			SELECT a.index_id, name,b.object_id,avg_fragmer FROM sys.dm_db_index_physical_stats(DB_ID(), OBJECT_ID('Schema.Objectname'), NULL, NULL , 'I JOIN sys.indexes AS b ON a.object_id = b.object b.index_id; GO ---------- SELECT a.index_id, name,OBJECT_ID('Schema.Objectname'),avg_fragmer FROM sys.dm_db_index_physical_stats(DB_ID(), OBJECT_ID('Schema.Objectname'), NULL, NULL , 'I JOIN sys.indexes AS b ON a.object_id = b.object b.index_id; GO
117	Scripting Tables		http://www.sqlservercentral.com/scripts/CREATE+TABLE/163124/ https://blogs.msdn.microsoft.com/buckwoody/2009/07/02/powers_hell-and-sql-server-script-_all-tables/
118	To get SPs/Functions/Triggers info for scripting		sys.sql_modules
119	Getting Indexes with table-cols count and index cols count ---------- ---------- ------ ----- ---------- ---------- - --------		SELECT top 20 TCC.*,COLS.COLUMNS_COUNT,Ind.Indexed_Columns_Count FROM (SELECT b.name,object_schema_name(a.object_id) AS 'schema', OBJECT_NAME(a.object_id) as 'Table',avg_fragmentation_in_percent,fill_factor,

			CASE WHEN type = 1 then 'ALTER INDEX ' + name + ' ON ' + object_schema_name(a.object_id) + '.' + OBJECT_NAME(a.object_id) + ' REBUILD WITH (FILLFACTOR=90); GO' WHEN type <> 1 then 'ALTER INDEX ' + name + ' ON ' + object_schema_name(a.object_id) + '.' + OBJECT_NAME(a.object_id) + ' REBUILD WITH (FILLFACTOR=95); GO' END AS COMMAND FROM sys.dm_db_index_physical_stats (NULL, NULL, NULL, NULL, NULL) AS a JOIN sys.indexes AS b ON a.object_id = b.object_id AND a.index_id = b.index_id where avg_fragmentation_in_percent >30 AND b.type <> 0 -- AND OBJECT_NAME(a.object_id)='TABLENAME') TCC JOIN (select TABLE_SCHEMA,TABLE_NAME,COUNT(COLUMN_NAME) AS COLUMNS_COUNT from INFORMATION_SCHEMA.COLUMNS GROUP BY TABLE_SCHEMA,TABLE_NAME) COLS ON TCC.[schema]=COLS.TABLE_SCHEMA AND TCC.[Table]=COLS.TABLE_NAME join (select s.name as TABLE_SCHEMA, t.name as TABLE_NAME,COUNT(c.name) as Indexed_Columns_Count from sys.tables t inner join sys.schemas s on t.schema_id = s.schema_id inner join sys.columns c on c.object_id = t.object_id inner join sys.index_columns ic on ic.object_id = t.object_id and c.column_id=ic.column_id group by s.name ,t.name) Ind on TCC.[schema]=Ind.TABLE_SCHEMA AND TCC.[Table]=Ind.TABLE_NAME order by TCC.[schema],TCC.[Table]

			To script COLUMN def n alter ---------- SELECT 'ALTER TABLE [' + Table_Schema+'].['+Table_Name +'] Alter Column ['+ Column_Name+'] varchar(' +Convert(nvarchar(5),Character_Maximum_ Length)+');' + ' Update ['+ Table_Schema+'].['+Table_Name + '] SET ['+Column_Name+']= Rtrim(['+Column_Name+']);' FROM

			INFORMATION_SCHEMA.COLUMNS WHERE DATA_TYPE='CHAR' SELECT TOP 1000 * FROM INFORMATION_SCHEMA.COLUMNS WHERE COLUMN_NAME='CREATEDUSER' ALTER TABLE [METADATA].[VW_RANDOMVALUES_BY_DATATYPE] Alter Column [varchar] varchar(3); Update [METADATA].[VW_RANDOMVALUES_BY_DATATYPE] SET [varchar]= Rtrim([varchar]);
120	Performance - Data type length		https://sqlperformance.com/2017/06/sql-plan/performance-myth s-oversizing-strings
121	Missing Indexes		-- Extract missing Index data SELECT t.name AS 'table', (avg_total_user_cost * avg_user_impact) * (user_seeks + user_scans) AS 'potential_impact', 'CREATE NONCLUSTERED INDEX ix_IndexName ON ' + SCHEMA_NAME(t.schema_id) + '.' + t.name COLLATE DATABASE_DEFAULT + ' (' + ISNULL(d.equality_columns, '')

```
+ CASE WHEN d.inequality_columns IS
NULL THEN ''

ELSE CASE WHEN d.equality_columns IS
NULL THEN ''

ELSE ','

END + d.inequality_columns

END + ') ' + CASE WHEN
d.included_columns IS NULL THEN ''

ELSE 'INCLUDE (' + d.included_columns +
')'

END + ';' AS 'create_index_statement'

FROM sys.dm_db_missing_index_group_
stats AS s

INNER JOIN
sys.dm_db_missing_index_groups AS g

ON s.group_handle =
g.index_group_handle

INNER JOIN sys.dm_db_missing_index_
details AS d

ON g.index_handle = d.index_handle

INNER JOIN sys.tables t WITH ( NOLOCK )
ON d.OBJECT_ID = t.OBJECT_ID

WHERE d.database_id = DB_ID()

AND s.group_handle IN (

SELECT TOP 500 group_handle

FROM sys.dm_db_missing_index_group_
stats WITH ( NOLOCK )

ORDER BY ( avg_total_user_cost *
avg_user_impact ) *

( user_seeks + user_scans ) DESC )
```

			AND t.name LIKE 'Person' ORDER BY (avg_total_user_cost * avg_user_impact) * (user_seeks + user_scans) DESC;