Guide pratique - Outils de diagnostic

Plans

```
set plan optgoal
     allrows_oltp | allrows_mix | allrows_dss

select * from … where …
     plan '(use optgoal allrows_dss)'

sp_configure 'optimization timeout limit',0-100
set plan opttimeoutlimit 0-100

Limite le temps d'optimisation d'une requête par
rapport au temps d'exécution.

set plancost on

Affiche le coût des plans :
L : logical io ( e : estimate )
P : physical_io ( e : estimate )
R : row count ( e : estimate )
Cpu: Cpu tics

set option show (normal/brief/long/on/off)

set option show_abstract_plan on|off

Affiche le plan abstrait :
The Abstract Plan (AP) of the final query
execution plan:
( nl_join ( i_scan PKCN_PORTFOLIO ( table ( b
PORTFOLIO ) ) ) ( i_scan X5_ID_XACT_CASH ( table (
a ID_XACT_CASH ) ) ) ) ( prop ( table ( b
PORTFOLIO ) ) ( parallel 1 ) ( prefetch 2 )
( lru ) ) ( prop ( table ( a ID_XACT_CASH ) )
( parallel 1 ) ( prefetch 2 ) ( lru ) )
To experiment with the optimizer behavior, this AP
can be modified and then passed to the optimizer
using the PLAN clause: SELECT/INSERT/DELETE/UPDATE
... PLAN '( ... )'.

set option show_lop on

Affiche les opérateurs logiques :
( project
        ( join
                ( scan ID_XACT_CASH
                )
                ( scan PORTFOLIO
                )
        )
)

set option show_lio_costing normal

Affiche la sélectivité des indexes :
Beginning selection of qualifying indexes for
table 'ID_XACT_CASH',
Estimating selectivity of index
'ID_XACT_CASH.AIM1', indid 3
    PF_COD = 'AWFEUROLIQ'
    Estimated selectivity for PF_COD,
        selectivity = 0.001560471,
    Intelligent Scan selectivity reduction from 1
to 0.06445105
    scan selectivity 0.06445105, filter
selectivity 0.001560471
    restricted selectivity 1
    1750753 rows, 7208.077 pages
    Data Row Cluster Ratio 0.2326496
    Index Page Cluster Ratio 0.8658771
    Data Page Cluster Ratio 0.2821443
    using index prefetch (size 16K I/O)
    Large IO selected: The number of leaf pages
qualified is > MIN_PREFETCH pages
    in index cache 'default data cache' (cacheid
0) with LRU replacement
```

Cache de requêtes - Statement Cache

Configuration

```
sp_configure 'statement cache size', 0, '100M'
sp_configure 'enable literal autoparam',1
```

Table mda : master..monCachedStatement

set statement_cache on |off

```
set literal_autoparam on | off

select show_cached_text(SSQLID)

select SSQLID, show_cached_text(SSQLID)
from       master..monCachedStatement

dbcc purgesqlcache[(SSQLID)]
dbcc prsqlcache(SSQLID|0,0|1)
-- 0 : trace, 1 : + showplan
```

Monitoring – sp_monitor

```
sp_monitor
```

Voir la liste dans sybsystemprocs. Utilisent les tables mda ou compteurs internes

set

L'ordre des tables de la clause from prime

```
set forceplan on|off
```

Reformatage (reformatting)

```
set store_index on|off

select * from … where …
     plan '(use store_index off)'
enable | disable reformatting
```

Cache de procedure

```
sp_configure 'max resource granularity',1-100
set resource_granularity 1-100

Limite la quantité de cache de procédure
utilisable par l'optimiseur de requêtes lors de
l'évaluation des plans.

set bushy_space_search on | off

Valable uniquement avec allrows_dss pour une
requête lente ou une erreur 701 qui survient lors
de l'optimisation (cache de procédures saturé)
```

Jointures par fusion (merge joins)

```
set merge_join on | off

select * from … where …
     plan '(use merge_join off)'

sp_configure 'enable merge join'
```

Jointures par hachage (hash joins)

```
set hash_join on |off
enable | disable hash joins
```

Jointures imbriquées (nested loop joins - NI joins)

```
set nl_join on |off
enable | disable nl joins
```

Export des options (export_options)

```
set export_options on |off
Implicite dans les triggers login
```

Statistiques - statistics

Fonction datachange : retourne un % de modifications de la table

```
select datachange(table,partition,col)
select datachange('INSTRUMENT', null,null);
```

Statistiques manquantes - Missing stats

```
dbcc traceon(3604)
set option show_missing_stats on | off | long

select convert(varchar(30),object_name(id)),
     indid, moddate
from       sysstatistics
where moddate < dateadd(dd,-10,getdate())
```

Traces

```
sp_helpapptrace
go
dbcc traceon(3604)
go
set tracefile '/tmp/tf.txt' for pid
go
set show_sqltext on
set statistics io on
set statistics time on
set statistics plancost on
set showplan on
….
set showplan off
set statistics io off
set statistics time off
set show_sqltext off
set tracefile off for pid
go
```

Configuration

```
sp_configure 'nondefault'

Affiche les paramètres serveur qui ne sont pas à
leurs valeurs par défaut.
```

Création d'un index

```
set sort_resources on | off

Affiche les ressources utilisées lors de la
création d'un index :
The sort is performed using Serial sort.
Sort buffer size: 500
Parallel degree: 1
Number of output devices: 19
The data to be sorted has approximately 3877
rows, 999 used pages (1998 KB) and 62 unused pages
(124 KB).
```

sp_options

```
sp_options help
sp_options [ [show | help
[, <option_name>|<category_name>|null
[, dflt | non_dflt | null
[, <spid>] ] ] ] ]
```