Firebird Configuration, episode 2:
TempCacheLimit

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TempCacheLimit Usage

• Queries with Order By, Group By, Distinct, Union,
• Memory area defined by TempCacheLimit is also used for
  – Temporary BLOBs (which are less than page size)
  – Undo logs
  – Monitoring data
  – Batch data
TempCacheLimit in 2.5

- For Classic — per connection (process)
- For SuperServer and SuperClassic — per process
- In all architecture - only 2Gb max
  - If set more than 2 Gb, will be «turned» from the beginning.
    - For example, set 3Gb = actual 1Gb
    - Set 4Gb = actual 0!
TempCacheLimit in 3.0

- TCL for Classic — per connection (process)
- TempCacheLimit in SuperServer and SuperClassic - united for all databases, per process, not limited to 2Gb!
- For 64 bit Architectures practically can be set up to 64Gb
TempCacheLimit in 4.0 - 1

• Big change!
  – Now TempCacheLimit is allocated **per database**
  – `Firebird.conf → TempCacheLimit = XX — default for all databases`
  – `databases.conf → TempCacheLimit = XXX — tuned for each database`
TempCacheLimit in 4.0 — 2

For Classic

Conn 1
DB1

TCL
for
DB1

Conn 2
DB1

TCL
for
DB1

Conn 1
DB2

TCL
for
DB2

Conn 3
DB2

TCL
for
DB2

For SuperServer

Conn 1
DB1

TCL
for
DB1

Conn 2
DB1

TCL
for
DB1

Conn 3
DB2

TCL
for
DB2

Conn 1
DB2

TCL
for
DB2

Conn 2
DB2

TCL
for
DB2

Conn 3
DB2

TCL
for
DB2
TempCacheLimit in 4.0 — 3

- https://github.com/FirebirdSQL/firebird/issues/5984

For SuperClassic, in versions 4.0.0-4.0.4

TCL for SuperClassic v4.0 was allocated per connection, using per database setting, till the fix

https://github.com/FirebirdSQL/firebird/issues/7928
TempCacheLimit in 4.0 — 4

For SuperClassic v4.0.5

In version 4.0.5 TCL is allocated per database and shared per all connections.
TempCacheLimit in 5.0

• The same as in v4.0.5!
Configuring TempCacheLimit
(all recommendations are for 64bit)

• For 2.5
  - SuperServer and SuperClassic — always 2Gb
  - Classic — depends on the number of connections
    • Consider to use multi-instance Classic+SuperClassic for shared access

• For 3.0
  - 10-15% of RAM for SuperServer and SuperClassic
  - Classic — depends on the number of connections
    • Consider to use multi-instance Classic+SuperClassic for shared access

• For 4.0.5+ and 5.0
  - Tuning per database!
  - For SuperServer and SuperClassic - need to know number of databases, to do not use all the memory
  - Classic

• Configuration Calculator for Firebird
Thank you!

• Questions?
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