

# SECTION – 3

## DB2 ARCHITECTURE

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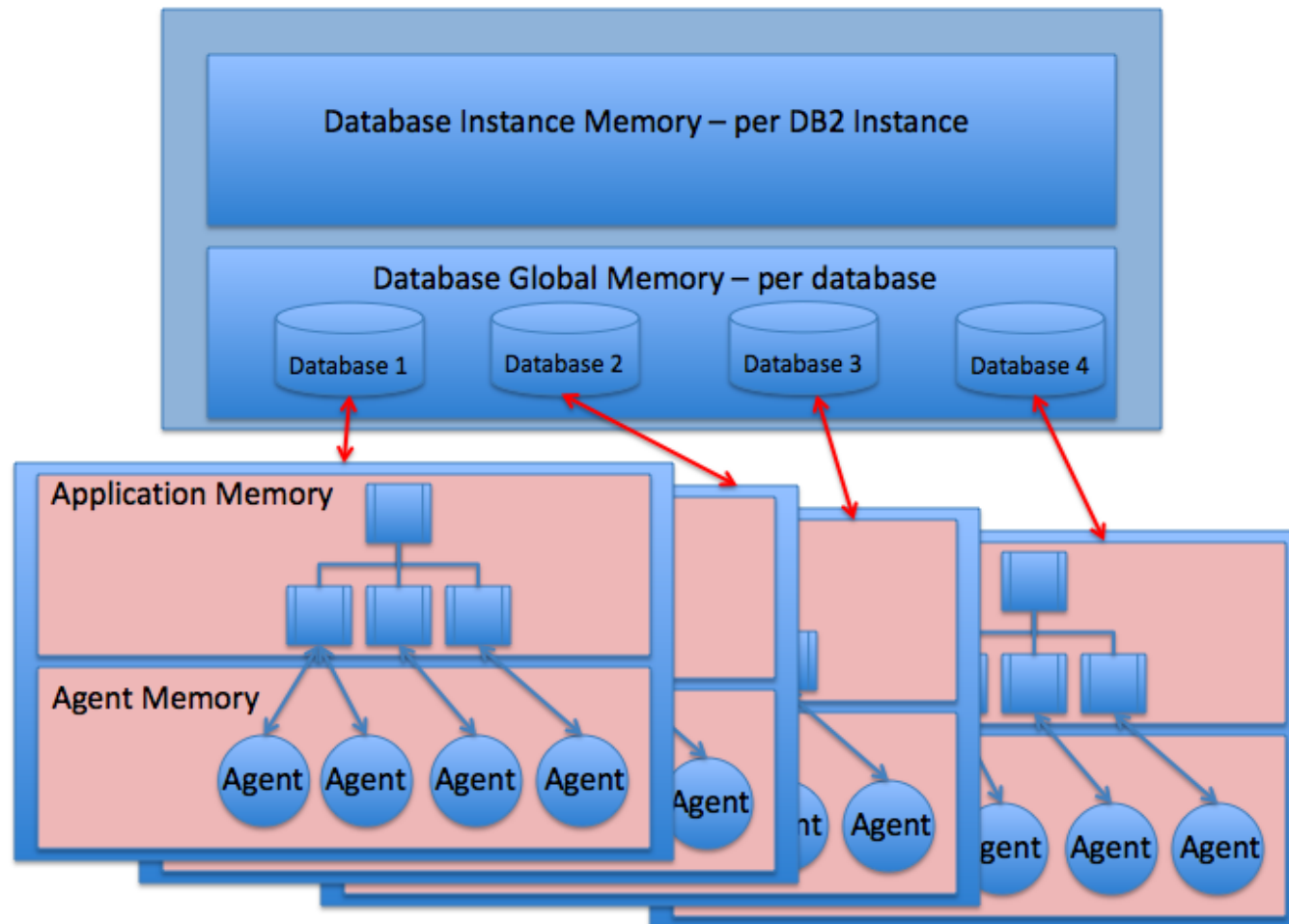
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- Memory Model - Highlight
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- Summary

# DB2 Memory Model - Highlight

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DB2 manages memory at 4 different levels



# Database Instance Memory (DIM)

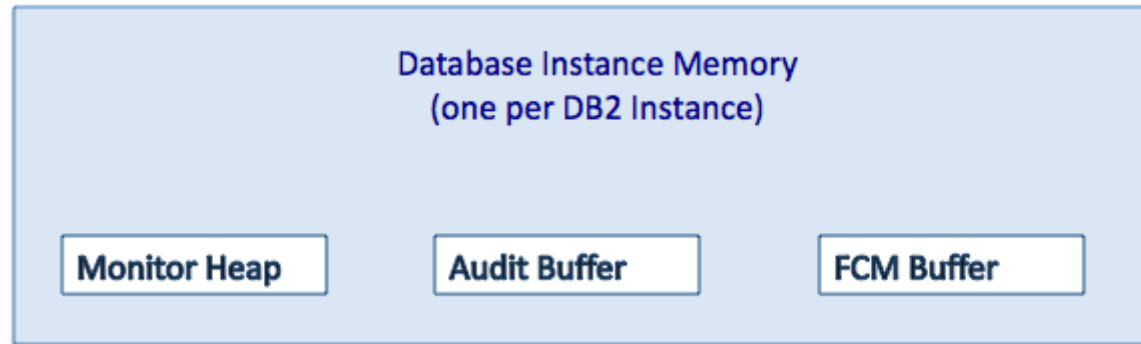
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- The memory allocated for each DBMS instance is Database Instance Memory or Instance Shared Memory
- It is used for instance level tasks such as monitoring, auditing and inter-node communication
- It is allocated when the DB2 is started (**db2start**), and freed when it is stopped (**db2stop**)

# Database Instance Memory cont..

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- The memory pools in Database Instance Memory are:
  - ▣ The Monitor Heap (*mon\_heap\_sz*) – for monitoring
  - ▣ The Audit Buffer (*audit\_buf\_sz*) – for db2audit facility and
  - ▣ The FCM Buffer (*fcm\_num\_buffers*) – for partitioned systems



The Database Manager Configuration parameter **INSTANCE\_MEMORY** controls how much memory can be allocated to an instance

# Database Global Memory (DGM)

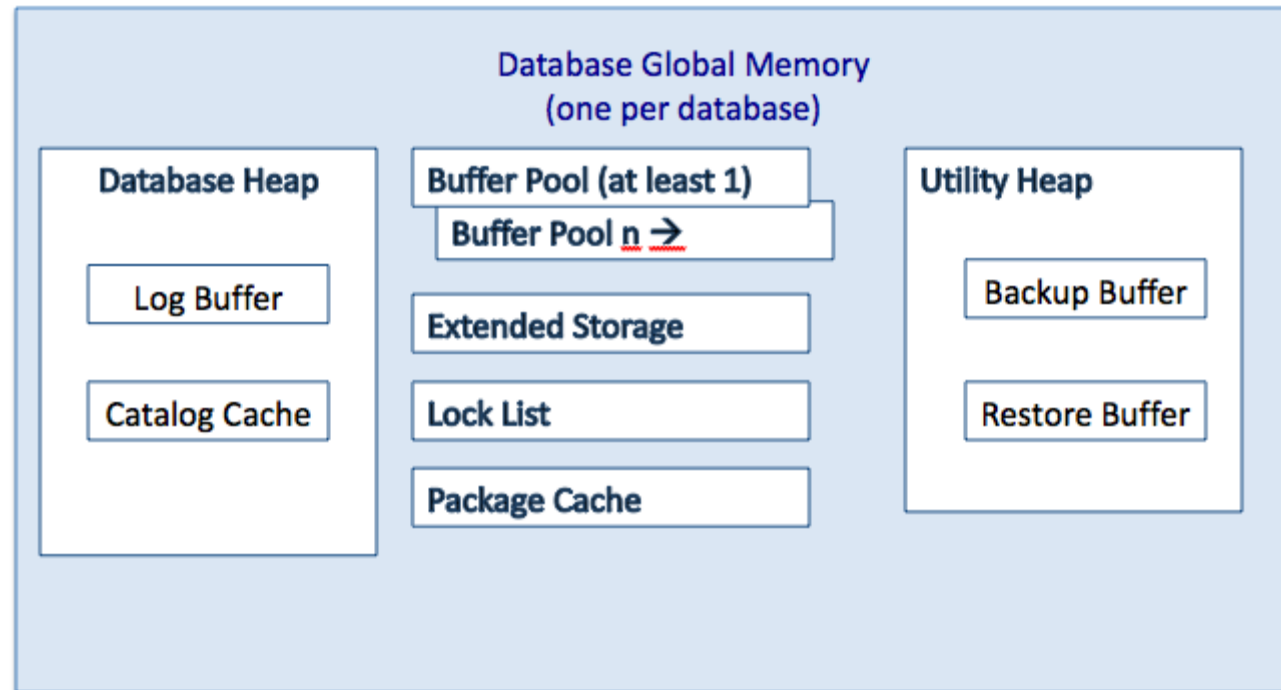
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- The memory allocated for each database is Database Global Memory
- It is used for backup and restore, locking, and SQL execution.
- It is allocated when you start or initially connect to a database and is released when you stop or disconnect.

# Database Global Memory cont..

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- Within Database Global Memory, there are a number of memory pools.

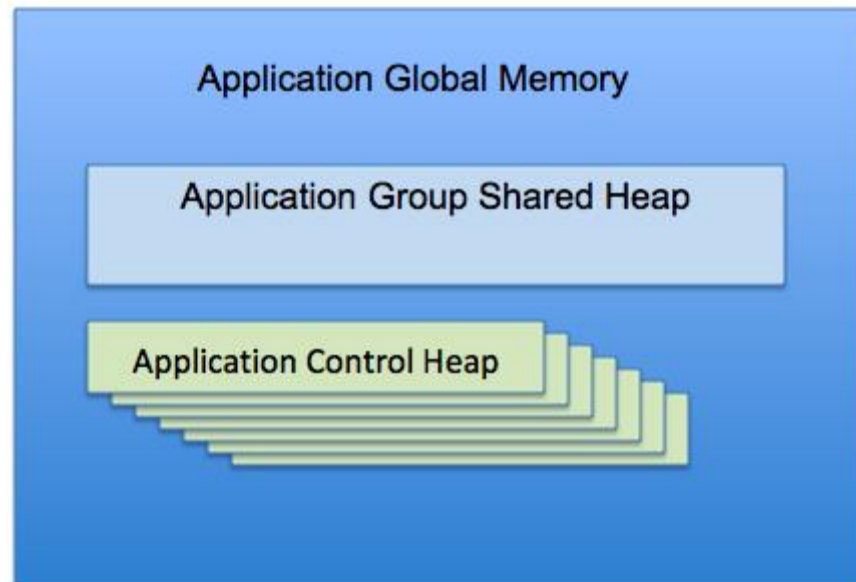


The amount of memory that is reserved for the database global memory for a database is determined by the **DATABASE\_MEMORY** configuration parameter

# DB2 Application Global Memory (AGM)

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- Application Global Memory is used for:
  - ▣ coordinating and sending messages between the DB2 agents that are working on behalf of an application
  - ▣ To store copies of currently executing sections of access plans
  - ▣ For handling compilation of an SQL statements



In non-partitioned databases, use of Application Global Memory is minimal.

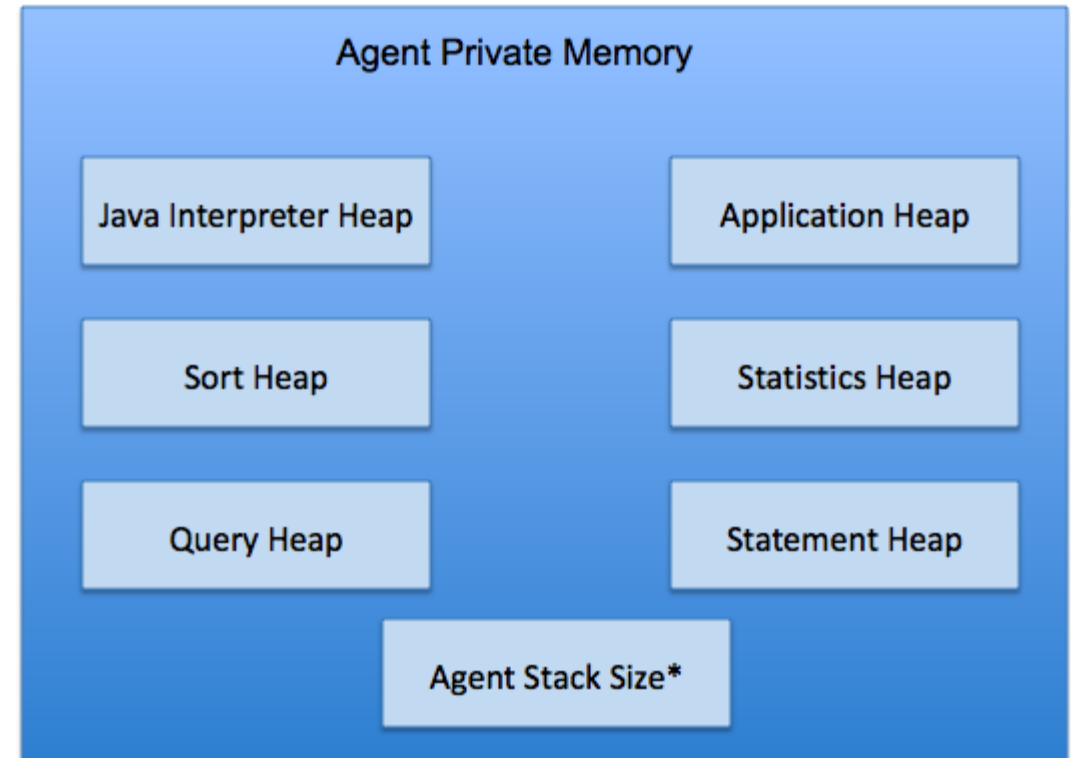
**APPL\_MEMORY**



# DB2 Agent Private Memory (APM)

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- Agents perform work for the applications, they are used for such things as:
  - ▣ Building Query Plans
  - ▣ Executing Query Plans
  - ▣ Handling Cursors
  - ▣ Sorting
  - ▣ Gathering Statistics



\* Windows Only

# Summary

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- Database Instance Memory
  - ▣ INSTANCE\_MEMORY (Automatic)
- Database Global Memory
  - ▣ DATABASE\_MEMORY (Automatic)
- Application Global Memory
  - ▣ APPL\_MEMORY (Automatic)
- Agent Private Memory
  - ▣ Eg: SORTHEAP , JAVA\_HEAP\_SZ etc