A Multi-variant Execution Environment for In-memory Databases

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• Problem: Memory space overhead
  — Modern in-memory DBs utilize huge amount of memory (hundreds of GB order)
  — Fail to launch multiple in-memory DB variant

• Solution: Share the same content pages among variants
  — Allow us to run multiple in-memory DB variants
  — No modification of in-memory DB source code
  — Mitigate runtime overhead of variant synchronization

• Current Result:
  — Reduced the memory utilization of in-memory DB variants