11 – Morsel-Driven Parallelism:

A NUMA-Aware Query Evaluation Framework for the Many-Core Age

1. Overview of Idea
   Since state-of-the-arts processors has out-of-order cores, query distribution has become more important. Morsel-driven processing and stealing work from other cores can be a solution for performance improvement with many cores

2. Main Finding

   Making query domain to some morsels can improve OLAP query performance

3. Systems used and its Specifications
   NUMA systems are used, morsel-driven query processing scheme

   A. Morsel
      partition of query domain, used for locality and parallel execution of query. Each morsels are assigned to a core.

   B. Dispatcher
      scheduler for parallel execution of queries. Preserve locality(assign morsel to core which the morsels are allocated) and elasticity of task(if DRAM are full, still task from other morsel) to improve OLAP performance

4. Workloads evaluated
   TPC-H is used. Star scheme benchmark is used. Overall, these are all analytical query benchmarks