

Gather-Scatter DRAM

In-DRAM Address Translation to Improve the Spatial Locality of Non-unit Strided Accesses

Session C1, Tuesday 10:40 AM

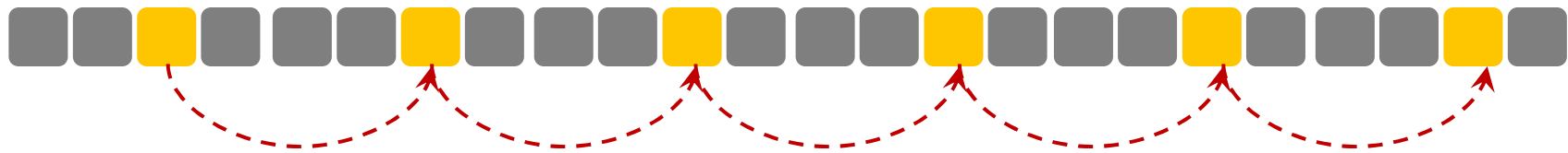
Vivek Seshadri

Thomas Mullins, Amirali Boroumand, Onur Mutlu,
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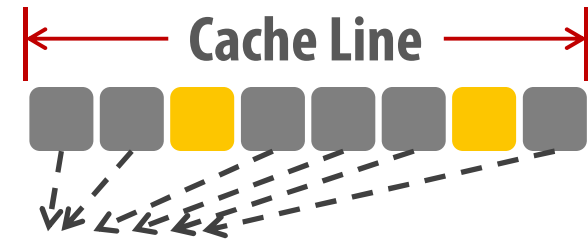
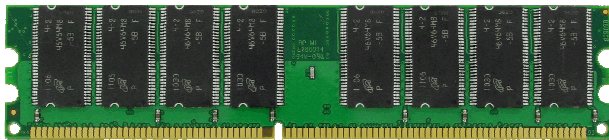
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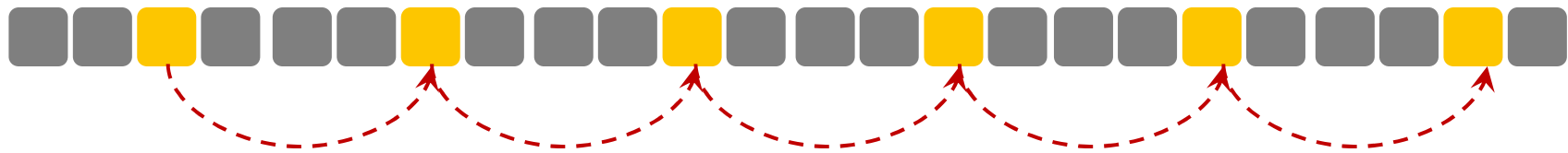


Problem: Non-unit strided accesses

Today's DRAM

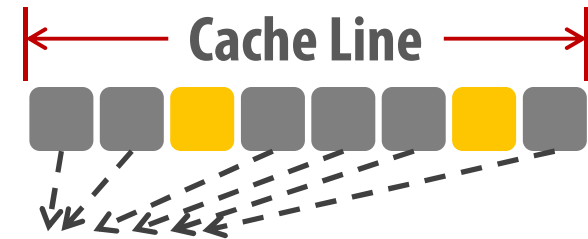
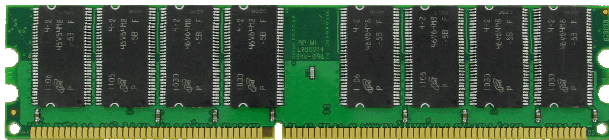


Inefficiency: High latency , wasted bandwidth and cache space



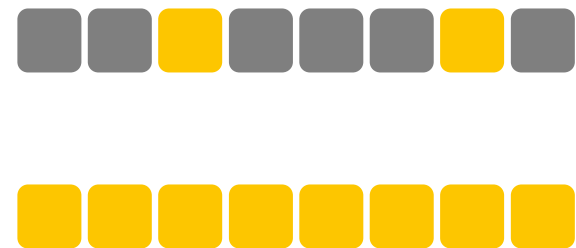
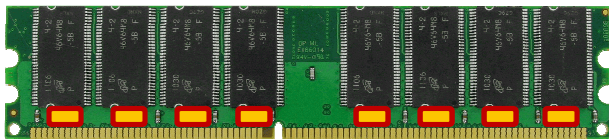
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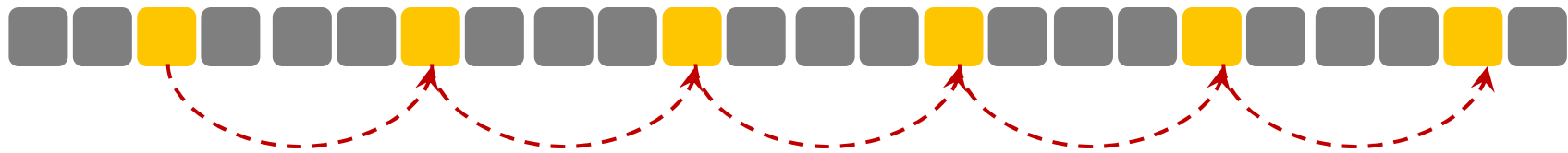
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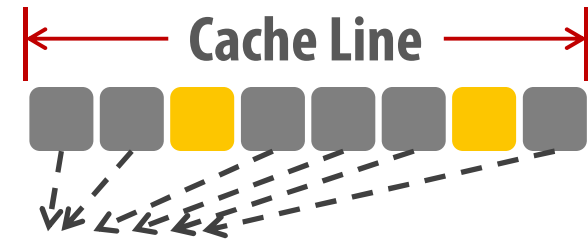
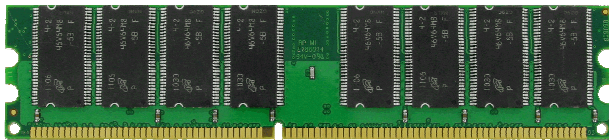
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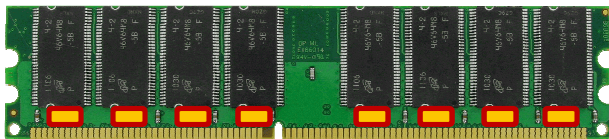
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Example result

In-memory databases



Best of both row store and column store layouts

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