

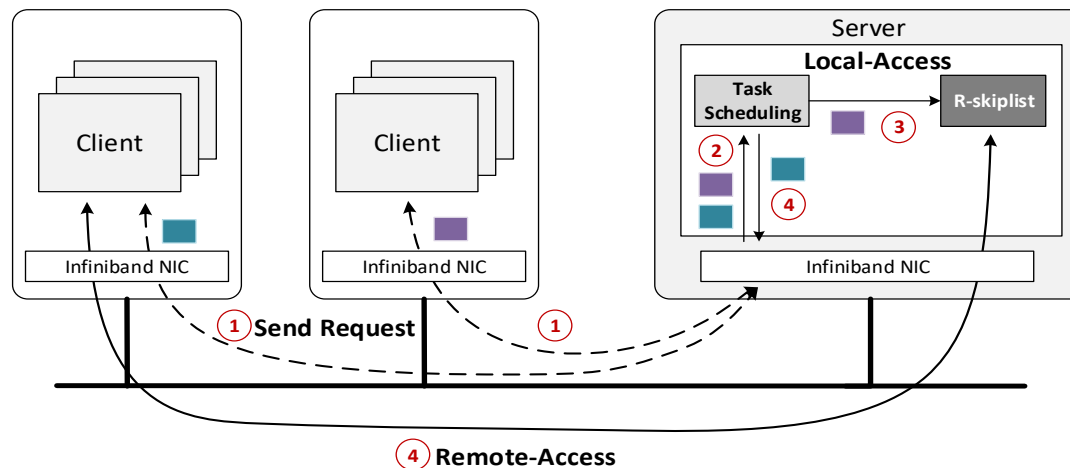
RS-store: rdma-enabled skiplist-based key-value store for efficient range query

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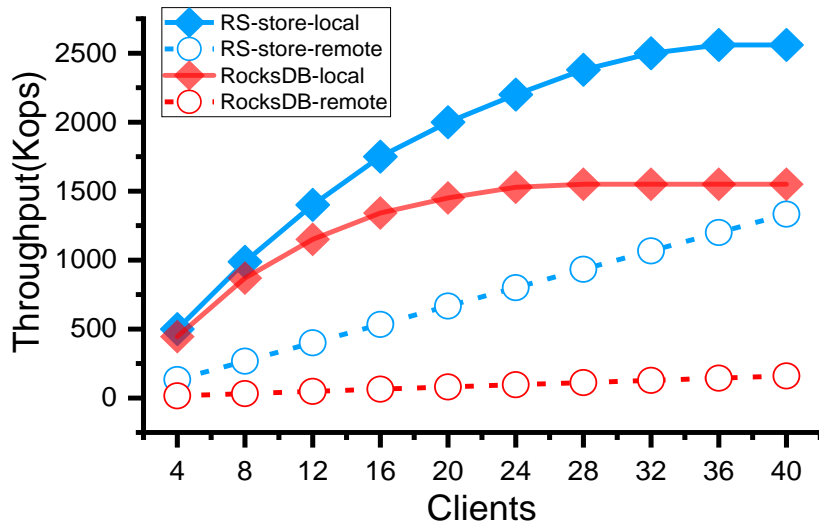
Problems & Ideas

- Problems of applying RDMA to the skiplist-based key-value store
 - The CPU-intensive access of skiplist combined with the high-speed network RDMA will easily lead to the storage layer reaches CPU bottleneck.
- Ideas: Introduce remote-access to solve the server's CPU bound
 - Present a skiplist-based key-value store with RDMA, which supports two access modes: local-access and remote-access.
 - Redesign a novel skiplist *R-skiplist* to reduce the number of network commucations in remote-access.
 - Implement a latch-free concurrency control strategy to enable all concurrency between two access modes.

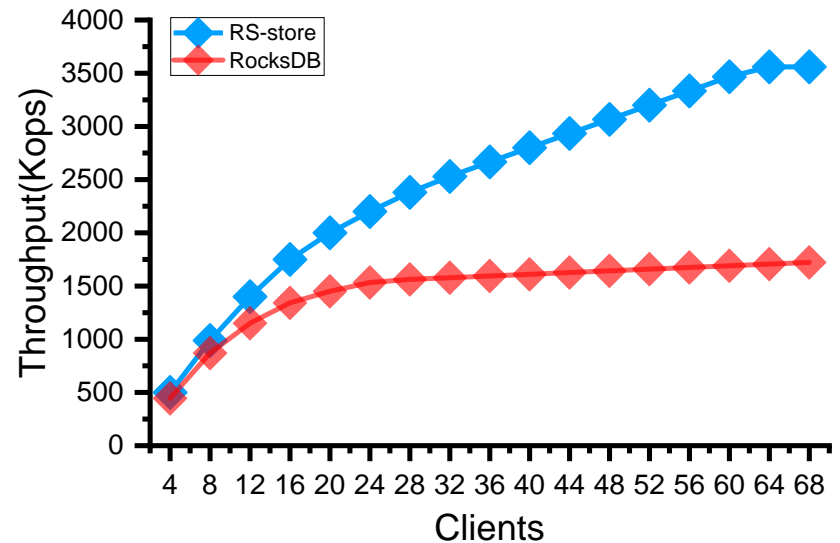


Main Contributions

- Throughputs of remote-access and local-access



- Throughput of hybrid access mode



- The max throughputs of remote-access and local-access increased by 8.3x and 1.6x respectively.
- The client-side scalability of RS-store under the hybrid access mode has 2.1x improvement.