RocksDB Festival

Supported by IITP, StarLab.

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BGR

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- Introduce BGR team
  - ✓ 하계 방학 RocksDB 분석 스터디 참여
  - ✓ Team Member
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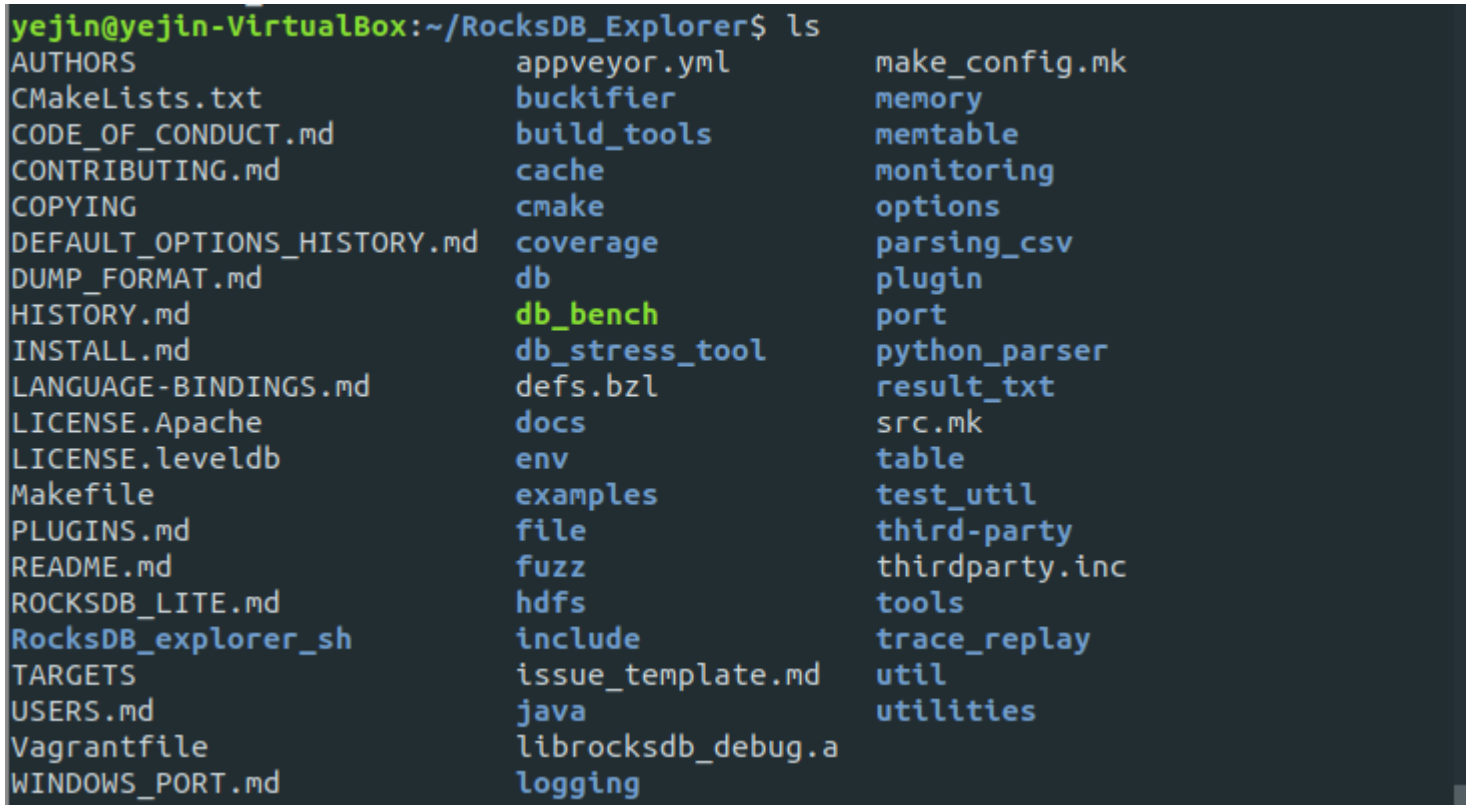
RocksDB Festival

- RocksDB db_bench 설치
  - ✓ https://github.com/DKU-StarLab/RocksDB_Explorer을 참고하여 RocksDB db_bench 설치 완료.



RocksDB Festival

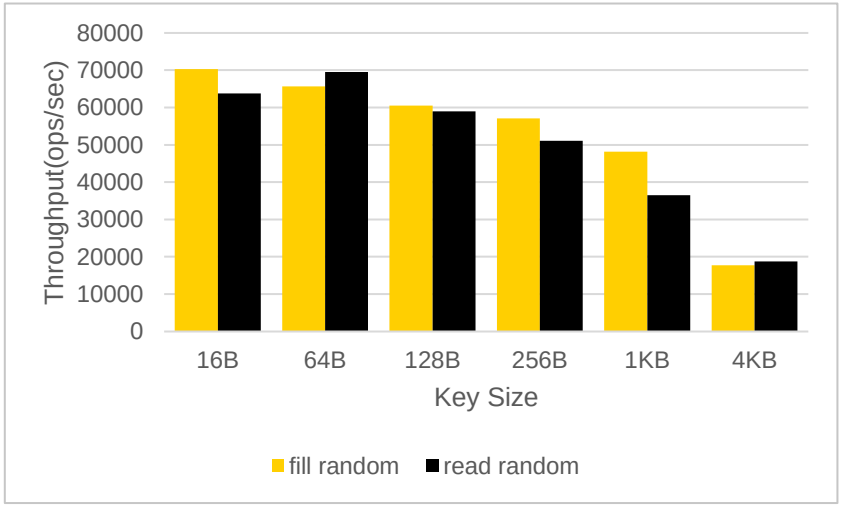
- db_bench 테스트 결과

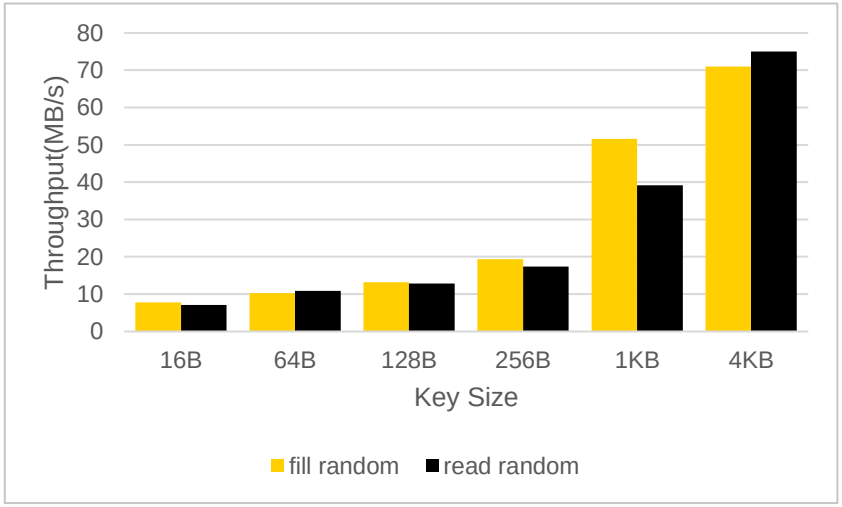
```
Initializing RocksDB Options from the specified file
Initializing RocksDB Options from command-line flags
RocksDB:    version 6.21
Date:       Sun Jul 18 15:20:23 2021
CPU:        1 * Intel(R) Core(TM) i5-7500 CPU @ 3.40GHz
CPUCache:   6144 KB
Keys:       16 bytes each (+ 0 bytes user-defined timestamp)
Values:     100 bytes each (50 bytes after compression)
Entries:    1000000
Prefix:    0 bytes
Keys per prefix:    0
RawSize:    110.6 MB (estimated)
FileSize:   62.9 MB (estimated)
Write rate: 0 bytes/second
Read rate: 0 ops/second
Compression: Snappy
Compression sampling rate: 0
Memtablerep: skip_list
Perf Level: 1
WARNING: Assertions are enabled; benchmarks unnecessarily slow
------------------------------------------------
Initializing RocksDB Options from the specified file
Initializing RocksDB Options from command-line flags
DB path: [/tmp/rocksdbtest-1000/dbbench]
fillseq      :       8.735 micros/op 114478 ops/sec;   12.7 MB/s
Please disable_auto_compactions in FillDeterministic benchmark
```

<./db_bench>

RocksDB Festival

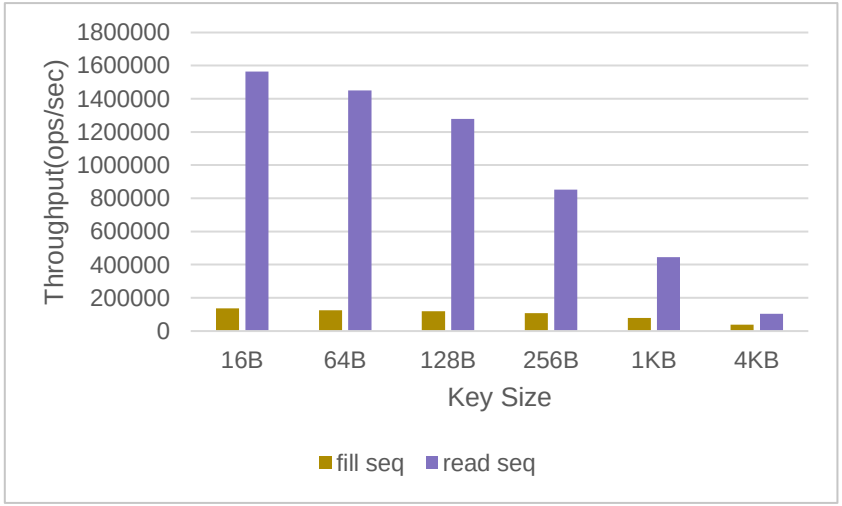
- db_bench 테스트 결과
  - ✓ Key Size 변경 (16B/64B/128B/256B/1KB/4KB)
  - ✓ fill random, read random

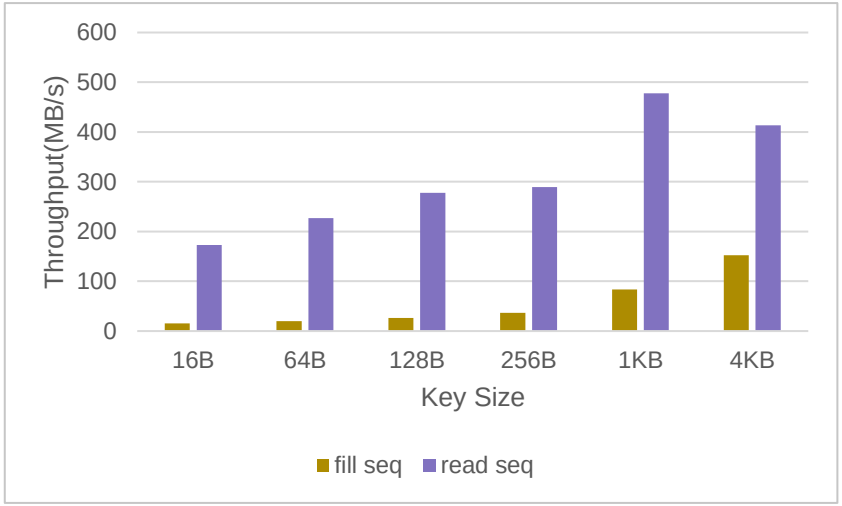




<./db_bench + --key_size=N>

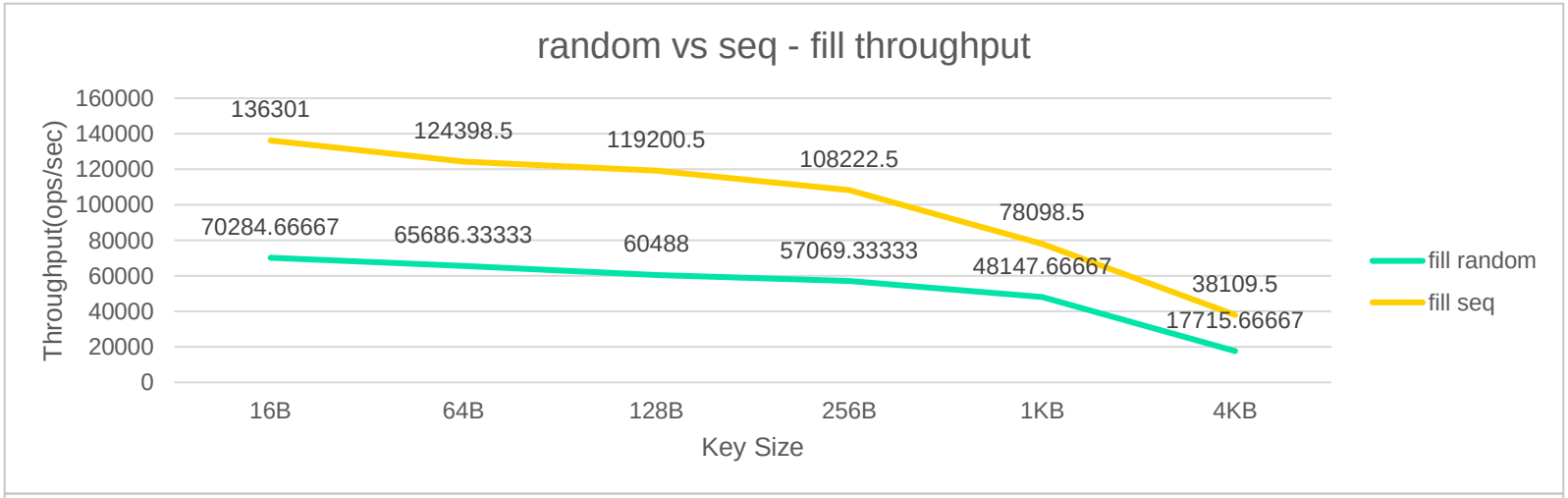
- db_bench 테스트 결과
  - ✓ Key Size 변경 (16B/64B/128B/256B/1KB/4KB)
  - ✓ fill sequential, read sequential

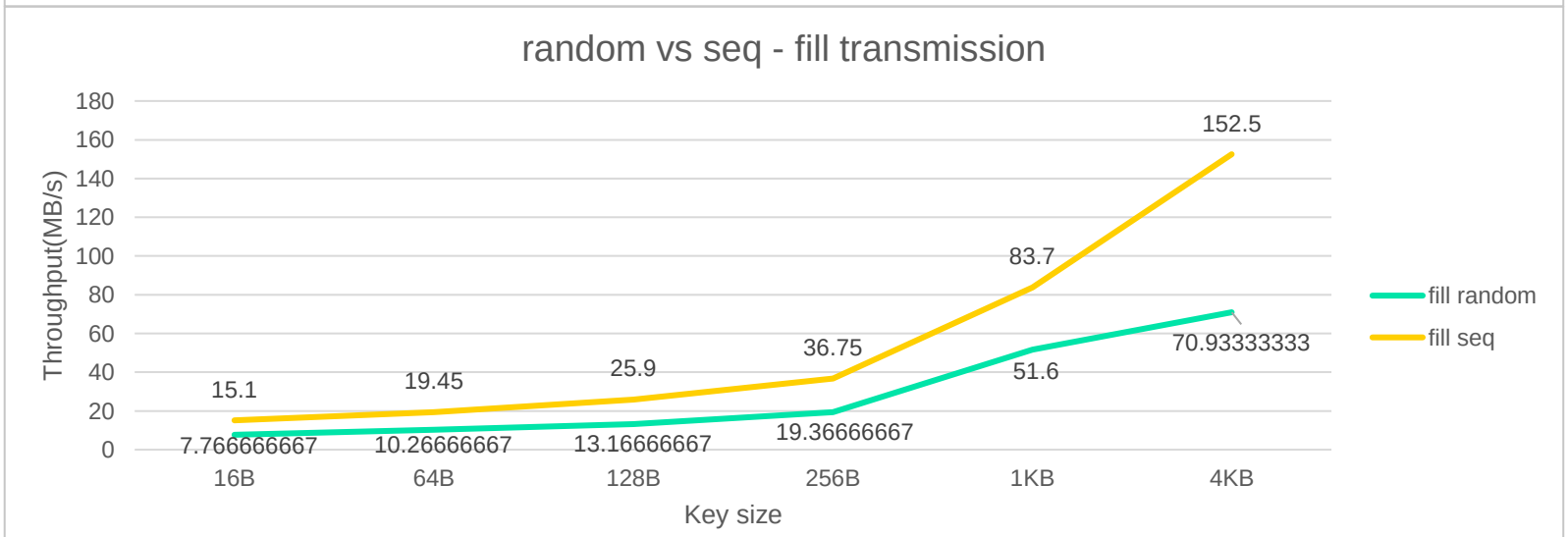




<./db_bench + --key_size=N>

- db_bench 테스트 결과



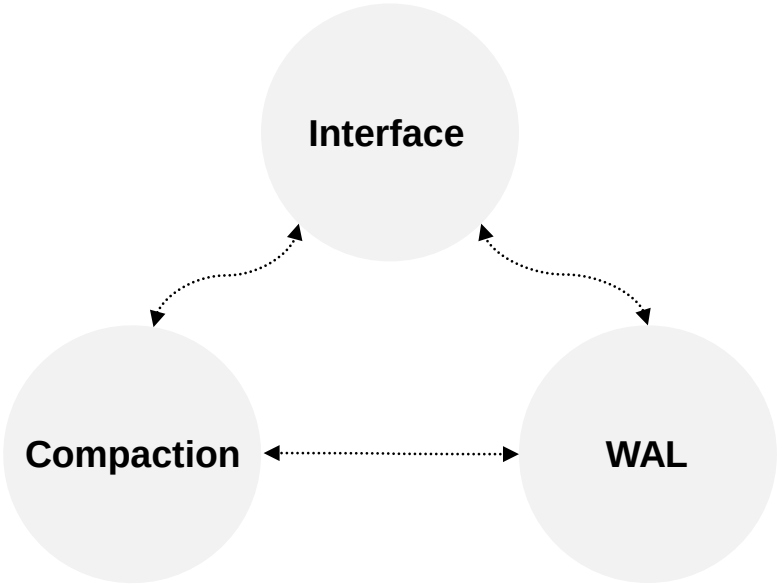


- Topic: Interface Related
  - ✓ 내부 구조와 함께 인터페이스 측면에서 RocksDB를 분석하고 RedisDB와 성능 및 차이점을 비교하는 것이 목적

RocksDB

RedisDB

- 기대 결과
  - ✓ 다양한 DB 중에서도 **RocksDB**만의 뛰어난 성능을 확인하여 표나 그래프 등의 결과로 나타낸다.
  - ✓ 추가적으로 단순한 성능 비교를 넘어 **RocksDB**의 내부 구조가 어떻게 동작하는지도 분석해본다.



Discussion