Compaction

iotdb StorageGroupProcessor tsfile

*
* iotdb-engine.properties compaction_strategy
* compaction_strategy LEVEL_COMPACTION NO_COMPACTION
* LEVEL_COMPACTION NO_COMPACTION
* iotdb-engine.properties merge_chunk_point_numberchunkLEVEL_COMPACTION
* iotdb-engine.properties max_level_numLEVEL_COMPACTION
*
* TsFileManagement StorageGroupProcessor seqFileList unSeqFileList seqFileList unSeqFileList
* {firstFileTimestamp}-{version}-{mergeVersion + 1}.tsfile

TsFileManagement

- TsFileManagement
- TsFileManagement Seq UnSeq StorageGroupProcessor TsFileManagement
- List\<TsFileResource\> getStableTsFileList() TsFileResource
- List\<TsFileResource\> getTsFileList(boolean sequence) / sequence = true
- Iterator\<TsFileResource\> getIterator(boolean sequence) / sequence = true
- void remove(TsFileResource tsFileResource, boolean sequence) TsFileResource
- void removeAll(List\<TsFileResource\> tsfileReourceList, boolean sequence) TsFileResource
- void addAll(List\<TsFileResource\> tsfileReourceList, boolean sequence) TsFileResource
- boolean isEmpty(boolean sequence)
- int size(boolean sequence)
- void forkCurrentFileList(long timePartition)
- void recover()
- CompactionMergeTask closeUnsealedTsFileProcessorCallBack

LEVEL_COMPACTION merge

* forkCurrentFileList(long timePartition)
* chunk merge_chunk_point_number
* merge
*
* MergeManager
*
* {first_file_name}-{max_level_num - 1}.tsfile
* .compaction.log
*
*
* device - offset
*
*
* {first_file_name}-{level + 1}.tsfile
* .compaction.log
*
*
* device, device - offset
* .resource
* writer endFile
*
*
*
* .compaction.log
*

LEVEL_COMPACTION recover

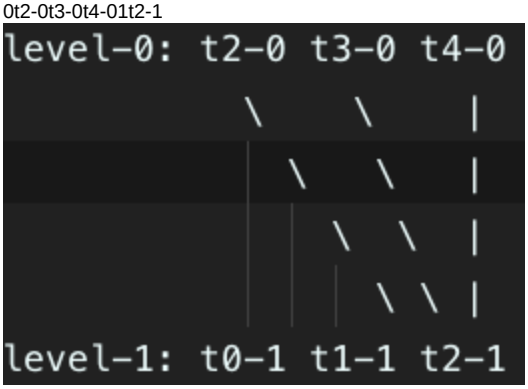
*
*
*
*
*
*
*
*
*
*
*
*
*

LEVEL_COMPACTION

max_file_num_in_each_level = 3tsfile_manage_strategy = LevelStrategy max_level_num = 30122

level

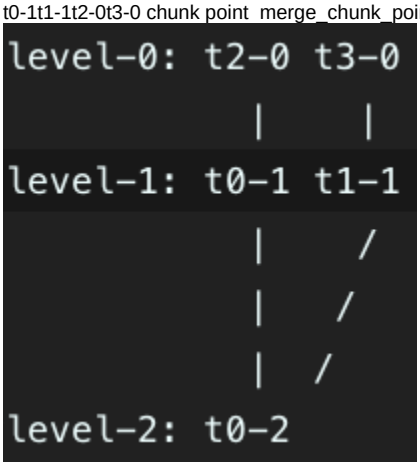
5
level-0: t2-0 t3-0 t4-0
level-1: t0-1 t1-1
0t2-0t3-0t4-01t2-1



122t0-2

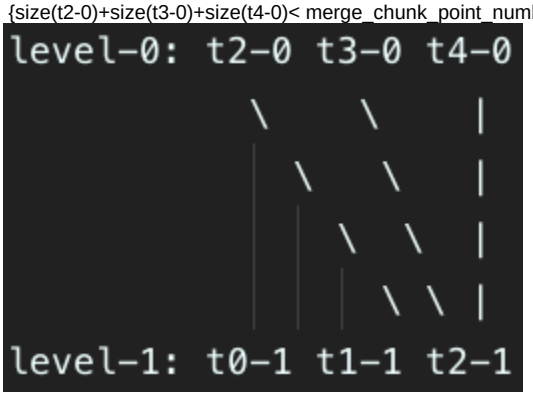
merge_chunk_point_number

4,
level-0: t2-0 t3-0
level-1: t0-1 t1-1
t0-1t1-1t2-0t3-0 chunk point merge_chunk_point_number2



- merge
- max_file_num_in_each_level = 3
* 0.10.0
* mergeVersion {max_level_num - 1}
*
5
level-2: t0-2 t1-2 t2-2 t3-2 t4-2

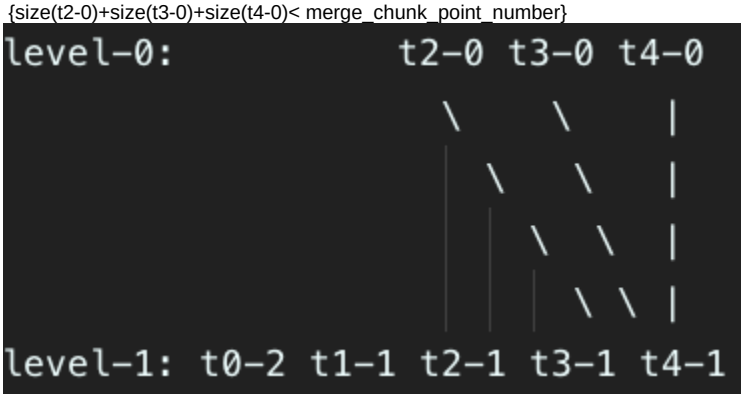
* max_level_num
* level recover {max_level_num - 1}
* level {max_level_num - 1}
5 max_file_num_in_each_level = 2 max_file_num_in_each_level = 3
level-0: t2-0 t3-0 t4-0
level-1: t0-1 t1-1
 {size(t2-0)+size(t3-0)+size(t4-0)< merge_chunk_point_number}



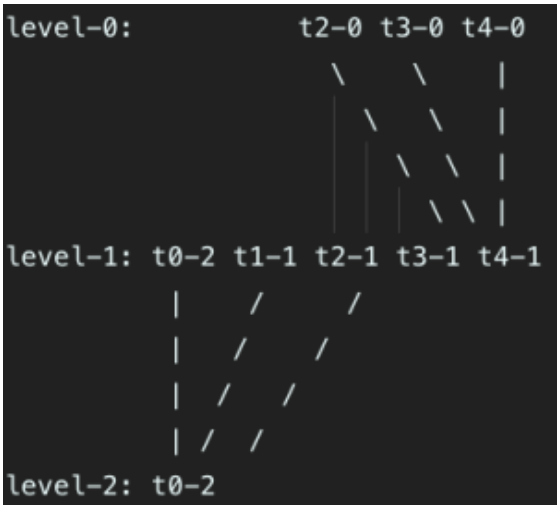
122t0-2

* max_level_num
* level recover {max_level_num - 1}
* {max_level_num - 2}

7max_file_num_in_each_level = 3max_file_num_in_each_level = 2
level-0: t4-0 t5-0 t6-0
level-1: t0-2 t1-1 t2-1 t3-1
{size(t2-0)+size(t3-0)+size(t4-0)< merge_chunk_point_number}



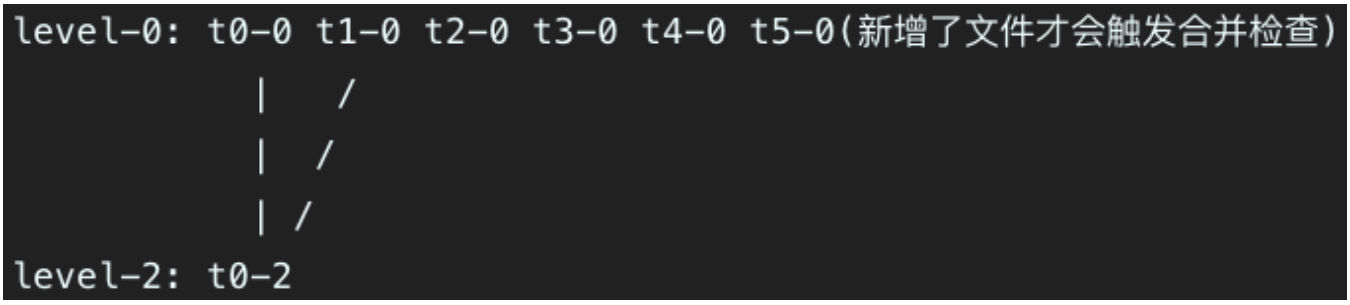
12



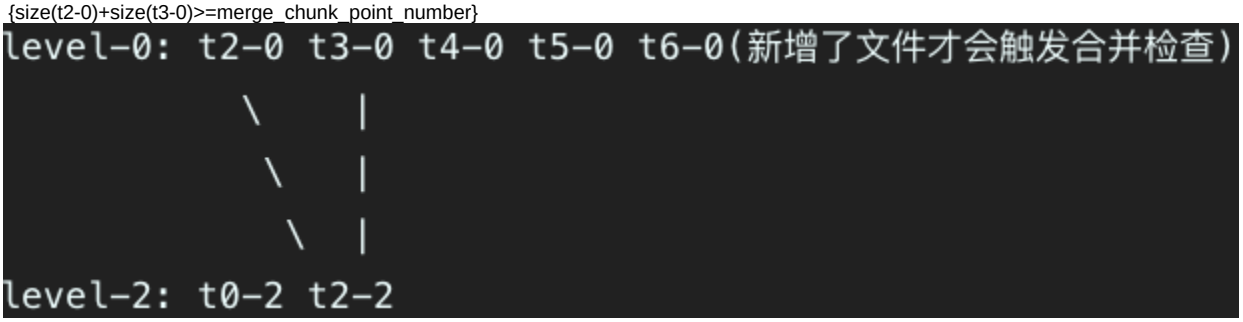
level-0:
level-1: t3-1 t4-1
level-2: t0-2

* NO_COMPACTION -> LEVEL_COMPACTION
* {mergeVersion + 1} 0
* {merge_chunk_point_number}

5
level-2: t0-0 t1-0 t2-0 t3-0 t4-0
{size(t0-0)+size(t1-0)>=merge_chunk_point_number}



{size(t2-0)+size(t3-0)>=merge_chunk_point_number}



{size(t4-0)+size(t5-0)+size(t6-0)+size(t7-0)< merge_chunk_point_number}