Merge Issues:

1. Merge is using File System locking that doesn’t guarantee many race conditions

Recommendation: this need to be replaced by DB centralized locking .

1. Merge is re-using existing L3 indexes DB records/Folders that already merged and resetted and empty, and it have a mechanism to find a gap or create new and the format is very basic for folder path etc. all this logic introduce many race conditions and require

Recommendation : we need to eliminate all the race conditions , we should only create new Indexes, and the path should be either a new GUID under the group folder, or using new Index Id to create a hash path the same as we do for group id.

1. Merge currently deleting the optimized L3 indexes in the flow , there is no retry mechanism or tracking if anything fails.

Recommendation : we will treat the process of delete as a separate process step that need to be succeed or retried , so we keep track of what happened and take actions.

This will require modification to Search.Searchindex table we will add Process Step / StepInProgress plus other needed columns to define they are currently merging , ready for delete / deleted. , this Modification also will be used under the centralized DB locking by group when we get L3 Index to optimize , this process will guarantee and eliminate many race conditions happening.

1. Merge currently doesn’t have any rollback mechanism in case of failure triggered by the environment , ex: disk space ,network issues , SQL issues

Recommendation: we need to have rollback/retry mechanism concept on all these failure cases.

1. Merge currently download locally the L3 indexes to merge, then after creating the new L3 Index upload it to ISLON.

Recommendation: Is there a way to reduce this for example treating the local working area as the final index path.

1. Merge L3 indexes can be accessed by different tools for deletion.

Recommendation: we need to integrate this process in merge, so no external tool can touch or delete from index externally, Merge should define a process of how to submit requests to delete items, and Merge will handle the request internally and delete desired docs while merging.