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Calculations:

Best Case:
The smallest possible level 1 array that could accommodate 10514 objects would be of size 128, as the ideal number of elements in the L1 array would be 103 (102.5 rounded up), and since the base size of the array is 4, and the only way that the array grows is by doubling, so the minimum size of the array that could accommodate 103 elements would be 128.

Worst Case:
The largest possible level 1 array that could accommodate 10514 items would be 256 elements. This is because of a few factors:

- The level 1 array can only grow by doubling in size.
- Since the worst case, scenario would be that every element is added to the last level 2 array in the list, this would mean that each level 2 array would double in size until it is larger than the level 1 array, in which case it would split.
- This repeated splitting of the level 2 arrays would result in roughly double the elements in the L1 array that the best-case scenario would have (103 x 2 = 206)

Due to these factors, in order to accommodate the number of elements in the worst-case scenario level 1 array (roughly 206), the array would have to grow to be 256 elements in length.

Bugs:
No known bugs.