

Finding elements in ordered positions

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The approach used to sort the entire array is by using buckets. The data are split by an upper bound of the array values in a set of buckets, and buckets are sorted separately and finally they are put together.

With "MPI" the number of buckets is equal to the number of processes minus one (core 0, who serves the buckets). In an MPI+OpenMP version, each process will divide his bucket in sub-buckets, which will be sorted by OpenMP threads.

The best results have been obtained with an MPI version with 32 cores.