

CONTROL DATA® CYBER 170 SERIES SORT/MERGE SOFTWARE SYSTEM

CONTROL DATA
CORPORATION



The CONTROL DATA CYBER 170 Sort/Merge system is a high-speed processing program for the manipulation and rearrangement of fixed files into a prescribed order or collating sequence according to the user's specifications.

Sort/Merge satisfies the highest level of ANSI COBOL requirements and in addition has the capability to operate as a stand-alone product or as a subprogram called by a FORTRAN or COMPASS main program.

It executes in three modes:

- As a main program called by a control card
- As a subprogram called by macro instructions specified in the user's program
- By use of the COBOL SORT verb

The modular construction of the Sort/Merge program enhances the record or file processing options by providing the following capabilities:

- Sort only — rearranges records from one or more input files into an order or sequence specified by the user.
- Merge only — combines two or more presorted input files into a single output file.
- Sort and Merge — sorts one or more input files into a sequence specified by the user and merges the output with one or more presorted files.

The Sort/Merge program is composed of the following program phases:

- Sort Monitor
 - Provides the communications link between the Sort/Merge program and the operating system.
 - Is responsible for the loading of individual program phases.
 - Supervises interface control between phases during the program run.
- Edit
 - Reads and examines control card or macro parameters.
 - Prints diagnostics.
 - Calculates internal parameters used by the internal sort and intermediate merge phases.
- Internal Sort
 - Reads randomly ordered records from an input file.
 - Sorts random records into user specified sequenced strings.
- Intermediate Merge
 - Reads sorted record strings from the internal sort phase.
 - Merges these strings into longer, but smaller numbers of record strings.

- Final Merge
 - Reads the record strings constructed during the intermediate merge phase.
 - Merges these strings with any presorted record strings into a single string which is then written out on the output file.

USER FEATURES

- Sort Keys
 - Allows up to a maximum of 100 sort keys per record.
 - Each sort key can be specified for sequencing on either an ascending or descending basis.
- Standard Collating Sequences
 - 6-Bit display code
 - 6-Bit internal BCD code
 - 6-Bit ASCII code
 - 6-Bit COBOL code

- Restart Procedures

- When restart procedures are requested, Sort/Merge automatically initiates a restart dump to be taken between each pass of intermediate merge phase processing. The user has the option of specifying that the dump occur between intermediate merge passes or each time a specified number of input records is read into the sort phase. The program can be stopped any time after a restart dump and subsequently restarted at the point the last restart occurred.

The Sort/Merge processing program with its versatile sorting and collating system, has been established from proven techniques and uses these to advantage when combined with the unique hardware architecture of the CDC CYBER 170 Series.