Title:

RC 3600 Data Entry Release 2
SORT PROGRAM
OPERATING GUIDE

RC REGNECENTRALEN

Abstract: The Sort Program for RC 3600 Data Entry
Release 2 is developed in order to handle
data batches with several record types
forming units of various structures. This
publication tells how to operate the Sort
Program under the Data Entry Supervisor.

This guide contains information needed in order to operate the RC 3600 Data Entry Release 2 Sort Program. Information on the Data Entry System and specifications for it is not included, but it will be found in the relevant Data Entry manuals.

The purpose of this guide is to explain how to operate the Sort Program. It contains explanation of how to call the Sort Program from the Supervisor Key Station, and it contains a complete list of messages from the Sort Program with explanation, and possible actions to be taken by the operator are described.

CONTENTS   PAGE

1.   INTRODUCTION

The RC 3600 Data Entry Release 2 Sort Program is designed for RC 3600 configurations which are running the Data Entry Release 2 System.

The Sort Program is developped especially to handle Data Entry Batches which are characterized by the fact that the keyed data may be stored in different record types, and that a sequence of records may form a unit. For example, an invoice may be composed of, say, three different record types keyed in under control of three different subformats . The essential feature of the sort program is to make it possible to sort units e.g. representing invoices without mixing records from one unit with records from other units.

The Sort Program is divided into four Supervisor Programs, and a standard format (SORTF) which controls keying of a parameter batch to the SORT-module.

The four Supervisor Programs forming the Sort Program are installed in the files SORT, SORT1, SORT2 and SORT3, and they are registrated under the program numbers RC36 - 00612, RC36 - 00613, and RC36 - 00614, and RC36 - 00615 respectively.

2. SORT PROGRAM OPERATION

The Sort Program is started from the Supervisor Keystation with the following command:

SORT <INPUTBATCH> <OUTPUTBATCH> <PARAMETERBATCH>

<INPUTBATCH>   :   is the name of the batch to be sorted. The batch-status must be closed.

<OUTPUTBATCH>   :   is the name of the batch, where the sorted records will be written. The output batch is created by SORT and must not exist at call-time (except when inputbatch is the same as the outputbatch, which is not recommended, see USERS GUIDE, section 3). The output-batch is placed in the same JOB as the input-batch, and marked as sorted.

<PARAMETERBATCH>   :   is the name of the batch containing information about the structure of the inputbatch, the record types and the fields to be used as sort-keys. This batch must be keyed under control of the standard format SORTF (see section 3). The batch-status must be closed and valid.

Two parameters more can be given to the Sort Program <WORKAREASIZE> and <RELEASE>, but they should only be used in some special occasions after error messages (see section 5).

When SORT has checked that inputbatch and parameterbatch is OK and outputbatch and workarea has been created, the actual sorting of the records is started. When one sort-module has finished the next one is automatically loaded and started by the Data Entry Supervisor.

The Sort Program can terminate in two ways:

Erroneous   :   An error message is displayed on the Supervisor
                                       keystation (see section 5).

Correct   :   A printout is written on the Supervisor keystation,
                                       in the spool-file or directly on the hardcopy device
                                       (selected by the operator as described in RC3600
                                       DATA ENTRY RELEASE 2 USERS GUIDE, Part 2,
                                       Section 7), in the following format:

                                       SORT ENDED

                                       INPUT BATCH   : <INPUTBATCHNAME>

                                       OUTPUT BATCH   : <OUTPUTBATCHNAME>

                                       RECORDS SORTED   : NUMBER OF RECORDS IN
                                                              OUTPUT BATCH

3. STANDARD FORMAT SORTF

SORTF is a standard format with fill-in-the blank guidance, used to key a batch containing parameters (information about the inputbatch) to the Sort Program.

To key a parameterbatch use the following commands:

SET <JOBNAME> SORTF <BATCHNAME>

KEY <BATCHNAME> IMAGE

(for more detailed information about keying and setting batches see RC3600 DATA ENTRY RELEASE 2 USERS GUIDE, Part 1).

SORTF consists of 3 subformats (S,F,E).

When the KEY-command has been given subformat S is automatically selected. This subformat is used to describe a record-type (subformat) in the inputbatch. The operator must key information about

NAME   LEVEL   SEQUENCE

NAME

is the subformatname in the inputbatch. When no more subformats should be described press ENTER, the subformat E is then automatically selected, which closes the parameter batch and terminates the keying.

LEVEL & SEQUENCE

is numeric in the range 1 - 255 and describes the relation between records in the inputbatch (see SORT USERS GUIDE, section 2).

After NAME, LEVEL and SEQUENCE has been keyed subformat F is automatically selected. This subformat is used to describe a sort-key (field), in the last defined record. The operator must key information about

FIELD NO	TYPE	ORDER

FIELD NO   is the field-number in the record to be used as sort-key.
When no more sort-keys in this recordtype press ENTER, then
subformat S is automatically selected so the next rexordtype
can be defined.

TYPE   is the type of the field.
A = alphanumeric
N = numeric.

ORDER   is the kind of sort on this field.
A = ascending.
D = descending.

After FIELD NO, TYPE and ORDER have been keyed subformat F is automati-
cally selected again. This means that when keying with SORTF subformat S
is executed once for each recordtype (subformat) in the inputbatch and subfor-
mat F is executed for each recordtype once for each sort-key (field) and sub-
format E is executed once to close the batch and terminate the keying.

4. RESTART OF SORT

The Sort Program has a restart facility, which should be used in case of erroneous termination of the Sort Program or system break down. This facility is activated by keying RESTART in stead of the parameters in the call:

SORT RESTART

The function of the RESTART-command depends on the circumstances under which the Sort Program was terminated. When SORT is restarted the workarea (a discfile named *SRT*) is examined, and from some controlparameters in the first sector it is possible to see whether the Sort Program can continue where it stopped or it must be started from the beginning.
If possible the Sort Program continues, if not the RESTART will be a house-keeping function to delete the workarea (*SRT*) and if inputbatch is the same as the outputbatch the workfile.
In section 5 (error messages) it is mentioned for each message whether it is necessary to give the RESTART-command or not. If necessary, it must be done, else disc space is wasted by the sort workarea (*SRT*) and the workfile if input-batch and outputbatch is the same. (Note, that these discfiles cannot be removed by the Supervisor-command DELETE).

5. ERROR MESSAGES

All error messages will be displayed on the Supervisor keystation and will except two cause termination of the Sort Program. Following is a complete list of error-messages, the meaning of them and possible actions to be taken.

SYNTAX

Syntax error in command-line. Consult section 2 of this guide and key in the command again.

SORT OF XXXXX NOT TERMINATED RESTART?

This is one of the errormessages that does not cause the Sort Program to terminate. A Sort of the inputbatch XXXXX has been started and not terminated properly (some workfiles are on the disc). To restart the old Sort key RESTART, to delete workfiles and execute the new SORT-command press ENTER.

NOT BATCH

The specified inputbatch is not an existing batch.

STATE ERROR

The batchstatus is not correct for the inputbatch or the parameterbatch. If it is the parameterbatch (it must be closed and valid) it must be brought into the correct status, and then the command can be keyed again. If it is the inputbatch it means that it contains invalid records, if it still should be sorted use the RELEASE parameter in the command:

SORT <IN> <OUT> <PARAMETER> RELEASE

INPUT BATCH DOES NOT EXIST

The specified input batch does not exist. Make sure that it was keyed correct and that the batch exists. Key the command again.

PARAMETER BATCH DOES NOT EXIST

The specified parameterbatch does not exist. Make sure that it was keyed correct and that the batch exists. Key the command again.

OUTPUT BATCH EXISTS

The specified outputbatch already exists. If it should be
used as outputbatch, DELETE it and key the command again.

PARAMETER BATCH INCORRECT FORMAT

The specified parameterbatch is not keyed under control of
SORTF. Make sure that the name was keyed correct and key
the command again.

SYNTAX IN PARAMETER BATCH

An error has occured in the parameterbatch. The format
of the data does not correspond to the format SORTF
(should not be possible unless the batch has been destroyed
in some way). Or more likely a recordtype (= subformat)
has been defined more than once in the parameterbatch.
Correct the error and key the command again.

TOO MANY SORTSPECIFICATIONS

The parameterbatch contains too many sortspecifications.
The area containing these specifications is 200 bytes. Each
recordtype (= subformat) definition requires 10 bytes and
each sort-key (= field) definition requires 6 bytes. Any
combination of recordtype and sort-key definition is legal
as long as it does not exceed 200 bytes.

FORMAT ERROR IN INPUT BATCH

The format in the input batch does not correspond with the
description in the parameterbatch in the way that a sort-keys
field no is greater than number of fields in the record. Correct
the error. Key a SORT RESTART command to delete workfiles.
Key the command again.

SUBFORMAT X NOT DEFINED

This is one of the errormessages that does not cause the Sort
Program to terminate. Recordtype X in the inputbatch is not
defined in the parameterbatch. Press ENTER to continue and
skip the record. Key STOP to terminate, define the record-
type in the parameter batch, key a SORT RESTART command
to delete workfile and key the command again.

SORT-KEYS GREATER THAN 480 BYTES

Length of sort-keys in one record exceeds 480 bytes, a limit
in the Sort Program (see SORT USERS GUIDE section 3.1).
Key a SORT RESTART command to delete workfiles.

DISC FULL

During creation of the workarea (*SRT*) or the outputbatch
(workbatch if inputbatch = outputbatch) the disc has run out
of space. Key a SORT RESTART command to delete workfiles.
DELETE some unused batches, and key the command again.

OUTPUT BATCH EXIST IN JOB

The specified outputbatch did not exist as a discfile, but the
batchname was in the JOB. Serious system error, should not
appear.

WORKAREA TOO SMALL NNNN

The calculated workareasize was too small (NNNN sectors).
Use a SORT RESTART command to delete workfiles. See SORT
USERS GUIDE section 2 <WORKAREASIZE>. Key the command.

SORT <IN> <OUT> <PARAMETER> <WORKAREASIZE>

SORT CANNOT BE RESTARTED

A SORT RESTART command has been given, but the Sort Program
was stopped in a way that it could not be restarted. In this case
RESTART is a housekeeping function, that has deleted the workarea
(*SRT*) and the workbatch if inputbatch = outputbatch.

SORT   IS NOT CORRECTLY TERMINATED BEFORE SORT1 IS STARTED
SORT1 IS NOT CORRECTLY TERMINATED BEFORE SORT2 IS STARTED
SORT2 IS NOT CORRECTLY TERMINATED BEFORE SORT3 IS STARTED

> SORT1, SORT2 or SORT3 has been started from the Super-
> visor keystation, which is not allowed.

SORT SYSTEM ERROR

> This is a serious system error that should never occur. If it
> does, please copy the inputbatch and the parameterbatch to
> magnetic tape and send it to REGNECENTRALEN.
> Use the Supervisor command:
>
> GET <BATCHNAME> MTR. <FILENUMBER>
>
> to copy the batches.

<DISCFILENAME> STATE NNNNNN

> A discerror has occured with the errorcode NNNNNN
> (see DATA ENTRY RELEASE 2 USERS GUIDE, PART 2, APPENDIX 2).
> Key a SORT RESTART command to try to continue the sorting.

** SUPV <MESSAGE>

> Errormessage from the Supervisor. See DATA ENTRY RELEASE 2
> USERS GUIDE, PART 2, section 8.1. Key a SORT RESTART command
> to continue the sorting.

APPENDIX A

APPENDIX A continued

ALPHABETIC LIST OF MESSAGES continued

APPENDIX B

EXAMPLE OF KEYING WITH SORTF

This is an example of setting up parameters to sort a batch keyed with the standard format INVOI (see DATA ENTRY RELEASE 2 FORMAT LANGUAGE GUIDE Appendix 3). The parameters are set up in the way that the invoices will be sorted using the customer number as sort-key, and for each invoice the article Lines are sorted using the article number as sort-key. Before keying the BATCH must be SET with the following command:

```
SET  SORTJ  SORTF    SPAR1
     JOB    FORMAT  BATCH
```

To start the keying use the command

```
KEY  SPAR1   IMAGE
```

In the following the underlined must be keyed, the rest is texts written on the screen by SORTF.

```
NAME       1       LEVEL  1 SEQUENCE  1

FIELDNO  1       TYPE    A ORDER       A

FIELDNO ENTER   TYPE       ORDER

NAME       2       LEVEL  2 SEQUENCE  1

FIELDNO  1       TYPE    N ORDER       A

FIELDNO ENTER   TYPE       ORDER

NAME       3       LEVEL  2 SEQUENCE  2

FIELDNO ENTER   TYPE       ORDER

NAME    ENTER              SEQUENCE
```

The keying is now terminated and the parameterbatch is closed. In Appendix C is an example of sorting with this parameterbatch.

APPENDIX C

EXAMPLE OF RUN WITH SORT

SORT IBAT OBAT SPAR1 <ENTER>	keyed
SUBFORMAT H NOT DEFINED	message
<ENTER>	keyed
** SUPV NO ROOM	message
SORT RESTART	keyed

SORT ENDED

INPUT BATCH   : IBAT

OUTPUT BATCH   : OBAT   message

RECORDS SORTED : 50

The SORT-command is keyed. When reading the input batch a not defined subformat
is found, and the errormessage appears on the Supervisor screen. By pressing ENTER
the operator skips the undefined record. During load of one of the Sort Program mo-
dules the Supervisor run out of available memory space, the Sort program is terminated
with the message ** SUPV NO ROOM. When more memory is available the SORT
RESTART command is given. The Sort Program continues and terminates finally with
the logoutput.