

NTSORT Macro - Control of Sort Program

The NTSORT macro can be used to specify various options that control the handling of the sort program used when a SORT statement is executed.

The sort program to be used can be either Natural's internal one (the default for all environments) or an external one. The type of sort to be used depends on the setting of the NTSORT keyword parameter EXT.

This document covers the following topics:

- NTSORT Syntax
- NTSORT Keyword Parameters
- NTSORT Alternative

NTSORT Syntax

The NTSORT macro is specified as follows:

```
NTSORT
WRKSIZE=nnn, STORAGE=medium, EXT=ON/OFF, EXTNAME=name, EXTOPT=(options, ...), EXTEOJ=ON/OFF
```

The individual keyword parameters are explained below.

NTSORT Keyword Parameters

The following keyword parameters are available: WRKSIZE | STORAGE | EXT | EXTNAME | EXTOPT | EXTEOJ

WRKSIZE - Size of Work Buffer Used by Sort Program

WRKSIZE specifies the size *nnn* (in KB) of the work buffer used by the sort program.

Possible values:	10 to 256, or 0.
Default value:	10

If you specify WRKSIZE=0, no sort operations can be performed.

The work buffer specified by WRKSIZE accommodates internal sort control data. The remaining storage is used to collect and sort the records. The size of the sort control data depends on various factors (the WRKSIZE itself, the sort record length, the number of sort keys, their size and format) and can therefore not be calculated in a formal way.

STORAGE - Type of Storage Medium

STORAGE specifies the type of storage *medium* to be used by Natural's internal sort program.

In general, the SORT statement first tries to use the remaining storage in WRKSIZE. If the number of records does exceed this storage, the SORT statement tries to use intermediate storage to additionally process records:

MAIN	(default), only the remaining storage of WRKSIZE is used, no other intermediate storage is available.
BP	The SORT buffer pool is used as intermediate storage.
SD	Com-plete SD files are used as intermediate storage.

Note Concerning SD Files

The files are allocated as temporary SD files. They are allocated for a stack level. This means, the name of the SORT SD files are &&STsnnn with:

&&	Indicator for a temporary SD file
ST	Standard prefix for the SD SORT file
s	Stack level
nnn	Sequence number within a single SORT run

EXT - Use of External Sort Program

EXT specifies if an external sort program is to be used or not:

ON	An external sort program will be used. The use of an external sort program is possible only in batch environments, including IMS/BMP, TSO, TIAM and CMS.
OFF	The Natural sort program will be used (this is the default).

EXTNAME - Name of External Sort Program

EXTNAME specifies the *name* (1 to 8 characters) of the external sort program to be used. The default name is "SORT".

EXTOPT - Additional Options for External Sort Program

EXTOPT specifies additional *options* for the external sort program.

Natural generates the necessary field and format parameters and passes them to the external sort program. With EXTOPT, you can specify additional parameters to be passed to the external sort program.

You can only specify parameters that are part of the control statement syntax of your external sort program. Depending on the underlying operating system, the options are appended to the following control statements:

Under OS/390:	SORT control statement
Under VSE/ESA:	OPTION control statement

EXTOPT Example:

The additional parameters can be specified as in the following example:

```
EXTOPT=(SIZE=E2000000,NOEQUALS,DYNALLOC=(3350,8))
```

EXTEOJ - Action in the Event of an Error

EXTEOJ specifies the action to be taken if an error is detected during the execution of the external sort program:

ON	If an error is detected, sort processing is terminated. ON requires that the sort program used is able to detect a return code of 16 from both the E15 and E35 sort exit routines.
OFF	If an error is detected, Natural withholds further calls to the sort program and ignores each record as it is passed to the E35 sort exit routine (this is the default).

NTSORT Alternative

All options of the NTSORT macro can also be specified dynamically with the **profile parameter SORT**.