

**ND-500/5000 System Package  
for SINTRAN III/VSX version M****211305C**

## Description of product

Collection of basic products required to run an ND-500 or ND-5000 system.

The ND-500/5000 System Package for SINTRAN III/VSX version M contains the following parts:

- ND-500/5000 Monitor
- ND-500/5000 Swapper
- ND-500/5000 Place Library

## Reason for new version

- Support of new hardware
- Increased performance in the ND-500/5000 Swapper

## Prerequisites

### Hardware prerequisites

ND-500 or ND-5000 system.

ND-500/5000 Micro Programs:

ND prod.no.	System type	Microprogram version
210332 J	ND-500 series I, standard	10512
210338 I	ND-500 series I, AX-CPU	10412
210411 G	ND-500 series I, CX-CPU	10312
210412 G	ND-500 series I, CXA-CPU	10612
210787 F	ND-530	15313
210786 F	ND-550/560/570	15213
210788 F	ND-550/560/570, > 32 Mb	15413
210701 H	ND-580	15113
211272 E	ND-5200	11531
211273 E	ND-5400	11631
211274 E	ND-5500	11731
211275 E	ND-5700	11831
211276 E	ND-5800	11931
211847 A	ND-5850	12000

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## Other prerequisites

Minimum Permanent Mass Storage on user area SYSTEM: 155 pages on 2 files  
on user area SYSTEM or :PROG-file user: 160 pages on 1 file  
on user area SYSTEM or :BRF-file user: 60 pages on 6 files

Number of segments (ND-100): minimum: 0 maximum: 1

Space required on segment files: 160 pages

## Documentation

Title	Number
SINTRAN III Release Information M-version	860230.7
SINTRAN III Commands Reference Manual	860128.7

## Changes in configuration limitations

- The maximum number of entries in the reentrant-subsystem table (ND-100 reentrant subsystems and ND-500/5000 standard domains) is increased to 400 (maximum 100 ND-500/5000 standard domains).  
The total length of names of all entries in the table is increased to 4096 characters (including the apostrophe terminating each name).
- The previous limitation of memory size to 32 megabytes was changed to 128 megabytes on ND-5000 systems in the L-version of SINTRAN III.  
This new limit (128 megabytes) now applies to all ND-500/5000 systems.

## Installation

- Enter the directory on the diskette:  
@ENTER-DIRECTORY ↵  
DIRECTORY NAME: 211305 ↵  
DEVICE NAME: FLOPPY-DISC-<controller> ↵  
DEVICE UNIT: <unit> ↵

**ND-500/5000 System Package  
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- Log into the SINTRAN III user area where you keep :PROG files to be dumped as reentrant subsystems (or user area SYSTEM).
- Copy the file containing the ND-500/5000 Background Monitor to disk:  
@COPY-FILE ↵  
DESTINATION FILE: "ND-500-MON-K<rev>:PROG" ↵  
SOURCE FILE: (211305:FLOPPY-USER)ND-500-MON-K<rev>:PROG ↵
- Log out and log in as user area SYSTEM
- If you already have a version of the ND-500/5000 Monitor reentrant, you should delete it:  
@DELETE-REENTRANT ↵  
NAME: ND-500-MONITOR ↵
- Dump the ND-500 Background Monitor as a reentrant subsystem:  
@DUMP-PROGRAM-REENTRANT ↵  
NAME: ND-500-MONITOR ↵  
FILE NAME: (<user-name>)ND-500-MON-K<rev>:PROG,N5MON ↵
- You should insert this command in the mode file you run after a cold start (or replace the commands already used to dump a previous version of the ND-500 Monitor reentrant).

**ND-500/5000 Swapper**

- Log in as user area SYSTEM.
- Delete the old version of the ND-500/5000 Swapper:  
@DELETE-FILE ↵  
FILE NAME: SWAPPER:PSEG ↵  
@DELETE-FILE ↵  
FILE NAME: SWAPPER:DSEG ↵
- Copy the files containing the ND-500/5000 Swapper to disk:  
@COPY-FILE ↵  
DESTINATION FILE: "SWAPPER-L<rev>:PSEG" ↵  
SOURCE FILE: (210305:FLOPPY-USER)SWAPPER-L<rev>:PSEG ↵  
@COPY-FILE ↵  
DESTINATION FILE: "SWAPPER-L<rev>:DSEG" ↵  
SOURCE FILE: (210305:FLOPPY-USER)SWAPPER-L<rev>:DSEG ↵

**ND-500/5000 System Package  
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- The ND-500/5000 Place Library is only required if you have users who write programs manipulating (starting, stopping, etc.) ND-500/5000 domains. If your system does not require the ND-500/5000 Place Library, you may skip this section.
- Log in as user area SYSTEM or the user area where you want the Place-Library files to be stored.
- Copy the files of the ND-500/5000 Place Library:

**@COPY-FILE** ↵

DESTINATION FILE: "PLACE-1BANK-C&lt;rev&gt;:BRF" ↵

SOURCE FILE: (210305:FLOPPY-USER)PLACE-1BANK-C&lt;rev&gt;:BRF ↵

**@COPY-FILE** ↵

DESTINATION FILE: "PLACE-2BANK-C&lt;rev&gt;:BRF" ↵

SOURCE FILE: (210305:FLOPPY-USER)PLACE-2BANK-C&lt;rev&gt;:BRF ↵

**@COPY-FILE** ↵

DESTINATION FILE: "PLACE-SML-1B-C&lt;rev&gt;:BRF" ↵

SOURCE FILE: (210305:FLOPPY-USER)PLACE-SML-1B-C&lt;rev&gt;:BRF ↵

**@COPY-FILE** ↵

DESTINATION FILE: "PLACE-SML-2B-C&lt;rev&gt;:BRF" ↵

SOURCE FILE: (210305:FLOPPY-USER)PLACE-SML-2B-C&lt;rev&gt;:BRF ↵

**@COPY-FILE** ↵

DESTINATION FILE: "PLACE-BIG-1B-C&lt;rev&gt;:BRF" ↵

SOURCE FILE: (210305:FLOPPY-USER)PLACE-BIG-1B-C&lt;rev&gt;:BRF ↵

**@COPY-FILE** ↵

DESTINATION FILE: "PLACE-BIG-2B-C&lt;rev&gt;:BRF" ↵

SOURCE FILE: (210305:FLOPPY-USER)PLACE-BIG-2B-C&lt;rev&gt;:BRF ↵

**Finishing installation**

- When all files are copied, release the diskette.

**@RELEASE-DIRECTORY** ↵

DIRECTORY NAME: 211305 ↵

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## ND-500/5000 Monitor

### Modifications

- Support for new hardware (ND-5850).

### Errors corrected

- Error in DEFINE-STANDARD-DOMAIN on domain stored as a domain file.  
If a file was connected as segment, this segment was erroneously defined as part of the standard domain.

### Notes and Hints

- Dump the ND-500 Monitor as a reentrant subsystem, as indicated in "Installation" on page 3, to improve its performance (especially if used by many users at the same time).
- You may also define an extra entry point at address 31 for entering the Symbolic Debugger without first entering the monitor by using the command:

```
@DEFINE-REENTRANT-PROGRAM  ↵  
NAME: DEBUGGER-500  ↵  
START ADDRESS (OCT): 31  ↵  
RESTART ADDRESS (OCT): 31  ↵  
SEGMENT (NAME OR NUMBER (OCT)): N5MON  ↵
```

This command should also be inserted in the mode file you run after a cold start.

## ND-500/5000 Swapper

### Improved functionality

- The previous limitation on total memory size of 32 megabyte is changed.  
The new limitation is to 128 megabyte total memory size.  
This applies to all ND-500 and ND-5000 systems.

### Improved performance

- The function write-back-segment-to-file (WSEG) is optimised.
- Restarting a process directly after page fault (done by the ND-500/5000 Swapper instead of by ND-100.)
- Use of disks connected to a DOMINO controller in swapping is optimised (the ND-500/5000 Swapper now calls BDIO directly)

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## ND-500/5000 Place Library

### New functions

**PLANC routine:**

ND500\_X (&lt;domain name&gt;,&lt;priority function&gt;,&lt;priority operand&gt;,&lt;cpu number&gt;)

**FORTTRAN routine:**

ERR = ND500F\_X (&lt;domain name&gt;,&lt;priority function&gt;,&lt;priority operand&gt;,&lt;cpu number&gt;)

**FORTTRAN reentrant routines:**

ERR = ND500R (&lt;domain name&gt;, &lt;priority&gt;)

ERR = ND500R\_X(&lt;domain name&gt;,&lt;priority function&gt;,&lt;priority operand&gt;,&lt;cpu number&gt;)

**Parameter description:**

- domain name:      Directory and user can be omitted or abbreviated.  
                      Domain name can be abbreviated as long as it is unambiguous.
- priority function:    = 1 Set fixed priority.  
                      = 2 Insert in time-slice.  
                      = 3 Remove from time-slice.
- priority operand:    Priority value for priority-function = 1.  
                      Time-slice class for priority-function = 2.  
                      Dummy, not used for priority-function = 3.
- cpu number:         = 0 Use CPU with smallest load.  
                      > 0 Use specified CPU number.