

OPERATOR ENVIRONMENT

ND 211068 OPERATOR ENVIRONMENT FOR ND-100/ND-500

The screenshot displays the ND 211068 Operator Environment interface, which is a text-based menu system. It is divided into several overlapping windows:

- User Directory Window:** A table listing system users with columns for 'User area', 'Directory', 'P', 'Last use', 'Publ', 'Frien', 'Own', 'Alloc', 'Used', 'Max', and 'Ino'. Users listed include DWA-BWA, DOMAIN-USER, DS-BACKUP, ELLEN-NORWICH, ERG, EX, FAYE-ANDREWS, FLOPPY-USER, FTX, GAMES, GUEST, and HILLE-LOVETT.
- User List Window:** A list of users with columns for 'Term', 'User-name', 'User-area', 'Last-logged', and 'Time'. Users include Lars Appelstal, John Brown, Anders Grindland, Rune Slettun, Espjarn Houstad, Per Einar Arntstad, Johan Henrik Bullie, Stein Andersen, and Johan Henrik Bullie.
- Main Menu Window:** A menu titled 'OPERATOR ENVIRONMENT' for 'Area:ND-OPERATIONS' dated '1986-12-15 11:35'. It lists tasks: 1 Maintain User Information, 2 Manage Terminals, 3 Control Printer Use, 4 Maintain Files, 5 Maintain Databases, 6 Control System, 7 Backup, 8 Control Disks, and 9 Own Tasks. A sub-menu for 'FLOPPY OPERATION' is open, showing options like 'Create New Floppy', 'Format Floppy', and 'Create Floppy Directories'.



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Introduction

Operator Environment is a tool for the system supervisor. It is menu-driven and has improved functionality as compared to SINTRAN. Some of the menu entries are new, useful tools, while others are improved SINTRAN commands.

Operator Environment consists of several products, tied together with menus. The menus can be included in any user-written menu system, or user-written menus can be included in the OE menus.

Features

- Problem-related menus
- Simple in use
- Related functions are grouped

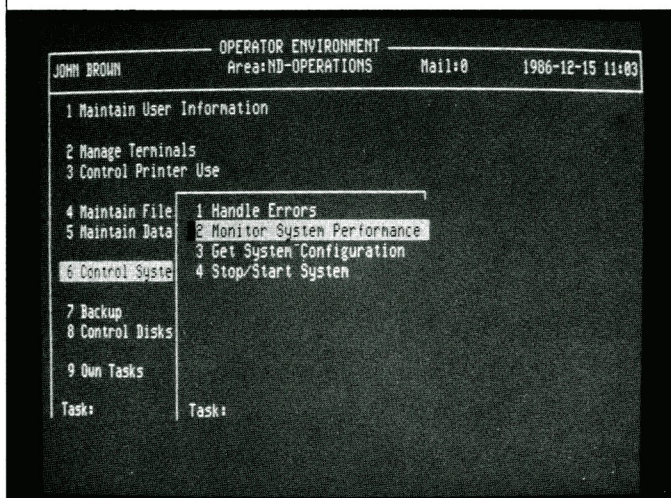
Product description

Operator Environment consists of:

ND-211069 OE Basic Module
ND-211070 User Area Manager
ND-211071 Configuration Dictionary
ND-211073 File System Verification
ND-211074 Performance Monitor
ND-211075 File Manager
ND-211076 Backup Definition System
ND-211031 SPRINT spooling

The main menu in Operator Environment is based on the most common tasks for a system supervisor. It has the following entries:

- Maintain User Information
- Manage Terminals
- Control Printer Use
- Maintain Files
- Maintain Databases
- Control System
- Backup
- Control Disks



Configuration Dictionary

holds all information about the hardware configuration on the computer. It gives the operator easy access to the hardware configuration, and displays and prints it so that it is easily understood. In future versions, it will also hold information about software.

Features

- Consists of a central database with all information about the system's hardware and peripherals.
- The database is easy to use.

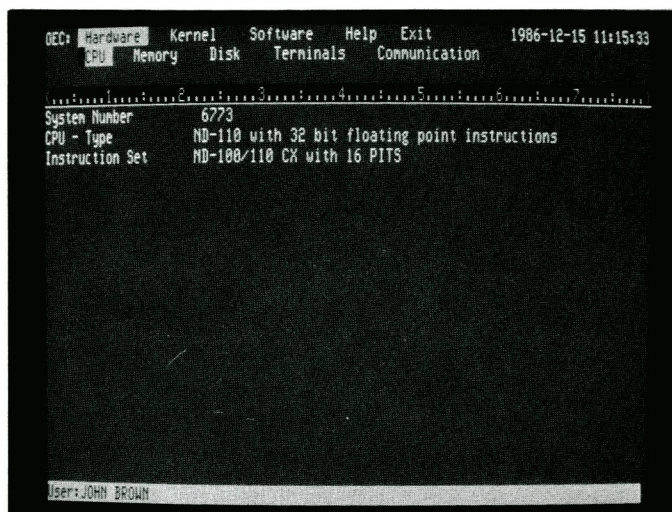
Product description

The Configuration Dictionary consists of a database, and of tools to access it. Access to the database is menu-driven and user-friendly.

The configuration database is designed in a hierarchical structure. This means that it is easy for the operator to check and understand the logical relation between different parts of the configuration. The operator can print the information. Thus, all information about the hierarchy is available.

Each record in the database is protected against unauthorised editing. System supervisor and RT-programs have all privileges, while a public user only has read access.

Access is only possible through the server.



Each of these entries has several layers of either menus or functions. The logical grouping of functions prompts the supervisor along the right path when problems occur.

Each module is described below.

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The OE Basic Module

contains the main menu system for OPERATOR ENVIRONMENT. The menu system shows the different tasks available, and the operator can choose the desired function from this menu.

In addition, the Basic Module has a status program which collects all status information about terminals, printers, batches and servers.

Features

- The menu system connects new and existing programs in a functional hierarchy of tasks.
- The menus support an inexperienced operator by extensive use of HELP at all levels and by proposing default parameters or actions when appropriate.
- The menus are open-ended, so that you can append your own routines or include the menu system in your own menus.
- The system status program offers information on the status of terminals, batch processors, printers and servers.
- All status information is automatically updated on the screen every 20 seconds.
- The computer clock is checked on startup.

Product description

The menu system has a task-oriented structure, which makes it easy to learn and to use. Tasks are grouped according to the problems a system supervisor has to deal with, with specific menu entries at lower levels. The menu system includes supervision of products like NOTIS-DS, NOTIS-ID and BACKUP.

The menus partly overlap on the screen, in such a way that it is easy to see where you are in the menu hierarchy. Each menu choice has a corresponding HELP picture for further explanation.

The Status entry allows you to do the following:

- Get an overview of terminals, batch processors, printers and servers: How many are currently in use and how many are available
- Get status information for terminals: Terminal number, the names of those who are logged on, current user area, last command given, time elapsed and CPU time used since the user logged on
- Send a message to a selected terminal: Release or stop a terminal
- Get status information on batch processors: Processor number and state (idle or active), user area, last command given, time elapsed and CPU time used since the user logged on
- Get status information on printers: Printer name, current user name, size of what is being printed, number of documents in the queue
- Get status information on servers: Server name and status (idle or active)

```
OES : Overview Terminal Batch Printers Servers Exit
      [LIST] Message Release Stop
```

Term.	User-name	User-area	Last-command	Time	CPU
39	Lars Appelstal	Lars-Appelstal		01:48	0
>>42	John Brown	System	CC <OES-STATUS> CC	00:57	2
43	Anders Grindland	Backup-Ang		02:27	0
46	Rune Slettun	Backup-Dev-Res	N-W-E-N P-S-D-86	01:36	0
48	Asbjarn Hovsta	Asbjarn-Hovsta	<NOTIS-ID-NO>	01:06	0
49	Per Einar Arnstad	Per-Arnstad	<WP 500> Norsk M06	01:06	0
50	Johan Henrik Bulie	Johan-Henrik		00:45	0
55		System		01:13	0
56	Stein Andersen	Stein-Andersen	CONNECT-TO ODIN	01:24	0
57	Stein Andersen	System	CC <OEC-CONFI > CC	01:26	5
59	Johan Henrik Bulie	System		00:45	0
777		System	FA-server 01 active, 45:40	1	1

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User Area Manager

displays information about all user areas on the computer. In addition, there are functions for editing the user areas, creation of new users and display of statistical information.

Features

- Automatic listing of all user areas
- Edit and Statistics functions are separated
- Enhancing data security by checking whether a user's area has a password or not

User area	Directory	P	Last use	Publ	Frien	Own	Alloc	Used	Max	Ind
			yr-mn-dy							
DNA-BRA	PACK-ONE-BRAGE	N	86-12-11		RWACD	RWACD	0	0	256	84
	PACK-5-BRAGE						120	63	256	20
DOMAIN-USER	PACK-ONE-BRAGE	N	86-12-11	R	RWACD	RWACD	0	0	256	16
	PACK-2-BRAGE						200	143	256	10
DS-BACKUP	PACK-ONE-BRAGE	N	86-12-11		RWACD	RWACD	0	0	256	80
	BRAG-DS-BACK						34756	2634	256	0
ELLEN-NORWICH	PACK-ONE-BRAGE	Y	86-12-11		RWACD	RWACD	0	0	256	28
	PACK-5-BRAGE						100	35	256	1
ERG	PACK-ONE-BRAGE	N	86-12-11		RWACD	RWACD	0	0	256	15
EX	PACK-ONE-BRAGE	N	86-12-11		RWACD	RWACD	0	0	256	81
FAYE-ANDREUS	PACK-ONE-BRAGE	N	86-12-13	RWACD	RWACD	RWACD	0	0	256	67
	PACK-5-BRAGE						780	466	256	18
FLOPPY-USER	PACK-ONE-BRAGE	N	86-12-14	RWACD	RWACD	RWACD	10	0	512	18
FTX	PACK-ONE-BRAGE	N	86-12-11		RWACD	RWACD	0	0	256	32
	PACK-2-BRAGE						350	321	256	13
GAMES	PACK-ONE-BRAGE	Y	86-12-11		RWACD	RWACD	0	0	256	59
	PACK-4-BRAGE						110	44	256	13
GUEST	PACK-ONE-BRAGE	N	86-12-13		RWACD	RWACD	0	0	256	40
HILDE-LOVETT	PACK-ONE-BRAGE	N	86-12-11		RWACD	RWACD	0	0	256	46

Product description

The program starts by reading through each directory on the system, collecting information about user areas on each directory. All the information collected on user areas is then displayed on the screen.

One can change values in the work area through the EDIT option, or to look at user area information through the STATISTICS option.

For each user, one may look at the number of pages available, reserved and used on each directory, and see how many megabytes are available, reserved and used on the total system.

Term	User-name	User-area	Last-command	Time	CPU
39	Lars Appelstal			01:50	0
>>42	John Brown			00:59	2
43	Anders Grindland	Enter message:		20:01	0
46	Rune Slettun	The system will be stopped		01:39	0
48	Asbjørn Houvs	for maintenance		01:00	0
49	Per Einar Annstad	at 12:00 today		21:09	0
50	Johan Henrik Bulie			00:40	0
55		aho		01:16	0
56	Stein Andersen			01:27	0
57	Stein Andersen	Enter batch processor number:		01:28	5
59	Johan Henrik Bulie	.		00:40	0
777				45:43	1

One can create a new user, or rename the user, and the program will place it alphabetically in the user list, which will be displayed on the screen. In addition, user space can be increased, and the number of files on a user area listed.

Additional default areas can be created for the users, and user areas can be deleted.

When you create a user area, information is given on the number of areas available on a directory, and the user areas existing on the directory.

Information about user areas which have separate passwords can be retrieved, thus enhancing the general data security.

Statistical information							
Directory	Type	#Areas	Available	Allocated	%	Used	%
					pages		
PACK-ONE-BRAGE	Main	84	34756	34753	100	31202	90
PACK-2-BRAGE	Def	19	21457	21435	100	19725	92
PACK-3-BRAGE	Def	1	34719	34500	99	2571	7
PACK-4-BRAGE	Def	22	34756	34004	98	20597	59
PACK-5-BRAGE	Def	22	34751	34730	100	28543	82
PACK-6-BRAGE-CMV	Def	8	34717	30052	87	9212	27
PACK-7-BRAGE	Def	38	34757	17739	51	9018	26
BRAG-DS-BACKUP-1		1	34758	34756	100	2634	8
Total:			542Mb	496Mb	91%	253Mb	47%
Number of user areas without a password :			66				

File System Verification

is a tool to control that the internal structure of the file system is correct on a directory. It ought to be used on a regular basis to verify directories.

Features

- Two-line command menus simplify the use of the system
- A list of all directories is given to facilitate the selection of the desired directory
- It can be run on all ND screen terminals: In line mode, i.e. on a hard-copy terminal, or as a MODE/BATCH job
- Reserves a directory for exclusive use. Tasks on other directories can run simultaneously
- Extensive error information
- Directory checks can be interrupted.

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```
DEV: Verify Finish
Check the consistency of the directory
The verification is completed with 1 errors detected
directory entry  user file  object file  bit file
OK              1 ERRORS  OK           OK

Directory name           : OK
Object file index pointer : OK
User file index pointer  : OK
Bit file pointer         : OK
Number of pages not reserved : OK
Errors in user file index block : 0
Errors in user entries    : 1
Errors in object file subindex block : 0
Errors in object file index block : 0
Errors in object entries  : 0
Errors in data files      : 0
Number of pages outside device limits : 0
Number of page conflicts  : 0
Pages used but not set in bit file : 0

PACK-6-BRAGE-CMV
```

Product description

File System Verification is an important part of the system software for control of directories. The following functions are implemented in the system:

- Directories can be listed. A specific directory can be chosen from the list
- The chosen directory is then checked for errors. Four alternatives for output are given.
 - Statistics. A statistical overview of all detected errors.
 - Error-List. A complete list of all errors. Each error message consists of two lines with the locality and specification of the error.
 - Report-To-Error-Device. The same as for Error-List, with the messages also sent to the error device.
 - Warning-And-Error-List. A complete list all errors and warnings.
 - An error is not fatal for the directory structure, while a warning must be acted on.

It is also possible to use the program in connection with Job Execution Control, (JEC), in batch and mode jobs to check directories, and start activities which are dependent upon the result of the verification.

NOTE: File system verification will not check the structure of databases!

The Performance Monitor

makes it easy to collect information that is used to evaluate system performance. The information retrieved is easy to understand. The system will suggest how performance can be improved. From this information, system tuning can be done in order to remove bottlenecks and take advantage of unused resources.

Efficient use of a computer system is very important to achieve a good, cost-effective investment. It is not always easy to analyse and tune a computer to make it work in the most efficient manner.

```
DEP: Diagnose Activate Edit Report
System check finished Runtime from 11.08.40 to 11.11.13

SYSTEM DIAGNOSTICS

11.11.12!
!.....!

Your system seems to have a bottleneck.

The swapping rate is too high, and that indicates
that the system needs more internal memory before
the response time can be reduced.

To make sure that this conclusion is right,
please run the DIAGNOSE command several times
and make sure that the system environment under
which the performance measurements are run
resembles your normal use of the computer.
```

Features

- Collects information about:
 - The use of terminals and printers
 - Swapping activity
 - The frequency of disk accesses, process starts, segment switches and monitor calls
 - The number of segment pages in memory
 - The frequency with which certain address areas in memory are accessed
- A function for general evaluation of system performance without mandatory input of any parameters.

```
DEP: Diagnose Activate Edit Report
System check started Runtime from 11.08.40 Duration:
Clock Please press EXIT when you wish to terminate the measurements
11.10.47

THE USE OF SYSTEM RESOURCES, CUMULATIVE VALUES:
-----
Total utilization of the ND-100 CPU : 40.1 percent
Total utilization of the ND-500 CPU : 23.6 percent
Total utilization of Swapping system : 26.0 percent
Total utilization of System disc (unit 0): 27.6 percent
```

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Product description

The Performance Monitor is a tool for the system supervisor to better be able to measure performance and make convenient use of all resources.

The DIAGNOSE option allows you to get a general evaluation of system performance without having to work with the log macros or log primitives, and without having to fill in any parameters.

In addition, it is possible for the supervisor to create patterns for what the performance monitor should measure. Thus, each supervisor can have the system performance checked according to the vital needs of a particular installation.

Below are the four macro logs already defined on the Performance Monitor:

- SET UP definition for performance monitor
- SYSTEM LOG contains information about the use of terminals, printers, disks and swapping activity
- EVENT COUNTING contains information about the number of disk accesses, process starts and segment switches.
- MONITOR CALL LOG contains the number of monitor calls executed
- PAGE LOG contains the number of pages in memory for a specific segment
- PROGRAM COUNTER contains information about the access frequency of address areas in memory.

When the parameters of the log macro are defined, you then can use the log primitive to specify exactly where in the system you want your measurements taken. The parameters you define in the log primitive will be highlighted at the top of the screen.

Through the REPORT option, you can get a summary of the performance information obtained from the last execution of the log macro, including average, standard deviation, and maximum and minimum value.

Standard Backup and Restore

The purpose of Standard Backup and Restore is to make the use of backup/restore safe and easy. It standardises the use of the Backup System (ND 210337) for those who carry out identical copy operations on a regular basis.

Features

- Backup/restore can be chosen from a menu of predefined sets, where each set consists of one or more commands to the Backup System
- Copy operation can be executed interactively, as a Mode file or as a batch job
- Copy operation may be continued after a failure
- Extended functionality for database backup under Transaction User Environment (TRUE).
- Extensive HELP functions

Product description

Standard Backup And Restore consists of two modules: A definition part and an execution part.

Job no.	Auto	Job type	Job parameters	Destination and source
01	N	File-to-file	Backup fl-u	P-2 nd-operations oec-syst
02	N	File-to-file	Backup fl-u	P-2 nd-operations oec-data
03	N	File-to-file	P-2 nd-operations	Backup fl-u oec-sys:data
04	N	File-to-file	P-2 nd-operations	Backup fl-u oec-data:data
05	N	Disk-to-Streamer	Streamer-Tape-1 0	Disc-6-70nb-1 2.1
06	N	Disk-to-Streamer	Streamer-Tape-1 0	Disc-6-70nb-1 2.2
07	N	Disk-to-Streamer	Streamer-Tape-1 0	Disc-6-70nb-1 2.3
08	N	Disk-to-Streamer	Streamer-Tape-1 0	Disc-6-70nb-1 2.4
09	N	Disk-to-Streamer	Streamer-Tape-1 0	Disc-6-70nb-1 2.5
10	N	Streamer-to-disk	Disc-6-70nb-1 2.2	Streamer-Tape-1 0
11	N	Streamer-to-disk	Disc-6-70nb-1 2.3	Streamer-Tape-1 0
12	N	Streamer-to-disk	Disc-6-70nb-1 2.4	Streamer-Tape-1 0
13	N	Streamer-to-disk	Disc-6-70nb-1 2.5	Streamer-Tape-1 0
14	N	Streamer-to-disk	Disc-6-70nb-1 2.6	Streamer-Tape-1 0
15	N	Disk-to-Disk	Disc-70nb-1 1	Disc-70nb-1 0
16	N	Disk-to-Streamer	Streamer-Tape-1 0	Disc-6-70nb-1 2.0
17	N	Disk-to-Disk	Disc-70nb-1 0	Disc-70nb-1 1

Definition Part

The definition part is used to create patterns for backup/restore. If backup/restore is done routinely, definitions can be created to make the task easier. All storage media are supported.

The program uses the Device-Copy and Copy-Users-Files facilities in the Backup System, and the parameters are according to this system. File-to-file and disk-to-disk have the same parameters in both Backup and Restore operations. The definition part may be edited in any screen editor.

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Execution part

The execution part is the part visible to the operator. It presents a list of all sets defined for the operator. The sets are created from the definition part. When a set is selected, all prerequisites and warnings for running the selected set are given. The prerequisites are a list of devices which must be mounted and a list of those directories which have opened files (they have to be closed). The operator has to confirm the prerequisites before the actual copy process can start. If any failure occurs during copying, the operator can make the necessary arrangements and may continue from where the process was interrupted.

```
OE@: Select Exit
      Select a set for copying

Back-DB Database- and log-backup - reset log
Back-Con Copy Configuration Dictionary
Back-P-3 Backup av PACK-3
Back-P-4 Backup av PACK-4
Back-P-5 Backup av PACK-5
Back-P-6 Backup av PACK-6
Back-P-7 Backup av PACK-7
Back-Sys Backup av system disks
Rest-DB Restore database disk
Rest-Con Restore configuration dictionary
Rest-P-3 Restore of Pack-3
Rest-P-4 Restore of Pack-4
Rest-P-5 Restore of Pack-5
Rest-P-6 Restore of Pack-6
Rest-P-7 Restore of Pack-7
Rest-Sys Restore system disks

Current set: Mail: 0
```

Standard backup/restore running under TRUE

When Standard Backup and Restore is running under TRUE, some additional functions are available. TRUE is the transaction monitor system for Norsk Data's systems. For more details on TRUE, we refer to a separate data sheet.

- Before backup is started, it checks that the operator has closed the databases and made them unavailable to the users.
- After a successful backup, the logs of the given databases are reset and the databases are made available.

Exceptions when running as batch or mode job:

- Before backup is started, the databases are closed and made unavailable by the system
- Automatic start of batch processor using TRUE's scheduling functions is possible.
- Error messages will be reported to TRUE-OPCOM or error device

File Manager

is a tool for administration of files, and is useful both for end users and for the system operator.

Features

- Handles 4096 files
- User-Areas can be changed
- The context is contained
- Displays file names and file attributes
- Files and file attributes can be created, edited and deleted
- Search functions on file and file attribute level
- Inspect contents of a file
- Extensive HELP functions

Product description

File Manager allows you to create and delete files, as well as to look at and change file attributes. Some of the file attributes shown in File Manager are listed below.

- FILE NAME -- the file/document name
- FILE TYPE -- :text, :prog, etc.
- STORAGE TYPE -- indexed, contiguous, spooling, etc.
- ACCESS RIGHTS
read, write, append, common, directory, for public, friend and own access
- DATE and TIME CREATED/READ/WRITTEN
- NUMBER of DISK PAGES
each page may hold up to 2048 characters
- RESERVED
with a spooling file, indicates that the file contains text; with other disk files, whether the file has been written to since last backup

You can give commands in File Manager to print the current display to a printer, to retrieve file descriptions from a new user area, and to change user area among those available to you in User Environment.

Requirements

SINTRAN III, version K
User Environment, version C

Documentation

Operator Environment User Guide ND 30.061.EN
Operator Environment Reference Card ND 99.040.EN

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