



SERVICETEAM

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FEEDBACK: <input type="checkbox"/>	ACTION: <input type="checkbox"/>
STATUS: VERSION 1	

# SINTRAN SERVERS FROM ND SERVICE TEAM SERVER MODELS AND UPGRADES

Date: 20. september 1990  
Written by: KIHA

## Standard 5000 Server range

ND 111347 ND-5700 ES S11  
ND 111280 ND-5830 ES S11  
ND 111281 ND-5850 ES S11

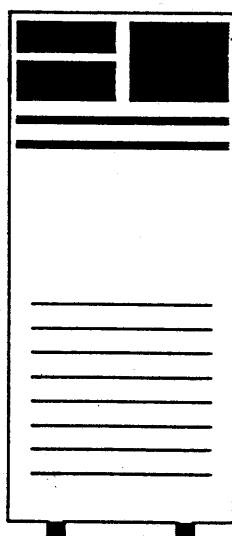
ND 111348 ND-5700 ES C11  
ND 111282 ND-5830 ES C11  
ND 111283 ND-5850 ES C11

ND 111349 ND-5700 ES L11  
ND 111284 ND-5830 ES L11  
ND 111285 ND-5850 ES L11  
ND 111286 ND-5950 ES L12  
ND 111287 ND-5950 ES L13  
ND 111288 ND-5950 ES L14

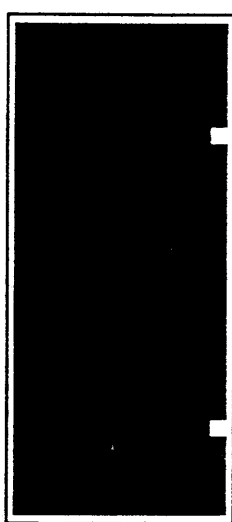
## ND tpServer range

ND 111314 ND tpServer A25 in C cab.  
ND 111315 ND tpServer A35 in C cab.  
ND 111316 ND tpServer A45 in C cab.

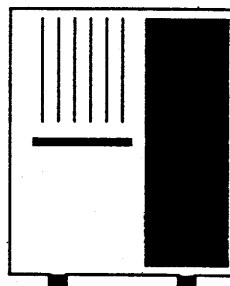
ND 111317 ND tpServer A25 in L cab.  
ND 111318 ND tpServer A35 in L cab.  
ND 111319 ND tpServer A45 in L cab.  
ND 111320 ND tpServer A55 in L cab.  
ND 111321 ND tpServer A65 in L cab.  
ND 111322 ND tpServer A75 in L cab.



Large



Large  
Filestore



Compact



Satellite

## INTENTIONS WITH THIS PRODUCT

The intention with the new SINTRAN Server range is to provide ND ServiceTeam and the ND business units with a highly competitive Server range based on proprietary technology.

The new SINTRAN Servers are a general-purpose systems and target Norsk Data's existing customer base.

Our SINTRAN products are now for most of our segments in the "milk-cow" product-cycle phase. At the same time these product has gained some unnecessary weight with regard to product handling, support and sale.

The main area of use for the Servers will be as multi-user application servers, as database or file servers for up to hundreds of PCs and workstations, or Servers for heavy technical applications. Fault-tolerant features like powerfail/restart, disk-mirroring, automatic reconfiguration between two Servers (FTX) sharing disks, high level of security on access control and logging of critical file and user operation and high availability make these systems ideal for business-oriented ("mission-critical") tasks.

The competitiveness of the new SINTRAN Server range is ensured by a very good price/performance ratio, and co-existence with UNIX systems by support for NFS, X Windows terminals, Telnet and FTP.

The major contribution to performance is the introduction of the ND-5850 ("RALLAR") cpu. This cpu exist in two version, one is the ND-5850 which is a 45 MHz "full speed" version with 16MB fast onboard memory and the ND-5830 which is a 25 MHz version with 16MB fast onboard memory.

The SINTRAN Servers can be equiped with 1 to 4 cpu's (multi-cpu). All ND-5000 Systems can be upgraded with ND-5830 or ND-5850 cpu's and the 16MB onboard memory will be included in the upgrading price. The replaced cpu together with the MF Controller board is returned to ND ServiceTeam. Upgrading a ND-5000 system with ND-5830 or ND-5850 cpu require a new N-5000 MFBus Controller (JAMES) and SINTRAN III version M.

**NOTE:** ND-5000 Compact A/B can not be upgraded with the ND-5830 or ND-5850 cpu. The ND-5830 and ND-5850 cpu requires more power than the DC-110 power supply can supply.

For ND-5000 ES S and C systems the DC 502 power supply is required when upgrading with ND-5830 or ND-5850 cpu.

**STANDARD INCLUDED SOFTWARE:**

The standard SINTRAN 5000 Server systems contain the following basic software which comprises the Basic SW Package for ND-5000 (ND 380799 B01):  
The software is pre-loaded and integrated on the internal 310MB system disk.

**Basic Operating System**

210576 M06 SINTRAN III/VSX Standard System A version M  
210913 C00 SINTRAN III Monitor call package  
211305 C01 ND-500/5000 System Package for Sintran III/VSX version M  
- ND-500/5000 Background Monitor version K01  
- ND-500/5000 Swapper version L02  
- ND-500/5000 Place Library version C01  
211518 D04 User Environment  
210586 D12 UE-Errors  
211479 A09 DSS Basic System

**Printer Management**

211056 A05a SPRINT Spooling System  
211583 A05a Standard Printer Drivers  
211600 A05 SPRINT Vision Server

**Communication**

210374 G02 COSMOS Basic module  
210580 B04p COSMOS Ethernet option

**Operation tools**

System Administration menu system  
211226 B04 Backup Manager  
210337 I05 Backup-System  
211078 A01 Multi-Machine Operator Environment

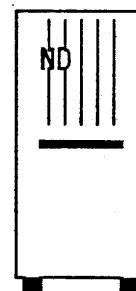
**File System Utilities**

211075 C03 File Manager  
211073 A05 File System Verification  
211070 A01 User Area Manager

**Other tools**

211074 B01 Performance Monitor for ND-100/500(0)  
210534 B00 JEC  
210721 C01 BRF-Linker  
210375 C00 TELEFIX files for user sites  
210455 G06 VTM Tables  
210319 H02 ND-500 Linkage-Loader  
210511 D02 ND-500 Exception Library  
210080 J00 PED Eng for ND-100  
211224 B01 ND Linker for ND-500/5000  
211229 A03 Convert-Domain  
211846 A02 Softice for Sintran System

## STANDARD SINTRAN 5000 SERVER MODELS IN SATELLITE CABINET



Standard SINTRAN 5000 Servers in Satellite cabinets comprise the following:

- Standard SW-platform for ND-5000 ES on a 310MB system disk
- Floppy disk drive, 5.25", 1.2MB
- Streamer tape drive, 155MB
- ND-100 SCSI controller (system disk, streamer)
- ND-120/CX (4MB) I/O processor (32 bit floating point)
- ND-5700, ND-5830 (16MB) or ND-5850 (16MB) as main processor
- 4MB I/O memory and 8/16MB MF-bus memory (shared memory)
- Ethernet II controller (COSMOS) incl. tranceiver cable
- Room for 1 extra 5.25" SCSI disk unit in the cabinet
- 3 free positions for ND-100 I/O controllers (8 Terminal, PIOC, HDLC, Megalink)
- 1 free MF-bus position (Ethernet III or memory 4/8/16 MB)

New MODEL	PERFORMANCE Rel. MIPS		Main CPU	MEMORY Shared + Local (MB)	Included disk	File-store	Max. disk Gbyte	Streamer	Con-sole	No of*) active WP-users
5700 ES S11	1	9.5	5700	8 + 4	310MB	No	1.3	Yes	No	30
↓ 5830 ES S11	2.2	16.8	5830	16 + 4	310MB	No	1.3	Yes	No	30
↓ 5850 ES S11	4	30.4	5850	16 + 4	310MB	No	1.3	Yes	No	30

MIPS numbers are Whetstone single-precision (unoptimized).

\*) This apply for medium heavy NOTIS-WP users on a tuned (CPU-bound) system.

NOTE! Console terminal is NOT included.

ND no. Name/Description

111347 ND 5700 ES S11  
111280 ND 5830 ES S11  
111281 ND 5850 ES S11

600000 Installasjon av Satellite eller Compact m/driftstart  
600062 Installasjon av Satellite eller Compact

CPU Upgrade kits:

ND no.	Name/Description
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111293	Upgrade from ND-5200 to ND-5700 ES Sat.
111294	Upgrade from ND-5400 to ND-5700 ES Sat.
111182	Upgrade from ND-5500 to ND-5700 ES Sat.
111295	Upgrade from ND-5700 to ND-5830 ES Sat. (Upgrade include 16MB onboard memory)
111296	Upgrade from ND-5830 to ND-5850 ES Sat.

600029 Installasjon av oppgradering ND-5000/ND tpServer

111350 Power-supply 5/12V DC 502 for ND-5000 ES S and C

NOTE! Upgrades do NOT include memory or ND-120/CX I/O processor unless noted.  
Remember to upgrade 100-CPU and memory to match new model.

NOTE! Upgrade is done by CPU replacement. The replaced CPU together  
with the MF bus controller board is returned to ND ServiceTeam.

NOTE! Old systems (before 1989) with 501-power supply must upgrade to  
502-power-supply when upgrading to ND-5830 or ND-5850. Contact  
service responsible for checking power supply type.

Hardware Options:

ND no.	Name/Description
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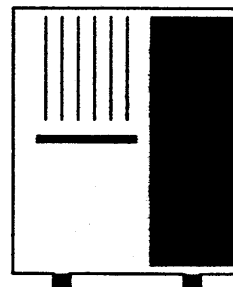
ND 111199	48 Bit Floating Point Option for ND-120/CX
ND 110513	Ethernet III Controller
ND 110396	Disc Drive 310MB SCSI 5.25" SE
ND 111134	Disc Drive 630MB SCSI 5.25" SE
ND 111338	Disc Drive 1GB SCSI 5.25" SE
ND 110580	Free-standing 1600/6250 bpi, 125 ips magtape
ND 110636	ND Gigatape System, Free standing

Phasing out:

ND no.	Name/Description
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ND 111178	ND-5400 ES S11
ND 111179	ND-5500 ES S11
ND 111180	ND-5700 ES S11
ND 110605	Upgrading from ND-5200 to ND-5400 ES Satellite
ND 111181	Upgrading from ND-5400 to ND-5500 ES Satellite

## STANDARD SINTRAN 5000 SERVER MODELS IN COMPACT CABINET



The standard SINTRAN 5000 Server models in Compact cabinet comprise the following:

- Standard SW-platform for ND-5000 on a 310MB system disk
- Floppy disk drive, 5.25", 1.2MB
- Streamer tape drive, 155MB
- ND-100 SCSI controller  
(system disk, streamer and additional internal SCSI units)
- ND-120/CX I/O processor (32 bit floating point)
- ND-5700, ND-5830 (16MB) or ND-5850 (16MB) as main processor
- 4MB I/O memory and 8/16MB MF-bus memory (shared memory)
- Ethernet II controller (COSMOS) incl. transceiver cable
- Room for 4 extra 5.25" SCSI units in the cabinet
- 5 free positions for ND-100 I/O controllers
- 3 free MF-bus position (Ethernet III/memory 4/8/16 MB or SCSI Adaptor for MF-bus).

The table below summarize the characteristics of the ND-5000 ES Compact models.

New MODEL	PERFOR- MANCE Rel. MIPS		Main CPU	MEMORY Shared + Local (MB)	Included disk	File- store	Max. disk Gbyte	Str eam er	Con- sole	No of*) active WP-users
5700 ES C11	1	9.5	5700	8 + 4	310MB	No	4.3	Yes	No	70 - 80
↓ 5830 ES C11	2.2	16.8	5830	16 + 4	310MB	No	4.3	Yes	No	80 - 110
↓ 5850 ES C11	4	30.4	5850	16 + 4	310MB	No	4.3	Yes	No	110-130

MIPS numbers are Whetstone single-precision (unoptimized).

\*) This apply for medium heavy NOTIS-WP users on a tuned (CPU-bound) system.

NOTE! Consol terminal is NOT included.

ND no.                      Name/Description

111348 ND 5700 ES C11  
111282 ND 5830 ES C11  
111283 ND 5850 ES C11

CPU Upgrade kits:

ND no.	Name/Description
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111297	Upgrade from ND-5200 to ND-5700 ES Comp.
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111298	Upgrade from ND-5400 to ND-5700 ES Comp.
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110613	Upgrade from ND-5500 to ND-5700 ES Comp.
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111299	Upgrade from ND-5700 to ND-5830 ES Comp.
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(Upgrade include 16MB onboard memory)

111300	Upgrade from ND-5800 to ND-5850 ES Comp.
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(Upgrade include 16MB onboard memory)

111301	Upgrade from ND-5830 to ND-5850 ES Comp.
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600029	Installation of upgrade kits ND-5000 or ND tpServer
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111350	Power-supply 5/12V DC 502 for ND-5000 ES S or C
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NOTE! Old systems (before 1989) with 501-power supply must upgrade to 502-power-supply when upgrading to ND-5830 or ND-5850. Contact service responsible for checking power supply type.

NOTE! Upgrades do NOT include memory or ND-120/CX I/O processor unless noted. Remember to upgrade 100-CPU and memory to match new model.

NOTE! Upgrade is done by CPU replacement. The replaced CPU together with the MF bus controller board is returned to ND ServiceTeam.

Typical Hardware Options:

ND 111199	48 Bit Floating Point Option for ND-120/CX
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ND 110399	SCSI Adaptor for MF-Bus
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ND 110513	Ethernet III Controller
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ND 110502	Disc Drive 310MB SCSI 5.25" for C cabinet
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ND 110788	Disc Drive 630MB SCSI 5.25" for C cabinet
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ND 111277	Disc Drive 1GB SCSI 5.25" for C cabinet
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ND 110580	Free-standing 1600/6250 bpi, 125 ips magtape
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ND 110579	ND Gigatape System for ND-5000 ES C, cabinet mount
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ND 110636	ND Gigatape System, Free standing
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Phasing out:

ND no.	Name/Description
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ND 111183	ND-5400 ES C11
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ND 111184	ND-5500 ES C11
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ND 111185	ND-5700 ES C11
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ND 111186	ND-5800 ES C11
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ND 110611	Upgrading from ND-5200 to ND-5400 ES Compact
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ND 110612	Upgrading from ND-5400 to ND-5500 ES Compact
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ND 110614	Upgrading from ND-5700 to ND-5800 ES Compact
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## STANDARD SINTRAN 5000 SERVER MODELS IN LARGE CABINET

The standard SINTRAN 5000 Server comprise the following:

- Standard SW-platform for ND-5000 on a 310MB system disk
- Floppy disk drive, 5.25", 1.2MB
- Streamer tape drive, 155MB
- ND-100 SCSI controller (system disk and streamer)
- Ethernet II controller (COSMOS) incl. tranceiver cable
- ND-120/CX I/O processor (32 bit floating point)
- ND-5700, ND-5830 (16MB) or ND-5850 (16MB) as main processor
- 4MB I/O memory and 8-64MB MF memory (shared)
- 16 free positions for ND-100 I/O controllers or memory.
- 16 free MF-bus position (13 of 16 positions can be used for DOMINO I/O Cont. or ND-5000 CPU's. All 16 can be used for memory)

The table below summarizes the ND-5000 ES Large cabinet models.

New MODEL	PERFOR- MANCE Rel. MIPS		Main CPU	MEMORY Shared + Local (MB)	Storage Included disk	File- store	Max. disk Gbyte	Str eam er	Con- sole	No of*) active WP-users
5700 ES L11	1	9.5	5700	8 + 4	310MB	Optio	48	Yes	Yes	70-80
↓										
5830 ES L11	2.2	16.8	5830	16 + 4	310MB	Optio	48	Yes	Yes	80-110
↓										
5850 ES L12	4	30.4	5850	16 + 4	310MB	Optio	48	Yes	Yes	110-130 <sub>1</sub>
↓										
5950 ES L13	8	60	2*5850	32 + 4	310MB	Optio	48	Yes	Yes	130 <sub>1</sub>
↓										
5950 ES L14	12	90	3*5850	48 + 4	310MB	Optio	48	Yes	Yes	130 <sub>1</sub>
↓										
5950 ES L14	16	120	4*5850	64 + 4	310MB	Optio	48	Yes	Yes	130 <sub>1</sub>

MIPS numbers are Whetstone single-precision (unoptimized).

\*) This apply for medium light NOTIS-WP-users on a tuned (CPU-bound) system.

1) Require that terminals are connected via Ethernet-III controller(s). The limitation is the number of 500 processes = 134.

Note: Filestore cabinet is optional and is connected to SCSI Adaptor for MF-bus or ND100 SCSI controller. Both controllers are sold separately.  
Max. disk capacity per Filestore cabinet (24\*1 GB) = 24 GB



ND no.	Name/Description
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111349	ND-5700 ES L11
111284	ND-5830 ES L11
111285	ND-5850 ES L11
111286	ND-5950 ES L12
111287	ND-5950 ES L13
111288	ND-5950 ES L14

600001 Installation of ND-5000 L or ND tpServer L w/Driftsstart

600066 Installation of ND-5000 L or ND tpServer L

NOTE! SCSI Adaptor for SCSI Filestore cabinet is NOT included in the system.  
When ordering SCSI filestore and SCSI disk units, remember to order the proper SCSI Adaptor, either (ND-110329) ND-100 SCSI Adaptor or (ND-110399) SCSI Adaptor for MF-bus.

**CPU Upgrade kits:**

111302	Upgrade from ND-5200 to ND-5700 ES L11
111303	Upgrade from ND-5400 or ND-5700 ES L11
111226	Upgrade from ND-5500 to ND-5700 ES L11
111304	Upgrade from ND-5700 to ND-5830 ES L11 (Upgrade include 16MB onboard memory)
111305	Upgrade from ND-5830 to ND-5850 ES L11
111306	Upgrade from ND-5850 to ND-5950 ES L12 (Upgrade include 16MB onboard memory)
111307	Upgrade from ND-5950/2 to ND-5950 ES L13 (Upgrade include 16MB onboard memory)
111308	Upgrade from ND-5950/3 to ND-5950 ES L14 (Upgrade include 16MB onboard memory)
111309	Upgrade from ND-5800 to ND-5850 ES L11 (Upgrade include 16MB onboard memory)
111310	Upgrade from ND-5900/2 to ND-5850 ES L11 (Upgrade include 16MB onboard memory)
111311	Upgrade from ND-5900/3 to ND-5950 ES L12 (Upgrade include 32MB onboard memory)
111312	Upgrade from ND-5900/4 to ND-5950 ES L12 (Upgrade include 32MB onboard memory)

600029 Installation of upgrade kits ND-5000 or ND tpServer

NOTE! Upgrades do NOT include memory or ND-120/CX I/O processor unless noted.  
Remember to upgrade 100-CPU and memory to match new model.

NOTE! Upgrade is done by CPU replacement. The replaced CPU together  
with the MF bus controller board is returned to ND ServiceTeam.

Hardware Options:

ND 111199 48 Bit Floating Point Option for ND-120/CX  
ND 110399 SCSI Adaptor for MF-Bus  
ND 110513 Ethernet III Controller  
ND 110770 Filestore cabinet for L cabinet (grey)  
ND 110328 Disc Drive 310MB SCSI 5.25" for Filestore  
ND 110789 Disc Drive 630MB SCSI 5.25" for Filestore  
ND 111278 Disc Drive 1GB SCSI 5.25" for Filestore  
ND 110800 Adaptor box for 5.25" devices used in tall Filestore  
ND 110324 Magtape Drive SCSI, STC/2925  
ND 110790 ND Gigatape System for SCSI Large Filestore  
ND 110329 ND-100 SCSI Adaptor

Miscellaneous

- Remote diagnostics (Telefix)  
Modem and modem cable must be ordered separatly.
  - ND 110280 Telefix Modem
  - 325730 xx RS232 Cable
  - 323398 AD102 Adaptor Plug

Phasing out:

ND no.	Name/Description
ND 111198	ND-5700 ES L11
ND 111188	ND-5800 ES L11
ND 111189	ND-5900 ES L12
ND 111190	ND-5900 ES L13
ND 111191	ND-5900 ES L14
ND 111224	Upgrading from ND-5200 to ND-5400 ES Large
ND 111225	Upgrading from ND-5400 to ND-5500 ES Large
ND 111227	Upgrading from ND-5700 to ND-5800 ES Large
ND 111228	Upgrading from ND-5800 to ND-5900/2 ES Large
ND 111229	Upgrading from ND-5900/2 to ND-5900/3 ES Large
ND 111230	Upgrading from ND-5900/3 to ND-5900/4 ES Large

## 870217&lt;LNG&gt; BASIC DOCUMENTATION PACKAGE FOR ND-5000 SERVERS

Standard system documentation package for ND-5000 ES systems.

Part no.	Description
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830147EN2	ND-5000 ES System Administrator Guide
840012EN1	Information Pamphlet for ND Customers
860264EN1	SINTRAN III User Guide
860230EN7	SINTRAN III Release Information M-version
860151EN3	SINTRAN III Utilities Manual
860128EN7	SINTRAN III Commands Reference Manual
899020EN2	SINTRAN III Quick Reference Card
830025EN2	COSMOS Operator Guide
860163EN4	COSMOS User Guide
899002EN2	COSMOS Operator Card
899001EN2	COSMOS User Card
860194EN4	User Environment Reference Manual
860250EN2	BACKUP User Guide
860276EN2	BACKUP Manager User Guide
860252EN2	SPRINT User Guide
814009EN1	DOMINO SCSI Operator Guide
830101EN1	Multi-machine OE User Guide
860136EN4B	ND-500 Loader/Monitor
860289EN2	ND Linker User Guide and Reference Manual
860215EN1	File Manager Introduction
899053EN1	File Manager Reference Card
860354EN1	File System Verification User Guide
860367EN1	User Area Manager User Guide
899016EN2	ND-100 Operator's Communication Instruction Survey
830040EN2	TELEFIX Reference Manual
899072EN1	ND-Shell Reference Card

The following manuals are available in Norwegian:

830147N02	ND-5000 ES System Administrator Håndbok
860163N04	COSMOS Brukerhåndbok
860194N04	Brukermiljø Referansehåndbok
860215N01	Filoversikt Introduksjon
899053N01	File Manager Oppslagskort
860250N02	Sikkerhetskopiering Brukerhåndbok
860252N02	SPRINT Brukerhåndbok
860264N01	SINTRAN III Sluttbrukerveiledning
860354N01	File System Verification Brukerhåndbok
860367N01	User Area Manager Brukerhåndbok

## ND tpSERVER MODELS

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The ND tpServer series is a range of high-performance/high-functionality (SQL) database servers. Based on ND-5000/DOMINO technology, the ND tpServer includes a complete database management system, a high-capacity mass storage system, high-capacity LAN DB communication facilities and a ND GTS backup device.

The ND 5850 cpu will be a major contribution to our transaction systems based on the ND tpServer. The major bottleneck today's ND tpServer models, when it comes to performance, is the lack of cpu-power.

By integrating the ND-5850 cpu into the ND tpServer concept, new and more powerful highend models will be available.

This will be a important launch for all Norsk Data's existing customers. The customer will now have the possibilities to grow and get more performance out of his ND-tpServer systems.

The new ND tpServer range are available in two cabinet types: C and L (Compact and Large). Both includes a pre-packaged 310 Mbyte system-disk with all the bundled software, a 155 Mbyte Streamer for restore/backup of the system-disk, and a high-capacity ND GTS backup device.

The C cabinet systems cover the need for small to medium database sizes with up to 4.3 Gbyte of internal storage.

The performance of these systems range from about 10 tps to 26 tps.

The L cabinet systems typical cover medium to large dabases, and are delivered with a Filestore cabinet that can be configured with max. 24 Gbyte of disks. With one more filestore cabinet up to 48 Gbytes may be configured.

The performance of these systems range from about 10 tps to 104 tps.

All ND tpServer Models have the same functionality. The difference between each model is the CPU power and memory size.

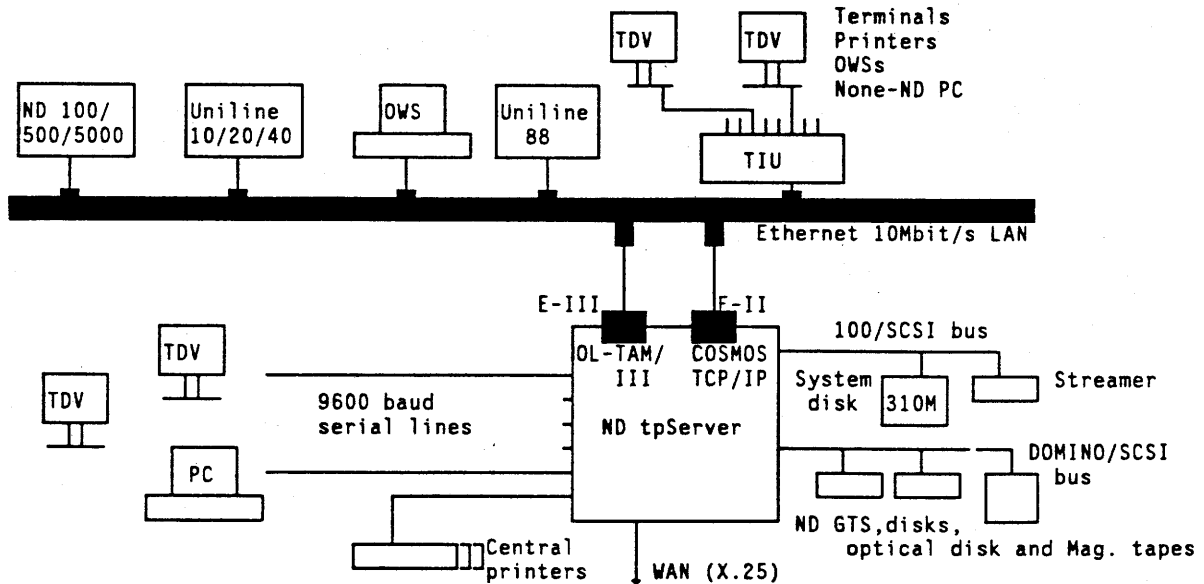
## TARGET MARKETS AND USERS

MARKET REQUIREMENTS & TRENDS:	THE ND TP SERVER WILL PROVIDE:
<ul style="list-style-type: none"> <li>• System Management               <ul style="list-style-type: none"> <li>- Availability:</li> <li>- DB verification:</li> <li>- Backup facilities:</li> <li>- Ease of operation:</li> <li>- Transparency</li> <li>- Fault tolerant</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Better stability and reduced recovery time with new tools and focus on quality.</li> <li>- Online DB-backup w/mirroring.</li> <li>- Very fast DB-verify (100 min/GB).</li> <li>- Pre-configured system disk.</li> <li>- Simplify installation/upgrade.</li> <li>- Much faster verify (100min/GB) and checkpointing.</li> <li>- Reduced off-line backup time.</li> <li>- Online incremental DB backup.</li> <li>- Online DB-backup w/mirroring.</li> <li>- Easy backup and operation of the DS data base (DS DB based on SIBAS/R).</li> <li>- Ready-made operation menus and operator procedures.</li> <li>- Easy and automatic operation.</li> <li>- Operation of all databases in the network from one terminal.</li> <li>- Low 'user threshold'</li> <li>- Users registered only once within a local domain.</li> <li>- New, enhanced functions for maintaining user &amp; terminal profiles.</li> <li>- ND-PILOT tutorials included.</li> <li>- Users may log on to any machine in a local domain using same name &amp; password.</li> <li>- Automatic logon after connect-to.</li> <li>- Network oriented operation tools.</li> <li>- Upgrade to FTX-system available.</li> <li>- Disk-mirroring standard included.</li> </ul>
<ul style="list-style-type: none"> <li>• Performance               <ul style="list-style-type: none"> <li>- Optimised handling of indexed files</li> <li>- Transactions/second:</li> <li>- DB size:</li> <li>- Optimised use of the swapper</li> <li>- DOMINO I/O-system</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- More than double performance on page allocating in the filesystem.</li> <li>- Double of today's maximum.</li> <li>- Up to more than 10GB of databases.</li> <li>- Optimised WSEG, process restart after page fault, swapping to DOMINO disks.</li> <li>- No I/O-bottlenecks</li> </ul>

MARKET REQUIREMENTS & TRENDS:	THE ND TPSEVER WILL PROVIDE:
<ul style="list-style-type: none"><li>• Functionality<ul style="list-style-type: none"><li>- Support all models:</li><li>- SQL:</li><li>- Easy handling of text documents:</li><li>- Increased disk capacity</li><li>- Client/Server architecture</li><li>- Based on a general purpose ND5000 machine</li></ul></li><li>• Security<ul style="list-style-type: none"><li>- Logging of critical file &amp; user operations</li><li>- Improved access control</li></ul></li><li>• Packaging<ul style="list-style-type: none"><li>- Easy installation of SW.</li><li>- Automatic backup without operator intervention.</li></ul></li></ul>	<ul style="list-style-type: none"><li>-Support all ND tpServer models based on the ND-5000 and ND-5850 cpu.</li><li>-SQL program access.</li><li>-Text may be stored and retrieved from DBs.</li><li>-Up to 4 TB</li><li>-Support for Ethernet and other LAN connection. Support for WAN connection.</li><li>-Application on DOS,OS/2,SINTRAN and UNIX.</li><li>-Can be used both as an application and a database server.</li><li>-Powerfull multi-cpu models allowing powerfull application and databases to be run within the same machine.</li><li>-File system event-log</li><li>-User access control through user defined objects.</li><li>-Terminal access control using card reader.</li><li>-Password check in the File Server (COSMOS)</li><li>-Pre-packed system disk with complete set of database server software distributed on a streamer cartridge.</li><li>-ND Gigatape System for database backup and 155 MB streamer for system backup, standard on all models.</li></ul>

## PRODUCT ENVIRONMENT

The ND tpServer will offer its services in an open local area network (TCP/IP on Ethernet) to various user groups.



The workstations and servers will work together by running different tasks:

### ND tpServer:

- Database servers
- Document servers
- Heavy applications
- "Old" applications
- 4GL tools
- Printer server
- E-mail server
- Gateway/Network management
- Operation management

### Workstations

- Word processing
- Office applications
- DB front-end applications
- 4GL
- User interface
- Industry standard SW
- Graphics
- Local printer/plotter

## USER GROUPS

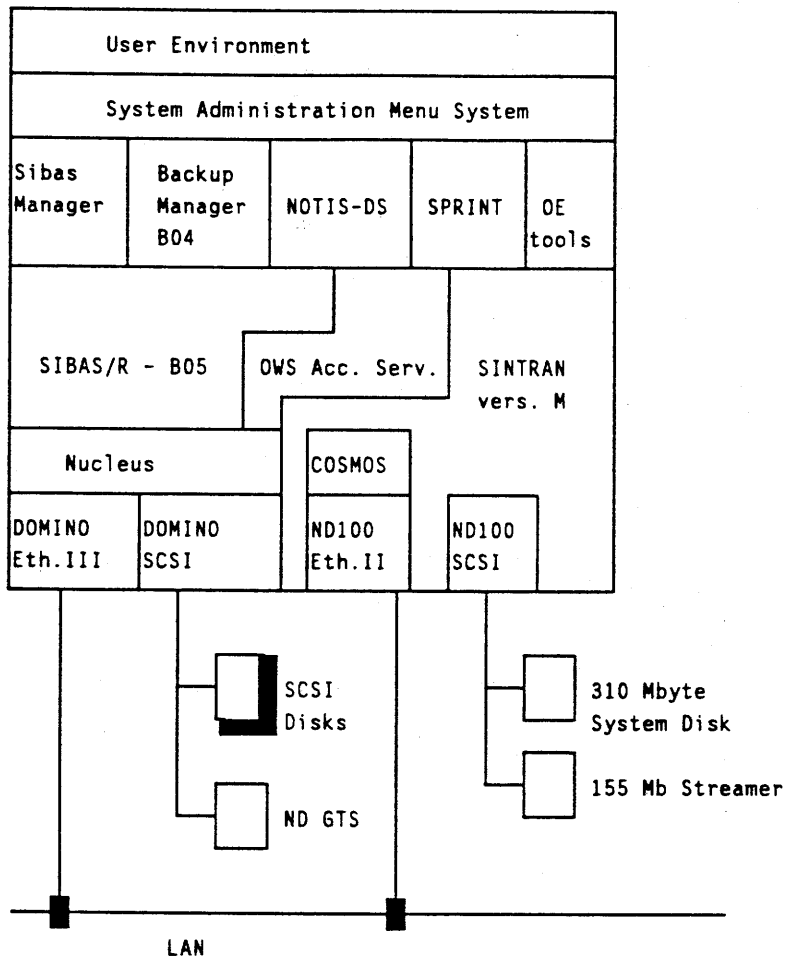
The table below indicates the services offered on the ND tpServer system for the listed user groups.

Service User Group	Time- share	FTP	SIBAS Library	COSMOS	NFS	Print share	SQL	X *
Networked Terminals	Yes	-	-	-	-	-	-	-
DWS 12/55/85 (88.1) w/OpenLAN Adaptor Ilana LAN Adaptor	Yes	Yes	Yes	No	No	Yes SPRINT	Yes	No
IS PC w/OpenLink	Yes	Yes	-	-	Yes Opt.	-	Yes TCP/IP	Yes
UNIX WS w/NFS (Sun)	Yes	Yes	No	-	Yes Opt.	No	Yes	Yes
Uniline 10/20 Xenix	Yes	Yes	Yes	No	No	-	Yes	No
Xenix Timesharing Users Uniline 40	Yes	Yes	Yes	No	No	-	Yes	No
Sintran Timesharing and Other Vendor Us	Yes	Yes	Yes	Yes	Yes Opt.	Yes SPRINT	Yes	No
Uniline 88	Yes	Yes	Yes	No	Yes	No	Yes	Yes
X-Terminal	-	-	-	-	-	-	-	Yes
Unix386 3.2 U10/20 Ready ??90	Yes	Yes	Yes (?)	No	Yes Opt.	-	Yes	Yes
Unix386 3.2 Uni40 Ready ??90	Yes	Yes	Yes (?)	No	Yes Opt.	Yes	Yes	No



## BASIC SOFTWARE OVERVIEW

The following chapters provides an overview of the product.



### Basic Software included:

ND 211560 Basic System Package for ND tpServer (Streamer cartridge)

- SINTRAN III/VSX version M
- User Environment version D
- DOMINO/SCSI Software A09
- SIBAS/R DBMS version B05
- SIBAS/R Backend
- NOTIS-DS version E
- SPRINT version A05
- Backup Manager B04
- SOFTICE for Sintran
- COSMOS Basic Module version G
- COSMOS Ethernet Option
- TCP/IP Basic Module/III B05
- OWS Access Server for ND-5000
- FTP/TELNET
- DOMINO Maintenance Utilities
- File System Utilities
- TELEFIX
- SINTRAN NFS Support
- ND tpServer tutorial

### Basic Software options:

- 211574 SQL Library for ND-100/500/5000
- 211575 SQL Interactive for ND-500/5000
- 211168 FTX Automatic Reconfiguration
- 211699 X.25 Basic Module/III
- 211061 OSI Session Library
- 211128 FTX Error Logger

**BASIC HARDWARE OVERVIEW****Standards:**

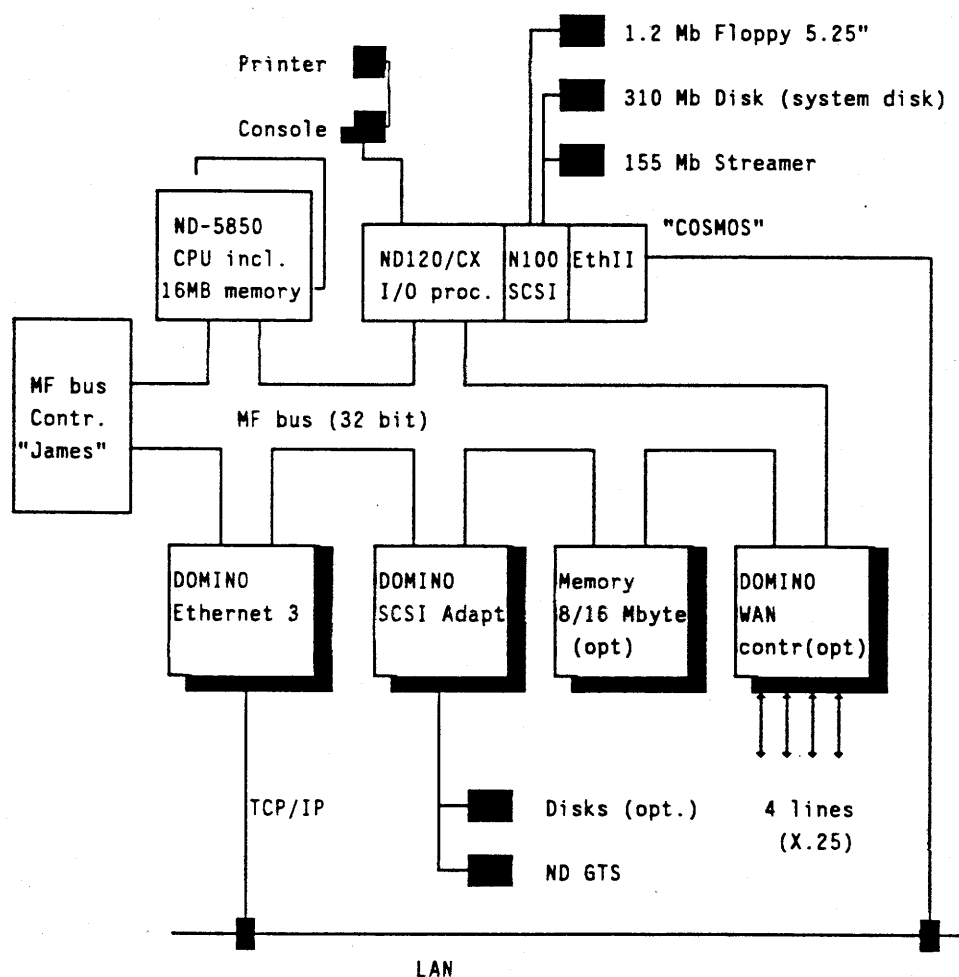
Ethernet: IEEE 802.3  
 SCSI : ANSI X3T9.2

Fully compatible  
 Fully compatible

**Not standards:**

Floating: ND Format

Floating Point (32/64 bits)  
 Array Processing Functions

**Hardware Configuration:**

**STANDARD INCLUDED SOFTWARE:**

All ND tpServer models are delivered with the Basic System Package for ND tpServer (ND 211560 B01), which contains the following software products:

**Basic Operating System**

210576 M06 SINTRAN III/VSX Standard System C  
210913 C00 SINTRAN III Monitor call package  
211305 C01 ND-500/5000 System Package for Sintran III/VSX version M  
- ND500/5000 Background Monitor version K01  
- ND500/5000 Swapper version L02  
- ND-500/5000 Place Library version C01  
211518 D04 User Environment  
210586 D12 UE-Errors  
211479 A09 DSS Basic System (DOMINO/SCSI SW)

**Printer Management**

211056 A05a SPRINT Spooling System  
211583 A05a Standard Printer Drivers  
211600 A05 SPRINT Vision Server

**Database and Document storage**

210794 E02 NOTIS-DS for ND500/5000  
220001 B05 SIBAS/R for ND-500/5000  
Consist of:  
- SIBAS/R Libraries and Utilities  
- SIBAS Manager  
- SIBAS Service  
- SIBAS DRL and DBM  
- SW Act. Key for 220002  
- SW Act. Key for 220005

**Communication**

220004 SIBAS/R Backend Access (SW Activation Key)  
211325 B02 OWS Access Server for ND-5000  
211327 B05 TCP/IP Basic Module/III  
211154 D00 COSMOS FTP/TELNET Client  
210374 G02 COSMOS Basic module  
210580 B04p COSMOS Ethernet option  
211299 A01 SINTRAN NFS Support

**Operation tools**

System Administration menu system  
211226 B04 Backup Manager  
210337 I05 Backup-System  
211078 A01 Multi-Machine Operator Environment

**File System Utilities**

211075 C03 File Manager  
211073 A05 File System Verification  
211070 A01 User Area Manager

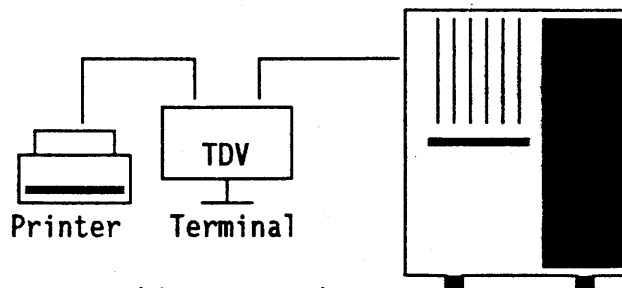
**DOMINO Maintenance Utilities**

211322 C03 Domino Maintenance kit  
211321 C03 Nucleus Maintenance kit  
211481 A09 DSS Test programs

**Other tools**

211074 B01 Performance Monitor for ND-100/500(0)  
210534 B00 JEC  
210721 C01 BRF-Linker  
210375 C00 TELEFIX files for user sites  
210455 G06 VTM Tables  
210319 H02 ND-500 Linkage-Loader  
210511 D02 ND-500 Exception Library  
210080 J00 PED Eng for ND-100  
210532 K00 PED Eng for ND-500  
211224 B01 ND Linker for ND-500/5000  
211229 A03 Convert-Domain  
211480 A09 DSS Libraries  
210335 H00 Symbolic Debugger for ND-500/5000  
210336 F01 Symbolic Debugger for ND-100  
211846 A02 Softice for Sintran System

## ND tpSERVER MODELS IN COMPACT CABINET



The ND tpServer models in compact cabinet comprise the following:

- Standard SW-platform for ND tpServer on a 310MB system disk
- ND Gigatape System 2.2 GB
- Floppy disk drive, 5.25", 1.2MB
- Streamer tape drive, 155MB
- ND-100 SCSI controller (system disk and streamer)
- Ethernet II controller (COSMOS) incl. tranceiver cable
- SCSI Adaptor for MF-bus (ND GTS and additional internal disk units)
- Ethernet III controller (TCP/IP SIBAS Backend, Telnet, FTP, NFS)
- ND-120/CX I/O processor (32 bit floating point)
- ND-5700 or ND-5830/5850 (16MB) as main processor
- 16MB MF-bus memory (shared memory)
- Room for 3 extra 5.25" SCSI disk units in the cabinet
- Console terminal with printer
- 5 free positions for ND-100 I/O controllers
- 1 free MF-bus position (Ethernet III, SCSI Adaptor or memory 4/8/16MB)

The table summarize the new ND tpServer Systems:

Model	Relative		Main CPU	100-CPU	MEMORY <sup>1</sup>		Internal disks included Internal	Max. <sup>2</sup> disk GB	ND GTS	Con-sole	Up-grade path
	Cabin	et perf			Included Shared + local	MAX. Shared + local					
A25	C	1	5700	120/CX	16 + 4	32 + 32	310MB	3.3	Yes	Yes	↓
A35	C	2	5830	120/CX	16 + 8	32 + 32	310MB	3.3	Yes	Yes	
A45	C	3.2	5850	120/CX	16 + 8	32 + 32	310MB	3.3	Yes	Yes	

<sup>1</sup>) In addition comes 4MB of I/O-memory on each DOMINO-controllers.

<sup>2</sup>) Includes the 310 MB system disk connected to the 100-SCSI adaptor. Extra disks units are connected to the SCSI Adaptor for MF-Bus.

Limitation in SINTRAN M std. C wo/mirroring = (4 TB pool size \* 40) = 160 TB.

ND no.                      Name/Description

111314 ND tpServer A25 in C cabinet  
 111315 ND tpServer A35 in C cabinet  
 111316 ND tpServer A45 in C cabinet

600000 Installation of Satellite/Compact w/Driftstart  
 600062 Installation of Satellite/Compact

RELEASED INFORMATION

**CPU Upgrade kits:**

ND no.	Name/Description
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111323	Upgrading from ND tpServer A10 to ND tpServer A25 in C cabinet
111324	Upgrading from ND tpServer A20 to ND tpServer A25 in C cabinet
111325	Upgrading from ND tpServer A25 to ND tpServer A35 in C cabinet (Upgrade include 16MB onboard memory)
111326	Upgrading from ND tpServer A30 to ND tpServer A45 in C cabinet (Upgrade include 16MB onboard memory)
111327	Upgrading from ND tpServer A35 to ND tpServer A45 in C cabinet
600029	Installation of upgrade ND-5000/ND tpServer

NOTE! Upgrades do NOT include memory or ND-120/CX I/O processor unless noted.  
Remember to upgrade 100-CPU and memory to match new model.

NOTE! Upgrade is done by CPU replacement. The replaced CPU together  
with the MF bus controller board is returned to ND ServiceTeam.

**Hardware Options:**

ND 111199	48 Bit Floating Point Option for ND-120/CX
ND 110399	SCSI Adaptor for MF-Bus
ND 110513	Ethernet III Controller
ND 110939	MF WAN Controller
ND 110502	Disc Drive 310MB SCSI 5.25" for C cabinet
ND 110788	Disc Drive 630MB SCSI 5.25" for C cabinet
ND 111277	Disc Drive 1GB SCSI 5.25" for C cabinet
ND 110580	Free-standing 1600/6250 bpi, 125 ips magtape

**Phasing out:**

ND no.	Name/Description
--------	------------------

ND 5023	ND tpServer A10 in C-cab.
ND 5024	ND tpServer A20 in C-cab.
ND 5025	ND tpServer A30 in C-cab.
ND 110793	Upgrading from model A10 to A20 in C
ND 110794	Upgrading from model A20 to A30 in C

## ND tpSERVER MODELS IN LARGE CABINET

The ND tpServer models in large cabinet comprise the following:

- Standard SW-platform for ND tpServer on a 310MB system disk
- ND Gigatape System 2.2 GB
- Floppy disk drive, 5.25", 1.2MB
- Streamer tape drive, 155MB
- ND-100 SCSI controller (system disk and streamer)
- Ethernet II controller (COSMOS) incl. tranceiver cable
- SCSI Adaptor for MF-bus (ND GTS and additional filestore disk units)
- Ethernet III controller (TCP/IP SIBAS Backend, Telnet, FTP, NFS)
- ND-120/CX I/O processor (32 bit floating point)
- ND-5700 or ND-5830/5850 (16MB) as main processor
- 16-64MB MF memory (shared)
- 16 free positions for ND-100 I/O controllers or memory.
- 14 free MF-bus position (11 of 14 positions can be used for DOMINO I/O Cont. or ND-5000 CPU's. All 14 can be used for memory)
- Console terminal with printer
- Large SCSI Filestore cabinet

The table summarize the new ND tpServer systems.

Model	Relative TP		Main CPU	100-CPU	MEMORY <sup>1</sup>		Internal included disks	Max. <sup>2</sup> disk GB	ND GTS	Con-sole	Up-grade path
	Cabin	perf			Included Shared + local	MAX. Shared + local					
A25	L	1	5700	120/CX	16 + 4	512+32	310MB	48	Yes	Yes	↓
A35	L	2	5830	120/CX	16 + 8	512+32	310MB	48	Yes	Yes	↓
A45	L	3.2	5850	120/CX	16 + 8	512+32	310MB	48	Yes	Yes	↓
A55	L	6.4	2x5850	120/CX	32 + 8	512+32	310MB	48	Yes	Yes	↓
A65	L	9.6	3x5850	120/CX	48 + 8	512+32	310MB	48	Yes	Yes	↓
A75	L	12.8	4x5850	120/CX	64 + 8	512+32	310MB	48	Yes	Yes	↓

<sup>1</sup>) In addition comes 4MB of I/O-memory on each DOMINO-controllers.

<sup>2</sup>) This includes the 310 MB system disk connected to the 100-SCSI adaptor. Extra disks units are Filestore mounted and connected to the SCSI Adaptor for MF-Bus Max. disk capacity per Filestore cabinet (24\*1GB) = 24GB  
Limitation in SINTRAN M std. C wo/mirroring = (4 TB pool size \* 40)=160TB

## ND no. Name/Description

111317 ND tpServer A25 in L cabinet  
111318 ND tpServer A35 in L cabinet  
111319 ND tpServer A45 in L cabinet  
111320 ND tpServer A55 in L cabinet  
111321 ND tpServer A65 in L cabinet  
111322 ND tpServer A75 in L cabinet

600001 Installation of ND-5000 L or ND tpServer L w/Driftsstart

600066 Installation of ND-5000 L or ND tpServer L

CPU Upgrade kits:

111328 Upgrading from ND tpServer A10 to  
ND tpServer A25 in L cabinet  
111329 Upgrading from ND tpServer A20 to  
ND tpServer A25 in L cabinet  
111330 Upgrading from ND tpServer A25 to  
ND tpServer A35 in L cabinet  
(Upgrade include 16MB onboard memory)  
111331 Upgrading from ND tpServer A30 to  
ND tpServer A45 in L cabinet  
(Upgrade include 16MB onboard memory)  
111332 Upgrading from ND tpServer A35 to  
ND tpServer A45 in L cabinet  
111333 Upgrading from ND tpServer A45 to  
ND tpServer A55 in L cabinet  
(Upgrade include 16MB onboard memory)  
111334 Upgrading from ND tpServer A55 to  
ND tpServer A65 in L cabinet  
(Upgrade include 16MB onboard memory)  
111335 Upgrading from ND tpServer A65 to  
ND tpServer A75 in L cabinet  
(Upgrade include 16MB onboard memory)  
111336 Upgrading from ND tpServer A40 to  
ND tpServer A45 in L cabinet  
(Upgrade include 16MB onboard memory)  
111337 Upgrading from ND tpServer A50 to  
ND tpServer A55 in L cabinet  
(Upgrade include 32MB onboard memory)

600029 Installation of upgrade ND-5000/ND tpServer

NOTE! Upgrades do NOT include memory or ND-120/CX I/O processor unless noted.  
Remember to upgrade 100-CPU and memory to match new model.

NOTE! Upgrade is done by CPU replacement. The replaced CPU together  
with the MF bus controller board is returned to ND ServiceTeam.



Hardware Options:

ND no.	Name/Description
ND 111199	48 Bit Floating Point Option for ND-120/CX
ND 110399	SCSI Adaptor for MF-Bus
ND 110513	Ethernet III Controller
ND 110939	MF WAN Controller
ND 110770	Filestore cabinet for L cabinet (grey)
ND 110328	Disc Drive 310MB SCSI 5.25" for Filestore
ND 110789	Disc Drive 630MB SCSI 5.25" for Filestore
ND 111278	Disc Drive 1GB SCSI 5.25" for Filestore
ND 110800	Adaptor box for 5.25" devices used in tall Filestore
ND 110324	Magtape Drive SCSI, STC/2925

Miscellaneous

- Remote diagnostics (Telefix)  
Modem and modem cable must be ordered separatly.
  - ND 110280 Telefix Modem
  - 325730 xx RS232 Cable
  - 323398 AD102 Adaptor Plug

Phasing out:

ND no.	Name/Description
ND 5041	ND tpServer A10 in L-cab.
ND 5042	ND tpServer A20 in L-cab.
ND 5043	ND tpServer A30 in L-cab.
ND 5044	ND tpServer A40 in L-cab.
ND 5045	ND tpServer A50 in L-cab.
ND 110795	Upgrading from model A10 to A20 in L
ND 110796	Upgrading from model A20 to A30 in L
ND 110797	Upgrading from model A30 to A40 in L
ND 110798	Upgrading from model A40 to A50 in L

## 870027&lt;LNG&gt; BASIC DOCUMENTATION PACKAGE FOR ND TP SERVER

Standard system documentation package for ND-tpServer systems.

Part no.	Description
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830127EN2	ND tpServer System Administrator Guide
840012EN1	Information Pamphlet for ND Customers
860051EN8	SINTRAN III Real Time Loader
860128EN7	SINTRAN III Commands Reference Manual
860133EN2B	SINTRAN III Real Time Guide
860264EN1	SINTRAN III User Guide
899020EN2	SINTRAN III Quick Reference Card
860151EN3	SINTRAN III Utilities Manual
860230EN7	SINTRAN III Release Information M-version
860163EN4	COSMOS User Guide
830025EN2	COSMOS Operator Guide
899001EN2	COSMOS User Card
899002EN2	COSMOS Operator Card
860284EN1	COSMOS Telnet/FTP User Guide
860194EN4	User Environment Reference Manual
860250EN2	BACKUP User Guide
860276EN2	BACKUP Manager User Guide
860252EN2	SPRINT User Guide
863017EN4	NOTIS-DS User Guide
830059EN5	NOTIS-DS Supervisor Guide
830072EN2	DIALOGUE Operations
860256EN1	DIALOGUE-SIBAS/R Introduction
860290EN2	DIALOGUE-SIBAS/R Application Development (DML)
860282EN2	DIALOGUE-SIBAS/R Database Definition
899078EN1	DIALOGUE-SIBAS/R DML Quick Reference Card
899015EN1	DIALOGUE-SIBAS/R DRL Quick Reference Card
899016EN2	ND-100 Operator's Communication Instruction Survey
814009EN1	DOMINO SCSI Operator Guide
830101EN1	Multi-machine OE User Guide
830107EN3	OpenLAN Network Supervisor Guide
830141EN1	SINTRAN NFS Support Supervisor Guide
860289EN2	ND Linker User Guide and Reference Manual
860136EN4B	ND-500 Loader/Monitor
860215EN1	File Manager Introduction
899053EN1	File Manager Reference Card
860354EN1	File System Verification User Guide
860367EN1	User Area Manager User Guide
860121EN4	PED User's Guide
830040EN2	TELEFIX Reference Manual
899072EN1	ND-Shell Reference Card

The following manuals are available in Norwegian:

830127N02	ND tpServer System Administrator Håndbok
860163N04	COSMOS Brukerhåndbok
860194N04	Brukermiljø Referansehåndbok
860250N02	Sikkerhetskopiering Brukerhåndbok
860252N02	SPRINT Brukerhåndbok
860256N01	DIALOGUE SIBAS/R Introduksjon
860264N01	SINTRAN III Sluttbrukerveiledning
860354N01	File System Verification Brukerhåndbok
860367N01	User Area Manager Brukerhåndbok
863017N04	NOTIS-DS Brukerhåndbok

860215N01 Filoversikt Introduksjon  
899053N01 File Manager Oppslagskort

RELEASED INFORMATION

- 5 = All ND-5000 ES systems is delivered with SINTRAN III version M std. A.  
(The limitation is the number of 500 processes - 134)
- 6 = All ND tpServer systems are delivered with SINTRAN III version M std C.  
(The limitation is the number of 500 processes - 190)

# **SINTRAN RESOURCE PARAMETERS.**

Max. available	XMSG ports/tasks	Processes 500/Backgr	Terminal	PIOC/HDLC	NOTS/X.21 HW	DOMINO/SCSI HW / BDIO	SCSI pools
ND-5000 ES SW plf. :	500 / 300	134/160	135	4 / 6	3 / 2	4 / 16	
ND-tpServer SW plf. :	500 / 300	190/200	172	2 / 2	1 / 1	4 / 40	

## **Resources used**

ND-5000 ES SW plf. : 27 / 20 2  
 ND-tpServer SW plf. : 80 / 50 10  
 Per SIBAS Process (DB): 2 2  
 Per SPRINT Printer Driver  
 (Local,OpenLan,NotS,Pers): 1 / 1  
 Remote printing : 0

## **Number of:**

Max. Printer definitions in SPRINT : 60  
 Max. telnet connection pr. ethIII : 124<sub>7</sub>  
     with NFS : 85<sub>7</sub>

- 7 = The value is the max. sum of SIBAS, OWS Access and Telnet connection.  
 OWS Access Server may only utilize the first Ethernet III controller  
 while SIBAS and Telnet can utilize all Ethernet III controllers.

Max. SIBAS call per ethIII controller:  
     - in Backend cpu: 100  
     - in Frontend cpu: 120  
 Max. SIBAS call per ethII controller (COSMOS): 45  
 Max. terminal connection per NET/ONE contr. : 30

Max. no of ethIII controllers utilized:  
     Running SIBAS/R - Frontend cpu: 4  
                       - Backend cpu: 4  
                       - Running FTP: 1  
                       - Running Telnet: 4  
     - Running OWS Access Server: 1  
     - Running NFS: 1