

# INSTALLATION GUIDE



**PRODUCT : A902-3500-0000    RELEASE: 07.00.77**



PRODUCT ID'S: D902-3000-0000 THROUGH D902-8505-0000

NCR ITX OPERATING SYSTEM

RELEASE BULLETIN

RELEASE 7.00.77

NOVEMBER 1992

\*\*\*\*\*  
\* \* \* NOTE \* \* \*  
\*

PLEASE READ SECTION V, 'USER INFORMATION', IN THIS RELEASE BULLETIN BEFORE INSTALLING YOUR SYSTEM.  
\*

ADDITIONAL USER INFORMATION REGARDING THIS RELEASE IS STORED IN FILE 'UIDITX7040' ON THE RELEASE  
\* MEDIA. PLEASE PRINT AND READ THIS FILE AFTER INSTALLING YOUR SYSTEM. REFER TO THE BEGINNING OF  
\* SECTION IV, 'INSTALLATION INSTRUCTIONS', IN THIS RELEASE BULLETIN FOR INSTRUCTIONS ON PRINTING  
\* THIS FILE.  
\*  
\*\*\*\*\*

\* \* \* NCR NETWORK PRODUCTS DIVISION-SAN DIEGO \* \* \*

TABLE OF CONTENTS

- I. INTRODUCTION .....1
- II. LIST OF PRODUCTS .....3
- III. DEPENDENCIES .....7
- IV. INSTALLATION INSTRUCTIONS (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9400/9500).....8
  - A. UPGRADING AN EXISTING SYSTEM FROM A MAJOR RELEASE (MODEL 35/MODEL 55/MODEL 65/MODEL75/9400IP/9500) ...8
  - B. UPDATING AN EXISTING SYSTEM TO A POINT RELEASE (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9500) .....9
  - C. INSTALLING OPTIONAL PRODUCTS (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9500) .....10
  - D. INSTALLING A NEW SYSTEM (MODEL 35/MODEL 55/MODEL 65/MODEL75/MODEL 85/9400IP/9500) .....10
  - E. ADDITIONAL STEPS FOR INSTALLING A MODEL 85 .....11
  - F. INSTALLING A NEW OPERATING SYSTEM FROM DISK(S) (9400) .....11
  - G. UPDATING AN EXISTING OPERATING SYSTEM FROM DISK(S) (9400) .....12
  - H. INSTALLING A NEW OPERATING SYSTEM FROM TAPE (9400) .....13
  - I. UPGRADING AN EXISTING OPERATING SYSTEM FROM TAPE (9400) .....14
  - J. INSTALLING OPTIONAL PRODUCTS (9400) .....14
- V. USER INFORMATION .....15
  - A. OBACKUP CONSIDERATIONS (MODEL 65/MODEL 75/MODEL 85) .....15
  - B. DISK CACHE GUIDELINES .....15
  - C. TAM RECOMPILE .....16
  - D. MIGRATING ITXNET FROM ITX RELEASE 6.01 TO ITX RELEASE 7.00 .....16
  - E. SCL ESCAPE .....17
  - F. SYSGEN CONSIDERATIONS .....17
  - G. SPOOL FILE CONSIDERATIONS .....17
  - H. ITXNET ON ISM PLATFORMS .....17
  - I. MIGRATING SYSTEM ACCESS CONTROL TO ITX 7.00 .....17
  - J. SYSGEN SECURITY .....18
  - K. TIMEOUT OF IDLE TERMINALS .....18
  - L. BASIC SYSTEM MESSAGE HANDLER CONSIDERATIONS .....18
- VI. REQUESTS FOR CHANGE (RFC'S) .....19
- VII. CORRECTED PROBLEMS .....20
- VIII. OUTSTANDING PROBLEMS .....21
- IX. CORRECTIONS NOT INSTALLED.....22
- X. DOCUMENTATION .....23
- XI. EDUCATION .....24
- XII. STAND ALONE APPLICATIONS .....25

I. INTRODUCTION

This release, ITX 7.00.77, is an update release for the Model 35, Model 55, Model 65, Model 75, Model 85, 9200(W/VAC), 9400IP, 9400 Classic and 9500 Operating Systems. The following list highlights some important 7.00 features. For more information on available features, refer to Chapter 1, Introduction, in the ITX Operating System Reference Manual (01-0545-F).

NCR System 10000 Model 35

- . Satellite System
- . Office Server, Branch System
- . Offline Development Machine
- . Table-top Size
- . Base System Components
  - . 2MB Processor Module
  - . Peripheral Module
  - . Performance Monitor
  - . Power Module
- . Options
  - . 6092 File Subsystem
  - . 4MB Memory
  - . Up to 14 TTY Communication Lines
  - . SCSI Host Adapter for Support of ITXNET or Switchable SCSI Peripherals

NCR System 10000 Model 65

- . Mid-Range System
- . Large System Configurability
- . Medium to Large Central or Regional System
- . Incremental Processing Architecture
- . Base System Components
  - . 8MB Processor Module
  - . Integrated Performance Monitor
  - . 5432 Communication Module
  - . 5496 File Subsystem
- . Options
  - . 5432 Communication Module(s)
  - . 5496 File Subsystem(s)
  - . 6099 File Subsystem(s)

NCR System 10000 Model 85

- . High End Clustered System
- . Very Large or Regional System Environment
- . Provides High End Migration from Other ITX Systems
- . Serves as a Major Node in an ITX Network Incremental Processing Architecture
- . Base System Components
  - . Two 24MB 5428 Dyadic Processor Modules
  - . Two Integrated Performance Monitors
  - . Two 5432 Dedicated Communication Modules
  - . One 5432 Switched Communication Module
  - . Two 5496 Dedicated File Subsystems
  - . One 5496 Switched File Subsystem
  - . One PC Workstation Console
    - . NCR PC 386SX (or Equivalent)
    - . 2MB Memory (Minimum)
    - . 2 Serial Communication Ports
    - . 14" VGA Monitor (Recommended)
    - . Microsoft Mouse (or Equivalent)
    - . MS DOS 4.1 (or Equivalent)
    - . Microsoft Windows 3.0
- . Options
  - . 5432 Communication Module(s) (Switched or Dedicated)
  - . 5496 File Subsystem(s) (Switched or Dedicated)
  - . 6099 File Subsystem(s) (Switched or Dedicated)

ITXNET Release 5.00

- . ITXNET Virtual Terminal (Remote Logon, Remote Execute)
- . Cluster routing enhancements
- . TAM distributed application terminal support

NCR System 10000 Model 55

- . Entry Level System
- . Host for Small Mid-size Installation
- . Replicated/Remote Branch System
- . Base System Components
  - . 4MB Processor Module
  - . Integrated Performance Monitor
  - . 5433 Communication/Peripheral Module
- . Options
  - . 5432 Communication Module(s)
  - . 5496 File Subsystem(s)
  - . 6092 File Subsystem(s)
  - . 6099 File Subsystem(s)
  - . Up to 16 MB Memory

NCR System 10000 Model 75

- . High End System
- . Very Large or Regional System Environment
- . Provides High-End Migration from Other ITX Systems
- . Serves as a Major Node in an ITX Network Incremental Processing Architecture
- . Base System Components
  - . 8 MB Processor Module
  - . Integrated Performance Monitor
  - . 5432 Communication Module
  - . Two 5496 File Subsystems
- . Options
  - . 5432 Communication Module(s)
  - . 5496 File Subsystem(s)
  - . 6099 File Subsystem(s)

ITX Windows - ITX to PC Interface

- . Allows up to 9 simultaneous ITX interactive processes per connection
- . ITX COBOL programs and ITX C programs can execute PC programs
- . Published programming standards
- . Improves programmer productivity
- . Microsoft Windows environment
- . Color/Graphics Windows interface to 3GL Languages
- . Allows cut and paste between jobs
- . Easy system interface: Icons, mouse, pull-down menus
- . Offload programming function to PC

PERFORMANCE

The system level and batch performance of the System 10000 Model 75 running under ITX 7.00 is equivalent to that of the model on ITX 6.01 for equivalent workloads and configuration.

MEMORY REQUIREMENTS

To run ITX 7.00, the system must have at least 2MB of memory. A Virtual Assist Chip (VAC) is also required. The working set size of ITX 7.00 has been measured and found to be an increase over the working set size for ITX 6.01 as shown in the following table:

	<u>ITX 6.01</u>	<u>ITX 7.00</u>
Monadic	850KB	946KB
Dyadic	1.2MB	1.3MB

EXTENDED MEMORY SYSTEM DISK REQUIREMENTS

The following lists the recommended ((SWAP )) file allocations and the minimum base OS sizes for ITX 7.00 Extended Memory systems:

EXHIBIT A:

Model 75:

<u>Memory</u>	<u>Recommended ((SWAP )) file (sectors)*</u>	<u>Base OS (sectors)</u>
24 MB	180,000	62,700
32 MB	240,000	62,700

\* Reference ITX 7.00 ITX Operating System Reference Manual, Installing Your NCR Software.

To accommodate these large ((SWAP)) file requirements, the usage of a 300 MB disk is required when using a Model 75 configured at 24 or 32 MB.

When configuring the system disk, the ((SWAP)) file must reside on (SYS1), and (SYS1) must reside on a single unit. This requires (SYS1) to reside on a unit consisting of the following minimum number of logical units when contained on the 300 MB disk:

EXHIBIT B:

<u>Model 65</u>		<u>Model 75</u>		<u>Model 85 Processor #1</u>		<u>Model 85 Processor #2</u>	
<u>Memory</u>	<u>Minimum Number of logical units</u>	<u>Memory</u>	<u>Minimum Number of logical units</u>	<u>Memory</u>	<u>Minimum Number of logical units</u>	<u>Memory</u>	<u>Minimum Number of logical units</u>
24 MB	6 LU	24 MB	8 LU	24 MB	8 LU	24 MB	8 LU
32 MB	8 LU	32 MB	10 LU	32 MB	10 LU	32 MB	10 LU

When installing your Extended Memory system, follow these disk requirements.

NOTE: It is not required that (SYS2) and (SYS3) reside on the 300 MB disk. They may continue to reside on the 135 MB disk, TPU 1000.

II. LIST OF PRODUCTS

All features, functions and operations described herein are not necessarily being marketed in all parts of the world.

<u>PRODUCT ID</u>	<u>PRODUCT DESCRIPTION</u>
A902-3500-0000	MODEL 35 FIRMWARE (9200 W/VAC)
A902-5500-0000	MODEL 55 FIRMWARE
A902-5940-0000	9400 CLASSIC FIRMWARE
A902-5941-0000	9400IP FIRMWARE
A902-6500-0000	MODEL 65 FIRMWARE
A902-6595-0000	MODEL 65M/9500 FIRMWARE
A902-7500-0000	MODEL 75 FIRMWARE
A902-8500-0000	MODEL 85 FIRMWARE
D902-3000-0000	ITX DELUXE RT PACKAGE (MODEL 35, 9200/VAC)
D902-3001-0000	ITX OPERATING SYSTEM (MODEL 35, 9200/VAC)
D902-3002-0000	ITX SWITCHABLE SCSI PERIPHERALS
D902-3003-0000	ITX O.S. KANJI MODULE
D902-3005-0000	ITX BMM TAPE SUBSYSTEM
D902-3006-0000	ITX WORM OPTICAL SUBSYSTEM
D902-3103-0000	ITX TOKEN RING LAN
D902-3104-0000	ITX ETHERNET TCP/IP RELEASE 1.0
D902-3106-0000	ITX ITXNET VIRTUAL TERMINAL OPTION
D902-3200-0000	ITX SNA PACKAGE
D902-3201-0000	ITX SNA PU TYPE 2 BASE
D902-3207-0000	ITX SNA ADVANCED PROGRAM TO PROGRAM COMM (APPC)
D902-3208-0000	ITX SNA COMM NETWORK MANAGEMENT SVS (CNMS)
D902-3209-0000	ITX SNA/X.25 PACKAGE
D902-3401-0000	ITX PROGRAMMING LIBRARY UPKEEP SYS (PLUS)
D902-3402-0000	ITX SYMBOLIC DEBUGGER
D902-3414-0000	ITX WINDOWS HOST
D902-3415-0000	ITX WINDOWS PC
D902-3419-0000	ITX NCR DYNAMIC DEBUG TOOL (DOT) HOST
D902-3421-0000	ITX NCR COMPOSER HOST
D902-3425-0000	ITX SCREEN MANAGER-CREATION/USER MODULE
D902-3426-0000	ITX SCREEN MANAGER-RUNTIME
D902-3427-0000	ITX COBOL MACRO EXPANSION FACILITY (CMAX)
D902-3501-0000	ITX NATIVE COBOL 74 COMPILER
D902-3502-0000	ITX COBOL 85 COMPILER
D902-3503-0000	ITX RPOPS COBOL COMPILER
D902-3504-0000	ITX BASIC INTERPRETER/COMPILER
D902-3505-0000	ITX PASCAL COMPILER
D902-3506-0000	ITX C COMPILER
D902-5000-0000	ITX DELUXE RT PACKAGE (MODEL 55, 9400/9400IP)
D902-5001-0000	ITX OPERATING SYSTEM (MODEL 55, 9400/9400IP)
D902-5002-0000	ITX SWITCHABLE SCSI PERIPHERALS
D902-5003-0000	ITX O.S. KANJI MODULE
D902-5005-0000	ITX BMM TAPE SUBSYSTEM
D902-5006-0000	ITX WORM OPTICAL SUBSYSTEM
D902-5010-0000	ITX DEVELOPMENT PACKAGE - DELUXE (FOUR USER)

## LIST OF PRODUCTS - (Continued)

<u>PRODUCT ID</u>	<u>PRODUCT DESCRIPTION</u>
D902-5101-0000	ITXNET
D902-5102-0000	ITX REMOTE BATCH SUBSYSTEM
D902-5103-0000	ITX TOKEN RING LAN
D902-5104-0000	ITX ETHERNET TCP/IP RELEASE 1.0
D902-5106-0000	ITX ITXNET VIRTUAL TERMINAL OPTION
D902-5200-0000	ITX SNA PACKAGE
D902-5201-0000	ITX SNA PU TYPE 2 BASE
D902-5207-0000	ITX SNA ADVANCED PROGRAM TO PROGRAM COMM (APPC)
D902-5208-0000	ITX SNA COMM NETWORK MANAGEMENT SVS (CNMS)
D902-5209-0000	ITX SNA/X.25 PACKAGE
D902-5301-0000	ITX OSI X.25/X.29 DTE BASE
D902-5401-0000	ITX PROGRAMMING LIBRARY UPKEEP SYS (PLUS)
D902-5402-0000	ITX SYMBOLIC DEBUGGER
D902-5414-0000	ITX WINDOWS HOST
D902-5415-0000	ITX WINDOWS PC
D902-5419-0000	ITX NCR DYNAMIC DEBUG TOOL (DDT) HOST
D902-5421-0000	ITX NCR COMPOSER HOST
D902-5425-0000	ITX SCREEN MANAGER-CREATION/USER MODULE
D902-5426-0000	ITX SCREEN MANAGER-RUNTIME
D902-5427-0000	ITX COBOL MACRO EXPANSION FACILITY (CMAX)
D902-5433-0000	ITX WINDOWS EXECUTIVE TTY/LAN (PC-8 USERS)
D902-5501-0000	ITX NATIVE COBOL 74 COMPILER
D902-5502-0000	ITX COBOL 85 COMPILER
D902-5503-0000	ITX RPOPS COBOL COMPILER
D902-5504-0000	ITX BASIC INTERPRETER/COMPILER
D902-5505-0000	ITX PASCAL COMPILER
D902-5506-0000	ITX C COMPILER
D902-6000-0000	ITX DELUXE RT PACKAGE (MODEL 65)
D902-6001-0000	ITX OPERATING SYSTEM (MODEL 65)
D902-6002-0000	ITX SWITCHABLE SCSI PERIPHERALS
D902-6003-0000	ITX O.S. KANJI MODULE
D902-6005-0000	ITX 8MM TAPE SUBSYSTEM
D902-6006-0000	ITX WORM OPTICAL SUBSYSTEM
D902-6010-0000	ITX DELUXE RT PACKAGE (MODEL 65M, 9500)
D902-6020-0000	ITX OPERATING SYSTEM (MODEL 65M, 9500)
D902-6101-0000	ITXNET
D902-6102-0000	ITX REMOTE BATCH SUBSYSTEM
D902-6103-0000	ITX TOKEN RING LAN
D902-6104-0000	ITX ETHERNET TCP/IP RELEASE 1.0
D902-6106-0000	ITX ITXNET VIRTUAL TERMINAL OPTION
D902-6200-0000	ITX SNA PACKAGE



LIST OF PRODUCTS - (Continued)

<u>PRODUCT ID</u>	<u>PRODUCT DESCRIPTION</u>
D902-6201-0000	ITX SNA PU TYPE 2 BASE
D902-6207-0000	ITX SNA ADVANCED PROGRAM TO PROGRAM COMM (APPC)
D902-6208-0000	ITX SNA COMM NETWORK MANAGEMENT SVS (CNMS)
D902-6209-0000	ITX SNA/X.25 PACKAGE
D902-6301-0000	ITX OSI X.25/X.29 DTE BASE
D902-6401-0000	ITX PROGRAMMING LIBRARY UPKEEP SYS (PLUS)
D902-6402-0000	ITX SYMBOLIC DEBUGGER
D902-6414-0000	ITX WINDOWS HOST
D902-6415-0000	ITX WINDOWS PC
D902-6419-0000	ITX NCR DYNAMIC DEBUG TOOL (DDT) HOST
D902-6421-0000	ITX NCR COMPOSER HOST
D902-6425-0000	ITX SCREEN MANAGER-CREATION/USER MODULE
D902-6426-0000	ITX SCREEN MANAGER-RUNTIME
D902-6427-0000	ITX COBOL MACRO EXPANSION FACILITY (CMAX)
D902-6433-0000	ITX WINDOWS EXECUTIVE TTY/LAM (PC-8 USERS)
D902-6501-0000	ITX NATIVE COBOL 74 COMPILER
D902-6502-0000	ITX COBOL 85 COMPILER
D902-6503-0000	ITX RPOPS COBOL COMPILER
D902-6504-0000	ITX BASIC INTERPRETER/COMPILER
D902-6505-0000	ITX PASCAL COMPILER
D902-6506-0000	ITX C COMPILER
D902-7000-0000	ITX DELUXE RT PACKAGE W/COBOL 85 (MODEL 75)
D902-7001-0000	ITX OPERATING SYSTEM W/COBOL 85 (MODEL 75)
D902-7002-0000	ITX SWITCHABLE SCSI PERIPHERALS
D902-7003-0000	ITX O.S. KANJI MODULE
D902-7005-0000	ITX 8MM TAPE SUBSYSTEM
D902-7006-0000	ITX WORM OPTICAL SUBSYSTEM
D902-7010-0000	ITX DELUXE RT PACKAGE W/COBOL 74 (MODEL 75)
D902-7020-0000	ITX OPERATING SYSTEM W/COBOL 74 (MODEL 75)
D902-7101-0000	ITXNET
D902-7102-0000	ITX REMOTE BATCH SUBSYSTEM
D902-7103-0000	ITX TOKEN RING LAN
D902-7104-0000	ITX ETHERNET TCP/IP RELEASE 1.0
D902-7106-0000	ITX ITXNET VIRTUAL TERMINAL OPTION
D902-7200-0000	ITX SNA PACKAGE
D902-7201-0000	ITX SNA PU TYPE 2 BASE
D902-7207-0000	ITX SNA ADVANCED PROGRAM TO PROGRAM COMM (APPC)
D902-7208-0000	ITX SNA COMM NETWORK MANAGEMENT SVS (CNMS)
D902-7209-0000	ITX SNA/X.25 PACKAGE
D902-7301-0000	ITX OSI X.25/X.29 DTE BASE

## LIST OF PRODUCTS - (Continued)

<u>PRODUCT ID</u>	<u>PRODUCT DESCRIPTION</u>
D902-7402-0000	ITX SYMBOLIC DEBUGGER
D902-7414-0000	ITX WINDOWS HOST
D902-7415-0000	ITX WINDOWS PC
D902-7419-0000	ITX NCR DYNAMIC DEBUG TOOL (DDT) HOST
D902-7421-0000	ITX NCR COMPOSER HOST
D902-7425-0000	ITX SCREEN MANAGER-CREATION/USER MODULE
D902-7426-0000	ITX SCREEN MANAGER-RUNTIME
D902-7427-0000	ITX COBOL MACRO EXPANSION FACILITY (CMAX)
D902-7433-0000	ITX WINDOWS EXECUTIVE TTY/LAN (PC-8 USERS)
D902-7501-0000	ITX NATIVE COBOL 74 COMPILER
D902-7502-0000	ITX COBOL 85 COMPILER
D902-7503-0000	ITX RPOPS COBOL COMPILER
D902-7504-0000	ITX BASIC INTERPRETER/COMPILER
D902-7505-0000	ITX PASCAL COMPILER
D902-7506-0000	ITX C COMPILER
D902-8001-0000	ITX OPERATING SYSTEM W/COBOL 85 (MODEL 85)
D902-8003-0000	ITX O.S. KANJI MODULE
D902-8005-0000	ITX BMM TAPE SUBSYSTEM
D902-8006-0000	ITX WORM OPTICAL SUBSYSTEM
D902-8010-0000	ITX OPERATING SYSTEM W/COBOL 74 (MODEL 85)
D902-8102-0000	ITX REMOTE BATCH SUBSYSTEM
D902-8103-0000	ITX TOKEN RING LAN
D902-8104-0000	ITX ETHERNET TCP/IP RELEASE 1.0
D902-8200-0000	ITX SNA PACKAGE
D902-8201-0000	ITX SNA PU TYPE 2 BASE
D902-8207-0000	ITX SNA ADVANCED PROGRAM TO PROGRAM COMM (APPC)
D902-8208-0000	ITX SNA COMM NETWORK MANAGEMENT SVS (CNMS)
D902-8209-0000	ITX SNA/X.25 PACKAGE
D902-8301-0000	ITX SNA X.25/X.29 DTE BASE
D902-8402-0000	ITX SYMBOLIC DEBUGGER
D902-8415-0000	ITX WINDOWS PC
D902-8425-0000	ITX SCREEN MANAGER-CREATION USER MODULE
D902-8426-0000	ITX SCREEN MANAGER-RUNTIME
D902-8427-0000	ITX COBOL MACRO EXPANSION FACILITY (CMAX)
D902-8433-0000	ITX WINDOWS EXECUTIVE TTY/LAN (PC-8 USERS)
D902-8501-0000	ITX NATIVE COBOL 74 COMPILER
D902-8502-0000	ITX NATIVE COBOL 85 COMPILER
D902-8503-0000	ITX RPOPS COBOL COMPILER
D902-8504-0000	ITX BASIC INTERPRETER/COMPILER
D902-8505-0000	ITX PASCAL COMPILER

III. DEPENDENCIES

Release 7.00.77 uses the following firmware releases:

Platform	Firmware Release
Model 35	CB5V04Q016
Model 55	CX5V06Q009
Model 65	MX5V07Q013
Model 75	DX5V07Q016
Model 85	DX5V07Q016
9400	IS5V04Q021
9400IP	MB5V04Q024
9500	DP5V04Q024

Users need only do a SYSGEN to add additional products and/or to change the system configuration. For further information, refer to the ITX Operating System Reference Manual (DI-0545-F).

On all the platforms, the ITX 7.00 software must reside, after initial system boot from tape, on a 45MB or greater single-spindle, Multibus-connected SCSI disk. If you have an Extended Memory system, please refer to EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, INTRODUCTION. If multiple host adapters (HA) are used, the system software must be resident on the first HA. See Section IV, Part B, UPDATING AN EXISTING SYSTEM TO A POINT RELEASE, for actual disk space requirements.

NOTE: 1) All ITX 7.00 systems are 'SET' systems. To run ITX 7.00, all processors are required to have at least 2MB of memory and a VAC chip.

2) ITX 7.0 on a Classic system requires the Extended Arithmetic Chip (EAC) upgrade kit to be able to execute Tam Control Monitor (TCM). The use of C language code in the ITX 7.0 Telecommunication Access Method (TAM) software requires the EAC to execute. This problem can be seen when the user tries to EXECUTE \$TCM and receives the message:

"494 Hardware Feature, (EAC) Required for this Program".

The kit number for this upgrade is 5425-K530-V001. Any customer on a Classic System who is using communications and is planning to migrate to ITX 7.0 needs to purchase this upgrade to install this feature.

IV. INSTALLATION INSTRUCTIONS (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9400/9500)

**\*\* CAUTION: READ SECTION V, 'USER INFORMATION', IN THIS RELEASE BULLETIN BEFORE INSTALLING YOUR SYSTEM. \*\***

The User Information Document (UID) file on the release media contains important additions and changes to the printed publications for your system. Be sure to print this information before installing your new ITX system or as early during the installation process as possible.

If you are upgrading to a new ITX release, print the User Information Document on your old system. To print this document, enter the following SCL statements:

```
AS A UIDITX7038 (release media)
AS B (LP, ANY)
MOVE A B
```

If you are a first-time user, follow the installation procedures in this Release Bulletin, then print the User Information Document.

If you are unfamiliar with installing ITX software, please refer to INSTALLING SYSTEM SOFTWARE in your ITX Operating System Reference Manual (D1-0545-F).

A. UPGRADING AN EXISTING SYSTEM FROM A MAJOR RELEASE (MODEL 35/MODEL 55/MODEL 65/MODEL 75/9400IP/9500)

Follow these steps for upgrading from a major release such as from ITX 5.01 or ITX 6.01 to ITX 7.00.

1. If you have user files residing on the system disk, back up the files to tape or another disk. (Moving the new software onto the disk will erase all existing files.) Move current system files to another disk for backup.
2. If you are upgrading to an Extended Memory system, back up current files on the 300 MB disk to be used as the system disk. (Moving the software onto the disk will erase all existing files.) Verify the initialization of the 300 MB disk with adequate capacity for SYS1 as specified in EXHIBIT B under EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, INTRODUCTION.
3. If you wish to have \$SYSGEN migrate your configuration or Access Control information from your existing release to ITX 7.00, you must first save a copy of your current system for this purpose. Minimally, to migrate the configuration, you must save a copy of your current system's first system disk and its associated files; for migrating Access Control information (the ((SAC . . .)) file) a copy of the third system disk is needed. To make copies of these units, either use the SCL Full Media MOVE command with the 'SO' option, or use \$SYSGEN to make copies of these units.

Once you have successfully installed ITX 7.00, you will need to configure the above-referenced unit into your system before you can migrate the required information. For more details on migrating configuration and Access Control information, see the "Installing your System" section of the ITX Operating System Reference Manual (D1-0545-F).

4. If multiple host adapters (HA) are used, the system software must be resident on the first HA.
5. Load the new ITX software cartridge into the streaming tape drive.
6. Reboot from tape. (ESCAPE CONTROL T, or turn the processor off, then on.)  
NOTE: ESCAPE CONTROL T can only be used when updating from a point release. If you are upgrading from a major release, you must turn the processor off, then on.
7. MOVE the software to your system disk. If you are upgrading to an Extended Memory system, the system disk is your 300 MB disk. TAPE BOOT requires the system disk to be either TPU 1000 or 1001.
8. Reboot from disk.
9. Use \$SYSGEN to modify the default configuration if needed, or migrate previous stored SYSGEN information or add optional products. If you have purchased optional products, such as \$PASCAL, follow the steps in C. INSTALLING OPTIONAL PRODUCTS.
10. If you are upgrading to an Extended Memory system, increase the ((SWAP)) file size (Screen 3B in \$SYSGEN) to the specified size.
11. You must reboot using ESCAPE CONTROL-L or POWER ON/OFF for the new system to be available for use.
12. Restore the user files from tape or disk.

B. UPDATING AN EXISTING SYSTEM TO A POINT RELEASE (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9500)

Follow these steps for upgrading systems within a major release, such as ITX 7.00.22 to ITX 7.00.77.

NOTE: For a Model 85 system, these steps must be performed for each processor.

The following space requirements must be noted when updating systems from streaming tape:

- The temporary input device must have enough free space to hold the contents of the entire streamer tape. For the Base Operating system, these requirements are approximately

9400 Classic (not on a 6530)	43000 Sectors
9400IP	47500 Sectors
Model 35/9200 with VAC	49000 Sectors
Model 55	47100 Sectors
Model 65M/9500	62000 Sectors
Model 65	62500 Sectors
Model 75	65700 Sectors
Model 85	70000 Sectors

Additional space will be required if additional products have been purchased. Space requirements for these files can be obtained from examining your current system disk and adding the sizes to the above numbers.

- If the temporary input device unit is different from the current system disk(s), then there must be enough free space on the system disk(s) for two operating systems (and products), excluding the ((SWAP )) and ((SP00L )) files. These two files take up approximately the number of sectors given below:

9400 Classic (not on a 6530)/9400IP/Model 35/Model 55	15500 Sectors
Model 65/75/85/9500	30500 Sectors

If you have a system with Extended Memory, refer to EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, INTRODUCTION.

- If the temporary input device is the same as one of the system disks, then there must be enough free space on this unit to hold the contents of the entire streaming tape, as outlined above.
  - If you do not have a unit with enough free space, splitting up your system disks (via \$SYSGEN) is one way of providing more space on these disks. For example, moving SYS2 to a different unit than SYS1 (and then rebooting) will provide extra disk space on the SYS1 unit.
- If you are upgrading a non-Extended Memory system to an Extended Memory system, back up current files on the 300 MB disk to be used as the system disk. (Moving the new software onto the disk will erase all existing files.) Verify the initialization of the 300 MB disk with adequate capacity for SYS1 as specified in EXHIBIT B under EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, INTRODUCTION.
  - Load the new ITX software cartridge into the streaming tape drive.
  - MOUNT a scratch disk for restoring the tape, if the temporary disk is not the same as the system disk.
  - EX \$SYSGEN. (From existing system.)
  - If you have optional products on the same release media as your base system, on Screen 1 answer 'Y' to #3: DO YOU WISH TO ADD A NEW PRODUCT?
  - On Screen 1, answer 'Y' to #4: DO YOU WISH TO UPDATE EXISTING PRODUCT SET?
  - When prompted for SOFTWARE INPUT DEVICE, enter the unit number of the streaming tape device, such as (0,MT). Enter the scratch disk unit number for the TEMPORARY INPUT DISK.  
  
If you are upgrading a non-Extended Memory system to an Extended Memory system, enter the disk unit numbers for SYS1 (contained on the 300 MB disk), SYS2 and SYS3. NOTE: SYS1 must be on a unit capable of supporting the required ((SWAP )) file size as specified in EXHIBIT B under EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, INTRODUCTION.
  - Complete the SYSGEN procedure. If you are upgrading a non-Extended Memory system to an Extended Memory system, increase the ((SWAP )) file size (Screen 3B) to the specified size. You must reboot using ESCAPE CONTROL-L or POWER ON/OFF for the new system to be available for use.

C. INSTALLING OPTIONAL PRODUCTS (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9500)

Optional products which have not already been added in Section C can be added to your system through one of two methods.

**METHOD 1:** If you installed your system via TAPEBOOT, as is outlined in Part A, UPGRADING AN EXISTING SYSTEM FROM A MAJOR RELEASE, follow these steps to add the additional products to your system.

1. EX \$\$SYSGEN
2. On Screen 1, select 'Y' to #3: DO YOU WISH TO ADD A NEW PRODUCT?
3. When prompted for the SOFTWARE INPUT DEVICE, enter the unit number of your first system disk, such as (D1, 0). Continue on with the SYSGEN procedure, modifying the configuration if needed. You must reboot before the new products and configuration will be available for use.

**METHOD 2:** If you updated your system as is outlined in Part B, UPDATING AN EXISTING SYSTEM TO A POINT RELEASE, follow these steps to add the additional products to your system.

1. Load the software cartridge which holds the optional software products into the streaming tape drive.
2. MOUNT a scratch/temporary input unit (for restoring the tape). See comments under Part C for information on space requirements when restoring streaming tapes.
3. EX \$\$SYSGEN
4. On Screen 1, select 'Y' to #3: DO YOU WISH TO ADD A NEW PRODUCT?
5. When prompted for the SOFTWARE INPUT DEVICE, enter the unit number of the streaming tape device, such as (0, MT). Enter the scratch disk unit number for the TEMPORARY INPUT DISK. Continue on with the SYSGEN procedure; modifying the configuration if needed. You must reboot before the new products and the new configuration will be available for use.

D. INSTALLING A NEW SYSTEM (MODEL 35/MODEL 55/MODEL 65/MODEL 75/MODEL 85/9400IP/9500)

Follow these steps if this is the first time you are installing ITX on the system.

**NOTE:** For a Model 85 system these steps must be performed for each processor.

1. Load the ITX software cartridge into the streaming tape drive.
2. Turn the processor on to boot software from tape.
3. Initialize the system disk.

**NOTE:** If you are installing an Extended Memory system, verify that the system disk has the 300 MB capacity initialized to adequately support SYS1 as specified in EXHIBIT B under EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, Introduction.

4. Move the software to the system disk. The new system must be moved to TPU 1000 or a unit that is defined in the new system's configuration. If you are installing an Extended Memory system, the new system must be moved to TPU 1001 or a unit that is defined in the system's configuration.
5. Reboot from disk.
6. If you are installing an Extended Memory system, increase the ((SWAP )) file size (Screen 3B in \$\$SYSGEN) to the specified size detailed in EXHIBIT B under EXTENDED MEMORY SYSTEM DISK REQUIREMENTS in Section I, Introduction. You must reboot again using ESCAPE CONTROL-L or POWER ON/OFF for the SYSGEN change to take place.

If you are installing a Model 85 system, refer to Section E, Additional Steps for Installing a Model 85.

If you have purchased optional products such as \$COBOL, follow the steps in Part C, INSTALLING OPTIONAL PRODUCTS, METHOD #1.

E. ADDITIONAL STEPS FOR INSTALLING A MODEL 85

Before you can use ITXNET and the inter-processor bus on the Model 85 system, you must change the PPC configuration of one of the processor nodes. (This change is necessary after the initial installation of the software because the software distribution tapes for both processor nodes are identical.) Run \$SYSGEN to make the following changes:

1. On the processor node that is to be designated as NODE2, select Screen 512, PPC Processor Configuration, and do the following:
2. Change the CONNECT TYPE field for PPC Processor UNIT 000 from LOCAL to REMOTE.
3. Change the CONNECT TYPE field for PPC Processor UNIT 001 from REMOTE to LOCAL.

To configure the Model 85 system for switchable communications, run \$SYSGEN to do the following:

1. On both processor nodes, select Screen 8, Multibus Board Information.
2. Enter "SW-ISM" in the TYPE field for the ISM boards involved in Switchable SCSI Communications.

To reserve switchable terminals, COM Printers, and COM links for initial use by one of the processor nodes, run \$SYSGEN to do the following:

1. Change the RESERVE fields of the units you want to reserve for initial use by a processor node from "NO" (default) to "YES" on that processor node.

The following chart shows the numbers of the applicable \$SYSGEN screens.

<u>Devices, Lines, or Links</u>	<u>\$SYSGEN Screens</u>
TTY Terminals	0, 5, 502
TTY Printers	0, 5, 504
Pollable lines	0, 5, 505
DLC Secondary lines	0, 5, 506
DLC ABM Lines	0, 5, 507
DLC Primary lines	0, 5, 508
BISYNC General lines	0, 5, 509
BMC BISYNC lines	0, 5, 515

For additional information about installing switchable communications and using \$SYSGEN and ITXNET, refer to the following manuals:

- o ITX System Peripheral Installation Manual (D2-0166-A), Chapter 6 - Model 85 Switchable SCSI Communications Installation
- o ITX Operating System Reference Manual (D1-0545-F), Chapter 2 - Installing System Software
- o NCR System 10000 Model 85 System Administrator's Guide (D1-2081-A), Chapter 5 - ITXNET-Related Information

F. INSTALLING A NEW OPERATING SYSTEM FROM DISK(S) (9400)

Follow these steps for upgrading from a major release such as ITX 5.01 or 6.01 to 7.00.

NOTE: If you want to use \$SYSGEN Screen 9, "Migrate System Information From a Previous Release," to copy your system configuration and/or access control information to your new system, there are certain steps you must take before you install the new release of software. These steps are outlined in Part A, UPGRADING AN EXISTING SYSTEM FROM A MAJOR RELEASE.

1. If you received the ITX software on several disks, check the disk directories to determine which is the bootable system disk; it contains the files "\$SYS1," "\$SYS2," and "\$SYS3." This system disk is the only one capable of running \$SYSGEN and Diagnostics. The second disk contains the utilities and is not bootable. The third disk contains any optional products ordered. You must complete the installation procedure for your system to be usable.
2. Load the new system disk (TPU 1000), and reboot by using <ESCAPE> and <CONTROL- L> or by powering the processor off, then on. Check to make sure you are booted to the new software. The displayed software release level should match the level you are trying to install.

NOTE: The loadable system disk is set up to look for SYS2 and SYS3 files on TPU 1000, disk unit 01. If you load the disk on another unit, the following message will be displayed:

H111 UNABLE TO MOUNT DI01 AS SYSTEM DISK X. RETRY=N/L NEW UNIT=XXX

Answer the prompt with the unit number where the disk is loaded. This must be a disk that is pre-configured in the new release of software.

3. Enter EX \$\$SYSGEN. The system displays Screen 1, "SYSGEN Information."
4. Enter Y for Item 3 (DO YOU WISH TO ADD A NEW PRODUCT?). The system displays the following prompt:  
SOFTWARE INPUT DEVICE: (  
Enter the unit number and device type (DI,xxx) of the disk unit on which you loaded the distribution system disk. Press <N/L> to proceed to the next screen. The system displays Screen 2, "SYSGEN Devices."
5. Specify the unit number of the fixed disk on which your new system will reside for Items 1, 2, and 3 on Screen 2. The default is disk unit 0 (DI,000).
6. If necessary, modify other aspects of your system configuration at this time. Refer to Chapter 2, Installing System Software, in the ITX Operating System Reference Manual for a detailed description of each of the \$\$SYSGEN screens.
7. Complete \$\$SYSGEN by selecting Item 2 on Screen 0, the main menu (NO CHANGES -- CONTINUE NEXT PHASE).
8. Unload the removable disk whose contents you just moved to the system disk and load the second distribution disk. Press <ESCAPE> and <CONTROL-B> on the firmware console to reboot your system.
9. Enter EX \$\$SYSGEN. The system displays Screen 1, "\$\$SYSGEN Information."
10. To load the utilities from the second distribution disk, enter Y for Item 5 on Screen 1 (DO YOU WISH TO INPUT REMAINING UTILITIES?). The screen displays the following prompt:  
SOFTWARE INPUT DEVICE: (  
11. Enter the unit number and device type (DI,xxx) of the disk unit into which you loaded the second distribution disk and press <N/L>.
12. Complete \$\$SYSGEN by selecting Item 2 on Screen 0, the main menu (NO CHANGES -- CONTINUE NEXT PHASE).
13. When the system prompt (?) appears, press <ESCAPE> and <CONTROL-B> on the firmware console to reboot your system. When the system is rebooted, unload the second distribution disk whose contents you just moved to the system disk.  
If you do not have any optional products to add, your operating system is installed and ready to use.  
If you have optional products such as COBOL, etc., to add from a third distribution disk, follow the steps in Part I, INSTALLING OPTIONAL PRODUCTS.

#### G. UPDATING AN EXISTING OPERATING SYSTEM FROM DISK(S) (9400)

Follow these steps for upgrading 9400 Operating Systems within a major release such as ITX 7.00.22 to ITX 7.00.77.

1. If you received the ITX software on several disks, check the disk directories to determine which is the bootable system disk; it contains the files "\$SYS1", "\$SYS2", and "\$SYS3". The system disk is capable of running SYSGEN and Diagnostics only. The second disk contains the utilities and is not bootable. The third disk contains any optional products you ordered. You must complete the installation procedure in order for your system to be usable.
2. If you are updating existing optional products, such as \$COBOL, you must mount the disk containing the optional products OR move the contents of the disk (SCL MOVE with the SO parameter) to a scratch disk unit other than your current system disk.
3. Load and mount the new system disk.
4. Enter EX \$\$SYSGEN.
5. On screen 1, enter Y for Item 4 (DO YOU WISH TO INPUT A NEW BASE PRODUCT SET?)



6. When prompted for SOFTWARE INPUT DEVICE, enter the unit number where the new distribution disk with \$SYS1, \$SYS2, and \$SYS3 is mounted. Continue with the SYSGEN procedure. When processing the input, \$SYSGEN will display a series of informational messages:

```
G022 - READING OPERATIO1
.
.
G022 - READING UTILITIE01
.
.
G022 - MODULE $MINT NOT FOUND
G022 - MODULE $CAP NOT FOUND
G022 - MODULE $TCM NOT FOUND
.
.
```

The modules not found are located on the Utilities disk and will be automatically processed in Step #10 below.

7. If you are updating optional products, \$SYSGEN will display the message "G500 - XXXXXXXX NOT FOUND. MOUNT DEVICE WITH PROPER INPUT IMAGE (N/L WHEN DONE, R TO RESPECIFY, X TO 'SKIP' INPUT, A TO ABORT)". Choose R to respecify and enter the disk unit number for the optional products.

Respond to the following messages with 'X' to skip input.

```
G500 - TAM 01 NOT FOUND...
G500 - SORT 01 NOT FOUND...
G500 - MAGNETIC01 NOT FOUND...
G500 - TEXTEDIO1 NOT FOUND...
G500 - SACUTIL01 NOT FOUND...
```

These modules will be automatically updated in Step #10.

8. Select Item 2 on Screen 0, the main menu, (NO CHANGES -CONTINUE NEXT PHASE). Unload the removable system disk and load and mount the utilities disk (second disk). Then reboot your system from the updated system disk.
9. Enter EX \$SYSGEN. On screen 1, enter Y to Item 5: (DO YOU WISH TO INPUT REMAINING UTILITIES?).
10. When prompted for the SOFTWARE INPUT DEVICE, enter the unit number and device type (DI,xxx) of the disk with the utilities. Select Item 2 on screen 0, the main menu, (NO CHANGES -- CONTINUE NEXT PHASE). Reboot from the updated system disk.
11. If you do not have any optional products to add, your operating system is installed and ready to use.

If you are adding new optional products such as COBOL, PASCAL, BASIC, etc. to your system, follow the steps in Part I, INSTALLING OPTIONAL PRODUCTS.

#### H. INSTALLING A NEW OPERATING SYSTEM FROM TAPE (9400)

Follow these steps if this is the first time you are installing a ITX 7.00 9400 Operating System from tape.

1. If you received the ITX 7.00 software on magnetic tape, move the tape or tapes to disk using an SCL Full Media MOVE with the S0 parameter. If you received your ITX software on streaming tape, RESTORE it to disk using \$STREAM RESTORE with the S0 parameter. ITX 7.00 requires that the disk TPU be 1000, 1001, or 1002 if you wish to boot from it.
2. Boot from the new system disk (TPU 1000, 1001, 1002). Check to make sure you are booted to the new software. The displayed software release level should match the level you are trying to install.
3. Enter EX \$SYSGEN. The system displays Screen 1, "SYSGEN information."
4. Enter Y for Item 3 (DO YOU WISH TO ADD A NEW PRODUCT?). The system displays the following prompt:

```
SOFTWARE INPUT DEVICE: (
```

Enter the unit number and device type (DI,xxx) of the disk unit which contains the new operating system files. Press <N/L> to proceed to the next screen. The system displays Screen 2, "SYSGEN Devices."

5. Specify the unit number of the disk containing your new software for Items 1, 2, and 3.
6. If necessary, modify other aspects of your system configuration at this time. Refer to Chapter 2, Installing System Software, in the ITX Operating System Reference Manual for a detailed description of each of the \$SYSGEN screens.
7. Complete \$SYSGEN by selecting Item 2 on Screen 0, the main menu, (NO CHANGES -- CONTINUE NEXT PHASE).

8. You must reboot your system before any \$\$SYSGEN changes become effective. Press <ESCAPE> and <CONTROL - B> to reboot your system.

I. UPGRADING AN EXISTING OPERATING SYSTEM FROM TAPE (9400)

Follow these steps for upgrading 9400 Operating Systems within a major release such as ITX 7.00.22 to ITX 7.00.77.

1. If you received the ITX 7.00 software on magnetic tape, move the tape or tapes to disk using an SCL Full Media MOVE with the S0 parameter. If you received your ITX software on streaming tape, RESTORE it to disk using \$\$STREAM RESTORE with the S0 parameter. ITX 7.00 requires that the disk TPU be 1000, 1001, or 1002 if you wish to boot from it.
2. Boot from your old system disk.
3. Enter EX \$\$SYSGEN. The system displays Screen 1, "SYSGEN Information."
4. Select Y for Item 4 (DO YOU WISH TO INPUT A NEW BASE PRODUCT SET?). The system displays the following prompt:  
SOFTWARE INPUT DEVICE: (  
Enter the unit number and device type (DI,xxx) of the disk unit which contains the new operating system files. Press <N/L> to proceed to the next screen. The system displays Screen 2, "SYSGEN Devices."
5. Specify the unit number of the disk containing your old operating system for Items 1, 2, and 3.
6. Complete \$\$SYSGEN by selecting Item 2 on Screen 0, the "Main Menu" (NO CHANGES -- CONTINUE NEXT PHASE).
7. You must reboot your system before any \$\$SYSGEN changes become effective. Press <ESCAPE> and <CONTROL-B> to reboot your system.

J. INSTALLING OPTIONAL PRODUCTS (9400)

1. Mount the disk containing the optional products.
2. Enter EX \$\$SYSGEN.
3. On Screen 1, enter Y for Item 3, (DO YOU WISH TO ADD A NEW PRODUCT?). The system displays the following prompt:  
SOFTWARE INPUT DEVICE: (  
Enter the unit number and device type (DI,xxx) of the disk containing the optional products.
4. Complete \$\$SYSGEN by selecting Item 2 on Screen 0, the main menu, (NO CHANGES -- CONTINUE NEXT PHASE).
5. You must reboot your system before any \$\$SYSGEN changes become effective. Press <ESCAPE> and <CONTROL-B> to reboot your system.

V. USER INFORMATIONA. QBACKUP CONSIDERATIONS (MODEL 65, MODEL 75, MODEL 85)

Existing System 10000 Model 65, 75 or 85 customers may experience problems while executing QBACKUP on ITX 7.00. This condition is due to a problem on the following extended memory ISM boards: 348-0018163, 348-0017713 and 348-0027427. The problem symptoms are system or SCSI peripheral lockup, console error messages W310- SCSI Host Adapter Error or W208- I/O Unsuccessful After Many Retries, and system error log entry IE, exception code 00000009 and status 57. System 10000 Model 65, 75 or 85 customers encountering these symptoms while executing QBACKUP should contact the local Field Engineer to check the above mentioned ISM boards.

B. DISK CACHE GUIDELINES

NOTE: With ITX 7.00, Disk Cache is a bundled part of the Operating System. If you choose not to use this feature, steps must be taken to disable it.

GENERAL DESCRIPTION

Disk Cache is a feature designed to keep a number of I/O buffers in memory for file processing. These buffers can be referenced by any process. Sometimes called Buffer Pooling, Disk Cache allows many I/O requests to be satisfied from the cache rather than by physically accessing a disk file. Performance is improved by reducing the number of physical inputs required.

HOW TO ACTIVATE/SETUP DISK CACHE

Disk Cache is a bundled feature; the size of the cache will default to approximately twenty percent of the amount of real memory in the system. The size of the cache can be altered using \$SYSGEN. To turn off the Disk Cache feature, enter a size of 0. The user also controls which files will be placed in the cache by specifying CA(che) on the SCL AS(sign) command. A number of conditions should be taken into consideration when selecting the size of the Disk Cache and the files to be placed in the cache.

SIZE OF THE DISK CACHE

The size of the Disk Cache can be changed through Screen #3: CHANGE SYSTEM PARAMETERS? of \$SYSGEN. Option 1: CHANGE FILE SIZES has the ability to change the size of the Disk Cache. The number initially displayed is the default for the system in Kilo-bytes. The minimum value is 64K and the maximum value is approximately fifty percent of the amount of memory in the system or 14MB (14,000K), whichever is smaller. If an invalid value is entered, the range of valid values will be displayed.

If the memory is available, it is recommended that the size of the Disk Cache (Buffer Pool) be initially set to 25 percent of the size of all files to be cached. Optimum Disk Cache performance may require some fine tuning later.

In any case, the amount of memory allocated to Disk Cache should be available over and above the amount of other memory needed at the time of maximum system usage, based on the number of users supported, the product set being used and the applications being run. The amount of memory needed for a specific job mix can be calculated based on the memory requirements listed in "System Performance", Chapter 20, in the ITX Operating System Reference Manual (DI-0545-F). The amount of real memory remaining after this calculation is the memory available for Disk Cache. Cache structures are swappable; therefore, if the size of the cache is larger than the amount of memory available, swapping may occur which may degrade the system. In this event the maximum benefit will not be obtained from this feature.

The size desired is also related to the number of files assigned to use the cache, the type of files, and the span of reference. Ideally, the cache must be large enough to hold all the blocks necessary to complete a series of accesses before any blocks are aged out. For instance, if a program references the same six blocks over and over again and the cache can only hold five blocks, one block would be needlessly aged out because the cache was too small.

OPTIMAL USAGE OF DISK CACHE

Files are directed to use the cache by indicating the CA(che) option on the SCL AS(sign) command. Greater flexibility is provided by having Disk Cache selectable on a per file basis. If all files were to use the cache, the cache would have to be too large. Moreover, not all files will benefit from being in the pool. As a file is accessed, blocks are placed into the Disk Cache. The Cache Manager is designed to perform write-through.

With write-through, each physical output request is not only placed in the cache, but is also written immediately to the disk. This feature protects files in case of a system failure because all of the data will have been written to the disk; however, the number of physical outputs will not be reduced. When a physical input request is generated, the cache is searched for the requested block. If the block is not in the pool, it is read from the disk and placed in the pool. Therefore, the files that should be placed in the cache are those where input requests can be repeatedly satisfied from the cache.

To determine the number of physical INPUTS and OUTPUTS that are being done, AS(sign) the files with the KE(ep) option and execute the desired job(s). At the conclusion of the job(s), the number of physical I/O's associated with the files can be obtained from a DISPLAY ST ALL F LONG. Files that are being written to much more than they are being read from may not be good candidates to place in the pool. It is important to DEA(ssign) all of the files once the values are obtained. When a file is deassigned by the last process accessing that file, all the blocks associated with the file are released from the cache. This will open up more space in the cache.

The DISPLAY ST ALL F LONG can also be used to compare values from when a job is run without using the cache with values from when it is run while using the cache. A comparison of values for physical inputs for a file will show the number of inputs saved. Once the cache is full, new blocks being added will cause other blocks to be aged out. The blocks being released from the cache are those that have been both least recently and less frequently referenced. As more files are included in the pool, the number of blocks being aged out may increase. If this causes the number of physical inputs for a file in the cache to increase, the pool may need to be made larger.

Since the performance improvements associated with the Disk Cache feature result from reducing physical inputs, most Index files will benefit from this feature since the index portion will be kept in the pool and not have to be re-read off the disk. For the most part, sequentially accessed files should not be placed in the cache; however, it may be useful for shared sequential files opened for extend. Relative files will benefit if there are blocks with enough commonality of reference. The maximum benefit will be attained for those processes which are re-reading or sharing the same block of a file.

C. TAM RECOMPILE

All TAM users will be required to recompile all MDL's when migrating to ITX 7.00. If you are migrating between point releases (i.e. 7.00.22 to 7.00.77) this is not necessary.

D. MIGRATING ITXNET FROM ITX RELEASE 6.01 TO ITX RELEASE 7.00

If you are migrating ITXNET to ITX Release 7.00, you must do the following to move your global catalogs and name maps. NOTE: If using PPC (processor-to-processor communication using SCSI bus), all processors must be on the same point release.

While still using the previous release:

Create a command output file for the global catalog

- . ASSIGN command output file AS CO cofile( )NE
- . ASSIGN old global catalog AS CAT catfile
- . EXECUTE utility EX \$NETCAT
- . Enter 5 on main menu

Output is a command output file (cofile assigned above).

Create a command output file for each name map.

- . ASSIGN command output file AS CO mapcofile( )NE
- . ASSIGN old name map AS MAP mapfile
- . EXECUTE utility EX \$NETMAP
- . Enter 2 on main menu

Output is a command output file (mapcofile assigned above). Do this for each name map you are migrating. Follow directions to install the new software release, then create the new global catalog:

- . ASSIGN command output as command input AS CI cofile
- . ASSIGN new catalog AS CAT catfile NE
- . ASSIGN line printer AS LO (LP)
- . EXECUTE utility EX \$NETCAT, CI

Create the new name map(s).

- . ASSIGN command output as command input AS CI mapcofile
- . ASSIGN new name map AS MAP mapfile NE
- . ASSIGN line printer AS LO (LP)
- . EXECUTE utility EX \$NETMAP, CI

There is one more important step: Increase the Global Catalog header fields BIMAXCE and BIMAXCONN. You can do this one of two ways:

1. Interactively while in the smart mode (EX \$NETCAT,S).

The fields are named as follows:

BIMAXCE is MAXIMUM CONNECTING ENTITIES on SCREEN 2. Increase to 276 (or higher).

BIMAXCONN is TOTAL NUMBER OF CONNECTIONS on SCREEN 2. Increase to 275 (or higher).

2. Modifying BIMAXCE and BIMAXCONN in your command input file (CI).

#### E. SCL ESCAPE

Using the ESCAPE command from any terminal other than the system console causes an error message to display on the screen or remote console (when remote console is enabled). An error message will occur, stating unauthorized terminal.

#### F. SYSGEN CONSIDERATIONS

ITX system software is distributed with the swap file sizes given below:

9400 Classic distributed on a 6530	6000 Sectors
9400 Classic distributed on other media/9400IP/Model 35/Model 55	15000 Sectors
Model 65/Model 65M/Model 75/9500	30000 Sectors

If you add new products and/or new hardware, you must increase the swap file size accordingly. The ITX recommended swap file size is 5000 sectors per megabyte of memory. Failure to provide a large enough swap file during system generation can result in an unbootable system.

Please note that when you sysgen on top of the same disk unit that contains your system, \$SYSGEN does not default to the system recommended swap file size. The swap file is assigned the system recommended number of sectors only if you move your system to another disk unit.

To install a new/additional ISM board:

1. Install new board.
2. Execute \$SYSGEN and configure the ISM board.
3. Configure devices attached to new board.

NOTE: You must reboot the system to access any of the new devices.

#### G. SPOOL FILE CONSIDERATIONS

The size of the released ((SPOOL )) file on the dyadic machines (9500 and Model 75) has been reduced from 12000 sectors to 500 sectors. Users requiring a larger ((SPOOL )) file must execute \$SYSGEN again, change the file size, and reboot.

#### H. ITXNET ON ISM PLATFORMS

To successfully run ITXNET on an ISM platform, two adjustments are necessary.

1. If the communications link to the remote node(s) is DLC-ABM or X.25, the T1-INTERVAL-TIMER in the TAM EDF should be increased to 20 on both nodes.
2. The Connection Command Timer (CCT) in the NODE ENTRIES OF THE GLOBAL CATALOG should be increased to 20 seconds.

#### I. MIGRATING SYSTEM ACCESS CONTROL TO ITX 7.00

When migrating from a major release, such as ITX 4.01, 5.01 or 6.01, to ITX 7.00, you can migrate your System Access Control definitions using SYSGEN MIGRATE option. Refer to Section V B of this Release Bulletin or the Securing Your ITX System (ST-2113-93) publication for more information on the steps necessary before and after installing ITX 7.00.

During migration of System Access information, the ((SAC )) file size is increased by approximately 25% of the old size. Defaults are set for new system policies and user profile features:

- For new system policies
  - FORCE PASSWORD POLICY = NO
  - DEACTIVATE USER POLICY = NO
  - ACCESS UTILITY LOG OPTION = NO
  - REMOTE LOGON POLICY = PROMPT
  - SYSTEM SECURITY = NONE
- For each system user migrated
  - USER CONTROL STRING = NONE
  - DEACTIVATE STATUS = ACTIVE
  - EXPIRATION DATE = NONE

The default values are set so that your system access policies and system users will continue to function as in your previous release except for SYSGEN SECURITY policy (see Section I). If you wish to activate any new Security Features in ITX 7.00, use the \$ACCESS Utility to change these values. Refer to the Securing Your ITX System (ST-2113-93) publication for more information on the features added to ITX 7.00 System Access Control and Audit Trail.

J. SYSGEN SECURITY

Following migration of your System Access information, ((SAC )) file, the SYSGEN SECURITY OPTION is set to NONE, and anyone may execute \$\$SYSGEN. Use \$ACCESS to set the policy as follows if you require SYSGEN security on your system.

NOTE: The migrated ((SAC )) is not activated until the reboot following use of SYSGEN MIGRATE option. The \$ACCESS SYSGEN SECURITY OPTION has the following settings:

1. NONE - All users can execute and complete \$\$SYSGEN.
2. PARTIAL - All users can execute but cannot complete \$\$SYSGEN.
3. ADMINISTRATORS - Only System Administrators can execute and complete \$\$SYSGEN.

K. TIMEOUT OF IDLE TERMINALS

The SYSGEN TERMINAL READ TIMEOUT value is defaulted so that terminal inputs are not timed out. To activate the timeout of input prompts for SCL, you must set this interval. When the terminal user at the SCL prompt has not responded to the SCL prompt in this interval of time, the process is logged off.

L. BASIC SYSTEM MESSAGE HANDLER CONSIDERATIONS

Basic System Message Handler (BSMH) provides a message handling service for non-critical messages. There are several functions of this new feature that should be researched before modification is performed. Refer to the ITX Reference Manual, SCL Section, and the UID for further details. Please make note of the following commands and capabilities:

- SET MESSAGE ON/OFF (Ref. Manual, UID)
- SET MESSAGE DELAY = 1 to 30 (seconds) (Ref. Manual, UID)
- DISPLAY MESSAGE TERMQ = X/ALL (Ref. Manual, UID)
- Message Redirection (UID)

VI. REQUESTS FOR CHANGE (RFC'S)

The Requests for Change (RFC's) that have been implemented are described in the User Information Document (UID). Refer to the beginning of Section IV, INSTALLATION INSTRUCTIONS, in this Release Bulletin for instructions on printing this file.

VII. CORRECTED PROBLEMS

The following list contains this release's corrected field CALLS (problems) from the MCR SPECS problem reporting system:

CALL LIST FOR ITX BIND 7.00.77

Call#	Problem Summary
354995	ERROR LOG UTILITY 0127360 ITXNET REJECTS ALL SESSIONS INITIATED BY 1 REMOTE NODE
357302	GALAXY FILE MIGRATION UTILITY - ITX SUPPORT 0139784 CALLXREF RETURNS INVALID OPERAND 5 00 140 SYM#0009
355600	GALAXY - ITX SUPPORT 9003241 SCL HETEROGENEOUS MOVE/COPY OF EMPTY FILE FAILS
414564	COMM TSM 0139941 POWERING X.25 TERMINAL OFF TOO QUICKLY CAUSES SYSTEM
414566	COMM ITX NET 0139566 PPC RECEIVE LOGS EXTRANEIOUS ERROR 0139978 NEED TO UNLOCK ATOMIC SWITCHES IN ITXNET PROGRAM CLEAN
414593	OPERATING SYSTEM EXECUTIVE 0140111 C RUNTIME LOCATION NOT RESTARTED WITH RPOPS COBOL SUBPR
414594	FILE MANAGEMENT 0134955 SYSTEM HUNG WITH ((SPOOL)) 90% FULL
417206	COBOL85 COMPILER 0137555 I-COBOL85 PROGRAM RECEIVES COMPILER ERR 32 ON "STRING" 0139682 ITX COBOL85 PROGRAM RECEIVES ERROR 42 (UNABLE TO FIND
417249	COMM ITX TCP/IP 0139859 SEGMENT VIOLATION @ 5 01 1830 SYM#1830 0139999 TCP/IP MUST CHECK FOR FAILED CALL_C306



2 VIII. OUTSTANDING PROBLEMS

The following are the outstanding field CALLs (problems) for this release. These items have been determined not to cause problems for the average user and will be fixed in a later release. They are documented for your information.

**NOTE: THIS LIST WAS CURRENT AT TIME OF PUBLICATION. FOR THE MOST CURRENT INFORMATION OR DETAILS ON THE FOLLOWING PROBLEMS, HAVE YOUR LOCAL FIELD REPRESENTATIVE QUERY WCR'S ONLINE PROBLEM REPORTING SYSTEM.**

Call# P Problem Summary

---

- 414603 PHYSICAL I/O  
0140238 SYSTEM HUNG UP (INTERGER OVERFLOW)
  
- 414606 SI SCL  
0139628 HELP MOVE & COPY DOES NOT MENTION HETEROGENEOUS PARAMETERS
  
- 417249 COMM ITX TCP/IP  
0125387 STOP TCP HANGS WHEN TELNET TERM NOT RELEASED  
0126391 EXTREMELY SLOW RESPONSE TIME IN \$TELNET

SEPTEMBER 1992

ITX 07.00.75

IX. CORRECTIONS NOT INSTALLED

There are no corrections that have not been installed at this time. All of the corrections that were available have been included in this bind.

X. DOCUMENTATION

The following are the Technical Publications that are available for this release.

ITX Operating System Reference Manual*	D1-0545-F
ITX Operations Handbook*	ST-2113-91
Operating Your NCR ITX System*	D1-1146-A
NCR System 10000 Diagnostics*	D2-0091-C
ITX Message Manual*	D1-1147-D
ITX Communications Manual*	D1-1148-D
Securing Your ITX System*	ST-2113-93
NCR System 10000 Migration Handbook*	ST-2113-92
ITX Interpretive COBOL User Manual	CB-7905-00
ITX Interpretive COBOL Handbook	CB-7905-01
ITX Native COBOL User Manual	CB-7906-00
ITX Native COBOL Handbook	CB-7906-01
ITX COBOL Reference Manual	D1-1595-B
ITX Native COBOL Reference Manual	D1-0543-A
ITX Pascal User's Guide	D1-0058-A
ITX Pascal Language Reference Manual	D1-0057-A
ITX System Interface Package Reference Manual (C)	D1-1707-B
ITX BASIC	D1-0161-A
ITX Screen Manager (Pub. No. 9)	ST-5060-A25
ITX C User Guide	D1-0644-D
APPC C Application Planning Guide	ST-2111-84
APPC ITX Native COBOL Application Planning Guide	ST-2111-83
ITX SNA APPC User's Guide	D1-1670-B
NCR PLUS User's Guide	D1-1211-B
ITX Symbolic Debugger Reference Manual	D1-1257-B
CMAX	D1-0896-A
ITXNET Installation Guide	ST-2112-05
ITXNET User's Guide	ST-2114-01
ITX RBS User's Guide	ST-2112-55
ITX CNMS User's Guide	ST-2112-57
ITX X.25 TTY Terminal User's Guide	ST-2122-58
Installing Your System 10000 Model 35**	D1-1395-A
Operating Your System 10000 Model 35**	D1-1396-A
Getting To Know Your System 10000 Model 35**	D1-1397-A
Model 35 Pre-Installation Planning Guide	ST-2500-A23
ITX Tran-Pro Reference Manual	RM-0559
ITX Windows User's Guide	ST-2113-94
ITX Windows WIP Programmer's Manual	ST-2113-95
NCR Dynamic Debug Tool (DDT)	ST-2113-96
ITX Windows Executive System Administrators Guide	ST-2113-97
ITX Windows Executive User's Guide	ST-2113-98
ITX Windows Messages Handbook	ST-2113-99
ITX TCP/IP User's and Administrator's Guide	ST-2114-02
ITX Oracle Document Set	S1-0159-A
ITX Query, Rel. 3	D1-1306-A
IIB Reference Guide	D1-0765-B
IIB Administrators Guide	D1-0303-C
IIB Quick Reference	D1-0299-C
I-XPERT User Guide	D1-1708-A
NCR System 10000 Model 85 System Administrator's Guide	D1-2081-A
ITX System Peripheral Installation Manual	D2-0166-A
IIB/X.400 System Administrator's Guide	ST-2114-13

- \* Can be ordered as a book set using S1-212-A as the order number
- \*\* Can be ordered as a book set using S1-0137-A as the order number

For more information regarding these publications, call the following toll-free numbers:

1-800-534-2010 (Outside Ohio)  
 1-800-543-6691 (Inside Ohio)

XI. EDUCATION

Please refer to the Educational Catalog (EP-9742) or the Course Catalog and Schedule (EP-9803) for a detailed description of self-instruction courses, classes, and educational publications available from NCR Customer and Support Education (CASE). The following are the CASE courses available (number and title):

R12005 - ITX/IRX - RBS  
 K21805 - ITX Operating System  
 K33105 - ITX Telecommunications (MCS)  
 K32805 - ITX Operating System - Advanced  
 K29902 - ITX Operating (Self- Instruction Course)  
 K83002 - ITX 6.0 Update  
 G79805 - ITX SMA Installation  
 R39805 - ITX TRAN-PRO Concepts  
 R40105 - ITX TRAN-PRO Programming and Installation  
 484100 - COBOL 74  
 320105 - Accelerated COBOL or Interactive Systems  
 364105 - Introduction for Interactive COBOL Programming  
 M02105 - BASIC Programming  
 M25105 - PASCAL Programming  
 R31102 - Screen Manager (Self-Instruction)  
 690105 - ITX X.25 Installation  
 619005 - Interfacing to the X.25 Environment  
 675005 - Problem Determination for X.25  
 R49905 - ITXNET System Administrator  
 T16802 - IIB System Administration (Tele-class)  
 T13902 - Learning IIB (Self-Instruction) -

CASE is supported by the Central Services toll-free 800 numbers. You are not required to be licensed by Central Services for educational questions. They welcome all calls from customers pertaining to curriculum planning, course content, and availability of new courses.

When using CODAR (Central Dispatch and Reporting) please indicate that your call is for educational assistance. You will be asked to give your name, company name and address, customer number (if applicable), and the telephone number. Please give the course name and number, and the particular question you would like answered. The toll-free numbers are  
 800-543-9935 (Outside Ohio)  
 800-762-9275 (Inside Ohio)

XII. STAND ALONE APPLICATIONS

The following application products are designed to run on ITX 7.00. Ask your MCR Sales Representative for more information about these products.

*ITX DBS	D305-0102-0000	D305-0202-0000	D305-0302-0000	
	D305-0402-0000	D305-0502-0000	D305-0602-0000	
*RM/COS to ITX Migration (Runs on I-Tower)	D902-0001-0000			
*IMOS to ITX Migration Aid	D902-0002-0000			
ITX SNA/Application Interface	D902-3202-0000	D902-5202-0000	D902-6202-0000	
	D902-7202-0000	D902-8202-0000		
ITX SNA/Remote Job Entry (RJE)	D902-3203-0000	D902-5203-0000	D902-6203-0000	
	D902-7203-0000	D902-8203-0000		
ITX SNA/LUI Printer	D902-3204-0000	D902-5204-0000	D902-6204-0000	
	D902-7204-0000	D902-8204-0000		
ITX SNA/3270 DSC/LU3 Printer	D902-3205-0000	D902-5205-0000	D902-6205-0000	
	D902-7205-0000	D902-8205-0000		
ITX SNA Doc Interchange Architecture (DIA)	D902-3206-0000	D902-5206-0000	D902-6206-0000	
	D902-7206-0000	D902-8206-0000		
ITX TranPro W/Integ. Comm.	D902-3403-0000	D902-5403-0000	D902-6403-0000	
	D902-7403-0000	D902-8403-0000		
ITX Windows Exec PC	D902-3416-0000	D902-5416-0000	D902-6416-0000	
	D902-7416-0000	D902-8416-0000		
ITX Windows Exec Config	D902-3417-0000	D902-5417-0000	D902-6417-0000	
	D902-7417-0000	D902-8417-0000		
ITX Query	D902-3423-0000	D902-5423-0000	D902-6423-0000	
	D902-7423-0000	D902-8423-0000		
ITX Information Bridge (IIB)	D902-3428-0000	D902-5428-0000	D902-6428-0000	D902-7428-0000
ITX Information Bridge (IIB) PC	D902-3429-0000	D902-5429-0000	D902-6429-0000	D902-7429-0000
ITX Page Printer Forms Overlay	D902-0030-0000			

\* In Controlled Delivery

