

DATAPoint

**INX-PC
INTELLIGENT NETWORK EXECUTIVE**

Installation and User's Guide

50849

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Version 1.2
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PREFACE

The key to using this document is to successfully follow the step-by-step procedures. Read the table of contents; most of the procedure sections are titled:

"How to..."

Each procedure is generally preceded by sections of facts or background knowledge you need to perform the procedures.

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Chapter 1.

Introduction and background

Document overview

The product

Intelligent Network Executive PC :synonym: INX-PC

This document is a users guide for the DATAPOINT Intelligent Network Executive system which interfaces IBM PC, IBM PC XT, IBM PC AT as well as selected bus compatible work-alikes to the DATAPOINT ARC Network and its resources.

Audience

This document is written for the user of an IBM PC computer, who wishes to install and use the DATAPOINT INX-PC system hardware and software.

Scope of document

The scope of this document includes:

- descriptions of the INX-PC system concepts and processes and
 - detailed step-by-step procedures you will need to
 - install INX-PC hardware and software, and
 - operate PCDOS with INX-PC facilities.
-

Compatible model codes

This is a list of model codes and descriptions of the machines that will accommodate the INX-PC adaptor card.

VENDOR	MODEL	DESCRIPTION
IBM	5150	"PC" system unit
IBM	5160	"XT" system unit
IBM	5170	"AT" system unit
COMPAQ	PC Portable	PC Portable
COMPAQ	Deskpro	Deskpro

Note: COMPAQ does not use numeric model codes.

DOS, DOS.H, DOS.D, and PCDOS

Definition of terms

In this document, the term

DOS – means DATAPOINT's Disk Operating System
which comes in two versions:

- DOS.H and
- DOS.D.

PCDOS – means the Disk Operating System for the IBM PC.

Example: IBM PCDOS 2.10 or equivalent.

Comment: IBM PC literature may refer to PCDOS as the IBM Personal Computer DOS Version 2.10 for example.

Different

These two disk operating systems are very different.

Convention

In this document:

DOS – means DATAPOINT DOS

PCDOS – means IBM Personal Computer DOS.

How to use this document

Overall document design

This document presents detailed procedures and related information in chapters ordered numerically as you will probably use them.

The appendices contain:

- some miscellaneous details you should look over, and
 - at the very back, summaries of commands you can easily refer to after you have become familiar with the main body of text.
-

Process

This document is intended to lead you to your desired level of proficiency:

- First level – using your PC with INX-PC network disk services,

READ	DESCRIPTION
CHAPTERS	
1	Introduction and background
2	Installation
3	Running INX-PC
4	Using PC Disks
Appendix D	INX command summary

- Second level – using your PC with INX-PC network printer services,

READ CHAPTER	DESCRIPTION
5	Spooling thru INX-PC

- Third level – setting up and sharing network PC Disk resources.

READ CHAPTER	DESCRIPTION
6	Using sub-directories

- Forth level – using the 1560 DOS.H processor in your PC to run DOS.H applications programs,

READ CHAPTERS	DESCRIPTION
7	Running DOS.H programs
8	Managing your network disk space
Appendix C	Implementing 1560 keyboards on the IBM PC

- Fifth level – Utilizing both operating systems to work on a single batch of data.

READ CHAPTER	DESCRIPTION
9	Transferring text files

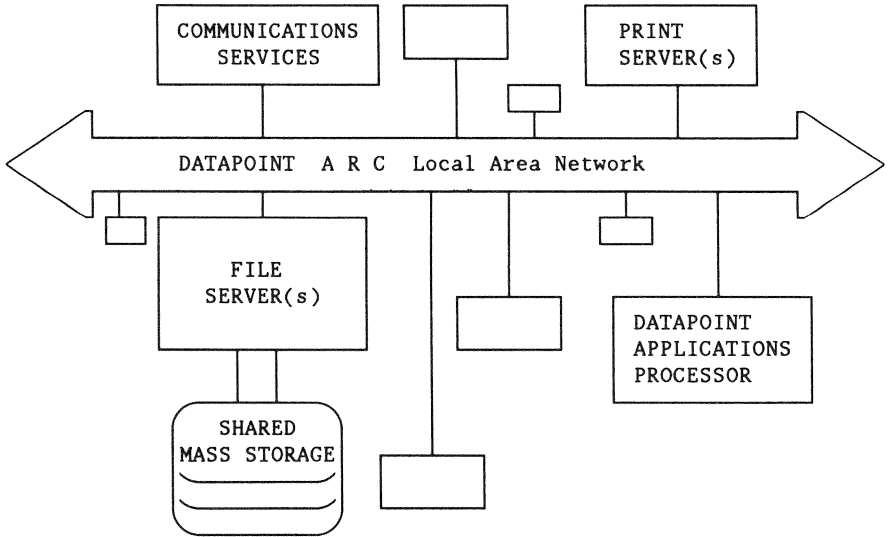
Coming up

Now you will be introduced to the major

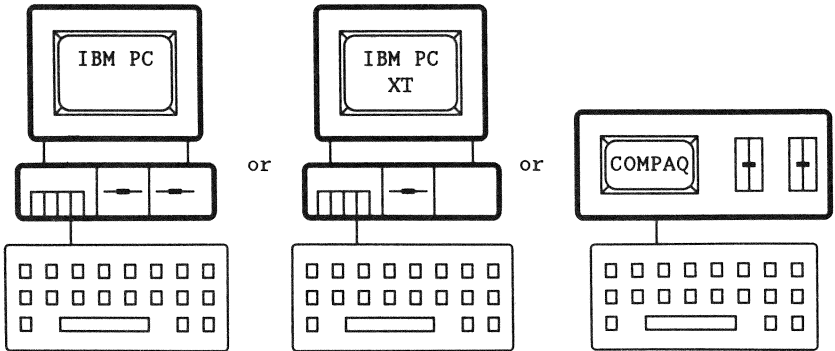
- structures and
 - concepts of INX-PC.
-

What you start with

1) You have an ARC Network



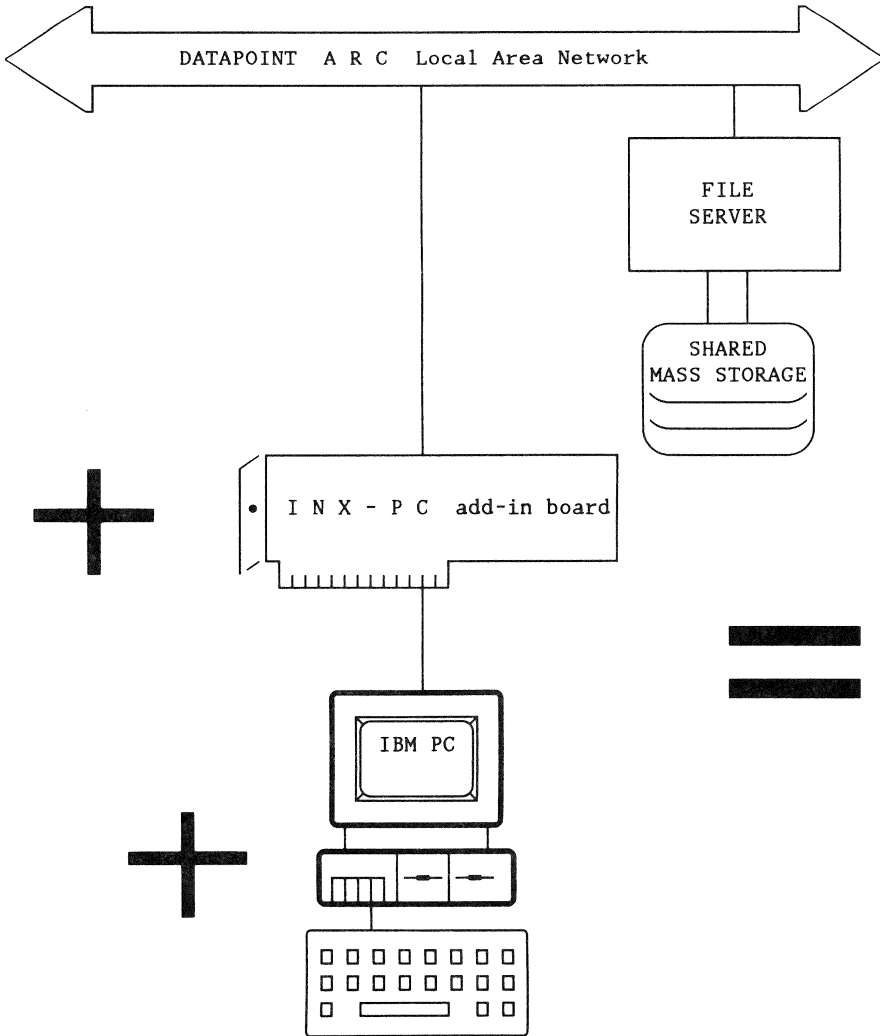
2) You have an IBM PC or work-alike:



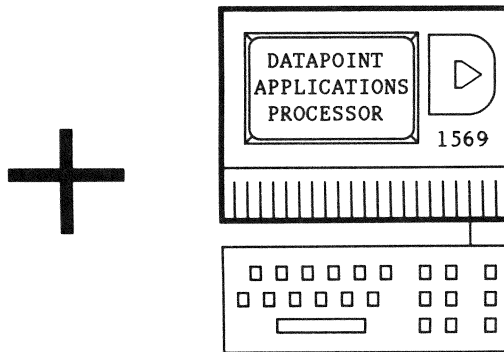
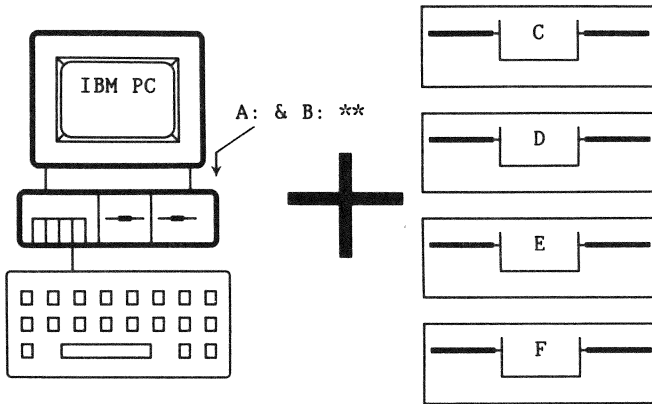
also, IBM PC AT

- COMPAQ Portable or
- COMPAQ Deskpro

INX-PC connects IBM PCs to the network...



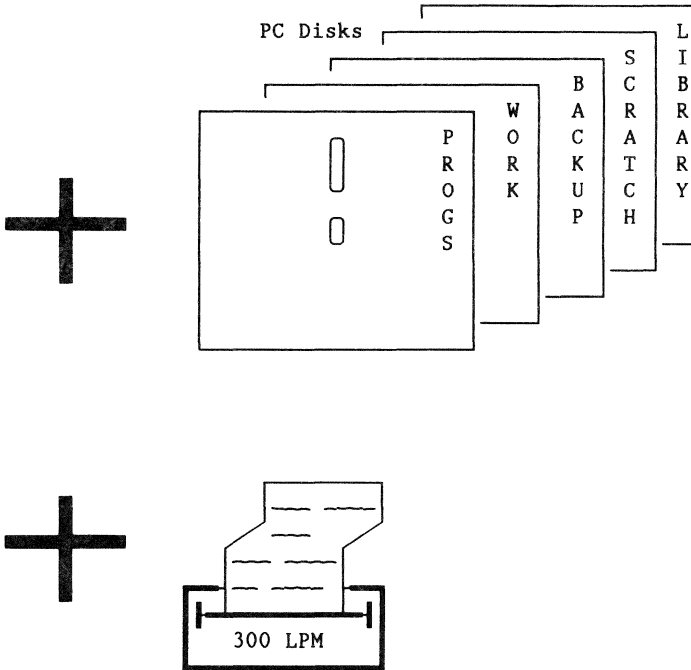
is an extra processor & 4 PC Disk drives...



** Note: On an IBM PC XT and IBM PC AT:

- the internal diskette drive is both A: and B: ,
 - the harddisk is C: and
 - the INX-PC disk drives are D: , E: , F: , and G: .
-

and a 300 LPM printer & PC Disks.



These are simulated by files on a network *file server*.

PC Disk storage capacities are equivalent to either:

- a diskette or
 - a hard disk.
-

SYSTEM COMPONENTS

To understand INX-PC, what it is, and how it works, you first have to look at the basic system components.

1 – a local area network – DATAPOINT ARC including in particular,

- FILE SERVERS with MASS STORAGE facilities
- operated under the DATAPOINT DOS operating system.

2 – a standard IBM PC, IBM PC XT, IBM PC AT, COMPAQ, or selected equivalents

- with one or two disk drives
- operated under the PCDOS operating system.

3 – an INX-PC adapter board, consisting of:

- an ARC Network Resource Interface Module (RIM), and
- a Z-80 microprocessor system equivalent to a DATAPOINT 1569 applications processor without a display or keyboard.

4 – INX-PC software, in particular:

- a PCDOS device driver – INX.DRV,
- a PCDOS command program – INX.COM, and
- a DOS.H program – INXPCDSS/CMD.

THE BASIC PROCESS

Translation

The DOS.H processor on the INX-PC adapter board serves, in part, as a data-format translator connected in between:

- a PCDOS processor and
 - ARC Network communications protocol to DOS mass storage disks.
-

Simulation

The INX-PC driver software loaded into the PC simulates the presence of four additional PCDOS disk drives, called *PC Disk drives*.

Transposition

The INXPCDSS task that runs in the DOS.H processor:

- receives PCDOS DISK I/O requests from the PCDOS processor, and
 - transposes them into DOS FILE I/O transactions to network mass storage disks.
-

Primary Concept: a FILE equals a DISK

A DOS file on a network file server is made into the equivalent of a PCDOS disk.

These files are called:

PC Disks.

They come in two *potential* sizes:

- HARDDISK – 5 megabytes and
- DISKETTE – 360 k bytes.

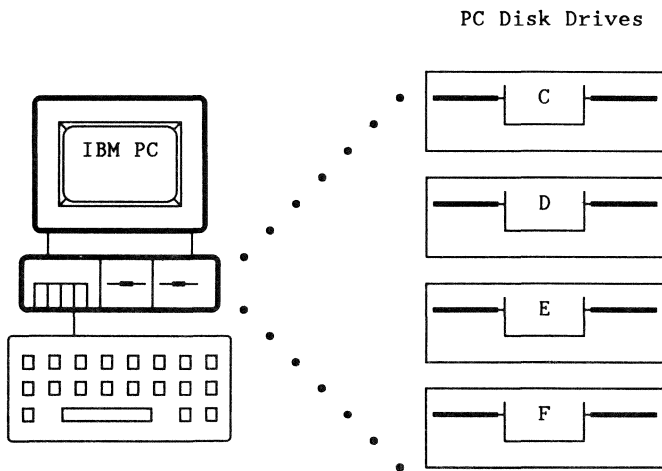
They are *dynamically allocated* which means: they only occupy as much space as is required to hold the data you put in them.

Handling PC Disks

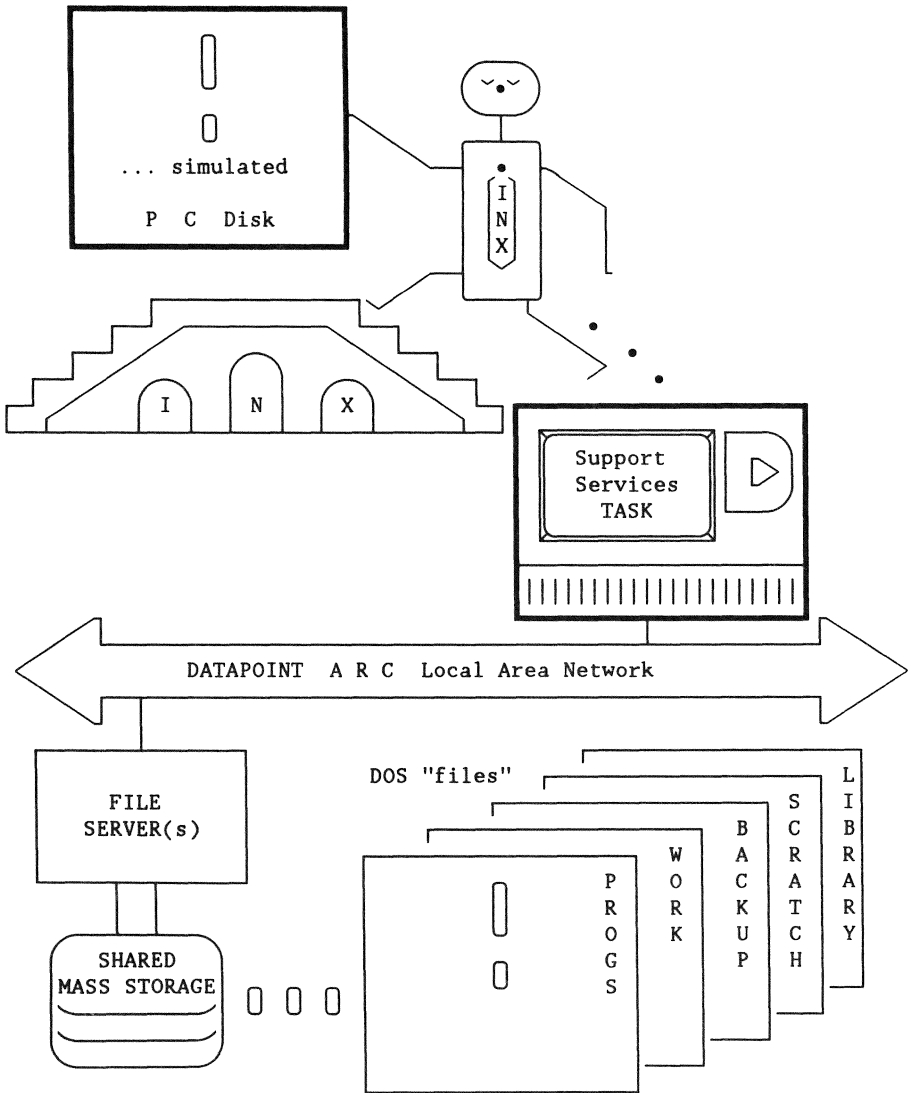
The PCDOS command program, INX.COM, provides you with the following functions to *handle* PC Disks and PC Disk drives:

- DISK CREATE
 - DISK INSERT
 - DISK REMOVE and
 - DISK EXAMINE.
-

System function diagram



You use PCDOS with four additional *logical* disk drives.



The INX-PC Support Services Task in the DOS.H processor on the INX-PC adapter board transfers data between PC Disks and the PC Disk drives via the ARC Network.

Familiarization with two operating systems

Introduction

This section will outline some of the major differences between operating PCDOS and DOS including:

- upper and lower case requirements,
 - drive names,
 - default drive specifications,
 - generic parameters and other default assumptions, and
 - file naming conventions and drive-name-extension order.
-

Purpose

Since you will be using both operating systems interactively, you may need some help getting used to the differences.

You may, or may not, use DOS very much, but you will need some familiarity with it even though most DOS functions required of you will be detailed explicitly in the primary procedures you need to run INX-PC.

Upper .vs. Lower Case

At the operating system command line:

- PCDOS accepts either upper or lower case letters
 - DATAPOINT DOS accepts only upper case.
-

Disk drive names

The names of disk drives in:

- PCDOS are A: B: C: D: ...etc.
 - DATAPOINT DOS are :DR0 :DR1 :DR2...thru :DR15.
-

Default drive

When you specify a file to be created without specifying a drive, the default drive in:

- PCDOS is the current drive you are logged onto.

Note: This drive is always represented in the prompt.

Example: A> means drive A:

- DATAPOINT DOS is :DR0 or the lowest numbered of any drive on which a file of the specified name already exists. (i.e. it is overwritten)

When you specify a file to be read from or written to, without specifying a drive, the default drive in:

- PCDOS is the current drive you are logged onto.
- DATAPOINT DOS is the lowest numbered of all "mounted" drives on which a file of the specified name already exists.

Generic symbols

DATAPOINT DOS does not have an equivalent to PCDOS generic characters "*" and "?".

HELP

Since we assume you know PCDOS, you will be glad to know that there are two HELP commands:

- HELP ... in DOS.H and
- INX HELP ... in PCDOS.

These two commands will be very useful to you while you are adding INX-PC and DOS.H to your repertoire of computer skills.

File naming conventions

Table

The following table describes the general form of file names used with PCDOS and DOS.H and some specific examples of file names for different types of files.

Type of file name	PCDOS example	DOS.H example
Command Program	A:EDLIN.COM	EDIT/CMD:DRO
Large Program	B:FORTRAN.EXE	FORTRAN/CMD:DR1
Print File	A:COBOL.LST	COBOL/PRT:DRO
Text File	B:MAILLIST.TXT	MAILLIST/TXT:DR1
Document File	A:LETTER.DOC	LETTER/LIB:DRO

Print files

For print files produced by the spooling capability of INX, the DOS.H conventions are followed because the file exists in DOS.H format. Therefore, such print files have an extension of "/PRT."

Text files

Text files under PCDOS have a file type of ".TXT," although there are no hard and fast rules that require that this convention be followed all of the time.

"/PCD" file extension

The unique and special file extension of "/PCD" is reserved for use under DOS for DOS files that contain the entire contents of a PCDOS diskette or hard disk.

One DOS file, whose complete DOS file name includes an extension of /PCD, contains all of the data and directory structure of one PCDOS diskette or (hard disk). Such DOS /PCD files are "inserted" (with INX.COM commands) into the PCDOS disk "drives" that are simulated by the INX-PC software.

Two kinds of DOS: DOS.H and DOS.D

Purpose

The purpose of this section is to help you understand what the difference is when we say:

- DOS,
- DOS.H, or
- DOS.D

Basically, DOS is the all-inclusive term meaning:

- DOS.D and DOS.H

or

- their overlapping similarities.
-

Fact

There are two different types of DOS ...processors, ...programs, ...disk volumes, and ...sub-directories:

- DOS.H and
- DOS.D.

There is only one type of DOS file format. Therefore, DOS.H files can be stored on DOS.D volumes and vice versa.

Processor types

The difference between DOS.D and DOS.H processors is their instruction set.

PROCESSOR TYPE	INSTRUCTION SET	EXAMPLE
DOS.H	Z-80	<ul style="list-style-type: none">• the <u>INX-PC</u> adapter board processor <u>and</u>• 1500 series
DOS.D	DATAPOINT proprietary	6000 <u>and</u> 8000 series

Program types

There are two separate types of DOS programs:

- DOS.D for DOS.D processors, and
- DOS.H for DOS.H processors.

Most DOS programs are available in both DOS.D and DOS.H.

Program names are sometimes...	DOS.D EXAMPLES	DOS.H EXAMPLES
the same.	IEOS EDIT	IEOS EDIT
slightly different.	MOUNT ARC ARCSTAT	MOUNT15 ARC15 ARCST15

Clue: The "15" in a program name usually means it is a DOS.H program (i.e. for 1500 series processors).

Note: Just because the names are the same, does not mean they can run on both processors.

DOS disk volume types and sub-directories

An ARC Network *DOS file server* may have one or more named disk volumes which are accessed by other DOS processors on the network.

Each disk volume will be either DOS.D or DOS.H type.

Both types of disks have:

- one SYSTEM sub-directory, and
- one or more user sub-directories.

Definition: DOS user sub-directories are separate groups of files on a DOS disk volume.

Each user sub-directory has a "user name" and access "codeword" so that a user has exclusive protected use of his files. However, many users can use the same disk.

The SYSTEM sub-directory is visible to any user that has access to a user sub-directory.

When you use INX-PC, you will have access to at least:

- your private, named, password-protected sub-directory, and
- the common SYSTEM sub-directory on the same disk volume,

....which will be a DOS.H disk volume.

DOS files

All files on both DOS.D and DOS.H disks are:

- DOS format files.

Examples: the following are all examples of DOS files:

- DOS.D and DOS.H program files,
- data files used with DOS.D and DOS.H programs,
- PC Disk files you use with INX-PC.

Rule:

You can store any DOS file on any DOS disk.

SUMMARY

When you are using INX-PC:

- your DOS processor type is DOS.H,
 - you will always log onto a DOS.H sub-directory,
 - you may use additional DOS.D or DOS.H sub-directories,
 - you may put any DOS file in any DOS sub-directory to which you have password-protected access.
-

Chapter 2.

Installation

Overview

Introduction

This chapter describes how to

- install the INX-PC adapter board,
 - connect it to the ARC Network, and
 - configure the INX-PC software.
-

In this chapter

This chapter lists:

- eleven separate installation tasks,
 - items supplied with the INX-PC package, and
 - items required that you should already have.
-

Further reference

The details for each individual installation task are in Appendix A.

See: "Installation TASK details," page A-1

IMPORTANT NOTICE

Save the shipping carton in which you received your INX adapter board in case you must return it to DATAPOINT for repair.

List of installation tasks

Purpose

The purpose of this task list is to specify:

- the order in which to perform the tasks, and
 - who should perform the tasks.
-

Task responsibilities

The overall setup and installation of ARC Network facilities to support an INX-PC equipped IBM PC will require some assistance and coordination between you and several other persons.

These persons will be indicated by abbreviations in the column labeled: Who.

The following list of abbreviations will refer to a person with the qualifications described.

Abbreviation	Person's Qualifications
CSE	Customer Service Engineer - a person qualified to install processors on an ARC Network.
SA	System Administrator - a person qualified to: <ul style="list-style-type: none">• set up DATAPOINT DOS file processors,• set up DOS disk sub-directories, and• issue security passwords for sub-directories.
NS	Network Supervisor - the person who maintains a list of RIM ID assignments for an ARC Network.

List of installation tasks

Task list

This is a list of installation tasks in the order that they should be performed.

	TASK	DESCRIPTION	WHO	Done?
H A R D W A R E	1	Coordinating and obtaining a RIM ID	you or CSE and NS	
	2	Setting INX-PC board RIM ID switch	you or CSE	
	3	Setting INX-PC board ROM switch	you or CSE	
	4	Installing the INX-PC adapter board	you or CSE	
	5	Connecting the IBM PC to the ARC Network	you or CSE	
S O F T W A R E	6	Configuring the INX-PC software	you	
	7	Copying INX-PC files to a boot disk	you	
	8	Configuring PCDOS for INX-PC	you	
	9	Obtaining a DOS.H LOGON sub-directory	you and SA	
	10	Loading DOS.H file server software <u>Note:</u> this task is required for each DOS.H file server on the network, but not for each INX-PC equipped PC installed.	SA	
	11	Running INX-PC diagnostics <u>Optional:</u> May be performed as part of installation or as needed.	you or CSE	

Reference: You will find the detailed procedures for each of the above tasks in the Appendix, beginning on page A-1 .

Which tasks will you actually need to perform?

If you are in a company which is setting up lots of INX-PC installations, someone will probably perform tasks 1,2,3, 6,9, and 10 for you.

You will be given:

- an INX-PC adapter board with:
 - the RIM ID switch set,
 - the ROM code switch set to zero, and
 - a label stating the RIM ID and ROM code;
- a 5-1/4 inch PCDOS format diskette with the INX-PC software installed for:
 - ROM code zero
 - FONT zero;
- this User's Guide, and
- a piece of paper that has the information about your logon sub-directory:
 - user name
 - codeword, and
 - DOS.H disk volume name.

Then you will only have to perform TASKS 4,5,7,8 and 11.

It really depends on your exact circumstances. Check off each task as it is performed.

What to do after installation

After you have performed the installation tasks, proceed to Chapter 3, "Running INX."

Then follow the procedure "How to LOG onto INX-PC" on page 3-23."

List of supplied and required items

Introduction

This section lists two groups of items:

- the basic INX-PC system package items and
 - items you should already have.
-

Purpose

Make sure you have everything you need before beginning the installation tasks.

List of INX-PC package items

The following items will be provided to equip an IBM PC with INX-PC capability.

- one INX-PC printed circuit adapter board,
 - one plastic printed circuit board card guide,
 - one copy of this user's guide,
 - one coaxial cable,
 - one 5-1/4 inch diskette with INX-PC software.
 - **OPTIONALLY**, specially ordered media containing DOS.H programs. See: TASK 10, page A-52
-

List of other required items

These items are required to implement an INX-PC system, but they are not provided with the INX PC package.

- you will need an IBM PC or IBM PC XT processor system which is functional and which is accompanied with the appropriate manuals.

System printer: an IBM PC system printer is optional. If you have one, it can be used with INX-PC. If you don't have one, you may take advantage of the INX-PC spooling features and use other printers attached to other processors on the ARC Network.

- you must also have access to a DATAPOINT ARC Network which, at minimum, includes one DOS file server processor with at least one DOS.H disk volume.

Additional disk resources: Additional DOS.D hard disk space may be used by the INX-PC equipped IBM PCs if it is available on the network.

Chapter 3.

Running INX-PC

Overview

Introduction

This chapter describes how to control the overall system state of your INX-PC equipped PC, including the procedures:

- "How to LOG onto INX-PC" on page 3-23 ,
 - "How to LOG onto DOS.H" on page 3-30 ,
 - "How to shut off INX-PC support services" on page 3-47 , and
 - "How to context switch to DOS.H" on page 3-42 , and
 - "How to context switch to PCDOS" on page 3-44 .
-

Commands described in this chapter

COMMAND	PURPOSE
INX HELP	Displays all INX-PC command syntax
INX LOGON	Log onto DOS.H
INXPCDSS	Activate INX-PC support services task for PCDOS through DOS.H
Ctrl=Break	Context switch to PCDOS
<u>Alt=left shift=right shift</u>	Context switch to DOS.H

Overview

Main objective

The main objective of the procedures in this chapter is to activate the INX-PC support services which effectively logs the PCDOS operating system onto network disk resources.

Coming up

First, we present the two basic control functions you need to run INX-PC:

- "The basic process of logging onto INX-PC" on page 3-3 and and
- "Context switching" on page 3-5 .

Then we see how these functions affect the INX-PC system components.

Finally, the detailed step-by-step procedures are presented.

What's next

After you learn the procedures in this chapter, you will want to learn how to use PCDOS with PC Disks and Spooling.

See:

- Chapter 4 - Using PC Disks
 - Chapter 5 - Spooling thru INX-PC
-

The basic process of logging onto INX-PC

Introduction

This is not the step-by-step procedure that you should follow. It will be described later.

This is basically all you have to remember after you follow the procedures one time to make sure INX-PC is installed correctly.

Process description

This is how you normally log onto INX-PC.

STEP 1 - turn on your PC.

STEP 2 - make sure you are typing in UPPER CASE by pressing the *Caps Lock* key.

STEP 3 - type: INX LOGON Return .

STEP 4 - type three words to log onto a DOS.H network disk sub-directory:

— *your user name* Return ,

— *your codeword* Return , and

— *your disk volume name* Return .

STEP 5 - type: INXPCDSS Return

STEP 6 - press the key chord: Ctrl-Break

What really happens

In the process just described,

- Steps 2 through 4 activate the DOS.H processor on the INX adapter board.

Your PC then has two separate active processors which share the keyboard and display facilities of the PC.

Comment: You can stop at this point and use the DOS.H processor by itself to run DOS.H programs.

- Step 5 activates a task in the DOS.H processor that *connects* the PCDOS processor to ARC Network disk services through the DOS.H processor.

This completes the ultimate function of logging PCDOS onto network disk services.

- Step 6 merely *context switches* the screen and keyboard back to the PCDOS processor.

Normally you would stay in the PCDOS context mode and use PCDOS programs and INX.COM commands to create, insert and remove PC Disks.

But remember, you actually have a DOS.H processor available which you can operate by context switching to DOS.H.

Context switching

Definition

Context switching is a function implemented in INX-PC software.

It lets the keyboard and display be shared by two processors:

- the PCDOS processor originally in the PC, and
 - the DOS.H processor on the INX-PC adapter board.
-

Two display memory buffers

Two separate displays are maintained internally at all times:

- 1 — the normal PCDOS display and
- 2 — the DOS.H display

Depending on which context you are in, PCDOS or DOS.H, one of these displays will appear on your PC's CRT.

Context switching

Context switching commands

You control the context switch with two keyboard command chords (keys pressed simultaneously).

This command...	switches context to...
<i>Ctrl-Break</i>	PCDOS
<i>Alt-Left Shift-Right Shift</i>	DOS.H

See: these procedures for more details:

- "How to context switch to DOS.H" on page 3-42 and
- "How to context switch to PCDOS" on page 3-44 .

Rule - CAPS LOCK key state

When you switch context to either processor, the CAPS LOCK key state remains in effect.

Example: if you are typing in upper case (without using the Shift key) in PCDOS, then when you context switch to DOS.H you will still be typing in upper case.

Rule - when you can switch

This table shows when you can context switch from one mode to the other.

DIRECTION OF SWITCH	WHEN THE COMMAND HAS EFFECT
DOS.H to PCDOS	anytime
PCDOS to DOS.H	<p><u>only</u> when a PCDOS program is</p> <ul style="list-style-type: none">• waiting for, <u>or</u>• checking for keyboard input; <p><u>not</u> when it is performing</p> <ul style="list-style-type: none">• calculations <u>or</u>• disk accesses; unless it is also checking for keyboard input. <p><u>Comment:</u></p> <p>The net result is... you can usually switch from PCDOS to DOS.H anytime. If the switch does <u>not</u> take place, execute the command again.</p>

Context switching

Rule - program suspension

Context switching has an effect on application programs running in the processor which was being displayed before the switch occurred.

When you context switch...	will an applications program in the other context (if one is running) continue to execute ?
to PCDOS	Yes, a DOS.H program will continue until it needs to perform I/O <ul style="list-style-type: none">• from the keyboard <u>or</u>• to the printer. Then it will suspend execution <u>until</u> you context switch <u>back</u> to DOS.H.
to DOS.H	No, a PCDOS program will suspend execution <u>until</u> you context switch <u>back</u> to PCDOS.

Result: you can leave a program running in DOS.H (like a long SORT or CHAIN program, for example) while you operate PCDOS in PCDOS context mode. But PCDOS always suspends execution while you operate in DOS.H context.

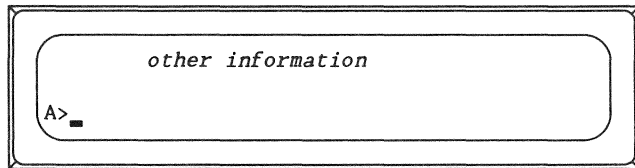
Recognizing the two modes

You can readily determine which context mode you are in by the shape of the cursor.

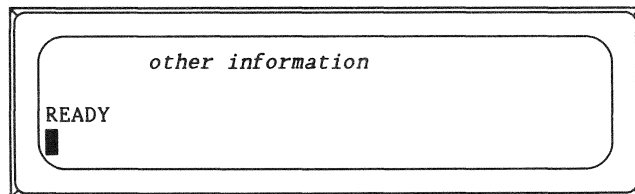
Compare the examples of a PCDOS and a DOS.H screen.

Note: both processors are shown at their operating system prompt line. The prompt lines are also distinguishing features, but when applications programs are running, only the cursor is visible.

Example of PCDOS context:



Example of DOS.H context:



Three "System States"

Purpose

We are defining "System States" so that:

- we can refer to them in later procedures,
 - you can picture what happens as you log onto DOS.H and finally to INX-PC, and
 - relate the procedures in this chapter to the states.
-

Definition

The System State of your INX-PC equipped PC is determined by which system elements of the INX-PC hardware and software are active, or

"what the PC is ready to do."

State names

The names we will use to define the three system states are:

- 1 - logged onto PCDOS,
 - 2 - logged onto DOS.H, and
 - 3 - logged onto INX-PC.
-

Three "System States"

How the state names are related

Each successive state actually includes the previous state.

When the system state is...	The PC is actually...
logged onto PCDOS	logged onto: PCDOS <u>only</u>
logged onto DOS.H	logged onto: PCDOS and DOS.H
logged onto INX-PC	logged onto: PCDOS, DOS.H and INX-PC

One temporary state

The basic process of logging onto INX-PC takes you from state 1 to state 3.

While logging on to INX-PC, you momentarily pass through state 2: "logged onto DOS.H".

The state "logged onto DOS.H" is a temporary state which normally you will not use.

However, it is defined because you must have the PC in that state to run some DOS.H programs that will not run while the INX-PC support services task is running.

See: Chapter 7 "Running DOS.H programs" for more details.

Three "System States"

How the states are achieved

In the previous description of the basic process of logging onto INX-PC on page 3-3 , there were 6 basic steps. This table shows how they relate to the 3 system states.

When you ...	the system state is...
turn on the PC in STEP 1	logged onto PCDOS
type: <ul style="list-style-type: none">• INX LOGON,• <i>user name</i>,• <i>codeword</i>, and• <i>volume name</i> in STEPs 2-4	logged onto DOS.H this is the <u>TEMPORARY</u> state
type: INXPCDSS in STEP 5	logged onto INX-PC

Comment: STEP 6 is a "context switch" back to PCDOS.
Whenever the system state is either:

- logged onto DOS.H or
- logged onto PCDOS,

you can "context switch" your PC keyboard and display between PCDOS and DOS.H.

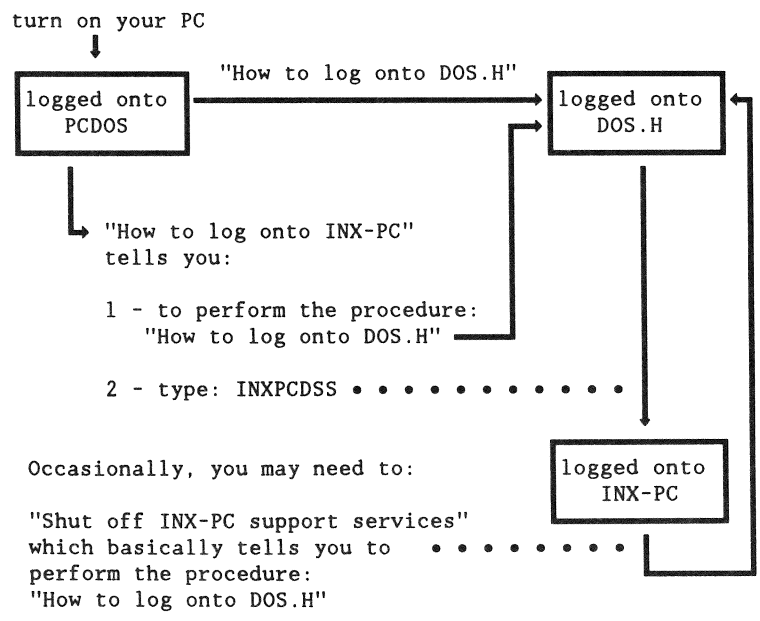
How the states relate to specific procedures

The three basic procedures that follow in this chapter:

- "How to LOG onto DOS.H" page 3-30 ,
- "How to LOG onto INX-PC" page 3-23 , and
- "How to shut off INX support services" page 3-47 ;

are related as follows.

State Diagram:



State 1: Logged onto PCDOS

Definition

Your PC system state is logged onto PCDOS when:

- you turn on your PC and
 - the PCDOS operating system is loaded and initialized.
-

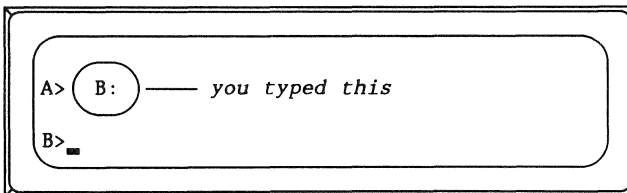
PCDOS logon drive :synonym: default drive

If you are using an IBM PC, you normally log onto drive A:.
If you are using an IBM PC XT, you normally log onto drive C:.

Changing the logon drive: you can change the drive you are logged onto by typing the drive letter followed by a colon.

Example: B: Return

Result: If you had been logged onto drive A: your screen would look something like this:



State 1: Logged onto PCDOS

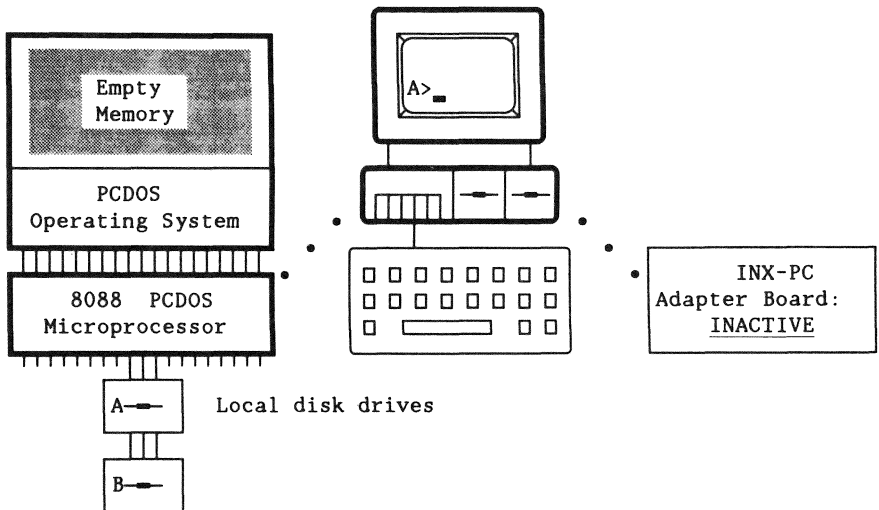
Capabilities

In the *logged onto PCDOS* state, you can:

- use the PC as if it did not have the INX-PC adapter board installed, or
 - log onto DOS.H, and then
 - log onto INX-PC.
-

System diagram

This diagram indicates the system components which are active when your PC is in the *logged onto PCDOS* state.



State 2: Logged onto DOS.H

Definition

Your PC system state is logged onto DOS.H when you execute the PCDOS command INX LOGON.

This command causes the DOS.H processor on the INX-PC adapter board to be:

- connected to the ARC Network,
- logged onto a DOS.H user sub-directory, and
- loaded with the DOS.H operating system.

Also, the "context switching" function is activated.

This is a TEMPORARY state !

Most users of INX-PC will only pass through this state as they log onto INX-PC.

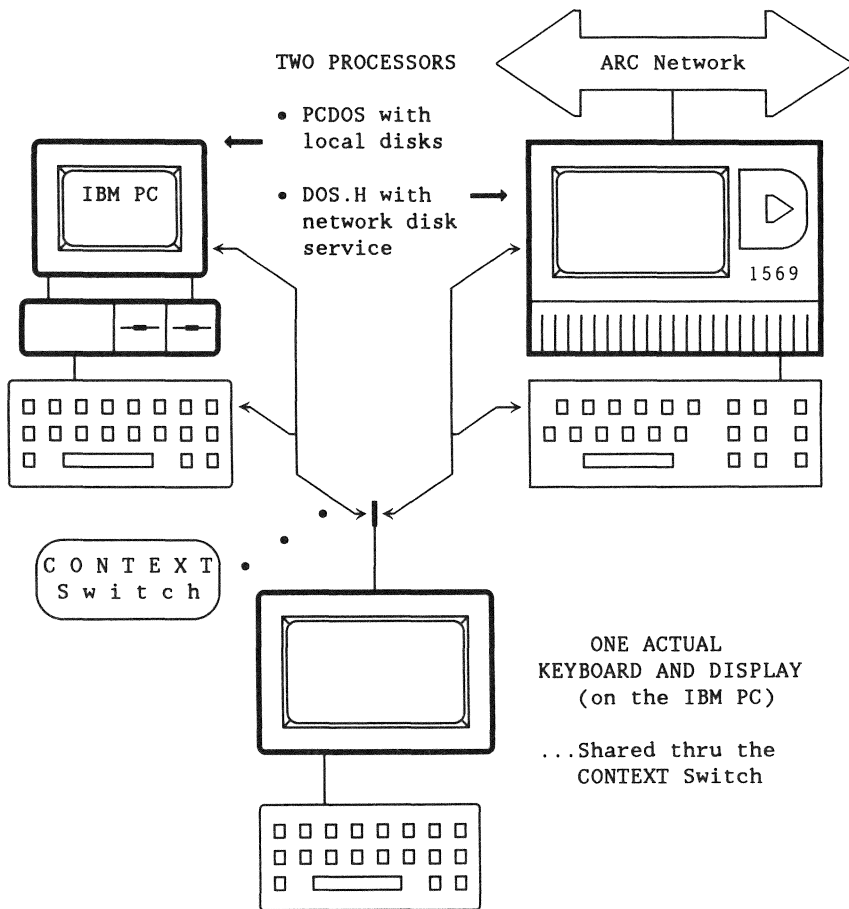
Capabilities

In the *logged onto DOS.H* state, you can:

- use the PCDOS processor,
 - use the DOS.H processor, or
 - type INXPCDSS to log onto INX-PC.
-

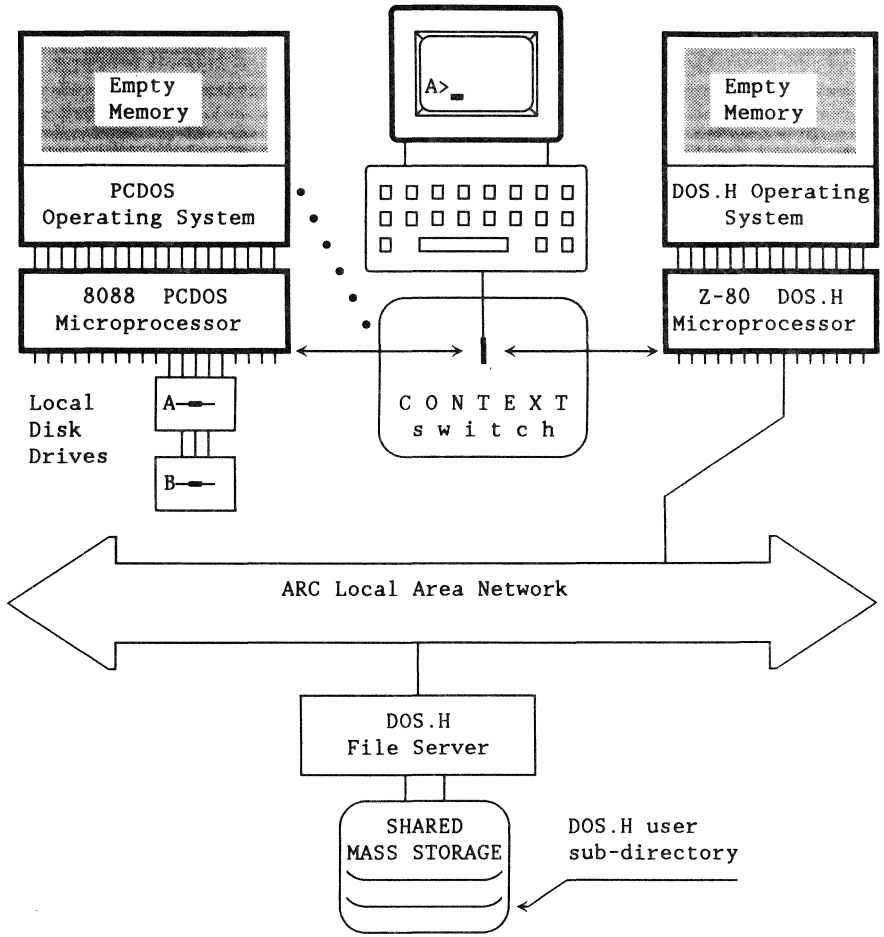
System concept diagram

System state: LOGGED ONTO DOS.H.



System block diagram

This diagram shows the active system components when your PC is in the *logged onto DOS.H* state.



State 3: Logged onto INX-PC

Definition

Your PC system state is *logged onto INX-PC* when you

- log onto DOS.H and
- then execute the DOS.H command INXPCDSS.

This causes a task in the DOS.H processor to be activated which provides the PCDOS processor with access to ARC network services.

Expanded PCDOS services

These services, as seen by the PCDOS processor, look like the PCDOS processor now has:

- four additional disk drives, and
- a printer (e.g. a 300 line per minute printer).

Note: these services are both implemented by using DOS files on network disks to:

- simulate PC Disks, and
 - capture printer data in spool files.
-

Limited DOS.H processor capability

Now the DOS.H processor can only run *some* DOS.H programs, those that can run concurrently (at the same time) as the INXPCDSS task. See Chapter 7.

Capabilities

In the *logged onto INX-PC* state, you can:

- use the PCDOS processor with INX-PC network services, including:
 - creating PC Disks,
 - inserting and removing PC Disks,
 - transferring text files between PCDOS and DOS disks,
or
 - spooling PCDOS program printer data to DOS spool files.

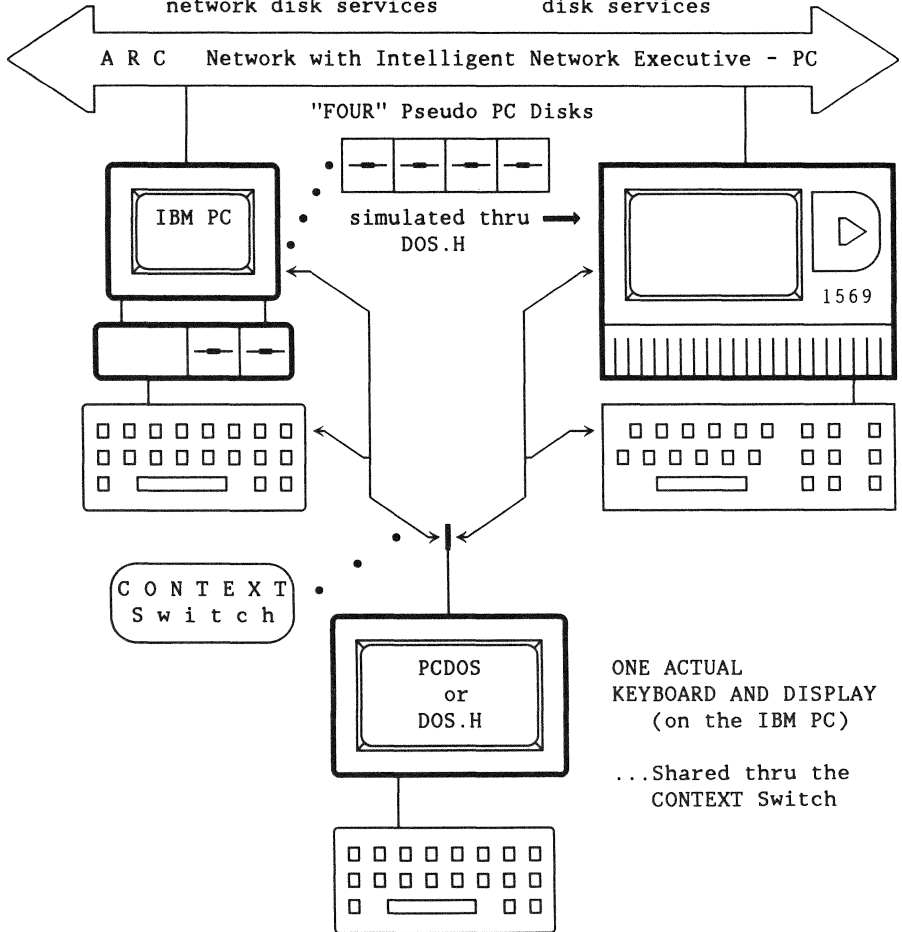
 - use the DOS.H processor to run *some* DOS.H programs, particularly
 - unspooling DOS printer spool files to your local PC printer.
-

System concept diagram

System state: LOGGED ONTO INX-PC.

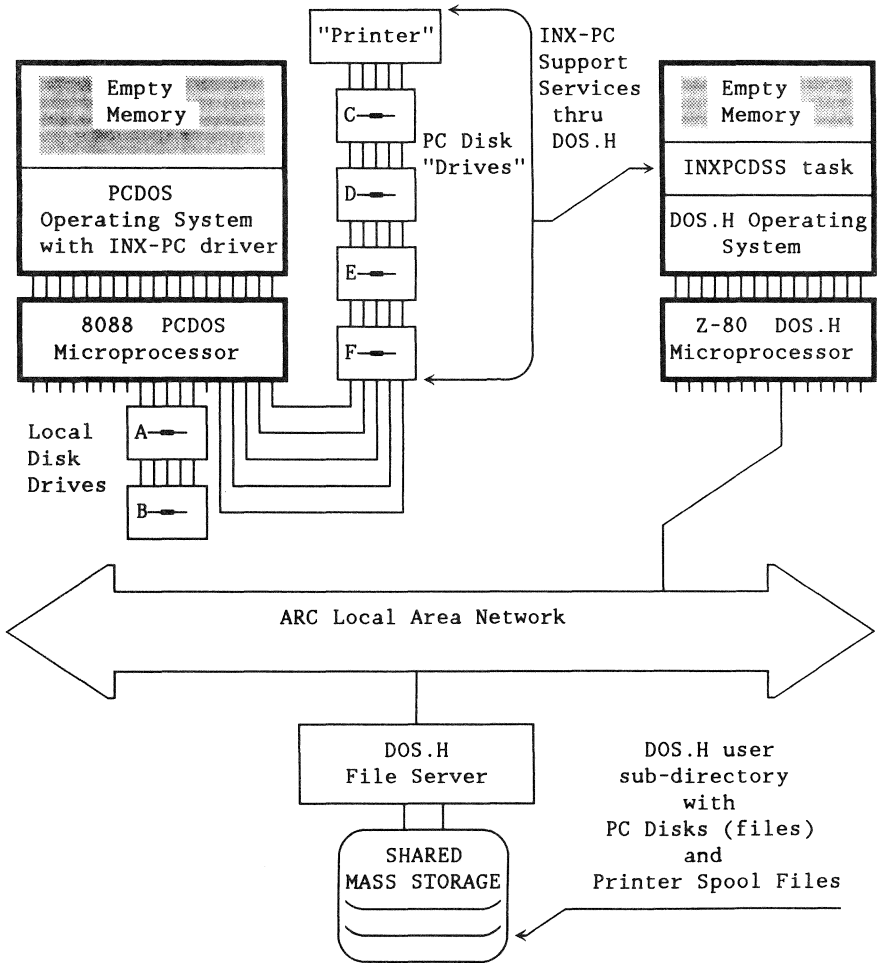
TWO PROCESSORS:

- PC DOS with local and network disk services
- DOS.H with network disk services



System block diagram

This is the system diagram of your PC in the *logged onto INX-PC* state. (The keyboard, display, and context switch are not shown.)



How to LOG onto INX-PC

Purpose

This procedure fully activates your INX-PC equipped PC.

Function

This procedure produces two results:

- 1 — the INX-PC processor is logged onto a DOS.H network file server.
 - 2 — the DOS.H program task module INXPCDSS is initialized to provide PCDOS with network services:
 - four PC Disk drives, and
 - printer spooling facilities.
-

When to use

Normally you will use the procedure just after you turn on your PC to begin a session using any of the

- INX DISK,
- INX PRINTER or
- INX COPY commands.

Sometimes, you will use this procedure after you have "logged onto DOS.H" to run certain DOS.H applications programs that will not run with the INXPCDSS task active.

Prerequisites

You must have completed all of the installation tasks listed on page 2-3 .


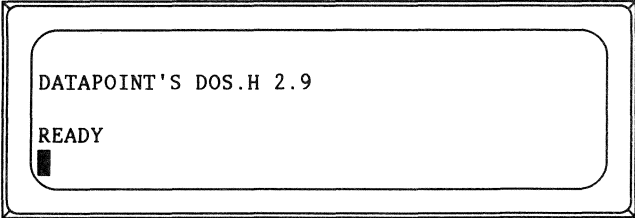
Procedure

This is the procedure for logging onto INX-PC.

STEP	ACTION
1	<p>Are you already logged onto DOS.H?</p> <p>IF <u>yes</u>, THEN go to STEP 4. IF <u>not</u>, THEN go to STEP 2.</p> <p><u>Hint:</u></p> <p>If you just turned on your PC, go to STEP 2.</p> <p>If you have been running DOS.H programs, go to STEP 4.</p>
2	<p>Perform the procedure:</p> <p>"How to LOG onto DOS.H" <u>and</u></p> <p>then go to STEP 3.</p> <p><u>See:</u> page 3-30</p> <p><u>Result:</u> that procedure will leave you at the DOS.H command line as shown below.</p> <div data-bbox="414 967 1046 1235" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><p>DOS.H 2.9 DATAPOINT'S DISK OPERATING SYSTEM READY</p><p>█</p></div>
3	Goto STEP 5

continued

Procedure
(continued)

STEP	ACTION
4	<p data-bbox="299 326 873 375">Is the keyboard and display <i>context</i> switched to DOS.H ?</p> <p data-bbox="299 407 635 428">IF <i>yes</i>, THEN go to STEP 5.</p> <p data-bbox="299 461 913 509">IF <i>not</i>, THEN use the <u>Alt-Left Shift-Right Shift</u> sequence:</p> <div data-bbox="303 545 789 605"><p>The diagram illustrates the keyboard sequence for switching context. It consists of three rectangular boxes connected by horizontal lines. The first box contains the text 'Alt'. The second box contains an upward-pointing arrow symbol (⇧). The third box also contains an upward-pointing arrow symbol (⇧).</p></div> <p data-bbox="299 643 365 664"><u>Hint:</u></p> <p data-bbox="299 696 900 745">If you have been running DOS.H programs, go to STEP 5.</p> <p data-bbox="299 777 925 850"><u>Result:</u> This action will guarantee that your context is switched to DOS.H. You should see the DOS.H READY prompt.</p> <div data-bbox="316 862 948 1078"><p>The screenshot shows a terminal window with a double border. Inside, the text 'DATAPOINT'S DOS.H 2.9' is displayed on the first line. The second line shows 'READY' followed by a small black cursor block.</p></div> <p data-bbox="299 1118 546 1140"><u>Possible exception:</u></p> <p data-bbox="299 1143 925 1218">IF the DOS.H screen does <u>not</u> show DOS.H READY, THEN you are probably in the middle of running a DOS.H applications program.</p> <p data-bbox="299 1250 658 1271">IF so, THEN end the program.</p>

continued

Procedure
(continued)

STEP	ACTION
5	<p>Type the DOS.H command that initiates the INX-PC support services task:</p> <p><u>INXPCDSS</u> <i>Return</i></p> <p><u>Result:</u> A separate task that does <u>not</u> use the keyboard and display facilities of the DOS.H processor will be initiated. It is called a concurrent task. It will provide the INX-PC network services to the PCDOS processor while at the same time you can run an applications program on the DOS.H processor.</p> <p>The DOS.H processor is ready for your command.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>DATAPOINT'S DOS.H 2.9 READY (INXPCDSS) —— you typed this INXPCDSSS 1.2 - INITIATE INX-PC DISK SUPPORT SERVICES - 09/20/84 INX DISK SUPPORT SERVICE MODULE IS NOW ACTIVE! DATAPOINT'S DOS.H 2.9 READY █</pre></div>

continued

Procedure
(continued)

STEP	ACTION						
6	<p>You are now logged onto INX-PC...and DOS.H.</p> <p>You now have the following choices:</p> <table border="1" data-bbox="307 435 962 646"> <tr> <td data-bbox="307 435 556 488">IF you want to...</td> <td data-bbox="556 435 962 488">THEN see the procedure..</td> </tr> <tr> <td data-bbox="307 488 556 565">go back to PCDOS</td> <td data-bbox="556 488 962 565">"How to context switch to PCDOS" on page 3-44 .</td> </tr> <tr> <td data-bbox="307 565 556 646">run other DOS.H programs</td> <td data-bbox="556 565 962 646">Chapter 7 "Running DOS.H programs"</td> </tr> </table> <p><u>Normal Choice:</u> Normally you will switch the context back to PCDOS from DOS.H by using the <u>Ctrl-Break</u> sequence:</p> <div data-bbox="307 743 575 808" style="border: 1px solid black; padding: 5px; display: inline-block;"> Ctrl - Break </div> <p><u>Result:</u> The screen will switch back to PCDOS and you will see that you now have four additional PC Disk drives.</p> <div data-bbox="319 930 953 1252" style="border: 2px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">NETWORK DISK SERVICES ARE NOW AVAILABLE ON</p> <p style="text-align: center;"> DRIVES (CDEF). or DRIVES (DEFG). </p> <p style="text-align: center;"> ↑ on a PC ↑ on an XT </p> <p style="text-align: center;">INX LOGON FUNCTION COMPLETE.</p> <p>A> </p> </div> <p><u>Note:</u> the four drive letters depend on whether you have an IBM PC <u>or</u> an IBM PC XT.</p>	IF you want to...	THEN see the procedure..	go back to PCDOS	"How to context switch to PCDOS" on page 3-44 .	run other DOS.H programs	Chapter 7 "Running DOS.H programs"
IF you want to...	THEN see the procedure..						
go back to PCDOS	"How to context switch to PCDOS" on page 3-44 .						
run other DOS.H programs	Chapter 7 "Running DOS.H programs"						

continued

Procedure
(continued)

STEP	ACTION
7	Now you can use PCDOS with all of the INX-PC features. <u>See:</u> Chapter 4 "Using PC Disks" and Chapter 5 "Spooling thru INX-PC."

Simultaneous DOS.H and PCDOS programs

While you are logged onto INX-PC, you can *context switch* your keyboard and display back and forth between PCDOS and DOS.H. You can run applications simultaneously on both processors. PCDOS programs are suspended while switched to DOS.H. However, DOS.H programs are not suspended but continue running.

Some DOS.H programs will not run while INX-PC is active.

Reason:

The INXPCDSS program module is a second (concurrent) task in the DOS.H processor. It provides the network disk services to PCDOS while you run other DOS.H programs.

Not all DOS.H programs can be run while a concurrent task is running.

See: Chapter 7 "Running DOS.H programs" for more details.

How to LOG onto DOS.H

Purpose

This procedure logs the DOS.H processor onto the ARC Network.

Results

This procedure has two results:

- 1—you establish password-protected access to a DOS.H disk sub-directory located at a remote DOS file server on the ARC Network, and
 - 2—the DOS.H operating system is then automatically loaded into the INX-PC card processor memory from the file server.
-

When to use

You will be instructed to use this procedure in the first *major* step of "How to LOG onto INX-PC" page 3-23 .

You may also use it by itself if you want to use certain DOS.H programs that cannot run with the INX-PC support services task running concurrently.

Prerequisites

Before you perform this procedure you must perform all tasks in the installation procedure in Chapter 2 on page 2-3 .

In particular, you will need to use four pieces of information determined in the installation procedures:

1—the PCDOS drive letter –

- which contains the INX-PC files and
- which you must select as the default drive before running the INX LOGON command,

2—your user name – the name of the DOS.H disk sub-directory you will be using to hold your PC Disks.

3—your code word – for that sub-directory, and

4—the volume name – of the DOS.H disk that holds that sub-directory.

Values used in examples

In command line examples in the following procedure, we will use the values shown in the table below for parameters which will depend on your exact installation.

Note: Fill in the blanks provided in the table and use those values in place of the example values. See the table in installation "TASK 9" in Appendix A on page A-51 .

PARAMETER NAME	VALUES YOU WILL USE	VALUES USED IN EXAMPLES						
PCDOS default drive	<table border="1"> <tr> <td data-bbox="391 282 523 391">IF you have an...</td> <td data-bbox="523 282 720 391">THEN you will <i>probably</i> log onto drive...</td> </tr> <tr> <td data-bbox="391 391 523 443">IBM PC</td> <td data-bbox="523 391 720 443">A:</td> </tr> <tr> <td data-bbox="391 443 523 495">IBM PC XT</td> <td data-bbox="523 443 720 495">C:</td> </tr> </table>	IF you have an...	THEN you will <i>probably</i> log onto drive...	IBM PC	A:	IBM PC XT	C:	A:
IF you have an...	THEN you will <i>probably</i> log onto drive...							
IBM PC	A:							
IBM PC XT	C:							
user name	<table border="1"> <tr> <td data-bbox="391 547 603 574"> <input type="text"/> </td> </tr> </table> <p>Rule: this may be <u>up to</u> eight characters and all letters <i>must</i> be UPPER CASE</p>	<input type="text"/>	MYNAME					
<input type="text"/>								
code word	<table border="1"> <tr> <td data-bbox="391 704 603 732"> <input type="text"/> </td> </tr> </table> <p>Rule: this must be <u>exactly</u> eight characters and letters may be upper or lower case. Note: For ease of use, all upper case is recommended.</p>	<input type="text"/>	FORGOTT					
<input type="text"/>								
DOS volume	<table border="1"> <tr> <td data-bbox="391 940 603 967"> <input type="text"/> </td> </tr> </table> <p>Rule: this may be <u>up to</u> eight characters and all letters <i>must</i> be UPPER CASE</p>	<input type="text"/>	ARCVOL1					
<input type="text"/>								

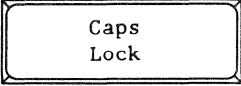
Procedure

This is the step-by-step procedure to log onto DOS.H.

STEP	ACTION						
1	Turn on your INX-PC equipped IBM PC and initialize PCDOS unless you have already been running PCDOS.						
2	<p>Make sure the disk <u>with</u> the installed INX-PC files is on-line.</p> <table border="1" data-bbox="406 521 1059 760"> <thead> <tr> <th data-bbox="406 521 578 602">IF you are using an...</th> <th data-bbox="578 521 1059 602">THIS means that...</th> </tr> </thead> <tbody> <tr> <td data-bbox="406 602 578 683">IBM PC</td> <td data-bbox="578 602 1059 683">you should put the diskette with the INX-PC files in drive A:.</td> </tr> <tr> <td data-bbox="406 683 578 760">IBM PC XT</td> <td data-bbox="578 683 1059 760">the INX-PC files are already on the hard disk in drive C:.</td> </tr> </tbody> </table>	IF you are using an...	THIS means that...	IBM PC	you should put the diskette with the INX-PC files in drive A:.	IBM PC XT	the INX-PC files are already on the hard disk in drive C:.
IF you are using an...	THIS means that...						
IBM PC	you should put the diskette with the INX-PC files in drive A:.						
IBM PC XT	the INX-PC files are already on the hard disk in drive C:.						
3	<p>Log onto the PCDOS drive with the INX-PC files.</p> <table border="1" data-bbox="525 862 968 1019"> <thead> <tr> <th data-bbox="525 862 785 919">If you are using:</th> <th data-bbox="785 862 968 919">type:</th> </tr> </thead> <tbody> <tr> <td data-bbox="525 919 785 967">an IBM PC</td> <td data-bbox="785 919 968 967">A: <u>Return</u></td> </tr> <tr> <td data-bbox="525 967 785 1019">an IBM PC XT</td> <td data-bbox="785 967 968 1019">C: <u>Return</u></td> </tr> </tbody> </table> <p>Result: if you had been logged onto drive B:, the result would look like this on your IBM PC screen.</p> <div data-bbox="422 1125 1053 1317" style="border: 1px solid black; padding: 10px;"> <p>B> (A) — you typed this</p> <p>A> _</p> </div>	If you are using:	type:	an IBM PC	A: <u>Return</u>	an IBM PC XT	C: <u>Return</u>
If you are using:	type:						
an IBM PC	A: <u>Return</u>						
an IBM PC XT	C: <u>Return</u>						

continued

Procedure
(continued)

STEP	ACTION
4	<p>Make certain that you are typing in UPPER CASE.</p> <p>Press the <u>Caps Lock</u> key: </p> <p>Type some characters on the PCDOS command line.</p> <p>If they are <u>not</u> in UPPER CASE, press the <u>Caps Lock</u> key again.</p> <p><u>Reason:</u> in STEPS 7,8,9 and 11 you will need to enter data to the DOS.H processor which requires upper case letters.</p> <p><u>What's NOT obvious:</u></p> <p>In STEP 7 and STEP 8, the first words you type to DOS.H will <u>not</u> be displayed on your screen;</p> <p>they are displayed as asterisks (*) for security reasons. So...it is important that you know ahead of time that you are typing upper case letters.</p>

continued

Procedure
(continued)

STEP	ACTION
5	<p>Type the following command to log onto INX:</p> <p><u>INX LOGON</u> <i>Return</i></p> <p><u>Result:</u> the following lines are displayed on the IBM PC display, indicating progress of the logon initialization process.</p> <div data-bbox="406 521 1040 922" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> A> INX LOGON ← you typed this INX 1.2 - INTELLIGENT NETWORK EXECUTIVE LOGON FUNCTION SELECTED: TESTING 8088 ACCESS TO INX MEMORY... TESTING Z80 ACCESS TO INX MEMORY... LOADING PC DISK SUPPORT MODULE TO INX RAM.. LOADING BOOT PROGRAM... LOADING FIRMWARE TO INX CARD... DOS.H LOADING FROM NETWORK... </pre> </div> <p>...then the display context automatically switches to the DOS.H processor. The PCDOS screen image is saved.</p> <div data-bbox="406 1073 1040 1317" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> WELCOME TO ARC15... VERSION 1.2 YOU ARE ?: </pre> </div>

continued

Procedure
(continued)

STEP	ACTION								
6	<p>SKIP this step <u>if</u> you got the proper result in STEP 5.</p> <p>If <u>not</u>, THEN:</p> <ul style="list-style-type: none"> • try to resolve the problem (see table below) and • retry this procedure. <p><u>Comment</u>: this is the first point you actually run INX-PC so this is when these problems will appear.</p> <table border="1" data-bbox="311 602 962 1312"> <thead> <tr> <th data-bbox="311 602 598 654">OBSERVED SYMPTOM</th> <th data-bbox="598 602 962 654">POSSIBLE CAUSE/REMEDY</th> </tr> </thead> <tbody> <tr> <td data-bbox="311 654 598 995"> The screen is blank when it should say: WELCOME TO ARC15... and you hear a click about once a second. </td> <td data-bbox="598 654 962 995"> <ul style="list-style-type: none"> • your IBM PC is <u>not</u> properly connected to the ARC Network. <u>Check</u>: the coaxial cable connection to the ARC Network. See installation TASK 5, page A-30 • there are no DOS.H file server processors active on the ARC Network. <u>Check</u>: with the systems administrators. </td> </tr> <tr> <td data-bbox="311 995 598 1154"> The screen is displaying a random cross-hatch pattern when it should say: WELCOME TO ARC15.. </td> <td data-bbox="598 995 962 1154"> <ul style="list-style-type: none"> • You did <u>not</u> do the INX INSTALL function. <u>Check</u>: installation TASKS 6,7 & 8 beginning on A-33 </td> </tr> <tr> <td data-bbox="311 1154 598 1312"> Error message: INX-PC DEFECTIVE, MISSING, OR IMPROPERLY INSTALLED! </td> <td data-bbox="598 1154 962 1312"> The ROM code switches do <u>not</u> match the INX INSTALL ROM code. <u>Check</u>: TASK 3, page A-17 and TASK 6, page A-33 </td> </tr> </tbody> </table> <ul style="list-style-type: none"> • type: <u>Ctrl-Break</u> to switch context back to PCDOS, 	OBSERVED SYMPTOM	POSSIBLE CAUSE/REMEDY	The screen is blank when it should say: WELCOME TO ARC15... and you hear a click about once a second.	<ul style="list-style-type: none"> • your IBM PC is <u>not</u> properly connected to the ARC Network. <u>Check</u>: the coaxial cable connection to the ARC Network. See installation TASK 5, page A-30 • there are no DOS.H file server processors active on the ARC Network. <u>Check</u>: with the systems administrators. 	The screen is displaying a random cross-hatch pattern when it should say: WELCOME TO ARC15..	<ul style="list-style-type: none"> • You did <u>not</u> do the INX INSTALL function. <u>Check</u>: installation TASKS 6,7 & 8 beginning on A-33 	Error message: INX-PC DEFECTIVE, MISSING, OR IMPROPERLY INSTALLED!	The ROM code switches do <u>not</u> match the INX INSTALL ROM code. <u>Check</u> : TASK 3, page A-17 and TASK 6, page A-33
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continued

Procedure
(continued)

STEP	ACTION
7	<p>Type in your user name in response to YOU ARE ?:. <u>Example:</u> MYNAME <i>Return</i></p> <p><u>Result:</u> the characters you typed are displayed as asterisks (*).</p> <div data-bbox="406 492 1040 812" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> WELCOME TO ARC15... VERSION 1.2 YOU ARE ? : (*****) CODEWORD ? : █ </pre> </div> <p><u>I M P O R T A N T:</u></p> <p>If you think you made a mistake while typing</p> <ul style="list-style-type: none"> • your user name <p>then backspace over <u>ALL</u> the asterisks <u>and</u> type the whole word again <u>BEFORE</u> you press <i>Return</i>.</p> <p>OR Press return without entering a codeword. This will give you another opportunity to respond to the YOU ARE: prompt.</p>

continued

Procedure
(continued)

STEP	ACTION
8	<p>Type in your code word in response to CODEWORD ?:. <u>Example:</u> FORGOTIT <u>Return</u></p> <p><u>Result:</u> the characters you typed are displayed as asterisks (*).</p> <div data-bbox="307 526 939 899" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>WELCOME TO ARC15... VERSION 1.2 YOU ARE ?: ***** CODEWORD ?: (***** YOUR VOLUME: █</pre></div> <p><u>I M P O R T A N T:</u></p> <p>If you think you made a mistake while typing</p> <ul style="list-style-type: none">• your code word <p>then backspace over <u>ALL</u> the asterisks and type the whole word <u>again BEFORE</u> you press <u>Return</u>.</p> <p>OR Press return without entering a volume. This will give you another opportunity to respond to the YOU ARE: prompt.</p>

continued

Procedure
(continued)

STEP	ACTION
9	<p>Type your DOS.H volume name in response to YOUR VOLUME:.</p> <p><u>Example:</u> ARCVOL1 <i>Return</i></p> <p><u>Comment:</u> this must be a DOS.H, <u>not</u> a DOS.D disk volume name. Later you can MOUNT additional DOS.H or DOS.D volumes but you <u>must</u> log onto a DOS.H disk.</p> <p><u>Result:</u> IF... <ul style="list-style-type: none"> • you typed everything correctly <u>and</u> • your DOS.H volume is on-line, THEN... you will see the READY message indicating that DOS.H is ready to accept a command.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> WELCOME TO ARC15... VERSION 1.2 YOU ARE ?: ***** CODEWORD ?: ***** YOUR VOLUME: (ARCVOL1) THANK YOU. DOS.H 2.9 DATAPOINT'S DISK OPERATING SYSTEM READY </pre> </div>

continued

Procedure
(continued)

STEP	ACTION		
10	<p>SKIP this step <u>if</u> you got the proper result in STEP 9.</p> <p>IF <u>not</u>, THEN review the following possibilities.</p> <p><u>Result:</u> if STEP 9 did <u>not</u> produce the correct result, the screen might look like this:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>YOUR VOLUME: (arcvoll) or (ARCVOL1)</p> <p>YOUR VOLUME MOUNT FAILED...</p> <p>I CAN'T FIND THAT VOLUME</p> <p>YOU ARE ? : █</p> </div>		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">IF your volume name appears in...</td> <td>THEN...</td> </tr> </table>	IF your volume name appears in...	THEN...
IF your volume name appears in...	THEN...		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">lower case</td> <td> <ul style="list-style-type: none"> • press the <u>Caps Lock</u> key and • GO BACK to STEP 7 </td> </tr> </table>	lower case	<ul style="list-style-type: none"> • press the <u>Caps Lock</u> key and • GO BACK to STEP 7
lower case	<ul style="list-style-type: none"> • press the <u>Caps Lock</u> key and • GO BACK to STEP 7 		
	<table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">upper case</td> <td> <p>it is possible you typed your user name or code word incorrectly, so</p> <ul style="list-style-type: none"> • GO BACK to STEP 7 <p><u>Note:</u> IF you think you typed everything correctly, it is possible that the DOS.H file server is off-line. Check with a system administrator.</p> </td> </tr> </table>	upper case	<p>it is possible you typed your user name or code word incorrectly, so</p> <ul style="list-style-type: none"> • GO BACK to STEP 7 <p><u>Note:</u> IF you think you typed everything correctly, it is possible that the DOS.H file server is off-line. Check with a system administrator.</p>
upper case	<p>it is possible you typed your user name or code word incorrectly, so</p> <ul style="list-style-type: none"> • GO BACK to STEP 7 <p><u>Note:</u> IF you think you typed everything correctly, it is possible that the DOS.H file server is off-line. Check with a system administrator.</p>		

continued

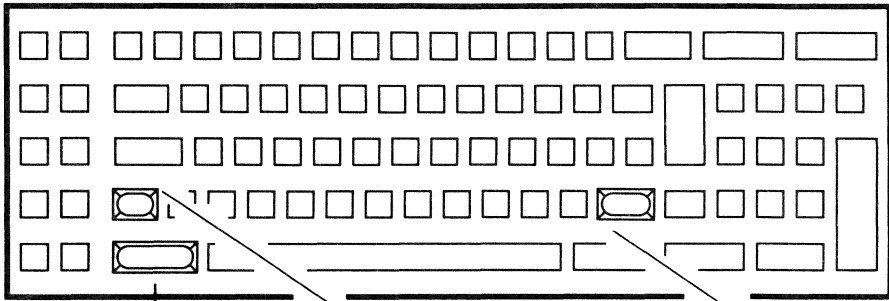
Procedure
(continued)

STEP	ACTION								
11	<p>Do you want to use additional DOS sub-directories? Probably not!</p> <p>IF <u>yes</u>, THEN</p> <ul style="list-style-type: none"> • follow the procedure: "How to mount additional DOS sub-directories" on page 6-13 . • and then GO TO STEP 12. <p>IF <u>not</u>, THEN go to STEP 12 now.</p>								
12	<p>Congratulations !</p> <p>You are now logged onto DOS.H.</p> <p>You now have the following choices:</p> <table border="1" data-bbox="399 781 1050 1068"> <thead> <tr> <th data-bbox="399 781 644 829">IF you want to...</th> <th data-bbox="644 781 1050 829">THEN see the procedure..</th> </tr> </thead> <tbody> <tr> <td data-bbox="399 829 644 911">use INX-PC support services</td> <td data-bbox="644 829 1050 911">"How to LOG onto INX-PC" on page 3-23</td> </tr> <tr> <td data-bbox="399 911 644 992">go back to PCDOS</td> <td data-bbox="644 911 1050 992">"How to context switch to PCDOS" on page 3-44</td> </tr> <tr> <td data-bbox="399 992 644 1068">run other DOS.H programs</td> <td data-bbox="644 992 1050 1068">Chapter 7 "Running DOS.H programs"</td> </tr> </tbody> </table>	IF you want to...	THEN see the procedure..	use INX-PC support services	"How to LOG onto INX-PC" on page 3-23	go back to PCDOS	"How to context switch to PCDOS" on page 3-44	run other DOS.H programs	Chapter 7 "Running DOS.H programs"
IF you want to...	THEN see the procedure..								
use INX-PC support services	"How to LOG onto INX-PC" on page 3-23								
go back to PCDOS	"How to context switch to PCDOS" on page 3-44								
run other DOS.H programs	Chapter 7 "Running DOS.H programs"								

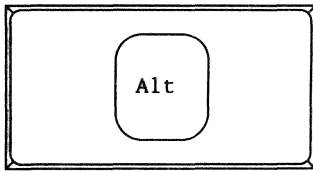
How to context switch to DOS.H

Procedure

Press the keys shown below to switch context to DOS.H.

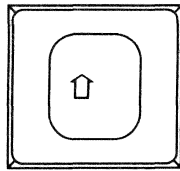


Alternate Key



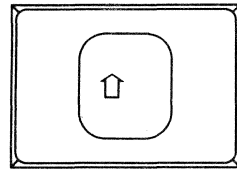
1) Press and hold
this key...

Left-Shift



THEN this key...

Right-Shift



THEN this key...

2) Release all the keys.

When to use

Use this procedure when you are operating the PCDOS processor and you want to operate the DOS.H processor on the INX-PC board.

For example, to:

- access additional sub-directories (see Chapter 6) or
 - run a DOS.H applications program (see Chapter 7).
-

Prerequisites

To use this procedure, you must already be logged onto INX-PC and/or DOS.H.

Comment

When you use the INX LOGON command, you are automatically context switched from PCDOS to DOS.H to log onto the ARC Network.

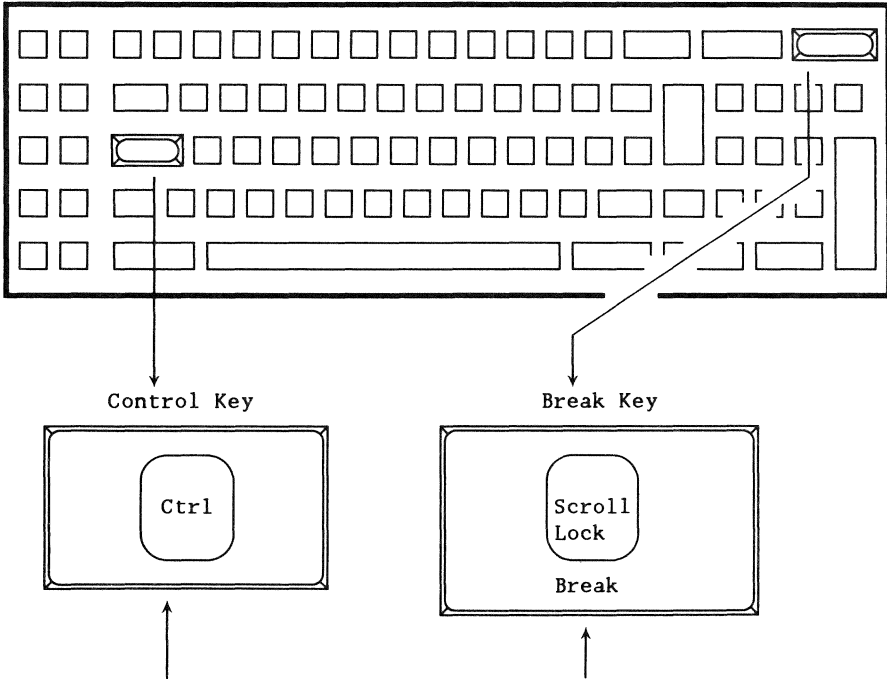
Reference

Refer to the concepts of Context Switching on page 3-5 .

How to context switch to PCDOS

Procedure

Press the keys shown below to switch context to PCDOS.



1) Press and hold
this key...

THEN this key...

2) Release all the keys.

When to use

Use this procedure when you are operating the DOS.H processor provided on the INX-PC board and you want to operate the PCDOS processor.

First time: the first time you will use this procedure is after you have "logged onto INX-PC and/or DOS.H" to get back to PCDOS.

CAUTION

If you press Ctrl-Break in the middle of running a PCDOS program while you are already in the PCDOS context; most PCDOS programs will terminate.

Be sure that you really are in the DOS.H context before using Ctrl-Break.

When used in this manner, Ctrl-Break will only switch you back to PCDOS; it will not affect the currently running PCDOS program.

Hint:

You can tell the difference between PCDOS and DOS.H context by the type of cursor displayed:

- the PCDOS cursor looks like this: █
 - the DOS.H cursor looks like this: ▣
-

BIOS bug - PC DOS cursor

There is a bug in IBM (and COMPAQ) BIOS: the cursor character for a monochrome monitor is improperly initialized.

Normally, INX-PC corrects the problem when you log onto INX-PC or context switch to PC DOS.

When it shows up: The problem may show up if you are switching between a color and monochrome monitor by using the PC DOS MODE command.

Symptom: The cursor character on a monochrome monitor may change shape when you context switch back to PC DOS.

Example of proper cursor: A>_

Example of bad cursor: A>▬

Corrective procedure:

To restore the cursor to its proper shape, execute either of these INX commands:

- INX PRINTER EXAMINE Return or
 - INX DISK EXAMINE Return.
-

How to shut off the INX-PC support services

Introduction

This procedure is used to shut off the INX-PC support services task for one of the following reasons:

- to use MOUNTI5 to access additional sub-directories,
 - to run any other DOS.H program that can't run concurrently with the INXPCDSS task, or
 - whenever a DOS.H program indicates that you must re-boot (restart or re-initialize) the DOS.H processor.
-

Process description

The process is simply to use the INX LOGON command to re-log onto DOS.H, without starting up the INXPCDSS task.

Prerequisites

You would necessarily be "logged onto INX" before you perform this procedure.

Procedure

This is the procedure to shut off the INX support services task and re-log onto DOS.H

STEP	ACTION
1	Context switch to DOS.H <u>and</u> make sure that you terminate any applications program that may have files open.
2	Context switch to PCDOS <u>and</u> make sure that you terminate any applications program that is running so that: <ul style="list-style-type: none">• all files on PC Disks are closed, <u>and</u>• more obviously, so you can type commands to PCDOS.
3	IF spooling is active THEN type: INX PRINTER NORMAL <u>Return</u> <u>Result:</u> this will properly close the currently active print file.

continued

Example procedure
(continued)

STEP	ACTION						
4	<p>Remove all PC Disks from the PC Disk drives with the INX DISK REMOVE command.</p> <table border="1" data-bbox="399 435 1055 776"> <tr> <td data-bbox="399 435 583 516">IF you have an...</td> <td data-bbox="583 435 1055 516">THEN type the following commands</td> </tr> <tr> <td data-bbox="399 516 583 646">IBM PC</td> <td data-bbox="583 516 1055 646"> INX DISK REMOVE C:<u>Return</u> INX DISK REMOVE D:<u>Return</u> INX DISK REMOVE E:<u>Return</u> INX DISK REMOVE F:<u>Return</u> </td> </tr> <tr> <td data-bbox="399 646 583 776">IBM PC XT</td> <td data-bbox="583 646 1055 776"> INX DISK REMOVE D:<u>Return</u> INX DISK REMOVE E:<u>Return</u> INX DISK REMOVE F:<u>Return</u> INX DISK REMOVE G:<u>Return</u> </td> </tr> </table> <p><u>Result:</u> All PC Disk files will be properly closed.</p> <p><u>See:</u> "The INX DISK REMOVE command" for more details, on page 4-24 .</p> <p><u>Hint:</u> This would be a good application for a batch file command. See Chapter 11.</p>	IF you have an...	THEN type the following commands	IBM PC	INX DISK REMOVE C: <u>Return</u> INX DISK REMOVE D: <u>Return</u> INX DISK REMOVE E: <u>Return</u> INX DISK REMOVE F: <u>Return</u>	IBM PC XT	INX DISK REMOVE D: <u>Return</u> INX DISK REMOVE E: <u>Return</u> INX DISK REMOVE F: <u>Return</u> INX DISK REMOVE G: <u>Return</u>
IF you have an...	THEN type the following commands						
IBM PC	INX DISK REMOVE C: <u>Return</u> INX DISK REMOVE D: <u>Return</u> INX DISK REMOVE E: <u>Return</u> INX DISK REMOVE F: <u>Return</u>						
IBM PC XT	INX DISK REMOVE D: <u>Return</u> INX DISK REMOVE E: <u>Return</u> INX DISK REMOVE F: <u>Return</u> INX DISK REMOVE G: <u>Return</u>						
5	<p>Follow the procedure "How to LOG onto DOS.H" <u>but</u> make sure you do <u>not</u> start the INXPCDSS task.</p> <p><u>See:</u> "How to LOG onto DOS.H" on page 3-30</p>						

Chapter 4.

Using PC Disks

Overview

Introduction

Now that you have learned how to log onto INX, you will want to create some PC Disks and use them in the four additional PCDOS drives (PC Disk drives) that INX provides.

In this chapter

In this chapter we will describe:

- what are:
 - PCD drives,
 - DOS logical drives, and
 - PC Disks;
 - four PCDOS commands you will use with PC Disks, including:
 - INX DISK CREATE,
 - INX DISK INSERT,
 - INX DISK REMOVE,
 - INX DISK EXAMINE, and;
 - an example of using these commands.
-

Other chapters

You will be able to find out more about using PC Disks in Chapter 8, "Managing your network disk space."

What are PCD drives

PCD drive :Synonym: PC disk drive

PCD drive :Synonym: pseudo disk drive

Definition

A PCD drive is a PCDOS disk drive simulated by the INX support services task in the DOS.H processor and by the special INX driver configured into PCDOS.

Use

INX DISK commands to PCDOS allow you to insert and remove PC Disks in the PCD drives.

PCD drives can only be used with PC Disks and

PC Disks can only be used with PCD drives.

Four drives

When you LOG ONTO INX, your PC is equipped with four additional disk drives: PCD drives.

IF you are using...	the four PCD drives are...
an IBM PC	C:, D:, E:, and F:
an IBM PC XT	D:, E:, F:, and G:

What are DOS.H logical drives

Definition

DOS.H logical drives are the entities defined in DOS.H which represent sub-directories you have access to on network file servers.

Drive names

The DOS.H drives are named — :DR0, :DR1, ... :DR15.

Note: these are roughly the DOS equivalent to PCDOS disk drives — A:, B:, C: ...etc.

Your LOG-ON drive

When you log onto a DOS.H file server, you specify a disk sub-directory (*your name*) on a volume.

That sub-directory on *that* volume will be :DR0 (drive 0).

Additional sub-directories

If you mount additional sub-directories, they will become drives 1, 2, etc.

They may actually be *different* sub-directories on the *same* volume or, possibly, sub-directories with the *same* name on *different* volumes.

What are DOS.H logical drives

Use

In DOS.H, when you completely specify a file name, you specify:

- the file name – up to eight characters,
- the file extension – a "/" and up to three characters, and
- the logical drive – :DR 0 thru 15.

Similarity to PCDOS: PCDOS has the same basic three part specification of a file name.

Default DOS.H drive

If you do not specify a DOS.H logical drive number, drive 0 is assumed (your log on sub-directory).

Default PCDOS drive

In PCDOS, when you do not specify a PCDOS drive, the default drive is the one you are logged onto; that is, the drive letter indicated by the prompt, for example:

C> _

Comment: in DOS.H you cannot easily change your logon drive (sub-directory) as you can in PCDOS.

When to specify DOS drives when using INX

If you simply:

- log onto DOS.H, and
- do not mount additional sub-directories,

you will not have to specify DOS.H drive numbers.

If you:

- log onto DOS.H and
- do mount additional sub-directories,

you will have to specify which sub-directory (DOS.H drive) a PC Disk (DOS file) is in, or is going to be created in.

Reason: INX commands you type to PCDOS sometimes have a DOS *file:drive* specification which is passed to DOS.H for final processing and network transaction.

What are PC Disks

PC Disk :Synonym: simulated PCDOS disk

PC Disk :Synonym: pseudo PCDOS disk

PC Disk :Synonym: PCD

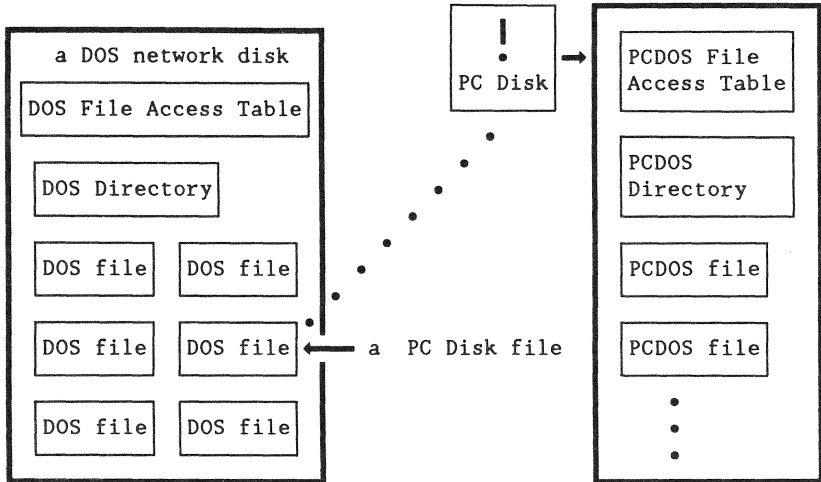
Description

PC Disks are DOS files that:

- simulate PCDOS disks,
 - have an internal data structure – that exactly duplicates the structure of a physical PCDOS disk,
 - are created on DOS disks – attached to ARC Network DOS file servers, and
 - may be used by INX equipped IBM PCs as PCDOS disks.
-

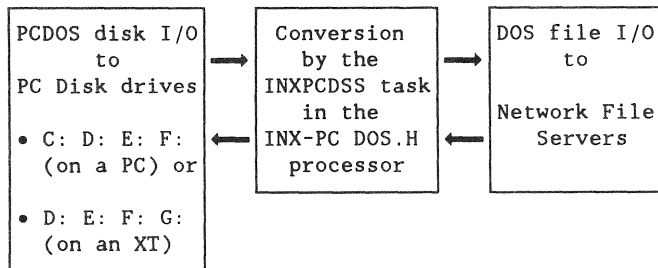
Concept diagram

A DOS file on a network mass storage disk contains a DOS file which has the internal structure of a PCDOS disk.



How they work

The INX-PC support services task in the DOS.H processor performs a data format translation so that disk I/O from PCDOS is converted to DOS.H file I/O to ARC file servers.



Advantages of PC Disks

List

These are some of the advantages of PC Disks.

- MASS STORAGE

Mass storage disks already on an ARC Network become potential disk space for your PC simply by adding the INX-PC adapter board.

- SHARED PCDOS FILES

Data files in PC Disks on an ARC Network may be shared with other users of INX-PC equipped PCs.

Note: see Chapter 6 "Using sub-directories" for information on shared PC Disks.

- BACKUP

Your PC Disks will be automatically backed up whenever the network mass storage disks are routinely backed up by network administration personnel.

- TRANSPORTABILITY

Your PC Disks can be transferred between ARC Networks almost anywhere in the world with DATAPOINT communication facilities.

See: Chapter 10, "Transporting PC Disks" for more details.

Types of PC Disks: HARDDISK and DISKETTE

Classification

There are two types of PC Disks:

- HARDDISK and
- DISKETTE.

The capacity of each roughly corresponds to a physical hard disk or diskette, respectively.

Main characteristics

This table indicates for each type of PC Disk, its:

- capacity in bytes of PCDOS data and
- advantage.

PC Disk TYPE	STORAGE CAPACITY	ADVANTAGE
HARDDISK	5 megabytes 112 files	Holds a lot of data, best used if most files are larger than 7000 bytes
DISKETTE	360 k bytes 112 files	<ul style="list-style-type: none">• Access time is faster because File Access Tables are smaller.• best for small files because cluster size is smaller.

Dynamic file space allocation

When you create a PC Disk, it takes up very little DOS file space. When you put PCDOS files on the PC Disk, more DOS file space will automatically be allocated and used.

Benefit: you may create and use many small PC Disks in a relatively small amount of DOS disk space.

Deallocation: when you delete data from a PC Disk, the DOS.H file space used by the PC Disk does not automatically contract.

See: Chapter 8, "Managing your network disk space", in particular: "How to deallocate unused space in PC Disks" on page 8-17.

Introduction

PC Disks are used exactly the same way you would use a physical disk, except that you "handle" them with INX-PC program commands.

This section will list three groups of commands you may use involving PC Disks:

- special INX PCDOS commands
 - normal PCDOS commands
 - DOS.H commands
-

Further details

The commands will be listed here without full details regarding their syntax and use. For more details on:

- INX-PC commands – see the the sections that follow,
 - PCDOS commands – see your PCDOS user's guide,
 - DOS.H commands – see Chapter 8, "Managing your network disk space."
-

INX PCDOS commands

These INX PCDOS commands are used to "handle" PC Disks.

COMMAND	FUNCTION
INX DISK CREATE	This command does the following: <ul style="list-style-type: none">• creates a blank PC Disk in your DOS.H sub-directory on a network mass storage disk.• inserts it in a specified PCD drive,• formats it,• makes it ready to use.
INX DISK INSERT	Inserts a previously created PC Disk in a specified PCD drive.
INX DISK REMOVE	Removes a PC Disk from the specified PCD drive so that: <ul style="list-style-type: none">• initially allocated DOS file space is deallocated if it was <u>not</u> used.• you can perform DOS file commands on it.
INX DISK EXAMINE	Displays the: <ul style="list-style-type: none">• PCD name (DOS filename) <u>and</u>• type (HARDDISK or DISKETTE) of the PC Disks in all four PCD drives

Standard PCDOS commands

These are only some of the standard PCDOS commands that you can use with PC Disks in the same manner you would use them with regular PCDOS disks.

COMMAND	FUNCTION
BACKUP	Backs up files from a fixed disk
CHKDSK	Checks a disk for errors. <u>Note:</u> this command will say PCD is a "Probable non-PCDOS disk" "Continue Y/N: ?" ... say (Y)es.
CHDIR (CD)	Change (PCDOS) directories
COPY	Copies file(s)
DEL (ERASE)	Deletes file(s)
DIR	Lists requested directory entries
LABEL	Assign a volume name to a disk
MKDIR (MD)	Makes a directory
REN (RENAME)	Renames files
RMDIR (RD)	Removes a directory
VERIFY	Verifies writes to disk
VOL	Displays disk volume ID

PCDOS command exceptions

These commands DO NOT work with PC Disks.

[DISKCOPY]	Will <u>NOT</u> work if either disk is a PCD
[FORMAT]	<u>DO NOT</u> use this command on PC Disks
[SYS]	<u>DO NOT</u> use this command on PC Disks

DOS.H commands

These DOS.H commands are used to maintain your network disk space or prepare your PC Disk files for communication via special DATAPOINT programs.

Note: you will have to context switch to DOS.H, not PCDOS, to use them.

In DOS.H you treat PC Disks as DOS files. You do not access the PCDOS files within the PC Disk file. You can only perform DOS file operations on the whole PC Disk.

COMMAND	FUNCTION
INXPCDTT	Test a PC Disk for transportability and initialize unformatted sectors.
CAT /PCD	Display the name of all PC Disks in your DOS sub-directory(s).
CHANGE	Change the protection status of the DOS file: <ul style="list-style-type: none">• DELETE protected,• WRITE protected, or• <u>not</u> protected.
COPY	Copy a PC Disk from one logical DOS drive to another.
KILL	Erase and delete a PC Disk.
FILES	Display the actual DOS file size of a PC Disk.

PC Disk DOS file name

Fact

A PC Disk DOS file name is assigned when you create it.

Rule: DOS extension name

All PC Disk (DOS) file names will automatically be given the extension

/PCD

when they are created.

Example

If you create a PC Disk named "WORKDISK", a DOS file named "WORKDISK/PCD" will actually be created.

PC Disk volume name

Fact

The name you assign to a PC Disk when you create it will automatically become the PCDOS volume name for that disk.

Changing volume names

You may use the PCDOS command LABEL, to assign a different volume name to a PC Disk.

INX DISK CREATE command

Purpose

The INX DISK CREATE command produces two results:

- 1 — it creates a DOS file which is the PC Disk.
- 2 — it inserts it in a specified PCD drive.

Note: it also removes any PC Disk that may have been in the specified PCD drive.

When to use

Use this command to create PC Disks when you need them.

You will need to create some PC Disks after you have learned to log onto INX-PC.

Prerequisites

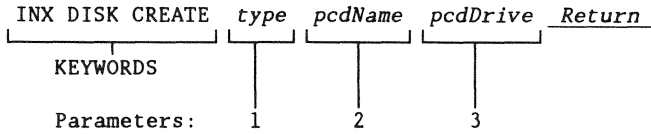
Before you use this command, you must be:

- logged onto INX-PC and
- context switched to PCDOS.

Advice: Do an INX DISK EXAMINE command first, but if you don't, there is an "ARE YOU SURE ?" prompt that lets you out of INX DISK CREATE.

Command format

This is the format of the INX DISK CREATE command.



Parameter description

This table describes the command parameters.

PARAMETER		DESCRIPTION
1	<i>type</i>	A simulated PC Disk type: DISKETTE or HARDDISK.
2	<i>pcdName</i>	A simulated PC Disk name. Actually this is the name of a DOS.H file (<i>pcdName</i> /PCD) that INX will use to simulate a PC disk. <u>Note:</u> You must also specify the DOS.H drive if it is <u>not</u> drive 0. <u>Examples:</u> WORKDISK ...(<i>in DOS.H drive 0</i>) COMMON:DR1 ...(<i>in DOS.H drive 1</i>)
3	<i>pcdDrive</i>	A PCDOS PCD disk drive: D:, E:, F:, or G: on an IBM PC XT <u>or</u> C:, D:, E:, or F: on an IBM PC. <u>Comment:</u> these are the simulated INX disk drives.

Examples

These are examples of the INX DISK CREATE command.

Create PC Disks in your log on sub-directory
(DOS drive 0)...:

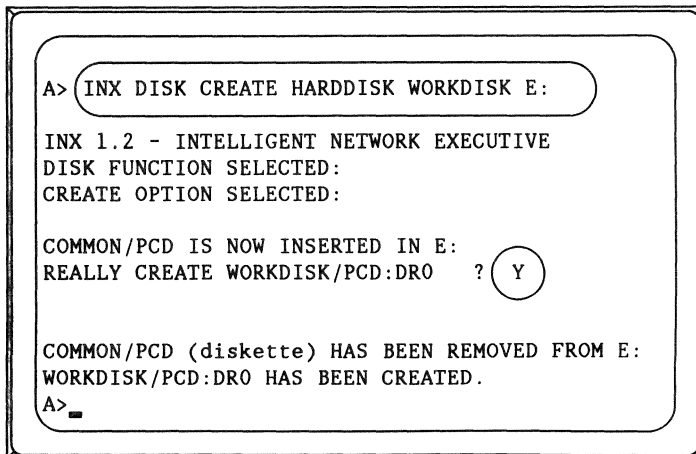
```
INX DISK CREATE DISKETTE NEWSMALL E: Return  
INX DISK CREATE HARDDISK NEWBIG F: Return
```

Create PC Disks in a sub-directory other than drive 0...:

```
INX DISK CREATE HARDDISK NEWBIG:DR2 F: Return
```

Results

The results of using the INX DISK CREATE command are shown in this example where a PC Disk was already inserted in the drive specified.



```
A> INX DISK CREATE HARDDISK WORKDISK E:  
  
INX 1.2 - INTELLIGENT NETWORK EXECUTIVE  
DISK FUNCTION SELECTED:  
CREATE OPTION SELECTED:  
  
COMMON/PCD IS NOW INSERTED IN E:  
REALLY CREATE WORKDISK/PCD:DR0 ? (Y)  
  
COMMON/PCD (diskette) HAS BEEN REMOVED FROM E:  
WORKDISK/PCD:DR0 HAS BEEN CREATED.  
A> █
```

Good practice

Use the INX DISK REMOVE command after you are finished using the newly created PC Disk.

When you CREATE a PC Disk, DOS.H will *initially* allocate an amount of DOS disk space that varies. Sometimes it is a lot more than you would actually need for an empty, or even partially full PC Disk.

To release that unused DOS disk space for other users, or other PC Disks of your own, use the INX DISK REMOVE command before you end the session of INX-PC in which you created the PC Disk.

Note: When you eventually fill the allocated space, DOS.H will allocate some more space. Again it will be more than you need, so always use the INX DISK REMOVE before you end a session of INX-PC in which you create, or add files to a PC Disk.

Location of PC Disks

You may create or place (copy) PC Disks on any DOS disk volume.

Note: Your logon disk volume is DOS.H, but you may also use DOS.D volumes.

See: Chapter 6, "Using sub-directories" for more information.

INX DISK INSERT command

Purpose

The INX DISK INSERT command effectively places a previously created PC Disk in a specified PCD drive.

Note: it also removes any PC Disk that may have been in the specified PCD drive.

When to use

Use this command when you want to use a PC Disk that:

- is not currently inserted in a PCD drive, but
 - has already been created with INX DISK CREATE.
-

Prerequisites

Before you use this command, you must be:

- logged onto INX and
- context switched to PCDOS.

Advice: Do an INX DISK EXAMINE command first.

Command format

This is the format of the INX DISK INSERT command.

INX DISK INSERT	<i>pcdName</i>	<i>pcdDrive</i>	<u>Return</u>
-----		-----	
KEYWORDS	1	2	
Parameters: 1 2			

Parameter description

This table describes the command parameters.

PARAMETER		DESCRIPTION
1	<i>pcdName</i>	<p>A simulated PC Disk name.</p> <p>Actually this is the name of a DOS.H file (<i>pcdName</i>/PCD) that INX will use to simulate a PC disk.</p> <p><u>Note:</u> You must also specify the DOS.H drive if it is <u>not</u> drive 0.</p> <p><u>Examples:</u> WORKDISK ...(<i>in DOS.H drive 0</i>) COMMON:DR1 ...(<i>in DOS.H drive 1</i>)</p>
2	<i>pcdDrive</i>	<p>A PCDOS PC Disk drive: D:, E:, F:, or G: on an IBM PC XT <u>or</u> C:, D:, E:, or F: on an IBM PC.</p>

Examples

These are examples of INX DISK INSERT commands.

```
INX DISK INSERT WORKDISK E: Return
INX DISK INSERT COMMON:DR1 F: Return
```

INX DISK REMOVE command

Purpose

The INX DISK REMOVE command has two functions:

- 1 — it removes one PC Disk from a specified PCD drive, and
 - 2 — it deallocates unused DOS file space which was allocated in the immediately previous session of using the PCD.
-

When to use

Use the INX DISK REMOVE command before you

- turn off your PC or
- re-log onto DOS.H or INX

when you have either:

- created a new PC Disk or
 - placed new files on any PC Disk.
-

Prerequisites

Before you use this command, you must be:

- logged onto INX and
- context switched to PCDOS.

Advice: Do an INX DISK EXAMINE command first.

Good practice

To be on the safe side, always remove all four PC Disks before you turn off your PC or re-log onto DOS.H or INX.

Example: ...on an IBM PC XT

```
INX DISK REMOVE D: Return  
INX DISK REMOVE E: Return  
INX DISK REMOVE F: Return  
INX DISK REMOVE G: Return
```

Hint: create a batch file command that removes all four disks from the PCD drives.

Name a file INXOFF.BAT, or something you like, and place four lines of text like the above example in it.

INX DISK EXAMINE command

Purpose

The INX DISK EXAMINE command displays the

- name,
- type, and
- DOS drive residence

of each PC Disk currently inserted in the four PCD drives.

Physical equivalent

This is the INX logical equivalent to physically pulling diskettes out of physical drives and looking at the label.

When to use

You should use this command to

make sure you know which PC Disk you have in a particular PCD drive before you:

- do something that may destroy data on a PC Disk,
 - create a new PC Disk or
 - insert a PC Disk.
-

Prerequisites

Before you use this command, you must be:

- logged onto INX-PC and
 - context switched to PCDOS.
-

Command format

This is the format of the INX DISK EXAMINE command.

INX DISK EXAMINE Return

Note: This command has no parameters.

Result

This is an example of the information displayed when you use the INX DISK EXAMINE command on an IBM PC XT.

```
C>INX DISK EXAMINE

INX 1.2 - INTELLIGENT NETWORK EXECUTIVE

DISK FUNCTION SELECTED:
EXAMINE OPTION SELECTED:

DISK DRIVE STATUS:

DRIVE D: NEWBIG /PCD:DR00 (HARDDISK)
DRIVE E: (EMPTY)
DRIVE F: WORKDISK/PCD:DR00 (DISKETTE)
DRIVE G: BACKUP /PCD:DR01 (HARDDISK)
```

Other commands to use

The INX DISK EXAMINE is not the only command you may use to *examine* PC Disks in the literal sense.

You may also use normal PCDOS commands, for example:

- DIR
 - VOL
 - CHKDSK... etc.
-

Example of using PC Disks

Introduction

This is an example procedure which shows how you might first begin using PC Disks after you have first logged onto INX-PC.

We will show the example on an IBM PC, not an XT.

Summary

This procedure will do the following:

- create five PC Disks,
 - BIGONE
 - SMALLONE
 - SCRATCH
 - WP
 - WPCOPY
 - copy some files from a diskette onto PC Disk "WP",
 - copy the files on "WP" to "WPCOPY".
-

Example procedure

This is an example of how you can use PC Disks.

STEP	ACTION
1	<ul style="list-style-type: none">• Log onto INX-PC <u>and</u>• context switch to PCDOS. <p><u>Reference:</u> see "How to LOG onto INX-PC" on page 3-23</p> <p><u>Result:</u> you will see that network services are available for drives C:, D:, E:, and F:.</p> <div data-bbox="410 613 1045 824" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><p>NETWORK DISK SERVICES ARE NOW AVAILABLE ON DRIVES (CDEF).</p><p>INX LOGON FUNCTION COMPLETE.</p><p>A> _</p></div>

continued

Example procedure
(continued)

STEP	ACTION
2	<p>Type:</p> <p>INX DISK EXAMINE <u>Return</u></p> <p><u>Result:</u> you will see that all drives are empty.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre> A>INX DISK EXAMINE DISK DRIVE STATUS: DRIVE C: (EMPTY) DRIVE D: (EMPTY) DRIVE E: (EMPTY) DRIVE F: (EMPTY) A>_ </pre> </div>
3	<p>Create four PC Disks by typing the following sequence of commands:</p> <p>INX DISK CREATE HARDDISK BIGONE C: <u>Return</u> Y <u>Return</u></p> <p>INX DISK CREATE DISKETTE SMALLONE D: <u>Return</u> Y <u>Return</u></p> <p>INX DISK CREATE DISKETTE SCRATCH E: <u>Return</u> Y <u>Return</u></p> <p>INX DISK CREATE DISKETTE WP F: <u>Return</u> Y <u>Return</u></p>

continued

Example procedure
(continued)

STEP	ACTION
4	<p>See the results by typing:</p> <pre>INX DISK EXAMINE <u>Return</u></pre> <p><u>Result:</u> you will see that all drives have PC Disks</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre>A>INX DISK EXAMINE DISK DRIVE STATUS: DRIVE C: BIGONE /PCD:DRO (HARDDISK) DRIVE D: SMALLONE/PCD:DRO (DISKETTE) DRIVE E: SCRATCH /PCD:DRO (DISKETTE) DRIVE F: WP /PCD:DRO (DISKETTE) A> _</pre> </div>
5	<p>Create a fifth PC Disk by typing:</p> <pre>INX DISK CREATE DISKETTE WPCOPY E: <u>Return</u> Y <u>Return</u></pre> <p><u>Result:</u> The PC Disk SCRATCH will be removed from drive E: as WPCOPY is created.</p>

continued

Example procedure
(continued)

STEP	ACTION
6	Put a diskette with some of your word processor documents in drive B.
7	<p>Copy all the files on it to the "WP" PC Disk by typing:</p> <p style="padding-left: 40px;">COPY B:*. * F: <u>Return</u></p> <p><u>Result:</u> Now you have all those files on the network file server. You may never have to pick up that diskette again.</p>
8	<p>Copy all the files on "WP" to "WPCOPY" by typing:</p> <p style="padding-left: 40px;">COPY F:*. * E: <u>Return</u></p>
9	<p>Put "SCRATCH" PC Disk back in a different drive, like C:, by typing:</p> <p style="padding-left: 40px;">INX DISK INSERT SCRATCH C: <u>Return</u></p> <p><u>Result:</u> The PC Disk BIGONE will be removed from drive C: as SCRATCH is inserted.</p>
10	<p>Remove all the PC Disks properly before you end a session of being logged onto INX-PC by typing:</p> <p style="padding-left: 40px;">INX DISK REMOVE C: <u>Return</u> INX DISK REMOVE D: <u>Return</u> INX DISK REMOVE E: <u>Return</u> INX DISK REMOVE F: <u>Return</u></p>
11	<p>You can turn off the PC now. All your PC Disks will be out there on the network disks waiting for next time.</p>

Backing up your PC Disks

Vulnerability to wipe-out

Your PC Disks are files on a DOS file server disk. Like any type of disk medium, these disks are also susceptible to circumstances that render their data unrecoverable.

Company backup policies

If the company maintaining your ARC Network does perform routine backup of the network's file server disks, then you may not need to use this procedure.

Assumption - additional sub-directory

This backup procedure assumes that you have obtained access to a second DOS user sub-directory on a different disk volume than the one you normally use for your PC Disks.

Process description

The process of backing up a PC Disk is basically:

- in DOS.H, mounting two sub-directories on different disks.
 - copying the DOS PC Disk file from the sub-directory where it is normally used, to the sub-directory on the backup disk volume.
-

When to use

Use this procedure whenever you have placed new valuable data on your PC Disks and you do not have another form of backup for the data.

Procedure

This is the procedure to backup a PC Disk.

STEP	ACTION
1	<p>Check your PC Disk that you are going to back up to see if it is making inefficient use of its allocated space.</p> <p><u>Comment:</u> You don't want to double the inefficiency.</p> <p><u>Reference:</u> see the procedures in Chapter 8.</p> <ul style="list-style-type: none"> • "Determining when a PC Disk is fragmented" on page 8-7 <u>and</u> • "How to deallocate unused space in a PC Disk" on page 8-17 .
2	<p>Log onto DOS.H, <u>not</u> INX-PC.</p> <p>If you were logged onto INX-PC, THEN follow the procedure in Chapter 3:</p> <p>"How to shut off INX-PC support services" on page 3-47</p> <p><u>Important:</u> that procedure will guarantee two things:</p> <ul style="list-style-type: none"> • you will be able to use the MOUNT15 command, <u>and</u> • your PC Disk will be removed from a PCD drive.
3	<p>Make sure you are context switched to DOS.H.</p>

continued

Procedure, continued

STEP	ACTION
4	<p>Mount the sub-directory that will be used to store the backup copy of the PC Disk.</p> <p>Follow the procedure in Chapter 6: "How to mount additional DOS sub-directories" on page 6-13</p> <p><u>Result:</u> You will now have at least two DOS drives mounted:</p> <ul style="list-style-type: none"> • your logon drive :DRO, <u>and</u> • the backup drive :DRL. <p>If you had more drives already mounted before you mounted the backup drive, you will need to substitute the correct drive numbers in the following examples.</p>
5	<p>Use the DOS.H COPY command to copy your original PC Disk file to the backup drive.</p> <p><u>Format:</u> the format of the COPY command is: COPY <i>sourceFile destinationFile</i> <u>Return</u></p> <p><u>Example:</u> lets say that you have a PC Disk named: WORKDISK on drive 0. You would type:</p> <p>COPY WORKDISK/PCD:DRO, :DRL <u>Return</u></p> <p><u>Result:</u> This example copies WORKDISK/PCD on :DRO to WORKDISK/PCD on :DRL. If it already existed on :DRL, it would be overwritten.</p> <p><u>Comment:</u> if you wanted to change the name of the backup copy to indicate a date for instance, you could have typed: COPY WORKDISK/PCD:DRO,WD1024/PCD:DRL <u>Return</u></p>

Chapter 5.

Spooling thru INX-PC

Overview

Introduction

This chapter will explain how you can spool data to a DOS print file from a PCDOS program instead of printing it directly on a printer attached to your PC.

Do you need a printer ?

You do not need a printer attached to your PC to use spooling thru INX-PC.

Note: If you do have a printer, you can print the data from the DOS spool file on it. Otherwise, you can use one of the various types of printers available at other processors (print servers) on the ARC Network.

Spooling commands

This chapter will show you how to use the three INX commands used to control spooling:

- INX PRINTER EXAMINE - tells you if it is on or off,
 - INX PRINTER SPOOL - turns on spooling, and
 - INX PRINTER NORMAL - turns off spooling.
-

What is spooling ?

Definition

Spooling is a function that causes data to be redirected to a file instead of going to a physical printer.

How it works

Most PC DOS programs send printer data to a device called "LPT1:". When you spool print data through INX-PC, PC DOS sees the LPT1: printer device as the equivalent of a 300 line-per-minute printer.

When spooling is active, the LPT1: device is really a DOS file which receives data that PC DOS sends to its LPT1:. This is implemented thru the DOS.H processor on the INX-PC board and the special PC DOS driver provided with INX-PC.

Note: If you do have a real printer plugged into the PC port assigned to LPT1:, it will be effectively disconnected by the PC DOS INX-PC driver software while spooling is active.

Purpose

There are three possible reasons you would use spooling:

- to save time,
 - to print data later on a printer remote to your PC, or
 - to proofread a printed document without actually printing it.
-

Saving time

When you use a PCDOS program or command to print data on your local printer, you have to wait while your printer completes printing a job.

If you spool the data using INX-PC, the spool file looks like a 300 line-per-minute printer. This is probably much faster than your local PC printer, so you only have to wait a proportional amount of time.

Examples:

If your printer speed is ...	that is approximately...	which results in a time saving of...
30 CPS	22 LPM	13 to 1
80 CPS	60 LPM	5 to 1
160 CPS	120 LPM	2.5 to 1

Multiple jobs:

You can spool data from several programs into one continuous spool file. When you are done, you can turn off spooling and then unspool (print) the data in the file with one command, and then walk away from your PC until the whole file is printed. This is deferred waiting; but theoretically, you have finished all your work at the PC before you leave it to print at its normal slow rate.

Reference: See the procedure "How to unspool to your local printer" on page 5-22 .

Printing on remote printers

With the INX-PC equipped IBM PC connected to a typical ARC Network, you are able to print the contents of your spool files on any of the different types of printers attached to any print server on the network, including for example:

- letter quality printers with sheet feeders,
- high speed line printers, and
- laser printers.

Reference: see the section "Unspooling to remote printers" on page 5-25 .

Proofreading

You may want to see how a word processor has formatted page-breaks, or headings, etc. This is a way to test print it without using any paper and saving considerable time.

Process:

- First, with the INX-PC spooling feature, you can quickly "print" your document to a DOS spool file instead of printing it on a printer.
- Second, you can switch to DOS.H and "read" the print file with the LIST command to see how it looks.

The LIST command will scroll the file up on the CRT screen.

- Third, if you like it, you can print the spool file, otherwise, you can go back to your word processor and correct it.

Reference: you can learn more about the LIST command with the DOS.H command "HELP."

Kinds of data you can spool

Rule

You can send any print data to an INX-PC spool file that is

- standard ASCII text data, and
- up to 132 characters per line.

Note: the number of characters per line must be within the limit of the printer which will ultimately print the data in the spool file.

What is ASCII text data

ASCII text data is the set of characters and symbols normally included on a standard typewriter known as the *ASCII printable character set*. It includes:

- the upper and lower case alphabet
 - numbers, and
 - standard punctuation marks.
-

What is not ASCII text data

Most printers for the PC allow you to print special renditions of a character font like bold, italics, underlined, wide, tall or tall and wide. Also they provide a special dot graphics mode.

The mechanisms used to control the printing of all of these special characters are not defined in the standard ASCII set of text characters.

Data conversion during spooling

Principle

Some PCDOS programs will send control characters to a printer because it is trying to activate special printing functions.

When spooling thru INX-PC is active, INX-PC will filter out any control characters except:

- CR (carriage return),
- LF (line feed), and
- FF (form feed).

Only those control characters and the printable ASCII characters will end up in the spool file.

Result

If your PCDOS word processor program prints characters in special font renditions, they may come out in the normal typeface. This is because the control characters, that normally cause the switch in typeface, will not be in the spool file.

Solution: Configure your word processing program for a printer that is:

- "SIMPLE, ORDINARY, and NON-BACKSPACING" and

which can only respond to :

- "Carriage Return, Line Feed, and Form Feed".

Then the word processing program will output such special effects as BOLDFACE and UNDERLINE in a way that will print on any DATAPOINT printer.

INX PRINTER EXAMINE command

Purpose

The INX PRINTER EXAMINE command has two functions. It tells you:

- whether spooling is active or not active, and
 - the name of the current spool file (if spooling is active).
-

When to use

There are two times to use INX PRINTER EXAMINE:

- 1 — ALWAYS use this command before you use the INX PRINTER SPOOL command to begin spooling,

...just to make sure you do not re-initialize spooling to the same spool file.

Reason: if you do have a spool file active with accumulated data, if you re-initialize spooling to that same file, all the current data will be overwritten.

- 2 — If you forget whether spooling is active or not, use this command to see if it is, and if it is, whether it is active to the file you want.
-

Prerequisites

Before you use the INX PRINTER EXAMINE command, you must be:

- logged onto INX-PC, and
 - context switched to PCDOS.
-

Command format

This is the format of the INX PRINTER EXAMINE command.

INX PRINTER EXAMINE Return

Note: This command has no parameters.

Results

If you type the INX PRINTER EXAMINE command, the results will depend on whether spooling is active or not.

If spooling is not active, you will see:

```
A> INX PRINTER EXAMINE
INX 1.2 INTELLIGENT NETWORK EXECUTIVE

PRINTER FUNCTION SELECTED:
EXAMINE OPTION SELECTED:
NORMAL PRINTING IS NOW ACTIVE.

A> _
```

If spooling is active, to file SPOOL1 for example, you will see:

```
A> INX PRINTER EXAMINE
INX 1.2 - INTELLIGENT NETWORK EXECUTIVE

PRINTER FUNCTION SELECTED:
EXAMINE OPTION SELECTED:
SPOOLING TO SPOOL1/PRT:DRO IS NOW ACTIVE.

A> _
```

INX PRINTER SPOOL command

Purpose

The purpose of the INX PRINTER SPOOL command is to:

- initiate the process of spooling, and
- specify the name of a DOS spool file.

Note: If you have already activated spooling with this command, the current spool file will be closed (terminated) and spooling will continue to the new file specified.

When to use

Use this command whenever you want to:

- begin spooling data, or
 - change the spool file, i.e. close the current file and begin a new one.
-

Prerequisites

Before you use the INX PRINTER SPOOL command, you must be:

- logged onto INX-PC, and
 - context switched to PCDOS.
-

Strong recommendation

Use the INX PRINTER EXAMINE command first to make sure you do not already have spooling active to the file you are going to specify.

CAUTION: If you accidentally use this command to begin spooling to a file that is already being used in active spooling, that file will be erased and recreated. You would lose any data that had already been spooled to it.

Command format

This is the format of the INX PRINTER SPOOL command.

<u>INX PRINTER SPOOL</u>	<u><i>doshPrintFile</i></u>	<u><i>Return</i></u>
KEYWORDS		
Parameters:	1	

Parameter description

This table describes the one command parameter.

PARAMETER		DESCRIPTION
1	<i>doshPrintFile</i>	The file name of a DOS print file. <u>Extension name:</u> all print files created by INX-PC will have an extension name: /PRT. <u>Note:</u> You must also specify the DOS.H drive if it is not drive 0. <u>Examples:</u> SPOOL1 ... (in DOS.H drive 0) SPOOL2:DR1 ... (in DOS.H drive 1)

Examples

These are examples of the INX PRINTER SPOOL command.

Create a spool file in your log on sub-directory (DOS drive 0)...:

INX PRINTER SPOOL SPOOL1 Return

Create a spool file in a sub-directory other than drive 0...:

INX PRINTER SPOOL SPOOL2:DR1 Return

Results

The result of the INX PRINTER SPOOL command depends on whether or not spooling is active.

If spooling is not active, you will see:

```
A> INX PRINTER SPOOL SPOOL1
INX 1.2 - INTELLIGENT NETWORK EXECUTIVE

PRINTER FUNCTION SELECTED:
SPOOL OPTION SELECTED:
REALLY BEGIN SPOOLING TO SPOOL1/PRT:DR0? (Y)

SPOOLING TO SPOOL1/PRT:DR0 IS NOW ACTIVE.
A> _
```

If spooling is active, to file SPOOL2 for example, you will see:

```
A> INX PRINTER SPOOL SPOOL1
INX 1.2 - INTELLIGENT NETWORK EXECUTIVE

PRINTER FUNCTION SELECTED:
SPOOL OPTION SELECTED:
SPOOLING TO SPOOL2/PRT:DR1 IS NOW ACTIVE.
REALLY BEGIN SPOOLING TO SPOOL1/PRT:DR0? (Y)

SPOOLING TO SPOOL2/PRT:DR1 HAS BEEN TERMINATED.
SPOOLING TO SPOOL1/PRT:DR0 IS NOW ACTIVE.
A> _
```

INX PRINTER NORMAL command

Purpose

The INX PRINTER NORMAL command

- terminates spooling if it is active and closes the DOS print file, and
 - returns the local PC printer (if you have one) to be the device that receives any subsequent print data.
-

When to use

Use the INX PRINTER NORMAL command when you

- are finished spooling print data and want to use the actual printer,
 - before you try to unspool a print file that is the current active spool file, or
 - before you turn off the PC or shut off INX-PC support services when spooling is active.
-

Command format

This is the format of the INX PRINTER NORMAL command.

INX PRINTER NORMAL Return

Note: This command has no parameters.

Result

This is the result displayed if spooling was active to file SPOOL2/PRT for example.

```
A> INX PRINTER NORMAL
INX 1.2 - INTELLIGENT NETWORK EXECUTIVE
PRINTER FUNCTION SELECTED:
NORMAL OPTION SELECTED:
SPOOLING TO SPOOL2/PRT:DR1 HAS BEEN TERMINATED.
NORMAL PRINTING IS NOW ACTIVE.
A> _
```

Rules for spooling

Introduction

These are some rules that you must remember when using the INX-PC spooling functions.

Initiating spooling

Before you execute the PCDOS command to initiate spooling, always check to see if spooling is already active using the PCDOS command:

```
INX PRINTER EXAMINE Return
```

If spooling is already active, you may:

- continue spooling – to the current spool file – by doing nothing, or
- terminate spooling – to the current spool file – and initiate spooling – to a new file – with the same PCDOS command:

```
INX PRINTER SPOOL doshPrintFile Return
```

If spooling is not already active, initiate spooling to a new file with the PCDOS command:

```
INX PRINTER SPOOL doshPrintFile Return
```

Terminating spooling

Whenever spooling has been activated, always terminate spooling by using the PCDOS command:

```
INX PRINTER NORMAL Return
```

Result: this will guarantee that the spool file buffer is dumped or flushed to the file, and that the end-of-file mark is properly written.

Reusing the same spool file

When you initialize spooling, you specify a spool file. If that file already exists, it will be overwritten and its previous contents will be lost.

Solution: Unspool (i.e. print) the data in a spool file before you use it again.

How spooling effects the PC local printer

When spooling is active through INX-PC,

- all PCDOS functions that would direct data to the PCDOS parallel port printer device (LPT1:) cause the data to go to the spool print file on a DOS disk but
- all DOS.H functions that would direct data to the local DOS.H printer cause the data to go to the physical printer attached to the IBM PC parallel printer device (LPT1:).

Example: a DOS.H command like LIST *filename*;FL would actually print on the IBM PC printer even if spooling was active in PCDOS through INX-PC.

Summary: Spooling does not affect DOS.H use of the local printer. It only affects the PCDOS use of the local printer.

Avoid multiple access to active spool files

When spooling is active in PCDOS, you can context switch to DOS.H. If you do, do not perform any write operations to the active DOS spool file.

Example: It is possible to use the DOS.H editor program EDIT to modify an active spool file. This would amount to having two users writing to the same file (the INXPCDSS task and the task running the DOS.H program EDIT). The file would become damaged.

Comment: DOS allows multiple users or tasks to access the same file, but the multiple access file protection mechanisms were not activated on the spool files because there was no practical need for them in this case.

Solution: make sure you turn spooling off before you perform any DOS.H operations on a spool file.

How to unspool to your local printer

Procedure

This is the step by step procedure to print a spool file on the printer attached to your PC.

STEP	ACTION
1	<p>Make sure your spool file is closed.</p> <ul style="list-style-type: none">• Context switch to PCDOS.• Type: <code>INX PRINTER EXAMINE <u>Return</u></code> <p><u>Result:</u></p> <p>If spooling is active, you will see something like:</p> <div data-bbox="311 688 945 878" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>A> INX PRINTER EXAMINE SPOOLING TO SPOOL2/PRT:DR1 IS NOW ACTIVE. A> _</pre></div> <p>If spooling is <u>not</u> active, you will see something like:</p> <div data-bbox="311 1003 945 1193" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>A> INX PRINTER EXAMINE NORMAL PRINTING IS NOW ACTIVE. A> _</pre></div>

continued

How to unspool to your local printer

Procedure (continued)

STEP	ACTION
2	IF spooling is <u>not</u> active THEN go to STEP 4. IF spooling was <u>active</u> THEN go to the next STEP.
3	Type: INX PRINTER NORMAL <u>Return</u> <u>Result:</u> <div data-bbox="410 638 1045 878" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>A> INX PRINTER NORMAL SPOOLING TO SPOOL2/PRT:DR1 TERMINATED. NORMAL PRINTING IS NOW ACTIVE. A> _</pre></div>
4	Make sure your printer is on-line.
5	Set your printer width to 132 columns with the PCDOS command: MODE.
6	Print something (like a screen dump) to be sure that the compressed character mode has been sent to the printer.

continued

How to unspool to your local printer

Procedure (continued)

STEP	ACTION
7	<p>Context switch to DOS.H.</p> <p><u>Result:</u> You should see the DOS.H READY message.</p> <div data-bbox="303 464 936 626" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><p>READY</p></div>
8	<p>Type the DOS.H print command which has this format:</p> <p><u>LIST doshPrintFile;FL <u>Return</u></u></p> <p><u>Example:</u> LIST MYWORK/PRT;FL <u>Return</u></p> <p><u>Result:</u></p> <p>The contents of the spool file will be printed on the local printer attached to your PC.</p> <p><u>Note:</u> If you context switch to PQDOS, the printer will stop printing until you switch back to DOS.H.</p>

Unspooling to remote printers

Process

Since each ARC Network installation is different, you should consult with a network administrator or other users on the network and find out the exact procedure you should follow.

Chapter 6.

Using sub-directories

Overview

Introduction

This section describes how you can make use of additional DOS sub-directories with INX-PC.

You already know how to log onto one sub-directory when you log onto DOS.H and INX-PC, but this chapter describes more advanced uses.

Procedures

In this chapter you will learn how to:

- access (mount) additional DOS sub-directories, and
 - set up sub-directories so that multiple INX-PC equipped PCs can share PCDOS files in PC Disks.
-

Background knowledge

In this chapter, you will learn about

- the difference between PCDOS and DOS sub-directories,
 - the DOS.H command MOUNT15, and
 - the DOS.H command CHANGE which is used to change the protection status of DOS files (like shared PC Disk files).
-

Sub-directories: DOS vs. PCDOS

Fact

DOS and PCDOS *both* provide use of different sub-directory techniques:

PCDOS sub-directories are really called "directories".

Generically speaking, sub-directories are separate groups of files on a single disk.

Scope of policy

The following policies describe

- the scope of your need to understand sub-directories and
 - what use of sub-directories is required or compatible with INX-PC.
-

What are directories?

This term has two meanings when used in relation with computer disk operating systems:

1-Directories are the parts of a disk which hold the name and location of the files on the disk.

Example: When you type:

- the DIR command in PCDOS or
- the CAT command in DOS.H

a list of file names is displayed.

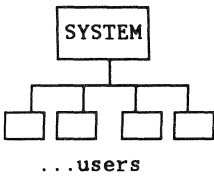
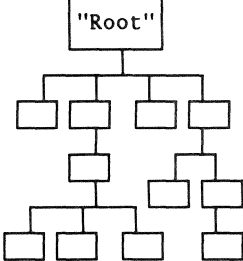
In...	the sub-divisions are called...
PCDOS	Directories
DOS.H	Sub-directories

In this chapter we are concerned with the concept of directories as sub-divisions of a disk.

2-Directories are also conventions used to logically sub-divide groups of files on a disk.

Comparison

This table compares several aspects of DOS and PCDOS sub-directories.

ASPECT of COMPARISON	DOS	PCDOS
sub-directory structure	linear, 2 dimensional 	hierarchical tree, multi-dimensional 
access protection	by password	none
optional or required usage with INX-PC ?	inherently required when any DOS disk is accessed on an ARC Network	optional

DOS sub-directory policy

Introduction

This policy describes the level of introduction to DOS sub-directories you will need to use INX-PC.

How they are created

A DOS system administrator will set up at least one sub-directory for you to use with INX-PC.

You will not need to learn how to create DOS sub-directories.

Further references: If you are interested, you can read about it in DATAPOINT DOS.D or DOS.H User's Guides, in chapters about the following commands: ARC, ARC15, ARCID, ARCID15, and particularly SUR which explains these concepts.

What you will be given

You will be given three words to access each DOS sub-directory you may use:

- a user name (i.e. sub-directory name)
 - a code word, and
 - the name of the DOS disk volume that contains the sub-directory.
-

What you will do

You will be instructed on how to —

- log onto your initial DOS.H sub-directory in the procedure "How to LOG onto DOS.H" on page 3-30 and and
 - mount additional DOS.H or DOS.D sub-directories in the procedure "How to mount additional DOS sub-directories" on page 6-13 .
-

PCDOS directory policy

Introduction

You may or may not be familiar with PCDOS sub-directories. If you are not, don't worry about it.

We just want to tell you that INX-PC:

- does support PCDOS disk sub-directory structures in the PC Disks you use and create with INX-PC, and
 - has a few rules regarding PCDOS sub-directories.
-

PC Disks alleviate the need for PCDOS directories

PCDOS sub-directories were invented so that you could subdivide a large PCDOS disk into usable chunks.

Comment: You can create as many PC Disks as you like on an ARC Network file server disk. You can access up to four PC Disks at any one time. It is therefore recommended that you do not use sub-directories, but rather use more PC Disks.

Remember, PC Disk files are dynamically allocated and normally take up only the amount of disk space required to hold the data placed on them.

Optional

It is optional whether or not you choose to use PCDOS sub-directories with your INX-PC equipped PC.

Rule 1: INX-PC program files

In the installation procedures, you are instructed to load all INX-PC program files into the "Root" sub-directory on the PCDOS disk you will be using.

If you are not using PCDOS sub-directories, this simply means you copy the files onto a disk.

Rule 2: PCDOS log-on drive

INX-PC has the specific requirement that:

when you are using INX-PC, PCDOS must be logged onto the "Root" sub-directory of the disk that has the INX-PC program files.

If you are not using PCDOS sub-directories, this simply means you are logged onto the drive (A:, B: or C:) that has the INX-PC program files.

Rule 3: Location of text files

When you use the INX COPY command to transfer *text* files between PCDOS and DOS disks, you must place the text file in the "current" directory of the PCDOS disk (including PC Disk types). If the current directory is not the "root" directory, the PATH command may be used to allow PCDOS to find the INX command when you execute INX COPY.

Reference: see Chapter 9, "Transferring text files."

Clarification: This rule does not apply to use of the PCDOS COPY program. That is, you can COPY a file from any PCDOS disk or PC Disk sub-directory to another.

The MOUNT15 command

Purpose

The MOUNT15 command is a DOS.H command used to access additional DOS sub-directories after you have logged onto DOS.H.

Two modes of use

MOUNT15 has two modes of use:

- interactive with help screens, or
 - a single line command with parameters.
-

Command format

This is the format for interactive use with help screens:

MOUNT15 Return

These are two single line formats for use with parameters:

This form mounts the sub-directory in the lowest numbered DOS drive which is empty:

MOUNT15 *dosVolume* ;N=*userName* ,C=*codeWord* Return

This form mounts the sub-directory in the specified DOS drive:

MOUNT15 *dosVolume* , :*dosDrive* ;N=*userName* ,C=*codeWord* Return

Parameter description

This table describes the parameters in the MOUNT15 command.

PARAMETER	DESCRIPTION
<i>dosVolume</i>	The volume name of a DOS disk, <u>not</u> a PCDOS disk. <u>Example:</u> INXSUPRT
<i>dosDrive</i>	A DOS.H disk drive: :DR0 thru :DR15 <u>Comment:</u> these each represent a single sub-directory on a disk. Several drives may represent several different sub-directories on a single disk.
<i>userName</i>	The name of a DOS sub-directory on a DOS disk, <u>not</u> a PCDOS disk. The <i>userName</i> that you use will usually be your name. <u>Example:</u> JOHN
<i>codeWord</i>	An eight letter password for a DOS sub-directory. <u>Example:</u> MYSECRET

Examples

These are examples of the MOUNT15 command.

```
MOUNT15 INXSUPRT;N=JOHN,C=MYSECRET Return  
MOUNT15 ARCVOL1;N=COMMON,C=EVERYONE Return  
MOUNT15 ARCVOL1,:DR2;N=COMMON,C=EVERYONE Return
```

Results

If the MOUNT15 command is successful, a single line of text will be displayed:

MOUNT FUNCTION COMPLETED.

If not successful:

I CAN'T FIND THAT VOLUME ANYWHERE !

How to mount additional DOS sub-directories

Introduction

This is the procedure for mounting additional DOS sub-directories.

When to use

You will use this command when you want to access DOS sub-directories other than your log on sub-directory, for example:

- another sub-directory you own on another disk,
 - a friend's sub-directory, or
 - a common sub-directory giving you access to:
 - shared PC Disks, or
 - shared DOS.H programs.
-

Caution: read-only shared access

If you are mounting another user's sub-directory, be extremely careful that you both do not use the same PC Disk file simultaneously except in read-only mode.

Prerequisites

Before you use the MOUNT15 command, you must:

- be logged onto DOS.H, but not INX-PC, and
- be context switched to DOS.H.

You must also know the:

- DOS disk volume name,
- sub-directory user name, and
- code word

for the sub-directory you want to access.

Procedure

This is the procedure to mount an additional DOS sub-directory.

STEP	ACTION
1	<p>Make sure you are:</p> <ul style="list-style-type: none">• logged onto DOS.H but <u>not</u> INX-PC.• context switched to DOS.H. <p><u>Note:</u></p> <p>IF you are logged onto INX-PC, THEN you must re-log onto DOS.H only. Follow the procedure in Chapter 3 "How to shut off INX-PC support services" on page 3-47 .</p> <p><u>Comment:</u></p> <p>IF you are logged onto INX-PC <u>and</u> already have one or more additional sub-directories mounted, you will need to re-mount them again after you re-log onto DOS.H, if you still want to use them.</p>
2	<p>Decide if you want the sub-directory mounted in a particular DOS drive number.</p> <p><u>Reason:</u></p> <p>In PCDOS, the INX DISK CREATE, INX DISK INSERT, and INX PRINTER SPOOL commands require that you specify the DOS drive a PC Disk or spool file is on, or going to be on, if <u>not</u> drive 0.</p> <p>If you are mounting several additional drives, you should plan to specify drives so that you know which files are on which drives.</p> <p>If you are mounting <u>only</u> one additional sub-directory, then you do not need to specify the drive: it will be mounted in drive 1.</p>

continued

Procedure
(continued)

STEP	ACTION
3	<p>Type the command to mount the sub-directory.</p> <p><u>Examples:</u> MOUNT15 ARCVOL1;N=COMMON,C=EVERYONE <u>Return</u> ... in the next available drive</p> <p>MOUNT15 ARCVOL1,:DR2;N=COMMON,C=EVERYONE <u>Return</u> ... in a specific drive</p> <p><u>Results:</u> If the specified sub-directory is on-line, you will see:</p> <div data-bbox="307 651 939 841" style="border: 1px solid black; padding: 10px;"><pre>MOUNT15 MOUNT FUNCTION COMPLETED. READY █</pre></div> <p>If the specified sub-directory is <u>not</u> on-line, you will see:</p> <div data-bbox="307 943 939 1133" style="border: 1px solid black; padding: 10px;"><pre>MOUNT15 I CAN'T FIND THAT VOLUME ANYWHERE ! READY █</pre></div>
4	<p>Repeat step 3 until you have mounted all the sub-directories you need.</p> <p>Then you may log onto INX-PC, <u>or</u> run DOS.H programs.</p>

A plan for shared PC Disks

Introduction

This plan describes how you might set up sub-directories on DOS network disks to give multiple INX-PC users access to shared PC Disks.

Audience

This section is provided for network administrators who are planning and setting up shared PCDOS databases to be used with INX-PCs.

Fact

Whenever you mount or log onto a DOS sub-directory, you automatically have access to:

- all files in that sub-directory, and
 - all files in the SYSTEM sub-directory of that same disk.
-

Placement of shared PC Disks

Put any PC Disks that are to be shared in the SYSTEM sub-directory of a DOS disk volume that already has INX-PC logon sub-directories.

Purpose: When each user logs on, he will automatically have access to the PC Disks in the SYSTEM sub-directory without having to mount an additional sub-directory.

A blank COMMON sub-directory

On the same disk, create an empty sub-directory called "COMMON", for example, with a simple code word.

Comment: At DATAPOINT, we often use:

- a sub-directory: EVERYONE
- a code word: EVERYONE.

Purpose: This common sub-directory will provide access to the SYSTEM sub-directory files for INX-PC users who normally log onto a different disk. They can use MOUNT15 to mount this second sub-directory to gain access to the shared files.

Setting up a shared PC Disk

Introduction

This describes the basic process of setting up a shared PC Disk. It is not a step-by-step procedure.

Assumption

It is assumed that whoever does this is very familiar with DOS, PCDOS and INX-PC.

Process

To set up a shared PC Disk:

- 1 - create a PC Disk using INX-PC. Call it "COMMON," for example.
- 2 - Move it from your user sub-directory to the SYSTEM sub-directory with the DOS.H "NAME" command.

Example: NAME COMMON/PCD, ,SYSTEM Return

Note: Put 2 commas between the file name and SYSTEM.

- 3 - Put PCDOS files on the PC Disk using INX-PC.
- 4 - Write protect the PC Disk with the DOS.H command CHANGE.

Example: CHANGE COMMON/PCD;W Return

- 5 - now multiple users can access this PC Disk in read-only mode.
-

Updating a shared PC Disk

Process

First someone must coordinate a time when this is going to happen, i.e. all users must be informed that they may not use the common PC Disk while it is being updated.

- 1 - Use an INX-PC to access the PC Disk.
- 2 - Use the DOS.H command CHANGE to un-protect the common PC Disk file.

Example: CHANGE COMMON/PCD;X Return

- 3 - In PCDOS, add, delete, or change files on the PC Disk.
- 4 - Write protect the PC Disk with the DOS.H command CHANGE.

Example: CHANGE COMMON/PCD;W Return

- 5 - The PC Disk is now ready to be shared again.
-

Chapter 7.

Running DOS.H programs

Overview

Introduction

With an INX-PC equipped IBM PC, you actually have two computers built into one.

The INX-PC system is primarily intended to support your use of the IBM computer by giving you additional PCDOS disk drives. This feature is implemented by actually placing the processor components of a DATAPOINT 1569 in the IBM case.

In addition to this useful facility for running PCDOS programs, you can *context switch* the screen and keyboard of the IBM processor over to the DATAPOINT 1569 processor and run DATAPOINT DOS.H programs.

Important concepts

In order to effectively run DOS.H programs, you must understand two important concepts:

- concurrent tasks and
 - context switching.
-

Important APPENDIX reference - DOS.H keys

When you run DOS.H programs, you will need the DOS.H key equivalent tables beginning on Appendix page C-1 .

Concurrent tasks

Definition

Concurrent tasks are multiple programs that run in the same processor *simultaneously*.

The programs share the processor memory and take turns executing instructions in the single processor. Usually only one of the concurrent tasks uses the keyboard and display facilities, while the other tasks perform operations using any of the other I/O devices attached to the processor.

Technically, a task and program are different but the words are often used interchangeably.

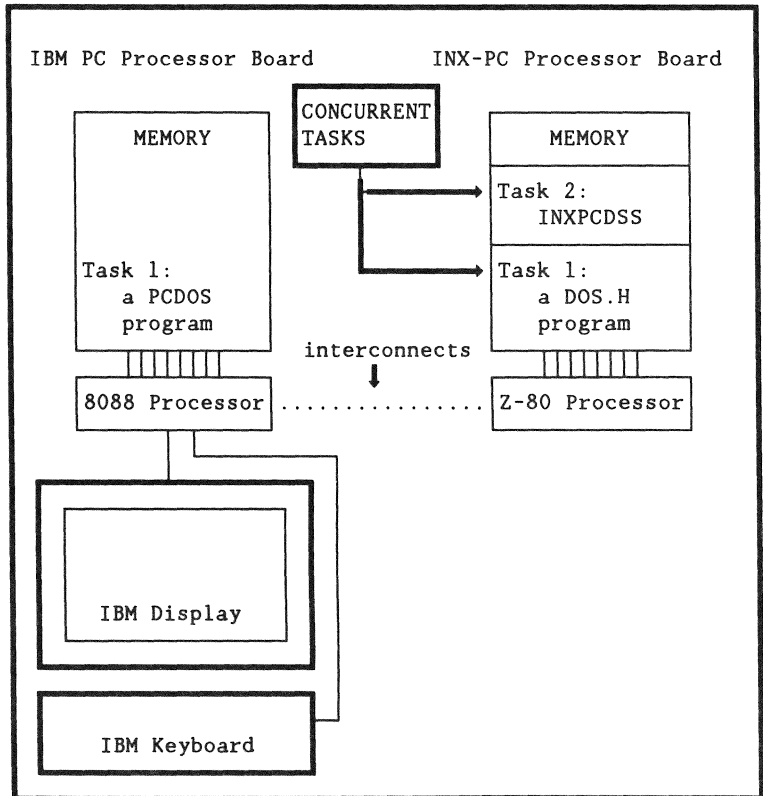
- Tasks are structures set up in the processor by the operating system to hold and run programs.
- Programs are the instructions loaded into the task memory space.

Impact

A processor capable of running two concurrent tasks can run two programs. In the INX-PC system, you can tell one of the tasks to run different DOS.H programs while the second task provides additional disk drive support to PCDOS programs.

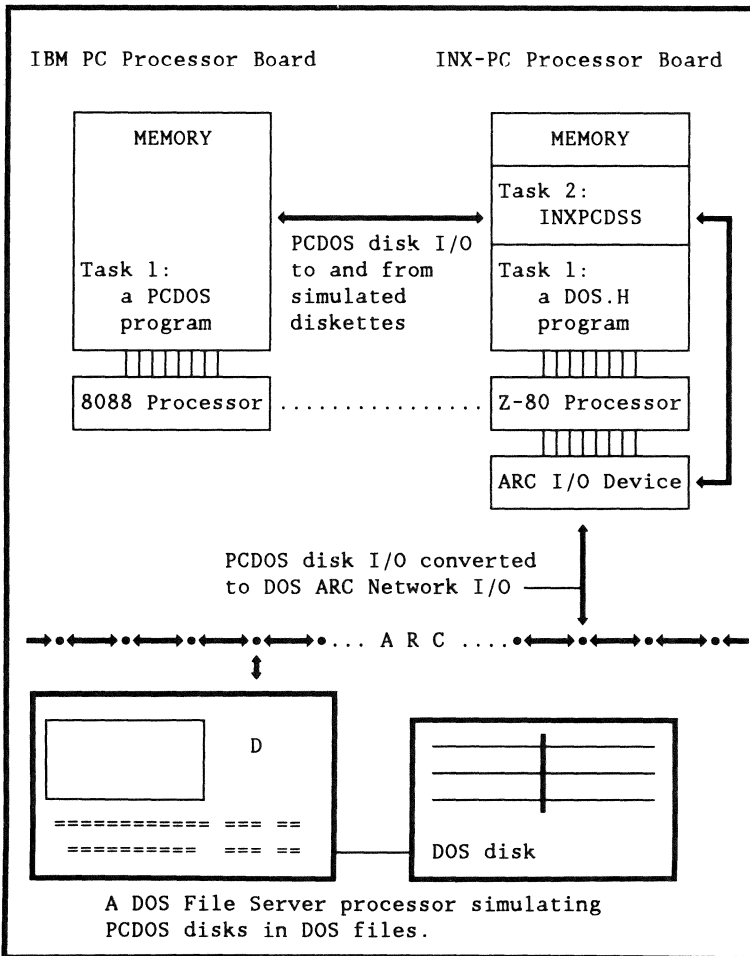
Example diagram

This block diagram of an INX-PC equipped IBM PC shows two processor tasks. The INX-PC processor is running two concurrent tasks.



Non-Keybaord/Display I/O task

This diagram shows how Task 2 in the INX-PC processor uses only a limited number of I/O devices, (not including the keyboard and display) in order to provide the PCDOS task with simulated disk drives.



DOS.H programs that won't run concurrently

Definition

DOS.H programs that won't run concurrently are programs that will not run in the INX-PC DOS.H processor while a concurrent task like INXPCDSS (support services) is active.

Implication

This implies that you must shut off the INX-PC disk support services before you run these DOS.H programs. In other words, in PCDOS, you must:

- close all open files on INX-PC PC Disks, which generally means ending any PCDOS applications program that has files open;
- remove all PC Disk volumes from the PCDOS drives, and
- re-log onto INX-PC without initiating the INXPCDSS task.

Reference: See the procedure "How to shut off INX-PC support services" on page 3-47 .

List

The following are some of the DOS.H programs that will not run while another concurrent task is active.

- MOUNT15
 - IEOS
 - MP (Multiplan)
 - ARCST15
 - NAME
-

DOS.H programs that will run concurrently

Introduction

DOS.H programs that will run concurrently with the INX-PC support services task, may be executed on the DOS.H processor while you are logged onto INX-PC.

List

These are some of the DOS.H programs that will run concurrently with the INX-PC support services task.

- EDIT
 - FILES
 - CAT
 - LIST
 - KILL
 - CHANGE
-

If you don't see it here

If you want to find out if a program will run with the INX-PC support services active, try it....BUT first, as a precaution:

- end any program running in PCDOS,
 - turn off spooling if it is active, and
 - remove all your PC Disks.
-

How to run DOS.H programs

Procedure

This is the procedure to run a DOS.H program in general.

STEP	ACTION						
1	<p>Determine whether or not the DOS.H program you want to run can run concurrently with INX-PC support services.</p> <p><u>Reference:</u> see the two previous sections</p> <ul style="list-style-type: none"> • DOS.H programs that will run concurrently, page 7-7 • DOS.H programs the won't run concurrently, page 7-5 						
2	<p>IF you are already logged onto INX-PC then:</p> <table border="1" data-bbox="307 704 959 1019"> <tr> <td data-bbox="307 704 502 784">IF the DOS.H program</td> <td data-bbox="502 704 959 784">THEN</td> </tr> <tr> <td data-bbox="307 784 502 889">will run concurrently</td> <td data-bbox="502 784 959 889">context switch to DOS.H with <i><u>Alt-Shift Left-Shift Right</u></i></td> </tr> <tr> <td data-bbox="307 889 502 1019">will <u>not</u> run concurrently</td> <td data-bbox="502 889 959 1019">follow the procedure: "How to shut off INX-PC support services," page 3-47</td> </tr> </table> <p>IF you are <u>NOT</u> logged onto INX-PC then: Are you already logged onto DOS.H ?</p> <p>IF yes, THEN:</p> <ul style="list-style-type: none"> • context switch to DOS.H and • go to STEP 3 <p>IF not, THEN: follow the procedure "How to LOG onto DOS.H" on page 3-30</p>	IF the DOS.H program	THEN	will run concurrently	context switch to DOS.H with <i><u>Alt-Shift Left-Shift Right</u></i>	will <u>not</u> run concurrently	follow the procedure: "How to shut off INX-PC support services," page 3-47
IF the DOS.H program	THEN						
will run concurrently	context switch to DOS.H with <i><u>Alt-Shift Left-Shift Right</u></i>						
will <u>not</u> run concurrently	follow the procedure: "How to shut off INX-PC support services," page 3-47						
3	Run the DOS.H program.						

The DOS.H Print Screen feature

Introduction

When you are in the DOS.H context mode, you can print the contents of the display screen on your local printer. This is a special feature implemented by INX-PC.

Comment

This feature is just like the "print screen" feature that is found in PCDOS.

Prerequisites

Before you use the DOS.H "print screen" command, you must:

- have a printer attached to your PC, and on-line,
 - be logged on to DOS.H and/or INX-PC, and
 - be context switched to DOS.H.
-

Command description

To activate the "print screen" function in DOS.H, use the following key sequence:

Ctrl-Shift-PrtSc

Note: this is similar to the PCDOS "print screen" command: *Shift-PrtSc*

Using the PC local printer

Introduction

If your PC has a printer attached to the LPT1: device port, you may use it as the DOS.H *local printer device*.

Limited support

Some DOS.H programs may generate special control character sequences to obtain special printing functions which your PC's printer was not designed to support, and vice versa.

Examples: these are some of the special printing functions used in DOS.H programs:

- bold-facing
- underlining
- italics
- selectable fonts

Therefore, when you use the PC's printer with some DOS.H programs, you may get unexpected results; like strange characters printed where the special printing effects should start or stop.

Recommended use

Use the PC's printer to print "proof" copies, and then use network print server facilities to print final copies.

If you keep your printed documents simple, without special printing functions, your PC's printer may be perfect for final copies.

Chapter 8.

Managing your network disk space

Overview

Introduction

This chapter explains how PC Disks grow (are dynamically allocated) and how and when they need to have unused space deallocated.

Procedure in this chapter

These procedures are explained in this chapter:

- Determining when a PC Disk has become fragmented
 - How to deallocate unused space in PC Disks
-

Non INX-PC commands you will use

These are three commands you will need to evaluate network disk space usage by PC Disk files.

- CHKDSK ... a PCDOS command
- FILES ... a DOS.H command
- FREE ... a DOS.H command

These commands will be explained before the procedures that use them.

When a PC Disk may need deallocation

Circumstances

These are two main circumstances that may cause a PC Disk to need space deallocation.

- If you created a PC Disk or were writing data to one and either

- a power failure occurred, or

- INX-PC was terminated before you did INX DISK REMOVE commands,

then, the DOS files may have been allocated space that would normally be deallocated by the INX DISK REMOVE command.

- If you have placed lots of files on a PC Disk and then deleted some of them, the space they originally occupied will remain allocated in the PC Disk file.

Note: If you later put new files on the PC Disk, the space originally occupied by the deleted files will be reused.

The concept is: deleting files from a PC Disk does not make the DOS file smaller.

The CHKDSK command

Purpose

The CHKDSK command has several uses, but the one we are interested in is:

to find out either how much space:

- is used on a PC Disk or
- is available on a PC Disk.

Note: for other uses see your PCDOS reference manual.

Format

The format of the CHKDSK command is:

CHKDSK *pcdosDrive*: Return

Example: CHKDSK D: Return

Result

The result of using the CHKDSK command is something like this for a PC Disk.

```
A> CHKDSK D: ...the command
Probable non-DOS disk. ...means non-PCDOS, not DOS.H
Continue (Y/N)? Y ...you typed: Y Return
353024 bytes total disk space
  40960 bytes in 2 hidden files
   1024 bytes in 1 directories
197376 bytes in 22 user files } ..add these together
 12288 bytes in bad sectors  } to get TOTAL bytes used
102400 bytes available on disk ...this is easier to use
262144 bytes total memory ..PC processor memory info
190992 bytes available is not important to us.
A> _
```

The FILES command

Purpose

The FILES command is multi-purpose, but we are only interested in finding out:

the size of a particular DOS PC Disk file.

Format

The FILES command has many formats. We will be using the one which displays the size of all PC Disk files:

```
FILES /PCD 1:doshDrive;D Return
```

...which means either:

```
FILES /PCD;D Return
```

or

```
FILES /PCD:doshDrive;D Return
```

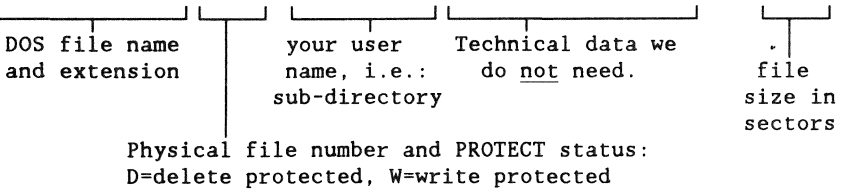
Note: you only have to specify a DOS.H drive if you want to display the files on a drive other than 0.

Result

```
READY
FILES /PCD;D
DOS.H VER 2.9 FILES MAPPING COMMAND
```

- Next the following kind of information is displayed.
 - Note: the numbers in circles are the numbers we need.
- ↓

BIGNEW	/PCD	(264)	(MYNAME)	SEG 1 CYL 171	7	SIZE (408)
BIGUSE	/PCD W(265)	(MYNAME)	SEG 1 CYL 211	2	SIZE 408	
			SEG 2 CYL 204	4	SIZE 240	
					TOTAL (648)	
SMALLNEW	/PCD	(255)	(MYNAME)	SEG 1 CYL 228	1	SIZE (48)
SMALLUSE	/PCD D(256)	(MYNAME)	SEG 1 CYL 250	6	SIZE (120)	
			TOTAL NUMBER OF FILES DISPLAYED	4		
			TOTAL SIZE OF FILES DISPLAYED	1224		



Determining when a PC Disk is fragmented

Introduction

You will need to use the PCDOS command CHKDSK and the DOS.H command FILES to get some numbers. Then do some calculations described in the following procedure on page 8-11 .

Criteria

A PC Disk has become fragmented and is making inefficient use of DOS network disk space when:

[the number of PCDOS bytes used] divided by [224]

plus [overhead DOS sectors] is grossly larger than

[the number of DOS sectors used].

Tables

We have prepared two tables that already have done all these calculations for you. The two tables are titled:

- HARDDISK PC Disk file size table on page 8-9 , and
- DISKETTE PC Disk file size table 8-10 .

They indicate the size a PC Disk DOS file should be for different amounts of PCDOS space used.

Purpose: you will be instructed to use the tables in the procedure on page 8-11 .

Space used .vs. space available

The two tables both have three columns:

- PCDOS space used,
- PCDOS space available, and
- DOS file size.

The first two columns always add up to a constant; the total space on a disk. You may use either one.

Choice of convenience:

We normally think in terms of "space used", but the CHKDSK command may give you several numbers that must be added together to come up with "total space used."

It always gives you a single number that is "space available," so it is easier to use.

HARDDISK PC Disk file size table

This table shows the relation between PCDOS disk statistics obtained with the CHKDSK command and DOS file statistics obtained with the FILES /PCD command.

IF the PCDOS total space USED in bytes is less than	Or IF the PCDOS space AVAILABLE in bytes is greater than...	THEN the size of the DOS PC Disk file in sectors should be equal to or less than...
0	5,727,232	29 (overhead)
7,168	5,720,064	61
21,504	5,705,728	125
35,840	5,691,392	189
50,176	5,677,056	253
64,512	5,662,720	317
78,848	5,648,384	381
93,184	5,634,048	445
107,520	5,619,712	509
121,856	5,605,376	573
136,192	5,591,040	637
150,528	5,576,704	701
164,864	5,562,368	765
179,200	5,548,032	829
193,536	5,533,696	893
207,872	5,519,360	957
222,208	5,505,024	1,021
680,960	5,046,272	3,069
1,139,712	4,587,520	5,117
1,598,464	4,128,768	7,165
2,057,216	3,670,016	9,213
2,515,968	3,211,264	11,261
2,974,720	2,752,512	13,309
3,433,472	2,293,760	15,357
3,892,224	1,835,008	17,405
4,350,976	1,376,256	19,453
4,809,728	917,504	21,501
5,268,480	458,752	23,549
5,727,232	0	25,597

Determining when a PC Disk is fragmented

DISKETTE PC Disk file size table

This table shows the relation between PCDOS disk statistics obtained with the CHKDSK command and DOS file statistics obtained with the FILES /PCD command.

IF the PCDOS total space USED in bytes is less than	Or IF the PCDOS space AVAILABLE in bytes is greater than...	THEN the size of the DOS PC Disk file in sectors should be equal to or less than...
0	353,024	23 (overhead)
1,792	351,232	31
3,584	349,440	39
5,376	347,648	47
7,168	345,856	55
8,960	344,064	63
23,296	329,728	127
37,632	315,392	191
51,968	301,056	255
66,304	286,720	319
80,640	272,384	383
94,976	258,048	447
109,312	243,712	511
123,648	229,376	575
137,984	215,040	639
152,320	200,704	703
166,656	186,368	767
180,992	172,032	831
195,328	157,696	895
209,664	143,360	959
224,000	129,024	1,023
238,336	114,688	1,087
252,672	100,352	1,151
267,008	86,016	1,215
281,344	71,680	1,279
295,680	57,344	1,343
310,016	43,008	1,407
324,352	28,672	1,471
338,688	14,336	1,535
353,024	0	1,599

Determining when a PC Disk is fragmented

Procedure

This is the procedure to use to determine if a PC Disk file is fragmented.

STEP	ACTION
1	Make sure you are: <ul style="list-style-type: none">• logged onto INX-PC <u>and</u>• context switched to PCDOS.
2	Insert a PC Disk to be checked. <u>Example:</u> INX DISK INSERT BIGNEW D: <u>Return</u>
3	Use the CHKDSK command to obtain either the <ul style="list-style-type: none">• amount of space used <u>or</u>• amount of space available. <u>Example:</u> CHKDSK D: <u>Return</u> <u>Reference:</u> see the section "The CHKDSK command" on page 8-3 . <u>Result:</u> Lets say for example, that the <ul style="list-style-type: none">• space used is - 10,000 bytes <u>or</u>• space available is - 5,717,232

continued


Determining when a PC Disk is fragmented

Procedure (continued)

STEP	ACTION																					
4	<p data-bbox="298 341 958 397">Look up the DOS file size that this PC Disk should have.</p> <table border="1" data-bbox="304 430 958 673"> <tr> <td data-bbox="309 438 505 511">IF the PC Disk type is...</td> <td data-bbox="505 438 952 511">THEN use the table titled...</td> </tr> <tr> <td data-bbox="309 511 505 592">HARDDISK</td> <td data-bbox="505 511 952 592">HARDDISK PC Disk file size table on page 8-9</td> </tr> <tr> <td data-bbox="309 592 505 665">DISKETTE</td> <td data-bbox="505 592 952 665">DISKETTE PC Disk file size table on page 8-10</td> </tr> </table> <p data-bbox="298 706 958 787">PCD Type?: If you don't remember what type the PC Disk is, use the INX DISK EXAMINE command on page 4-27 .</p> <p data-bbox="298 812 958 868">Result: in this example, PC Disk BIGNEW is a HARDDISK type PCD.</p> <p data-bbox="298 893 958 974">In the HARDDISK table, the values 10,000 used or 5,717,232 available fall in between DOS file sizes: 61 to 125 sectors.</p> <table border="1" data-bbox="304 1006 958 1193"> <thead> <tr> <th data-bbox="309 1015 487 1063">bytes used</th> <th data-bbox="487 1015 723 1063">bytes available</th> <th data-bbox="723 1015 952 1063">DOS file size</th> </tr> </thead> <tbody> <tr> <td data-bbox="309 1063 487 1104">0</td> <td data-bbox="487 1063 723 1104">5,727,232</td> <td data-bbox="723 1063 952 1104">29</td> </tr> <tr> <td data-bbox="309 1104 487 1144">7,168</td> <td data-bbox="487 1104 723 1144">5,720,064</td> <td data-bbox="723 1104 952 1144">61</td> </tr> <tr> <td colspan="3" data-bbox="309 1144 952 1161" style="text-align: center;">BIGNEW is in between these lines</td> </tr> <tr> <td data-bbox="309 1161 487 1185">21,504</td> <td data-bbox="487 1161 723 1185">5,705,728</td> <td data-bbox="723 1161 952 1185">125</td> </tr> </tbody> </table> <p data-bbox="298 1234 958 1315"><u>Note:</u> The tables do not have values all possible values. You must estimate in between given values to get the approximate answer.</p>	IF the PC Disk type is...	THEN use the table titled...	HARDDISK	HARDDISK PC Disk file size table on page 8-9	DISKETTE	DISKETTE PC Disk file size table on page 8-10	bytes used	bytes available	DOS file size	0	5,727,232	29	7,168	5,720,064	61	BIGNEW is in between these lines			21,504	5,705,728	125
IF the PC Disk type is...	THEN use the table titled...																					
HARDDISK	HARDDISK PC Disk file size table on page 8-9																					
DISKETTE	DISKETTE PC Disk file size table on page 8-10																					
bytes used	bytes available	DOS file size																				
0	5,727,232	29																				
7,168	5,720,064	61																				
BIGNEW is in between these lines																						
21,504	5,705,728	125																				

continued

Procedure
(continued)

STEP	ACTION
5	<p>Now use the DOS.H FILES command to see exactly how big the DOS file is.</p> <ul style="list-style-type: none">• context switch to DOS.H <p><u>Alternate Key - Left Shift - Right Shift</u></p>  <p>• type the FILES command</p> <p><u>Example:</u></p> <p>FILES /PCD;D <u>Return</u></p> <p><u>Reference:</u> See the section "The FILES command" on page 8-5</p> <p><u>Result:</u> for example, let's say that the size of DOS file BIGNEW/PCD is 408 sectors.</p>

continued

Determining when a PC Disk is fragmented

Procedure (continued)

STEP	ACTION
6	<p>Decide if the file is being used efficiently.</p> <p><u>Example:</u></p> <p>The file is actually: 408 sectors</p> <p>The table said it should be between: 61 to 125 sectors</p> <p>Subtract 125 from 408, and we see that the file currently has no valid PCDOS data in at least 283 of its 408 sectors.</p> <p>283 sectors multiplied by 224 bytes per sector is: 63,392 bytes.</p> <p><u>Comment:</u> this example is typical of the result of not doing an INX DISK REMOVE after writing data on or creating a PC Disk.</p>
7	<p>If you do <u>not</u> anticipate placing any new data into the unused space,</p> <p>THEN follow the procedure:</p> <p>"How to deallocate unused space in PC Disks" on page 8-17 .</p>

The FREE command

Purpose

The FREE command tells you how much space is available on each DATAPOINT DOS network disk volume you have mounted.

Format

The FREE command has no parameters, it is simply:

FREE Return

The FREE command

Result

If you have only logged onto DOS.H without mounting additional sub-directories, the result is:

```
READY
FREE
DOS.H VER 2.9 FREE SPACE AND FILES COMMAND

LOGICAL DRIVE 0 VOLUME ID (ARCVOL1 ) 3504 SECTORS 65 FILES
```

If you have logged onto DOS.H and mounted additional subdirectories, the result might look like this:

```
READY
FREE
DOS.H VER 2.9 FREE SPACE AND FILES COMMAND

LOGICAL DRIVE 0 VOLUME ID (ARCVOL1 ) 3504 SECTORS 65 FILES
LOGICAL DRIVE 1 VOLUME ID (COMMON ) 1345 SECTORS 122 FILES
LOGICAL DRIVE 2 VOLUME ID (ARCVOL1 ) 3504 SECTORS 65 FILES
```

Note: in this example, the sub-directories you mounted in drives 0 and 2 are on the same disk. The FREE command reports free space on the whole disk.

In the example, you have 3504 sectors free on ARCVOL1, and 1345 on COMMON, period. You do not have 2 times 3504 free.

That space is available to the user of any sub-directory, first come, first served.

How to deallocate unused space in PC Disk

Process description

The basic process to deallocate unused space in a PC Disk is:

- 1 - rename the original PC Disk file in DOS.H with the NAME command, see page D-7 .
- 2 - insert the renamed disk in PCDOS with the INX DISK INSERT command, see page 4-22 .
- 3 - create a new PC Disk with the original name in PCDOS with the INX DISK CREATE command, see page 4-18 .
- 4 - copy all the files from the old PC Disk to the new one with the PCDOS command COPY *.*.

Example: COPY D:*. * E: Return

- 5 - delete the original PC Disk file with the DOS.H command KILL, see page D-7 .
-

When to use

Use this procedure when you have determined that a PC Disk needs to have space deallocated by following the procedure: "Determining when a PC Disk is fragmented" on page 8-7 .

Chapter 9.

Transferring text files

Overview

Introduction

The INX COPY command is a special PCDOS command you can use to transfer text files between PCDOS disks and DOS disks or vice versa.

What is a text file

Definition: a text file is a file that contains a limited set of characters. Those characters are known as the ASCII printable character set. They include all normal printable characters, CR (carriage return), and LF (line feed).

They do not include all the other special control characters that are sometimes sent to printers or used in some word processing documents to indicate special text formats.

Example: files created with the DOS.H program EDIT or the PCDOS program ED are examples of text files. Also, most word processor and spread sheet programs provide functions that allow you to *print* data to a file instead of to a printer; those files are usually examples of text files.

Non-Example: Program command files and most word processing documents or spread sheet files are not examples of text files because they contain additional character codes that are not printable.

Purpose

The purpose of the INX COPY command is to allow you to move a single text file back and forth between DOS and PCDOS disks so that you can manipulate that file with different programs that run under those different operating systems.

Example 1: you create a text file with the DOS.H editor and then you use the INX COPY command to move it from a DOS disk onto a PCDOS disk. Then you use a PCDOS spelling checker that you like. Then you can copy the corrected file back to a DOS disk and use the DOS.H editor again.

Example 2: you create a document file with a PCDOS word processor program. Then you create a text file output version of the file. Next you use INX COPY to place a copy of that file on a DOS disk. Then you use the DOS IEOS word processor program to convert the text file to a document file, and make changes to the document to format it for distribution to other departments via DATAPOINT's IEOS electronic mail facility.

Example 3: you create a text file in PCDOS which could be a word processing document or spread sheet printout. Then you use INX COPY to put a copy of that file on a DOS disk. Then you go to a DATAPOINT RMS processor on the ARC Network and use the RMS command GETARC to copy the DOS file onto an RMS disk. Then you can use an RMS word processor to format the document for printing on the 9660 Laser Printer, using many different fonts and renditions.

The INX COPY command

Introduction

This section describes the format and parameters of the INX COPY command.

Command format

This is the format of the INX COPY command:

```
  INX COPY  sourceFile  destinationFile Return
  └──┬──┘  └──┬──┘  └──┬──┘
  KEYWORDS  1      2
Parameters:  1      2
```

Direction of transfer

The direction of transfer is inferred by the format of the source file specification.

IF the source file specification is a ...	THEN the direction of transfer is from...
PCDOS file	PCDOS to DOS
DOS file	DOS to PCDOS

Field description

This is a description of required and optional values for fields 1 and 2.

PARAMETER		DESCRIPTION	
1	source file	a <i>full file specification</i> is required	
		<u>Note:</u> FILE SPECIFICATION FORMATS	
		IF the file is...	THEN the file spec format is...
		PCDOS	<i>Drive:Name.Extension</i> <u>Example:</u> C:TEXTFILE.TXT
DOS	<i>Name/Extension:Drive</i> <u>Example:</u> TEXTFILE/TXT:DR1		
2	destination file	a drive specification is required as a minimum. <u>Defaults:</u> if the destination file <i>name</i> and/or <i>extension</i> are <u>not</u> specified, they will be the same as those specified for the source file.	

Examples

These following are examples of the INX COPY command.

Example 1: this copies DOS file DATA/TXT:DR1 to
PCDOS file B:DATA.TXT:

```
INX COPY DATA/TXT:DR1 B: Return
```

Example 2: this copies PCDOS file B:DATA.TXT to DOS
file DATA/TXT:DR1:

```
INX COPY B:DATA.TXT :DR1 Return
```

Example 3: this copies PCDOS file B:DATA.TXT to DOS
file NEWDATA/NEW:DR1:

```
INX COPY B:DATA.TXT NEWDATA/NEW:DR1 Return
```

The INX COPY conversion process

Introduction

When the INX COPY command transfers files from PCDOS to DOS or vice-versa, it converts certain characters in the text files. The conversion process is different in each direction.

DOS to PCDOS process

This table shows the conversion of text characters in DOS files when transferred to PCDOS files.

These characters in a DOS text file...	are converted to these characters in a PCDOS file..
space compressed blanks	explicit blanks
DOS end-of-record marker	PCDOS end-of-record character sequence
DOS end-of-file marker	PCDOS end-of-file character sequence
Carriage return: 0D (hex)	Carriage return, line feed: 0D, 0A (hex)

Comment: the net effect of this translation scheme is that you may use the multi-featured DOS.H text editor for virtually all your PCDOS text file editing needs.

PCDOS to DOS process

This table shows the conversion of text characters in PCDOS files when transferred to DOS files.

These characters in PCDOS text files...	are converted to these characters in DOS files...
any with the 8th bit set	the same character with the 8th bit stripped off
tab	replaced with spaces to the next column which is an even multiple of 8
form-feed	discarded, <u>not</u> converted
line-feed	discarded, <u>not</u> converted
carriage return	<u>Note:</u> passed directly to maintain logical record equivalence

Comment: the net effect of this translation scheme is that the text files produced by the most popular PCDOS word processing programs will translate very cleanly to DOS text files.

Chapter 10.

Transporting PC Disks

Overview

Introduction

You can move PC Disk files from one DOS disk to another with the COPY command. If you want to transport PC Disk files via cassette tape or communications programs, you must first use the INXPCDTT program to test them.

DOS.H COPY command

Since simulated diskette files appear to DOS.H as normal DOS.H files, they can be moved from one network disk volume to another simply by using the DOS.H COPY command. Additionally, the COPY command can be used to transfer these files to DATAPOINT format diskettes in diskette drives attached to 1500 series processors.

Accessing simulated diskette files

DOS.H ARC software support provides the ability for the MOUNT15 command to access disk volumes maintained by DOS.D processors (processors using DATAPOINT's proprietary instruction set). Therefore, simulated diskette files may ultimately reside on almost any type of disk media serviced by almost any model of DATAPOINT processor.

INXPCDTT command

Introduction

Simulated diskette files may also be transferred to DATAPOINT format cassette tapes and transmitted to remote locations using any of the many communications software packages provided by DATAPOINT.

Before using cassettes or data communications, test the desired PCDOS simulated diskette file for transportability by executing the following command under DOS.H:

INXPCDTT *pcdName* Return

The command name stands for INX Personal Computer Diskette Transportability Test. The process of creating these files (using the INX DISK CREATE function) does not initialize all of the disk space that may ultimately be allocated to the file. Therefore, INXPCDTT tests each allocated sector to be sure that it is properly formatted and that there are no "uninitialized holes" in the file which might cause the cassette transfer or communication programs to abort.

Command format

The command format is:

INXPCDTT *pcdName* Return

Parameter description

The parameter *pcdName* is a simulated PC Disk name.

Actually this is the name of a DOS.H file (*pcdName/PCD*) that INX-PC will use to simulate a PC Disk.

Note: You must also specify the DOS.H drive if it is not drive 0.

Examples:

WORKDISK ...(*in DOS.H drive 0*)

COMMON:DR1 ...(*in DOS.H drive 1*)

How to test a PC Disk file

Procedure

The following procedure shows you how to test a PC Disk file.

Prerequisites:

You must:

- be logged onto DOS.H and/or INX-PC
- have the PC Disk file you want to test.

STEP	ACTION
1	In PCDOS, remove the PC Disk from the PC Disk drive. <u>See:</u> the INX DISK EXAMINE and INX DISK REMOVE commands on pages 4-12 and D-5 .
2	Context switch to DOS.H
3	Type the INXPDDTT command which has this format INXPDDTT <i>pcdName</i> <u>Return</u> <u>Example:</u> INXPDDTT WORKDISK <u>Return</u> <u>Result:</u> All sectors of the file will be properly initialized.

Chapter 11.

Using INX-PC commands in batch files

Overview

Introduction

You may use the INX DISK, INX COPY, and INX PRINTER commands in PCDOS batch files.

Commands with prompts

Two of the INX DISK and INX PRINTER commands have prompts for a YES or NO response.

They are:

- INX DISK CREATE and
- INX PRINTER SPOOL.

This two commands require slightly different syntax when used in batch files.

Prompt files for batch file commands

Definition

A prompt file is a text file that has single line of text with the single letter: "Y."

Example

This is an example of a prompt file that might be called:
YES.TXT

Y

Use

If you want to use either the INX DISK CREATE or INX PRINTER SPOOL commands in a batch file, you must specify a prompt file name in the command line.

Formats: These are the formats of these two commands when used in batch files...:

```
INX DISK CREATE type pcdName pcdDrive <promptFile Return  
INX PRINTER SPOOL doshPrintFile <promptFile Return
```

Examples: These are examples of the commands when used in a batch file...:

```
INX DISK CREATE DISKETTE NEWSMALL E: <YES.TXT Return  
INX PRINTER SPOOL SPOOL1 <YES.TXT Return  
INX PRINTER SPOOL SPOOL2:DR1 <YES.TXT Return
```

Appendix A.

Installation TASK details

Overview

In this section

This section of the appendix contains:

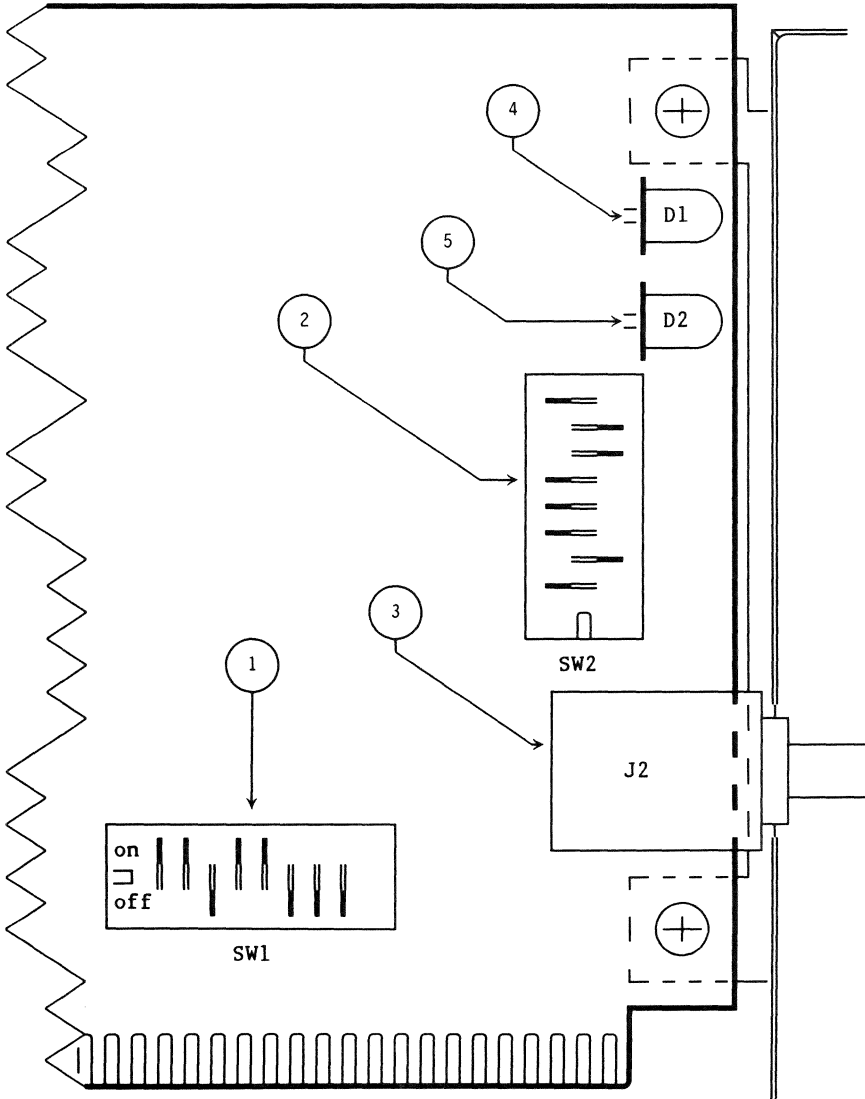
- a diagram of the INX-PC adapter board, and
 - detailed information and step-by-step procedures for performing each of the ten individual installation tasks.
-

Purpose

Chapter 2 describes the installation process and lists the ten installation tasks. Since you will only perform these tasks once (in most cases) this information has been placed here, where it is out of the way for your normal use of the rest of this user's guide.

INX-PC Adapter Board diagram

You will need to locate the items indicated on this drawing in some of the following installation tasks.



Parts function table

This table describes the name and function of the parts indicated in the previous drawing.

PART	FUNCTION
<p>① ROM group select switch SW1</p>	<p>Selects an unused portion of your PC memory which will be used by the INX-PC ROM.</p>
<p>② RIM ID switch SW2</p>	<p>Codes your PC with a unique address on the ARC Network</p>
<p>③ ARC Network coaxial connector</p>	<p>Connector used to connect the INX-PC equipped PC to the ARC Network.</p>
<p>④ LED 1 (GREEN)</p>	<p>Indicates ARC RIM activity.</p>
<p>⑤ LED 2 (RED)</p>	<p>Indicates non-maskable interrupts in the DOS.H processor. Heavy activity usually means error condition</p>

TASK 1: Coordinating and obtaining a RIM ID

Introduction

You must obtain a RIM ID for your INX-PC adapter board before you can install it. You will set the RIM ID switches in TASK 2, page A-6 .

Hint

Since you must consult with a network administrator to obtain a RIM ID, you could also obtain your logon sub-directory information at the same time.

Note: That particular task is listed as TASK 9 on page A-49 since you do not need the information until after you have completed the installation procedure.

Definition

A RIM ID is an ARC Network Resource Interface Module identification number.

Rule: Every processor connected to an ARC Network has a resource interface module (a piece of hardware) and each is coded with a unique number (like an address).

Values

RIM IDs are octal (not decimal) numbers. They range from 0001 to 0377 inclusive. Zero is reserved and never used by a RIM.

TASK 1: Coordinating and obtaining a RIM ID

Convention

In this document,

- octal numbers are always indicated by a leading zero,
- decimal values do not have a leading zero.

Number of values: 0001 thru 0377 octal, represents 255 unique (decimal) values 1 thru 255. Therefore, you can have 255 processors, maximum, connected to an ARC Network.

Procedure

STEP	ACTION								
1	<p>Obtain your RIM ID from one of these sources:</p> <ul style="list-style-type: none">• the person who gave you your INX-PC adapter board, diskette, or user's guide, <u>or</u>• a Customer Service Engineer who is going to install your INX-PC adapter board, <u>or</u>• an ARC Network Supervisor.								
2	<p>Write your RIM ID here:</p> <p>My IBM-PC RIM ID is: <table border="1" data-bbox="686 1044 890 1097"><tr><td>0</td><td></td><td></td><td></td></tr></table></p> <p><u>Example:</u> <table border="1" data-bbox="686 1122 890 1175"><tr><td>0</td><td>1</td><td>3</td><td>2</td></tr></table></p>	0				0	1	3	2
0									
0	1	3	2						

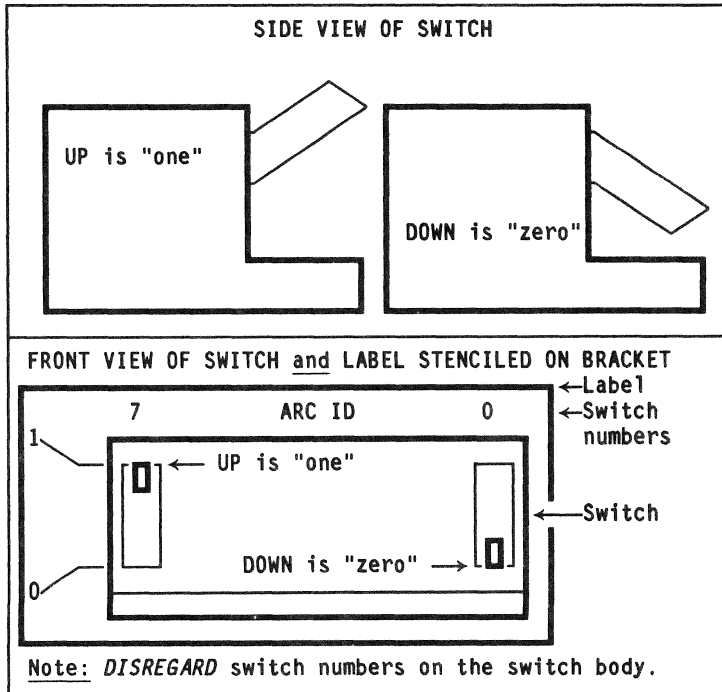
TASK 2: Setting INX-PC board RIM ID switch

Introduction

This is the procedure for setting your ARC RIM ID code on the INX-PC adapter board.

Switch "one"/"zero" positions

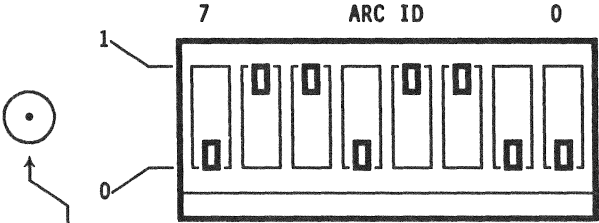
This diagram shows how you set an individual switch rocker arm to the "one" or "zero" position.



TASK 2: Setting INX-PC board RIM ID switch

Procedure

This is the procedure to set switch SW2 with your RIM ID.

STEP	ACTION
1	<p>Orient the INX-PC adapter board by laying it down on a table:</p> <ul style="list-style-type: none">• with the components facing up,• so you see switch SW2 thru the hole in the bracket.  <p>The diagram shows a top-down view of the INX-PC adapter board. On the left is a circular coax connector. To its right is a rectangular bracket with a hole. Below the bracket is a switch labeled 'SWITCH SW2' with eight rocker arms numbered 7 to 0. Above the switch is a label 'ARC ID'. A line labeled '1' points to the top of the switch, and a line labeled '0' points to the bottom. Below the diagram, labels 'COAX CONNECTOR', 'BRACKET', and 'SWITCH SW2' are aligned with their respective parts. An upward arrow points from 'BRACKET' to the bracket, and another from 'SWITCH SW2' to the switch.</p>
2	Look at the last STEP of TASK 1 where you wrote your RIM ID, on page A-5 .
3	Look up your RIM ID in the table "RIM ID switch setting table" on page A-9 .
4	<p>Set the individual rocker arms "7" through "0" on switch SW2 as indicated in the table.</p> <p>IMPORTANT: Use the switch rocker arm numbers indicated on the INX-PC adapter board bracket stenciled label.</p> <p>DO NOT refer to numbers on the switch itself.</p>

TASK 2: Setting INX-PC board RIM ID switch

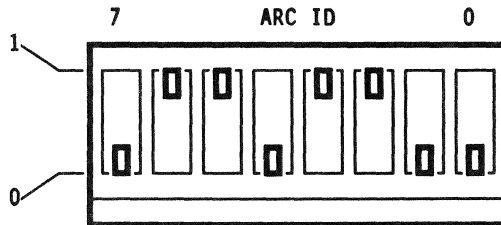
Example

For example, IF your RIM ID is:

0 (always)	1	5	4
---------------	---	---	---

THEN you would locate the row shown in this extract from the RIM ID switch setting table:

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0154	0	1	1	0	1	1	0	0



AND THEN you would set the rocker arms on switch SW2 as shown above.

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
(0 is never used)								
0001	0	0	0	0	0	0	0	1
0002	0	0	0	0	0	0	1	0
0003	0	0	0	0	0	0	1	1
0004	0	0	0	0	0	1	0	0
0005	0	0	0	0	0	1	0	1
0006	0	0	0	0	0	1	1	0
0007	0	0	0	0	0	1	1	1
0010	0	0	0	0	1	0	0	0
0011	0	0	0	0	1	0	0	1
0012	0	0	0	0	1	0	1	0
0013	0	0	0	0	1	0	1	1
0014	0	0	0	0	1	1	0	0
0015	0	0	0	0	1	1	0	1
0016	0	0	0	0	1	1	1	0
0017	0	0	0	0	1	1	1	1
0020	0	0	0	1	0	0	0	0
0021	0	0	0	1	0	0	0	1
0022	0	0	0	1	0	0	1	0
0023	0	0	0	1	0	0	1	1
0024	0	0	0	1	0	1	0	0
0025	0	0	0	1	0	1	0	1
0026	0	0	0	1	0	1	1	0
0027	0	0	0	1	0	1	1	1
0030	0	0	0	1	1	0	0	0
0031	0	0	0	1	1	0	0	1
0032	0	0	0	1	1	0	1	0
0033	0	0	0	1	1	0	1	1
0034	0	0	0	1	1	1	0	0
0035	0	0	0	1	1	1	0	1
0036	0	0	0	1	1	1	1	0
0037	0	0	0	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0040	0	0	1	0	0	0	0	0
0041	0	0	1	0	0	0	0	1
0042	0	0	1	0	0	0	1	0
0043	0	0	1	0	0	0	1	1
0044	0	0	1	0	0	1	0	0
0045	0	0	1	0	0	1	0	1
0046	0	0	1	0	0	1	1	0
0047	0	0	1	0	0	1	1	1
0050	0	0	1	0	1	0	0	0
0051	0	0	1	0	1	0	0	1
0052	0	0	1	0	1	0	1	0
0053	0	0	1	0	1	0	1	1
0054	0	0	1	0	1	1	0	0
0055	0	0	1	0	1	1	0	1
0056	0	0	1	0	1	1	1	0
0057	0	0	1	0	1	1	1	1
0060	0	0	1	1	0	0	0	0
0061	0	0	1	1	0	0	0	1
0062	0	0	1	1	0	0	1	0
0063	0	0	1	1	0	0	1	1
0064	0	0	1	1	0	1	0	0
0065	0	0	1	1	0	1	0	1
0066	0	0	1	1	0	1	1	0
0067	0	0	1	1	0	1	1	1
0070	0	0	1	1	1	0	0	0
0071	0	0	1	1	1	0	0	1
0072	0	0	1	1	1	0	1	0
0073	0	0	1	1	1	0	1	1
0074	0	0	1	1	1	1	0	0
0075	0	0	1	1	1	1	0	1
0076	0	0	1	1	1	1	1	0
0077	0	0	1	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0100	0	1	0	0	0	0	0	0
0101	0	1	0	0	0	0	0	1
0102	0	1	0	0	0	0	1	0
0103	0	1	0	0	0	0	1	1
0104	0	1	0	0	0	1	0	0
0105	0	1	0	0	0	1	0	1
0106	0	1	0	0	0	1	1	0
0107	0	1	0	0	0	1	1	1
0110	0	1	0	0	1	0	0	0
0111	0	1	0	0	1	0	0	1
0112	0	1	0	0	1	0	1	0
0113	0	1	0	0	1	0	1	1
0114	0	1	0	0	1	1	0	0
0115	0	1	0	0	1	1	0	1
0116	0	1	0	0	1	1	1	0
0117	0	1	0	0	1	1	1	1
0120	0	1	0	1	0	0	0	0
0121	0	1	0	1	0	0	0	1
0122	0	1	0	1	0	0	1	0
0123	0	1	0	1	0	0	1	1
0124	0	1	0	1	0	1	0	0
0125	0	1	0	1	0	1	0	1
0126	0	1	0	1	0	1	1	0
0127	0	1	0	1	0	1	1	1
0130	0	1	0	1	1	0	0	0
0131	0	1	0	1	1	0	0	1
0132	0	1	0	1	1	0	1	0
0133	0	1	0	1	1	0	1	1
0134	0	1	0	1	1	1	0	0
0135	0	1	0	1	1	1	0	1
0136	0	1	0	1	1	1	1	0
0137	0	1	0	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0140	0	1	1	0	0	0	0	0
0141	0	1	1	0	0	0	0	1
0142	0	1	1	0	0	0	1	0
0143	0	1	1	0	0	0	1	1
0144	0	1	1	0	0	1	0	0
0145	0	1	1	0	0	1	0	1
0146	0	1	1	0	0	1	1	0
0147	0	1	1	0	0	1	1	1
0150	0	1	1	0	1	0	0	0
0151	0	1	1	0	1	0	0	1
0152	0	1	1	0	1	0	1	0
0153	0	1	1	0	1	0	1	1
0154	0	1	1	0	1	1	0	0
0155	0	1	1	0	1	1	0	1
0156	0	1	1	0	1	1	1	0
0157	0	1	1	0	1	1	1	1
0160	0	1	1	1	0	0	0	0
0161	0	1	1	1	0	0	0	1
0162	0	1	1	1	0	0	1	0
0163	0	1	1	1	0	0	1	1
0164	0	1	1	1	0	1	0	0
0165	0	1	1	1	0	1	0	1
0166	0	1	1	1	0	1	1	0
0167	0	1	1	1	0	1	1	1
0170	0	1	1	1	1	0	0	0
0171	0	1	1	1	1	0	0	1
0172	0	1	1	1	1	0	1	0
0173	0	1	1	1	1	0	1	1
0174	0	1	1	1	1	1	0	0
0175	0	1	1	1	1	1	0	1
0176	0	1	1	1	1	1	1	0
0177	0	1	1	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0200	1	0	0	0	0	0	0	0
0201	1	0	0	0	0	0	0	1
0202	1	0	0	0	0	0	1	0
0203	1	0	0	0	0	0	1	1
0204	1	0	0	0	0	1	0	0
0205	1	0	0	0	0	1	0	1
0206	1	0	0	0	0	1	1	0
0207	1	0	0	0	0	1	1	1
0210	1	0	0	0	1	0	0	0
0211	1	0	0	0	1	0	0	1
0212	1	0	0	0	1	0	1	0
0213	1	0	0	0	1	0	1	1
0214	1	0	0	0	1	1	0	0
0215	1	0	0	0	1	1	0	1
0216	1	0	0	0	1	1	1	0
0217	1	0	0	0	1	1	1	1
0220	1	0	0	1	0	0	0	0
0221	1	0	0	1	0	0	0	1
0222	1	0	0	1	0	0	1	0
0223	1	0	0	1	0	0	1	1
0224	1	0	0	1	0	1	0	0
0225	1	0	0	1	0	1	0	1
0226	1	0	0	1	0	1	1	0
0227	1	0	0	1	0	1	1	1
0230	1	0	0	1	1	0	0	0
0231	1	0	0	1	1	0	0	1
0232	1	0	0	1	1	0	1	0
0233	1	0	0	1	1	0	1	1
0234	1	0	0	1	1	1	0	0
0235	1	0	0	1	1	1	0	1
0236	1	0	0	1	1	1	1	0
0237	1	0	0	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0240	1	0	1	0	0	0	0	0
0241	1	0	1	0	0	0	0	1
0242	1	0	1	0	0	0	1	0
0243	1	0	1	0	0	0	1	1
0244	1	0	1	0	0	1	0	0
0245	1	0	1	0	0	1	0	1
0246	1	0	1	0	0	1	1	0
0247	1	0	1	0	0	1	1	1
0250	1	0	1	0	1	0	0	0
0251	1	0	1	0	1	0	0	1
0252	1	0	1	0	1	0	1	0
0253	1	0	1	0	1	0	1	1
0254	1	0	1	0	1	1	0	0
0255	1	0	1	0	1	1	0	1
0256	1	0	1	0	1	1	1	0
0257	1	0	1	0	1	1	1	1
0260	1	0	1	1	0	0	0	0
0261	1	0	1	1	0	0	0	1
0262	1	0	1	1	0	0	1	0
0263	1	0	1	1	0	0	1	1
0264	1	0	1	1	0	1	0	0
0265	1	0	1	1	0	1	0	1
0266	1	0	1	1	0	1	1	0
0267	1	0	1	1	0	1	1	1
0270	1	0	1	1	1	0	0	0
0271	1	0	1	1	1	0	0	1
0272	1	0	1	1	1	0	1	0
0273	1	0	1	1	1	0	1	1
0274	1	0	1	1	1	1	0	0
0275	1	0	1	1	1	1	0	1
0276	1	0	1	1	1	1	1	0
0277	1	0	1	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0300	1	1	0	0	0	0	0	0
0301	1	1	0	0	0	0	0	1
0302	1	1	0	0	0	0	1	0
0303	1	1	0	0	0	0	1	1
0304	1	1	0	0	0	1	0	0
0305	1	1	0	0	0	1	0	1
0306	1	1	0	0	0	1	1	0
0307	1	1	0	0	0	1	1	1
0310	1	1	0	0	1	0	0	0
0311	1	1	0	0	1	0	0	1
0312	1	1	0	0	1	0	1	0
0313	1	1	0	0	1	0	1	1
0314	1	1	0	0	1	1	0	0
0315	1	1	0	0	1	1	0	1
0316	1	1	0	0	1	1	1	0
0317	1	1	0	0	1	1	1	1
0320	1	1	0	1	0	0	0	0
0321	1	1	0	1	0	0	0	1
0322	1	1	0	1	0	0	1	0
0323	1	1	0	1	0	0	1	1
0324	1	1	0	1	0	1	0	0
0325	1	1	0	1	0	1	0	1
0326	1	1	0	1	0	1	1	0
0327	1	1	0	1	0	1	1	1
0330	1	1	0	1	1	0	0	0
0331	1	1	0	1	1	0	0	1
0332	1	1	0	1	1	0	1	0
0333	1	1	0	1	1	0	1	1
0334	1	1	0	1	1	1	0	0
0335	1	1	0	1	1	1	0	1
0336	1	1	0	1	1	1	1	0
0337	1	1	0	1	1	1	1	1

continued

TASK 2: Setting INX-PC board RIM ID switch

RIM ID switch setting table
(continued)

If your RIM ID is...	Then set each arm to "1" or "0".							
	ARM NUMBERS: (on bracket label)							
	7	6	5	4	3	2	1	0
0340	1	1	1	0	0	0	0	0
0341	1	1	1	0	0	0	0	1
0342	1	1	1	0	0	0	1	0
0343	1	1	1	0	0	0	1	1
0344	1	1	1	0	0	1	0	0
0345	1	1	1	0	0	1	0	1
0346	1	1	1	0	0	1	1	0
0347	1	1	1	0	0	1	1	1
0350	1	1	1	0	1	0	0	0
0351	1	1	1	0	1	0	0	1
0352	1	1	1	0	1	0	1	0
0353	1	1	1	0	1	0	1	1
0354	1	1	1	0	1	1	0	0
0355	1	1	1	0	1	1	0	1
0356	1	1	1	0	1	1	1	0
0357	1	1	1	0	1	1	1	1
0360	1	1	1	1	0	0	0	0
0361	1	1	1	1	0	0	0	1
0362	1	1	1	1	0	0	1	0
0363	1	1	1	1	0	0	1	1
0364	1	1	1	1	0	1	0	0
0365	1	1	1	1	0	1	0	1
0366	1	1	1	1	0	1	1	0
0367	1	1	1	1	0	1	1	1
0370	1	1	1	1	1	0	0	0
0371	1	1	1	1	1	0	0	1
0372	1	1	1	1	1	0	1	0
0373	1	1	1	1	1	0	1	1
0374	1	1	1	1	1	1	0	0
0375	1	1	1	1	1	1	0	1
0376	1	1	1	1	1	1	1	0
0377	1	1	1	1	1	1	1	1

TASK 3: Setting INX-PC board ROM switch

Introduction

This task sets a code on your INX-PC Adapter that selects an unused area of your PC memory that will be used by the Read-Only Memory (ROM) on the adapter board.

ROM address group codes

The ROM address group code choices are: 0,1,2,3,4,5,6 or 7.

Factory preset ROM group code

Your INX-PC board is factory set for ROM address group 0.

Comment: this code will normally work if you

- do not have any other add-in boards installed in your PC, or
 - do have any or even all of the following IBM boards installed:
 - ASYNC communications adapter,
 - monochrome adapter,
 - color display adapter,
 - diskette adapter,
 - fixed disk adapter or
 - parallel printer adapter.
-

TASK 3: Setting INX-PC board ROM switch

Changing your ROM Code

If you need to change the ROM code on the INX-PC adapter board because you add other boards to your PC, you must always perform Installation TASK 6 on page A-33 and TASK 7 on page A-39 afterwards.

Table

This table shows the correspondence between the ROM address group code and hexadecimal memory addresses.

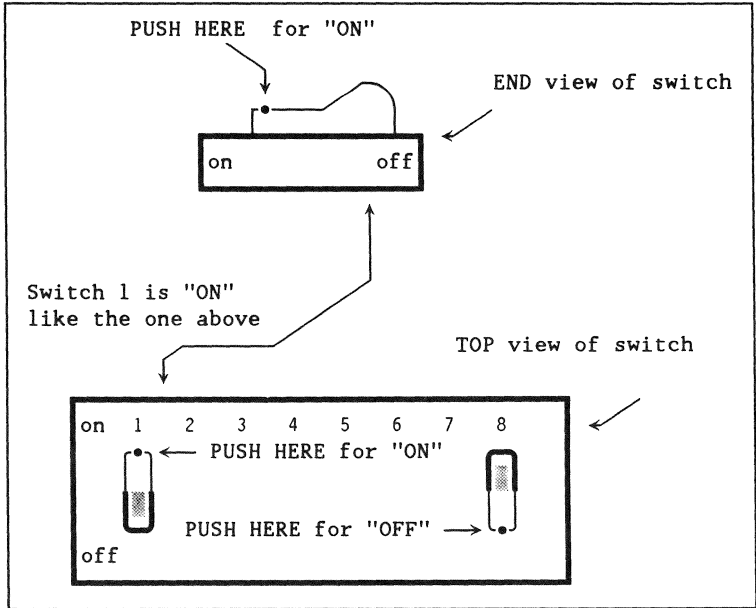
Purpose: this table may be helpful if you need to select a ROM group code other than group 0.

ROM address group code..	represents hexadecimal memory addresses...
0	D0000 thru D3FFF
1	D4000 thru D7FFF
2	D8000 thru DBFFF
3	DC000 thru DFFFF
4	E0000 thru E3FFF
5	E4000 thru E7FFF
6	E8000 thru EBFFF
7	EC000 thru EFFFF

TASK 3: Setting INX-PC board ROM switch

Switch ON/OFF positions

This diagram shows how you set a switch to the "ON" position. The "OFF" position is obtained by pushing the opposite side.



TASK 3: Setting INX-PC board ROM switch

Table of switch settings

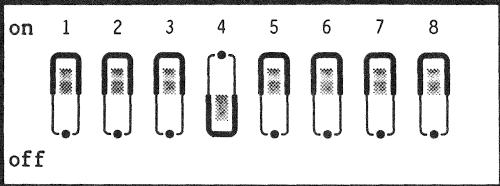
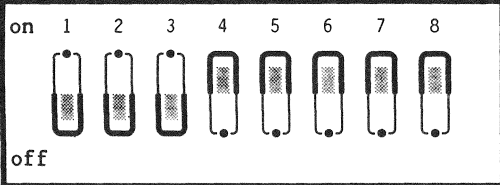
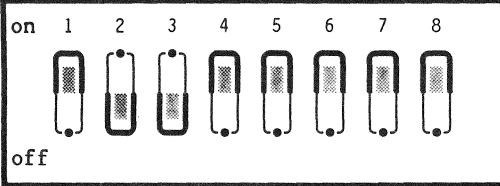
This table shows the eight possible switch settings you will choose from in the following procedure.

ROM GROUP CODE	SW1 SWITCH SETTINGS
0	<p style="text-align: center;">on on off on off off off off</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="text-align: center;">on 1 2 3 4 5 6 7 8</p> <p style="text-align: center;">off</p> </div> <p>Note: This is the way the switch is set at the factory.</p>
1	<p style="text-align: center;">off on off on off off off off</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="text-align: center;">on 1 2 3 4 5 6 7 8</p> <p style="text-align: center;">off</p> </div>
2	<p style="text-align: center;">on off off on off off off off</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="text-align: center;">on 1 2 3 4 5 6 7 8</p> <p style="text-align: center;">off</p> </div>

continued

TASK 3: Setting INX-PC board ROM switch

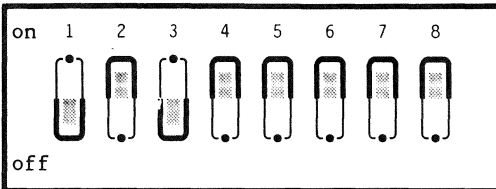
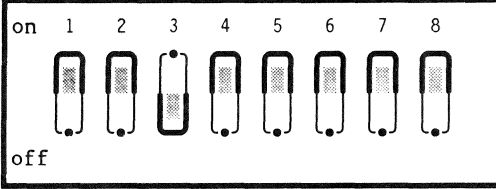
Table of switch settings
(continued)

ROM GROUP CODE	SW 1 SWITCH SETTINGS
3	<p style="text-align: center;">off off off on off off off off</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">on 1 2 3 4 5 6 7 8</p>  <p style="text-align: center;">off</p> </div>
4	<p style="text-align: center;">on on on off off off off off</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">on 1 2 3 4 5 6 7 8</p>  <p style="text-align: center;">off</p> </div>
5	<p style="text-align: center;">off on on off off off off off</p> <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">on 1 2 3 4 5 6 7 8</p>  <p style="text-align: center;">off</p> </div>

continued

TASK 3: Setting INX-PC board ROM switch

Table of switch settings
(continued)

ROM GROUP CODE	SW 1 SWITCH SETTINGS
6	<p style="text-align: center;">on off on off off off off off</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: fit-content;"> <p style="margin: 0;">on 1 2 3 4 5 6 7 8</p>  <p style="margin: 0;">off</p> </div>
7	<p style="text-align: center;">off off on off off off off off</p> <div style="border: 1px solid black; padding: 5px; margin: 5px auto; width: fit-content;"> <p style="margin: 0;">on 1 2 3 4 5 6 7 8</p>  <p style="margin: 0;">off</p> </div>

Note: In all eight switch settings above, switch rockers 7 and 8 can actually be in either ON or OFF positions. It does not matter.

TASK 3: Setting INX-PC board ROM switch

Procedure

This is the procedure to set the ROM group selector switch, SW1 on the INX-PC adapter board.

STEP	ACTION
1	<p>SKIP this procedure if you do:</p> <ul style="list-style-type: none">• <u>not</u> have any other add-in boards <u>or</u>• have only the boards listed on page A-17 <p><u>Note:</u> This means you will be using the factory preset ROM code: zero (0).</p> <p><u>OTHERWISE:</u> GO TO STEP 2.</p>
2	<p>Determine which ROM group code is unused in your PC.</p> <p>Consult literature that came with your other add-in boards <u>and</u> your PC.</p>
3	<p>Write down the code group you have selected:</p> <p>My INX-PC adapter board ROM group code is: <input data-bbox="959 862 1014 914" type="text"/></p> <p><u>Reason:</u> You will need to know this number to install the INX-PC software in TASK 6, page A-33 .</p>
4	<p>Look up that number in the table: "Table of switch settings" beginning on page A-20 .</p>
5	<p>Set the eight rocker switches on SW1 accordingly.</p> <p><u>Note:</u> Push the end of the switch marked with a dot.</p>

TASK 4: Installing the INX-PC adapter board

Introduction

Now that the INX-PC adapter board's RIM ID and ROM group code switches are set, you can install it in the PC.

Prerequisites

Before you install the INX-PC adapter board, make sure you have completed:

- TASK 2: Setting INX-PC board RIM ID switches, page A-6
 - TASK 3: Setting INX-PC board ROM switches, page A-17
-

Tools you will need

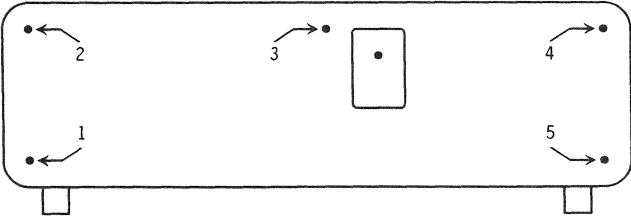
You will need the following tools to install the INX-PC adapter board:

- a medium size flat-bladed screw driver or
 - a 1/4 inch hex nut driver, and
 - a 3/16 inch hex nut driver.
-

TASK 4: Installing the INX-PC adapter board

Procedure

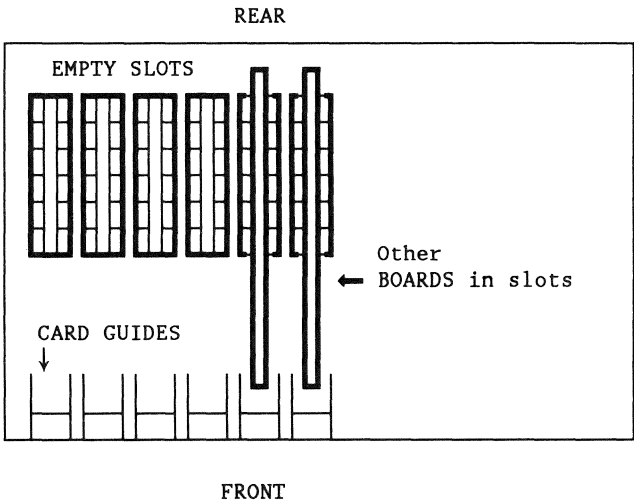
This is the procedure to install the INX-PC adapter board in the chassis of the IBM PC.

STEP	ACTION
1	<p>T U R N O F F the power on your PC</p> <p style="text-align: center;"><u>a n d</u></p> <p>D I S C O N N E C T the power cord from the wall.</p>
2	<p>Mark the back plate of the INX-PC Board with the</p> <ul style="list-style-type: none"> • RIM ID from TASK 1, page A-5 <u>and</u> • ROM group code from TASK 3, page A-23 <p>so it is visible from the back of the PC when the board is installed.</p> <p><u>Example:</u></p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>RIM ID 0153 ROM 0</p> </div>
3	<p>Remove 5 screws on the rear of the PC processor body.</p> 

continued

TASK 4: Installing the INX-PC adapter board

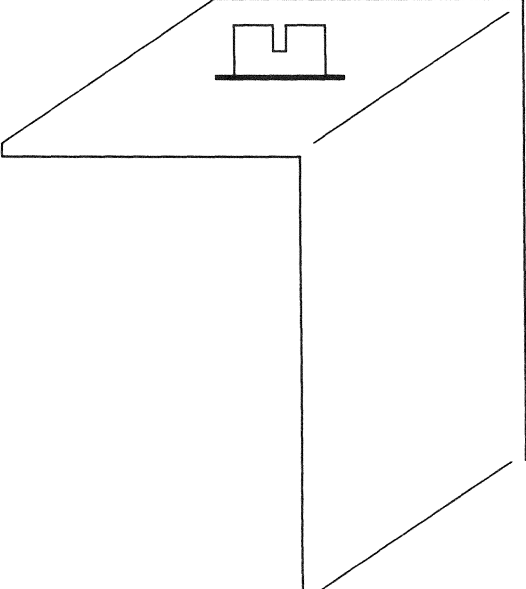
Procedure (continued)

STEP	ACTION
4	<p data-bbox="316 347 957 448">Slide the top cover off completely, towards the front of the chassis, exposing the empty slots. The cover must be tilted up at the end to be able to remove it completely.</p> <div data-bbox="319 500 950 998"><p>The diagram shows a top-down view of a PC chassis. At the top, the word 'REAR' is centered. Below it, a row of eight vertical slots is shown. The first four slots are labeled 'EMPTY SLOTS' and each contains a vertical rectangle representing a board. The last two slots are labeled 'Other BOARDS in slots' with an arrow pointing to them. Below the slots, a row of eight vertical lines represents 'CARD GUIDES'. An arrow points to the first guide with the label 'CARD GUIDES'. At the bottom, the word 'FRONT' is centered.</p></div>
	<p data-bbox="316 1031 957 1079">If your PC does <u>not</u> have card guides, insert the card guide supplied with the INX-PC adapter board.</p> <p data-bbox="316 1112 957 1177"><u>Hint:</u> The card guide has two protruding posts. Push them into the two holes on the inside wall of the front of the PC chassis.</p>

continued

TASK 4: Installing the INX-PC adapter board

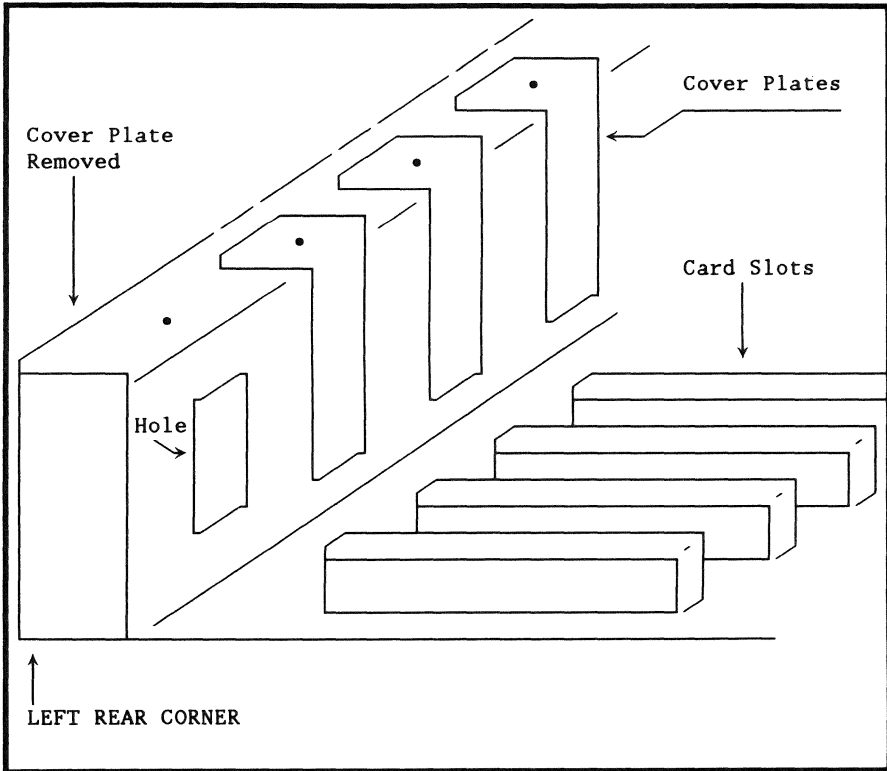
Procedure (continued)

STEP	ACTION
6	<p data-bbox="397 342 1022 391">Remove a plate covering a hole in the rear panel of the PC.</p> <p data-bbox="397 418 770 443">Use the 3/16 inch nut driver.</p> 

continued

TASK 4: Installing the INX-PC adapter board

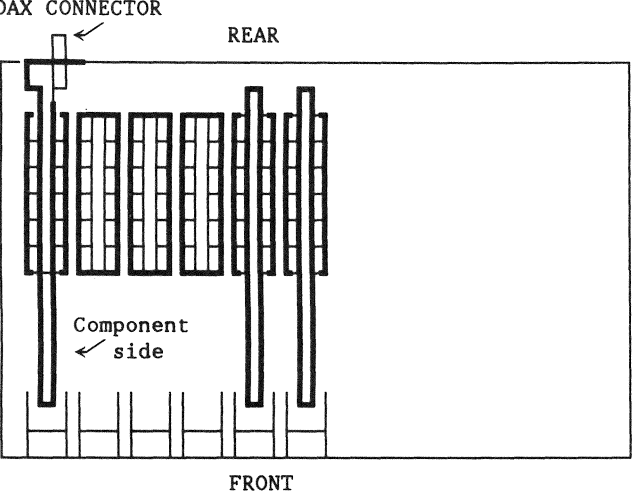
Procedure step result



continued

TASK 4: Installing the INX-PC adapter board

Procedure (continued)

STEP	ACTION
7	<p>Place the INX-PC adapter board in one of the empty slots at the left of the chassis. Secure carefully.</p> <p><u>Note:</u> Make sure of the following:</p> <ul style="list-style-type: none">• put the coax connector into the cut-out panel first• the coaxial connector protrudes thru the cut-out panel in the rear• the front end of the board fits into the card guide on the front panel. 
8	Use the screw that held the rear cover plate (STEP 6) to fasten the INX-PC adapter board bracket in place.
9	Replace the cover and 5 screws.

TASK 5: Connecting the PC to the network

Introduction

This procedure is a simple matter of connecting a piece of coaxial cable between your PC and a connector on your wall that comes from an ARC Network hub. It includes a procedure for checking that you are not interfering with the existing processors on the network.

Prerequisites

You must have:

- completed TASK 4: Installing the INX-PC adapter board on page A-24 , and
 - a coaxial cable run to your office (probably to a wall plate) from an ARC Network hub. (See a network administrator or customer service engineer if you don't).
-

Procedure

This is the procedure for connecting your INX-PC equipped PC to an ARC Network.

STEP	ACTION
1	Connect the coaxial cable between the coaxial connectors on: <ul style="list-style-type: none">• the INX-PC adapter board <u>and</u>• the wall plate.

continued

TASK 5: Connecting the PC to the network

Procedure (continued)

STEP	ACTION
2	<p style="text-align: center;"><u>OPTIONAL</u></p> <p>As a courtesy to other users of the ARC Network, verify that you are <u>not</u> using the same RIM ID as someone else.</p> <p>Go to <u>another</u> INX-PC equipped PC or a DOS application processor.</p> <p>Run the program:</p> <ul style="list-style-type: none">• ARCST15 on an INX-PC equipped PC or other DOS.H processor, <u>or</u>• ARCSTAT on a DOS.D processor. <p>Select option 5 from the program menu.</p> <p><u>Result:</u></p> <p>You should see a blank spot where your RIM ID is located on the program display screen, assuming the power is off on your PC.</p> <p><u>Hint:</u></p> <p>Get someone who is familiar with these programs to show you how to identify the place on the screen where your processor will show up.</p> <p>A customer service engineer or network administrator knows how to do this.</p>
3	<p>Go back and turn on the power to your INX-PC equipped PC.</p> <p><u>Result:</u></p> <p>The RIM portion of the adapter board will become active and will automatically communicate with the ARC Network.</p>

continued

TASK 5: Connecting the PC to the network

Procedure (continued)

STEP	ACTION
4	<p>Go run the ARCSTAT or ARCST15 program a second time and see if a dot shows up at the RIM ID you set on your INX-PC board.</p> <p><u>Note:</u> The dot will <u>not</u> automatically appear unless you redisplay the screen.</p> <p>If it does show up, then you are all set to go to TASK 6.</p> <p>If it does <u>not</u> show up, then either:</p> <ul style="list-style-type: none">• you set the switches incorrectly in TASK 2 <u>or</u>• you are not connected to the network. <p>If the program shows that the network is doing a lot of reconfigurations (RECONS), then:</p> <p>you may have accidentally set your RIM ID to the same number someone else is using.</p> <p>First, go turn off your PC immediately and then go see if the RECONS have stopped. If the RECONS stopped, then your RIM ID was set incorrectly.</p> <p>Review the procedure on page A-7 to set your RIM ID.</p>

TASK 6: Configuring the INX-PC software

Introduction

This procedure is the first step in installing the INX-PC software.

Purpose

The purpose of this procedure is to configure the INX-PC software on the master disk with two numbers:

- the ROM group code – 0 thru 7 (from TASK 3, page A-23), and
- the FONT number – 0 thru 99 (font 0 is the normal choice).

Note: the font number selects a file which contains a character set that is used with the IBM PC display when you operate the DOS.H processor so that DOS.H display symbols can be duplicated on the PC. Font-0 contains the English language character set.

Assumption

We assume that you are already familiar with using PCDOS on your PC, in particular, the commands:

- DISKCOPY and
 - COPY.
-

TASK 6: Configuring the INX-PC software

Prerequisites

Before you perform this procedure, you must have determined the ROM group code in TASK 3, page A-23 .

Procedure

This is the procedure for configuring the INX-PC software on the master disk.

STEP	ACTION
1	<p>Turn on your PC and log onto PCDOS as you normally would.</p> <p><u>Result:</u> you will arrive at the PCDOS operating system prompt which appears as follows:</p> <p>On an IBM PC....</p> <div data-bbox="316 813 950 948" style="border: 1px solid black; padding: 5px; margin: 5px 0;"><pre>A>_</pre></div> <p>On an IBM PC XT....</p> <div data-bbox="316 1024 950 1159" style="border: 1px solid black; padding: 5px; margin: 5px 0;"><pre>C>_</pre></div> <p><u>PROBLEM ?:</u> IF your PC will <u>not</u> boot and</p> <ul style="list-style-type: none">• you installed the INX-PC adapter board, <u>and</u>• you have other add-in boards <p>THEN you may need to go back to TASK 3 and change the ROM code switch setting. Try a different code.</p>

continued

TASK 6: Configuring the INX-PC software

Procedure (continued)

STEP	ACTION
2	<p>SKIP to STEP 4 if you have access to a backup copy of the INX-PC software master disk.</p> <p><u>WARNING:</u> the installation procedure causes data to be written on the master disk. It is recommended that a backup copy be made first.</p>
3	<p>Make a backup copy of the master disk <u>and</u> label it</p> <div data-bbox="415 565 900 623" style="border: 1px solid black; padding: 5px; text-align: center;">UN-INSTALLED COPY OF INX-PC MASTER</div> <p><u>Assumption:</u> we assume you know how to perform this procedure:</p> <ul style="list-style-type: none">• Put a blank diskette in drive A.• FORMAT A:• Put the master INX-PC diskette in drive A.• Put the blank diskette in drive B.• DISKCOPY A: B: <p><u>Comment:</u> on an IBM PC XT, drive A and B are the same physical drive.</p>

continued

TASK 6: Configuring the INX-PC software

Procedure (continued)

STEP	ACTION
4	<p>Place the master INX-PC software diskette in drive A.</p> <p><u>Note:</u></p> <p>The installation procedure will work <u>only</u> in drive A.</p>
5	<p>Log onto drive A by typing:</p> <p>A: <u>Return</u></p> <p><u>Comment:</u> If you are using an IBM PC XT you were probably logged onto drive C. If you are using an IBM PC, you are probably already logged onto A.</p> <p><u>Result:</u></p> <div data-bbox="311 821 942 1013" style="border: 1px solid black; padding: 10px;"><pre>C> A: — you typed this A> █</pre></div>

continued

Procedure
(continued)

STEP	ACTION
6	<p>Type the INX INSTALL command which has the following format:</p> <pre>INX INSTALL ROM/<i>r</i> FONT/<i>f</i> <u>Return</u></pre> <p>where:</p> <ul style="list-style-type: none"> • <i>r</i> is the ROM group code number you determined and wrote down in TASK 3, page A-23 , <u>and</u> • <i>f</i> is the font number - use 0. <p><u>Note:</u> this will use font file INX.F0 (no others are currently available).</p> <p><u>Example:</u></p> <pre>INX INSTALL ROM/0 FONT/0 <u>Return</u></pre> <p><u>Result:</u> A successful installation will look like this on the PC screen.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <pre>A> INX INSTALL ROM/0 FONT/0 INX 1.2 - INTELLIGENT NETWORK EXECUTIVE INSTALL FUNCTION SELECTED: INX INSTALLATION COMPLETED OK. A> _</pre> </div>

continued

TASK 6: Configuring the INX-PC software

Procedure (continued)

STEP	ACTION
7	<p>Write the following information on the master INX-PC diskette which you just "INSTALLED".</p> <p><u>Caution:</u> Use a felt tip marker!</p> <ul style="list-style-type: none">• the word "INSTALLED",• the ROM group you used, like "ROM 0"• the FONT file number, like "FONT 0" <p><u>Reason:</u></p> <p>IF for some reason, you later need to re-load the INX-PC files onto a boot disk (see TASK 7, page A-39)</p> <p>THEN you will know that it has been "INSTALLED" and with which parameters.</p> <p>...DONE</p>

TASK 7: Copying INX-PC files to a boot disk

Introduction

This procedure will result in placing all the INX-PC files from the INSTALLED master INX-PC diskette on the disk from which you normally boot PCDOS.

Rule: LOG ON / boot drive

The disk that you place the INX-PC files on must always be on-line when you execute any INX commands. In fact, it must be on the disk from which PCDOS is booted (i.e. the disk containing COMMAND.COM, CONFIG.SYS, ...etc.)

Also, you must be logged onto that drive when you execute any INX LOGON command.

IF you have an	THEN we assume that your BOOT DRIVE is..	and the PCDOS LOG-ON DRIVE indicated in the prompt line will be...
IBM PC	A ...a diskette	A> INX _....
IBM PC XT	C ...a hard disk	C> INX _....

TASK 7: Copying INX-PC files to a boot disk

Contents of the master diskette

The 5-1/4 inch master diskette contains the following INX-PC software files:

FILE NAME	DESCRIPTION
INX.COM	the INX-PC command program
INX.DRV	the INX-PC driver module
INX.CFG	a file that you may copy to CONFIG.SYS to configure PCDOS to work with INX-PC.
INX.FØ	a font file that simulates a DATAPOINT 1560 character set on the IBM PC. Font Ø is the English language character set version.
INX.TST INX.BUT INX.FWC INX.DSM	support files for the INX-PC driver module

Prerequisites

Before you copy the INX-PC files to your boot disk/diskette, you must have completed the INX-PC INSTALL procedure in TASK 6.

See: STEP 6 of the Procedure beginning on page A-34

TASK 7: Copying INX-PC files to a boot disk

Procedure

This is the procedure to copy the INX-PC files to your normal boot disk/diskette.

STEP	ACTION
1	<p data-bbox="385 402 959 451">Boot your PC and log onto PCDOS as you would normally.</p> <p data-bbox="385 483 448 505"><u>Note:</u></p> <div data-bbox="416 521 979 626" style="border: 1px solid black; padding: 5px;"><p data-bbox="437 537 931 610">IF you are using an IBM PC, <u>not</u> an XT or AT, make sure that your normal boot diskette is in drive A.</p></div> <p data-bbox="385 667 984 716"><u>Result:</u> you will arrive at the PCDOS operating system prompt which appears as follows:</p> <p data-bbox="385 743 592 764">On an IBM PC....</p> <div data-bbox="391 781 1022 914" style="border: 1px solid black; padding: 10px;"><p data-bbox="425 846 466 873">A> _</p></div> <p data-bbox="385 954 707 976">On an IBM PC XT or AT....</p> <div data-bbox="391 992 1022 1125" style="border: 1px solid black; padding: 10px;"><p data-bbox="425 1057 466 1084">C> _</p></div>

continued

TASK 7: Copying INX-PC files to a boot disk

Procedure
(continued)

STEP	ACTION	
2	IF you have an...	THEN put the "INSTALLED MASTER" INX-PC diskette in drive...
	IBM PC	B
	IBM PC XT or AT	A
3	IF you have an...	THEN type the following command..
	IBM PC	COPY B:INX.* A: <u>Return</u>
	IBM PC XT or AT	COPY A:INX.* C: <u>Return</u>
<p><u>Result:</u></p> <p>All the INX-PC files on the installed master diskette will be copied to your boot disk.</p>		
4	<p>Remove your master INX-PC diskette and save it.</p> <p style="text-align: right;">... DONE</p>	

TASK 8: Configure PC DOS for INX-PC

Introduction

This procedure will either:

- create a CONFIG.SYS file, or
 - modify the one you currently have.
-

CONFIG.SYS file

The CONFIG.SYS file is used when you boot PC DOS to tell PC DOS how to configure itself.

Purpose

The purpose of this procedure is to put a line in the CONFIG.SYS file that tells PC DOS to use a special INX-PC driver file:

```
DEVICE=INX.DRV
```

TASK 8: Configure PCDOS for INX-PC

What if you don't have one ?

In case your PC is operating without a PCDOS CONFIG.SYS file, one is supplied with the INX-PC software. In TASK 7, page A-41 you copied it to your boot disk. All you have to do is copy it to CONFIG.SYS.

Its name is: INX.CFG.

Its contents are:

```
BUFFERS=8
DEVICE=INX.DRV
```

If you do have one

If you already have a CONFIG.SYS file, you can add the necessary single line to it in several ways.

Note: you may need to consult your IBM PC DOS manual if you have already set up a special configuration file.

Rule: boot disk

The file CONFIG.SYS must be on the disk from which PCDOS is booted (i.e. the disk containing COMMAND.COM, ...etc.)

IF you have an	THEN we assume that your BOOT DISK is in drive
IBM PC	A ...a diskette
IBM PC XT or AT	C ...a hard disk

Prerequisites

Before you fix the CONFIG.SYS file, you must have completed the INX-PC file copying procedure in TASK 7, page A-41.

Procedure

This is the procedure to set up the CONFIG.SYS file on your normal boot disk/diskette.

STEP	ACTION
1	<p>Boot your PC and log onto PCDOS as you would normally.</p> <p><u>Note:</u></p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>IF you are using an IBM PC, <u>not</u> an XT or AT, make sure that your normal boot diskette is in drive A.</p> </div> <p><u>Result:</u> you will arrive at the PCDOS operating system prompt which appears as follows:</p> <p>On an IBM PC....</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>A> _</p> </div> <p>On an IBM PC XT or AT....</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>C> _</p> </div>

continued

TASK 8: Configure PC DOS for INX-PC

Procedure
(continued)

STEP	ACTION						
2	<p>See if you already have a CONFIG.SYS file on your boot disk by typing the following command:</p> <p style="padding-left: 40px;">DIR CONFIG.SYS <u>Return</u></p> <p><u>Result:</u></p> <p>IF you have it, the displayed result is:</p> <p style="padding-left: 40px;">CONFIG.SYS <i>size</i> <i>date</i></p> <p>IF you do <u>not</u> have it, the displayed result is:</p> <p style="padding-left: 40px;">NO FILE !</p>						
3	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="299 748 730 802">IF you...</th> <th data-bbox="730 748 947 802">THEN go to...</th> </tr> </thead> <tbody> <tr> <td data-bbox="299 802 730 855">have a CONFIG.SYS file</td> <td data-bbox="730 802 947 855">STEP 4</td> </tr> <tr> <td data-bbox="299 855 730 909">do <u>not</u> have a CONFIG.SYS file</td> <td data-bbox="730 855 947 909">STEP 6</td> </tr> </tbody> </table>	IF you...	THEN go to...	have a CONFIG.SYS file	STEP 4	do <u>not</u> have a CONFIG.SYS file	STEP 6
IF you...	THEN go to...						
have a CONFIG.SYS file	STEP 4						
do <u>not</u> have a CONFIG.SYS file	STEP 6						

continued

TASK 8: Configure PCDOS for INX-PC

Procedure (continued)

STEP	ACTION
4	<p>Add the following line to the end of your CONFIG.SYS file:</p> <pre>DEVICE=INX.DRV</pre> <p><u>Hint:</u></p> <p>You can use several methods including:</p> <ul style="list-style-type: none">• the PCDOS COPY command with the concatenate option (see Example) <u>or</u>• a text editor. <p><u>Example:</u></p> <p>Using the PCDOS COPY command, type:</p> <pre>RENAME CONFIG.SYS CONFIG.SAV <u>Return</u> (that saves the original one) COPY CONFIG.SAV+INX.CFG CONFIG.SYS <u>Return</u></pre> <p><u>Result:</u></p> <p>The contents of CONFIG.SAV and INX.CFG will be copied to CONFIG.SYS.</p>
5	GO to STEP 7

continued

TASK 8: Configure PCDOS for INX-PC

Procedure (continued)

STEP	ACTION
6	<p>Since you do <u>not</u> have a CONFIG.SYS file... type the following command:</p> <pre>COPY INX.CFG CONFIG.SYS <u>Return</u></pre> <p><u>Result:</u></p> <p>The INX.CFG file will be copied to a file named CONFIG.SYS on the same drive.</p>
7	<p>V E R Y I M P O R T A N T</p> <p>Reboot your IBM PC before you try to run INX-PC.</p> <p>This means that you <u>must</u> press the <u>Alt-Ctrl-Del</u> key chord.</p> <p><u>Note:</u> a <u>Ctrl-C</u> will <u>NOT</u> work. PCDOS needs a complete cold boot so that it reconfigures itself from the new CONFIG.SYS file.</p> <p><u>Result:</u></p> <p>You will see a message at the top of the screen before PCDOS lets you set the time and date.</p> <div data-bbox="308 1127 944 1263" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>INX DISK DRIVER IS ACTIVE (1.2) Current date is...</pre></div> <p style="text-align: right;">... DONE</p>

TASK 9: Obtain your LOGON sub-directory

Introduction

This task is simply getting some information that defines your LOGON sub-directory's:

- user name
- security codeword, and
- DOS.H disk volume name.

Note: this information may already have been given to you when you received this document from your company.

How it is created

A network systems administrator will go to a DOS.H file server and run the program ARCID15 that sets up a sub-directory for you on a DOS.H disk.

The disk will already have a volume name. The systems administrator will merely add your name and a codeword to a list on a file on the disk.

TASK 9: Obtain your LOGON sub-directory

How it works

First you log onto this sub-directory by giving your user name and codeword. Then you may use as much space as is available on that disk.

See: "How to LOG-ON to INX-PC" on page 3-23 .

Other users with sub-directories on the same disk will also be using up space, on a first come, first serve basis.

Any files you create will be marked as belonging to your sub-directory. As long as you do not give out your "user name" and "codeword", no one else will be able to access your sub-directory or the files it contains.

Additional sub-directories

You may also obtain access to additional sub-directories that either:

- give you additional space on other disks, or
- allow you to share files (or PC Disk files) in READ-ONLY mode with other INX-PC users.

See: Chapter 6 "Using sub-directories" for more details.

TASK 9: Obtain your LOGON sub-directory

Procedure

STEP	ACTION																				
1	<p>For future reference... Write down the three words which define your...</p> <p>LOGON sub-directory:</p> <ul style="list-style-type: none"> • user name <input style="width: 100px; height: 20px; border: 1px solid black;" type="text"/> <p style="margin-left: 100px;">... up to eight characters</p> • code word <input style="width: 100px; height: 20px; border: 1px solid black;" type="text"/> <p style="margin-left: 100px;">... exactly eight characters</p> • volume <input style="width: 100px; height: 20px; border: 1px solid black;" type="text"/> <p style="margin-left: 100px;">... up to eight characters</p> 																				
2	<p>Here is a space for you to write down the information for other sub-directories you may use.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th data-bbox="382 906 534 954">USER NAME</th> <th data-bbox="534 906 689 954">CODE WORD</th> <th data-bbox="689 906 847 954">VOLUME</th> <th data-bbox="847 906 1051 954">Comments</th> </tr> </thead> <tbody> <tr> <td style="height: 25px;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="height: 25px;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="height: 25px;"></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="height: 25px;"></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	USER NAME	CODE WORD	VOLUME	Comments																
USER NAME	CODE WORD	VOLUME	Comments																		

TASK 10: Loading DOS.H file server software

Introduction

You will normally not need to load the DOS.H INX-PC software onto a network file server.

This procedure will be performed by a network systems administrator, not an INX-PC user.

Special order software

This software must be separately ordered on media of your choice which depends on the *disk type* of your DOS file server.

Exception: Your current release of DOS.H software may already have the INX-PC file server software included. Consult the INX-PC product release form (RFM).

ARC Version

The DOS.H file servers must have a version of ARC15/CMD that is version 1.2 or later.

DOS.H version

The DOS.H file servers must be 2.9 or later.

TASK 10: Loading DOS.H file server software

Contents of DOS.H program media

This is an example of the contents of an 8 inch DOS.H diskette, which is one type of media.

Note: Only the first two files listed are specifically for INX-PC.

FILE NAME	DESCRIPTION
INXPCDSS/CMD	the INX-PC Personal Computer Disk Support Services program command
INXPCDTT/CMD	the INX-PC Personal Computer Diskette Transportability Test program command
SYSTEM0/SYS SYSTEM1/SYS SYSTEM2/SYS SYSTEM3/SYS SYSTEM4/SYS SYSTEM5/SYS SYSTEM6/SYS SYSTEM7/SYS SYSTEM/OVL SYSTEM/REL UTILITY/LNK UTILITY/REL UTILITY/SYS UTILITY/OVL	DOS.H operating system files version 2.9 or later <u>NOTE:</u> these files are usually on any DOS diskette. You do <u>not</u> need to do anything with them.

Distribution not required

This software does not need to be distributed to persons who will be using INX-PC equipped IBM PCs, only to network administrators with DOS.H file servers.

TASK 10: Loading DOS.H file server software

Procedure

This is not an exact procedure for loading the INX-PC DOS.H file server software, because it depends on the particular installation.

STEP	ACTION
1	<p data-bbox="307 444 440 472"><u>Objective:</u></p> <p data-bbox="307 496 543 524">Put the two files:</p> <ul data-bbox="348 550 584 626" style="list-style-type: none"><li data-bbox="348 550 584 578">• INXPCDSS/CMD <u>and</u><li data-bbox="348 602 531 626">• INXPCDIT/CMD <p data-bbox="307 654 936 730">in the SYSTEM sub-directory of all DOS.H volumes that will be used to provide log-on sub-directories for INX-PC users.</p>

TASK 11: Running INX-PC diagnostics

Introduction

This task is an optional part of the installation procedure.

These tests verify the proper function of the INX-PC adapter board's RAM memory and RIM.

Definition

The DATAPOINT INX-PC diagnostic tool is a firmware resident program located on the INX-PC adapter board. Its immediate accessibility creates a flexible interface between the user and the machine.

Reason for use during installation

Running these diagnostics during the installation process may uncover a problem which may not otherwise be discovered (or recognized) during normal use of the INX-PC system.

Other uses

If you experience or suspect problems with the INX-PC adapter board, use the diagnostic system to see if can detect any definable faults.

TASK 11: Running INX-PC diagnostics

List of commands

The following table lists and describes INX-PC diagnostic system commands that will be used in the following procedure.

Detailed descriptions of the commands may be found in the sections following the procedure.

COMMAND	DESCRIPTION
1?	Displays the RIM ID of your processor. <u>Note:</u> the RIM ID is controlled by the switch on the INX-PC adapter board which is set in TASK 2.
12345T	Starts a rotating bit RAM memory test.
12345W	Starts the RIM diagnostics. This diagnostic has two modes of operation: 1 - Default mode is a minimal test of the RIM 2 - Echo mode involves using a <u>second</u> DOS.H processor. This mode <u>completely</u> test the RIM's ability to send and receive data through the ARC Network.

Note: The diagnostic system has additional features and commands which are beyond the scope of this document.

Prerequisite

You must have completed the installation TASKS 1 thru 9 before running the diagnostic test.

TASK 11: Running INX-PC diagnostics

Errors

If an error displays while executing either the memory test (12345T) or the RIM diagnostic test (12345W), contact your DATAPOINT CSC (Customer Service Center).

Procedure

The following procedure describes the steps you need to complete to run the diagnostic tests.

STEP	ACTION
1	Turn OFF your PC if it is on.
2	Place the diskette with installed INX-PC software in drive A:, <u>unless</u> you have a PC with the INX-PC software installed on a hard disk.
3	Turn ON your PC and initialize PCDOS. <u>Result:</u> the PC will be <i>cold booted</i> from drive A:, or from drive C: if your PC has a hard disk.

continued

TASK 11: Running INX-PC diagnostics

Procedure (continued)

STEP	ACTION
4	<p>Type the following command which initiates logon to DOS.H.</p> <p style="text-align: center;"><u>INX LOGON</u> <i>Return</i></p> <p><u>Result:</u> the following lines are displayed on the PC display, indicating progress of the logon initialization process.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre>A> INX LOGON ← you typed this INX 1.2 - INTELLIGENT NETWORK EXECUTIVE LOGON FUNCTION SELECTED: TESTING 8088 ACCESS TO INX MEMORY... TESTING Z80 ACCESS TO INX MEMORY... LOADING PC DISK SUPPORT MODULE TO INX RAM.. LOADING BOOT PROGRAM... LOADING FIRMWARE TO INX CARD... DOS.H LOADING FROM NETWORK...</pre></div> <p><u>Error results:</u> If you see an error message instead of the above procedural messages:</p> <ul style="list-style-type: none">• the ROM code switch (set in TASK 3) may <u>not</u> match the ROM code for which the INX-PC program on the boot disk was installed, <u>or</u>• the INX-PC adapter card may be faulty.

continued

TASK 11: Running INX-PC diagnostics

Procedure (continued)

STEP	ACTION
5	<p data-bbox="433 347 1063 423">Proceed to STEP 6 when the display switches to the DOS.H processor: like this.....</p> <div data-bbox="440 436 1049 670" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre data-bbox="472 574 862 630">WELCOME TO ARC15... VERSION 1.2 YOU ARE ?:</pre></div> <p data-bbox="575 703 885 727"><u>or possibly like this....</u></p> <div data-bbox="440 740 1049 974" style="border: 1px solid black; padding: 10px; margin: 10px 0;"><pre data-bbox="472 769 1022 948">[Blank screen]</pre></div> <p data-bbox="440 1008 1063 1057">Note: the screen will be BLANK if there is <u>no</u> DOS.H file server on the network that can respond.</p>
6	<p data-bbox="440 1083 1051 1107">Invoke the diagnostic mode with the key sequence:</p> <p data-bbox="440 1135 555 1159"><u>F10-F6-F2</u></p> <p data-bbox="440 1187 1003 1235">See: "Entering the diagnostic system" on page A-61 for more information and results.</p>

continued

TASK 11: Running INX-PC diagnostics

Procedure (continued)

STEP	ACTION
7	Verify that you set your RIM ID correctly with the command: <u>1? Return</u> See: "The 1? command" on page A-64 for more information and results.
8	Run the RAM Memory Test with the command: <u>12345T Return</u> See: "The 12345T command" on page A-65 for more information and results.
9	Terminate the RAM memory test with the key sequence: <u>F10-F6-F2</u>
10	Run the RIM Diagnostics Test with the command: <u>12345W Return</u> See: "The 12345W command" on page A-67 for more information and results.
11	Terminate the RIM Diagnostic Test with the key sequence: <u>F10-F6-F2</u>
12	Return to the PC DOS operating system with the key sequence: <u>Ctrl-Break</u>

Entering the diagnostic system

Introduction

This section describes how you enter the diagnostic system to test the INX-PC adapter card.

Comment: the diagnostic system is sometimes automatically invoked by DOS.H when a system error is detected.

Prerequisites

To enter the diagnostic system, your PC must be logged onto DOS.H (or at least the INX LOGON command must be executed to begin the process of logging on to DOS.H).

See: STEPS 1-5 in the previous procedure on page A-57 .

Caution: DO NOT invoke the diagnostic system while a DOS.H applications program or the INXPCDSS task is in progress. Complete all user initiated tasks before performing the diagnostics.

Entering the diagnostic system

Procedure

The following procedure results in a key-chord sequence which invokes the diagnostic system.

STEP	ACTION
1	Press and <u>hold</u> the <u>F10</u> key
2	Press and <u>hold</u> the <u>F6</u> key
3	Press and <u>release</u> the <u>F2</u> key
4	Release the other two keys

Diagram: of the F10–F6–F2 key sequence:



Additional function: this key sequence also interrupts the 12345T or 12345W commands when they are running.

Special key functions

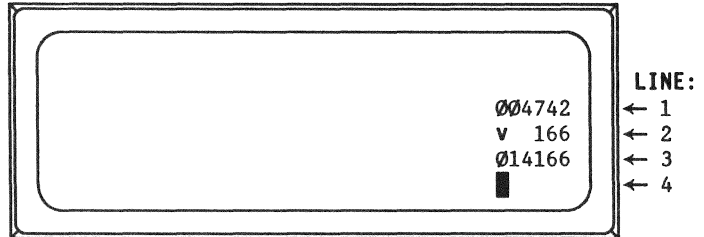
This table shows the function of three keyboard keys used when entering diagnostic system commands and data.

KEY	FUNCTION
<u>Backspace</u>	erases the character most recently entered
<u>Tab</u>	deletes the entire entry
<u>Return</u>	causes command to be entered and execution to begin

Entering the diagnostic system

Screen example

The following screen is an example of the result of entering the INX-PC diagnostic program.



Screen description

LINE	DISPLAYS...
1	the current 16-bit memory address in octal.
2	the 8-bit contents of the current address, two ways: <ul style="list-style-type: none">• on the right: a 3-digit octal number and• on the left: the equivalent ASCII symbol.
3	the combined 16-bit value (in octal) of: <ul style="list-style-type: none">• the current memory location (as the LSB) and• the next memory location (as the MSB).
4	a command line with a blinking cursor █.

The 1? command to display RIM ID

Introduction

The 1? command causes the RIM ID of your DOS.H processor (on the INX-PC adapter board) to be displayed.

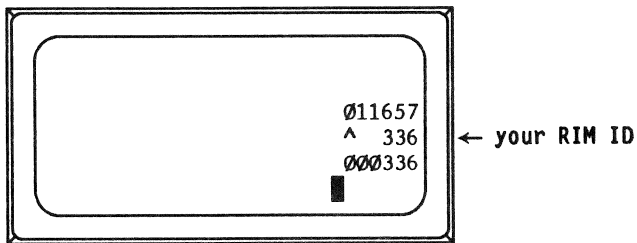
Purpose

The purpose of this command is to verify or determine exactly what RIM ID resulted from setting the RIM ID switch in TASK 2.

See: TASK 1 and TASK 2, in particular page A-5 where you wrote down your assigned RIM ID.

Display example

This display is an example of result of the RIM ID command for a processor with RIM ID: 0336.



The 12345T memory test command

Introduction

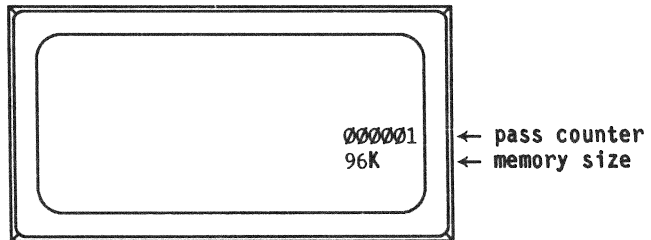
This command causes the firmware (ROM) and RAM memory test to be run.

Display description

When the memory test is initialized, two items are displayed on the screen:

- the INX-PC board's RAM memory size and
- a pass counter.

Note: A click is sounded at the beginning of each pass (repetition) of the test. The pass counter is updated and displayed before any actual testing begins for the pass.



Process description

This stage table describes the function of the memory test.

STAGE	PROCESS
1	<p>The ROM portion of the memory is tested with an LRC/SLRC test.</p> <p><u>Result:</u> if an error is detected, this message is displayed...</p> <p style="text-align: center;">"FIRMWARE CRCERR"</p> <p><u>Note:</u> this stage of the test is <u>not</u> repeated.</p>
2	<p>The RAM portion of the test generates a psuedo-random test pattern and writes this pattern to each memory location in a 4k sector.</p>
3	<p>The locations of the sector are read and compared to the generated pattern.</p>
4	<p>When the patterns do not match, an error occurs and the physical memory address of the error is displayed.</p>
6	<p>When all locations of all sectors of RAM have been tested, one pass of the test is completed.</p>
7	<p>The test continues <u>indefinitely</u> unless it is interrupted with the key sequence:</p> <p><u>F10=F6=F2</u></p> <p><u>Hint:</u> the test may <u>only</u> be interrupted at the the end of a pass, so hold down the four keys until the test stops.</p>

The 12345W RIM test command

Introduction

The 12345W command initiates the RIM diagnostic test.

Two modes

This test has two modes of operation:

- 1 - Default (single processor) mode is a minimal test of the RIM data buffers.
 - 2 - Test and Echo (dual processor) mode involves using a second DOS.H processor. This mode completely test the RIM's ability to send and receive data through the ARC Network.
-

The 12345W RIM test command

Single processor default test process

The following table describes the process of using the default single processor RIM test.

STAGE	PROCESS
1	Initialize the RIM test with the command: 12345W <u>Return</u>
2	The following question is displayed: TEST TYPE? (Default, Test or Echo) enter: D <u>Return</u>
3	A pass number will be displayed at the top of the screen: PASS NO. XXXXXX As the test runs, the pass counter (XXXXXX) is incremented for each pass. No other messages are displayed unless an error occurs.
4	The test continues <u>indefinitely</u> unless it is interrupted with the key sequence: <u>F10=F6=F2</u>

The 12345W RIM test command

Dual processor Test and Echo process

This process stage table describes how the dual processor RIM test operates.

STAGE	PROCESS
1	<p>Both processors must first enter the diagnostic system.</p> <p>See: "Entering the diagnostics system" on page A-61 .</p> <p>Note: if either of the processors is <u>not</u> an INX-PC equipped PC, the procedure is <u>different</u> than the one referenced above.</p>
2	<p>The RIM ID of the Echo processor must be known.</p> <p>Hint: use the 1? command. See page A-64 .</p>
3	<p>Both processors must be given the 12345W command to begin the RIM test.</p>
4	<p>Both processors must answer <u>differently</u> to the following question:</p> <p>TEST TYPE? (Default, Test or Echo)</p> <p>The processor being tested answers: <u>T Return</u> The <u>other</u> processor answers : <u>E Return</u></p> <p><u>Result:</u></p> <p>The Test processor will prompt for the RIM ID of the Echo processor:</p> <p>ECHO ID? █</p> <p>The Echo processor will begin testing.</p>

continued

The 12345W RIM test command

Dual processor Test and Echo process (continued)

STAGE	PROCESS
5	<p>The Test processor must be given the RIM ID of the Echo processor.</p> <p><u>Examples:</u> 303 <u>Return</u> 021 <u>Return</u></p> <p><u>Note:</u> you must enter exactly 3 digits.</p> <p><u>Important timing:</u></p> <p>When the <i>Return</i> key is pressed following the RIM ID, the Test processor will start the test.</p> <p>The Echo processor <u>must</u> be started first.</p> <p>The Test processor <u>must</u> be started second, within 15 seconds.</p> <p><u>Timing failure results:</u></p> <p>If the Test processor is <u>not</u> initiated within the time out period, the Echo processor displays the error message: RCVR ERR</p> <p>If the Test processor is initiated before the Echo processor is ready, the Test processor displays the error message: XMTR ERR</p> <p>Once both processors are running the test, the above error messages should stop and the test will continue.</p>

continued

Dual processor Test and Echo process
(continued)

STAGE	PROCESS
6	<p>Testing begins:</p> <ul style="list-style-type: none">• the Test processor sends a block of data.• the Echo processor receives the block.• the Echo processor re-transmits the block of data back to the Test processor.• the Test processor receives the block.• the pass counter is incremented. <p>Errors are displayed when detected. See the following table.</p> <p>This stage of the process continues until it is interrupted with the key sequence used to enter the diagnostic system:</p> <p><u>Example:</u> on an INX-PC equipped PC, use the key sequence:</p> <p><u>F10=F6=F2</u></p> <p><u>Note:</u> in some instances the above sequence will not be recognized and you must use:</p> <p><u>Ctrl=Break</u></p> <p>which will return you to PCDOS. If you wish to re-enter the diagnostic system, see "Entering the diagnostic system" on page A-61 for more information.</p>

Error messages

The following table lists error messages given by the 12345W RIM test.

MESSAGE	DESCRIPTION
NO ARC	Either no RIM is physically in the processor or the processor cannot communicate with the RIM hardware.
MEM ERR	An error occurred while reading and writing to the RIM buffer memory.
XMTR ERR	A timeout error occurred while an attempt was being made to transmit a block of data.
RCVR ERR	A timeout error occurred while an attempt was being made to receive a block of data.
RCVR BUF ERR	The Echo machine's receiving buffer contains incorrect data.
RIM INTR ERR	The interrupt logic in the RIM is not working correctly.

Appendix B.

Error messages

Overview

Introduction

This section lists the messages that may be displayed when you are using the INX-PC software.

What you should do

If you encounter an error message, write it down so you can tell service personnel that will help you.

Example:

ERROR (nn)

Note: The number relates to the code number in the table on page B-3 .

Error messages

INX-PC error codes displayed by driver

The following messages are issued by the driver directly to the display through the BIOS when serious problems occur.

The 'XX' in the messages is replaced by the error codes shown below. The details shown in EMSG4 are displayed along with EMSG2 or EMSG3. EMSG2 is given during normal network disk accesses related to /PCD's. EMSG3 is given when a disk error occurs that is related to spooling.

```
EMSG1  ERROR (XX): INX HAS BEEN TERMINATED!  
        FRESH LOGON REQUIRED!  
EMSG2  ERROR (XX): INX DISK ERROR! ,  
EMSG3  ERROR (XX): INX SPOOLING TERMINATED! ,  
EMSG4  (FILE: XXXXXXXX/XXX:DRXX  LRN:      ; nnnnnn),
```

Error code description table

CODE	DESCRIPTION
1	Timeout waiting for DOS.H to respond to keyboard interrupt
2	Timeout waiting for DOS.H to respond to printer interrupt
3	Invalid INX-PC disk state (junk in INX-PC RAM)
4	Invalid INX-PC printer state (junk in INX-PC RAM)
5	Invalid INX-PC keyboard state (junk in INX-PC RAM)
6	Invalid INX-PC beep state (junk in INX-PC RAM)
7	Invalid INX-PC click state (junk in INX-PC RAM)
8	Timeout waiting for interrupts available for disk service
9	Timeout waiting for DOS.H to respond to disk interrupt
10	Timeout waiting for DOS.H to begin background disk operation
11	Timeout waiting for DOS.H to finish background disk operation
12	Invalid control packet received from INX-PC board (junk in INX-PC RAM)

continued

Error messages

Error code description table

CODE	DESCRIPTION
13	Invalid spooling function passed to driver (defective INX.COM)
14	Invalid stop spooling function passed to driver (defective INX.COM)
15	Invalid start spooling function passed to driver (defective INX.COM)
16	Invalid disk function passed to driver (defective INX.COM)
17	Invalid copy function passed to driver (defective INX.COM)
28	Read parity error during INX-PC disk operation
29	Write parity error during INX-PC disk operation
30	Drive off-line error during INX-PC disk operation
31	Space full error during INX-PC disk operation
32	Write protect error during INX-PC disk operation

Notes

Errors 28–32 can be issued by the driver if the disk operation is not related to a response to a specific INX-PC command function.

For example, when the spooling buffer becomes full, an INX-PC disk write will be issued from the printer interrupt code. In this case, there is no "calling program" to which the error code can be returned, hence, the driver issues the message directly to the CRT.

All error messages issued from the driver utilize the PC/BIOS display interrupt, since PC/DOS is not re-entrant. Hence, the messages will appear on the physical CRT display, regardless of any console device redirection that may have been placed into effect by the user.

Appendix C.

DOS.H key equivalents on a PC

Overview

Introduction

When you use an INX-PC equipped PC, ...and you are using it in DOS.H Context mode (running DOS.H programs);

because the PC keyboard is slightly different than a DOS.H (DATAPOINT 1560 processor) keyboard;

to get certain DOS.H keys,
you will need to press either :

- a single PC key or
 - two PC keys together, in a chord.
-

Purpose

This section defines PC keys that you must use to get certain DOS.H key equivalents.

Comment

The key equivalents are the same as those used in the DATAPOINT PC-8220 terminal emulator program for the PC.

List

These DOS.H keys (on a DATAPOINT 1560 keyboard) need special definitions on a PC keyboard.

General keys:

- Command
- Cancel
- Back tab
- Insert
- Delete

Named function keys:

- INT (also known as RESTART)
- ATT or ATTN
- CTRL (also known as INT)
- DSP
- KBD

Numeric function keys:

- F1
 - F2
 - F3
 - F4
 - F5
-

Disabled keys

When you are in the DOS.H context mode, the Back Apostrophe and Back Slash keys are defeated (disabled) to preclude inadvertently initiating a command sequence.

Overview

In this section

The following diagrams and tables are shown:

- PC keys used in definitions,
 - DOS.H keys which are NOT on the PC keyboard,
 - single key equivalent definitions, and
 - two-key chord equivalent definitions.
-

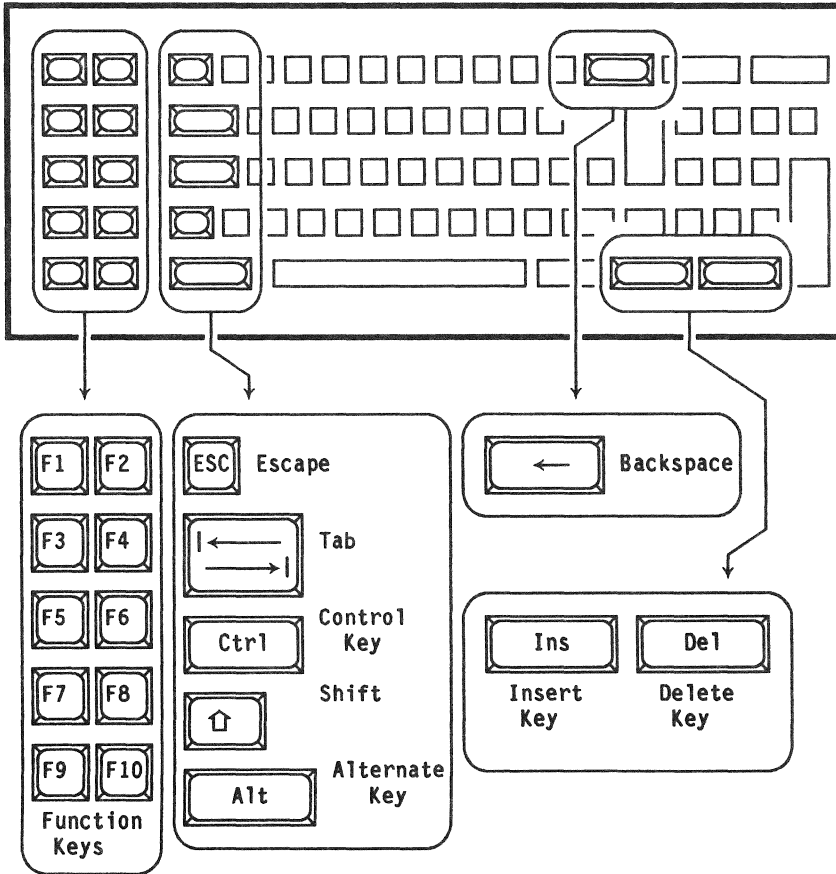
When used

You will use the IBM PC keyboard to implement the DOS.H keyboard when you context switch to DOS.H and run DOS.H applications programs.

PC keys used in definitions

Key location diagram

The keys labeled in this diagram are used to define DOS.H key equivalents.



DOS.H (1560) keys absent on a PC

Purpose

The following diagram will be familiar to anyone who knows the DATAPOINT 1560 keyboards. The keys indicated on the keyboard are those that need special equivalent definitions on the PC keyboard.

Comment

There are two different types of 1560 (processors and...) keyboards:

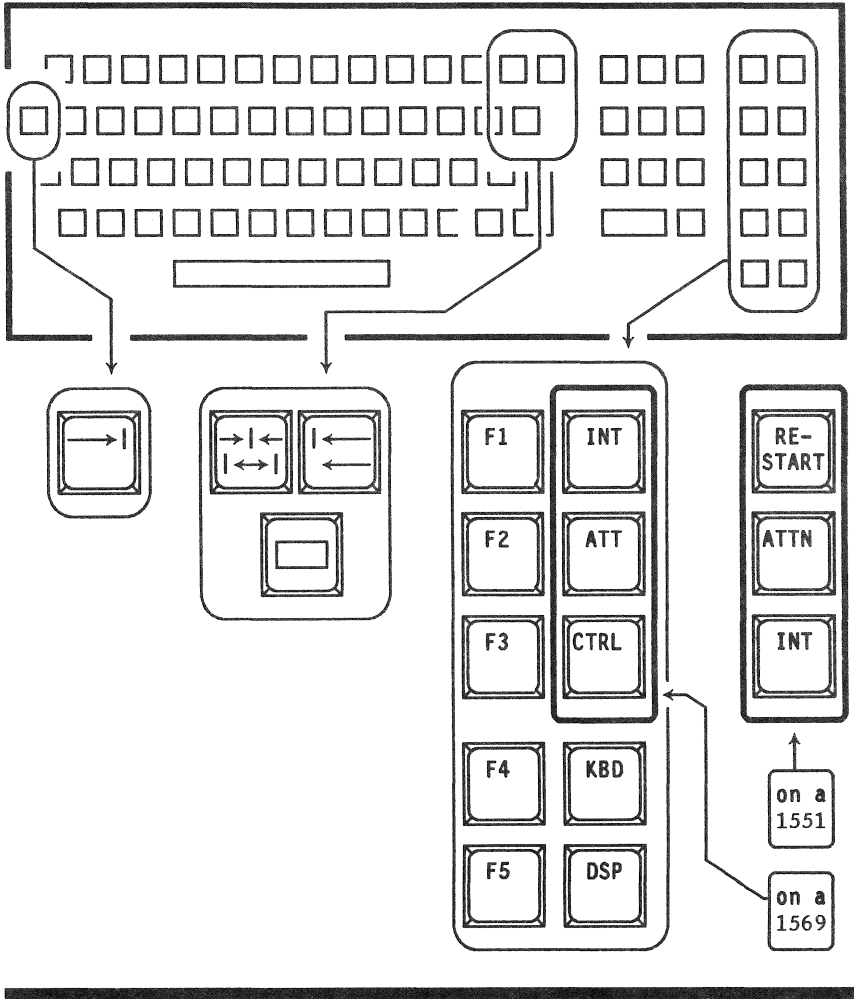
- a 1551 and
- a 1569.

They have the same layout but two keys are labeled differently.

This key on a 1569 type 1560...	corresponds to this key on a 1551 type 1560...
INT Key	RE-START Key
CTRL Key	INT Key

Diagram













This diagram of a DATAPOINT 1560 keyboard shows the keys which are not on the PC or are redefined.



Single key equivalents

Table














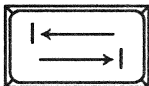
The following table shows DOS.H keys which are defined with a single PC key.

IF you need this DOS.H key...	THEN use this key on the PC
On 1569: Interrupt OR On 1551: Restart  INT  RE-START	 F2
<u>Attention Key</u>  ATT	 F4
On 1569: Control OR On 1551: Interrupt  CTRL  INT	 F6
<u>Keyboard</u>  KBD	 F8
<u>Display</u>  DSP	 F10

continued

Single key equivalents

Table
(continued)

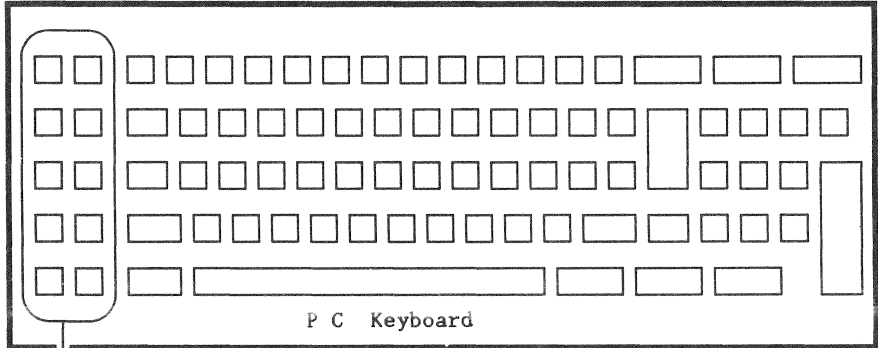
IF you need this DOS.H key...	THEN use this key on the PC
	
	
	
	
	
<u>Command Key</u> 	<u>Escape</u> 
<u>Tab or Cancel</u> 	<u>Tab</u> 

Single key equivalents

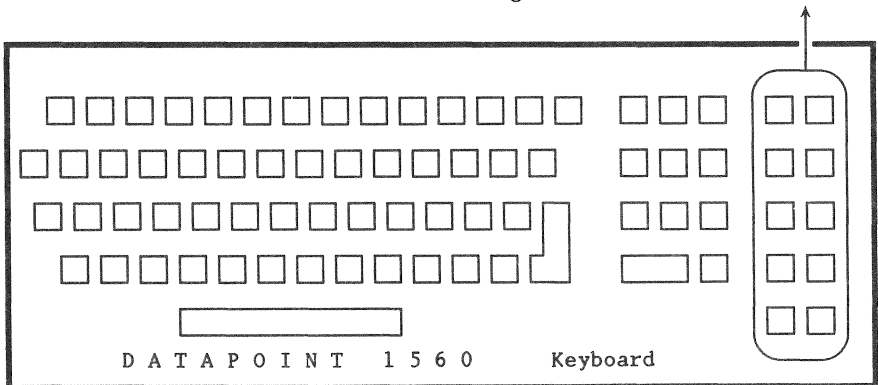
Effective result

The group of function keys on the PC... exactly mimics the group of function keys on the 1560.

- Difference:
- PC function keys are on the LEFT,
 - 1560 function keys are on the RIGHT.



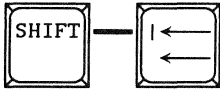
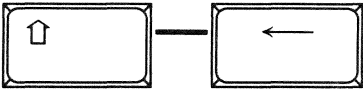


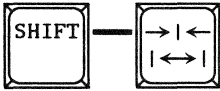

Both function key pads are the same,
..but the location is left for right.



Two-key (chord) equivalents

Table

The following table shows DOS.H keys which are defined with two-key chords on the PC.

IF you need to use this DOS.H key...	THEN use this two-key chord on the PC ...
<p><u>Backtab:</u> <u>Shift - Backspace Key</u></p>  <p>The diagram shows a rectangular box labeled 'SHIFT' on the left, connected by a horizontal line to another rectangular box on the right. The right box contains a vertical bar with two horizontal arrows pointing to the left, representing the Backspace key.</p>	<p><u>Shift - Backspace</u></p>  <p>The diagram shows a rectangular box on the left containing an upward-pointing arrow, representing the Shift key, connected by a horizontal line to a rectangular box on the right containing a horizontal arrow pointing to the left, representing the Backspace key.</p>
<p><u>Insert</u></p>  <p>The diagram shows a rectangular box containing a vertical bar with a horizontal arrow pointing right above it and a horizontal arrow pointing left below it, representing the Insert key.</p>	<p><u>Alternate - Insert</u></p>  <p>The diagram shows a rectangular box labeled 'Alt' on the left, connected by a horizontal line to a rectangular box on the right containing a vertical bar with the word 'Ins' below it, representing the Insert key.</p>
<p><u>Delete:</u> <u>Shift - Insert</u></p>  <p>The diagram shows a rectangular box labeled 'SHIFT' on the left, connected by a horizontal line to a rectangular box on the right. The right box contains a vertical bar with a horizontal arrow pointing right above it and a horizontal arrow pointing left below it, representing the Insert key.</p>	<p><u>Alternate - Delete</u></p>  <p>The diagram shows a rectangular box labeled 'Alt' on the left, connected by a horizontal line to a rectangular box on the right labeled 'Del', representing the Delete key.</p>

Appendix D.

INX Command Summary

Overview

Introduction

This chapter is a brief list of commands you will use with the INX-PC system.

Most of these commands are implemented in the INX-PC software.

The other commands are DOS.H commands.

Purpose

The purpose of this appendix is to provide a quick reference of command syntax.

Categories

The commands are grouped in the following four categories:

- commands to PCDOS,
 - commands to DOS.H,
 - context switching key sequences, and
 - useful DOS.H commands
-

Symbolic parameters used in commands

List

The following table lists and describes all the symbolic parameters that are used to describe the INX-PC and DOS.H commands in the sections that follow.

SYMBOLIC PARAMETER	DESCRIPTION
<i>r</i>	An IBM PC ROM group designator: 0-7
<i>f</i>	A font file number: 0-99.
<i>type</i>	A simulated PC Disk type: DISKETTE or HARDDISK.
<i>pcdName</i>	A simulated PC Disk name. Actually this is the name of a DOS.H file (<i>pcdName</i> /PCD) that INX will use to simulate a PC disk. <u>Note:</u> You must also specify the DOS.H drive if it is <u>not</u> drive 0. <u>Examples:</u> WORKDISK ...(<i>in DOS.H drive 0</i>) COMMON:DR1 ...(<i>in DOS.H drive 1</i>)

continued

Symbolic parameters used in commands

List
(continued)

SYMBOLIC PARAMETER	DESCRIPTION
<i>doshPrintFile</i>	<p>The file name of a DOS.H print file.</p> <p><u>Extension name:</u> all print files created by INX will have an extension name: <i>/PRT</i>.</p> <p><u>Note:</u> You must also specify the DOS.H drive if it is not drive 0.</p> <p><u>Examples:</u> SPOOL1 ...(in DOS.H drive 0) SPOOL2:DR1 ...(in DOS.H drive 1)</p>
<i>sourceFile</i>	<p>A complete file name specification for a text file, either:</p> <ul style="list-style-type: none"> • PCDOS: <i>pcdosDrive:fileName.extension</i> <u>Example:</u> C:WPMEMO2.DOC <p><u>or</u></p> <ul style="list-style-type: none"> • DOS.H: <i>fileName/extension:drive</i> <u>Example:</u> DATAFILE/TXT:DRO
<i>destinationFile</i>	Same as <i>sourceFile</i> .

continued

List
(continued)

SYMBOLIC PARAMETER	DESCRIPTION
<i>userName</i>	<p>The name of a DOS sub-directory on a DOS disk, <u>not</u> a PCDOS disk. The <i>userName</i> that you use will usually be your name.</p> <p><u>Example:</u> JOHN</p>
<i>codeWord</i>	<p>An eight letter password for a DOS sub-directory.</p> <p><u>Example:</u> MYSECRET</p>
<i>dosVolume</i>	<p>The volume name of a DOS disk, <u>not</u> a PCDOS disk.</p> <p><u>Example:</u> INXSUPRT</p>
<i>pcdosDrive</i>	<p>A PCDOS disk drive: A: thru G:</p> <p><u>Comment:</u> these represent <i>whole</i> physical or simulated PCD disks.</p>
<i>pcdDrive</i>	<p>A PCDOS PCD disk drive: D:, E:, F:, or G: on an IBM PC XT <u>or</u> C:, D:, E:, or F: on an IBM PC.</p> <p><u>Comment:</u> these are the simulated INX disk drives.</p>
<i>dosDrive</i>	<p>A DOS.H disk drive: :DR0 thru :DR15</p> <p><u>Comment:</u> these each represent a single sub-directory on a disk. Several drives may represent several different sub-directories on a single disk.</p>

Command list

PCDOS commands

These are the INX commands you will use at the PCDOS command line.

INX HELP Return

INX INSTALL ROM/*r* FONT/*f* Return

INX LOGON Return*followed by:*
userName Return
codeWord Return
dosVolume Return

INX DISK CREATE *type pcdName pcdDrive* Return

INX DISK INSERT *pcdName pcdDrive* Return

INX DISK REMOVE *pcdDrive* Return

INX DISK EXAMINE Return

INX PRINTER EXAMINE Return

INX PRINTER NORMAL Return

INX PRINTER SPOOL *doshPrintFile* Return

INX COPY *sourceFile destinationFile* Return

INX DOS.H commands

These are the INX commands you will use at the DOS.H command line.

INXPCDSS Return
... starts INX support services

INXPCDTT *pcdName* Return
... tests a PC Disk DOS file for transportability.
Ctrl-Shift-PrtSc
...print current DOS.H screen on printer

Context switching key sequences

The following chorded key sequences are used to switch the context of the keyboard and display between the PCDOS and DOS.H processors in an INX equipped PC.

Ctrl=Break

... switch to PCDOS

Alt=Left Shift=Right Shift

... switch to DOS.H

Useful DOS.H commands

You will use these commands at the DOS.H command line.

HELP

...interactive detailed help on most DOS.H commands

MOUNT15

...enter interactive mode with help screens

MOUNT15 dosVolume ;N=userName,C=codeWord Return

...mount a sub-directory in next empty DOS.H drive

MOUNT15 dosVolume, :dosDrive ;N=userName,C=codeWord Return

...mount a sub-directory in a specified DOS.H drive

CAT [:dosDrive] Return

... display names of all files on all or specified drive.

CAT /PCD[:dosDrive] Return

... display names of all PC Disk files on all or specified drive.

continued

Useful DOS.H commands
(continued)

FREE Return

... report number of free sectors on each DOS drives.

FILES :*dosDrive*;D Return

... report name and size of all files on specified DOS drive

FILES /PCD:*dosDrive*;D Return

... report name and size of PC Disk files on specified
DOS drive

CHANGE *dosFileSpec*;W Return

... write and delete protect a file

CHANGE *dosFileSpec*;D Return

... delete protect a file

CHANGE *dosFileSpec*;X Return

... remove all protection from a file

COPY *sourceFile,destinationFile* Return

... copy a file to another file

KILL *dosFileSpec* Return

... delete a file

NAME *currentDosFileSpec,newDosFileSpec* Return

... rename a file
