DATAPOINT®

Edition 01

USER'S GUIDE

UNDERSTANDING INX-32

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PREFACE

Understanding INX-32 is intended for the DATAPOINT INX-32 system user. This guide contains information to help you learn how to use INX-32 and to acquaint you with the concepts and features of the software.

The goal of this guide is to provide an overall perspective of the software and step-by-step instructions for its use. The information is organized so each chapter proceeds from simple topics through increasingly detailed concepts. In writing this guide, we assumed you have general familiarity with DATAPOINT computers and computer systems in general.

CONTENTS

Chapter 1.
INTRODUCTION TO INX-32

Overview

Introduction

> **Trademarks and acronyms:**
>
> - Intelligent Network Executive ^{TM}, INX-32 ^{TM}
> - Attached Resource Computer $^{®}$, ARC $^{®}$
> - Resource Management System ^{TM}, RMS ^{TM}

This chapter provides an overview of the DATAPOINT Intelligent Network Executive 32 system and describes the contents and organization of this user's guide.

Background

The DATAPOINT 3200 system is a powerful microcomputer capable of 32-bit operations that uses UNOS ^{TM}, a UNIX ^{TM} look-alike operating system. INX-32 links the 3200 system with DATAPOINT's ARC local area network (LAN) and ARC resources.

Description

The INX-32 system is a product with two interrelated parts:

- hardware--a board with electronic components called a Resource Interface Module (RIM) card and

- software--sets of computer instructions; a single piece of software is called a program. In addition to a RIM card, the INX-32 system contains one RMS program and a set of four UNOS programs.

These two parts enable DATAPOINT computers to use the power and speed of the 3200 as an ARC resource.

Command conventions

In this manual all commands are presented in a different typeface than the normal text. RMS commands are listed in uppercase letters and UNOS commands are listed in lowercase letters.

Example

COPY is an RMS command

copy is a UNOS command

Key words

multiuser—a computer system containing two or more terminals that can be used at the same time.

multitasking—a computer system allowing two or more programs or tasks to operate at the same time.

operating system—computer software that manages and controls the operations of a computer system. Operations can include managing system resources, running programs in response to user commands, and controlling interaction with peripherals.

peripherals—associated computer system devices providing input, output, or storage capabilities. Disks, tapes, and printers are typical computer peripherals.

utilities—a collection of programs that are supplied with operating systems to aid general system operation, file management, text processing, software development, and communications. The copy command is an example of a UNOS utility. This utility allows you to create copies of a file.

Additional Information

This book describes the basic concepts of INX-32 and how to use it. The following table provides a list of additional useful documentation.

FOR ADDITIONAL INFORMATION ABOUT...	READ...
the RMS 32ATTTACH/CMD,	the RMS INSS software release document accompanying your INX-32 software.
the UNOS operating system,	• *User's Guide to UNOS* (Document No. 50877), • *UNOS Commands* (Document No. 50878), and • *UNOS Installation and Management Guide* (Documet No. 50879).
the RMS operating system,	*RMS User's Guide Volumes I to IV* (Document No. 50545).
the ARC local area network,	*Concepts of ARC Local Networking* (Document No. 50694).

Product checklist

Please be sure you have received all of the following items with your INX-32 product. The following table lists the INX-32 parts and their model codes.

ITEM	QUANTITY	MODEL CODE
INX-32 Adapter card	1	3219
INX-32 Software Kit containing an: • 8" diskette and • *Understanding INX-32*	1	81013
RMS Network Services Software Kit containing the: • 32ATTACH/CMD • RMS INSS SRD	1	9603

How to Use this Book

Introduction

This section provides guidelines for quick understanding and effective use of INX-32 documentation.

Scope of this book

This guide includes descriptions of the INX-32 system concepts and detailed step-by-step procedures you need to:

- install INX-32 software,

- gain access to UNOS from RMS using INX-32,

- copy text files from UNOS to RMS, and

- copy text files from RMS to UNOS.

What chapters should I read?

The following table provides general guidelines quickly locating the information you need to use INX-32.

IF YOU WANT TO...	READ THE...
install INX-32 software,	Overview, Components of INX-32, Installing INX-32 Software, and Error Messages.
attach to a 3200 from RMS 8000 series computers or workstations	Overview, Components of INX-32, and How to Use INX-32.

Chapter contents

The following table briefly describes each chapter of this guide.

TITLE	DESCRIPTION
Chapter 1, INTRODUCTION TO INX-32,	INX-32 and the organization of this book.
Chapter 2, COMPONENTS OF AN INX-32 SYSTEM,	the parts of INX-32 including hardware, system files, and utilities.
Chapter 3, USING INX-32,	basic operating information, how to gain access to a 3200 system through INX-32, how to copy text files from one operating system to another, and how to exit.
Chapter 4, INX-32 HELP OPTIONS,	how to display the help screens.
Appendix A, INSTALLING INX-32,	how to install the INX-32 software components in the RMS and UNOS operating systems.
Appendix B, ERROR MESSAGES,	the types of INX-32 error messages that can occur in RMS and UNOS.

What is UNOS?

Introduction

The INX-32 system establishes a form of dialogue between RMS and UNOS, allowing the exchange of text files between the two operating systems. This is accomplished by three INX-32 system components.

- The INX-32 RIM Adapter card establishes a physical connection between the UNOS operating system and an ARC network.

- An RMS user program called 32ATTACH allows you to gain access to the UNOS operating system and run UNOS software.

- An INX-32 UNOS user program called unicopy allows you to copy files from RMS to UNOS and from UNOS to RMS.

This section provides background information about UNOS and a brief sketch of its primary features. The RMS operating system is described in the section entitled *What is RMS?*.

The UNOS operating system

An enhanced UNIX look-alike, UNOS was developed as a time-sharing system containing extensive utilities for DATAPOINT 3200 computer users. UNOS presents improved performance over UNIX in the following areas:

- synchronization,

- priority scheduling,

- file system reliability,

- process management, and

- data input and output (I/O).

UNOS also supports relational data base management, office applications software such as word processing and financial spreadsheets, and several programming languages including DATABUS ®.

Key UNOS Features

The following table lists key features of the UNOS operating system.

FEATURE	DESCRIPTION
Portability	UNOS can be easily modified to run on different types of computers.
Multiuser computer system	UNOS supports multiple users working simultaneously on the 3200 system.
Multitasking	UNOS allows a user to start a task and work on others while the system works on the original one.
Hierarchical File Structure	UNOS supports a hierarchical file structure that enables groups of files to be organized conveniently for storage and retrieval.
Pipes	UNOS pipes are used to combine several simple programs into one complex function.
Utilities	UNOS includes utility programs for sorting files, processing text, searching files, and structuring files.
Text-Processing Tools	UNOS contains tools for text processing including text editing.
Software Development Tools	As a UNIX look-alike, UNOS provides an environment for software development. A package of software tools is available for UNOS systems.

What is RMS?

Introduction

The DATAPOINT Resource Management System (RMS) is the other participant in the INX-32 system. This section describes RMS and its key features.

The RMS operating system

RMS is DATAPOINT's proprietary operating system developed to implicitly support DATAPOINT's ARC LAN. Designed for multiuser, multitasking computer operations, RMS is a highly efficient system for managing the multiple computer resources and software tasks associated with local area network support.

Using RMS, each part of a computer system can communicate with and use the resources of any other part of the system. RMS manages the system to:

- store,

- process,

- retrieve,

- copy,

- safeguard, and

- transmit data.

RMS easily coordinates the various facets of the computer's operations.

Major Features

The following table describes major features of the RMS operating system.

FEATURE	DESCRIPTION
Local area network support	RMS contains features specifically intended to support local area networking.
Multiuser System	RMS supports multiple users working simultaneously on a DATAPOINT computer system.
Multitasking	RMS allows a user to start a task and work on others while the system works on the original one.
Hierarchical File Structure	RMS supports a hierarchical file structure that enables groups of files to be organized conveniently for storage and retrieval.
Pipes	RMS pipes are used to enable communications processes between tasks.
Utilities	RMS contains easy to use utilities with extensive options and help screens.
Chains	RMS increases the efficiency of utility operations through the use of chains--programs that evaluate complex operator input and resource allocation.

What is ARC?

Introduction

The INX-32 Adapter card enables the 3200 to participate in the DATAPONT ARC LAN. This section presents the general concepts of the ARC network and lists some of its key features.

What is ARCNET?

ARCNET is the component of DATAPOINT's local area network architecture that is implemented in hardware. ARCNET consists of:

- coaxial or fiber optic junction boxes (hubs),

- coaxial or fiber optic cable, and

- Resource Interface Modules (RIMs).

ARCNET components can be used to implement a variety of local area network configurations.

Background

ARC serves as a local area network extension of DATAPOINT's RMS proprietary operating system. ARC combines DATAPOINT's operating system software with ARCNET components and DATAPOINT computers and other hardware.

Major Features

ARC features the following:

- 2.5 million bits per second (Mbps) transmission rate,

- baseband, token passing organization,

- up to 255 computers in one network,

- automatic network reconfiguration on device power up or power down,

- concurrent file access with provisions to secure record updating, and

- maximum separation of four miles between the two most distant participating computers in the network.

Chapter 2.
COMPONENTS OF AN INX-32 SYSTEM

Overview

Introduction

The three basic components of an INX-32 system, described in this chapter, are:

- an INX-32 Adapter card,

- a RMS user program, and

- a set of four UNOS user programs.

Key words

extension—in the RMS operating system a file name is comprised of the name you assign it and an extension. The extension describes the type of file. For example, a file containing an interoffice memo might be named: MEMO/TEXT. The slash (/) separates the name of the file from the type of file. The default extension in RMS is /TEXT.

source code—instructions in the original programming language. Computers do not process source code. Source code must be compiled into operating code (op code) before a computer will perform the command.

Hardware

Typical hardware components are:
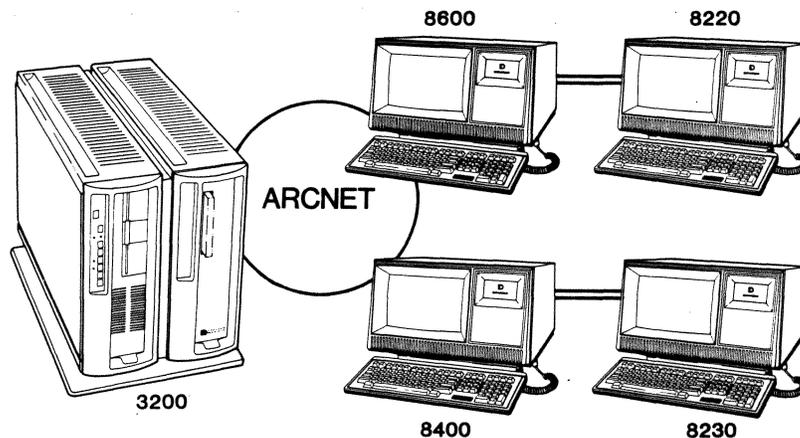
Software

The major INX-32 software components are:

RMS	UNOS

- RMS nucleus

- 32ATTACH/CMD

- 32CONFIG/TEXT

- 32GROUP/TEXT

- UNOS kernel with RIM support

- unicopy

- unistat

- unilog

- unitest

Part/Function Table

The following table describes the elements of the INX-32 system and their functions.

HARDWARE	FUNCTION
3200 with RIM card	Participates in ARC as a resource
DATAPOINT 8000 series computer and workstation	Host RMS software including 32ATTACH/CMD
ARCNET	Connects 3200 with RMS
SOFTWARE	FUNCTION
UNOS with RIM support	Manages RIM I/O on 3200
RMS Nucleus	Serves as host for 32ATTACH/CMD
32ATTACH/CMD	Performs VT100 emulation allowing an RMS user to gain access to the 3200 and its UNOS operating system
32CONFIG/TEXT	Specifies target Net and RIM
32GROUP/TEXT	Names target group

Required System Hardware for INX-32

Introduction

Specific hardware is required to implement INX-32 in a computer system. This section describes the hardware requirements for INX-32 use.

Required hardware

The basic hardware components needed to use INX-32 are:

- DATAPOINT series 8000 computers and workstations,

- an INX-32 Adapter card,

- a 3200 system, and

- ARCNET components.

Keyboard differences

INX-32 is designed for use on an RMS 8000 series computer or workstations. However, the 8400/8230 keyboard is different from the 8600/8220 keyboard. The typewriter style keys on both keyboards perform equivalent functions. The other keys retain their original functions or are ignored by the INX-32 software. Refer to the *KHELP Options* for a listing of equivalent keys.

3200 system

The 3200 computer directly supports ASCII terminals. Typical 3200 components are:

3200   VT100
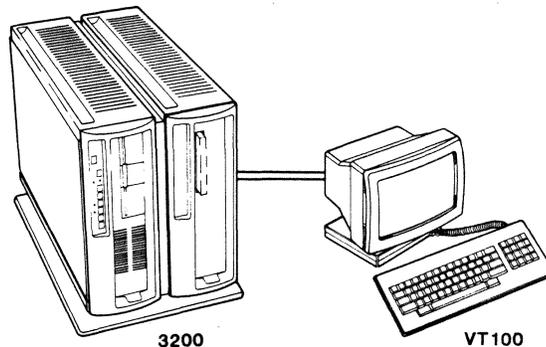
RMS Software for INX-32

Introduction

INX-32 software for RMS consists of a single program and its software release document:

- 32ATTACH/CMD—an object code file used as an RMS command to attach to UNOS on a 3200 system.

- RMS INSS SRD—a software release document containing information about your RMS 32ATTACH software.

You may obtain the 32ATTACH/CMD file on typical RMS release media.

32ATTACH support files

The 32ATTACH/CMD requires three RMS text files during operation. In this guide, the files are named:

- 32GROUP/TEXT,

- 32CONFIG/TEXT, and

- 32LOG/TEXT.

These are the default file names 32ATTACH searches for when the command is used without file specifications or options. 32GROUP/TEXT and 32CONFIG/TEXT, are usually created by the systems administrator during installation. 32LOG/TEXT is the name of the file you wish to direct logged output to.

Note:

The file names used in this guide may not be the actual file names used by your system. Determine the actual names of the support files used in your computer system, before using the software.

File contents

The contents of the 32ATTACH support files are:

```
┌───┐              ┌───┐              ┌───┐
│ 1 │              │ 2 │              │ 3 │
└───┘              └───┘              └───┘
```

32GROUP/TEXT   32CONFIG/TEXT   32LOG/TEXT

GROUP	groupname
LOG	logname

GROUP	groupname
NET	netname
RIM	octalID

logged output
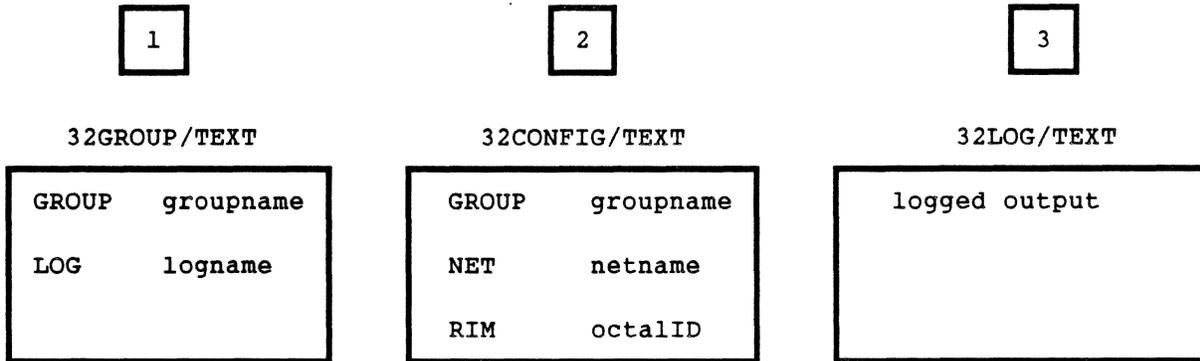
The 32GROUP/TEXT file

32ATTACH scans the 32GROUP/TEXT file for two elements of information:

- GROUP--The groupname is similar to an RMS node name, but there is no tight binding between it and its RIM ID. The groupname is simply a label that points to NET and RIM information in the 32CONFIG file. The following table describes conditional uses of the groupname.

IF THE 32GROUP FILE...	THEN THE groupname...
does not exist,	should be specified in the 32ATTACH command line option (G)ROUP=<name>.
does not exist and the groupname is not specified in the (G)ROUP= <name> option,	in the 32CONFIG file must be $DEFAULT. 32ATTACH searches through the 32CONFIG file for this label.

- LOG--The logname specifies a name for the file you want to direct UNOS logged output to. If this line is not specified, either in this file or on the 32ATTACH command line, the default name is 32LOG/TEXT.

The 32CONFIG/TEXT file

32ATTACH uses the 32CONFIG/TEXT file to obtain:

- GROUP—The group name pointing to the network name and RIM ID combination of the 3200 machine. The groupname in 32CONFIG must be the one specified in either the 32GROUP file or the 32ATTACH command line option (G)ROUP=<name>.

- NET—The network name of the target 3200 machine.

- RIM—The octal RIM ID of the INX-32 Adapter card in the target 3200 machine.

<u>Example:</u>

The following illustration shows the contents of a sample CONFIG/TEXT file. Three UNOS nodes are listed in this file.

```
GROUP  GROUPA
NET    ALPHA
RIM    0041

GROUP  GROUPB
NET    BNET
RIM    0123

GROUP  $DEFAULT
NET    NETONE
RIM    0103
```

The 32LOG/TEXT file

32ATTACH uses this file for logging UNOS operations. The output can be directed to either a disk file or a printer. You can override the default name of this file by specifying a name in the:

- 32ATTACH command line or

- 32GROUP/TEXT file.

UNOS Software for INX-32

Introduction

Four utilities are available to support INX-32 on your 3200. The files are provided on an 8-inch diskette as part of the INX-32 kit. The files are:

- unicopy,

- unilog,

- unistat, and

- unitest.

The commands are described below. Their formats and use are described in Chapter 3, *Using INX-32 Software*.

UNOS commands in lowercase format

All commands in the UNOS environment are written in lowercase letters. The list below illustrates some of the UNOS commands.

- ps

  The ps command displays active tasks or processes.

- list

  The list command displays the contents of a directory.

- makedir

  The makedir command creates directories.

For more information about UNOS commands and command formats read the *UNOS Commands Manual* (Document No. 50878).

The unicopy command

To operate properly, the unicopy command must be invoked through 32ATTACH. The unicopy command allows you to transfer only text files between RMS and UNOS. Instructions for using the unicopy command are in Chapter 3, *Using INX-32 software*.

The unilog command

The `unilog` command initiates the debugging log display function by retrieving the debugging log for the system and writing it to the standard output. If the current kernel does not have the debugging system linked in, then nothing is written out. The display always includes the most recent set of trace statements. Each time unilog is run, the debug log is cleared.

The unistat command

The `unistat` command tracks the RIM driver statistics by displaying the contents of the internal counters for the UNOS RIM driver.

The unitest command

The `unitest` command tests that emulator transmissions between RMS and UNOS are handled correctly. This command can be executed through an RMS 8000 series computer using the INX-32 emulator. The following table describes the processes the unitest command undergoes to produce the equivalent of a LIST command of an RMS file while in UNOS.

STAGE	PROCESS
1	The unitest command causes the terminal emulator to open the specified local file and transmit it to UNOS.
2	The program sends the decoded messages back to the terminal emulator as normal character data.
3	The terminal emulator displays the characters on the screen.

Chapter 3.
USING INX-32 SOFTWARE

Overview

Introduction

This chapter explains how to use INX-32 software to gain access to the 3200 computer system and its UNOS operating system, to copy text files from one system to the other, and to display INX-32 system status and test information.

Key words

emulator--an emulator enables a computer or system to imitate another; allows dissimilar hardware or systems to share software. Emulators can be implemented in firmware or software or combinations of the two.

interface--point where two things meet; this can be a interconnection between hardware and software, hardware and people, software and people, or a combination of the three.

Single path entry point

INX-32 software has a single direction entry point. RMS users operating from an 8000 series computer may use INX-32 software to gain access to the 3200 computer and its UNOS operating system.

Command line conventions

In this manual the following command line conventions are used:

<> angle brackets. Replace <fs> with a valid RMS file
specification. Do not include the angle brackets in your
specification.

[ ] square brackets. Square brackets indicate optional
material. Do not include the square brackets in your
specification.

( ) parentheses. The parentheses enclosing the (G)ROUP
option are used to indicate that you do not have to use the
entire option name. You can use G=<name> on the command line.

... ellipsis. Ellipses indicate a continuing series where the
preceding item may be repeated in the same format.

How to Use RMS 32ATTACH

Introduction

32ATTACH has a straight forward user interface; it can be used with or without options, and the emulation task is user-transparent.

Run-time instructions

32ATTACH depends primarily on the file 32CONFIG/TEXT for the information it requires to link to an 3200. If specified, the 32ATTACH command line option (G)ROUP=<name> overrides the groupname in the 32GROUP file. The default file names 32GROUP, 32CONFIG, and 32LOG can be substituted on the command line.

UNOS must be in multiuser mode

For 32ATTACH to operate, you must generate a CONFIG file and place the UNOS node in multiuser mode before you link to it. The necessary UNOS ports must be active. Read the *UNOS Installation and Management Guide* (Document No. 50879) for UNOS port configuration instructions.

To attach to UNOS

To attach to a 3200's UNOS, enter the command line.

```
32ATTACH
```

Your screen should display some INX-32 port-search information and the UNOS sign-on prompts:

```
Name:
Password:
```

Once these prompts are answered correctly, you are effectively using a VT100 terminal in the UNOS environment.

Note:

For information on 8600, 8220, 8400, 8230 to VT-100 key equivalencies, read the *KHELP Options*.

Sample 32ATTACH display

The following diagram illustrates a sample 32ATTACH display.

<u>Note:</u>

Your display may not exactly resemble the following sample.

```
Attached to UNOS port 8 on id 0157  (UNOS has 4 incoming buffers)

UNOS attachment VT100 emulator (Press DSP/INT to get out)


Name:admin
Password:




****************************************************************
                        UNOS - Release 4
****************************************************************


                    DATAPOINT CORPORATION
                    9725 DATAPOINT DRIVE
                    SAN ANTONIO, TEXAS 78284
                    (512) 699-7000


ADMIN> █
```

Returning to RMS on an 8600/8220

To return to the standard RMS operating system follow these steps:

STEP	ACTION
1	To log off from UNOS, hold down [Kbd] and press [D] .
2	The UNOS system displays the log-in prompts.
3	To return to RMS, hold [Dsp] and press [Inf] .

Note:

For details on the 32ATTACH command line, see the *The 32ATTACH Command Line.*

Returning to RMS on an 8400/8230

To return to the standard RMS operating system follow these steps:

STEP	ACTION
1	To log off from UNOS, hold down [7] and press [D] .
2	The UNOS system displays the log-in prompts.
3	To return to RMS, hold [8] and press [⊘ Quit] .

The 32ATTACH Command Line

Introduction

The 32ATTACH command line contains several options that you can use to specify file names or bypass default actions. Unless directly specified on the 32ATTACH command line, file specifications are assigned the default values: 32GROUP, 32CONFIG, and 32LOG.

Command line syntax

The format of the 32ATTACH command is illustrated below:

```
32ATTACH [[GROUP=]<fs>][,[LOG=]<fs>][,[CONFIG=]<fs>][;options]
```

File specifications

You may specify the following input file for the 32ATTACH command:

- GROUP = group name file

  ○ Groups are named in 32GROUP/TEXT and 32CONFIG/TEXT or in the (G)ROUP=<name> option.

- LOG = log file name

  ○ Default is 32LOG/TEXT (read the *General Help Option*)

- CONFIG = system configuration file

  ○ Default is 32CONFIG (read the *General HELP Option*)

Note:

For information on the 32ATTACH help screens, see *32ATTACH Help*.

Options

32ATTACH users may use the options:

- HELP shows all command options, describes the GROUP and CONFIG options in detail and displays the names of the two help screens that can be invoked from the INX-32 command line.

- KHELP shows how the VT-100 keyboard is mapped to the DATAPOINT keyboards and describes some useful key sequence information.

- (G)ROUP specifies the group name to search for in the 32CONFIG/TEXT file. If specified, this option overrides the groupname in the 32GROUP file.

Example

The following example illustrates the use of the 32ATTACH command line. The following items are assumed:

- A CONFIG/TEXT file named MYCONFIG/TEXT file contains:

  ○ GROUP UNODE,

  ○ NET UNIVERSE, and

  ○ RIM 0042.

- The INX-32 Adapter card RIM ID is 0042.

```
32ATTACH CONFIG=MYCONFIG/TEXT,LOG=MYLOG;G=UNODE
```

The GROUP file is not specified in the command line above. The G option was used to override the use of the default file 32GROUP. The G option label, UNODE, points to the groupname UNODE in the file MYCONFIG/TEXT.

How to Use INX-32 UNOS Commands

Introduction

This section describes how to use the four commands supplied on the INX-32 system UNOS diskette.

How to enter UNOS commands

To use any of the UNOS commands, type the command, any options, and press the RETURN key.
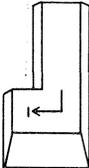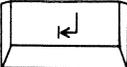
Example:

KEY IN...	PRESS THE RETURN KEY:
list and	General Purpose Keyboard Expanded Function Keyboard

Table of unistat counters

The following internal counters are displayed by unistat:

THE COUNTER...	DISPLAYS THE...
messages transmitted	number of valid messages transmitted.
messages received	number of messages received.
messages ignored	number of received messages that contained unsupported system codes.
times transmitter was filled	number of times a facility wanted to send a message and no available outgoing RIM buffers were available. This measures the number of times UNOS software overruns the RIM hardware.
times receiver was filled	number of times the RIM driver tries to enable the receiver and finds no available receive buffers. This measures the number of messages received faster than they are being processed.
soft transmission errors	number of times a completed transmission was not ACKNOWLEDGED (ACKed) and was retried.
hard transmission errors	number of times a completed transmission was not ACKed and not retried.
soft transmitter aborts	number of times the transmitter was aborted for a message and was retried.
hard transmitter aborts	number of transmitter aborts with no retries left.
reconfigurations	number of reconfigurations that occurred.

The unitest command

The `unitest` command tests the terminal emulator. The command can be executed through the 32ATTACH command. The program:

- causes the terminal emulator to open the specified local file,

- transmit it to UNOS,

- send the decoded messages back to the terminal emulator as normal character data, and

- display the characters.

This command, therefore, enables you to LIST an RMS text file while in UNOS.

The command line format is:

```
unitest <local file name>
```

Command line format:

The <local file name> is the RMS text file you want to transmit to UNOS. Only text files may be used.

Example:

```
unitest MYMEMO/TEXT
```

Chapter 4.
INX-32 HELP OPTIONS

Overview

Introduction

The RMS 32ATTACH command has two help screens:

- HELP—command help—displays additional file specifications and their structures, general areas of information including operation, logging procedure, and group determination.

- KHELP—keyboard help—describes the keys required to perform special functions.

How to display the help screens

The INX-32 help screens are offered as options of the 32ATTCH command. To view and read a screen, enter the command and the specific help option you want to read.

Example:

```
32ATTACH;KHELP
```

General Help Option

Introduction

The general 32ATTACH help screen gives you a list of the other options available and some information on the group determination process.

Command line

To read the general help screen, enter the following command:

```
32ATTACH;HELP
```

Display

The help screen displays the following information:

```
32ATTACH;HELP
32ATTACH V.r 3200 TASK ATTACH UTILITY

command line syntax:
  32ATTACH [[GROUP=]<fspec>][,[LOG=]<fspec>][,[CONFIG=]<fspec>][;<options>]
  GROUP  = group name file.  Default is 32GROUP/TEXT.
  LOG    = log file name.  Default is 32LOG/TEXT.
  CONFIG = system config file.  Default is 32CONFIG/TEXT.
options:
  HELP           - Get this display
  KHELP          - Get the keyboard mapping
  VT52           - Begin terminal emulation in VT52 mode
  GROUP=<name>   - Set the group name   (also G=<name>)

The group file must contain a line that specifies the group name in the
form : GROUP <name>.  The available ports will be the ports in the
selected GROUP.  The GROUP name is determined by the following:

- the value of the GROUP or G options
- the name specified in the file 32GROUP/TEXT
  (in the form GROUP <name>)
- the value $DEFAULT
```

```
The config file is a file that converts the group name to
port name.  The entries are:

GROUP <name>
NET <name>
RIM <octal RIM id>

A logging facility is available with the use of the KBD-<pad 9>-KBD
sequence.  The data that goes to the screen is also written to the
print file which is determined from:

- the command line
- the 32GROUP/TEXT file entry LOG
- the default 32LOG/TEXT

This program automatically connects you to an available UNOS
port in your GROUP.  You may see some extraneous output if the previous
user of the port aborted in the middle of screen output.  Press the
ENTER key to get the log-in request message.

To return to RMS while in 32ATTACH, hold down DSP and press INT.
```

KHELP Help Option

Introduction

The KHELP option help screen displays keyboard translations and key sequence information.

Command line

To read the KHELP screen enter the following command:

```
32ATTACH;KHELP
```

Display

The KHELP option displays the following information:

```
32ATTACH;KHELP
32ATTACH 1.1.G   3200 TASK ATTACH UTILITY

    Keyboard:   8220/8600       8230/8400           VT100
                F1 thru F4      F1 thru F4          PF1 thru PF4
                <--             <--                 DELETE
                |<--            |<--                BACK SPACE
                KBD             F7                  CTRL
                F5              Help                ESC
                ->|<-  |<->|    ->|<-   |<->|       number pad ,
                -->|            -->                 TAB
        shifted pad 2 4 6 8                         cursor
        shifted pad 0                               ENTER
        shifted pad 1                               number pad -
                pad .                               number pad .
                INT             Quit                control-Y
        KBD & pad 3             F7 & pad 3          CAPS LOCK
        KBD & pad 9             F7 & pad 9          toggle printer logging mode
        DSP & INT               F8 & Quit           Return to RMS

    The RMS DSP key display pausing toggle is used in place of the NO SCROLL
    key (pause happens only upon cursor position or screen roll and is
    released upon any key stroke).
```

```
    All workstations use the the KBD key for the control key; old 8200's must
    use the KBD key for the numeric pad shift key and must run CHARLOAD
    before using 32ATTACH (to load the keyboard translate table).
```

Appendix A.
INSTALLING INX-32

Overview

Introduction

This appendix describes how to install the INX-32 software and provides guidelines on the equipment required for operation. INX-32 installation consists of three phases:

- Phase 1—installing the RIM adapter card,

- Phase 2—loading the two RMS files, and

- Phase 3—loading the four UNOS files.

Key words

console—usually refers to the computer or workstation used by the computer operator or systems administrator to control the computer system. This terminal could contain special keys not available on a user workstation.

node—a computer with a RIM interface participating in an ARC local area network.

Before you begin

The following table is a checklist of software requirements you must heed before installing your INX-32 hardware and software.

IF....	THEN...
you do not have an RMS version that is compatible with 32ATTACH/CMD,	you must upgrade your RMS system to the correct version.
you do not have a UNOS version with RIM support,	you must upgrade your UNOS kernel to the correct version.

Installing the RIM adaptor card

The INX-32 Adapter card **is not** customer installable.
Only DATAPOINT Customer Service is authorized to install
the INX-32 Adapter card.

How to Install RMS 32ATTACH

Introduction

This section describes how to install the RMS portion of INX-32 software. Two items are supplied for the RMS portion of INX-32:

- a command file—32ATTACH/CMD

- a software release document—RMS INSS SRD

Note:

Please read the software release document (SRD) before proceeding. It contains important information about the installation and use of the 32ATTACH/CMD.

Associated files

During the installation procedure, you create two additional files that are used with the 32ATTACH command. The files are:

- 32GROUP/TEXT

- 32CONFIG/TEXT

The 32ATTACH command uses the information in these files to identify the UNOS node and attach to it.

UNOS node name

In this section the term UNOS node name is used to refer to the groupname that you place in the 32GROUP file after the word GROUP. RMS identifies computers with RIMs as nodes. The 3200 is the UNOS node you attach to using INX-32.

Installation procedure

The following table lists the steps to install your INX–32 software into RMS.

STEP	ACTION
1	Copy the 32ATTACH/CMD file and 32ATTACH/SRD file from the release media to your :U (utility) environment.
2	Create a text file using an RMS text editor. This file is known as the *32GROUP* file and should have the extension /TEXT. If you do not want to specify the name on the command line, use the default name 32GROUP. When used without specifications or options, 32ATTACH searches for this file to find the information it needs.
3	Enter the following items in this file: ● the word GROUP, ● a UNOS node name (an arbitrary name), ● the word LOG, and ● if you do not want to use the default name 32LOG/TEXT, a name for the log file. For the UNOS node name, use the name of the UNOS node you are attaching to. The name can be arbitrary, since INX–32 searches for the RIM ID of the 3200 associated with the name you assign. Example: ``` GROUP UNODE LOG ULOG ```
4	Exit the edit session. Unless you specify otherwise, the created file resides in the :W (working) catalog.

STEP	ACTION
5	Create a second file using an RMS screen editor. This file is called the *CONFIG* file. It contains the information necessary to define the UNOS node to connect to. If you have multiple 3200s (UNOS nodes), you may define entries for all nodes.
| 6 | Enter the following items in this file:<br><br>• the word GROUP and the UNOS node name you will attach to,<br>• the word  NET and the net name the 3200 system is connected to, and<br>• the word RIM and the octal RIM id number for the INX-32 Adapter card.<br><br>Example:<br><br>```
GROUP  UNODE
NET    UNIVERSE
RIM    0042
GROUP  NODEU2
NET    MYNET
RIM    0181
```|
| 7 | Exit the editing session. Unless you specify otherwise, the created file resides in the :W catalog. |

What next?

Once you have installed the RMS side of INX-32, you must install four files in the UNOS operating system. The next section describes how to install these files.

How to Install INX-32 UNOS User Software

Introduction

The final phase of installing INX-32 user software requires loading four UNOS files from the 8-inch diskette UNOS release medium. The four files are:

- unicopy,

- unilog,

- unitest, and

- unistat.

This section describes the installation procedure for installing the UNOS user programs.

Who should load the files?

Installation should be done at the system console by the system administrator. Preferably, the system should be in single user mode.

Use the 3200 console

When you load the INX-32 UNOS files, you should work from the console that is directly connected to the 3200. After the installation is complete, you can run 32ATTACH from RMS terminals. You can invoke these four programs only from RMS terminals running 32ATTACH.

Card error message

```
UNIPORT:  Card n already has a server for system code 020!
```

Unspecified error message

Occasionally an error may occur that has no specific designation. When this occurs the following message appears.

```
UNIPORT:  Unknown message type n from ID n
```

RIM Error and Status Messages

Introduction

The 3200 console also displays messages describing RIM errors. If a RIM error message appears, notify your systems administrator immediately.

RIM status messages

Messages describing the status of the RIM card and driver are:

```
RIM:   Already initialized

RIM:   Card n is not available

RIM:   Card n is available.  Network id is n;
       took n bytes.

RIM:   Card n is available.  Network id is n (uncertain);
       took n bytes.

RIM:   Card n is available.  Network id is unknown; took n bytes.
```

RIM error and diagnostic messages

Messages describing RIM card and driver errors are:

```
RIM:   Card n fails self-test!  It has been disabled.

RIM:   Hardware failure on card n

RIM:   Nothing in transmit queue when there must be!

RIM:   Power-on-reset on card n

RIM:   Transmit requested for invalid card number n
```

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