60455270

CONTROL DATA CORPORATION

NETWORK PRODUCTS

NETWORK TERMINAL USER'S INSTANT

CDC® OPERATING SYSTEM: NOS 1

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REVISION RECORD	
REV	DESCRIPTION
A	Manual released. This manual reflects NOS
(06-30-78)	Version 1.3 at PSR level 472.
B	Manual revised to reflect support of NOS
(08-10-79)	Version 1.4 at PSR level 501. This revision
	includes the access subsystem; the network
	communication commands; the character set
	commands; and the time-sharing commands
	TRMDEF, DEBUG, ENQUIRE, and XEDIT.
C	Manual revised to reflect support of NOS
(10-31-80)	Version 1.4 at PSR level 528. The revision
	includes new permanent file command param-
	eters (preferred residence, backup require-
	ments, and real-time parameters) for the
	mass storage subsystem, a new section on the
	Message Control System (MCS), the cE and cS
	job status commands, revised (CR) and
	ENQUIRE commands, support of X command
	from all subsystems, and the alphabetiza-
	tion of the IAF Commands and RBF Commands
	sections. Because changes are extensive,
	revision bars and dots are not used, and all
	pages reflect the latest revision level.
	This edition obsoletes all previous editions.

Publication No.
60455270

Revision letters I, O, Q, and X are not used.

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LIST OF EFFECTIVE PAGES

New features, as well as changes, deletions, and additions to information in this manual, are indicated by bars in the margins or by a dot near the page number if the entire page is affected. A bar by the page number indicates pagination rather than content has changed.

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PREFACE

The Network Operating System (NOS) was developed by Control Data Corporation to provide a multimode job processing capability for CONTROL DATA® CYBER 170 Series; CDC® CYBER 70 Series, Models 71, 72, 73, and 74; and CDC 6000 Series Computer Systems. Multimode job processing allows concurrent processing of local and remote batch, transaction, and remote interactive jobs.

A Control Data communication network provides this multimode capability. The communication network is a message routing system that provides a standard interface that allows applications (host resident information storage, retrieval, and/or processing programs) to communicate with terminals. The communication network requires the services of the Network Access Method (NAM) version 1 and Communication Control Program (CCP) version 3.

ORGANIZATION AND AUDIENCE

This manual provides a brief description of network login, application selection, and terminal definition commands. This is followed by a digest of the commands from the Interactive Facility (IAF) version 1, Remote Batch Facility (RBF) version 1, Message Control System (MCS), Text Editor, and XEDIT Reference Manuals.

RELATED PUBLICATIONS

This manual is intended to serve only as a quick reference tool for the user. For complete information concerning the products described, refer to the appropriate manuals.

The NOS Manual Abstracts is a pocket-sized manual containing brief descriptions of the contents and intended audience of all NOS and NOS product manuals. The abstracts can be useful in determining which manuals are of greatest interest to a particular user.

Control Data also publishes a Software Publications Release History of all software manuals and revision packets it has issued. This history lists the revision level of a particular manual that corresponds to the level of software installed at the site.

Control Data Publication	Publication Number
APL Version 2 Reference Manual	60454000
CYBER Interactive Debug Version 1 Reference Manual	60481400
Message Control System Reference Manual	60480300
Network Products Interactive Facility Version 1 Reference Manual	60455250
Network Products Remote Batch Facility Version 1 Reference Manual	60499600
Network Products Transaction Facility Version 1 Reference Manual	60455340
NOS Version 1 Manual Abstracts	84000420
Software Publications Release History	60481000
Text Editor Reference Manual	60436100
XEDIT Version 3 Reference Manual	60455730

DISCLAIMER

This product is intended for use only as described in this document. Control Data cannot be responsible for the proper functioning of undescribed features or undefined parameters.

CONTENTS

TABLE

NETWORK COMMUNICATIONS

LOGIN SEQUENCE

1. Complete dial-in procedure, if necessary, to connect the terminal to the network. Check to ensure that the terminal switches are set to the correct positions.

2. Once the connection is established, it may be necessary to identify the terminal to the network. This is required on autorecognition lines so that the network can determine the line speed and/or character code set of the terminal. The user presses one of the following:

SEND key or ETX key	Mode 4 terminals.
ⓒⓡ	Terminal classes 1 through 8.

   Entry of ⓒⓡ at terminals of classes 1 through 8 enables the system to determine the terminal's line speed. When the line speed is recognized, the system issues two line feeds. The user then has 60 seconds to enter either of the following sequences for character code set recognition.

)ⓒⓡ	For recognition of the character code set in use at the terminal.
ⓒⓡ	The ASCII character code set is assumed.

   If the user does not respond in 60 seconds, the system disconnects the terminal. If the system prints the message UNSUPPORTED CODE SET, the code set of the user's terminal is not supported at the site and the user may have to restart the login sequence.

3. When communication with the network is established, the network initiates the login sequence by requesting the family name as follows:

   ```
   yy/mm/dd. hh.mm.ss.†  termnam††

   CDC MULTI-MODE OPERATING SYSTEM.
     NOS 1

   FAMILY:
   ```

†Date is given in year/month/day and time in a 24-hour format (hours.minutes.seconds.).
††termnam is the network-supplied terminal name.

Enter family name on the same line.

4. After the family name is accepted, the network requests entry of a user name.

   USER NAME:

   Enter user name on the same line.

5. The network then requests entry of a password.

   PASSWORD
   ⊠⊠⊠⊠⊠⊠⊠⊠

   On terminals where overtyping is possible, the network blacks out the password entry area by overtyping a variety of characters. This is done to preserve password secrecy.

   Enter password in area that network has blacked out; if no password is assigned, press ⓒⓡ only.

6. After the password is accepted, the user can select an application as described under Application Selection.

Steps 3, 4, 5, and 6 can be done in a one-line entry by responding to the FAMILY: prompt as follows:

FAMILY: familyname,username,password,application ⓒⓡ

APPLICATION SELECTION

After the network has accepted the family name, user name, and password of the user, it requests entry of the application to which the user wants to be connected.

termnam - APPLICATION:

A user can be automatically logged into an application during the initial login sequence. If this is the case, the application selection message does not appear. If the user that has automatic application selection makes a mistake on the first login attempt, any subsequent attempt will contain the application selection request. The following paragraphs describe selection of the Interactive Facility, the Remote Batch Facility, the Transaction Facility, and the Message Control System by validated users.

INTERACTIVE FACILITY SELECTION

To use the Interactive Facility (IAF), enter IAF following the application prompt.

IAF then displays the terminal number and type (NAMIAF) and requests entry of either the subsystem to be used, valid charge and project numbers, or RECOVER command.

```
TERMINAL nnnn, NAMIAF
RECOVER/SYSTEM:
        or
RECOVER/CHARGE:
```

If the RECOVER/SYSTEM request is issued, enter the subsystem to be used (the system automatically selects an initial subsystem for each user name)† or any other valid IAF command.

If the RECOVER/CHARGE request is issued, enter the CHARGE command (refer to IAF Commands in section 2). After the CHARGE command has been accepted, the user can enter the subsystem to be used (the system automatically selects an initial subsystem for each user name)† or any other valid IAF command.

If the user is reinitiating the login sequence after having been accidentally disconnected from the system, the RECOVER command can be entered in response to the RECOVER/SYSTEM or RECOVER/CHARGE request. This allows a user to resume operation at the point of interruption in service. For additional information concerning the RECOVER command, refer to IAF commands in section 2.

REMOTE BATCH FACILITY SELECTION

To use the Remote Batch Facility (RBF), enter RBF following the application prompt.

RBF responds with the date and time of the connection as follows:

```
RBF VER 1.2 - STARTED yy/mm/dd hh.mm.ss.††
READY.
```

Enter any valid RBF command.

---

†The initial subsystem is specified in the system validation file. This file determines the internal system controls associated with each user name.

††Date is given in year/month/day and time in 24-hour format (hours.minutes.seconds).

MESSAGE CONTROL SYSTEM SELECTION

To use the Message Control System (MCS), enter MCS following the application prompt.

MCS responds with the following message.

```
MCS1.0yy/mm/dd.  hh.mm.ss †
```

If the terminal is dedicated, MCS issues the following message.

```
DEDICATED TERMINAL
APPLICATION=application
SYMBOLIC NAME=name
STATUS=status
mode MODE
?
```

This message informs the user of the application to which the terminal is dedicated, the symbolic name of the terminal, the terminal's status (ENABLED or DISABLED), and the terminal's mode (DATA or COMMAND).

If the terminal is not dedicated or only dedicated to the application or symbolic name, the system makes the following requests.

1. The system requests entry of an MCS application. Enter the application following the application prompt.

   ```
   MCS APPLICATION?
   ```

   If the terminal is dedicated to a particular application, MCS does not issue the prompt.

2. After the system accepts the application, it requests the symbolic name of the terminal.

   ```
   SYMBOLIC NAME?
   ```

   Enter either one or two symbolic names. The symbolic name may be a source, destination, or interactive name. If the user enters two symbolic names, the first must be a source name, the second must be a destination name, and they must be separated by a space.

   If the terminal is named in an ALIAS clause in the application definition, the prompt is not issued.

---

† Date is year/month/day and time is hours.minutes.seconds.

3. The system then issues the operating mode of the terminal and a question mark. The mode is either DATA or COMMAND.

```
mode MODE
?
```

The user can change the operating mode. To change from COMMAND mode to DATA mode, enter DATA. To change from DATA mode to COMMAND mode, enter the termination character (user break 2).

Depending on the mode, enter message data or an MCS command on the same line as the question mark.

TRANSACTION FACILITY SELECTION

To use the Transaction Facility (TAF), enter TAF following the application prompt.

TAF responds with the following message.

```
READY.
```

Further input under TAF is task controlled. Refer to the Transaction Facility Reference Manual listed in the preface. No further information about TAF is provided in this instant.

APPLICATION SWITCHING

The user can switch from one application to another as described in the following paragraphs. All terminal characteristics in effect under the previous application remain in effect under the new application unless specifically altered by the user or the application.

SWITCHING FROM IAF

To leave IAF control and access another application, enter one of the following commands.

```
BYE, application
GOODBYE, application
HELLO, application
LOGIN, application
LOGOUT, application
```

A logout message is displayed and the terminal is disconnected from IAF. If the user is validated to use the specified application, the terminal is connected to the application.

If the user enters one of the preceding commands without specifying an application (for example, BYE,), or if the application entered is not available or not allowed, a logout message is displayed, the terminal is disconnected from IAF, and the next application is requested.

termnam - APPLICATION:

Enter the name of an application.

Entering one of the preceding commands with neither a comma nor an application (for example, BYE) is described in Logout Sequence.

SWITCHING FROM RBF

To leave RBF control and access IAF, enter the following command.

IAF

If the user is validated to use IAF, a logout message is displayed, and the terminal is disconnected from RBF and connected to IAF.

To leave RBF control and access an application other than IAF, enter the following command.

END

A logout message is displayed, the terminal is disconnected from RBF, and entry of the next application is requested.

termnam - APPLICATION:

Enter the name of an application.

SWITCHING FROM MCS

To leave MCS control and access another application, enter one of the following commands.

BYE application	LOGIN application
END application	LOGOFF application
GOODBYE application	LOGON application
HELLO application	LOGOUT application

A logout message is displayed, and the terminal is disconnected from MCS.

If the user is validated to use the specified application, the terminal is connected to the application.

If the user enters END LOGIN, LOGON, or HELLO without specifying an application, a logout message is displayed, the terminal is disconnected from MCS, and the system requests the application desired.

```
termnam-APPLICATION:
```

Enter the name of an application.

LOGOUT SEQUENCE

To terminate the session, the user enters certain commands to disconnect the terminal from the current application and optionally from the network. When leaving application and network control, all terminal characteristics are reset. When leaving the application and remaining connected to the network, all terminal characteristics in effect under the previous application remain in effect unless specifically altered by the user or subsequent applications. The descriptions of the logout procedures follow.

IAF LOGOUT

To leave IAF and network control, enter one of the following commands.

```
BYE
GOODBYE
LOGOUT
```

A logout message is displayed, and the terminal is disconnected from the network.

To leave IAF but remain connected to the network, enter one of the following commands.

HELLO
LOGIN

A logout message is displayed, and the login sequence is reinitiated.

RBF LOGOUT

To leave RBF and network control, enter one of the following commands.

LOGOFF
LOGOUT

A logout message is displayed and the terminal is disconnected from the network.

To leave RBF and reinitiate the login sequence, enter one of the following commands.

LOGIN
LOGON

A logout message is displayed, and the login sequence is reinitiated.

MCS LOGOUT

To leave MCS and network control, enter one of the following commands.

BYE
GOODBYE
LOGOFF
LOGOUT

A logout message is displayed, and the terminal is disconnected from the network.

To leave MCS but remain connected to the network, enter one of the following commands.

HELLO
LOGIN
LOGON

A logout message is displayed, and the login sequence is reinitiated.

NETWORK LOGOUT

To leave network control when the APPLICATION prompt is issued, enter one of the following commands.

BYE
LOGOUT

To reinitiate the login sequence when the APPLICATION prompt is issued, enter one of the following commands.

HELLO
LOGIN

TERMINAL DEFINITION COMMANDS

The terminal class or terminal definition values can be changed by entering terminal definition commands† in the following format.

control terminal definition ©R††

control

Terminal control character defined for the terminal in use (CT character in table 1-1).

terminal definition

A two-character mnemonic followed by = and the desired terminal class number or parameter value. The range of values is shown in table 1-1.

©R

Message terminator character for the terminal in use.

†IAF users also can enter the TRMDEF command (refer to section 2).

††Spaces are included for clarity. They should be omitted when entering the command.

Table 1-1 lists the terminal definitions, the defaults, and the ranges (indicated in parentheses) for each of the 15 terminal classes. N/A indicates that the parameter does not apply to that terminal class. The mnemonics listed in the table have the following meanings.

Mnemonic	Meaning
TC	Terminal class
CT	Control character
BS	Backspace character
CN	Cancel input line character
AL	Abort output line character
B1	User break 1 (interruption character)
B2	User break 2 (termination character)
CI	Carriage return idle count
LI	Line feed idle count
PW	Page width
PL	Page length
PG	Page wait
PA	Parity
SE	Special editing †
DL	Transparent text delimiter
IN	Input device
OP	Output device
EP	Echoplex mode

†Special editing may not be supported at some sites.

TABLE 1-1. TERMINAL DEFINITION COMMANDS

Mnemonic	M33, M35, M37, M38	CDC 713-10
TC	1	2
CT	ESC (Any) †	ESCAPE (Any) †
BS	CTRL/H (Any) †	← (Any) †
CN	CTRL/X (Any) †	CTRL/X (Any) †
AL	CTRL/X (Any) †	CTRL/X (Any) †
B1	CTRL/P (Any) †	CTRL/P (Any) †
B2	CTRL/T (Any) †	CTRL/T (Any) †
CI	2 (0-99, CA)	0 (0-99, CA)
LI	1 (0-99, CA)	1 (0-99, CA)
PW	72 (0-255)	80 (0-255)
PL	0 (0-255)	0 (0-255)
PG	N (Y,N)	N (Y,N)
PA	E (Z, O, E, N)	E (Z, O, E, N)
SE	N (Y,N)	N (Y,N)
DL	X 0D, C2043 (X any, C1-C4096 TO)	X 0D, C2043 (X any, C1-C4096,TO)

† Any ASCII character except NUL, STX, EOT, LF, CR, =, and DEL.

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	M33, M35, M37, M38	CDC 713-10
IN	KB (KB, PT, XK, X, XP)	KB (KB, PT, XK, X, XP)
OP	PR (PR, PT)	DI (DI, PT)
EP	N (Y,N)	N (Y,N)

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	Reserved	IBM 2741
TC	3	4
CT		ATTN % (Any)†
BS		BACK SPACE (Any)†
CN		ATTN ((Any)†
AL		ATTN ((Any)†
B1		ATTN: (Any)†
B2		ATTN) (Any)†
CI		2 (0-99, CA)
LI		1 (0-99, CA)
PW		132 (0-255)
PL		0 (0-255)
PG		N (Y,N)
PA		O (Z, O, E, N)
SE		N (Y,N)
DL		X 6D (X 6D)

†Any ASCII character except NUL, STX, EOT, LF, CR, =, and DEL.

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	Reserved	IBM 2741
IN		KB (KB, PT, XK, X, XP)
OP		PR (PR, PT)
EP		N/A

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	M40	Hazeltine 2000
TC	5	6
CT	CTRL/P (Any)†	ESC (Any)†
BS	N/A	CTRL/H (Any)†
CN	CTRL/X (Any)†	CTRL/X (Any)†
AL	CTRL/X (Any)†	CTRL/X (Any)†
B1	CTRL/F (Any)†	CTRL/P (Any)†
B2	CTRL/T (Any)†	CTRL/T (Any)†
CI	1 (0-99, CA)	0 (0-99, CA)
LI	3 (0-99, CA)	3 (0-99, CA)
PW	74 (0-255)	74 (0-255)
PL	0 (0-255)	0 (0-255)
PG	N (Y,N)	N (Y,N)
PA	E (Z, O, E, N)	E (Z, O, E, N)
SE	N (Y,N)	N (Y,N)
DL	X 0D, C2043 (X any, C1-C4096, TO)	X 0D, C2043 (X any, C1-C4096, TO)

† Any ASCII character except NUL, STX, EOT, LF, CR, =, and DEL.

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	M40	Hazeltine 2000
IN	KB (KB, PT, XK, XP, X)	KB (KB, PT, XK, XP, X)
OP	DI (DI, PT)	DI (DI, PT)
EP	N (Y,N)	N (Y,N)

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	CDC 751-1	Tektronix
TC	7	8
CT	ESC (Any)†	ESC (Any)
BS	← (Any)†	CTRL/H (Any)†
CN	CTRL/X (Any)†	CTRL/X (Any)†
AL	CTRL/X (Any)†	CTRL/X (Any)†
B1	CTRL/P (Any)†	CTRL/P (Any)†
B2	CTRL/T (Any)†	CTRL/T (Any)†
CI	0 (0-99, CA)	0 (0-99, CA)
LI	12 (0-99, CA)	1 (0-99, CA)
PW	80 (0-255)	74 (0-255)
PL	0 (0-255)	0 (0-255)
PG	N (Y,N)	N (Y,N)
PA	E (Z, O, E, N)	E (Z, O, E, N)
SE	N (Y,N)	N (Y,N)
DL	X 0D, C2043 (X any, C1-C4096, TO)	X 0D, C2043 (X any, C1-C4096, TO)

†Any ASCII character except NUL, STX, EOT, LF, CR, =, and DEL.

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	CDC 751-1	Tektronix
IN	KB (KB, PT, XK, XP, X)	KB (KB, PT, XK, XP, X)
OP	DI (DI, PT)	DI (DI, PT)
EP	N (Y,N)	N (Y,N)

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	HASP Protocol	200UT
TC	9	10
CT	% (Any, except =)	% (Any, except =)
BS	N/A	N/A
CN	((Any, except =)	((Any, except =)
AL	N/A	N/A
B1	: (Any, except =)	: (Any, except =)
B2	) (Any, except =)	) (Any, except =)
CI	N/A	N/A
LI	N/A	N/A
PW	80 (0-255)	80 (0-255)
PL	0	13 (0-255)
PG	N/A	Y (Y,N)
PA	N/A	0
SE	N/A	N/A
DL	N/A	N/A
IN	KB	KB
OP	DI	DI
EP	N/A	N/A

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	CDC 714-30	CDC 711-10
TC	11	12
CT	% (Any, except =)	% (Any, except =)
BS	N/A	N/A
CN	((Any, except =)	((Any, except =)
AL	N/A	N/A
B1	: (Any, except =)	: (Any, except =)
B2	) (Any, except =)	) (Any, except =)
CI	N/A	N/A
LI	N/A	N/A
PW	80 (0-255)	80 (0-255)
PL	13 (0-255)	16 (0-255)
PG	Y (Y,N)	Y (Y,N)
PA	0	0
SE	N/A	N/A
DL	N/A	X 03
IN	KB (KB, X)	KB (KB, XK, X)
OP	DI	DI
EP	N/A	N/A

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	CDC 714	CDC 731-12 CDC 732-12
TC	13	14
CT	% (Any, except =)	% (Any, except =)
BS	N/A	N/A
CN	((Any, except =)	((Any, except =)
AL	N/A	N/A
B1	: (Any, except =)	: (Any, except =)
B2	) (Any, except =)	) (Any, except =)
CI	N/A	N/A
LI	N/A	N/A
PW	80 (0-255)	80 (0-255)
PL	16 (0-255)	13 (0-255)
PG	Y (Y,N)	Y (Y,N)
PA	0	0
SE	N/A	N/A
DL	X 03	N/A
IN	KB (KB, XK, X)	KB (KB)
OP	DI	DI
EP	N/A	N/A

TABLE 1-1. TERMINAL DEFINITION COMMANDS (Contd)

Mnemonic	CDC 734
TC	15
CT	% (Any, except =)
BS	N/A
CN	((Any, except =)
AL	N/A
B1	: (Any, except =)
B2	) (Any, except =)
CI	N/A
LI	N/A
PW	80 (0-255)
PL	13 (0-255)
PG	Y (Y,N)
PA	0
SE	N/A
DL	N/A
IN	KB
OP	DI
EP	N/A

NETWORK COMMUNICATION COMMANDS

ABORT OUTPUT LINE SEQUENCE

When the user enters the abort output line character as the only character on a line, the system discards the current output line. If the user can interrupt output at the terminal by pressing the BREAK key,† output will continue starting with the next line by entering the abort output line character (refer to table 1-1 for abort line values).

CANCEL INPUT LINE SEQUENCE

The user can enter the cancel input line character as the last character before ⓒⓡ in order to delete the line that was entered. This character is specified in table 1-1. The network responds by printing *DEL* on the next line and positioning the carriage to the beginning of a new line.

CHARACTER CODE SET COMMAND

This command allows a user to change the terminal's character code set. (This command works on terminal classes 1 through 8.) The command can be entered any time after the terminal identification part of login. The format is:

control CD=A ⓒⓡ ††

control — The terminal control character used in the terminal definition commands.

†The BREAK key is sometimes labeled INT, INTRPT, or ATTN.

††Spaces are included for clarity. They should be omitted when entering the command.

After entering the command, the user physically selects the character code set and enters one of the following:

) (CR)	For recognition of the character code set in use.
(CR)	For the ASCII character code set.

When the system recognizes the character code set, it issues two line feeds to indicate that the user can continue. If the system prints the message UNSUPPORTED CODE SET, the code set of the user's terminal is not supported at the site. A dial-up line is disconnected, and a leased (hardwired) line waits for user to reenter,) (CR) or (CR).

INTERRUPTION SEQUENCE FOR IAF

To interrupt an executing program or the listing of a file, the user enters the interruption character (user break 1) followed by (CR). This character can be found in table 1-1. If the system is transmitting output to the terminal when interruption is desired, the user may have to suspend the output before entering the interruption character. To do this, the user can press the BREAK key.† If the terminal does not have a BREAK key, the user would have to set the page wait before program execution, and enter the interruption sequence when page wait occurs. To continue after an interruption, the user can enter (CR) or P(CR). To terminate, the user can enter the termination sequence.

MESSAGE COMMAND

This command enables a user to send a message to the local operator. The format is:

control MS=message (CR) ††

control	Terminal control character used in terminal definition commands.
message	Message of no more than 76 characters (including spaces).

†The BREAK key is sometimes labeled INT, INTRPT, or ATTN.

††Spaces are included for clarity. They should be omitted when entering the command.

TERMINATION SEQUENCE FOR IAF

To terminate an executing program or a file listing, the user enters the termination character (user break 2) followed by ⓒⓡ. This character can be found in table 1-1. If the system is transmitting output when the user decides to terminate, the user may have to suspend the output before entering the termination character. To do this, the user can press the BREAK key.† If the terminal does not have a BREAK key, the user would have to set the page wait before program execution, and enter the termination sequence when page wait occurs.

TERMINATION SEQUENCE FOR RBF

To terminate refreshing the display, the user enters any RBF command, the interruption character (user break 1), or the termination character (user break 2), followed by ⓒⓡ. These characters can be found in table 1-1. The user starts display refreshing by entering the DISPLAY command. If refreshing the display is not in effect, the break character is ignored.

TERMINATION SEQUENCE FOR MCS

To switch a terminal from command mode to data mode, the user enters the termination character (user break 2) followed by a ⓒⓡ. To terminate output to the terminal, the user enters the interruption character (user break 1) followed by a ⓒⓡ. These characters can be found in table 1-1.

† The BREAK key is sometimes labeled INT, INTRPT, or ATTN.

INTERACTIVE FACILITY

PERMANENT FILE OPTIONS

The following parameters are options for various permanent file commands.

BR=br

Backup requirement of file. Use this parameter only on the CHANGE, DEFINE, or SAVE command.

br	Description
Y	Maintain backup copy. Default value.
M	Maintain backup copy unless file is on Mass Storage Facility.
N	Do not maintain backup copy.

CE

Clears error flag which had previously been set (used with CHANGE command).

CT=n

Category of permission for alternate users.

n
P, PR, or PRIVATE
S or SPRIV
PU or PUBLIC

M=m

File or user permission mode.

m
A or APPEND
E or EXECUTE
M or MODIFY
N or NULL
R or READ
RA or READAP
RM or READMD
W or WRITE

NA

No abort. If NA is specified, the job does not terminate as a result of an error. The error is handled in one of two ways:

- If the error condition is temporary, job processing is suspended until the error condition ends (for example, when a requested direct access file is busy, or a requested auxiliary device is not available). In a multimainframe environment, job processing is suspended until the error condition ends and the rollout delay time has elapsed.

- If the error condition is not temporary, the job continues with the next operation. The job processes the next file listed on the statement, or if no more files are listed, processes the next control statement.

ND

No drop; prevents release of current local files and converts the previous primary file to a nonprimary temporary file when OLD, NEW, or LIB command is entered.

PN=packnam

One- through seven-character pack name used in conjunction with R parameter to identify the auxiliary device to be accessed in the permanent file request.

PR=pr

Preferred residence of file.

pr	Description
M	Mass Storage Facility (MSF).
N	No preferred residence. Default value.

PW=passwrd

Password associated with permanent file.

For secure entry of password, user should specify PW with no option. The system then supplies a blacked-out area over which the user enters the password (if the terminal is capable of that function).

R=r

Type of device on which file resides or is to reside.

r	Device
DE	Extended core storage.
DIn	844-21 disk storage subsystem (half track) (1≤n≤8).
DJn	844-41 or 844-44 disk storage subsystem (half track) (1≤n≤8).
DKn	844-21 disk storage subsystem (full track) (1≤n≤8).
DLn	844-41 or 844-44 disk storage subsystem (full track) (1≤n≤8).
DMn	885 disk storage subsystem (half track) (1≤n≤3).
DP	Distributive data path to ECS.
DQn	885 disk storage subsystem (full track) (1≤n≤3).

n is number of units

RT

Real-time parameter used with ATTACH command. While direct access file is being moved from MSF to disk, user may enter commands. Refer to ATTACH command.

S=space

Amount of space in decimal PRUs wanted when defining a direct access permanent file.

SS=subsyst

Subsystem to be associated with the file. It can be specified on the SAVE or CHANGE command.

subsyst

NUL or NULL
BAS or BASIC
FTN or FTNTS
FOR or FORTRAN
EXE or EXECUTE
BAT or BATCH

Using just SS specifies that the current subsystem is to be associated with the file.

UN=usernum

User name. Permanent file resides on catalog of usernam.

IAF COMMANDS

ACCESS

Selects the access subsystem for validated users. ACCESS may be selected automatically by the system at login. This can be checked by entering the LIMITS command.

APL,TT=term,LO=lo,I=lfn$_1$,L=lfn$_2$,WS=lfn$_3$,
UN=usernam,PW=passwrd,MX=mmmm,MN=nnnn,NH

Selects the APL (A Programming Language) interactive interpreter. To take advantage of the full capabilities of APL (including the character set), use this command in conjunction with the CD network communication command.

To leave APL control enter:

)SYSTEM

The following parameters are optional.

TT=term — Specifies type of terminal being used. Default is TT=ASCAPL. The following are the term options.

ASCAPL	ASCII terminals with the APL character set.
ASCII	ASCII terminals without the APL character set.
BATCH	Local or remote batch ASCII 64-character set printers.
BIT	Bit-paired APL.
COR	Correspondence APL.
TTY33	Teletype model 33 or similar device.
TTY383	Teletype model 38.
TYPE	Typewriter-paired APL.
713	ASCII terminals without the APL character set (unlike TT=ASCII, lowercase letters are converted to upper case).

LO=lo — Lists options intended primarily for batch users of APL. If omitted or if LO=0, none of the options is selected. Up to three options can be selected, for example, LO=EPB.

E	Echo input.
P	Inhibit prompt.
B	Blank in first column of each output line.

I=lfn_1 — Specifies input is on file lfn_1. Default is I=INPUT.

L=lfn_2	Specifies output is to be written on file lfn_2. Default is L=OUTPUT. If L=0, no APL output is produced.
WS=lfn_3	Specifies file lfn_3 contains the active workspace. If omitted, a clear workspace is used.
UN=usernam	Specifies user name contains file lfn_3 (WS parameter). This parameter is required only if lfn_3 resides in another user's permanent file catalog.
PW=passwrd	Specifies password of the file lfn_3 (WS parameter). This parameter is required only if lfn_3 resides in another user's permanent file catalog and has a password.
MX=mmmm	Sets maximum field length to mmmm. If omitted, APL sets MX equal to 24576 (60000 octal) or the maximum for which the user is validated, whichever is less. mmmm is a decimal number unless octal is specified with the postradix B.
MN=nnnn	Sets minimum field length to nnnn. If omitted, APL selects an appropriate minimum field length. nnnn is a decimal number unless octal is specified with the postradix B.
NH	Suppresses printing of the header banner.

Refer to the APL Version 2 Reference Manual for further information.

APPEND,pfn,lfn_1,lfn_2,...,lfn_n/UN=usernum,
PW=passwrd,PN=packnam,R=r,NA

Appends local mass storage files lfn_i at the end of the specified indirect access permanent file pfn. Refer to Permanent File Options earlier in this section for parameter descriptions.

ASCII

Selects the ASCII 128-character set. The system may automatically select ASCII at login. This may be checked by entering the LIMITS command. Subsequent characters entered from the terminal will be translated into 6/12 display code. The standard character set contains 64 graphic characters (63 graphic characters is selected, if the site uses the 63-character set). For other than ASCII code terminals, this command provides the capability to use 128 characters of the character set available at those terminals.

ATTACH,lfn_1=pfn_1,lfn_2=pfn_2,...,lfn_n=pfn_n/M=m,
UN=usernum,PW=passwrd,PN=packnam,R=r,NA,RT

Establishes a link to permanent file pfn_i for direct access usage. If the M=m parameter is omitted, the system assumes M=R permission.

If RT parameter is used and pfn_i is on MSF, the file is copied to disk. Another ATTACH is needed to access the files. If pfn_i is already on disk, it is attached.

AUTO,nnnnn,iiii

Directs IAF to generate five-digit line numbers automatically. The nnnnn parameter specifies the beginning line number (default is 00100); iiii specifies the increment value added for each succeeding line number (default is 10). The cancel input line sequence followed by any IAF command terminates AUTO mode.

BASIC,ccc

Selects the BASIC subsystem.† The optional ccc parameter enables the user to specify an additional command.

BATCH,nnnnn

Selects the batch subsystem.† The nnnnn parameter specifies the maximum field length in octal central memory words, needed to enter control statements.

†The system may automatically select the subsystem at login. This can be checked by entering the LIMITS command.

BEGIN,pname,pfile,p_1,p_2,...,p_n
or
-pname,pfile, p_1,p_2,...,p_n

Initiates processing of CCL procedure pname.

pname — Name of procedure; default is next procedure on pfile.

pfile — Name of file on which procedure is located; default is PROCFIL.

p_i — Optional parameter specifying substitution to be made for a keyword in the procedure. Parameter formats are:

value	A 1- through 40-character value; can be null. Nonalphanumeric characters must be placed within $ delimiters.
keyword	Same keyword used in the related parameter on procedure header statement.
keyword=	Null substitution for keyword in procedure header statement.
keyword=value	Value is substituted for keyword in procedure header statement.

BRIEF

Suppresses all full and partial headers, such as those issued by the LIST or RUN command.

BYE,application

Logs user out of IAF and connects user to specified application. If

BYE

is specified, disconnects the terminal; if

BYE,

is specified, asks the user to enter an application.

CALL,lfn,C,S=ccc(oldnam$_1$=newnam$_1$,
oldnam$_2$=newnam$_2$,...,oldnam$_n$=newnam$_n$)

Initiates processing of KCL† procedure file lfn.

C	Replaces the control statement record after the CALL command with lfn (optional).
S=ccc	Specifies control language statement or statement label ccc as first statement to be processed in procedure file (optional).
oldnam=newnam	For each occurrence of oldnam in the procedure file, substitute newnam (optional).

CATLIST,LO=options,FN=pfn,UN=usernam,PN=packnam,
R=r,DN=dn,NA,L=lfn

Selects a listing of specific information about user's permanent files or the permanent files that can be accessed in catalogs of alternate users. Refer to Permanent File Options earlier in this section for additional parameter descriptions.

LO=0	Selects a short alphabetical list that gives only the names of files in user's catalog. An asterisk (*) preceding a file name indicates an error flag is set in the catalog entry for the file. Default value.
LO=F	Selects for listing information about each file in user's catalog.

† This refers to the control language available under NOS prior to the introduction of CCL (refer to NOS Reference Manual, Volume 1).

LO=FP — Selects listing of access permissions granted for file specified (FN=pfn). If UN=usernam is specified, file permission granted to that user is listed.

LO=P — Selects a short list that gives only the user names of alternate users who accessed a specified private or semiprivate permanent file. This parameter requires that a file name be specified (FN=pfn).

FN=pfn — Selects catalog information only for permanent file pfn. This parameter is required when the user wants permit information (LO=FP, LO=P). If pfn contains an asterisk, information on a subset of files is listed. For example, FN=***JOB lists information on all of the user's six-character file names that end in JOB, and FN=SL***** lists information on all of the user's file names that start with SL. The asterisk is not valid with LO=FP or LO=P.

DN=dn — The device number (1 through 77) specified is searched for files that are specified by the CATLIST command parameters.

L=lfn — Specifies name of local file (lfn) to which CATLIST information is written. If L=lfn is omitted, information is returned to the terminal.

CHANGE,nfn_1=ofn_1,nfn_2=ofn_2,...,nfn_n= ofn_n/
PW=passwrd, CT=n,M=m,BR=br,PR=pr,SS=subsyst,
PN=packnam,R=r,NA,CE

Allows the originator of a permanent file to change any of several parameters without having to attach and redefine the file or retrieve and save it. The nfn_i option specifies the new file name to be assigned; ofn_i is the current file name. If file name is to remain the same, only ofn_i is specified. Refer to Permanent File Options earlier in this section for parameter descriptions.

CHARGE,chargeno,projectno

Allows user to specify a valid charge number (chargeno) and project number (projectno) to be billed for subsequent terminal operations.

For greater security, the user can enter the CHARGE command with no parameters. The system requests the charge number and supplies a blacked-out area over which the user enters the charge number (if the terminal is capable of this function). It then responds in the same manner for project number.

CLEAR
or
CLEAR,*

Releases all local files. In a CCL procedure, CLEAR releases all local files except the CCL work files.

CLEAR,*,lfn_1,lfn_2,...,lfn_n

Releases all local files except lfn_i. In a CCL procedure, the CCL work files are not released.

CONVERT,p_1,p_2,...,p_n

Converts input from one character set to another.

p_i Any of the following, in any order.

p_i	Description
P=lfn_1	Input on file lfn_1; if P=lfn_1 is omitted, file OLD is assumed.
N=lfn_2	Output on file lfn_2; if N=lfn_2 is omitted, file NEW is assumed.
RS=n	Maximum record size in characters, where n is from 1 through 500. If RS=n is omitted, assumed maximum record size is 300 characters.
64	Converts 63-character set to 64-character set. If 64 is omitted, no 63- to 64-character set conversion takes place. (TS must be specified if 64 is not.)

p_i	Description
TS=t	Converts old time-sharing record (61-character set) to new time-sharing record (63-character set).† t may be one of the following terminal types.

t	Terminal Type
TTY	ASCII code terminal with standard print.
COR	Correspondence terminal with standard print.
CORAPL	Correspondence terminal with APL print.
MEMAPL	Memorex 1240 (ASCII code) terminal with APL print.
NAMIAF	Virtual network terminal.

If t is omitted, it is assumed to be NAMIAF. If TS is omitted, no time-sharing conversion takes place (64 must be specified if TS is not).

R	Rewinds input and output files prior to processing. If R is omitted, no rewinding occurs.
RC=n	Converts n decimal records. If n is omitted, converts until an EOF is encountered. If RC=n is omitted, converts one record.
NM	Used in conjunction with TS parameter and specifies that conversion is to normal mode; if NM is omitted, conversion is to ASCII mode. Conversion has the indicated effect on the following characters.

† Old time-sharing character set refers to the 61-character set used by preceding systems (for example, early versions of KRONOS 2.1).

^ (circumflex)

If TS is specified, display code 70 (circumflex character) is converted to 76. If NM is omitted, conversion is to 7402 (ASCII mode).

: (colon)

If TS and 64 are specified, display code 63 (colon character) is converted to 00. If NM is omitted, conversion is to 7404 (ASCII mode).

(CR)

Requests an abbreviated terminal status if entered in the first character position of the line.

If a command is currently active, enter the cS (c is the terminal control character) command to obtain an immediate abbreviated job status response (refer to cS command).

When output has stopped on a page boundary (refer to terminal definition commands PL and PG), (CR) sends the next page of output to the terminal and does not give a status response.

CSET,c

Selects c as the terminal character-set mode. To determine which terminal characteristic set the system initially assigns, enter the LIMITS command.

c	Description
ASCII	Selects ASCII 128-character set.
NORMAL	Selects ASCII graphic 64-character set or 63 graphic characters, if the 63-character set is being used at the site.

DAYFILE,L=lfn,FR=string,OP=op,PD=pd,PL=pl,I=infile
or
DAYFILE,lfn,string,op,pd,pl,infile

Lists the system's record of the user's time-sharing activity. Parameters are order independent in first command format and order dependent in second command format.

L=lfn — Specifies file on which the dayfile is to be written. If L=lfn is omitted, output is returned to the terminal.

FR=string — Specifies the literal string to be searched for in the dayfile. If the string contains any characters other than letters and numbers, including leading and embedded blanks, it must be enclosed by $ delimiters. If the string contains a $, that $ must be replaced with $$. IAF commands in the dayfile are preceded by a $. This $ must be replaced by $$ and be enclosed by $ delimiters. (For example, $OLD is specified by $$$OLD$.) The first character of the literal string requested must always be the first character of the field specified by the OP parameter (for example, the first character of the time field is a space). The portion of the dayfile from the last occurrence of the requested literal string to the end of the dayfile is returned to the terminal.

OP=op — Specifies the starting field position within the output line; op can be one of the following.

- T — Searches the beginning of the time field for a matching string.
- M — Searches the beginning of the message field for a matching string.
- I — Lists the dayfile from the last occurrence of the message USER DAYFILE DUMPED. If OP=I, the FR=string parameter cannot be specified.

F Lists the entire dayfile if the FR=string parameter is not specified; searches the beginning of the message field if the FR=string parameter is specified.

If the OP=op parameter is omitted and the FR=string parameter is specified, OP=M is assumed. If the OP and FR parameters are omitted, OP=F is assumed.

PD=pd Specifies the print density in pd lines per inch (3, 4, 6, or 8). Default is PD=6.

PL=pl Specifies the page length in lines per page. Default is 30 if pd option is 3, 40 if pd is 4, 60 if pd is 6, and 80 if pd is 8.

I=infile Specifies that local file infile contains a copy of a dayfile and is to be used for input instead of the system dayfile. Default is the system dayfile.

DEBUG,parameter

Activates, terminates, or resumes CYBER Interactive Debug.

Parameter	Description
ON	Activates debug mode.
OFF	Terminates debug mode.
RESUME	Resumes debug session.

If parameter is omitted, ON is assumed.

DEFINE,lfn_1=pfn_1,lfn_2=pfn_2,...,lfn_n=pfn_n/
PW=passwrd,CT=n,M=m,BR=br,PR=pr,PN=packnam,R=r,
S=space,NA

Allows a validated user to create a direct access permanent file (pfn_i) and attach it in write mode. If the optional parameters are omitted, the system assumes the following default values. Refer to Permanent File Options earlier in this section for parameter descriptions.

PW No password.

CT Private file.

M Write mode.

BR Maintain a backup copy.

PR No preferred residence.

PN File placed on device specified by last PACKNAM command. If a device was not specified, the file is placed on the default family device.

R, S File placed on device with most space available.

DIAL,nnnn,sss

Sends one-line message sss to the terminal specified by terminal number nnnn. DIAL command can be used only by a validated user under the access subsystem.

cE

Requests the current job status. It is processed immediately and can be entered during program execution. c is the current terminal control character.

The system responds:

```
TERMINAL:   nnn,NAMIAF
SYSTEM:     subsys
FILE NAME:  fname
STATUS:     status
MESSAGE:    message
```

nnn Terminal number.

subsys Subsystem currently active.

fname Primary file name.

status Current job status:

IDLE

No job being processed.

EXECUTE

User job being processed.

WAIT

User job waiting for computer resources to become available.

message — For EXECUTE or WAIT status, the current job status message is printed. For IDLE status, the system issues no message.

EDIT,FN=lfn$_1$,M=m,I=lfn$_2$,L=lfn$_3$
or
EDIT,lfn$_1$,m,lfn$_2$,lfn$_3$

Selects Text Editor (refer to Text Editor Commands in this section). Parameters are order independent in first command format and order dependent in second command format. To edit a multirecord file, XEDIT must be used. Refer to XEDIT command.

FN=lfn$_1$ — Specifies the name of an existing local file to be edited or a new local file name. If FN=lfn$_1$ is omitted, the primary file is assumed.

M=m — Selects mode of file processing.

ASCII or AS

ASCII mode edit file.

NORMAL or N

Normal mode edit file.

If M=m is omitted, mode in effect is assumed.

I=lfn$_2$ — Specifies file from which EDIT commands are to be read; if I=lfn$_2$ is omitted, commands are entered from the terminal.

L=lfn$_3$ — Specifies file on which output is to be written; if L=lfn$_3$ is omitted, output is returned to the terminal.

ENQUIRE

Requests the current terminal status. If a command is currently active, enter the cE command to obtain an immediate job status response (refer to the cE command).

The system responds:

```
TERMINAL:    nnn,NAMIAF
SYSTEM:      subsys
FILE NAME:   fname
STATUS:      IDLE
MESSAGE:
```

nnn — Terminal number.

subsys — Subsystem currently active.

fname — Primary file name.

ENQUIRE,OP=$p_1p_2...p_n$,JN=ccc,O=lfn$_1$,FN=lfn$_2$
or
ENQUIRE,$p_1p_2...p_n$

Allows the user to obtain information on terminal and job status. Information returned depends on the parameters selected.

OP=p_i — Specifies any of the following options. Up to seven options can be specified (for example, ENQUIRE, BDF).

p_i	Description
A	Selects all options (except S and T).
B	Requests user identification and job information.
D	Requests user's resource demand information (tape units and disk packs).
F	Requests status of user's local files.

p_i	Description
J	Requests contents of user control registers, error flag fields, and succeeding control statements in the procedure file.
L	Requests loader information.
R	Requests amount of system resources used, with each resource listed separately.
S	Requests amount of system resources used, in SRUs.
T	Requests accumulated CPU time for this session.
U	Requests resource usage for the user name specified at login.

JN=ccc Requests status of a job or file currently in a system queue (for example, a remote job initiated with the SUBMIT command). Option ccc is the last three characters of the name the system assigns to the job. If the =ccc is omitted, the status of all jobs or files in the system queues under the current user name is returned.

O=lfn_1 Specifies file to which ENQUIRE information is written; output is returned to terminal by default.

FN=lfn_2 Requests same information as OP=F parameter but only for file lfn_2. lfn_2 must be a local file.

EXECUTE,ccc

Selects the execute subsystem. The optional ccc parameter enables the user to specify an additional command. The execute subsystem is used only to execute a previously compiled (object code) program. The RUN (or RNH) command must be entered to initiate execution. The system may automatically select EXECUTE at login. This can be checked by entering the LIMITS command.

FORTRAN,ccc

Selects the FORTRAN subsystem,† which uses the FORTRAN version 5 compiler. The optional ccc parameter enables the user to specify an additional command.

FTNTS,ccc

Selects the FTNTS subsystem,† which uses the FORTRAN Extended version 4 compiler. The optional ccc parameter enables the user to specify an additional command.

GET,lfn_1=pfn_1,lfn_2=pfn_2,...,lfn_n=pfn_n/
UN=usernum,PW=passwrd,PN=packnam,R=r,NA

Retrieves a copy of the specified permanent file (pfn_i) for use as a temporary file (lfn_i). Used only for indirect access permanent files.

GOODBYE,application

Same as BYE command.

HELLO,application

Logs user out of IAF and connects user to application. If just

HELLO

is specified, reinitiates the login sequence; if

HELLO,

is specified, reissues the request for entry of an application.

† The system may automatically select this subsystem at login. This can be checked by entering the LIMITS command.

HELP

Allows the user to get descriptions of the IAF commands.

LENGTH,lfn

Requests the file name, file length in physical record units (PRUs), file type, and last status of the local file specified by lfn. If lfn is omitted, the primary file is assumed.

LIB,lfn=pfn/PW=passwrd,PN=packnam,R=r,NA,ND

Retrieves a copy of the specified permanent file (indirect access only) from the catalog of special user name LIBRARY. File selected becomes the new primary file, and all current local files are released unless ND keyword is included (previous primary file becomes a nonprimary temporary file). Refer to Permanent File Options earlier in this section for parameter descriptions. If just LIB is entered, the system asks for pfn with the following prompt.

FILE NAME:

Indirect access files in the catalog of user name LIBRARY can also be accessed with the following commands.

GET,lfn=pfn/UN=LIBRARY...

OLD,lfn=pfn/UN=LIBRARY...

Direct access permanent files in the catalog of user name LIBRARY can be accessed via the following command.

ATTACH,lfn=pfn/UN=LIBRARY...

LIMITS

Provides a listing of the user's current validation limits. Validation limits are system controls that govern the use of certain system resources and establish initial operating characteristics for the terminal.

The values for each field indicate a limit or specific quantity for which the user is validated. All numerical values listed are decimal unless the postradix B appears. For a complete description, refer to the IAF Reference Manual.

Field	Description
AB	No meaning for an IAF user.
MT	Magnetic tape units.
RP	Auxiliary devices concurrently assigned.
TL	Central processor time in seconds for job step.
CM	Central memory words (job's field length).
NF	Number of local files assigned to the job.
DB	Active deferred batch jobs.
FC	Permanent files.
CS	PRUs for indirect access files.
FS	PRUs for any one indirect access file.
TC	Initial terminal character set.
IS	Initial subsystem for terminal.
MS	Mass storage PRUs additionally allocatable to user's job.
DF	Number of dayfile messages allowed.
CC	Processed batch control statements.
OF	Print and punch files sent to output queues.
CP	Cards to be punched from punch file.
LP	Lines to be printed from print file.
PT	Plot file units.
EC	Extended core storage (ECS) words.
SL	SRUs per job.
CN	Not currently used by the system.

Field	Description
PN	Not currently used by the system.
DS	PRUs for any one direct access file.
AW	Access word; the octal value listed corresponds to the following access options (bit 0 is option 0, bit 1 is option 1,...,).

Option	Description
0	User can change password.
1	Use of access subsystem.
2	Create direct access files.
3	Create indirect access files.
4	Has system origin status from any job origin if system console is in debug mode.
5	Access/create library files.
6	Assign nonallocatable devices.
7	Access system without supplying charge and project numbers.
8	Create and/or replace files on auxiliary devices.
9	Access special transaction functions.
10	Terminal has no-timeout status.
11	Use of system control point (SCP) facility.
12	Special accounting privileges.
13	Special batch job privileges.
14	Use of PROTECT statements.
15-23	Not used. Reserved.
24	Access IAF.
25	Access RBF.

Option	Description
26	Access TAF.
27	Access MCS.
28	Access TVF.

Bits 29 through 47 may also be set to indicate that the user is validated to access additional applications.

Example: If the access word listed is:

AW=0000000000000040215

the user is validated for options 0,2,3,7, and 14, as shown in the following:

```
      AW=   4  0  2  1  5
           10000001000 1101
options= 14     7   32 0
```

LIST,lnum,R
or
LIST,F=lfn

Lists the contents of the current primary file unless the F=lfn parameter is specified. List includes header information (specifies date, time, and file name) unless the user is in the batch subsystem or brief mode is in effect (refer to BRIEF command).

lnum — Specifies line number where listing is to begin. Parameter is optional and valid only if the primary file is being listed. File should be sorted for correct results (performed automatically unless the R parameter is specified or LIST is preceded by NOSORT command).

R — Indicates end-of-record (EOR) and end-of-file (EOF) marks, if present, on output listing. Cannot be used if F=lfn is specified. If omitted, EOR and EOF marks are not printed.

F=lfn — Lists local file lfn. If F=lfn is specified, neither the lnum nor the R parameter can be supplied. File lfn is listed from current position to end-of-information (EOI). If F=lfn is omitted, the primary file is listed.

LNH,lnum,R
or
LNH,F=lfn

Optional form of the LIST command in which listing does not include header information. Uses same parameters as LIST.

LOGIN,application

Same as HELLO command.

LOGOUT,application

Same as BYE command.

NEW,lfn/ND

Allows the user to create a new primary file named lfn. All current local files are released unless the ND keyword is specified (the previous primary file becomes a nonprimary temporary file). If just NEW is entered, the system releases all current local files and requests the lfn with the prompt:

FILE NAME:

NORMAL

Clears modes established by ASCII, AUTO, BRIEF, CSET, and NOSORT commands. Selects the ASCII graphic 64-character set or the 63 graphic characters, if the 63-charcter set is being used at the site.

NOSORT

Prevents system from automatically sorting the primary file when succeeding EDIT, LENGTH, LIST, LNH, REPLACE, RNH, RUN, SAVE, SUBMIT, or XEDIT command is entered.

NULL

Selects the null subsystem. This command is typically entered when performing time-sharing operations that do not need subsystem association. The system may automatically select NULL at login. This can be checked by entering the LIMITS command.

OLD,lfn=pfn/UN=usernam,PW=passwrd,PN=packnam,R=r,
NA,ND

Retrieves a copy of the specified permanent file (indirect access only). This file becomes the new primary file, and all current local files are released unless ND keyword is included (previous primary file becomes a nonprimary temporary file). If a specific subsystem is associated with the file, it is selected automatically. If just OLD is entered, the system releases all current local files and requests the pfn with the prompt.

FILE NAME:

Refer to Permanent File Options earlier in this section for parameter descriptions.

P (CR)

Proceed. Entered after interruption character. If the program is transmitting output to the terminal when suspended, the system discards the data generated by the program which had not been sent to the terminal before the user interrupted it. The amount of output discarded depends on the program being executed. Program execution continues.

PACK,lfn_1,lfn_2,NR

Compresses a file consisting of several logical records into one logical record. This command may be entered in one of the four following formats.

PACK

Packs the primary file into one logical record.

PACK,lfn

Rewinds and packs local file lfn into one logical record. File lfn is rewound again after the pack.

PACK,lfn_1,lfn_2

Rewinds and packs local file lfn_1 into one logical record and writes that file at the current position in lfn_2. File lfn_2 is rewound after the pack; lfn_1 is not.

PACK,lfn_1,lfn_2,NR

Same as preceding format except that no rewind (NR) parameter inhibits file lfn_1 from being rewound before the pack, unless it is the primary file.

PACKNAM,PN=packnam
or
PACKNAM,packnam

Enables validated user to direct subsequent permanent file requests to auxiliary device specified by the PN parameter. To access normal family devices again, PN parameter must be set to zero as follows:

PACKNAM
or
PACKNAM,PN=0

PASSWOR,oldpswd,newpswd

Allows validated users to change their password. Both the current password (oldpswd) and the new password (newpswd) must be specified.

For greater security, the user can enter PASSWOR without parameters. The system requests the old password and supplies blacked-out characters (if the terminal is capable of this function) over which the user enters the old password. It then responds in the same manner for the new password.

PERMIT,pfn,$usernam_1$=m_1,$usernam_2$=m_2,...,
$usernam_n$=m_n/PN=packnam,R=r,NA

Grants $usernam_i$ permission to access private or semiprivate file pfn. If the permission mode (m_i) is omitted, the system assumes read-only permission. Refer to Permanent File Options earlier in this section for parameter descriptions.

PRIMARY,lfn

Makes temporary file lfn the new primary file while the previous primary file becomes a nonprimary temporary file. All other local files are retained.

PURGE,pfn_1,pfn_2,...,pfn_n/UN=usernam,PW=passwrd,
PN=packnam,R=r,NA

Removes the specified permanent files (pfn_i) from permanent file storage. Local assignment of the file is not affected. †

RECOVER,nnnn

Allows user to resume processing after terminal nnnn was disconnected from the system. This command is valid only when responding to RECOVER/SYSTEM or RECOVER/CHARGE request during login sequence.

RENAME,$nlfn_1$=$olfn_1$,$nlfn_2$=$olfn_2$,...,$nlfn_n$=$olfn_n$

Changes the name of local file $olfn_i$ to $nlfn_i$. If file $nlfn_i$ currently exists, it is released.

REPLACE,lfn_1=pfn_1,lfn_2=pfn_2,...,lfn_n=pfn_n/
UN=usernam,PW=passwrd,PN=packnam,R=r,NA

Allows validated users to replace the contents of a permanent file (pfn_i) with the contents of a local file (lfn_i). If file pfn_i does not exist, a new permanent file is created. Used only for indirect access permanent files. †

RESEQ,nnnnn,iiii,t

Allows user to resequence or add line numbers to the current primary file.

nnnnn	New line number of the first statement. Default is 00100.
iiii	Increment to be added to nnnnn for subsequent lines. Default is 10.

† Refer to Permanent File Options earlier in this section for parameter descriptions.

t Type of file to be resequenced.

B Files with BASIC source code. Default value if the user is in the BASIC subsystem.

T Text files; line number is added to each line of file.

other Existing line numbers are resequenced; line numbers are added where none exist. Default value for all subsystems other than BASIC.

RETURN,lfn_1,lfn_2,...,lfn_n

Releases local files lfn_1,...,lfn_n.

RETURN,*

Releases all local files. In a CCL procedure RETURN,* releases all local files except the CCL work files.

RETURN,*,lfn_1,lfn_2,...,lfn_n

Releases all local files except lfn_1,...,lfn_n. In a CCL procedure, the CCL work files are not released.

REWIND,lfn_1,lfn_2,...,lfn_n

Positions local files lfn_1,...,lfn_n at beginning-of-information (BOI).

REWIND,*

Positions all local files at BOI.

REWIND,*,lfn_1,lfn_2,...,lfn_n

Positions all local files except lfn_1,...,lfn_n at BOI.

RNH,parameters

Optional form of the RUN command in which output listings do not include header information. Refer to the RUN command for parameter descriptions.

RUN,parameters

Compiles and/or initiates execution of the primary file or another local file. One or more of the following parameters can be supplied with the RUN command.

B=lfn or C=lfn	Compiles the source program and writes the resultant binary to local file lfn.
I=lfn	Compiles and/or initiates execution of local file lfn. No compilation occurs under execute subsystem.
MA=nnnnn	Uses nnnnn as the octal field length for the current program execution.
MI=nnnnn	Adds nnnnn (octal) to the program or system default field length.
$T,q_1,q_2,\ldots,q_n$	This command is used only when running an object code FORTRAN program under the execute subsystem. Parameters q_i specify new local file names to be used in place of those that currently exist in the PROGRAM statement.

S,nnnnn

Increases the SRU limit by nnnnn (number of decimal units). When a job step exceeds its SRU limit, this response is required to continue job execution. If nnnnn is omitted, a default increment is used. Entering S,* increases the SRU limit to the maximum for which the user is validated. Entering (CR) alone allows the job to enter normal abort procedures. Entering the termination sequence (user break 2) terminates the job step.

cS

Requests an abbreviated job status response. c is the current terminal control character.

The possible responses include:

IDLE	No command being processed.
EXECUTE	Command being processed.
WAIT	Command waiting for system resources to become available.

SAVE,lfn_1=pfn_1,lfn_2=pfn_2,...,lfn_n=pfn_n/PW=passwrd,
CT=n,M=m,SS=subsyst,BR=br,PN=packnam,R=r,NA

Allows a validated user to retain a copy of the specified local file (lfn_i) in the permanent file system. This command is used only to create indirect access permanent files. If a subsystem other than NULL is active when the primary file is saved, or if a subsystem is specified using the SS parameter, that subsystem becomes associated with the permanent file (pfn_i). It is then selected automatically when the file is retrieved as a primary file or when the lfn on a GET command is the current primary file. Refer to Permanent File Options earlier in this section for parameter descriptions. If the optional parameters are omitted, the system assumes the following default values.

PW	No password.
CT	Private file.
M	Write mode.
SS	Current subsystem when lfn_i is the primary file; NULL subsystem when lfn_i is not the primary file.
BR	Maintain a backup copy.
PN	File placed on device specified by last PACKNAM command. If no device has been specified, file is placed on the default family pack.

SETASL,nnnnn

Sets SRU account block limit; allows the user to specify an SRU limit (nnnnn decimal units†) for all operations prior to logout or entry of another CHARGE command. Entering SETASL,* increases the SRU limit to the maximum for which the user is validated.

SETJSL,nnnnn

Sets SRU job step limit; allows the user to specify an SRU limit (nnnnn decimal units†) for each individual subsequent operation (job step). Entering SETJSL,* increases the SRU limit to the maximum for which the user is validated.

SETTL,nnnnn

Sets time limit (nnnnn decimal seconds†) for all subsequent operations requiring the central processor.

SORT

Forces sorting of the current primary file when the next command is entered that may read the primary file.

SORT,lfn,NC=n

Sorts local file lfn by arranging statements in order using the first n digits of the line number (where n is any number from 1 through 10). If NC=n is omitted, sort is performed using first five digits of line number.

STATUS

Same as ENQUIRE command.

SUBMIT,lfn,q,NR.c

Allows a validated user to submit a batch job deck image to the local batch queue as a deferred batch job. This remote job entry capability also provides reformatting directives to aid the user in preparing his job.

lfn Name of file to be submitted for processing as a deferred batch job. If lfn is omitted, the current primary file is used.

† To enter octal units, use nnnnnB.

q Disposition of job's dayfile and special output files (OUTPUT, PUNCH, PUNCHB, and P8) as follows:

B Job is processed as a local batch job, and the job's dayfile and special output files are printed or punched at the central site.

N Job is processed as a local batch job. Job's dayfile and special output files are not printed or punched unless they are explicitly routed. The default is N.

E Job is processed as a remote batch job, and the job's dayfile and special output files are queued for printing or punching at a remote batch terminal.

NR No rewind; inhibits rewind of file specified by reformatting directive cREAD. If NR is omitted, file is automatically rewound.

c Escape character used to identify reformatting directives in the file to be submitted (lfn). If c is omitted, the system assumes c=/.

Directive	Description
cJOB	Indicate reformatting of the submit file. Must be the first line of the submit file. The next two lines must be a job and USER statement. If cJOB is omitted, the submit file is not reformatted.
cEOR	Write an EOR mark.
cEOF	Write an EOF mark.
cSEQ	Remove line numbers from subsequent lines (default value).
cNOSEQ	Reverse effect of cSEQ; does not remove leading line numbers from subsequent lines.

Directive	Description
cPACK	Remove succeeding internal EOR and EOF marks (default value). cEOR and cEOF reformatting directives are not affected.
cNOPACK	Reverse effect of cPACK. Does not discard internal EOR and EOF marks.
cTRANS	Process all reformatting directives following this directive until the first line that does not contain a reformatting directive is encountered. This selects transparent submit mode whereby all subsequent reformatting directives are ignored until an internal EOR or EOF mark is encountered. Directives are then processed again until the first line not containing a directive is encountered. This causes transparent submit mode to be reset unless a cNOTRANS directive is encountered. The cPACK or cNOPACK directive remains in effect during transparent submit mode; cSEQ or cNOSEQ does not.
cNOTRANS	Reverse effect of cTRANS directive. Examine submit file on a line-by-line basis (default value).
cREAD,lfn	Read file lfn and insert it in place of cREAD directive in the submit file. An EOF or EOI terminates reading of lfn. If lfn is omitted, file TAPE1 is assumed.
cREWIND,lfn	Rewind file lfn (specified in cREAD directive) to BOI. If lfn is omitted, file TAPE1 is assumed.
c_1EC=c_2	Change escape code character from c_1 (current escape code) to c_2 (new escape code).

SUMMARY
or
SUMMARY,OP=$p_1p_2...p_n$,JN=ccc,O=lfn_1,FN=lfn_2

Same as ENQUIRE command, except the default lists the resources used during the session.

T,nnnnn

Increases the central processor time limit by nnnnn (number of decimal seconds). To enter octal units, use nnnnnB. When a job step exceeds its time limit, this response is required to continue job execution. If nnnnn is omitted, a default increment is used. Entering T,* increases the time limit to the maximum for which the user is validated. Entering ⓒⓡ alone allows the job to enter normal abort procedures. Entering the termination sequence (user break 2) terminates the job step.

TEXT

Selects text mode. To terminate text mode, enter the termination sequence or the end-of-text (ETX) character as the only input on a line.

TIMEOUT

Changes terminal in no-timeout status (terminal remains connected to system until user logs out) to standard timeout status (user is automatically logged out if terminal is inactive for 10 minutes). The effects of this command cannot be reversed. Also, this command is effective only if user is validated for no-timeout status (refer to the Interactive Facility for additional information).

TRMDEF,L=lfn,$tc_1=v_1,...,tc_n=v_n$†

Changes one or more terminal characteristics.

L=lfn — Specifies the file where the redefinition information is written. If L=lfn is omitted, L=OUTPUT is assumed.

tc_i — Terminal characteristic specified by a two-character mnemonic listed in table 1-1.

†Terminal characteristic (tc) cannot be DL. If tc is IN, the values XK, XP, and X cannot be used for v.

v_i New value of the terminal characteristic listed in table 1-1. It can be given in any of the following formats.

v	Any alphanumeric character. (Display code 0 through 44_8.)
v	Any character including special characters, delimited by dollar signs (for example, $*$). If $ is to be used enter $$$$.
vvvB	Octal value of an ASCII character (for example, 052B, which is equivalent to $*$).
Xvv	Hexadecimal value of an ASCII character (for example, X2A, which is equivalent to $*$).

USER,usernam

Allows a validated user in the access subsystem to determine the terminal number(s) to which a specified user (usernam) is currently connected.

X,cccccccc

Allows user to force the system to process a valid time-sharing command (cccccccc) as a batch control statement. This command can be entered from any subsystem.

XEDIT,lfn_1,p_1,p_2,..,p_n.dcs

Selects XEDIT. Refer to XEDIT Commands in this section.

lfn_1	Name of local or permanent file to be edited (default is primary file). If lfn is omitted, the commas which would precede and follow lfn must be included.
dcs	Optional delimited command sequence that is processed before XEDIT takes commands from file INPUT or file lfn_2.

p_i One or more of the following optional parameters.

p_i	Description
AS	Process the file in ASCII mode. Upon exiting XEDIT, the terminal is returned to the mode in effect before the editing session. The default is the mode in effect before the user enters XEDIT.
B	Process the job as a batch origin job.
C	Create new file lfn_1.
FR	Take first editing command from first line of file lfn_1.
I=lfn_2	Take editing commands from file lfn_2. If I=0, commands are taken from dcs field. If I=lfn_2 is omitted, file INPUT is assumed.
L=lfn_3	Place XEDIT output on file lfn_3. If L=0, no output is generated. Default is L=OUTPUT.
NH	Suppress printing of the XEDIT header.
P	Retrieve and edit permanent file lfn_1.

PAPER TAPE INPUT FORMATS

Program mode — User ends each program line with:

RETURN, LINE FEED, RUBOUT, RUBOUT, RUBOUT

Command mode — User ends each command line with:

RETURN, LINE FEED, CTRL/X-OFF, RUBOUT, RUBOUT, RUBOUT

Data mode

User ends each data line with:

RETURN, LINE FEED, CTRL/X-OFF, RUBOUT, RUBOUT, RUBOUT

Input device

User can change to paper tape reader by entering:

control IN=PT
or
TRMDEF,IN=PT

User can change back to keyboard by entering:

control IN=KB
or
TRMDEF,IN=KB

Output device

User can change to paper tape punch by entering:

control OP=PT
or
TRMDEF,OP=PT

User can change back to printer by entering:

control OP=PR
or
TRMDEF,OP=PR

control — Control character in table 1-1.

TEXT EDITOR (EDIT) COMMANDS

Refer to Job Processing Commands in this section for information on how to call Text Editor (refer to EDIT).

EDIT COMMAND WORDS

ADD(S) or A(S)

Adds new data after the specified position. User enters new data in response to ENTER TEXT request.

ALIGN or AL

Eliminates extraneous blanks from the edit file while retaining the structural integrity of words, sentences, and paragraphs.

BLANK(S) or B(S)

Replaces a specified string, line, or set of lines with blank characters. Unlike the DELETE command, the BLANK command does not relocate text.

CHANGE(S) or C(S)

Specifies position(s) in the edit file of data that is to be replaced by new data. Length of new data is independent of length of data it replaces. New data is entered in response to ENTER TEXT request.

CLEAR or CL

Removes all data from the string buffer. If this is not done, information from subsequent EXTRACT operations is appended to the information from previous EXTRACT operations.

DEFTAB or DT

Defines the single tab character that is later used (when responding to an ENTER TEXT request) to cause blank fill to the next tab stop.

DELETE(S) or D(S)

Erases one or more occurrences of a particular string of characters, one or more lines containing a particular string of characters, or one or more entire lines. The text is realigned, leaving no excess blanks.

END

Terminates text editing and returns control to the subsystem currently in use.

EXTRACT or E(S)

Copies information from the edit file into the string buffer. The contents of the edit file are not affected.

FIND(S) or F(S)

Locates and lists the specified lines or the last line of n lines that contain a specified string in the edit file. Advances the pointer to the line printed.

INSERTS or IS

Inserts new data into the edit file at a place specified by the user. Data to be inserted is embedded within the command.

LENGTH

Resets the dimensions of the edit file by limiting the number of lines on which other edit commands can operate and also resets the search pointer to the first line.

LINE or LN

Provides message indicating current position of the search pointer.

LIST or L

Provides listing of all or selected portions of the edit file.

LISTAB or LT

Provides listing of the tab stops specified in the most recent TAB command.

MERGE or M

Causes the contents of a specified file (local or permanent) to be merged into the edit file.

NUMBER(S) or N(S)

Provides a count of lines in a file or a count of lines containing a specified string of characters. Count begins at current position of search pointer.

RESET or R

Resets the search pointer to beginning of the edit file.

RS

Replaces data already present in the edit file with new data. This command is similar to the CHANGE command except that only string replacements can be performed and replacement data is embedded in the command.

SET or S

Moves the search pointer the specified distance forward or backward in the edit file. Also locates and advances search pointer forward to line containing specified string.

STOP

Terminates text editing and does not protect edit file contents; output files can be lost.

TAB or T

Sets tab stops at specified print columns. Default column numbers are 11, 18, 30, 40, and 50.

WIDTH or W

Defines the maximum number of character columns that can be contained in a single line of the edit file. This command is effective only when followed by the ALIGN command.

SUMMARY OF EDIT COMMANDS AND FORMATS †

The user is operating in string mode when the command entered ends in S; otherwise the user is in line mode.

```
ADD(S)
ADD(S);n
ADD(S):/string/
ADD(S):/string/;n

ALIGN
ALIGN;n
ALIGN:/string/
ALIGN:/string/;n
ALIGN:/string1/,/string2/
ALIGN:/string1/,/string2/;n

BLANK(S)
BLANK(S);n
BLANK(S):/string/
BLANK(S):/string/;n
BLANK(S):/string1/,/string2/
BLANK(S):/string1/,/string2/;n

CHANGE(S)
CHANGE(S);n
CHANGE(S):/string/
CHANGE(S):/string/;n
CHANGE(S):/string1/,/string2/
CHANGE(S):/string1/,/string2/;n

CLEAR

DEFTAB
DEFTAB:/tabchar/

DELETE(S)
DELETE(S);n
DELETE(S):/string/
DELETE(S):/string/;n
DELETE(S):/string1/,/string2/
DELETE(S):/string1/,/string2/;n

END
```

†To add a comment at the end of a command, the user enters a $ followed by the comment. Text Editor ignores everything on the line after the $.

ES
ES;n
ES:/string/
ES:/string/;n
ES:/string1/,/string2/
ES:/string1/,/string2/;n

EXTRACT
EXTRACT;n
EXTRACT:/string/
EXTRACT:/string/;n
EXTRACT:/string1/,/string2/
EXTRACT:/string1/,/string2/;n

FIND(S)†
FIND(S);n
FIND(S):/string/;n
FIND(S):/string1/,/string2/;n

INSERTS:/string1/,/string2/;n

LENGTH;n
LENGTH;*

LINE

LIST(S)
LIST(S);n
LIST(S):/string/
LIST(S):/string/;n
LIST(S):/string1/,/string2/
LIST(S):/string1/,/string2/;n

LISTAB

MERGE:/lfn/
MERGE:/lfn/;n
MERGE:/lfn/,/string/
MERGE:/lfn/,/string/;n
MERGE:/pfn/
MERGE:/pfn/;n
MERGE:/pfn/,/string/
MERGE:/pfn/,/string/;n

NUMBER(S)
NUMBER(S):/string/
NUMBER(S):/string1/,/string2/

† This command moves the search pointer.

RESET†

RS
RS:/string/
RS:/string/;n
RS:/string1/,/string2/
RS:/string1/,/string2/;n

SET†
SET;n
SET;-n
SET:/string/
SET:/string/;n

STOP

TAB
TAB:/t_1,...,t_n/

WIDTH;n ($6 \leq n \leq 150$)

† This command moves the search pointer.

XEDIT COMMANDS

Refer to Job Processing Commands in this section for information on how to call XEDIT.

XEDIT COMMAND WORDS

ADD or A

Adds a specified string to the end of one or more existing file lines.

ADDLN or ALN

Adds a line number to every line in the file which currently has none.

BOTTOM or B

Moves file pointer to last line of the current record in the file.

BRIEF or BR

Suppresses XEDIT verification mode or turns verification either on (BRIEF-) or off (BRIEF+).

CHANGE(S) or C(S)

Replaces one or more occurrences of a particular string or strings of characters with another string.

COPY

Copies one or more lines from the edit file to a specified file.

COPYD

Same as COPY except that the copied lines are deleted from the edit file.

(CR)

Allows user to enter input mode and insert an unspecified number of lines into the file immediately after the line designated by the current pointer position.

DBADL or DBL

Deletes a specified number of bad lines (those not beginning with a line number) beginning at the current pointer position.

DEFTAB or DT

Defines the tab character for subsequent use when entering editing data with the INSERT, INSERTB, or REPLACE commands, or with input mode.

DELETE or D

Deletes one or more lines from a file starting at the current pointer position or deletes a particular number of lines on the basis of specified string criteria.

DELETELN or DLN

Deletes all line numbers in the file.

DELIMIT or DEL

Establishes a particular character as the delimiter. In subsequent lines the delimiter separates multiple commands and editing data.

DEOF or DF

Deletes a specified number of EOF marks from the file.

DEOR or DR

Deletes a specified number of EOR marks from the file.

DLBLANKS or DLB

Deletes leading blanks from a specified number of lines in the file starting at the current pointer position. Blank lines are entirely deleted.

eEDIT

Refer to INPUT.

END or E

Terminates XEDIT execution and allows user to save edited file.

EXPLAIN

Gives user more detailed information about the XEDIT message that was most recently printed.

FBADL or FBL

Searches for a specified number of bad lines (those not beginning with a line number). In verification mode, the bad lines are printed.

FILE or F

Saves the edited file according to parameters specified.

FINDLL or FLL

Searches for long lines (those having more characters than the current RMARGIN setting). In verification mode, the long lines are printed.

HELP or H

Requests information about a specific XEDIT command.

INPUT e or eEDIT

Allows user to insert an unspecified number of lines into the file after the line designated by the current pointer position and to make quick changes to the last line entered by using the escape character e. e may be any character except space or the command delimiter. User leaves input mode by entering eEDIT or a ⓒⓡ.

INSERT or I

Inserts a specified number of lines into the file immediately after the line designated by the current pointer position.

INSERTB or IB

Inserts a specified number of lines into the file before the line designated by the current pointer position.

line number

Performs a circular search for the line identified by the specified line number and sets the file pointer at that line.

LISTAB or LT

Lists the current tab character and tab stop column positions.

LOCATE or L

Locates a specified number of lines that contain a particular string or strings of characters, contain one string but not another, or do not contain a certain string. In verification mode, the lines are printed.

MODIFY or M

Allows users to alter line contents on a character-by-character basis.

MODIFY Directives

The following directives can be entered under the character or column to be modified. If no modification directives are entered after the single question mark, no changes are made to the line.

↑string# or ∧ string#

Inserts the alphanumeric string contained between the ↑ and # before the character indicated by ↑.

↑ or ∧

Inserts a blank in front of indicated character when the directive is not followed by any other character.

#

Deletes indicated character and closes up the space left by the deletion.

blank

No change to character above the blank space.

&

Replaces the character above & with a blank.

Any alphanumeric character

Character in file line is changed to character in directive.

NEXT or N

Moves the file pointer from its current position forward or backward a specified number of lines.

NOBELLS or NB

Turns off the user's terminal bell that rings when certain XEDIT messages are printed.

OCTCHANGE or OC

Converts the octal display code of a specified character or string to another octal code character or string.

PRINT or P

Lists a specified number of lines, starting at the current pointer position.

QMOD or QM

Allows users to alter portions of their file lines on the basis of column numbers. XEDIT verifies the modification(s) by printing the affected line(s). QMOD uses MODIFY directives.

QUIT or Q

Same as END command.

READ

Merges one or more local files into the edited file after current pointer position.

READP

Merges one or more permanent files into the edited file after current pointer position.

REPLACE or R

Replaces a specified number of existing file lines (starting at the current pointer position) with the same number of substitute lines.

REPLACELN or RLN

Replaces the existing set of line numbers in a file with a new set of line numbers.

RESTORE or REST

Cancels any changes that have been made since the last time the pointer was positioned to the beginning of the file.

RMARGIN or RM

Sets the column position of the right margin of a file.

STOP

Terminates XEDIT execution without saving the modified edited file.

TABS or TAB

Allows the user to define up to eight tab stop column positions.

TEOF

Toggles or turns either on (TEOF+) or off (TEOF-) the printing of —EOF— messages.

TEOR

Toggles or turns either on (TEOR+) or off (TEOR-) the printing of —EOR— messages.

TOP or T

Moves the file pointer to the first line in the user's file.

TOPNULL or TN

Inserts a blank line as the first line in a file and sets the file pointer to that line.

TRIM

Toggles or turns either on (TRIM+) or off (TRIM-) the trim mode. If trim mode is on, XEDIT ignores trailing blanks on commands that involve string searches.

TRUNCATE or TRUNC

Truncates a specified number of long lines to RMARGIN length, starting at the current pointer position.

VERIFY or V

Initiates XEDIT verification mode or turns it on (VERIFY+) or off (VERIFY-).

WEOF or WF

Writes an EOF mark on the file in front of the current pointer position.

WEOR or WR

Writes an EOR mark on the file in front of the current pointer position.

WHERE or W

Prints the current line count (that is, the number of file lines that appear from the beginning of the file to the current pointer position).

WMARGIN or WM

Sets the left and right window margin column settings to define a window which restricts the scope of string searches to the specified columns.

Y

Allows user to enter several commands (separated by delimiters) in one line of entry. XEDIT executes the commands without listing them. The Y command delimiter should be different than the delimiter specified by the last DELIMIT command.

YQMOD or YQM

Same as QMOD except that the set of column numbers is not printed.

Z

Same as Y command except that XEDIT prints each component command as it is processed.

.n or -n

Advances the file pointer the specified number of lines and reexecutes the last command (.n) or the last Z or Y command (-n) that the user entered.

XEDIT CONTROL CHARACTERS

prefix characters

Any number and combination of the following characters which can precede any command.

/	Advances the file pointer ahead one line before processing the command.
X	Suppresses editor verification when verification mode is in effect. Verifies the results of the command when brief mode is in effect.
↑ or ∧	Moves file pointer to the top of the file before processing the command.
+	Indicates to XEDIT that editing data is on the same line as the command. + can be used with ADD, INSERT(B), MODIFY, QMOD, REPLACE, and YQMOD commands.

ln

Optional line number prefix which specifies the line at which the specified command is to be executed.

suffix character

One of the following characters, which can follow any command that does a string search, provided that a window has been defined via the WMARGIN command.

A	Forces only the leftmost character of the first string to reside in the window. All other characters can reside outside the window. Otherwise, the string is not found.
W	Forces all characters in the string to reside in the window. Otherwise, the string is not found.

SUMMARY OF XEDIT COMMANDS AND FORMATS

ADD n

ADDLN(S) ln n

BOTTOM

BRIEF
BRIEF+
BRIEF-

CHANGE(S)/string1//n
CHANGE(S)/string1a...string1b//n
CHANGE(S)/string1/string2/n
CHANGE(S)/string1a...string1b/string2/n
CHANGE(S)//string2/n

COPY(D) fname n
COPY(D) fname/string/n
COPY(D) fname/string1...string2/n
COPY(D) fname/string1- - -string2/n
COPY(D) fname/- - -string2/n

(CR)

DBADL n

DEFTAB char

DELETE n
DELETE/string/n
DELETE/string1...string2/n
DELETE/string1- - -string2/n

DELETELN

DELIMIT char

DEOF m

DEOR m

DLBLANKS n

eEDIT

END,fname,mode

EXPLAIN

FBADL n

FILE,fname,mode

FINDLL n

HELP,cmd

INPUT e

INSERT(B) n

line number

LISTAB

LOCATE/string/n
LOCATE/string1...string2/n
LOCATE/string1- - -string2/n
LOCATE/- - -string2/n

MODIFY

NEXT n
NEXT -n

NOBELLS

OCTCHANGE oct1 oct2 n

PRINT n

QMOD n

QUIT,fname,mode

READ(P) $fname_1$...$fname_n$

REPLACE n

REPLACELN ln n

RESTORE

RMARGIN m

STOP

TAB(S) t_1 t_2 ... t_n ($n \leq 8$)

TEOF
TEOF+
TEOF-

TEOR
TEOR+
TEOR-

TOP

TOPNULL

TRIM
TRIM+
TRIM-

TRUNCATE n

VERIFY
VERIFY+
VERIFY-

WEOF

WEOR

WHERE

WMARGIN lm rm

YQMOD n

Ycmd_1$$cmd$_2$...cmd_n$

Zcmd_1$$cmd$_2$...cmd_n$

.n
-n

REMOTE BATCH FACILITY

RBF COMMANDS

ABORT,dev
or
ABT,dev

Terminates a file being processed by input or output device and purges the file from the system.

dev Device type:

CPn	Card punch.
CRn	Card reader.
LPn	Line printer.
PLn	Plotter.
ALL	All devices.
omitted	Same as LP1.

n is the device number assigned to the device. If n is omitted, n=1 is assumed. If n=A, all devices of that type are affected.

CANCEL,queue
or
CAN,queue

Cancels extended effects on queue of previous DIVERT command with EXT parameter selected.

queue One of the following:

PR	Print queue.
PT	Plotter queue.
PU	Punch queue.
ALL	All queues.
omitted	Same as ALL.

CHANGE,JOB=jobname,queue,PRI=pppp,REP=rpent
or
CHG,JOB=jobname,queue,PRI=pppp,REP=rpent

Changes priority and/or repeat count of an output file while in output queue.

jobname Seven-character name identifying the output file; can be specified without JOB=.

queue One of the following:

PR	Print queue.
PT	Plotter queue.
PU	Punch queue.
ALL	All queues.
omitted	Same as PR.

pppp A one- through four-character octal integer specifying the new priority.

rpent A one- or two-digit integer from 0 through 31 specifying the new repeat count. If omitted, rpent=1 is assumed. If REP=rpent is omitted, repeat count is not changed.

DISPLAY,type,RFR
or
DIS,type,RFR

Displays job, file, or device status information.

type Status information for:

PR	Print files.
PT	Plot files.
PU	Punch files.
IN	Jobs in input queue.

	EX	Jobs in execution queue.
	DEV	Remote batch I/O devices and extended DIVERT commands.
	JOB=jobname or jobname	All system queues pertaining to the specified job or file.
	omitted	Same as DEV.
RFR	Optional parameter specifying that the display is to be refreshed and updated at regular intervals; not applicable when DEV is specified.	

DIVERT,JOB=jobname,queue,FAM=famname,USR=username,
EXT
or
DIV,JOB=jobname,queue,FAM=famname,USR=username,EXT
or
DIVERT,JOB=jobname,queue,HST,EXT
or
DIV,JOB=jobname,queue,HST,EXT

Transfers or reroutes files and/or jobs belonging to the user to a different destination.

jobname Seven-character name of job or file to be diverted; can be specified without JOB=. If jobname is not specified, all files with same user name, family name, and origin type combination as the terminal from which command is entered are diverted.

queue One of the following:

PR	Print queue.
PT	Plotter queue.
PU	Punch queue.
IN	Input queue.
EX	Execution queue.

ALL — All queues except if HST or EXT is specified, and then ALL indicates all output queues.

omitted — Same as ALL, if a jobname is specified. Same as output queues if HST or EXT is specified.

famname — One- through seven-character family name. If FAM=famname is not specified, the family name of the logged-in user is assumed.

username — One- through seven-character name identifying the terminal user to which jobs and/or files are to be diverted.

EXT — Optional parameter specifying that the DIVERT command is extended to jobs and/or files not yet existing; cannot be used with JOB=, ALL, EXT, or IN.

HST — Parameter specifying that jobs and/or files are to be output on the host computer peripherals. If FAM=famname and USR=username are omitted, HST is assumed.

END

Logs the user out of RBF and allows selection of another application.

GO,dev
or
G,dev

Enables data transmission to or from device that is stopped.

dev — Device type:

CPn — Card punch.

CRn — Card reader.

LPn — Line printer.

PLn Plotter.

ALL All devices.

omitted Same as LP1.

n specifies the device number assigned to the device. If n is omitted, n=1 is assumed. If n=A, all devices of that type are affected.

IAF

Logs the user out of RBF and connects the terminal to the Interactive Facility.

LOGIN

Logs the user out of RBF and reinitiates the login sequence.

LOGOFF

Logs the user out of RBF and disconnects the terminal.

LOGON

Logs the user out of RBF and reinitiates the login sequence. (Same as LOGIN command.)

LOGOUT

Logs the user out of RBF and disconnects the terminal. (Same as LOGOFF command.)

PURGE,JOB=jobname,queue
or
PUR,JOB=jobname,queue

Drops an executing job or purges a file from the system queues.

jobname Seven-character, system assigned name of the job to be dropped or the file to be purged; can be specified without JOB=. If JOB=jobname is omitted, queue must be specified.

queue One of the following:

PR	Print queue.
PT	Plotter queue.
PU	Punch queue.
IN	Input queue.
EX	Execution queue.
ALL	All queues. If jobname is omitted, all jobs belonging to the user that reside in the queue specified are purged.
omitted	Queue is ALL, and jobname must be specified.

RESTORE,dev,opt
or
RES,dev,opt

Restores acknowledging of input files, printing of the banner, and/or printing under printer format control, which were suppressed by a previous SUPPRESS command.

dev Device type:

CRn	Card reader.
LPn	Line printer.

n is the device ordinal assigned to the specified device. Defaults depend upon opt parameter.

opt One or more of the following:

ACK	Displays acknowledgment message (jobname) at the terminal to indicate the end of each input file transmission. If dev is not specified, CR1 is assumed.

BAN — Restores banner page printing at the beginning of the next print file. If dev is not specified, LP1 is assumed.

FMT — Restores print format control immediately. If dev is not specified, then LP1 is assumed.

omitted — Same as ACK, if CRn is specified. Same as FMT, if LPn is specified.

If no parameters are specified, RESTORE,LP1,FMT is assumed.

RESUME
or
R

Causes terminal to resume batch operations if a batch I/O device can transfer data immediately. RESUME or R has no effect on a device stopped because of device failure or with status of STOP or STOP/ABT, and is ignored if entered from a HASP protocol terminal.

RETURN,device,PRI=pppp
or
RET,devicePRI=pppp

Returns an output file active on a device to its queue.

device — One of the following:

CPn — Punch.

LPn — Print.

PLn — Plotter.

ALL — All files.

omitted — Same as LP1.

n is the device number assigned to the device. If n is omitted, n=1 is assumed. If n=A, all devices of that type are affected.

pppp One- through four-digit octal integer that specifies the new queue priority. If pppp is omitted, the file is returned to the lowest nonzero priority allowed by the system.

REWIND,dev
or
REW,dev

Rewinds a file currently at an output device.

dev Device type:

CPn	Card punch.
LPn	Line printer.
PLn	Plotter.
ALL	All devices.
omitted	Same as LP1.

n is the device number assigned to the device. n=A implies that files at all devices of the specified type are to be rewound.

SET,dev,REP=rpcnt,FMS=fmscode,WID=width,BLK=size

Sets the repeat count of a file at an output device, changes the forms code of an output device, and/or specifies the maximum number of characters that can be printed on one line.

dev Device type:

CPn	Card punch.
LPn	Line printer.
PLn	Plotter.
omitted	Same as LP1.

n is the device number assigned to the device. If n is omitted, n=1 is assumed. If n=A, all devices of that type are affected.

rpcnt One- or two-digit decimal integer from 0 through 31 that specifies the number of additional file copies desired. If rpcnt is omitted, REP=1 is assumed. If REP=rpcnt is omitted, the repeat count is not changed.

fmscode Two alphanumeric character identifiers used to change the forms code of the output device. If fmscode is omitted, existing forms code is removed (default is blanks). If FMS=fmscode is omitted, the forms code is not changed.

width Decimal value from 50 through 150 that specifies the maximum number of characters that can be printed on a line. If width is omitted, the printer width specified when printer was initially connected to RBF is assumed. If WID=width is omitted, print width is not changed.

size Block size specifies the maximum size block that is sent to output device. If size is omitted, default value of 200 decimal is used. Maximum size is 2043 decimal.

SKIP,dev,+val
or
SKP,dev,+val

Repositions the file currently on an output device.

dev Device type:

CPn	Card punch.
LPn	Line printer.
PLn	Plotter.
omitted	Same as LP1.

n is the device number assigned to the specified device. If n is omitted, n=1 is assumed. If n=A, all devices of that type are affected.

val One of the following:

Any integer from 1 through 4095 that specifies the number of file sectors in multiples of eight to skip forward (+) or backward (-). A value of 1 means 8 sectors are skipped, 2 means 16 sectors are skipped, and so on. If +val is omitted, +1 is assumed.

DFL	Causes skipping to the beginning of dayfile, if one exists; applies only to print files.
END	Repositions file to EOI. Repeat counts are honored.

STOP,dev,END
or
S,dev,END

Causes the file transmission to be suspended and the specified device to be stopped.

dev Device type:

CPn	Card punch.
CRn	Card reader.
LPn	Line reader.
PLn	Plotter.
ALL	All devices.
omitted	Same as LP1.

n is the device number assigned to the device. If n is omitted, n=1 is assumed. If n=A, all devices of that type are affected.

END Optional parameter specifying that transmission is to be stopped when end of current file is encountered; selected by default for card readers.

SUPPRESS,dev,opt
or
SUP,dev,opt

Suppresses acknowledgment of input files, printing of the banner, and/or format control.

dev Device type:

CRn	Card reader.
LPn	Line printer.

n is the device number assigned to the specified device. Defaults depend upon opt parameter.

opt One or more of the following:

ACK	Suppresses acknowledgment message at the terminal to indicate the end of each input file transmission. If dev is not specified, CR1 is assumed.
BAN	Suppresses banner page printing at the beginning of the next print file and for subsequent files. If dev is not specified, then LP1 is assumed.
FMT	Causes printing of current file, except banner page, to be single spaced. Carriage control characters are printed as leftmost characters of each line. If dev is not specified, then LP1 is assumed.
omitted	Same as ACK, if CRn is specified. Same as FMT, if LPn is specified.

If no parameters are specified, SUPPRESS,LP1,FMT is assumed.

MESSAGE CONTROL SYSTEM

MCS COMMANDS

BYE application

Logs user out of MCS and connects user to specified application. If BYE is specified without an application, the system disconnects the user from MCS and network control.

DATA

Switches terminal from command mode to data mode.

DISABLE

Disables the terminal. Terminal cannot send and/or receive application messages but can perform all command mode activities.

DISPLAY name

Displays information about the current status of input and output queues.

Name	Description
ALL	Displays status of both input and output queues.
INPUT	Displays status of all input queues.
LAST	Displays serial number of last message received from the terminal.
OUTPUT	Displays status of all output queues.
queue	Displays status of specified queue. Queue is the name of an output or input queue defined in the application definition.

ENABLE

Reestablishes connection between MCS and the terminal. Terminal can send and receive application messages.

END application

Logs user out of MCS and connects user to specified application. If END is specified without an application, the system reissues the request for entry of an application.

GOODBYE application

Logs user out of MCS and connects user to specified application. If GOODBYE is specified without an application, the system disconnects the terminal from MCS and from the network.

HELLO application

Logs user out of MCS and connects user to specified application. If HELLO is specified without an application, the system reissues the request for entry of an application.

LOGIN application

Same as HELLO command.

LOGOFF application

Same as GOODBYE command.

LOGON application

Same as HELLO command.

LOGOUT application

Same as GOODBYE command.

MESSAGE "string"

Sends the message string to the applications operator. "string" is 80 characters or less.

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