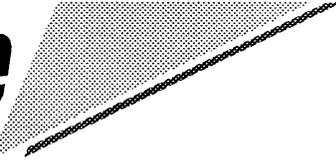


Ultimate

THE ULTIMATE CORP.



System
Commands
Guide

The Ultimate Corp.
East Hanover, NJ

Version 3.2

The Ultimate® System Commands Guide

Version 3.2

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How to Use This Manual

This manual is intended as a reference for all Ultimate system users. It explains the format and usage of Terminal Control Language (TCL) system commands supplied with Ultimate Operating System Revision 210 series, which includes:

Revision No.	Platforms
210	Ultimate Bull 6000/7000 and LSI™ systems
214	Ultimate IBM™ S/370™ and S/390™ systems
215	Ultimate 1400 systems
217	Ultimate PLUS™ on Hewlett Packard 9000 systems
218	Ultimate PLUS on IBM RISC System/6000 systems
219	Ultimate PLUS on Bull DPX/2 systems

Note: Some Ultimate system commands work differently on, or are not included for, different platforms. For complete information on how commands function for a specific platform, please refer to the System Administrator Guide for the platform.

Readers of this guide should be generally familiar with the Ultimate system. New Ultimate users should read the *Beginner's Guide to Ultimate* and the *System Overview* before using the TCL system commands explained in this guide.

How the Manual is Organized

Chapter 1 is an Introduction to System Commands. This chapter describes:

- What TCL is and how to start it.
- Components of a system command statement.
- How to enter system command statements.
- Listing system commands available to your account.
- Using command stacks and multiple TCL levels.
- System commands by function.

Chapter 2 is an alphabetical System Commands Reference. Syntax, usage, required access level, and where to find additional information is provided for each command. Examples are given for most commands.

Appendix A contains a glossary.

Appendix B describes System Messages by message number.

Appendix C contains a list of ASCII Codes.

Appendix D contains information on S/370 and S/390 UCSB and FCB Items, which are used with parallel printers on S/370 and S/390 systems.

Appendix E contains information on the CAPTURE subroutine.

Conventions

This manual presents the syntax for each TCL system command. In presenting and explaining the syntax, the following conventions apply:

Convention	Description
UPPER CASE	Characters or words shown in upper case are required and must be entered exactly as shown.
lower case	Characters or words shown in lower case are parameters to be supplied by the user, such as filename, itemlist, and options.
{ }	Braces surrounding a parameter indicate that the parameter is optional.
Enter option:	Courier typeface is used for messages and prompts displayed by the system.
bold	Boldface type is used for command statement components. It also indicates user input.

RETURN ↵	The word RETURN, or the RETURN symbol (↵), means press the RETURN key on the keyboard. RETURN is required at the end of a command statement in order to begin processing the command.
enter	The word enter means type the required text, then press the RETURN key.
<key>	Angle brackets indicate a key other than letters, numbers, or punctuation; such as <ESC>.
<key-key>	Represents a key sequence involving two keys held down at the same time, such as <CTRL-X>.
X'nn'	Defines a hexadecimal number, where 'nn' is the hex value; such as X'0B', X'41', X'FF'

Notes

1 Introduction to System Commands

Ultimate system commands are entered at the Terminal Control Language (TCL) level. TCL is the interface between the user and the Ultimate Operating System.

TCL system commands allow you to perform the following functions:

- Arithmetic calculations and conversions
- Invoking the assembler
- Invoking BASIC
- Bisynchronous communications
- Charging for system usage
- Database backup, restore, and verification
- Database entry (Ultimate UPDATE[®] commands)
- Database query (Ultimate RECALL[®] commands)
- Diagnostics
- Disk drive operation and control
- Document creation and maintenance
- Error reporting and recovery
- File and account creation and maintenance
- File reallocation
- Graphing (UltiPlot[®] commands)
- IBM-specific commands
- Indexing
- Item and list handling
- Kernel commands
- Level pushing
- Listing utilities
- Logging on/off
- Print spooler operation and control
- PROC
- Stacking TCL commands
- System security

- System starting and stopping
- System upgrading
- System utilities
- Tape drive operation and control
- Terminal and line operation and control

Note: A list of TCL system commands by function starts on page 1-14.

Starting or Getting to TCL

By default, most Ultimate systems are set up to run TCL as soon as you log on. Once you enter your accountname and password (if necessary), you should see the TCL colon (:) prompt, or the greater-than sign (>) if the TCL stack is OFF. The TCL prompt can be changed with the TCL-PROMPT command.

If, instead of TCL, your account is set up to start a program or display a menu, check with your system manager on how to access TCL.

Components of a System Command Statement

TCL system command statements consist of the following components:

```
COMMAND {parameter1 ...parameter $n$ } ↵
```

COMMAND

All statements contain a *COMMAND*. COMMANDS must be entered exactly as defined in the system Master Dictionary (MD); generally they are defined with uppercase letters.

A COMMAND can be a verb (written in assembly language), a PROC (written in PROC language), or a catalogued BASIC program. Commands must exist in a user account's MD.

PARAMETER

Statements can also contain one or more *parameters*, although many commands do not require any. Parameters are user-specified information such as filenames, item-IDs, or options.

Other things to know about parameters:

- There must be at least one space between a COMMAND and a parameter.
- Parameters in this manual shown enclosed in braces { } are optional.
- Parameters must be separated from each other with spaces or commas. To avoid errors, be sure to check the exact syntax before entering a command statement.
- Some parameters must be enclosed in:

```
(parentheses)
"double quotes"
'single quotes'
```

To avoid errors, be sure to check the exact syntax before entering a command statement.

RETURN

You must press *RETURN* (↵) to begin execution of a command.

More on Parameters

The most frequently used parameters include filenames, positional parameters, keyword parameters, and options.

Filenames

Many TCL commands act on files. Each Ultimate file contains a *DICTIONARY* section, and can contain one or more *DATA* sections. For example, the BP file below has a single dictionary section and three associated data sections:

DICT Section	Associated DATA Sections
a) BP	b) BP c) BP2 d) BP3

A filename can be specified in different ways, depending on the section of the file to be used:

dataname	Specifies the DATA section of a file with the same name as its DICT. For example, BP shown in b) above.
dictname,dataname	Specifies a DATA section when the dictname has multiple DATA sections. For example: BP,BP shown in b) above; BP,BP2 shown in c) above; or BP,BP3 shown in d) above.
DICT dictname	Specifies the DICT section of a file. For example, DICT BP shown in a) above.
DICT dictname,dataname	Specifies the DICT section of a file. Same as DICT dictname above.
DATA dataname	Specifies the DATA section of a file with the same name as its DICT. Same as dataname above.
DATA dictname,dataname	Specifies a DATA section when the dictname has multiple DATA sections. Same as dictname,dataname above.

Positional Parameters

Some TCL commands require that their parameters be entered in a certain order. These are known as positional parameters. For example, the SET-STACK command requires that you enter its parameters as follows:

```
SET-STACK n,status,sents,clear,one.sent
```

In other words, SET-STACK expects that the first parameter will be the line number, the second parameter will be the status, and so forth.

To avoid typing in values for all parameters when you only want to change one, you can use commas to specify parameter default values. For example, if the only SET-STACK parameter you want to change is **sents** (the number of commands saved in your stack) from the default of 32 to the maximum of 120, you could enter:

```
SET-STACK ,,120
```

The commas represent the current values for line number and status.

Keyword Parameters

Some TCL commands have keyword parameters as an alternative to positional parameters. Keyword parameters contain the parameter name (the keyword), an equal sign, and the parameter value. Unlike positional parameters, keyword parameters can be entered anywhere in the statement. For example, the parameters for the SET-STACK command can be entered in either positional or keyword syntax:

POSITIONAL SYNTAX:

```
SET-STACK 2,ON,120,NO,NO
```

KEYWORD SYNTAX:

```
SET-STACK STATUS=ON PORT=2 CLEAR=NO SENTS=20 ONE.SENT=NO
```

Other things to know about keyword parameters:

- Keywords must be separated from each other with spaces or commas.
- Keywords can be abbreviated to at least three characters, or more in order to be unique among other keywords in the command.

- Zero or more spaces can both precede and follow the equal sign in the keyword parameter.
- Multiple keyword values must be enclosed in parentheses. Within the parentheses, separate multiple keyword values from each other by one or more spaces, or by a comma.

Options

Option parameters are one-letter codes that perform additional actions during the command.

Note: Option parameters must always be specified at the end of the command.

Most options must be preceded by a left parenthesis, with the right parenthesis optional. To avoid errors, be sure to check the exact syntax before entering an option.

If multiple options are selected, they can be entered with no separation between them, or they can be separated from each other with spaces or commas. For example:

```
LIST-LOCKS (IP
           or
LIST-LOCKS (I P
           or
LIST-LOCKS (I,P
```

In this example, the I option specifies that item lock information be included in the lock list, and the P option specifies that the lock report be sent to the printer instead of displayed on the screen.

Entering and Editing System Command Statements

System command statements can be entered when your cursor is at the TCL prompt.

To enter a command statement, type the **COMMAND** (usually in uppercase), followed by any parameters (in upper or lowercase), and a **RETURN**. For example:

```
LIST-ITEM CUSTOMERS ↵
```

where **LIST-ITEM** is the command, **CUSTOMERS** is a filename parameter, and ↵ means press the **RETURN** key to execute the statement. The **LIST-ITEM** command lists all items in the **CUSTOMERS** file.

To correct a command statement, use the <BACKSPACE> key or <CTRL-H> to erase the mistake, then retype the entry. Other helpful editing key sequences can be found in the section later in this chapter on Using Command Stacks.

Commands that are too long to fit on a single line will wrap to the next line if your terminal is set up to do so.

When the command finishes execution, the screen returns to the TCL prompt.

An error message is displayed if the command is improperly formatted, is not in your Master Dictionary, cannot be processed for some reason, or if an error occurs during processing. A description of system messages is provided in Appendix B.

Checking the Commands Available in Your Account

Most TCL system commands are standard and available on all user accounts. However, some TCL commands apply only to certain machine types or to optional software, and may not be available on your system. (For complete information the commands available for a specific platform, please refer to the *System Administrator Guide* for the platform.)

In addition, some commands must be executed from the system manager's SYSPROG account, or from the SECURITY account.

Every command that can be executed from your account is an item in your Master Dictionary (MD). Use one of the following to see the commands in your account:

Command	Result
LISTVERBS	Lists command names (other than PROCs)
LISTPROCS MD	Lists PROCs

Types of Commands

Commands that do not access a file are known as TCL-I commands. Examples of this type of command include:

```
LOGTO accountname
MESSAGE line.no message-text
OFF
SP-ASSIGN {(options)}
TIME
```

Commands of a specific form that access a file and its items are known as TCL-II commands. Examples include:

```
COPY filename itemlist {(options)}
ED filename itemlist {(options)}
```

TCL-II commands require that an itemlist be entered if no select-list is present. Also, TCL-II commands do not require single quote marks around item-IDs.

Commands that access a specified file and, optionally, its items *and* offer a choice to use selection criteria and to specify output format are known as Ultimate RECALL commands. An example of an Ultimate RECALL command is:

```
LIST filename {itemlist} {selection-criteria} {output-specs}
      {(options)}
```

If no itemlist is specified in an Ultimate RECALL command statement, all items in the file are assumed. If an item-ID is specified, it must be enclosed in single quotes, double quotes, or backslashes.

Using Command Stacks

As each command statement is entered at TCL, it is placed in the TCL command stack if the stack is set to ON. Command statements in the stack can be displayed, edited, and re-executed during the session. The TCL stack is available on all terminals supported by Ultimate except the IBM 3270 terminal. (However, see the R option of the 3270.PFK command.)

Default Stack Settings

The default TCL stack settings are:

```
Stack:                ON
Stack Limit:          32 commands
Clear at Logoff:      YES
One copy of sentence: NO
```

To change any setting, use the SET-STACK command.

Note: If the stack is turned off, the default TCL prompt character is a greater-than sign (>) instead of a colon (:).

Stack Commands

The following commands are used with the TCL stack:

```
. (period)           View the stack. Same as VIEW.
CLEAR-STACK          Clears the stack.
SET-STACK            Changes or displays default stack settings.
VIEW                 View the stack. Same as . (period).
```

Refer to Chapter 2 for complete information on stack commands.

Each line has its own stack. The TCL stack is a First In First Out (FIFO) stack, where new TCL commands are added to the top of the stack, and the oldest entry is discarded from the bottom when the stack is full. For example, the following displays a stack set to a maximum of 32 commands:

```
001 BASIC BP CUSTOMER.MAINT
002 ED BP CUSTOMER.MAINT
003 WHO
004 SORT INVENTORY BY DESC DESC UOM
.
.
.
031 LISTFILES
032 LOGTO DEV
:
```

Enter the RUN command:

RUN BP CUSTOMER.MAINT.↓

Stack after entry of the RUN command:

```
001 RUN BP CUSTOMER.MAINT
002 BASIC BP CUSTOMER.MAINT
003 ED BP CUSTOMER.MAINT
004 WHO
005 SORT INVENTORY BY DESC DESC UOM
.
.
.
032 LISTFILES
:
```

Notice that LOGTO DEV was at entry 032 before RUN was executed, but dropped off the stack after RUN was executed.

The last command statement executed (in this case, RUN) is always placed into entry 001. However, if entry 001 is re-executed without an intervening command, its second execution is not duplicated onto the

stack. You can also set the one sentence parameter so that only the last entry of a statement is kept in the stack.

By default, the stack is cleared when you log off, although this can be changed with SET-STACK. The stack is not saved by the file-save process, so it is cleared at every file-restore.

Stacked TCL commands are displayed, edited, and executed via the stack command keys:

Displaying Stack Entries

Use the following keys to display the stack contents:

. (period) or VIEW	Display the entire stack.
. n or VIEW n	Display statement n.
. n-m or VIEW n-m	Display statement n-m.
. aaa or VIEW aaa	Search for and display the first statement starting with aaa.

Note: The stack display commands *.(period)* and *VIEW* are never added to the stack.

↑	Displays the last TCL command statement entered, with the cursor at the end of the statement. Continued use of this key displays statements from newer to older.
↓	After another stack display command has been entered, use of this key displays statements from older to newer.
<F4>	Search or <S/O> key. <F4> searches the stack for an entry beginning with the characters currently typed at the TCL prompt. When a match is found, the entire statement is displayed. To search for the next occurrence, press <F4> again. If no characters were typed at the TCL prompt before <F4> was pressed, the entire stack is displayed.

**Editing
Stack
Entries**

Use the following keys to edit and re-execute stack commands:

- Moves the cursor one character to the right until the end of the statement is reached.
- ← On terminals on which this key is different from the BACKSPACE key, moves the cursor one character to the left until the beginning of the statement is reached.
- <HOME> Moves the cursor to the beginning of the statement.
- <TAB> Moves the cursor one word to the right until the end of the statement is reached.
- <F1> or <CTRL-E> <EDIT> key. <F1> or <CTRL-E> toggles between INSERT and REPLACE edit modes. The initial mode is REPLACE.
- <BACKSPACE> Deletes the character to the left of the cursor until the beginning of the statement is reached.
- Deletes the character at the cursor.
- <CTRL-R> Reprints the current TCL command up to the current cursor position.
- <CTRL-W> Erases one word to the left.
- <CTRL-X> Clears the current TCL command, places the cursor next to the prompt character, and returns to REPLACE mode. The current stack position is not changed.
- <SHIFT-F1> Help key. <SHIFT-F1> displays a help screen of the stack manipulation, cursor movement, and editing keys described above.
- RETURN Executes the displayed TCL command.

TCL Level Pushing

Level pushing allows you to suspend activity in the current TCL session (level) and start an additional, completely separate TCL session without logging off. The information for the session at each level is saved and is restored when you return to that level. When you return to a previous TCL level (also known as level popping), the screen is updated so that it looks just as it did before the push.

Level pushing is available any time input is expected by TCL, BASIC, Ultimate RECALL, Ultimate UPDATE, or PROC. The number of available levels is limited only by disk space. The number of TCL levels for the current process is indicated as follows:

- If the status of both the TCL stack and TCL-PROMPT is ON, the level is indicated only if the L code is included as part of the TCL-PROMPT command.
- If the status of the TCL stack is ON, but the status of TCL-PROMPT is OFF, a colon prompt (:) is displayed for each level. For example, if you have three TCL sessions active, the following prompt is displayed:

```
:::
```

- If the status of both the TCL stack and TCL-PROMPT is OFF, and if more than one level is active, two greater-than signs are displayed. For example, if you have three TCL sessions active, the following prompt is displayed:

```
>>
```

TCL level pushing uses the following commands:

LEVEL-EXIT	Returns (pops) you to the previous TCL level after a level push, or, if specified, to the bottom level.
SET-LEVEL-PUSH	Activates or deactivates TCL level pushing. Also lets you designate function keys for push, pop, and screen refresh operations; set the output buffer size; and specify a startup command to execute at each level push.
SHOW-LEVELS	Displays TCL level information for a specified line.

For complete information on these commands, please refer to Chapter 2.

System Commands By Function

The following pages list the Ultimate System Commands by function. Commands followed by a single asterisk (*) were introduced in Revision 200; those followed by a double asterisk (**) were introduced in Revision 210.

Arithmetic Calculations & Conversions

ADDD	MULX
ADDX	PRIME
DIVD	RTD
DIVX	SUBD
DTR	SUBX
DTX	XTD
MULD	

Assembler

:DEBUG-PSYM	OPT
AS	SET-SYM
ASM	STRIP-SOURCE
CROSS-INDEX	VERIFY-SYSTEM
MLIST	X-REF
MLOAD	XREF
MVERIFY	

BASIC

BASIC	DECATALOG
CATALOG	EBASIC
CLEAR-BASIC-LOCKS	LIST-NAMED-COMMON*
CLEAR-NAMED-COMMON	RUN
COMPILE	

Bisynchronous Communications

:RESTART-BSC	CHANGE-BSC-TIMER
B-ATT	DISCONNECT
B-DET	RECEIVE
B-LIST	TRANSMIT
BSC-DIAL	

Charging System Usage

CHARGE-TO	CLEAR-ACC-FILE
CHARGE-UNITS**	LISTACC
CHARGES	

Database Backup, Restore, and Verification

:FILELOAD	LOG
ACCOUNT-RESTORE	LOG-STATUS
ACCOUNT-SAVE	LOGGER
ALL-UPDATE-SAVE	PART-UPDATE-SAVE
FILE-SAVE	RESTORE-FILE**
FILEOPT	SAVE
LIST-FILE-STATS	SEL-RESTORE
LIST-VSAVE-STATS*	VERIFY-SAVE*
LOAD-STATS	

Database Entry: Ultimate UPDATE Commands

LIST-UERRORS	UPD-VALIDATE
LIST-UIITEMS	UPDATE
UPD-DEF	USORT

Database Query: Ultimate RECALL Commands

CHECK-SUM	SORT
COUNT	SORT-ITEM
LIST	SORT-LABEL
LIST-ITEM	SREFORMAT
LIST-LABEL	SSELECT
REFORMAT	STAT
SELECT	SUM

Diagnostics

DISK.DIAGS	PRINTER.DIAGS
MEM.DIAGS	TAPE.DIAGS
ON-LINE-DIAGS	

Disk Drive Operation and Control

DISK-ADDRESS**	DISK-STATUS**
DISK-FORMAT**	DISK.COPY
DISK-RESYNC**	START-RESYNC**

Document Creation & Maintenance

RUNOFF	WP-OUT{PUT}
WP-IN{PUT}	

Error Reporting and Recovery

:INIT-SYSTEM	LIST-LOCKS
CLAIM	LIST-SYSTEM-ERRORS
DUMP	PRINT-ERR
FIX-FILE-ERRORS	SYSTEM-ERROR-SUMMARY
LIST-GFE	SYSTEMERRORS

File and Account Creation and Maintenance

BMSH	ISTAT
CLEAR-FILE	ITEM
CREATE-ACCOUNT	MOVE-FILE**
CREATE-FILE	RENAME-ACCOUNT
DELETE-ACCOUNT	RENAME-FILE
DELETE-FILE	UPDATE-ACCOUNT
GROUP	UPDATE-FILE
HASH-TEST	

File Reallocation

REALLOCATE

Graphing: UltiPlot Commands

LIST-PLOT-DEVICES	SPIE
PIE	SPLOT
PLOT	

IBM-Specific Commands

#CP	RP-PUNCH
3270.PFK**	RP-READ
ACCESS-CODE	S/I-DUMP
RP-ATT	S/I-LOAD
RP-DET	SYSMON**

Indexing

CLEAR-INDEX-LOCKS*	LIST-INDEX-LOCKS*
CREATE-INDEX*	LIST-INDEXES*
DELETE-INDEX*	

Item Handling

COMPARE	ED{IT}
COPY	EEDIT
COPY-FILES	EXCHANGE
CT	RECOVER-FD
DELETE	SE**
ECOPY	SEARCH

Kernel Commands

:TRAP	SLEEP
:UNTRAP	UNLOCK-FRAME
LOCK-FRAME	

Level Pushing

LEVEL-EXIT**	SHOW-LEVELS**
SET-LEVEL-PUSH**	

List Handling

COPY-LIST	GET-LIST
DELETE-LIST	QSELECT
EDIT-LIST	SAVE-LIST

Listing Utilities

LISTCONN	LISTPROCS
LISTDICT	LISTU{SERS}
LISTF	LISTVERBS
LISTFILES	

Logging On/Off

:RESTARTLINE	LOGTO
:SET-MAX-LINES	OFF
COFF	RESET-LOGOFF
LOGOFF	SET-LOGOFF
LOGON	

Network

INIT-NET

Print Spooler Operation and Control

LA100	SP-LISTASSIGN
PRINTER	SP-LISTLPTR
PRINTRONIX	SP-LISTQ
SET-LPTR	SP-MENU
SP-ASSIGN	SP-OPEN
SP-CLOSE	SP-SKIP
SP-DELETELPTR	SP-STARTLPTR
SP-DEQ	SP-STATUS
SP-EDIT	SP-STOPLPTR
SP-KILL	SP-TAPEOUT

PROC

BUILD-PROC**	RUNPROC
--------------	---------

Stacking TCL Commands

.(period)	SET-STACK
CLEAR-STACK	VIEW

System Security

ACCESS-MAINT

System Starting and Stopping

:WARMSTART	CREATE-BOOT
:WARMSTOP	USER-COLD-START
COLDSTART	WARMSTART

System Upgrading

ALL-ACCOUNT-RESTORE	SYS-GEN
---------------------	---------

System Utilities

:TASKINIT	SET-LANGUAGE*
BLOCK-PRINT	SET-TIME
DATE	STATUS
LINK-WS	TIME
LOOP-ON	ULTI*MENU
POVF	ULTIKIT
REV	WHAT
SET-DATE	WHERE
SET-FILE	WHO

Tape Drive Operation and Control

S-DUMP	T-LOAD
T-ATT	T-RDLBL
T-BCK	T-READ
T-CHK	T-RET
T-COPY	T-REW
T-DET	T-SPACE
T-DUMP	T-STATUS
T-EOD	T-UNLOAD
T-ERASE	T-WEOF
T-FWD	T-WTLBL

Terminal and Line Operation and Control

132 & 80	SET-TERM
BREAK-CHR-OFF	SMARTERM
BREAK-CHR-ON	STRIP-PARITY
BREAK-KEY-OFF	TABS
BREAK-KEY-ON	TCL-PROMPT**
DROP-DTR	TCL-PROMPT-OFF**
DROP-RTS	TERM
ECHO-OFF	TERM-INIT
ECHO-ON	TERM-VIEW*
LOAD-TERMDEF	TERM-VIEW-OFF*
MESSAGE	TERM-VIEW-ON*
MSG	TERMINAL
P	TRANSLATE-INPUT*
PAGEIO-OFF	TRANSLATE-LOAD*
PAGEIO-ON	TRANSLATE-OFF*
PASSTHRU	TRANSLATE-ON*
RAISE-DTR	TYPEAHEAD-OFF
RAISE-RTS	TYPEAHEAD-ON
READ-STATUS	WY60
SAVE-PARITY	X-OFF
SET-BAUD	X-ON

System Support Commands

The following commands should only be used by System Support personnel, or by VTERM users, and are not described in this manual:

:STARTSYSTEM
:STARTVTERM
CLEAR-VTERM-LOCKS

Notes

2 System Commands Reference

This chapter is an alphabetical reference of TCL system commands. The following information is provided for each command:

COMMAND NAME

A brief description of the command's function is displayed below its name.

Syntax

COMMAND {**parameter**} {(options)} Shows the exact syntax of the command statement in **boldface** type. Braces indicate an optional parameter.

parameter Each parameter is shown in **boldface** type, with an explanation to the right.

(options) One-letter options are shown indented below any parameters. For example:

A Option 1

B Option 2

Description

A detailed description of the command's usage is displayed here. A boxed example is often provided at the end of this section:

<code>:COMMAND parameter (option...]</code>	If necessary, an explanation of the example is provided here.
---	---

Available On

Lists default accounts on which the command is available, required privilege level if greater than zero, and any platform limitations.

See Also

Lists associated commands, as well as other documents containing more information about the command.

#CP

#CP

#CP (Control Program) executes CP commands on an Ultimate S/370 and S/390 virtual machine.

Syntax

#CP command

command Specifies any supported CP command.

Description

Use #CP to invoke the CP facility of VM; for example, to perform a virtual reader/punch or other CP function.

Note: The following CP commands are not supported via #CP:

DCP	LOGOUT	SHUTDOWN
DEFINE	LOGOFF	STCP
IPL	SET	SYSTEM

In addition, other commands may not be supported, depending on your installation's security arrangements within VM.

Ultimate displays up to 2000 or 4000 characters of returned information, depending on the Ultimate S/370 and S/390 hardware. Responses exceeding this maximum are truncated and the excess character count is displayed. VM error message numbers are returned when appropriate.

<pre>:#CP ATTACH 181 TO ULTIMATE AS F80␣</pre>	Attaches tape drive.
<pre>TAPE 181 ATTACHED TO ULTIMATE AS F80</pre>	
<pre>:#CP QUERY VIRTUAL UR␣</pre>	Checks device settings.
<pre>RDR 0040 CL 0 NOCONT NOHOLD EOF READY</pre>	
<pre>RDR 0040 2540 CLOSED NOKEEP</pre>	

Available On

SYSPROG or SECURITY account on Ultimate S/370 and S/390 systems.

See Also

Virtual Machine/System Product, *CP Command Reference Manual* for the release and type of VM at your site (available from IBM.)

%SP-KILL

%SP-KILL is used by the SP-DELETEL PTR, SP-DEQ, and SP-KILL commands to, respectively, delete a printer from the system, dequeue a print job from a forms queue, or terminate printer output.

Syntax

% SP-KILL {(options)}

(options:

- n** Terminates output on printer n. You must have level 2 privileges to terminate output on a printer other than the one on which you currently have a job printing.
- A** Terminates all output produced on the user's account.
- Dn** Deletes printer n from the system. You must have level 2 privileges to use this option.
- Fn** Dequeues print job n and turns it into a hold file. You must have level 2 privileges to dequeue a print job other than your own.
- FA** Dequeues all jobs produced on the user's account.
- FB** Dequeues all jobs. You must have level 2 privileges to use this option; otherwise it dequeues only your jobs
- FU** Same as **FB**, except an error message is displayed if you do not have level 2 privileges.

Note: If no option is entered, %SP-KILL attempts to terminate output on printer 0 (zero).

Description

%SP-KILL is not normally used. Instead, use the SP-DELETEL PTR, SP-DEQ, or SP-KILL commands, which allow only the options appropriate to their function.

Available On

Any user account.

See Also

SP-DELETEL PTR
SP-DEQ
SP-KILL

%SP-LISTQ

%SP-LISTQ is used by the SP-LISTQ command to list queued print jobs.

Syntax *% SP-LISTQ* {(options)}

(options:

- n** Lists print job entry number n.
- A** Lists print jobs created by the current account.
- C** Suppresses listing of status information; only displays the total number of print jobs and their total amount of disk space used.
- E** Replaces status information with current position and beginning frame ID (FID) of hold file.
- F** Outputs a list of queued print jobs in job queue number order (Form# on the SP-ASSIGN listing). For example, lists all queued print jobs and their status in job queue 0, then jobs in job queue 1, etc.
- P** Routes output to the spooler.
- 'account'** Lists print jobs created by 'account'.

Note: *Options that follow 'account' are ignored.*

Note: *If parameters are omitted, all print jobs are listed.*

Description Options for the *%SP-LISTQ* command are the same as the SP-LISTQ command, except *%SP-LISTQ* uses F instead of Q to specify the output form queue. For more information, see the SP-LISTQ command.

Available On Any user account.

See Also SP-LISTQ

%SP-STARTLPTR

%SP-STARTLPTR is a synonym for the *SP-STARTLPTR* command. Refer to the *SP-STARTLPTR* command for complete information.

. (period)

The `.(period)` command retrieves current entries from the TCL stack. The `.` command is a synonym for the `VIEW` command.

Syntax

`. {n} {n-m} {string} {(P}`

n Specifies the stack entry number containing the command to be viewed. If omitted, the entire stack is displayed.

n-m Specifies a range of stack entry numbers containing the commands to be viewed. If omitted, the entire stack is displayed.

string Specifies a character string that matches the beginning character string of a command to be viewed. The string can include the Editor wild card character (^).

Note: Either *n*, *n-m*, or *string* may be specified, but not a combination.

(P Routes output to the spooler.

Note: If parameters are omitted, the entire stack is displayed.

Description

Use `.` to display TCL commands previously executed on your line.

For complete information on viewing the TCL stack, please refer to the section "Using Command Stacks" in Chapter 1 of this document.

```
:.↓  
Seq Sentence
```

```
001 WHO  
002 WP-OUT WP-DOCUMENTS,PAYROLL DOC.1 (P  
003 LIST ONLY WP-DOCUMENTS  
004 LISTUSERS  
005 ED BP CUSTOMER.MAINTENANCE  
006 LISTFILES
```

```
:. W↓  
:WHO
```

Search for the first occurrence of
a command starting with W.

Available On Any user account.

See Also CLEAR-STACK
SET-STACK
VIEW
Chapter 1 of this document for further information on the TCL stack.

132 and 80

The 132 command and the 80 command change the terminal setting to 132-column or 80-column mode, respectively.

Syntax 132

80

Description 132 displays information on the screen in 132-column format. It reduces the size of the characters, allowing more characters across the screen.

80 displays information on the screen in 80-column format. It expands the size of the characters, allowing fewer characters across the screen.

Note: 132 and 80 commands work only on terminals that support changes in the number of characters displayed per line.

These commands also change the WIDTH parameter of the TERM command. 132 changes the width to 131; 80 changes the width to 79.

: 132 ↵	All characters are displayed in 132-column format.
: 80 ↵	All characters are displayed in 80-column format.

Available On Any user account.

See Also TERM

3270.PFK

3270.PFK defines PF keys on IBM 3270 terminals.

Syntax

3270.PFK n action {data}

3270.PFK CL

- n** Specifies the number of PF key to be defined, from 1-24.
- action** Specifies the action to define on a key. Actions can include:
- A** Appends data and <CR> to the current line; current input line is not cleared and data is not echoed on screen.
 - B** Defines key as <BREAK> key.
 - C** Defines key as <CLEAR> key.
 - D** Deletes current line and replaces with data. The user must press **ENTER** to execute the line.
 - I** Ignores current line and replaces with data and <CR>; current input line and next line are cleared and data is echoed on screen.
 - R** Defines key as RETRIEVE key. This lets you retrieve up to the last 32 inputs made at the terminal, including TCL commands, BASIC input, editor commands, and all other input. As the key is pressed, each preceding input is displayed, and can be executed by pressing **ENTER**.
- data** Specifies a string of up to 28 ASCII characters to be entered at the current cursor location when the key is pressed. Data must be entered for A, D, and I actions. If the D option is used, ASCII characters are replaced with EBCDIC characters. Any data following a B, C, or R action is ignored.
- CL** Clears all previous definitions and resets all keys to system default values.

Description

3270.PFK allows the 3270 PF keys to be customized. Once a key has been defined, it executes that definition each time it is pressed. The definition remains until it is changed by another 3270.PFK command, or until the terminal is turned off or re-initialized.

If 3270.PFK is executed from a BASIC program, control characters (ASCII value less than 32) can be specified in the data.

<pre>:3270.PFK 13 D WHO␣</pre>	Stores WHO in PF key 13; no <CR> is appended.
--------------------------------	---

<pre>:3270.PFK 23 I OFF␣</pre>	Stores OFF <CR> in PF key 23. When 23 is pressed, the user is logged off.
--------------------------------	---

Available On

Any user account on Ultimate S/370 and S/390 systems.

:ACTIVATE-LINES

:ACTIVATE-LINES is automatically used at the end of a coldstart or file-restore to enable terminal input and output on all lines connected to the system.

Syntax :ACTIVATE-LINES

Description :ACTIVATE-LINES is already part of the COLDSTART command in DICT SYSPROG-PL, and should not be used at any other time.

During a coldstart or file-restore, only line zero (0) is enabled. At the end of the procedure, the :ACTIVATE-LINES command in COLDSTART enables terminal input and output to all lines connected to the system.

Available On SYSPROG or SECURITY account.

See Also COLDSTART

:DEBUG-PSYM

:DEBUG-PSYM specifies the default symbol file to be used by all lines for symbolic debugging.

Syntax

:DEBUG-PSYM filename {(X)}

filename Specifies the default symbol file for all lines. Default filename PSYM is activated during COLDSTART.

(X) Specifies no default symbol file is provided. Requires that a filename be entered.

Description

Debugging assembly language programs or troubleshooting system problems is much easier when process-relative virtual memory locations are referred to by their standard names rather than by absolute frame number, offset, and field width. To translate names to locations, the system debugger requires a symbol file.

COLDSTART uses :DEBUG-PSYM to set the default symbol file PSYM for all lines. :DEBUG-PSYM can also be executed to change the name of or turn off access to the default symbol file.

To set another symbol file that overrides the :DEBUG-PSYM setting for the current line only, use the SET-SYM command.

<pre>: :DEBUG-PSYM SPEC.SYM.␣</pre>	Sets the default symbol file for all lines to SPEC.SYM.
<pre>:</pre>	

Available On

SYSPROG or SECURITY account.

See Also

COLDSTART

SET-SYM

Ultimate Assembly Language Reference Guide

:DUMP-MODULE

:DUMP-MODULE allows one or two modules of system software, such as the kernel or bootstrap code, to be dumped to tape.

Syntax

:DUMP-MODULE **module-number**{**,module-number**}

module-number The number of a relocatable system software module; either one or two modules may be dumped.

Description

Several software components of the Ultimate system, such as the kernel, programmable controller code, and bootstrap code, are stored as relocatable modules on disk. :DUMP-MODULE is used by CREATE-BOOT and SYS-GEN to copy the specified module to the beginning of a boot or SYS-GEN tape, where it is read in and executed when the computer is initialized.

Each :DUMP-MODULE command creates one tape file terminated by an end-of-file mark. The tape file may contain either a single module (such as for the Ultimate 6000/7000 system boot), or two modules (such as for an LSI system boot).

Before using :DUMP-MODULE, the tape drive must already be attached via T-ATT with the correct block size for the system that will use the boot code.

Available On

SYS-PROG or SECURITY account. This command is not available on Ultimate 1400, S/370, or S/390 systems.

See Also

CREATE-BOOT

SYS-GEN

T-ATT

System Management Guide for information on creating boot tapes

:DUMPTAPE

:DUMPTAPE copies computer memory contents to tape for analysis and problem resolution by Ultimate's Technical Assistance Center (TAC).

Caution: Because the system halts after writing the tape, :DUMPTAPE should not be used unless requested by Ultimate TAC.

Syntax :DUMPTAPE

Description Analysis of a memory dump may be helpful in troubleshooting certain types of system problems. However, interpreting the results requires detailed knowledge of both the hardware configuration and the operating system release involved. Therefore, memory dump analysis and interpretation should be left to Ultimate TAC.

Note: Entry of :DUMPTAPE on the S/370 or S/390 systems takes you to the Error Recovery System (ERS). Memory dump tape created from ERS is in a different format than for other platforms.

Available On SYSPROG or SECURITY account. This command is not available on Ultimate 1400 systems.

See Also :MDUMP
System Management Guide for information on troubleshooting

:FILELOAD

:FILELOAD initiates a system file-restore from a full file-save tape by itself, or along with an update-save tape or a transaction log tape.

Caution: Any existing database will be deleted from the system.

Syntax

:FILELOAD {(options)}

(options)

- | | |
|----------|--|
| I | Inhibits reallocation based on reallocation parameters on the file-save tape. |
| M | Modulo; adds modulo adjustment information. This must be used for a file-restore from systems running under revisions prior to 200E. |

Description

:FILELOAD can be used as an alternative to the F (file-restore) system startup option of the bootstrap procedure. Note, however, that while :FILELOAD restores the file section, it does not restore the kernel or assembler code frames (ABS). (The F option of the system startup procedure restores the kernel, the ABS code, and the files.) :FILELOAD can only be run after the system is booted.

Before invoking :FILELOAD, make sure of the following:

- The appropriate tape (full file-save tape, update-save tape, or transaction log tape) has been mounted, attached, and is on-line
- All users are logged off

When :FILELOAD is invoked without options, a full file restore occurs. A full file-save tape created with a FILE-SAVE command must be mounted. All accounts and associated files currently on disk are deleted, and the system is rebuilt to contain only those accounts and files on the tape.

When the full file restore is finished, the following prompt is displayed:

```
Update/transaction tapes (Y/N)?
```

If there are no additional update or transaction tapes to be restored in addition to the full file restore, enter N to return to TCL.

If there are additional update or transaction tapes to be restored, enter Y.

An update restore occurs when an update-save tape created with an ALL-UPDATE-SAVE or PART-UPDATE-SAVE command is mounted after the full file restore of the file save tape is completed.

A transaction log restore occurs when a transaction log tape produced by the LOG command is mounted after the full file restore or update restore tape is completed.

If you enter Y, the following options are displayed:

Data restore options:

U - Unload tape

n - Skip tape forward 'n' files

Tn - Switch to tape drive 'n'

Type option and press <CR>, or just press <CR> to continue:

To unload the current tape, enter U. As the tape is rewound and unloaded, the data restore options are redisplayed. When the tape is unloaded, mount the next tape and press RETURN. A tape label similar to the following is displayed:

```
L 2000#time date user-label-name ~01
Seq# of this data tape:    0    0    0    1
Seq# of last data tape:   0    0    0    1
Is this the right tape (Y/N)?
```

If the correct tape has been mounted, enter Y. If the correct tape has not been mounted, enter N; the prompt is redisplayed. Proceed until all tapes have been restored.

Upon completion, a COLDSTART is invoked.

The I Option If the I option is specified, the restore proceeds and inhibits any modulo reallocation specified on the file-save tape.

The M Option If the M option is specified, a screen similar to the following is displayed:

```
Destination frame size: xxxx Source frame size: 0

File modulos are adjusted whenever frame sizes differ.
Set source frame size = 0 to read value from tape.
Enter other values (mod 500) to use as source.
When not indicated on tape, source frame size defaults
to destination frame size.

Enter source frame size or <CR> to accept:
```

The destination frame size is the frame size of the current system. The source frame size is the frame size of the system on which the file-save tape was created. To accept the displayed source size, press **RETURN**; otherwise, enter the frame size of the source system. If a new source frame size is entered, the following message is displayed:

```
Destination frame size:xxxx;Source frame size:yyyy;
Modulos adjusted
```

The restore begins as described above. Load additional tapes as prompted until the restore is complete.

Take care that programs and data restored with :FILELOAD are compatible with the existing ABS and kernel code. This situation is not usually a problem if the tape was produced under the same operating system release as the one used to do the restore. When this is the case, check for assembly language code (user exits) required by programs being restored.

However, when restoring data from one release to another, more caution is required. Elements stored in files such as verbs, BASIC programs, and PROCs can refer to assembly language routines by ABS location (mode ID), and can cause damage if the correct software is not present.

Available On SYSPROG or SECURITY account.

See Also

ALL-UPDATE-SAVE
LOG
PART-UPDATE-SAVE
SAVE

Operations and Maintenance Guide for your specific platform for information on backing up and restoring data.

System Management Guide for information on bootstrapping, coldstart, and file-restore procedures.

:INIT-SYSTEM

:INIT-SYSTEM initializes or resets all group, item, BASIC, and other system locks, such as those associated with tape drives and the overflow table. The BASIC RND function, which generates random numbers, is also reset to its initial value.

Caution: Arbitrarily clearing locks can result in lost data from Group Format Errors (GFEs) and can compromise database integrity.

Syntax :INIT-SYSTEM

Description :INIT-SYSTEM should only be used when a system malfunction has set one or more locks that cannot be unlocked in the normal manner.

:INIT-SYSTEM is performed as part of a coldstart or file-restore.

:INIT-SYSTEM should never be used on a properly running system, and is best done only on the advice of Ultimate TAC personnel.

Available On SYSPROG or SECURITY account.

See Also *Operations and Maintenance Guide* for your specific platform for information on troubleshooting.

:MDUMP

:MDUMP formats and displays the contents of a memory dump tape created by forcing a memory dump from panel mode or by using the :DUMPTAPE command on a 6000/7000 system. Memory dump tapes are not normally created or inspected except in consultation with Ultimate TAC personnel when troubleshooting certain system problems.

Syntax

:MDUMP {options}

(options

- n** Number of a specific memory word address. Hexadecimal numbers must be preceded by a decimal point (for example, .2D0).
- n-m** Numeric range of memory word addresses. Any delimiter may be used to separate the numbers as long as the delimiter cannot be confused for part of a number. If the second number is hex, no delimiter is required (for example, .100.C20)
- N** No automatic end-of-page waiting.
- P** Routes output to the spooler.

Description

:MDUMP assumes that a memory dump tape has been mounted, the tape is at load point, and the tape is attached. The tape block size is displayed. The first record on tape is assumed to be the contents of the first buffer (512 bytes) in memory, with the following buffers as following records until an end-of-file mark is reached. Data is displayed in hexadecimal and character format, along with the corresponding memory address. Output is compressed by replacing repeated patterns of data by a row of asterisks.

Available On

SYSPROG or SECURITY account.

See Also

:DUMPTAPE

Operations and Maintenance Guide for your platform for information on creating a memory dump.

:RESTART-BSC

:RESTART-BSC reloads and reinitializes communication controller bisynchronous (bisync) operation.

Syntax

:RESTART-BSC

Description

:RESTART-BSC reloads the controller code from disk and reinitializes the system's bisync controllers. Any bisync commands entered before :RESTART-BSC must be re-issued.

:RESTART-BSC can be used to restart a controller that seems to be hung, where no information is being transmitted or received through the controller, and there is no apparent hardware problem.

Available On

SYSPROG or SECURITY account on Ultimate Bull 6000/7000 and LSI systems.

See Also

B-ATT
B-DET
BSC-DIAL

:RESTARTLINE

:RESTARTLINE restarts a hung line.

Syntax

:RESTARTLINE n

n Number of the line to be restarted. This line must have the <BREAK> key enabled.

Description

:RESTARTLINE executes a SET-BAUD command to reset the terminal controller for a specified line, then logs off the line.

Note: :RESTARTLINE waits until the line's current operation, such as a file update, is in a safe state before logging off the line.

<pre> : :RESTARTLINE 9.↓ [534] Successful Logoff of process:9</pre>	Executes a SET-BAUD for line 9, then logs off the line.
--	---

Available On

SYSPROG or SECURITY account.

See Also

BREAK-KEY-ON
LOGOFF
SET-BAUD

:SET-MAX-LINES

:SET-MAX-LINES specifies the maximum number of lines that can be logged on to the system.

Syntax

:SET-MAX-LINES **n**

n Specifies the maximum number of lines allowed to log on. The default setting for **n** is 0 (zero), which specifies all lines can log on.

Description

:SET-MAX-LINES is used to prevent additional lines from logging on to the system. It has no effect on lines already logged on, and line 0 (zero) is always allowed to log on.

The number of lines allowed to log on is on a first-come, first-served basis, and is not related to the line number of any terminal attempting to log on.

<pre>::SET-MAX-LINES 4</pre>	Sets to 4 the maximum number of lines allowed to log on to the system.
<pre>::SET-MAX-LINES 0</pre>	All available lines can log on to the system.

Available On

SYSPROG or SECURITY account.

:STARTSPOOLER

:STARTSPOOLER restarts the spooler.

Caution: This command should only be used when there are no open print jobs being generated and no print jobs actively printing.

Syntax

:STARTSPOOLER {level}

level:

- (null) First level restart. The spooler's internal variables are reinitialized. All closed print jobs and hold files remain intact and all job queues and inactive logical printers remain undisturbed.
- C Second level restart (similar to spooler reinitialization during COLDSTART.) The spooler's internal variables are reinitialized. Spooler software then checks all hold files, dequeues all valid print jobs, and retains them as hold files. It then detaches all job queues, dequeues all logical printers, and sets the SP-ASSIGN command for all lines to the S option (no output sent to the spooler).
- I Third level restart (similar to spooler reinitialization during file-restore.) The spooler's internal variables are reinitialized. Spooler software then removes all print jobs and hold files, detaches all job queues, and deletes all logical printers. It sets the SP-ASSIGN command for all lines to the S option (no output sent to the spooler).

Description

:STARTSPOOLER re-initializes the spooler without coldstarting the entire system.

Note: After either a second or third level restart (with the C or I options), the system manager must use SP-STARTLPTR to start the logical printers. All users on the system must reset their SP-ASSIGN assignments.

<pre>:: STARTSPOOLER.J</pre>	First level spooler restart initiated.
<pre>:: STARTSPOOLER C.J</pre>	Second level spooler restart initiated.
<pre>:: STARTSPOOLER I.J</pre>	Third level spooler restart initiated.

Available On SYSPROG or SECURITY account.

See Also SP-ASSIGN
 SP-STARTLPTR

:TASKINIT

:TASKINIT displays the number of initialized TCL levels, obtains and initializes additional TCL workspaces, or checks linkage of extended levels in the overflow table. :TASKINIT operates on a system-wide basis.

Syntax

:TASKINIT {n} {(C}

- n** Specifies the number of TCL levels for which workspace is needed. If omitted, the command displays the total number of levels currently initialized. The maximum value for n is 32767.
- (C** Checks all unused, existing extended levels to see if they are properly linked. Unusable levels are discarded, and their frames are not returned to the overflow table.

Note: If both n and (C are specified, (C is ignored. If parameters are omitted, the total number of initialized levels is displayed.

Description

Workspaces in the extended level overflow table are initialized for the number of TCL levels specified. If the number specified is greater than the number of workspaces currently allocated, additional workspaces are obtained from the available space pool and initialized. If the number specified is less than the number of workspaces currently allocated, the extra workspaces are returned to the available space pool unless they are in use.

:TASKINIT can be used during startup procedures, such as USER-COLD-START, to reserve extra workspace for future use. (Even though the system automatically allocates additional workspaces as needed, such allocation takes some amount of time. Therefore, performance may be enhanced by allocating workspaces at startup time.)

Note: The size of workspaces for one TCL level varies based on frame size. Number of workspace frames is calculated as:

$$64 + ((64000/\text{system data frame size}) \times 3)$$

For example, a system with frame size of 500 bytes would have a workspace size of 448 frames.

Available On SYSPROG or SECURITY account.

See Also POVF
 USER-COLD-START
 System Management Guide for information on initializing extended TCL
 workspaces.

:TRAP

:TRAP increments a trap counter for a specified line in order to suspend execution on that line. Execution remains suspended until a corresponding number of :UNTRAP commands are issued.

Caution: :TRAP is intended as a system-level diagnostic tool, and not for use in applications. This is due to possible side effects that vary from release to release. For example, if a process is trapped while it has the overflow table locked, other processes needing to use the overflow table will hang until the process holding the lock is untrapped. Also, trapping a process that has an item lock set may hang other processes running the same application.

Syntax

:TRAP {n} {Z}

n Specifies the number of the line to trap. Increments the trap counter by one for that line.

Z Traps all lines except line 0 (zero), other system lines such as UltiNet, and the line issuing the command.

Note: Either the n option or the Z option can be specified, but not both.

Description

:TRAP is a system debugging tool. The specified line is rendered inactive until an :UNTRAP command is issued.

::TRAP 2	Increments the trap counter by 1 and suspends execution on line 2.
::TRAP Z	Increments the trap counter by 1 for all lines except line 0 (zero), other system lines, and the line issuing the command.

Available On

SYSPROG or SECURITY account.

See Also

:UNTRAP

:UNTRAP

:UNTRAP decrements a trap counter for a specified line previously trapped by the :TRAP command in order to resume execution on that line. Execution can only resume when the number of :UNTRAP commands corresponds to the number of :TRAP commands issued for the line.

Syntax

:UNTRAP {n} {Z}

n Specifies the number of line to untrap. Decrements the trap counter by one for that line.

Z Decrements the trap counter by one for all lines trapped by :TRAP Z.

Note: Either the n option or the Z option can be specified, but not both.

Description

:UNTRAP is a system debugging tool. If a specified line was previously trapped with :TRAP, :UNTRAP decrements the trap counter. However, the line is freed only when the trap counter returns to zero. For example, if two :TRAP commands were issued for a line, two :UNTRAP commands must be issued to free the line.

: :UNTRAP 2.↓	Decrements the trap counter for line 2 by 1. When the trap counter for line 2 reaches 0, line 2 is freed for execution.
: :UNTRAP Z.↓	Decrements the trap counter for all trapped lines by 1. When the trap counter for a line reaches 0 (zero), that line is freed for execution.

Available On SYSPROG or SECURITY account.

See Also :TRAP

:WARMSTART

:WARMSTART flushes memory and warmstarts the system. The kernel is reloaded without losing work that was in progress at the time the command was issued; however, output to terminals, printers, or tape devices can be lost.

Syntax

:WARMSTART

Description

:WARMSTART is an alternative to bootstrapping from the CPU control panel when recovery is needed from abnormal hardware conditions or soft restart situations. For example, use :WARMSTART when all lines on a communications controller are hung and need to be restored.

:WARMSTART first flushes memory to preserve the state of all active processes on disk. It then reloads the kernel/firmware, reloads all controller software, and starts execution. The processes are brought back in from disk and execution resumes where it left off.

Available On

SYSPROG or SECURITY account on Ultimate Bull 6000/7000 and LSI systems.

See Also

:WARMSTOP

Operations and Maintenance Guide for your specific platform for information on system startup options, including warmstarting and stopping.

System Management Guide for information on bootstrapping.

:WARMSTOP

:WARMSTOP flushes memory to disk and halts the system.

Syntax :WARMSTOP

Description :WARMSTOP should be used for any planned shutdown, such as before turning the system over to a field engineer for maintenance.

:WARMSTOP first flushes memory to preserve the state of all active processes on disk. It also sets a flag on disk indicating that the system was brought down in an orderly manner, with all memory flushed. This disk flag is used by the warmstart process when the system is brought up again. If this flag is not set, it is assumed that the system crashed prior to flushing memory, and several frames can be removed from the available space pool in an attempt to prevent Group Format Errors (GFES).

Available On SYSPROG or SECURITY account.

See Also :WARMSTART
Operations and Maintenance Guide for your specific platform for information on bootstrapping.
System Management Guide for information on bootstrapping and warmstart.

:ZLINKED

:ZLINKED

:ZLINKED zeros out the linked chain of overflow frames. These frames can only be returned to the system after a file-restore.

Caution: Before entering this command, make sure all users are logged off the system.

Syntax :ZLINKED

Description :ZLINKED can be used if you suspect the overflow table has been corrupted, and that deleting the linked portion of the table may prevent further group format errors (GFES). Note, however, that the contiguous-frame portion of the overflow table is not affected. The best way to ensure valid files and overflow is with a file-save and file-restore.

Available On SECURITY or SYSPROG account.

ABS-DUMP

ABS-DUMP dumps ABS (assembly language software) frames to tape. This command should only be used by CREATE-BOOT or SYS-GEN.

Syntax

ABS-DUMP

Description

When a SYS-GEN or boot system backup tape is created, ABS-DUMP dumps the coldstart and ABS sections to tape after the bootstrap section has been dumped.

The coldstart section contains system modules and a copy of the ABS frames. The ABS section is preceded by a tape label with release level, and contains the system and user assembly language software. It is followed by an End-of-File (EOF) mark.

The ABS frames make up the bulk of the Ultimate Operating System, and also includes the Ultimate RECALL, BASIC, PROC, and Ultimate UPDATE language processors; the various system support and utility programs; the relocatable system modules such as kernel memory-resident and hardware-specific software; and error messages.

Before invoking ABS-DUMP, mount and attach a blank tape. When ABS-DUMP is entered, the following prompt is displayed:

ABS tape label:

Enter the desired label, or press RETURN for no label. The following prompt is displayed:

ABS limits:

To define the boot tape coldstart section, enter the following:

S_n, S_m, . . . , C_w{-x}, C_y{-z}, . . .

where:

S_n, S_m, . . . ,

S indicates a system module, **n** and **m** are decimal module numbers, and **. . .**, indicates that you may enter as many system modules as necessary.

Cw{-x},Cy{-z},... C indicates frame numbers used by the kernel, w{-x} and y{-z} indicate frame numbers or a range of frame numbers, and ... indicates that you may enter as many frame numbers as necessary.

```
:ABS-DUMP.␣
ABS tape label: COLDSTART SECTION.␣
ABS limits: S2,S7,S8,S9,C1-399,C600-646,C648-2047.␣
:
```

Note: Module and frame number lists may be multiple lines, where each line but the last ends with a comma (,).

To define the boot tape ABS section, enter the following:

```
Rn,Rm,...,Aw{-x},Ay{-z},...
```

where:

Rn,Rm,..., R indicates a system module, n and m are decimal module numbers, and ..., indicates that you may enter as many system modules as necessary.

Aw{-x},Ay{-z},... C indicates frame numbers used by virtual, w{-x} and y{-z} indicate frame numbers or a range of frame numbers, and ... indicates that you may enter as many frame numbers as necessary.

```
:ABS-DUMP.␣
ABS tape label: ABS SECTION.␣
ABS limits: R124,R125,A1-399,A600-646,A648-2047.␣
:
```

Note: Module and frame number lists may be multiple lines, where each line but the last ends with a comma (,).

Available On SYSPROG or SECURITY account.

See Also *System Management Guide* for information on system generation and system restore.

ACCESS-CODE

ACCESS-CODE allows entry of the security code received from Ultimate TAC.

Syntax

ACCESS-CODE

Description

On Ultimate S/370 and S/390 operating systems, an access code must be entered before the system can be used by a line other than line 0 (zero).

A temporary access code is included with each new system or upgrade, if required. This code must be entered the first time the system is coldstarted; a message displayed on line 0 outlines the procedure. Until the code is entered, only line 0 can function.

The system must be Initial Program Loaded (IPL'd) after the access code is entered in order for the remaining lines to be activated.

Note: A permanent access code must be requested from Ultimate TAC within 45 days of first entering the temporary code.

ACCESS-CODE prompts for the CPU serial number and the access code:

ACCESS-CODE

:ACCESS-CODE.]

While this program does check the general format of an access code entered, it does NOT verify that the code given is valid. Please, make sure that the code is entered exactly as received from Ultimate support.

Enter {platform} CPU id, "*" for this CPU (nnnnnnnnn) or <CR> to quit: *.]

* Note: the date displayed with the access code is the date the code was entered. It is NOT an expiration date!

CPU id: nnnnnnnnn

1) mm/dd/yy nnn-AAA-nnA-AnA <-- current access-code--<

2) mm/dd/yy nnn-AAA-nnA-AnA

.

.

n) mm/dd/yy nnn-AAA-nnA-AnA

Enter new access code, code 1-n (to pick another entry) or <CR>:nnn-AAA-nnA-AnA.]

Available On SECURITY account on Ultimate S/370 and S/390 systems.

See Also *9370 Operations and Maintenance Guide* for information on installing the Ultimate Operating System.

ACCESS-MAINT

ACCESS-MAINT allows insertion or deletion of retrieval or update locks for a specified account and all of its files.

Syntax

ACCESS-MAINT {**accountname**}

accountname Specifies account for which retrieval or update locks should be added or deleted. If omitted, the system prompts for it.

Description

Use ACCESS-MAINT to modify retrieval or update locks. Retrieval and update locks allow or deny access to files in a specified account. The locks are implemented as lists containing the system and account names that are allowed access.

- If an account has a retrieval lock list, its files cannot be listed, edited, or otherwise viewed by users on any account other than those specified in the account's retrieval list.
- If an account has an update lock list, but not a retrieval list, users on other accounts can list and otherwise view the first account's files, but cannot make changes unless their account is specified in the first account's update list.

When ACCESS-MAINT is invoked without specifying an accountname, the following prompt is displayed:

```
Enter Account Name or <CR> to End:
```

Enter the accountname for which retrieval/update locks are to be set. Once an accountname is entered, a Retrieval Locks screen similar to the following is displayed:

```

Account Name = MYACCOUNT (Existing)
Retrieval Locks

System Name Account Name      System Name Account Name
-----
(LOCAL)      MYACCOUNT
              PERSONNEL

Enter (I)nsert or (D)elete :
```

To insert accountnames that can have retrieval access to all files in the specified account, enter **I**. To delete accountnames that have retrieval access, enter **D**. (If no list of accounts exists, a delete entry is ignored.)

Once I or D is entered, the following prompt is displayed:

```
Enter System Name ( "." for LOCAL):
```

Enter a period (.) if the accountname to be inserted or deleted is on the local system. If the account is connected via UltiNet, enter the account's host system name as defined by UltiNet.

Once the account's system name is specified, the following prompt is displayed:

```
Enter Account Name (* for ALL):
```

To specify that the names of all accounts be inserted or deleted, enter an asterisk (*). To specify individual accounts, enter the account names. To return to the system name prompt, press **RETURN** at the Account Name prompt.

To return to the the (I)nsert or (D)elete prompt, press **RETURN** at the system name prompt. To display the Update Locks screen, press **RETURN** at the (I)nsert or (D)elete prompt. A screen similar to the following is displayed:

```
Account Name = MYACCOUNT (Existing)
```

```
Retrieval Locks
```

```
System Name Account Name      System Name Account Name
```

```
-----
```

```
(LOCAL)      MYACCOUNT
```

```
              PERSONNEL
```

```
Enter (I)nsert or (D)elete :
```

The Update Locks screen is identical to the Retrieval Locks screen. Insert or delete names of accounts that can have update access as described above for retrieval access.

Note: *To disallow access for all accounts except the one being maintained, enter only that accountname under the local system.*

When the names of all accounts having retrieval or update access have been inserted or deleted, press RETURN until a screen similar to the following is displayed:

```
Ultimate Access Code Maintenance
```

```
Retrieval and Update codes will be placed on ALL files
in account MYACCOUNT as entered.
```

```
Enter <A>cept, <R>e-enter, or <Q>uit:
```

To update the indicated account and all files in that account with the retrieval and update locks just specified, enter A. To return to the Retrieval Locks (I)nsert or (D)elete prompt with all current changes still displayed but not yet saved, enter R. To cancel all changes and return to TCL, enter Q.

Note: *All new files created in this account will default to the retrieval and update lock settings.*

Available On SYSPROG or SECURITY account.

See Also UPDATE-ACCOUNT

ACCOUNT-RESTORE

ACCOUNT-RESTORE restores a single account from a SYS-GEN tape, a file-save tape, a transaction logger tape, or an account-save tape to an existing Ultimate system.

Syntax

ACCOUNT-RESTORE **accountname** **{(options)}**

accountname Specifies name to which the saved account will be restored on the system; must not already exist on the system.

(options

I Inhibits reallocation based on reallocation parameters on the file-save tape.

Note: Automatic reallocation can be manually inhibited for any particular file by placing an asterisk in attribute 13 of its file definition item prior to file save. The asterisk must immediately follow any reallocation parameters: (n)*, or (n,m)*, or (n,m,k)*.

M Modulo; adds modulo adjustment information. This must be used for accounts restored from systems with a different frame size running under revisions prior to 200E. Cannot be used with the U option.

S Skips initial forward spacing of the tape. Used when the restore starts at the beginning of the second or later reels of a file-save tape.

U Update; restores update and transaction log tapes. The restore must be started with the first reel of the file-save tape or account-save tape, since this contains information required by the update and transaction log save tapes. Cannot be used with the M option.

Description

ACCOUNT-RESTORE restores a single account to the system from tape.

The restore must be started with the first reel of the file-save tape and continued through all file-save tapes until the account is restored. After this, update and transaction log tapes can be applied. If no update or transaction log tapes are involved in the restore, you can save time by using the STAT-FILE listing to determine which reel of the file-save the account data starts on, and start the restore with that reel.

Starting with Revision 200E, all file-save and account-save tapes contain an entry that specifies the frame size of the source system. If that tape is restored to a 200E or later system with a frame size different from the source frame size, the restore process automatically adjusts the file modulus so that the files are allocated as efficiently as possible.

The M option is intended for cases where the frames sizes of the source and destination systems differ and the source tape was created on a revision prior to 200E. It allows the user to specify the frame size of the source system so that the files can be automatically reallocated by the system.

Note: To do an ACCOUNT-RESTORE from a SYS-GEN tape, enter four T-FWDS from the tape load point before restoring the account. This bypasses the cold-load and ABS-load sections on the SYS-GEN tape.

Restore with No Options

When ACCOUNT-RESTORE is invoked, the following prompt is displayed:

Account name on tape:

Enter the saved account name exactly as it was originally saved. The following prompt is displayed:

Password(s) (Y/N)?

To restore the account with no password, enter N. To restore the account with a password, enter Y. The following prompt is displayed:

Password(s) or <CR> (use password(s) from tape):

To retain the current passwords as saved on tape, press RETURN. To assign new passwords, enter one or more passwords separated by

ACCOUNT-RESTORE

spaces; the passwords are not echoed on the screen. If new passwords are entered, the system prompts:

```
Re-enter password(s) to confirm:
```

Re-enter the passwords to confirm them; the entries are not echoed.

If the password entries do not match, a password mismatch is indicated and the Passwords prompt is redisplayed.

Once the account is found on tape, the system displays the block size message and starts loading the account's files:

```
:ACCOUNT-RESTORE AGENTS.␣
Account name on tape? AGENTS.␣
Password(s) (Y/N)? N.␣

Block Size: 8192
AGENT
FILE1 24506,2,1
.
.
FILEm 14965,1,1
```

As each file is loaded into the system, the filename is displayed, along with its starting frame ID (base FID), modulo, and separation.

Note: If the restore consists of more than one tape reel, mount additional reels when the (C)ontinue/(Q)uit prompt is displayed. Once the next reel is mounted, enter C.

The I Option

If the I option is specified, the previously described prompts for accountname and password are displayed. The restore proceeds, inhibiting any modulo reallocation specified on the file-save tape. Reallocation based on frame size differences proceeds unless overridden by specification of the M option.

The M Option

If the M option is specified, the previously described prompts for accountname and password are displayed. Once that information is entered, a screen similar to the following is displayed:

```
Destination frame size: xxxx Source frame size: 0

File modulus are adjusted whenever frame sizes differ.
Set source frame size = 0 to read value from tape.
Enter other values (mod 500) to use as source.
When not indicated on tape, source frame size defaults
to destination frame size.

Enter source frame size or <CR> to accept:
```

The actual frame size of the destination is displayed and the source frame size is given as zero. This indicates that the system is to read the source frame size from the tape.

At the prompt, if the frame size is not on tape, enter the frame size of the source machine in multiples of 500. The destination and source frame sizes are displayed, and the system returns to the file restore options menu.

To accept the default to read the frame size from tape, press **RETURN**. If **RETURN** is pressed and the tape does not contain the frame size, the destination frame size is used and a message similar to the following is displayed:

```
Destination frame size:xxxx;Source frame size:yyyy;
Modulos adjusted
```

After the frame size is entered, the system proceeds to calculate each file's new modulo and restores the file using the new modulo. The following formula is used:

- a) The starting value for the calculation is the modulo specified in attribute 13 of the file definition item, if any. If that is blank, the current modulo in attribute 3 is used.

- b) If the destination frame size is a *multiple* of the source frame size, the value determined in step a) is divided by the multiple and the next lower prime number is used as the new modulo.
- c) If the destination frame size is a *fraction* of the source frame size, the value determined in step a) is divided by the fraction and the next higher prime number is used as the new modulo.

Note: If the destination frame size is the same as the source frame size, no reallocation based on frame size occurs regardless of the true relative sizes.

The U Option

If you entered the U option to use update or transaction tapes, the following prompt is displayed after the account is restored from the file-save tape:

```
Update/transaction tape (Y/N)?
```

To restore from an update-save or transaction logger tape, enter Y. The following prompt is displayed:

```
Account name on tape?
```

Specify the account name exactly as it was saved. The following screen is displayed:

```
Data restore options:
```

```
U - Unload tape  
n - Skip tape forward 'n' files  
Tn - Switch to tape drive 'n'
```

```
Type option and press <CR>, or just press <CR> to  
continue:
```

If the update or transaction tape is loaded on another drive, enter **Tn** to specify the drive number. The first tape drive is detached and the specified drive is attached.

If the update or transaction logger tape is to be mounted on the current tape drive, unload the account-save tape by entering **U**. The data restore

options are displayed again. When the account-save tape is rewound, remove it, then mount the update-save or transaction tape, and make sure it is loaded and on-line. Press **RETURN** to continue.

If your update or transaction tape consists of more than one reel, you will be prompted to mount the next reel as follows:

```
Mount next reel, (C)ontinue/(Q)uit?
```

If you see this prompt, remove the first reel and mount the next reel. When the next reel is loaded and on-line, type **C** to continue.

When the tape has been restored, ACCOUNT-RESTORE returns to the Update/transaction tape (Y/N) prompt. If there are no more tapes, enter **N**. The TCL prompt is displayed.

Available On SYSPROG or SECURITY account.

See Also ACCOUNT-SAVE
System Management Guide for information on account-saves and restores, and multiple tape procedures.

ACCOUNT-SAVE

ACCOUNT-SAVE saves a single account to tape.

Syntax

ACCOUNT-SAVE {(options)}

(options)

- B** Specifies backward-release compatible; used to save an account to be restored on a system running a revision prior to 190. It does not dump items greater than 32K, but displays their item-IDs on the terminal. Extended format items under 32K are saved in regular format.
- D** Specifies LSI tape cartridge compatibility mode. This option applies to Ultimate Bull 6000/7000 systems when reading or writing tape cartridges for use on LSI tape cartridge systems.
- L** Closes out the current transaction log tape and starts a new one. This ensures that any changes made to the account after the save starts are logged to an identifiable transaction logging tape. If transaction logging is not currently active, this option has no effect.

Note: Your system should have at least two tape drives and two terminals to run ACCOUNT-SAVE during transaction logging.

Description

Use ACCOUNT-SAVE to save a single account to tape. Only one account at a time can be saved, and D-pointers or Q-pointers to the account are not saved. No STAT-FILE items are generated.

If you enter ACCOUNT-SAVE from any account other than SECURITY (or SYSPROG with SECURITY status), and attempt to save an account other than the one currently logged on, the following message is displayed:

Account save attempt disallowed.

When you invoke ACCOUNT-SAVE, the following prompt is displayed:

```
File-save tape label =
```

For easy reference, Ultimate recommends that you label your tapes in the following format:

```
ACCOUNT-SAVE accountname mm-dd-yy
```

where mm-dd-yy is the date of the account-save. After labeling, the following prompt is displayed:

```
Account name =
```

Enter the name of the account to be saved, exactly as it appears in the system Master Dictionary (MD). The accountname must already exist, and must not be a DX, DV, or Q-pointer in the system MD. If the account does not meet these criteria, the prompt is redisplayed.

Once a valid accountname is entered, the following prompt is displayed:

```
Password(s) (Y/N)?
```

To save the account with no password, enter N. To save the account with passwords, enter Y.

If you entered Y to save with passwords, the following prompt is displayed:

```
Password(s) or <CR> (use current password(s)):
```

To save the account with the current passwords, press **RETURN**. To save the account with different passwords, enter one or more new passwords separated by spaces. The passwords are not echoed.

If the L option is used, the following message is displayed:

```
Current LOG tape TOPPED OFF  
Mount reel for next LOG tape  
Enter C when tape is READY and ONLINE.
```

The save begins. As each file is written, its reel and file numbers are displayed. If multiple tapes are needed for the save, mount them as requested by the system.

ACCOUNT-SAVE

ACCOUNT-SAVE creates an account-save tape that can be used with ACCOUNT-RESTORE, SEL-RESTORE, and RESTORE-FILE.

```
:ACCOUNT-SAVE┘
Block size: 8192
Block size: 8192

File-save tape label = ACCOUNT-SAVE 07-15-90┘
Account name = CUSTOMER┘
Password(s) (Y/N)? N┘

1      1 CUSTOMER
1      2      FILEA
1      3      FILEA
      .
      .
      .
1     13      FILEZ
1     13      FILEZ
:
```

Available On SYSPROG or SECURITY account.

See Also ACCOUNT-RESTORE
FILE-SAVE
LIST-FILE-STATS
LOG
SAVE
Operations and Maintenance Guide for your specific platform.
System Management Guide for information on account-saves and restores and multiple tape procedures.

ADDD

ADDD adds two decimal integers.

Syntax

ADDD n m

n Specifies first decimal integer.

m Specifies second decimal integer.

Description

ADDD adds one decimal integer to another decimal integer and displays the result on the terminal. These numbers can range from 0 (zero) to ± 140737488355327 . For the result to be valid, it must also be in the same range.

To enter a negative decimal, enter a minus sign (-) before the number.

<pre>:ADDD 1325 15↵ 1340</pre>	<p>Add decimal 1325 to decimal 15. Result.</p>
<pre>:ADDD 1325 -15↵ 1310</pre>	<p>Add decimal 1325 to decimal -15. Result.</p>
<pre>:</pre>	

Available On

Any user account.

See Also

ADDX

ADDX

ADDX adds two hexadecimal numbers.

Syntax

ADDX n m

n Specifies first hexadecimal number.

m Specifies second hexadecimal number.

Description

ADDX adds one hexadecimal number to another. Numbers can range from 0 to FFFFFFFF. If fewer than 12 hexadecimal characters are entered, high order zeroes are assumed. Overflow is ignored.

<pre>:ADDX 5 7 C</pre>	<pre> Add hexadecimal value 5 to value 7. Result.</pre>
------------------------------	--

Available On

Any user account.

See Also

ADDD

ALL-ACCOUNT-RESTORE

ALL-ACCOUNT-RESTORE is executed from the SYSPROG account to restore from a file-save tape all user accounts not currently on the system.

Syntax

ALL-ACCOUNT-RESTORE {(options)}

(options)

- I Inhibits reallocation based on reallocation parameters on the file-save tape.
- M Modulo; adds modulo adjustment information. This must be used for accounts restored from systems with a different frame size running under revisions prior to 200E.
- U Update; restores update and transaction log tapes.

Note: Either the I option or the M option may be specified, but not both.

Description

ALL-ACCOUNT-RESTORE restores accounts that are not already on the system. The file-save tape containing the accounts to be restored must have been created using the Ultimate Operating System.

Note: ALL-ACCOUNT-RESTORE does not restore the following accounts:

ACC	SPSYM
ATP	SYSLIB
BLOCK-CONVERT	SYSPROG
ERRMSG	SYSTEM
PROCLIB	SYSTEM-ERRORS
SECURITY	

If the UltiLink™, UltiMation™, or UltiWord® (WP) accounts exist on the system, they will be overwritten by the tape version.

Starting with Revision 200E, all file-save and account-save tapes contain an entry that specifies the frame size of the source system. If that tape is restored to a 200E or later system with a frame size different from the source frame size, the restore process automatically adjusts the file modulus so that the files are allocated as efficiently as possible.

The M option is intended for cases where the frames sizes of the source and destination systems differ and the source tape was created on a revision prior to 200E. It allows the user to specify the frame size of the source system so that the files can be automatically reallocated by the system.

Restore with No Options

When ALL-ACCOUNT-RESTORE is invoked, the system displays the block size message and starts loading each account's files. As each file is loaded into the system, the filename is displayed, along with its starting frame ID (base FID), modulo, and separation.

Note: If the restore consists of more than one tape reel, mount additional reels when the (C)ontinue/(Q)uit prompt is displayed. Once the next reel is mounted, enter C.

The I Option

If the I option is specified, the restore proceeds but inhibits any modulo reallocation specified on the file-save tape. Reallocation based on frame size differences proceeds.

The M Option

If the M option is specified, a screen similar to the following is displayed:

```
Destination frame size: xxxx Source frame size: 0
```

```
File modulus are adjusted whenever frame sizes differ.  
Set source frame size = 0 to read value from tape.  
Enter other values (mod 500) to use as source.  
When not indicated on tape, source frame size defaults  
to destination frame size.
```

```
Enter source frame size or <CR> to accept:
```

The actual frame size of the destination is displayed and the source frame size is given as zero. This indicates that the system is to read the source frame size from the tape.

At the prompt, if the frame size is not on tape, enter the frame size of the source machine in multiples of 500. The destination and source frame sizes are displayed, and the system returns to the file restore options menu.

To accept the default to read the frame size from tape, press **RETURN**. If **RETURN** is pressed and the tape does not contain the frame size, the destination frame size is used and a message similar to the following is displayed:

```
Destination frame size:xxxx;Source frame size:yyyy;  
Modulos adjusted
```

After the frame size is entered, the system proceeds to calculate each file's new modulo and restores the file using the new modulo. The following formula is used:

- a) The starting value for the calculation is the modulo specified in attribute 13 of the file definition item, if any. If that is blank, the current modulo in attribute 3 is used.
- b) If the destination frame size is a *multiple* of the source frame size, the value determined in step a) is divided by the multiple and the next lower prime number is used as the new modulo.

- c) If the destination frame size is a *fraction* of the source frame size, the value determined in step a) is divided by the fraction and the next higher prime number is used as the new modulo.

Note: *If the destination frame size is the same as the source frame size, no reallocation based on frame size occurs regardless of the true relative sizes.*

Automatic reallocation can be manually inhibited for any particular file by placing an asterisk in attribute 13 of its file definition item prior to file save. The asterisk must immediately follow any reallocation parameters: (n)*, or (n,m)*, or (n,m,k)*.

Available On SYSPROG account.

See Also ACCOUNT-RESTORE
Upgrade Procedure for your specific implementation.

ALL-UPDATE-SAVE

ALL-UPDATE-SAVE saves to a file-save tape all groups that have been updated since the last full FILE-SAVE, PART-UPDATE-SAVE, or SAVE.

Syntax

ALL-UPDATE-SAVE

Description

ALL-UPDATE-SAVE saves all updates to your system since the last FILE-SAVE, PART-UPDATE-SAVE, or SAVE. Updates consist of creating, changing, or deleting an item, file, or account. ALL-UPDATE-SAVE does not reset any group-updated flags.

By using ALL-UPDATE-SAVE exclusively, only the last full FILE-SAVE tape, the last ALL-UPDATE-SAVE tape, and any transaction logging tapes are needed to restore the system.

This contrasts with the exclusive use of PART-UPDATE-SAVE, which only saves changes since the last PART-UPDATE-SAVE, and means you must have all PART-UPDATE-SAVE tapes and the full FILE-SAVE tape in order to restore the system. However, the trade-off is that an ALL-UPDATE-SAVE usually takes more time to execute than a PART-UPDATE-SAVE.

ALL-UPDATE-SAVES, which are classified as incremental saves, are not allowed under the following circumstances:

- A full FILE-SAVE has not been performed since a FILE-RESTORE.
- Any save attempt is interrupted and prematurely ended, for instance, during a crash.

When ALL-UPDATE-SAVE is invoked, it attaches the tape to drive 0 if the tape was not previously attached, rewinds it, displays the time, then displays the following prompt:

```
Do you want the Console listing to go to the printer?  
(Y/N/X) -
```

To send the list of changes being saved to the printer as well as being displayed on the terminal, enter Y. To display the list only on the terminal, enter N. To terminate the command, enter X.

The following prompt is displayed:

```
Enter tape block size (500-n) -
```

On all IBM systems, and on Ultimate 1400 systems with half-inch drives, n is 32000. On Ultimate 1400 systems with quarter-inch drives, n is 31744. On all other systems, n is 8192. Enter the desired tape block size.

The following prompt is displayed:

```
Enter Tape Label -
```

Enter the information to be stored in the tape label.

ALL-UPDATE-SAVE then starts. When it is finished, the following prompt is displayed:

```
Count of System-Errors in the past 2 days  
To Lineprinter (Y/N/X) -
```

To print system errors on the printer, enter Y. To display the system errors only on the terminal, enter N. For no printing or display of system errors, enter X.

The following message is displayed:

```
All-Update-Save finished at time date
```

ALL-UPDATE-SAVE then logs off.

ALL-UPDATE-SAVE

```
:ALL-UPDATE-SAVE.↓
Tape attached
Block size: 8192
Rewinding...
End of file
Rewinding...
All-Update-Save beginning at 10:11:12  12 NOV 1991
Do you want the Console listing to go to the printer?(Y/N/X)- Y.↓
Enter tape block size (500-8192) - 8192.↓
Enter Tape Label - ALL-UPDATE-SAVE 11/12/90.↓
Tape attached
Block size: 8192
Rewinding...
Count of System-Errors in the past 2 days
To Lineprinter (Y/N/X) Y.↓
All-Update-Save finished at 12:45:55  12 NOV 1991

<Connect time= n mins; CPU= n units; lptr pages=0 >
<Logged off at hh:mm:ss          on dd mmm yyyy >
```

Available On SYSPROG or SECURITY account.

See Also

- FILE-SAVE
- PART-UPDATE-SAVE
- SAVE
- SYSTEMERRORS

System Management Guide for information on file-saves.

AS

AS assembles assembly language programs for firmware machines.

Syntax

AS filename {itemlist} {(options)}

filename Specifies the file containing the items to be assembled.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

E Lists only errors; used in conjunction with the L option.

L Generates a listing equivalent to the MLIST command during assembly.

N Specifies no automatic end-of-page waiting; useful in conjunction with the Z option.

P Routes output to the spooler.

Q Specifies that messages are not to be displayed nor the editor entered if assembly errors are found; normally, this is used when multiple items are being assembled.

Z Specifies that the editor not be entered if assembly errors are found; normally, this is used when multiple items are being assembled.

Description

For more information on assemblies, please refer to the *Ultimate Assembly Language Reference Guide*.

Available On

Any user account.

See Also

ASM
CROSS-INDEX
OPT

ASM

ASM assembles programs on Ultimate 1400 systems.

Syntax

ASM filename {itemlist} {(options)}

filename	Specifies the file containing the items to be assembled.
itemlist	Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.
(options)	
C	Retains comment lines from the source code.
E	Lists only errors; used in conjunction with the L option.
L	Generates a listing equivalent to the MLIST command during assembly.
N	Specifies no automatic end-of-page waiting; useful in conjunction with the Z option.
P	Routes output to the spooler.
Q	Specifies that messages are not to be displayed nor the editor entered if assembly errors are found; normally, this is used when multiple items are being assembled.
V	Inserts a V.TRAP instruction into the native code before each source instruction, instead of just at labels.
Z	Specifies that the editor not be entered if assembly errors are found; normally, this is used when multiple items are being assembled.

Description

For more information on assemblies, please refer to the *Ultimate Assembly Language Reference Guide*.

Available On

Any user account.

See Also

AS
CROSS-INDEX
OPT

B-ATT

B-ATT attaches and dedicates a bisynchronous (bisync) communications controller to the line issuing the command.

Syntax

B-ATT {n}

n Specifies the number of the bisync controller to attach. If omitted, controller 0 (zero) is attached.

Description

B-ATT must be used before any other bisync communications commands to ensure that only one user at a time has access to the communications processor. The attachment is in effect until a B-DET or an OFF command is issued.

When B-ATT is successful, it raises Data Terminal Ready (DTR) and displays the following message:

```
[140] BSC Controller attached
```

If the specified controller does not exist, the following message is displayed:

```
[134] No BISYNC communications pac found
```

The maximum number of available bisync controllers depends on your platform:

Platform	Bisync Controllers
LSI 3030	3
LSI 3040 and LSI 3050	4
All other LSI models	1
Ultimate 1400	7
Ultimate Bull 6000/7000	32

```
:B-ATT (2) ↓
```

```
[140] BSC Controller attached  
:
```

Available On SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

- :RESTART-BSC
- B-DET
- B-LIST
- BSC-DIAL
- CHANGE-BSC-TIMER
- DISCONNECT
- RAISE-DTR

B-DET

B-DET detaches a bisynchronous (bisync) communications controller from a line, making it available to other lines.

Syntax

B-DET {U,n}

U Unconditionally detaches a controller not on the current line. If omitted, the controller attached to the current line is detached.

n Specifies the number of the bisync controller to detach; must be specified if U is specified.

Note: If parameters are omitted, the controller attached to the current line is detached.

Description

Use B-DET to detach a bisync controller from a line.

:B-DET (U, 0) ↵	Unconditionally detaches controller zero from its line.
:B-DET ↵	Detaches the controller from the current line.

Available On

SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

:RESTART-BSC
 B-ATT
 B-LIST
 BSC-DIAL
 CHANGE-BSC-TIMER
 DISCONNECT

B-LIST

B-LIST displays the bisynchronous (bisync) attachment table.

Syntax

B-LIST

Description

B-LIST displays a table showing each bisync controller (BSC) number and any attached line number.

If a controller is attached, the line number to which it is attached is displayed under the heading Process#. If the line issuing the command has a controller attached to it, an asterisk follows the line number. If the controller is not attached, the Process# column contains a hyphen.

```
: B-LIST.↓  
BSC# Process# BSC# Process# BSC# Process# BSC# Process#  
0      9*      1      5      2      -      3      1  
4      -      5      -      6      -      7      -  
8      -      9      -      10     -      11     -  
12     -      13     -      14     -      15     -  
16     -      17     -      18     -      19     -  
20     -      21     -      22     -      23     -  
24     -      25     -      26     -      27     -  
28     -      29     -      30     -      31     -  
:
```

Available On

SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

:RESTART-BSC
B-ATT
B-DET
BSC-DIAL
CHANGE-BSC-TIMER
DISCONNECT
WHERE

BASIC

BASIC compiles an Ultimate BASIC source program to create BASIC object code. The object code can then be executed using the RUN command, or the program can be cataloged and executed directly from TCL.

Note: *BASIC is an alternative to, and works exactly the same as, the COMPILE command.*

Syntax

BASIC filename itemlist {(options)}

filename Specifies the file containing the source program to compile.

itemlist Specifies one or more explicit item-IDs (program names), or an asterisk (*) to specify all items in the file.

(options)

- C** Suppresses end-of-line opcodes from object code.
- F** Lists internal variables and labels; used with the M option.
- I** Lists lines from \$INCLUDED programs if the L option is specified.
- L** Displays line by line listing of the program during compilation.
- M** Lists map of variables and object layout.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Suppresses generation of symbol table.
- X** Cross-references all labels and variables and stores this information in the BSYM file.

Description

For more information on BASIC programs, please refer to the *Ultimate BASIC Language Reference Guide*.

Available On

Any user account.

BLOCK-PRINT

BLOCK-PRINT prints any ASCII characters in block form on the terminal or printer.

Syntax

BLOCK-PRINT character-string {(options)}

character-string Specifies the characters to be block-printed. If the total number of characters, when block-printed, exceeds the current line length set by the most recent TERM command, the extra characters are wrapped either to the next line or to the next screen.

(options)

- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- U** Display character-string in upper case letters.

Description

BLOCK-PRINT prints characters in an expanded block form. Any printable ASCII character can be block-printed.

No quotation marks are needed to delimit the string unless the string already contains a quotation mark. If the string contains a single quote ('), the string must be enclosed in double quotes (" "), and vice versa. For example, to print LET'S GO, enter the string "LET'S GO".

BLOCK-PRINT checks the BLOCK-CONVERT file and outputs the blocked characters as specified. The ASCII character itself is used to produce the expanded block. The block height is seven characters, with an additional blank line at the bottom of each character.

```

:BLOCK-PRINT HELLO␣          Block print HELLO on the terminal

      HH   HH  EEEEEEE LL      LL      000000
      HH   HH  EE      LL      LL      00   00
      HH   HH  EE      LL      LL      00   00
      HHHHHHH EEEEEEE LL      LL      00   00
      HH   HH  EE      LL      LL      00   00
      HH   HH  EE      LL      LL      00   00
      HH   HH  EEEEEEE LLLLLLL LLLLLLL 000000

:BLOCK-PRINT "LET'S GO" (P␣  Block print LET'S GO on
                               the printer.
  
```

Available On Any user account.

See Also *System Management Guide* for information on the BLOCK-CONVERT file.

BMSH

BMSH displays the base, modulo, separation, and hashing algorithm information for a specified file.

Syntax

BMSH filename

filename Specifies the file whose base, modulo, separation, and hash information is to be displayed.

Description

The file information is displayed in the following format:

```
[425] File 'xyz' base=xxx, modulo=xxx, separ=xxx, hash=x
```

where:

base File location (first frame ID of primary storage).
modulo Number of groups in primary storage.
separ Number of contiguous frames per group.
hash Specifies the algorithm (1 or 2) used to hash the items into groups for storage.

```
:BMSH DICT BP.J
```

```
[425] File 'BP' base=1247822, modulo=1, separ=1, hash=1  
:
```

Available On

Any user account.

See Also

System Management Guide for information on base, modulo, separation, and hashing algorithm.

BOOT-DUMP

BOOT-DUMP writes the boot section of the SYS-GEN tape. This command should only be used by SYS-GEN.

BREAK-CHR-OFF

BREAK-CHR-OFF disables the <CTRL-C> key sequence from functioning the same as the <BREAK> key.

Syntax

BREAK-CHR-OFF {n}

n Specifies the line number on which the <CTRL-C> key sequence should not operate as a <BREAK> key. If omitted, the current line is assumed.

Description

BREAK-CHR-OFF disables special handling of the <CTRL-C> key sequence. If BREAK-CHR-ON has not been previously entered, no action is performed.

```
: BREAK-CHR-OFF 31␣ Disable the <CTRL-C> feature on line 31.  
:
```

Available On

SYSprog or SECURITY account on Ultimate Bull 6000/7000 systems.

See Also

BREAK-CHR-ON

BREAK-CHR-ON

BREAK-CHR-ON enables the <CTRL-C> key sequence to function the same as the <BREAK> key.

Syntax

BREAK-CHR-ON {n}

n Specifies the line number on which the <CTRL-C> key sequence should operate as a <BREAK> key. If omitted, the current line is assumed.

Description

BREAK-CHR-ON enables special handling of the <CTRL-C> key sequence. Once enabled, a process can be interrupted at the terminal by pressing <CTRL-C>.

To disable the <CTRL-C> key sequence, use BREAK-CHR-OFF.

Note: If the <BREAK> key has been disabled, the <CTRL-C> key is also disabled.

<pre>:BREAK-CHR-ON 31. Enable the <CTRL-C> feature on line : 31. :</pre>

Available On

SYSPROG or SECURITY account on Ultimate Bull 6000/7000 systems.

See Also

BREAK-CHR-OFF

BREAK-KEY-OFF

BREAK-KEY-OFF disables the <BREAK> key for a specified terminal.

Syntax

BREAK-KEY-OFF {n}

n Specifies the line number on which to disable the <BREAK> key. If omitted, the current line is assumed.

Description

BREAK-KEY-OFF disables the <BREAK> key on the terminal attached to the specified line; thereafter processes cannot be interrupted by pressing <BREAK> (or <CTRL-C> on Ultimate Bull 6000/7000 systems) if BREAK-CHR-ON is set.

To enable the <BREAK> key on a terminal, use one of the following:

- BREAK-KEY-ON
- LOGTO accountname
- Log off and log on again

```
:BREAK-KEY-OFF 31␣ Disable the <BREAK> key on line 31.  
:
```

Available On

SYSPROG or SECURITY account.

See Also

BREAK-KEY-ON

BREAK-KEY-ON

BREAK-KEY-ON enables the <BREAK> key for a specified terminal.

Syntax

BREAK-KEY-ON {n}

n Specifies the line number on which to enable the <BREAK> key. If omitted, the current line is assumed.

Description

BREAK-KEY-ON enables program interruption by pressing the <BREAK> key (or <CTRL-C> on Ultimate Bull 6000/7000 systems), if BREAK-CHR-ON is set.

```
:BREAK-KEY-ON 31␣ Enable the <BREAK> key on line 31.
```

```
:
```

Available On

SYSPROG or SECURITY account.

See Also

BREAK-KEY-OFF

BSC-DIAL

BSC-DIAL initiates automatic dialing on any Ultimate system using synchronous modems.

Syntax

BSC-DIAL phone-number

phone-number Specifies the number to be dialed; can consist of numbers, blanks, and dashes (-).

Description

Before invoking BSC-DIAL, use B-ATT to attach the controller connected to the modem. You must also set the switch on the front of the modem to DATA.

BSC-DIAL waits for the modem to report call status for up to 45 retries.

```
:BSC-DIAL 9-1-213-555-1234.]
```

```
[149] BSC AUTO-DIAL CALL PLACEMENT SUCCESSFULLY COMPLETED.
```

Available On

SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

:RESTART-BSC
B-ATT
B-DET
B-LIST
CHANGE-BSC-TIMER
DISCONNECT.

BUILD-PROC

BUILD-PROC builds a PROC from a TCL command statement.

Syntax

BUILD-PROC tcl.stmt

tcl.stmt Specifies the TCL command statement to copy into the PROC.

Description

Use BUILD-PROC to build a PROC from any TCL statement, such as a complex Ultimate RECALL statement. When invoked, BUILD-PROC displays the following prompt:

```
Enter PROC item-id:
```

Enter the name of the PROC. The PROC is filed in the current MD and the following message is displayed:

```
PROC "proc.name" created.
```

PROCs created with BUILD-PROC have the following format:

```

item-ID
001 PQ
002 Created by BUILD-PROC on date
003 Htcl.stmt
004 P
```

Attribute 2 is a comment line that identifies the date the PROC was created. Attribute 3 contains the specified TCL command statement.

To use BUILD-PROC for a statement that has already been executed:

1. Redisplay the statement from the TCL stack.
2. Press <HOME> to move the cursor to the beginning of the statement.
3. Press <F1> to enter insert mode.
4. Type BUILD-PROC followed by a space, then press RETURN.
5. Name the PROC.

Once created, the PROC can be edited as desired.

Available On

Any user account.

See Also

Ultimate PROC Reference Guide for further information on PROCs.

CATALOG

CATALOG catalogs a compiled BASIC program. Cataloged programs can then be used as TCL commands.

Syntax

CATALOG filename {itemlist} {(options)}

filename Specifies the file to be cataloged.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

G Causes specified items to be passed to the program, instead of being executed by TCL. Changes attribute 1 of the item from PC to PG.

L Inhibits execution of the program at logon if the program has the same name as the account in which it is cataloged. Changes attribute 1 of the item from PC to P.

Description

For more information about BASIC programs, please refer to the *Ultimate BASIC Language Reference Guide*.

Available On

Any user account.

CHANGE-BSC-TIMER

CHANGE-BSC-TIMER sets the maximum time for bisynchronous (bisync) messages to be acknowledged.

Syntax

CHANGE-BSC-TIMER {n}

n Specifies the number of seconds before a bisync timeout occurs. If omitted, the default is 20 seconds.

Description

CHANGE-BSC-TIMER changes the default timeout period for acknowledgment of data received via bisync communications.

<code>: CHANGE-BSC-TIMER 30.↓</code>	Change timer to 30 seconds.
<code>: CHANGE-BSC-TIMER.↓</code>	Reset timer to default 20 seconds.
<code>:</code>	

Available On

SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

B-ATT
 B-DET
 B-LIST
 BSC-DIAL
 DISCONNECT
 RECEIVE
 TRANSMIT

CHARGE-TO

CHARGE-TO terminates the current charge session and adds a specified charge name to the current account name.

Syntax

CHARGE-TO {chargename}

chargename Specifies the name to add to the current accountname, such as user name or department number. Can contain any sequence of letters, numbers, or other characters, except for an asterisk. The name is added to the current accountname, preceded by an asterisk; that is, **accountname*chargename**. If omitted, the current account name is charged.

Description

Use CHARGE-TO to keep track of computer usage for multiple projects associated with the same accountname. CHARGE-TO performs the following functions:

- Terminates the current charge session and displays the current accounting statistics up to the point when the command is entered.
- If the account's accounting option is set (via CREATE-ACCOUNT or UPDATE-ACCOUNT), it updates the ACC file with the accumulated charge-units, line printer pages, and connect-time statistics.
- Begins a new charge session with the specified name. Use the WHO command to display the charge name.

<code>:WHO↵</code> 09 TEST	Displays the current user name.
<code>:CHARGE-TO PROJECT1↵</code>	Terminates the current charge session, starts a new session, and appends PROJECT1 to the current accountname (TEST).
<code><Connect time= 20 mins.; CPU= 1 units; lptr pages=0 ></code>	
<code>:WHO↵</code> 09 TEST*PROJECT1	Displays the new user name.
<code>:CHARGE-TO PROJECT3↵</code>	Terminates the current charge session, starts a new session and appends PROJECT3 to the current accountname (TEST).
<code><Connect time= 20 mins.; CPU= 1 units; lptr pages=0 ></code>	
<code>:WHO↵</code> 09 TEST*PROJECT3 :	Displays the new user name.

Available On Any user account.

See Also CHARGE-UNITS
CHARGES
CLEAR-ACC-FILE
WHO
System Management Guide for information on the Accounting History (ACC) file and user accounts.

CHARGE-UNITS

CHARGE-UNITS monitors and lists computer usage for one or more specified lines. Of the lines specified, it indicates the line with the highest usage.

Syntax

CHARGE-UNITS {n{-m}} {(options)}

n Displays charge units of line n. If -m is omitted (see below), n also displays the user's account name (from WHO) and system location (from WHERE).

-m Displays charge units of lines n through m.

Note: If line number or range of line numbers is omitted, all lines are displayed.

(options)

A Accumulates charge units when the command is invoked. If not specified, units shown are from the time the line was logged on, or LOGTO or CHARGE-TO was used. Can be used to monitor current usage if used with the L option.

L Loops usage display of the lines specified, pausing between loops. The default pause is approximately 10 seconds; to change the value, also specify the Z option. To stop the display, press any key.

T Traps the line while units are being accumulated, then untraps it.

Z Prompts for number of seconds to sleep between loops:
ENTER AMOUNT OF TIME TO SLEEP (SECONDS) ?

Description

CHARGE-UNITS measures computer usage. The value of the charge unit is hardware dependent.

The report displays the following information:

LINE# Line number. Lines currently logged on are preceded by a plus sign (+); lines not logged on are preceded by a minus sign (-).

CHARGES Accumulated charge units. If the A option is not specified, shows the charge units since the line logged on. If the line is not currently logged on, charge units from the last logon are shown. An asterisk (*) next to the charge units column indicates the line invoking the command.

Note: If a line has not logged on since the last coldstart, the value displayed for that line is meaningless.

At the end of the report, the line with the maximum usage and its number of charge units is displayed. The current line is not included in determining the line with the maximum usage.

The number of columns displayed can be increased or decreased by resetting terminal width with the 132 or 80 commands.

LINE#	CHARGES	LINE#	CHARGES	LINE#	CHARGES	LINE#	CHARGES
+0	0	+20	0	-40	0	-60	0
+1	238	+21	0	-41	0	-61	0
-2	0	+22	1	-42	0	-62	0
+3	54*	+23	0	-43	0	-63	0
+4	0	+24	0	-44	0		
.							
.							
time	date	**MAX USAGE**		LINE #	= 1	CHARGE UNITS	= 238

Available On SYSPROG account.

See Also CHARGE-TO
 CHARGES
System Management Guide for information on the Accounting History (ACC) file and user accounts.

CHARGES

CHARGES displays total connect time, charge units of CPU time, and line printer pages accumulated since logon or since the last CHARGE-TO or LOGTO command.

Syntax

CHARGES

Description

Use CHARGES to verify the computer usage for a particular logon session. CHARGES displays logon statistics as follows:

```
< Connect time= n mins.; CPU= m units, lptr pages=x >
```

where:

- n** Number of minutes logged on to the account.
- m** CPU units charged to the account.
- x** Pages printed to the line printer.

Note: CHARGES does not end the current charge session.

```
:CHARGES.↓  
  
< Connect time=90 mins.;CPU= 5 units; lptr pages= 0 >  
  
:
```

Available On

Any user account.

See Also

CHARGE-TO
CHARGE-UNITS
System Management Guide for information on the Accounting History (ACC) file and user accounts.

CHECK-SUM

CHECK-SUM is an Ultimate RECALL command that generates a checksum for file items.

Syntax **CHECK-SUM filename {itemlist} {sel-criteria} {attr} {(P}**

filename Specifies the file to be checksummed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by the specified **attr** value in an item in order for the item to be checksummed. Also known as a WITH clause.

attr Specifies the value of a single attribute to be checksummed in the item. If omitted, the entire item is checksummed.

(P Routes output to the spooler.

Description For further information on CHECK-SUM, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On Any user account.

CHECK.REV

CHECK.REV is used by the upgrade procedures when a new revision is installed. It should not be used at any other time.

CHK-SYSGEN

CHK-SYSGEN is used by the upgrade procedures when a new revision is installed. It should not be used at any other time.

CLAIM

CLAIM builds contiguous blocks of overflow space from the individual frames contained in the link chain portion of the overflow table.

Caution: *No other users should be on the system when CLAIM is running.*

Syntax

CLAIM

Description

Ultimate recommends you use CLAIM in the following cases:

- Contiguous space is getting low.
- As a routine step after many of contiguous frames are used.
- To otherwise reclaim frames until a file-restore reorganizes files into contiguous frames.

Note: *Use POVf to display the currently available blocks of contiguous frames.*

Available On

SYSprog or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

POVF

CLEAR-ACC-FILE

CLEAR-ACC-FILE deletes all logon history items from the Accounting History (ACC) file.

Caution: *On timesharing systems that base customer charges on ACC data, do not use CLEAR-ACC-FILE until after a billing cycle is completed.*

Syntax

CLEAR-ACC-FILE

Description

Items in the ACC file are limited to a maximum of 65,536 bytes each. Use CLEAR-ACC-FILE periodically to ensure that ACC items do not exceed this maximum.

If an item approaches the maximum byte size, a message similar to the following is displayed:

```
[333] ACC file statistics item 'A' will soon be too
large to update.
```

If the item reaches the maximum byte size, a message similar to the following is displayed:

```
[338] ACC file statistics item 'A' is too large to
update.
```

Available On

SYSPROG or SECURITY account.

See Also

LISTACC

System Management Guide for information on the Accounting History (ACC) file and user accounts.

CLEAR-BASIC-LOCKS

CLEAR-BASIC-LOCKS clears the BASIC lock table.

Caution: *This command should be used only when directed to by Ultimate support personnel.*

Syntax

CLEAR-BASIC-LOCKS

Description

There are 48 BASIC locks (0-47) shared by all BASIC programs on the system.

If a program cannot obtain a lock because another program on a different terminal is using it, the program trying to obtain the lock waits until the lock is cleared by the program using it.

To display the BASIC locks on your system, use the WHAT command.

Available On

SYSPROG or SECURITY account.

See Also

WHAT
Ultimate BASIC Language Reference Guide for information on LOCK and UNLOCK statements.

CLEAR-FILE

CLEAR-FILE clears the dictionary section or data section of a file.

Syntax

```
CLEAR-FILE DICT dictname
CLEAR-FILE DATA dictname{,dataname}
```

DICT Specifies the dictionary section of the file is to be cleared.

DATA Specifies the data section of the file is to be cleared.

Note: Either *DICT* or *DATA* must be specified.

dictname Specifies the dictionary of the file to be cleared.

dataname Specifies the data section to be cleared. If *dataname* is omitted and *DATA* is specified, the *dataname* that is the same as the *dictname* is assumed.

Description

CLEAR-FILE removes all items from the specified file. It releases any extended frames (attached to primary frames) to the system's pool of available space.

When a dictionary is cleared, all items are removed except file definition items (D-pointers).

```
: CLEAR-FILE DATA INVENTORY, MARCH.↓
:
```

Available On

SYSPROG or SECURITY account.

See Also

DELETE
DELETE-FILE

CLEAR-INDEX-LOCKS

CLEAR-INDEX-LOCKS unlocks all indexes for a specified file.

Caution: *This command should be used only when directed by Ultimate support personnel.*

Syntax

CLEAR-INDEX-LOCKS filename

filename Specifies the file associated with the index.

Description

Under normal conditions, the system unlocks index locks. However, if a process using indexes ends abnormally, an index could remain locked. In that case, use CLEAR-INDEX-LOCKS to unlock the index.

Note: *To list index locks, use the LIST-INDEX-LOCKS command.*

No message is displayed when CLEAR-INDEX-LOCKS is complete. Any index locks in the file are unlocked and the system returns to the TCL prompt.

Available On

Any user account with privilege level 2.

See Also

LIST-INDEX-LOCKS

CLEAR-NAMED-COMMON

CLEAR-NAMED-COMMON clears named COMMON areas.

Caution: *This command should be used only when directed to by Ultimate support personnel.*

Syntax

CLEAR-NAMED-COMMON

Description

CLEAR-NAMED-COMMON clears all named COMMON areas from the current line.

Note: *To list named COMMON areas, use the LIST-NAMED-COMMON command.*

No message is displayed when CLEAR-NAMED-COMMON is complete.

Available On

Any user account.

See Also

LIST-NAMED-COMMON
Ultimate BASIC Language Reference Guide

CLEAR-STACK

CLEAR-STACK clears the TCL stack of all commands.

Syntax CLEAR-STACK

Description CLEAR-STACK immediately removes all commands from your TCL stack. The next command entered at TCL is stored in entry 001.

Note: To display current stack entries prior to using CLEAR-STACK, use the VIEW command or . (period) command. The VIEW command and . command are never stacked.

Since the stack is not saved by the file-save process, it is cleared during every file-restore.

Available On SYSPROG or SECURITY account.

See Also . (period)
SET-STACK
VIEW
Chapter 1 of this document for information on the TCL stack.

COFF

COFF (Communication OFF) logs off the line issuing the command and drops its Data Terminal Ready (DTR) status to low.

Syntax

COFF

Description

COFF performs a logoff procedure similar to the OFF command. Differences are:

- The accounting statistics (such as connect time and CPU units) for the session just ended are not displayed.
- COFF drops the line's DTR to low for one second before the Logon Please message is displayed.

COFF is used instead of the OFF command to log off a line connected via a modem when the modem and/or communications multiplexor requires DTR to drop to low during logoff.

On Ultimate 1400 systems, COFF drops both DTR and Request To Send (RTS).

```
:COFF_
```

```
26 JUN 1990 07:42:53 Logon please:
```

Available On

SYSPROG or SECURITY account on Ultimate Bull 6000/7000 systems and Ultimate 1400 systems.

See Also

DROP-DTR
DROP-RTS
OFF

COLDSTART

COLDSTART executes automatically at the end of the coldstart operation. It initializes system parameters and enables all lines.

COLDSTART should never be used as a TCL command. You can customize coldstarting by modifying USER-COLD-START.

For further information on coldstarting procedures, please refer to the *System Management Guide*.

COMPARE

COMPARE compares items in two files and reports if they are equal, unequal (same item-IDs with different contents), or missing (item-ID is in only one file).

Syntax

COMPARE {(options)}

(options)

- N Specifies no automatic end-of-page waiting.
- P Routes output to the spooler.

Description

When invoked, COMPARE displays the following prompt:

```
ENTER TWO FILE NAMES TO COMPARE FOR EQUAL, UNEQUAL OR  
MISSING ITEMS. FILE NAME CAN OPTIONALLY BE PRECEDED  
BY THE "DICT" MODIFIER
```

```
ENTER FILE NAME TO COMPARE
```

Enter the first filename. The following prompt is displayed:

```
ENTER SECOND FILE NAME
```

Enter the second filename.

The report lists which items are equal (=), which items are not equal (<>), and which items are missing from one of the files (MISS).

The items in both files are listed twice (see the following example) because the items in the first file are tested first, then the items in the second file are tested.

COMPARE

:COMPARE.↓

ENTER TWO FILE NAMES TO COMPARE FOR EQUAL, UNEQUAL OR MISSING ITEMS. FILE NAME CAN OPTIONALLY BE PRECEDED BY THE "DICT" MODIFIER

ENTER FILE NAME TO COMPARE **CUSTOMER.↓**

ENTER SECOND FILE NAME **USER.↓**

FILEA	FILEB	KEY	
=	=	ABC10	Equal.
<>	<>	CVR10	Unequal.
	MISS	LAH10	In CUSTOMER, not in USER.
=	=	ABC10	Equal.
<>	<>	CVR10	Unequal.
MISS		PLC10	In USER, not in CUSTOMER.

:

Available On SYSPROG or SECURITY account.

COMPILE

COMPILE compiles an Ultimate BASIC source program, creating BASIC object code. The object code can then be executed using the RUN command, or the program can be cataloged and executed directly from TCL.

Note: COMPILE is an alternative to, and works exactly the same as, the BASIC command.

Syntax

COMPILE filename itemlist {(options)}

filename Specifies the file containing the source program to compile.

itemlist Specifies one or more explicit item-IDs (program names), or an asterisk (*) to specify all items in the file.

(options)

- C** Suppresses end-of-line opcodes from object code.
- F** Lists internal variables and labels; used with the M option.
- I** If the L option is specified, lists lines from \$INCLUDED programs.
- L** Displays line by line listing of the program during compilation.
- M** Lists map of variables and object layout.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Suppresses generation of symbol table.
- X** Cross-references all labels and variables and stores this information in the BSYM file.

Description

For more information about COMPILE, please refer to the *Ultimate BASIC Language Reference Guide*.

Available On

Any user account.

COPY

COPY copies items from a file to another file, to the same file, to the terminal, or to the printer.

Syntax

COPY filename {itemlist} {(options)}

- filename** Specifies the file from which items in the itemlist are to be copied. Also known as the source file.
- itemlist** Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.
- (options)**
- A** Copies data in editor assembler format; used with the P or T options.
 - D** Deletes the items in the source itemlist after the copy to another file is complete. Items are not deleted when they are copied to the terminal or printer.
 - F** Formfeed; starts each item on a new page. Used with the P or T options.
 - I** Inhibits display of item-IDs of copied items.
 - N** If copying to a file, inhibits creation of new items. Copy occurs only if the item-ID already exists, and overwrites the existing item.
If copying to a terminal, specifies no automatic end-of-page waiting.
 - O** Overwrites existing items. If the destination itemlist contains multiple item-IDs with the same name, only the last item copied with that name is retained in the destination file.
 - P** Routes output to the spooler.
 - S** If copying to a file, suppresses the error message listing.
If copying to printer or terminal, suppresses line numbers.
 - T** Routes output to the terminal.

X Hexadecimal; displays the data in hexadecimal format.
Used with the P or T options.

Description

If COPY is invoked without the P or T option, the following prompt is displayed:

To:

To copy items to the terminal, press **RETURN**. To copy items to a file, enter the following information:

{{filename} {new-itemlist}

where:

(filename)	The file to which the source file's itemlist will be copied. Also known as the destination file. If omitted, itemlist is copied back to the source file.
new-itemlist	The itemlist to which the source file's itemlist will be copied. If omitted, itemlist is copied with the same item-IDs. Multiple item-IDs must be separated with blanks. If an item-ID has embedded blanks, enclose it in single quotes (for example, 'TEST ITEM').

Source and destination itemlists can contain different numbers of items. If the source itemlist is exhausted first, COPY terminates. If the destination itemlist is exhausted first, the remaining item-IDs in the source list are copied with no change to their item-ID.

If the destination itemlist already contains an item-ID that exists in the source itemlist, and neither the O nor N options are used, the source item is not copied.

When copying from a dictionary, COPY does not copy file definition items (D-pointers), nor does it copy CC-pointers (compiled BASIC program object code pointers) or CL-pointers (saved-list pointers). Therefore, you cannot use COPY to copy object code or save-lists. To copy the object code pointer, copy the source to the data section and recompile the file. To copy a list, use COPY-LIST.

COPY

<pre>:COPY BP TIME.CONV (T) TIME.CONV 001 * TIME CONVERSION 002 PRINT @(-1) 003 * CONSTANTS 004 S = 60 005 PRINT "INPUT HOURS" 006 INPUT HRS: 007 PRINT 008 HRS = HRS * S 009 PRINT HRS 010 PRINT</pre>	<p>Copy BP item TIME.CONV to the terminal.</p>
<pre>:COPY CUSTOMER ITEM1 ITEM2 To: ITEM5 ITEM6 1 ITEM5 2 ITEM6</pre> <p>2 items copied</p>	<p>Copy ITEM1 and ITEM2 from file CUSTOMER to ITEM5 and ITEM6 in file CUSTOMER.</p>
<pre>:COPY DICT CUST * (I) To: (DICT USERS)</pre> <p>[418] File definition item 'CUSTOMER' not copied</p> <p>23 items copied</p>	<p>Copy all CUST dictionary items to USERS file dictionary, and suppress itemlist.</p> <p>D-pointer not copied, all remaining items copied.</p>

Available On Any user account.

See Also

- COPY-FILES
- COPY-LIST
- CT

COPY-FILES

COPY-FILES copies items from one data file to another file within the current account, or from one account to another. You must have access permission in order to copy to or from files in another account.

Syntax

COPY-FILES

Description

When you invoke COPY-FILES, the following prompt is displayed:

```
File name that you are copying FROM:
```

Enter the filename from which items are to be copied.

Note: The DICT section of a file cannot be specified.

The following prompt is displayed:

```
Account name where the FROM file exists:
```

Enter the name of the account containing the file. The following prompt is displayed:

```
File name that you are copying TO:
```

Enter the existing filename to which items are to be copied.

Note: The DICT portion of a file cannot be specified.

The following prompt is displayed:

```
Account name where the TO file exists:
```

Enter the name of the account containing the file. The following prompt is displayed:

```
Do you want to copy all items (Y=<CR>/N)?
```

To copy all items, press RETURN. To copy some of the items in the file, enter N. The following prompt is displayed:

```
Enter item-ids you wish to copy; separate ids with a  
space:
```

COPY-FILES

Enter the item-IDs you want to copy, separated by spaces. The following prompt is displayed:

```
OVERLAY all existing items (Y=<CR>/N)?
```

To replace all existing items in the file to which you are copying, press **RETURN**. Otherwise, enter N. The following prompt is displayed:

```
Is this what you want (Y=<CR>/N)?
```

To start the copy, press **RETURN**. To cancel all previous responses and return to the first prompt, enter N.

When you start the copy, COPY-FILES first checks the files and items for validity and access. If the entries are valid, COPY-FILES creates two file synonym definition items (Q-pointers), %CFILE and %RFILE, in your Master Dictionary. After the items are copied, these Q-pointers are deleted. If either %CFILE or %RFILE already exists, the command terminates with the message:

```
Cannot copy: %CFILE (or %RFILE) already exists in MD
```

```
:COPY-FILES.␣
File name that you are copying FROM: INV.␣
Account name where the FROM file exists: ACCTNG.␣
File name that you are copying TO: INV.␣
Account name where the TO file exists: CUSTOMER.␣
Do you want to copy all items (Y=<CR>/N)? N.␣
Enter item-ids you wish to copy; separate ids with a
space: WK1 WK2.␣
OVERLAY all existing items (Y=<CR>/N)? Y.␣
Is this what you want (Y=<CR>/N)? Y.␣
    1 WK1
    2 WK2
2 items copied
:
```

Available On SYSPROG or SECURITY account.

See Also COPY
MOVE-FILE

COPY-LIST

COPY-LIST copies a saved select-list to another select-list, to a file item, or to the terminal or printer.

Syntax

COPY-LIST {**listname**} {(**options**)}

listname	Specifies the saved select-list. Also known as source list. If omitted, the system assumes a null item-ID.
(options)	
D	Deletes the select-list after the copy is complete. The select-list is not deleted when it is copied to the terminal or printer.
I	Does not display the item-ID.
N	Specifies no automatic end-of-page waiting; used with the T option.
O	Overwrites existing list.
P	Routes output to the spooler.
S	Suppresses the line numbers when used with P or T option.
T	Routes output to the terminal.
X	Hexadecimal; displays the data in hexadecimal format. Used with P or T options.

Description

If COPY-LIST is invoked without the P or T option, the following prompt is displayed:

To :

To copy the list to another select-list (the destination list), enter the following:

listname

COPY-LIST catalogs the new select-list. When the copy is complete, the following message is displayed:

COPY-LIST

'newlistname' saved - n frames used.

To copy the list as a file item, enter the following information:

(filename {item-ID})

If no item-ID is specified, the name of the list being copied is used as the item-ID.

COPY-LIST converts the select-list to standard item format, with each element of the select-list being stored as an attribute. When the copy is complete, the following message is displayed:

```
1 items copied
```

If the specified item-ID already exists, and the O option is not used, the following error message is displayed:

```
[415] 'item-ID' exists on file
```

```
:COPY-LIST OLD (D.↓      Deletes list when copy is done.
To :OLD.CUST.↓          Copies the list to another list.

'OLD.CUST' saved - 1 frames used.

:COPY-LIST NEW.↓
To : (RECEIPTS NEW.CUST.↓  Copies the list to a file item.

1 NEW.CUST

1 items copied
:
```

Available On Any user account.

See Also EDIT-LIST
SAVE-LIST

COUNT

COUNT is an Ultimate RECALL command that counts the number of items specified by the itemlist and selection-criteria.

Syntax

COUNT filename {itemlist} {sel-criteria} {(P}

filename Specifies the file containing items to be counted.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by the item in order for it to be counted. Also known as a WITH clause.

(P Routes output to the spooler.

Description

For further information on COUNT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

CREATE-ACCOUNT

CREATE-ACCOUNT creates or updates user accounts and account synonyms (Q-pointers), and stores the associated user identification items in the SYSTEM dictionary.

Syntax

CREATE-ACCOUNT {**accountname**}

accountname Specifies the account to be created or updated. If not specified, and the user is on a security account, the system prompts for an accountname. Users on non-security accounts can only update the current account.

Description

Use CREATE-ACCOUNT to create or modify a user account, or a synonym (Q-pointer) to an existing user account.

A user account contains a Master Dictionary and data files, while a synonym (Q-pointer) points to an already existing user account.

Only users on security accounts (SECURITY or SYSPROG with security enabled) can create new accounts. Users on non-security accounts can only update certain parameters for the current account.

When CREATE-ACCOUNT is invoked by a security account without an account name, the following prompt is displayed:

```
Account Name (<CR> to exit) :
```

Enter the account name to be created or updated. If you enter an account name that is not in the SYSTEM dictionary, the system displays the following prompt:

```
Defining (A)ccount or (S)ynonym:
```

Entering A creates a new account; entering S creates a Q-pointer to an existing account. The following sections describe how to create or update user accounts or synonyms.

Creating a User Account

To create a new user account, enter **A** at the (A)ccount or (S)ynonym prompt. A screen similar to the following is displayed:

```

                                ULTIMATE Account Processor

                                Account Name: ACCOUNTING (New)

Dimensions
    1. Modulo, Separation : 29,1

Security
    2. Password :
    3. System Privileges (0,1,2) :0
    4. Lines to Allow Logon :
    5. Retrieval Locks (Y,N) :N
    6. Update Locks (Y,N) : N

Special Options
    7. Accounting Option (Y,N) :N
    8. Restart Option (Y,N) :N
    9. Inhibit Break Key at Logon (Y,N) :N
    10. File-Save Options (V,W,X) :
  
```

Note: To move quickly from field to field or to exit or save your changes from any field, enter a slash (/) followed by a field number or command. For example, to go to field 3 enter /3, to exit without saving changes enter /EX, or to file all changes enter /FI.

Each option displays default values, with the cursor positioned at the first entry. Enter values as described below:

1. Modulo, Separation

The modulo and separation determine the primary space allocated to the account. The default of modulo 29, separation 1 is shown (29 groups of 1 frame each reserved in a contiguous block of disk space). To maintain

these defaults, press **RETURN**; or enter new values for modulo and separation.

2. Password

One or more passwords can be assigned to the account to provide logon security. To specify the default of no password, press **RETURN**.

To assign a password, enter the password at the prompt. An account can have multiple passwords, any one of which may be used to access the account. To specify multiple passwords, enter each password separated by a space.

3. System Privileges

The three levels of system privilege (0, 1, 2) specify the amount of access the account has to system functions. To specify the default system privilege level 0 (access to most functions), press **RETURN**. To allow the account to access more functions, enter **1**. To specify access to all functions, enter **2**.

4. Lines to Allow Logon

This option indicates which lines may log on to the account. To specify the default that all lines may log to the account, press **RETURN**. To restrict access to the account to one or more specified lines, enter the line number or numbers.

5. Retrieval Locks

Retrieval locks prevent users in other accounts from accessing the Master Dictionary in the new account. To accept the default value of no locks on the account (that is, all other accounts have access to the account's Master Dictionary), press **RETURN**. If you enter **Y** to add a retrieval lock to an account, a screen similar to the following is displayed:

```

Account Name: NEWACCOUNT (New)
Retrieval Locks

System Name Account Name System Name Account Name
-----
BLUE          PAYROLL

Enter (I)nsert or (D)elele:
    
```

Enter the network system name and the account names that will be allowed to read the information in the new account.

Note: All new files created in this account will default to the retrieval and update lock settings.

6. Update Locks

Update locks prevent others from changing the Master Dictionary in the new account. To accept the default value of no locks on the account (that is, all other accounts may update the account's Master Dictionary), press RETURN. If you enter Y to add an update lock to an account, a screen similar to the following is displayed:

```

Account Name: NEWACCOUNT (New)
Update Locks

System Name Account Name System Name Account Name
-----
BLUE          MASTER

Enter (I)nsert or (D)elele:
    
```

Enter the network system name and the account names that will be allowed to change the account's Master Dictionary.

Note: All new files created in this account will default to the retrieval and update lock settings.

7. Accounting Option

This option specifies whether or not logon usage statistics for the account are maintained in the Accounting History (ACC) file. To specify

the default of no accounting, press **RETURN**. To log statistics for the account, enter **Y**.

8. Restart Option

This option specifies that when restarting from the debugger by entering **END**, a logon PROC or other program having the same name as the account is executed. To specify the default of no program execution, press **RETURN**. To execute such a program, enter **Y**.

9. Inhibit Break Key at Logon

This option specifies that pressing the <BREAK> key will not abort the current process unless the BREAK-KEY-ON command is entered. To specify the default of not having this option, press **RETURN**. To inhibit the <BREAK> key, enter **Y**.

10. File-Save Options (V,W,X)

The file save options control whether or not the account is saved during normal backup routines, such as a file-save. To specify a file-save option, enter one of the following, or press **RETURN** to select the default to always save the file.

- V** Does not save the account unless the A (always save) or V option is present in the SAVE command.
- W** Saves the account unless the W option is present in the SAVE command.
- X** Does not save the account unless the A option is present in the SAVE command.

After all values for the screen have been entered, the following prompt is displayed:

```
Enter Option (#,EX,FI):
```

To change any entries, enter the field number.

To exit this screen without saving any entries, enter **EX**. The following prompt is displayed:

```
Cancel of Update Desired (Y,N):
```

Enter **Y** to cancel the update and return to the Account Name prompt; enter **N** to redisplay the Enter Option prompt.

To file the account-defining item and create the account, enter **FI**. A Master Dictionary is created and the file-defining item is stored in the SYSTEM Dictionary.

The contents of the prototype Master Dictionary file, NEWAC, are copied to the new account's Master Dictionary. The command then returns to the Account Name prompt for creation of another new account, if desired. To exit the command, press **RETURN** at the Account Name prompt.

Creating a Synonym (Q-Pointer)

To create a synonym (Q-pointer) to an existing account, enter **S** at the (A)ccount or (S)ynonym prompt. The following screen is displayed:

```

                                ULTIMATE Account Processor

                                Synonym Name: ACCOUNTING2 (New)

Linkage
      1. Account Name :

Security
      2. Password :
      3. System Privileges (0,1,2):0
      4. Lines to Allow Logon :

Special Options
      5. Accounting Option (Y,N) :N
      6. Restart Option (Y/N :N
      7. Inhibit Break Key at Logon (Y,N) : N
  
```

Each option displays default values, with the cursor positioned at the first entry. Enter the values as described below:

1. Account Name

This option specifies the account name to which the new account should point. Enter the account name to point to.

2. Password through 7. Inhibit Break Key at Logon

These options all operate the same as when creating a regular account, which was described above.

After the values have been entered, the following prompt is displayed:

Enter Option (#,EX,FI):

To change any entries, enter the field number. To exit this screen without saving any entries, enter EX. The following prompt is displayed:

Cancel of Update Desired (Y,N):

Enter Y to cancel the update and return to the Account Name prompt ; enter N to redisplay the Enter Option prompt.

To file the synonym, enter FI. The command then returns to the Account Name prompt. To exit the command, press RETURN.

Updating Accounts and Synonyms

If you enter an account or synonym name that already exists, the corresponding screen is displayed with the current values, and the cursor is at the Enter Option prompt. To change a value, enter the field number at the Enter Option prompt, then enter the new value.

Note: Users on non-security accounts cannot increase their privilege level, nor can they change their Accounting Option entry, Restart Option entry, or Inhibit Break Key at Logon entry.

When all changes have been made, enter FI at the Enter Option prompt to save all changes.

Available On

Any user account to update the current account; SECURITY or SYSPROG with security enabled to create a new account or update another account.

See Also

UPDATE-ACCOUNT

System Management Guide for information on creating or updating an account's parameters and creating new user accounts.

CREATE-BOOT

CREATE-BOOT creates a copy of the system boot tape.

Syntax CREATE-BOOT

Description Use CREATE-BOOT to create a copy of the boot tape every time the system is upgraded to a new software revision.

A boot tape contains only the system programs necessary to boot (coldstart or warmstart) the system. Unlike the SYS-GEN tape, it does not contain the system accounts or system files, and therefore takes less time to create. The presence of the accounts WP (UltiWord), ATP, UltiMation, and UltiLink are not required to create a boot tape.

When CREATE-BOOT is invoked, the following screen is displayed:

```
Instructions for this program can be found
in SYSTEM MANAGEMENT Manual.
```

```
This program creates a Boot tape.
```

```
Mount tape, with write ring, on drive n
```

```
ENTER <CR> TO CONTINUE OR END TO EXIT -
```

To create the tape, press **RETURN**. To exit, enter **END**.

Tape and block size messages are displayed, followed by the list of frames dumped to tape. At completion, the following message is displayed:

```
BOOT TAPE CREATION FINISHED
```

CREATE-BOOT

Remove the tape from the drive and label it with the current revision number (enter **REV** to see the current revision number).

Available On SYSPROG or SECURITY account.

See Also REV
SYS-GEN
System Management Guide

CREATE-FILE

CREATE-FILE creates both dictionary and data sections in a new file; only the dictionary section; or, if a dictionary already exists, only the data section. CREATE-FILE can also be used to change attributes for an existing file.

Syntax

CREATE-FILE {filename {parameter1} {parameter2}}

Note: If *parameter1* and *parameter2* are both omitted, a screen is displayed for entering file parameter values.

filename Specifies the file to be created. If omitted, the system prompts for it.

parameter1 Creates the modulo, separation, and hashing algorithm for the dictionary section of the file. These values can be user-specified with one of the following formats:

1) mod,sep{,alg}

mod Number of groups in primary storage; the maximum modulo is 16,777,213.

sep Number of frames per group in primary storage. Separation may be a number from 1 through 127 when the modulo is 1 through 65,535, and must be 1 when the modulo is greater than 65,535.

alg Hashing algorithm used to determine group in which items are placed. If omitted, the algorithm is 1. See the note on the next page.

2) AC, n1,n2{,alg}

AC Invokes the automatic modulo calculation routine for this file section. See the Automatic Modulo Calculation description below.

- n1** Estimated number of items in this file section.
- n2** Estimated size of each item in this file section.
- alg** Hashing algorithm used to determine in which group items are placed. If omitted, the algorithm is 1, unless the modulo is greater than 64K, in which case alg is 2, regardless of what is specified.

parameter2 Creates the modulo, separation, and hashing algorithm for the data section of the file. These values can be specified exactly as shown for **parameter1** above.

Description

Use CREATE-FILE to create or update file dictionary and data sections.

Note: To create a file, a block or blocks of available contiguous frames large enough for the entire DICT and DATA sections must exist. Use the POVf command if necessary.

When a dictionary section is created, disk space is reserved and a D-pointer is inserted in the account's Master Dictionary (MD).

When a data section is created, disk space is reserved and a pointer to the space is placed in the file's dictionary section.

Files can be created by specifying all parameters at the TCL prompt, or by invoking the CREATE-FILE menu.

Creating Files at TCL Prompt

When you enter the parameters for the CREATE-FILE statement at the TCL prompt, a file definition item is created with the following default attributes:

Attribute	Name	Default at Creation
001	File Save Option	None.
002	Base	Specified by system.
003	Modulo	Specified by user.
004	Separation,Algorithm	Specified by user.
005	Retrieval Lock	Same as account's MD.
006	Update Lock	Same as account's MD.
007	Conversion	None.
008	Correlative	None.
009	Justification	Left.
010	Length	10.

To change default file attributes, use the menu form of CREATE-FILE. (Option 1 can also be changed with the FILEOPT command, while Options 5 and 6 can also be changed with the ACCESS-MAINT command.)

Once a file is created at the TCL, the information for each new data and dictionary section is displayed in the following format:

```
[417] File 'filename' created; base= xx, modulo = xx,
      separ = xx
```

where base is the file's location (first frame ID in the block of primary storage).

```
:CREATE-FILE INVENTORY 3,1 373,1.
[417] File 'INVENTORY' created; base = 1038395, modulo =
3, separ = 1.
[417] File 'INVENTORY' created; base = 1875890, modulo =
373, separ = 1.
:
```

Automatic Modulo Calculation

The Automatic Modulo Calculation routine calculates the modulo as follows:

- Modulos are always prime numbers; the maximum modulo is 16777213.
- Separation is always 1.
- If the average item size is greater than the frame size of the system, the modulo will be set the same as the estimated number of items in the file and adjusted, if necessary, to the next prime number. With perfect distribution, this would place one item in each group.
- If the average item size is less than the frame size of the system, the modulo is calculated according to the following formula:

no. of items*(item size/frame size)

The result is rounded up to the next prime number.

```
:CREATE-FILE T 1,1 AC,30000,75␣
[417] File 'T' created; base=365102, modulo=1, separ=1
[417] File 'T' created; base=782425, modulo=4507, separ=1
:
```

In the example above, the estimated size of data items (75 bytes) is *less than* the system's frame size, so the modulo for the data file is based on the estimated number of items (30000), multiplied by item size divided by frame size (75/500), and rounded up to the next prime number.

```
:CREATE-FILE T AC,15,30, AC,2000,5000␣
[417] File 'T' created; base=365102, modulo=1, separ=1
[417] File 'T' created; base=782425, modulo=2003, separ=1
:
```

In this example, the estimated size of data items (5000 bytes) is *greater than* the system's frame size, so the modulo is based on the estimated number of items (2000), rounded up to the next prime number.

Creating Files with Menu Form

If you invoke CREATE-FILE by entering the statement with no filename parameter, the following screen is displayed:

```

                                ULTIMATE File Processor

File Name (<CR> to exit):

Valid File Name Formats
-----
file-name
file-name,file-name
DICT file-name
DATA file-name
DATA file-name,file-name

```

Enter a valid filename format at the File Name prompt. Depending on the filename format entered, the next screen will contain options for dictionary section attributes, data section attributes, or both.

Once a filename is entered, either at the TCL prompt or at the previous screen, a screen similar to the following is displayed:

```

File Name = NEWFILE (New)
Dictionary Section
  1. File Options (V,W,X,Y) :
  2. Modulo, Separation, Algorithm : 1,1
  3. Retrieval Locks (Y/N) : N
  4. Update Locks (Y/N) : N
  5. Conversions :
  6. Correlatives :
  7. Justification (L,R,T,U) : L
  8. Length : 10

Data Section
  9. File Options (V,W,X,Y) :
 10. Modulo, Separation, Algorithm : 1,1
 11. Retrieval Locks (Y/N) : N
 12. Update Locks (Y/N) : N
 13. Conversions :
 14. Correlatives :
 15. Justification (L,R,T,U) : L
 16. Length : 10

```

Attributes for both the dictionary section (1-8) and data section (9-16) are identical, although you may want to enter different values for each section. The attributes are explained below.

Note: To move quickly from field to field or to exit or save your changes from any field, enter a slash (/) followed by a field number or command. For example, to go to field 3 enter /3, to exit without saving changes enter /EX, or to file all changes enter /FI.

1. File Options (V,W,X,Y)

The file save options control whether or not your file is saved during normal backup routines, such as a file-save. To specify a file-save option, enter one of the following, or press **RETURN** to select the default to always save the file.

- V Does not save the file unless the A (always save) or V option is present in the SAVE command.
- W Saves the file unless the W option is present in the SAVE command.
- X Does not save the file unless the A option is present in the SAVE command.
- Y Saves the file's space (D-pointer), but not its data. The file will be empty when it is restored.

2. Modulo, Separation, Algorithm

The modulo, separation, and hashing algorithm determine the physical boundaries of your file. The default modulo and separation (1,1) are shown, although the default algorithm of 1 is not shown. (To change algorithm to 2, enter 2 after the modulo and separation; for example, 1,1,2.)

At this option, the following prompt is displayed:

```
***Enter (AC) - Automatic Calculation of Modulo and  
Separation***
```

To maintain the default, press **RETURN**. To have the modulo and separation automatically calculated by the system, enter **AC**. The following prompt is displayed:

Enter Estimated Number of Items:

Enter the estimated number of items this file will contain. The following prompt is displayed:

Enter Estimated Size of Items (Bytes):

Enter the estimated size of the items in bytes (characters). For further information, see the previous section on Automatic Modulo Calculation.

The modulo and separation values are displayed, and the cursor moves to the next option.

3. Retrieval Locks

Retrieval locks prevent users in other accounts from accessing the files in your account. To accept the default value for the account, press **RETURN**. If you enter **Y** to add a retrieval lock to a file, a screen similar to the following is displayed:

```

File Name: NEWFILE (New)
Retrieval Locks

System Name Account Name System Name Account Name
-----
BLUE PAYROLL

Enter (I)nsert or (D)elite:

```

Enter the network system names and the account names that will be allowed to read the information in the new file. For further details, see the ACCESS-MAINT command.

4. Update Locks

Update locks prevent others from changing the files in your account. To accept the default value for your account, press **RETURN**. If you enter **Y** to add an Update lock to a file, a screen similar to the following is displayed:

```
File Name: NEWFILE (New)
Update Locks

System Name  Account Name  System Name  Account Name
-----
BLUE         MASTER

Enter (I)nsert or (D)elete:
```

Enter the network system names and the account names that will be allowed to change the new file. For further details, see the ACCESS-MAINT command.

5. Conversions

Conversions affect the way the item-IDs are displayed. Any RECALL processing code can be specified.

6. Correlatives

Correlatives affect the way the item-IDs are displayed. Any RECALL processing code can be specified.

7. Justification

Justification affects the way the item-IDs are displayed and sorted. Justification can be L (left), R (right), T (text), or U (do not wrap).

8. Length

Length is the maximum number of characters to be displayed in a line for item-IDs. Excess characters wrap to the next line.

Enter the desired values for the data section of the file. Once all options have been entered, the following prompt is displayed at the bottom of the screen.

```
Enter Option (#,EX,FI) :
```

Enter an option number to return to that option to change it. Enter EX to exit this screen without creating the file. Enter FI to create the new file. The cursor returns to the filename screen. Enter the name of another file to create, or press RETURN to go to TCL.

Changing Existing File Attributes with Menu Form

If you enter the name of a file that already exists, its current attributes are displayed and the cursor is positioned at the Enter Option prompt. The screen is identical to the screen used to create a new file, except for the prompts on lines 2 and 10, which change from Base to the following:

Reallocation (Modulo, Separation, Algorithm) :

Reallocation parameters resize the file the next time the file is saved and restored.

Available On

Any user account with privilege level 1 or greater.

See Also

ACCESS-MAINT
FILEOPT
UPDATE-FILE

CREATE-INDEX

CREATE-INDEX builds an index for a file, using a specified Ultimate UPDATE definition item to build the index's structure.

Syntax

CREATE-INDEX {filename} {item-ID}

filename Specifies the name of the file for which the index is to be created. If omitted, the system prompts for it.

item-ID Specifies the name of the Ultimate UPDATE definition item on which to base the index. If omitted, the system prompts for it.

Description

CREATE-INDEX takes information from the specified file and Ultimate UPDATE definition item to build an index key structure, which it then uses to create the index keys. An index key structure contains the following:

- Attribute number.
- Attribute conversion.
- Attribute correlative.
- Attribute justification.
- Attribute name.
- Item-ID justification (from file definition item).

This index key structure becomes a permanent part of the index.

After the index key structure is built, CREATE-INDEX uses it to build the index, and the system uses it to maintain the index. The system does not rely on the Ultimate UPDATE definition item. This approach has the following benefits:

- Integrity of the index is maintained. If the Ultimate UPDATE definition item is subsequently changed or deleted, the index is still updated correctly, according to the original attribute definition.
- Because Ultimate RECALL matches the criteria in the Ultimate RECALL command to the structure, any number of synonym

attribute definition items that match the structure can use the corresponding index.

Note: *Although the index is not damaged by changing or deleting the Ultimate UPDATE definition item, Ultimate RECALL cannot use the index if it does not find an Ultimate UPDATE definition item that matches the index structure. Also, Ultimate RECALL cannot use the index if the justification of the item-ID is changed, because it is also part of the index structure.*

Any attribute defined with the same elements used to create the index is considered to be an indexed attribute, whether or not it is the original Ultimate UPDATE definition item.

If the Ultimate UPDATE definition item defines the attribute as multi-valued, one index entry is created for each value in the attribute. If the attribute is not defined as multi-valued, one index entry is created for each attribute.

```
:CREATE-INDEX VENDOR NAME.]
```

```
Creating Index ...
```

Available On Any user account with privilege level 1 or greater.

See Also

- DELETE-INDEX
- LIST-INDEXES
- UPD-DEF

CROSS-INDEX

CROSS-INDEX creates a cross index of all symbols used in an assembly language program or set of programs.

Syntax

CROSS-INDEX filename {itemlist} {(options)}

filename Specifies the file containing items to be indexed.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in a file. Can be omitted if a select-list is present.

(options)

F Prompts for the name of a symbol file to use instead of PSYM; if not specified, the symbols are searched for in PSYM.

O Creates a cross-index of opcodes instead of operands; should be used with the F option.

Description

For further information on CROSS-INDEX, please refer to the *Ultimate Assembly Language Reference Guide*.

Available On

Any user account.

CT

CT copies specified items to the terminal.

Syntax

CT filename {itemlist} {(options)}

filename Specifies the file whose items are to be copied.

itemlist Specifies one or more item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

F Formfeed; starts each item on a new terminal or printer page.

I Does not display the item-ID.

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

S Suppresses display of line numbers.

X Hexadecimal; displays the attributes in hexadecimal format.

Description

CT is an alternative to the COPY command with the T option.

Unless modified by the I or S options, CT output includes the item-ID on the first line and one attribute on each following line.

```
:CT DICT ACC 001┘  
  
    001  
001 Jeff's office      x200  
002  
003 W  
004  
005  
006  
007  
008  
009  
010 US  
011  
012 MD  
  
:CT DICT ACC 001 (X┘  
  
001 436C6966662773206F66666963652020202020202078323030  
002  
003 57  
004  
005  
006  
007  
008  
009  
010 5553  
011  
012 4D44
```

Available On Any user account.

See Also COPY
LIST-ITEM

DATE

DATE displays the current system time and date.

Syntax

DATE

Description

DATE displays the current system time, and displays the date with a two-digit day, three-letter month, and four-digit year as shown below:

```
HH:MM:SS DD MON YYYY
```

Time is based on the 24-hour clock, with midnight at 00:00:00. The system updates the date at midnight.

```
:DATE.↓  
17:15:00 15 MAR 1991  
:
```

Available On

Any user account.

See Also

SET-DATE
SET-TIME
TIME

DECATALOG

DECATALOG removes BASIC object code from the system and deletes a cataloged program name from an account's Master Dictionary (MD).

Syntax

DECATALOG filename {itemlist}

filename Specifies the file containing items to be decataloged.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

Description

For further information on DECATALOG, please refer to the *Ultimate BASIC Language Reference Guide*.

Available On

Any user account.

DELETE

DELETE deletes specified items from a file.

Syntax

DELETE filename {itemlist}

filename Specifies the file from which items should be deleted.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

Description

DELETE deletes the specified items from the file and displays the following message for each deleted item:

```
'item-ID' deleted
```

If the file is a dictionary, DELETE does not delete items that are file synonym definition items (Q-pointers), file definition items (D-pointers), compiled BASIC object code (CC-pointers), or save-lists (CL-pointers). To delete these items, use CLEAR-FILE, DECATALOG, DELETE-FILE, or DELETE-LIST, respectively.

```
:DELETE VENDOR ITEM3.↓  
'ITEM3' deleted.  
:
```

Available On

Any user account.

See Also

CLEAR-FILE
DECATALOG
DELETE-FILE
DELETE-LIST

DELETE-ACCOUNT

DELETE-ACCOUNT deletes an account and all of its files.

Syntax

DELETE-ACCOUNT {**accountname**}

accountname Specifies the account to be deleted. If omitted, the system prompts for it.

Description

If you invoke DELETE-ACCOUNT without an account name, the following prompt is displayed:

```
Account name?
```

To go back to TCL, press **RETURN**; otherwise, enter the name of the account to be deleted. DELETE-ACCOUNT checks for the following conditions that would prevent it from deleting the specified account:

- One of several pointers to system files is missing from your Master Dictionary.
- Entering the command from an illegal account, such as from SYSPROG if the security feature is not enabled.
- The specified accountname is a Q-pointer.

Note: To delete a Q-pointer, delete the account item in the SYSTEM directory by entering **ED SYSTEM accountname RETURN**, and then entering **FD** (file delete) at the line editor prompt.

- The account has a user logged on.
- SYSTEM is specified as the account name.
- The specified accountname is not valid.

If any of these conditions exist, an error message is displayed and the command returns to TCL.

If none of these conditions exist, the following prompt is displayed:

```
List files to be deleted (Y=<CR>/N)?
```

To see a list of files in the account before it is deleted, press **RETURN**.
If you do not want to list the files, enter **N**.

If you press **RETURN** , the following prompt is displayed:

```
To the (P)rinter or <CR> screen (P/<CR>)?
```

Press **RETURN** to display the files on the screen, or enter **P** to print the listing. In either case, the following prompt is displayed:

```
Do you still want to delete the account (Y/N)?
```

To delete the account, enter **Y**. To exit without deleting the account, enter **N**. If you enter **Y**, all files defined in the account are deleted and all space associated with those files is returned to available space. Also, all Q-pointers to the account are deleted from SYSTEM.

```
:DELETE-ACCOUNT  TEMPORARY.↓
```

```
List files to be deleted (Y=<CR>/N)?N.↓
```

```
Do you still want to delete the account (Y/N)?Y.↓
```

```
:
```

Available On SECURITY account or SYSPROG account if enabled for security.

See Also *System Management Guide* for information on user accounts.

DELETE-FILE

DELETE-FILE deletes a specified file. The dictionary section, one or more data sections, or all sections of the file can be deleted.

Syntax

DELETE-FILE filename

filename Specifies the name of the file to be deleted.

Description

Use DELETE-FILE to delete a file. When both the DICT section and all DATA sections of a file are deleted, the file definition item (D-pointer) in your account's Master Dictionary (MD) is deleted, the pointers to all data files are deleted from the file dictionary, and all frames are returned to available space.

Deletion of the DICT section of a file is allowed only if the file contains no DATA sections.

When just a DATA section is deleted, the pointer for that section is deleted from the file dictionary, and space associated with that section is returned to available space. Other DATA sections of the file are not affected.

Note: File synonym definition items (Q-pointers) cannot be deleted with DELETE-FILE.

```
:DELETE-FILE DICT TEMPORARY.↓  
:  
:DELETE-FILE DATA CUSTOMER, TEMPORARY.↓  
:
```

Available On

Any user account with privilege level 1 or greater.

See Also

CLEAR-FILE

CREATE-FILE

Chapter 1 of this document for further information on filenames.

DELETE-INDEX

DELETE-INDEX deletes the specified index.

Syntax

DELETE-INDEX {filename} {item-ID}

filename Specifies the file for which the index is to be deleted. If omitted, the system prompts for it.

item-ID Specifies the name of the Ultimate UPDATE definition item upon which the index is based. If omitted, the system prompts for it.

Description

If an index has not been previously created for the Ultimate UPDATE definition specified in the item-ID, the following error message is displayed.

```
'item-ID' not on file.
```

Note: To list existing indexes, use the *LIST-INDEXES* command.

```
:DELETE-INDEX VENDOR ZIP.CODE.␣
Deleting Index ...
:
```

Available On

Any user account with privilege level 1 or greater.

See Also

CREATE-INDEX

LIST-INDEXES

Ultimate RECALL and Ultimate UPDATE User Guide

DELETE-LIST

DELETE-LIST deletes a saved select-list.

Syntax

DELETE-LIST {listname}

listname Specifies the select-list to delete. If omitted, the system assumes that the list was saved with a null item-ID.

Description

DELETE-LIST deletes the the pointer to the specified list from the DICT of the POINTER-FILE, and returns the frames to available space. The following message is displayed:

```
[242] 'listname' decataloged.
```

If the list is not found, the following message is displayed:

```
'listname' not on file.
```

```
:DELETE-LIST TEMPORARY␣  
[242] 'TEMPORARY' decataloged.  
:
```

Available On

Any user account.

See Also

EDIT-LIST
GET-LIST
QSELECT
SAVE-LIST
SELECT
SSELECT

Ultimate RECALL and Ultimate UPDATE User Guide

DISCONNECT

DISCONNECT breaks the current bisynchronous telephone connection, drops Data Terminal Ready (DTR), and disconnects the modems.

Syntax DISCONNECT

Description Use DISCONNECT as an alternative to manually disconnecting the telephone line when using bisynchronous 2780-type protocol or 3780-type protocol. If necessary, use B-ATT to bring up DTR.

Available On SYSPROG or SECURITY account.

See Also

- B-ATT
- B-DET
- B-LIST
- BSC-DIAL
- CHANGE-BSC-TIMER

DISK-ADDRESS

DISK-ADDRESS determines the disk address of a specified frame.

Syntax

DISK-ADDRESS {(P)}

(P Routes output to the spooler.

Description

When DISK-ADDRESS is invoked, the following prompt is displayed:

```
Enter frame number :
```

Enter a frame number in decimal, or in hexadecimal preceded by a period. To return to TCL, press **RETURN**, or enter **X** or **END**. If any other non-numeric character is entered, the following message is displayed and the command returns to the frame number prompt:

```
Not numeric
```

DISK-ADDRESS displays the following information, then redisplay the Enter frame number prompt:

FID	Frame number in decimal and hexadecimal.
Drive#	Disk drive on which the frame is stored. The drive number was assigned when the disk was formatted, or when the label was written by the Utility Sub-System command D-WRTLAB.
Channel	Channel number of the drive on which the frame is stored. If the disk is shadowed, the channel addresses of both disks are displayed.
Cylinder	Cylinder number on which the frame is stored.
Head	Head number on which the frame is stored.
Sector	Sector number on which the frame is stored. Frames occupy two sectors on Ultimate Bull 6000/7000 disks; the sector number displayed is the first sector of the frame.

Note: The lowest cylinder, head, or sector number is 0 (zero), not 1.

If the frame is on a track assigned to an alternate track, the address of the alternate track is also displayed. The alternate track's channel address is displayed, since a shadowed system might have a track assigned to an alternate on one of the disks (sibs), but not assigned to an alternate on the other disk. If a track is assigned to an alternate on both disks, both alternate addresses are displayed. See the second example below.

If the disk supports alternate sectors, rather than alternate tracks, no information is provided regarding whether the frame uses an alternate sector. Alternate sectoring is performed automatically by the controller and can only be displayed by the Utility Sub-System.

```

:DISK-ADDRESS.↓
Enter frame number : 300000.↓           Display disk address of
FID =      300000           (X'493E0') decimal frame number
Drive# =    2                300000.
Channel =  2880
Cylinder =  131
Head =     19
Sector =   75
Enter frame number : 1.↓               Display disk address of
FID =      1                (X'1') decimal frame number 1.
Drive# =    1
Channel =  6600 Sib channel = B000      The second channel
Cylinder =  0                        indicates this is a
Head =     11                          shadowed system.
Sector =    2
Enter frame number : .20788.↓          Display disk address of
FID =     133000           (X'20788') hexadecimal frame
Drive# =    1                number 20788.
Channel =  6600 Sib channel = B000
Cylinder =  219
Head =      6
Sector =   16
***** Alternate track assigned *****
                                Channel =           B000
                                Alternate cylinder = 821
                                Alternate head =      7
:

```

Available On SYSPROG account on Ultimate Bull 6000/7000 systems.

See Also *Ultimate Bull 6000/7000 Operations and Maintenance Guide.*

DISK-FORMAT

DISK-FORMAT formats a single disk while the operating system is running on another set of disks.

Syntax

DISK-FORMAT channel

channel Specifies the channel address of the disk to be formatted, entered in hexadecimal without a preceding period.

Description

A new disk must be formatted before it can be used. Also, it is often desirable and sometimes mandatory to format a disk that has been repaired.

DISK-FORMAT formats a disk while the operating system continues to run. The disk being formatted cannot be a member of the active disk set, so DISK-FORMAT can only be used when a spare disk drive exists.

DISK-FORMAT writes header information pointing to the data, and also tests for defective areas on the disk. If any defects are found, alternate areas are assigned.

In the past, in order to format a disk it was necessary to run a standalone utility, either the diagnostic monitor or the Utility Sub-System (Util). Now the formatter in Util is invoked with DISK-FORMAT, although there are some differences when running the formatter with DISK-FORMAT instead of Util:

- The disk label is always ***FORMATTED**** and is always disk 1 of 2. This prevents the disk from accidentally being recognized as part of a disk set.
- Terminal I/O uses standard system routines, so when the formatter requests input, the standard system terminal input routine prints a colon (:), which would not be seen if Util were running.

When DISK-FORMAT is invoked, it displays the following warning message:

```
***WARNING*** Format destroys all data!
```

If this disk has been previously formatted and the formatter finds a valid map of alternate areas, it asks if the previously assigned alternates should be retained:

```
Save old alternates? (<CR>=Y/N) :
```

If you enter **Y** or press **RETURN** to save old alternates, the areas previously marked as bad by the formatter will continue to be treated as bad areas, even if they test good this time. It is recommended that you save old alternates, since a marginally unreliable part of a disk cannot always be detected by the formatter as bad.

If the disk has never been formatted by Ultimate, the prompt may not be displayed; if it is displayed for a new disk, enter **N**.

The disk format begins, and the screen is updated approximately every two seconds with a status message indicating the phase (1 through 4) of the format procedure and which cylinder is being formatted. Messages are displayed whenever a defective area is found and assigned to an alternate area. Some messages indicate errors that require an operator response.

```
:DISK-FORMAT E900␣  
  
***WARNING*** Format destroys all data!  
Save old alternates? (<CR>=Y/N) : Y␣  
  
Format started at 11:43:22 - device has 1635 cylinders  
Chan E900 Phase n cylinder xxx  
Format complete at 13:15:20 Elapsed time : 01:31:57  
Chan defects ..... status .....  
  
E900      1   O.K.  
[374] Format complete.  
:
```

In the example above, the formatter detected no errors other than a single previously assigned alternate sector. The *n* and *xxx* on the line showing the phase represent values that are updated about once every two seconds. Note the elapsed time is not the difference between the start and end times; this is due to rounding.

```

:DISK-FORMAT E080␣

***WARNING*** Format destroys all data!
Channel E080 cycled down!
Correct above listed problems - press <CR>: ␣
Save old alternates? (<CR>=Y/N) : Y␣

Format started at 08:15:23 - device has 1635 cylinders
Chan E080 Phase n cylinder xxx
Channel E080 Cyl 349 Head 2 Sect 82 -Defective added
to error log
Chan st1 st2 cwa cwb cwd rcwa rcwb rcwd task rng rrng
E080 8800 0000 095D 0252 0000 095D 0252 0000 A942 5F00 0D00
Chan E080 Phase 4 cylinder 1634
Format complete at 09:30:58 Elapse time : 01:15:35
Chan defects ..... status .....

E080      2   O.K.
[374] Format complete.

```

In the example above, the disk was off-line when DISK-FORMAT was invoked. If this occurs, power up the disk and press RETURN. The formatter then proceeded; it found one bad sector in addition to one that was already in the alternates table. When it found the error, it printed the actual status read from the disk. This information can be useful to Ultimate or Bull support personnel if many errors are present on one disk.

Note: If you press <BREAK> and enter the system debugger while DISK-FORMAT is executing, the formatter does not stop, although it does stop printing the status message. However, when the formatter needs to print any other messages, such as reporting an error, it stops until the message has been displayed.

To return control to the formatter from the debugger, enter G. If you enter END to exit the debugger, the formatter aborts.

Stacked input and typeahead are not passed to the formatter, since many of the formatter's requests for terminal input are for operator response to errors.

Available On SYSPROG account on Ultimate Bull 7000 systems.

See Also DISK-RESYNC
Ultimate Bull 6000/7000 Operations and Maintenance Guide.

DISK-RESYNC

DISK-RESYNC starts copying one disk to another in order to restore disk shadowing on Ultimate Bull 7000 systems.

Syntax

DISK-RESYNC source destination

source Specifies the channel address of the disk that is already running as part of the system. Enter in hexadecimal without a preceding period.

destination Specifies the channel address of a sibling disk that is to shadow the source disk. Enter in hexadecimal without a preceding period.

Description

Each of the following methods can restore shadowing between a disk that is part of the operating system and a disk that has just been placed on-line:

- | | |
|-------------|--|
| DISK-RESYNC | Restores shadowing to the sib pair while the system is running; this results in the highest system availability. |
| D-COPY | Copies one disk to another; it is faster than DISK-RESYNC, but requires that the system be down while it is running. This command is part of the Utility Sub-System. |
| F restore | Restores shadowing as it restores the data; this is the slowest method. |

DISK-RESYNC begins copying a disk that is part of the operating system to another disk. Once the copy is started, the line that executed DISK-RESYNC is free to do anything else, while resynchronization continues automatically in the background under control of the kernel. DISK-STATUS can be used to monitor the resynchronization.

When DISK-RESYNC is invoked, it checks for the following:

- There is enough memory for the kernel to allocate track I/O buffers.
- The source disk is part of the running disk set and is unshadowed.

- The destination disk channel was detected when the system was booted and is not already part of the running disk set.

If all these conditions are met, the command starts the resynchronization, prints the following message, then exits to TCL:

```
[361] Disk resynchronization started.
```

Caution: *DISK-RESYNC does not actually access the disks being resynchronized. It is possible for DISK-RESYNC to think that resynchronization has been started, when it actually failed, perhaps because the destination disk was off-line. Use DISK-STATUS to determine the status of the resynchronization. See START-RESYNC.*

Before resynchronization, the label on the destination disk can contain any set name and sequence numbers. It does not have to have been previously written with the on-line set name and correct drive number, as is required by D-COPY in the Utility Sub-System. This allows a spare disk to be on-line at all times, so that should a disk fail and be decoupled, shadowing can be restored immediately, without waiting for the actual disk that failed to be repaired. This also allows a disk that has been formatted with DISK-FORMAT to be used. In any case, to prevent the disk from being configured as part of the on-line system should the resync fail, an invalid label is written to the destination disk at the start of the resync.

When the resynchronization is completed, the label of the newly resynchronized disk is rewritten and contains the name of the online set and all appropriate sequence numbers.

On a system with no applications running, one sib pair can be resynchronized in 20 to 50 minutes, depending on disk size. The time increases proportionally with the disk load on the system.

Conversely, resynchronization slows disk-bound jobs in inverse proportion to the number of disk jobs. A busy system is not noticeably slowed by resynchronization, but the resynchronization will take a long time to complete.

Resynchronization uses the same I/O buffers as the fast file save. While resynchronization is running, the file save performance enhancements introduced in Revision 200 are not in effect.

Only one sib pair at a time can be resynchronized. If DISK-RESYNC is invoked while a resynchronization is underway, the following message is displayed:

```
[366] Resynchronization already in progress.
```

```
:DISK-RESYNC 2800 E000.┘
```

```
[361] Disk resynchronization started.  
:
```

Available On SYSPROG account on Ultimate Bull 7000 systems.

See Also DISK-FORMAT
 DISK-STATUS
 START-RESYNC
 Ultimate Bull 6000/7000 Operations and Maintenance Guide.

DISK-STATUS

DISK-STATUS displays status information about the disk subsystem.

Syntax

DISK-STATUS {(options)}

(options)

- F** Displays D_FLAG bits and D_STATE bits for each disk.
- P** Routes output to the spooler.
- Q** Displays queued I/O counters for each disk.
- S** Displays statistics for each disk; can be used to monitor system performance.

Note: The F, Q, and S options are intended primarily for use by Ultimate TAC when there is a suspected problem with the disk system.

- X** Suppresses the summary information at the beginning of the report; intended to be used with S or Q options.

Note: If options are omitted, the current status of the disk subsystem is displayed.

Description

Use DISK-STATUS (without options) periodically on shadowed systems to determine if any shadowed disks have failed. It can be used to:

- Display sib relationships.
- Identify any disks that have failed and are decoupled.
- Monitor dynamic resynchronization (DISK-RESYNC).

:DISK-STATUS

Current Disk Subsystem Status 07:58:35 19 JUN 1991

Dynamic resynchronization is in progress.

Volume	Channel(s)	Status
1	2800/E000	Both running shadowed.
2	2880/E080	2880 is being copied to E080. 12% done.
	B000	Formatting.

Available On SYSPROG account on Ultimate Bull 6000/7000 systems that support shadowing.

See Also DISK-RESYNC
Ultimate Bull 6000/7000 Operations and Maintenance Guide.

DISK.COPY

DISK.COPY copies a multi-disk system by copying the on-line disk set to a backup set of removable disks. DISK.COPY is only available on Ultimate Bull 6000/7000 systems.

For further information on DISK.COPY, please refer to the *Ultimate Bull 6000/7000 Operations and Maintenance Guide, Version 3*. For further information on disk copies, refer to the *System Management Guide*.

DISK.DIAGS

DISK.DIAGS is used by the ON-LINE-DIAGS command to test for hardware problems associated with reading and writing data to disk. Ultimate recommends that you use the ON-LINE-DIAGS command to run diagnostic tests.

For further information on DISK.DIAGS, please refer to ON-LINE-DIAGS.

DIVD

DIVD divides one whole decimal integer by another whole decimal integer.

Syntax

DIVD n m

n Specifies the first decimal integer.

m Specifies the second decimal integer.

Description

DIVD divides decimal integer n by decimal integer m. These numbers can range from ± 140737488355327 .

<pre>:DIVD 123456789 23456789J 5 6172844 :</pre>	<p>5 is the quotient and 6172844 is the remainder.</p>
--	--

Available On

Any user account.

See Also

ADDD
DIVX
MULD
SUBD

DIVX

DIVX divides one hexadecimal number by another hexadecimal number.

Syntax

DIVX n m

n Specifies the first hexadecimal number.

m Specifies the second hexadecimal number.

Description

DIVX divides hexadecimal number *n* by hexadecimal number *m*. These numbers can be positive or negative. Negative numbers range from FFFFFFFF to 800000000001. Positive numbers range from 0 to 7FFFFFFFFF. If fewer than 12 hexadecimal characters are entered, high order zeroes are assumed.

```
:DIVX A2 52␣  
1 50
```

1 is the quotient and 50 (hex) is the remainder.

```
:
```

Available On

Any user account.

See Also

ADDX
DIVD
MULX
SUBX

DROP-DTR

DROP-DTR drops the Data Terminal Ready (DTR) status to low on a specified line.

Syntax

DROP-DTR {n}

n Specifies the line on which to drop DTR. If omitted, the current line is assumed.

Description

If DTR is dropped on a dial-up line, the line disconnects and can no longer be connected until DTR is raised again.

If you enter an invalid line number, the following message is displayed:

```
[535] Illegal line number
```

On 1400 systems, DROP-DTR drops both DTR and Request To Send (RTS).

```
: DROP-DTR 2 ↵  
:
```

Available On

SYSprog or SECURITY account on Ultimate Bull 6000/7000 systems, and Ultimate 1400 systems.

See Also

RAISE-DTR

DROP-RTS

DROP-RTS drops the Request To Send (RTS) status to low on a specified line.

Syntax

DROP-RTS {n}

n Specifies the line on which to drop RTS status. If omitted, the current line is assumed.

Description

Use DROP-RTS to drop RTS status to low. The effect of dropping RTS depends on what device is connected to the line, and how the line is wired.

If a modem is attached, dropping RTS causes the modem to drop Clear To Send (CTS), which in turn causes the system to stop outputting data.

If you enter an invalid line number, the following message is displayed:

```
[535] Illegal line number
```

On 1400 systems, DROP-RTS drops both DTR and RTS.

```
: DROP-RTS 5 ↵  
:
```

Available On

SYSprog or SECURITY account on Ultimate Bull 6000/7000 systems, and Ultimate 1400 systems.

See Also

RAISE-RTS

DTR

DTR (Decimal To Radix) converts a specified decimal number to its equivalent in a specified radix (base).

Syntax

DTR {r} n

r Specifies the radix (base) number. Any radix from 2 to 16 is valid. If omitted, radix 16 (hexadecimal) is used.

n Specifies the decimal number to be converted.

Description

If a non-decimal character (a character other than 0-9) is encountered in the number to be converted, the command stops on the last digit before the invalid character and converts the value to that point to the specified radix. If the non-decimal character is the first character of the number to be converted, a value of zero is returned.

:DTR 8 9A.J	Converting 9A to radix 8 returns
11	11, since 9A is an invalid decimal
:	number and the command stops at 9.
:DTR 2 189.J	Converting 189 to radix 2 (binary).
10111101	
:	

Available On

Any user account.

See Also

DTX
RTD

DTX

DTX (Decimal To Hex) converts a decimal number to its equivalent value in hexadecimal.

Syntax

DTX n

n Specifies the decimal number to be converted. If n is an invalid decimal number, 0 is returned.

Description

DTX converts a decimal number to its hexadecimal value. These numbers can be in the range ± 140737488355327 .

```
:DTX 155.1
      9B
:
```

Available On

Any user account.

See Also

DTR
XTD

DUMP

DUMP displays the data contained in one or more frames. The data can be displayed in character or hexadecimal format.

Syntax

DUMP n1{-n2} {options}

n1{-n2} Specifies a single frame ID (FID), or range of frame IDs to be dumped, in decimal or hexadecimal format. To specify in hexadecimal, enter a period (.) before the FID.

options

- G** Starts the dump at the first frame and follows either the forward or backward links (depending on whether or not the U option is specified). The dump terminates when the last frame in the logical chain is found.
- I** Specifies item format dump.
- L** Specifies that the dump be confined to the links of the frames indicated. No data is displayed.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- U** Traces the data or links logically upwards to display the backward (previous) links.
- X** Displays data in hexadecimal format as well as ASCII character format.

Description

DUMP displays the contents of specified frames on the terminal or printer. Regardless of the option selected, DUMP always displays the following columns of information for each frame:

- Column 1 Frame ID (FID). Preceded by a plus sign (+) if a forward link, a minus sign (-) if a backward link.
- Column 2 Number of next contiguous frames (NNCF).
- Column 3 Forward link (FID of next logical frame).
- Column 4 Backward link (FID of previous logical frame).
- Column 5 Number of previous contiguous frames (NPCF).

- Column 6 (Data in parentheses) is the data in columns 1 through 5, displayed in hexadecimal format.

The data in the frame may or may not be displayed, depending on the options selected.

```

:DUMP 6950 L, Link-only dump option.
FID: 6950 : 0 6967 0 0 ( 1B26 : 0 1B37 0 0 )
+FID: 6967 : 0 0 6950 0 ( 1B37 : 0 0 1B26 0 )

:DUMP .1DC81 X, Display data in decimal and hexadecimal.
FID: 121985 : 0 122174 0 0 ( 1DC81 :0 1DD3E 0 0 )
0000 00000001 DD3E0000 0000000 31324137 0 :.....]>.....12A7:
0010 4155544F 52414345 FE202020 20202044 16 : AUTORACE^ D:
0020 494D2057 494E2835 292C4452 49564552 32 : IM WIN(5),DRIVER:
0030 2835292C 4155544F 283529FE 20202020 48 : (5),AUTO(5)^ :
0040 20205041 5553453D 35FE2020 20202020 64 : PAUSE=5^ :
0050 55503D40 282D3130 29FE2020 20202020 80 : UP=@(-10)^ :
.
.
.
:
```

Available On SYSPROG or SECURITY account.

See Also GROUP

EBASIC

EBASIC compiles an Ultimate BASIC source program to create BASIC object code. The object code can then be executed using the RUN command, or the program can be cataloged and executed directly from TCL.

Note: EBASIC operates the same as BASIC and COMPILE, but is used to compile source items created with EEDIT.

Syntax

EBASIC filename itemlist {(options)}

filename Specifies the file containing the source program to compile.

itemlist Specifies one or more explicit item-IDs (program names), or an asterisk (*) to specify all items in the file.

(options)

- C** Suppresses end-of-line opcodes from object code.
- F** Lists internal variables and labels; used with the M option.
- I** Lists lines from \$INCLUDED programs if the L option is specified.
- L** Displays line by line listing of the program during compilation.
- M** Lists map of variables and object layout.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Suppresses generation of symbol table.
- X** Cross-references all labels and variables and stores this information in the BSYM file.

Description

For more information on EBASIC, please refer to the *Ultimate BASIC Language Reference Guide*.

Available On

Any user account.

ECHO-OFF

ECHO-OFF deactivates the terminal echo feature. Characters entered at the keyboard are not displayed on the screen.

Syntax

ECHO-OFF {n}

n Specifies the line on which to deactivate terminal echo. If omitted, the current line is assumed.

Description

When ECHO-OFF is used, characters entered at the keyboard are not displayed on the screen. However, characters entered at TCL are placed in the TCL stack and can be retrieved using TCL stack commands such as VIEW.

To restart terminal echo, use ECHO-ON.

```
: ECHO-OFF 4 ↵
```

Information entered on line 4 is no longer displayed on that line's screen.

```
:
```

Available On

Any user account.

See Also

ECHO-ON

ECHO-ON

ECHO-ON activates the terminal echo feature. Characters entered at the keyboard are displayed on the terminal screen.

Syntax

ECHO-ON {n}

n Specifies the line on which to activate terminal echo. If omitted, the current line is assumed.

Description

Characters entered at the keyboard are displayed on the terminal screen.

Note: When your system is coldstarted, terminal echo is activated for all lines.

<pre>: ECHO-ON 2 ↵</pre>	Information entered at line 2 is displayed on that line's screen.
<pre>:</pre>	

Available On

Any user account.

See Also

ECHO-OFF

ECOPY

ECOPY copies items from a file to another file, to the same file, to the terminal, or to the printer.

Note: *ECOPY operates the same as COPY, but is used to expand blank and asterisk fields compressed with EEDIT.*

Syntax

ECOPY filename {itemlist} {(options)}

- filename** Specifies the file from which items in the itemlist are to be copied. Also known as the source file.
- itemlist** Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.
- (options)**
- A** Data copied in assembler format; used with the P or T options.
 - D** Deletes the items in the source itemlist after the copy to another file is complete. Items are not deleted when they are copied to the terminal or printer.
 - F** Formfeed; starts each item on a new page; used with the P or T options.
 - I** Inhibits display of item-IDs of copied items.
 - N** If copying to a file, inhibits creation of new items. Copy occurs only if the item-ID already exists, and overwrites the existing item. If copying to a printer or terminal, inhibits automatic end-of-page waiting.
 - O** Overwrites existing items. If the destination itemlist contains multiple item-IDs with the same name, only the last item copied with that name is retained in the destination file.
 - P** Routes output to the spooler.
 - S** If copying to a file, suppresses the error message listing. If copying to printer or terminal, suppresses line numbers.

- T** Terminal; routes copy data to the terminal.
- X** Hexadecimal; displays the data in hexadecimal format; used with the P or T options.

Description

Because EEDIT compresses redundant blanks and asterisks, the source item can be reduced considerably. Use ECOPY to expand an item to its original size before its blanks and asterisks were compressed by EEDIT. ECOPY creates copies of items that are expanded to their uncompressed form.

If ECOPY is invoked without the T or P option, the following prompt is displayed:

To :

To copy items to the terminal, press RETURN. To copy items to a file, enter the following information:

{{filename}} {itemlist}

(filename) Copy items to a new file, known as the destination file. If omitted, items are copied to the source file.

itemlist Copy items to new item-IDs in the source or destination file. If omitted, items are copied with the same item-IDs. Separate multiple item-IDs with blanks. If an item-ID has embedded blanks, enclose the item-ID in single quotes (for example, 'TEST ITEM').

Item-IDs can be repeated within the itemlist. However, if you use the O or N option, only the last item copied with the same name is retained in the destination file. If you do not select the O or N option and the itemlist contains an item-ID that already exists, the source item is not copied.

The source and destination itemlists can contain different numbers of items. If the source itemlist is exhausted first, the ECOPY terminates. If the destination itemlist is exhausted first, the remaining item-IDs are copied with the original item-ID.

When copying a dictionary, ECOPY does not copy file definition items (D-pointers) to another file. You can only create D-pointers with

CREATE-FILE. The CC-pointers and CL-pointers created by BASIC, COMPILER, COPY-LIST, EDIT-LIST, and SAVE-LIST are not copied. Therefore, you cannot use ECOPY to copy BASIC object code or saved lists.

```

:ECOPY BP TIME.CONVERT (T)
    TIME.CONVERT
001 *****
002 ***** TIME CONVERSION *****
003 *****
004 PRINT @(-1)
005 **** CONSTANTS
006 S = 60
007 PRINT "INPUT HOURS:"
008 INPUT HRS
009 PRINT
010 HRS = HRS * S
011 PRINT HRS
012 PRINT

:
:ECOPY CUSTOMER ITEM1 ITEM2)
To :ITEM5 ITEM6)
    1 ITEM5
    2 ITEM6

2 items copied

:
:ECOPY DICT CUSTOMER * (I)
To :(DICT USERS)
[418] File definition item 'CUSTOMER' was not copied

23 items copied

:

```

ITEM5 and ITEM6 are in expanded (normal) format.

Available On Any user account.

See Also COPY
EEDIT

ED{IT}

ED{IT} invokes the line editor, with which you can create or edit Ultimate file items.

Syntax

ED{IT} filename {itemlist} {(options)}

filename Specifies the name of the file containing the item or items to be edited.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

A Displays assembly code source programs in standard assembly listing format.

M Displays macro expansions when used with the A option.

P Routes output to the spooler.

S Suppresses display of line numbers, or suppresses display of object code if used with the A option.

X Displays data retrieved from the editor in hexadecimal format.

Description

For more information on ED{IT}, please refer to the *Guide to the Ultimate Editors*.

Available On

Any user account.

EDIT-LIST

EDIT-LIST allows you to edit a saved select-list.

Syntax

EDIT-LIST listname

listname Specifies the name of the select-list to be edited.

Description

For more information on EDIT-LIST, please refer to the *Guide to the Ultimate Editors*.

Available On

Any user account.

EEDIT

EEDIT invokes the line editor, with which you can create or edit an Ultimate file item.

Note: *EEDIT operates the same as ED{IT}, except that redundant blanks and asterisks are compressed from the edited item when it is filed.*

Syntax

EED{IT} filename {itemlist} {(options)}

filename Specifies the name of the file containing the item or items to be edited.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

- A** Displays assembly code source programs in standard assembly listing format.
- M** Displays macro expansions when used with the A option.
- P** Routes output to the spooler.
- S** Suppresses display of line numbers, or suppresses display of object code if used with the A option.
- X** Displays data retrieved from the editor in hexadecimal format.

Description

For more information on EED{IT}, please refer to the *Guide to the Ultimate Editors*.

Available On

Any user account.

EXCHANGE

EXCHANGE allows you to switch the names of two items in the same file, or to rename a single item.

Syntax

EXCHANGE filename item-ID1 item-ID2

filename Specifies the file in which to find item-ID1 and item-ID2.

item-IDn Specifies the names of the items to switch.

Description

EXCHANGE uses the COPY command with the O and D options to exchange the names of two specified items, or to rename an item. EXCHANGE copies item-ID1 to the %TEMP% item, then copies item-ID2 to item-ID1, and finally copies %TEMP% to item-ID2 and deletes %TEMP%.

```

:EXCHANGE BP PROG1 PROG2.↓      Exchange names of
COPY BP PROG1 PROG2 %TEMP% (O,D)  PROG1 and PROG2.
%TEMP% PROG1 PROG2_
  1 PROG1
  2 PROG2
  3 %TEMP%

3 items copied
:

```

Available On Any user account.

See Also COPY

FILE-SAVE

FILE-SAVE does a full file save. FILE-SAVE saves all file groups to a file-save tape, and resets the group-updated flags.

Syntax

FILE-SAVE

Description

FILE-SAVE backs up your database by producing a file-save tape that contains your system and user files. FILE-SAVE saves all files and items, regardless of activity since the last file-save, except for DX and DV files. Also, only the filenames of DY files are saved.

Note: FILE-SAVE does not save the kernel (coldstart), the ABS (assembly language software), or any TCL stacks.

When invoked, FILE-SAVE attaches tape drive 0 if no tape drive is currently attached, and rewinds the tape. It then writes an extra end-of-file marker at the beginning of the file-save tape, displays the time, and displays the following prompt:

```
Do you want the Console listing to go to the printer?  
(Y/N/X) -
```

To send the list of files being saved to the printer as well as being displayed on the terminal, enter Y. To display the list just on the terminal, enter N. To terminate the command, enter X.

The following prompt is displayed:

```
Enter tape block size (500-nnnn) -
```

On all IBM systems, and Ultimate 1400 systems with half-inch drives, n is 32000. On Ultimate 1400 systems with quarter-inch drives, n is 31744. On all other systems, n is 8192. Enter the desired tape block size.

The following prompt is displayed:

```
Do you want to generate File Statistics? (Y/N)
```

To generate a STAT-FILE item for each saved file, enter Y. Otherwise, enter N. The following prompt is displayed:

```
Would you like GFES fixed by the FILE-SAVE process?  
(Y/N)
```

Enter Y to let the system fix GFES by truncating groups at the last good item and fixing links if possible. Otherwise, enter N.

The following prompt is displayed:

```
Enter Tape Label -
```

Enter the information to be displayed in the tape label.

```
:FILE-SAVE.␣  
  
Now beginning File-Save Write/Read Test  
  
WRITE/READ TEST VERIFIED  
  
File-Save beginning at hh:mm:ss dd mmm yyyy  
  
Do you want the Console Listing to go to the Printer?(Y/N) N.␣  
Enter tape block size (500 - 8192) 8000.␣  
Do you want to generate File Statistics? (Y/N) Y.␣  
Would you like GFES fixed by the FILE-SAVE process? (Y/N) Y.␣  
Enter Tape label: FILE-SAVE.␣
```

Available On FILE-SAVE, SYSPROG, or SECURITY accounts.

See Also ALL-UPDATE-SAVE
FILEOPT
PART-UPDATE-SAVE
SAVE
Operations and Maintenance Guide for your specific platform.
System Management Guide for information on file-save procedures and multiple tape operations.

FILEOPT

FILEOPT displays or modifies a file or account's file-save options.

Syntax

FILEOPT filename {itemlist} {(options)}

filename Specifies the file containing the D-pointers to be inspected or updated; can be any file including SYSTEM or MD.

itemlist Specifies one or more file definition items (D-pointers) whose file options are to be displayed or changed, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

- C** Allows BASIC code and saved list pointers in the dictionaries; used for compatibility with older software revisions (not required on current revision).
- D** Sets the file code to D (the default) so that the file is always file-saved.
- V** Does not save files unless the V or A option is used with SAVE.
- W** Does not save files when using SAVE with the W option.
- X** Does not save the file unless the A option is used with the SAVE command.
- Y** Saves only the D-pointers in the file.

Note: If options are omitted, FILEOPT displays the current file-save options (attribute 1) of each D-pointer.

Description

Use FILEOPT to display or modify file-save options. It can display or modify D-pointers in a file dictionary, user account Master Dictionary, or the SYSTEM dictionary. This is an alternative to using UPDATE-ACCOUNT or UPDATE-FILE to modify the options for a single account or file.

If any item in an itemlist is not a D-pointer, the following message is displayed:

```
[201] 'item' is not a file name
```

FILEOPT updates each D-pointer with the specified options and displays the following message:

```
[250] 'filename' updated.
```

FILEOPT sets a read lock for each group of items, copies the items to workspace, then releases the read lock. It then modifies the items and writes them back.

```
:FILEOPT SYSTEM USER.↓  
[251] 'USER' options = DY  
:  
:FILEOPT DICT CUSTOMER CUSTOMER (X.↓  
[250] 'CUSTOMER' updated.  
:
```

Available On Any user account.

See Also UPDATE-ACCOUNT
UPDATE-FILE
System Management Guide for information on saves and read locks.

FIX-FILE-ERRORS

FIX-FILE-ERRORS attempts to diagnose the nature of Group Format Errors (GFEs) found in a specified file and, if possible, recover the data.

Syntax

FIX-FILE-ERRORS filename {(group.no)} {(options)}

filename Specifies the file to be examined.

{(group.no)} Specifies one group of the file to be checked for GFEs. If omitted, all groups in the file are checked.

{(options)}

P Routes output to the spooler.

X Checks extended item (object code items only).

Description

FIX-FILE-ERRORS processes each group (or the specified group if a group.no is indicated) in the file until all groups are examined.

FIX-FILE-ERRORS assumes that a TSYM file exists in the account of the specified file. When possible, the process removes the data in error and places it in the TSYM file. These error items are assigned item-IDs having the following format:

```
Error-type FID Seq#
```

Note: When you invoke *FIX-FILE-ERRORS*, it clears the TSYM file.

FIX-FILE-ERRORS makes two passes through each group. Pass One checks the limits of the primary file space (contiguous frames allocated by CREATE-FILE). The number of frames should equal the file's modulo times separation. Errors are displayed in the following format:

```
Linkfield error - group at n1 - frame n2
```

```
Links: n3 n4 n5 n6
```

If the primary space crosses the maximum FID, the program stops and issues a message. After processing the primary space, the operation scans the links of the extended frames, searching for an incorrect backward link and for the end of group. (Extended frames are the

linked frames allocated from available space when the primary file space is used up.) If an incorrect backward link is found, the program issues an error message and scans up to 66 more frames in that group before going to the next group.

Pass Two scans the data one item at a time, examining items for the following format errors and making the indicated corrections:

Error	Description	Fix	Description
A	No segment mark at end of item.	1	A new item is created in the TSYM file and a group-terminating segment mark is placed after the last good item. Any extended frames beyond the last item are disconnected from the group.
C	Count field out of range (= > 6 and <= 32267)	1	See above.
N	Non-hex character in count field.	1	See above.
O	Premature end of data.	1	See above.
L	An item-ID exceeds 50 characters.	2	The bad file items are removed and placed in the TSYM file. The scan continues through the group.
H	Item-ID does not hash to the current group	2	See above.
(none)	A segment mark exists in the item.	3	The segment marks are replaced with back-arrows. The message SM @ xxxx.yy (where xxxx=frame and yy=displacement) is displayed.

When processing is completed, the following message is displayed:

n new error items created in TSYM

Available On SYSPROG or SECURITY account.

See Also *System Management Guide* for information on Group Format Errors (GFES), and assembler.

GET-LIST

GET-LIST retrieves a saved select-list for processing.

Syntax

GET-LIST {listname}

listname Specifies the name of the saved select-list. If omitted, a null item-ID is assumed.

Description

Use GET-LIST to retrieve a previously saved list, as an alternative to performing a SELECT.

Note: GET-LIST assumes that a POINTER-FILE (or a Q-pointer to a POINTER-FILE) exists in the current account.

GET-LIST searches the POINTER-FILE for the specified list. If the listname is not found, the following message is displayed:

```
'listname' not on file
```

If the listname is found, the following message is displayed:

```
n items selected.
```

Where n is the number of item-IDs or attributes in the saved select-list. The select-list then becomes available to the next system command entered or program executed.

```
:GET-LIST CUSTOMER.↓  
  
124 items selected.  
:
```

Available On

Any user account.

See Also

SAVE-LIST
Ultimate PROC Reference Guide.
Ultimate RECALL and Ultimate UPDATE User Guide.

GROUP

GROUP outputs file structure information about the groups in a specified file.

Syntax

GROUP filename {(options)}

filename Specifies the name of the file to be examined.

(options)

- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Suppresses the itemlist, but gives FID (frame ID) and file size.

Description

GROUP provides file structure information about groups, such as the physical location of items in groups. This can be used as an aid in repairing Group Format Errors (GFEs), since once the location is determined, DUMP can be used to view data in the group.

GROUP outputs the base FID of each group in the specified file. For each group, every item-ID in the group is listed, along with a character count of the item (in hexadecimal), and its starting address (decimal FID, hexadecimal offset). At the end of each group the following statistics are displayed:

```
n Items m Bytes p/q Frames
```

where:

- n** Number of items in the group.
- m** Total number of bytes used in the group.
- p** Number of full frames in the group.
- q** Number of bytes used in the last frame of the group.

GROUP

Information about extended items (items larger than 32K) is placed on the line immediately under the primary entry and includes the following information:

- Size (in hexadecimal) of the extended item.
- Beginning FID (in decimal) of the extended item.
- Displacement (in hexadecimal) of the beginning of the extended item.

```
: GROUP  USER.┘
880894
09D0 880894.00C USER2
1 Items 2512 Bytes 5/12 Frames
880895
0017 880895.00C USER3                               Extended item.
      01E854 1193571.2D
1 Items 23 Bytes 0/23 Frames
880896
003E 880896.00C USER1
1 Items 62 Bytes 0/62 Frames
:
```

Available On Any user account.

See Also DUMP
ITEM

HASH-TEST

HASH-TEST is an Ultimate RECALL command that uses a test modulo to provide file management information about a file.

Syntax

**HASH-TEST filename {itemlist} {sel-criteria} {modifiers}
{(options)}**

filename Specifies the file to be hashed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by an item in order for it to be hashed. Also known as a WITH clause.

modifiers All modifiers valid for LIST or SORT may be used with this command.

(options)

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

S Shows only summary information.

Description

For further information on HASH-TEST, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

INIT-NET

INIT-NET is an UltiNet® command that initializes your UltiNet communication network.

Syntax INIT-NET

Description For further information on INIT-NET, please refer to the *Ultimate UltiNet User's Guide*.

Available On SYSPROG or SECURITY account.

ISTAT

ISTAT is an Ultimate RECALL command that provides file management information for a file.

Syntax

ISTAT filename {itemlist} {sel-criteria} {modifiers} {(S}

filename Specifies the file for which information should be provided.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by an item in order for it to be processed. Also known as a WITH clause.

modifiers All modifiers valid for LIST or SORT may be used with this command.

(S Shows only summary information.

Description

For further information on ISTAT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

ITEM

ITEM displays structure information for an item in a specified file.

Syntax

ITEM filename {itemlist} {(options)}

filename Specifies the file containing the item.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

S Suppresses the itemlist, but gives the frame ID (FID) and the group size.

Description

ITEM outputs the base FID of the group into which the specified itemlist hashes. It then lists every item-ID in the group, along with a character count of the item (in hexadecimal), and its starting address (decimal FID, hexadecimal offset). At the end of the itemlist, the following statistics are displayed:

```
n Items m bytes p/q Frames
```

where:

n Number of items in the group.

m Total number of bytes used in the group.

p Number of full frames in the group.

q Number of bytes used in the last frame of the group.

This is followed by the list of items in the group and the statistics for the group. Information about extended items (items larger than 32K) is placed on the line immediately under the primary entry and includes the following:

- Size (in hexadecimal) of the extended item.

- Beginning FID (in decimal) of the extended item.
- Displacement (in hexadecimal) of the beginning of the extended item.

If the item does not exist in the file, the following message is displayed:

Item Not Found

```

:ITEM NAME LONG┘          This is an extended item.
LONG
231644
0025 231644.00C TEST
0016 231644.031 LONG
      00980A 1279715.2D
:
:ITEM MD MULX┘

MULX
211016
0019 211016.00B *A3
0016 211016.024 CHARGE-TO
000B 211016.03A OR
0011 211016.405 POVf
0019 211016.056 B/DEL
001B 211016.06F A4
0010 211016.087 MULX
001C 211016.097 S/NAME
001B 211016.0B3 SSELECT
001F 211016.0CE V/MAX
0012 211016.0ED SLEEP
0021 211016.0FF S
0018 211016.120 CHECK-SUM
000A 211016.138 MD
14 Items 508 Bytes 1/8 Frames
:

```

Available On Any user account.

See Also DUMP
GROUP

LA100

LA100 prompts for settings on print quality, characters per inch, pitch, lines per inch, and lines per page for DEC letter-quality printers.

Syntax LA100

Description Before using LA100, you must use SP-ASSIGN to route print jobs to the proper printer.

When LA100 is invoked, you are prompted for the desired printer characteristics. To accept the system default value, press **RETURN**. Default values are:

Setting	Default
Print quality	Draft
Pitch selection	Font
Characters per inch	10
Lines per inch	6
Lines per page	66

```
: LA100.↓  
  
Enter 1) Letter Quality or 2) Draft Quality print - 2.↓  
Enter Pitch Select 1) Font Pitch or 2) All Pitches - 1.↓  
Enter Characters/Inch (5,6,6.6,8.25,10,12,13.2,16.5) - 12.↓  
Enter Lines/Inch (2,3,4,6,8, OR 12) - 6.↓  
Enter Number of Lines per Page - 60.↓  
:
```

Available On SYSPROG or SECURITY account.

See Also SP-ASSIGN

LEVEL-EXIT

LEVEL-EXIT returns (pops) you to the previous TCL level after a level push, or, if specified, to the primary TCL level.

Syntax

LEVEL-EXIT {ALL}

ALL Exits all pushed TCL levels and pops to the primary TCL level. If omitted, you are popped back a single TCL level.

Description

Use LEVEL-EXIT to pop to a previous level. Levels are pushed from TCL or from the system debugger.

When popping back a level, the screen is updated to appear just as it did before the level push was specified.

LEVEL-EXIT has no effect when EXECUTED from a BASIC program, but can be used in a CHAIN statement.

If LEVEL-EXIT is entered at the primary TCL level, an error message is displayed.

If SET-LEVEL-PUSH is ON, using LEVEL-EXIT without the ALL parameter is the same as pressing the POP function key or <CTRL-O>. LEVEL-EXIT has no effect if SET-LEVEL-PUSH is off.

::: LEVEL-EXIT↵	Pop one TCL level.
:::	Prompt symbol is reduced by one.
::: LEVEL-EXIT ALL↵	Return to the primary TCL level.
:	Primary TCL level prompt is displayed.

Available On

Any user account.

See Also

SET-LEVEL-PUSH
SHOW-LEVELS

Chapter 1 of this document for further information on TCL level pushing.

LINK-WS

LINK-WS links the extended workspace frames of one or more lines.

Caution: *Do not use LINK-WS when other users are on the system.*

Syntax

LINK-WS {(n)} {(n-m)}

n Specifies the line whose extended workspace is to be re-linked.

n-m Specifies a range of lines to be re-linked.

Note: *If line number or range of line numbers is omitted, the workspaces of all lines are re-linked, except those of lines currently logged on and those of the spooler, warmstart, and UltiNet processes.*

Description

LINK-WS re-links the extended workspace, which is usually automatically linked and available after a file-restore. Each extended workspace consists of a contiguous block of frames, divided into three equal sections. Each section is 64,000 bytes.

Use LINK-WS if you suspect extended workspace links have been destroyed, for instance, if BASIC programs abort with the following message:

Not Enough Work Space

Or, if a program or process aborts on one line but works correctly on others.

LINK-WS performs the linkage process one line at a time. During the process, the line number whose workspace is currently being linked is displayed on your terminal in hexadecimal. If a specified line is logged on, the following message is displayed and the workspace is not relinked:

On!

Note: The extended workspace of the spooler, warmstart, and UltiNet processes can only be relinked via a coldstart.

```
: LINK-WS (2-4)
02 On!
03 04
:
```

Available On SYSPROG or SECURITY account.

See Also *System Management Guide* for information on workspace allocation.

LIST

LIST is an Ultimate RECALL command that generates formatted output of selected items and attributes in a file.

Syntax

LIST filename {itemlist} {sel-criteria} {output-specifications} {print-limiters} {(options)}

filename Specifies the file for which information should be listed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by an item in order for it to be listed. Also known as a WITH clause.

output-specifications Specifies the attributes and values in the selected items that should be listed.

print-limiters Restricts the printing of output specification to values that meet the limit conditions.

(options)

- C** Suppresses column heading lines that define attributes in a report.
- D** Suppresses all detail lines from a report.
- H** Suppresses the report's page heading line and "n items listed" line.
- I** Suppresses the item-ID column or row heading.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.

Description

For further information on LIST, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

LIST-FILE-STATS

LIST-FILE-STATS lists the current file statistics for the system.

Syntax LIST-FILE-STATS

Description LIST-FILE-STATS produces a current File Statistics Report that reflects all files on the system at the latest full file-save.

When invoked, LIST-FILE-STATS displays the following prompt:

To Lineprinter? (Y/N/X) -

Enter **Y** to send the report to the printer, **N** for screen display, or **X** to exit to TCL. If you enter **Y** or **N**, the following prompt is displayed:

Detail Suppress? (Y/N/X) -

Enter **X** to return to TCL. If you enter **Y**, the report is limited to the following information for each account:

USER-NAME	The account name.
SIZE	Total size of the account in bytes.
FRAMES	Total number of frames used by the account.
%UT	Utilization of file space.
PAD	Pad space in file.
INDEXES	File indexes.
GFE	Group Format Errors.

At the end of the listing is a total for each column.

Note: For columnar display when the report is sent to the terminal, set terminal width with the `132` command.

If you enter **N**, every file is listed alphabetically within its user account. The following information is displayed for each file:

LIST-FILE-STATS

R#	Tape reel number.
SEQ	File number.
NAME	File name. One or more fields are present, indicating the file is an account, a dictionary, or a data file.
BASE	Base FID of file.
MOD	Modulo of file.
SEP	Separation of file.
SIZE	Bytes in file.
ITEMS	Number of items in the file.
FRAMES	Number of frames used by the file.
AV/ITM	Average bytes per item.
ITM/GP	Average items per group.
FRM/GP	Average frames per group.
%UT	Utilization of file space.
PAD	Pad space in file.
INDEXES	Number of file indexes.
GFE	Group Format Errors.

A total for each column is shown at the end of each account.

Note: *The file-restore process clears STAT-FILE, which contains the LIST-FILE-STATS data. If you need to list the file status after a file-restore, use the LOAD-STATS command to restore the appropriate STAT-FILE.*

```

12:22:34 09 MAR 1991
***** FILE STATISTICS REPORT *****
page 1
R# SEQ NAME..... BASE MOD SEP .SIZE.... ITEMS FRAMES AV/ITM ITM/GP FRM/GP %UT. ...PAD...INDEXES GFE
1 1176 AB.SYS          770176 3 1      57      2      3      28      0.6      1.0      3      1,443      0
1 1178 AB.SYS*AB.SYS  771670 1 1      77      20      8      44      1.2      1.0      5      3,112      0
1 1051 BUS.CUST        762247 1 1    50,145    31     101    1,617    31.0    101.0    99      355      0
1 1052 BUS.CUST*BUS.CUST 762248 17 1    80,072   420     170     190    24.7    10.0    94     4,928      0
.
.
.
1 1311 ZCF            587010 3 1      35      1      3      35      0.3      1.0      2      1,465      0
1 1312 ZCF*ZCF        685407 2833 1 1,906,497 42543 5343 44 15.0 1.8 71 765,003 0
1 1310 ZIP.CODE       586942 29 1    12,674   337      42      37    11.6    1.4    60     8,326      0

*** TOTALS FOR USER- ZIP.CODE
-----
1,919,206      5388      71 774,794      0
-----
20,956,042    78876     78 7,481,958    0
-----

```

Available On SYSPROG or SECURITY account.

See Also ACCOUNT-SAVE
 FILE-SAVE
 LOAD-STATS
 SAVE
 Operations and Maintenance Guide for your specific platform.
 System Management Guide for information on the File Statistics Report.

LIST-GFE

LIST-GFE checks the SYSTEM-ERRORS file for Group Format Error (GFE) records, compiles any GFE information, and outputs the results to the terminal or printer.

Syntax

LIST-GFE

Description

LIST-GFE first checks the SYSTEM-ERRORS file for any GFE records. If none exist, the following message is displayed:

```
[401] No items present.
```

```
There are no GFE records logged in the SYSTEM-ERRORS
file.
```

```
<CR> to continue
```

Press **RETURN** to go to the TCL prompt.

If GFE errors do exist in the SYSTEM-ERRORS file, the following message is displayed:

```
There are n GFE records logged in the SYSTEM-ERRORS
file
```

```
Enter "P" to send listing to Printer, <CR> to screen
```

Enter a **P** to send the GFE report to the printer, or press **RETURN** to display the report on the screen.

LIST-GFE then begins to process the selected GFE error records against the STAT-FILE. An asterisk (*) is displayed on the screen (regardless of the output selection) for each 20 STAT-FILE items processed. All GFES that can be associated with a particular file are listed first. Any GFES for which no file can be found are listed separately.

The report is then directed to either the terminal or printer as specified. All records are automatically included on reports directed to the printer. For reports on the terminal, each record is individually displayed and you are prompted to continue or quit after each display.

```
:LIST-GFE.]
```

```
There are 4 GFE records logged in the SYSTEM-ERRORS file
```

```
Enter "P" to send listing to Printer, <CR> to screen
Output being displayed on terminal
```

```
Each '*' displayed indicates that 20 records in the STAT-FILE
have been processed
```

```
*****
```

```
GFE Recorded on 26 MAY 1991 at 12:48AM
```

```
GFE located at 82730.132 in group with primary frame 61231
```

```
Account=          SALES
Dict filename=    BP,SALES
STAT-FILE Key=    2:399
File Base=        61229
Mod=              29
Sep=              1
```

```
<CR> to continue, "Q" to quit
```

```
*****
```

```
The current STAT-FILE does not contain a file with a base for
the following GFE's
```

DATE	TIME	LOCATION	PRIMARY FRAME	FILE BASE
17 JAN 90	05:41PM	128343.	128343	128293
28 MAR 90	06:21PM	129666.	129666	129652
29 MAR 90	10:21AM	82730.132	61231	61228

```
<CR> to continue
```

Available On SYSPROG or SECURITY account.

See Also FILE-SAVE
LIST-SYSTEM-ERRORS
SAVE
System Management Guide for information on the File Statistics Report.

LIST-INDEX-LOCKS

LIST-INDEX-LOCKS lists the lock status for each index associated with a specified file.

Syntax

LIST-INDEX-LOCKS filename {(options)}

filename Specifies the file for which index locks are to be listed.

(options

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

Description

The system locks an index as follows:

- If an index is being read by a user, it is locked against being updated; however, it can be read by other users.
- If an index is being updated by a user, it is locked against being read or updated by all other users.

LIST-INDEX-LOCKS displays the following information:

ATTR# Attribute number. A negative attribute number indicates that the index is a generated value based on a correlative.

INDEX-L Displays the line number of a user currently setting the overall Index-Lock for that attribute.

WRITE Displays the line number of a user currently updating the index.

READ-CTR. Displays the current number of users accessing (reading) the index.

```

:LIST-INDEX-LOCKS  VENDOR.┘

```

Attr#	Index-L	Write	Read-ctr.	
-----	-----	-----	-----	
2	-	37	0	User on line 37 is updating
-0001	-	-	0	information for the index on
1	-	-	4	attribute 2.
				Four users are accessing
				information from the
				index based on attribute 1.
:				

Available On Any user account.

See Also CLEAR-INDEX-LOCKS
LIST-INDEXES

LIST-INDEXES

LIST-INDEXES lists all indexes for a specified file.

Syntax

LIST-INDEXES filename {(options)}

filename Specifies the file for which indexes are to be listed.

(options)

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

Description

Use LIST-INDEXES to list the indexes associated with a file. When invoked, LIST-INDEXES displays the index structure and the name of the Ultimate UPDATE definition item specified in CREATE-INDEX.

If no indexes exist for the file, the following error message is displayed:

```
No Indexes Present
```

If an index is corrupted, it is not used by the system and the following message is displayed:

```
Index 'name' is corrupted. Please delete and recreate it.
```

```
:LIST-INDEXES  VENDOR.↓
Indexes for file :  VENDOR
Attr# Attr.name      Correlative          Attr. Id's Multi-
-----
0      CS              A;(2:",":3)         L      R      N
1      NAME              L                    L      R      Y
2      ZIP.CODE          L                    L      R      N
:
```

Available On

Any user account.

See Also

CREATE-INDEX
DELETE-INDEX

LIST-ITEM

LIST-ITEM is an Ultimate RECALL command that lists the contents of items in a specified file in Line Editor format.

Syntax

LIST-ITEM filename {itemlist} {sel-criteria} {(options)}

filename Specifies the file containing the items to be listed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by an item in order for it to be listed. Also known as a WITH clause.

(options)

- A** Lists items in editor assembler format.
- F** Formfeeds after each item.
- I** Suppresses the item-ID column or row heading.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Suppresses line numbers.
- X** Displays data in hexadecimal format.

Description

For more information on LIST-ITEM, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

LIST-LABEL

LIST-LABEL is an Ultimate RECALL command that generates formatted output of data from items in a file. Item data can be grouped into blocks, with several blocks placed across the page, as in a set of mailing labels. LIST-LABEL is similar to LIST, except that more than one item can exist on an output line.

Syntax

LIST-LABEL filename {itemlist} {sel-criteria} {output-specifications} {print-limiters} {(options)}

filename	Specifies the file for which labels should be listed.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be listed. Also known as a WITH clause.
output-specifications	Specifies the attributes and values in the selected items that should be listed.
print-limiters	Restricts the printing of output specification to values that meet the limit conditions.
(options)	
C	Suppresses column heading lines that define attributes in a report.
N	Specifies no automatic end-of-page waiting.
P	Routes output to the spooler.

Description

For further information on LIST-LABEL, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

LIST-LOCKS

LIST-LOCKS displays information about currently set group locks, item locks, and read locks.

Syntax

LIST-LOCKS {(options)}

(options)

- I** Displays item lock information.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.

Note: If options are omitted, all group lock information is displayed.

Description

Use LIST-LOCKS to determine if any group, item, or read locks are currently set, and if so, the line numbers (and UltiNet system numbers) that set them.

Group and item locks are set by the system when files are updated. Item locks can also be set by BASIC statements such as READU. A group can be locked, items in a group can be locked, or a group and items can be locked. A read lock, which locks groups, is set by the system when items are accessed.

If no locks are set, LIST-LOCKS takes no action and returns to TCL. If any locks are set, the following display is generated for each group (or specified group):

```
DecimalFID (HexFID) LINE/* [UltiNet#/*] <readlocks>
      {LINE} {[UltiNet#/0]}
```

where:

- DecimalFID** Starting FID address of the group in decimal.
- (HexFID)** Hexadecimal FID of the group.
- LINE/*** Line number for a group lock, or * if group is not locked.
- [UltiNet#/*]** UltiNet system number, or * if the local system.

LIST-LOCKS

<readlocks> Line numbers having read locks set. Line numbers are displayed in the order set, with the most recently set line number first.

Within a group, the following display is generated for each item lock:

{LINE} Line number of group having an item lock. This is only displayed if the I option is entered.

[UltiNet#/0] UltiNet system number, or 0 if the local system. This is only displayed if the I option is entered.

```
:LIST-LOCKS.↓
232874 (38DAA) * [*] <14 20 5>
                                     Lines 14, 20, and 5 have set
                                     read locks for the group in
                                     frame 232874. There are no
                                     group locks set.

232853 (389D5) 4 [*] <10>
                                     Line 10 has set a read lock for
                                     the group in frame 232853,
                                     and Line 4 has a group lock
                                     set.

:LIST-LOCKS (I.↓
242233 (3B239) * [*]
      4 [0]
                                     Line 4 has an item locked in
                                     the group.
```

Available On SYSPROG or SECURITY account.

See Also *System Management Guide* for information on group locks, item locks, and read locks.

LIST-NAMED-COMMON

LIST-NAMED-COMMON lists the BASIC named COMMON areas for the current line.

Syntax LIST-NAMED-COMMON

Description LIST-NAMED-COMMON lists the named COMMON areas for the current line. If no named COMMON areas exist for the current line, no message is displayed.

```
:LIST-NAMED-COMMON.
```

```
/CTR/
```

The current line has one named COMMON area called CTR.

Available On Any user account.

See Also *Ultimate BASIC Language Reference Guide* for information on COMMON areas.

LIST-PLOT-DEVICES

LIST-PLOT-DEVICES lists all terminals and printers supported by UltiPlot.

Syntax

LIST-PLOT-DEVICES {(P}

(P Routes output to the spooler.

Description

LIST-PLOT-DEVICES lists the terminals and printers that can produce UltiPlot output (bar or line graph, scatter diagram, and rectangular or pie chart).

When LIST-PLOT-DEVICES is invoked, the following information is displayed:

```
Device.. Manufacturer... Model.. Resolution Notes.....
```

where:

Device	Name of the printer or terminal.
Manufacturer	Name of the manufacturer.
Model	Model number.
Resolution	Resolution specifications in pixels.
Notes	Miscellaneous information.

N O T E

The following device type is fully qualified and supported by Ultimate for use with UltiPlot:

PTX Printronix Printer

Ultimate cannot guarantee that any other device will work with UltiPlot.

Some serial printers use null characters as spaces when in graphics mode. The spooler on all PICK systems adds extra null characters after certain control codes. When this occurs, gaps will appear in the graph shifting pieces of lines to the right.

To prevent this, the printer must be started by a terminal without any delay characters as defined by the term setting. If the printer is already started, delete it (SP-DELETEPTR n). Before starting the printer, execute TERM ,,,0,0 then start the printer.

Press <RETURN> to continue:

Available On SYSPROG or SECURITY account.

See Also *UltiPlot Reference Guide.*

LIST-SYSTEM-ERRORS

LIST-SYSTEM-ERRORS lists disk, memory, and other errors recorded in the SYSTEM-ERRORS file.

Syntax

LIST-SYSTEM-ERRORS

Description

Use LIST-SYSTEM-ERRORS periodically to examine the SYSTEM-ERRORS file. Early detection of errors can prevent future serious problems with disk drives, memory boards, or other hardware components. The following types of errors are reported:

- Illegal MLCP channel errors detected by the kernel (Ultimate Bull 6000/7000 hardware only).
- Disk errors.
- Error Detection and Correction (EDAC)-corrected memory errors detected by the disk controller and the CPU. (Ultimate Bull 6000/7000 only.)
- On Ultimate 1400 systems only, machine-check errors (address or bus exceptions).
- Group Format Errors (GFES). Use LIST-GFE to get detailed information about the GFES.
- Virtual aborts.

When LIST-SYSTEM-ERRORS is invoked, the following prompt is displayed:

```
To the Printer (Y=<CR>/N) ?
```

To send the report to the printer, enter **Y** or **RETURN**. To display the report on the screen, enter **N**. (Since the printed report contains fields not included on the screen display, and since the diversity of information presented makes the screen display difficult to interpret, Ultimate recommends that you print the report.) The following prompt is displayed:

```
System Error listing explanation (Y/N=<CR>) ?
```

To see the System Error Reporting and Interpretation document at the end of the error listing, enter **Y**; otherwise, enter **N** or press **RETURN**.

The following prompt is displayed:

```
Would you like the list sorted (Y/N) ?
```

It is recommended that you sort the report by error type; enter **Y** to do so.

If no system errors have been logged to the SYSTEM-ERRORS file, the following message is displayed:

```
[401] No items present.
```

If there are errors, they are either printed or displayed on your terminal. Most errors are explained in the System Error Reporting and Interpretation document at the end of the error listing. Other error information includes:

- The display of machine-check errors on Ultimate 1400 systems includes the columns TIME, DATE, type of exception, and PC, ADR, and PIB values.
- The printout of machine-check errors on Ultimate 1400 systems includes address registers (R0-R15), various physical 68000 registers, and other internal state information to be used for diagnostic purposes.
- The display or printing of Group Format Errors (GFES) includes time, date, FID/DISP, BASE, and GROUP.
- The display of aborts includes date, time, line numbers, and abort type.

LIST-SYSTEM-ERRORS

```
:LIST-SYSTEM-ERRORS.↓
To the Printer (Y=<CR>/N) ?N.↓
System Error listing explanation (Y/N=<CR>) ?N.↓
Would you like the list sorted (Y/N) ?Y.↓

9 items selected

TIME      DATE      STAT  STAT CHAN DRIVE  ERROR  PLATTER CYL HD SEC
          1      2      #      #      CODE  SELECT (IN DECIMAL)
          BIT
11:42:17 01/02/90 23    RC    0880    MLCP ERROR
14:05:51 01/07/90 8040  8000  0600    00 0    584 5 40
13:41:38 01/17/90 8040  8000  0600    00 0    580 5 40
10:58:34 01/20/90 8040  8000  0600    00 0    580 5 40
11:34:33 01/26/90 23    RC    0880    MLCP ERROR
14:55:15 02/17/90 23    TR    1400    MLCP ERROR
16:40:56 02/17/90 30    MD                    EDAC ERROR DETECTED BY DISK
16:41:05 02/17/90 132                    # OF EDAC ERRORS DETECTED BY CPU
GFE:16:50:29 03/01/90          506677          506706

:
```

Available On SYSPROG or SECURITY account.

See Also LIST-GFE
 SYSTEM-ERROR-SUMMARY
 SYSTEMERRORS
 System Management Guide for information on system error reporting.
 Troubleshooting section of *Operations and Maintenance Guide*.

LIST-UERRORS

LIST-UERRORS reports the results of the most recent UPD-VALIDATE, which validates Ultimate UPDATE dictionary definition items for a file.

Syntax

LIST-UERRORS filename {LPTR} {(P)}

filename Specifies the file for which dictionary validation results are to be reported.

LPTR Routes output to the spooler.

(P) Same as LPTR.

Description

For further information on LIST-UERRORS, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

LIST-UIITEMS

LIST-UIITEMS reports the Ultimate UPDATE dictionary definition items in a file.

Syntax LIST-UIITEMS

Description For further information on LIST-UIITEMS, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On Any user account.

LIST-VSAVE-STATS

LIST-VSAVE-STATS generates a report based on the VSAVE-STATS file created by the last VERIFY-SAVE.

Syntax

LIST-VSAVE-STATS {LPTR} {132}

132 Puts terminal in 132-column mode.

LPTR Routes output to the spooler.

Description

LIST-VSAVE-STATS generates the Verify Save Statistics Report, which contains a summary of the information on the file-save tape. This report is similar to the File Statistics Report, which is generated by the file-save process and stored in the STAT-FILE file.

In addition, LIST-VSAVE-STATS compares the information in the STAT-FILE currently on the system with the information in the VSAVE-STATS file, and indicates any differences on the report. The information displayed includes:

- Reel number
- File number
- Account name{ *dictname{ { *dataname} } }
- Number of items in file on tape, as determined by VERIFY-SAVE
- Number of bytes in file on tape, as determined by VERIFY-SAVE
- Number of items in file on disk, as determined from STAT-FILE
- Number of bytes in file on disk, as determined from STAT-FILE
- Number of item-size errors
- Number of tape format errors
- Number of BASIC object item errors

If the information on tape (as defined in the VERIFY-SAVE file) differs from the information on disk (as defined in the STAT-FILE file), the Verify Save Statistics Report flags item-size errors, tape formats errors, and object item errors. If the number of items or bytes on tape differs

from the number on disk, an asterisk is appended to the display of the number on disk.

Item-size and BASIC object item errors are flagged when the number of bytes in an item does not match the number that precedes the item.

Item-size errors indicate possible data loss in items. Before you make another file-save tape, look at the item with the error. Is this a critical item? Is it worthwhile to redo the file-save for this error? If so, redo your file-save. If not, consider doing a T-DUMP to save the item separately.

Object item errors indicate possible data loss with BASIC object items. You might want to recompile the object code and try again. You could also do a T-DUMP or ACCOUNT-SAVE.

Tape format errors are flagged when the tape does not satisfy the acceptable Ultimate tape format. Tape format errors indicate possible problems with the way information is written to the tape. If you get a tape format error, redo the file-save with another tape or perform system maintenance such as cleaning the tape drives and tape heads.

After trying the above suggestions, use the VERIFY-SAVE and LIST-VSAVE-STATS commands again. If there are still errors, use another tape to do your file-save. If the new tape does not correct this problem, call Ultimate TAC.

Caution: *The above guidelines are suggestions only. It is possible to encounter situations not addressed here.*

The following is a sample of the first page of the printed report. In this example, there is one item size error and one tape format error for the files in the ACE account.

14:49:34 03 JAN 1991

PAGE 1

*** VERIFY SAVE STATISTICS REPORT ***

REEL#	FILE#	Acc name*Dict name*Data name...	Tape items	Tape size	Stat-File items	Stat-File size	ISIZE	TFMT..	OBJ..
1	46	ACE	519	25223	519	25221*	1	0	0
1	57	ACE*C.INTERFACE	9	342	9	342	0	0	0
1	58	ACE*C.INTERFACE*C.INTERFACE	0	0	0	0	0	0	0
1	51	ACE*CALENDAR	7	311	7	311	0	0	0
1	52	ACE*CALENDAR*CALENDAR	0	0	0	0	0	0	0
1	85	ACE*DOCKETING	36	1372	36	1372	0	0	0
1	86	ACE*DOCKETING*DOCKETING	74	7626	74	7626	0	1	0
1	53	ACE*DOCKETING.BP	1	41	1	41	0	0	0
1	89	ACE*DOCKETING.BP*DOCKETING.BP	9	322	9	322	0	0	0
1	69	ACE*SPECIAL.MENUS	17	625	17	625	0	0	0
1	70	ACE*SPECIAL.MENUS*SPECIAL.MENUS	56	22226	56	22226	0	0	0
1	87	ACE*TERM.BP	27	1340	27	1340	0	0	0
1	88	ACE*C.INTERFACE	27	64712	27	64712	0	0	0
*** TOTALS FOR USER - ACE			2912466		2912464		1	1	0

Available On SYSPROG or SECURITY account.

See Also VERIFY-SAVE

LISTACC

LISTACC lists accounting data of system usage for specified accounts and line numbers.

Syntax

LISTACC {**accountname#n**} {**LPTR**} {**NOPAGE**}

accountname#n Specifies name and line number of the account for which data should be listed. Line number must be preceded with a pound sign (#). Use spaces to separate multiple accountnames. If omitted, all accounting history items in the ACC file are listed.

LPTR Routes output to the spooler.

NOPAGE Specifies no end-of-page waiting.

Description

LISTACC displays account information contained in the ACC file. The ACC file stores usage information on accounts that selected the Accounting Option during CREATE-ACCOUNT or UPDATE-ACCOUNT.

When invoked, LISTACC displays the following information on selected accounts in the ACC file:

```
ACC..... DATE. TIME... CONN... UNITS PAGES
```

where:

ACC User account name and line number separated by a pound sign (#).

DATE Date logged on the system.

TIME Time logged on the system.

CONN Connect time. The number of hours and minutes between logon and logoff.

UNITS CPU usage.

PAGES Number of pages routed to the spooler.

```
:LISTACC  SYSPROG#23  SYSPROG#33.↓
```

```
PAGE 1
```

```
10:15:04  19 MAR 1991
```

ACC.....	DATE.	TIME...	CONN...	UNITS	PAGES
		*	*	*	*
SYSPROG#23	03/12	18:36	05:29	152	34
	03/13	17:59	02:32	204	
	03/16	17:23	00:27	1	
	03/17	18:19	01:48	35	
SYSPROG#33	03/16	09:34	00:03	02	

```
2 items listed
```

```
:
```

Available On Any user account.

See Also

CHARGE-UNITS

CHARGES

CLEAR-ACC-FILE

CREATE-ACCOUNT

UPDATE-ACCOUNT

System Management Guide for information on the Accounting History (ACC) file and user accounts.

LISTCONN

LISTCONN lists all Ultimate RECALL connectives in a specified file's dictionary.

Syntax

LISTCONN {filename} {LPTR} {NOPAGE}

filename Specifies the file containing connectives to be listed. If omitted, the account's Master Dictionary is assumed.

LPTR Routes output to the spooler.

NOPAGE Specifies no automatic end-of-page waiting.

Description

Connectives are elements in Ultimate RECALL statements that are used in specifying selection-criteria, sort-criteria, and display parameters, and C as the first character of attribute one.

In the following Ultimate RECALL statement, WITH, >, BY, and BREAK-ON are connectives:

```
    SORT TOOL.FILE WITH COST > 100 BY MANUF BREAK-ON MODEL
```

```
:LISTCONN.↓
PAGE      1                                time    date
M/DICT... *A1.....                        If a filename is specified, it is
                                           displayed in place of M/DICT.
BY-EXP-DISC-
BY-EXP     C.
BY-DSND    C/
.
.
THE        CZ
68 items listed.
:
```

Available On Any user account.

See Also *Ultimate RECALL and Ultimate UPDATE User Guide.*

LISTDICT

LISTDICT lists the attribute definitions of a file's dictionary items.

Syntax

LISTDICT {filename} {LPTR} {NOPAGE}

filename Specifies the file whose dictionary is to be examined. If omitted, the account's Master Dictionary is assumed.

NOPAGE Specifies no automatic end-of-page waiting.

LPTR Routes output to the spooler.

Description

When LISTDICT is invoked, the following attribute definition information is listed:

filename	File whose dictionary is to be examined. The Master Dictionary is shown as M/DICT.
item-ID	Attribute name.
CODE	Attribute definition type: A = Attribute definition. X = Protected attribute. U = Ultimate UPDATE attribute definition.
A/AMC	Attribute number. The number or position of the attribute in the data item.
S/NAME	Column heading for Ultimate RECALL reports.
S/AMC	Structure code if the attribute controls or is controlled by other attributes.
CONVERSIONS	Conversion code for items such as date, time, money, pattern-matching, and range checks.
CORRELATIVES	Correlative code, used for special functions such as computations.
TP	Justification of the attribute field. R= Right-justified. L= Left-justified.

LISTDICT

T= Text-justified (wraparound on blank).

U= Unconditional left justified.

MAX Maximum column width.

```
:LISTDICT┘
PAGE 1                                12:24:55  26 OCT 1991

M/DICT : *A0
CODE    A
A/AMC   00
TP      L
MAX     10

M/DICT : *A9DV
CODE    A
A/AMC   0
CONVERSIONS MR%%
CORRELATIVES F;12;NV;"1";-
TP      T
MAX     3
.
.
.
5 items listed.

:LISTDICT INVENTORY LPTR┘           Partial 132-column
                                     printout is shown below.

PAGE          1
INVENTORY. CODE A/AMC S/NAME..... S/AMC
CONVERSIONS..
MANUFACTUREA      1 MANUFACTURER
DESCRIPTIONA      2 DESCRIPTION
QUANTITY    A      3 QUANTITY
LIST.PRICE A      4 LIST PRICE           MR2$,
EXT.PRICE  A      5 EXTENDED PRICE       MR2$,
```

Available On Any user account.

See Also *Ultimate RECALL and Ultimate UPDATE User Guide* for information on attribute definition items.

LISTF

LISTF sorts and lists all file definition items (D-pointers) in a file's dictionary.

Syntax

LISTF {**DICT filename**} {**LPTR**} {**NOPAGE**}

filename Specifies the file whose dictionary is to be examined. If omitted, the file definition items in the current Master Dictionary are displayed.

LPTR Routes output to the spooler.

NOPAGE Specifies no automatic end-of-page waiting.

Description

When LISTF is invoked, the following information is displayed:

name File or account name.
CODE File definition code (D, DC, DV, DW, DX, DY, DZ).
F/BASE File location (first frame ID in primary storage).
F/MOD Modulo (number of groups in primary storage).
F/SEP Separation (number of frames per group).

```
:LISTF.↓
PAGE 1 *** M/DICT *** FILE DEFINING ITEMS      05 JUN 1991
M/DICT... CODE F/BASE..... F/MOD..... F/SEP...
BP          D          1247822          1          1
NEWAC      D          78026           1          1
:
```

Available On Any user account.

See Also LISTFILES

LISTFILES

LISTFILES sorts and lists all file definition items (D-pointers) and file synonym definition items (Q-pointers) in a dictionary. It displays data filenames indented under their associated dictionary filenames.

Syntax

LISTFILES {filename} {LPTR} {NOPAGE} {(options)}

filename Specifies the file whose dictionary is to be listed. If omitted, the default is the account's Master Dictionary.

LPTR Routes output to the spooler.

NOPAGE Specifies no automatic end-of-page waiting.

(options)

F Displays File Control Block (FCB) FID.

O Specifies the old method. Displays only the dictionary level information, which was the format in revisions prior to 190.

P Same as LPTR.

Note: If parameters are omitted, files, Q-pointers, and data sections in the current account's Master Dictionary are displayed.

Description

When invoked, LISTFILES displays the following information:

```
Files for: filename           time  date  Page n
File           Code   Base   Mod   Sep   Hash
----           -
DICT FILENAME
DATA FILENAME
```

where:

filename The specified filename. If omitted, the current account name is assumed.

file	Lists dictionary filenames and data filenames; the data filenames are indented under their associated dictionary filenames.
Code	File definition code (D-pointer or Q-pointer).
Base	File location (first frame ID in the primary storage block).
Mod	Modulo (number of groups in primary storage).
Sep	Separation (number of frames per group in primary storage).
Hash	Hashing algorithm (1 or 2) is used to hash the items into groups of storage.

: LISTFILES ↓		Lists files in the current account.			
Files for: SYSPROG		10:36:59	19 MAR 1991	Page	1
File	Code	Base	Mod	Sep	Hash
----	----	----	---	---	----
CONVERSION	D	82726	1	1	1
DOC	D	82728	1	1	1
PGM	D	82758	3	1	1
PROC	D	82818	7	1	1
TABLE	D	82815	1	1	1
NEWAC	D	81812	1	1	1
NEWAC	D	81814	17	1	1
.					
.					
.					
:					

Available On Any user account.

See Also LISTF

LISTPROCS

LISTPROCS sorts and lists all PROCs in a file or dictionary.

Syntax

LISTPROCS {filename} {LPTR} {NOPAGE}

filename Specifies the file whose PROCs are to be listed. If omitted, the PROCLIB file is displayed.

LPTR Routes output to the spooler.

NOPAGE Specifies no automatic end-of-page waiting.

Description

When invoked without parameters, LISTPROCS produces a list similar to the following:

```
:LISTPROCS.␣
PAGE      1                               13:53:44  20 APR 1991

PROCLIB : ADD.DEL.INDEX
Line  1  PQ
Line  2  C 7738 56107 MUR
Line  3  C UPD
Line  4  C
Line  5  HRUN SYSLIB LAST.NAME H.FILE (U
Line  6  P
Line  7  HRUNUPDATE PROCLIB ADD.DEL.INDEX
Line  8  H (FLNC)
Line  9  P
Line 10  X

PROCLIB : ASORT
.
.
.
:
```

Available On Any user account.

See Also

LISTVERBS
Ultimate PROC Reference Guide.

LISTU{SERS}

LISTU{SERS} lists the account name, line number, and time of logon for all current users.

Syntax LISTU{SERS}

Description When invoked, LISTU{SERS} displays the following information:

```
CH#. PCBFID NAME..... TIME.. DATE..... LOCATION
```

where:

- CH#** User's line number. An asterisk is displayed to the left of the line issuing the command.
- PCBFID** Process Control Block FID. The first frame of the workspace for the process or CH#; frame is shown in hexadecimal.
- NAME** Account name.
- TIME** Time the account logged on.
- DATE** Date the account logged on.
- LOCATION** Name and phone extension of the line's user. This information can be changed with the **TERMINAL** command.

```
:LISTU␣
CH#. PCBFID NAME..... TIME.. DATE.....LOCATION.....
*001 0840  SYSPROG          09:00  03/19/91  JOE SMITH      x22
002 0880  CUSTOMER            08:13  03/19/91  JIM BRANDT     x28
028 0F00  SCHEDULE            10:35  03/19/91  RECEPTIONIST  x29
040 1200  INVENTORY           09:33  03/19/91  PEG WHARTON   x30
:
```

Available On Any user account.

See Also **TERMINAL**
System Management Guide for information on the DICT ACC file.

LISTVERBS

LISTVERBS sorts and lists all verbs in the specified dictionary.

Syntax

LISTVERBS {filename} {LPTR} {NOPAGE}

filename Specifies the file whose dictionary is to be listed. If omitted, the Master Dictionary (MD) is assumed.

LPTR Routes output to the spooler.

NOPAGE Specifies no automatic end-of-page waiting.

Description

LISTVERBS lists system commands and cataloged programs, but does not list PROCs.

```

:LISTVERBS.
PAGE      7                               17:03:50  19 MAR 1991
M/DICT... *A1..... *A2..... *A3..... *A4..... *A5...
.
.
.
DROP-RTS  P           618A
DTR       P           10A0
DTX       P           10A0
DUMP      PZ          42
EBASIC    P           2           4011      BE           UP
ECHO-OFF  P           118B
.
.
.
.

```

Available On Any user account.

See Also LISTPROCS

LOAD-STATS

LOAD-STATS restores the contents of the STAT-FILE from a file-save tape and lists the results.

Syntax

LOAD-STATS

Description

FILE-SAVE saves the contents of the STAT-FILE at the end of the file-save tape or disk that it creates. This information is useful in:

- Determining the order of accounts and files on the corresponding file-save.
- Determining if files need to be reallocated.
- Determining reallocation parameters.
- Repairing Group Format Errors (GFES).

LOAD-STATS clears the current STAT-FILE, restores the contents of the STAT-FILE from the file-save tape, and executes LIST-FILE-STATS to print a report.

On a multiple tape drive system, attach the correct drive with the T-ATT command before LOAD-STATS is executed.

LOAD-STATS displays the following messages:

```
This procedure will load the STAT-FILE from a file-  
save tape and then list the file-stats to the printer  
Mount the last reel of your file-save and press <CR>:
```

Mount the last reel of the file-save that contains the desired STAT-FILE, and bring it to load point. Then press **RETURN** to begin loading the STAT-FILE file from the tape.

LOAD-STATS

:LOAD-STATS␣

This procedure will load the STAT-FILE from a file-save tape and then list the file-stats to the printer

Mount the last reel of your file-save and press <CR>:␣

Tape attached

Block size: 8000

Block size: 8000

.

.

File Statistics Report

To Lineprinter? (Y/N/X) - **Y**␣

Detail Suppress? (Y/N/X) - **N**␣

Now generating statistics report

:

Available On SYSPROG account.

See Also FILE-SAVE
 LIST-FILE-STATS

LOAD-TERMDEF

LOAD-TERMDEF loads the terminal definitions (in the file TERMDEF) for the system. LOAD-TERMDEF should be run after modifying an entry in the TERMDEF file for that change to take effect. This program is used by the coldstart procedure.

For further information on LOAD-TERMDEF, please refer to the *System Management Guide*.

LOCK-FRAME

LOCK-FRAME locks a frame in memory.

Caution: *Locking too many frames at one time reduces the amount of memory available for accessing programs and data files.*

Syntax

LOCK-FRAME n

n Specifies the decimal number of the frame to be locked.

Description

LOCK-FRAME should be used only by qualified personnel to lock a frame in memory. LOCK-FRAME is not required in a normal environment because the operating system locks frames in memory when necessary.

LOCK-FRAME converts the specified number of the frame to be locked and returns the absolute hexadecimal address of the memory buffer in which the frame is memory locked.

When you lock a frame, the following message is displayed:

```
[11] Frame locked at location X'a'
```

where 'a' is the absolute hexadecimal address of the memory buffer in which the frame is locked.

A memory-locked frame remains locked until it is released by a powerfail restart, COLDSTART, UNLOCK-FRAME, WARMSTART, or WARMSTOP.

```
:LOCK-FRAME 39440.↓  
[11] Frame locked at location X'030D00'  
:
```

Available On

SYSPROG or SECURITY account.

See Also

UNLOCK-FRAME
WARMSTART
WARMSTOP

LOG

LOG displays a menu to provide transaction logging functions on the terminal issuing the command. The terminal is then dedicated to logging until the transaction logger is exited.

Syntax LOG

Description Use LOG to start the transaction logger, to select the accounts and files to be logged, and to print the list of accounts and files to be logged.

The transaction logger considers a transaction to be one of the following updates:

- Creating an item, file, or account.
- Updating an item, file, or account.
- Clearing an item, file, or account.
- Deleting an item, file, or account.

Transaction logging can be used in conjunction with update file-saves to prevent data loss in case of a system failure.

Only one line at a time can be used for transaction logging. The logger terminal should be used sparingly for operator input since the same workspace is used for logging and the operator-system dialogue. Ultimate recommends using any line except line 0 (zero) for transaction logging, since line 0 is used by the system console to boot the system and to perform other system functions.

Note: *Mount a new reel of tape before each logging session.*

When LOG is invoked (from SYSPROG), the Logger Main Menu screen is displayed:

```
SYSPROG          Logger Menu          09:21:46  08 OCT  1991
```

1. LOG Menu
2. Selective Setup
3. Selective Touchup
4. Selective Report

Enter program selection or press <CR> to exit

Enter one of the four choices:

- The Log Menu is used to check logger status, start or stop the logger, start or stop the logging tape, or change logging parameters.
- Selective Setup is used to turn logging of the entire system on or off, or turn logging of specific accounts or files on or off.
- Selective Touchup is used to selectively set transaction logging indicators on individual files in the system.
- Selective Report outputs a report of current or future transaction logger settings.

Or press RETURN to return to TCL.

Note: All accounts are initially set for no logging.

LOG Menu

Option 1 of the Logger Main Menu, LOG Menu, displays the following screen:

```
Logger status: Inactive
```

```
Transaction logger options:
```

1. Activate logger; start tape
2. Deactivate logger; exit menu
3. Suspend tape
4. Restart tape
5. Change tape attachment parameters

```
Enter option or <CR> to display status:
```

To display the current status, press **RETURN**. A status screen similar to the following is displayed:

```
Tape started; seq#    0    0    0    3
```

```
Logger assigned to line 2
```

```
Disk queue permanent frames used:    5
```

```
Disk queue overflow frames used:     0
```

```
Latest transaction in disk queue:    1    time    date
```

```
Oldest transaction# in disk queue:   2        ?        ?
```

The first line of this status screen is the Logger Status Line, which shows sequencing information. The first three values are a count of file-save activity, while the fourth value is a count of Transaction Logger activity. This number is incremented by 1 each time you select the Activate Logger or Restart Tape options explained below. This number is reset to zero when a SYS-GEN or file-restore is performed.

To return to the LOG Menu from this screen, press **RETURN**. Options 1 through 5 of the LOG Menu are explained below. When one of these options is selected, the logger performs the requested operation, if possible, then prints a response and redisplay the current status and the LOG Menu.

1. Activate Logger; start tape

Option 1 of the LOG Menu activates the logger and starts tape operation for a new transaction logging session. A transaction tape must already be mounted and loaded at the BOT mark. The status of the logger must be Inactive; otherwise a warning message is displayed and the logger remains in its current state. When the logger is activated, it writes a sequencing information segment to tape to signal a new session.

If more than one reel of tape is needed during a session, the following message is displayed:

```
Mount reel #n
Label: Transaction Log
(C)ontinue/(Q)uit
```

Mount a new reel of tape as soon as possible, since all transactions are recorded on disk until the new reel is ready, and a system failure in the interim would lose those transactions.

All reels from a single session are known as a transaction session tape set.

2. Deactivate logger; exit menu

Option 2 of the LOG Menu exits the LOG Menu immediately if the logger is inactive. If the logger is active and a tape is started, any transactions queued on disk are flushed to tape and a tape EOF mark is written to signal the end of the session. The frames used by the logger are released to the system pool of available space, the logger is exited, and control returns to TCL.

If the status of the logger is Tape Suspended (see below), the following message is displayed:

```
Any transactions now queued on disk will be lost.
Continue (Y/N)?
```

Enter Y to exit the logger without flushing the queue; any frames are released to overflow. Enter N to return to Tape Suspended state.

3. Suspend tape

Option 3 of the LOG Menu ends the current logging session. Transactions queued on disk are flushed to tape, an EOF mark is written, and the tape is suspended.

The tape drive is detached so that the tape can be removed and a different tape can be loaded for other purposes (such as T-DUMP or T-LOAD). During the time the tape is suspended, transactions are recorded on disk.

When the tape drive is ready to resume transaction logging, mount a new reel of tape and select option 4 below.

Note: Do not suspend the tape for long, since:

- *If a failure occurs, all transactions stored on disk but not yet written to tape are lost.*
- *Overflow frames are used to store the transactions and if the system is low on disk space, performance can be affected.*

4. Restart tape

Option 4 of the LOG Menu starts a new transaction logging session on a new reel of mounted tape. A sequencing information segment is written to the BOT, then all transactions currently queued on disk are dumped to the new tape.

If the current status is not Tape Suspended when this option is entered, a warning message is displayed and the logger remains in its original state.

5. Change tape attachment parameters

Option 5 of the LOG Menu lets you change T-ATT parameters (block size and tape drive number). This option can be selected if the current state is Inactive or Tape Suspended. The logger prompts for the new T-ATT options. Enter the new parameters, or press <CR> to retain the old parameters. The logger automatically uses the standard default options (Tape drive 0 and Block size 4000) if options are omitted.

Selective Setup

Option 2 of the Logger Main Menu, Selective Setup, lets you turn logging of the entire system on or off, or turn logging of specific accounts or files on or off.

Note: Selective Setup sets logging indicators for specified accounts and files, except accounts and files that have a D/CODE of DX or DY. These items are never subject to logging, and neither Selective Setup nor Selective Touchup will set their indicators to require logging.

Transaction logging settings entered during Selective Setup remain in effect until you change them. You can change them by either using the Selective Setup option again, or by using the Selective Touchup option. Selective Touchup is faster because it makes only minor changes in the original settings.

When Selective Setup is chosen from the Logger Main Menu, the following message is displayed:

```
WARNING : The SET-UP program will reset any previously  
set flags.
```

```
Do you want to continue (Y/N)
```

To exit this option and return to the Logger Main Menu, enter N. To continue with setup, enter Y. If you enter Y, the following screen is displayed:

SELECT TRANSACTION LOGGER PARAMETERS

1. Set Current Parameters
2. Set Future Parameters
3. Set BOTH Current and Future Parameters

The future parameter becomes the Current parameter during a File-Restore.

ENTER OPTION:

Current parameters are the accounts and files to be logged for the current session. Future parameters replace the current parameters during a file-

restore, which allows time-consuming resetting to take place while logging is in process, without disturbing the current logging.

Note: Use option 3, Set BOTH Current and Future Parameters, for the initial setting.

After an option is selected from the logging parameters screen above, the following screen is displayed:

```
Enter 1 or 2 to specify system default value
```

1. Log ALL accounts.
2. Log NO accounts.
3. Set LOGGING for an Account.
4. Reset Logging for an Account.

```
ENTER OPTION:
```

Each option on this menu is described below:

- 1. Log ALL accounts, and**
- 2. Log NO accounts**

To log transactions for all accounts or for no accounts on the system, enter **1** or **2**. As logging is activated or deactivated for each account, the following message is displayed:

```
Processing: SYSTEM, accountname  
Number of FIRST Level D-POINTERS in accountname is nnn  
Processing File: accountname, filename
```

After one of the above system-wide indicators is set, the following screen is displayed to let you specify any accounts that will be exceptions to the system-wide setting:

```
SELECT TRANSACTION LOGGER PARAMETERS
```

```
SYSTEM Logging parameter is (NO) LOGGING
```

1. Change the setting for one or more accounts.
2. Exit without changing the setting.

```
ENTER OPTION:
```

To exit this screen and return to the previous screen, enter **2**. To change the log/no log setting for one or more accounts, enter **1**. The following screen is displayed:

```
SELECT TRANSACTION LOGGER PARAMETERS
```

```
The system is set for (NO) LOGGING. Select those  
accounts that should (NOT) be LOGGED.
```

1. Process the account listed below.
2. Display the next account (in alphabetical order).
3. Exit without selecting any more accounts.

```
To select a specific account, enter the account name  
and press <CR>.
```

```
ACCOUNT = accountname
```

To select the accountname displayed at the prompt, enter **1**. The logging status (on or off) for the specified account is changed to its opposite.

To display the name of the next account without selecting the current account, enter **2**.

To select a specific account, enter the name of the account at the prompt. If you enter a name that is not found in the SYSTEM file, the following message is displayed:

```
ACCOUNT IS NOT A VALID SYSTEM LEVEL FILE - TRY AGAIN
```

To exit this screen, enter **3**. The following screen is displayed:

System and account logging parameters have been set.

1. Select a specific file.
2. Exit without selecting specific files.

ENTER OPTION:

To end the program, enter **2**. To select specific files to set logging status opposite of what their account status is, enter **1**. The following account selection screen is displayed:

Select the account that contains the file whose logging parameter is to be changed.

1. Select the account listed below.
2. Display the next account (in alphabetical order).
3. Exit without selecting any more accounts.

To select a specific account, enter the account name and press <CR>.

ACCOUNT = accountname

To exit the account selection screen and return to the Logger Menu, enter **3**. To select the accountname displayed at the prompt, enter **1**. To display the name of the next account without selecting the current account, enter **2**. To select a specific account, enter the name of the account .

Once an account is selected, the following file selection screen is displayed:

accountname is set for (NO) LOGGING

Specify only files for that should (NOT) be LOGGED

Names of Q-Pointer items are not valid

1. Select the file listed below.
2. Display the next filename (in alphabetical order).
3. Exit without selecting any more files.

FILE NAME = filename

To change the setting for the filename displayed, enter **1**. The indicator is changed and the next filename is displayed.

To display the name of the next file without selecting the current name, enter **2**. To select a specific file, enter the name of the file.

To exit the file selection screen and return to the account selection screen, enter **3**.

3. Set (turn on) LOGGING for an Account, and 4. Reset (turn off) LOGGING for an Account

To turn logging on or off for one or more accounts, enter **3** or **4**. The following screen is displayed:

SELECT TRANSACTION LOGGER PARAMETERS

1. Process the account listed below.
2. Display the next account (in alphabetical order).
3. Exit without selecting any more accounts.

To select a specific account, enter the account name and press <CR>.

ACCOUNT = accountname

To select the accountname displayed at the prompt, enter **1**. The logging status (on or off) for the specified account is changed to its opposite.

To display the name of the next account without selecting the current account, enter **2**.

To select a specific account, enter the name of the account at the prompt. If you enter a name that is not found in the SYSTEM file, the following message is displayed:

```
ACCOUNT IS NOT A VALID SYSTEM LEVEL FILE - TRY AGAIN
```

To exit this screen and return to the Logger Menu, enter **3**.

Selective Touchup

Option 3 of the Logger Main Menu, Selective Touchup, selectively sets transaction logging indicators on individual files in the system. Its purpose is to make minor changes in file settings after the Selective Setup option has been used at least once. Selective Touchup does not interrupt any currently active transaction logging.

Note: You cannot use Selective Touchup to change the logging settings for the SYSTEM file, or for any Master Dictionary files. To change the settings for these files, you must use the Selective Setup option.

When the Selective Touchup option is selected from the Logger Main Menu, the following screen is displayed:

TRANSACTION LOGGER TOUCHUP

Use this program to select files whose transaction logger status you want to change.

You may only change the logging status of Dictionary (level 2) files and Data (level 3) files. You cannot change the logging status of the SYSTEM file or of the Master Dictionaries.

1. Change the Current status.
2. Change the Future status.
3. Change BOTH the Current and Future status.

ENTER OPTION:

To exit this screen and return to the Logger Menu, press **RETURN**.

If the new parameters should take effect immediately, enter **1**.

If the new parameters should take effect after the next file-save and file-restore procedures, enter **2**.

If logging parameters for BOTH current and future sessions should be set, enter **3**.

If **1**, **2**, or **3** is entered, the following file selection screen is displayed:

This program will modify the current logging status of a file only under some conditions. It will always allow a file to be set to "no logging" . However, it will not allow a file to be set to "logging" if the Transaction Logger is currently active - since the data would not be properly handled.

Enter "ACCOUNTNAME FILENAME" for the file whose status is to be modified.

Enter name:

To exit this screen without changing the status of a file, press **RETURN**.

To change the logging status of a file, enter its accountname and filename.

Once the accountname and filename are entered, the following log/no log file screen is displayed:

```
1. LOG the filename file
2. DO NOT LOG the filename file

ENTER OPTION:
```

To turn on logging of the file, enter **1**. To turn off logging of the file, enter **2**.

The file's status is changed. The following prompt is displayed in order to enter the name of another file in the same account:

```
Enter filename:
```

To change the logging status of another file in the current account, enter the filename. To change a file in a different account, press **RETURN**; the prompt to specify accountname is redisplayed. Repeat these steps for each file whose status should be changed.

To return to the Transaction Logger Touchup Menu when you are finished changing the logging status of your files, press **RETURN** at the Enter name: prompt.

Selective Report

Option 4 of the Logger Main Menu, Selective Report, outputs a report of current or future transaction logger settings.

When the Selective Report option is selected, the following screen is displayed:

PRINT A TRANSACTION LOGGER REPORT

1. Print a report on Current settings
2. Print a report on Future settings

The Future setting is made the current setting during a file restore.

ENTER OPTION:

To print a report on current settings, enter **1**. To print a report on future settings, enter **2**. Once an entry is made, the following message is displayed at the bottom of the screen:

```
PROCESSING ACCOUNT : accountname  
FILE : filename
```

The completed report is sent to the spooler for output to the printer assigned to the current line. The Logger Main Menu screen is redisplayed.

The following information is displayed in the report:

- The first part is the setting for the system as a whole.
- The second part is the listing of accounts that are set opposite to the system as a whole.
- The third part is the listing of files within accounts where the files are set opposite to the accounts in which they reside.

A sample report format is shown below.

```
TRANSACTION LOGGER REPORT   Time   Date   Page 1
TRANSACTION LOGGER REPORT OF CURRENTLY ACTIVE FILES
SYSTEM IS SET FOR NOT LOGGING
ACCOUNTS WHICH ARE EXCEPTIONS (WHICH ARE SET FOR LOGGING)
FOLLOW:
(accountname) IS TO BE LOGGED
.
.
(accountname)-A SYSTEM LEVEL FILE OR ACCOUNT IS TO BE LOGGED
(filename)-A DICTIONARY FILE, AND ITS SUBORDINATE DATA FILE(S)
ARE NOT TO BE LOGGED
(filename)-A DICTIONARY FILE, AND ITS SUBORDINATE DATA FILE(S)
ARE NOT TO BE LOGGED
.
END OF REPORT
```

Available On SYSPROG or SECURITY account.

See Also LOG-STATUS
 LOGGER
 System Management Guide for information on transaction logging, file
 backup and restore.

LOG-STATUS

LOG-STATUS displays the transaction logger status.

Syntax LOG-STATUS

Description The transaction logger is a utility that records disk file updates onto magnetic tape as the updates are made. At any given time, the logger can be in one of the following states:

Inactive No logging is currently being performed. If the logger is inactive, the LOG-STATUS command displays the message:

```
[777] The transaction logger is  
inactive.
```

Tape started If the logger is active, and logging transactions to tape has been started, the LOG-STATUS command displays the message:

```
[779] The transaction logger is active.
```

Tape suspended If the logger is active, and logging transactions to tape has started but is now suspended, the LOG-STATUS command displays the message:

```
[778] The transaction logger has been  
suspended.
```

Available On Any user account.

See Also LOG
LOGGER
System Management Guide for information on the transaction logger.

LOGGER

LOGGER is used by LOG to display the transaction logger status and Logger Menu.

Syntax

LOGGER

Description

LOGGER status can be active, inactive, or suspended.

```
:LOGGER ↵
```

```
Logger status: status
```

```
Transaction logger options:
```

1. Activate logger; start tape
2. Deactivate logger; exit menu
3. Suspend tape
4. Restart tape
5. Change tape attachment parameters

```
Enter option or <CR> to display status:
```

Available On

SYSPROG or SECURITY account.

See Also

LOG

LOG-STATUS

System Management Guide for information on the transaction logger.

LOGOFF

LOGOFF ends a specified terminal session on another line and logs off the line.

Caution: *LOGOFF can cause data to be lost, depending on the activity on the specified line.*

Syntax

LOGOFF {line} {(options)}

line Specifies the line or lines to be logged off. Line can be:

- n** Log off line n.
- n-m** Log off lines n through m, inclusive.
- n, n-m** Log off a single line *and* a range of lines. Can be any combination of single lines and ranges, with each separated by a comma or a space.

If omitted, the system prompts for line number.

(options)

- t** Specifies number of seconds to wait for the logoff to complete; default is 20 seconds, maximum is 60 seconds. 0 (zero) posts a logoff condition to the specified line and immediately returns to the line issuing the command.
- S** Suppresses all terminal output on the line to be logged off until the LOGON message is displayed.
- U** Untraps a trapped process and then logs off the line. If omitted, trapped lines are not logged off and a message to that effect is displayed on the terminal of the line issuing the LOGOFF.

Description

Use LOGOFF to end the processing on and log off another line. LOGOFF is similar to pressing the <BREAK> key and entering OFF at the debugger prompt in that it interrupts whatever processing was going on; however, the specified line is logged off only when it is safe to do so.

For example, if the line is in the middle of updating a file, LOGOFF waits until the update is complete. This allows lines to be logged off from a remote terminal without causing GFES or corrupting system data structures such as the table of available space.

If parameters are omitted, the following prompt is displayed:

```
Enter processes and (options) :
```

Enter the line number or numbers of the processes to log off.

Note: *To avoid problems with LOGOFF during execution of a BASIC program, include the TRAP ON or BREAK OFF statement in the program. The BASIC BREAK OFF statement can be overridden, however, by entering the TCL BREAK-KEY-ON command for the specified line. In this case, LOGOFF must be entered again.*

When the logoff is complete, a message similar to the following is displayed:

```
[534] Successful logoff of process : n
```

If the number of seconds to wait for logoff is exceeded, a message similar to the following is displayed:

```
[577] Logoff posted for process : n
```

In this case, the line is logged off as soon as possible.

Available On SYSPROG or SECURITY account.

See Also BREAK-KEY-OFF
BREAK-KEY-ON
COFF
DROP-DTR
OFF
RAISE-DTR
RESET-LOGOFF
SET-LOGOFF
BASIC Reference Manual, TRAP ON topic.
System Management Guide for logoff procedures.

LOGON

LOGON logs on a specified line and starts a terminal session.

Syntax

LOGON {n{-m},accountname{,password}} {(options)}

n	Logs on line n.
n-m	Logs on lines n through m, inclusive.
accountname	Specifies the name of the account to which line or lines are logged.
password	Specifies the password for the specified account.
(options)	
t	Specifies the number of seconds to wait for the logon to complete; default is 20 seconds, maximum is 60 seconds. 0 (zero) posts a logon condition to the specified line and immediately returns to the line issuing the command.
S	Suppresses all terminal output to and input from the line to be logged on, until the line is logged on. This option is useful for running background jobs without a terminal.
U	Untraps a trapped process and then logs on the line. If omitted, trapped lines are not logged on and a message to that effect is displayed on the terminal of the line issuing the LOGON.

Note: If all parameters are omitted, the system prompts for them.

Description

Enter the line number or numbers, account name, and password, if any, to log on. When the logon is complete, a message similar to the following is displayed:

```
[533] Successful logon of process : n
```

If the number of seconds to wait for logon is exceeded, a message similar to the following is displayed:

```
[574] Logon posted for process : n
```

The line is logged on as soon as possible.

Available On SYSPROG or SECURITY account.

See Also LOGTO

LOGTO

LOGTO allows you to log to a different account from the current account.

Syntax

LOGTO **accountname**{**,password**}

accountname Specifies the name of the account to log to.

password Specifies the password, if any, for the specified account. If entered as part of the command, the password will be displayed in your TCL stack. If omitted, the system will prompt for it.

Description

To log off the current account and log to another account, enter the name of the account to log to.

Note: LOGTO cannot be executed from a secondary TCL level.

Once the system accepts the account name and password, you are logged off the current account. The system then updates the accounting statistics for the logged off account and displays them as follows:

```
<Connect time= n mins.; CPU= m units, lptr pages =x >
```

where:

n Number of minutes logged on to the account.
m Number of units charged to the account.
x Number of pages printed to the line printer from the account.

When logging to another account, all spooler assignment options (see SP-ASSIGN) are cancelled. All tape attachments are maintained.

Available On

Any user account.

See Also

CHARGE-TO
OFF

LOOP-ON

LOOP-ON executes a TCL command statement until a stop condition occurs.

Syntax

LOOP-ON **statement** {C/} {L/} {n/} {S/}

statement Specifies any valid TCL statement, including parameters and options.

Note: The following LOOP-ON parameters can be entered anywhere in the syntax line, and are not passed to TCL:

- C/ Clears the screen before each execution.
- L/ Causes a blank line to be printed before each execution. More than one L/ can be specified.
- n/ Specifies a 1- or 2-digit number specifying seconds to pause between each execution. The default is no pause except for terminal type F (IBM 3270), in which case pause is 1 second. (It is not usually possible to press <BREAK> and enter END on a 3270 unless a pause is specified.)
- S/ Suppresses printing the TCL command.

Description

Use LOOP-ON for debugging and system diagnostic purposes, usually with simple system commands such as WHO or WHERE. It allows system engineers to monitor a change in the line-to-terminal connection while a line is active, but without losing data in an actual job process.

LOOP-ON repeats the specified command until one of the following stop conditions occurs:

- The <BREAK> key is pressed and END is entered at the system debugger prompt.
- The TCL command is a PROC. In this case, LOOP-ON is only executed once.

LOOP-ON

- The TCL command runs a BASIC program that executes the ABORT statement.
- The line is logged off because of a drop in Data Set Ready (DSR).
- The LOGOFF command is executed for the line executing the LOOP-ON.

```
: LOOP-ON WHO 2 L/ 3/↓
```

Execute the WHO 2 command every three seconds, with a blank line before each execution.

```
WHO 2  
2 SYSPROG
```

```
WHO 2  
2 SYSPROG
```

```
WHO 2  
2 SYSPROG
```

```
.  
. .  
. . .
```

Available On Any user account.

See Also BREAK-KEY-OFF
BREAK-KEY-ON
LOGOFF
SET-LOGOFF

MEM.DIAGS

MEM.DIAGS is used by the ON-LINE-DIAGS command to perform diagnostics on computer memory. Ultimate recommends that you use the ON-LINE-DIAGS command to run diagnostic tests.

For further information on MEM.DIAGS, please refer to ON-LINE-DIAGS.

MESSAGE

MESSAGE allows one user to send a message to one or more users on the same Ultimate system.

Syntax

MESSAGE {!}receiver message-text

! Indicates receiver (see below) is a line number rather than an accountname. Line numbers do not have to be logged on to be specified.

receiver If not preceded by an exclamation point (!), specifies an accountname to which the message is to be sent; the account must currently be logged on. If preceded by an exclamation point, specifies a line number to which the message should be sent. The line need not be logged on.

message-text Specifies the message to be sent.

Description

For further information on MESSAGE, see MSG listed alphabetically in this chapter.

Available On

Any user account.

MLIST

MLIST lists specified items in an assembly language program.

Syntax

MLIST filename {itemlist} {(options)}

filename Specifies the program file from which the items listed in the itemlist are to be accessed and listed.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to indicate all items in the file. Can be omitted if a select-list is present.

(options)

n-m Lists only line numbers n through m, inclusive.

E Produces an errors-only listing.

J Enables page eject if an EJECT directive is in the program being listed.

M Prints macro expansions of the source statements.

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

S Suppresses display of the object code.

Description

Use MLIST to get a listing from a file of assembly language programs. MLIST generates a program listing that includes one instruction per line. Each line shows the following information:

- A statement number.
- Location counter.
- Object code and source code, with the label, op-code, operand and comment fields aligned.

A page heading is also displayed at the top of each new page.

Errors, if any, are displayed in the location counter/object code area. Macro expansions are displayed as source code, with the operation codes prefixed by a plus sign (+).

MLIST

```
:MLIST USER-MODES ENT443 (1-10)↓
```

```
PAGE 1          ENT443          FRAME 419      14:37:45  12  
MAR 1991
```

```
001 0001 7FF301A3          FRAME 419  
    0001
```

```
002                *USER  
003                *01 DEC 1991  
004                *R10*180  
005                *30 JUN 1991  
006                *SCOTT
```

```
007 0001 1E0A  
008 0003 1E0D  
009 0005 1E10  
010 0007 1E13  
EOI
```

```
:
```

Available On SYSPROG or SECURITY account.

See Also *Ultimate Assembly Language Reference Guide.*

MLOAD

MLOAD loads an assembly language program mode (item) into the frame specified in the mode's FRAME operation code statement.

Syntax

MLOAD filename {itemlist} {(options)}

filename Specifies the file from which the items (modes) listed in itemlist are to be accessed and loaded.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to indicate all items in the file. Can be omitted if a select-list is present.

(options)

E Prints messages relating only to errors.

I Prints item-IDs if more than one is loaded.

N Inhibits load but prints message.

P Routes output to the spooler.

Description

Use MLOAD to load an assembled program or mode into a frame specified by a FRAME operation code statement. The assembled mode must fit in one frame. A FRAME statement must be the first statement assembled in the mode.

If the load is successful, the program becomes part of the ABS software and the following message is displayed:

```
[216] Mode 'itemID' loaded; Frame =nnnn Size =sss Cksum =cccc
```

where:

nnnn Four-digit decimal number of the frame into which the mode has been loaded.

sss Number of bytes of object code loaded into the frame, expressed in hexadecimal (base=16).

cccc Byte checksum for the object code in the loaded mode.

MLOAD

```
:MLOAD USER-MODES CALC2.↓  
[216] Mode 'CALC2' loaded; Frame = 400 Size = 1DB Cksum = B18C  
:
```

Available On SYSPROG or SECURITY account.

See Also

- AS
- ASM
- MVERIFY
- OPT

Ultimate Assembly Language Reference Guide.

MOVE-FILE

MOVE-FILE moves a file from one account to another.

Syntax

MOVE-FILE {filename} {FROM acctname} {TO acctname} {(Q)}

filename Specifies the name of the file to be moved. If omitted, the system prompts for it. The filename cannot already exist in the destination account, unless it is a Q-pointer to the source file.

FROM acctname Specifies the name of the account from which the file should be moved; also known as the source account. If specified, the FROM keyword is required. If omitted, the current account is assumed.

TO acctname Specifies the name of the account to which the file should be moved; also known as the destination account. If specified, the TO keyword is required. If omitted, the current account is assumed.

Note: If both FROM and TO accountname are omitted, the system prompts for both.

(Q) Changes the file's Q-pointers in all accounts to the account where the file was moved. An asterisk is printed on the screen as each account containing a Q-pointer to the file is updated. You must have access to SYSTEM dictionary, and to the accounts containing Q-pointers to the moved file in order for those Q-pointers to be updated.

Note: Updating Q-pointers can take a long time since the entire system must be searched.

MSG

MSG allows one user to send a message to one or more users on the same Ultimate system.

MSG is the same as MESSAGE.

Syntax

MSG {!}receiver message-text

! Indicates receiver (see below) is a line number rather than an accountname. Line numbers do not have to be logged on to be specified.

receiver If not preceded by an exclamation point (!), specifies an accountname to which the message is to be sent; the account must currently be logged on. If preceded by an exclamation point, specifies a line number to which the message should be sent. The line need not be logged on. To send to all users, enter an asterisk (*).

message-text Specifies the message to be sent.

Description

Use MSG for inter-office communications, or to inform users of impending system activities. MSG attempts to send the message to the specified account or line. All users logged on to a specified accountname receive the message.

To send the message to all logged on accounts, enter an asterisk for the **receiver** parameter. To send the message to all lines (whether logged on or not), enter an exclamation point followed by an asterisk (!*). You must have privilege level 2 to do this.

The following information is displayed on the receiving terminals:

```
time    date    From account-name  #line-number:
message-text
```

If the specified accountname is not logged on, the following message is displayed:

- [337] Message was not sent because
- a) user not logged on
 - b) user in debugger, but not at input
 - c) line is trapped.

Note: Depending on your system, MSG can interrupt data entry on receiving terminals. Up to 16 characters can be lost at the receiving terminal due to the interference of the message. If this occurs, the user at the receiving terminal can enter <CTRL-R> to view the remaining characters of the interrupted input.

```
:MSG !* The meeting is now in progress.
                                     Message sent to all lines.

14:11:00  12 MAR 1991  From SYSPROG #2:
The meeting is now in progress
                                     Above message as it
                                     appears on user terminals.

:MSG 9 Please come to my office.
                                     Message sent to a single
                                     line.

14:13:00  12 MAR 1991  From SYSPROG #2:
Please come to my office
                                     Message as it appears on
                                     line 9.

:
```

Available On Any user account. Must have privilege level 2 to use the asterisk parameter.

See Also MESSAGE

MULD

MULD multiplies two decimal integers.

Syntax

MULD n m

n Specifies the first decimal integer.

m Specifies the second decimal integer.

Description

MULD multiplies two decimal integers, which can range from ± 140737488355327 .

<pre>:MULD -1700 5.1 -8500</pre>	<p>Multiply -1700 by 5. Result.</p>
--	---

Available On

Any user account.

See Also

- ADDD
- DIVD
- MULX
- SUBD

MULX

MULX multiplies two hexadecimal numbers.

Syntax

MULX n m

n Specifies the first hexadecimal number.

m Specifies the second hexadecimal number.

Description

MULX multiplies two hexadecimal numbers, which can be positive or negative. Negative numbers range from FFFFFFFF to 800000000001. Positive numbers range from 0 to 7FFFFFFFFF. If fewer than 12 hexadecimal characters are entered, high order zeroes are assumed.

Note: The result is limited to a six-byte maximum field.

<code>:MULX A A ↓</code>	Multiply A by A.
64	Result.

Available On

Any user account.

See Also

ADDX
DIVX
MULD
SUBX

MVERIFY

MVERIFY checks previously loaded assembly language object code against the assembled source item.

Syntax

MVERIFY filename {itemlist} {(options)}

filename Specifies the file to be verified.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to indicate all items in the file. Can be omitted if a select-list is present.

(options)

- A** Displays all error bytes.
- E** Prints error messages only.
- I** Prints item-IDs (if more than one selected).
- P** Routes output to the spooler.

Description

MVERIFY verifies the assembly language object code in a program item, or mode, against the actual code loaded in the ABS frame specified by the FRAME operation code statement in the mode. If the process is successful, the following message is displayed:

```
[217] Mode 'itemID' verified;Frame=nnnn Size=sss Cksum=cccc
```

If the process finds mismatches, they are displayed with the following message:

```
LOC SB AB
[218] MODE 'itemID' Frame=nnnn has xx mismatches
```

where:

- LOC** Location of an error.
- SB** Value that should be in that location.
- AB** Current value in that location.

Use MLOAD to reload any items that have mismatches.

Each byte in the source file with mismatches is listed, followed by the value in the executable frame.

```
:MVERIFY CUSTOMER PROG1 (A,
[217] Mode 'PROG1' verified; Frame = 511 Size = 1FB
Cksum = A03C
:
:MVERIFY CUSTOMER PROG2 (A,

LOC SB AB LOC SB AB LOC SB AB LOC SB AB
014 0C 18 015 13 17 016 0E 0D 017 3A 3C
.
.
.
[218] Mode 'PROG2' Frame = 511 has 78 mismatches
:
```

Available On SYSPROG or SECURITY account.

See Also AS
ASM
MLOAD
OPT
Ultimate Assembly Language Reference Guide.

OFF

OFF ends the current terminal session and logs off the account.

Syntax

OFF

Description

OFF logs you off the current account and displays the following accounting statistics for the session just ended:

```
<Connect time= n mins.; CPU= m units, lptr pages =x >
```

```
<Logged off at time           on date           >
```

where:

- n** Number of minutes logged onto the account.
- m** Number of units charged to the account.
- x** Number of pages printed to the line printer.

The system then displays the Logon Please message.

When OFF is entered, all open print jobs are closed. If a tape unit was attached during the session, it is detached.

To end work on the current account and log to another account, use LOGTO, which automatically logs off the current account before logging onto the new account.

```
:OFF↵  
  
< Connect time = 7 mins.; CPU=1252 units; lptr pages=0 >  
< Logged off at 16:07:30           on 20 NOV 1991 >  
  
20 NOV 1991 16:07:30 Logon Please:
```

Available On

Any user account.

See Also

COFF
LOGOFF
LOGTO

ON-LINE-DIAGS

ON-LINE-DIAGS allows non-destructive diagnostic testing of Ultimate hardware components while the system is on-line.

Caution: If hardware integrity is in doubt, perform a file-save as soon as possible.

Syntax

ON-LINE-DIAGS

Description

ON-LINE-DIAGS displays a menu of diagnostic programs used to troubleshoot suspected hardware problems.

```
                ULTIMATE SYSTEM ON-LINE DIAGNOSTICS
                (ON-LINE DIAGS REV 2)

TEST #1. NON-DESTRUCTIVE DISK TEST
TEST #2. TAPE DRIVE TEST
TEST #3. MEMORY TEST
TEST #4. PRINTER TEST
TEST #5. DISPLAY STATUS OF TERMINAL LINES
TEST #6. TAPE GAIN ADJUSTMENT TEST
      #7. LIST SYSTEM ERRORS (DISK ERRORS
            & EDAC MEMORY ERRORS)
      #8. PRINT "ON-LINE DIAGNOSTIC DOCUMENT"
      #9. LOG OFF

ENTER TEST NUMBER TO RUN:
```

Enter the desired menu number. Each menu selection is described below:

Note: All test programs can be ended by pressing <BREAK> and entering END at the system debugger prompt (!). Option 9 logs you off.

TEST # 1. NON-DESTRUCTIVE DISK TEST (DISK.DIAGS)

The Disk Test reads and then writes back every part of the disk accessible to the operating system, in no specific pattern. Although this test does not alter data, a defective component in the disk I/O chain (such as a bad disk controller) could inadvertently change the data that is written and damage your database.

The disk test consists of six phases. The amount of time to complete all six phases depends on the size and type of disk being tested. It takes approximately 20 seconds to read or write 1000 frames. The following is a brief explanation of each phase:

- Phase 1: Frames are read in increments of 1000, starting with frame 1000.
- Phase 2: Frames are written to disk in increments of 1000, starting with frame 1000. The data is not changed.
- Phase 3: Frames are read in increments of 100, starting with frame 100.
- Phase 4: Frames are written to disk in increments of 100, starting with frame 100. Data is not changed.
- Phase 5: Every frame is read in ascending sequential order, starting with frame 1.
- Phase 6: Every frame is written to disk in ascending sequential order, starting with frame 1. Data is not changed.

When the disk test is invoked, a screen similar to the following is displayed:

On-line non-destructive disk test

This test has six (6) phases:

- Phase 1: read frames from 1 to max in 1000 frame increments.
- Phase 2: write frames as above (no data is altered).
- Phase 3: read frames from 1 to max in 100 frame increments.
- Phase 4: write frames as above (no data is altered).
- Phase 5: read all frames from 1 to max in sequential order.
- Phase 6: write all frames as above (no data is altered).

You are to look for two 'symptoms':

- (1) If the system hangs on a particular frame number, that probably means that there is a bad spot on that frame. You will have to do a cold-start to bring the system back on line.
- (2) If you see an ampersand sign (&), that means that you have a disk error. Break-and-END this test. You'll get back to the main menu automatically. Then, select program "List system errors" to print the disk error report.

It takes approximately 20 seconds to test 1000 frames.
This system has nnnnn frames.
You may break-and-END this test at any time.

Enter Y to start the test or <CR> if you do not wish to proceed:

To go back to TCL, press RETURN. To start the test, enter Y. Frame numbers are displayed as they are tested. When the test is complete, a screen similar to the following is displayed:

```
Phase 1 Read frames; increment=1000
49000  <- Frame being tested
Phase 2 Write frames; increment=1000
49000  <- Frame being tested
Phase 3 Read frames; increment=100
49800  <- Frame being tested
Phase 4 Write frames; increment=100
49800  <- Frame being tested
Phase 5 Read frames; increment=1
49894  <- Frame being tested
Phase 6 Write frames; increment=1
49894  <- Frame being tested
```

If a coldstart is necessary or an ampersand is displayed, print the error report by re-executing ON-LINE-DIAGS and selecting option 7 to run the LIST-SYSTEM-ERRORS program. Or, enter LIST-SYSTEM-ERRORS at TCL from the SYSPROG or SECURITY account.

TEST # 2. TAPE DRIVE TEST (TAPE.DIAGS)

The Tape Drive Test first writes test patterns to tape at various block sizes. Four patterns are written to tape for each block size:

1. 50 blocks of test pattern X'B6DB6D...'
2. 50 blocks of test pattern X'AAAA...'
3. 50 blocks of test pattern X'55AA55AA...'
4. 50 blocks of test pattern X'55555555...'

An end-of-file (EOF) mark is written to tape, then these test patterns are repeated, 50 blocks per pattern, for the next block size. At the end of the last block, another EOF mark is written to tape.

After all test patterns are written, the program rewinds the tape and reads the test patterns to check for any discrepancy. You should look for the following symptoms:

- The system reports parity errors by displaying a percent sign (%) on the screen. The system retries the tape I/O operation when a parity error is encountered.
- After 10 retries, the system displays:

(A) ccept / (R) etry / (Q) uit :

To accept the error and go ahead to the next block, enter A. To retry another 10 times, enter R. To quit the test, enter Q.

TEST # 3. MEMORY TEST (MEM.DIAGS)

The Memory Test writes to memory the test pattern X'B6DB6D...', repeated to fill a 512-byte memory block (frame). Sufficient contiguous overflow frames (two bytes per 1K bytes of memory) must be available. When the memory test is invoked, a screen similar to the following is displayed:

On-line Memory Test

This test exercises the memory by writing a test pattern in memory.

The test pattern is subsequently checked for errors.

Due to the virtual memory management scheme employed by the Ultimate operating system, the memory test: (1) requires frequent access to disk and (2) is not able to report the exact real memory location in case of errors.

You are to look for three 'symptoms':

- (1) an ampersand sign (&) is displayed, which means that you have either a disk error or an EDAC error detected by disk controller.
- (2) an error message "MEMORY ERROR" is displayed, which means that you have a "hard" memory error.
- (3) on Honeywell-based systems, EDAC errors are reported in real memory location X'1F'. EDAC errors are also logged by the system automatically.

You can break-and-END this test at any time. You'll get back to the main menu automatically. Select program "List system errors" to print the report.

This system has 5120K memory. This test runs indefinitely. You may break-and-END this test at any item.

Enter Y to start the test or <CR> if you do not wish to proceed:

You should look for three symptoms:

- An ampersand (&) indicates a disk error or an EDAC error detected by the disk controller. In this case, press the <BREAK> key and enter **END** to end this test. If you are logged to the ON-LINE-DIAGS account, the Main Menu is displayed. Select List System Errors to print the error report.
- The error message MEMORY ERROR indicates a hard memory error. In this case, run TACPAC (stand-alone diagnostics for Ultimate Bull 6000/7000 systems) to check the memory boards. To find out the locations of EDAC errors on Ultimate Bull 6000/7000 systems, set the memory boards to PARITY mode, and then run TACPAC to find the errors. (If the boards are set to EDAC mode, you will not be able to find the locations of the errors.)
- EDAC errors are reported in real memory location X'1F' (on Ultimate Bull 6000/7000 systems). EDAC errors are also logged automatically by the Ultimate Operating System. To obtain a report of errors logged by the system, press <BREAK> and enter **END** at any time to end this test, and select List System Errors from the menu.

Due to the nature of the test, most memory errors encountered do not report the exact memory address causing the error. Some types of memory errors are logged in the SYSTEM-ERRORS file. For a listing of the errors logged in the SYSTEM-ERRORS file, use LIST-SYSTEM-ERRORS from either the ON-LINE-DIAGS menu or from TCL.

TEST # 4. PRINTER TEST (PRINTER.DIAGS)

The Printer Test verifies whether the parallel printer is working properly. When invoked, the program prompts for the number of the parallel printer to test. If no parallel printers are connected, the following message is displayed:

```
This system does not have parallel printers.
```

The program first checks the status of the printer controller. If the status is ready, the program sends 50 lines of printable ASCII characters (X'21' to X'7E'), repeated to fill a 132-character line, directly to the printer controller without going through the Ultimate System spooler.

If the status is not ready, the following message is displayed and the system returns to the prompt for the parallel printer to test:

```
Printer is not ready. Printer status word is X'0000'.
```

Since the printer test bypasses the spooler, it can be helpful in determining whether a printer problem is due to a hardware malfunction or to the spooler software interface.

If the printer controller is not ready, a status word is returned and displayed on the screen. The printer status word on Ultimate Bull 6000/7000 systems is:

bit 00 - Device Ready	bit 08 - unused
bit 01 - Attention	bit 09 - unused
bit 02 - unused	bit 10 - unused
bit 03 - End of Form	bit 11 - unused
bit 04 - unused	bit 12 - Corrected Memory Error
bit 05 - unused	bit 13 - Non-existent Resource
bit 06 - unused	bit 14 - Bus Parity
bit 07 - unused	bit 15 - Non-correctable Memory Error

TEST # 5. DISPLAY STATUS OF TERMINAL LINES (STATUS)

The Status Test reports the current status of terminal lines. For further information, please refer to the STATUS command.

TEST # 6. TAPE GAIN ADJUSTMENT TEST

The Tape Gain Adjustment Test allows a Customer Service Engineer to adjust the gain on an Ultimate Bull 6000/7000 system tape drive. A tape must be mounted, on-line, and write-enabled on the drive to be tested. The test program writes test pattern X'7FF77FF7...' to tape, using a block size of 8192. The program runs until you press the <BREAK> key and enter END.

MENU OPTION # 7 LIST SYSTEM ERRORS

This option displays or prints the disk and EDAC errors stored in the SYSTEM-ERRORS file. For details, see LIST-SYSTEM-ERRORS.

MENU OPTION # 8 PRINT ON-LINE DIAGNOSTICS DOCUMENT

This option displays or prints a document containing further information about the on-line diagnostics.

Available On SYSPROG or SECURITY account.

See Also LIST-SYSTEM-ERRORS
STATUS
System Management Guide on System Error Reporting and Interpretation.

OPT

OPT is used to assemble a program on Ultimate S/370 and S/390 systems.

Syntax

OPT filename {itemlist} {(L)}

filename Specifies the file containing items to be assembled.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in a file. Can be omitted if a select-list is present.

(L) Generates an instruction that allows a BREAK at each label.

Description

For further information on OPT, please refer to the *Ultimate Assembly Language Reference Guide*.

Available On

Any user account on Ultimate S/370 and S/390 systems.

P

The P command switches the terminal display feature on and off.

Syntax P {(options)}

(options

- I Suppresses terminal display, regardless of the current status of the command.
- L Allows terminal display, regardless of the current status of the command.

Description When used without any options, the P command toggles terminal display on or off.

Terminal display on (the normal condition) displays information from the system on your terminal.

Terminal display off suppresses all display on the terminal except for the echoing of keyboard input. System messages and menus, for example, will not be displayed until after another P command is entered.

Display of keyboard input can be controlled with the ECHO-OFF and ECHO-ON commands.

Available On Any user account.

See Also ECHO-OFF
 ECHO-ON

PAGEIO-OFF

On some LSI systems, the PAGEIO-OFF command returns a line previously set to PAGEIO mode to normal input mode.

Syntax PAGEIO-OFF

Description On smaller LSI systems (series 2000, and series 3000 models below model 3030), the normal input mode is PAGEIO-OFF. On these systems, PAGEIO-OFF is used when a line currently operating in PAGEIO-ON mode needs to be reset to normal input mode.

PAGEIO-ON mode is designed to accommodate bursts of input data on a line that your system cannot handle fast enough in normal input mode. This situation can happen if a line is used to take input from a device other than a terminal. The PAGEIO-OFF command resets the line to normal input mode, which is the setting for all lines after a coldstart on smaller LSI systems.

On larger LSI systems, (series 3030 and above), the normal input mode is PAGEIO-ON. Therefore, PAGEIO-OFF should not be needed.

Available On Any user account on the systems indicated above.

See Also PAGEIO-ON

PAGEIO-ON

PAGEIO-ON initiates PAGEIO mode on the line that issues the command.

Syntax

PAGEIO-ON

Description

On smaller LSI systems (series 2000 and series 3000 models below model 3030), the normal input mode is PAGEIO-OFF. However, PAGEIO-ON mode can be used for terminal input when bursts of input data on a line cannot be handled fast enough by the computer in normal input mode. This can happen if a line is used to take input from a device other than a terminal.

On larger LSI systems (series 3030 and above), the normal input mode is PAGEIO-ON. On these systems the PAGEIO-ON command is not needed unless the typeahead feature has been turned off (TYPEAHEAD-OFF), which automatically turns PAGEIO off. In this case, PAGEIO-ON can be reset by issuing this command or a TYPEAHEAD-ON command.

The visible effect of the PAGEIO-ON command varies with different Ultimate systems. Sometimes the echoing of keyboard input is affected. Also, software such as UltiWord may not work properly on some systems when input is requested one character at a time, without a carriage return. On Ultimate Bull 6000/7000 systems and larger LSI systems, the effect of the PAGEIO-ON command is to return the system to normal input mode. On smaller LSI systems where PAGEIO-OFF is the normal input mode, this command enables the PAGEIO-ON mode. The PAGEIO mode remains in effect until it is reset via PAGEIO-OFF or a system coldstart.

Available On

Any user account on Ultimate Bull 6000/7000 systems, and the LSI systems indicated above.

See Also

PAGEIO-OFF
TYPEAHEAD-OFF
TYPEAHEAD-ON

PART-UPDATE-SAVE

PART-UPDATE-SAVE saves to a file-save tape all groups that have been updated since the last full FILE-SAVE, PART-UPDATE-SAVE, or ALL-UPDATE-SAVE. It also resets the group-updated flags.

Syntax

PART-UPDATE-SAVE

Description

PART-UPDATE-SAVE saves all updates to your system since the last FILE-SAVE, PART-UPDATE-SAVE or SAVE. Updates consist of creating, changing, or deleting an item, file, or account. PART-UPDATE-SAVE also resets the group-updated flag associated with each group.

The advantage of PART-UPDATE-SAVE over ALL-UPDATE-SAVE is that it saves time and tape on each update save. However, the disadvantage is that in order to restore your system, the full file-save tape, as well as every subsequent PART-UPDATE-SAVE tape, is required.

When PART-UPDATE-SAVE is invoked, the file data area is saved, the filenames are printed, any Group Format Errors (GFEs) are repaired, the saved groups are output to magnetic tape, and the updated flags of the saved groups are reset.

If PART-UPDATE-SAVE is aborted, the next save must be a full file-save. A partial save cannot be performed because it would be impossible for the system to determine which group-updated flags had been reset or not reset before the part-update-save operations aborted. If you attempt to do a PART-UPDATE-SAVE after an abort, the following message is displayed:

```
[994] Full file save required
```

Available On

SYSPROG or SECURITY account.

See Also

ALL-UPDATE-SAVE

FILE-SAVE

SAVE

System Management Guide for information on file-saves.

PASSTHRU

PASSTHRU causes terminal input/output (I/O) to be redirected to another line, allowing you to use a line on your system to access another system.

Syntax

PASSTHRU **n{,baud}** **{(esc-code)}**

n Specifies the line number from which terminal input is to be received and to which terminal output is to be transmitted.

,baud Specifies the baud rate of the target terminal using PASSTHRU.

(esc-code) Specifies the ASCII code value of a keyboard character used as part of an escape sequence to terminate the PASSTHRU operation. If no escape code is specified, a value of decimal 88 is used, corresponding to the character X (that is, the default escape sequence is <ESC-X>).

Description

PASSTHRU causes all subsequent characters typed at your terminal to be sent out on the specified line, and causes all characters input on the specified line to be displayed on your terminal.

This mode of passthrough interaction remains in effect until the specified escape code sequence is entered at your terminal. This breaks the connection to the specified line and normal terminal I/O is resumed. The escape code sequence is the ESC character (hexadecimal X'1B'), followed by the escape code character specified in the command (or by the default X, decimal 88).

PASSTHRU is useful when the specified line is connected to another computer, such as via a modem. In effect, you can interact with the remote computer as if there were no local computer.

The specified line must not have anyone logged on to it.

You can execute PASSTHRU from BASIC via the EXECUTE statement. The returned and displayed data can be saved by using the CAPTURING redirection variable as follows:

```
EXECUTE "PASSTHRU 3,9600" CAPTURING.> OUTPUT
```

Ultimate has integrated this operation into a BASIC subroutine called CAPTURE in the SYSLIB file, which uses PASSTHRU to capture all data echoed at your terminal, and stores it in an Ultimate file. Please refer to appendix E for further information on the CAPTURE subroutine.

: PASSTHRU 6 (67) ↵	Executes passthru on line 6; specifies the letter C as the escape character.
:	
: PASSTHRU 15,1200 ↵	Executes passthru on line 15 at 1200 baud.

Available On Any user account.

PIE

PIE is an UltiPlot command that generates a pie chart from a list of items. PIE is a graphic equivalent of the LIST command.

Note: Since data should be in sorted order to create a meaningful chart or graph, you may prefer to use the SPIE command. Or, you can sort data with SSELECT, and the resulting select-list can be saved with SAVE-LIST. The actual charting could then be done later by retrieving the sorted list via GET-LIST, followed by the PIE command.

Syntax

PIE filename {itemlist} {sel-criteria} {output-specifications} {(options)}

filename	Specifies the file for which information should be charted.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be charted. Also known as a WITH clause.
output-specifications	Specifies the attributes and values in the selected items that should be charted.
(options	
C	Suppresses column heading lines that define attributes in a report.
D	Suppresses all detail lines from a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.

- P Routes output to the spooler.
- N Specifies no automatic end-of-page waiting.

Description For further information on PIE, please refer to the *UltiPlot Reference Guide*.

Available On Any user account.

PLOT

PLOT is an UltiPlot command that generates a rectangular chart, bar graph, line graph, or scatter diagram on a Printronix dot-matrix printer. PLOT is a graphic equivalent of the LIST command.

Note: Since data should be in sorted order to create a meaningful chart or graph, you may prefer to use the SPLOT command. Or, you can sort data with SSELECT, and the resulting select-list can be saved with SAVE-LIST. The actual charting could then be done later by retrieving the sorted list via GET-LIST, followed by the PLOT command.

Syntax

PLOT filename {itemlist} {sel-criteria} {output-specifications} {(options)}

filename	Specifies the file for which information should be charted.
itemlist	One or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be charted. Also known as a WITH clause.
output-specifications	Specifies the attributes and values in the selected items that should be charted.
(options)	
C	Suppresses column heading lines that define attributes in a report.
D	Suppresses all detail lines from a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.

- P Routes output to the spooler.
- N No automatic end-of-page waiting.

Description For further information on PLOT, please refer to the *UltiPlot Reference Guide*.

Available On Any user account.

POVF

POVF displays the table of available virtual frame space, which indicates the system available disk space, broken down into the total number of frames of contiguous space and linked space.

Syntax

POVF {(P)}

(P Routes output to the spooler.

Description

POVF displays the available system disk space in the system overflow table in the following format:

```

nnn (mmm)                ppp (qqq)
xxxxx-yyyyy : ccccc      vvvvv-wwwww : ddddd
Total number of contiguous frames : nnnnnn

```

where:

nnn (mmm)	FID (frame ID) of the first frame in linked available space; contains mmm frames.
ppp (qqq)	FID of the beginning of the extended TCL workspace set; contains qq q frames.
xxxxx or vvvvv	First frame of the block.
yyyyy or wwwww	Last frame of the block.
ccccc or ddddd	Total number of frames in the block.
nnnnnn	Total of all the contiguous available space frames on the system.

Since only non-empty portions of the table are printed, if there is no linked available space chain, nnn and (mmm) are not printed.

Workspaces for all extended TCL levels are obtained from available space.

After a file-restore, all available space is contiguous until normal system operation obtains and releases portions of that space. A linked chain of available space is created only when there are 31 sets of contiguous

available space, which is the maximum number the system space management routines can maintain.

```
:POVF.┘
          3936      ( 823)
5549- 5551 :      3      6746- 6746 :      1
6748- 7160 :     431     7254- 7258 :      2
23054- 23289 :     236     26000- 148159 : 122159

Total number of contiguous frames      : 122832
:
```

Available On Any user account.

See Also *System Management Guide* for information on system file structure and allocation, and the extended level overflow table.

PRIME

PRIME prints the smallest prime number equal to or greater than a specified number.

Syntax

PRIME {n}

n Specifies the number to be tested as prime. If omitted, the system prompts for a number.

Description

Use PRIME to test whether a number is prime, or to find the next prime number greater than the number entered.

PRIME can help decide what value to select for the modulo of a new file, since modulus that are prime numbers are more likely to cause items in the file to be distributed evenly.

If a number is omitted, PRIME prompts for the number to test:

```
Enter # to test:
```

If the number entered is prime, the system displays the following message:

```
n is prime!
```

If the number entered is not prime, the system begins checking each odd number greater than the number entered. The numbers and their divisors are printed until a prime number is found.

```
:PRIME.␣  
Enter # to test:32.␣  
32 is even!  
33 is evenly divisible by 3  
35 is evenly divisible by 5  
37 is prime!  
:
```

Available On

Any user account.

PRINT-ERR

PRINT-ERR displays messages stored in ERRMSG, or other specified file using ERRMSG format.

Syntax

PRINT-ERR filename {itemlist} {(P)}

filename Specifies the file (normally ERRMSG) to be accessed for item display.

itemlist Specifies one or more explicit error message numbers, or an asterisk (*) to indicate all error messages in the file. Can be omitted if a select-list is present.

(P) Routes output to the spooler.

Description

PRINT-ERR verifies system error message or other message file contents, and displays specified items. Messages containing parameters, such as the TERM command, have dummy parameters A, B, C, D, and so on, inserted in the message display.

```
:PRINT-ERR ERRMSG 201.↓
[201] 'A' is not a file name
:

:PRINT-ERR ERRMSG 289.↓
      Terminal  Printer
Page width:      A      B
Page depth:      C      D
Line skip :      E
LF delay :       F
FF delay :       G
Backspace:       H
Term type:       I
:
```

Available On Any user account.

See Also *System Management Guide* for information on the ERRMSG file.

PRINTER

PRINTER displays or sets printer characteristics.

Syntax

PRINTER {line-length} {page-length} {printer-code}

line-length Specifies the maximum number of characters per line, normally 80 or 132.

page-length Specifies the maximum number of lines per page, normally 66.

printer-code Specifies the type of printer. The standard Ultimate system includes definitions for the following printer types:

- H Honeywell (NEC) letter quality printer
- L Hewlett-Packard LaserJet printer

Note: If parameters are omitted, the current settings are displayed.

Description

PRINTER affects printer output only on the line issuing the command.

If only the printer-code is to be changed, all other parameters can be omitted from the command. Printer codes are stored as items in the TERMDEF file on the SYSPROG account.

The line-length and page-length parameters can also be displayed and modified with the TERM command. However, printer-code can only be displayed and modified with the PRINTER command.

The printer-code value is not important for most printer output. Only software such as UltiWord adjusts output according to printer type, since it contains program code specifically for letter quality printers. A menu is provided by UltiWord for setting up items such as the printer code.

```
:PRINTER␣  
  
Page width:      132  
Page depth:     60  
Type           :      H  
  
:  
  
:PRINTER , 59, L␣  
  
:  
:PRINTER␣  
  
Page width:      132  
Page depth:     59  
Type           :      L  
  
:
```

Available On Any user account.

See Also SET-LPTR
TERM

PRINTER.DIAGS

PRINTER.DIAGS is used by the ON-LINE-DIAGS command to test parallel printer operation. Ultimate recommends that you use the ON-LINE-DIAGS command to run diagnostic tests.

For further information on PRINTER.DIAGS, please refer to ON-LINE-DIAGS.

PRINTRONIX

PRINTRONIX sets the number of lines per page on Printronix printers.

Syntax PRINTRONIX

Description When PRINTRONIX is invoked, it prompts for the maximum number of lines to print on a form before automatic eject. The standard number of lines for 11-inch long paper is 66.

```
:PRINTRONIX↵  
Number of lines?: 66  
:
```

Available On SYSPROG or SECURITY account.

See Also PRINTER
TERM

QSELECT

QSELECT creates a select-list from attributes in an item, or from items in a file.

Syntax

QSELECT filename {itemlist} {(n)}

filename Specifies the file whose items are to be used to create the select-list.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to indicate all items in the file. Can be omitted if a select-list is present.

(n) Specifies the attribute number whose item data is to be included in the select-list. If omitted, all attributes are selected.

Description

QSELECT selects all itemlist items, using either all attribute data or data from a single attribute, and creates a select-list. The select-list can be saved with SAVE-LIST for use in subsequent system commands or BASIC programs. Multiple values are stored as separate elements in the select-list.

Note: QSELECT and COPY-LIST are inverse functions. QSELECT creates a select-list from attributes in items, while COPY-LIST creates an item from a select-list.

<pre>:QSELECT INVENTORY 0123 2990 (2) ↓ 2 items selected. :</pre>	Selects attribute 2 from the specified items.
---	---

Available On

Any user account.

See Also

COPY-LIST
 SAVE-LIST
 SELECT
 SSELECT
Ultimate BASIC Language Reference Guide.
Ultimate RECALL and Ultimate UPDATE User Guide.

RAISE-DTR

RAISE-DTR raises the Data Terminal Ready (DTR) status on a specified line.

Syntax

RAISE-DTR {n}

n Specifies the line on which to raise DTR. If omitted, the current line is assumed.

Description

RAISE-DTR allows a line to be connected for communications. On a dial-up line, DTR must always be high to maintain the connection between the system and the remote line.

On Ultimate 1400 systems, RAISE-DTR raises both DTR and Request To Send (RTS). If the line number is omitted, RAISE-DTR raises DTR and RTS on the current line.

```
: RAISE-DTR 2.↓  
:
```

Available On

SYSPROG or SECURITY account on Ultimate Bull 6000/7000 systems and Ultimate 1400 systems.

See Also

DROP-DTR
DROP-RTS
RAISE-RTS

RAISE-RTS

RAISE-RTS raises the Request to Send (RTS) status on a specified line.

Syntax

RAISE-RTS {n}

n Specifies the line on which to raise RTS. If omitted, the current line is assumed.

Description

RAISE-RTS is the inverse of DROP-RTS. The effect of raising RTS depends on what device is connected to the line, and how the line is wired.

If a modem is attached, raising RTS causes the modem to raise Clear To Send (CTS), which in turn causes the system to output data on the line.

On Ultimate 1400 systems, RAISE-RTS raises both Data Terminal Ready (DTR) and RTS. If the line is not specified, RAISE-RTS raises DTR and RTS on the current line.

```
: RAISE-RTS 2 ↵  
:
```

Available On

SYSprog or SECURITY account on Ultimate Bull 6000/7000 systems and Ultimate 1400 systems.

See Also

DROP-DTR
DROP-RTS
RAISE-DTR

READ-STATUS

READ-STATUS returns the hexadecimal communications status for a specified line.

Syntax

READ-STATUS {n}

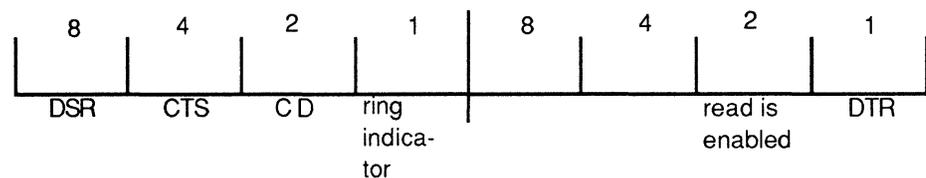
n Specifies the line whose status is to be read and displayed. If omitted, the current line is assumed.

Description

Use READ-STATUS to verify communication flags current status. The status codes are determined by the settings of bits that indicate the current state of the RS232 control signals. For example:

- E0 Data Set Ready (DSR), Clear To Send (CTS), and Carrier Detect (CD) are high.
- C0 DSR and CTS are high.
- 80 DSR is high.

The following chart shows the meaning of each bit and its hexadecimal value. Use this chart to interpret the status codes.



: READ-STATUS	Read the status of the current line.
E1	DSR, CTS, CD, DTR all high (80+40+20=E, DTR=1)
:	

Available On

SYSprog or SECURITY account on Ultimate Bull 6000/7000 systems.

REALLOCATE

REALLOCATE calculates a new modulo for files, which can then be used to update all files on the system, a single account, or a single file.

Syntax

REALLOCATE

Description

REALLOCATE uses STAT-FILE information produced by the last FILE-SAVE to calculate a new modulo for all files or a specified account or file. It always uses a separation of 1. REALLOCATE places the new modulo in SYSPROG's REALLOC-FILE and optionally updates attribute 13 of each file's D-pointer with the new modulo. The actual reallocation of files using the new modulus is performed when the next file-save and file-restore is done.

With the aim of minimizing the need for overflow space, REALLOCATE performs the following calculation:

- Calculate the number of items with growth allowance, where (GROWTH = 1.05): $NO. ITEMS = INT((ITEMS * GROWTH) + .5)$
- Calculate the new file size:
 - a. If AVERAGE ITEM SIZE \geq ID.DATA.SIZE then
NEW.MODULO = NO.ITEMS
 - b. If AVERAGE ITEM SIZE $<$ ID.DATA.SIZE then
 $NEW.MODULO = INT(NO.ITEMS / INT(ID.DATA.SIZE / AVG.ITEM.SIZE) + .5)$
- Set the new modulo equal to the nearest prime number that is greater than or equal to the new modulo just calculated.

When invoked, REALLOCATE displays the following menu:

The ULTIMATE File Reallocation Menu

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1. Reallocate All Files Automatically
2. Calculate Suggested Reallocation Parameter For All Files
3. List Reallocation Parameters to Printer
4. Reallocation Entry Maintenance
5. Update Files With New Reallocation Parameters
6. Clear Reallocation Parameters from File Pointers
88. Logoff
99. Go to TCL

Enter Selection -

At the Enter Selection prompt, enter the desired option number. Each option is explained below:

1. Reallocate All Files Automatically

Option 1 is a combination of options 2 and 5. When option 1 is selected, the following prompt is displayed:

Is it OK to down size a file (YES/<CR>=N)?

If the modulo cannot be reduced, press **RETURN**. If the modulo can be reduced, enter **YES**. The following prompt is displayed:

xxx data bytes per frame (YES=<CR>/N)?

The value of xxx is the frame size of the machine being used. If the files are to be restored on a system with a different frame size and running a pre-200 revision of the operating system, or if the displayed frame size is not correct, enter **N**; otherwise, press **RETURN**. If **N** is entered, a prompt similar to the following is displayed:

Enter new frame size (mod 500), or press <CR> to use
xxx:

Enter the new frame size. New values for modulo and separation are calculated for all files listed in STAT-FILE, and placed in REALLOC-FILE. The following messages are displayed:

```
Now clearing Reallocation file
Now selecting Stat-File
Now processing -
Processing complete.
```

REALLOCATE calculates new modulos for all files, but will not update any D-pointers if there is not enough disk space to do so.

2. Calculate Suggested Reallocation Parameter For All Files

When option 2 is selected, the following prompt is displayed:

```
Is it OK to down size a file (YES/<CR>=N)?
```

If the modulo cannot be reduced, press **RETURN**. If the modulo can be reduced, enter **YES**. The following prompt is displayed:

```
xxx data bytes per frame (YES=<CR>/N)?
```

The value of xxx is the frame size of the machine being used. If the files are to be restored on a system with a different frame size and running a pre-200 revision of the operating system, or if the displayed frame size is not correct, enter **N**; otherwise, press **RETURN**. If **N** is entered, a prompt similar to the following is displayed:

```
Enter new frame size (mod 500), or press <CR> to use
xxx:
```

Enter the new frame size. New values for modulo and separation are calculated and placed in REALLOC-FILE. The following messages are displayed:

```
Now clearing Reallocation file
Now selecting Stat-File
Now processing -
Processing complete.
```

3. List Reallocation Parameters to Printer

When option 3 is selected, the following information is printed for each file:

- Reel Number
- Sequence Number
- File Level (1=account, 2=dictionary, and 3=data section)
- Account Name
- Dictionary Name
- File Name
- Current Modulo
- Current Separation
- New Modulo
- New separation
- % of growth

4. Reallocation Entry Maintenance

After REALLOCATE calculates a suggested new modulo (that is, after executing option 1 or 2), you can override it with your own calculation. To do this, you must know the reel number and sequence number of the file to be changed as it exists on the File Statistics Report. (Use LIST-FILE-STATS, if needed.)

When option 4 is selected, the following screen is displayed:

```
File Reallocation Maintenance

Reel Number      File Seq. Number
Account Name -
File Name -
Level -

                Modulo      Separation      Prime
Current Size
Reallocation

Suggested Reallocation
New Reallocation
-- <D> to delete
```

To exit this screen and return to the Reallocation menu, enter **END** at the Reel Number prompt. Otherwise, enter the reel number and file sequence number. Data will be displayed for the Account Name, File Name, File Level, Current Modulo, Current Separation, Current Prime, and Current Reallocation (if a reallocation parameter was previously calculated).

Enter a new modulo. To make changes to the new reallocation, enter **D** to delete the entry. Enter **END** to return to the Reel Number prompt.

The file or files are not updated. To update files with a new calculation, select option 5 below.

5. Update Files With New Reallocation Parameters

Option 5 uses the reallocation parameters from the REALLOC-FILE. All files that have been designated in the REALLOC-FILE for reallocation are updated with the new modulo as a reallocation parameter.

To perform the actual file reallocation, a file-save and file-restore must be done.

If reallocation is specified but there is not enough disk space to increase file size, D-pointers are not updated. If reallocation will reduce file sizes, the following prompt is displayed:

```
THIS PROCEDURE WILL UPDATE ALL FILES WITH NEW  
REALLOCATION
```

```
DO YOU WANT TO CONTINUE (Y/N)?
```

If **N** is entered, the Enter Selection prompt of the Reallocation Menu is redisplayed.

If **Y** is entered, the following messages are displayed:

```
Now selecting Realloc-File
```

```
Now processing -
```

```
Processing complete.
```

6. Clear Reallocation Parameters from File Pointers

This option clears any reallocation parameters that may have been added to attribute 13 of file definition items.

Available On SYSPROG or SECURITY account.

See Also *System Management Guide* for information on file reallocation.

RECEIVE

RECEIVE allows you to receive bisync messages into a specified file, into the RECEIVED-MSGs file, or into the spooler.

Syntax

RECEIVE {filename} {item-ID} {(options)}

filename Specifies name of the file to receive messages. If omitted, the file RECEIVED-MSGs is assumed.

item-ID An item-ID is required for the G option below.

(options)

- A** Indicates messages are in 3780 format.
- B** Specifies block mode. Each block of data is filed as an item, using a sequential item-ID starting with 1. Each execution of RECEIVE resets the item-ID back to 1. If the item-ID already exists in the file, it is replaced by the newly received item.
- C** Files printer control characters with the received data. If omitted, embedded printer control characters are stripped before the data is written to the file.
- D** Displays the incoming message to the screen as it is received. This option has no effect on the filing or printing of the message.
- E** Ends the receive process and returns to TCL after receiving one message. If omitted, the process remains in receive mode indefinitely.
- F** Files the message in the receiving file. This overrides any printer selection sequence in the message.
- G** Indicates an item-ID in which to receive data is specified following the filename.
- P** Routes output to the spooler.
- U** Specifies Ultimate mode. The first record of the received message becomes the message's item-ID in the receiving file. Care should be taken that the transmitting station intends the first record to become the item-ID.

If the first record already exists as an item-ID in the RECEIVED-MSGs file, then a default date-time-# item-ID is constructed and the first record becomes the first attribute of the new item. Problems can occur if the first record received is larger than the maximum item-ID size of 50 bytes.

- W** Returns to TCL if the state WAITING FOR COMMUNICATIONS LINE TO BE CONNECTED is encountered. Prints the waiting message before exiting to TCL.
- X** Contains the terminal identification string received from the remote computer when bidding for the communications line. When the local computer is bidding to transmit to the remote computer, this string is received from the remote computer with the acknowledgement.

Description

When an Ultimate system is performing data communications using a binary synchronous communications protocol with a 2780- or 3780-type communications device, RECEIVE is used to set a terminal to receive status. A bisync channel must already be attached with B-ATT.

Note: When using the RECEIVE command to receive bisync messages, be sure the RECEIVE command uses the same protocol as used in the transmission. That is, both must use 2780 mode or both must use 3780 mode. The 2780 mode is the default.

The options allow the operator alternative display/storage methods and to end receive status after a single message.

If no options are present, the destination (file or printer) of the received message is determined by a component selection sequence at the start of the first received record. (For details on this sequence, see IBM's "2780 Component Description" document.) If the component selection sequence is omitted, the message is filed in the RECEIVED-MSGs or other specified file.

RECEIVE

A filed message is assigned an item-ID. The default is a date-time-# item-ID. The format is DD MON YY-HH:MM:SS-#, constructed by combining the date and time (24-hour clock) that the message was received with the message's sequence number.

If the transmission is in transparent mode (TRANSMIT with the H option), the following message is displayed when the first record is actually received:

```
[317] Transparent text being received
```

During transparent mode, if a segment mark is part of the received message, the following message is displayed:

```
[318] A "SM" (X'FF') was converted to a "NULL" (X'00')
in received transparent text.
```

After the message has been printed/stored, receive mode is re-entered to receive another message (unless the command has the E option).

You can halt the receive process, disconnect the line, and return to TCL at any time by pressing <BREAK> and entering END.

Available On SYSPROG or SECURITY account.

See Also B-ATT
General Information--Binary Synchronous Communication,
IBM Document Number GA27-3004.
Component Description: IBM 2780 Data Transmission Terminal,
IBM Document Number GA27-3005.

RECOVER-FD

RECOVER-FD allows you to recover an item deleted with the FD command in the Line Editor, if possible.

Syntax

RECOVER-FD

Description

You must use RECOVER-FD immediately after you delete the item you want to recover.

Caution: *Do not specify the item-ID in the command line, as this guarantees that the item will not be recovered.*

When RECOVER-FD is invoked, the following prompt is displayed:

```
Enter item-id *
```

Enter the exact item-ID you just deleted, and press RETURN.

Caution: *If you press RETURN alone at the Enter item-id * prompt, you may never be able to recover the item.*

If you enter an incorrect item-ID, the Enter item-id * prompt is redisplayed.

Once you enter the correct item-ID, the deleted item is recovered and the following message is displayed:

```
'itemID' filed.
```

Once recovered, the item is placed back into the same file from which it was deleted. Also, the item is restored back to the state it was in prior to the last FS or FI Line Editor command.

If there are no recoverable items, the following message is displayed:

```
[401] No items present.
```

Note: *You cannot use RECOVER-FD if you deleted the item with FD while using EDIT-LIST.*

```
:ED SALES CLIENT.␣
Top
001 MY BEST CLIENT
002 COMPANY NAME
003 ADDRESS
004 TELEPHONE NUMBER
EOI 004
.FD
'CLIENT' deleted.

:RECOVER-FD.␣

Enter item-id * CLIENT.␣

'CLIENT' filed.

:
```

Available On Any user account.

See Also *Guide to the Ultimate Editors.*

REFORMAT

REFORMAT is an Ultimate RECALL command that creates a new file from items in a specified file, according to indicated selection criteria, modifiers, and options.

Syntax

REFORMAT filename {itemlist} {sel-criteria} {output-specifications} {print-limiters} {(options)}

filename	Specifies the file containing the items to be reformatted.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be processed. Also known as a WITH clause.
output-specifications	Specifies the attributes and values in the selected items that should be processed.
print-limiters	Restricts the printing of output specification to values that meet the limit conditions.
(options)	
C	Suppresses column heading lines that define attributes in a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.

Description

For further information on REFORMAT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

RENAME-ACCOUNT

RENAME-ACCOUNT changes the name of an existing account.

Syntax **RENAME-ACCOUNT {accountname1} {accountname2} {(Q}**

accountname1 Specifies the current name of an account to be changed. If omitted, the system prompts for it.

accountname2 Specifies the new name of the account. This name must not already exist as an account. If omitted, the system prompts for it.

(Q Updates all Q-pointers in all Master Dictionaries to specify the new accountname. Updates all D-pointers in all Master Dictionaries and all file dictionaries to give the new accountname access.

Description Use RENAME-ACCOUNT to rename an account. When an account is renamed, the logon PROC or BASIC program in the account's Master Dictionary is also renamed. All Q-pointers in SYSTEM that point to the old account are updated to the new accountname. All update and retrieval locks for all D-pointers and Q-pointers in SYSTEM are also updated to the new accountname.

```
:RENAME-ACCOUNT␣
Enter Account Name ?OLDNAME␣
Enter New Name ?NEWNAME␣
[250] 'NEWNAME' updated.
```

Available On SECURITY account, or SYSPROG if security is enabled.

See Also CREATE-ACCOUNT

RENAME-FILE

RENAME-FILE changes the name of a file.

Syntax

RENAME-FILE {filename1} {filename2}

filename1 Specifies the current name of a file. If not specified, the system prompts for it.

filename2 Specifies the new name of the file. If not specified, the system prompts for it.

Description

Use RENAME-FILE to change a filename. To use RENAME-FILE, you must have update access to your Master Dictionary, and you must have update access to the file dictionary to update the D-pointer.

RENAME-FILE operates only on the D-pointers in the current Master Dictionary. RENAME-FILE cannot change the file synonym definition items (Q-pointers), and cannot change D-pointers referred to via Q-pointers (such as files on a different account).

Depending on the form of the filename specified, the action taken by RENAME-FILE will differ as follows:

dataname	Renames the dictionary section and its data section having the same name. No other data section names are changed.
dictname,dataname	Renames only the specified data section when the dictname has multiple data sections.
DICT dictname	Renames the dictionary section only.
DATA dataname	Renames only the data section having the same name as its dictionary.

RENAME-FILE

DATA dictname,daname Renames only the specified data section when the dictname has multiple data sections. Same as **dictname,daname** above.

If neither filename is specified, the following prompts are displayed:

Enter File Name?

Enter New Name ?

You cannot rename a file to a name that includes blanks, commas, or exceeds 50 characters.

```
:RENAME-FILE FILE1 FILE2.J      Rename FILE1 to FILE2.  
[250] 'FILE2' updated.  
:
```

Available On Any user account with privilege level 1 or greater.

See Also CREATE-ACCOUNT

RESET-LOGOFF

RESET-LOGOFF disables the automatic logoff function set by SET-LOGOFF when Data Set Ready (DSR) drops on the specified line.

Syntax

RESET-LOGOFF {n}

n Specifies the line for which automatic logoff should be disabled. If omitted, the current line is assumed.

Description

Use RESET-LOGOFF for a specified line to disable the automatic logoff function set up by SET-LOGOFF when DSR drops.

On Ultimate 1400 systems only, RESET-LOGOFF also disables the logoff when Data Terminal Ready (DTR) and Request To Send (RTS) occur.

```
:RESET-LOGOFF 3↓
```

```
:
```

Available On

SYSprog or SECURITY account on Ultimate Bull 6000/7000 systems and Ultimate 1400 systems.

See Also

SET-LOGOFF

RESTORE-ALL-ULTIS

RESTORE-ALL-ULTIS restores one or more of the following Ultimate application accounts from the SYS-GEN tape:

- UltiWord
- UltiLink
- UltiMation
- ATP (Acceptance Test Procedures)
- UltiWriter

For further information on RESTORE-ALL-ULTIS, please refer to the upgrade procedure for your specific platform.

RESTORE-FILE

RESTORE-FILE restores a file from a file-save tape, account-save tape, update-save tape, or transaction logging tape.

Syntax

RESTORE-FILE filename {(options)}

filename Specifies the name of file to be restored; this name must not currently exist in the account.

(options)

- A** Specifies the tape is already positioned at the desired account. When specified, the Account name on tape: prompt is not displayed.
- E** Restores every version of an item or items that can be found on tape. System-generated item-IDs will be used for duplicate copies of items; the original item-ID will be stored as attribute one of the item (attribute six for CC-pointer or CL-pointer items). Must be used with the U option.
- M** Modulo; adds modulo adjustment information. This must be used for files restored from systems with a different frame size running under revisions prior to 200E. Cannot be used with the U option.
- S** Skips initial forward spacing of the tape. Used when the restore starts at the beginning of the second or later reels of a file-save tape.
- U** After file is restored from current tape, or if end of tape is reached, displays prompt for update and transaction tapes.

Description

RESTORE-FILE restores the dictionary level file and all associated data level files. The restore can be started with any level of save tape: file-save, account-save, update-save, or transaction logging tape. However, if the restore is started with a tape created by either an update-save or transaction logging, that tape must contain the creation of the file.

When RESTORE-FILE is invoked without the A option, the following prompt is displayed:

RESTORE-FILE

Account name on tape:

Enter the name exactly as it is on tape. The following prompt is displayed:

File name:

Enter the file name exactly as it is on tape. RESTORE-FILE searches for the account and file and restores the DICT and any associated DATA sections of the file. When the restore is finished, the following message is displayed:

Restore completed.

The system returns to TCL unless the U option is specified, in which case the following prompt is displayed:

Update/transaction tapes (Y/N)?

If there are no additional update or transaction tapes to be applied, enter N to return to TCL.

If there are additional update or transaction tapes to be applied, enter Y. The data restore options are displayed, similar to the following:

Data restore options:

- U - Unload tape
- n - Skip tape forward 'n' files
- Tn - Switch to tape drive 'n'

Type option and press <CR>, or just press <CR> to continue:

To unload the current tape, enter U. As the tape is rewound and unloaded, the data restore options are redisplayed. When the tape is unloaded, mount the next tape and press RETURN. (If the next tape is on a different drive, enter Tn, where n is the tape drive number.) A tape label similar to the following is displayed:

```
L 2000# time date Transaction log ~01
Seq# of this data tape:    0    0    0    1
Seq# of last data tape:    0    0    0    0
Is this the right tape (Y/N)?
```

If the correct tape has been mounted, enter **Y**. If the correct tape has not been mounted, enter **N**; the prompt is redisplayed. Mount the correct tape and enter **Y**.

When the correct tape is mounted, RESTORE-FILE searches for the account and file and applies any updates. When the end of the tape is reached, messages and a prompt similar to the following are displayed:

```
Restore completed.  
Account: acctname -- was found  
File:      filename -- was found  
Update/transaction tapes (Y/N)?
```

If there are no additional update or transaction tapes to be applied, enter **Y**. The data restore options are displayed as noted above.

Available On Any user account.

See Also ACCOUNT-RESTORE
SEL-RESTORE

REV

REV displays the revision levels of the various software and firmware components of your system.

Syntax

REV

Description

REV displays the revision levels of bisynchronous and asynchronous communications software, firmware, kernel software, ABS (system software), Diagnostics Monitor, and Engineering Change Orders (ECOs) if installed.

REV displays revision information in the following format:

```
Bisync rev.      d.dd
Firmware rev.   xx
Kernel rev.     dddd
Async rev.      ddd
Abs rev.        dddaa
Diags rev.      ddd
ECOS Loaded     dd
```

where:

d	decimal digit
x	hexadecimal digit
a	alphabetic character

Bisync rev.	Indicates the revision level of the bisynchronous communications software. This field is displayed only on systems with bisynchronous hardware.
Firmware rev.	On Ultimate Bull 6000/7000 and LSI systems, refers to the version of firmware in programmable read-only memory (PROM) chips on an Ultimate processor board. This value does not change until the hardware is updated with different PROMs.
Kernel rev.	Indicates the version of the kernel software.

Async rev.	Indicates the version of the asynchronous software.
Abs rev.	Indicates the system revision number of the operating system currently loaded on the computer. You can use the Abs rev. to identify which Boot or SYS-GEN tape was last used to coldstart or file-restore the system.
Diags rev.	Specifies the revision level of the Diagnostics Monitor.
ECOS Loaded	Indicates number of ECOs that have been applied to the system. If there are no ECOs, this field is not displayed.

:REV ↓	Display system revision information.
Firmware rev.	7A
Kernel rev.	853
Async rev.	2534
Abs rev.	210D
Diags rev.	3970
:	

Available On SYSPROG or SECURITY account.

RP-ATT

RP-ATT attaches a virtual reader or punch device.

Syntax

RP-ATT device{=n}

device Can be one of the following:

RDR Attaches a virtual reader device.

PUNCH Attaches a virtual punch device.

=n Specifies the number of the reader or punch device (0 through 7) to attach. If omitted, the default is the next available reader or punch device.

Description

A reader or punch device must be explicitly attached before it can be used to read or punch virtual card images.

Note: Only one reader and one punch device can be attached to a line at any one time.

After a successful attachment, the following message is displayed:

```
[807] RDR (or PUNCH) n attached (CUU=xxx)
```

where:

n Reader or punch device number.

xxx Virtual device channel and unit number for VM.

Once a reader or punch device is attached, it remains attached until detached with RP-DET, or log off.

To spool data to the reader or punch, use the #CP command.

```
:RP-ATT RDR=0.↓  
[807] Reader 0 attached (CUU=040).  
:  
:RP-ATT PUNCH.↓  
[807] Punch 0 attached (CUU=045).  
:
```

Available On Any user account with privilege level 1 or greater on Ultimate S/370 and S/390 systems.

See Also

- #CP
- RP-DET
- RP-PUNCH
- RP-READ

RP-DET

RP-DET detaches an attached virtual reader or punch device.

Syntax

RP-DET device

device Enter one of the following:

RDR Detaches a virtual reader device.

PUNCH Detaches a virtual punch device.

Description

RP-DET detaches the current reader or punch. Once a reader or punch device is detached, it cannot be used to read or punch virtual card images until it is specifically attached via RP-ATT.

```
: RP-DET RDR,|  
:
```

Available On

Any user account with privilege level 1 or greater on Ultimate S/370 and S/390 systems.

See Also

#CP
RP-ATT
RP-PUNCH
RP-READ

RP-PUNCH

RP-PUNCH takes the items from a file, produces one or more virtual cards in fixed-length EBCDIC format or Ultimate format, and passes the cards to the VM spooler for distribution.

Syntax

```
RP-PUNCH filename itemlist {(resize{-blksize}}
RP-PUNCH filename itemlist (U
```

- | | |
|------------------------|---|
| filename | Specifies the file from which RP-PUNCH takes items. |
| itemlist | Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present. |
| (resize-blksize | <p>Specifies the fixed-length in bytes of the output records and blocks, separated by a hyphen. If omitted, the default of 80-80 is used. If the blksize is omitted, the default is the specified resize.</p> <p>If the specified resize is not a multiple of 80, then blksize can be used to optimize the number of 80-byte card images produced to transfer records. Blksize must be a multiple of resize, and for optimization, it is recommended that it be a multiple of 80. For example, 70-140 is valid, but 70-560 is optimized.</p> <p>Selecting a blksize greater than resize permits the compression of records into card images within a block, thereby decreasing the number of card images required to transfer a record.</p> |
| (U | Specifies Ultimate-to-Ultimate file transfer. This eliminates the need for the field definition prompts. |

Description

Use RP-PUNCH to move data between virtual machines on the same host system, or on a network connected via a Remote Spooling Communications Subsystem (RSCS) or other network managers.

The punch device must be attached with RP-ATT before RP-PUNCH can be used.

Use the RP-PUNCH reresize-blksize format to transfer data to a non-Ultimate virtual machine. Use the RP-PUNCH (U format to transfer data from one Ultimate system to another.

When using RP-PUNCH with the U format, no attribute field formatting is needed, since the destination machine is also an Ultimate system. The items are transferred in Ultimate format directly to the virtual cards.

When using RP-PUNCH with the reresize-blksize format, the system issues a series of dash prompts to specify which fields are to be transmitted and the location of those fields in the record. The responses that describe the fields to be output in the record must be entered in the following format:

```
ta(s,l){c}
```

where:

- t** Field type; can be one of the following:
 - L** Left-justified. Pads with blanks on the right.
 - R or T** Right-justified. Pads with blanks on the left. Characters are translated to EBCDIC per the standard translation table.
 - N** Numeric field. Allows the first character on the left to be a minus sign (-); if so, the field is padded with zeros on the left and the minus sign is placed over the rightmost digit. This is known as packed format.

Note: If a field is longer than the size specified in the l parameter below, field types N, R, and T are truncated on the left, and field type L is truncated on the right.

- a** Attribute number. This is the position of the attribute in the item; same as A/AMC on line 2 of the attribute definition item.

- s Start position on record (in range 1- recsize). The attribute byte is placed at this field position in the record. If the start position of a field is greater than the record size, the field is ignored.
- l Length of field. This is the number of bytes that the attribute uses in the record. If the length of a field plus the start position (see s above) exceeds the record size, the field is truncated at the record size.
- c Conversion (optional). This is specified only if the attribute has a conversion code. For example, MD2 for decimal value with two fractional digits, or D2 for a date in MM/DD/YY format.

The conversion code is enclosed in colons if the conversion is to external format; for example, :MD2,; and :D2/; .

The code is enclosed in semicolons if converting to internal format (not normally used); for example, ;MD2,; and ;D2/; .

The following information shows how RP-PUNCH would be used for a file called TEST-FILE:

Card Record Layout:

Fields	<-----NAME----->	<-DATE-><PRICE>	<QY>
	1 2 3 4 5 5 6		
Positions	12334567890.....9012334567890123456789012345...0		
		end-of-record	↑

Note: The card record contains 60 bytes (1-60). Only positions 30-34, 50, and 55-60 are blank. Records are blocked 8 (8 records to a block).

File Layout:

Field:	A/AMC	Conversions
PRODUCT NAME	1	
PURCHASE PRICE	4	D2/
UNIT PRICE	5	MD2,
QUANTITY	11	

PROC to format TEST-FILE:

```
001 PQ
002 ** SAMPLE PROC
003 HRP-ATT PUNCH
004 P
005 HSSELECT TEST-FILE WITH DATE GT 02/26/87
006 STON
007 HRP-PUNCH TEST-FILE (60-480)<
008 HL1(1,29)<
009 HR4(35,8):D2/:<
010 HR5(43,7):MD2, :<
011 HN11(51,4)<
012 H<
0133 P
```

TCL example:

```
:RP-PUNCH DICT TEST-FILE 'ITEMA' 'ITEMB' (60-480)␣
-L1(1,29)␣
-R4(35,8):D2/:␣
-R5(43,7):MD2, :␣
-N11(51,4)␣
```

Available On

Any user account with privilege level 1 or greater on Ultimate S/370 and S/390 systems.

See Also

RP-ATT
RP-DET
RP-READ

The following documents are available from IBM documents (Virtual Machine/System Products):

Document GC19-6200: *VM/SP Planning Guide*

Document GC20-1816: *RSCS User's Guide*

Document GH24-5003: *RSCS Specifications*

Document GH24-5004: *RSCS Networking*

RP-READ

RP-READ reads virtual card images that have either fixed-length records and fields in EBCDIC or ASCII, or Ultimate formatted file data, and stores the data in a file.

Syntax

RP-READ filename (recsize-blksize{,options})

RP-READ filename (U{,options})

filename Specifies the file into which the read items are placed.

(recsize-blksize Specifies the fixed-length (number of bytes) of the input records and blocks, separated by a hyphen.

(U Specifies Ultimate-to-Ultimate file transfer. This eliminates the need for the field definition prompts.

,options

A Specifies data is already in ASCII; if omitted, EBCDIC is assumed and the data is converted to ASCII.

I Displays item-IDs as the records are loaded.

K Generates item-IDs as 6-digit sequential numbers. Used when the item-ID is not present in the data.

O Overlays existing items.

R Rejects entirely any item that contains invalid data such as non-numeric characters, including spaces, in a numeric field.

Note: Only the I and O options can be used with the (U) format.

Description

Use RP-READ to receive data sent by another virtual machine on the same host system, or on a network connected via a Remote Spooling Communications Subsystem (RSCS) or other network manager.

The reader device must be attached with RP-ATT before RP-READ can be used.

Use the RP-READ recsize-blksize format to read data from a non-Ultimate virtual machine. Use the RP-READ U format to read data being transferred from one Ultimate system to another.

When using RP-READ with the U format, no attribute field formatting is needed, since the destination machine is also an Ultimate system. The items are read in Ultimate format directly from the transferred records.

When using RP-READ with the recsize-blksize format, the system issues a series of dash prompts to specify how to divide the input records into fields and where to place the fields as attributes in the item being created.

The first dash prompt expects the item-ID, unless the command has the K option. In that case the first dash prompt expects the first attribute.

Each subsequent dash prompt relates to the next attribute to be loaded in the current item. If an attribute is not to be loaded from the transmitted data, specify S to skip that attribute. Multiple attributes can be skipped by entering a series of S responses on separate lines, or by entering Sn, where n is the number of sequential attributes to skip.

RP-READ builds an item, attribute by attribute. Each attribute can be built by simple input record references, user-entered constants, concatenations, and/or conversions. Use the following format to enter an input record reference that describes an attribute to be loaded:

t (s, l) {c}

where:

t attribute type; can be one of the following:

L Left-justified. Removes trailing blanks.

R Right-justified. Removes leading blanks.

P Packed decimal. Removes high order zeros after conversion.

N Numeric. Must contain only digits 0-9 and sign digit. Removes high order zeros.

- s Start position on record (in range 1- reccsize).
- l Length. This is the number of bytes that the attribute uses on the card.
- c Conversion (optional). This is specified only if the attribute has a conversion code. For example, MD2 for decimal value with two fractional digits, or D2 for a date in MM/DD/YY format.

The conversion code is enclosed in colons if the conversion is to external format; for example, :MD2,; and :D2/; .

The code is enclosed in semicolons if converting to internal format (not normally used); for example, ;MD2,; and ;D2/; .

If a constant should be stored into an attribute (not loaded from the input data), enter the literal enclosed in single quotes (as in 'CA') or in double quotes (as in "CA").

Any simple input record reference can have a conversion (usually to internal format). If the field value in the record is in external format, the conversion to internal format is specified by enclosing the code in semicolons (;). If the conversion is from internal format to external format, the code is enclosed in colons (:). For example, use the following format to convert an 8-character external date to internal format.:

```
R(52,8);D;
```

Concatenations can be built by combining input record references with input record references that have conversions and with constants. Concatenation is indicated by using an asterisk (*). For example the following builds a date by inserting slashes between each pair of characters stored in positions 52/53 and 54/55 and 56/57 on the input record:

```
R(52,2)*/*R(54,2)*/*R(56,2)
```

The following information shows how this command would be used in a proc for a file called INVENTORY-MASTER:

Card Record Layout (Input Record = 100 bytes):

Data	0015001	00525660	12		FLY WHEEL CEN

		1	2 22	3	4 5
Position	12345678901234567890123456789012345678901234567890				
Data	TER	JC200	040679..PPL022570...	C-53	000776J

	5	6	7	8	9 1
Position	12345678901234567890123456789012345678901234567890				0
Field Name	Position	Length	Type of Field		
PART NUMBER	1-7	7	Numeric; no decimal		
PRICE	13-20	8	Numeric; 5 decimal		
SITE CODE	23-24	2	Alphanumeric		
DESCRIPTION	38-62	25	Alphanumeric		
CREATION DATE	64-69	6	MMDDYY		
COST	70-74	5	Packed numeric; 5 decimal		
SALES TO DATE	75-80	6	Numeric; no decimal		
MISC-CODE	86-92	7	Alphanumeric		
MISC-NEG	93-100	8	Negative number		

Sample PROC for INVENTORY-MASTER File

```

001 PQ
002 * SAMPLE PROGRAM RP-READ
003 STOFF
004 RO
005 HRP-READ INVENTORY-MASTER (100-100,0,I)
006 STON
007 HL(1,7)***L(23,2)<           Item-id  PART# * SITE
008 HL(38,25)<                   Attr 1   DESCRIPTION
009 HS3<                          Attr 2-4  Skip (null)
010 HP(70,5)<                     Attr 5   COST; 5 packed decimal
011 HN(13,8);MD35;<              Attr 6   PRICE;3 decimal
012 HS<                            Attr 7   Skip (null)
013 HL(64,2)                       Attr 8   CREATION DATE
014 H*/*                            from MMDDYY to
015 HL(66,2)                        MM/DD/YY to
016 H*/*                            internal format
017 HL(68,2);D;<                   via conversion
018 HL(86,7)<                       Attr 9   MISC-CODE
029 HN(93,8)<                       Attr 10  MISC-NEG
020 HS1<                            Attr 11  Skip (null)
021 HN(75,6)<                       Attr 12  SALES TO DATE
022 P

```

Loaded Record in INVENTORY-MASTER File - Stored output record:

```
0015001*12 (item- )
001 FLY WHEEL CENTER   JC200
002
003
004
005 150504
006 5257
007
008 8479
009 C-53
010 -7761
011
012 22570
```

Available On Any user account with privilege level 1 or greater on Ultimate S/370 and S/390 systems.

See Also

RP-ATT

RP-DET

RP-PUNCH

The following documents are available from IBM (Virtual Machine/System Products):

Document GC19-6200: *VMISP Planning Guide*

Document GC20-1816: *RSCS User's Guide*

Document GH24-5003: *RSCS Specifications*

Document GH24-5004: *RSCS Networking*

RTD

RTD (Radix To Decimal) converts a specified radix number to its equivalent decimal value.

Syntax

RTD {r} n

r Specifies the radix (base) in which the number n is expressed. Any radix from 2 to 16 is valid. If omitted, radix 16 (hexadecimal) is assumed.

n Specifies the number to be converted, must be valid in the specified base. If n is hexadecimal, a negative number can be in the range FFFFFFFFFF to 800000000001 and a positive number can be in the range 0 to 7FFFFFFFFF. If fewer than 12 hex characters are entered, high order zeroes are assumed.

Description

Use RTD to convert a value from another radix to decimal. If the value to convert is invalid in the specified radix, a value of zero (0) is returned.

<pre>:RTD 2 10010 ↵ 18</pre>	<p>Convert 10010 from base 2 to decimal.</p>
<pre>:RTD 2 1012 ↵ 0</pre>	<p>Zero is returned since 2 in 1012 is an illegal digit.</p>
<pre>:</pre>	

Available On

Any user account.

See Also

DTR

RUN

RUN executes a BASIC program.

Syntax

RUN filename item-ID {argument list} {(options)}

filename	Specifies the file containing the program to be executed.
item-ID	Specifies the name of the program to be executed.
argument list	Parameters that must be passed to the program.
(options)	
A	Inhibits entry to the BASIC debugger under all error conditions.
D	Causes the BASIC debugger to be entered before the start of program execution.
E	Forces the program to enter the BASIC debugger when an error occurs.
I	Inhibits initialization of data area when RUN is invoked by a BASIC CHAIN statement.
N	Specifies no automatic end-of-page waiting.
P	Routes output to the spooler.
S	Suppresses run-time warning messages.

Description

For further information on RUN, please refer to the *BASIC Language Reference Guide*.

Available On

Any user account.

RUNOFF

RUNOFF executes the RUNOFF program to output formatted text items prepared by the Ultimate Line Editor.

Syntax

RUNOFF filename {itemlist} {(options)}

filename Specifies the name of the file to be formatted.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

C Inhibits CHAIN and READ.

I Displays next item-ID.

J Suppresses highlighting.

N Specifies no automatic end-of-page waiting.

Nn Overprints n times for boldface.

P Routes output to the spooler.

S Suppresses boldface and underlining at terminal.

U Prints all uppercase.

Description

For further information on RUNOFF, please refer to Appendix D of the *Guide to the Ultimate Editors*.

Available On

Any user account.

RUNPROC

RUNPROC executes a PROC from a specified file.

Syntax

RUNPROC filename procname {parameters}

filename Specifies the file that contains the PROC.

procname Specifies the name of the PROC to be executed.

parameters Specifies parameters required by the PROC.

Description

Use RUNPROC to execute a PROC from any file. The PROC does not have to be defined in the Master Dictionary of the account.

```
:RUNPROC DICT SYSPROG-PL LIST-PLOT-DEVICES (P-  
:
```

Available On

Any user account.

See Also

Ultimate PROC Reference Guide.

S-DUMP

S-DUMP is an Ultimate RECALL command that dumps the contents of a specified file from disk to tape in a sorted sequence.

Syntax

S-DUMP filename {itemlist} {sel-criteria} {HEADER "name"} {sort-criteria} {(options)}

filename	Specifies the file to be dumped to tape.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be sorted and dumped. Also known as a WITH clause.
HEADER "name"	Specifies a tape label "name."
sort-criteria	Specifies the sorting sequence. Also known as a BY clause.
(options)	
H	Suppresses the tape label.
I	Suppresses listing dumped items to the terminal.

Description

For further information on S-DUMP, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

S/1-DUMP

S/1-DUMP dumps the Series/1 internal memory into a specified disk file.

Syntax

S/1-DUMP filename item-ID (n)

filename Specifies the destination file; requires a modulo of at least 101,1.

item-ID Specifies a unique item in the filename. The item-ID is used as a prefix for items written to the file containing data from the Series/1. This can be any unique string, and could contain information about which S/1 had the failure. Typically this prefix is xxxmmdd, where xxx is the real address of the S/1, mm is the month, and dd is the day.

(n) Specifies a device number from 0-3.

Description

When S/1-DUMP is invoked, the system displays the item-IDs of the items as they are written to the destination file. When the dump is completed, the Series/1 checks certain components.

If the S/1-DUMP does not encounter any errors, it automatically reinitializes the system. Otherwise, there is a flashing error code in the S/1 front panel lights, and the terminals cannot operate.

If S/1-DUMP does not automatically reinitialize the system, you must reinitialize via an S/1-LOAD command. You should also T-DUMP the destination file and send it to the Ultimate TAC for diagnosis.

The Series/1 processor has an internal trace table that traces I/O requests and interrupts from both the terminals and the channel (host) attachment. This table, which is dumped by S/1-DUMP, aids in diagnosing any runtime problems encountered.

S/1-DUMP

:S/1-DUMP	ULTIMATE	BC01225	(2↓)
:S/1-DUMP	YCOMPANY	AC01224	(1↓)

Available On SYSPROG or SECURITY account on Ultimate S/370 and S/390 systems.

See Also S/1-LOAD

S/1-LOAD

S/1-LOAD reinitializes a Series/1 front-end asynchronous communications processor.

Syntax

S/1-LOAD (n

(n Specifies a device number from 0-3.

Description

Use S/1-LOAD to reinitialize a Series/1 front-end processor, such as when all the terminals connected to a particular S/1 are not working properly, but the computer is operating.

S/1-LOAD clears the information between the terminals connected to the S/1 and the computer, then reloads the communications software. Finally, it restarts the communications between the terminals and the computer. The screen on each terminal is cleared and the following message is displayed:

```
VERSION X.YY
```

where:

X.YY Version code for the Series/1 programs.

When you press RETURN at each terminal, the terminal restarts its screen display at some point just prior to when the S/1-LOAD is requested (probably in the debugger). To continue, enter G.

Note: To avoid loss of AutoBaud functions, do not press <BREAK> until communications have been re-established.

All lines come up at 9600 baud unless the baud rate of a line has been set via SET-BAUD or in DICT ACC.

Available On

SYSPROG or SECURITY account on Ultimate S/370 and S/390 systems.

See Also

S/1-DUMP

SAVE

SAVE performs a file-save. SAVE is executed by each of the file-save processes (file-save, account-save, and update-save), or can be called directly from TCL.

Syntax

SAVE {(options)}

(options)

- A Saves all files regardless of the file save option (DX, DY, DV, or DW) specified in the D/CODE in attribute 1 of the file definition item.
 - B Specifies backward-release compatible (pre-190 release); used when the file save will be restored to a pre-190 system. No Rev. 190 and above file information is saved to tape, including indexes. Does not save items larger than 32K (extended-format items), but does display their item-IDs. Items in extended-format smaller than 32K are saved in regular item format.
- Note:* When using the B option, separate any items over 32K into multiple items.
- D Saves the file area. If omitted, no files are saved.
 - E Does not save file indexes to tape.
 - F Displays the file names as they are saved. If omitted, only the SYSTEM file and the account names are displayed.
 - G If Group Format Errors (GFES) are detected, the system truncates the group at the end of the last good item. It also attempts to fix the links between the frames and changes an extra segment mark in an item to X'DF'. (If the S option is specified, GFES are logged in the STAT-FILE regardless of the G option.
 - I Saves an individual account. Issues a prompt for the account name.

-
- L** When used in conjunction with the I option, sends a message to the logger telling it to end the current log tape and start another. Has no effect unless the I option is also specified and transaction logging is currently active.
 - P** Routes output to the spooler.
 - R** Resets the group-updated flags as files are saved. This option is normally used as part of a FILE-SAVE or PART-UPDATE-SAVE. If present, the SEQ# for the R-option is incremented.
 - S** Stores one STAT-FILE item for each file saved. After the file-save, the STAT-FILE contains file statistics that can be listed and used to reallocate files. (See FILE-SAVE, LIST-FILE-STATS, and REALLOCATE commands.)
 - T** Routes file-save output to magnetic tape; if omitted, nothing is written to magnetic tape. However, if the S option is present, the STAT-FILE is still updated. Issues prompt for tape label name: "file-save tape label ="; this name is written to tape as part of the tape label.
 - U** Specifies update-save. If omitted, a full file-save is assumed. If used, the SEQ# for the update-saves is incremented. If omitted, the SEQ# for full file-saves is incremented (unless the Z option is present).
 - V** Ensures that files whose D-pointers have a D/CODE of DV are saved. Normally DV is treated the same as DX.
 - W** Ensures that files whose D-pointers have a D/CODE of DW are not saved (treated like DX). Normally these files are saved.
 - Z** Suppresses SEQ# incrementing, and creates a tape with all-zero SEQ# values. This option is used for transfers of current system to another system, and for making SYS-GEN tapes.

Description

Ultimate recommends that only experienced users execute the SAVE command. Instead, use the SYSPROG file-save menu, or one of the following file-save PROCs for file-save operations:

SAVE

- **SYS-GEN** Create a SYS-GEN tape. Same as SAVE (D,F,G,S,T,Z)
- **FILE-SAVE** Full file-save. Same as SAVE (D,F,R,S,T)
- **ALL-UPDATE-SAVE** Complete update-save, does not reset update flags. Same as SAVE (D,F,T,U)
- **PART-UPDATE-SAVE** Partial update-save, does reset update flags. Same as SAVE (D,F,R,T,U)

Or, use the file-save menu from the SYSPROG account.

Unless the A option is used, SAVE does not save files whose file definition items have a DX as their D/CODE in line 1. Therefore, any data file, dictionary, or account can be exempted from file-saves. The STAT-FILE does not reflect these files.

SAVE does save files whose file definition items have a DY code, but, unless the A option is used, none of the items in the file are saved. For example, the data section of STAT-FILE has a D/CODE of DY because the data is not valid after a file-restore and does not need to be saved.

If the file definition item for the dictionary has a D/CODE of DY, none of the items in the dictionary (except D-pointers) are saved. However, the data sections are still saved unless the file definition item for a data section has a DY. STAT-FILE includes the number of items in all files with DY as their D/CODE.

During update-saves, groups marked for reallocation (with a reallocation parameter in the file definition item) are always saved if the new modulo and separation are to be different from the existing ones.

Also, any DC and DZ files are saved. These file types are supported for compatibility with older systems and software releases, but they have no special meaning in current Ultimate system releases. DCX and DCY files, if any, are processed as DX and DY files, respectively.

During a file-save operation, SAVE locks groups as it saves them. This prevents transient Group Format Errors (GFEs) from occurring on other lines. Up to four groups at a time can be locked by SAVE. The groups to be locked are those that contain the following:

- SYSTEM dictionary pointer for the account being saved.
- File dictionary pointer for the dictionary of the file being saved; this is a group in the account's MD.
- File data pointer for the data file being saved; this is a group in the file's dictionary.
- Data in the group currently being saved.

If someone on another line tries to access data in a locked group, the terminal issuing that command hangs until the file-save finishes saving all items in the locked group and unlocks the group.

At the end of each account, an end-of-file (EOF) mark is written to tape. The last record can be filled with blank pad characters after the end of valid data.

Available On SYSPROG or SECURITY account.

See Also

ALL-UPDATE-SAVE
FILE-SAVE
FILEOPT
LIST-FILE-STATS
PART-UPDATE-SAVE
REALLOCATE
SYS-GEN

System Management Guide for information on file-save, update-save, and system generation procedures.

SAVE-LIST

SAVE-LIST makes a permanent select-list item from a temporary select-list produced by SELECT, SSELECT, QSELECT, GET-LIST, or SEARCH with the S option.

Syntax

SAVE-LIST {listname}

listname Specifies the name of the saved select-list. If omitted, the select-list is assigned a null item-ID ("").

Description

Use SAVE-LIST to save and catalog a select-list and reuse it as a permanent item in the system.

Note: SAVE-LIST requires a file or file synonym called POINTER-FILE to exist in the account issuing the command.

SAVE-LIST must be entered immediately following the command that created the select-list to be saved.

SAVE-LIST catalogs the select-list. Cataloging saves the list in frames retrieved from the available space, and adds or updates the pointer to the select-list in the POINTER-FILE dictionary.

Note: If a select-list was previously saved with the specified list-name, it is overwritten by any subsequent SAVE-LIST command that specifies the same list-name or null name. No warning is issued.

After the select-list is cataloged, the system displays the following message:

```
'list-name' saved - nn frames used.
```

where:

list-name Item-ID of the saved select-list.

nn Number of overflow frames used to store the select-list.

```
:SAVE-LIST CUST.LIST␣  
'CUST.LIST' saved - 3 frames used.  
:
```

Available On Any user account.

See Also DELETE-LIST
EDIT-LIST
GET-LIST
Ultimate PROC Reference Guide.
Ultimate RECALL and Ultimate UPDATE User Guide.

SAVE-PARITY

SAVE-PARITY allows input of 8-bit transparent data on a specified line, instead of the default communication format of a 7-bit ASCII character plus a parity bit.

Syntax

SAVE-PARITY {n}

n Specifies the number of the line to be set to the SAVE-PARITY mode. If omitted, the current line is assumed.

Description

Use SAVE-PARITY whenever communications require input to be received in 8-bit transparent mode.

SAVE-PARITY sets the receive-data mode so that the high order bit is not stripped from the incoming data stream. This allows transmission of 8-bit transparent data.

If the communication device does not support 8 data bits and parity transfers, parity must be disabled for the line with SET-BAUD.

Once a line is set to the 8-bit mode, it remains in that mode until it is reset to the default by the STRIP-PARITY command.

Note: A coldstart resets all lines to the system default mode. A warmstart, however, does not change the current mode on any line.

```
: SAVE-PARITY 2,1  
:
```

Available On

SYSPROG or SECURITY account.

See Also

SET-BAUD
STRIP-PARITY

SE

SE invokes the Ultimate Screen Editor.

Syntax

SE {filename} {itemlist} {(L)}

filename Specifies the name of the file to be edited. If omitted, the system prompts for it.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. If omitted, the system prompts for it.

(L Loads function keys.

Description

For further information on SE, please refer to the *Guide to the Ultimate Editors*.

Available On

Any user account.

SEARCH

SEARCH examines one or more items for occurrences of one or more specified character strings.

Syntax

SEARCH filename {itemlist} {(options)}

filename Specifies the file containing the items to be searched.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

- I** Searches the item-IDs as well as the item contents for the specified search string.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Generates a select-list containing the item-IDs of the items that match the search string.
- U** Ignores distinction between uppercase and lowercase characters in the search strings and items. Output is in all lowercase letters.

Description

Use SEARCH whenever you need to locate one or more specific character strings in file items. As SEARCH processes each item, it reports on the occurrence of the string, or builds a select-list.

When SEARCH is invoked, it displays the following prompt:

```
String? -
```

Enter the first character string to be searched for. The String? prompt is redisplayed. An additional string can be entered at each occurrence of the prompt. To end display of the String? prompt, press RETURN without entering a string.

A search string can contain blanks and one or more wild card (^) characters. The wild card character can be used anywhere in the search string, except as the first character of the string.

The system searches each item for each of the specified search strings. If a match is found, SEARCH displays the associated item-ID, followed by the matching information.

If the S option is used, SEARCH builds a select-list of each item containing the specified string. Note that even though an item can contain multiple search strings, no item-ID is added more than once to a select-list.

```
SEARCH MYFILE ITEM1 ITEM2.
String?- TAPE^
String?- BLOCK=^^
String?-

ITEM1
003 TAPE1 IS ON-LINE AND READY.
020 TAPE2 IS ON-LINE AND READY.
BLOCK=8192.

ITEM2
004 TAPES ARE ALL ORDERED.
```

Available On SYSPROG or SECURITY account.

SECURITY

SECURITY displays the main menu of the SECURITY account.

Syntax

SECURITY

Description

SECURITY displays the Ultimate Accounts Manager menu (also known as the Security Main Menu).

Note: SECURITY only works in the SECURITY account.

The Ultimate Accounts Manager menu allows the system manager to establish system and terminal security, create, rename, or delete user accounts, and display terminal logon failures. The system manager can also access the on-line security documentation from this menu.

When invoked, SECURITY displays the following menu:

```
*****
*           The ULTIMATE Accounts Manager           *
*           Version n   date                         *
*****

1. System Security Specifications
2. Terminal Security Specifications
3. Create/Update an Account
4. Rename an Account
5. Account Save to Tape
6. Account Restore from Tape
7. Delete an Account
8. Display Terminal Logon Failures
9. Security System Documentation
10. Delete Q-pointer Account

Enter Selection, 'TCL', or 'OFF'
```

Note: For Ultimate S/370 and S/390 systems, this menu includes item 11, Enter Access Code for this Machine.

At the Enter Selection prompt, enter the number of the desired option. The screen for the selected option is then displayed.

To return to TCL, enter TCL. To log off, enter OFF.

Available On SECURITY account.

See Also ACCESS-CODE
ACCOUNT-RESTORE
ACCOUNT-SAVE
CREATE-ACCOUNT
DELETE-ACCOUNT
RENAME-ACCOUNT
SECURITY-STATUS
TERMINAL
UPDATE-ACCOUNT
System Management Guide for information on the SECURITY account and menus.

SECURITY-STATUS

SECURITY-STATUS allows the system manager to inspect and modify system security parameters.

Syntax SECURITY-STATUS

Description SECURITY-STATUS allows the system manager to enable or disable assembly code operations, security features in SYSPROG, and logon monitoring. It also allows the system manager to reactivate lines disabled due to logon violations.

When invoked, SECURITY-STATUS displays the following Security Feature Status Control screen:

```
Security Feature Status Control

1) Assembly Code Modification Capability (E or D) : Enabled
2) Enable Security Features in SYSPROG (E or D) : Enabled
3) Logon Error Recording and Control (E or D) : Disabled

4) Number of Sequential Logon Errors Before Disablement (#):10
5) Duration of Disablement (HH:MM:SS) :00:02:00

6) Number of Logon Errors Per Day Before Disablement (#):20
7) Duration of Disablement (HH:MM:SS) :00:02:00

8) Reactivate Line Disabled Due to Logon Failures (#) :

Enter Option (#,EX,FI) :
```

Options 4-7 are the default for all lines unless otherwise specified on a per-line basis via the TERMINAL command.

At the Enter Option: prompt, enter an option number, **EX** to exit without saving your changes, or **FI** to file and save your changes.

Available On SECURITY account.

See Also TERMINAL
System Management Guide for information on setting up system security.

SEL-RESTORE

SEL-RESTORE selectively restores items from a file-save tape or account-save tape.

Syntax

SEL-RESTORE filename {itemlist} {(options)}

filename Specifies the file to which items in the itemlist should be restored. Also known as the destination file.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

- A** Specifies that the tape is already positioned in the desired account. When specified, the Account name on tape: prompt is not displayed.
- C** Considers every item before the next D-pointer on tape or the end-of-file (EOF) mark for the selective restore. This feature ensures that data can be restored even if a D-pointer is damaged on the tape. You must also use the N option when you use the C option.
- E** Restores every version of an item or items that can be found on tape. System-generated item-IDs will be used for duplicate copies of items; the original item-ID will be stored as attribute one of the item (attribute six for CC-pointer or CL-pointer items). Must be used with the U option; cannot be used with the O option.
- I** Inhibits display of item-IDs of restored items.
- N** Identifies the file on tape by its file number. If this option is present, the command prompts for the file number with the File#?" prompt.
- O** Overwrites items currently on the file.
- S** Skips initial forward spacing of the tape. Used when the restore starts at the beginning of the second or later reel of a file-save tape.

- U Prompts for update and transaction tapes when the specified items have been restored; the end of the file (or end of tape set if the file has not yet been found) is reached on a file-save, account-save, or update save tape; or the end of a transaction log tape is detected.

Description

Use SEL-RESTORE to load items from a file on an account-save or file-save tape. You must be logged on to the account into which the file is to be restored, or have a Q-pointer to the destination file. SEL-RESTORE assumes that the save tape containing the file has been mounted.

Note: If SEL-RESTORE is used from a SYS-GEN tape, you must first execute four T-FWD commands (3 on S/370 and S/390 systems) from the tape load point before restoring the file. This operation is necessary to bypass the cold-load and ABS-load sections on the SYS-GEN tape.

When SEL-RESTORE is invoked (without the A or N options), the following prompt is displayed:

Account name on tape?

Enter the account name under which the file was saved on tape. The following prompt is displayed:

File name?

Enter the name under which the file was saved.

Hint: To obtain a file listing if none is available, use a non-existent accountname and filename. As SEL-RESTORE searches the tape for this non-existent data, all filenames and their associated file numbers are displayed.

If SEL-RESTORE is invoked with the N option, the following prompt is displayed:

File#?

Enter the file number from the STAT-FILE listing associated with the filename on the STAT-FILE listing for this file-save tape.

SEL-RESTORE

As the tape is searched, its filenames and file numbers are displayed. Filenames are indented one space for account names, two spaces for dictionaries, and three spaces for data filenames.

To restore both dictionary and data sections of a file, restore the DICT first (DICT filename). Since dictionary items follow data items, in a large file there can be a considerable wait between the time the file is found and the actual restore.

The tape can be moved backward with T-BCK, or forward with T-FWD. Then SEL-RESTORE with the A or N options can be invoked. This can be faster than restarting the tape from the beginning when restoring both the dictionary and data sections of a file, or when restoring multiple files.

When the restore starts at the second or later reel of a multi-reel file-save, and if the beginning of the tape is not at a file mark, the SEL-RESTORE automatically forwards to the beginning of the next file. However, the S option can be used to inhibit this forward spacing.

To restore items in the SYSTEM dictionary, such as Q-pointers, use SEL-RESTORE with the N and C options, and File# = 1. Remember that this is the last file on the tape. On a multi-reel file-save, mount the last reel, and also use the S option.

```
: SEL-RESTORE WP DOC1 (A) ↓
```

```
File name? WP ↓
```

Available On

Any user account.

See Also

ACCOUNT-SAVE
ACCOUNT-RESTORE
FILE-SAVE
LIST-FILE-STATS
RESTORE-FILE
SAVE
T-BCK
T-FWD

System Management Guide for information on saves and selective restores.

SELECT

SELECT is an Ultimate RECALL command that creates a select-list from specified file items. The select-list can contain item-IDs or attribute data.

Syntax

```
SELECT filename {itemlist} {sel-criteria} {output-  
specifications} {print-limiters}}
```

filename	Specifies the file from which items should be selected.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be selected. Also known as a WITH clause.
output-specifications	Specifies the attributes and values used to create the select-list.
print-limiters	Restricts the printing of output specification to values that meet the limit conditions.

Description

For further information on SELECT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

SET-BAUD

SET-BAUD sets and displays the baud rate and other elements of protocol for lines using asynchronous communications.

Positional Syntax

SET-BAUD {n/Z,r,c,s,p,e,x,t} {(P)}

Keyword Syntax

```
SET-BAUD {LINE = n/Z}
          {BAUD = r}
          {DATABITS = c}
          {STOPBITS = s}
          {PARITY = p}
          {ECHO = e}
          {XON/XOFF = x}
          {TYPEAHEAD = t}
          {(P)}
```

Note: If parameters are omitted, SET-BAUD displays the values for the current line. For any parameter omitted from the command, its current value is used.

SET-BAUD positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
n/Z	LINE = n/Z	Specifies the line for which baud rate is to be set or displayed. If omitted, the current line is assumed. Use the letter Z to display all lines.
r	BAUD = r	Specifies baud rates in bits per second. See Description for a list of valid baud rates by platform
c	DATABITS=c	Specifies the character length in number of bits; values are 5, 6,7, or 8.
s	STOPBITS=s	Specifies the stop bit in number of bits; values are 1 or 2.

p	PARITY=p	Specifies the parity bit. Values for keyword format are ODD, EVEN, and NONE. Values for positional format are: O, E, and N.
e	ECHO=e	Specifies echo status. Status values are ON or OFF.
x	XON/XOFF=x	Specifies XON/XOFF status. Status values are ON or OFF.
t	TYPEAHEAD=t	Specifies TYPEAHEAD status. Status values are ON or OFF.
(P	(P	Routes output to the spooler.

Description

Use SET-BAUD to display the current characteristics for one or all lines, or to set new characteristics on a line.

Caution: *SET-BAUD should be used only when the specified line is not active, since it can otherwise affect ongoing data transfer.*

When invoked without parameters, SET-BAUD displays the following for the current line:

```
Line Line Char Stop Parity Echo Xon/Xoff TpAhead
Speed Leng Bits
```

Note: *Lines on an S/370 and S/390 systems' Series/1 will initialize at 9600 baud, 8 data bits, 1 stop bit, and no parity. Lines on a 4-way (Feature 2096) will automatically change their baud rate to match the terminal's baud rate; however, parity and stop bits do not automatically adjust.*

<code>:SET-BAUD 10,,,E↓</code>	Set parity to EVEN on line 10.
<code>:SET-BAUD 4 BAUD = 19200↓</code>	Set baud rate on line 4 to 19200.
<code>:SET-BAUD Z↓</code>	Display settings for all lines.

SET-BAUD

Valid baud rates by platform are:

Baud Rates	S/370 and S/390 (Series/1)	S/370 and S/390 (HIFAS)	LSI	Bull 6000/7000	1400
38400		*			
19200	*	*	*	*	*
9600	*	*	*	*	*
7200	*	*	*		
4800	*	*	*	*	*
3600	*	*		*	*
2400	*	*	*	*	*
2000	*			*	*
1800	*	*	*	*	*
1200	*	*	*	*	*
1050				*	*
600	*	*	*	*	*
300	*	*	*	*	*
200			*	*	*
150		*	*	*	*
134			*	*	*
110		*	*	*	*
75		*	*	*	*
50		*	*	*	*

Available On SYSPROG or SECURITY account.

SET-DATE

SET-DATE changes the system date.

Syntax

SET-DATE **dd mon {yy{yy}}**
mm dd {yy{yy}}

- dd** Specifies the numeric form for day (1-31); a leading zero is not required.
- mon** Specifies the alpha form for month. Must be the first three letters of the month, for example, MAR for March.
- mm** Specifies the numeric form for month (1-12); a leading zero is not required.
- yy{yy}** Specifies the desired year. If omitted, the current year is assumed. If present, it can be a 2-digit or 4-digit number.

Note: Any non-numeric character can be used for delimiters.

Description

Use SET-DATE to change the system date. The result is always displayed as follows:

```
hh:mm:ss dd mon yyyy
```

If the numeric month form is used, the command assumes the first number entered is the month.

The system updates the date at midnight (00:00:00).

SET-DATE

```
:SET-DATE 04/9/91.↓  
10:05:39 09 APR 1991  
  
:SET-DATE SEP 03 91.↓  
10:06:02 03 SEP 1991  
  
:SET-DATE 4 MAR 1991.↓  
10:06:34 04 MAR 1991
```

Available On SYSPROG or SECURITY account. This command is not available on Ultimate S/370 and S/390 systems.

See Also

- DATE
- SET-TIME
- TIME

SET-FILE

SET-FILE creates or updates a file synonym definition item called QFILE in an account's Master Dictionary.

Syntax

SET-FILE {accountname} {filename} {systemname} {(options)}

accountname Specifies the name of the account in which the specified file is defined. If omitted, the system prompts for it; at the prompt, to use the value from the current QFILE item, enter a backslash (\).

filename Specifies the name of the file to be used. If omitted, the system prompts for it; at the prompt, to use the value from the current QFILE item, enter a backslash (\).

systemname In an UltiNet environment, specifies the system containing the account and file. If omitted, assumes the current system.

(options)

- O** Overwrites any existing Q-pointer called **filename**; used with the S option.
- S** Creates a Q-pointer called **filename** (as well as one called QFILE) if it does not already exist.

Description

Use SET-FILE to create a file synonym definition item, also known as a Q-pointer. A Q-pointer allows you to access a file in another account, or to define a synonym name for a file in the same account. Q-pointers have a D/CODE (attribute 1) value of Q.

SET-FILE sets up an item called QFILE in the current Master Dictionary as a Q-pointer to the specified file. QFILE is a temporary pointer that changes with every SET-FILE executed in the account. To create a permanent Q-pointer named filename, use the S option.

If accountname is omitted in the command statement, the following prompt is displayed:

SET-FILE

Account name?

Enter the name of the account, or press **RETURN** to exit to TCL.

If filename is omitted in the command statement, the following prompt is displayed:

File name?

Enter the name of the file, or press **RETURN** to create a pointer to the specified account's Master Dictionary.

If there is already an item in the MD with the same name as filename, and the S option is specified, the following message is displayed:

```
[415] 'filename' exists on file.
```

When the Q-pointer is successfully created, the following message is displayed:

```
'QFILE' updated
```

```
: SET-FILE CUSTOMER ADDRESS.↓  
'QFILE' updated  
:
```

Available On Any user account.

See Also *System Management Guide* for information on file synonym definition items (Q-pointers).
UltiNet User's Guide.

SET-LANGUAGE

SET-LANGUAGE specifies the language setting for the current line, or displays the current language setting for a specified line or for all lines.

Syntax

```
SET-LANGUAGE {lc}
              {n}
              {?}
```

- lc** Specifies the two-character language code to be set for the current line. The default language code is US, for English language as used in the United States.
- n** Displays language setting for the specified line.
- ?** Displays language setting for all lines on the system.

Note: If parameters are omitted, the language setting for the current line is displayed.

Description

Use SET-LANGUAGE to display or change the current language setting.

SET-LANGUAGE stores the current language setting in the dictionary of the ACC file in the item for each line. The pointers to the ERRMSG file and the PROCLIB file for the current user are changed to the data level corresponding to the current language code.

Language codes are defined using the Ultimate UltiKit® application.

: SET-LANGUAGE FR.↓	Set the language code for the current line to French.	
: SET-LANGUAGE.↓	Display the language code for the current line.	
Line #	Language Code	Language Name
3	FR	Francais
:		

Available On

Any user account.

SET-LEVEL-PUSH

SET-LEVEL-PUSH activates or deactivates TCL level pushing. You can also designate function keys for push, pop, and refresh operations; set the output buffer size for each level; and specify a startup command to execute at each level push.

Positional Syntax

```
SET-LEVEL-PUSH {n},{status},{push},{pop},{refresh},
               {buff},{startup}
```

Keyword Syntax

```
SET-LEVEL-PUSH {LINE = n}
               {STATUS = status}
               {PUSH = push}
               {POP = pop}
               {REFRESH = refresh}
               {BUFFER = buff}
               {STARTUP = startup}
```

Note: If parameters are omitted, level pushing values for the current line are displayed.

SET-LEVEL-PUSH positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
n/*	LINE = n	Specifies the line that should have level pushing parameters displayed or modified; * displays all lines. If omitted, the current line is assumed.
status	STATUS = status	Turns level pushing ON or OFF. The default is OFF.
push	PUSH = push	Designates a function key to perform the push operation. Allowable formats are Fn (Function Key n) or SFn (Shift/Function Key n). If omitted, the default is F6. You can also use <CTRL-P> to push a level.

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
pop	POP = pop	Designates a function key to perform the pop operation (go back one TCL level). Allowable formats are Fn (Function Key n) or SFn (Shift/Function Key n). If omitted, the default is F7. You can also use <CTRL-O> to pop a level.
refresh	REFRESH = refresh	Designates a function key to perform refresh of the current screen. If omitted, the default is F8.

Caution: *Make sure that push, pop, and refresh function keys or CTRL key sequences do not conflict with function keys or CTRL key sequences of other programs that run on the same line.*

buff	BUFFER = buff	Specifies size in bytes of the buffer that captures output for each level. The default size is 8000 bytes; maximum size is 32000 bytes and minimum size is 500 bytes. Any output in excess of the maximum is discarded by the system.
-------------	----------------------	---

startup	STARTUP = startup	Specifies a program or command, including parameters, to be executed at the beginning of each level push.
----------------	--------------------------	---

Note: *If the startup string contains string delimiters such as single quotes ('), double quotes ("), or backslashes (\), the entire startup string must be enclosed in another, different set of string delimiters.*

Description

SET-LEVEL-PUSH allows you to enable or disable TCL level pushing, and to specify level pushing and popping parameters.

If the amount of data for a level to be stored in the buffer exceeds the capacity of the buffer, the following prompt is displayed:

SET-LEVEL-PUSH

Output has been lost; still PUSH <Y/N=CR> :

To cancel the push request, press **RETURN**; the system continues at the current level. To push the level, enter **Y**; when you return to the current level, data can be missing from the screen display.

```
:SET-LEVEL-PUSH␣           Display level pushing settings
                             for the current line.

Port  Status  <PUSH>  <POP>  <REFRESH>  Buffer  Startup
22    Off
:
:SET-LEVEL-PUSH  ON␣       Turn on level pushing for the
                             current line.

Port  Status  <PUSH>  <POP>  <REFRESH>  Buffer  Startup
22    On     F6      F7     F8         8000
:
:SET-LEVEL-PUSH 6,,,32000␣ Set output buffer size for line
                             6 to its maximum, without
                             changing other settings.

Port  Status  <PUSH>  <POP>  <REFRESH>  Buffer  Startup
6     On     F6      F7     F8         32000
```

Available On Any user account.

See Also LEVEL-EXIT
SHOW-LEVELS
Chapter 1 of this document for further information on TCL level pushing.

SET-LOGOFF

SET-LOGOFF sets up a line to automatically log off if Data Set Ready (DSR) drops.

Syntax

SET-LOGOFF {n}

n Line for which automatic logoff should be set. If omitted, the current line is assumed.

Description

Use SET-LOGOFF for a specified line to automatically log off the line whenever a drop in DSR, such as Carrier Detect (CD) or Clear To Send (CTS), is detected.

On Ultimate 1400 systems, SET-LOGOFF also logs off the line when Data Terminal Ready (DTR) or Request To Send (RTS) occurs.

```
: SET-LOGOFF 3-J  
:
```

Available On

SYSPROG or SECURITY account on Ultimate Bull 6000/7000 systems and Ultimate 1400 systems.

See Also

RESET-LOGOFF

SET-LPTR

SET-LPTR sets a specified maximum for page width (line length) and page depth (lines per page) on output from the line printer.

Syntax

SET-LPTR

Description

SET-LPTR is an alternative to using PRINTER or TERM to set page format for the line printer. When invoked, SET-LPTR displays the following prompt:

```
PRINTER PAGE WIDTH (# COLUMNS)?
```

Enter the desired page width (from 16-465 columns), or press **RETURN** to specify the default page width of 140 columns. The following prompt is displayed:

```
PRINTER PAGE DEPTH (# LINES)
```

Enter the desired page depth (from 0-132 lines), or press **RETURN** to specify the default page depth of 60 lines per page. When both entries have been made, the system displays the current line printer settings.

```
: SET-LPTR.
PRINTER PAGE WIDTH (# COLUMNS)? 80.
PRINTER PAGE DEPTH (# LINES)? 59.
      Terminal Printer
Page width:      79      80
Page depth:      24      59
Line skip :      0
LF delay  :      1
FF delay  :      5
Backspace :      8
Term type :      S
:
```

Available On

Any user account.

See Also

PRINTER
TERM

SET-STACK

SET-STACK displays or changes parameters for the TCL stack.

Positional Syntax

SET-STACK {n},{status},{sents},{clear},{one.sent} {{P}}

Keyword Syntax

```
SET-STACK {LINE = n}
          {STATUS = status}
          {SENTENCES = sents}
          {CLEAR= clear}
          {ONE.SENTENCE = one.sent}
          {{P}}
```

Note: If parameters are omitted, SET-STACK displays the stack settings for the current line.

SET-STACK positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
n	LINE = n	Specifies the number of the line for which the TCL stack should be set or displayed. An asterisk (*) sets or displays the stack parameters for all lines in the system.
status	STATUS = status	Turns the TCL stack ON or OFF for the specified line. Default is ON. When the stack is OFF, no commands are stacked, although the stack can still be displayed with the VIEW command.
sents	SENTENCES = sents	Specifies the number (from 1-120) of command statements to be saved in the stack. Default is 32.
clear	CLEAR = clear	Specifies whether or not to clear the TCL stack at logoff; acceptable values are YES and NO, default is YES (CLEAR).

SET-STACK

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
one.sent	ONE.SENTENCE = one.sent	Specifies whether or not to save only one occurrence of a command statement in the stack; acceptable values are YES and NO, default is NO. Saving only one occurrence is useful if the same commands are entered often during a session, such as EDIT, COMPILE, and RUN, and you do not want the stack to fill up with these commands.
(P	(P	Routes settings to the spooler.

Description

Use SET-STACK without parameters to display settings for the current line; enter parameters or keywords to change desired settings.

: SET-STACK.J					Display settings for the current line (line 1).
Line	Stacker Status	Saved Sentences	Clear at Logoff	One Copy of Sentence	
1	On	32	Yes	Yes	
:					

Available On

Any user account with privilege level 1 or greater. Must have privilege level 2 to change settings for another line.

See Also

CLEAR-STACK

VIEW or . (period)

WY60

Chapter 1 of this document for information on the TCL stack.

SET-SYM

SET-SYM specifies a symbolic debugger file for use by the current line.

Syntax

SET-SYM filename {(T}

filename Specifies the name of a symbol file containing names for assembly-level addresses for the current line.

(T Indicates that the **filename** specified above is a secondary file containing symbols that are not in the default system debugger file (usually PSYM). If omitted, makes **filename** the primary debugger file for the line.

Description

Use SET-SYM to set a specified file as the debugger symbol file for the current line. The specified file can replace the default symbol file for the system debugger (usually PSYM in the SYSPROG account), which is set at coldstart by :DEBUG-PSYM. Or, if the T option is used, the specified file can be secondary to the default system debugger file to provide local symbols. You may wish to use a filename such as TSYM for this purpose.

Once SET-SYM is executed, the debug symbolic display commands backslash (/) and asterisk (*) can be used.

Available On

SYSPROG or SECURITY account.

See Also

Ultimate Assembly Language Reference Guide.

SET-TERM

SET-TERM sets the default terminal and printer characteristics for all subsequent logons on all terminals.

Positional Syntax

SET-TERM {w},{d},{ls},{lfd},{ffd},{bs},{prw},{prd},
{code}

Keyword Syntax

SET-TERM {WIDTH = w}
{DEPTH = d}
{LINESKIP = ls}
{LFDELAY = lfd}
{FFDELAY = ffd}
{BACKSPACE = bs}
{PRWIDTH = prw}
{PRDEPTH = prd}
{TYPE = code}

Note: If parameters are omitted, SET-TERM displays settings for the current line.

SET-TERM positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
w	WIDTH=w	Specifies the number of characters per line on the terminal, up to 465.
d	DEPTH=d	Specifies the number of lines per screen on the terminal.
ls	LINESKIP=ls	Specifies the number of blank lines displayed before the start of the next screen page.
lfd	LFDELAY=lfd	Specifies the number of delay or idle characters to output following each RETURN or line feed. Used on terminals that require a pause after RETURN or line

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
		feed because the CPU generates characters faster than the terminal can accept them.
ffd	FFDELAY=ffd	<p>Specifies action to take when a terminal or printer new-page condition occurs. (Terminal new-page occurs at term-page-depth + term-line-skip. Printer new-page occurs at lptr-page-depth.)</p> <p>Terminal actions include no action, or sending a clear-screen character sequence and n delay characters.</p> <p>Printer actions include no action, or sending a top-of-form character sequence.</p> <p>If the value entered is 0 (zero), no clear-screen or top-of-form character sequence is sent to either the terminal or the printer. If the value entered is 1, no clear-screen character sequence is sent to the terminal, but a top-of-form character (X'0C') is output whenever a new printer page begins, as determined by lptr-page-length.</p> <p>If the value entered is greater than 1, the terminal screen is cleared at the beginning of each terminal page, and a top-of-form is output at the beginning of each printer page. For terminal output, the value entered generates that number of delay or idle characters to allow the clear-screen character sequence to be processed. The clear-</p>

SET-TERM

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
		screen character sequence is determined by the terminal-code.
bs	BACKSPACE = bs	Specifies the decimal number whose value corresponds to an ASCII character. This is used as an alternate backspace character in normal input mode. An ASCII backspace (<CTRL-H> or X'08'), is always interpreted as a backspace. bs is always echoed on the terminal whenever it is entered.
prw	PRWIDTH=prw	Specifies the number of characters per line on the printer.
prd	PRDEPTH=prd	Specifies the number of lines per page on the printer.
code	TYPE=code	Specifies the type of terminal, which determines functions such as the clear-screen character sequence, as well as cursor addressing and other characteristics specified by such means as the BASIC @ function or the PROC T statement. Codes are:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
		A ADDS Regent 40 (25-line CRT)
		B Digital VT241 Color Graphics' CRT
		C ADDS Viewpoint Color
		D Digital VT100
		E Digital VT200 Series 8-bit mode
		F IBM 3270 terminal
		G IBM 3101
		H Honeywell VIP-7200
		J Heathkit in ANSI mode
		L Liberty Freedom-200
		M Minitel
		P IBM Personal Computer

- Q Wyse Wy-50/Ultimate ULT-50 in enhanced viewpoint emulation mode-extended version
- R ADDS Regent 25
- S Wyse WY-60 in Native mode
- T Wyse WY-50/Ultimate ULT-50 in enhanced viewpoint emulation mode-extended version
- U Ultimate CRT (Volker-Craig)
- V Ultimate VDT (ADDS Viewpoint)
- W Wyse WY-50 or ULT-50 Enhanced Viewpoint
- X Wyse WY-50 or ULT-50 Native mode
- Y Wyse WY-85 in VT220 7-bit mode
- Z HP 700/92

Note: If only terminal code is to be changed, all other parameters can be omitted from the command.

Description

Use SET-TERM to preset the entire system's default terminal and printer characteristics at one time.

When invoked without parameters, the current terminal settings are displayed as follows:

	Terminal	Printer
Page width:	79	132
Page depth:	24	60
Line skip :	0	
LF delay :	1	
FF delay :	5	
Backspace :	8	
Term type :	S	

SET-TERM sets all specified parameters and retains the current values for any null parameters. All non-keyword parameters are interpreted by their position in the command.

The current TERM settings can be displayed via the TERM command, or by entering SET-TERM without any parameters.

SET-TERM

```
:SET-TERM 79,24,,,,,8,132,55,Y↓  
:SET-TERM Y↓  
:
```

Available On SYSPROG or SECURITY account.

See Also LOAD-TERMDEF
 TERM

SET-TIME

SET-TIME changes the system time. System time is based on the 24-hour clock.

Syntax

SET-TIME **hh**{:**mm**{:**ss**}}

hh Specifies hours (00-23); a leading zero is not required.

mm Specifies minutes (00-59); a leading zero is not required. If omitted, 00 is assumed.

ss Specifies seconds (00-59); a leading zero is not required. If omitted, 00 is assumed.

Note: A colon is required between parameters.

Description

Use SET-TIME to change the system time. Hours are entered and displayed in 24-hour format, where midnight is 00:00:00, 1 a.m. is 01:00:00, noon is 12:00:00, and 1 p.m. is 13:00:00.

The system updates the date at midnight (00:00:00).

:SET-TIME	13 ↓	Set time to 1 p.m.
13:00:00	22 JUN 1991	
:SET-TIME	10:45 ↓	Set time to 10:45 a.m.
10:45:00	22 JUN 1991	

Available On

SYSPROG or SECURITY account. This command is not available on Ultimate S/370 and S/390 systems in VM/VMS mode.

See Also

DATE
SET-DATE
TIME

SHOW-LEVELS

SHOW-LEVELS displays information on TCL levels activated by the specified line.

Syntax

SHOW-LEVELS {n}

n Specifies the line for which TCL level information should be shown. If omitted, the current line is assumed.

Description

Use SHOW-LEVELS to display all TCL levels activated by the specified line. The following information is displayed for the specified line:

```
Level   Type   Processor {Filename Item-id}
```

where:

Level Zero (0) is logon (base) level. The maximum number of TCL levels depends on available disk space.

Type Type of activity that caused the level to be activated:

base TCL logon level.

exec BASIC execute.

wp Word processor (UltiWord).

push Level push.

!> System debugger (one system command is executed, the level is exited, and control returns to the debugger).

!>> Next TCL level is entered from the debugger.

Processor Active processor for the level. Processors include BASIC, PROC, RECALL, TCL, WP.

Filename Name of the BASIC file being executed, or indicates WP document exists.

Item-id Name of the BASIC item-ID being executed, or WP item-ID.

Note: *Filename and item-ID are only displayed if line is omitted, or if the command is executed from SYSPROG or SECURITY accounts.*

If only the base level is active, the following message is displayed:

```
[668] No other TCL levels active.
```

```
: SHOW-LEVELS 33.↓      Show TCL levels for line 33 (not the
                          current line). Notice that filenames and
                          item-IDs are not displayed.
```

```
SHOW-LEVELS for Line: 033 at hh:mm:ss dd mmm yyyy
```

Level	Type	Processor
3	push	current level
2	push	TCL
1	exec	WP
0	base	BASIC Run-time

```
:
```

```
: LOGTO SYSPROG.↓
```

```
: SHOW-LEVELS 33.↓
```

```
SHOW-LEVELS for Line: 033 at hh:mm:ss dd mmm yyyy
```

Level	Type	Processor	Filename	Itemid
3	push	current level		
2	push	TCL		
1	exec	WP	[WP-DOCUMENTS,	ULT MEMO]
0	base	BASIC Run-time	[WP-PROGS	WP

Available On Any user account.

See Also

LEVEL-EXIT

SET-LEVEL-PUSH

Chapter 1 of this document for further information on TCL level pushing.

SLEEP

SLEEP deactivates a terminal and stops processing for a specified period of time.

Syntax

SLEEP n

SLEEP hh:mm:{ss}

n Specifies the number of seconds to sleep.

hh:mm:ss Specifies the time (based on 24-hour clock) at which the terminal should wake up.

Description

Use SLEEP to stop processing on a terminal for a specified number of seconds, or until a specified wake-up time.

As soon as SLEEP is invoked, the terminal is deactivated. When the SLEEP period ends or the wake-up time is reached, the terminal is reactivated and any queued commands are executed.

SLEEP can be canceled with the <BREAK> and END sequence, which ignores any previous keyboard input. You can also use the MSG or MESSAGE command from another terminal to wake up a sleeping terminal.

You can use the wake-up feature of SLEEP to control when the system will run a task on your terminal. For example, you can put SLEEP in a file-save PROC to preset an exact run-time, such as setting a file-save to run at 23:00 (11:00 p.m.) every night.

<pre>: SLEEP 100.␣</pre>	Set the terminal to sleep for 100 seconds.
<pre>: SLEEP 22:00.␣</pre>	Set the terminal to sleep until 22:00 (10 p.m.)

Available On Any user account.

See Also MESSAGE
MSG

SORT

SORT is an Ultimate RECALL command that rearranges selected file items into a specified sequence and then generates formatted output of the selected attribute data.

Syntax

**SORT filename {itemlist} {sel-criteria} {sort-criteria}
{output-specifications {print-limiters}} {(options)}**

filename	Specifies the file containing the items to be sorted.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Specifies conditions that must be met by an item in order for it to be selected. Also known as a WITH clause.
sort-criteria	Specifies sorting sequence. Also known as a BY clause.
output-specifications	Specifies the attributes and values in the selected items that should be listed.
print-limiters	Restricts the printing of output specification to values that meet the limit conditions.
(options)	
C	Suppresses column heading lines that define attributes in a report.
D	Suppresses all detail lines from a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.

SORT

N Specifies no automatic end-of-page waiting.

P Routes output to the spooler.

Description For further information on SORT, please refer to the *Ultimate RECALL* and *Ultimate UPDATE User Guide*.

Available On Any user account.

SORT-ITEM

SORT-ITEM is an Ultimate RECALL command that sorts selected items, then lists them in Line Editor format.

Syntax

SORT-ITEM filename {itemlist} {sel-criteria} {sort-criteria} {(options)}

filename Specifies the file for which items should be sorted and listed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Specifies conditions that must be met by an item in order for it to be sorted and listed. Also known as a WITH clause.

sort-criteria Specifies sorting sequence. Also known as a BY clause.

(options)

- A** Lists items in editor assembler format.
- F** Formfeeds after each item.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Suppresses line numbers.

Description

For further information on SORT-ITEM, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

SORT-LABEL

SORT-LABEL is an Ultimate RECALL command that generates sorted and formatted output of data from items in a file. Item data can be grouped into blocks, with several blocks placed across the page, as in a set of mailing labels. SORT-LABEL is similar to SORT, except that more than one item can exist on an output line.

Syntax

SORT-LABEL filename {itemlist} {sel-criteria} {output-specifications} {print-limiters} {(options)}

- | | |
|------------------------------|--|
| filename | Specifies the file for which labels should be sorted and listed. |
| itemlist | Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present. |
| sel-criteria | Conditions that must be met by an item in order for it to be sorted and listed. Also known as a WITH clause. |
| output-specifications | Specifies the attributes and values in the selected items that should be listed. |
| print-limiters | Restricts the printing of output specification to values that meet the limit conditions. |
| (options) | |
| C | Suppresses column heading lines that define attributes in a report. |
| N | Specifies no automatic end-of-page waiting. |
| P | Routes output to the spooler. |

Description

For further information on SORT-LABEL, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

SP-ASSIGN

SP-ASSIGN displays or changes the terminal's current spooler assignment.

Syntax

SP-ASSIGN {?} {output options} {Qn} {copy} {Rn}

? Displays the current spooler assignment if other parameters are omitted. If other parameters are specified, displays the new settings.

output Specifies whether the job should be routed or held.

options More than one may be specified.

C Chokes a print job by limiting it to 20 frames of disk space at a time. As a job is printed, frames associated with the job are released back to the pool of available space. Only valid with the I option below.

H Retains the print job as a hold file.

I Immediately enqueues a print job as it is processing. The default is for a job to be enqueued when the entire job has been processed.

O Keeps the print job open after completion until closed by SP-CLOSE or another SP-ASSIGN. This is the same as the SP-OPEN command, and is useful for combining several reports that are one logical job but must be generated as separate units, such as by multiple execution of commands or BASIC programs.

P Routes output to the specified queue.

S Suppresses (does not queue) the print job. Can be used with H to create a hold file that is not output at this time, or with T to send output only to tape.

T Routes output to tape; assumes that a tape drive is available. The tape must be attached.

Note: The tape file does not have the same format as tapes produced by FILE-SAVE or T-DUMP.

- Qn** Specifies the number (from 0-253) of the job queue for the print job. The default is job queue 0 (Q0).
- copy** Specifies the number of copies (from 0-125) to be output to the printer device. The default is one copy. When output is to tape only, one copy is sent. If output is to tape and a printer, one copy is sent to tape and the specified number of copies are printed.

Note: If IC is present, only one copy is printed.

- Rn** Specifies the number (from 0-255) of a print file that corresponds to a PRINT ON n statement in BASIC, a .PFILE n in RUNOFF, or a \PFILE n in UltiWord.

Note: If parameters are omitted, the following default values are reset:

- Print jobs are enqueued in job queue 0 (zero) at the completion of processing.
- One copy is output.

Description

Use SP-ASSIGN to display or change spooler assignments. SP-ASSIGN can also be used to select spooler assignments for a specific print file number, which is useful when compiling reports or documents that have unique print requirements.

Although SP-ASSIGN accepts any combination of parameters, some are conflicting. In these cases, one has priority and will be implemented by the command; the others are ignored. The conflicts and priorities are:

- | | |
|--------------------------------|--|
| S(suppress queueing) | Overrides P , Qn , and copy . |
| H(old file) | Overrides C . |
| IC(immediately enqueue, choke) | Overrides copy and sets copies to 1. |

If **output options** are omitted, the print job is queued to the job queue specified by Qn, with no hold file and no tape output.

If I or IC is present, the spooler starts to enqueue the print job as soon as the first line of data is available, rather than waiting for the entire job to be processed before queueing it.

The C option allows a maximum of 20 frames of disk space to be used to store the print job, and it causes frames to be released to available space as they are printed. This means that if output generation is 20 frames ahead of printing by the physical printer device, the process suspends generation of output until a sufficient number of frames are printed and released to available space. If the C option is not in effect, data frames are released to available space only after the printer has finished printing the job.

Normally when a print job has completed, it is closed and the output generation process cannot add any more data to it. The O option keeps the print job open until it is explicitly closed by SP-CLOSE or by another SP-ASSIGN.

If SP-ASSIGN is executed from a BASIC program, and either a PRINTER ON statement or an SP-ASSIGN O was in effect prior to executing the BASIC program, the following message is displayed:

```
[1140] Your open files were closed
```

Any open print files are closed and the new spooler assignments affect subsequent printing during the operation of the BASIC program.

The spooler assignment is normally used for all print jobs on a line. However, if the Rn parameter is specified, SP-ASSIGN parameters are only assigned to the specified print file number. It does not change the current spooler assignment or the options used with any other BASIC, RUNOFF, or UltiWord print files. This option is used with the following BASIC and word processing statements that allow printing of selected material in selected print files to create a single printout:

```
PRINT ON n    (BASIC)  
.PFILE n     (RUNOFF)  
\PFILE n     (UltiWord)
```

Only data produced by statements specifying print file n are sent to the reserved print job. Usually the print job is closed when the BASIC

program, RUNOFF item, or UltiWord item is terminated, although you can use the O option to force the job to remain open.

Print jobs are printed in their job queue order. Note that although the output options queue the print job as soon as possible, they do not guarantee immediate printing unless the job is first job in the queue and the printer is attached.

```

: SP-ASSIGN ?J      View the current spooler assignments.

Line Status Cop Form Assignment for line 2 is to output 1 copy
#          ies # from job queue (form) 0 to the printer (P)
2 P        1  0 These are the default settings.

:
: SP-ASSIGN ICO Q4J Immediately enqueue and choke to 20
                        frames, leave queue open, and print 1
                        copy from job queue 4.

: SP-ASSIGN ?J      Show new settings.
Line Status Cop Form
#          ies #
2 PIC O    1  4

:
: SP-ASSIGN J       Return to default settings.
:

```

Available On Any user account.

See Also

- SP-CLOSE
- SP-MENU
- SP-OPEN
- T-ATT
- Guide to the Ultimate Editors.*
- Ultimate BASIC Language Reference Guide.*
- UltiWord Reference Guide.*

SP-CLOSE

SP-CLOSE closes all open print jobs for the current line.

Syntax SP-CLOSE

Description Normally, when a print job is created by a command, a BASIC program, or the word processor, the print job is automatically closed at the end of the execution. However, commands such as SP-OPEN and SP-ASSIGN O direct the spooler to keep the print job open in order to combine multiple files that are logically one print unit. SP-CLOSE closes these print jobs.

Note: *At logoff (OFF or LOGOFF) all print jobs are closed automatically.*

Available On Any user account.

See Also SP-ASSIGN
 SP-OPEN

SP-DELETELPTR

SP-DELETELPTR deletes a logical printer from the system.

Syntax

SP-DELETELPTR n {O}

n Specifies the number of the logical printer to be deleted.

O Unconditionally deletes the printer even if there is an active job assigned to it. The job that is being printed is deleted; any jobs waiting to be printed remain in the queue, just as if the printer had never been started.

Description

Unless the O option is used, SP-DELETELPTR assumes that the printer has been stopped with SP-STOPLPTR and is inactive, and that no print jobs are pending. SP-DELETELPTR detaches the job queues currently attached to the specified printer, and the system can no longer access the physical printer device currently associated with that logical printer number.

<pre>: SP-DELETELPTR 1J Delete logical printer 1. :</pre>
--

Available On

SYSprog or SECURITY account.

See Also

SP-MENU
SP-STARTLPTR
SP-STOPLPTR

SP-DEQ

SP-DEQ dequeues a print job waiting in a job queue.

Syntax

SP-DEQ n {U}

n Specifies the entry number of the print job to be dequeued. Must be a job that was queued by the current line, unless the U parameter below is used.

U Specifies unconditional access to the specified print job to be dequeued. You must have privilege level 2 to use this parameter.

Description

Use SP-DEQ to dequeue a waiting print job.

Note: If the print job has started printing, use SP-KILL.

SP-DEQ dequeues the specified print job entry number in the job queue by removing it from the queue. The print job is retained as a hold file, and is therefore available to SP-EDIT for subsequent re-spooling or deleting.

<pre>: SP-DEQ 12.␣ :</pre>	Dequeue print job number 12.
----------------------------	------------------------------

Available On

Any user account to dequeue your own print job. You must have privilege level 2 to dequeue another print job.

See Also

SP-KILL
SP-LISTQ
SP-MENU

SP-EDIT

SP-EDIT allows you to display, spool, or delete specified hold files.

Syntax

SP-EDIT {options}

options

'accountname' Specifies edit of hold files generated by this account. (You must have privilege level 2 to edit hold files in another account.) This overrides the U option.

n{-m} Specifies entry number or range of numbers of the hold file to be displayed, printed, or deleted. If omitted, all hold files created by the current account are assumed.

Note: To determine the entry number of a print job, note the hold file number when the job is created, or use SP-LISTQ.

Fn{-m} Specifies form number or range of numbers of the hold file to be displayed, printed, or deleted.

L Displays an enqueued print file.

MD Deletes multiple hold files. No further prompts are displayed.

MS Spools multiple hold files using the current SP-ASSIGN parameters. No further prompts are displayed.

T Directs the hold file to tape.

U Allows SP-EDIT to operate on queue entries created by accounts other than your own. You must have privilege level 2 to use this parameter.

Description

Use SP-EDIT to display, spool, or delete one or more hold files created by the current or specified account. Users with privilege level 2 can access any hold file in the system.

A hold file can only be accessed by one user at a time. If the hold file is currently being accessed by SP-EDIT or is being spooled by another user, the following message is displayed:

Not Available

Note: Prior to using SP-EDIT to process a hold file, use SP-ASSIGN to set up the necessary spooler assignments for outputting the hold file data. The output destination must be printer (P option), tape (T option), or both. The SP-ASSIGN options should not be used. The H option, if present, is ignored.

SP-EDIT accesses the specified hold files. If no file is found, the following message is displayed:

[1162] End of print file control block

When a hold file is found, the command displays a series of prompts that allow you to specify the following:

- Display the first frame of the hold file.
- Search for a specified string.
- Spool the hold file.
- Delete the hold file.

Each of these options is described below.

Display the Hold File

The DISPLAY prompt allows you to view the first frame of the hold file, go to another prompt, or exit the command. The DISPLAY prompt is displayed as:

DISPLAY? (Y/N/S/D/X/<CR>)?

where:

- | | |
|------|---|
| Y | Display the first frame of the hold file. |
| N | Go to the next prompt (STRING-). |
| S | Go to the SPOOL prompt. |
| D | Go to the DELETE prompt. |
| X | Exit SP-EDIT. |
| <CR> | Go to the next hold file. |

Any other response skips to the STRING- prompt.

Search for a String

The STRING- prompt allows you to enter a search string to find in the hold file. The STRING- prompt is displayed as:

STRING-

The STRING- prompt options are:

- "text"** Text string to search for in the hold file. Start spooling file from "text" to end of file. (Spooling does not start until after an entry is made at the SPOOL prompt below.)
- <CR>** Go to the SPOOL prompt.

Spool the Hold File

The SPOOL prompt requests the output destination for a hold file to be spooled as a print job or to the terminal, or a file with RUNOFF format items. The SPOOL prompt is displayed as:

SPOOL (Y/N=<CR>/T/TN/F) ?

where:

Y Spools the hold file as a print job with current SP-ASSIGN parameters; if the destination does not contain P or T, an error message is displayed.

N or <CR> Goes to next prompt (DELETE).

T Spools the hold file to your terminal, one screen page at a time. The spooler waits for input at the end of each screen. Enter:

<CR> Displays next screen page.

U Repeats the current page on screen.

T Starts again from the beginning of the hold file.

X Ends screen display of the hold file.

When screen display ends, the SPOOL prompt is re-displayed.

TN Spools the hold file to your terminal without end-of-page waiting, until the end of the file is reached, then returns to the SPOOL prompt.

- F** Converts the hold file to Ultimate items in RUNOFF format. (See the subsection, Spooling to a File.) The user must be logged onto the account that created the hold file, or use the U option.

Any other response skips to the DELETE prompt.

Delete the Hold File

The DELETE prompt lets you delete the current hold file or go to the next print job. The DELETE prompt is displayed as:

```
DELETE (Y/N=<CR>)?
```

where:

- Y** Delete the hold file from the system. The disk space is released to available space.
- N or <CR>** Go to the next print job.

Any other response skips to the next print job.

Spooling to a File

When the spooler transfers a hold file to file items, it prompts for a destination filename and starting item-ID as follows:

```
File name?-
```

```
Initial item name?-
```

If the item-ID already exists in the specified file, the existing item is overwritten by the hold file data.

When it transfers the hold file, the spooler first places the RUNOFF commands .BP and .NF at the top of the item. It then copies the contents of the first page of the hold file into the item.

Hold files that are not paginated or that have very long pages (more than 1200 data bytes) are blocked into multiple items, each with a maximum of 1200 data bytes. For multi-page hold files, each hold file page becomes an item. A sequential number is appended to the starting item-ID. The following RUNOFF command is appended to the end of each item; except the last:

```
.CHAIN item-IDnnn
```

SP-EDIT

where n starts at 0001 and is incremented for each item.

You must wait until the SP-EDIT or spooling is completed before the hold file can be accessed.

```
: SP-EDIT 4 J
: SP-EDIT 3 U J
```

Available On

Any user account to edit your own print jobs. You must have privilege level 2 to edit print jobs from another account.

See Also

SP-ASSIGN
SP-DEQ
SP-MENU

SP-KILL

SP-KILL aborts a print job currently being printed on a physical printer device.

Syntax

SP-KILL n {U}

n Specifies the number of the logical printer where the print job is to be killed. Must be a job that was created by the current account, unless the U parameter below is used.

U Unconditionally kills the job on the specified printer.

Description

Use SP-KILL to kill a job that is currently printing.

Note: If the print job has not started printing, use SP-DEQ.

SP-KILL accesses the specified logical printer and aborts the print job currently being output, as soon as all characters already in the buffer are printed. The message ABORT! is printed on the output, and the next job in the job queue is sent to the physical printer device for printing.

A killed print job is retained as a hold file only if the H option was previously set via SP-ASSIGN.

<pre>: SP-KILL 2.1 :</pre>	Kill the print job currently printing on logical printer 2.
----------------------------	---

Available On

Any user account to kill your own print jobs. You must have privilege level 2 to kill another print job.

See Also

SP-ASSIGN
SP-DEQ

SP-LISTASSIGN

SP-LISTASSIGN lists the current spooler assignments of all lines on the system.

Syntax

SP-LISTASSIGN

Description

Use SP-LISTASSIGN to display the current spooler assignments for all lines, in the following format:

Line #	Status	Cop ies	Form #
-----------	--------	------------	-----------

where:

- Line #** Identifies the line.
- Status** Identifies output specifications for print jobs queued by the line. Output specifications are:
 - C Choke print job processing to 20 frames at a time.
 - H Send output to hold file.
 - I Enqueue as job becomes available.
 - O Keep print job open at end of process.
 - P Print output. If P is omitted, printing is suppressed.
 - T Send output to tape.
- Copies** Identifies the number of copies to be output.
- Form #** Identifies the job queue number.

Spooler assignments for each line are made via SP-ASSIGN.

SP-LISTASSIGN ↵				Display spooler assignments for all lines on the system.
Line #	Status	Copies	Form #	
0	P	1	5	
1	PI	1	0	
2	P	4	0	
3	PIC	1	0	
4	PI	1	0	
5	PO	1	0	
6	HT	1	0	
7	H	1	0	
8		0	0	
.				
.				
:				This line has never logged on or has not reset option after SP-STARTLPTR.

Available On SYSPROG or SECURITY account.

See Also SP-ASSIGN

SP-LISTLPTR

SP-LISTLPTR displays the status of each logical printer on the system.

Syntax SP-LISTLPTR

Description Use SP-LISTLPTR to display the status of all printers on the system in logical printer number order in the following format:

```
Printer assignments                hh:mm:ss
Printer      Output queues Page  Dev or  Status
Type        Number          skip  line #
```

where:

- | | |
|----------------------|--|
| Printer Type | Parallel or Serial. |
| Number | Logical printer number. |
| Output Queues | Identifies job queue numbers attached to the logical printer. Also known as Form# . |
| Page Skip | Number of pages to skip between print jobs. |
| Dev or line# | Parallel printer device number or serial printer line number. |
| Status | One of the following: <ul style="list-style-type: none">Stopped Printer has been stopped by SP-STOPLPTR.Active A job is currently printing on the physical printer device.Inactive The printer device is not printing. |

```
:SP-LISTLPTR.J
```

```
Printer assignments          hh:mm:ss

Printer      Output queues Page  Dev or  Status
Type        Number          skip  line #

Parallel    0    1           0    0      Inactive
Serial      1    0           4   59      Inactive
```

Available On Any user account.

See Also SP-STATUS

SP-LISTQ

SP-LISTQ lists the status of print jobs in all job queues.

Syntax

SP-LISTQ {n} {account} {options}

- n** Specifies the entry number of a print job for which status is to be displayed.
- account** Limits display to print jobs created by the specified account.
- A** Limits list to print jobs created by the current account.
- C** Suppresses listing of status information. Only the total number of print jobs and their total amount of disk space used are displayed.
- E** Replaces status information with current position and beginning frame ID (FID) of hold file.
- L** Displays jobs that have already been printed and purged.
- P** Routes output to the spooler.
- Q** Outputs a list of jobs queued for printing in groups by job queue (Form#) number order.

Note: If parameters are omitted, all print jobs are displayed.

Description

Use SP-LISTQ to display print job entry numbers and other print job status. If parameters are omitted, the listing is displayed in the following format:

```
[1131] Printer list elements      dd MON yyyy hh:mm:ss
# Stat Lk Ln Status   Cp Fo Frms   Date   Time  Acct
```

where:

- #** Print job entry number.
- Stat** Status word in hexadecimal; for maintenance use only.
- Lk** Forward link, if other than zero; indicates next job to be printed.

Ln	Line number that generated the job, or line on which this hold file is being edited with SP-EDIT.
Status	Print job status indicators: A Available entry (displayed only if L option used) C Closed G Align H Hold file I Immediate L Locked N No close O Currently being output P Printer R Requeued (SP-EDIT) S Spooled T Tape X Killed (SP-KILL)
Cp	Number of copies.
Fo	Job queue number (Form# on SP-ASSIGN listing).
Frms	Number of frames, if closed, or OPEN, if open job.
Date	System date job was created.
Time	System time job was created.
Acct	Account name under which job was created.

If the E option is used, the print job entry number and status information are omitted and the columns Curpos and Begfid are displayed:

- Curpos displays the 12-digit hexadecimal current position.
- Begfid displays the hexadecimal starting frame of the print job.

SP-LISTQ

```
: SP-LISTQ ↵                               List all print jobs.

[1131] Printer list elements                dd MON yyyy hh:mm:ss

# Stat Lk Ln Status Cp Fo Frms Date Time Acct
1 0080 9 HP C 1 4 261 01/31/85 17:49:32 TSB
2 0080 1 HP C 1 4 575 02/06/85 15:58:54 TSB
3 8100 5 H C 1 0 37 02/06/85 10:37:52 DOCU
4 0088 0 HP C R 1 0 81 02/01/85 12:51:38 BUG
5 8080 5 H C 3 0 4 02/02/85 12:53:01 DP
6 41C1 5 P L 1 0 OPEN 02/03/85 12:40:37 DOCU
9 C098 5 HP C XR 5 1 21 01/31/85 12:06:56 DP
10 80C1 1 H L 3 0 OPEN 02/01/85 09:45:42 DP

8 queue elements. 1034 frames in use.
:
: SP-LISTQ E ↵                               List all print jobs and show current
                                                position and starting FID.

[1131] Printer list elements                dd MON yyyy hh:mm:ss

Stat Lk Ln Curpos Begfid Cp Fo Frms Date Time Acct
8880 50 00010010EA13 0010EA13 1 4 261 01/31/85 17:49:32 TSB
C088 42 00010006B9DF 0006B9DF 1 0 40 01/31/85 17:53:22 ALF
C088 42 0001000EF32C 000EF32C 1 0 40 01/31/85 17:59:14 ALF

:
```

Available On Any user account.

See Also SP-ASSIGN
SP-MENU
SP-EDIT

SP-MENU

SP-MENU provides a menu for selecting common spooler operations such as starting and stopping printers, editing hold file entries, and displaying the status of printers and print jobs.

Syntax

SP-MENU

Description

SP-MENU displays the following menu of spooler command options:

```

                                The Ultimate Spooler Menu
                                time    date

1. Start a line printer
2. Stop a line printer
3. Delete a line printer
4. Set the output print assignments for your line
5. List the print jobs in the job queue
6. Process a Hold File in the job queue
7. Dequeue a job in the job queue
8. List status of the spooler and each line printer
9. List the assignments and status of every printer

Please enter the option of your choice or TCL or OFF -
```

Enter an option number to begin execution of the spooler command. If the command has associated parameters, SP-MENU prompts for them.

Available On

SYSPROG or SECURITY account.

See Also

SP-ASSIGN
SP-DELETELPTR
SP-DEQ
SP-EDIT
SP-LISTLPTR
SP-LISTQ
SP-STARTLPTR
SP-STATUS
SP-STOPLPTR

SP-OPEN

SP-OPEN forces print jobs created by a subsequent command or BASIC program to remain open even after the command or program is completed.

Syntax

SP-OPEN

Description

SP-OPEN is an alternative to using SP-ASSIGN with the O option. Use it when you want to compile a print job that contains output from several programs or processes. This command is useful for printing an index, a manual, or other long document that has multiple parts.

Note: SP-OPEN does not open a print job. It merely specifies that a print job shall not be closed when the program or command that creates the print job has completed execution.

Use SP-OPEN after setting any necessary SP-ASSIGN spooler assignments, but before executing the first command or program that creates the print job or jobs. SP-OPEN directs the spooler to keep the print job open until it is explicitly or implicitly closed.

Open print jobs can be closed by using one of the following:

- SP-CLOSE to explicitly close open print jobs.
- SP-ASSIGN without the O option to implicitly close all open print jobs. Also, if SP-ASSIGN is executed with the BASIC statement PRINTER ON in effect, the file is closed.
- OFF, LOGOFF, or LOGTO to automatically close all print jobs.

: SP-OPEN	Leave the next print job open until it is explicitly or implicitly closed.
:	

Available On

Any user account.

See Also

SP-ASSIGN
SP-CLOSE

SP-SKIP

SP-SKIP sets the number of pages to skip between print jobs.

Syntax

SP-SKIP lp{n}

lp Specifies the logical printer on which pages should be skipped.

,n Specifies the number of pages (from 0-9) to skip between print jobs. If omitted, no pages are skipped.

Description

Use SP-SKIP to specify the number of pages to skip between print jobs. The specified logical printer must have been previously started by SP-STARTLPTR.

You can review the current SP-SKIP setting for any or all logical printers via the SP-LISTLPTR or SP-STATUS commands.

The SP-SKIP setting remains in effect until reset by another SP-SKIP command.

<pre>: SP-SKIP 5, 1 ↵ :</pre>	<p>Skip 1 page between print jobs on logical printer 5.</p>
-------------------------------	---

Available On

SYSPROG or SECURITY account.

See Also

SP-LISTLPTR
 SP-STATUS
 SP-STARTLPTR

SP-STARTLPTR

SP-STARTLPTR assigns a physical printer device to a logical printer, and assigns a job queue number and number of pages to skip between print jobs to that logical printer. It can also be used to restart a logical printer or to control forms alignment. On Ultimate S/370 and S/390 systems, two additional parameters are available to load the Universal Character Set Buffer (UCSB) and a Forms Control Buffer (FCB).

Positional Syntax

```
SP-STARTLPTR lp,q,{ej},{Pn/Sn},{A}
or
SP-STARTLPTR lp,(q1,q2{,q3}},{ej},{Pn/Sn},{A}
```

Keyword Syntax

```
SP-STARTLPTR PRINTER = lp
               QUEUE = q / QUEUE = (q1,q2{,q3})
               {EJECT = ej}
               {PARALLEL = n} / {SERIAL = n}
               {ALIGN}
               {UCSB = ucsb-item-ID}
               {FCB = fcb-item-ID}
```

SP-STARTLPTR positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
lp	PRINTER = lp	Required. Specifies the logical printer to be started. The range of available printers depends on your system.
q	QUEUE = q	Required except when restarting a printer. Specifies a single job queue number (0-125) from which print jobs are sent to the logical printer.
(q1,q2{,q3})	QUEUE =(q1, q2{,q3})	Associates two or three job queues with the logical printer. Enclose the queue numbers in parentheses, and separate them with commas.

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
ej	EJECT =ej	Specifies the number (from 0-9) of pages to skip (eject) between print jobs. If omitted, no pages are skipped.
Pn	PARALLEL = n	<p>Specifies a parallel printer device.</p> <p>Enter a number from 0-15. Enter 0 to assign the parallel printer connected to the lowest system channel, or if the system has only one parallel printer. Enter 1 to assign the parallel printer connected to the next higher channel, and so on.</p> <p>For positional format, you must specify P before the number, as in P0.</p>
Sn	SERIAL = n	<p>Specifies a serial printer device.</p> <p>Enter the terminal line number to which the serial printer is connected.</p> <p>For positional format, you must specify S before the number, as in S35.</p>
A	ALIGN	<p>Specifies manual forms alignment. Applies only when one queue is specified for the printer. The printer must first be stopped via SP-STOPLPTR.</p>

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
	UCSB = ucsb- item-ID	Applies only to Ultimate S/370 and S/390 systems with parallel printers, and must be specified before using the parallel printer. This parameter is an item-ID in the UCSB-DEF file on the SYSPROG account. The item defines the print chain, and provides an ASCII-to-EBCDIC translation mapping of ASCII-to-EBCDIC values for this printer. Please refer to Appendix D for the format of the UCSB-DEF item.
	FCB = fcb-item- ID	Applies only to Ultimate S/370 and S/390 systems with parallel printers that accept a forms control buffer (FCB). This parameter is an item-ID in the FCB-DEF file on the SYSPROG account. This item defines the following printer characteristics: <ul style="list-style-type: none">• lines per inch• print density• index value• first printable line• number of lines per page Please refer to Appendix D for the format of the FCB-DEF item.

Description

SP-STARTLPTR sets up and maintains parameters for the logical printers in your system. For each logical printer, the spooler maintains parameters for the following:

- The physical printer device attached to it.
- The job queue(s) attached to it.
- The number of pages to skip (eject) between print jobs.

SP-STARTLPTR can be used to set or change any of these parameters, or to restart a printer that has been stopped by SP-STOPLPTR..It can also be used to align the form (paper) on a physical printer device. To do this,

the logical printer must have been stopped by SP-STOPLPTR and must be currently inactive (not printing any job).

Starting an On-line Physical Printer

To start an on-line printer, specify the lp, q or (q1,q2 {,q3}), ej, and Pn/Sn parameters or equivalent keywords. The command assigns the logical printer lp to the physical printer device Pn/Sn (or n if keyword format is used). The specified job queue(s) are attached to the logical printer, and the number of page ejects between jobs is set to ej. These parameters are displayed as Printer Type, Number, Output Queues, Page skip, and Dev or line #.

One job queue can be used for a single or shared job queue attachment. Two or three job queues indicate a multiple job queue attachment. In multiple attachments, q1 has the highest priority, q2 has a lower priority, and q3, if specified, has the lowest priority.

At least one job queue must be explicitly specified, even if it is the default (job queue 0).

Changing Job Queue Attachments

To change job queue attachments for a printer, specify the lp and q or (q1,q2 {,q3}) parameters, or their associated keywords. SP-STARTLPTR automatically detaches all job queues currently attached to the printer, then attaches the specified new job queues. The physical printer device type and page eject number are not changed.

Restarting a Stopped Logical Printer

To restart a stopped printer, specify the lp parameter only. The logical printer is assumed to have been previously stopped by SP-STOPLPTR. SP-STARTLPTR restarts the specified printer without changing any parameters. The logical printer resumes printing by sending the first job waiting in the job queue, or first job in each job queue, to the physical printer device.

Aligning Forms on a Physical Printer

To align forms, the printer must first be stopped with SP-STOPLPTR. Once the printer has been stopped, specify the lp, q, and A parameters or their associated keywords. Any other setting can also be changed. If the printer has been stopped via SP-STOPLPTR, SP-STARTLPTR detaches all job queues currently attached to the printer, and the printer enters alignment mode.

If the printer has not been stopped via SP-STOPLPTR or is still printing a job, the following error message is displayed:

[1105] Printer must be stopped.

When the alignment mode is successfully entered, the following prompt is displayed:

Lines?

Enter the number of lines to be printed on the form in order to check the alignment. For example, enter 10 to print the first 10 lines of your print job to see if the alignment is correct. After printing the specified number of lines, the following prompt is displayed:

Again (Y/N/T)?

To print the same number of lines again, enter **Y**.

To exit the alignment mode and resume normal printer operation, enter **N**. The jobs in the specified job queue then begin printing on the physical printer device.

To exit the alignment mode without resuming normal printer operation, enter **T**. The physical printer remains stopped (no queued print jobs are printed), although the new parameters are now in effect.

Loading a UCSB on an Ultimate S/370 or S/390 Parallel Printer

All parallel printers connected to an Ultimate S/370 or S/390 system must have a Universal Character Set Buffer (UCSB) loaded before the printer is used. If specifying the alignment (ALIGN or A) parameter, the UCSB must be loaded either previously or at the same time.

Whenever the print train is changed on a printer, execute a new SP-STARTLPTR and specify the appropriate UCSB item. This step ensures that the internal character positions on the print train are properly loaded. If the correct UCSB is not loaded, then random characters or blank lines will be printed.

Both UCSB and FCB parameters should only be used when the printer is stopped and inactive. Specify the ucsb-item-ID parameter, which is then loaded by SP-STARTLPTR. When the UCSB load is complete, the following message is displayed:

UCSB load complete.

If there are any EBCDIC characters defined on the print chain that the system is not using, the system displays the following message:

```
The following EBCDIC print train characters are
unused:
```

```
<hexvalue1> <hexvalue2> ...
```

Each hex value represents an EBCDIC character. This message is useful to determine which characters are still available for mapping, and should not be considered an error.

Loading an FCB on an Ultimate S/370 or S/390 Parallel Printer

The File Control Buffer (FCB) parameter should be used only when you want to overwrite or reload the default forms control buffer in a parallel printer connected to an Ultimate S/370 or S/390 system. Before loading a new FCB, make sure that the forms have been aligned to the correct position.

Specify the fcb-item-ID parameter on a printer that supports FCBs. The logical printer is assumed to be stopped and inactive. SP-STARTLPTR loads the specified fcb-item-ID to change default paging characteristics.

Loading an FCB does not automatically change the printer page depth known by the general system. Use TERM, SET-TERM, or PRINTER to change page depth.

When the FCB load is complete, the system displays the following message:

```
FCB load complete.
```

It can also display unusable print positions on the print chains, such as IBM error messages 1311 and 1312.

SP-STARTLPTR

: SP-STARTLPTR 1,0	Start logical printer 1 with job queue 0.
:	
: SP-STARTLPTR 1,(0,3,11),2,P1	
:	Start logical printer 1 with job queues 0, 3, and 11, skip 2 pages between jobs, and define the printer as parallel printer 1.
: SP-STARTLPTR 1,0,,,A	Start logical printer 1 with job queue 0, and enter alignment mode.
:	
: SP-STARTLPTR 1 QUEUE=0 SERIAL=44 EJECT=0 ALIGN	
:	Use keywords to start logical printer 1 with job queue 0, define the printer as serial printer 44, don't skip any pages between jobs, and enter alignment mode.
:	

Available On SYSPROG or SECURITY account.

See Also

- SP-DELETELPTR
- SP-LISTLPTR
- SP-MENU
- SP-STOPLPTR

SP-STATUS

SP-STATUS displays the status of the spooler and of each logical printer.

Syntax

SP-STATUS {n} {(P)}

n Specifies the logical printer for which status should be displayed. If omitted, the status of all logical printers is displayed.

(P) Routes output to the spooler.

Description

Use SP-STATUS to display the status of the spooler and all printers. The spooler is displayed as active or inactive. To be active, the spooler must have one or more print jobs actively printing on a physical printer device.

For each printer, the display shows its type and status, job queues, and the number of page skips between jobs. If the printer is active, the report shows the print job entry number currently being printed on the physical printer device.

```
: SP-STATUS.↓
[1200] The spooler is active.

[1210] Printer #0 is parallel, active and on line.
[1221] The printer is defined as parallel printer # 0.
[1229] Print file being output is element 8, a closed
       file for line # 6 generated on account DP, which
       is 13 frames long.
[1240] Assigned output queues: 0.
[1243] The number of inter-job pages to eject is 0.

[1210] Printer #1 is serial, inactive, and on line.
[1222] The printer is running on line 51.
[1240] Assigned output queues: 5.
[1243] The number of inter-job pages to eject is 0.
:
```

Available On Any user account.

See Also SP-MENU
SP-LISTLPTR

SP-STOPLPTR

SP-STOPLPTR directs the spooler to stop a logical printer at the end of the current print job.

Syntax

SP-STOPLPTR n

n Specifies the logical printer to stop.

Description

SP-STOPLPTR causes the logical printer to stop printing queued print jobs after completing the print job currently being output.

Note: To stop the job currently being output, use SP-KILL. To stop jobs, but not the printer, use SP-DEQ. To delete a printer after it has been stopped, use SP-DELETPTR.

If the current print job is to print multiple copies, the printing stops after the current copy being printed; subsequent copies are not printed. If the current print job is a hold file, it is retained. If not, the print job is removed from the job queue.

Only one user at a time can issue SP-STOPLPTR to a specific printer.

The logical printer remains stopped until restarted by SP-STARTLPTR.

```
: SP-STOPLPTR 2
[1170] Printer # 2 set to stop and is inactive.
:
```

Available On

SYSPROG or SECURITY account.

See Also

SP-DELETPTR
SP-DEQ
SP-KILL
SP-LISTLPTR
SP-MENU
SP-STARTLPTR

SP-TAPEOUT

SP-TAPEOUT transfers the contents of a tape file to the spooler.

Syntax

SP-TAPEOUT {A} {U} {SP-ASSIGN parameters}

A Converts tape data to ASCII format before transfer to the spooler. Assumes tape data is in EBCDIC format.

U Converts all alphabetic characters to uppercase before transfer to the spooler.

SP-ASSIGN parameters Sets up the spooler assignment for the print job. Can be any combination of options available in SP-ASSIGN except T.

Note: If parameters are omitted, the command uses the current SP-ASSIGN spooler assignments, transfers without changing any data to uppercase, and assumes tape data is in ASCII format.

Description

Use SP-TAPEOUT to print a tape file or output it to another device. If your system has multiple tape drives, T-ATT must be used to attach a tape unit before executing SP-TAPEOUT.

If SP-ASSIGN parameters are omitted, the current spooler assignment can not contain a T option. The system assumes that the tape is at the location of the file to be transferred. The tape file is normally, but not necessarily, the result of output under SP-ASSIGN with the T option.

On single tape drive systems, SP-TAPEOUT executes a T-ATT, then transfers the contents of the tape file to the spooler. The spooler creates a print job using the contents of the tape file as the data to be output.

If both the A and U options are specified, the characters are first converted to ASCII and then to uppercase.

SP-TAPEOUT

<code>: SP-TAPEOUT A</code>	Output the tape in ASCII format.
-----------------------------	----------------------------------

<code>:</code>	
----------------	--

Available On Any user account.

See Also SP-ASSIGN
T-ATT

SPIE

SPIE is an UltiPlot command that generates a sorted list of items and uses this list to produce a pie chart. SPIE is a graphic equivalent of the SORT command.

Syntax

**SPIE filename {itemlist} {sel-criteria} {sort-criteria}
{output-specifications} {(options)}**

filename	Specifies the file containing the items to be charted.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be charted. Also known as a WITH clause.
sort-criteria	Specifies sorting sequence. Also known as a BY clause.
output-specifications	Specifies the attributes and values in the selected items that should be charted.
(options)	
C	Suppresses column heading lines that define attributes in a report.
D	Suppresses all detail lines from a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.
N	Specifies no automatic end-of-page waiting.
P	Routes output to the spooler.

Description

For further information on SPIE, please refer to *UltiPlot Reference Guide*.

Available On

Any user account.

SPLIT

SPLIT is an UltiPlot command that generates a sorted list of items and uses this list to produce a rectangular chart, bar graph, line graph, or scatter diagram. SPLIT is a graphic equivalent of the SORT command.

Syntax

SPLIT filename {itemlist} {sel-criteria} {sort-criteria} {output-specifications} {(options)}

filename	Specifies the file containing the items to be charted.
itemlist	One or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be charted. Also known as a WITH clause.
sort-criteria	Specifies sorting sequence. Also known as a BY clause.
output-specifications	Specifies the attributes and values in the selected items that should be charted.
(options)	
C	Suppresses column heading lines that define attributes in a report.
D	Suppresses all detail lines from a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.
N	Specifies no automatic end-of-page waiting.
P	Routes output to the spooler.

Description

For further information on SPLIT, please refer to *UltiPlot Reference Guide*.

Available On

Any user account.

SREFORMAT

SREFORMAT is an Ultimate RECALL command that creates a new file from specified items in a file, according to specific selection criteria, modifiers, and options.

Syntax

SREFORMAT filename {itemlist} {sel-criteria}{sort-criteria} {output-specifications} {(options)}

filename	Specifies the file containing the items to be sorted and reformatted.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be processed. Also known as a WITH clause.
sort-criteria	Specifies the sorting sequence. Also known as a BY clause.
output-specifications	Specifies the attributes and values in the selected items that should be processed.
(options)	
C	Suppresses column heading lines that define attributes in a report.
H	Suppresses the report's page heading line and "n items listed" line.
I	Suppresses the item-ID column or row heading.

Note: This command can also use the TAPE modifier.

Description

For further information on SREFORMAT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

SSELECT

SSELECT is an Ultimate RECALL command that creates a sorted select-list from specified item-IDs or attribute values.

Syntax

**SSELECT filename {itemlist} {sel-criteria}{sort-criteria}
{output-specifications {print-limiters}}**

- | | |
|------------------------------|--|
| filename | Specifies the file containing the items to be sorted and selected. |
| itemlist | One or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present. |
| sel-criteria | Conditions that must be met by an item in order for it to be sorted and selected. Also known as a WITH clause. |
| sort-criteria | Specifies the sorting sequence. Also known as a BY clause. |
| output-specifications | Specifies the attributes and values in the selected items to be used to create the select-list. |
| print-limiters | Restricts the printing of output specification to values that meet the limit conditions. |

Description

For more information on SSELECT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

START-RESYNC

START-RESYNC issues a DISK-RESYNC command, followed shortly by a DISK-STATUS command.

Syntax

START-RESYNC source destination

source Specifies channel address of the disk that is already running as part of the system. Enter in hexadecimal without a preceding period.

destination Specifies channel address of a disk that is to be made a sib of (shadow) the source disk. Enter in hexadecimal without a preceding period.

Description

Because disk problems can cause DISK-RESYNC to fail shortly after it begins execution, START-RESYNC provides as a convenient way to execute DISK-RESYNC, wait a while, then display the status of the resynchronization in case any initial failures have occurred. If START-RESYNC does not indicate an error, resynchronization usually proceeds to a successful completion, stopped only by a hard disk error on the destination disk or a system reboot.

```
:START-RESYNC 2880 E080
[361] Disk resynchronization started.
Current Disk Subsystem Status      10:19:55  14 AUG 1991

Dynamic resynchronization is in progress.
Volume  Channel(s)      Status
   1    2800/E000      Both running shadowed.
   2    2880/E080      2880 is being copied to E080.
                          0% done.
```

Available On

SYSPROG account on Ultimate Bull 7000 systems.

See Also

DISK-RESYNC
DISK-STATUS

STAT

STAT is an Ultimate RECALL command that accumulates and reports the total of all the values of one attribute name for a selected set of file items. It also provides a count of the number of items selected and their average value.

Syntax

STAT filename {itemlist} {sel-criteria} {attr}

filename Specifies the file containing the items to be processed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by the specified **attr** value in an item in order for the item to be processed. Also known as a WITH clause.

attr Specifies the value of a single attribute to be processed in the item. If omitted, the entire item is processed.

Description

For further information on STAT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

STATUS

STATUS indicates the general type of processing being performed on one or more lines. STATUS is also available as an option on the ON-LINE-DIAGS menu.

Syntax

STATUS {n {n}...} {(P)}

n Specifies the line number for which status is to be reported. Multiple lines must be separated by spaces. If omitted, the status of all logged-on lines is reported.

(P) Routes output to the spooler.

Description

Use STATUS to view the processing status of one or more lines.

STATUS is similar to WHERE, except that STATUS provides descriptions of the ABS (assembly-language) frames and the PIB (Process Identification Block) status bits, in place of raw numbers.

For each line specified, STATUS displays the name of the account logged on to that line, a brief description of the assembly-level software currently being executed, and the PIB status bits. STATUS also provides an interpretation of the status bits, for example, showing whether a line is performing terminal input, terminal output, or waiting for input.

```

: STATUS 0 3 15.J
Name.... Frame ID....Status .....
0 SYSPROG WHERE 0000 Running
3 ACCTING SYSTEM 0210 Input roadblocked/pending
15 SPOOLER SPOOLER 4000 Sleeping
:

```

Available On

SYSPROG or SECURITY account.

See Also

LISTU{SERS}
ON-LINE-DIAGS
WHERE

STRIP-PARITY

STRIP-PARITY restores the normal input communication format of 7-bit ASCII characters plus a parity bit on a specified line.

Syntax

STRIP-PARITY {n}

n Specifies the line for which STRIP-PARITY mode should be set. If omitted, the current line is assumed.

Description

STRIP-PARITY can be used to resume receiving data at the system default mode of 7-bit ASCII characters plus a parity bit. STRIP-PARITY assumes that the line has previously been set by SAVE-PARITY to allow transmission of 8-bit transparent data.

STRIP-PARITY sets the receive-data mode so that the high-order bit is stripped from the incoming data stream. This is the normal mode, where the 7-bit ASCII character is assumed.

Once a line has been reset by STRIP-PARITY, it remains in the normal mode until set again by SAVE-PARITY. SAVE-PARITY sets the line to the 8-bit mode.

A coldstart resets all lines to the system default mode (the STRIP-PARITY mode). A warmstart, however, does not change the current mode on any line.

```
: STRIP-PARITY 4.1  
:
```

Available On

SYSPROG or SECURITY account.

See Also

SAVE-PARITY

STRIP-SOURCE

STRIP-SOURCE creates copies of assembly language program items with all source language statements deleted.

Syntax

STRIP-SOURCE filename {itemlist}

filename Specifies the file from which the items listed in the itemlist are to be accessed and copied

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

Description

Use STRIP-SOURCE to create an assembly language program item that contains only object code. These stripped items can be loaded and verified using MLOAD and MVERIFY, but cannot be re-assembled.

Once a filename and itemlist are entered, STRIP-SOURCE prompts for a destination file name. After processing, the destination file contains stripped versions of each source item, leaving the original items unchanged.

The first six lines of each program item are assumed to be comment lines and are not stripped.

```
:STRIP-SOURCE .MODES *↓
Destination file: OBJECT.CODE
:
```

Available On

SYSPROG or SECURITY account.

See Also

AS
 ASM (Ultimate 1400 systems)
 OPT (IBM S/370 and S/390 systems)
 MLIST
 MLOAD
 MVERIFY
Ultimate Assembly Language Reference Guide

SUBD

SUBD subtracts two decimal integers.

Syntax

SUBD n m

n Specifies the first decimal integer.

m Specifies the second decimal integer.

Description

SUBD subtracts two decimal numbers. These numbers can range from 0 (zero) to ± 140737488355327 .

```
: SUBD -20 5.1  
      -25  
:
```

Available On

Any user account.

See Also

SUBX

SUBX

SUBX subtracts two hexadecimal numbers.

Syntax

SUBX n m

n Specifies the first hexadecimal number.

m Specifies the second hexadecimal number.

Description

SUBX subtracts one positive or negative hexadecimal number from another. Negative numbers can range from FFFFFFFFFF to 800000000001. Positive numbers can range from 0 to 7FFFFFFFFF. If fewer than 12 hexadecimal characters are entered, high order zeroes are assumed.

```
:SUBX 7FFF 20.↓  
      7FDF  
:
```

Available On

Any user account.

See Also

SUBD

SUM

SUM is an Ultimate RECALL command that accumulates and reports the total of all the values of one attribute name for a selected set of file items.

Syntax

SUM filename {itemlist} {sel-criteria} {attr}

filename Specifies the file containing the items to be processed.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by the specified **attr** value in an item in order for the item to be processed. Also known as a WITH clause.

attr Specifies the value of a single attribute to be processed in the item. If omitted, the entire item is processed.

Description

For further information on SUM, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

SYS-GEN

SYS-GEN is used to create a SYS-GEN tape during a Method 1 upgrade, and should not be used at any other time.

For further information on SYS-GEN, please refer to the upgrade procedure for your system.

SYSMON

SYSMON invokes the performance monitor, which measures and displays Ultimate S/370 and S/390 system activity.

Syntax

SYSMON

Description

The performance monitor uses a series of screens to display information about system activity, as follows:

Screen Name	Description
PARM	Used to specify the operational parameters.
MAIN	Displays system activity and line usage data.
DISK	Displays summary of disk utilization.
STAT	Displays detailed statistics on use of system resources.
VIRT	Displays cumulative statistics on use of virtual locks.
VIRTI	Displays interval statistics on use of virtual locks.

When SYSMON is invoked the first time, the PARM screen is displayed. When SYSMON is invoked subsequently, it immediately begins accumulating values for the first sample period and displays a message similar to the following:

```
MONITOR ACCUMULATING INITIAL STATISTICS FOR THE NEXT
xx SECONDS
```

The MAIN screen is then displayed.

These screens are described in detail in the following sections.

Screen Values

The values for all the screens are calculated at the end of each sample period. Thus, when you move from one screen to another, the values displayed are for the same sample period. If the number of digits to be displayed exceeds the maximum specified for an entry, the value is divided by 1000 and a K is appended to indicate the value has been scaled. If the number of digits is still too large, the value is again divided by 1000 and an M is appended to the value. If the number of digits is still too large, the value is again divided by 1000 and a G is appended to the value.

Command Prompt

Each screen has a command prompt. The following commands are available on any of the screens, except where noted:

DISK	Displays DISK screen.
EXIT	Exits to TCL.
HELP	Lists the names of available commands.
FREE	Restarts the display of updated statistics.
HOLD	Stops the display of updated statistics based on new samples; the sampling continues.
MAIN	Displays MAIN screen.
PAGB	Displays previous page; available only on MAIN and DISK screens.
PAGF	Displays next page; available only on MAIN and DISK screens.
PARM	Displays PARM screen.
STAT	Displays STAT screen.
VIRT	Displays VIRT screen.
VIRTI	Displays VIRTI screen.

To redisplay the data on the screen, press **ENTER**.

Top of Screen

The top line of each screen is similar to the following:

```
date time      scrn      ULTIMATE SYSTEM MONITOR  vmuserid serial.n
```

where:

- date** Current date.
- time** Time the current sample was taken.
- scrn** Screen name.
- vmuserid** For VM systems, displays the VM user id.
- serial.n** Ultimate system serial number.

Executing From More Than One Terminal

SYSMON can be executed from more than one terminal at a time. However, since the kernel cannot tolerate more than one inquiry per sample period, SYSMON is designed to use previously stored historical data to supply the information for other terminals using the performance monitor. The data is stored in the SYSMON.HISTORY file in SYSPROG.

This means that any terminal running the monitor must be logged onto SYSPROG or have a Q-pointer to the file SYSMON.HISTORY. If the program is run from SYSPROG and the file does not exist, it is created. However, if the program is run from an account other than SYSPROG and the file does not exist, the program returns to TCL. (The format of items in this file is described in the section SYSMON.HISTORY File.)

The terminal that first started the performance monitor is the master terminal, and only the master terminal can set sampling parameters. In order for other terminals to use the monitor, the master terminal must specify Y at the following prompt on the PARM screen:

```
WRITE HISTORICAL DATA TO FILE
```

For more information on the PARM screen, see the PARM Screen section.

If the master terminal exits the performance monitor, another terminal running the monitor becomes the master and that terminal does the sampling.

Use of Historical Data File

The historical data file (SYSMON.HISTORY) created by SYSMON can be used for several purposes, including constant analysis, capacity planning, and load balancing.

The file is useful for both immediate and archive-based reporting. In some cases, fields in the file are cumulative from IPL (or midnight), permitting selection of every nth record, thus reducing the number of records to be released.

Reports can be created using Ultimate RECALL, ULTILOT, or BASIC. Since every computer installation is slightly different, no archive methods are described here. Each site must decide how often and where to save performance data.

However, since the overhead of the monitor increases when its file is full, care should be taken to empty (archive) the file periodically. Make sure the file can contain the number of records written between each archive.

PARM Screen The first time SYSMON is invoked, or thereafter when PARM is entered at the command prompt, a screen similar to the following is displayed:

```

date time      PARM      ULTIMATE SYSTEM MONITOR      vmuserid serial.no

PROGRAM OPERATION PARAMETERS

1. SAMPLING INTERVAL [SECONDS] (30-600)          030
2. SAMPLES TO AVERAGE [5-100]                   010
3. WRITE HISTORICAL DATA TO FILE [Y/N]          Y
4. ENABLE REAL MEMORY DISPLAY/ALTER [Y/N]N
5. LINE NUMBER TO ALWAYS MONITOR

10. MASTER PROCESS NUMBER                        n          <- THIS PROCESS
11. ACCOUNT RUNNING MASTER PROCESS              current acct
12. ITEMID OF CURRENT CAPTURE RECORD            date*time*sys.type*vmuserid

ENTER LINE # TO CHANGE, 'SAVE', OR 'EXIT'
    
```

This screen is used to specify the parameters that determine the length of time each sample is to take and the number of samples to use in determining the system statistics. The default is 30-second samples and 10 samples per average.

This is the first screen displayed, unless SYSMON has been executed previously or is being executed from more than one terminal; in that case, this screen is skipped and the MAIN screen is displayed.

To change one of the parameters, enter the number of the line. Only lines 1 through 5 can be changed. To continue with the program, enter **SAVE**. This takes you to the MAIN screen. To exit to TCL, enter **EXIT**.

Each line of the PARM screen is described below:

- | | |
|---|--|
| 1. SAMPLING INTERVAL | The time, in seconds, to use for each sample. The range is 30-600 seconds. The default is 30. |
| 2. SAMPLES TO AVERAGE | The number of samples to take. The range is 5-100. The default is 10. |
| 3. WRITE HISTORICAL
DATA TO FILE | To save data to a file, enter Y. If the data is not to be saved, enter N. If more than one user wants to run this program at a time, this parameter must be Y. The default is N. |
| 4. ENABLE REAL
MEMORY
DISPLAY/ALTER | Currently, this option is not implemented; the option should remain N. |
| 5. LINE NUMBER TO
ALWAYS MONITOR | The MAIN screen can display a maximum of 12 lines on the first page, 24 total. If a specific line should always be displayed, enter its line number here. |
| 10. MASTER PROCESS
NUMBER | The line number of the master process; if the current line is the master, the characters THIS PROCESS are displayed. (This parameter is for display only.) |
| 11. ACCOUNT RUNNING
MASTER PROCESS | The name of the account that is the master process. (This parameter is for display only.) |
| 12. ITEMID OF CURRENT
CAPTURE RECORD | The item-ID under which the current statistics will be saved in the SYSMON.HISTORY file. (This parameter is for display only.) |

**MAIN
Screen**

When MAIN is entered at the command prompt, a screen similar to the following is displayed:

```

date time          MAIN    ULTIMATE SYSTEM MONITOR          vmuserid serial.no

      TOT  OVH  VRT  DISK OTHER  REF  VIRT  VIRT  Q1   Q2  INTERVAL: nnn SEC
      CPU% CPU% CPU% ISEC  ISEC  MEM% PAGE  DISP  USER  USER  CAPTURE :   Y
--> nnn  nnn  nnn  nnn.n nnn.n  nnn nnnnn  nnnn  nnnn  nnnn  PAGE LEN:  4096
<-- nnn  nnn  nnn  nnn.n nnn.n  nnn nnnnn  nnnn  nnnn  nnnn  AVAIL CPU%: nnn.n

LINE ACCOUNT NAME          Q  STS  CPU%  DISK Q1MS Q2MS LOK ATL EXE DSP DSP
*line account.name1        x  xxx  xxx.xx nnnn nnnn nnnn nnn nnn nnn nnn nnn
line account.name2         x  xxx  xxx.xx nnnn nnnn nnnn nnn nnn nnn nnn nnn
.
.
.
line account.namen         x  xxx  xxx.xx nnnn nnnn nnnn nnn nnn nnn nnn nnn

ENTER COMMAND:
    
```

This screen displays both the total CPU activity and the individual line use of system resources. The information on the line preceded by "-->" indicates the current sample, while the information on the line preceded by "<--" indicates the averaged values.

The following statistics are displayed:

- TOT CPU% Total non-idle CPU time (OVH plus VRT time) as a percent of total time including idle time.
- OVH CPU% Total CPU time performing non-virtual work, such as processing interrupts, selecting users to run, or flushing memory.
- VRT CPU% Total CPU time running virtual processes.

DISK ISEC	Number of physical disk I/O operations initiated per second. Note that one start I/O can read or write many frames.
OTHER ISEC	Number of physical non-disk I/O operations initiated per second. This includes terminals, tape, printers, and any other non-disk device.
REF MEM%	Percent of virtual frames in main storage that were recently referenced plus the number of frames that have been updated and need to be written back to disk; see the STAT screen for the number of each. The value for this parameter can range from 0 to 200%.
VIRT PAGE	Number of virtual frames in main storage. This is a measure of how much memory is actually available for virtual tasks.
VIRT DISP	Number of virtual dispatches or activities. An activity is any processing that takes place for virtual; for example, it is an activity when a character is entered at the keyboard and the system moves it to a buffer. It is another activity when ENTER is pressed and the system goes to process the data.
Q1 USER	Number of processes classified as 'Q1' (an interactive process is an example of a Q1 process) at the end of the sample interval.
Q2 USER	Number of processes classified as 'Q2' (batch process is an example of a Q2 process) at the end of the sample interval.
INTERVAL	Actual number of seconds between samples, rounded to the nearest second. The actual elapsed time can be greater, depending on system load. (The actual elapsed time, rounded to the nearest millisecond, is used for 'per second' calculations and is saved in the SYSMON.HISTORY file.)

CAPTURE	Y indicates the performance data is being written to SYSMON.HISTORY; N indicates that it is not being written. In order for more than one terminal at a time to use the performance information, this must be Y.
PAGE LEN	System hardware page size. This can be different from Ultimate frame size; if it is, there might be performance problems.
AVAIL CPU%	Percent of CPU time available to the Ultimate system. This is calculated by dividing the number of milliseconds that Ultimate could have had control of the CPU by the wall clock time in milliseconds. On a VM system, this measures the CPU resources that are being used by other virtual machines, by subtracting the value shown from 100 percent.
LINE	Line number: * Indicates the current line. @ Indicates that the process is always to be part of the sample
ACCOUNT NAME	Account the process is logged on to, from ACC attribute 1.
Q	Indicates the type of process; can be one of the following: A process is permanently in Q1 B process is permanently in Q2 X process ran in both Q1 and Q2 during sample interval 1 process was only in Q1 during the sample interval 2 process was only in Q2 during the sample interval

STS	Indicates status at end of sample period; can be one of the following: RUN run at end of sample period INP waiting for input SLP waiting for a specific time to elapse (for example, RQM, SLEEP) DSK waiting for a frame to be read from disk OUT waiting for terminal output to be written to the terminal/printer
CPU%	Percent of total virtual CPU resource consumed by this process.
DISK	Number of frame faults requested during sample interval.
Q1MS	Time spent executing as a Q1 user (in milliseconds).
Q2MS	Time spent executing as a Q2 user (in milliseconds).
LOK	For all processes but the spooler, number of virtual locks requested (the actual number of locks acquired is this number less the ATL value). For spooler processes, indicates internal activity of spooler.
ATL	For all processes but the spooler, number of times a virtual lock was requested, but unavailable. For spooler processes, indicates the number of serial printers jobs that were initiated plus the number of times a lock was requested, but unavailable.
EXE	Number of times system assigned a new execute level to a process.
DSP	Number of activities during the sample period.
DSF	Number of times this line was not activated during the sample period due to a required frame not being in memory. As this number increases, it indicates more difficulty in starting a process to run (thrashing).

DISK Screen When DISK is entered at the command prompt, a screen similar to the following is displayed:

```

date time    DISK    ULTIMATE SYSTEM MONITOR    vmuserid serial.no

                SERV -INTERVAL --CUMULATIVE--- I/O  QUE
CCUU VOLSER  MS.  READ WRIT  READ WRITE ERR  TIME LEN  BSY%
xxxxx xxxxxx nn.n nnnn nnnn nnnnn nnnnn nnn nnn.n nn.n nn.n
.
.
.
xxxxx xxxxxx nn.n nnnn nnnn nnnnn nnnnn nnn nnn.n nn.n nn.n

ENTER COMMAND:
    
```

This screen displays the following statistics on disk usage:

- CCUU Channel address of the disk. For IBM VM systems, this is a virtual address.
- VOLSER Name given the disk by the user.
- SERV MS. Milliseconds per frame read or write. This is intended to measure how efficiently the disk itself is operating. It does not measure delays caused by queueing the I/O operation.
- INTERVAL READ Number of frame reads done during the sample period.
- INTERVAL WRITE Number of frame writes done during the sample period.
- CUMULATIVE READ Total number of frame reads done since last IPL.

CUMULATIVE WRITE	Total number of frame writes done since last IPL.
CUMULATIVE ERR	Total number of errors (both correctable and non-correctable) since last IPL.
I/O TIME	Average time to perform a complete I/O operation during the sample period. This might include many reads and writes (see QUE LEN).
QUE LEN	Average number of reads and writes per disk operation.
BSY%	Percent of time that the system found the disk busy when trying to start an operation. This also includes controller and bus (IBM channel) busy conditions.

Note: If a disk has no activity during an interval, the *SERV MS.*, *I/O TIME*, and *QUE LEN* are shown as zero.

**STAT
Screen**

When STAT is entered at the command prompt, a screen similar to the following is displayed:

```

date time      STAT      ULTIMATE SYSTEM MONITOR      vmuserid serial.no

-----CPU%-----PAGES-----
TOT WAIT EXT I/O DISP ECB Q1 Q2 VIRT REF WRQ ABS W/S MON
--> nnn nnn
<-- nnn nnn

ENTER COMMAND:
    
```

This screen displays the following detailed breakdown of the statistics displayed on the first screen:

- CPU% TOT Same as TOT CPU% on main screen.
- CPU% WAIT Percent of time the system was idle during the sample period.
- CPU% EXT Percent of time the system was handling timer-based events.
- CPU% I/O Percent of time the system was handling I/O operations and interrupts.
- CPU% DISP Percent of time the system was dispatching a process (selecting the process to run, attaching its registers, and getting it ready to run).
- CPU% ECB Percent of time the system was running kernel-related work not shown above.
- CPU% Q1 Percent of time the system was running Q1 processes.

CPU% Q2	Percent of time the system was running Q2 processes.
PAGES VIRT	Same as VIRT PAGE on main screen.
PAGES REF	Number of virtual frames that were recently referenced.
PAGES WRQ	Number of virtual frames that were recently changed and have not yet been flushed to disk.
PAGES ABS	Number of ABS frames in main memory.
PAGES W/S	Number of workspace frames in main memory. This does not include EXECUTE workspaces.
PAGES MON	Number of pages converted to kernel use, over and above the number of pages allocated at IPL.

VIRT Screen When VIRT is entered at the command prompt, a screen similar to the following is displayed:

```

date time          VIRT    ULTIMATE SYSTEM MONITOR          vmuserid serial.no
-----GROUP LOCKS-----
  MAIN  NETWK  GOT    TBL   LOCK  LOCK
  CALLS  CALLS  LOCK   FULL  HELD  RTRY
nnnnnnn nnnnnnn nnnnnnn nnnnnn nnnnnn nnnnnn

-----ITEM LOCKS-----
  MAIN  RTNALL  GOT    TBL   LOCK  LOCK  WRTLK  WRTLK  GLOCK
  CALLS  CALLS  LOCK   FULL  HELD  RTRY  HELD  FULL  RTRY
nnnnnnn nnnnnnn nnnnnnn nnnnnn nnnnnn nnnnnn nnnnnn nnnnnn nnnnnn

-----READ LOCKS-----          -----READ ITEM-----
  MAIN  WRTLK  WRTLK  GLOCK  LOCK  TBL  ADD  OVF  MAIN  RTNALL  NOT
  CALLS  HELD  HELD+  FULL  RTRY  FULL  FRM  ERR  CALLS  CALLS  LOCKD
nnnnnnn nnnnnnn nnnnnnn nnnnnn nnnnnn nnnnnn nnn  nnn  nnnnnnn  nnnnnnn  nnnnnnn

-----WRITE LOCKS-----
  MAIN  GOT    NOT    RDLK  RDLK
  CALLS  LOCK  LOCKD  HELD  HELD+
nnnnnnn nnnnnnn nnnnnnn nnnnnnn nnnnnnn

ENTER COMMAND:
    
```

This screen displays the following statistics on locks set by the system:

GROUP LOCKS:

MAIN CALLS Number of times the group lock routine "wait if group lock cannot be obtained" was called.

NETWK CALLS Number of times the group lock routine "do not wait if group lock cannot be obtained" was called. This is used, for example, by UltiNet.

GOT LOCK	Number of times group lock was obtained.
TBL FULL	Number of times group lock was not acquired because group lock table is full.
LOCK HELD	Number of times group lock was not acquired because some other process held that lock.
LOCK RTRY	Number of times process looped in group lock routine trying to acquire a lock.

ITEM LOCKS:

MAIN CALLS	Number of times the item lock routine "spin until lock obtained" was called.
RTNALL CALLS	Number of times the item lock routine "do not wait if lock cannot be obtained" was called.
GOT LOCK	Number of times item lock was obtained.
TBL FULL	Number of times item lock was not acquired because item lock table full.
LOCK HELD	Number of times item lock was not acquired because that lock held by another process.
LOCK RTRY	Number of times process looped in item lock routine trying to acquire a lock.
WRTLK HELD	Number of times item lock was not acquired because a write group lock was held by another process.
WRTLK FULL	Number of times item lock was not acquired because the write group lock table was full.
GLOCK RTRY	Number of times item lock routine had to retry locking a group.

READ LOCKS:

MAIN CALLS	Number of times read lock routine called to get a read lock.
------------	--

WRTLK HELD	Number of read lock calls that failed because a write lock was held by another process.
WRTLK HELD+	Number of read lock calls that failed because a write lock persisted after an attempt to free the lock by activating the locking process.
GLOCK FULL	Number of read lock calls that failed because the group lock table was full.
LOCK RTRY	Number of times read lock routine retried getting a lock after a failure.
TBL FULL	Number of times the read lock routine found its table full.
ADD FRM	Number of times read lock routines expanded the read lock table.
OVF ERR	Number of times the read lock routines could not expand the read lock table because no available space frames were available.
 READ ITEM:	
MAIN CALLS	Number of calls to read an item for update.
RTNALL CALLS	Number of calls to read an item for update that would not wait if a lock was held.
NOT LOCKD	Number of times that a read lock for update failed.
 WRITE LOCKS:	
MAIN CALLS	Number of calls to get a write lock for the purpose of updating an item.
GOT LOCK	Number of times lock was obtained.
NOT LOCKD	Number of times lock was not obtained.

RDLK HELD	Number of times lock was not obtained because a read was underway on the same group.
RDLK HELD+	Number of times that another process holding the desired lock was run to try and free the lock.

**VIRTI
Screen**

The VIRTI is exactly the same as the VIRT screen, except the statistics are displayed for the last sample interval only.

**SYSMON.
HISTORY
File**

Data that is used in preparing the screens can be captured and saved to the SYSMON.HISTORY file by specifying Y at prompt 3 (WRITE HISTORICAL DATA TO FILE) in the PARM screen.

Data is stored in the SYSMON.HISTORY file in the following format:

item.id	date*time*system.type*vmuserid
001	SYSMON version number (currently 1.0)
002	number of milliseconds in current sample
003	reserved
004	total WAIT (idle) milliseconds since midnight
005	total EXT CPU milliseconds since midnight
006	total I/O CPU milliseconds since midnight
007	total DISP (dispatcher) CPU milliseconds since midnight
008	total ECB (kernel) CPU milliseconds since midnight
009	total Q1 CPU milliseconds since midnight
010	total Q2 CPU milliseconds since midnight
011	total memory size in pages
012	number of recently referenced pages
013	number of recently modified pages
014	number of virtual pages converted to kernel use
015	internal use only
016	internal use only
017	number of core locked pages
018	number of pages that have I/O errors outstanding
019	internal use only
020	internal use only
021	internal use only
022	number of ABS frames in memory

- 023 number of primary and extended workspace frames in memory (excluding frames used by EXECUTE)
- 024 number of data frames and EXECUTE workspaces in memory
- 025 accumulated number of successful process dispatches since IPL
- 026 number of Q1 processes
- 027 number of Q2 processes
- 028 accumulated number of attempted process dispatches since IPL
- 029 internal use only
- 030 internal use only
- 031 internal use only
- 032 internal use only
- 033 internal use only
- 034 internal use only
- 035 internal use only
- 036 internal use only
- 037 internal use only
- 038 internal use only
- 039 internal use only
- 040 internal use only
- 041 internal use only
- 042 accumulated total disk reads since IPL
- 043 accumulated total disk writes since IPL
- 044 accumulated disk start I/O operations
- 045 accumulated non-disk start I/O operations
- 046 reserved
- 047 reserved
- 048 reserved
- 049 reserved

Attributes 50 through 64 are multivalued, with each value in attributes 51 through 64 relating to the disk address in the corresponding value in attribute 50.

- 050 disk address
- 051 disk volume number (VOLSER)
- 052 accumulated number of read operations since IPL
- 053 accumulated number of write operations since IPL

- 054 average number of milliseconds to read or write one frame during the sample period
- 055 accumulated number of read and write errors since IPL
- 056 accumulated number of milliseconds elapsed while I/O was underway to the device, during sample period; does not include time waiting in a queue before I/O operations started
- 057 accumulated number of I/O operations done during sample period. Each start I/O counts as one operation, even if that start I/O operation does more than one read or write
- 058 accumulated number of I/O operations done to the device since IPL
- 059 accumulated number of interrupts received from the device since IPL
- 060 accumulated number of times device found busy when kernel wanted to start an I/O operation since IPL
- 061 reserved
- 062 reserved
- 063 reserved
- 064 reserved

Attributes 65 through 84 are multivalued, with each value in attributes 66 through 84 relating to the process number in the corresponding value in attribute 65.

- 065 process number
- 066 process status in decimal; value corresponds to that shown by WHERE verb
- 067 queues process ran in during sample interval; possible values are
 - 1 Q1
 - 2 Q2
 - x both Q1 and Q2
 - A permanently in Q1
 - B permanently in Q2
- 068 number of CPU milliseconds executed while in Q1
- 069 number of CPU milliseconds executed while in Q2
- 070 number of disk frame faults
- 071 number of virtual locks requested

SYSMON

- 072 number of times a virtual lock was requested, but
unavailable
- 073 number of successful dispatches
- 074 number of dispatch attempts
- 075 number of requests for I/O related kernel services
- 076 number of requests for non-I/O related kernel services
- 077 number of times system assigned a new execute level to
a process
- 078 reserved
- 079 reserved

Values in attributes 80 through 110 are for internal use only.

Available On SYSPROG or SECURITY account on Ultimate S/370 and S/390 systems.

SYSPROG

SYSPROG displays the SYSPROG Main Menu.

Syntax

SYSPROG

Description

The SYSPROG Main Menu allows you to save files, back up accounts, load utility programs, set spooler parameters, reallocate files, and create boot tapes.

Note: The SYSPROG command only works in the SYSPROG account.

When invoked, SYSPROG displays the following menu:

```
                                SYSPROG MAIN MENU

1.  File-Save menu
2.  Account-Save menu
3.  Load Ulti's menu
4.  Spooler Menu
5.  Automatic File Reallocation Menu
6.  Create Boot tape

Press RETURN for TCL

ENTER SELECTION ?
```

At the Enter Selection prompt, enter the number of the desired option. The screen for the selected option is then displayed.

To go back to TCL, press RETURN.

Available On SYSPROG account.

See Also

ACCOUNT-SAVE
ALL-UPDATE-SAVE
CREATE-BOOT
FILE-SAVE
PART-UPDATE-SAVE
REALLOCATE
RESTORE-ALL-ULTIS
SP-MENU
ULTI*MENU

System Management Guide for information on the SYSPROG account and menus.

SYSTEM-ERROR-SUMMARY

SYSTEM-ERROR-SUMMARY generates a summary of the SYSTEM-ERRORS file grouped by error type.

Syntax

SYSTEM-ERROR-SUMMARY

Description

SYSTEM-ERROR-SUMMARY can be used at any time, but is especially useful when troubleshooting suspected hardware problems.

The report generated by SYSTEM-ERROR-SUMMARY is similar to that generated by LIST-SYSTEM-ERRORS when output is to the printer, although it does not print Group Format Errors (GFEs) or system aborts. If the SYSTEM-ERRORS file has no error items, the command displays the following message:

```
[401] No items present.
```

Up to five separate sections can be included in the report, depending on the errors present in SYSTEM-ERRORS:

- EDAC (Error Detection And Correction) memory errors detected by the standard CPU.
- MLCP (Multi-Line Communications Processor) errors.
- EDAC errors detected by a disk controller.
- Disk errors.
- Machine check errors (Ultimate 1400 systems only).

Errors within each section are sorted in chronological order.

When SYSTEM-ERROR-SUMMARY is invoked, the following information is displayed:

```
n items selected.
```

```
Do you want the listing to the printer?(Y/<CR>)
```

Enter **Y** to send the information to the printer, or press **RETURN** to display the information on the screen.

SYSTEM-ERROR-SUMMARY

```
: SYSTEM-ERROR-SUMMARY.↓
2 items selected.
Do you want the listing to the printer?(Y/<CR>)↓
```

System Error Summary Listing as of 21 MAR 1991

DATE	CHAN #	OF ERRS	MLCP ERRORS							
			BIT MAP							
			00-15	16-31	32-47	48-63	64-79	80-95	96-111	112-127
03/21/90	3580	1	0000	0000	0000	0000	0100	0000	0000	0000
03/21/90	1900	1	0100	0000	0000	0000	0000	0000	0000	0000
:										

Available On SYSPROG account.

See Also LIST-SYSTEM-ERRORS

SYSTEMERRORS

SYSTEMERRORS lists the total number of errors recorded in the SYSTEM-ERRORS file over the past two days.

Syntax SYSTEMERRORS

Description SYSTEMERRORS counts the errors logged in the SYSTEM-ERRORS file over the past two days.

Note: For a complete listing of the errors, use LIST-SYSTEM-ERRORS.

When SYSTEMERRORS is invoked, the following prompt is displayed:

```
To Lineprinter (Y/N/X)
```

To send the count of system errors to the printer, enter Y. To display the information on the screen, enter N. To return to TCL, enter X.

```
: SYSTEMERRORS.␣  
Count of System-Errors in the past 2 days  
  
To Lineprinter (Y/N/X) - N.␣  
  
Total of SYSTEM ERRORS IN PAST TWO DAYS = 2  
:
```

Available On SYSPROG or SECURITY account.

See Also LIST-SYSTEM-ERRORS
SYSTEM-ERROR-SUMMARY

T-ATT

T-ATT attaches a tape device to the line executing the command.

Positional Syntax

T-ATT {n} {size} {density} {(options)}

Keyword Syntax

T-ATT {DRIVE = n}
 {BLOCKSIZE = size}
 {DENSITY = density}
 {SPEED = speed}
 {UNBUFFERED}
 {ASCII} / {EBCDIC}
 {DECFORMAT}
 {OLDLABEL}

Note: If parameters are omitted, T-ATT attaches drive 0 with the current block size, or 8192 if no block size has been defined.

T-ATT positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
n	DRIVE = n	Specifies the tape drive to be attached. A system can have up to four tape drives (0 to 3).
size	BLOCKSIZE = size	Specifies the size of the block to write to tape, in the ranges shown below for each system. If omitted, the block size of the previous T-ATT command is used, or the default of 8192 if no block size was previously specified.
		Ultimate Bull 6000/7000 19 to 8192 for 1/2" drives.
		256 to 4096 for cartridge drives, in increments of 256.

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
		Ultimate LSI 19 to 8192.
		Ultimate 1400 19 to 32000 for 1/2" drives. 512 to 31744 for cartridge drives, in increments of 512.
		Ultimate S/370 and S/390 19 to 32000.
density	DENSITY = density	Specifies the tape density in bits per inch (bpi). Valid densities are 800, 1600, and 6250, depending on the tape device. Tape must be at BOT for this command to take effect.
	SPEED = speed	Specifies tape speed (25 or 100) for Pertec FS1000 tape drives only.
	UNBUFFERED	For GCR tape drives only. Forces the drive to run in unbuffered mode to allow accurate tape error handling. Tape must be at BOT.

The following parameters can be specified as either options or keywords. Options must include a left parenthesis.

<u>(Option</u>	<u>Keyword</u>	<u>Description</u>
A	ASCII	Specifies that reads and writes are in ASCII mode. This is the default.
E	EBCDIC	Specifies that reads and writes are in EBCDIC mode. Translates to EBCDIC when writing to tape, translates from EBCDIC when reading from tape. This setting is in effect until a T-ATT (A or T-ATT ASCII command is executed.

<u>Option</u>	<u>Keyword</u>	<u>Description</u>
D	DECFORMAT	Specifies LSI11 tape cartridge compatibility mode. It is used on Ultimate Bull 6000/7000 systems to read or write tape cartridges for use on LSI systems with tape cartridges. This compatibility mode supports the T-DUMP and ACCOUNT-SAVE commands. The data must be on the correct cartridge type for the drive doing the writing, but can be read by either drive type.
O	OLDLABEL	Specifies old label format. Used for writing tapes to be read on Ultimate systems running Revision 122 and earlier operating systems. This entry is not necessary for reading tapes.

Description

On a multiple tape drive system, T-ATT must be used before any other tape command in order to attach a tape drive. You can attach only one tape drive to your line at a time. However, if a tape drive is already attached to your line, you can use T-ATT at any time to change the parameters.

When there is only one tape drive connected to the system, most tape commands automatically attach the tape drive. However, you must use T-ATT before executing BASIC programs that do tape operations.

Once attached, the tape drive remains unavailable to other lines until it is released by a T-DET command, or until the line logs off. The tape remains attached when you LOGTO another account

If the specified tape drive is already attached to another line, the following message is displayed:

```
Tape n attached to line nn
```

If the line issuing the command is already attached to another tape drive, the following error message is displayed:

Cannot attach multiple tapes

If your terminal is already attached to the specified drive, the command displays the current block size:

```
Tape n attached
Block size: nnnn
```

If a new block size is specified in the command, the command replaces the old block size with the new block size, and displays the new block size.

<pre>:T-ATT.␣ Tape 0 attached Block size: 8192</pre>	<pre>Attach default tape drive 0, with default block size of 8192.</pre>
<pre>: :T-ATT DRIVE=3, DENSITY=1600.␣ Tape 3 attached Block size: 8192</pre>	<pre>Attach drive 3 with density of 1600.</pre>
<pre>: :T-ATT BLOCKSIZE = 16384.␣ Tape 0 attached Block size: 16384</pre>	<pre>Attach drive 0 with blocksize of 16384.</pre>
<pre>: :T-ATT UNBUFFERED (A.␣ Tape 0 attached Block size: 16384</pre>	<pre>Attach GCR drive 0 in unbuffered mode with reads and writes in ASCII.</pre>

Available On Any user account with privilege level 1 or greater.

See Also

```
T-BCK      T-DUMP
T-CHK      T-LOAD
T-COPY     T-RDLBL
T-DET      T-READ
```

System Management Guide for information on tape read/write errors.

T-BCK

T-BCK backspaces the tape a specified number of blocks, or to the previous end-of-file (EOF) mark or beginning-of-tape (BOT) mark.

Syntax

T-BCK {n}

n Specifies the number of records to backspace. The maximum value is 2147483647. If omitted, the command backspaces to the position before the previous EOF, or to the BOT.

Description

T-BCK backs up the tape drive attached to the line executing the command. In a single drive system, T-BCK also does a T-ATT if necessary. In a multiple drive system, you must first attach the tape drive by entering T-ATT.

T-BCK moves the tape back the specified number of records. If record number is omitted, the tape backs up until one of the following is reached:

- The position immediately before the previous end-of-file (EOF) mark. If any further information is to be written to tape, you must enter T-FWD to position the tape just past the EOF mark.
- The BOT mark.

On LSI systems with cartridge tapes, the tape cannot be physically moved backwards except via the T-REW command. However, the cache memory buffer can contain records previously written to or read from the tape, and T-BCK may be able to back up within the buffer and enable you to T-READ the records in memory.

On Ultimate 1400 systems, the cartridge tape drive has limited backspacing capability, and only supports the following T-BCK commands:

- Use a T-BCK 1 command after reading a label (via T-RDLBL) to backspace over the label.
- Use a T-BCK 1 command after reading a filemark or after a T-FWD command to backspace over the filemark.

- Use two T-BCK 1 commands after reading a label to backspace over both the label and the filemark.

No other cases of T-BCK are supported on the Ultimate 1400 system cartridge tape drive.

<pre>:T-BCK 12J</pre>	Go back 12 records.
Block size: 8192	
:	

Available On Any user account with privilege level 1 or greater.

See Also

- T-ATT
- T-FWD
- T-RDLBL
- T-READ
- T-REW

T-CHK

T-CHK checks one tape file or all tape files for unequal length errors and parity errors.

Syntax

T-CHK {(A)}

(A) Checks all files on the tape. If omitted, only checks the file at the current tape location.

Description

Use T-CHK to check the current file or all files for parity errors. In a single drive system, T-CHK does a T-ATT if necessary. In a multiple drive system, you must first attach the tape drive by entering T-ATT.

An unequal length error occurs when T-CHK reads a block that is not equal to the block size specified on the tape label. If an unequal length is found, T-CHK terminates with the following message:

```
Unequal length error
```

If the A option is omitted, the command returns to TCL after checking the current file and the following message is displayed:

```
[91] End tape check - 1 file(s)
```

If the A option is specified, the command starts at the current location and checks all files on the tape until it encounters an end-of-data (EOD) mark. The completion message indicates the number of files checked.

```
:T-CHK (A)
Block size: 8192
[91] End tape check - 61 file(s)
:
```

Available On

Any user account with privilege level 1 or greater.

See Also

T-ATT
VERIFY-SAVE

T-COPY

T-COPY allows systems with multiple tape drives to copy tape files from one tape to another.

Syntax

T-COPY **drive#{,file#{,newblksz} {(options)}**

drive# Specifies the number (0-3) of the destination tape drive. This number must be different from the source tape drive number (the currently attached drive).

file# Specifies the number of files to be copied. If omitted and the E option is not present, only the file at the current location is copied.

newblksz Copies the files with a different block size than the block size on the original tape. If the destination drive is a Ultimate 1400 system cartridge tape drive, **newblksz** is forced to a multiple of 512.

(options

- E** Copies all files until the end-of-data (EOD) mark is reached.
- I** Inhibits ANSI minimum record lengths of 19 bytes.
- L** Displays Ultimate tape labels on the terminal as they are encountered. This option must be used when copying to quarter-inch cartridge tapes on Ultimate 1400 systems. The L option is required when copying tapes from a multiple-reel set.
- R** Reverses the source drive and destination drive. That is, the currently attached tape drive becomes the destination drive and the drive specified by T-COPY becomes the source drive.
- S** Swaps even/odd bytes. This is useful when interchanging tapes with certain non-Ultimate equipment.
- U** Rewinds and unloads the destination tape drive when the copy is complete.

Description

T-COPY is available on systems with multiple tape drives. The command assumes that the source drive is loaded with the tape to be copied, and the drive is attached.

Any tape drive can be used as the source or destination, but the same drive cannot be used for both. If the source and destination tapes are mistakenly assigned to the same drive, the following error message is displayed:

```
From/To cannot be same drive.
```

Unless the R option is used, the source drive is the tape drive currently attached with T-ATT.

If the destination drive does not exist, the following message is displayed:

```
No such tape unit.
```

If the destination tape drive is attached to another line, the following message is displayed:

```
Tape n attached to line nn
```

If a new block size is omitted, the command copies data blocks with the same block size to the destination drive. If the tape on the source drive has variable-sized block data, the same variable-sized block data is copied to the destination drive.

If the new block size is larger than the block size on the source tape drive, data is packed into the larger block for the destination drive. For example, to copy from block size 2000 to 4000, two data blocks from the source drive are packed into one data block for the destination drive.

On the other hand, if the new block size is smaller than the block size in the source drive, data is unpacked into smaller blocks for the destination drive. For example, to copy from block size 4000 to 2000, one source data block is unpacked into two data blocks for the destination drive.

When an end-of-file (EOF) mark is reached on the source drive, the data block for the destination drive can be partially full due to packing or unpacking. In this case, the remainder of the block is filled with X'FB'.

If the system tries to copy a block that is less than the ANSI minimum size of 19 bytes (or less than 1 byte if the I option is used), the following message is displayed:

```
Invalid size - block skipped
```

When copying half-inch tapes to Ultimate 1400 system quarter-inch cartridge tapes, you must use the L option. The L option forces the copy block size to be a multiple of 512, which is a requirement of the Ultimate 1400 quarter-inch cartridge tape drive.

Always use the L option when copying tapes from a multiple-reel set. Without the L option, the end-of-reel label from the source tape can be copied onto the middle of the destination tape. If this end-of-reel label is found during a restore, the system prompts you to load the next reel, even though there may still be data after the label.

The L option also correctly numbers the copies of a multiple-reel set. Without this option, the tapes may not be numbered properly.

When copying without the E (EOD) option, you should normally follow the T-COPY with an attach of the destination drive and T-WEOF.

:T-COPY 1,,8192 (E,)	Copy all files to tape drive 1, with blocksize 8192.
:T-COPY 1, 3,8192 (L,)	Copy 3 files to drive 1 (1400 1/4 cartridge tape drive), with blocksize 8192.

Available On SYSPROG or SECURITY account.

See Also T-ATT
T-READ

T-DET

T-DET detaches a tape drive from a line.

Syntax

T-DET {U} {drive#}

U Unconditionally detaches the specified drive; available only to users with privilege level 2. If drive number is omitted, tape drive 0 is detached. This option cannot be used to detach the tape drive used by the transaction logger.

drive# Specifies the number of the tape drive to be detached. If omitted, the tape drive attached to the current line is assumed.

Description

Use T-DET to detach a tape drive from a line. When a drive has been detached, it becomes available to other users to attach via T-ATT.

You do not need to use T-DET when you log off, since these devices are automatically detached when you log off the line.

If no drive is currently attached, the command returns the following error message:

```
No tape attached!
```

If you want to detach the drive on which the transaction logger is currently running, you must suspend the tape (from the Log Menu) before using T-DET U. T-DET U then verifies that the transaction logger tape has been suspended. Otherwise, it does not detach the tape drive.

If you enter T-DET U for a drive that is in use by another process, T-DET fails and the following message is displayed:

```
Detach request denied
```

:T-DET U 2

Detach tape drive 2 from the line to which it is attached.

:

Available On Any user account to detach a tape drive from the current line. Must have privilege level 2 to detach a tape drive from another line.

See Also T-ATT

T-DUMP

T-DUMP is an Ultimate RECALL command that dumps the contents of a specified file from disk to tape.

Syntax **T-DUMP filename {itemlist} {sel-criteria} {HEADER "name"}
{(options)}**

filename	Specifies the file to be dumped to tape.
itemlist	Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.
sel-criteria	Conditions that must be met by an item in order for it to be dumped. Also known as a WITH clause.
HEADER "name"	Specifies a tape label "name."
(options)	
D	LS111 tape compatibility.
H	Suppresses the tape label.
I	Suppresses listing dumped items to the terminal.

Description For further information on T-DUMP, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On Any user account.

T-EOD

T-EOD moves the tape forward until it reaches the end-of-data (EOD) mark.

Syntax

T-EOD

Description

T-EOD moves the tape attached to the current line forward to the end-of-data (EOD) mark. The EOD mark is a double end-of-file (EOF) mark and is expected after the last file on the tape. The tape will be positioned between these two file marks.

Use T-EOD before appending data to the end of a tape with existing data. For example, to add a file to the end of a tape, enter a T-EOD followed by a T-DUMP.

Note: You cannot append data to the end of an Ultimate 1400 system cartridge tape.

```
:T-EOD
Block size: 8192
[91] End tape check - 3 file(s)
:
```

Available On

Any user account with privilege level 1 or greater.

See Also

T-BCK
T-DUMP
T-FWD

T-ERASE

T-ERASE erases tape.

Syntax

T-ERASE

Description

Use T-ERASE to create gaps in a tape.

On Ultimate Bull 6000/7000 systems and LSI systems, T-ERASE erases a 2-inch section of the tape attached to the current line. T-ERASE starts erasing at the current position of the tape and erases forward 2 inches.

On Ultimate S/370 and S/390 systems, T-ERASE erases up to a 2 foot section of the tape.

On Ultimate 1400 systems, T-ERASE erases the entire tape.

Available On

Any user account with privilege level 1 or greater.

T-FWD

T-FWD moves a tape forward a specified number of records, or to the next end-of-file (EOF) mark.

Syntax

T-FWD {n}

n Specifies the number of records to move forward. The maximum number is 2147483647. If omitted, the tape moves forward to the position immediately after the next EOF mark.

Note: T-FWD n to move n number of records forward is not supported on Ultimate 1400 systems; but T-FWD to move to the next EOF mark is supported.

Description

T-FWD moves the attached tape forward the specified number of records, or to the position immediately after the next EOF mark. The tape is then ready to read the first record of the next file.

```

:T-FWD 3␣                               Move forward 3 records.
Block size: 8192

End of file

:

```

Available On

Any user account with privilege level 1 or greater.

See Also

T-BCK
T-EOD
T-SPACE

T-LOAD

T-LOAD is an Ultimate RECALL command that loads specified file items from the tape attached to the current line.

Syntax

T-LOAD filename {itemlist} {sel-criteria} {(options)}

filename Specifies the file containing items to be loaded from tape.

itemlist Specifies one or more explicit item-IDs. If specified, each item-ID must be enclosed in single quotes, double quotes, or backslashes. If omitted, the command acts on the current select-list, or on all items in the file if no select-list is present.

sel-criteria Conditions that must be met by an item in order for it to be loaded. Also known as a WITH clause.

(options)

I Suppresses listing dumped items to the terminal.

O Overwrites existing items.

Description

For further information on T-LOAD, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

T-RDLBL

T-RDLBL reads and displays a tape label.

Syntax

T-RDLBL

Description

Use T-RDLBL to read and display a tape label. On single drive systems, T-RDLBL performs an automatic T-ATT if necessary. On multiple drive systems, a T-ATT must first be used to attach the desired drive. The tape must be positioned before the label at the beginning of a tape file.

Labels are automatically written at the beginning of tape files created by T-DUMP, and before each account saved by a file-save command such as FILE-SAVE and ACCOUNT-SAVE. Labels can also be written by T-WTLBL.

If no tape label exists on the tape, or is not in the standard label format, or if the tape is not positioned before the label, the command reads the first tape record, determines the tape does not contain a label, and backs up one record.

Tape label format is:

```
L rrrr#hh:mm:ss dd mon yyyy filename ^nn
```

where:

L	Label specifier (in byte 1).
rrrr	Block size in hexadecimal.
hh:mm:ss	Time the label was written.
dd mon yyyy	Date the label was written.
filename	Source filename. It can be user-specified if T-WTLBL was used instead of T-DUMP.
^nn	Attribute mark (^) in byte 78 followed by the reel number in bytes 79 and 80. Depending on your terminal, the attribute mark may be displayed with another symbol.

T-RDLBL

Note: On multiple-reel tape files, bytes 1-77 are the same on each tape label.

```
:T-RDLBL, Read the next tape label.  
Block size: 4000  
  
L 01B7#09:25:30 20 MAR 1991 PAYROLL ABC CORP. ^01  
  
:
```

Available On Any user account with privilege level 1 or greater.

See Also T-DUMP
T-WTLBL

T-READ

T-READ displays or prints the contents of the attached tape.

Syntax

T-READ {n{-m}} {(options)}

n Displays tape blocks 1 through n. If omitted, all tape blocks to end-of-file (EOF) or end-of-data (EOD) are displayed.

n-m Displays tape blocks n through m. If omitted, all tape blocks to end-of-file (EOF) or end-of-data (EOD) are displayed.

(options)

- A** Converts data from EBCDIC to ASCII and outputs that data in ASCII character format.
- I** Inhibits ANSI minimum record length restriction of 19 bytes.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to the spooler.
- S** Swaps even/odd bytes. This is useful when reading certain non-Ultimate tapes.
- X** Outputs all data in hexadecimal and character format.

Note: If parameters are omitted, all records in the current file on the tape are displayed in ASCII character format.

Description

Use T-READ to check the contents of a tape or tape file. On single drive systems, T-READ performs an automatic T-ATT if necessary. On multiple drive systems, a T-ATT must first be used to attach the desired drive.

T-READ outputs the tape label (if present and in standard format), and then displays the rest of the tape data. This is useful for finding the location of a specific file.

T-RET

T-RET retensions a quarter-inch cartridge tape.

Syntax

T-RET {n}

n Specifies the number of times to retension the tape. If omitted, the tape is retensioned once.

Description

Retensioning is recommended if a cartridge tape has been sitting unused in a drive for several hours. This procedure can also be helpful if you are having trouble reading a tape cartridge. For best results, repeat the retensioning several times.

T-RET moves the tape forward to the end-of-tape mark and then rewinds it back to the beginning of the tape. The tape is then brought to load point.

```
:T-RET 3.↓  
Block size: 4000  
:
```

Available On

Any user account with privilege level 1 or greater on systems with quarter-inch cartridge tape drives.

See Also

T-ATT
T-BCK
T-FWD

T-REW

T-REW rewinds the tape attached to the current line.

Syntax T-REW

Description T-REW rewinds the tape attached to the current line to the load point. The rewind begins at the current tape location and stops when it reaches the beginning-of-tape (BOT) mark.

On Ultimate 1400 systems with tape cartridges, T-REW should always be performed before any sequence that will read or write data to a tape that has just been loaded or manually removed.

A T-REW (or a T-UNLOAD) should also be performed before a tape is removed from the drive on an Ultimate 1400 system tape cartridge, or Ultimate LSI system cartridge. Failure to execute a T-REW or T-UNLOAD after writing to the tape means the tape will not have a valid end-of-data (EOD) mark.

```
:T-REW,␣  
Block size: 4000  
  
Rewinding...  
  
:
```

Available On Any user account with privilege level 1 or greater.

See Also T-ATT
T-BCK
T-FWD
T-DET
T-UNLOAD

T-SPACE

T-SPACE moves the attached tape drive forward a specified number of files, or until the end-of-data (EOD) mark.

Syntax

T-SPACE {n}

n Specifies the number of files to move forward. If omitted, the system prompts for it.

Description

Use T-SPACE to quickly position the tape at the beginning of a specific file. T-SPACE is a PROC composed of the commands T-RDLBL and T-FWD.

```
:T-SPACE 2J           Move forward 2 files.
Block size: 8192
Write density set to 1600 bpi

L 0FA0#21:50:02 30 MAR 1991 DATA SYSLIB           ~01
  Block size: 8192
  Write density set to 1600 bpi
  End of file
  Block size: 8192
  Write density set to 1600 bpi

L 0FA0#21:50:02 30 MAR 1991 DATA ERRMSG           ~01
  Block size: 8192
  Write density set to 1600 bpi
  End of file
  Block size: 8192
  Write density set to 1600 bpi
:
```

Available On

Any user account with privilege level 1 or greater.

See Also

T-ATT
T-DET
T-FWD
T-RDLBL

T-STATUS

T-STATUS displays the current status of all tape drives on the system.

Syntax **T-STATUS**

Description T-STATUS determines the status of all system tape drives and displays the report on the terminal.

If the tape drive is attached to the line issuing the command, and is capable of density selection (GCR, Pertec FS1000 and FS2000 on the Ultimate Bull 6000/7000), or the DENSITY keyword was used with the T-ATT command on the IBM, the following T-STATUS message is displayed:

```
Tape n is attached to your line, status, write density
is xxx, write
```

where:

status Off-line or on-line.
xxx Density specified with DENSITY keyword.
write Write-protected or write-permit.

If the drive is not capable of density selection, then the following T-STATUS message is displayed:

```
Tape n is attached to your line, status, write
```

If the tape is attached to another line, the following message is displayed:

```
Tape n attached to line m
```

If the tape is not attached, the following message is displayed:

```
Tape n not attached
```

T-STATUS

```
:T-STATUS↓
```

```
Tape 0 is attached to your line, on-line, write density  
is 1600, write protected.
```

```
Tape 1 attached to line # 0
```

```
:
```

Available On Any user account with privilege level 1 or greater.

See Also T-ATT
T-DET

T-UNLOAD

T-UNLOAD rewinds the attached tape and unloads the tape device.

Syntax T-UNLOAD

Description T-UNLOAD is an alternative to T-REW to rewind a tape. It rewinds the tape to load point (BOT) and unloads it for removal.

Note: A T-UNLOAD (or T-REW) should be performed before removing a tape from an Ultimate 1400 system tape cartridge. Failure to execute a T-REW or T-UNLOAD after writing to the tape means the tape will not have a valid EOD mark.

When specified for a cartridge drive (Ultimate Bull 6000/7000 system, Ultimate LSI system, and the Ultimate 1400 system), T-UNLOAD is treated as a T-REW.

<pre> :T-UNLOAD. Block size: 8192 Rewinding... : </pre>	<pre> Rewind and unload the tape attached to the current line. </pre>
---	---

Available On Any user account with privilege level 1 or greater.

See Also

- T-ATT
- T-BCK
- T-DET
- T-FWD
- T-REW
- T-WEOF

T-WEOF

T-WEOF writes an end-of-file (EOF) mark on the tape attached to the current line.

Syntax

T-WEOF

Description

T-WEOF writes the EOF mark at the current tape position. The EOF mark is actually written twice and the tape is backed up over the second mark. The two EOFs together create an end-of-data (EOD) mark. If additional data is then written on the tape, the second EOF is overwritten, resulting in a normal EOF between files. If no additional data is written, the EOD effectively marks the end of valid data on the tape.

Note that T-WEOF is not necessary after most tape operations, because T-DUMP, T-COPY without the E option, and file-save commands automatically add an EOD after writing the last tape record. BASIC, however, does not add the EOD mark.

Since the Ultimate 1400 system and Ultimate LSI system tape cartridge drives are not capable of backspacing, the second filemark is not immediately written for these drives. If T-WEOF is followed by a command that writes more data to the tape, such as T-DUMP, then the second filemark is not written at all. If T-WEOF is followed by a T-REW or a T-UNLOAD, the second filemark is written and the tape is rewound.

For this reason a T-REW or T-UNLOAD *must* be executed after writing data to the tape and before removing the tape cartridge. Failure to execute a T-REW or T-UNLOAD after writing to the tape means the tape will not have a valid EOD mark.

<pre>:T-WEOF.␣ Block size: 4000 End of file :</pre>	Write an EOF mark at the current tape location.
---	---

Available On Any user account with privilege level 1 or greater.

See Also

- T-ATT
- T-DET
- T-DUMP
- T-EOD

T-WTLBL

T-WTLBL writes a tape label at the current tape location.

Syntax

T-WTLBL label

label Specifies the label data (from 1 to 48 characters) to be written to the tape. This data normally includes file and header identifiers. If omitted, T-WTLBL does not write anything on the tape.

Description

T-WTLBL must be used when writing from a BASIC program to tape if a tape label needs to be generated. Although the BASIC program must include WRITET commands to write data records to tape, it does not write labels. T-WTLBL must be used for this, either before running the program, or from within the program via an EXECUTE statement.

T-WTLBL can also be used any other time a tape label needs to be written. The command assumes that the tape is positioned at the load point, or after an end-of-file (EOF) mark. The label is 80 bytes in length, and contains the elements shown below:

```
L rrrr#hh:mm:ss dd mon yyyy label ^nn
```

where:

L	Label specifier (in byte 1).
rrrr	Block size in hexadecimal.
hh:mm:ss	Time the label was written.
dd mon yyyy	Date the label was written.
label	User specified label, up to 48 characters.
^nn	Attribute mark (^) in byte 78 followed by the reel number in bytes 79 and 80. Depending on your terminal, the attribute mark may be displayed with another symbol.

Note: *On multiple-reel tape files, bytes 1-77 should be the same on each tape label.*

```
:T-WTLBL PAYROLL DATA FOR ABC CORP.↓
```

```
Block size: 8192
```

```
L 01B7#09:25:30 20 MAR 1991 PAYROLL DATA FOR ABC CORP. ^01
```

```
:
```

Available On Any user account with privilege level 1 or greater.

See Also

RUN

T-ATT

T-DET

T-RDLBL

Ultimate BASIC Language Reference Guide.

TABS

TABS sets tab stops for terminal input or output.

Syntax

TABS {I/O {S}}

TABS {I/O {n1 {,n2,n3 ...n15}}}

I or O	Indicates input tab stops or output tab stops, respectively.
S	When used with the I or O option, reinstates the most recently set tab stops (either input or output).
n1 {,n2,n3...}	Specifies column position(s). When used with the I or O option, the specified tab stops are set at the n positions or columns. Up to 15 tab stop positions can be specified. They must be in ascending numerical sequence.

Note: If parameters are omitted, the current input and output tab stops are displayed.

Description

Tabs are stops for user input from the terminal, and for system-generated output to the terminal. TABS can be used for a variety of tab stop operations:

- Display the current tab stops.
- Reinstates or disables previously set tab stops.
- Set new tab stops. Tab stops can be set for input or output functions, but a separate TABS is needed for each function.

Note: BASIC, PROC, and the Ultimate Line Editor support tabs; TCL supports tabs only when the TCL stack is ON.

When TABS is invoked with no parameters, the currently set tab stops (if any) are displayed as follows:

```

          1         2         3         4         5 ...
12345678901234567890123456789012345678901234567890123 ...
  I  I  I  I  I  I  I
  O  O  O  O  O

```

where I marks the columns where an input tab stop occurs, and O marks the columns where an output tab stop occurs.

If TABS is invoked with parameters, the first parameter must be either an I or an O. If other parameters are omitted, all tab stops of the specified type (input or output) are cleared.

If the S parameter is entered, all tab stops of the specified type (input or output) are reinstated to their last known positions and become operative.

If one or more numbers is specified, each number represents a column where a tab stop is to be set. Any existing tab stops are cleared before new ones are set.

Once a set of tab stops has been established, they become available at any time the system performs input/output on the terminal. The input tabs control the spacing available via the TAB key (on some terminals, this is <CTRL-I>). That is, when the TAB key is pressed, spaces are output until the cursor reaches the next tab stop. If no more tab stops are set, the TAB key has no action.

In order to perform a tab operation, the system looks only for the hexadecimal character X'09', whether or not the TAB key input it.

Note: *Input tabs set by TABS I are identical to those set by TB in the line editor.*

Output tabs are only useful for those printing terminals that support physical tabbing, and can be used to speed up output on printing terminals. Output tabs are not normally required nor advantageous on CRTs, since CRTs print blanks quickly, and output tab stops may not be supported or may be awkward to set.

If output tab stops are set, the system replaces blank sequences in any output generated by the system with an appropriate tab character

TABS

(<CTRL-I>), thus reducing the data output. The user must also set up the physical tab stops on the terminal to correspond to those set in the TABS O statement. On many terminals, this entails positioning the carriage and entering a set-tabs sequence from the keyboard.

<code>:TABS I 4,8,12,16,20,24,28</code>	Set input tabs at the indicated columns.
<code>:TABS O 10,20,30,40,50,60</code>	Set output tabs at the indicated columns.
<code>:TABS</code>	Display the current tab settings.
<code>:TABS I</code>	Remove all input tab stops.
<code>:TABS O S</code>	Reinstate all output tab stops.
<code>:</code>	

Available On Any user account.

TAPE.DIAGS

TAPE.DIAGS is used by the ON-LINE-DIAGS command to test tape drive operation.

For complete information on TAPE.DIAGS, refer to the ON-LINE-DIAGS command.

TCL-PROMPT

TCL-PROMPT changes the TCL prompt for the current line.

Syntax

TCL-PROMPT **{text}** **{'sys.code'}** **{@(c,r)}** **{@(-n)}**

text Specifies any string to be displayed, up to 39 characters.

'sys.code' Displays system information; must be enclosed in single quotes. One or more of the following system codes can be specified:

- A** Account name.
- D** Date in dd mon yyyy format.
- E** TCL stack entry number of the command that is currently displayed.
- L** TCL execute level.
- M** Machine type code to indicate the current system.
Possible codes include:
 - D0** LSI system without typeahead.
 - D1** LSI system with typeahead and regular memory.
 - D2** LSI system with typeahead and regular memory.
 - D3** LSI 3030 system.
 - D4** LSI 3040/3050 system.
 - H1** Ultimate HPP system.
 - H2** Ultimate Bull 7000 system.
 - H3** Ultimate Bull 8Mb 6000 system.
 - IN** IBM native system.
 - IV** IBM system under VM.
 - M0** Ultimate 1400 system.
- N** UltiNet node name.
- P** Line number.
- R** Revision of operating system ABS.

S	System serial number.
T	System time.
Xnn	Hexadecimal value.
@(c,r)	Positions cursor at column c, row r.
@(-n)	Generates a terminal escape sequence for visual attributes; see Table 2-1 for values and descriptions. These are the same values that are available in the BASIC @(-n) functions. Although any can be specified, not all may be meaningful for TCL-PROMPT. Ultimate recommends that you not use those codes marked with an asterisk (*).

Note: If parameters are omitted, the current TCL prompt is displayed.

Description

The parameters can be specified in any order and are displayed in the order in which they are specified.

The prompt set for the current line remains in effect when you log to another account, unless the logon PROC in that account changes it. If the current account name (A code) is part of the prompt, the prompt changes to the new name when you log to another account.

If TCL-PROMPT is in effect, secondary TCL levels are not indicated with a double prompt, although the L parameter can be used to display the current execute level.

The specified prompt remains until one of the following occurs:

- You log off.
- Another TCL-PROMPT is issued.
- TCL-PROMPT-OFF is issued.

The prompts displayed by the system debugger (!) and the BASIC debugger (*) are not affected by this command.

Note: In order to avoid confusion with other prompts, or other system problems, Ultimate recommends that you not use the following characters in your prompt string:

- ! System debugger prompt
- * BASIC debugger prompt
- & Displays disk errors
- % Displays tape errors
- @ DEC kernel prompt
- A= Honeywell kernel prompt

<pre>:TCL-PROMPT +.J + :TCL-PROMPT 'P A'-.J 009 DEV- 009 DEV-LOGTO PRODUCTION.J 009 PRODUCTION- :TCL-PROMPT @(-5)?@(-6).J ? :TCL-PROMPT 'X1B'F'TX0D'.J :</pre>	<p>Sets prompt character to +.</p> <p>Sets prompt character to current line number and account name, followed by dash.</p> <p>Sets prompt to logged-to account name.</p> <p>Sets prompt character to blinking question mark.</p> <p>On a Wyse 50 terminal, the time is displayed on the status line and a colon is displayed on the prompt line. The time is updated every time the TCL prompt is redisplayed.</p>
--	--

Table 2-1. Cursor Control Values (1 of 6)

Code	Description
@(-1)	Clear the screen and position the cursor at 'home' (upper left corner of the screen).
@(-2)	Position the cursor at 'home' (upper left corner).
@(-3)	Clear from cursor position to the end of the screen.
@(-4)	Clear from cursor position to the end of the line.
@(-5)	Start blink.
@(-6)	Stop blink.
@(-7)	Start dim.
@(-8)	Stop dim.
@(-9)	Backspace the cursor one character.
@(-10)	Move the cursor up one line.
@(-11)	Move the cursor down one line.
@(-12)	Move the cursor right one column.
@(-13)*	Enable auxiliary (slave) line.
@(-14)*	Disable auxiliary (slave) line.
@(-15)*	Enable auxiliary (slave) line in transparent mode.
@(-16)*	Initiate slave local print.
@(-17)	Start underline.
@(-18)	Stop underline.
@(-19)	Start reverse video.
@(-20)	Stop reverse video.
@(-21)	Delete line.
@(-22)	Insert line.
@(-23)	Scroll screen display up one line.
@(-24)	Start boldface type.
@(-25)	Stop boldface type.

* Ultimate recommends that you not use this code.

Table 2-1. Cursor Control Values (2 of 6)

Code	Description																																																																					
@(-26)	Delete one character.																																																																					
@(-27)	Insert one blank character.																																																																					
@(-28)*	Start insert character mode.																																																																					
@(-29)*	Stop insert character mode.																																																																					
@(-30,c)	Set foreground and background color:																																																																					
	<table> <thead> <tr> <th>c</th> <th>background</th> <th>foreground</th> </tr> </thead> <tbody> <tr><td>1</td><td>black</td><td>cyan</td></tr> <tr><td>2</td><td>black</td><td>red</td></tr> <tr><td>3</td><td>black</td><td>blue</td></tr> <tr><td>4</td><td>black</td><td>green</td></tr> <tr><td>5</td><td>black</td><td>magenta</td></tr> <tr><td>6</td><td>black</td><td>yellow</td></tr> <tr><td>7</td><td>black</td><td>white</td></tr> <tr><td>8</td><td>blue</td><td>red</td></tr> <tr><td>9</td><td>blue</td><td>green</td></tr> <tr><td>10</td><td>blue</td><td>white</td></tr> <tr><td>11</td><td>blue</td><td>yellow</td></tr> <tr><td>12</td><td>blue</td><td>red</td></tr> <tr><td>13</td><td>blue</td><td>cyan</td></tr> <tr><td>14</td><td>blue</td><td>magenta</td></tr> <tr><td>15</td><td>white</td><td>red</td></tr> <tr><td>16</td><td>white</td><td>green</td></tr> <tr><td>17</td><td>white</td><td>blue</td></tr> <tr><td>18</td><td>white</td><td>cyan</td></tr> <tr><td>19</td><td>white</td><td>magenta</td></tr> <tr><td>20</td><td>white</td><td>black</td></tr> <tr><td>21</td><td>red</td><td>white</td></tr> <tr><td>22</td><td>red</td><td>green</td></tr> </tbody> </table>	c	background	foreground	1	black	cyan	2	black	red	3	black	blue	4	black	green	5	black	magenta	6	black	yellow	7	black	white	8	blue	red	9	blue	green	10	blue	white	11	blue	yellow	12	blue	red	13	blue	cyan	14	blue	magenta	15	white	red	16	white	green	17	white	blue	18	white	cyan	19	white	magenta	20	white	black	21	red	white	22	red	green
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20	white	black																																																																				
21	red	white																																																																				
22	red	green																																																																				

* Ultimate recommends that you not use this code.

Table 2-1. Cursor Control Values (3 of 6)

Code	Description
@(-31,f)	Set foreground color: f foreground 1 brown (may vary on some terminals) 2 white 3 red 4 magenta 5 yellow 6 green 7 cyan 8 blue
@(-32,b)	Set background color: b background 1 brown 2 white 3 black 4 red 5 blue 6 cyan 7 magenta
@(-33)	Set 80 columns
@(-34)	Set 132 columns
@(-35)	Set 24 rows
@(-36)	Set 44 rows
@(-37)-	Reserved
@(-45)*	

* Ultimate recommends that you not use these codes.

Table 2-1. Cursor Control Values (4 of 6)

Code	Description
@(-46)*	<p>Returns function key default values as a string in the following format:</p> <pre>sFBfFBx1FA...x16FBy1FA...y16FBeFB</pre> <p>s character sequence needed to set the overall characteristics of the function line; typically, this is null</p> <p>f lead-in sequence used to load function keys</p> <p>xn value for function key n</p> <p>yn value for shifted function key n</p> <p>e terminator for key text</p>
@(-47)*	<p>Returns character sequence needed to set the overall characteristics for the label line (bottom line of terminal). The following information is returned:</p> <pre>sFBfFBx1FBy1FBeFBr</pre> <p>s character sequence needed to set the overall characteristics of the label line</p> <p>f lead-in sequence used for label line</p> <p>xn lead-in sequence for unshifted label line</p> <p>yn lead-in sequence for shifted label line</p> <p>e terminator for text</p> <p>r reset label line (turn off)</p>
@(-48)*	<p>Returns character sequence needed to set the overall characteristics for the status line (top line of terminal). The following information is returned:</p> <pre>sFBfFBx1FBy1FBeFBr</pre> <p>s character sequence needed to set the overall characteristics of the status line</p> <p>f lead-in sequence used for status line</p> <p>xn lead-in sequence for unshifted status line</p> <p>yn lead-in sequence for shifted status line</p> <p>e terminator for text</p> <p>r reset status line (turn off)</p>

* Ultimate recommends that you not use this code.

Table 2-1. Cursor Control Values (5 of 6)

Code	Description
@(-49)*	Return string that defines the graphics characters set; the exact characters that will be displayed depend on the terminal type.
@(-50)*	Start graphics.
@(-51)*	Stop graphics.
@(-52)	Start blink.
@(-53)	Stop blink.
@(-54)	Start reverse video.
@(-55)	Stop reverse video.
@(-56)	Start reverse video and blink.
@(-57)	Stop reverse video and blink.
@(-58)	Start underscore.
@(-59)	Stop underscore.
@(-60)	Start underscore and blink.
@(-61)	Stop underscore and blink.
@(-62)	Start underscore and reverse video.
@(-63)	Stop underscore and reverse video.
@(-64)	Start underscore, reverse video, and blink.
@(-65)	Stop underscore, reverse video, and blink.
@(-66)	Start dim.
@(-67)	Stop dim.
@(-68)	Start dim and blink.
@(-69)	Stop dim and blink.

* Ultimate recommends that you not use this code.

Table 2-1. Cursor Control Values (6 of 6)

Code	Description
@(-70)	Start dim and reverse video.
@(-71)	Stop dim and reverse video.
@(-72)	Start dim, reverse video, and blink.
@(-73)	Stop dim, reverse video, and blink.
@(-74)	Start dim and underscore.
@(-75)	Stop dim and underscore.
@(-76)	Start dim, underscore, and blink.
@(-77)	Stop dim, underscore, and blink.
@(-78)	Start dim, reverse video, and underscore.
@(-79)	Stop dim, reverse video, and underscore.
@(-80)	Set 80 columns.
@(-81)*	Reserved.
@(-82)	Set 132 columns.

* Ultimate recommends that you not use this code.

TCL-PROMPT-OFF

TCL-PROMPT-OFF resets the TCL prompt.

Syntax **TCL-PROMPT-OFF**

Description TCL-PROMPT-OFF resets the TCL prompt (if the TCL stacker is ON) to the default.

<code>:TCL-PROMPT 'P A'-</code>	Sets the prompt character to the current line number and account name, followed by dash.
<code>009 DEV-</code>	
<code>009 DEV-TCL-PROMPT-OFF</code>	Resets prompt character to a colon (:).
<code>:</code>	

Available On Any user account.

See Also TCL-PROMPT

TERM

TERM sets the characteristics for the terminal and print jobs for the current line.

Positional Syntax

TERM {w},{d},{ls},{lfd},{ffd},{bs},{prw},{prd},{code}

Keyword Syntax

TERM {WIDTH = w}
 {DEPTH = d}
 {LINESKIP = ls}
 {LFDELAY = lfd}
 {FFDELAY = ffd}
 {BACKSPACE = bs}
 {PRWIDTH = prw}
 {PRDEPTH = prd}
 {TYPE = code}
 {INPUTMODE = imode} (S/370 and S/390 only)
 {MODE = mode} (S/370 and S/390 only)
 {OUTPUTDELAY = opd} (S/370 and S/390 only)
 {TRANSLATE = tchars} (S/370 and S/390 only)

Note: If parameters are omitted, TERM settings for the current line are displayed.

TERM positional parameters and keywords are described below:

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
w	WIDTH=w	Specifies the number of characters per line on the terminal, up to 465.
d	DEPTH=d	Specifies the number of lines per screen on the terminal.
ls	LINESKIP=ls	Specifies the number of blank lines displayed before the start of the next screen page.

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
lfd	LFDELAY=lfd	Specifies the number of delay or idle characters to output following each RETURN or line feed. Used on terminals that require a pause after RETURN or line feed because the CPU generates characters faster than the terminal can accept them.
ffd	FFDELAY=ffd	<p>Specifies the action to take when a terminal or printer new-page condition occurs. (Terminal new page occurs at term-page-depth + term-line-skip. Printer new page occurs at lptr-page-depth.)</p> <p>Terminal actions include no action, or sending a clear-screen character sequence and n delay characters. Printer actions include no action, or sending a top-of-form character sequence.</p> <p>If the value entered is 0 (zero), no clear-screen or top-of-form character sequence is sent to either the terminal or the printer. If the value entered is 1, no clear-screen character sequence is sent to the terminal, but a top-of-form character (X'0C') is output whenever a new printer page begins, as determined by lptr-page-length.</p> <p>If the value entered is greater than 1, then the terminal screen is cleared at the beginning of each terminal page, and a top-of-form is output at the beginning of each printer page. For terminal output, the value entered generates that number of delay or idle characters to allow the screen time to settle.</p>

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
		The clear-screen character sequence is determined by the terminal-code.
bs	BACKSPACE=bs	Specifies the decimal number whose value corresponds to an ASCII character. This is used as an alternate backspace character in normal input mode. An ASCII backspace (<CTRL-H> or X'08'), is always interpreted as a backspace. bs is always echoed on the terminal whenever it is entered.
prw	PRWIDTH=prw	Specifies the number of characters per line on the printer.
prd	PRDEPTH=prd	Specifies the number of lines per page on the printer.
code	TYPE=code	Specifies the type of terminal, which determines functions such as the clear-screen character sequence, as well as cursor addressing and other characteristics specified by such means as the BASIC @ function or the PROC T statement. Codes are: <ul style="list-style-type: none"> A ADDS Regent 40 (25-line CRT) B Digital VT241 Color Graphics CRT C ADDS Viewpoint Color D Digital VT100 E Digital VT200 Series 8-bit mode F IBM 3270 terminal G IBM 3101 H Honeywell VIP-7200 J Heathkit in ANSI mode L Liberty Freedom-200 M Minitel P IBM Personal Computer

<u>Parameter</u>	<u>Keyword</u>	<u>Description</u>
	Q	Wyse Wy-50/Ultimate ULT-50 in enhanced viewpoint emulation mode-extended version
	R	ADDS Regent 25
	S	Wyse WY-60 in Native mode
	T	Wyse WY-50/Ultimate ULT-50 in enhanced viewpoint emulation mode-extended version
	U	Ultimate CRT (Volker-Craig)
	V	Ultimate VDT (ADDS Viewpoint)
	W	Wyse WY-50 or ULT-50 Enhanced Viewpoint
	X	Wyse WY-50 or ULT-50 Native mode
	Y	Wyse WY-85 in VT220 7-bit mode
	Z	HP 700/92

Note: If only terminal-code is to be changed, all other parameters can be omitted from the command.

The following special keyword parameters are part of the Ultimate system command TERM and can be used to set up 3270 terminals and ASCII terminals connected to the HIFAS. These keywords have no meaning for terminals connected to a Series/1.

<u>Keyword</u>	<u>Description</u>
MODE = mode	Specifies the type of terminal or emulation; options are:
ASCII	if specified for a terminal connected to the HIFAS, terminal functions as an ASCII terminal. If specified for a 3270 terminal, terminal, it causes the screen to be considered a single field.
3270	terminal functions as a 3270 terminal; TERM type must be F.

REMOTE terminal is being accessed through a network and functions as a 3270 terminal; TERM type must be F.

BLOCK valid only with a 3270 terminal; information is sent unchanged through the 3270 driver.

The following keywords are relevant only if a terminal is in 3270 mode (MODE = 3270).

<u>Keyword</u>	<u>Description</u>
INPUTMODE = imode	Specifies processing for a command line of data; options are: <ul style="list-style-type: none"> ALL specifies that each command line is processed in its entirety (the default). CURSOR specifies only the characters up to the cursor are processed when RETURN is pressed.
OUTPUTDELAY = opd	Specifies the number of seconds to delay before displaying characters on the terminal; the number can be specified as an integer (n) or an integer plus fraction (n.n). The valid range is 0-9.9 (a 1-3 second delay is recommended).
TRANSLATE="tchars"	Specifies modifications to the current EBCDIC-to-ASCII terminal input character translation table. To return to default, specify a null value or the word RESET. For information on specifying codes, see the section, "Translating Input Characters," under the Description section.

Description

TERM sets all specified parameters and retains the current values for any null parameters for the current line. All non-keyword parameters are interpreted by their position in the command.

When invoked without parameters, the current terminal settings are displayed as follows:

	Terminal	Printer
Page width:	79	132
Page depth:	24	60
Line skip :	0	
LF delay :	1	
FF delay :	5	
Backspace :	8	
Term type :	S	

Translating Input Characters

The default EBCDIC-to-ASCII terminal input character translation table translates both lowercase and uppercase EBCDIC letters to the equivalent uppercase ASCII letters.

To specify the TRANSLATE parameter for a new translation, you must specify:

- the EBCDIC code to be converted
- the ASCII code to convert it to

The EBCDIC and ASCII codes must be specified as hexadecimal numbers. The separator between the EBCDIC codes and the ASCII codes can be either a comma or a space.

If the translation of more than one character is to be changed, specify all the EBCDIC codes before the ASCII codes. Use a space to separate each EBCDIC code and each ASCII code. You can specify a range using a hyphen (-) to separate the first code in the range from the last code.

To reset all conversions to their default settings, specify either the word RESET or "" (null).

TERM

```
: TERM.↓ Display terminal settings for the current
line.

: TERM W.↓ Set terminal code for Wyse WY-50.

: TERM 79,24,,,,,8,132,55,Y.↓
Change parameters in positional format.

: TERM TRANSLATE = "81-89 91-99 A2-A9,61-7A".↓
Processes all lowercase EBCDIC as
lowercase ASCII.

: TERM TRANSLATE = RESET.↓
Process both uppercase and lowercase
EBCDIC as uppercase ASCII; this is the
default.

: TERM TRANSLATE = "4F,21".↓
Modify one translation code.

: TERM TRANSLATE = "C1 C2,41 42".↓
Modify multiple translation codes.

: TERM TRANSLATE = "F0-F9,30-39".↓
Modify range of translation codes.

: TERM TRANSLATE = ""↓
Reset to default table.

: TERM F MODE = 3270.↓

: TERM INPUTMODE = ALL MODE = ASCII OUTPUTDELAY = 1.↓
```

Available On

Any user account.

See Also

PRINTER
SET-TERM

TERM-INIT

TERM-INIT sets terminal features for compatibility with Ultimate software.

Syntax

TERM-INIT

Description

Use TERM-INIT to set a terminal's features for standard Ultimate operation.

TERM-INIT operation is based on the terminal type defined for the line on which the command is entered. When invoked, TERM-INIT displays the current type code letter and allows the user to change it, if necessary.

TERM-INIT supports the following terminal types:

- A ADDS Regent 40 (25-line CRT)
- C ADDS Viewpoint Color
- D Digital VT100
- H Honeywell VIP-7200
- L Liberty Freedom-200
- P IBM Personal Computer
- R ADDS Regent 25
- S Wyse WY-60 in Native mode
- U Ultimate CRT (Volker-Craig)
- V Ultimate VDT (ADDS Viewpoint)
- W Wyse WY-50 or ULT-50 Enhanced Viewpoint
- X Wyse WY-50 or ULT-50 Native mode
- Y Wyse WY-85 in VT220 7-bit mode
- Z HP 700/92 Native mode

If a terminal type C, S, V, W, X, or Y is selected, prompts are produced for you to load function keys.

If a terminal type A, D, H, L, P, R, or Z is selected, TERM-INIT exits, since no programmable features are defined for those terminal types.

Note: Only function keys 1-10 are loaded.

TERM-INIT

If function keys are loaded, they are programmed to send the code sequences expected by Ultimate software (such as UltiWord) for the particular terminal type.

When initialization is completed, TERM-INIT displays the following:

```
Terminal initialization complete
```

```
:TERM-INIT␣
```

```
Current terminal type: V
```

```
Enter new type code, or <CR>, or '?' for help:C
```

```
Terminal initialization complete
```

Available On Any user account.

See Also TERM
SET-TERM

TERM-VIEW

TERM-VIEW allows one terminal to view activity and interact with a second terminal.

Syntax

TERM-VIEW n **{({exit-character},{I})}**

n Specifies the line to which the current terminal is to be connected.

(exit-character Specifies the ASCII value in decimal of the character to be used to exit the TERM-VIEW process; the default character is the uppercase letter X. To exit the process, press ESC followed by the exit character. The process can only be exited from the terminal that initiated the connection. (For a list of ASCII codes, see Appendix C.)

I Inhibits synchronization between terminals of output display. The default of the TERM-VIEW process is to synchronize the rate of output between the two terminals. This option causes output to be displayed at the rate set on the terminal being viewed. If this rate is higher than the rate on the terminal that initiated TERM-VIEW, the I option could cause characters sent to the initiating terminal to be lost.

Description

Use TERM-VIEW to access another terminal. For example, in a training situation, the instructor can use TERM-VIEW to connect to a student's terminal. In a support situation, a technician can connect to a customer's terminal through a modem for direct access to the customer's process.

Note: *If you try to use TERM-VIEW on a line that has never been activated after a file restore, the following message is displayed:*

```
[568] Target process has not yet been initialized.
      Use LOGON to activate it.
```

When you use TERM-VIEW, information entered at either terminal is accepted as input to the process on the terminal being viewed and is echoed on both terminals. Output from the process on the terminal being viewed is displayed on both terminals.

Terminals that are to be connected by TERM-VIEW should be of the same TERM type to ensure that screen displays retain their integrity on both terminals.

TERM-VIEW synchronizes the display of output between two terminals. If the two terminals have the same baud rate, the display is virtually identical. However, if the terminals have different baud rates, there might be a slight discrepancy between the screens. For example, if the terminal that initiates the command is connected via a modem that is running at 1200 baud and the terminal being viewed is running at 9600 baud, the display at the terminal being viewed is slowed down so that the information is displayed at each terminal at approximately the same rate. However, because of the buffering capabilities of the terminals, the display on the two terminals is not necessarily simultaneous.

If the I option is specified, the output synchronization is inhibited and data is sent at the speed determined by the terminal being viewed. If the initiating terminal is operating at a slower speed, characters could be lost. If the initiating terminal is operating at a speed equal to or faster than the second terminal, the I option has virtually no effect.

The two terminals remain logically connected until the initiator of TERM-VIEW breaks the connection by pressing ESC and the exit character. The default exit character is the uppercase letter X.

Note: *VT220 terminals do not have <ESC> keys. Break the connection by pressing <CTRL-3> followed by the exit character.*

Any line can be connected by TERM-VIEW. To prevent a line from being set up as a TERM-VIEW line, use TERM-VIEW-OFF. The default setting is TERM-VIEW-OFF.

If you try to use TERM-VIEW on a line that is protected by TERM-VIEW-OFF, the following message is displayed:

```
[560] Process specified is Term-view protected.
```

: TERM-VIEW 31 (65) ↓	Connect the current line to line 31 and use uppercase A as the exit character. All further input on either terminal is displayed on both terminals.
:<ESC-A>	Exit term view mode.
[561] Term-view mode exited. :	

Available On SYSPROG or SECURITY account.

See Also TERM-VIEW-OFF
 TERM-VIEW-ON

TERM-VIEW-OFF

TERM-VIEW-OFF protects the specified line against being viewed by another line with TERM-VIEW. TERM-VIEW-OFF is the default setting.

Syntax

TERM-VIEW-OFF {n}

n Specifies the line to protect against TERM-VIEW. If omitted, the current line is locked.

Note: Line number can only be specified when using this command from the SYSPROG or SECURITY accounts.

Description

Use TERM-VIEW-OFF to protect a line from being connected to another line.

Note: TERM-VIEW-OFF will break a currently active TERM-VIEW session.

If TERM-VIEW-OFF is issued for the current line, it disables TERM-VIEW unconditionally. It also prohibits another process from issuing a TERM-VIEW-ON command that would affect the current line. Only a TERM-VIEW-ON from the same line can re-enable TERM-VIEW.

<pre>: TERM-VIEW-OFF 31.↓</pre>	Prevent line 31 from being connected to another line.
<pre>:</pre>	

Available On

SYSPROG or SECURITY account.

See Also

TERM-VIEW
TERM-VIEW-ON

TERM-VIEW-ON

TERM-VIEW-ON enables the specified line to be viewed by another line with TERM-VIEW.

Syntax

TERM-VIEW-ON {n}

n Specifies the line to enable for TERM-VIEW. If omitted, the current line is unlocked.

Description

Use TERM-VIEW-ON to enable the use of TERM-VIEW by a line that has the default TERM-VIEW-OFF protection. If that line was previously disabled for viewing by a TERM-VIEW-OFF issued by that line, the following error message is displayed:

```
[587] Process specified is TERM-VIEW-ON disabled.
```

When TERM-VIEW-ON is issued for the current line, both TERM-VIEW and TERM-VIEW-ON from another line are enabled. The effect is to bring the process back to its log-on default status.

<pre>: TERM-VIEW-ON 31.↓</pre>	<p>Allow line 31 to be connected to another line.</p>
<pre>:</pre>	

Available On

SYSPROG or SECURITY account.

See Also

TERM-VIEW
TERM-VIEW-OFF

TERMINAL

TERMINAL allows parameters associated with a line to be reviewed and changed.

Syntax

TERMINAL

Description

Use TERMINAL to set parameters for a new line being added to the system, or to view or modify an existing line's parameters.

When invoked from the SECURITY account (or from SYSPROG with security enabled), TERMINAL prompts for line number:

```
                ULTIMATE Terminal Processor
Line Number :

*** Enter "#" for this Line Number ***
```

To display the terminal parameters for the current line, enter #. To return to TCL, press RETURN. To set parameters for a new line, or to change parameters for an existing line, enter a line number at the prompt.

Note: *If invoked from an account other than SECURITY or SYSPROG, no line number prompt is displayed, since you can only set terminal parameters for the current line.*

A screen similar to the following is displayed:

ULTIMATE Terminal Processor

Line Number: 001

Current Parameters

1. Baud Rate : 9600
2. Character Length (5,6,7,8) : 8
3. Stop Bits (1,2) : 2
4. Parity (EVEN,ODD,NONE) : EVEN
5. Echo (ON,OFF) : ON
6. Xon/Xoff (ON,OFF) : ON
7. Type Ahead (ON,OFF) : ON

Logon Parameters

8. Baud Rate : 9600
9. Character Length (5,6,7,8) : 8
10. Stop Bits (1,2) : 2
11. Parity (EVEN,ODD,NONE) : EVEN
12. Echo (ON,OFF) : ON
13. Xon/Xoff (ON,OFF) : ON
14. Type Ahead (ON,OFF) : ON
15. Terminal Type : W
16. Loc : Front Office

Logon Security

17. Logon Attempt Restrictions (ON,OFF) : ON
18. Allowable Attempts per Session : 10
19. Disable Time for Session Violation (HH:MM:SS) : 00:02:00
20. Allowable Attempts per Day : 20
21. Disable Time for Day Violation (HH:MM:SS) : 00:02:00

Enter Option (#,EX,FI) :

Note: To move quickly from field to field or to exit or save your changes from any field, enter a slash (/) followed by a field number or command. For example, enter /3 to go to field 3, /EX to exit without saving changes, or /FI to file all changes.

If the command is entered from a non-security account, the values for the current line are shown.

Each option displays default values, with the cursor positioned at the first entry. New values can then be entered. After the values have been entered, the following prompt is displayed:

Enter Option (#,EX,FI):

To change any entries, enter the field number (see below). To exit this screen without saving any entries, enter EX. To file the account-defining item and create the account, enter FI.

Current Parameters - Options 1 through 7

Options 1 through 7 display the communications parameters currently in effect for a selected line. You can also change these parameters via SET-BAUD.

Logon Parameters - Options 8 through 15

Options 8 through 15 display the default parameters used by this line every time the logon prompt is reached. These parameters are displayed from parameters 2 and 3 of DICT ACC, and revised values are recorded in the line's DICT ACC.

Location Parameter - Option 16

Option 16 specifies the location displayed for the line by LISTU{SERS} (attribute 1 of the line's item in DICT ACC.)

Logon Security Parameters - Options 17 through 21

Options 17 through 21 override the system global parameters set with the SECURITY- STATUS command.

Available On SYSPROG or SECURITY account.

See Also LISTU{SERS}
SECURITY-STATUS
SET-BAUD
TERM
System Management Guide for information on terminal values and setting up terminal security.

TIME

TIME displays the current system time and date. System time is based on the 24-hour clock.

Syntax**TIME****Description**

TIME displays the current system date and time as follows:

```
HH:MM:SS DD MON YYYY
```

Hours are entered and displayed in 24-hour format, where midnight is 00:00:00, 1 a.m. is 01:00:00, noon is 12:00:00, and 1 p.m. is 13:00:00.

The system updates the date at midnight (00:00:00).

```
: TIME ↵  
16:15:00 01 NOV 1991  
:
```

Available On

Any user account.

See Also

DATE
SET-DATE
SET-TIME

TRANSLATE-INPUT

TRANSLATE-INPUT creates a translation table that can be used to translate characters input to or output by the system. Using this table, any character or sequence of characters can be translated to any other character or sequence of characters.

Syntax

TRANSLATE-INPUT {filename {item-ID}}

filename Specifies the file in which to place translation table. If omitted, the system prompts for it.

item-ID Specifies the item in which to place the translation table. If omitted, the system prompts for it.

Description

Use TRANSLATE-INPUT whenever characters that are input or output need to be translated to other characters. For example, TRANSLATE-INPUT can be used to translate lowercase letters to uppercase letters, or to specify characters for foreign keyboards.

You can also use TRANSLATE-INPUT to translate keys for terminal emulations or for serial printers (must be enabled for output only).

The following system commands are available for translations:

- TRANSLATE-INPUT Defines a translation table.
- TRANSLATE-LOAD Makes the table available to a line.
- TRANSLATE-ON Enables the actual translation to start.
- TRANSLATE-OFF Stops the translation.

A translation table consists of a set of zero or more translation sequences. A translation sequence is identified by the first character in the sequence to be translated. Thus, there can be zero to 256 translation sequences in a table. Any of these sequences can consist of multiple parts to allow for differing sequences following the first character.

Each translation sequence can include the following components:

- Character ID (the unique first character).

- Zero or more sequences of additional characters associated with the character ID.
- Sequences of translation characters, each corresponding to a sequence of additional characters (if any).
- Zero or more flag settings, used to set display options. There is one for each sequence of additional characters.

Each of these components is explained below.

Character ID

The first character in each translation sequence is called the character ID. The character ID is entered in hexadecimal. You can define up to 256 unique character IDs.

The translation sequence is stored in the attribute whose number is the decimal value of the character ID plus 1.

There can be multiple additional character sequences for each character ID. Each additional-character sequence has a corresponding translation-character sequence entry and a flag-settings entry. All translation sequences for one character ID are stored as values in the attribute.

If TRANSLATE-INPUT is entered without filename or item-ID, it prompts for them. For example, at the prompts, enter **CUST.FILE** for the filename and **ABC100** for the item-ID. A screen similar to the following is displayed:

```
File name:  CUST.FILE  Item name:  ABC100      status-msg
```

```
Char id :  ..
```

```
Enter char in hex (ex:'A'='41',' '= '20'), or <CR> to exit
```

Character ID is the ASCII value in hexadecimal of the character to be translated. If a sequence of characters is to be translated, character ID is

the first character. For example, to translate the sequence ESCa0, enter a character ID of 1B, which is the hexadecimal code for ESC. The decimal equivalent of the hexadecimal value is displayed, and if possible, the ASCII representation of the character. Any existing translation sequences for this character ID are displayed.

Additional Characters

If additional characters are associated with the character ID, the system prompts for them as follows:

```
File name: CUST.FILE      Item name: ABC100      status-msg
```

```
Char id : 1B             Decimal value = 27
```

```
Enter any additional characters in hex or CTL-X to exit
```

Each character ID can be associated with any number of additional character sequences, with up to 10 hexadecimal characters in each sequence. Each sequence must be unique and no complete sequence can be identical to the beginning characters of another sequence.

For example, if you have a sequence defined for 123456, you cannot have a sequence 1234. However, you can have sequences 123456 and 1235, or sequences 123456 and 123457.

To translate a sequence of characters, enter the additional characters as a single string of hexadecimal characters. For example, to translate the additional characters in the sequence ESCa0, enter 6130, which is the hexadecimal representation of a0. If there is no sequence following the character ID, press **RETURN**. To return to the character ID prompt, press **<CTRL-X>**.

Translation Characters

After you enter any additional characters, the system prompts for the translation characters as follows:

```
File name: CUST.FILE      Item name: ABC100      status-msg
```

```
Char id : 1B             Decimal value = 27
```

```
6130                     .....
```

```
Enter any translation characters in hex
```

Enter the character or sequence of characters to which the specified characters are to be translated. For example, if ESCa0 is to be translated to the character A, enter **41**.

Flag Settings

TRANSLATE-INPUT then prompts for the flag settings, which determine display options:

```
File name: CUST.FILE      Item name: ABC100      status-msg
```

```
Char id : 1B             Decimal value = 27
```

```
6130                     41             ..
```

```
Enter the flag settings in hex
```

There are currently only two flags defined. One specifies if the original character is echoed to the screen, and the other specifies if the translated character is echoed. Possible combinations are:

TRANSLATE-INPUT

- 00 Echo both source and translated characters.
- 40 No echo on translated characters.
- 80 No echo on source characters.
- C0 No echo on source or translated characters.

To list the currently available flag settings on-line, press the question mark key (?).

After the flag setting is entered, you can enter another sequence of additional characters at the prompt. Enter as many sequences as desired.

After all sequences for the current character ID have been entered, return to the Char id prompt by pressing <CTRL-X> at the Additional characters prompt.

The system then checks the additional character sequences to make sure they are valid. If any invalid entries are found, the first invalid one is displayed. For example, if a sequence is entered that is identical to the beginning of a second sequence, the following message is displayed:

```
Ambiguous translate string
```

Press **RETURN**. You can then change any of the information. Use the arrow keys to move from field to field. When the information is correct, press <CTRL-X> at the prompt.

TRANSLATE-INPUT displays the Char id prompt. Continue entering translation information. When all translation information has been entered, press **RETURN**. The following prompt is displayed:

```
FI to file, <F2> or X to void, <CR> to continue:
```

To file and save the table, enter **FI**. To exit without changing the table, press function key <F2> or enter **X**. To enter additional translation characters, press **RETURN**.

Available On Any user account.

See Also TRANSLATE-LOAD
TRANSLATE -OFF
TRANSLATE-ON

TRANSLATE-LOAD

TRANSLATE-LOAD makes the specified translation table available to a line.

Syntax

```
TRANSLATE-LOAD {n} {filename {item-ID {INP}}}  
TRANSLATE-LOAD {n} {filename {item-ID {OUT}}}
```

- n** Specifies the line on which to make the translation table available. If omitted, the current line is assumed.
- filename** Specifies the file that contains the translation table. If omitted, the system prompts for it.
- item-ID** Specifies the item that contains the translation table. If omitted, the system prompts for it.
- INP** Uses the table for input translation. If omitted, the system prompts for the direction.
- OUT** Uses the table for output translation. If omitted, the system prompts for the direction.

Description

Use TRANSLATE-LOAD to make a translation table available to a line. Each line can have one input and one output table assigned at the same time. Assigning a table does not enable it. For information on enabling the table, see TRANSLATE-ON.

```
: TRANSLATE-LOAD 4 CUSTOMER TRANS1 OUT.↓  
:
```

Available On Any user account.

See Also TRANSLATE-INPUT
TRANSLATE-OFF
TRANSLATE-ON

TRANSLATE-OFF

TRANSLATE-OFF turns off character translation for a specified line.

Syntax

```
TRANSLATE-OFF {n} INP
TRANSLATE-OFF {n} OUT
```

n Specifies the line on which to turn off translation. If omitted, the current line is assumed.

INP Turns off input translation mode.

OUT Turns off output translation mode.

Description

Use TRANSLATE-OFF to stop a translation on a specified line.

When invoked to turn off input translation, the following message is displayed:

```
[563] Input translation mode OFF for process n.
```

When invoked to turn off output translation, the following message is displayed:

```
[565] Output translation mode OFF for process n.
```

```
:TRANSLATE-OFF 4 OUT
[565] Output translation mode OFF for process 4.
:
```

Available On

Any user account. You must have privilege level 2 to change a line other than your own.

See Also

TRANSLATE-INPUT
TRANSLATE-LOAD
TRANSLATE-ON

TRANSLATE-ON

TRANSLATE-ON turns on character translation for a specified line.

Syntax

TRANSLATE-ON {n} INP

TRANSLATE-ON {n} OUT

n Specifies the line on which to turn on translation. If omitted, the current line is assumed.

INP Turns on input translation. Characters entered at the keyboard are translated before being recognized by the system.

OUT Turns on output translation. Characters generated by the system for output are translated before they are output.

Description

Use TRANSLATE-ON to start a translation on a defined line. A translation table must have been loaded previously with translation in the same direction specified by the option in TRANSLATE-ON. If no such table is found, the following error message is displayed:

```
[567] No translation table loaded for process n
```

When you use TRANSLATE-ON to turn on input translation, the following message is displayed:

```
[562] Input translation mode ON for process n.
```

When you use TRANSLATE-ON to turn on output translation, the following message is displayed:

```
[564] Output translation mode ON for process n.
```

TRANSLATE-ON

```
:TRANSLATE-ON 4 OUT ↵  
[564] Output translation mode ON for process 4.  
:
```

Available On Any user account. You must have privilege level 2 to turn on the translation table for a line other than your own.

See Also

- TRANSLATE-INPUT
- TRANSLATE-LOAD
- TRANSLATE -OFF

TRANSMIT

TRANSMIT transmits Ultimate file items to another computer using bisynchronous communication protocol.

Syntax

TRANSMIT filename {itemlist} {(options)}

filename Specifies the file containing the items to be transmitted.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to specify all items in the file. Can be omitted if a select-list is present.

(options)

- A** Transmits 3780-format messages.
- H** Transmits in transparent mode. This option allows bisync characters to be sent as data (such as X'03').
- J** Turns space compression off. Space compression only exists in 3780 protocol.
- L** Pads all short records with blanks.
- M** Removes 80-character limit on transmission record size. The maximum transmission record size is three bytes less than the buffer size (400 bytes for 2780-format, 512 bytes for 3780-format).
- N** Changes number of transmission records sent in a block. The maximum number of transmission records per block is the same as the default (7 for 2780 and 100 for 3780). The command prompts for the number of transmission records to send in each block. If the response is incorrect (that is, less than 1 or greater than the default), the command re-prompts for a valid number.
- O** Concatenates all items being transmitted together in one transmission message, instead of transmitting one item per message.
- R** Treats a Reverse Interrupt (RVI) sequence as a positive acknowledgment, continues to transmit data, and does not relinquish the line. Use with caution since this sequence is normally considered a bug.

TRANSMIT

- S** Selects secondary station status when bidding for the line. If omitted, the primary station is the default.
- T** Terminates the process and return to TCL after transmitting the itemlist, instead of returning to the receive mode.
- Note:** *If the T option is omitted, TRANSMIT can also specify receive options available in the RECEIVE command. RECEIVE options take effect after auto turnaround when the terminal goes into receive mode.*
- U** Specifies Ultimate mode. The item-ID of the item to be transmitted becomes the first record of the transmission message. Short records do not have an EM character (X'19') appended to them. The maximum transmission record size is increased to 500 characters. The maximum transmission block size is increased to 502 bytes.
- W** Returns to TCL if the message WAITING FOR COMMUNICATIONS LINE TO BE CONNECTED is displayed.
- X** Specifies the terminal identification string sent by the local computer when bidding for the communications line. When the remote computer is bidding to transmit to the local computer, this string gets sent with the acknowledgement from the local computer.
- Y** Prompts for a fixed number of characters per record. The maximum value is 500 if the U option is specified; or 397 if the U option is omitted. This option automatically invokes the L and M options. This option is not supported while transmitting 3780-format items, or during transparent mode.

Description

Use TRANSMIT to set a terminal to transmit status when performing bisync data communications. TRANSMIT assumes that the line is already attached to a bisync communications controller via B-ATT. Use the BSC-DIAL command before invoking TRANSMIT if you have a UDS 201 C/D modem or a UDS 208 B/D modem.

Note: When using the TRANSMIT command to transmit bisync messages, be sure that the receiving end uses the same protocol as the TRANSMIT command. That is, both must use 2780 mode or both must use 3780 mode. The 2780 mode is the default.

TRANSMIT options allow you to select alternative transmission methods, and to return to TCL after the transmission is complete.

If options are omitted, each item is sent as a separate transmission message. Each attribute in an item becomes one transmission record with a maximum length of 80 characters. Shorter attributes have an EM character (X'19') appended to them.

After transmitting the itemlist, the line automatically starts the receive mode (also called the auto-turnaround). If auto-turnaround is used, you can specify RECEIVE options in the TRANSMIT command's option string. These options take effect after the terminal does auto-turnaround and goes into receive mode.

After TRANSMIT sets up the transmission parameters, dial the computer that will receive the data. When a connection is made, the data can be transferred in data mode. After the transmission, depending on the options selected, control returns to TCL or goes into the receive mode for two-way communications with the other computer.

You can halt transmission and return to TCL at any time by doing a <BREAK> and END.

```
:TRANSMIT CUSTOMER * (T.
[128] --Waiting for communications line to be connected
                                Dial the other computer.
[129] --Communications line connected--
220 records transmitted
```

Note: The messages displayed depend on your situation. For example, if the line is already connected, the message *Waiting for Communications Line to be Connected* is not displayed.

Available On

SYSPROG or SECURITY account.

See Also

B-ATT

B-DET

RECEIVE

System Management and Support Guide

TYPEAHEAD-OFF

TYPEAHEAD-OFF turns off the typeahead feature. Typeahead on is the default setting.

Syntax

TYPEAHEAD-OFF

Description

TYPEAHEAD-OFF turns off the typeahead feature for the current line. (Typeahead allows you to enter characters while the system is busy. These characters are later displayed and accepted when the system requests input.)

When typeahead is turned off, it remains off until restored by a TYPEAHEAD-ON from the same terminal, until it is set with the SET-BAUD command, or until the line is logged off and on again.

Once TYPEAHEAD-OFF is active, you must wait until the system requests terminal input (usually via a prompt character) before typing data. If the system is busy and you try to enter data, a bell rings at your terminal.

TYPEAHEAD-OFF also turns off the PAGEIO mode on LSI systems where the normal input mode is on. You can, however, turn the PAGEIO mode back on with PAGEIO-ON or TYPEAHEAD-ON. TYPEAHEAD-OFF does not affect the PAGEIO mode on systems where the normal input mode is PAGEIO-OFF.

Available On

Any user account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

PAGEIO-ON
SET-BAUD
TYPEAHEAD-ON

TYPEAHEAD-ON

TYPEAHEAD-ON enables the typeahead feature for the current line.

Syntax

TYPEAHEAD-ON

Description

TYPEAHEAD-ON allows you to re-enable the typeahead feature after it has been disabled by TYPEAHEAD-OFF. (Typeahead allows you to enter characters while the system is busy. These characters are later displayed and accepted when the system requests input.). If typeahead is already on, the command has no effect.

The typeahead feature remains on until disabled by TYPEAHEAD-OFF executed from the same terminal, or until reset by the SET-BAUD command.

TYPEAHEAD-ON also turns on the PAGEIO mode for LSI systems where the normal input mode is PAGEIO on. It does not affect systems where the normal input mode is PAGEIO off.

If you exceed the typeahead buffer capacity, a bell rings at your terminal.

Available On

Any user account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

PAGEIO-ON
SET-BAUD
TYPEAHEAD-OFF
X-OFF
X-ON

ULTI*MENU

ULTI*MENU displays the SYSPROG Load Ulti's menu for restoring Ultimate utility accounts from the SYS-GEN tape. It should not be used at any other time.

Syntax

ULTI*MENU

Description

For further information on ULTI*MENU, please refer to the upgrade procedures for your system.

Available On

SYSPROG or SECURITY account.

See Also

System Management Guide.

ULTIKIT

ULTIKIT invokes the UltiKit application development environment that contains tools to build, test, run, and modify new and existing applications.

Syntax**ULTIKIT****Description**

For information on using ULTIKIT, invoke the UltiKit's help facility from the UltiKit Main Menu by pressing the question mark (?) key.

Available On

Any user account.

UNLOCK-FRAME

UNLOCK-FRAME unlocks a memory-locked frame.

Syntax

UNLOCK-FRAME n

n Specifies the decimal number of the frame to be unlocked.

Description

UNLOCK-FRAME unlocks a frame that has previously been locked by LOCK-FRAME by clearing the memory-locked buffer status of the specified frame.

```
: UNLOCK-FRAME 2040 ↵  
:
```

Available On

SYSprog or SECURITY account.

See Also

LOCK-FRAME

UPD-DEF

UPD-DEF creates Ultimate UPDATE dictionary items for use with Ultimate UPDATE commands.

Syntax

UPD-DEF {filename}

filename Specifies the file to contain the Ultimate UPDATE dictionary definition items. If omitted, the system prompts for it.

Description

For further information on UPD-DEF, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

UPD-VALIDATE

UPD-VALIDATE validates Ultimate UPDATE dictionary definitions for a file so they can be used in Ultimate UPDATE commands.

Syntax UPD-VALIDATE {filename} {LPTR} {(P)}

filename Specifies the file containing dictionary definitions to be validated.

LPTR Routes output to the spooler.

(P) Same as LPTR.

Description For further information on UPD-VALIDATE, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On Any user account.

UPDATE

UPDATE is used to update a database file according to Ultimate UPDATE dictionary definitions and expressions.

Syntax

```
UPDATE filename item-ID.expr {attr.expr} {literal {...}}
{modifiers} {(options)}
```

filename Specifies the primary file to be updated.

item-ID.expr Specifies the update expression for the item-ID's screen placement.

attr.expr Specifies the attribute name from the dictionary of the file being updated.

Note: *item-ID.expr* and *attr.expr* can have the following form:

```
{@(x1,y) {{ : "" : @(-n) } : "tag" { : @(x2) } } : } {attr-name{[1,len]}}
```

where:

x 1 Column to display attribute name or tag.

y Row to display attribute.

"" Required if @(-n) is specified.

-n Sets visual attributes.

"tag" Text to be displayed instead of the tag specified in the Update definition item.

x 2 Column in which to display data.

attr-name Name of Update definition item; name for item-ID.update.expr must be ID0.

1 Literal 1 (one).

len Number of characters in attribute to display.

modifiers Screen formatting connectives:

HEADING Defines headings as in RECALL.

FOOTING Defines customized option prompt.

UPDATE

- NEXT-SCREEN** Specifies multiple screens.
- WINDOW** Specifies format of multi-valued attributes.
- END-WINDOW** Specifies end of window.

(options)

- nn** Specifies visual attribute used to display literal fields; see TCL-PROMPT for list (uses only number, not the minus sign).
- A** Uses lower case letters instead of numbers as field identifiers.
- B** Disables the <BREAK> key.
- F** Specifies <FI> must be entered to save item.
- H** Specifies ? must be pressed to display help messages.
- L** Displays literal fields in low intensity.
- M** Specifies existing items are display only; new items can be created.
- N** Specifies new items cannot be created; existing items can be displayed and updated.
- R** Automatically generates RETURN when maximum characters are entered.
- S** Displays entire screen when item-ID is entered.
- V** Specifies existing items are display only; new items cannot be created.
- X** Specifies FD can be entered to delete item.

Description

For further information on UPDATE, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

UPDATE-ACCOUNT

UPDATE-ACCOUNT allows updating of account parameters. It is a synonym for the CREATE-ACCOUNT command.

Syntax

UPDATE-ACCOUNT {accountname}

accountname Specifies the account to be updated. If omitted and the user is on a security account, the system prompts for an accountname. Users on non-security accounts can only update the current account.

Description

Use UPDATE-ACCOUNT to modify a user account, or a synonym (Q-pointer) to an existing user account.

Only users on security accounts (SECURITY or SYSPROG with security enabled) can update accounts other than the current account. Users on non-security accounts can only update certain parameters for the current account.

For further information, please refer to the CREATE-ACCOUNT command.

Available On

Any user account to update the current account. SECURITY account or SYSPROG with security enabled to update other accounts.

UPDATE-FILE

UPDATE-FILE allows updating of file parameters. It is a synonym for the CREATE-FILE command.

Syntax

UPDATE-FILE {filename {parameter1} {parameter2}}

Note: If parameter1 and parameter2 are both omitted, a screen is displayed for entering file parameter values.

filename Specifies the file to be updated. If omitted, the system prompts for it.

parameter1 Creates the modulo, separation, and hashing algorithm for the dictionary section of the file. These values can be user-specified with the following format:

mod,sep{,alg}

where:

mod Number of groups in primary storage; the maximum modulo is 16,777,213.

sep Number of frames per group. Separation must be a number from 1 through 127 when the modulo is 1 through 64K, and must be 1 when the modulo is greater than 64K.

alg Hashing algorithm used to determine group in which items are placed. If omitted, the algorithm is 1 if the modulo is less than 64K, or 2 if the modulo is greater than 64K.

Use the following Automatic Modulo Calculation format to automatically calculate values for the dictionary section of the file's modulo, separation, and hashing algorithm:

AC, n1,n2{,alg}

where:

- A C** Invokes the routine to calculate the modulo for this file section.
- n1** Estimated number of items in this file section.
- n2** Estimated size of each item in this file section.
- alg** Hashing algorithm used to determine in which group items are placed. If omitted, the algorithm is 1.

parameter2 Creates the modulo, separation, and hashing algorithm for the data section of the file. These values can be specified exactly as shown for **parameter1** above.

Description For further information, please refer to the CREATE-FILE command.

Available On Any user account.

UPG-REV
UPG-REV.WC
UPG-SYSPROCLIB
UPG-ULTIS
UPG-ULTIS.WC

The upgrade commands listed above are used when upgrading to a new release of the Ultimate operating system.

For further information on these commands, please refer to the upgrade procedures for your system.

USER-COLD-START

USER-COLD-START is a PROC executed at the end of every coldstart to allow custom features such as starting additional printers or reinitializing application software.

Syntax

USER-COLD-START

Description

As supplied by Ultimate, USER-COLD-START starts the system printer via SP-STARTLPTR, initializes the printer control block, and loads the user modes into the system.

You can modify this PROC to start additional printers, initialize applications, and perform various other tasks before users log onto the newly coldstarted system.

Available On

SYSPROG account.

See Also

COLDSTART

Guide to the Ultimate Editor for information on editing items.

Ultimate PROC Reference Guide for information on modifying PROCs.

USORT

USORT prints all Ultimate UPDATE dictionary items for a specific file.

Syntax

USORT {filename} {LPTR} {(P}

filename Specifies the file for which Ultimate UPDATE dictionary definition items should be listed. If omitted, the system prompts for it.

LPTR Routes output to the spooler.

(P Same as LPTR.

Description

For further information on USORT, please refer to the *Ultimate RECALL and Ultimate UPDATE User Guide*.

Available On

Any user account.

VERIFY-SAVE

VERIFY-SAVE verifies the integrity of a tape made during a FILE-SAVE or ACCOUNT-SAVE. This command does not verify the integrity of a tape made by ALL-UPDATE-SAVE or PART-UPDATE-SAVE.

Syntax

VERIFY-SAVE {(options)}

(options)

- A Does not rewind the tape. Use this option to verify tapes that contain multiple account-saves. If omitted, VERIFY-SAVE always rewinds the tape before beginning the verification.
- D Specifies debugging option. Prompts with a continue or quit message whenever an item-size error, a tape format error, or an object item error occurs.
- N Does not create the VSAVE-STATS file. Ultimate recommends that you only use this option when there is not enough disk space for the statistics.

Description

VERIFY-SAVE checks the tape on the attached drive for the following types of errors:

- Item-size errors Number of bytes for the item differs from the actual number of bytes in the item.
- Object item errors Number of frames for the BASIC object code or save-lists differs from the actual number of frames.
- Tape format errors Expected format of the next tape record differs from the actual format.

Note: These errors indicate that the tape is not reliable and should not be used to restore your system. Produce a new tape instead.

The statistics for the report are saved on a SYSPROG file called VSAVE-STATS. Use the LIST-VSAVE-STATS to list statistics reported by VERIFY-SAVE. For information on using the VSAVE-STATS file, see LIST-VSAVE-STATS.

VERIFY-SAVE

```
:VERIFY-SAVE␣
FILEA
  FILEA
FILEB
  FILEB
.
.
14:18:56 07 MAR 1991    Mount reel #2
Label : 07 MAR 1991 DATA accountname File-Save
(C)ontinue/(Q)uit ?C␣
FILEM
  FILEM
.
.
FILEZ
  FILEZ
:
```

Available On SYSPROG or SECURITY account.

See Also ACCOUNT-SAVE
 FILE-SAVE
 LIST-VSAVE-STATS
 SAVE
 T-CHK

VERIFY-SYSTEM

VERIFY-SYSTEM checks for errors in the system assembly language (ABS) software.

Syntax

VERIFY-SYSTEM

Description

Use VERIFY-SYSTEM if you suspect errors in the system software.

VERIFY-SYSTEM generates a check-sum for every frame of assembly language software (ABS), from frame 1 to frame 2047. These check-sums are compared with those in an item named CHECK-SUM in the ERRMSG file. The CHECK-SUM item contains the correct check-sum for the ABS frames.

Each attribute in the item contains a check-sum for one frame of code, or else it is null. If an attribute is null, the corresponding frame is ignored, since it contains no system assembly code.

If all the software frames verify, the following message is displayed:

```
[341] Ultimate system software verified.
```

If a frame generates a check-sum that does not match the correct check-sum in the CHECK-SUM item of ERRMSG, the two check-sums are printed and the following message is displayed:

```
[342] *** Ultimate system software does not verify!
***   There are n frames with mismatches.
```

If the system does not verify successfully, it must be restored by a coldstart.

```
:VERIFY-SYSTEM.␣
[341] Ultimate system software verified.
:
```

Available On

SYSPROG or SECURITY account.

VIEW

VIEW retrieves specified or all entries from the TCL stack for display, editing, or execution. The TCL stack contains TCL commands previously executed on the current line when the stack is on.

Syntax

VIEW {**n**} {**n-m**} {**string**} {(P)}

n Specifies the stack entry number containing the command to be viewed. If omitted, the entire stack is displayed.

n-m Specifies a range of stack entry numbers containing the commands to be viewed. If omitted, the entire stack is displayed.

string Specifies a character string that matches the beginning character string of a command to be viewed. The string can include the Editor wild card character (^).

Note: *Either n, n-m, or string may be specified, but not a combination.*

(P) Routes output to the spooler.

Note: *If parameters are omitted, the entire stack is displayed.*

Description

Use VIEW to display TCL commands previously executed on your line.

For complete information on viewing the TCL stack, please refer to the section "Using Command Stacks" in Chapter 1.

```
:VIEW.␣
Seq Sentence

001 WHO
002 WP-OUT WP-DOCUMENTS,PAYROLL DOC.1 (P
003 LIST ONLY WP-DOCUMENTS
004 LISTUSERS
005 ED BP CUSTOMER.MAINTENANCE
006 LISTFILES

:VIEW W.␣           Search for the first occurrence of
:WHO                a command starting with W.
```

Available On Any user account.

See Also . (period)
CLEAR-STACK
SET-STACK
Chapter 1 of this document for further information on the TCL stack.

WHAT

WHAT displays the current status of the system, including system configuration, lock and spooler status, and location of lines currently logged on.

Syntax

WHAT {'accountname'} {n{-m}} {(options)}

'accountname' Displays line information (as in WHERE) for the specified account name only. The account name must be enclosed in single quotes.

n{-m} Displays line information (as in WHERE) for specified line n or range of lines n-m.

(options)

- L** Suppresses display of lock information.
- P** Routes output to the spooler.
- S** Suppresses display of spooler status (as in SP-STATUS).
- W** Suppresses display of line number status (as in WHERE).
- Z** Displays all line numbers in the system (as in WHERE).

Note: If parameters are omitted, all system status information is displayed at the terminal.

Description

Use WHAT to check the entire system status, or to check the status of specific accounts, lines, or the spooler.

If a line is currently running on more than one TCL level, the statistics for all TCL levels are displayed. WHAT can display the status of all system printers.

When invoked without parameters, WHAT displays the following information:

```

15:03:22 26 APR 1990
System Information Memory PIBs Lines On PCBO Wssize Sysbase/mod/sep Maxfid
5120K 36 32 8 2048 128 19329 11 1 499871 3
Abs frmsize Data frmsize (no link) Linksize
512 500 12

Group/Item Locks 15679 (3D3F) * [*]

BASIC Locks 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000
000 000 000 000 000 000 000 000 000 000 000 000 000 000 000
000 000 000 000 000 000 000 000 000 000 000 000 000 000 000

System Lock Bytes 000 000 000 000 000 000 000 000 000 000 000 000 000 000 000
000 000 000 000 000 000 000 000 000 000 000 000 000 000 000

Line Information 001 0210 000800 T 6.097 6.032 5.088
*004 8010 000480 121.OFC 121.076 166.17E
005 0210 0004A0 6.097 6.032 5.088

Spooler Information [1200] The spooler is inactive.
[1210] Printer # 0 is serial, inactive, and on line.
[1222] The printer is running on line 10.
[1240] Assigned output queues: 0.
[1243] The number of inter-job pages to eject is 1.
...
:

```

System Information

System information consists of the following:

- Memory** Displays the current real memory size.
- PIBs** Number of communication lines (terminals), plus 1 (spooler), plus 1 (warmstart), plus 2 (UltiNet) for a total number of processes on the system.
- Lines** Number of communication lines.
- On** Number of lines logged on.
- PCBO** The PCB FID for line zero.
- Wssize** Extended workspace size. There are three extended workspaces per line.
- Sysbase/mod/sep** System base FID/modulo/separation. Sysbase is calculated as: $\text{Sysbase} = (\text{Wssize} * 3 * \text{PIBs}) + 1$.

Maxfid	Maximum disk FID.
Ovf	Available space, which is the number of linked frames plus contiguous frames.
Abs frmsize	The size in bytes of each frame in the ABS section of the operating system.
Data frmsize	The size in bytes of each frame of the data (files) section.
Linksize	The number of bytes reserved to link frames. These bytes are at the start of linked frames, and contain information about the forward and backward links for the frame.

Group & Item Lock Information

The group and item lock information is in the following format (also used by the LIST-LOCKS command):

dddd (xxxx) ccc [s] <p{p}>

where:

dddd	Group FID (decimal).
xxxx	Group FID (hex).
ccc	Line number that has the group locked, or an asterisk (*) if the group is not locked, but one or more items in the group are locked.
s	System number in an UltiNet network where the line is located, or an asterisk (*) for the local system (no network).
p	Line number that has a read lock in the group.

BASIC Locks Information

The BASIC locks information consists of 48 fields. A field is 000 if unlocked. Otherwise, the field contains the line number plus 1 of the line that locked it.

System Lock Bytes

The system lock bytes information consists of 000 if unlocked. Otherwise, the field contains the line number plus 1 of the line that locked it.

Line Information

The line information consists of the following columns (also used by the WHERE command):

- Line number for which information is displayed. If your line number is displayed, it is preceded by an asterisk (*).
- PIB status. The PIB status for each line consists of four digits. The first two digits are:

00 or 80	Active, or ready to go.
02	Waiting for terminal input.
04	Waiting for terminal output .
20	Waiting for disk.
40	Release quantum/sleeping (typical of the spooler).

The second two digits are:

80/90	The line is in the debugger.
Any other	Normal.

- PCB frame ID of the line, in hexadecimal.
- T indicates tape attachment.
 - d If the information came from the Debugger Control Block (DCB).
 - m If the return address is delimited by a stack marker.
- Assembly-level location counter (first address) and subroutine return-stack addresses. The entry format is as follows:

```
fff.ooo
```

where:

fff	Decimal FID.
ooo	Hexadecimal offset.

Spooler Information

The spooler is displayed as active or inactive. To be active, the spooler must have one or more print jobs actively printing on a physical printer device. For each printer, the display shows its type and status, job queues, and the number of page skips between jobs. If the printer is active, the report shows the print job entry number currently being printed on the physical printer device.

Available On

Any user account.

See Also

LIST-LOCKS

WHERE

System Management Guide for information on system concepts.

WHERE

WHERE displays the current status of any or all lines in the system.

Syntax

WHERE {'accountname'} {n{-m}} {(options)}

'accountname' Displays the line number status for the specified account name only. The account name must be enclosed in single quotes.

n{-m} Displays the line number status for specified line n or range of lines n through m.

(options)

P Routes output to the spooler.

Z Displays all line numbers in the system, whether or not they are currently logged on.

Note: If parameters are omitted, the status of all currently logged on lines is displayed.

Description

Use WHERE to check the status of any or all lines in the system.

Note: To check the status of the entire system, use WHAT.

WHERE displays the status of the specified lines. If a line is running on more than one TCL level, the statistics for all TCL levels are displayed.

The report information consists of the following columns:

- Line number for which information is displayed (if your line number is displayed, it is preceded by an asterisk (*)).
- PIB status. The PIB status for each line consists of four digits. The first two digits are:

00 or 80	Active, or ready to go.
02	Waiting for terminal input.
04	Waiting for terminal output.
20	Waiting for disk.
40	Release quantum/sleeping (typical of the spooler).

The second two digits are:

80/90	The line is in the system debugger.
Any other	Normal.

- PCB frame ID of the line, in hexadecimal.
- T indicates tape attachment.
 - d If the information came from the Debugger Control Block (DCB).
 - m If the return address is delimited by a stack marker.
- Assembly-level location counter (first address) and subroutine return-stack addresses. The entry format is:

```
fff.ooo
```

where:

fff	Decimal FID.
ooo	Hexadecimal offset.

WHERE displays all the entries in the return stack. If there are more entries than fit on one line, additional lines are used.

```

:WHERE 66-73J
066 0210 001880 T0      1141.032  685.042    5.0AB
067 2010 005B6A      d      231.166  245.054    255.152
      0004A0          1.0E2    6.097     6.032  5.088
069 0290 000DC2      d      1153.035  132.063
      000DC0          1.1A6   1141.032   685.02F
5.0A0
071 0210 000F00      m      1141.032  1142.05C   247.0D4
*073 8010 001A40      1125.045  1125.0B8   121.07A
:

```

In this example, tape drive 0 is attached to line 066. Line 067 has a secondary TCL level at the system debugger. The workspaces being used by this TCL level start at frame 5B6A (in hexadecimal).

The second display line for line 067 shows the line's first TCL level.

Available On Any user account.

See Also SHOW-LEVELS
STATUS
WHAT

WHO

WHO displays the specified line number and associated accountname.

Syntax

WHO {'accountname'} {n{-m}} {c}

'accountname' Displays all line numbers logged to the specified account. The accountname must be enclosed in single quotes.

n{-m} Displays the account names for a specified line n, or range of lines n through m. The line numbers can be any valid line from 0 to the maximum number of lines on the system.

c Specifies any non-numeric character, such as * or &. Displays the account names for all lines currently logged on.

Note: If parameters are omitted, information for the current line is displayed.

Description

Use WHO to determine which account is currently logged to one or more terminal lines, or to determine all lines logged to a particular account.

WHO displays specified line number and associated name in the following format:

```
n    accountname
```

where:

n Line number.

accountname Account logged to the line.

If no user is logged to a specified line, the account name is displayed as UNKNOWN.

If the specified accountname does not exist, the command exits and no report is displayed.

If the specified line number does not exist, the following error message is displayed:

[1145] Illegal specification number n

<pre>:WHO 1-50. 1 ADMINISTRATION 2 FINANCE 3 ACCOUNTING 4 UNKNOWN 5 SUPPORT 6 ULTIMATION 7 UW 8 UNKNOWN 9 DOCUMENTATION . . . 50 SALES :</pre>	Display the accountnames logged to lines 1 through 50.
--	--

Available On Any user account.

See Also LISTU{SERS}

WP-IN{PUT}

WP-IN{PUT} invokes the UltiWord word processor to create or edit documents. This command is an alternative to using the Word Processing Main Menu to access documents.

Syntax

WP-IN{PUT} filename {item-ID} {(options)}

filename Specifies the file to be created or edited.

item-ID Specifies the item to be created or edited.

(options)

S Suppresses display of ruler help screen on new items.

V Displays items in View-off mode (\ commands are not displayed).

Description

For further information on WP-IN{PUT}, please refer to the *UltiWord Reference Guide*.

Available On

Any user account.

WP-OUT{PUT}

WP-OUT{PUT} invokes the UtiWord word processor to display or print a word-processing document.

Syntax

WP-OUT{PUT} filename {item-ID} {(options)}

filename Specifies the file containing the item to be output.

item-ID Specifies the item to be output.

(options)

- n** Increases left margin by n spaces.
- A** Routes output to AUX line.
- H** Routes output to holdfile.
- L** Displays output with line numbers.
- N** Specifies no automatic end-of-page waiting.
- P** Routes output to spooler.
- Q** Formats output for letter quality printer.
- R** Uses fixed formula for right justifying text.
- V** Displays items in View-on mode (\ commands are displayed).

Description

For further information on WP-OUT{PUT}, please refer to the *UtiWord Reference Guide*.

Available On

Any user account.

WY60

WY60 sets a Wyse-60 terminal so that the cursor-left (←) key does not delete the character to the left of the cursor.

Syntax

WY60

Description

Use WY60 to set up a Wyse-60 terminal so that it operates properly when the TCL stack commands are used.

WY60 changes the operation of the cursor-left (←) key on a Wyse-60 terminal by changing the character generated by this key into a character recognized by the TCL stack. All the cursor movement and editing keys then work on Wyse-60 terminals as documented in the Chapter 1 description of the TCL stack.

```
:WY60 ↵
```

```
:
```

Available On

Any user account.

See Also

132 and 80 (columns)

CLEAR-STACK

SET-STACK

TERM-INIT

Chapter 1 of this document for information on cursor movement and editing keys.

X-OFF

X-OFF disables the data-flow control on a line, which is normally used to prevent a buffer overflow condition. Both outgoing and incoming data-flow control are disabled.

Syntax

X-OFF {n}

n Specifies the line on which data-flow control is to be disabled. If omitted, the current line is assumed.

Description

Use X-OFF to disable data-flow control.

All Ultimate systems support both incoming and outgoing (bidirectional) control. The normal, default condition of data-flow control enabled causes the system to monitor the user's terminal.

Whenever the typeahead input buffer is almost full, the system automatically sends an X-OFF character to the terminal or other device. This feature allows a device such as a serial printer, which recognizes the X-ON/X-OFF handshaking protocol, to check data-flow for a potential overflow condition in its input buffer.

When the buffer is nearing an overflow condition, an X-OFF character is transmitted to the Ultimate system so that the buffer can be emptied before receiving any more data. The Ultimate system does not send any more data to the device until the device transmits an X-ON character. When the typeahead input buffer empties and can accept more data, the system automatically sends an X-ON character.

X-OFF disables this normal data-flow control for the specified line. No data-flow control is done by the system and overflow conditions can occur without notifying the user. Once X-OFF has disabled the data-flow control for a line, the line remains in that state until control is reinstated via X-ON, or logoff and subsequent logon.

Disabling data-flow control allows transmission of the X-ON and X-OFF characters as regular data characters. Whenever data-flow control is enabled, these characters cannot be input as data into the system,

X-OFF

because they are intercepted by the terminal controller. A device that follows the X-ON/X-OFF protocol does not output these characters as data.

Note: *X-OFF does not halt the actual data-flow, but it halts the system control of the data-flow.*

The outgoing data-flow can be turned off by sending an X-OFF character (X'13') and turned back on by sending an X-ON character (X'11'). You can send an X-OFF character by pressing <CTRL-S>. Terminal output then stops until you send an X-ON character by pressing <CTRL-Q>.

If a non-existent line number is specified, the following message is displayed:

```
[535] Illegal line number
```

<pre>: X-OFF 3␣</pre>	Disable data-flow control on line 3.
<pre>:</pre>	

Available On

SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also

X-ON

X-ON

X-ON enables the data-flow control on a line, which is normally used to prevent a buffer overflow condition.

Syntax

X-ON {n}

n Specifies the line on which data-flow control is to be enabled. If omitted, the current line is assumed.

Description

Use X-ON to enable data-flow control. The command assumes that control has been previously disabled on the line by X-OFF.

All Ultimate systems support both incoming and outgoing (bidirectional) control. The normal, default condition of data-flow control enabled causes the system to monitor the user's terminal.

Whenever the typeahead input buffer is almost full, the system automatically sends an X-OFF character to the terminal or other device. This feature allows a device such as a serial printer, which recognizes the X-ON/X-OFF handshaking protocol, to check data-flow for a potential overflow condition in its input buffer.

When the buffer is nearing an overflow condition, an X-OFF character is transmitted to the Ultimate system so that the buffer can be emptied before receiving any more data. The Ultimate system does not send any more data to the device until the device transmits an X-ON character. When the typeahead input buffer empties and can accept more data, the system automatically sends an X-ON character.

X-ON reinstates this normal data-flow control for the specified line. If the line is already enabled, no action is taken. Once X-ON has enabled the data-flow control for a line, the line remains in that state until control is disabled via X-OFF.

***Note:** X-ON does not start the actual data-flow, but it allows the system control of the data-flow.*

X-ON

The outgoing data-flow can be turned off by sending an X-OFF character (X'13') and turned back on by sending an X-ON character (X'11'). You can send an X-OFF character by pressing <CTRL-S> . Terminal output then stops until you send an X-ON character by pressing <CTRL-Q> .

If a non-existent line number is specified, the following message is displayed:

```
[535] Illegal line number
```

```
:X-ON 3. Enable data-flow control for line 3.  
:
```

Available On SYSPROG or SECURITY account. This command is not available on Ultimate S/370 or S/390 systems.

See Also X-OFF

X-REF

X-REF creates a cross-reference listing of symbols from the CSYM file and stores it in the XSYM file in symbol name order.

Syntax

X-REF filename {itemlist}

filename Usually specifies CSYM, the file where CROSS-INDEX puts symbol data. However, X-REF can be used with any file whose items are in CSYM format.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to indicate all items in the file. Can be omitted if a select-list is present.

Description

Use X-REF to create a cross-reference listing of the CSYM file, which is assumed to contain program name items previously created by CROSS-INDEX.

Each symbol name associated with a program name in CSYM is stored as a separate item in a previously created file called XSYM. For each XSYM symbol item, the item-ID is the symbol name, and the only attribute is a multi-valued list of program names that use the symbol. In other words, where CSYM contains program name items that have symbol names as data, XSYM contains symbol name items that have program names as data.

```
: X-REF CSYM *^
```

Create a cross-reference of all programs in the CSYM file. Information is placed in a file called XSYM.

```
:
```

Available On

SYSPROG or SECURITY account.

See Also

CROSS-INDEX

XREF

Ultimate Assembly Language Reference Guide.

XREF

XREF clears the XSYM file, executes X-REF, and produces a sorted listing of the new XSYM file.

Syntax

XREF {filename} {itemlist} {(options)}

filename Specifies the name of the X-REF source file, normally CSYM. If omitted, the system prompts for it.

itemlist Specifies one or more explicit item-IDs, or an asterisk (*) to indicate all items in the file. Can be omitted if a select-list is present.

(options) Specifies any SORT options, or any single modifier, such as LPTR or NOPAGE.

Description

XREF is a PROC that combines the processing of CROSS-INDEX, X-REF, and SORT. Use XREF to create a cross-reference listing of the CSYM file with a sorted listing of the resulting XSYM file. Before using XREF, an attribute called REFERENCES must be defined in the file dictionary as follows:

REFERENCES

```
001  A
002  1
003  REFERENCES
004
005
006
007
008
009  L
010  70
```

```
:XREF CSYM * (P.)
```

Print an alphabetical, noncolumnar listing of XSYM. REFERENCES shows the programs in which the symbols ABIT and AF are used.

```
XSYM: ABIT
```

```
REFERENCES EDIT-I EDIT-II EDIT-III
```

```
XSYM: AF
```

```
REFERENCES ASTAT WRAP-III EDIT-I EDIT-III
```

Available On SYSPROG or SECURITY account.

See Also

CROSS-INDEX

SORT

X-REF

Ultimate Assembly Language Reference Guide.

XTD

XTD (Hexadecimal To Decimal) converts a hexadecimal number to its equivalent decimal value.

Syntax

XTD n

n Specifies the hexadecimal number to be converted to decimal.

Description

XTD converts positive and negative hexadecimal numbers to their equivalent decimal values. Negative hexadecimal numbers can range from FFFFFFFF to 800000000001. Positive hexadecimal numbers can range from 0 to 7FFFFFFFFF. If fewer than 12 hexadecimal characters are entered, high order zeroes are assumed.

```
:XTD FFFJ  
4095
```

Available On

Any user account.

See Also

DTR
DTX

A Glossary

A/AMC	Attribute number heading. The number or position of the attribute in the data item.
ABS	Assembler Software section.
ACC File	Accounting History File. Contains account usage data.
Access Code	Required on S/370 and S/390 systems in order to use a line other than line zero.
Access Permission	Ability to access another account or a file in another account. Access is provided via update and retrieval locks.
Account	A collection of related files associated with one user or one function. Each account has a Master Dictionary.
Account-Restore	Loading an account to disk from a previously created account-save tape.
Account-Save	Saving a disk account to tape.
Accountname	Name of an account. A user logs on the system by entering an accountname.
Attribute	A line of information in an item. Known as a field in other database systems.
Attribute Definition Item	Used to define an attribute; includes information on how the data is calculated and presented.
Available Space, Available Space Pool	Frames remaining after all user and other account sizes have been specified.

Base, Base FID	File location; first frame ID (FID) of primary storage.
BASIC	Beginner's All-Purpose Symbolic Instruction Code; a programming language.
Baud Rate	Rate at which information is transferred between hardware.
Bisynchronous Communication, Bisync	Data transmitted in two opposite directions simultaneously.
Block (Tape)	Unit of information on a tape.
Block Print	Printed characters made up of multiple rows of the character being printed.
BMSH	Base, modulo, separation, hashing algorithm.
BOD	Beginning of Data.
Boot	See Warmstart.
Bootstrap Procedure	See Warmstart.
BOT	Beginning of Tape.
Braces	{Punctuation marks that surround optional parameters}.
<BREAK> Key	Interrupts the current process.
<BREAK> and END	Press the <BREAK> Key and enter END at the system debugger prompt.
BSC	Bisynch(ronous) Controller.
Bull	See Platforms.
CC-Pointer	Compiled BASIC program object code pointer.
CL-Pointer	Saved list pointer.
Charge	Record system usage.
Charge Name	Account or file to which system usage is charged.

Checksum	Calculation on the items in a file.
Coldstart	Bringing a system on-line from a power off state.
Colon Prompt	See TCL Prompt.
Command	Part of a TCL Command Statement. A command can be a verb, PROC, or catalogued BASIC program.
Command Statement	Contains the TCL command and any parameters. Executed by pressing the RETURN key.
Connective	Element in a RECALL statement.
Contiguous Overflow Frames	Two bytes per 1K of memory.
Conversion	Affects display of item-IDs.
Correlative	Affects calculation and display of item-IDs.
CP	Control Program. CP commands are available only on Ultimate S/370 and S/390 systems.
<CTRL> Key	Used with other keys to perform a desired action. See Editing Key Sequence.
CTS	Clear To Send.
D-Pointer	See File Definition Item.
D/Code	Code that identifies the item as a file-defining item or a file pointer. D/CODES are D, DV, DW, DX, and DY.
DATA Section	Lowest level of a file; contains data stored in variable length attributes and items.
Default Value	Preset value for a parameter if no user input is provided.

Diagnostics	Tests to determine hardware or software operation.
DICT Section, Dictionary	An item that contains pointers to data files and attribute definition items.
Disk Shadowing	Activities occurring on one disk or set of disks is duplicated on another disk or set of disks.
Display	Output appears on the terminal screen.
DSR	Data Set Ready.
DTR	Data Terminal Ready or Decimal To Radix.
EDAC	Error Detection and Correction.
Echo	When keyboard input is displayed on the terminal screen.
Editing Key Sequence	A sequence of several keystrokes, such as <CTRL-X>.
Enter	Type input, then press the RETURN key.
EOD	End of Data.
EOT	End of Tape.
ERRMSG File	File containing all system error messages.
Error Message	System response to incorrect entry or other processing error.
Extended Format	Items larger than 32K.
Extended Frames	Linked frames allocated from available space after primary file space has been used up.
Extended Workspace	See Extended Frames.

FCB	File Control Block.
FID	Frame ID.
FIFO	First In, First Out.
File	Contains one or more items.
File-Restore	Loading one or more files to disk from a previously created file-save tape.
File-Save	Saving one or more disk files to tape. There are three types of file-saves; full file-save, part update save, and all update save.
File-Save Tape	A tape on which all files have been saved.
Filename	Specifies the DICT section, one or more DATA sections, or all sections of a file.
File Definition Item	Defines and points to a file in the current account. Also known as a D-Pointer.
File Synonym Definition Item	Points to a file in another account. Also known as a Q-pointer.
Frame	A memory block; size is platform specific.
GFE	See Group Format Error.
Greater-Than Prompt	See TCL prompt.
Group	A collection of frames. The number of groups per file is determined by the modulo of the file.
Group Format Error	Error created when a group is updated incorrectly or incompletely.
Hashing Algorithm	Determines the group into which items are placed.
Hexadecimal	Base 16 numbering system.

hh:mm:ss	Represents values for hours, minutes, and seconds.
Hold File	Holds a job for the spooler.
Host System	System to which other systems are linked on an UltiNet network.
Index	A sorted set of data based on attributes in a file. Provides a permanent, pre-sorted means of accessing items in the indexed file.
IPL	Initial Program Load.
Item	A set of related attributes; also known as record.
Item-ID	Name by which an item is identified. Also known as key record.
Itemlist	One or more explicit item-IDs, or an asterisk (*) to specify all items in a file.
Justification	The alignment of data in an item for display or sorting.
Kernel	The section of the Ultimate Operating System that handles process and disk scheduling, memory management, I/O, and interrupt handling.
Keyword	See Parameter.
Level, Level Pushing	See TCL Level.
Line	Data line between the terminal and the system.
Logger, Logging	See Transaction Logger.

Log Off	To end a work session at a terminal and make it inactive.
Log On	To start a work session at a terminal in a specified account.
Log To	Specify starting another account without exiting the current account.
LPTR	Option to send output to the printer.
LSI	See Platforms.
M/DICT	Heading for the Master Dictionary.
Master Dictionary	Contains the account's verbs, PROCs, and cataloged BASIC programs, as well as D-pointers and Q-pointers.
MD	Master Dictionary.
mm/dd/yyyy	Represents values for month, day, and year.
Modulo	Number of groups in primary storage; maximum is 16,777,213.
Network	One or more systems connected by hardware and software.
NEWAC File	Prototype Master Dictionary file.
NNCF	Number of Next Contiguous Frames.
NOPAGE	Parameter specifying no end-of-page waiting.
NPCF	Number of Previous Contiguous Frames.
Null Item-ID	An item-ID with no specified name.

Option	One-letter code that performs additional actions during a TCL command. Usually preceded by a left parenthesis, must be specified after all other parameters.
Parameter	User-specified input to an Ultimate command statement, such as filename, item-ID, or option.
Keyword	Parameter keyword, followed by an equal sign and the parameter value. Not position dependent.
Positional	Must be specified in a certain order.
Password	Sequence of non-echoing characters entered at a prompt to provide access to a security account or file.
PCBF	Process Control Block FID. First frame of process workspace, shown in hexadecimal.
PIB	Process Identification Block.
Platforms	The following platforms are currently supported: <ul style="list-style-type: none">Ultimate Bull 6000/7000 and LSI systems.Ultimate IBM S/370 and S/390 systems.Ultimate 1400 systems.Ultimate PLUS on Hewlett Packard 9000 systems.Ultimate PLUS on IBM RISC System/6000 systems.Ultimate PLUS on Bull DPX/2 systems.
Pop	Return to the previous TCL level.
Port	Obsolete; see Line.
Print	Output at the printer.

Privilege Level	Determines amount of access to system commands and functions. Available levels are 0,1, and 2.
PROC	Executable program written in Ultimate PROC procedural language. Can be used as an Ultimate command.
PSYM File	Default system debugger file.
Push	Go to the next TCL level.
Q-Pointer	See File Synonym Definition Item.
QFILE File	Temporary Q-pointer that changes each time SET-FILE is executed in the current account.
Reallocate, Reallocation	Adjusts the space needed for files whose size has increased or decreased since being created.
RECALL	Database query language used to retrieve information and generate reports.
Record (Tape)	See Block.
Retrieval Locks	Prevents specified accounts from accessing information.
RETURN	The keyboard RETURN key.
RISC	Reduced Instruction Set Code.
RS/6000	RISC System 6000. See Platforms.
S/370 and S/390	See Platforms.
S/AMC	Report heading for structure code if the attribute controls or is controlled by another attribute.
S/NAME	Report heading for alternative item name.

Security Account	The SECURITY account, or the SYSPROG account if SECURITY is enabled.
Select-List	A list of items created with one of the list commands.
Separation	Number of frames per group.
Shadow	To duplicate all operations being performed on two sets of disks.
Sib, Sibling	Disk drive that is being shadowed by another disk.
Spooler	Process that controls and routes print jobs.
Stack	See TCL Command Stack.
SYSPROG	System Programmer Account.
SYSTEM Dictionary	Highest level file in the Ultimate file hierarchy. Contains pointers to all accounts.
TAC	Technical Assistance Center.
TACPAC	Stand-alone diagnostics for Ultimate 6000/7000 systems.
TCL	Terminal Control Language.
TCL-I	TCL commands that do not access files.
TCL-II	TCL commands that access specified files or items. TCL-II commands require that an itemlist be specified if no select-list is present.
TCL Command Stack	Contains TCL command statements as they are entered. Statements in the TCL stack can be displayed, edited, and re-executed.
TCL Levels	Multiple TCL levels can be specified by a line, limited only by disk space. Each level can execute a separate process.

TCL Prompt	A colon (:) if the TCL stack is ON; otherwise a greater-than sign (>).
Terminal	Serial I/O device with keyboard and monitor screen on which system input and output is displayed.
Transaction Logger	Utility that records each disk file update to tape.
UCSB	Universal Character Set Buffer.
UDS 201 C/D	2400 baud autodial synchronous modem.
UDS 208 B/D	4800 baud autodial synchronous modem.
UltiKit	Application development environment.
UltiLink	Asynchronous communications support application.
Ultimate Plus	See Platforms.
UltiMation	Office automation application.
UltiNet	Network support application.
UltiPlot	Produces graphs from database information.
UltiWriter	Function key-based word processor.
UPDATE	Screen-oriented, on-line database maintenance program.
Update-Save	Saves to tape all updates (creation, deletion, or change) since the last save.
Update Lock	Prevents specified users from changing information in an account.
User Name	See Account Name.
Verb	TCL command written in assembly language.

VM

Virtual Machine.

X'nn'

Hexadecimal value.

B System Error Messages

The master list of Ultimate system error and informational messages is found in the ERRMSG file on the SYSPROG account. These messages are displayed by various system software, and have no standard numbering system or display format. Many messages do, however, fall into general categories, and many are displayed with an identifying number.

The table below summarizes the general message categories in message number order (which is also the item-id order) for easier user reference. Messages displayed without numbers are also included (in item-id order). Displayed message numbers are enclosed in square brackets (for example, [89]), while message numbers not displayed are shown with no brackets (for example, 2).

Note: To print a sorted list of error messages, enter `SSELECT ERRMSG, then PRINT-ERR ERRMSG (P.`

Message Category	Range of Numbers
Recall and other system command entry errors	2, and [3] through [120]
Bisync command processing errors	[121] through [151]
Recall command entry errors	[151] through [173]
System command entry errors	[197] through [204]
System Assembler errors	[205] through [219]
Editor messages	220 through 223
System Assembler errors	[225] through [238]
System command messages	[239] through [260]
PROC command processing errors	[265] through [281]
System command messages	[282] through [431]
Transaction Logger messages	451 through 466
System command messages	520, [521] through [558]

Message Category	Range of Numbers
Bisync error messages	600 through 620
Recall command entry errors	[700] through [708]
Tape and Disk errors	720 through 753
System command messages	780 through 806
Async command entry errors	[911] through [913]
Dump command entry errors	[990] through [991]
Restore command entry errors	[992] through [994]
What command messages	998 through 999
Spooler message	[1004] through [1243]
Printer Diagnostics messages	1250 through 1256
Disk Diagnostics messages	1257
Memory Diagnostics messages	1259 through 1260
UltiNet error messages	[2001] through [2341]
Recall forms output command entry errors	[5001] through [5012]
Update command entry errors	[7001] through [7134]
Basic command entry errors	B0, [B1] through [B220]
UltiPlot error messages	[G1] through [G94]
UltiWord error messages	WP-E1 through WP-E5

Error Message Format

Each line in an ERRMSG item must conform to the following general format:

code{text}

The valid codes are:

- A** Inserts the next parameter from the list of parameters passed by the originating process.
- A(n)** Inserts the next parameter as above, but left justified in a field of 'n' blanks.
- AM** Inserts attribute mark.
- D** Inserts the current date.
- E** Inserts the item-ID enclosed in brackets.
- H** Inserts the text following the H; does not include a CR/LF.
- H+** Suppresses final CR/LF that is normally output; used at the end of the ERRMSG item.
- L** Prints the contents of the output buffer with CR/LF at the end.
- L(n)** Same as L, then outputs n-1 blank lines.
- R(n)** Inserts the next parameter as A (above), but right justified in a field of 'n' blanks.
- S(n)** Sets the output buffer pointer to location 'n'.
- T** Inserts the current time.
- X** Skips a parameter in the list of parameters passed by the originating process.

Notes

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C ASCII Codes

This appendix presents a list of ASCII codes for decimal number values from 0 through 127 and 251 through 255. The hexadecimal equivalent value and ASCII character generated are also given.

Decimal values 0-31 are assigned as non-printable functions; these codes may be specified by control key sequences as input to a BASIC program. In the listing, the control key is indicated by a caret (^) in the first position in the Key column.

Decimal values greater than 127 (x'7F') are not defined in the ASCII character set. The functions or characters assigned to these values are dependent on the terminal being used. However, special file structure functions and control key sequences have been assigned to decimal values 251 through 255 (x'FB' through x'FF').

Decimal	Key	Hexadecimal	Name
0	^@	00	NUL
1	^A	01	SOH
2	^B	02	STX
3	^C	03	ETX
4	^D	04	EOT
5	^E	05	ENQ
6	^F	06	ACK
7	^G	07	BEL
8	^H	08	BS
9	^I	09	HT
10	^J	0A	LF
11	^K	0B	VT
12	^L	0C	FF
13	^M	0D	CR
14	^N	0E	SO
15	^O	0F	SI
16	^P	10	DLE
17	^Q	11	DC1
18	^R	12	DC2
19	^S	13	DC3
20	^T	14	DC4
21	^U	15	NAK
22	^V	16	SYN
23	^W	17	ETB
24	^X	18	CAN
25	^Y	19	EM
26	^Z	1A	SUB
27	^	1B	ESC
28	^\ ^_	1C	FS
29	^	1D	GS
30	^^	1E	RS
31	^_	1F	US

Decimal	Key	Hex	Decimal	Key	Hex
32		20	80	P	50
33	!	21	81	Q	51
34	"	22	82	R	52
35	#	23	83	S	53
36	\$	24	84	T	54
37	%	25	85	U	55
38	&	26	86	V	56
39	'	27	87	W	57
40	(28	88	X	58
41)	29	89	Y	59
42	*	2A	90	Z	5A
43	+	2B	91		5B
44	,	2C	92	\	5C
45	-	2D	93		5D
46	.	2E	94	^	5E
47	/	2F	95	~	5F
48	0	30	96	~	60
49	1	31	97	a	61
50	2	32	98	b	62
51	3	33	99	c	63
52	4	34	100	d	64
53	5	35	101	e	65
54	6	36	102	f	66
55	7	37	103	g	67
56	8	38	104	h	68
57	9	39	105	i	69
58	:	3A	106	j	6A
59	;	3B	107	k	6B
60	<	3C	108	l	6C
61	=	3D	109	m	6D
62	>	3E	110	n	6E
63	?	3F	111	o	6F
64	@	40	112	p	70
65	A	41	113	q	71
66	B	42	114	r	72
67	C	43	115	s	73
68	D	44	116	t	74
69	E	45	117	u	75
70	F	46	118	v	76
71	G	47	119	w	77
72	H	48	120	x	78
73	I	49	121	y	79
74	J	4A	122	z	7A
75	K	4B	123	{	7B
76	L	4C	124		7C
77	M	4D	125	}	7D
78	N	4E	126	~	7E
79	O	4F	127	DEL	7F

Decimal	Hexadecimal	Symbol	Name
128 (x'80') thru 250 (x'FA')		not used	
251	FB	SB	Start buffer
252	FC	SVM	Subvalue Mark
253	FD	VM	Value Mark
254	FE	AM	Attribute Mark
255	FF	SM	Segment Mark

D S/370 and S/390 UCSB and FCB Items

The Ultimate S/370 and S/390 system support for parallel printers requires that a Universal Character Set Buffer (UCSB) item be defined and loaded before the printer is used.

An additional item called the Forms Control Buffer (FCB) can be defined that allows paging characteristic to be changed.

The UCSB defines the print train, and when loaded, sets up a default ASCII-to-EBCDIC translation table for the printer. The translation table may be modified by adding mapping specifications to the UCSB item.

Print trains and mapping specifications are defined as items in the UCSB-DEF file on the SYSPROG account; there are items defined for the 1403, 3211, 3203, 4248, 6262, 4245, 3262, and various other printers. The names of 1403 print train items end with the number 14; for example, PN14. For more information about print trains and the UCSB, refer to the IBM component description for your printer.

The following is an example of a UCSB item:

001	* UCSB comment field	
002	304	- length of print train image and optional DUCT table (printer & train dependent)
003	240	- length of print train image.
004		-
005		- attributes 5 through 244 (in this example) contain print train images.
.		
.		
.		
244		
245		- DUCT (for printers that support this)
.		
.		
307		
308	* Comment about optional mapping section	
309	1	- number of mapping pairs.
310	21 6F	- map C!' to E'?

Loading the UCSB

The UCSB is loaded as part of the SP-STARTLPTR command. As part of the coldstart procedure, the Ultimate system automatically starts the first parallel printer on the system using the UCSB-DEF item called STANDARD. The item STANDARD should be loaded with the appropriate print train definition for your parallel printer.

If there is no item STANDARD, an error message is displayed and the coldstart continues. When the system is up, use SP-STARTLPTR to start your printers, or add an SP-STARTLPTR with the appropriate UCSB item to USER-COLD-START.

FCB Format for 6262 and 4248 Printers

The following FCB item format is used to define 6262 and 4248 printers:

Attribute	Description
1	* (asterisk) followed by any comments
2	type; for 6262 and 4248 printers, if added form control features are to be defined, specify 2; if added features are not used; can be 1
3	index; ignored by 6262 and 4248 printers
4	lines per inch (lpi); to specify more than one value per page, separate values with a value mark
5	first line to print using corresponding lpi value; separate values with a value mark
6	number of lines per page
7	LEVEL=x, stacker level control, where x is a value from 0 to 3 as follows: 0 automatic control 1 1 inch below automatic level 2 2 inches below automatic level 3 3 inches below automatic level
8	SPEED=x, print speed, where x is a value from 0 to 3 as follows: 0 no change from speed set by last SP-STARTLPTR 1 slow - highest print quality 2 medium 3 fast - lowest print quality
9	THICKNESS=x, thickness of form, where x is a value from 0 to 3 as follows: 0 .5 mm 1 .2 mm 2 .1 mm 3 <.1 mm
10	OFFSET=x, horizontal copy feature, where x is position (given as the number of characters from the left margin)

that the copying is to start. If x is 0, the horizontal copy feature is set to off.

Attributes 7 through 10 are optional, but, if used, must be in the order shown. If any one is used, all preceding optional attributes must be defined. For example, if you wish to define speed (attribute 8), you must also define level (attribute 7).

The following are examples of two FCB-DEF items supplied with this revision:

```
FCB6-4248
001 *THIS IS THE DEFAULT 4248/6262 FCB 6 LINES/IN.
    MEDIUM SPEED, AUTO STACKER.
002 2
003 0
004 6
005 1
006 66
007 LEVEL=0
008 SPEED=2
009 THICKNESS=0
010 OFFSET=0
```

```
FCB6-VARIABLE-4248
001 *THIS IS A SAMPLE 4248/6262 FCB WITH VARIABLE
    LINE SPACING; LINE SPACING CHANGES EVERY 5 INCHES
002 2
003 0
004 6]8]6
005 1]30]70
006 76
007 LEVEL=0
008 SPEED=2
009 THICKNESS=0
010 OFFSET=0
```

Note: The] character in the example is a value mark (ASCII 253).

UCSB Format for 6262 and 4248 Printers

The following UCSB item format must be used to define 6262 and 4248 printers:

Attribute	Description
1	* followed by any comments
2	BAND ID=xxxx, where xxxx is the ID of the print band for this printer; the print band IDs are given in your printer manual. This must be specified. The specified band id is checked by the system against the band id of the printer
3	TRAIN IMAGE - must be specified exactly as shown
4	length of print chain image (in decimal)
5	length of print chain image (must match attribute 4)
6-nnn	print chain image, where nnn is last attribute in image; each attribute is the hexadecimal value of one character
nnn+1	TRANSLATE OVERRIDE - if optional mapping pairs are to be defined, this phrase must follow last attribute in print chain image
nnn+2	number of optional mapping pairs to follow
nnn+3	first optional mapping pair; ASCII hexadecimal value is given first, followed by EBCDIC value to translate to

The following is an example of a UCSB-DEF items supplied with this revision:

```

B64-6262-TRANSLATE
001 *6262 64 CHARACTER EBCDIC BAND PART NUMBER
    6475399 FEATURE CODE 9501
002 BAND ID=OE01
003 TRAIN IMAGE
004 64
005 64
006 4A
007 4B
.
.
.
069 F9

```

070 TRANSLATE OVERRIDE
071 4
072 21 4F
073 5B 4F
074 5D 5F
075 5C 4F

E CAPTURE Subroutine

The CAPTURE subroutine uses the PASSTHRU command and captures its output. After setting up the INPUTS below, CAPTURE can be called from BASIC with the following CALL statement:

```
CALL CAPTURE (PORT,BAUD,PASSFILE,ITEMS,SIZE,KEY,ERRMSG)
```

Note: When CAPTURE is called as a subroutine, your local terminal operates in PASSTHRU mode until you press <ESC-X>. Only then does the calling process return to the mainline BASIC program.

The CAPTURE subroutine performs the following EXECUTE statement:

```
EXECUTE "PASSTHRU ":PORT:",":BAUD, //OUT. >OUTPUT
```

This statement captures data passed from another terminal and maintains statistics using the following interfaces:

	Variable	Description
Inputs:	PORT	Line number to use for PASSTHRU.
	BAUD	Baud rate to use for PASSTHRU.
	PASSFILE	File variable of the file data section in which captured data is to be filed.
Outputs:	ITEMS	Total number of items of captured data. Each item is approximately 10,000 bytes.
	SIZE	Total number of bytes of captured data.
	KEY	Captured data identifier. Each item of captured data has the format KEY-#, where: KEY PORT*TIME*DATE # Sequential number of the item, starting with 1 (KEY-1) and ending with the value in ITEMS (KEY-n).
	ERRMSG	ERRMSG number that terminated PASSTHRU.

Notes

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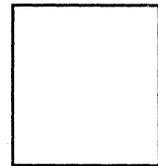
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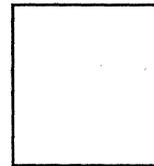
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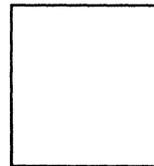
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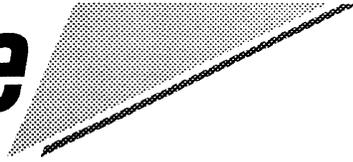
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