

ENTREX

System 480

O BATCH OPERATIONS
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T VALUE TABLE OPERATIONS
U DISK STATUS
V SYSTEM SAVE
W BATCH PROTECTION
X ENTER DATE

SELECTION:

Supervisor's Quick Reference Information

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SUPERVISORY FUNCTIONS

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S Library Operations
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U Disk Status
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W Batch Protection
X Enter Date

BATCH OPERATIONS

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6 WRITE ALL LIBRARIES

7 READ ALL LIBRARIES

VALUE TABLE OPERATIONS

- 1 Display Value Table List
- 2 Assign Value Table

DISK STATUS

Indicates the percent of the disk that is filled.

SYSTEM SAVE

Used to write the contents of the disk and core memory onto magnetic tape for history purposes.

BATCH PROTECTION

Used to specify the requirements that must be met by a batch before it can be written to tape or deleted.

ENTER DATE

Date entered appears in the batch status information for all batches started while that date is in effect.

SYSTEM TAPES

System tapes contain software programs supplied by ENTREX. Each installation maintains two types:

1. Master System Tape. This tape is generated by ENTREX and is *never written on by the user*. It is loaded (see "Cold Start Procedures") only when there is no usable data on the disk. While loading, it completely erases all data and libraries on the disk. Normally, it is loaded only when a new system is released.
2. System Save Tapes. These tapes are generated by the user at regular intervals for backup purposes. System saves, like all other tapes, must be carefully labeled with the date and hour of the save. If it is necessary to load a system save, always use the most recent version. See "Cold Start Procedures."

LOADING A TAPE (556,800 bpi)

Use the following procedures to load a tape on a 556 or 800 bpi drive.

1. Mount the reel on the lefthand hub. If the tape is to be written on, be sure that it has a write ring. When reading, do not use a write ring. Make sure that the write ring is removed at all times except when a tape is to be written upon.
2. Thread the tape as shown in Figure 1. While threading, it will help to keep tension off the leader by manually unwinding (clockwise) the lefthand reel as tape is pulled through the threading path.

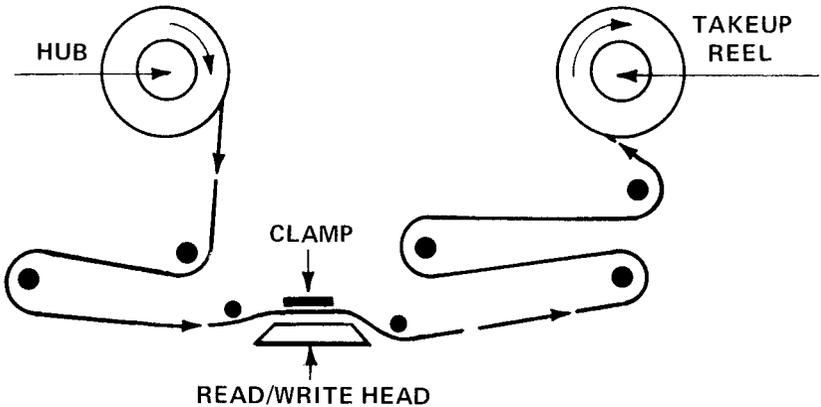


Figure 1. TAPE THREADING DIAGRAM (556,800 bpi)

3. Wind the tape around the takeup reel on the righthand hub. When the tape is secure around the righthand reel, depress the LOAD/UNLOAD button. The beginning-of-tape (BOT) marker is to the left of the read/write head.
4. Make sure that the clamp on top of the read/write head is down.
5. Depress the REMOTE button. The READY light is illuminated.
6. Close the front cover on the tape unit to keep dust out.

The tape is ready for use.

To unload a tape, use the following procedures:

1. Depress RESET and, if not already at BOT, REWIND.
2. Depress the LOAD/UNLOAD button.
3. Remove the reel from the hub.

LOADING A TAPE (1600 bpi)

Use the following procedures to load a tape on a 1600 bpi drive.

1. Mount the reel on the righthand hub by holding in the knob in the center of the hub and pushing the reel around the hub. If the tape is to be written on, be sure that it has a write ring. When reading, do not use a write ring. Make sure that the write ring is removed at all times except when a tape is to be written upon.
2. Thread the tape as shown in Figure 2. While threading, it will help to keep tension off the leader by manually unwinding (clockwise) the righthand reel as the tape is pulled through the threading path.

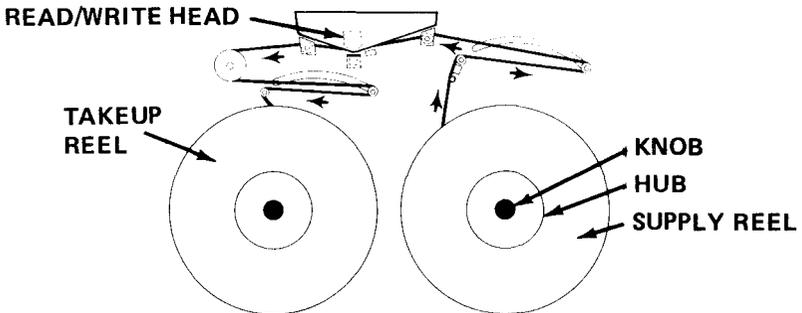


Figure 2. TAPE THREADING DIAGRAM (1600 bpi)

3. Wind the tape around the takeup reel on the lefthand hub. When the tape is secure around the lefthand reel, depress the LOAD button twice. The beginning-of-tape (BOT) marker is positioned to the left of the read/write head and the LOAD light is illuminated.
4. Depress the ONLINE button. It lights up indicating that the tape is ready for use.

Use the following procedures to unload a tape once it has been read or written upon.

1. Depress ONLINE. The light in the button is extinguished to indicate that the tape drive is no longer online to the System 480 computer.
2. If the BOT foil is positioned just to the left of the read/write head, depress REWIND once; otherwise, depress REWIND twice.
3. The tape can now be removed from the hub by holding in the knob in the center of the hub while pulling the reel away from the hub.

COLD START PROCEDURES

Use the following procedures to load the system or to load a system save tape.

1. Mount the reel of tape containing the system save or master system to be loaded.

NOTE: If a master system is to be loaded, insure that no usable data is on the disk. Loading a master system tape destroys all data and libraries on the disk.

Normally, cold start procedures are used to load system saves rather than masters.

2. Depress the REMOTE button to turn on the READY indicator on the tape unit.
3. Push the COLD START ENABLE switch up.
4. Push the TAPE CS switch up. The system starts loading.
5. Push the COLD START ENABLE switch down.
6. When the tape stops loading, it rewinds automatically. Unload the tape and place it back in its container. If the tape does not rewind automatically and the message CHECK WRITE RING AND READY TRY AGAIN is displayed, the system save is questionable. Either attempt to reload the save or use a backup save.

WARM START PROCEDURES

Because the disk warm start causes hardware diagnostic programs to be executed, it is good practice to use the disk warm start once a day; e.g., between shifts or when powering up the system in the morning.

1. If the system is operating, have all operators terminate their batches.

Do not execute a warm start when any dynamic operation is in process; e.g., while deleting batches, batch totalling, seeking error flags, or writing to tape or printing.
2. Push the COLD START ENABLE switch up and then push the DISK CS switch up. Wait 10 seconds, and then push the COLD START ENABLE switch down.
3. If all diagnostics run successfully, the HELP list is redisplayed on all keystations.

TAKING A SYSTEM SAVE

Use the following procedures to take a system save.

1. Mount a scratch tape with a write ring inserted in the reel.
2. Tell the operators to discontinue keying. It is not necessary for the operators to terminate their batches.

NOTE: If batches are not terminated and the system save is reloaded, the operators must depress **HELP** and **LOC RET** to redisplay the batch condition at the time of the save.
3. Select System Save from the supervisor's **HELP** list and depress **REL**.
4. The entire system contents are written onto tape; i.e., the contents of the computer's memory and the data and libraries contained on the disk. When the save is finished, the supervisor's **HELP** list is redisplayed on the terminal that requested the save. The other terminals are not affected and can continue keying as soon as the save is completed.
5. Remove the tape from the hub. **REMOVE THE WRITE RING AND PLACE A LABEL INDICATING THE DATE AND HOUR OF THE SAVE ON THE REEL.** Place the reel in its container.

WRITING MULTIPLE-FILE REELS

With System 480 it is possible to write more than one file on a reel of magnetic tape. Each file consists of one or more batches. Use the following procedures to create a multiple-file reel.

1. Write the batches that form the first file onto tape.
2. Select Write A Tape Mark. The system writes a tape mark that is used to separate the first file from the next.
3. Write the next file to tape and write a tape mark after it. Use this process for as many files as desired.
4. After the last file, select Write A Tape Mark and Rewind.
5. Label the tape to indicate the files on the reel and their sequence.

NOTE: As a matter of good operating practice, tapes should not be left at any position other than beginning-of-tape for long periods of time. Otherwise, there is a chance that an unexpected power fluctuation could damage the data.

WRITE A TAPE MARK

Write A Tape Mark is used to indicate that the file just written on the tape is complete.

When blocking records during output, Write A Tape Mark must be used to insure that all records are written to tape and that the proper padding of short blocks is accomplished.

WRITE A TAPE MARK AND REWIND

Select Write A Tape Mark and Rewind to perform all the functions of Write A Tape Mark, to rewind the tape, and to reset the system-generated record count.

POSITION TAPE AT TAPE MARK

Position Tape At Tape Mark can be used to position a multiple-file input tape to the file that is to be read onto the disk or to position an output tape that has been rewound so that another file can be added to it.

In either case, Position Tape At Tape Mark is used to move the tape forward to the end of the current file.

EXAMPLES:

Input: To read the second file of a multiple-file reel onto the disk, use Position Tape At Tape Mark once. Then follow the procedures for Read A Batch.

Output: Two files, separated by a tape mark, have been written on a tape that was subsequently rewound. Use the following procedures to add a third file:

- a. Execute Position Tape At Tape Mark twice to move the tape past the two files already on the tape.

BACKSPACE TAPE

Select Backspace Tape to position the tape in a backward direction. Each time it is selected, the tape is backspaced one block.

SELECT TAPE UNIT

Select Tape Unit is used only for systems with two tape drives; e.g., one 9-channel 800 bpi drive and one 9-channel 1600 bpi drive. When selected, the System displays the following choices:

1. 7-channel even parity,
2. 7-channel odd parity,
3. 9-channel 800 bpi,
4. 9-channel 1600 bpi.

The specified drive is used for all tape operations, including System Save, until another drive is specified or a warm start is executed.

TAPE TO PRINT DUMP

Tape To Print Dump is used to read data records into the System 480 computer memory and then to print them directly; no tape-to-disk operation is required. No reformatting is available. One tape record is equivalent to one line on the printer.

BATCH OUTPUT AND DELETION

The following sequence is used after the system requests the batch name for a batch output or deletion operation.

1. After the batch name is entered, the system displays the following message.

HIT REL TO PROCEED; OTHERWISE HIT HELP

If the batch name specified is the one desired for output or deletion, depress REL; otherwise depress HELP.

2. The system locates the batch on the disk and displays its name (and the names of all other batches associated with it if the asterisk convention is used). The message HIT REL TO PROCEED; OTHERWISE HIT HELP is redisplayed.

Depress REL to initiate the output or deletion operation; otherwise depress HELP.

3. Once the output or deletion operation begins, the system displays the names of any batches that are not written to tape or deleted because they do not meet the batch protection requirements. At the end of the operation, the message HIT REL TO PROCEED; OTHERWISE HIT HELP is displayed again. This time the message signifies only that the output or deletion operation is completed. Depress either REL or HELP to redisplay the supervisor's HELP list.

READ A BATCH — BATCH OPERATIONS

To read data from magnetic tape onto the disk, use the following procedures.

1. Start a batch or a standard job in Entry Mode. Insure that the input formats are assigned the correct PGM number and that the linking is correct. Before any data is entered, depress **HELP** and terminate the batch.
2. Select Supervisor and key the password.
3. If necessary, use Utility Operations to position the tape to the file to be read.
4. Select Batch Operations and Read A Batch. Answer the following questions.

Hit **REL** to proceed; otherwise hit **HELP**.

TAPE INPUT BATCH NAME _____

LIMIT # RECORDS _____

Depress **FIELD RELEASE** to read the entire file. Enter a number to divide the input file into smaller batches.

CONDITIONAL FORMATS (Y/N/P) —

Y = use conditional tape input. The first character of each input record must contain a digit indicating the program that is to control input.

N = do not use conditional tape input. The input formats are to be used in the fixed sequence indicated by answers to the batch start **LINKS TO** question for the input batch.

P = the program selector (first digit of the record) used in conditional tape input is to be removed from the record after the format has been selected.

ENABLE SKIP/EMIT (Y/N) —

Y = any automatic skip or emit fields defined in the input record format are to be executed during the input operation, thereby enlarging the input records.

N = read the record onto the disk without inserting any additional data. The same format used by the operator to enter the records originally can be used for the tape input process.

5. Depress REL to start the input operation. The status line shows the number of each record as it is read.

VALUE TABLE OPERATIONS

Use the following procedures to create a value table, assign it a number, and define a value table field.

1. If one does not already exist, create an input format to control the entry of the value table batch.
2. Enter the value table batch. The table can be entered by a supervisor or by using the Read A Batch function for tape input.
3. Assign a unique number in the range 1 through 20 to the value table batch using Assign Value Table.
4. Start entering the input format that defines the record containing the value table field. When the value table field is encountered, select PGM 5 and answer the questions that define the value table field.

NOTE: Assign Value Table can be used to disassign or reassign a value table in addition to the initial assignment. To disassign a value table, select Assign Value Table and enter the number of the table to be disassigned and depress FIELD RELEASE in response to the VALUE TABLE BATCH NAME question.

BATCH TOTALING AND BALANCING

Three types of batch totaling and balancing are available with System 480.

1. Batch totaling,
2. Batch balancing using predetermined totals,
3. Balancing to zero (adding and subtracting data fields to achieve a zero balance).

To develop a total or balance, one or more fields from each record entered under a record format specifying totals are added together. Similarly, fields from records entered under different formats can be added together to form one total. Two or more totals can be developed from different fields to determine an equality visually.

To specify batch totaling, enter the desired total number (1 through 20) in response to BATCH TOTAL NO. question in the record format definition of each batch total field. This number associates the field with one of the 20 totals that can be displayed using Display Batch Totals.

If a field is to be used in a balancing operation (either 2 or 3, above), it is defined in the same manner as a batch total field. The only exception is that C can be specified as the verification type required for batch balance fields if conditional verification is desired. When C is specified and the batch is in balance, total fields become scan (S) verify fields. If the batch is out of balance, the total fields require *key verification*.

In addition, batch balancing and balancing to zero both require a batch balance format to hold the predetermined totals. Use the following procedures to define a batch balance format.

1. Enter the following as the first record format field definition to indicate that the format is for a batch balance record.

```
FIELD # 00  
FIELD LENGTH 00  
TAG #  
VERIFY (KSRC)  
FIELD USE (ABLNSTU) B
```

Depress REL at this point.

2. Define the predetermined total fields and the data fields, if any, in the batch balance format.

SUBTOTALING

System 480 provides the capability to balance subtotals (minor totals) within a batch. When entering a batch that uses subtotaling, the operator keys the fields that are added to form the subtotal and then keys the actual subtotal. When the batch is terminated, System 480 computes each subtotal and compares it with the subtotal entered by the operator. If a miscompare is detected, an error flag is placed in the low-order position of the incorrect subtotal and the operator is notified that the batch is out of balance.

Formats

At least two record formats are required for subtotaling: one (or more) to contain the data fields that form the subtotal, and one to contain the subtotal keyed by the operator.

When the operator is entering data, the format for the fields to be totaled is always used before the format containing the actual subtotal. This is opposite to the approach taken in batch balancing where the format that contains the predetermined total must be used to enter the first record of the batch. The format used to contain the subtotal is identical to the format used to contain the predetermined total for batch balancing, as shown on Page 11. The only exception is that for subtotaling the first field definition has a field use of T, instead of B.

Batch Balancing With Subtotals

When subtotaling is specified, it is often desirable to know the total of the subtotals. Therefore, System 480 accumulates a batch total for each different subtotal operation; i.e., for each different number entered in response to the BATCH TOTAL NO. question during record format generation. These totals can be displayed by selecting Display Batch Totals from the Batch Operations list.

Because the system automatically accumulates a batch total for subtotals, it is also possible to batch balance the major totals. The following procedures are used.

1. A batch balance format with a FIELD USE of B must be the first format used to enter the batch. This format contains the predetermined total for the batch.
2. Each predetermined total in the batch balance format must have the same batch total number as the corresponding subtotals that are to be balanced.

CHECK DIGIT ALGORITHMS

The following is a list of the codes entered in response to the check digit question in Create A Record Format to select a check digit algorithm for a field.

Code	Check Digit Algorithm
1	Mod 11 uncomplemented
2	Mod 11
3	Mod 10 uncomplemented
4	Mod 10
5	Mod 7 uncomplemented
6	Mod 7
7	Nonstandard Mod 10
8	Nonstandard Mod 11

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