

TAPE64 Driver Users Guide

Revision History

Symbol	Version	Date	Approved by	Description
(none)	1.0	05/22/1992	MBK	Final updates to 3.1 version of user's guide
(none)	2.0	05/31/1994	MBK	ISO 9000 format; TPF 4.1 version.
1	2.1	06/21/1994	MBK	Plog TD00578 support for TDCTC macro
2	2.2	02/12/1996	LK	PLOG TD00652 Migration to ISO-C
(none)	2.3	12/16/2002		Addition of test: OTEST1
n/a	n/a	11/21/2007	KN	Removed TPF 4.1 references and changed the segment names to be the tape64 segments.

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System Test Interface Reference

General

TAPE64 driver is intended to be used as a test tool to exercise the z/TPF tape macros.

The system test interface can be run in any SSU in either NORM state or in 1052 state. It is designed to run on all available I-streams automatically.

Command Syntax

The system test interface to the TAPE64 driver has the following syntax:

TAPE64 Driver -- System Test Commands	
	+--HELPFunc-----+
	-HELPOth-----
	<--,-----<
>>--ZTEST--+-+-----+-+--TA64--+-+--CONTROL--V+-+-----+-+-->>	
+--i--+	
	-CRETc-----cc-----
	-MAXCount-----mmmmmm--
	-MINCount-----mmmmmm--
	-MSG-----+-PARMLIST--+-
	-WTOPC-----
	-IMSG-----
	-EMSG-----
	+-ALL-----+
	+-+--RTA---+-----+
	+-NORTA--+
	-Pause-----
	-REStart-----
	-SETup-----
	-START--+-+--tapename--+-+-----
	+-ALL-----+

```

| -STATUS-----|
+-STOP--+tapename+--+-----+
      |           | +---BP---+
+-ALL-----+

```

CONTROL

Modify global values which control SYSTEST activity. Note that if no values are specified, the current values are displayed. The user may change any or all of the following:

CRETC

RTA/NORTA

MSG

MINCOUNT

MAXCOUNT

HELPFUNC

Display message TAPE0099I, a syntax definition for the function test interface to the TA64 command.

HELPOTH

Display message TAPE0099I, a syntax definition for the other test interface to the TA64 command.

PAUSE

Pause tape driver activity.

RESTART

Restart tape64 driver activity idled by the PAUSE command.

SETUP

Define tape labels for use by the SYSTEST interface. *Note that this command is only valid at or below 1052 state.*

START

Start activity on the indicated tape.

STATUS

Display activity information for all SYSTEST tapes.

STOP

Stop activity on the indicated tape, or all tapes by specifying ALL as the tape name.

The *BP* option may be used to force the specified tape to be indicated as INACTIVE.

Command Options:

{tapenamelALL}

Name of the tape to be acted upon by the indicated command. Any valid tape name starting with 'Z' is allowed for use in the system test interface. However, only the following tape names are generated as part of SETUP processing:

- ZA1-ZA5 Intended for use with 3480 tapes
- ZB1-ZB5 Intended for use with 3480 tapes
- ZC1-ZC5 Intended for use with 3490 tapes

The STOP command also allows the value of ALL as a tape name.

CRETC-cc

Interval controlling the time between consecutive SYSTEST commands are passed to the system. Allowable values are from 1-99.

MSG-{PARMLIST|WTOPCI|MSG|EMSG|ALL}

Used to control the messages displayed to the screen for SYSTEST commands passed to the system. Useful for closely watching the activity, or completely ignoring all messages except for errors.

{RTA/NORTA}

Controls whether commands are issued to write data to the system logging tapes (RTA and RTL) as regular SYSTEST activity proceeds.

MINCOUNT-*mmmmm*

Minimum randomly selected value for the COUNT option specified on SYSTEST commands passed to the system. Allowed values are in the range of 1 to 32767.

MAXCOUNT-*mmmmm*

Maximum randomly selected value for the COUNT option specified on SYSTEST commands passed to the system. Allowed values are in the range of 1 to 32767.

Function Test Interface Reference

Command Syntax

The function test interface to the TAPE64 driver has the following syntax:

```

TAPE64 Driver -- Function Test Commands

>>--ZTEST--+-----+---TA64-->
      +--ii--+

+-HELP-----+
>+-Abort--+-----+-----+--><
|          |          +-GEN--+          |

```

```

|      +---Tape---+---+---xxx+---+
|-Backspace--+-----+---| I/O options |--| COUNT option |-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-CCW--+-----+---| I/O options |--| COUNT option |--| OPCODE option |--|
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-Switch--+-----+-----+-----+-----+-----+-----+-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-Dump--+| COUNT option |-----+-----+-----+-----+-----+
|-Input--+-----+---| I/O options |--| COUNT option |-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-Output--+-----+---| I/O options |--| COUNT option |-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-Query--+-----+-----+-----+-----+-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-Rewind--+-----+---| I/O options |--+-----+-----+-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|
|-Sync--+-----+---| I/O options |--+-----+-----+-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
|-Verify--+-----+---| I/O options |--| COUNT option |-----+
|      |      +-GEN--+ |
|      +---Tape---+---+---xxx+---+
+-Write--+-----+---| I/O options |--| COUNT option |-----+
|      |      +-RTA--+ |
|      +---Tape---+---+---xxx+---+

```

TAPE64 Driver -- Function Test Command Options

>>--<<

MSG option:

```
|-----+--|
+--MSG-----+--PARMLIST+--+
      | -WTOPC-----|
      | -IMSG-----|
      | -EMSG-----|
      +-ALL-----+
```

COUNT option:

```
|-----+--|
+--COunt-----nnnnnnnnn---+
```

OPCODE option:

```
|-----+--|
|          +-SNS--+ |
|          |      | |
+--OPCode-----+--WRT+--+
      | -RDF- |
      | -NOP- |
      | -REW- |
      | -RUN- |
      |      |
      | -RDB- |
      | -RDF- |
      | -RBL- |
      | -ERG- |
      | -WTM- |
      | -BID- |
      | -BSB- |
      | -BSF- |
      | -FSB- |
      | -FSF- |
      | -SYN- |
      | -DD0- |
      | -DD1- |
      | -DD2- |
```

```

+-SID-+
I/O options:

+-NOAuto-+          +-BUFFerEd---+ +-NOCycle-+
|-----+-----+-----+-----+-----+-----+-----+----->
+-AUTO---+ +-BLoCk---+ +-1055---+ +-NOBUFFerEd-+ +-CYcle---+
          |-127--|
          |-381--|
          +-4K---+
>-----+-----+-----+-----+-----+-----+-----+----->
|          |          |          |
+-CLOse---+ +-Yes-----+ +-OPEn---+ +-Assign-+
          |-Reserve-|          |-Input--|
          +-Exit----+          |-Output-|
                              +-No-----+
>-----+-----+-----+-----+-----+-----+-----+----->
|          +-00--|
+-FiLLchar---+ +-ff-+

```

HELP

Display message TAPE0099I, a syntax definition for the TA64 command.

ABORT

Abort the operation on the indicated tape. Note that this is only effective on operations which are iterative in nature. Specifically, this includes the following commands.

INPUT

OUTPUT

VERIFY

BACKSPACE

Backspace *nnnnnnnnnn* records on the indicated tape.

Note: If performed on tape in BLOCK mode, a system error will result.

CCW

Send specific CCW strings (indicated by the **OPCODE** option) to issue commands to the tape. This command exercises the TDTAC, TDCTC, and TPCNC macros which send a CCW string directly to the tape drive.

SWITCH

Initiate a CP Tape switch for the tape indicated by the **TAPE** option.

DUMP

Issue *nnnnnnnnnn* consecutive X'CODE00' dumps.

INPUT

Read *nnnnnnnnnn* records from the indicated tape into a block of storage defined by the **BLOCK** value.

OUTPUT

Write *nnnnnnnnnn* records to either the specified tape. The block size is determined by the **BLOCK** option, with a fill character defined by the **FILLCHAR** option.

REWIND

Rewind the indicated tape.

SYNC

Flush the tape drive buffer forcing an immediate physical write of the data in the buffer. (applicable to 3480 and above tape drives only)

QUERY

Display the status of the tape indicated by the **TAPE** option.

VERIFY

Verify the data previously written on the tape by the **OUTPUT** command. An error during processing will result in a X'CODE01' dump.

WRITE

Output *nnnnnnnnnn* bytes to the indicated real-time tape.

Command Options:

BLOCK-{127|381|1055|4K}

Size of the storage block to be used for the indicated command.

COUNT-*nnnnnnnnnn*

Non-zero, nine digit decimal number of records to read or write, the number of times a SERRC dump should be issued, or the number of bytes to transfer on a **WRITE** or **CCW** command.

CYCLE | **NOCYCLE**

Option indicating whether the fill data should be cycled (incremented by 1 for each successive character). This option is only valid for commands which support the **FILLCHAR** option.

TAPE-xxx

Tape name for which the operation is to be performed.

OPEN-`{INPUT|OUTPUT|NO|ASSIGN}`

This option has no meaning when using real-time tapes. It is used to specify whether the tape should be opened for input(`INPUT`), for output(`OUTPUT`), assigned (`ASSIGN` - pick up tape previously closed via the `RESERVE` option), or not opened (`NO`) causing an error exit upon attempt to perform the indicated command

CLOSE-`{YES|RESERVE|EXIT}`

This option has no meaning when using real-time tapes. It is used to specify whether the tape should be closed (`YES`), reserved (`RESERVE` - save for another ECB to pick up later), or whether the ecb should just take an error exit (`EXIT`) upon completion of the indicated command.

FILLCHAR-*ff*

Two digit hexadecimal number specifying the byte value to be used to fill in the remainder of a block before writing it to tape.

OPCode-`{WRT|RDF|...|SID}`

Mnemonic indicating the CCW that should be issued to the tape drive. See Figure 1 below for a description of the allowed `OPCODE` values and their function.

Figure 1. Allowable opcode values for the CCW command

OPCODE	Description	Notes
WRT	Write	
RDF	Read Forward	
NOP	No-operation	
SNS	Sense tape drive	
REW	Rewind the tape	Raw REWIND - does not forward space over labels, if any. Will result in labels being overwritten if a subsequent output operation is executed.
RUN	Rewind and unload the tape	
RDB	Read Backward	Will not work on a tape in <code>BLOCK</code> mode - a system error will result.
RBL	Read Buffered Log	Meaningful for buffered devices only
ERG	Erase Gap	Meaningful for nonbuffered devices only
WTM	Write tape mark	
BID	Read Block ID	Meaningful for buffered devices only
BSB	Backward skip block	Macro restrictions prevent this command from causing a backward tape switch
BSF	Backward skip file	Macro restrictions prevent this command from causing a backward tape switch
FSB	Forward skip block	Macro restrictions prevent this command from causing a forward tape switch
FSF	Forward skip file	Macro restrictions prevent this command from causing a forward tape switch
SYN	Synchronize	No-op for nonbuffered devices
DD0	Set system density 0	Meaningful for nonbuffered devices only
DD1	Set system density 1 (3420 drives only)	Meaningful for nonbuffered devices only

DD2	Set system density 2 (3420 drives only)	Meaningful for nonbuffered devices only
SID	Sense ID	Meaningful for buffered devices only

BUFFERED

Flag indicating whether the operation should be done in buffered mode. **NOBUFFERED** causes all writes to be done immediately. Tape writes done in buffered mode are not immediately physically written out. A **SYNC** operation may be required in order to cause the physical write to occur; this is the default.

Note: This operation is applicable only to model 3480 and above tape drive units.

MSG-{PARMLIST|WTOPCI|MSG|EMSG|ALL}

Flag indicating whether informational messages should be issued during certain commands. **MSG=EMSG** causes no such messages to occur. See the explanation for message TAPE0016E for further details.

AUTO

Flag indicating whether a **SYNC** operation should trigger an automatic tape switch if there are errors on the tape. **NOAUTO** is the default and indicates that an automatic tape switch should not be triggered.

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Instruction stream (I-S) number. **ZTEST** verifies that the I-S selected is a valid one. An asterisk '*' may be specified to indicate that this command should be issued on all active I-streams.

Other Test Interface Reference

Command Syntax

The other test interface to the TAPE64 driver has the following syntax:

TAPE Driver -- Other Test Commands	
+-HELPSys-----+	
-HELPOth-----	
>>--ZTEST-----TA64--+-OTEST1-----+--><	

HELPSYS

Display message TAPE0099I, a syntax definition for the system test interface to the TA64 command.

HELPFUNC

Display message TAPE0099I, a syntax definition for the function test interface to the TA64 command.

ITEST1

Tests the C APIs: `tape_cntl`, `tsync`, and `tdsp_q`. Requires a mounted GEN tape in either blocked (BLK) or non-blocked (NOBLK) mode.

Test Descriptions

Summary of OTEST functionality:

- **OTEST1:**
 - *Non-Blocked GEN tape:*
 1. Open the GEN tape.
 2. Initialize the GEN tape by writing 7 records.
 3. Rewind, read and check the data integrity of the record.
 4. Rewind, seek forward 1 record, read and check the record.
 5. Seek back 1 record, read and check.
 6. Seek forward 3 records, read and check.
 7. Seek back 5 records, read and check.
 8. Rewind, write one record, then try to read and seek past end of GEN tape.
 9. Rewind, then try to seek past beginning of GEN tape.
 10. Rewind, write records, test the tape queue length, sync the tape, and verify.
 - *Blocked GEN tape:*
 1. Open the GEN tape.
 2. Initialize the GEN tape by writing 60 records.
 3. Rewind, read and check 2 records.
 4. Seek forward 1 physical block, read and check.
 5. Seek back 1 physical block, read and check.
 6. Seek forward 2 physical blocks, read and check.
 7. Seek back 3 physical blocks, read and check.
 8. Rewind, write 1 record, then try to read and seek past end of GEN tape.
 9. Rewind, then try to seek past beginning of GEN tape.
 10. Rewind, write records, test the tape queue length, sync the tape, and verify.

Messages

TAPE0001	ERROR during BACKSPACE
----------	------------------------

Error severity: Command Aborted

Segment: QTP6

Reason: An IO error occurred during a BACKSPACE operation.

TAPE0002 Invalid record id *rr* - dump follows

Error severity: Command Aborted

Segment: QTP5

Reason: A record was read which did not contain the correct record id for records written by the tape64 driver - 'TD'. A diagnostic X'CODE01' dump follows the error message.

TAPE0003 WAITC error for *ttt* tape - check block type and count

Error severity: Command Aborted

Segment: QXTH, QTP5, QTP6, QTP7

Reason: An IO error occurred during an INPUT or OUTPUT operation. Either the BLOCK size is incorrect, or the COUNT value is too high resulting in an attempt to read/write too many records/bytes.

TAPE0004 ERROR during rewind of *ttt* tape.

Error severity: Command Aborted

Segment: QTP6

Reason: An IO error occurred during a REWIND operation.

TAPE0005 Logic error in action command code.

Error severity: Command Aborted

Segment: QXTG, QTP1, QTP2, QXTI, QXTH, QXTK

Reason: An internal error occurred during selection of the action command code. This error should be reported to the owner of the TAPE64 driver.

TAPE0006 Invalid record number *nnnnnnnnn* - dump follows

Error severity: Command Aborted

Segment: QTP5

Reason: Record *nnnnnnnnn* was found to be in error or out of sequence. A diagnostic X'CODE01' dump follows the error message.

TAPE0007 Invalid header *dddddddddddddd* - dump follows

Error severity: Command Aborted

Segment: QTP5

Reason: An error was encountered trying to verify the header of the tape data record. The header of the record in question is displayed. A diagnostic X'CODE01' dump follows the error message.

TAPE0008 Incorrect length error on *ttt* tape

Error severity: Command Aborted

Segment: QTP5, QTP6

Reason: During a READ operation, a record was encountered whose length did not match that specified by the BLOCK option.

TAPE0009 Invalid FILLCHAR data - dump follows

Error severity: Command Aborted

Segment: QTP5

Reason: The fill characters in the tape record did not match the fill character specified by the FILLCHAR option. A diagnostic X'CODE01' dump follows the error message.

TAPE0010 BLOCK size must be 127, 381, 1055 or 4K.

Error severity: Command Aborted

Segment: QXTG

Reason: The user has entered the BLOCK option and did not select one of the allowable values.

TAPE0011 Tape parameter must be 3 characters

Error severity: Command Aborted

Segment: QXTG

Reason: Tape name parameter specified was an invalid tape name. The parameter must be 3 characters, with the first 2 alphabetic, the third alphanumeric.

TAPE0012 OPEN parameter must be INPUT, OUTPUT, NO, or ASSIGN.

Error severity: Command Aborted

Segment: QXTG

Reason: The OPEN parameter can only take on four values. INPUT indicates that the tape should be opened for input, OUTPUT indicates that the tape should be opened for output. NO indicates that the tape should not be opened - resulting in an error condition. ASSIGN indicates that the ECB should pick up the tape from a previous command which specified 'RESERVE' on the CLOSE command (see below).

TAPE0013 CLOSE parameter must be YES, RESERVE, or EXIT.

Error severity: Command Aborted

Segment: QXTG

Reason: The CLOSE parameter can only take on three values. YES indicates that the tape should be closed upon termination of the function. EXIT indicates that the tape should not be closed up on termination of the function - resulting in an error condition. RESERVE indicates that the ECB should place the tape in a state where another ECB can pick it up by specifying 'ASSIGN' on the OPEN parameter.

TAPE0014 COUNT parameter cannot be 0.

Error severity: Command Aborted

Segment: QXTG

Reason: The COUNT parameter must take on a non-zero value up to nine decimal digits long.

TAPE0015 OPCODE value not valid - not found.

Error severity: Command Aborted

Segment: QXTG

Reason: The OPCODE parameter specified is not one of the allowed tape CCW op-codes. See the description of the OPCODE parameter for a list of the allowable values.

TAPE0016 MSG parameter must be PARMLIST, WTOPC, IMSG, EMSG, or ALL.

Error severity: Command Aborted

Segment: QXTG, QTP1

Reason: The MSG parameter can only take on one of the specified values. EMSG specifies that no information messages will be generated. PARMLIST specifies that parameter information should be generated. WTOPC specifies that execution-type messages will be generated; ALL specifies that both parameter and execution-type messages will be generated.

TAPE0017 **TAPENAME parameter must be 3 character tape name beginning with Z**

Error severity: Command Aborted

Segment: QTP1

Reason: Self explanatory. A valid TPF tape name beginning with 'Z' must be supplied on the command specified.

TAPE0018 **End of file or unexpected tape mark on *ttt* tape.**

Error severity: Command Aborted

Segment: QTP5, QTP6

Reason: The TAPE64 driver has encountered an EOF situation before it was expected. The user has either specified a COUNT value too high, or there are errors on the tape.

TAPE0019 **Tape specified is not valid for this command**

Error severity: Command Aborted

Segment: QTP1, QXTJ, QXTK

Reason: The tape specified (such as a real-time tape) is not valid for the requested function.

TAPE0020 **Count value of greater than 4095 invalid for this operation.**

Error severity: Command Aborted

Segment: QTP7

Reason: A COUNT value of greater than 4095 was specified for an operation that requires a COUNT value of 4095 or less. Specify a lower value and issue the command again.

TAPE0021 **TAPENAME = ALL not valid for START.**

Error severity: Command Aborted

Segment: QTP1

Reason: The ALL tapename cannot be used on the START command.

TAPE0022 **Command ignored - driver has not been START'ed**

Error severity: Command Aborted

Segment: QXTJ, QTP9

Reason: The user attempted to issue a SYSTEST interface command when the SYSTEST driver was not active.

TAPE0023 **Command ignored - driver is PAUSE'd**

Error severity: Command Aborted

Segment: QXTJ

Reason: The user attempted to issue a SYSTEST interface command when the SYSTEST driver was in PAUSE mode.

TAPE0024 **Command ignored - driver not PAUSE'd**

Error severity: Command Aborted

Segment: QTP9

Reason: The user attempted to issue the RESTART command when the SYSTEST driver was not in PAUSE mode.

TAPE0025 **Command ignored - tape *ttt* already started**

Error severity: Command Aborted

Segment: QXTJ

Reason: The user attempted to issue the START command when the specified tape had already been START'ed.

TAPE0026 Command ignored - tape *ttt* not started

Error severity: Command Aborted

Segment: QXTJ

Reason: The user attempted to issue the STOP command when the specified tape was not START'ed. Use of the BP option will prevent this condition from being detected.

TAPE0027 Reserved for future use

Reason: This message is not currently in use but may be used in the future.

TAPE0028 System must be no higher than 1052 state to execute this command

Error severity: Command Aborted

Segment: QXTI

Reason: The user attempted to issue a command which is valid only when running at or below 1052 state. Cycle to 1052 state and re-execute the command.

Error severity: Command Aborted

Segment: QXTI

Reason: The user attempted to activate SETUP processing when it was already active.

TAPE0030 CRETC value must be 1-99

Error severity: Command Aborted

TAPE0029 SETUP command already started

Segment: QTP1

Reason: The user specified a value for CRETC that was not in the range of 1-99.

TAPE0031 MINCOUNT must be integer value, 1 to 32767

TAPE0031 MAXCOUNT must be integer value, 1 to 32767

TAPE0031 MINCOUNT cannot be larger than MAXCOUNT

Error severity: Command Aborted

Segment: QTP1

Reason: The user specified a COUNT value that was not in the range specified. Reissue the command specifying a COUNT value within the allowed range.

TAPE0032 Please dismount all tapes in this SSU and reissue command

Error severity: Command Aborted

Segment: QXTI

Reason: All tapes must be dismounted from the SSU in which the SETUP request was issued.

TAPE0033 Command failed due to INVALID GLOBAL ADDRESS

Error severity: Command Aborted

Segment: QXTH

Reason: A global address pointer of X'00000000' was encountered. The system may not yet be at a state where the global area has been initialized.

TAPE0060 Macro: TWRTC Tape: *ttt* Data: *dddddddddddddddd*

Error severity: Informative

Segment: QTP7

Reason: The first 19 bytes of the data written to the tape by the TWRTC macro is displayed.

TAPE0061 Macro: TOUTC Tape: *ttt* Data: *dddddddddddddddd*

Error severity: Informative

Segment: QTP7

Reason: The first 19 bytes of the data written to the tape by the TOUTC macro is displayed.

TAPE0062 Macro: TOURC Tape: *ttt* Data: *dddddddddddddddd*

Error severity: Informative

Segment: QTP7

Reason: The first 19 bytes of the data written to the tape by the TOURC macro is displayed.

TAPE0063 Macro: TPRDC Tape: *ttt* Data: *dddddddddddddddd*

Error severity: Informative

Segment: QTP6

Reason: The first 19 bytes of the data read from the tape by the TPRDC macro is displayed.

TAPE0064 MACRO: *mmmmm* TAPE: *ttt* HEX DATA: *dddddddddddd*

Error severity: Informative

Segment: QXTH

Reason: The first 16 bytes in hex format of the data transferred to/from the tape by the indicated macro (*mmmmm*) is displayed.

TA640065	Active <i>ttt</i> on drive <i>ddd</i>		
	Standby <i>ttt</i> on drive <i>ddd</i>		
	Field Name	Active	Standby
	Hold I/O requests	--	--
	Inhibit Queue restart	--	--
	Auxiliary queued	--	--
	Standby tape	--	--
	Tape is reserved	--	--
	Tape is off-line	--	--
	Tape is closed	--	--
	Standard user labels present	--	--
	Backward tape switch	--	--
	Multivolume - not first tape	--	--
	Input tape	--	--
	Labeled tape	--	--

```
TA640065I End of display
```

Error severity: Informative

Segment: QTP8

Reason: The data for the specified tape is displayed. Field *ttt* is the tape name, and the indicated value is the bit setting whose meaning is being displayed.

```
TAPE0066          Data verified on ttt tape: xxxxxxxx of yyyyyyyy total records.
```

Error severity: Informative

Segment: QTP5

Reason: The contents of the records on the *ttt* tape have been verified. xxxxxxxx records were read, and each record contained the correct header/trailer information as well as the correct fill character, *ff*.

```
TA640067          ttt tape operation complete
```

Error severity: Informative

Segment: QXTH, QTP5, QTP6, QTP7, QTP8, QTP9

```
TAPE0068          User requested abort of operation to ttt tape
```

Error severity: Informative

Segment: QTP5, QTP6, QTP7

Reason: The user issued the ABORT command for the specified tape. The operation has been aborted.

```
TAPE0069          Reserved for future use
```

Reason: This message is not currently in use but may be used in the future.

```
TA640070          TAPE driver option values used: Command = *****
                   TAPE Name - ***, AUTO - *****, BLOCK Size - ****
                   BUFFER Mode - *****, COUNT - *****, CYCLE - *****
                   FILLCHAR - **, OPEN - *****, CLOSE - *****,
                   MSG Control - *****, OPCODE - *****
                   End of display
```

Error severity: Informative

Segment: QTP2

Reason: The values used for execution of the command (user specified and default values) are displayed. Options which do not have meaning for this command are indicated by a value of "*****"

```
TAPE0071          AUTO option is ignored for this command.
```

Error severity: Warning

Segment: QXTG

Reason: The user has entered the AUTO option on a command where it is not used. The option is ignored.

```
TAPE0072          BLOCK option is ignored for this command.
```

Error severity: Warning

Segment: QXTG

Reason: The user has entered the BLOCK option on a command where it is not used. The option is ignored.

TAPE0073 **TAPE option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the TAPE option on a command where it is not used. The option is ignored.

TAPE0074 **OPEN option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the OPEN option on a command where it is not used. The option is ignored.

TAPE0075 **CLOSE option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the CLOSE option on a command where it is not used. The option is ignored.

TAPE0076 **MSG option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the MSG option on a command where it is not used. The option is ignored.

TAPE0077 **BUFFERED/NOBUFFERED option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the BUFFERED option on a command where it is not used. The option is ignored.

TAPE0078 **COUNT option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the COUNT option on a command where it is not used. The option is ignored.

TAPE0079 **FILLCHAR option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the FILLCHAR option on a command where it is not used. The option is ignored.

TAPE0080 **OPCODE option is ignored for this command.**

Error severity: Warning

Segment: QXTG

Reason: The user has entered the OPCODE option on a command where it is not used. The option is ignored.

TAPE0081 CYCLE option is ignored for this command.

Error severity: Warning

Segment: QXTG

Reason: The user has entered the CYCLE option on a command where it is not used. The option is ignored.

TAPE0082 Driver now PAUSE'd

Error severity: Informative

Segment: QTP9

Reason: All driver activity has been paused. Currently running activity will finish, and no new activity will be started until the user issues the RESTART command.

TAPE0083 Driver now RESTART'd

Error severity: Informative

Segment: QTP9

Reason: Driver activity will be restarted. It may take up to 1 minute for all previously active tapes to initiate further activity.

TAPE0084 Tape *ttt* START'ing

Error severity: Informative

Segment: QXTJ

Reason: Driver activity for the indicated tape has been started. It may take up to the CRETC time (see STATUS command) for activity to actually start.

TAPE0085 Tape *ttt* STOP'ping

Error severity: Informative

Segment: QXTJ

Reason: Driver activity for the indicated tape is stopping. The currently running command will finish, and at the end of the next command the tape will be closed and activity will cease.

TAPE0086 Tape *ttt* STOP'd

Error severity: Informative

Segment: QXTJ

Reason: The indicated tape has been successfully stopped, and is in the process of being closed if not already closed.

If this was the last active tape in this subsystem user, the driver itself is put into a STOPPED state.

TAPE0087 Tape driver STOP'ping

Error severity: Informative

Segment: QXTJ

Reason: The tape64 driver is in the process of stopping. It will not completely stop until all tapes in this subsystem user are stopped.

TAPE0088 Tape driver STOP'd

Error severity: Informative

Segment: QXTJ

Reason: All active tapes have been successfully stopped; the driver is now stopped.

TAPE0089 Initialization phase *aa* of *bb* started

Error severity: Informative

Segment: QXTI

Reason: Self explanatory.

TAPE0090 Please allow *ss* seconds for this step to complete

Error severity: Informative

Segment: QXTI

Reason: The indicated step will take approximately the time indicated to complete. Do not enter any other commands until the SETUP process has completed, and message TAPE0091I has been displayed.

TAPE0091 TAPE SETUP processing completed.

Error severity: Informative

Segment: QXTI

Reason: Tape labels have been defined and are ready to be used.

Please note that the labels are only defined in the SSU and CPU that you entered the command. Other SSU's or CPU's are unaffected.

TAPE0092 TAPE *ttt* iteration *iiiiiii* completed.

Error severity: Informative

Segment: QXTJ

Reason: Iteration *iiiiiii* of system test activity has completed on the indicated tape.

```

TAPE0093           Tape Driver Control Values:
                   Write to RTA/RTL = rrr
                   Cretc interval = cc
                   MSG Control value: mmmmmmmmm
                   Minimum Count value: xxxxx
                   Maximum Count value: xxxxx
                   End of Display
    
```

Error severity: Informative

Segment: QTP1

Reason: The user has entered the CONTROL command. The control value settings, after any user specified changes, are displayed.

```

TAPE0094           Driver status: ssssssss,

                   Tape Name      Iterations    Current command  Commands      Errors
                   -----      -
                   ttt           nnnnn        xxxxxxxxxxx      cccccc       eeeee
                   ...
                   END OF DISPLAY
    
```

Error severity: Informative

Segment: QTPA

Reason: Tapes for which system test activity has been started are displayed.

TAPE0099

Function Test Interface Syntax:

```
ZTEST TA64  HELPFUNC | HELPSYS | HELPOTH
            ABORT | BACKSPACE | CCW | DUMP
            INPUT | OUTPUT | QUERY | REWIND
            SWITCH | SYNC | VERIFY | WRITE

Optns are -- AUTO/NOAUTO
            BLOCK-127/381/1055/4K
            BUFFERED/NOBUFFERED
            CLOSE-YES/RESERVE/EXIT
            COUNT-nnnnnnnnn
            CYCLE/NOCYCLE
            FILLCHAR-xx
            MSG-PARMLIST/WTOPC/IMSG/EMSG/ALL
            OPCODE-WRT/RDF/NOP/SNS/REW/RUN/RDB/RBL/ERG/WTM
            BID/BSB/BSF/FSB/FSF/SYN/DD0/DD1/DD2/SID
            OPEN-INPUT/OUTPUT/ASSIGN/NO
            TAPE-xxx

END OF DISPLAY
```

Error severity: Informative

Segment: QXTK

Reason: The user has asked for the HELPFUNC display.

TAPE0099

System Test Interface Syntax:

```
ZTEST TA64  START  tapename
            STOP   tapename  (BP)
            tapename -- ZA1, ZA2, ZA3, ZA4, ZA5
                    ZB1, ZB2, ZB3, ZB4, ZB5
                    ZC1, ZC2, ZC3, ZC4, ZC5
OR  STOP   ALL    (BP)
SETUP  -- Define tape labels
STATUS -- Display driver status
PAUSE  -- Pause driver activity
RESTART -- Restart driver activity
CONTROL -- Change/display global control values
        CRETC  -- 1 to 99
        RTA/NORTA
```

```

MSG          -- usual MSG values
MINCOUNT  -- minimum random count value
MAXCOUNT  -- maximum random count value

HELPFUNC   -- Show function test help
HELPSYS    -- Show this message
HELPOTH    -- Show other tests help

END OF DISPLAY

```

Error severity: Informative

Segment: QXTK

Reason: The user has either asked for the HELPSYS display, or has entered an invalid command. An invalid command is ignored, and execution aborted.

TAPE0099

Other Test Interface Syntax:

```

ZTEST TA64  OTEST1  -- Test tape_cntl, tsync, tdsp_q
HELPFUNC   -- Show function test help
HELPSYS    -- Show system test help
HELPOTH    -- Show this message

END OF DISPLAY

```

Error severity: Informative

Segment: QXTK

Reason: The user has either asked for the HELPOTH display, or has entered an invalid command. An invalid command is ignored, and execution aborted.

TAPE0100

OTESTx Test y Failed - zzzzz

Error severity: Error

Segment: QXTG *****

Reason: Other Test number *x* has failed on test case number *y* with the reason specified by *zzzzz*. Execution is aborted.

Tape Macro Usage

The following lists the macros used by the TAPE64 driver.

Macro

Usage

TASNC

Assign GENERAL tape

TBSPC

Backspace GENERAL tape

TCLSC

Close GENERAL tape

TDSPC

Indicate tape status

TOPNC

Open GENERAL tape

TOURC

Write REAL-TIME tape and release core

TOUTC

Write REAL-TIME tape

TPRDC

Read from a GENERAL tape

TREWC

Rewind a GENERAL tape

TRSVC

Reserve a GENERAL tape

TSYNC

Flush any outstanding write data from the 3480/3490 control unit buffer for the given device.

TDCTC

Initiate a user specified data transfer CCW

TDTAC

Initiate a user specified data transfer CCW

TPCNC

Initiate a user specified tape control CCW

TWRTC

Write a GENERAL tape

Command/Macro cross reference

Figure 2 indicates macros used by the TAPE64 driver. All macros may not be exercised for a given command - specific command options govern whether some macros are called.

Figure 2. Command/Macro cross reference

Command	Default tape macro(s) called	Other tape macro(s) possible
ABORT	None	None
BACKSPACE	TBSPC TASNC TRSVC	TCLSC TOPNC
DUMP	None	None
INPUT	TPRDC TCLSC TOPNC	TASNC TRSVC
OUTPUT	TWRTC TCLSC TOPNC	TOURC TASNC TRSVC
QUERY	TDSPC	None
REWIND	TREWC TASNC TRSVC	TCLSC TOPNC
SYNC	TSYNC TASNC TRSVC	TCLSC TOPNC
WRITE	TOUTC	None
CCW	TDTAC TASNC TRSVC	TPCNC TDCTC TCLSC TOPNC
SWITCH	TDSPC	None
VERIFY	TPRDC TOPNC TCLSC	None

Command Specific Option Information

Option Defaults and Allowed Options

Figure 3 below specifies the valid command/option combinations. Also listed are the option defaults for each command.

Figure 3. Command/Option Pairings + Defaults

Command	Allowed Options	Option Default	Implied Option Value
ABORT	TAPE MSG	TAPE=GEN MSG=PARMLIST	
BACKSPACE	TAPE OPEN CLOSE MSG BUFFERED COUNT	TAPE=GEN OPEN=ASSIGN CLOSE=RESERVE MSG=PARMLIST BUFFERED COUNT=1	
CCW	TAPE OPEN CLOSE MSG BUFFERED COUNT FILLCHAR CYCLE OPCODE	TAPE=GEN OPEN=ASSIGN CLOSE=RESERVE MSG=ALL BUFFERED COUNT=32 FILLCHAR=00 NOCYCLE OPCODE=SNS	
SWITCH	TAPE MSG	TAPE=GEN MSG=PARMLIST	
DUMP	COUNT MSG	COUNT=1 MSG=PARMLIST	
INPUT	BLOCK TAPE OPEN CLOSE MSG COUNT	BLOCK=1055 TAPE=GEN OPEN=INPUT CLOSE=YES MSG=PARMLIST COUNT=1	
OUTPUT	BLOCK TAPE OPEN CLOSE MSG BUFFERED COUNT FILLCHAR CYCLE	BLOCK=1055 TAPE=GEN OPEN=OUTPUT CLOSE=YES MSG=PARMLIST BUFFERED COUNT=1 FILLCHAR=00 NOCYCLE	
QUERY	TAPE MSG	TAPE=GEN MSG=IMSG	
REWIND	TAPE OPEN	TAPE=GEN OPEN=ASSIGN	

	CLOSE MSG BUFFERED	CLOSE=YES MSG=PARMLIST BUFFERED	
SYNC	TAPE OPEN CLOSE MSG AUTO	TAPE=GEN OPEN=ASSIGN CLOSE=RESERVE MSG=PARMLIST NOAUTO	
WRITE	TAPE BUFFERED COUNT MSG FILLCHAR CYCLE	TAPE=RTA BUFFERED COUNT=100 MSG=PARMLIST FILLCHAR=00 NOCYCLE	
VERIFY	BLOCK TAPE OPEN CLOSE MSG COUNT FILLCHAR CYCLE	BLOCK=1055 TAPE=GEN OPEN=INPUT CLOSE=YES MSG=ALL COUNT=1 FILLCHAR=00 NOCYCLE	

Examples

The following are examples of various TAPE64 driver commands being entered on a z/TPF system.

1. Take advantage of default values for options

The tape is opened and closed assuming a previous command specified 'CLOSE-RESERVE'.

```
User      |ZTEST TA64 BACK COUNT-15 |
System    TA640070I TAPE driver option values used: Command = BACKSPACE
          TAPE Name - GEN, AUTO - *****, BLOCK Size - *****
          BUFFER Mode - BUFFERED, COUNT - 15, CYCLE - *****
          FILLCHAR - **, OPEN - ASSIGN, CLOSE - RESERVE
          MSG - PARMLIST, OPCODE - *****
          End of display
          TA640067I GEN tape operation complete
```

2. Writing to a tape

The tape is opened for output and closed for later use by another command.

```
User      |ZTEST TA64 OUTPUT COUNT-5000 CL-R OPEN-O |
```

```

System      TA640070I TAPE driver option values used: Command = OUTPUT
           TAPE Name - GEN, AUTO - *****, BLOCK Size - 1055

           BUFFER Mode - BUFFERED, COUNT - 5000, CYCLE - NOCYCLE
           FILLCHAR - 00, OPEN - OUTPUT, CLOSE - RESERVE | | MSG -
           PARMLIST, OPCODE - *****

           End of display

           TA640067I GEN tape operation complete

```

```

+-----+

```

3. Reading from a tape

Records from the tape are read in and displayed back to the user. The parameter list display is suppressed by specifying 'MSG-WTOPC'.

```

User       |ZTEST TA64 INPUT COUNT-5 CL-R OPEN-A MSG-W|
System     TAPE0063I Macro: TPRDC Tape: GEN Data: TD1055 BLK000000015
           TAPE0063I Macro: TPRDC Tape: GEN Data: TD1055 BLK000000014
           TAPE0063I Macro: TPRDC Tape: GEN Data: TD1055 BLK000000013
           TAPE0063I Macro: TPRDC Tape: GEN Data: TD1055 BLK000000012
           TAPE0063I Macro: TPRDC Tape: GEN Data: TD1055 BLK000000011
           TA640067I GEN tape operation complete

```

4. Take advantage of default values for options

```

User       |ZTEST TA64 REWIND|
System     CSMP97I 14.49.00 CPU-B SS-BSS SSU-HPN IS-01

           TA640070I TAPE driver option values used: Command = REWIND
           TAPE Name - GEN, AUTO - *****, BLOCK Size - ****
           BUFFER Mode - BUFFERED, COUNT - *****, CYCLE - *****
           FILLCHAR - **, OPEN - ASSIGN, CLOSE - RESERVE
           MSG - PARMLIST, OPCODE - *****

           End of display

           TA640067I GEN tape operation complete

```

5. Displaying the status of a tape

Note that it does not matter which I-stream the command is issued on.

```

User       |ZTEST * TA64 QUERY TAPE-RTA|
System     TA640065I Active RTA on drive 0594
           TA640065I Standby RTA tape not mounted

```

Indicator settings: (ON=1, OFF=0)

Field Name	Active	Standby
Hold I/O requests	--	--
Inhibit Queue restart	--	--
Auxiliary queued	--	--
Standby tape	--	--
Tape is reserved	--	--
Tape is off-line	--	--
Tape is closed	--	--
Standard user labels present	--	--
Backward tape switch	--	--
Multivolume - not first tape	--	--
Input tape	--	--
Labeled tape	On	--

TA640065I End of display

TA640067I RTA tape operation complete

TA640065I Active RTA on drive 0594

TA640065I Standby RTA tape not mounted

Field Name	Active	Standby
Hold I/O requests	--	--
Inhibit Queue restart	--	--
Auxiliary queued	--	--
Standby tape	--	--
Tape is reserved	--	--
Tape is off-line	--	--
Tape is closed	--	--
Standard user labels present	--	--
Backward tape switch	--	--
Multivolume - not first tape	--	--
Input tape	--	--
Labeled tape	On	--

TA640065I End of display

TA640067I RTA tape operation complete

Program Logic

TAPE64 consists of the following program segments. Briefly, the function of each of the segments is as follows:

QXTG - TAPE64 functional message parser.

QTP1 - Extension of QXTG - finish parsing for SYSTEST commands

QTP2 - Extension of QXTG - set default option values. Displays function test command option values used (both default and user-specified).

QXTH - Function test command execution funnel

QXTI - Execution of the SETUP command

QXTJ - Performs SYSTEST functions and drives SYSTEST activity.

QTP3 - Extension of QXTJ - builds and issues ZTEST TA64 commands to the system.

QTP4 - Message handler for C segments - WTOPC interface.

QXTK - Utility programs. Performs functions common to other segments.

QTP5 - Extension of QXTH - function test command execution

QTP6 - Extension of QXTH - function test command execution

QTP7 - Extension of QXTH - function test command execution

QTP8 - Execution of the QUERY command

QTP9 - Extension of QXTH, QXTJ - function and system test interface commands

QTPA - Execution of the OTEST1 command

Common Macros and Headers used:

Macro Files

File	Description
sd0rv.mac	This macro file contains the DSECT for non-keypointable I-stream shared global (@ISSDRV) used by various drivers.
ta0eq.mac	Equates used by TAPE driver

Header Files

File	Description
c_ta0eq64.h	This header file was specifically created to hold the definition of a structures used by the TAPE driver.
c_sd0rv.h	This header file maps the non-keypointable I-stream shared global (@ISSDRV) used by various drivers.

