

# z/TPF HOTX Driver

(HOTR/HOTS/HS64)

User's Guide

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## ZTEST HOTR/HOTS/HS64

The HOTX driver suite contains the HOTR, HOTS and HS64 drivers. The HOTR driver tests the TPF DASD supports by creating a 'hot record' (default using #HOTREC) to blast channels and test cache. The instances created by the HOTR driver stresses the DASD system by repeatedly finding and filing the 'hot record'. The first time it runs, it allocates a 4K frame on the system heap for the subsystem to store the information (8 bytes for each entry containing the flags (run, stat, stop, ebrou) of all ordinals (0x00-0x13) of all I-stream (up to 24).

In the scope of HOTR driver, the instances of the HOTR (i.e. ECBs of QHT1), created by the START parameter, read in the request from the status table and run accordingly. These ECBs will keep running, accessing a 4 byte field in its ordinal of the target file/record, checking whether the number in the field matches the number saved in the instances. They will increment the number on both fields, file the record and start over again until they are requested to exit (STOP parameter). The statistics information can be requested by the STAT parameter. The parameters (START, STAT, STOP) compose the actions of the HOTR driver.

The target record stores the access information about the target record for all the I-Streams (maximum 24) of all the processors (maximum 32). The access information is a 4 byte long integer count number which is incremented and updated by the QHT1s every time they access the files.

The HOTS driver tests the VFA synchronization across the L/C system. The HS64 is the 64 bit version of the HOTS driver. Both drivers set up the request in the status table on the system heap for a specific ordinal. The QHT1s will enter the snippet segment (QHT3) if the HOTS (QHT2) sets the flag (snippets, nosnippets, normal, state#, service#, fct mode etc.) in the fields assigned to them in the status table. In the scope of QHT3, snippet is set up, the FARW is ported from D8 to D7 and D6 (only 2 states need 2), the FLFAC that each state needs is done and the find and hold record are done if the State/Service (detail in Appendix B) pairing needs a hold. The SET SNIPPETS parameter runs all the combinations of the State/Service starting from State 1/Service 1, 2, 3, ... pairs to State 14/ Service ..., 35, 36 then start over again.

### Requirements and restrictions

None.

### HOTR Format

```

>>--ZTEST--+-----+  --HOTR-  +-START-+-  +-----+  .-Ordinal-0-.
          '- i-'          +-STAT--+  +-Fileadd--+  +-Ordinal-n--+ |
                          +-STOp--+  '-FAcid---'  '-All-----' |
                          '-Help-----'

```

*i*

indicates the specific I-stream in which the driver will be run. If *i* is not specified, the test case(s) will be executed on the I-stream on which the command is entered.

### START

starts the driver on the ordinal number specified.

### **STOp**

stops the driver on the ordinal number specified.

### **STAT**

queries the status of the ordinal number specified.

### **Fileadd**

uses the address specified as the address of the 'hot record'.

**Note:** The FILEADDR parameter overrides the FACID parameter.

### **FAcid**

uses the FACE ID specified as the FACE ID of the 'hot record'.

### **Ordinal**

specifies number in Hex 0x00-0x13. If not specified, the default is 0.

### **All**

runs the action with all 20 ordinals 0x00-0x13.

**Note:** The ALL parameter overrides the ORDINAL parameter.

### **Help**

displays the correct syntax of the command.

## **Examples**

The following example will start HOTR with all ordinals on I-stream two:

```
ZTEST 2 HOTR START ALL
```

The following example will start HOTR with ordinal 0 on I-stream one:

```
ZTEST HOTR START
```

The following example will query the status of HOTR with ordinal 0 on I-stream one:

```
ZTEST HOTR STAT
```

The following example will query the status of HOTR with all ordinals on I-stream three:

```
ZTEST HOTR STAT ALL
```

The following example will stop HOTR with ordinal 0 on I-stream one:

```
ZTEST HOTR STOP
```

The following example will stop HOTR with all ordinals on I-stream four:

```
ZTEST 4 HOTR STOP ALL
```

## HOTS/HS64 Format

```

>>--ZTEST--+-+-----+-----  --+--HOTS--+----->
          '- i-'          '--HS64-'

                                     .-Ordinal-0-.
>--+- -Set--+-----+  +-+-----+  +-+-----+  +-+-----+  +-+-----><
|         +- -Fileadd-+ +-Normal-----+ +-Ordinal-n-+ +-Fct-----+ |
|         '- -FAcid---' +-SNippets----+ '-All-----' '-NOFct--' |
|                                     +-NOSNippets-+ |
|                                     +-STate-----+ |
|                                     '-Service----' |
|         '- -Help-----' |

```

### *i*

indicates the specific I-stream in which the driver will be run. If *i* is not specified, the test case(s) will be executed on the I-stream on which the command is entered.

### **HOTS**

specifies that the HOTS driver is to be run.

### **HS64**

specifies that the 64 bit version of HOTS driver is to be run.

### **Fileadd**

uses the address specified as the address of the 'hot record'.

### **FAcid**

uses the FACE ID specified as the FACE ID of the 'hot record'.

### **Normal**

specifies NO SNIPPETS run.

### **SNippets**

specifies ALL SNIPPETS run.

### **NOSNippets**

specifies run ONE SNIPPET runs.

### **STate**

specifies the state of the VFA buffer, VFA-X lock, delay file pending etc. If not specified, the default state is one.

### **SERVICE**

specifies which FIND and FILE macros to use in the test. If not specified, the default service is one.

### **Ordinal**

specifies a number in Hex 0x00-0x13. If not specified, the default is ordinal 0.

**All**

indicates to use all record ordinal numbers defined (i.e. 0x00-0x13). This parameter cannot be specified with the FILEADDR parameter.

**FCt**

specifies functional test mode.

**NOFCt**

specifies system test mode.

**Help**

displays the correct syntax of the command.

**Examples**

The following example will set the flag to run the snippets with ordinal 0 on I-stream two:

```
ZTEST 2 HOTS SET SNIPPETS
```

The following example will set the flags for not running the snippets with all ordinals on I-stream three:

```
ZTEST 3 HOTS SET NORMAL ALL
```

The following example will set the flag for running one snippet with ordinal 0 on I-stream four:

```
ZTEST 4 HOTS SET NOSNIPPETS
```

The following example will set state 2 for ordinal 2 on I-stream one using 64 bit HOTS driver:

```
ZTEST HS64 SET STATE-2 0-2
```

The following example will set Service 8 running the Functional Test mode:

```
ZTEST HOTS SET SERVICE-8 FCT
```

**Source code information**

The HOTX driver suite consists of the following program segments:

**Header Files**

None.

**Macros**

| Macro      | Description  |
|------------|--|
| hotreq.mac | This macro will be invoked at the start of both segments QHT0 and QHT1, and will then set up all the equates and constants that these segments will use. |

**BSOs**

| Module | Makefile     | Segment  | Description  |
|--------|--------------|----------|--|
| QHT0   | app_drvs.mak | qht0.asm | HOTR driver segment  |
| QHT1   | app_drvs.mak | qht1.asm | HOTR driver segment  |
| QHT2   | app_drvs.mak | qht2.asm | HOTS driver segment  |
| QHT3   | app_drvs.mak | qht3.asm | Called by QHT1 when HOTS is running<br>HOTS driver segment |
| QHT6   | app_drvs.mak | qht6.asm | HS64 driver segment  |

**CSOs**

None.

**Additional information****Macro Usage (HOTR):**

| Macro | Usage  |
|-------|--|
| BPKDC | Standardized parameter parser. Also uses BPPSC.                          |
| CINFC | Get the protection key.  |
| CRUSA | Test if data level(s) hold(s) a block and release if so.                 |
| DEFRC | Defer processing of current entry.                                       |
| FSYSC | Find the address of the system heap.                                     |
| EXITC | Exit segment and release any storage.                                    |
| FIWHC | Find the record specified with hold and wait for IO completion.          |
| FINWC | Find the record specified and wait for IO completion.                    |
| FILNC | File record but do not release the lock is specified.                    |
| GSYSC | Get the system heap.   |
| KEYRC | Restore the protection key.  |
| LODIC | Check if enough system resources are available to begin processing work. |
| SERRC | Issue a system error.  |
| UATBC | Get the name of the subsystem.   |
| UNFRC | Release the lock on the specified record address.                        |
| WAITC | Wait for completion of all pending IO's for that ECB.                    |
| WTOPC | Issue a specified message to the operator.                               |

**STATE information (HOTS):**

- STATE 1: VFA-X lock pending, BCA queue
  - GETCC D6
  - GETCC D7
  - FILEC D6
  - FILEC D7
- STATE 2: VFA-X lock pending, no BCA queue
- STATE 3: VFA buffer, no vfa locks
- STATE 4: VFA buffer, no VFA locks, delay file pending
  - GETCC D7
  - FILEC D7
- STATE 5: VFA buffer, VFA-X lock, delay file pending

GETCC D7  
FILNC D7  
WAITC

- STATE 6: No VFA buffer
- STATE 7: VFA-S lock pending, BCA queue, use D4/D5

CRUSA  
FINDC  
FINDC

- STATE 8: VFA-S lock pending, no BCA queue, use D5

CRUSA  
FINDC

- STATE 9: VFA buffer, VFA-s lock

CRUSA  
FINDC  
WAITC

- STATE 10: VFA buffer, VFA-s lock, RHT in BCA

FINHC  
WAITC  
UNFRC

- STATE 11: VFA buffer, VFA-X lock, RHT in BCA

- STATE 12: VFA buffer, VFA-X lock, delay file pending

FINHC  
WAITC  
FILNC  
WAITC  
UNFRC

- STATE 13: VFA buffer, VFA-X lock, delay file pending

FINHC  
WAITC  
FILUC

- STATE 14: VFA buffer, VFA-X lock, delay file pending

FINHC  
WAITC  
FILUC  
CRUSA

**SERVICE information (HOTS):**

SERVICE 1: FILEC VS=YES, RID=xx  
SERVICE 2: FILNC VS=YES, RID=xx  
SERVICE 3: FILEC VS=NO, RID=xx  
SERVICE 4: FILNC VS=NO, RID=xx  
SERVICE 5: FILSC VS=NO, RID=xx



SERVICE 6: FILSC VS=YES, RID=xx  
 SERVICE 7: FILUC VS=YES, RID=xx  
 SERVICE 8: FILUC VS=NO RID=xx  
 SERVICE 9: UNFRC VS=NO RID=xx  
 SERVICE 10: UNFRC VS=YES RID=xx  
 SERVICE 11: FINHC VS=YES RID=0  
 SERVICE 12: FINHC VS=YES RID=correct  
 SERVICE 13: FINHC VS=YES, RID=incorrect  
 SERVICE 14: FINHC VS=YES RID=incorrect vs=no  
 SERVICE 15: FINHC VS=NO, RID=0  
 SERVICE 16: FINHC VS=NO, RID=correct  
 SERVICE 17: FINHC VS=NO RID=inc VS=yes  
 SERVICE 18: FINHC VS=NO, RID=inc VS=no  
 SERVICE 19: FINDS VS=YES, RID=0  
 SERVICE 20: FINDC VS=YES RID=correct  
 SERVICE 21: FINDC VS=YES RID=inc vs=yes  
 SERVICE 22: FINDC VS=YES RID=inc vs=no  
 SERVICE 23: FLFAC VS=YES, RID=xx  
 SERVICE 24: FINSC VS=Yes RID=0  
 SERVICE 25: FINSC VS=YES RID=correct  
 SERVICE 26: FINSC VS=YES RID=inc vs=yes  
 SERVICE 27: FINSC VS=YES, RID=inc vs=no  
 SERVICE 28: FINDC VS=NO, RID=0  
 SERVICE 29: FINDC VS=NO RID=correct  
 SERVICE 30: FINDC VS=NO, RID=inc vs=yes  
 SERVICE 31: FINDC VS=NO, RID=inc vs=no  
 SERVICE 32: FLFAC VS=NO, RID=xx  
 SERVICE 33: FINSC VS=NO RID=0  
 SERVICE 34: FINSC VS=NO, RID=correct  
 SERVICE 35: FINSC VS=NO, RID=inc vs=yes  
 SERVICE 36: FINSC VS=NO, RID=inc vs=no

## Messages

### Normal Cases (HOTR):

---

#### ZTEST HOTR HELP

HOTR0001I Valid HOTR parameters are:  
 START FACID-cc ORDINAL-xx FILEADD-hh <ALL.  
 STAT FACID-cc ORDINAL-xx FILEADD-hh  
 STOP FACID-cc ORDINAL-xx FILEADD-hh  
 HELP  
 NOTE: ALL overrides the ORDINAL parm  
 FILEADDR overrides the FACID parm

---

#### ZTEST 2 HOTR START ALL

HOTR0003I Driver started for FACEID #HOTREC all ordinals+

---

**ZTEST HOTR START**

HOTR0009I Driver started for FACE ID: #HOTREC ordinal: 00000000+

---

**ZTEST 2 HOTR START**

HOTR0009I Driver started for FACE ID: #HOTREC ordinal: 00000000+

---

**ZTEST HOTR START O-4**

HOTR0009I Driver started for FACE ID: #HOTREC ordinal: 00000004+

---

**ZTEST HOTR STAT O-4**

HOTR0030I STATUS was requested for FACE ID #HOTREC Ordinal 00000004+  
CSMP0097I 16.31.17 CPU-B SS-BSS SSU-HPN IS-01  
HOTR0016I Driver running on FACE ID #HOTREC Ordinal 00000004  
The file-count is: 0000DDA8  
Snippets are not active at this time  
This record is not running EHT  
This record is running SVT Mode+

---

**ZTEST HOTR STOP O-4**

HOTR0031I STOP flag was set for FACE ID #HOTREC Ordinal 00000004+  
CSMP0097I 16.33.21 CPU-B SS-BSS SSU-HPN IS-01  
HOTR0017I Driver has stopped for FACE ID #HOTREC Ordinal 00000004  
The final file-count is: 000547AA  
Snippets are not active at this time  
This record is not running EHT  
This record is running SVT Mode+

---

**ZTEST HOTR STAT O-4**

HOTR0033I Driver not running on #HOTREC Ordinal 00000004  
The previous file-count was: 000547AA+

**Error Cases (HOTR):**

---

**ZTEST HOTR STOP O-4**

HOTR0012E Driver not running on #HOTREC ordinal 00000004 - request rejected+

---

**ZTEST HOTR START**

HOTR0007E The record FACE ID: #HOTREC ordinal: 00000000 indicates the driver is already running - issue a STOP and then try a START later+

---

**ZTEST HOTR START O-14**

HOTR0002E Ordinal number too high- must be 0x0-0x13+

---

**ZTEST HOTR START FILEADD-00000000CC03A802 O-1**

BPKD0061E 07.33.16 ZHOTR, TOO MANY CHARACTERS IN FILEADD PARAMETER+

---

**Normal Cases: (HOTS/HS64)**

---

**ZTEST HOTS HELP**

CSMP0099I 09.28.09 010000-B ZTEST HOTS HELP+  
CSMP0097I 09.28.09 CPU-B SS-BSS SSU-HPN IS-01  
HOTS0001I Valid HOTS parameters are:  
SET FACID-cc ORDINAL-xx FILEADDR-hh <ALL. <FCT.  
<NORMAL. <SNIPPETS. SState-xx SService-xx  
HELP  
ALL overrides ORDINAL, FILEADDR overrides FACID  
NORMAL overrides SNIPPETS, SNIPPETS overrides STATE/SERVICE+

The following messages are chronologically related.

---

**ZTEST HOTR START**

HOTR0009I Driver started for FACE ID: #HOTREC ordinal: 00000000+

---

**ZTEST HOTR STAT**

HOTR0030I STATUS was requested for FACE ID #HOTREC Ordinal 00000000+  
CSMP0097I 16.54.27 CPU-B SS-BSS SSU-HPN IS-01  
HOTR0016I Driver running on FACE ID #HOTREC Ordinal 00000000  
The file-count is: 00002F77  
Snippets are not active at this time  
This record is not running EHT  
This record is running SVT Mode+

---

**ZTEST HOTS SET SNIPPETS**

HOTS0009I Driver for FACE ID: #HOTREC all ordinals was told to:  
RUN ALL SNIPPETS +

---

**ZTEST HOTR STAT**

HOTR0030I STATUS was requested for FACE ID #HOTREC Ordinal 00000000+  
CSMP0097I 16.52.47 CPU-B SS-BSS SSU-HPN IS-01  
HOTR0016I Driver running on FACE ID #HOTREC Ordinal 00000000

The file-count is: 00007913  
Snippets active - last was STATE: 0004 SERVICE: 0001  
This record is not running EHT  
This record is running SVT Mode+

---

#### **ZTEST HOTR STAT**

HOTR0030I STATUS was requested for FACE ID #HOTREC Ordinal 00000000+  
CSMP0097I 16.53.01 CPU-B SS-BSS SSU-HPN IS-01  
HOTR0016I Driver running on FACE ID #HOTREC Ordinal 00000000  
The file-count is: 00007E20  
Snippets active - last was STATE: 000B SERVICE: 0022  
This record is not running EHT  
This record is running SVT Mode+

---

#### **ZTEST HOTR STOP**

HOTR0031I STOP flag was set for FACE ID #HOTREC Ordinal 00000000+  
CSMP0097I 16.55.58 CPU-B SS-BSS SSU-HPN IS-01  
HOTR0017I Driver has stopped for FACE ID #HOTREC Ordinal 00000000  
The final file-count is: 0002F6FE  
Snippets are not active at this time  
This record is not running EHT  
This record is running SVT Mode+

---

#### **ZTEST HOTS SET NORMAL**

HOTS0009I Driver for FACE ID: #HOTREC all ordinals was told to:  
RUN NO SNIPPETS +

---

#### **ZTEST HOTS SET NOSNIPPET**

HOTS0009I Driver for FACE ID: #HOTREC all ordinals was told to:  
RUN ONE SNIPPET +

---

#### **Error Cases (HOTS/HS64):**

#### **ZTEST HOTS SET SNIPPETS ORDINAL-2**

HOTS0010E Driver not running on #HOTREC ordinal 00000002 - request rejected+

## References

For more information about reading syntax diagrams, also referred to as railroad diagrams, see *Accessibility information* in the TPF Product Information Center.

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