



| z/TPF V1.1

# TPF Users Group Fall 2008

## z/TPF DASD Update

### Enhancements to DASD Support on z/TPF PUT 5

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# 64K Cylinder Support

- **Define up to 65520 cylinders on a single 3390 DASD module**
  - 11.79 million 4K records per module
  - 44.98 GB\* per module
  - 878.43 TB\* per TPF complex (assuming 19,999 fully duplicated modules)
- **Maximum of x'FFF0' cylinders**
  - Cylinder values range from x'0000' to x'FFEF'
  - Customer utilities that manipulate cylinder values must treat the cylinder value as an unsigned number
- **APAR PJ32336**

\* 1 GB = 2<sup>30</sup> bytes and 1 TB = 2<sup>40</sup> bytes

# New Record Hold Table (RHT) Diagnostic Dump

- **Existing on z/TPF: New overflow entries are dynamically allocated using system heap if the Record Hold Table (RHT) runs out of overflow entries**
  - ZSTAT SYSHEAP NAME-IRHT\* displays amount of system heap currently used by the RHT
  - ZDRHT DISPLAY STATUS displays RHT status and entry counts
- **New: RHTFN parameter on the RAM SIP macro defines the notification type used the first time system heap is obtained**
  - RHTFN=MSG: Issue message HOLD0003W and continue processing
  - RHTFN=DMP: Issue system error 000025 and continue processing
- **Dump option provides additional information to help determine why z/TPF ran out of overflow entries**
- **APAR PJ33072**

# Updated Stalled Module Queue Messages

- **Added DASD Subsystem ID (SSID) and IOB address from top of module queue to stalled module queue messages**
  - `CYED0001I 11.30.00 MODULE QUEUE FOR 0EE5 MAY BE STALLED, SSID FF01, IOB 0B099600`
  - `CYED0004I 11.30.00 POSSIBLE STALLED MODULE QUEUE FOR 0EE5, SSID FF01, IOB 0B099600`
  - `CYED0005I 11.30.00 MODULE QUEUE FOR 0EE5 STALLED FOR ABOUT 10 SECONDS, CURRENT QUEUE COUNT 6, SSID FF01, IOB 0B099600`
  - `Lost Interrupt System Error: CTL-I00003A QUEUE RESTARTED AFTER INTERRUPT TIMED OUT FOR 0EE5, SSID FF01, IOB 0B099600`
- **SSID helps determine if issues are on one or multiple DASD subsystems**
- **IOB address helps determine if module queues are stalled or moving slowly**
- **APAR PJ34019**

# New Stalled Module Queue Message Limit

- **Configurable value to limit number of stalled module queue messages issued per ZSONS SCAN interval**
  - Was previously a hardcoded limit of 50
  - Set through command: ZSONS ALTER SCAN MSGLIM-limit

```
ZSONS ALTER SCAN MSGLIM-20
```

```
SONS0039I 11.30.00 SCAN TIME VALUE IS      5
                SCAN MESSAGE LIMIT IS      20
                IN-USE SCAN TIME IS      5 SECONDS
END OF DISPLAY
```

- Set through SIP deck: ONLFIL SCANMSG=limit
  - limit is a decimal value from 1 to 99
  - Defaults to 50 if not set
- **Display message limit with ZSONS DISPLAY SCAN**
- **APAR PJ34019**

## New VSN Option for ZMCPY UP

- **ZMCPY UP requires the target module to have a specific VSN**
  - Old requirement: VSN must be expected VSN of the input symbolic module number
  - New option: VSN may be module copy VSN of the form SPnnnn
    - SP is the prefix specified by the COPYVSN parameter on ONLFIL SIP macro
    - nnnn is any numeric value
    - ZMCPY UP will automatically change the module copy VSN to the expected VSN
    - No longer have to manually change the VSN prior to ZMCPY UP
- **ZMCPY UP will accept either the expected VSN or a module copy VSN**
- **Included with APAR PJ32688**

# New ZVFAC USAGE Command

- **Provides VFA usage summary and detail about records in VFA**
  - ZVFAC USAGE SUMMARY ...
    - Summary counts for all of VFA or specific record ID/attribute combinations
  - ZVFAC USAGE FA ...
    - Details for individual file addresses
  - ZVFAC USAGE ACCESSES ...
    - Access counts by record ID
  - ZVFAC USAGE BUFFERS ...
    - Buffer counts by record ID
- **APAR PJ32762**

```
>>-ZVFAC Usage-- ----->

                .- --SORT-Buffers----- .- --ATTRibute-*----- .- --SHoW-20-----
>--+--Summary+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
><
| |          '- --SORT---Accesses---' | '- --ATTRibute---DELAy---' | '- --SHoW---limit---' |
| |                    +-Ratio----+ |           +-IMMed---+ |           '-*-----' |
| |                    '-Filing---' |           +-SDELAy--+ | |
| '-FA-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
|          '- --RECIid-recid-' | | |
+-Accesses-- --RECIid-recid-----+-----+-----+-----+-----+-----+-----+-----+
'-Buffers-- --RECIid-recid-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
```



# ZVFAC USAGE SUMMARY

- **SUMMARY** parameter provides summary of VFA usage by record ID
- Can help gauge efficiency of VFA
  - %TOTAL = Percentage of VFA buffers used
  - BUFFERS = Number of buffers in use
  - ACCESSES = Number of times TPF used the records in VFA
  - RATIO = Ratio of accesses to buffers (higher is better)

## ZVFAC USAGE SUMMARY

VFAC0030I 11.30.00 VFA USAGE SUMMARY BY RECORD ID

SHOWING 4 OF 4 ATTRIBUTE-\* RECIDS

RECID	%TOTAL	BUFFERS*	ACCESSES	RATIO	FILING NOW
-----	-----	-----	-----	-----	-----
E6D8/WQ	50.0	50K	100K	2.00	0
E2D7/SP	13.0	13K	120K	9.48	0
031A/..	5.0	5K	5K	1.00	1K
C8D9/HR	0.1	20	4M	212.58K	0

END OF DISPLAY



# ZVFAC USAGE SUMMARY (cont.)

- **Additional summary options**
  - Sort display by different column
    - BUFFERS, ACCESSES, RATIO, FILING
    - Sort column is marked by an asterisk
  - Restrict display to record ID's with specific VFA attributes
    - DELAY, IMMED, SDELAY, SIMMED
  - Limit the number of entries displayed

ZVFAC USAGE SUMMARY SORT-RATIO ATTRIBUTE-DELAY SHOW-2

VFAC0030I 11.30.00 VFA USAGE SUMMARY BY RECORD ID

SHOWING 2 OF 2 ATTRIBUTE-DELAY RECIDS

RECID	%TOTAL	BUFFERS	ACCESSES	RATIO*	FILING	NOW
-----	-----	-----	-----	-----	-----	-----
C8D9/HR	0.1	20	4M	212.58K		0
E2D7/SP	13.0	13K	120K	9.48		0

END OF DISPLAY

# ZVFAC USAGE FA

- **FA parameter provides list of file addresses/records in VFA**
  - Optional RECID parameter to only show specific record ID (shown below)
  - Optional ATTRIBUTE parameter to only show records with specific VFA attribute

```
ZVFAC USAGE FA RECID=HR SHOW=5
```

```
VFAC0031I 11.30.00 VFA ACCESSES BY FILE ADDRESS FOR RECID=C8D9/HR  
SHOWING 5 OF 20 ATTRIBUTE=* FILE ADDRESSES
```

```
RIAT ATTRIBUTES: VFAF-DELAY, VFAP-DELAY
```

FILE ADDRESS	RECID	ATTR	ACCESSES*
00000000CC03A80C	C8D9/HR	DELAY	221K
00000000CC03A802	C8D9/HR	DELAY	219K
00000000CC03A811	C8D9/HR	DELAY	218K
00000000CC03A807	C8D9/HR	DELAY	213K
00000000CC03A813	C8D9/HR	DELAY	212K

END OF DISPLAY

# ZVFAC USAGE ACCESSES/BUFFERS

- **ACCESSES and BUFFERS** parameters show usage for a given record ID across all VFA attributes and records (pool and fixed)
  - FIXED/POOL counts show detail counts for the input parameter (buffers or accesses)

ZVFAC USAGE BUFFERS RECID-AA

VFAC0033I 11.30.00 VFA BUFFERS IN USE FOR RECID-C1C1/AA

RIAT ATTRIBUTES: VFAF-DELAY, VFAP-DELAY

TYPE	IMMED	DELAY	SIMMED	SDELAY	NO
-----	-----	-----	-----	-----	-----
TOTAL BUFFERS	0	124	0	0	0
TOTAL ACCESSES	0	200K	0	0	0
-----	-----	-----	-----	-----	-----
FIXED	0	20	0	0	0
TOTAL POOL	0	104	0	0	0
LDP	0	60	0	0	0
4DP	0	44	0	0	0
END OF DISPLAY					

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