



z/TPF V1.1

TPF Users Group - Fall 2009

Title: Various Base Enhancements

Name: Michael Shershin
Venue: SCP Subcommittee

AIM Enterprise Platform Software
IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

Any reference to future plans are for planning purposes only. IBM reserves the right to change those plans at its discretion. Any reliance on such a disclosure is solely at your own risk. IBM makes no commitment to provide additional information in the future.

© 2009 IBM Corporation

Agenda

- **PJ35219 – File address information and protection**
- **PJ35813 – ZDHST enhancements**
- **PJ33918 – ECB resource monitor pool handling**
- **PJ35967 – RLCHA looping chain detection**
- **PJ36232 – PDU online multiple release enhancements**
- **PJ36233 – DASD Enhancements**

PJ35219 - File address information and protection

- **ZDFAI option provides additional information**
 - ZDFAI file_address PSDIR
 - Pool file addresses only
 - Status of file address in various pseudo directories
- **File address protection**
 - ZPOOL PROTECT file_address
 - Pool file address only
 - Updates pool directory to show this file address in use

PJ35219 - File address information example

- File address 00000000100006DD was a lost address that was returned as part of the last Recoup.

==> ZDFAI 00000000100006DD PSDI R

```
CSMP0097I 21.47.05 CPU-B SS-BSS SSU-HPN IS-01
DFAI0003I 21.47.05 DISPLAY FOR POOL RECORD BEGINS
POOL SECTION:          SDPA
POOL ORDINAL:          00000000000006DD
DIRECTORY ORDINAL:    0000004E
DIRECTORY BYTE:       0041
DIRECTORY BIT:        10
POOL STATUS:          AVAILABLE
```

```
—
RECOUP PHASE 1 1st CAPTURED DIRECTORY STPKP: IN-USE
RECOUP PHASE 1 2nd CAPTURED DIRECTORY SONCP: IN-USE
PDU UPDATE DIRECTORY                SONUP: RETURN
RECOUP ROLLIN DIRECTORY              SONROLL: NORETURN
RECOUP LOST ADDRESS DIRECTORY        SONLOST: RETURN
POOL DEACTIVATION DIRECTORY          SONDE: N/A
END OF DISPLAY+
—
```

PJ35219 - File address protection example

==> ZPOOL PROTECT 00000000180FC558

```
CSMP0097I 21.58.13 CPU-B SS-BSS SSU-HPN IS-01
POOL0281I 21.58.13 POOL ADDRESS 00000000180FC558 IS PROTECTED+
```

==> ZDFAI 00000000180FC558

```
CSMP0097I 21.58.16 CPU-B SS-BSS SSU-HPN IS-01
DFAI0003I 21.58.16 DISPLAY FOR POOL RECORD BEGINS
POOL SECTION:          4DPA
POOL ORDINAL:          000000000000FC558
DIRECTORY ORDINAL:    000004A0
DIRECTORY BYTE:       0034
DIRECTORY BIT:        80
POOL STATUS:          IN-USE
END OF DISPLAY. +
```

PJ35813 – ZDHST enhancements

- **ZDHST – Display system error history**
- **Add loadset name to ZDHST**
- **Add new display to ZDHST**
 - ZDHST DISPLAY OCCUR-x
 - Display all system errors that occurred x times or more

PJ35813 – ZDHST Enhancements example

==> ZDHST DISPLAY ERROR-00041001

CSMP0097I 23.00.40 CPU-B SS-BSS SSU-HPN IS-01
 DHST0005I 23.00.40 SYSTEM ERROR DETAILS DISPLAY
 FILTERS:

DISPLAY ERROR-00041001

TARGET SS: BSS RETENTION: 30

SE #	TYP	SYSERR	PROC	IS	DATE/ TIME	SS/ SSU	PRGM TRACE	EBROUT/ LOADSET	TAPE
	SNP	I00041001	F	01	28Aug09 11:33:16	BSS HPN	BRPE	010013F BASE	
	SNP	I00041001	F	01	28Aug09 11:35:50	BSS HPN	BRPE	010013F BASE	
	SNP	I00041001	F	01	28Aug09 11:51:45	BSS HPN	BRPE	010013F BASE	
	SNP	I00041001	F	01	28Aug09 13:21:34	BSS HPN	BRPE	010013F BASE	
	SNP	I00041001	F	01	28Aug09 14:02:14	BSS HPN	BRPE	010013F BASE	

END OF DISPLAY+

PJ35813 – ZDHST Enhancements example

==> ZDHST DISPLAY OCCUR-50

CSMP0097I 22.51.03 CPU-B SS-BSS SSU-HPN IS-01 _
DHST0006I 22.51.03 SYSTEM ERROR SUMMARY DISPLAY

FILTERS:

DISPLAY OCCUR-50

TARGET SS: BSS RETENTION: 30

ERROR# OCCURRENCES

I00DEB505	51
I00008651	117
I00000010	169 _
I0006410D	171
I000200E6	174
I0000C11F	1816
U00DEB005	2394

END OF DISPLAY+

PJ35813 – ZDHST Enhancements example

```
==> ZDHST DISPLAY OCCUR-10 START-11SEP09.000000 END-12SEP09.000000
CSMP0097I 22.53.42 CPU-B SS-BSS SSU-HPN IS-01
DHST0006I 22.53.42 SYSTEM ERROR SUMMARY DISPLAY
FILTERS:
    DISPLAY OCCUR-10 START-11SEP09.000000 END-12SEP09.000000
TARGET SS: BSS      RETENTION: 30
ERROR#      OCCURRENCES
UOODEB005      13
END OF DISPLAY+
```

PJ33918 – ECB resource monitor pool handling

- **New ECB monitors added for**
 - GETFC short terms
 - GETFC long terms
- **ECB monitors for pools are:**
 - GRFS (existing) – sum of both short term and long term GETFC requests made by this ECB
 - GFSS (new) – number of short term GETFC requests made by this ECB
 - GFSL (new) – number of long term GETFC requests made by this ECB
- **Can use one, two, or all three options for pools**

PJ33918 – ECB resource monitor pool handling

- **Ability to manage new options on ZECBM**
 - ZECBM DISPLAY
 - ZECBM SET LIMIT GFSS=value
 - ZECBM SET LIMIT GFSL=value
 - ZECBM SET PERCENT GFSS=value
 - ZECBM SET PERCENT GFSL=value
- **Ability to programmatically change settings in your ECB with ECBMC or tpf_ecbmc()**

PJ33918 – ECB resource monitor example

==> ZECBM SET LIMIT GFSS-1000

CSMP0097I 22.19.54 CPU-B SS-BSS SSU-HPN IS-01

ECBM0015I 22.19.54 ECB RESOURCE LIMIT HAS BEEN CHANGED

GFSS LIMIT CORE COPY SET FROM 0 TO 1000
END OF DISPLAY+

==> ZECBM SET PERCENT GFSS-200

CSMP0097I 22.20.08 CPU-B SS-BSS SSU-HPN IS-01

ECBM0016I 22.20.08 ECB RESOURCE PERCENT HAS BEEN CHANGED

GFSS PERCENT CORE COPY SET FROM 0 TO 200
END OF DISPLAY+

PJ33918 – ECB resource monitor example

==> ZECBM SET LIMIT GFSL-49900

CSMP0097I 22.21.46 CPU-B SS-BSS SSU-HPN IS-01

ECBM0015I 22.21.46 ECB RESOURCE LIMIT HAS BEEN CHANGED

GFSL LIMIT CORE COPY SET FROM 0 TO 49900
END OF DISPLAY+

==> ZECBM SET PERCENT GFSL-100

CSMP0097I 22.22.03 CPU-B SS-BSS SSU-HPN IS-01

ECBM0016I 22.22.03 ECB RESOURCE PERCENT HAS BEEN CHANGED

GFSL PERCENT CORE COPY SET FROM 0 TO 100
END OF DISPLAY+

PJ33918 – ECB resource monitor example

==> ZECBM DISPLAY

CSMP0097I 22.24.37 CPU-B SS-BSS SSU-HPN IS-01

ECBM0025I 22.24.37 ECB RESOURCE LIMIT TABLE DISPLAY FOR CORE COPY

RESOURCE	1ST LIMIT WARNING	2ND LIMIT PERCENTAGE
FIND	0	0
FILE	0	0
SERR	0	0 _
SWBK	0	0
GRFS	50000	100
GFSS	1000	200
GFSL	49900	100
CMBK	0	0
SYSH	0	0
CRET	0	0

FILT= 0 FILR= 0

WTOT= 0 WTOR= 0

ecbRM MONITORING IS: ON

1ST LIMIT ACTION IS: MESSAGE _

2ND LIMIT ACTION IS: DUMPEXIT

END OF DISPLAY+

PJ35967 – RLCHA looping chain detection

- **RLCHA processing identifies when a file address chain is chained to itself**
 - Intended when multiple release detection is not active
- **Detection is a following chain chase**
 - For every 2 finds in the standard chain chase, the following chain chase will do 1 find
 - Looping chain found when the file address in following chase is the same as the file address in the standard chase
- **Detection started after 500 finds in this chain**
 - Intent is to not add overhead for majority of RLCHA requests
- **SERRC 044800 taken if looping chain detected**

PJ36232 – PDU online multiple release enhancements

- **Previously, up to 1000 online multiple releases would be saved on a PDU**
 - The first 1000 online multiple releases would be saved.
 - ZDUPD S processes pools by pool section: rcc = x'04' first and rcc = x'A0' last
 - If there are more than 1000 online multiple releases, multiple releases in higher pools sections are not saved.

PJ36232 – PDU online multiple release enhancements

- **PJ36232 provides:**
 - ZDUPD S will log up to a specified number of online multiple releases for each pool type
 - New command: ZRPDU CNTL
 - Used to specify the maximum number of online multiple releases that can be logged
 - Unique value for each long term pool type
 - New user exit: UPD0
 - Determine whether to abort PDU based on the number of multiple releases.
 - Called by both offline multiple release and online multiple release processing

PJ36232 - Example

==> ZRPDU CNTL SET ONLMRMAX-999

CSMP0097I 23.20.00 CPU-B SS-BSS SSU-HPN IS-01

RPDU0001I 23.20.00 MAX NUM ONLINE MULTIPLE RELEASES FOR EACH LONG-TERM POOL TYPE

SET TO 999+

==> ZRPDU CNTL SET ONLMRMAX-5000 LTYPE-4DP

CSMP0097I 23.20.42 CPU-B SS-BSS SSU-HPN IS-01

RPDU0002I 23.20.42 MAX NUM ONLINE MULTIPLE RELEASES FOR 4DP LONG-TERM POOL TYPE

SET TO 5000+

PJ36232 - Example

==> ZRPDU CNTL DI SPLAY ONLMRMAX

CSMP0097I 23.21.35 CPU-B SS-BSS SSU-HPN IS-01

RPDU0003I 23.21.35 MAX NUM ONLINE MULTIPLE RELEASES FOR EACH LONG-
TERM POOL TYPE

SLT 999

SDP 999

LLT 999

LDP 999

4LT 999

4DP 5000

4D6 999

END OF DI SPLAY+

PJ36232 – Example – ZDUPD E

==> ZDUPD E SECTION-4DPA

CSMP0097I 20.41.20 CPU-B SS-BSS SSU-HPN IS-01
DYD00007I 20.41.20

DYDU MULTIPLE RELEASE ANALYSIS

ONLINE UPDATE RUN ON 20SEP AT 20.39.51

FADDR	DIR	ORD	BY/BI	ID	RCC	PROG	
0000000018042CA0	00000441	035/0	FA0D	0000	A003	_	
0000000018042CA1	00000441	035/1	FA0D	0000	A003		
0000000018042CA2	00000441	035/2	FA0D	0000	A003		
0000000018042CA3	00000441	035/3	FA0D	0000	A003		
0000000018042CA4	00000441	035/4	FA0D	0000	A003		
0000000018042CA5	00000441	035/5	FA0D	0000	A003		
0000000018042CA6	00000441	035/6	FA0D	0000	A003		
0000000018042CA7	00000441	035/7	FA0D	0000	A003	_	
0000000018042CA8	00000441	036/0	FA0D	0000	A003		

DYD00002I 20.41.20 EOJ

PJ36233 – DASD Enhancements

- **Removed NOP CCW at end of Find and File CCW chains**
 - Microcode requirement that is now obsolete
 - Reduces I/O response time
- **Various MPLF improvements**
 - Improved connect device assignment following cache initialization or connect device going offline

Trademarks

- **IBM is a trademark of International Business Machines Corporation in the United States, other countries, or both.**
- **Other company, product, or service names may be trademarks or service marks of others.**
- **Notes**
- **Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.**
- **All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.**
- **This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.**
- **All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.**
- **Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.**
- **Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.**
- **This presentation and the claims outlined in it were reviewed for compliance with US law. Adaptations of these claims for use in other geographies must be reviewed by the local country counsel for compliance with local laws.**