



TPF Users Group Fall 2007

Various Enhancements Requested by Users

Various User Exits

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AIM Enterprise Platform Software

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Agenda

- Copy a specific record
- Save a copy of fixed file records
- ZECBL enhancements
- CRET table commands
- ZSTIM enhancements
- Software Profiler
- ENQC enhancement
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- ZDSYS output changes
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- LREGSC / SREGSC enhancements
- New defer / delay accumulators
- New User area in ECB page 3
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Copy a specific record

- z/TPF APAR PJ31925
- ZCFIL COPY
 - Copy a specific record to a pool address
 - This option will obtain a pool address
 - Copy a specific record to a specified file address

ZCFIL COPY FROMFA-000000002C800007

```
CSMP0097I 21.08.05 CPU-A SS-BSS SSU-BSS IS-01
CFIL0001I 21.08.05 RECORD COPY COMPLETED SUCCESSFULLY,
FILE ADDRESS 000000002C800007 COPIED TO 0000000080206CFF+
```

ZCFIL COPY FROMFA-0000000080206CFF TOFA-000000002C800007

```
CSMP0097I 21.08.41 CPU-A SS-BSS SSU-BSS IS-01
CFIL0001I 21.08.41 RECORD COPY COMPLETED SUCCESSFULLY,
FILE ADDRESS 0000000080206CFF COPIED TO 000000002C800007+
```

Save a copy of fixed file records

- z/TPF APAR PJ31925
- ZCFIL SAVE
 - Save a copy of fixed file records to the file system
- ZCFIL DISPLAY
 - Display summary of file that was created by ZCFIL SAVE
- ZCFIL RESTORE
 - Restore fixed file records that were previously saved by ZCFIL SAVE
- ZIFIL ... FILE-
 - Save a copy of the fixed records before they are initialized

Example of ZCFIL

```
ZCFIL SAVE RECTYPE=SONRI START=0 END=LAST FILE='/sonri.sav'  
CSMP0097I 20.19.27 CPU-B SS-BSS SSU-HPN IS-01  
CFIL0009I 20.19.27 RECORD SAVE COMPLETED SUCCESSFULLY,  
2700 ORDINALS SAVED FOR RECORD #SONRI +
```

```
ZCFIL DISPLAY FILE='/sonri.sav'  
CSMP0097I 20.20.32 CPU-B SS-BSS SSU-HPN IS-01  
CFIL0030I 20.20.32 BEGIN DISPLAY ZCFIL SAVE SUMMARY  
NAME: #SONRI  
SIZE: 1055  
START: 0  
END: A8B  
CHARACTERISTICS: 00040101  
UNIQUENESS SPECIFIED ON ZCFIL SAVE COMMAND:  
SSU: ALL  
CPUID: ALL  
ISTREAM: ALL  
END DISPLAY+
```

Examples of ZCFIL Continued

```

ZCFIL SAVE RECTYPE-SONLOST START-0 END-LAST FILE-' /dev/tpf_tape/GEN'
CSMP0097I 21.45.29 CPU-B SS-BSS SSU-HPN IS-01
COSK0079A 21.45.29 *CP* HPN MOUNT GEN TAPE FOR OUTPUT +
ZTMNT GEN 421 A0
CSMP0097I 21.45.37 CPU-B SS-BSS SSU-HPN IS-01
COTM0310I 21.45.37 TMNT HPN TAPE GEN MOUNTED ON DEVICE 0421
          VSN A00114 G0001 S0001 F38K SL BZOS 0 COMP NOENC +
CSMP0097I 21.45.40 CPU-B SS-BSS SSU-HPN IS-01
CFIL0009I 21.45.40 RECORD SAVE COMPLETED SUCCESSFULLY,
2700 ORDINALS SAVED FOR RECORD #SONLOST+
CSMP0097I 21.45.41 CPU-B SS-BSS SSU-HPN IS-01
COTC0300A 21.45.41 TCLS HPN REMOVE GEN FROM DEVICE 0421
          VSN A00114 G0001 S0001 F38K SL BZOS 459 COMP NOENC +

```


Examples of ZCFIL Continued

```
ZCFIL SAVE RECTYPE-SONLOST START-0 END-LAST FILE-' /sonlost.sav'
```

```
CSMP0097I 22.25.19 CPU-B SS-BSS SSU-HPN IS-01
```

```
CFIL0009I 22.25.19 RECORD SAVE COMPLETED SUCCESSFULLY,  
2700 ORDINALS SAVED FOR RECORD #SONLOST+
```

```
ZCFIL RESTORE FILE-' /sonlost.sav'
```

```
CSMP0097I 22.25.51 CPU-B SS-BSS SSU-HPN IS-01
```

```
CFIL0025A 22.25.51 ABOUT TO RESTORE #SONLOST TO #SONLOST  
ORDINALS: 0 TO A8B
```

```
SSU: ALL
```

```
CPUID: ALL
```

```
ISTREAM: ALL
```

```
FROM: /sonlost.sav
```

```
ENTER ZCFIL RESTORE CONTINUE OR ZCFIL RESTORE CANCEL +
```

```
ZCFIL RESTORE CONTINUE
```

```
CSMP0097I 22.26.23 CPU-B SS-BSS SSU-HPN IS-01
```

```
CFIL0022I 22.26.23 RECORD RESTORE COMPLETED SUCCESSFULLY,  
2700 ORDINALS RESTORED TO RECORD #SONLOST+
```

Example of ZIFIL

ZIFIL SONLOST/CD/00/0/2699/NNN/N FILE-' /sonlost.sav'

CSMP0097I 20.28.14 CPU-B SS-BSS SSU-HPN IS-01

IFIL0042I 20.28.14 SAVE OF RECORD ORDINALS COMPLETED SUCCESSFULLY+

CSMP0097I 20.28.14 CPU-B SS-BSS SSU-HPN IS-01

IFIL0004I 20.28.14 RECORD INITIALIZATION STARTED FOR .SONLOST+

CSMP0097I 20.28.15 CPU-B SS-BSS SSU-HPN IS-01

IFIL0005I 20.28.15 RECORD INITIALIZATION COMPLETED FOR .SONLOST+

ZECBL enhancements

- z/TPF APAR PJ31925
- Schedule multiple ECBs to exit in one command
 - New parameter ZECBL M
 - Schedule ECBs to exit based on:
 - Program name
 - Trace name
 - LNIATA
 - TIME-sec
 - Optional parameter
 - ECBs to be exited be older than the number of seconds specified by TIME parameter
 - Default is TIME-3

Example of ZECBL M

ZECBL M PROGRAM-QZZO TIME-5

CSMP0097I	22.06.01	CPU-B	SS-BSS	SSU-HPN	IS-01					
ECBL0025I	22.06.01	ECB AT	OB351000	SCHEDULED TO	EXIT	-	PROG-QZZO			+
CSMP0097I	22.06.01	CPU-B	SS-BSS	SSU-HPN	IS-01					
ECBL0025I	22.06.01	ECB AT	OB3CF000	SCHEDULED TO	EXIT	-	PROG-QZZO			+
CSMP0097I	22.06.01	CPU-B	SS-BSS	SSU-HPN	IS-01					
ECBL0025I	22.06.01	ECB AT	OB3DB000	SCHEDULED TO	EXIT	-	PROG-QZZO			+
CSMP0097I	22.06.01	CPU-B	SS-BSS	SSU-HPN	IS-01					
ECBL0025I	22.06.01	ECB AT	OB3F6000	SCHEDULED TO	EXIT	-	PROG-QZZO			+

CRET table commands

- z/TPF APAR PJ31925
- Display CRET table
 - ZDCRT TYPE-MINUTE
 - ZDCRT TYPE-SECOND
- Add item to CRET table
 - ZACRT

Examples of CRET Commands

ZDCRT TYPE-MI NUTE

```

CSMP0097I 20.00.34 CPU-B SS-BSS SSU-HPN IS-01
DCRT0001I 20.00.34 START OF ZDRCT DISPLAY - ALLOCATED: 160, IN USE: 13
ACTIVATING PROGRAM CREATING PROGRAM TIME 1052 PBI SSU IS PARM
CAPB CAPB 1 N BSS HPN 1 00000001 _
CAPP CAPP 1 N BSS HPN 1 00000000
CDNE CDNE 1 Y BSS HPN 1 C3C4D5C5
CDNF CDNF 1 Y BSS HPN 1 C3C4D5C6
CSL4 CSL4 1 N BSS HPN 1 D5D6D9D4 _
CTSW CTSW 1 Y BSS HPN 1 0DC0FC00
CGL7 CGL7 5 Y BSS HPN 1 000CC000
CGT9 CGT9 10 N BSS HPN 1 0000000F
CVDW CVDW 10 N BSS HPN 1 00002038 _
CVMA CVMA 10 N BSS HPN 1 00000000
CVZ1 CVZ1 10 Y BSS HPN 1 00000000
COUH COUF 40 N BSS HPN 1 C3D6C4D9
CSRN CSUB 60 N BSS HPN 1 C3E2E4C2
END OF DISPLAY+

```

ZACRT TYPE-MI N PGM-QZZO TIME-1

```

CSMP0097I 20.03.46 CPU-B SS-BSS SSU-HPN IS-01
ACRT0001I 20.03.46 ITEM ADDED TO CRET TABLE+

```

ZSTIM enhancements

- z/TPF APAR PJ31925
- ZSTIM A PROC-x
 - Add to a specific processor or all processors
- ZSTIM A SS-ssname
 - Add to a specific Subsystem or all subsystems
- ZSTIM C changed to ZSTIM CANCEL
- ZSTIM CANCEL PROC-x
 - Cancel an item from a specific processor

ZSTIM enhancements continued

- ZSTIM COPY
 - Copy one item or all items from one processor to another
- ZSTIM D PROC-x
 - Display an item from a specific processor
- ZSTIM I changed to ZSTIM INITIALIZE
- ZSTIM INITIALIZE PROC-x
 - Initialize the table for a specific processor

Examples of ZSTIM changes

```
ZSTIM A FREQ=EVERY, TIME=05, MSG=' ZSTAT U' , PROC=C
```

```
CSMP0097I 21.12.33 CPU-B SS-BSS SSU-HPN IS-01  
STMA0001I 21.12.33 MSG ADDED TO TIM TBL+
```

```
ZSTIM D PROC=C
```

```
CSMP0097I 21.14.43 CPU-B SS-BSS SSU-HPN IS-01  
STMD0032I 21.14.43 TIME-INITIATED MSG TBL FOR PROC=C  
001 21:17* SMPC 05 ZSTAT U  
END OF TIM TBL DISPLAY+
```

```
ZSTIM CANCEL 001 PROC=C
```

```
CSMP0097I 21.16.09 CPU-B SS-BSS SSU-HPN IS-01  
STMC0001I 21.16.09 MSG CANCELLED FROM TIM TBL+
```

Examples of ZSTIM changes

ZSTIM COPY ALL TPROC=K FPROC=B

CSMP0097I 22.06.24 CPU-B SS-BSS SSU-HPN IS-01

STM00035I 22.06.24 COPY COMPLETE - PROC K +

ZSTIM COPY ALL TPROC=B SS=WP

CSMP0097I 00.11.40 CPU-B SS-WP SSU-WP1 IS-01

STM00035I 00.11.40 COPY COMPLETE - PROC B +

ZSTIM INITIALIZE PROC=L

CSMP0097I 22.17.24 CPU-B SS-BSS SSU-HPN IS-01

STM10001I 22.17.24 TIM TBL INITIALIZED+

Software Profiler

- z/TPF APAR PJ31925 and PJ32014
- Ability to direct TPF collected data to the file system
 - RTA tape no longer required
 - RTA tape remains default collection medium
 - File system provides ability to
 - Write collected data to file
 - When writing to a file, FTP the file to z/OS USS and post process
 - Write collect data to general tape

Software Profiler continued

- When writing to file system
 - Command is: ZTRAP ... OUTPUT-
 - Collected data is first written to file /tmp/SoftwareProfiler.temp
 - Collected data is written to file when buffers are full
 - New ECBs are used for each buffer
 - Each ECB opens with append and closes the file when done
 - If a close is done on a tape file (file = /dev/tpf_tape/xxx), the tape will close
 - A temporary file is used to avoid this problem
 - At end of run /tmp/SoftwareProfiler.temp is copied to file specified in OUT parameter
 - Recommend that /tmp directory be mounted as a memory file system
 - No need to do I/O for temporary files

Example of Software Profiler File System Usage

ZTRAP EI OUTPUT-' /ei.out'

```
CSMP0097I 20.22.38 CPU-B SS-BSS SSU-HPN IS-01  
TRAP0002I 20.22.38 EI OPTION - STARTED+
```

```
CSMP0097I 20.27.38 CPU-B SS-BSS SSU-HPN IS-01  
TRAP0001I 20.27.38 EI OPTION - COMPLETED  
EI OPTION - COLLECTION STATUS REPORT  
--- ITEMS COLLECTED 847: SINCE 20.22.38  
COLLECTION O.K.  
END OF DISPLAY+
```

Example of Software Profiler Using a General Tape

ZTMNT GEN 421 A0

```
CSMP0097I 20.35.22 CPU-B SS-BSS SSU-HPN IS-01
COTM0310I 20.35.22 TMNT HPN TAPE GEN MOUNTED ON DEVICE 0421
VSN A00509 G0002 S0001 F38K SL BZOS 0 COMP
```

ZTRAP MA OUTPUT-' /dev/tpf_tape/GEN'

```
CSMP0097I 20.35.48 CPU-B SS-BSS SSU-HPN IS-01
TRAP0002I 20.35.48 MA OPTION - STARTED+
```

```
CSMP0097I 20.40.49 CPU-B SS-BSS SSU-HPN IS-01
```

```
TRAP0001I 20.40.48 MA OPTION - COMPLETED
```

```
MA OPTION - COLLECTION STATUS REPORT
```

```
--- ITEMS COLLECTED 28329: SINCE 20.35.48
```

```
COLLECTION O.K.
```

```
END OF DISPLAY+
```

```
CSMP0097I 20.40.49 CPU-B SS-BSS SSU-HPN IS-01
```

```
COTC0300A 20.40.49 TCLS HPN REMOVE GEN FROM DEVICE 0421
```

```
VSN A00509 G0002 S0001 F38K SL BZOS 60 COMP
```


ENQC enhancement

- z/TPF APAR PJ31925
- New timeout option for waiting ECBs
- QTIME=
 - Specifies the amount of time that this ECB will wait to obtain the resource
 - Timeout units (seconds / milliseconds / etc) are specified in TIMEINC parameter
 - QTIME=0 is no timeout
- QTIMELOC=
 - Specifies where to pass control if the ECB times out
- C function equivalent = `tpf_enqc_qtime()`

PAUSC timeout

- z/TPF APAR PJ31925
- 2 minute timeout added
 - If after 2 minutes there is an I-Stream which has not paused, a CTL-574 catastrophic dump will be taken

ZDSYS output changes

- z/TPF APAR PJ31909
- New information added to display
 - Complex name
 - CPU-ID
 - Date

ZDSYS

```
CSMP0097I 20.13.35 CPU-A SS-BSS SSU-BSS IS-01
DSYS0001I 20.13.35 THE SYSTEM IS IN NORM STATE FOR SUBSYSTEM BSS
                ON TPFANET CPU-A 03SEP
END OF DISPLAY+
```

ZDRHT output changes

- z/TPF APAR PJ31925
- Output display enhanced to include lock facility information
 - MPLF SSID
 - CF name
- SVC TOD format changed to display hours, minutes, seconds, and microseconds
- Same changes made to the record hold wait queue exceeded messages HOLD0008W and HOLD0009W

Example of ZDRHT

ZDRHT DISPLAY QUEUE-1

CSMP0097I 19.45.12 CPU-B SS-BSS SSU-HPN IS-01 _
 DRHT0009I 19.45.12 RECORD HOLD TABLE DISPLAY

RHT ENTRIES MATCHING SEARCH CRITERIA: 2

FILE ADDRESS	SS	ECB ADDR	PGM	QUE	STATUS	SVC TOD	LOCK FACILITY
00000000CC022803	BSS	0B396000	QZZ3	1	COMPLETE	19:44:43.961939	MPLF-FF07 _
00000000CC022804	BSS	0B41A000	CVSN	1	COMPLETE	19:44:43.963241	MPLF-FF05

END OF DISPLAY+

CSMP0097I 20.12.13 CPU-B SS-BSS SSU-HPN IS-01
HOLD0008W 20.12.13 RECORD HOLD WAIT QUEUE EXCEEDED THRESHOLD 10

FILE ADDRESS	SS	ECB ADDR	PGM	QUE	STATUS	SVC TOD	LOCK FACILITY
00000000CC022803	BSS	0B3C0000	QZZ3	10	COMPLETE	20:10:13.009697	MPLF-FF07

END OF DISPLAY+

LREGSC / SREGSC enhancements

- z/TPF APAR PJ32151
- TPF 4.1 APAR PJ32174
- Specify target location
 - LREGSC LOREG=R14,HIREG=R14,SVREG=R1
 - Load into R14 the previously saved contents of R1
 - SREGSC LOREG=R15,HIREG=R15,SVREG=R2
 - Save R15 into the save area for R2
- LREGSC LOREG / HIREG supports
 - R0 – R8 and R10 - R15 can be used
- SREGSC LOREG / HIREG supports
 - R0 – R15 can be used

New defer / delay accumulators

- CE3DFRTOT
 - ECB page 3 field which has the accumulated defer / delay accumulator for this ECB
 - z/TPF APAR PJ31835 added
- PFXDFRTOT
 - Prefix page field which has the accumulated defer / delay accumulator since the last IPL for this I-Stream
 - z/TPF APAR PJ31424 added

New User area in ECB page 3

- z/TPF APAR PJ32151
- CE3USA added
 - 512 bytes



New User Exits

- New CP User Exits
 - z/TPF APAR PJ31909
 - DQUE
 - Monitor queue length changes for DASD modules
 - CCSONS: CJIU
 - DSIO
 - Monitor timing of individual DASD I/Os
 - CCONS: CJIU
 - UEXIUNLK
 - z/TPF APAR PJ32193
 - Emergency unlock routine
 - CCCPSE: CPSE

New User Exits continued

- New IPLB User Exit
 - z/TPF APAR PJ31909
 - CIOI
 - First level interrupt handler; monitor data from I/O interrupts
 - IPLB: CCIO
- New Macro User Exit
 - z/TPF APAR PJ32151
 - UFINIS
 - Added to FINIS macro to allow user service routines to be added to FINIS macro

New User Exits continued

- New E-type User Exits
 - z/TPF APAR PJ31909
 - UBXL
 - Added at end of keypoint capture to allow customer unique records to be written to the keypoint capture tape
 - UBXT
 - Added in capture tape mount routine in order to build a capture tape volser to real-time VSN cross reference table
 - UCVZ
 - Added to ZDSYS processing to allow additional information to be added to the ZDSYS message

New User Exits continued

- New E-type User Exits
 - z/TPF APAR PJ31909
 - UCS5
 - Added to system cycle to allow users to check status of utilities at the start of cycle down
 - UXTK
 - Added to tape label processing so that users can set tape labels to customer defined standards

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