



IBM Software Group

## *TPF Users Group Spring 2007*

### CDC Enhancements

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**AIM Enterprise Platform Software**

IBM z/Transaction Processing Facility Enterprise Edition 1.1.0

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# Agenda

- z/TPF CDC Client updates
- z/TPF APAR PJ31435 - Collect each type of data at its own frequency

## CDC Client Updates

- For Branch Target Check Mode, add indicator to show whether it is active
  - In System trace list
- For Check Processor Utilization, add list of utilization classes and number of ECBs

# Example of Branch Target Check Mode Indicator

CPUID B DANBURY.CO0901

File Help

System Summary | Subsystems | System TCP/IP and MQ Data | SSU Msgs, MPIF, LODIC, Tape, and DASD | **Istreams, Shutdowns, and Traces** | Channel Utilization

Istream Data for Istream 1

Metric	Value	Min	Max	Mean
Cross	0	0	0	0.0
Ready	0	0	0	0.0
Input	0	0	0	0.0
Deferred	0	0	0	0.0
Suspend	0	0	0	0.0
VCT	0	0	0	0.0
Utilization	0.4	0.3	1.2	0.56
Active ECB's	12	11	13	12.08
Routed Ent./s	0.0	0.0	0.0	0.0

Select Istream: 1

**Istream 1 Utilization %**

System Shutdown Count

Task	Description	Count	Last Time Detected
Input List	More than High Active ECB Blocks		
Input List	Fewer than Low Available FRM Blocks		
Input List	Fewer than Low Available COM Blocks		
Input List	Fewer than Low Available ECB Blocks		
Input List	Fewer than Low Available SWB Blocks		
Input List	Fewer than Low Available IOB Blocks		
Deferred List	More than High Active ECB Blocks		
Time Available Supervisor	Fewer than Low Available FRM Blocks		
Time Available Supervisor	Fewer than Low Available COM Blocks		
Time Available Supervisor	Fewer than Low Available ECB Blocks		
CREM Macro	Fewer than Low Available SWB Blocks		
CREM Macro	More than High Items on Ready List		
CRED Macro	Fewer than Low Available SWB Blocks		
CREX Macro	Fewer than Low Available SWB Blocks		
BSC Input	More than High Active Input List		
3270 Local Input	More than High Active Input List		
AI Input	More than High Active Input List		

System Traces

Metric	Value
ECB	ON
Enter/Back	ON
System Log	ON
I/O	ON
BRANCH	ON
REG cur. IPL	ON
Socket	OFF
Block Check Mode	OFF
IO CCW	OFF
Extended C Function	ON
Idle Timer	OFF
ECB Heap	ON
Heap Check Mode	OFF
IBM DBUGC Test	OFF
IBM DBUGC Log	OFF
User DBUGC Test	OFF
User DBUGC Log	OFF
VFA	ON
Lock	OFF
<b>Branch Relative Target Check Mode</b>	<b>ON</b>

Last screen update at: 03:33:17 PM EDT, Monday, April 09 2007. Min, Max, and Mean moving time window: 15 minute

## Example of Branch Target Check Mode Indicator

System Traces	
Metric	Value
ECB	ON
Enter/Back	ON
System Log	ON
I/O	ON
BRANCH	ON
REG cur. IPL	ON
Socket	OFF
Block Check Mode	OFF
IO CCW	OFF
Extended C Function	ON
Idle Timer	OFF
ECB Heap	ON
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IBM DBUGC Log	OFF
User DBUGC Test	OFF
User DBUGC Log	OFF
VFA	ON
Lock	OFF
<b>Branch Relative Target Check Mode</b>	<b>ON</b>

## Example of Utilization Classes

Utilization Class	ECB's	
UTILCLS1	1	
UTILCLS2	0	
UTILCLS3	0	
UTILIECB	0	
UTILSMP2	0	
UTILISMP	0	

## z/TPF APAR PJ31435

- Collect each type of data (metric) at a unique frequency on z/TPF
  - Command ZCDCO enhanced to set frequency by type of data
  - To selectively not collecting a specific type of data, set frequency = 0
- ZCDCO INIT sets default collection frequency
  - 5 seconds for all types of data
- Management of collection frequency is kept in format 2 global
  - Global ICDCNTL is used
  - Must define and initialize before using CDC
- Change ZCDCO command interface to write CDC data to other mediums
  - ENABLE / DISABLE writing of data to specified medium
    - ▶ Tape
    - ▶ TPFAR
    - ▶ TPFDF
    - ▶ TPF File System

## z/TPF APAR PJ31435

- Steps to use PJ31435
  - Before installing PJ31435 on z/TPF or TPF 4.1
    - ▶ Stop CDC
  - After installing PJ31435
    - ▶ On each processor
      - ▶ Define format 2 global
      - ▶ Initialize format 2 global
      - ▶ Initialize CDC
      - ▶ Start CDC
    - ▶ If fallback is done (i.e. validating coexistence with TPF 4.1)
      - ▶ On z/TPF with PJ31435 installed
        - ▶ Stop CDC
- Other consideration
  - To change collection frequency
    - ▶ Stop CDC
    - ▶ Change the collection frequency
    - ▶ Start CDC



# ZCDCO Syntax with PJ31435

```

>>-ZCDCO-- ----->
>--+-I n i t-----+--><
|
|                                     . - --Data-ALL--.
+-Modi fy-- --+-Frequency-seconds--+-----+--+-----+--+
|                                     ' - --Data-type-' |
|                                     |' -Ti me--+-I nfi ni te--+-----'
|                                     |   '-mi nutes--'
|
+-+-Enabl e--+- --Database--+-+-TAPE--+- --Name-name|-----+--+
| ' -Di sabl e-' | ' -TPFAR-'
|               +-TPFDF-----+
|               ' -TPFFS-----'
|
|                                     . - --Ti me-I nfi ni te-.
+-START--+-----+-----+-----+-----+-----+-----+--+
|                                     ' - --Ti me-mi nutes--'
+-STOP-----+-----+-----+-----+-----+-----+-----+--+
+-Di spl ay-----+-----+-----+-----+-----+-----+-----+
|                                     ' - --Frequency-'
| ' -RELFC-- --ALG-dfsubfi l eal g-----+-----+-----+-----+

```

## Example of ZCDCO HELP with PJ31435

### ZCDCO HELP

```
CSMP0097I 09.22.29 CPU-B SS-BSS SSU-HPN IS-01
CDC00001I START OF ZCDCO SYNTAX
ZCDCO INIT
  MODIFY FREQUENCY-seconds DATA-ALL/type
    TIME-mi nutes
  ENABLE/DI SABLE DATABASE-db NAME-name
  START TIME-Infi nte/mi nutes
  STOP
  DI SPLAY
  DI SPLAY FREQUENCY _
WHERE seconds - COLLECTION FREQUENCY, 5 TO 999 OR 0
  type      - TYPE OF CDC DATA
  minutes   - RUN DURATION, 0 TO 1440
  db        - TPFAR, TAPE, TPFDF, TPFPS
  name      - RDB OR TAPE NAME (TPFAR OR TAPE ONLY)
END OF DI SPLAY+
```

## To use CDC with PJ31435 do the following setup

ZGLBL GLOBAL DEFINE I CDCNTL LOC-64bit PROC-YES KEY-YES LOAD-CYCLEUP SYNC-NO IS-NO

CSMP0097I 09.04.11 CPU-B SS-BSS SSU-HPN IS-01

GLBL0050I 09.04.11 FORMAT-2 GLOBAL RECORD I CDCNTL DEFINED SUCCESSFULLY+

ZGLBL GL INIT I CDCNTL SOURCE-ZERO Size-8000 PROC-ALL

CSMP0097I 09.04.13 CPU-B SS-BSS SSU-HPN IS-01

GLBL0200I 09.04.13 FORMAT-2 GLOBAL RECORD I CDCNTL SUCCESSFULLY INITIALIZED+

ZCDCO INITIALIZE

CSMP0097I 09.04.42 CPU-B SS-BSS SSU-HPN IS-01

CDC00041I - CONTINUOUS DATA COLLECTION INITIALIZATION COMPLETED+

## Examples of PJ31435 changes

### ZCDCO DISPLAY

```
CSMP0097I 09.25.02 CPU-B SS-BSS SSU-HPN IS-01 _
CDC00053I 09.25.02 DISPLAY OF CDC RUN AND DATABASE SETTINGS
ENDTIME:   CDC IS NOT RUNNING
DATABASES: TPFAR:  ENABLED   RDBNAME: CDCDATA  TABLENAME: TPF CDC
           TAPE:   DISABLED
           TPFDF:  DISABLED TAPENAME:
           TPFFS:  DISABLED
END OF DISPLAY+
```

### ZCDCO MODIFY FREQUENCY-0 DATA-CDC\_TAPE

```
CSMP0097I 09.26.44 CPU-B SS-BSS SSU-HPN IS-01
CDC00044I - CONTINUOUS DATA COLLECTION MODIFY COMPLETED+
```

### ZCDCO MODIFY FREQUENCY-30 DATA-CDC\_DASD\_POOL

```
CSMP0097I 09.26.49 CPU-B SS-BSS SSU-HPN IS-01
CDC00044I - CONTINUOUS DATA COLLECTION MODIFY COMPLETED+
```

# Examples of PJ31435 change to display frequencies

## ZCDCO DISPLAY FREQUENCY

```

CSMP0097I 09.06.43 CPU-B SS-BSS SSU-HPN IS-01
CDC00054I 09.06.43 DISPLAY OF CDC COLLECTION FREQUENCIES IN SECONDS
FREQ  TYPE NAME
-----
5      CDC_USER
5      CDC_SYSTEM_MESSAGE
5      CDC_SYSTEM_LIST
5      CDC_SYSTEM_BLOCK
5      CDC_DASD_DEVICE
5      CDC_LODIC _
5      CDC_TCPIP
0      CDC_TAPE
5      CDC_MPIF
5      CDC_MQ_SUMMARY
5      CDC_MQ_QUEUE
5      CDC_MQ_CHANNEL
5      CDC_ISTREAM
5      CDC_SUBSYSTEM
30     CDC_DASD_POOL
5      CDC_VFA_DETAIL
5      CDC_DASD_SERVICE_TIME
5      CDC_LPAR_UTILIZATION
5      CDC_CHANNEL_UTILIZATION
5      CDC_LODIC_UTILIZATION_CLASS
END OF DISPLAY+

```

## Examples of PJ31435 changes

### ZCDCO START

```
CSMP0097I 09.29.16 CPU-B SS-BSS SSU-HPN IS-01  
CDC00049I - CONTUNUOUS DATA COLLECTION HAS BEEN STARTED+
```

### ZCDCO DISPLAY

```
CSMP0097I 09.29.20 CPU-B SS-BSS SSU-HPN IS-01  
CDC00053I 09.29.20 DISPLAY OF CDC RUN AND DATABASE SETTINGS  
ENDTIME: INFINITE  
DATABASES: TPFAR: ENABLED RDBNAME: CDCDATA TABLENAME: TPF CDC  
TAPE: DISABLED  
TPDFD: DISABLED TAPENAME:  
TPFFS: DISABLED _  
END OF DISPLAY+
```

### ZCDCO STOP

```
CSMP0097I 09.45.43 CPU-B SS-BSS SSU-HPN IS-01  
CDC00050I - CONTUNUOUS DATA COLLECTION HAS BEEN STOPPED+
```

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