TPF Users Group Spring 2008

Title: Design Concepts and Other Items

Name: Michael Shershin
Venue: SCP Subcommittee

Agenda

- **Multiple Release Detection**

- **Norm State Time Change**

- **SIP Challenge**

- **Other items**

Multiple Release Detection

Multiple Release Detection

- **TPFUG Requirements**

  - D07001S – Multiple Release Detection, Protection, and Diagnostics

  - D07005F – GETFC Abuse Detection

  - D07003S – RELFC Record ID validation

Multiple Release Detection

- **What problem is being addressed?**

  - Release (RELFC) a file address more than once

  - PDU catches most multiple releases today

    - Need to catch the multiple release sooner
    - Need better diagnostic data than PDU provides
    - Need ability to catch multiple releases after a PDU is run and after the file address is dispensed again

Multiple Release Detection

- **Three concepts being created**

  - Multiple Release Detection (MRD)

  - Get File Initialization

  - Record ID Validation

Multiple Release Detection

- **MRD Concepts**
  - When a RELFC is done
    - Record being released is retrieved
    - If record ID is a special record ID, a multiple release has happened
      - Either take an error (SERRC / SNAPC) or send a message
      - Update and file record with diagnostic data
    - If record ID is NOT the special record ID
      - Update record with diagnostic data
      - File record with diagnostic data and special record ID

Multiple Release Detection

- **MRD Concepts – Diagnostic data**

Type	RELFC	RLCHA
Program name	Yes	No
Object name	Yes	No
Displacement in Object	Yes	No
Trace name	Yes	Yes
TOD	Yes	Yes
CPUID	Yes	Yes
Previous record ID	Yes	Yes
Data from user exit	Yes	Yes

Multiple Release Detection

- **MRD Concepts – RELFC options**
  - RELFC synchronous
    - Do MRD processing at RELFC time
    - RELFC will retrieve record being released
      - RELFC behavior is changed
      - RELFC will give up control
    - Provides best possible diagnostics
  - RELFC asynchronous
    - Create another ECB to do MRD processing
      - RELFC behavior is maintained
      - RELFC will NOT give up control
  - RELFC default option
    - Define at the system level whether to do synchronous or asynchronous option

Multiple Release Detection

- **MRD Concepts**

  - Command to display record and format diagnostic data

  - Controls

    - Enable / disable by processor, long term pool type, and record ID

  - Auto shutdown

    - Every second do a LODIC resource check and a LODIC utilization check.

      - New LODIC classes to be used.

    - If low resources or high utilization do not allow MRD over the next second.

    - Shutdown values can be adjusted via ZSYSL command.

      - Initial LODIC values will never stop MRD.

Multiple Release Detection

- **Get File Initialization Concepts**
    - Prevent false positives in multiple release detection
        - Case:
            - RELFC … MRD files record with special record ID
            - PDU / Recoup returns file address
            - GETFC
            - RELFC … record has not been filed
                - MRD retrieves record and takes error because record has MRD record ID

Multiple Release Detection

- **Get File Initialization Concepts continued**
  - At GETFC time, record is filed with special record ID
    - Case:
      - RELFC … MRD files record with special record ID
      - PDU / Recoup returns file address
      - GETFC
        - File record with special record ID
      - RELFC … record has not been filed
        - MRD retrieves record; puts diagnostic data into record; continues with RELFC
  - Intended to be used when MRD is active
  - Controls
    - Enable / disable by processor, long term pool type, and record ID.
    - Auto shutdown can be used.

Multiple Release Detection

- **Record ID Validation Concepts**

  - New option on RELFC macro to give the record ID that this record should have

    - In order to use option must update programs that do RELFC

  - Record will be found

    - If ID in record matches the ID supplied on macro, proceed with RELFC

    - If ID is different, take a SERRC with exit.

      - SERRC provides best possible diagnostic data

        - ECB trace

        - Other core blocks held by the ECB … may contain record which has reference to this file address.

  - Controls

    - Enable / disable by processor, pool type, and record ID

Norm State Time Change Concepts

Norm State Time Change

- **What problem is being addressed?**
  - Apply time adjustments for daylight saving time (also known as summer time) without requiring a TPF outage.

Norm State Time Change

- **New Concepts**
  - Daylight savings time (DST) offset
    - Number of minutes to add to clock when DST is active
    - Most countries use offset of 60 minutes
  - Indicator to say whether DST offset is active
    - Ability to manually set indicator
    - Ability to automatically set indicator
      - Time / Date when DST is active
      - Time / Date when DST is not active

Norm State Time Change

- **Concepts of TPF Clock handling**

	Today	Norm State Time Change
Restart	**Set TOD clock**	**Set TOD clock**
TOD	**Always increasing; based on GMT**	**Always increasing; based on GMT**
Cycle up	**Set TPF clock and calendar using TOD, time zone offset, and leap seconds**	**Set TPF clock and calendar using TOD, time zone offset, leap seconds, and DST offset**
Cross a second	**Add one to seconds**	**Add one to seconds**
Cross a minute	**Increment TPF clock and update calendar if crossing a day**	**Set TPF clock and calendar using TOD, time zone offset, leap seconds, and DST offset**

z/TPF SIP Challenge

z/TPF SIP Challenge

- **How often do you run SIP Stage 1 in TPF 4.1?**

  - Assume at most once for every PUT and may only run stage 1 to determine changes to keypoints

    - Manually apply changes to keypoints

  - If correct, why don't you run it more frequently?

    - Hard to run?

    - Hard to get outputs?

    - Fixed dataset names?

z/TPF SIP Challenge

- **In z/TPF consider re-thinking how often SIP Stage 1 is run**
  - When you need to change a keypoint, run SIP Stage 1
  - When you need to change a SYSTC, run SIP Stage 1
  - Having separate SIP decks for each system
    - Production
    - Test
- **SIP Stage 1 is now run on Linux**
  - Bldtpf -sip
  - Directory based; datasets not used
  - Have unique root
    - Each system – Production / Test
    - Each run – can run SIP for individual change request

Other Topics

- **CONFIG macro BPCRLOAD**

  - Bypass core resident program load in restart

  - Recommendation

    - BPCRLOAD=YES in test systems, primarily under VM
    - BPCRLOAD=NO in production

- **System Heap**

  - 4K units vs 1MB units

    - RSYSC of 4K units does not return 1 meg frames to system
    - RSYSC of 1MB units does return 1 meg frames to system

  - Preallocated 64-bit System heap

    - If you expect to use a known amount of 64-bit System heap, use preallocation rather than 1 meg frames.
    - CORREQ SHA defines preallocated System heap.

Questions ?

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