TPF Users Group - Spring 2009

Title: Software Profiler Enhancements

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Software Profiler Overview

- **Five collection types:**
  - External Interrupt (EI) – samples PSW on floating interrupt.
  - Entry Analysis (EA) – tracks an ECB, logging all functions and macros issued
  - Resource Consumption (RC) – logs statistics for ECBs (FINDs/FILEs/etc…)
  - Macro Analysis (MA) – samples the macros called for the entire system
  - Page Reference (PR) – counts the approximate number of reference to a specific memory range.

- **Command:**
  - ZTRAP – online command
  - TRAP – offline post-processing program.

Software Profiler Enhancements

- **Continuous collections**

  - Ability to start collecting EI, MA, & RC data with no specified end time

  - To start for EI use ZTRAP EI STOP-0

  - To stop use ZTRAP STOP-EI

  - On cycle down to 1052 state, collections are stopped

  - On cycle up to Norm state, collections are resumed

  - Active collections re-started after IPL

- **OWNERS support for MA**

  - Ability to collect MA data from ECBs with a specific owner name

Software Profiler Enhancements cont…

- **Concurrent collections**
  - Collections of different types can be run concurrently
    - Ex: Continuous RC and MA can be run at the same time
    - Ex. Non-continuous EI and MA
  - Continuous and non-continuous collections can be mixed
    - Ex: Continuous EI and non-continuous MA
  - Concurrent collection of the same type are NOT permitted.
    - Ex. Continuous EI and non-continuous EI

ZTRAP Command Changes

- **Starting a continuous run: Use stop-0**
  - ZTRAP EI STOP-0

- **Stopping a specific collection:**
  - ZTRAP STOP-EI

- **Stopping all collections (default):**
  - ZTRAP STOP

- **Output of continuous collection must go to RTA**

- **Output of non-continuous collection can go to a file in the file system (no change)**

Cycle Up/Down

- **New message in cycle up to indicate a collection was restarted:**

  ```
  TRAP102I CONTINUOUS PROFILER COLLECTION STARTED FOR EI
  ```

- **Continuous collections are not lethal utilities**

- **Non-continuous collections are still lethal utilities**

ZTRAP Online Display

- ## Expanded status display:

```
AES0008I 00 ==> ztrap csr
TRAP0100I 23.29.38 TRAP STATUS REPORT
PACKAGE: MA
  STARTED: 13.JAN.2009 23.24.55 _
  TYPE: CONTINUOUS
  ITEMS COLLECTED: 35429
  MAX ITEM: 0
  START COMMAND:  MA STOP-0 OWNER-IECB
```

Collection start date & time
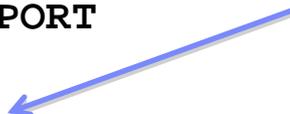
Notice the start command is now included
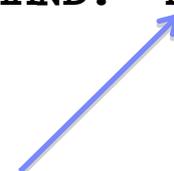
ZTRAP Online Display Cont…

Report when multiple collections are active

```
AES0008I 00 ==> ztrap csr
TRAP0100I 23.29.38 TRAP STATUS REPORT
PACKAGE: EI
  STARTED: 13.JAN.2009 23.29.27
  Type: NON-CONTINUOUS
  ITEMS COLLECTED: 29
  MAX ITEM: 0
  STATUS: 49 SECONDS REMAINING
  START COMMAND:  EI STOP-1
PACKAGE: MA
  STARTED: 13.JAN.2009 23.24.55 _
  TYPE: CONTINUOUS
  ITEMS COLLECTED: 35429
  MAX ITEM: 0
  START COMMAND:  MA STOP-0 OWNER-IECB
PACKAGE: RC
  STARTED: 13.JAN.2009 23.29.34
  Type: NON-CONTINUOUS
  ITEMS COLLECTED: 26
  MAX ITEM: 0
  STATUS: 56 SECONDS REMAINING
  START COMMAND:  RC STOP-1
END OF MESSAGE+
```

Software Profiler Postprocessor Changes

- **New OPTIONS card for JCL**

  ```
  CONT START ddmmmyy.hhmmss END ddmmmyy.hhmmss
  ```

  ```
  EX:
    //OPTIONS DD *
    RUN TYPE EI
    CUTOFF 0
    DETAILISTREAM COMP
    LINK YES
    CONT  START 01JAN01.000000 END 31DEC09.235959
  ```

Will process every record found of the specified collection (continuous or not).

Software Profiler Postprocessor: Continuous Mode

- **Ex 3 runs**

  ```
  ==> ZTRAP MA STOP-0

  ==> ZTRAP STOP-MA

  ==> ZTRAP MA STOP-1 OWNER-TRANSECB.INCOMING

  ==> ZTRAP MA STOP-0
  ```

- **Offline option:**

  ```
  CONT START 01JAN01.000000 END 31DEC09.235959
  ```

- **Data from all three runs will be shown in the report**

Software Profiler Postprocessor: Continuous Mode

- **Offline processing will not post process all records in the requested time range if a configuration change is detected:**
  - CP:
    - Number of CSECT changes
    - Size of any CSECT changes
  - Active SS/SSU changes
- **Offline NOT backwards compatible**
  - Old data cannot be post-processed by new offline code.
    - Affects both profiler and trace log data.

Software Profiler APARS

- **PJ34480**
  - Offline code
  - Software profiler CP segment

- **PJ35019**
  - Software profiler RT segments

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