IBM Education Assistance for z/OS V2R1

Item: TOD Accuracy Monitor
Element/Component: BCP Timer Supervisor

Material is current as of June 2013

Agenda

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Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.

Presentation Objectives

- Provide a TOD clock service which can be used to maintain the TOD clock within a specified time deviation from a standard time source.
  - Monitor activated only if a non-zero ACCURACY value is specified and the CEC is an STP-only CTN using one of the following External Time Sources:
    - Dial-out service on the HMC
    - A Network Time Protocol (NTP) server
    - A NTP server with a pulse per second output option

- Note: The ACCURACY value specified is with respect to the ETS time, which may deviate from Universal Coordinated Time (UTC) by a small amount. See section 2.3 of Server Time Protocol Planning Guide Redbook, SG24-7280, for additional details of the ETS accuracies.

CLOCKXX syntax

```
OPERATOR   NOPROMPT
TIMEZONE   W.00.00.00
ETRMODE        YES|NO
ETRZONE    YES|NO
ETRDELTA       xx
SIMETRID   xx
STRMODE        YES|NO
STPZONE    YES|NO
TIMEDELTA      xx
ACCURACY       nn
```

Where nn is 0 to 60,000 milliseconds

CLOCK00 (IBM DEFAULTS)

```
OPERATOR   NOPROMPT
TIMEZONE   W.00.00.//00
ETRMODE        YES
ETRZONE    YES
STRMODE        YES
STPZONE    YES
TIMEDELTA      10
ACCURACY       0
```

Messages

IEA036ITHE TOD CLOCK ACCURACY MONITOR IS NOT ACTIVE.

IEA034ITHE TOD CLOCK ACCURACY MONITOR IS ACTIVE.

IEA032ITOD CLOCK ACCURACY LIMITS MAY HAVE BEEN EXCEEDED.

IEA033ITHE TOD CLOCK IS NOW WITHIN SPECIFIED ACCURACY BOUNDS.

Overview

- Problem Statement / Need Addressed
  - A way is needed to monitor the accuracy of the TOD clock within installation defined limits.
- Solution
  - TOD clock Accuracy Monitor service
- Benefit / Value
  - Notifies the z/OS operation staff whenever the TOD clock differs from the ETS time by more than the specified limits.

Usage & Invocation

- The TOD Accuracy Monitor is enabled by a non-zero ACCURACY statement of the CLOCKxx Parmlib member. It is disabled by default.

- If the ACCURACY value is zero IEA036I 'THE TOD CLOCK ACCURACY MONITOR IS NOT ACTIVE' is issued at IPL.

- If the ACCURACY value is non-zero and the system requirements are not met IEA036I 'THE TOD CLOCK ACCURACY MONITOR IS NOT ACTIVE' is issued at IPL.

- If the ACCURACY value is non-zero and the system requirements are met IEA034I 'THE TOD CLOCK ACCURACY MONITOR IS ACTIVE' is issued at IPL.

Usage & Invocation

- If the TOD clock exceeds +/- the ACCURACY value, message IEA032E 'TOD CLOCK ACCURACY LIMITS MAY HAVE BEEN EXCEEDED' is issued and then re-issued every 30 minutes until the condition is corrected. Possible corrective actions are:
  - Allow the system to correct the time difference on its own. Note: This may take up to 7 hours per second of deviation to correct.
  - Follow your installation's clock synchronization process. Note: This may cause outages of the partitions on all the affected CEC(s).
  - Shut down the CTN, deconfigure it, and then use the Set or Adjust the Time panel on the Hardware Management Console (HMC) to correct the time on the CEC. Next, reconfigure the CTN, and then re-IPL the partitions.

Usage & Invocation

- If the TOD clock exceeds +/- the ACCURACY value, but drifts back or is corrected to be within the specified tolerance range, message IEA033I 'THE TOD CLOCK IS NOW WITHIN SPECIFIED ACCURACY BOUNDS' is issued.

Interactions & Dependencies

- Software Dependencies
  - Requires an active STP-only CTN using one of the required External Time Sources.
- Hardware Dependencies
  - None
- Exploiters
  - None

Migration & Coexistence Considerations

- Toleration APAR OA37967
  - Allows CLOCKxx members specifying ACCURACY to be used on prior z/OS releases.

Installation

- Provide a non-zero ACCURACY value in CLOCKxx to enable the TOD Clock Accuracy Monitor

Presentation Summary

- z/OS V2R1 provides a TOD clock service which can be used to maintain the TOD clock within an installation defined time deviation from a standard time source.

Appendix

- z/OS V2R1.0 MVS Planning Operations SA22-7601, pp 165-166.
- z/OS V2R1.0 MVS Initialization and Tuning Reference SA22-7592, pp189-191.
- z/OS V2R1.0 MVS System Messages, Vol 6 (GOS-IEA), SA22-7636, pp554-556