IBM Education Assistance for z/OS V2R1

Item: Supervisor Miscellany
Element/Component: BCP Supervisor

Material is current as of March 2013

Agenda

- Trademarks
- Presentation Objectives
- Overview
- Usage & Invocation
- Appendix

Trademarks

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

Presentation Objectives

Describe miscellaneous Supervisor changes with respect to

- A more complete facility list (ECVTFACL)
- Tracing of Disabled Interrupt Exits (DIEs)
- An Entry Table can have up to 256 Entry Table Entries
- Support for clock values in the 2nd Epoch (up to 2185)
- Reserve SVC entries for future use while maintaining abend upon use

Overview

- Problems
  - The “Facilities List” (FIceFacilitiesList) has room for only 128 facilities but there may be more facilities than that
  - Disabled Interrupt Exits (and their CPU time) are not traced, so it can be difficult to diagnose performance problems or other errors that arise due to misbehaving DIEs
  - Applications are running up against the z/OS limit of 128 entry table entries in an entry table
  - Clock conversion routines need to handle “reasonable” dates in the future (which extend beyond the first epoch)
  - When an SVC entry is reserved (even if not to be used yet), a routine must be provided and the system will no longer issue its normal abend for an “undefined” SVC

Overview

- Solutions
  - Provide a larger, and extendable, facilities list
  - Trace DIE exit
  - Allow the architectural limit of 256 ETEs
  - STCKSYNC and CONVTOD will handle dates up to the end of the 2nd epoch (June, 2185)
  - IEASVCxx may reserve an SVC while preserving the normal abend for an undefined SVC
- Benefits
  - As you would expect

Usage & Invocation (More complete facilities list)

- The facilities list is obtained by the STFLE instruction. As a convenience, z/OS captures this during IPL to make it easily accessed by programs.
- A new area, pointed to by new field ECVTFACL, is provided that can be used whenever running on z/OS 2.1 or later to access the entire facility list. The current area will continue to hold the first 128 facilty bits.
- The area is mapped by (new) macro IHAFACL and consists of a header followed by the list.

Usage & Invocation (Tracing of DIEs)

- Exit from a timer Disabled Interrupt Exit (DIE) is traced within the system trace. Data traced includes
  - Exit address
  - CPU time spent in the exit
- Tracing of DIE entry is not done primarily because it provides no particular additional information than would already be in the system trace. Writing unnecessary trace records is wasteful.

Usage & Invocation (256 ETEs)

- The ETDEF macro will support the architected limit of 256 Entry Table Entries in an Entry Table

Usage & Invocation (Times in 2nd Epoch)

- The CONVTOD and STCKCONV services will support values up to the end of the 2nd epoch (June, 2185, or a STCKE value with less than x'02' in the first byte). The 1st epoch ends in September 2042.
- A value beyond the end of the 2nd epoch will be rejected
- Somehow programs are already accommodating this situation even though expiration date (and other) processing can certainly land you with a date beyond the 1st epoch. Note that architecturally in current machines, the clock is not allowed to extend into the 2nd epoch and STCKCONV requires a valid clock value. That is in the process of being addressed

Usage & Invocation (Reserve SVC entries)

- The SVC interrupt handler issues a Fxx abend if SVC xx is issued when SVC xx is not defined. If a customer wishes to reserve an SVC for future use but not yet define the SVC routine, it can now do so, while still preserving that characteristic.
- A reserved entry is typically determined by programs as having the address set by z/OS for undefined SVCs: the address of IGCERROR within the nucleus.
- The customer now may define in IEASVCxx an entry using the name IGCERROR. That indicates to z/OS that even though it is “defined” it still should get the abend Fxx upon use.
- The address for such a case will not be set to IGCERROR, so that existing programs will think that the entry is not available to them.

Appendix

- Publications:
  - MVS Initialization and Tuning Reference (LOADxx) SA23-1380-00
  - MVS Assembler Services Reference (SYSSTATE) SA23-1370-00