z/OS 3.1 IBM Education Assistant

Solution Name: New Services/Capabilities for 31/64-bit Interoperability environment

Solution Element(s): Language Environment

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Agenda

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Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.
- Additional Trademarks:
  - None

Objectives

- Describe the New LE Services/Capabilities for 31/64-bit Interoperability environment for z/OS 3.1.

Overview

- Who

  z/OS application programmers who want to integrate their AMODE 31 and AMODE 64 programs within one application

- What
  - New 31bit callable service CEEMICT() and 64bit callable service __le_ceemict()
  - New DLL delete flag in CEL4RO31 and CEL4RO64 callable services
- Wow
  - Allow application programmer to share a Db2 connection in the Java Interlanguage Batch environment using RRSAF
  - Allow application programmer to delete target DLL of the other AMODE, to reduce memory usage of 31/64-bit interoperating applications.

Usage & Invocation 1/2

- **Db2 connection sharing and interoperability state management**

CEEMICT(function_code , MICT_ptr, fc)

__le_ceemict(function_code,MICT_ptr,fc)

Function code: QUERY/SET/UNSET to manage an interoperability state bit in stat_flag

MICT_ptr: a pointer to struct MICT_CB

```
typedef struct MICT_CB{
  unsigned int state_flag;
  void* state_ptr;
} MICT_CB;
```

State_flag: Bit 0 (Leftmost bit): Current TCB is sharing a Db2 connection in the Java Interlanguage Batch environment using RRSAF.

state_ptr: output pointer containing the address of SW3164 when function code is QUERY

Usage & Invocation 2/2

- **DLL Delete support**

Structures RO64_CB/ RO31_CB, which are parameters of CEL4RO64 and CEL4RO31, are updated for DLL delete support

Field name (input)	Field description
Version (input)	A fullword integer which contains the version of RO64_INFO.
Length (input)	A fullword integer which contains the total length of RO64_INFO.
Flags (input)	A fullword field which contains flags for functions to be performed Byte 1: •Bit0: dll load flag •Bit1: dll query flag •Bit2: function execution flag •Bit3: dll delete flag •Bit4-7: reserved Byte 2 - Byte 4: reserved All reserve flags must be zero.
…	…
Retcode (output)	A fullword integer which contains the return code 0 – Successful 1 – CEL4RO64 invoked from a multi-thread environment 2 - Storage issue in CEL4RO64 3 - Failed to prepare AMODE 64 Language Environment environment 4 - Failed to load target DLL 5 - Failed to query target function 6 - Failed to execute target function 7 - Failed to delete target DLL

Interactions & Dependencies

- Software Dependencies
  - None
- Hardware Dependencies
  - None
- Exploiters
  - COBOL runtime
  - JVM
  - PL/I runtime

Upgrade & Coexistence Considerations

- To exploit this solution, all systems in the Plex must be at the new z/OS level: No
- No upgrade/coexistence concerns
- No toleration/coexistence APARs/PTFs

Installation & Configuration

- No unique considerations

Summary

- New LE functionality for 31/64-bit interoperability support
  - New 31bit callable service CEEMICT() and 64bit callable service __le_ceemict()
  - New DLL delete flag in CEL4RO31 and CEL4RO64 callable services

Appendix

- z/OS Language Environment Vendor Interfaces