z/OS 3.1 IBM Education Assistant

Solution Name: Custom Fields in ACEE

Solution Element(s): RACF

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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

- Understand the new function
  - New ACEE keyword in CFDEF segment
  - R_GetInfo API to retrieve info

Overview

- Who (Audience)
  - IMS/CICS (and other) application designers
  - IBM Software Migration Project Office
- What (Solution)
  - Ability to retrieve selective USER Custom Field values in memory from a problem state program
- Wow (Benefit / Value, Need Addressed)
  - Enable business logic in IMS/CICS transactions
  - Remove migration barrier

Overview ...

- The new ACEE(YES|NO) keyword in the CFDEF segment of CFIELD class profiles identifies fields that should be anchored in the ACEE

- The IRRDPI00 UPDATE command reads CFIELD-class information into common storage and maintains this attribute (no external changes)

- RACROUTE REQUEST=VERIFY,ENVIR=CREATE extracts CSDATA info from the USER profile and anchors the ACEE(YES) fields in the ACEE extension (no external changes)

- The existing R_GetInfo callable service (IRRSGI00) provides a new function code 3 by which to obtain the data, from problem- or supervisor-state programs

Usage & Invocation – Defining the field

- New CFDEF segment keyword to designate a USER field to be anchored in ACEE. E.G.:

```
RDEFINE CFIELD USER.CSDATA.EMPSER UACC(NONE)
    CFDEF(TYPE(NUM) FIRST(NUMERIC) OTHER(NUMERIC)
    MAXLENGTH(8) MINVALUE(100000) MAXVALUE(99999999)
    ACEE(YES)
    HELP('EMPLOYEE SERIAL NUMBER, 6 - 8 DIGITS')
    LISTHEAD('EMPLOYEE SERIAL='))
```

- Activate changes:

```
ALLOCATE FILE(SYSUT1) DATASET('SYS1.SAMPLIB(IRRDPSDS)') SHR
IRRDPI00 UPDATE
FREE FILE(SYSUT1)
```

Usage & Invocation – Defining the field ...

- New CFDEF segment keyword to designate a USER field to be anchored in ACEE. E.G.:

- ACEE(YES) only applies to user-related fields
  - USER.CSDATA.MYFIELD
  - If you try to specify ACEE(YES) for a different profile type, you will get the existing catch-all error message with a new error-description insert:
    - IRR52216I An error was detected in the definition of custom field profile-name. error-description
  - For example:
    - ```
      IRR52216I An error was detected in the definition of
      custom field GROUP.CSDATA.MYFIELD. ACEE(YES) is only
      valid for USER profile fields.
      ```

Usage & Invocation – RACROUTE REQUEST=VERIFY

- ## There are no changes required for issuers of RACROUTE REQUEST=VERIFY

- ## However, some points of note:

    - The extra USER profile CSDATA segment I/O is only performed if at least one field has been defined (and activated) with ACEE(YES). This is true even if the field has not been assigned to this user (or to any user at all).

    - The CSDATA for ACEE(YES) fields is saved in fetch-protected storage and anchored in the undocumented ACEE extension

    - The CSDATA for ACEE(YES) fields is preserved in ENVR Objects created from that ACEE, and reinstated in an ACEE created from that ENVR Object

    - A user's ACEE VLF object is deleted when its CSDATA segment is updated, if at least one field has been defined (and activated) with ACEE(YES)*

    - This data is not passed into VERIFY exits, but the post-exit (ICHRIX02 can call R_GetInfo to retrieve it. The exit receives the new ACEE's address. The ACEE indicates if there is CSDATA.

Usage & Invocation … R_Getinfo

R_GetInfo (IRRSGI00) is updated with new function code 3 and two new optional parameters

CALL IRRSGI00 (Work_area,
ALET, SAF_return_code,
ALET, RACF_return_code,
ALET, RACF_reason_code,
Num_parms,   ← Must be 15 for function code X'0003'
Parm_ALET,   ← Must be 0
Function_code,   ← New value: X'0003' – Retrieve CSDATA information from ACEE
Option,   ← Can request single field, all fields, and authorization enforced for client
RACF_entity,   ← N/A
RACF_class,   ← N/A
Result_entries,   ← Format already function-specific. New format(s) for function code 3
CSDATA_keyword_name,   ← **New:** If only one field desired, specify its name here
ACEE_ptr   ← **New:** ACEE address from which to obtain data (also used for authorization).
                                              Available only to supervisor-state callers.

)

Usage & Invocation … R_GetInfo …

- R_GetInfo can be called from a problem-state caller
  - Profiles in the FIELD class determine if the identity of the caller (or of the passed ACEE) is authorized to retrieve info
    - If you can see it on a LISTUSER command, you can get it from R_GetInfo.
  - There is no FACILITY resource protecting the service
- FIELD authority not checked by default from supervisor state callers, but it may be requested

Usage & Invocation … R_Admin

- Standard update/extract support for general resource CFDEF segment ACEE field

CFDEF segment fields						
Field name	SAF field name	Flag byte values	RDEFINE/RALTER keyword reference	Allowed on add requests	Allowed on alter requests	Returned on extract requests
CFACEE	n/a	'Y'	CFDEF(ACEE(YES))	Yes	Yes	Yes
		'N'	CFDEF(ACEE(NO))	No	Yes	

Usage & Invocation … Database Unload (IRRDBU00)

- The general resource CFDEF record (05E0 - GENR_CFDEF_DATA) is updated.

Field Name	Type	Start	End	Comments
GRCFDEF_RECORD_TYPE	Int	1	4	Record type of the General Resources CFDEF data record (05E0).
…				
GRCFDEF_ACEE	Yes/No	629	632	For USER profile fields, is this field to be made available in an ACEE created for the user?

Usage & Invocation … Miscellaneous

- Standard command keyword stuff:

  - New database template field for CFDEF segment

  - ISPF general resource add/change CFDEF segment panels

- SAF trace support for new R_GetInfo parameters

Interactions & Dependencies

- Software Dependencies
  - None

- Hardware Dependencies
  - None

- Exploiters
  - CICS, IMS (?)

Upgrade & Coexistence Considerations

- To exploit this solution, all systems in the Plex must be at the new z/OS level: No

- No other considerations

Installation & Configuration

- n/a

Summary

- The new ACEE(YES|NO) keyword identifies fields that should be anchored in the ACEE

- The IRRDPI00 UPDATE command reads CFIELD-class information into common storage (no external changes)

- RACROUTE REQUEST=VERIFY,ENVIR=CREATE extracts CSDATA info from the USER profile and anchors it in ACEE extension (no external changes)

- The existing R_GetInfo callable service (IRRSGI00) provides a new function code by which to obtain the data

Appendix

- Publications
    - z/OS Security Server RACF Callable Services
        - R_Admin, R_GetInfo
    - z/OS Security Server RACF Command Language Reference
        - RDEFINE, RALTER
    - z/OS Security Server RACF Macros and Interfaces
        - DB Unload table
    - z/OS Security Server RACF Messages and Codes
        - New message for ACEE(YES|NO) not applying to non-USER fields
    - z/OS Security Server RACF Security Administrator's Guide
        - Custom field chapter describes new support
        - Chapter on securing callable services has R_GetInfo update