

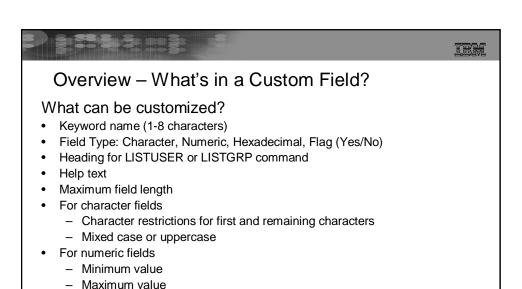
RACROUTE REQUEST=EXTRACTICHEINTY

LDAP SDBMR_admin

RACF: Custom Fields
© 2008 IBM Corporation

Page 5

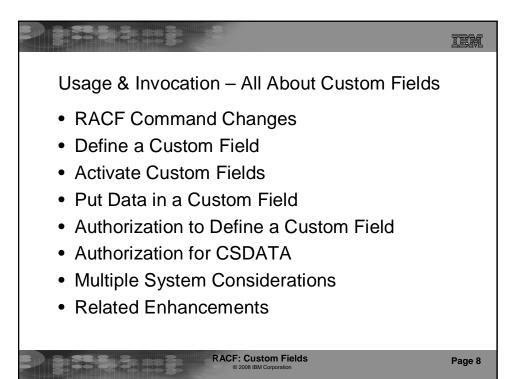
TEM Custom Fields – Preview of the Results List the Custom Fields in a USER profile -LISTUSER ANDREW CSDATA NORACF USER=ANDREW **CSDATA INFORMATION** EMPLOYEE SERIAL NUMBER = 256400 HOME ADDRESS = 14 Main Street, Anywhere, IN 01234 List the Custom Fields in a GROUP profile -LISTGRP TELLER CSDATA NORACF **GROUP=TELLER CSDATA INFORMATION** DEPARTMENT NUMBER = D09A40 MANAGER NAME = Jay Smith **RACF: Custom Fields** Page 6



RACF: Custom Fields

Other field customization can be performed in a field validation exit (IRRVAF01) which is under the control of the MVS dynamic exit facility

Control format or content of a field





- · CFIELD class
 - Profile name defines the keyword name
 - USER.CSDATA.HOMEADDR
 - GROUP.CSDATA.DEPTNUM

CFIELD profile format: profile-type.CSDATA.keyword-name

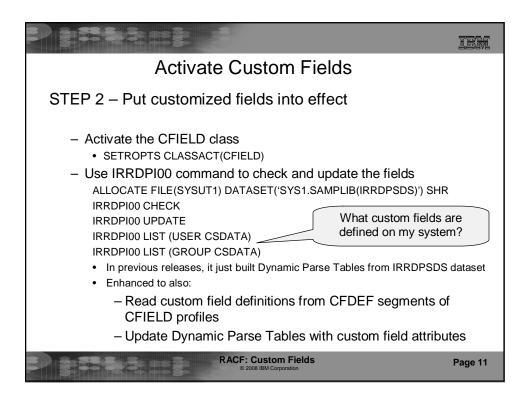
- CFDEF (Custom Field DEFinition) segment for CFIELD class profiles
 - Keyword is on RDEFINE, RALTER, RLIST commands
 - Sub-operands define the custom field attributes
 - RDEFINE CFIELD USER.CSDATA.HOMEADDR CFDEF (TYPE(CHAR) MAXLENGTH(100) FIRST(ANY) OTHER(ANY) MIXED(YES))
- CSDATA (CuStom DATA) segment for USER and GROUP profiles
 - Keyword is on ADDUSER, ALTUSER, LISTUSER, ADDGROUP ALTGROUP, LISTGRP commands
 - Sub-operands are YOUR custom fields!
 - ALTUSER ANDREW CSDATA (HOMEADDR ('13 Lucky Lane, Anywhere, IL 12345'))

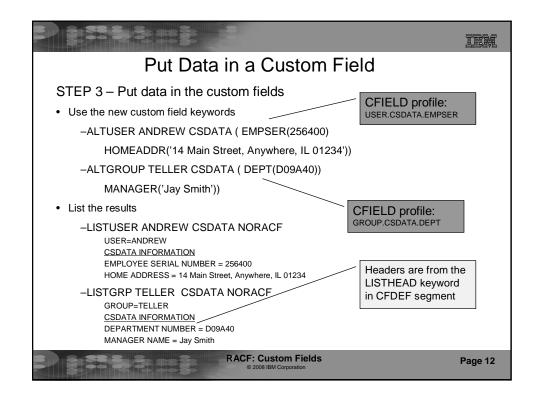
RACF: Custom Fields
© 2008 IBM Corporation

Page 9

TEM

TEM Define a Custom Field STEP 1 - Define custom field attributes with CFDEF segment in CFIELD profiles Define a numeric field as an employee serial number RDEFINE CFIELD USER.CSDATA.EMPSER UACC(NONE) CFDEF (TYPE (NUM) CFIELD profile format: MAXLENGTH (8) profile-type.segment-name.keyword-name FIRST(NUMERIC) OTHER(NUMERIC) HELP('EMPLOYEE SERIAL NUMBER, 6-8 DIGITS') MINVALUE(100000) MAXVALUE (99999999) LISTHEAD('EMPLOYEE SERIAL =')) Define a character field as a department number RDEFINE CFIELD GROUP.CSDATA.DEPT UACC(NONE) CFDEF (TYPE (CHAR) MAXLENGTH(10) FIRST(ALPHANUM) OTHER(ALPHANUM) MIXED(NO) LISTHEAD('DEPARTMENT NUMBER = ')) **RACF: Custom Fields** Page 10







Authorization to Define a Custom Field

STEP 4 (Optional) – Authorize certain users or groups to view and define custom field definitions and attributes

- For commands, FIELD profiles CFIELD.CFDEF.templatefield are used to control who can specify CFDEF fields on a CFIELD profile definition
 - READ access allows a user to view a CFDEF field in CFIELD profile
 - UPDATE access allows a user to view and update a CFDEF field in a CFIELD profile
- Examples
 - Allow all users to view custom field definitions RDEFINE FIELD CFIELD.CFDEF.* UACC(READ) SETROPTS RACLIST(FIELD) REFRESH
 - Allow USERADM to define and alter custom field definitions
 ALTUSER USERADM CLAUTH(CFIELD)
 PERMIT CFIELD.CFDEF.* CLASS(FIELD) ID(USERADM)
 ACCESS(UPDATE)
 SETROPTS RACLIST(FIELD) REFRESH

RACF: Custom Fields

Page 13

Standard FIELD

class authorization

TEM

Authorization for CSDATA

'Almost' standard FIELD class authorization

STEP 5 (Optional) – Authorize certain users or groups to update the data in the custom field

- For commands, FIELD profile profile-type.CSDATA.keyword will be used to control field level access checking for the custom field
 - READ access allows a user to view a CSDATA field in each USER or GROUP profile
 - UPDATE access allows a user to view and update a CSDATA field in each USER or GROUP profile
 - &RACUID can be on the access list to allow a user to access CSDATA fields in his/her own USER profile (not applicable to GROUP profiles)

RACF: Custom Fields



Authorization for CSDATA...

STEP 5 continued...(Optional) – Authorize certain users or groups to update the data in the custom field

Examples

 Allow all users to view and update their own ADDR1, ADDR2, ADDR3 custom fields

RDEFINE FIELD USER.CSDATA.ADDR* UACC(NONE)
PERMIT USER.CSDATA.ADDR* CLASS(FIELD) ID(&RACUID)
ACCESS(UPDATE)

- Allow the HR group to view and update each user's EMPSER custom fields RDEFINE FIELD USER.CSDATA.EMPSER UACC(NONE)
 PERMIT USER.CSDATA.EMPSER CLASS(FIELD) ID(HR) ACCESS(UPDATE)
- Allow the HR group to view and update each group's DEPT custom field RDEFINE FIELD GROUP.CSDATA.DEPT UACC(NONE)
 PERMIT GROUP.CSDATA.DEPT CLASS(FIELD) ID(HR) ACCESS(UPDATE)

RACF: Custom Fields
© 2008 IBM Corporation

Page 15



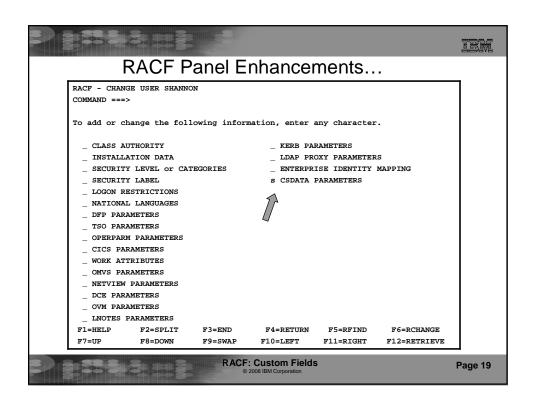
RACF Panel Enhancements

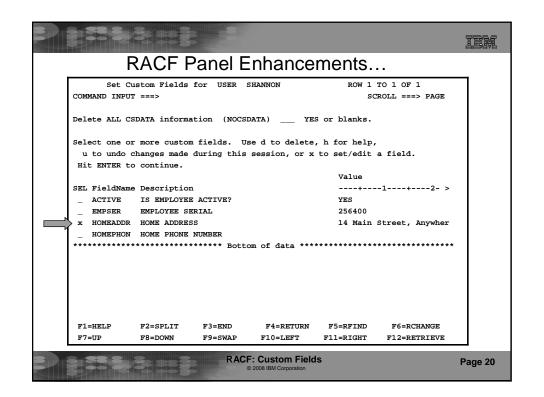
- Handle CFDEF segment on RDEFINE/RALTER/RLIST
 - Panels show the default values for each custom field type
 - RALTER panels show existing values and allow you to overtype and change the values
- Handle CSDATA segment on ADDUSER/ALTUSER/LISTUSER
 - Field names are primed from existing CFIELD profiles and can be updated by typing over the existing value
- Handle CSDATA segment on ADDGROUP/ALTGROUP/LISTGRP
 - Field names are primed from existing CFIELD profiles and can be updated by typing over the existing value

RACF: Custom Fields

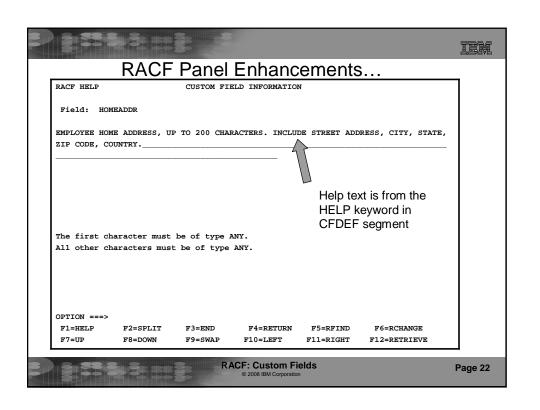
338	BEE					
RACF Panel Enhancements						
RACF - USER PROFILE SERVICES ENTER REQUIRED FIELD						
SELECT ONE OF THE FOLLOWING:						
1	ADD	Add a user p	profile			
2	CHANGE	Change a use	er profile			
3	DELETE	Delete a use	er profile			
4	PASSWORD	Change your	own password	and related	information	
5	AUDIT	Monitor use	r activity (Au	ditors only)		
D or 8 S or 9	DISPLAY SEARCH	Display profile contents Search the RACF data base for profiles				
ENTER THE FOLLOWING INFORMATION: USER ===> SHANNON Userid						
OPTION ===> F1=HELP	F2=SPLIT	F3=END	F4=RETURN	F5=RFIND	F6=RCHANGE	
F7=UP	F8=DOWN	F9=SWAP	F10=LEFT	F11=RIGHT	F12=RETRIEVE	
			F: Custom Field 2008 IBM Corporation	ds		Page 17

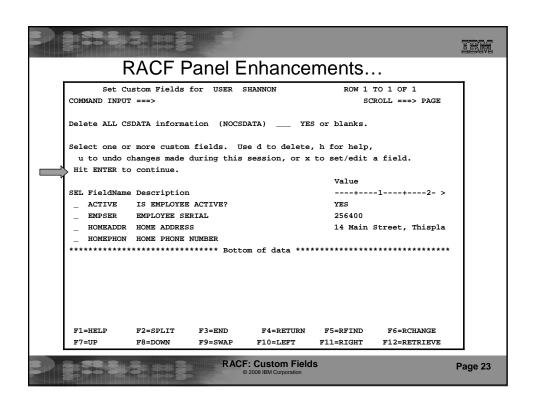
RACF Panel Enhancements						
RACF - CHANGE USER SHANNON	7					
OWNER Userid or group name USER NAME DEFAULT GROUP Group name						
Change PASSWORD related information s Add or Change OPTIONAL information						
s Add or Change Official Information						
TO ASSIGN A USER ATTRIBUTE, ENTER YES, TO CANCEL, ENTER NO						
GROUP ACCESS SPECIAL ADSP OPERATIONS OIDCARD AUDITOR NO-PASSWORD RESTRICTED						
CHANGE OR DELETE THE MODEL PROFILE USED FOR USER DATA SETS (OPTIONAL):						
NEW MODEL DELETE YES if no model is to be used COMMAND ===>						
F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE						
RACF: Custom Fields © 2008 IBM Corporation	Page 18					

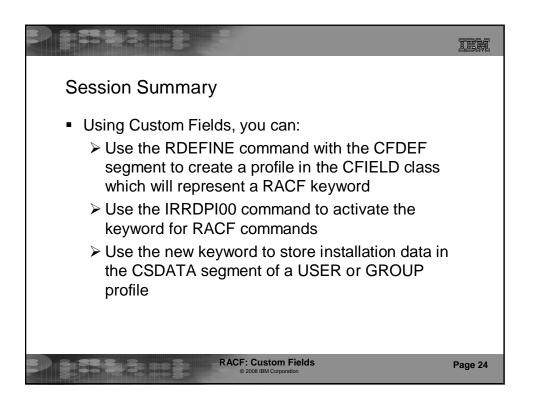


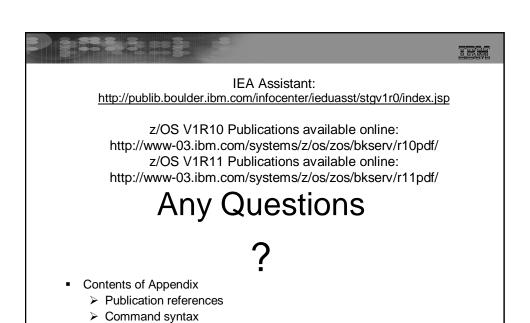


RACF Panel Enhancements								
	RACF - CUSTOM KEYWORD DATA for SHANNON							
	COMMAND ===> SCROLL ===> PAGE							
	Field Name: HOMEADDR							
	Description: HOME ADDRESS							
	14 Main Street, Thisplace, CA, 12345, USA							
	Can overtype in this field							
	(Enter changes. Hit ENTER to save, PF3 to CANCEL) F1=HELP F2=SPLIT F3=END F4=RETURN F5=RFIND F6=RCHANGE F7=UP F8=DOWN F9=SWAP F10=LEFT F11=RIGHT F12=RETRIEVE							
	RACF: Custom Fields © 2008 IBM Corporation	Page 21						









RACF: Custom Fields
© 2008 IBM Corporation

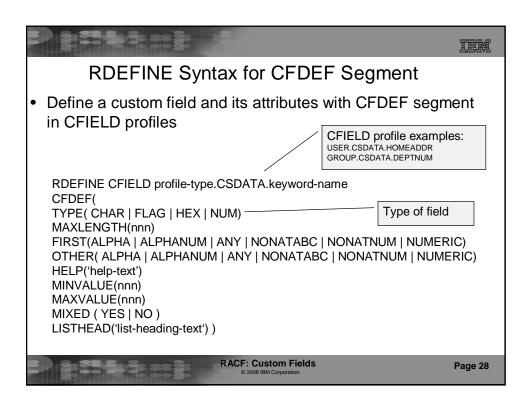
Format of custom fields in the RACF database

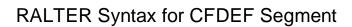
> FAQs

Page 25

tem **Appendix** Publications fSA22-7683 Security Server RACF Security Administrator's Guide f Entire chapter on "Defining and using custom fields" f SA22-7687 Security Server RACF Command Language Reference f RDEFINE, RALTER, RLIST commands – CFDEF segment and keywords f ADDUSER, ADDGROUP, ALTUSER, ALTGROUP, LISTUSER, LISTGRP commands - CSDATA segment and keywords fSA22-7681 Security Server RACF System Programmer's Guide f Custom field validation exit IRRVAF01 fGA22-7689 Security Server RACF Callable Services fR_admin updates for CFDEF and CSDATA segments f SA22-7683 Security Server RACF Macros and Interfaces FRACF Database unload (IRRDBU00) updates for CFDEF and CSDATA segments **RACF: Custom Fields** Page 26

Field Attributes for Each Type of Custom Field					
Field Type Attribute	Character	Flag	Hexadecimal	Numeric	
Keyword name	1-8 characters	1-8 characters	1-8 characters	1-8 characters	
Heading for list output	1-40 characters	1-40 characters	1-40 characters	1-40 characters	
Help text for keyword	1-255 characters	1-255 characters	1-255 characters	1-255 characters	
Maximum length	1-1100 characters	3	1-512 hex characters	1-10 numbers	
Maximum value	N/A	N/A	N/A	0 to 2 147 483 647	
Minimum value	N/A	N/A	N/A	0 to 2 147 483 647	
Characters allowed	Choose restrictions for first and remaining characters. Choose mixed case or not.	'YES' or 'NO'	Numbers 0-9 and letters A-F	Numbers 0-9	
RACF: Custom Fields © 2008 IBM Corporation Page 27					





 Change attributes of a custom field with CFDEF segment in **CFIELD** profiles

RDEFINE CFIELD profile-type.CSDATA.keyword-name CFDEF(

MAXLENGTH(nnn)

FIRST(ALPHA | ALPHANUM | ANY | NONATABC | NONATNUM | NUMERIC) OTHER(ALPHA | ALPHANUM | ANY | NONATABC | NONATNUM | NUMERIC)

HELP('help-text')

MINVALUE(nnn) | NOMINVALUE

MAXVALUE(nnn) | NOMAXVALUE

MIXED (YES | NO)

LISTHEAD('list-heading-text'))

- Cannot change TYPE
- Cannot remove TYPE, MAXLENGTH, FIRST, OTHER, HELP, MIXED, or LISTHEAD

RACF: Custom Fields

Page 29

TEM

tem CSDATA Segment Syntax for USER Profiles

- CSDATA segment keyword on ADDUSER, ALTUSER, LISTUSER
 - ADDUSER ANDREW

CSDATA (custom-keyword1 (custom-keyword1-value)

custom-keyword2 (custom-keyword2-value))

*NOTE: number of keywords per command is limited to 85

- ALTUSER ANDREW

CSDATA (custom-keyword1 (custom-keyword1-value) custom-keyword2 (custom-keyword2-value))

- LISTUSER ANDREW CSDATA NORACF
- NOCSDATA keyword on ALTUSER

ALTUSER ANDREW NOCSDATA

RACF: Custom Fields



CSDATA Segment Syntax for GROUP Profiles

- CSDATA segment keyword on ADDGROUP, ALTGROUP, LISTGRP
 - ADDGROUP TELLER

CSDATA (custom-keyword1 (custom-keyword1-value) custom-keyword2 (custom-keyword2-value))

*NOTE: number of keywords per command is limited to 85

- ALTGROUP TELLER

CSDATA (custom-keyword1 (custom-keyword1-value) custom-keyword2 (custom-keyword2-value))

- LISTGRP TELLER CSDATA NORACF
- NOCSDATA keyword on ALTGROUP
 - ALTGROUP TELLER NOCSDATA

RACF: Custom Fields
© 2008 IBM Corporation

Page 31





Custom Fields in RACF Database

Fields are stored in CSDATA segment of USER or GROUP profile in CSDATA repeat group.

Field type is saved in database along with the data.

Repeat group is limited to 65535 bytes.

CSKEY (custom field name)	CSTYPE (custom field type)	CSVALUE (custom field value)
EMPSER	Numeric (X'02')	x'000000FF'
ACTIVE	Flag (X'03')	x'01' for YES
		or x'00' for NO
CODE	Hex (X'04')	x'F0C1C2C3'
ADDRESS	Character (X'01')	'13 TRICIA BLVD, HIGHLAND' (x'F1F340')

RACF: Custom Fields

S IBM Corporation



FAQs

- · How many custom fields can I define?
 - There is no set limit for the number of custom fields defined in an installation
 - The region size may need to be increased in any JCL which runs the IRRDPI00 UPDATE command
 - EXEC PGM=IKJEFT01,REGION=2M,PARM='IRRDPI00 UPDATE'
 - Sample IRRDPTAB procedure shipped by RACF in SYS1.SAMPLIB was updated
 - There is a 64K limit on the size of data in the CSDATA segment for a particular USER or GROUP profile



Page 33

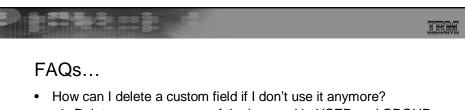


IEM

• I defined a custom field, but when I try to use it, I get this error message:

- ALTUSER ANDREW CSDATA (RETIRED(NO))
 - IKJ56702I INVALID OPERAND, RETIRED
- This means the keyword is not defined to RACF. Some possible reasons:
 - You did not issue the IRRDPI00 UPDATE command
 - The CFIELD class was not active when you issued the IRRDPI00 UPDATE command
 - Your keyword name does not match the 3rd qualifier of the CFIELD profile name
 - The custom field was defined with attributes that are inconsistent with its data type. (You may have received error messages on the RDEFINE command or the IRRDPI00 UPDATE command.)
- I defined a custom field, but when I try to use it I get this error message:
 - ALTUSER SHANNON CSDATA (ADDRESS('Highland, NY'))
 IRR52119I Keyword name abbreviation ADDRESS is ambiguous.
 - This is caused because you have another keyword that starts with the same letters, for example ADDRESS1
 - You will need to define a new CFIELD profile and delete the old one

RACF: Custom Fields



- 1. Delete any occurrence of the keyword in USER and GROUP profiles (use DB Unload to help find the occurrences)
 - ALTUSER SHANNON CSDATA(NOEMPCODE)
- 2. Delete the definition of the keyword
 - RDELETE CFIELD USER.CSDATA.EMPCODE
- What happens if I delete the definition of a keyword without deleting all occurrences of that keyword?
 - You will still be able to list the CSDATA fields in the USER and GROUP profiles
 - You will not be able to change the field contents
 - You will not be able to delete the field contents
 - You can still delete the entire CSDATA segment
 - You can re-define the field if needed

RACF: Custom Fields
© 2008 IBM Corporation