

AUTOMATING THE AUDIT OF RACF PROFILES

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JOHN HAUSER  
THE CLOROX COMPANY  
(415) 271-7506

## SESSION ABSTRACT

### Automating the RACF Audit

Data security administrators as well as EDP auditors will want to attend this intermediate-level session. Techniques for automating the review of dataset and user profiles defined in RACF will be demonstrated. Specific examples of these techniques and how they can be adapted to your organization will be presented. The applicable COBOL source code & JCL will be distributed.

## SPEAKER BIOGRAPHY

### John Hauser

John is currently the EDP Audit Manager at The CLOROX Company. Prior to joining CLOROX in 1987, he worked for the Computer Audit Assistance Group of Coopers & Lybrand in the San Jose and San Francisco offices. During his six years at Coopers, he was responsible for developing audit software for clients in the high technology, real estate and health care industries. He has also developed software which automates internal control reviews. John is a Certified Information Systems Auditor and a frequent speaker at local EDPAA chapter seminars.

## SPEAKER CONTACT:

JOHN HAUSER  
THE CLOROX COMPANY  
P.O. BOX 24305  
OAKLAND, CA 94623

(415) 271-7506

## I. COMPONENTS OF A COMPLETE RACF REVIEW <sup>1</sup>

1. Status Monitoring  
DSMON, SETROPTS
2. Event Monitoring  
RACFRW
3. Rules or Profiles Analysis  
LISTDSD, LISTUSER
4. Standards Review: Management

This presentation will focus on how to automate #3, the audit of RACF profiles

## II. PRESENTATION OBJECTIVES

1. Show how to automate RACF profiles review
2. Show how easy it is to automate the RACF review
3. Provide the basic tools (concepts, JCL, COBOL programs to automate the RACF profiles review

<sup>1</sup>Source: Kurt Meiser, Coopers & Lybrand  
"Heavy Metal" ex-IBM systems programmer  
CACS Conference Session "Introduction to the Audit of RACF"

### III. TWO KINDS OF BASIC RACF PROFILES

#### A. DATASET PROFILE

1. Data Set Name
2. Data Set Owner
3. Universal Access Authority (UACC)
4. Auditing (Logging) Conditions
5. User Notification
6. Authorized User Access List

#### B. USER PROFILE

1. User Id
2. User Name
3. User Attributes
4. Date ID Created
5. Password Interval
6. Revoke Date
7. Day & Time Restrictions
8. Group Information
9. Connect Information

1 DSN

INFORMATION FOR DATASET PIAC.\* (G)

LEVEL OWNER UNIVERSAL ACCESS WARNING ERASE

0 PIAC 2 OWNER READ 3 UACC NO NO

AUDITING

FAILURES (READ) 4 LOGGING OPTION

NOTIFY

NO USER TO BE NOTIFIED 5 USER NOTIFICATION

YOUR ACCESS CREATION GROUP DATASET TYPE

READ SYSTEMS NON-VSAM

GLOBALAUDIT

NO INSTALLATION DATA

SECURITY LEVEL

NO SECURITY LEVEL

CATEGORIES

NO CATEGORIES

6 AUTHORIZED USER ACCESS LIST

ID ACCESS

PIAP UPDATE  
J ALTER  
BATCHG ALTER  
OPERATOR ALTER  
OPER1 ALTER

PROGRAM ID ACCESS

NO ENTRIES IN CONDITIONAL ACCESS LIST

1  
 OWNER=BSA01      2      NAME=MIKE RAPP      OWNER=BSA      4      CREATED=88.308  
 DEFAULT-GROUP=BSA      PASSDATE=90.012      PASS-INTERVAL= 90  
 ATTRIBUTES=GRPACC      3  
 REVOKE DATE=NONE      6      RESUME DATE=NONE      5  
 LAST-ACCESS=90.022/06:08:58  
 CLASS AUTHORIZATIONS=NONE  
 INSTALLATION-DATA=BRITA SALES/DALLAS  
 MO-MODEL-NAME  
 LOGON ALLOWED      (DAYS)      (TIME)  
 -----  
 NYDAY      ANYTIME      9  
 GROUP=BSA      AUTH=USE      CONNECT-OWNER=BSA      CONNECT-DATE=88.308  
 CONNECTS= 134      UACC=NONE      LAST-CONNECT=90.022/06:08:58  
 CONNECT ATTRIBUTES=NONE      } 9      8 }  
 REVOKE DATE=NONE      RESUME DATE=NONE  
 SECURITY-LEVEL=NONE SPECIFIED  
 CATEGORY-AUTHORIZATION  
 NONE SPECIFIED

#### IV. RACF PROFILES REVIEW OBJECTIVES

Pop. 500 pages  
640 profiles

A. Identify all production, system and backup datasets:

Results: 40 profiles

664 authorized  
user > READ

1. With a UACC > READ
2. With AUTHUSER with access > READ

Pop. 330 pages  
1,055 profiles

B. Identify all userids:

Results. 1. 42 users

2. 193 users

3. 17 users

4. 27 users

5. 47 users

6. 11 users

7. 2 users

1. Which have not been used since being created
2. With an unusual password change interval
3. With user attribute > "GRPACC"
4. With connect attribute > "NONE"
5. With connect UACC > "READ"
6. With group authority > "USE"
7. With authority to define RACF profiles for resource classes

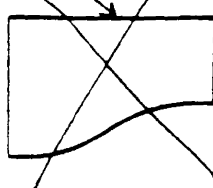
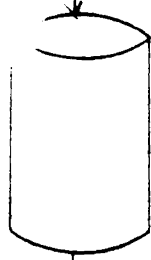
3/19/90

SYS1.RACF

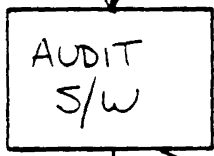


LISTDSD  
or  
LISTUSER

BATCH MODE  
RATHER THAN  
ONLINE OR  
ISPF PANELS

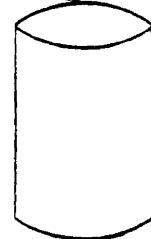
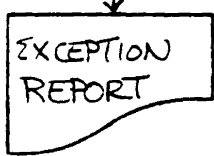


OUTPUT REPORT  
TO DISK  
NOT PRINTER



LISTDSD  
RACFUACC  
RACFAUTH

LISTUSER  
RACFUNNO  
RACFPINT  
RACFCOON  
RACFCOONN  
RACFCGRP  
RACFCCLAS  
RACFATTR



LIST OF EXCEPTIONS  
ON DISK  
FOR FURTHER  
PROCESSING

EXAMPLE: RACFAUT

# AUTOMATING THE RACF AUDIT



V. STEPS TO DEVELOP PATTERN MATCHING AUDIT SOFTWARE

- A. Execute the desired command or utility program. Send output to disk file rather than printer
- B. Review output for key phrases or patterns to differentiate lines
- C. Determine column placement of patterns
- D. Write program to extract based on above
- E. Debug or refine extract program based on results
  
- F. Create additional programs to summarize the extracted information in various ways

## VI. "GENERIC" PATTERN MATCHING PROGRAM SPECIFICATIONS

INPUT is the output of the RACF \_\_\_\_\_ command

OUTPUT is a report and a data file containing the exceptions to \_\_\_\_\_

### PROCESS

1. Read a record from input file
2. Determine if record is a "keeper". If not, read the next record.
3. If record is a "keeper", move relevant information to output fields
4. Write output file record and report line
5. On end of input, write total number of records written to output on the report

## VII. SPECIFIC EXAMPLES OF PATTERN MATCHING AUDIT SOFTWARE

- RACFUACC - list all datasets with a UACC > READ
- RACFAUTH - list all datasets to which specific users have access authority > READ
- RACFUNNO - list all users who have never used their TSO userid
- RACFPINT - list all users with an unusual password change interval
- RACFATTR - list all users with user attributes > "GRPACC"
- RACFCONA - list all users with connect attributes > "NONE"
- RACFCONN - list all users with connect UACC > "READ"
- RACFGRP - list all users with a group authority > "USE"
- RACFCLAS - list all users with authority to define RACF profiles for certain RACF resource classes



READY

LISTDSD PREFIX(PIPR) AUTHUSER  
INFORMATION FOR DATASET PIPR.SSM.CCPRHRSR\* (G)

LEVEL	OWNER	UNIVERSAL ACCESS	WARNING	ERASE
00	PIPR	NONE	NO	NO

AUDITING

-----  
FAILURES(READ)

NOTIFY

-----  
NO USER TO BE NOTIFIED

YOUR ACCESS	CREATION GROUP	DATASET TYPE
NONE	SYS1	NON-VSAM

GLOBALAUDIT

-----  
NONE

NO INSTALLATION DATA

SECURITY LEVEL

-----  
NO SECURITY LEVEL

CATEGORIES

-----  
NO CATEGORIES

ID	ACCESS
PIPR	UPDATE
CPR01	ALTER
J	ALTER
TPL57	ALTER
TAC25	ALTER
CAOMS	ALTER

Sample of the RACF LISTDSD AUTHUSER command  
Used as input to the RACFUACC & RACFAUTH programs

```

000001 READY
000002 LISTDSD PREFIX(PIPR) AUTHUSER
000003 INFORMATION FOR DATASET PIPR.SSM.CCPRHRSR* (G)
000004
000005 LEVEL OWNER UNIVERSAL ACCESS WARNING ERASE
000006 -----
000007 00 PIPR NONE NO NO
000008
000009 AUDITING
000010 -----
000011 FAILURES(READ)
000012
000013 NOTIFY
000014 -----
000015 NO USER TO BE NOTIFIED
000016
000017 YOUR ACCESS CREATION GROUP DATASET TYPE
000018 -----
000019 NONE SYS1 NON-VSAM
000020
000021 GLOBALAUDIT
000022 -----
000023 NONE
000024
000025 NO INSTALLATION DATA
000026
000027 SECURITY LEVEL
000028 -----
000029 NO SECURITY LEVEL
000030
000031 CATEGORIES
000032 -----
000033 NO CATEGORIES
000034
000035 ID ACCESS
000036 -----
=COLS> -----1-----2-----3-----4-----5-----6-----7--
000037 PIPR UPDATE
000038 CPR01 ALTER
000039 J ALTER
000040 TPL57 ALTER
000041 TAC25 ALTER
000042 CAOMS ALTER

```

Ruler line applied to the output to determine column placement

```

0100-PROCESS.
  IF C2-12 = 'INFORMATION'
      MOVE C26-64      TO O-DSN
                      R-DSN
      ADD 1           TO WS-VALID-RECORDS.

  IF C3-4 = '00' AND
      (C25-28 NOT = 'READ' AND C25-28 NOT = 'NONE')
      MOVE C24-30     TO O-UACC
                      R-UACC

  ELSE GO TO 0199-READ-NEXT.

  WRITE FILE-OUT-RECORD.
  ADD 1 TO WS-RECS-WRITTEN.
  PERFORM 270-PRINT-REPORT-LINE.

0199-READ-NEXT.
  READ FILE-IN
  AT END MOVE 'Y' TO WS-END-TXNS-SW.
  ADD 1 TO WS-RECS-READ.

```

Main paragraphs of RACFUACC program  
 See accompanying disk for a complete copy of the program

UNIVERSAL ACCESS GREATER THAN READ  
FOR PRODUCTION, SYSTEM & BACKUP DATASETS

DATA SET NAME PROFILE	UACC
BISY.SSM.%SMFDUMP* (G)	UPDATE
BNOR.SSA.DCSKMART* (G)	ALTER
BNOR.SSA.DCSWMART* (G)	ALTER
BNOR.SSM.DCSWMART* (G)	ALTER
PIAR.SSM.CARMLKBX* (G)	ALTER
PIFR.PFM.TLIB (G)	UPDATE
PIGL.PFM.TLIB (G)	UPDATE
PIRR.PFM.TLIB (G)	UPDATE
PISA.PFM.TLIB (G)	UPDATE
PDCB.SSA.VMMNDISK (G)	ALTER
PDHR.PFM.TLIB (G)	UPDATE
PDJA.BSM.ENG* (G)	UPDATE
PDJA.BSM.ISD* (G)	UPDATE
PDJA.BSM.MFG* (G)	UPDATE
PDJA.BSM.RAD* (G)	UPDATE
PKCA.PFM.HOLDMAST (G)	ALTER
PMOR.SSM.CONFRM* (G)	ALTER
PNMK.PFM.TLIB (G)	UPDATE
PNOR.SSA.DCSKMART* (G)	ALTER
PNOR.SSA.DCSWMART* (G)	ALTER
PRD1.CCLIB (G)	UPDATE
PRD1.RJE.* (G)	UPDATE
PRD1.SORCLIB (G)	UPDATE
SYS1.BROADCAST (G)	UPDATE
SYS2.SAR.SARD* (G)	UPDATE
SYS3.SARTEMP.* (G)	ALTER

RECORDS READ =	29,591	ERRORS ENCOUNTERED =	0
VALID RECORDS =	690	RECORDS WRITTEN =	40

Sample output of the RACFUACC program

```

0100-PROCESS.
  IF C2-12 = 'INFORMATION'
      MOVE C26-64 TO WS-DSN
      MOVE SPACES TO WS-HIGHLEVEL
      MOVE C26-29 TO WS-HIGHLEVEL
      ADD 1 TO WS-VALID-RECORDS.

  IF C12-18 = 'UPDATE ' OR
     C12-18 = 'ALTER ' OR
     C12-18 = 'CONTROL'
      MOVE C2-9 TO O-USER
      MOVE C12-18 TO O-ACCESS
      R-USER
      R-ACCESS

  ELSE GO TO 0199-READ-NEXT.

  IF O-USER = 'J ' OR
     O-USER = 'BATCHF ' OR
     O-USER = 'BATCHG ' OR
     O-USER = 'BATCHH ' OR
     O-USER = 'BATCHS ' OR
     O-USER = 'CAOMS ' OR
     O-USER = 'FAILURES' OR
     O-USER = 'OPER ' OR
     O-USER = 'OPER1 ' OR
     O-USER = 'OPERATOR' OR
     O-USER = WS-HIGHLEVEL
      GO TO 0199-READ-NEXT.

  MOVE WS-DSN TO O-DSN
      R-DSN.
  WRITE FILE-OUT-RECORD.
  ADD 1 TO WS-RECS-WRITTEN.
  PERFORM 270-PRINT-REPORT-LINE.

0199-READ-NEXT.
  READ FILE-IN
      AT END MOVE 'Y' TO WS-END-TXNS-SW.
  ADD 1 TO WS-RECS-READ.

```

Main paragraphs of RACFAUTH program  
 See accompanying disk for a complete copy of the program



INTERNAL AUDIT DEPARTMENT  
 SUMMARY OF RACF LISTDSD AUTHUSER  
 ACCESS GREATER THAN READ  
 FOR PRODUCTION, SYSTEM & BACKUP DATASETS  
 BY DSN  
 AS OF 02/26/90

DATA SET NAME PROFILE	AUTHUSER	ACCESS
BIPR.VCM.TAXCALC* (G)	TOP34	ALTER
BIPR.VCM.TAXCALC* (G)	TPL57	ALTER
BIPR.VCM.TAXCALC* (G)	TAC25	ALTER
.		
.		
PIPR.SSM.CCPRHRSR* (G)	CPR01	ALTER
PIPR.SSM.CCPRHRSR* (G)	TPL57	ALTER
PIPR.SSM.CCPRHRSR* (G)	TAC25	ALTER
PIPR.SSM.CCPRHRSR* (G)	CPR05	ALTER
PRD1.* (G)	SYS1	ALTER
PRD1.* (G)	THW06	UPDATE
PRD2.* (G)	TED10	ALTER
PRD2.* (G)	TPM41	ALTER
PRD2.* (G)	TVR12	ALTER
PRD2.* (G)	TFR97	ALTER
PRD2.* (G)	SYS1	ALTER
PRD2.* (G)	THW06	UPDATE
.		
.		
SYS1.PROCLIB (G)	BKCOMM	UPDATE
SYS1.UADS (G)	TFR97	UPDATE
SYS1.* (G)	JES2	UPDATE
SYS2.AFP* (G)	SYS1	ALTER
SYS2.AFP* (G)	TFR97	ALTER
SYS2.CICS.* (G)	SYSTEMS	UPDATE
SYS2.CICS.* (G)	SYS1	ALTER
SYS2.CICS.* (G)	COMSOFT	ALTER

RECORDS READ = 29,591    ERRORS ENCOUNTERED = 0  
 VALID RECORDS = 690    RECORDS WRITTEN = 664

Sample output of the RACFAUTH program

PIPR.SSM.CCPRHRSR* (G)	CPR05	ALTER
PIPR.SSM.CCPRSLSR* (G)	CPR05	ALTER
PDHR.SSA.HRSLABL3* (G)	CPS02	ALTER
PDHR.SSA.HRSLABL4* (G)	CPS02	ALTER
PDHR.SSA.IMAGEHRS* (G)	CPS02	ALTER
PDHR.SSA.IMAGEHRU* (G)	CPS02	ALTER
PDHR.SSA.IMAGEPRS* (G)	CPS02	ALTER
PDHR.SSA.IMAGEPRU* (G)	CPS02	ALTER
PDHR.SSM.INPUT10U* (G)	CPS02	ALTER
PDHR.SSM.INPUT25U* (G)	CPS02	ALTER
PDHR.VCM.RLPFILE (G)	CPS02	ALTER
PIPR.VCM.MSAIE.* (G)	CPS02	UPDATE
PDHR.SSA.HRSLABL3* (G)	CPS03	ALTER
PDHR.SSA.HRSLABL4* (G)	CPS03	ALTER
PDHR.SSA.IMAGEHRS* (G)	CPS03	ALTER
PDHR.SSA.IMAGEHRU* (G)	CPS03	ALTER
PDHR.SSA.IMAGEPRS* (G)	CPS03	ALTER
PDHR.SSA.IMAGEPRU* (G)	CPS03	ALTER
PDHR.SSM.INPUT10U* (G)	CPS03	ALTER
PDHR.SSM.INPUT25U* (G)	CPS03	ALTER
PDHR.VCM.RLPFILE (G)	CPS03	ALTER
PIPR.VCM.MSAIE.* (G)	CPS03	UPDATE
.		
.		
PISS.* (G)	TFR97	ALTER
PISS.VCM.SSSIGNON (G)	TFR97	ALTER
PHSA.FSM.HPDSAC (G)	TFR97	ALTER
PKDB.* (G)	TFR97	ALTER
PRD1.CCHIST (G)	TFR97	ALTER
PRD1.PROCLIB (G)	TFR97	ALTER
PRD1.SCHDLIB (G)	TFR97	ALTER
PRD1.UTILITY (G)	TFR97	ALTER
PRD1.VSAMDDC (G)	TFR97	ALTER
PRD2.* (G)	TFR97	ALTER
SSA08.* (G)	TFR97	ALTER
SYS2.AFP* (G)	TFR97	ALTER
SYS2.SYS.BACKOFF (G)	TFR97	ALTER
SYS3.DADS.CONTROL (G)	TFR97	ALTER
PISA.PFM.FOCEXEC (G)	TFR97	UPDATE
SYS1.UADS (G)	TFR97	UPDATE
SYSM.DOCUMENT.TEXT (G)	TFR97	UPDATE

Sample sorted output of RACFAUTH program  
 (UserID, Data Set Profile)  
 Used as input to the RACFAUT2 program



0100-PROCESS.

```
IF I-USER NOT = WS-USER
    MOVE WS-USER TO S-USER
    MOVE WS-COUNT TO S-COUNT
    PERFORM 260-PRINT-SUBTOT-LINE
    MOVE 0 TO WS-COUNT
    MOVE I-USER TO WS-USER
    MOVE I-USER TO R-USER
ELSE
    MOVE SPACES TO R-USER.

MOVE I-DSN TO R-DSN
MOVE I-ACCESS TO R-ACCESS
ADD 1 TO WS-COUNT
PERFORM 270-PRINT-REPORT-LINE.
```

0199-READ-NEXT.

```
READ FILE-IN
    AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.
IF ALL-TRANS-PROCESSED-SW = 'N'
    ADD 1 TO WS-RECS-READ
ELSE
    GO TO 1000-TERMINATE.
```

Main paragraphs of the RACFAUT2 program  
See accompanying disk for a complete copy of the program

INTERNAL AUDIT DEPARTMENT  
 SUMMARY OF RACF LISTDSD AUTHUSER  
 ACCESS GREATER THAN READ  
 FOR PRODUCTION, SYSTEM & BACKUP DATASETS  
 BY USER ID  
 AS OF 02/26/90

AUTHUSER	ACCESS	DATA SET NAME	PROFILE
CPR05	ALTER	PIPR.SSM.CCPRHRSR*	(G)
CPR05	ALTER	PIPR.SSM.CCPRSLSR*	(G)
			2
CPS02	ALTER	PDHR.SSA.HRSLABL3*	(G)
	ALTER	PDHR.SSA.HRSLABL4*	(G)
	ALTER	PDHR.SSA.IMAGEHRS*	(G)
	ALTER	PDHR.SSA.IMAGEHRU*	(G)
	ALTER	PDHR.SSA.IMAGEPRS*	(G)
	ALTER	PDHR.SSA.IMAGEPRU*	(G)
	ALTER	PDHR.SSM.INPUT10U*	(G)
	ALTER	PDHR.SSM.INPUT25U*	(G)
	ALTER	PDHR.VCM.RLPFILE	(G)
	UPDATE	PIPR.VCM.MSAIE.*	(G)
CPS02			10
.			
.			
.			
TFR97	ALTER	PISS.*	(G)
	ALTER	PISS.VCM.SSSIGNON	(G)
	ALTER	PHSA.FSM.HPDSAC	(G)
	ALTER	PKDB.*	(G)
	ALTER	PRD1.CCHIST	(G)
	ALTER	PRD1.PROCLIB	(G)
	ALTER	PRD1.SCHDLIB	(G)
	ALTER	PRD1.UTILITY	(G)
	ALTER	PRD1.VSAMDDC	(G)
	ALTER	PRD2.*	(G)
	ALTER	SSA08.*	(G)
	ALTER	SYS2.AFP*	(G)
	ALTER	SYS2.SYS.BACKOFF	(G)
	ALTER	SYS3.DADS.CONTROL	(G)
	UPDATE	PISA.PFM.FOCEXEC	(G)
	UPDATE	SYS1.UADS	(G)
	UPDATE	SYSM.DOCUMENT.TEXT	(G)
TFR97			17

RECORDS READ =

664

RECORDS PRINTED =

664

Sample output of the RACFAUT2 program

```

READY
  LISTUSER *
USER=CAC01  NAME=LIONEL DIGAL          OWNER=CAC  CREATED=87.324
DEFAULT-GROUP=CAC          PASSDATE=88.244  PASS-INTERVAL= 40
ATTRIBUTES=GRPACC
REVOKE DATE=NONE          RESUME DATE=NONE
LAST-ACCESS=88.264/13:42:08
CLASS AUTHORIZATIONS=NONE
NO-INSTALLATION-DATA
NO-MODEL-NAME
LOGON ALLOWED      (DAYS)              (TIME)
-----
ANYDAY              ANYTIME
GROUP=CAC          AUTH=USE          CONNECT-OWNER=CAC          CONNECT-DATE=87.
CONNECTS= 580      UACC=NONE          LAST-CONNECT=88.264/13:42:08
CONNECT ATTRIBUTES=NONE
REVOKE DATE=NONE          RESUME DATE=NONE
SECURITY-LEVEL=NONE SPECIFIED
CATEGORY-AUTHORIZATION
NONE SPECIFIED
USER=CAC02  NAME=MAURICE DLIMA          OWNER=CAC          CREATED=87.308
ATTRIBUTES=GRPACC
REVOKE DATE=NONE          RESUME DATE=NONE
LAST-ACCESS=88.264/14:37:46
CLASS AUTHORIZATIONS=NONE
NO-INSTALLATION-DATA
NO-MODEL-NAME
LOGON ALLOWED      (DAYS)              (TIME)
-----
ANYDAY              ANYTIME
GROUP=CAC          AUTH=USE          CONNECT-OWNER=CAC          CONNECT-DATE=87.
CONNECTS= 568      UACC=NONE          LAST-CONNECT=88.264/14:37:46
CONNECT ATTRIBUTES=NONE
REVOKE DATE=NONE          RESUME DATE=NONE
SECURITY-LEVEL=NONE SPECIFIED
CATEGORY-AUTHORIZATION
NONE SPECIFIED
USER=CAC03  NAME=HELEN COYOCA          OWNER=CAC          CREATED=88.007
DEFAULT-GROUP=CAC          PASSDATE=88.228  PASS-INTERVAL= 40
ATTRIBUTES=GRPACC
REVOKE DATE=NONE          RESUME DATE=NONE
LAST-ACCESS=88.259/14:16:41
CLASS AUTHORIZATIONS=NONE

```

Sample output of the LISTUSER command  
 Used as input by the RACFPINT, RACFUNNO, RACFATTR,  
 RACFCOON, RACFCONA, RACFGRP & RACFCLAS programs

```

000001 READY
000002 LISTUSER *
=COLS> -----1-----2-----3-----4-----5-----6-----7--
000003 USER=CAC01 NAME=LIONEL DIGAL OWNER=CAC CREATED=87.324
=COLS> -----1-----2-----3-----4-----5-----6-----7--
000004 DEFAULT-GROUP=CAC PASSDATE=88.244 PASS-INTERVAL= 40
000005 ATTRIBUTES=GRPACC
000006 REVOKE DATE=NONE RESUME DATE=NONE
=COLS> -----1-----2-----3-----4-----5-----6-----7--
000007 LAST-ACCESS=88.264/13:42:08
000008 CLASS AUTHORIZATIONS=NONE
000009 NO-INSTALLATION-DATA
000010 NO-MODEL-NAME
000011 LOGON ALLOWED (DAYS) (TIME)
-----
000012
000013 ANYDAY ANYTIME
000014 GROUP=CAC AUTH=USE CONNECT-OWNER=CAC CONNECT-DATE=87.
000015 CONNECTS= 580 UACC=NONE LAST-CONNECT=88.264/13:42:08
000016 CONNECT ATTRIBUTES=NONE
000017 REVOKE DATE=NONE RESUME DATE=NONE
000018 SECURITY-LEVEL=NONE SPECIFIED
000019 CATEGORY-AUTHORIZATION

```

Ruler lines applied to the output to determine column placement

```

0100-PROCESS.
  IF C1-4 = 'USER'
    MOVE C6-39      TO O-USERID
                   R-USERID
    MOVE C56-69    TO R-CREATED
                   O-CREATED
    MOVE 0         TO WS-REVOKED-FLAG
    ADD 1         TO WS-VALID-RECORDS.

  IF C13-19 = 'REVOKED'
    MOVE 1         TO WS-REVOKED-FLAG
    GO TO 0199-READ-NEXT.

  IF C2-12 = 'LAST-ACCESS' AND
     C14-20 = 'UNKNOWN'      AND
     WS-REVOKED-FLAG = 0
    MOVE C14-20    TO O-LSTACCESS
                   R-LSTACCESS
  ELSE GO TO 0199-READ-NEXT.

  WRITE FILE-OUT-RECORD.
  ADD 1 TO WS-RECS-WRITTEN.
  PERFORM 270-PRINT-REPORT-LINE.

0199-READ-NEXT.
  READ FILE-IN
  AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.
  IF ALL-TRANS-PROCESSED-SW = 'N'
    ADD 1 TO WS-RECS-READ.

```

Main paragraphs of the RACFUNNO program  
 See accompanying disk for a complete copy of the program



USERID	USER NAME	LAST ACCESS	DATE CREATED
CGA01	NAME=MILT ASHFORD	UNKNOWN	CREATED=89.258
CGA02	NAME=BOB CANTER	UNKNOWN	CREATED=89.258
CGA03	NAME=DENISE BARTONI	UNKNOWN	CREATED=89.258
CPO09	NAME=JIM FOUST	UNKNOWN	CREATED=89.319
CPO14	NAME=LARRY RUPP	UNKNOWN	CREATED=89.235
CPO24	NAME=CINDY BEARD	UNKNOWN	CREATED=89.319
CPO32	NAME=MARY MORRISON	UNKNOWN	CREATED=89.235
CPO34	NAME=CHARLES STRICKLER	UNKNOWN	CREATED=89.235
CPO36	NAME=PAT BACHTOLD	UNKNOWN	CREATED=89.258
CPO40	NAME=HAL MORRIS	UNKNOWN	CREATED=89.258
CPO42	NAME=CHARLIE SCHAD	UNKNOWN	CREATED=89.258
CPO99	NAME=CORP PURCHASING(GRP)	UNKNOWN	CREATED=89.251
FFT01	NAME=JUDY SCHWEITZER	UNKNOWN	CREATED=89.248
FFT07	NAME=BARB WESTER	UNKNOWN	CREATED=89.248
FMF06	NAME=JOHN BARNABA	UNKNOWN	CREATED=89.320
FRL02	NAME=LYNN GILBERTSON	UNKNOWN	CREATED=89.248
HCF02	NAME=RONDA TALLANT	UNKNOWN	CREATED=89.320
HFT03	NAME=BECKY STUCZYNSKI	UNKNOWN	CREATED=89.248
HPA04	NAME=ANN SPRADLIN	UNKNOWN	CREATED=89.304
HPA05	NAME=VICKIE HAY	UNKNOWN	CREATED=89.320
HPA06	NAME=LINN STOLLER	UNKNOWN	CREATED=89.320
HPA08	NAME=SHERYL WARD	UNKNOWN	CREATED=89.320
HPE09	NAME=LANCE ANKRUM	UNKNOWN	CREATED=89.320
HPE10	NAME=GREG TEMPLE	UNKNOWN	CREATED=89.324
HPK04	NAME=DONNA CRAFTON	UNKNOWN	CREATED=89.320
HPK05	NAME=HANK COOPER	UNKNOWN	CREATED=89.320
HPK06	NAME=DAN HEAD	UNKNOWN	CREATED=89.320
HPL02	NAME=BILL REIMAN	UNKNOWN	CREATED=89.349
HPT04	NAME=TOM MALAGISI	UNKNOWN	CREATED=89.320
KWH08	NAME=TRACY STRANDBERG	UNKNOWN	CREATED=89.317
KWH29	NAME=JACKIE CAMPA	UNKNOWN	CREATED=89.317
KWH67	NAME=BOB TOMCZYK	UNKNOWN	CREATED=89.319
KWH70	NAME=DENISE BOLLINGER	UNKNOWN	CREATED=89.320
KWH71	NAME=EDDIE CURRIE	UNKNOWN	CREATED=89.320
KWH72	NAME=JIM WOOD	UNKNOWN	CREATED=89.320

RECORDS READ = 19,805 ERRORS ENCOUNTERED = 0

VALID RECORDS = 1,055 RECORDS WRITTEN = 42

Sample output of the RACFUNNO program

0100-PROCESS.

IF C1-4 = 'USER'  
MOVE 0 TO WS-REVOKED-FLAG  
MOVE C6-39 TO O-USERID  
R-USERID  
ADD 1 TO WS-VALID-RECORDS.

IF C13-19 = 'REVOKED'  
MOVE 1 TO WS-REVOKED-FLAG.

IF C2-8 = 'DEFAULT' AND C57-59 NOT = '90'  
AND WS-REVOKED-FLAG = 0  
MOVE C57-59 TO O-PINTERVAL  
R-PINTERVAL

ELSE GO TO 0199-READ-NEXT.

WRITE FILE-OUT-RECORD  
ADD 1 TO WS-RECS-WRITTEN  
PERFORM 270-PRINT-REPORT-LINE.

→ whatever  
your  
installation  
default is  
use SETROPTS.JCL  
to find out

0199-READ-NEXT.

READ FILE-IN  
AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.  
IF ALL-TRANS-PROCESSED-SW = 'N'  
ADD 1 TO WS-RECS-READ.

Main paragraphs of the RACFPINT program  
See accompanying disk for a complete copy of the program

USERID	USER NAME	PASS. INT.
CAS03	NAME=HEIDE PILC	40
CAS12	NAME=BYRON NICHOLS	40
CAS19	NAME=PAUL BRUNET	40
CICSTEST	NAME=CICS TEST SYSTEM	N/A
CLCONF	NAME=CLCONF STC	N/A
CUW02	NAME=TECNTR UNITED-WAY-TC	40
DBP1DBM1	NAME=DB2 PROD STC	N/A
DBP1IRLM	NAME=DB2 PROD STC	N/A
DBP1MSTR	NAME=DB2 PROD STC	N/A
DBT1DBM1	NAME=DB2 TEST STC	N/A
DBT1IRLM	NAME=DB2 TEST STC	N/A
DBT1MSTR	NAME=DB2 TEST STC	N/A
DITTO	NAME=DITTO READ ONLY	40
DITTOC	NAME=DITTO CART	40
DITTOTC	NAME=DITTO TAPE TO CART	N/A
DITTOTT	NAME=DITTO TAPE TO TAPE	N/A
GTF	NAME=GTF STC	40
GTFVTAM	NAME=GTFVTAM STC	40
IBMUSER	NAME=	30
ISPFMP	NAME=ISPF LIB MANAGEMENT	N/A
J	NAME=INTERNAL READER	40
JES2	NAME=JES2 SUBSYSTEM	40
NET	NAME=NET STC	40
NETVIEW	NAME=NETWORK VIEW	N/A
RMT2	NAME=JES2 REMOTE #2	N/A
SAR	NAME=SAR STC	40
SAR50	NAME=SAR50 TEST	N/A
SUPRTRAC	NAME=SUPRTRAC	N/A
SYS3U	NAME=FOR SYS3 DATA SETS	N/A
SYS5U	NAME=UPDATE SYS5 NODE	40
TSO	NAME=TSO STC	40
TSTRJE	NAME=TEST RJE USER SUBMIT	N/A
TSTTOTAL	NAME=TEST TOTAL	40
ZIB06	NAME=SERVICE DIRECTOR	N/A

RECORDS READ = 19,805 ERRORS ENCOUNTERED = 0  
VALID RECORDS = 1,055 RECORDS WRITTEN = 193

Sample output of the RACFPINT program

```

//CIA04028 JOB (DPCOR0000,1076), 'INTERNAL-AUDIT-2', CLASS=A,
// NOTIFY=CIA04,MSGCLASS=X,TIME=(,15)
// * * * * *
// * ** MBR IKJEFT01 **
// * ** TSO BATCH TERMINAL MONITOR PROGRAM **
// * ** FOR BATCH SUBMISSION OF TSO COMMANDS **
// * **
// * * * * *
//STEP010 EXEC PGM=IKJEFT01,DYNAMNBR=30
//SYSTSPRT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSTSIN DD *
SETROPTS LIST
//

```

```

READY
SETROPTS LIST
ATTRIBUTES = INITSTATS WHEN(PROGRAM) TERMINAL(READ) SAUDIT CMDVIOL NOOPERAUDIT
STATISTICS = DATASET DASDVOL GDASDVOL TAPEVOL TERMINAL GTERMINL
AUDIT CLASSES = NONE
ACTIVE CLASSES = DATASET USER GROUP DASDVOL GDASDVOL TAPEVOL TERMINAL
GTERMINL TCICSTRN GCICSTRN PCICSPSB QCICSPSB FACILITY
FCICSFCT HCICSFCT JCICSJCT KCICSJCT DCICSDCT ECICSDCT
SCICSTST UCICSTST MCICSPPT NCICSPPT ACICSPCT BCICSPCT
PMBR PROGRAM TSOPROC ACCTNUM TSOAUTH CCICSCMD VCICSCMD
GENERIC PROFILE CLASSES = DATASET
GENERIC COMMAND CLASSES = DATASET
GENLIST CLASSES = NONE
GLOBAL CHECKING CLASSES = DATASET TERMINAL
ACLIST CLASSES = ACCTNUM
AUTOMATIC DATASET PROTECTION IS NOT IN EFFECT
ENHANCED GENERIC NAMING IS NOT IN EFFECT
REAL DATA SET NAMES OPTION IS INACTIVE
RES-BATCHALLRACF OPTION IS INACTIVE
RES-XBMALLRACF OPTION IS INACTIVE
RES-EARLYVERIFY OPTION IS ACTIVE
PROTECT-ALL OPTION IS NOT IN EFFECT
TAPE DATA SET PROTECTION IS INACTIVE
SECURITY RETENTION PERIOD IN EFFECT IS 1 DAYS.
BASE-ON-SCRATCH IS INACTIVE
SINGLE LEVEL NAMES NOT ALLOWED
LIST OF GROUPS ACCESS CHECKING IS ACTIVE.
INACTIVE USERIDS ARE BEING AUTOMATICALLY REVOKED AFTER 90 DAYS.
NO DATA SET MODELLING BEING DONE.

```

```

PASSWORD PROCESSING OPTIONS:
PASSWORD CHANGE INTERVAL IS 90 DAYS.
8 GENERATIONS OF PREVIOUS PASSWORDS BEING MAINTAINED.
AFTER 5 CONSECUTIVE UNSUCCESSFUL PASSWORD ATTEMPTS,
A USERID WILL BE REVOKED.
PASSWORD EXPIRATION WARNING LEVEL IS 5 DAYS.
INSTALLATION PASSWORD SYNTAX RULES:
RULE 1 LENGTH(4:8) *****

```

```

LEGEND:
A-ALPHA C-CONSONANT L-ALPHANUM N-NUMERIC V-VOWEL W-NOVOWEL *-ANYTHING
INSTALLATION DEFINED RVARV PASSWORD IS IN EFFECT FOR THE SWITCH FUNCTION.
INSTALLATION DEFINED RVARV PASSWORD IS IN EFFECT FOR THE STATUS FUNCTION.
ELEVELAUDIT IS INACTIVE

```

Sample JCL & Output for SETROPTS LIST Command



0100-PROCESS.

```
IF C1-4 = 'USER'
    MOVE 0          TO WS-REVOKED-FLAG
    MOVE SPACES    TO WS-GRPNAME
    MOVE C6-39     TO O-USERID
                    R-USERID
    ADD 1          TO WS-VALID-RECORDS.

IF C13-19 = 'REVOKED'
    MOVE 1          TO WS-REVOKED-FLAG
                    GO TO 0199-READ-NEXT.

IF C2-11 = 'ATTRIBUTES' AND
   WS-REVOKED-FLAG = 0 AND
   (C13-42 NOT = 'GRPACC' AND
    C13-42 NOT = 'NONE' ) AND
    MOVE C13-42     TO O-ATTRIB
                    R-ATTRIB

ELSE GO TO 0199-READ-NEXT.

WRITE FILE-OUT-RECORD
ADD 1 TO WS-RECS-WRITTEN
PERFORM 270-PRINT-REPORT-LINE.
```

0199-READ-NEXT.

```
READ FILE-IN
    AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.
IF ALL-TRANS-PROCESSED-SW = 'N'
    ADD 1 TO WS-RECS-READ.
```

Main paragraphs of the RUCFATTR program  
See accompanying disk for a complete copy of the program

SUMMARY OF RACF LISTUSER \*  
 WHERE USER ATTRIBUTE NOT = "GRPACC"  
 AS OF 02/26/90

USERID	USER NAME	ATTRIBUTE
CAOMS	NAME=CA SCHEDULER	OPERATIONS
CIA01	NAME=JOHN RALL	AUDITOR
CIA04	NAME=JOHN HAUSER	AUDITOR
DMSAR	NAME=DMS STC AUTO RESTORE	OPERATIONS
DMS08	NAME=DMS - DASD MANAGE	OPERATIONS
DRTTS99	NAME=DRTTS99 STC	SPECIAL GRPACC
IBMUSER	NAME=	SPECIAL OPERATIONS REVOKED
SSW	NAME=SOFTSWITCH	OPERATIONS GRPACC
TBC68	NAME=BILLY COSBY	SPECIAL GRPACC
TCV62	NAME=CHRIS VORIS	SPECIAL GRPACC
TFR97	NAME=FRANK REHOR	SPECIAL GRPACC
TFR97	NAME=FRANK REHOR	AUDITOR
THJ90	NAME=HAZEL JACOBY	SPECIAL OPERATIONS GRPACC
THK03	NAME=HOWARD KWASNIEWSKI	SPECIAL OPERATIONS GRPACC
THK03	NAME=HOWARD KWASNIEWSKI	AUDITOR
THW06	NAME=HANLEY WONG	UAUDIT
TJC50	NAME=JOE CAMPISI	AUDITOR

RECORDS READ = 19,805 ERRORS ENCOUNTERED = 0

VALID RECORDS = 1,055 RECORDS WRITTEN = 17

Sample output of the RACFATTR program

0100-PROCESS.

```
IF C1-4 = 'USER'
    MOVE 0          TO WS-REVOKED-FLAG
    MOVE C6-39     TO O-USERID
                  R-USERID
    ADD 1          TO WS-VALID-RECORDS.
```

```
IF C13-19 = 'REVOKED'
    MOVE 1          TO WS-REVOKED-FLAG
                  GO TO 0199-READ-NEXT.
```

```
IF C3-7 = 'GROUP' AND C24-31 NOT = 'USE '
    AND WS-REVOKED-FLAG = 0
    MOVE C24-31    TO O-AUTH
                  R-AUTH
    MOVE C9-16     TO O-GRPNAME
                  R-GRPNAME
```

ELSE GO TO 0199-READ-NEXT.

```
WRITE FILE-OUT-RECORD
ADD 1 TO WS-RECS-WRITTEN
PERFORM 270-PRINT-REPORT-LINE.
```

0199-READ-NEXT.

```
READ FILE-IN
    AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.
IF ALL-TRANS-PROCESSED-SW = 'N'
    ADD 1 TO WS-RECS-READ.
```

Main paragraphs of the RACFGRP program  
See accompanying disk for a complete copy of the program



INTERNAL AUDIT DEPARTMENT  
SUMMARY OF RACF LISTUSER \*  
WHERE GROUP AUTH IS NOT EQUAL TO "USE"  
AS OF 02/26/90

USERID	USER NAME	GROUP NAME	AUTH
IBMUSER	NAME=	SYS1	JOIN
IBMUSER	NAME=	VSAMDSET	JOIN
IBMUSER	NAME=	SYSCTLG	JOIN
TCV62	NAME=CHRIS VORIS	SYS1	JOIN
TED10	NAME=ERIC DUNIPACE	OPER	JOIN
THJ90	NAME=HAZEL JACOBY	SYS1	JOIN
THK03	NAME=HOWARD KWASNIEWSKI	SYS1	JOIN
THK03	NAME=HOWARD KWASNIEWSKI	SYSTEMS	JOIN
THK03	NAME=HOWARD KWASNIEWSKI	SYS2	JOIN
TPM41	NAME=PAT MCGEE	OPER	JOIN
TPM41	NAME=PAT MCGEE	OPER1	JOIN

RECORDS READ =	19,805	ERRORS ENCOUNTERED =	0
VALID RECORDS =	1,055	RECORDS WRITTEN =	11

Sample output of the RACFGRP program

0100-PROCESS.

```
IF C1-4 = 'USER'
    MOVE 0          TO WS-REVOKED-FLAG
    MOVE SPACES    TO WS-GRPNAME
    MOVE SPACES    TO O-AUTH
                  O-GRPNAME
    MOVE C6-39     TO O-USERID
                  R-USERID
    ADD 1          TO WS-VALID-RECORDS.
```

```
IF C13-19 = 'REVOKED'
    MOVE 1          TO WS-REVOKED-FLAG
    GO TO 0199-READ-NEXT.
```

```
IF C3-7 = 'GROUP'
    AND WS-REVOKED-FLAG = 0
    MOVE C9-16     TO WS-GRPNAME.
```

```
IF C5-22 = 'CONNECT ATTRIBUTES' AND
    C24-30 NOT = 'NONE ' AND
    WS-REVOKED-FLAG = 0
    MOVE WS-GRPNAME TO O-GRPNAME
                  R-GRPNAME
    MOVE C24-30     TO O-CONNATTR
                  R-CONNATTR
```

ELSE GO TO 0199-READ-NEXT.

```
WRITE FILE-OUT-RECORD
ADD 1 TO WS-RECS-WRITTEN
PERFORM 270-PRINT-REPORT-LINE.
```

0199-READ-NEXT.

```
READ FILE-IN
    AT END MOVE 'Y' TO WS-END-TXNS-SW.
ADD 1 TO WS-RECS-READ.
```

Main paragraphs of the RACFCONA program  
See accompanying disk for a complete copy of the program

USERID	USER NAME	GROUP NAME	CONNECT ATTR.
DPS	NAME=DPS STC	SYSTEMS	GRPACC
FALCON	NAME=FALCON STC	SYSTEMS	GRPACC
GTF	NAME=GTF STC	SYSTEMS	GRPACC
GTFVTAM	NAME=GTFVTAM STC	SYSTEMS	GRPACC
J	NAME=INTERNAL READER	SYSTEMS	GRPACC
JES2	NAME=JES2 SUBSYSTEM	SYSTEMS	GRPACC
NCCFB	NAME=NCCFB STC	SYSTEMS	GRPACC
NET	NAME=NET STC	SYSTEMS	GRPACC
NPM	NAME=NPM STC	SYSTEMS	GRPACC
PRDTOTAL	NAME=PROD TOTAL	SYSTEMS	GRPACC
QXPWTR	NAME=PROD RDMS	SYSTEMS	GRPACC
QXTWTR	NAME=TEST RDMS	SYSTEMS	GRPACC
RMF	NAME=RMF STC	SYSTEMS	GRPACC
SAR	NAME=SAR STC	SYSTEMS	GRPACC
TDG07	NAME=DAVE GRAVES	SYSTEMS	GRPACC
TDI04	NAME=DAVE IRISH	SYSTEMS	GRPACC
TED10	NAME=ERIC DUNIPACE	OPER	GRPACC
THK03	NAME=HOWARD KWASNIEWSKI	SYS1	SPECIAL
THK03	NAME=HOWARD KWASNIEWSKI	SYSTEMS	SPECIAL
THK03	NAME=HOWARD KWASNIEWSKI	SYS2	SPECIAL
THW06	NAME=HANLEY WONG	SYSTEMS	GRPACC
TKP14	NAME=KEN PARELLO	SYSTEMS	GRPACC
TMSINIT	NAME=TMS INITIALIZATION	SYSTEMS	GRPACC
PM41	NAME=PAT MCGEE	OPER	SPECIAL
PM41	NAME=PAT MCGEE	OPER1	SPECIAL
TSO	NAME=TSO STC	SYSTEMS	GRPACC
TSTTOTAL	NAME=TEST TOTAL	SYSTEMS	GRPACC

RECORDS READ = 19,805 ERRORS ENCOUNTERED = 0

VALID RECORDS = 1,055 RECORDS WRITTEN = 27

Sample output of the RACFCONA program

0100-PROCESS.

```
IF C1-4 = 'USER'
    MOVE 0          TO WS-REVOKED-FLAG
    MOVE SPACES    TO WS-GRPNAME
    MOVE SPACES    TO O-AUTH
                    O-GRPNAME
    MOVE C6-39     TO O-USERID
                    R-USERID
    ADD 1          TO WS-VALID-RECORDS.

IF C13-19 = 'REVOKED'
    MOVE 1          TO WS-REVOKED-FLAG
                    GO TO 0199-READ-NEXT.

IF C3-7 = 'GROUP'
    AND WS-REVOKED-FLAG = 0
    MOVE C9-16     TO WS-GRPNAME.

IF C5-12 = 'CONNECTS' AND (C27-34 NOT = 'NONE ' AND
                          C27-34 NOT = 'READ ')
    AND WS-REVOKED-FLAG = 0
*
* REMOVE NEXT LINE IF YOU WANT ALL GROUP CONNECT POSSIBLE
* REGARDLESS OF USE
*
    AND C14-19 NOT = ' 00'

    MOVE C27-34     TO O-AUTH
                    R-AUTH
    MOVE WS-GRPNAME TO O-GRPNAME
                    R-GRPNAME
    MOVE C14-19     TO O-CONNECTS
                    R-CONNECTS

ELSE GO TO 0199-READ-NEXT.

WRITE FILE-OUT-RECORD
ADD 1 TO WS-RECS-WRITTEN
PERFORM 270-PRINT-REPORT-LINE.
```

0199-READ-NEXT.

```
READ FILE-IN
    AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.
IF ALL-TRANS-PROCESSED-SW = 'N'
    ADD 1 TO WS-RECS-READ.
```

Main paragraphs of the RACFCONN program  
See accompanying disk for a complete copy of the program

USERID	USER NAME	GROUP	CONN. UACC	CONNECTS
CAOMS	NAME=CA SCHEDULER	SYSTEMS	UPDATE	4,200
CATU	NAME=ALLOW CATALOG UPDATE	CATALOG	UPDATE	478
GTF	NAME=GTF STC	SYSTEMS	UPDATE	32
GTFVTAM	NAME=GTFVTAM STC	SYSTEMS	UPDATE	169
J	NAME=INTERNAL READER	SYSTEMS	UPDATE	9,408
JES2	NAME=JES2 SUBSYSTEM	SYSTEMS	UPDATE	730
NET	NAME=NET STC	SYSTEMS	UPDATE	741
NPM	NAME=NPM STC	SYSTEMS	UPDATE	795
PRDTOTAL	NAME=PROD TOTAL	SYSTEMS	UPDATE	2,566
RMF	NAME=RMF STC	SYSTEMS	UPDATE	670
SAR	NAME=SAR STC	SYSTEMS	UPDATE	786
TBC39	NAME=BRIAN CHINN	DBA	ALTER	2,204
TDB66	NAME=DON BRUNS	DBA	ALTER	3,234
TDC88	NAME=DON CHESBROUGH JR.	TELECOMM	UPDATE	3,806
TDG07	NAME=DAVE GRAVES	SYSTEMS	UPDATE	414
TDL35	NAME=DOUG LAUGHMAN	OPER	UPDATE	688
TED10	NAME=ERIC DUNIPACE	OPER	ALTER	1,213
THJ90	NAME=HAZEL JACOBY	SYS1	ALTER	8,149
THK03	NAME=HOWARD KWASNIEWSKI	SYS1	ALTER	22,190
THK03	NAME=HOWARD KWASNIEWSKI	SYSTEMS	ALTER	02
TLF17	NAME=LENA FEDERICK	OPER	UPDATE	7,660
TLF17	NAME=LENA FEDERICK	OPER1	UPDATE	1,136
TMG42	NAME=MINA GRANADOS	DBA	ALTER	218
VMSINIT	NAME=TMS INITIALIZATION	SYSTEMS	UPDATE	656
TOP34	NAME=PRINTER OPERATOR	OPER	UPDATE	02
TOP34	NAME=PRINTER OPERATOR	TERMOPER	UPDATE	2,087
TOP59	NAME=CONSOLE OPERATOR	OPER	UPDATE	05
TOP59	NAME=CONSOLE OPERATOR	TERMOPER	UPDATE	8,899
TOP59	NAME=CONSOLE OPERATOR	OPER1	UPDATE	2,993
TPM41	NAME=PAT MCGEE	OPER	ALTER	4,768
TPM41	NAME=PAT MCGEE	OPER1	ALTER	4,019
TPS15	NAME=PAT SANTIAGO	OPER	UPDATE	3,651
TSM56	NAME=SUMA MADHVARAJA	DBA	ALTER	2,162
TSO	NAME=TSO STC	SYSTEMS	UPDATE	726
TSTTOTAL	NAME=TEST TOTAL	SYSTEMS	UPDATE	1,533
TTSS8	NAME=TILLIE SHORT	OPER	UPDATE	1,047
TVR12	NAME=VINCE RIVAS	OPER	ALTER	12,295

RECORDS READ = 19,805 ERRORS ENCOUNTERED = 0

VALID RECORDS = 1,055 RECORDS WRITTEN = 47

Sample output of the RACFCONN program

0100-PROCESS.

```
IF C1-4 = 'USER'
    MOVE 0          TO WS-REVOKED-FLAG
    MOVE SPACES    TO WS-GRPNAME
    MOVE C6-39     TO O-USERID
                  R-USERID
    ADD 1          TO WS-VALID-RECORDS.
```

```
IF C13-19 = 'REVOKED'
    MOVE 1          TO WS-REVOKED-FLAG
    GO TO 0199-READ-NEXT.
```

```
*
      '12345678901234567890'
IF C2-21 = 'CLASS AUTHORIZATIONS' AND
C23-28 NOT = 'NONE ' AND
WS-REVOKED-FLAG = 0
    MOVE C23-28 TO O-CLAUTH
                  R-CLAUTH
ELSE GO TO 0199-READ-NEXT.
```

```
WRITE FILE-OUT-RECORD
ADD 1 TO WS-RECS-WRITTEN
PERFORM 270-PRINT-REPORT-LINE.
```

0199-READ-NEXT.

```
READ FILE-IN
AT END MOVE 'Y' TO ALL-TRANS-PROCESSED-SW.
IF ALL-TRANS-PROCESSED-SW = 'N'
    ADD 1 TO WS-RECS-READ.
```

Main paragraphs of the RACFCLAS program  
See accompanying disk for a complete copy of the program

PROGRAM: RACFCLAS

INTERNAL AUDIT DEPARTMENT  
SUMMARY OF RACF LISTUSER \*  
WHERE CLASS AUTH NOT = "NONE"  
AS OF 02/26/90

PAGE NO.

1

USERID	USER NAME	CLASS AUTH.
TED10	NAME=ERIC DUNIPACE	USER
TPM41	NAME=PAT MCGEE	USER

RECORDS READ =	19,805	ERRORS ENCOUNTERED =	0
VALID RECORDS =	1,055	RECORDS WRITTEN =	2

Sample output of the RACFCLAS program





## VIII. PAYBACKS OF AUTOMATING THE RACF AUDIT

- \* Efficient at the time of review
- \* Rerun or follow up can be done at any time
- \* Can be useful to data security personnel or systems programmers
- \* Improves the image of auditors as "value added" consultants

## IX. HOW TO GET STARTED

1. The companion disk "RACF AUDIT UTILITY PROGRAMS" has complete COBOL source code, JCL & execution procedures for the programs described in this presentation.
2. Get the AUDITOR attribute assigned to your TSO userid. (What? You don't have a TSO id!! You've never logged on to your company's mainframe? What better reason to start!)
3. Don't be afraid to open the IBM RACF manuals. The most helpful ones are:

COMMAND LANGUAGE REFERENCE MANUAL	SC28-0733-8
pp. 3-87 -- 3-101	
SECURITY ADMINISTRATOR'S GUIDE	SC28-1340-4
Chapters 3 & 4	

The AUDITOR'S GUIDE (SC28-1342-4) discusses the Data Security Monitor (DSMON) and the RACF Report Writer (RACFRW) at length.

4. Call me if you get stuck or have a question.

INTERNAL AUDIT DEPARTMENT  
EXECUTION PROCEDURE  
RACF AUDIT SOFTWARE  
GENERAL TASKS

1. Ensure that your TSO userid has the AUDITOR attribute assigned to it. Without this attribute, the RACF LISTDSD, LISTUSER & SETROPTS commands will not execute correctly.
2. Print out the .AUD & .TXT files from the floppy disk.
3. Create source and load libraries for the COBOL programs.
4. Create a JCL library for the JCL members.
5. Upload files from floppy disk to the appropriate libraries. See FILES.TXT for the contents of the disk.
6. Review JCL members for necessary modifications: JOBCARD, JOBLIB & high level dataset name qualifiers.
7. Determine what the high level qualifiers are for production, system & backup dataset names at your company. Modify the LISTAUTH and LISTDSD JCL members as necessary.
8. Determine what the userids of the production scheduler, internal reader and console operators are. Modify the RACFAUTH COBOL program to exclude these userids from being reported.
9. Determine what the installation defined password change interval is. This can be found by running SETROPTS.JCL. Modify the 0100-PROCESS paragraph of the RACFPINT COBOL program accordingly.
10. Insert company name in report headings in all COBOL programs.
11. Compile & link all COBOL programs. Check that the return code from the link step is 00.

## JCL APPENDIX

JCL to execute RACF commands	PAGE
LISTDSD.....	A1
LISTUSER.....	A2

JCL to execute audit software	
RACFUACC.....	A3
RACFAUTH.....	A4
RACFAUT2.....	A5
RACFUNNO.....	A6
RACFPINT.....	A7
RACFATTR.....	A8
RACFCONA.....	A9
RACFCONN.....	A10
RACFCLAS.....	A11
RACFGRP.....	A12

```

//CIA04028 JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
//      NOTIFY=CIA04,MSGCLASS=X,TIME=(,15)
//*****
//* DELETE OUTPUT BEFORE EXECUTION
//*****
//DEL      EXEC PGM=IEFBR14
//DD1      DD DSN=CIA04.IKJEFT01.LISTDSD(AUTHUSER,
//          DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
//SYSPRINT DD SYSOUT=*
/*
//* *****
//* **      MEMBER      IKJEFT01                      **
//* **      TSO BATCH TERMINAL MONITOR PROGRAM        **
//* **      FOR BATCH SUBMISSION OF TSO COMMANDS      **
//* *****
//STEP010 EXEC PGM=IKJEFT01,DYNAMNBR=30
//*YSTSPRT DD      SYSOUT=*
//SYSOUT   DD      SYSOUT=*
//SYSTSPRT DD      DSN=CIA04.IKJEFT01.LISTDSD(AUTHUSER,
//          UNIT=TEST,
//          DISP=(NEW,CATLG,DELETE),
//          SPACE=(TRK,(200,10),RLSE),
//          DCB=(LRECL=80,BLKSIZE=11440,RECFM=FB)
//SYSTSIN  DD      *
//          LISTDSD PREFIX(P) AUTHUSER
//

```

} output to disk

Keep these in sync

Execute 3 times

- production
- system
- backup

Example JCL for the LISTDSD command  
 changes needed:  
 BCARD lines  
 IT= lines  
 phlevel qualifiers of dataset names from CIA04 to your userid

```

//CIA04028 JOB (DPCOR0000,1076), 'INTERNAL-AUDIT-2', CLASS=D,
// NOTIFY=CIA04,MSGCLASS=X,TIME=(,15)
//*****
//* DELETE OUTPUT BEFORE EXECUTION
//*****
//DEL EXEC PGM=IEFBR14
//DD1 DD DSN=CIA04.IKJEFT01.LISTUSER,
// DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
//SYSPRINT DD SYSOUT=*
//*
//* *****
//* ** MEMBER IKJEFT01 **
//* ** TSO BATCH TERMINAL MONITOR PROGRAM **
//* ** FOR BATCH SUBMISSION OF TSO COMMANDS **
//* *****
//STEP010 EXEC PGM=IKJEFT01,DYNAMNBR=30
//*YSTSPRT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//SYSTSPRT DD DSN=CIA04.IKJEFT01.LISTUSER,
// UNIT=TEST,
// DISP=(NEW,CATLG,DELETE),
// SPACE=(TRK,(200,10),RLSE),
// DCB=(LRECL=80,BLKSIZE=11440,RECFM=FB)
//SYSTSIN DD *
// LISTUSER *
//

```

} output  
to  
disk

Sample JCL for the LISTUSER command  
 Changes needed:  
 1) BCARD lines  
 2) UNIT= lines  
 3) High-level qualifiers of dataset names from CIA04 to your userid

```

00100 //CIA04028 JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
00200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
00210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
00220 //*****
00230 //* DELETE OUTPUT BEFORE EXECUTION
00240 //*****
00250 //DEL EXEC PGM=IEFBR14
00260 //DD1 DD DSN=CIA04.RACF.LISTDSD.UACC,
00270 //      DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
00280 //SYSPRINT DD SYSOUT=*
00290 /*
00300 //*****
00400 //** PROGRAM ID: RACFUACC COBOL VERSION
00500 //** AUDIT DEPARTMENT PROGRAM:
00600 //*****
00700 //STEP040 EXEC PGM=RACFUACC
00800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
00900 //SYSMSG DD SYSOUT=*
01000 //SYSPRINT DD SYSOUT=*
01100 //PRINT DD SYSOUT=* * REPORT PRINT
01200 //IN DD DSN=CIA04.IKJEFT01.LISTDSDP)AUTHUSER, .prod
01300 //      DISP=SHR
01400 // DD DSN=CIA04.IKJEFT01.LISTDSDS)AUTHUSER, .system
01500 //      DISP=SHR
01600 // DD DSN=CIA04.IKJEFT01.LISTDSDB)AUTHUSER, .backup
01700 //      DISP=SHR
01800 //OUT DD DSN=CIA04.RACF.LISTDSD.UACC,
01900 //      UNIT=TEST,
02000 //      DISP=(NEW,CATLG,DELETE),
02100 //      SPACE=(TRK,(100,10),RLSE),
02200 //      DCB=(LRECL=48,BLKSIZE=11424,RECFM=FB)
02300 //*****
02400 /*

```

Sample JCL for the RACFUACC program  
 Changes needed:  
 \* JCL CARD lines 100 & 200  
 \* JOB LIB line 210  
 \* UNIT= lines  
 \* Joblevel qualifiers of dataset names from CIA04 to your userid

```

000100 //CIA04028 JOB (DPCOR0000,1076), 'INTERNAL-AUDIT-2', CLASS=A,
00200 // NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
00210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
00220 //*****
000230 //* DELETE OUTPUT BEFORE EXECUTION
000240 //*****
000250 //DEL EXEC PGM=IEFBR14
000260 //DD1 DD DSN=CIA04.RACF.LISTDSD.AUTHUSER,
000270 // DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
000280 //SYSPRINT DD SYSOUT=*
000290 /*
000300 //*****
000400 //** PROGRAM ID: RACFAUTH COBOL VERSION
000500 //** AUDIT DEPARTMENT PROGRAM:
000600 //*****
000700 //STEP010 EXEC PGM=RACFAUTH
000800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
000900 //SYSMSG DD SYSOUT=*
001000 //SYSPRINT DD SYSOUT=*
001100 //PRINT DD SYSOUT=* * REPORT PRINT
001200 //IN DD DSN=CIA04.IKJEFT01.LISTSDP.AUTHUSER,
001300 // DISP=SHR
001400 // DD DSN=CIA04.IKJEFT01.LISTSDS.AUTHUSER,
001500 // DISP=SHR
001600 // DD DSN=CIA04.IKJEFT01.LISTSDSDB.AUTHUSER,
001700 // DISP=SHR
001800 //OUT DD DSN=CIA04.RACF.LISTDSD.AUTHUSER,
001900 // UNIT=TEST,
002000 // DISP=(NEW,CATLG,DELETE),
002100 // SPACE=(TRK,(100,10),RLSE),
000000 // DCB=(LRECL=55,BLKSIZE=11440,RECFM=FB)
002400 //*****
002400 /*

```

Sample JCL for the RACFAUTH program  
 Changes needed:  
 BCARD lines 100 & 200  
 BLIB line 210  
 = lines  
 Job qualifiers of dataset names from CIA04 to your userid

```

//CIA04028 JOB (DPCOR0000,1076), 'INTERNAL-AUDIT-2', CLASS=A,
// NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
//JOB LIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
//*****
//* DELETE OUTPUT BEFORE EXECUTION
//*****
//DEL EXEC PGM=IEFBR14
//DD1 DD DSN=CIA04.RACF.RACFAUT2.IN,
// DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
//SYSPRINT DD SYSOUT=*
/*
//STEP01 EXEC PGM=SORT
//SYSOUT DD SYSOUT=A
//SORTIN DD DSN=CIA04.RACF.LISTDSD.AUTHUSER,
// DISP=SHR
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),CONTIG)
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),CONTIG)
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(10,10)),CONTIG)
//SORTOUT DD DSN=CIA04.RACF.RACFAUT2.IN,
// DISP=(NEW,CATLG,DELETE),
// UNIT=PTSO,
// SPACE=(TRK,(10,1),RLSE),
// DCB=(RECFM=FB,LRECL=55,BLKSIZE=8855)
//SYSIN DD *
// SORT FIELDS=(41,8,A,1,40,A),FORMAT=CH
/*
//*****
//** PROGRAM ID: RACFAUT2 COBOL VERSION
//** AUDIT DEPARTMENT PROGRAM:
//*****
//STEP010 EXEC PGM=RACFAUT2,COND=(4,LE)
//SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
//SYSMSG DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//PRINT DD SYSOUT=*,COPIES=2 * REPORT PRINT
//IN DD DSN=CIA04.RACF.RACFAUT2.IN,
// DISP=SHR
//*****
//
//

```

ple JCL for the RACFAUT2 program  
 nges needed:  
 CARD lines 100 & 200  
 LIB line 210  
 T= lines  
 hlevel qualifiers of dataset names from CIA04 to your userid



```

000100 //CIA04028 JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
000200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
    210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
    220 //*****
000230 //* DELETE OUTPUT BEFORE EXECUTION
000240 //*****
000250 //DEL EXEC PGM=IEFBR14
000260 //DD1 DD DSN=CIA04.RACF.LISTUSER,
000270 //      DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
000280 //SYSPRINT DD SYSOUT=*
000290 /*
000300 //*****
000400 //** PROGRAM ID: RACFUNNO COBOL VERSION
000500 //** AUDIT DEPARTMENT PROGRAM:
000600 //*****
000700 //STEP010 EXEC PGM=RACFUNNO
000800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
000900 //SYSMSG DD SYSOUT=*
001000 //SYSPRINT DD SYSOUT=*
001100 //PRINT DD SYSOUT=* * REPORT PRINT
001200 //IN DD DSN=CIA04.IKJEFT01.LISTUSER,
001300 //      DISP=SHR
001400 //OUT DD DSN=CIA04.RACF.LISTUSER,
001500 //      UNIT=TEST,
001600 //      DISP=(NEW,CATLG,DELETE),
001700 //      SPACE=(TRK,(100,10),RLSE),
001800 //      DCB=(LRECL=55,BLKSIZE=8855,RECFM=FB)
001900 //*****
002000 /*

```

sample JCL for the RACFUNNO program

changes needed:

JOB CARD lines 100 & 200

JOBLIB line 210

DDT= lines

level qualifiers of dataset names from CIA04 to your userid

```

0100 //CIA04028 JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
0200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
0210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
0220 //*****
0230 //* DELETE OUTPUT BEFORE EXECUTION
0240 //*****
0250 //DEL EXEC PGM=IEFBR14
0260 //DD1 DD DSN=CIA04.RACF.LISTUSER.PINT,
0270 //      DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
0280 //SYSPRINT DD SYSOUT=*
0290 /*
0300 //*****
0400 //** PROGRAM ID: RACFPINT COBOL VERSION
0500 //** AUDIT DEPARTMENT PROGRAM:
0600 //*****
0700 //STEP010 EXEC PGM=RACFPINT
0800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
0900 //SYSMSG DD SYSOUT=*
1000 //SYSPRINT DD SYSOUT=*
1100 //PRINT DD SYSOUT=* * REPORT PRINT
1200 //IN DD DSN=CIA04.IKJEFT01.LISTUSER,
1300 //      DISP=SHR
1400 //OUT DD DSN=CIA04.RACF.LISTUSER.PINT,
1500 //      UNIT=TEST,
1600 //      DISP=(NEW,CATLG,DELETE),
1700 //      SPACE=(TRK,(100,10),RLSE),
1800 //      DCB=(LRECL=41,BLKSIZE=11439,RECFM=FB)
1900 //*****
2000 /*

```

Example JCL for the RACFPINT program

Pages needed:

CARD lines 100 & 200

LIB line 210

PF= lines

Place level qualifiers of dataset names from CIA04 to your userid

```

000100 //CIA04028 JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
000200 //          NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
000310 //JOBLIB   DD DSN=CIA04.LOAD.COBOL,DISP=SHR
000420 //*****
000530 //* DELETE OUTPUT BEFORE EXECUTION
000640 //*****
000750 //DEL      EXEC PGM=IEFBR14
000860 //DD1      DD DSN=CIA04.RACF.LISTUSER.ATTR,
000970 //          DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
001080 //SYSPRINT DD SYSOUT=*
001190 //*
001300 //*****
001400 //** PROGRAM ID: RACFATTR COBOL VERSION
001500 //** AUDIT DEPARTMENT PROGRAM:
001600 //*****
001700 //STEP010 EXEC PGM=RACFATTR
001800 //SYSOUT   DD SYSOUT=* * SYSTEM MESSAGES
001900 //SYSMSG   DD SYSOUT=*
002000 //SYSPRINT DD SYSOUT=*
002100 //PRINT    DD SYSOUT=* * REPORT PRINT
002200 //IN       DD DSN=CIA04.IKJEFT01.LISTUSER,
002300 //          DISP=SHR
002400 //OUT      DD DSN=CIA04.RACF.LISTUSER.ATTR,
002500 //          UNIT=TEST,
002600 //          DISP=(NEW,CATLG,DELETE),
002700 //          SPACE=(TRK,(100,10),RLSE),
002800 //          DCB=(LRECL=66,BLKSIZE=8844,RECFM=FB)
002900 //*****
003000 //*

```

Sample JCL for the RACFATTR program

Changes needed:

DDBCARD lines 100 & 200

DDJOBLIB line 210

DDSYSOUT= lines

DD dataset qualifiers of dataset names from CIA04 to your userid

```

00100 //CIA04028 JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
00200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
00210 //JOB LIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
00220 //*****
00230 //* DELETE OUTPUT BEFORE EXECUTION
00240 //*****
00250 //DEL      EXEC PGM=IEFBR14
00260 //DD1      DD DSN=CIA04.RACF.LISTUSER.CONA,
00270 //          DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
00280 //SYS PRINT DD SYSOUT=*
00290 /*
00300 //*****
00400 //** PROGRAM ID: RACFCONA COBOL VERSION
00500 //** AUDIT DEPARTMENT PROGRAM:
00600 //*****
00700 //STEP010 EXEC PGM=RACFCONA
00800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
00900 //SYMSG DD SYSOUT=*
01000 //SYS PRINT DD SYSOUT=*
01100 //PRINT DD SYSOUT=* * REPORT PRINT
01200 //IN DD DSN=CIA04.IKJEFT01.LISTUSER,
01300 //      DISP=SHR
01400 //OUT DD DSN=CIA04.RACF.LISTUSER.CONA,
01500 //      UNIT=TEST,
01600 //      DISP=(NEW,CATLG,DELETE),
01700 //      SPACE=(TRK,(100,10),RLSE),
01800 //      DCB=(LRECL=59,BLKSIZE=8850,RECFM=FB)
01900 //*****
02000 /*

```

Example JCL for the RACFCONA program

Resources needed:

3 CARDS lines 100 & 200

3 LIB line 210

3 T= lines

3 High level qualifiers of dataset names from CIA04 to your userid

```

000100 //CIA0402S JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
000200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
000210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
000220 //*****
000230 //* DELETE OUTPUT BEFORE EXECUTION
000240 //*****
000250 //DEL EXEC PGM=IEFBR14
000260 //DD1 DD DSN=CIA04.RACF.LISTUSER.CONN,
000270 //      DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
000280 //SYSPRINT DD SYSOUT=*
000290 /*
000300 //*****
000400 //** PROGRAM ID: RACFCONN COBOL VERSION
000500 //** AUDIT DEPARTMENT PROGRAM:
000600 //*****
000700 //STEP010 EXEC PGM=RACFCONN
000800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
000900 //SYSMSG DD SYSOUT=*
001000 //SYSPRINT DD SYSOUT=*
001100 //PRINT DD SYSOUT=* * REPORT PRINT
001200 //IN DD DSN=CIA04.IKJEFT01.LISTUSER,
001300 //      DISP=SHR
001400 //OUT DD DSN=CIA04.RACF.LISTUSER.CONN,
001500 //      UNIT=TEST,
001600 //      DISP=(NEW,CATLG,DELETE),
001700 //      SPACE=(TRK,(100,10),RLSE),
001800 //      DCB=(LRECL=58,BLKSIZE=8874,RECFM=FB)
001900 //*****
002000 /*

```

Example JCL for the RACFCONN program

Changes needed:

BCARD lines 100 & 200

BLIB line 210

lines

Level qualifiers of dataset names from CIA04 to your userid

```

000100 //CIA0402S JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
000200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
000210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
000220 //*****
000230 //* DELETE OUTPUT BEFORE EXECUTION
000240 //*****
000250 //DEL EXEC PGM=IEFBR14
000260 //DD1 DD DSN=CIA04.RACF.LISTUSER.CLAS,
000270 //      DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
000280 //SYSPRINT DD SYSOUT=*
000290 /*
000300 //*****
000400 //** PROGRAM ID: RACFCLAS COBOL VERSION
000500 //** AUDIT DEPARTMENT PROGRAM:
000600 //*****
000700 //STEP010 EXEC PGM=RACFCLAS
000800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
000900 //SYSMSG DD SYSOUT=*
001000 //SYSPRINT DD SYSOUT=*
001100 //PRINT DD SYSOUT=* * REPORT PRINT
001200 //IN DD DSN=CIA04.IKJEFT01.LISTUSER,
001300 //      DISP=SHR
001400 //OUT DD DSN=CIA04.RACF.LISTUSER.CLAS,
001500 //      UNIT=TEST,
001600 //      DISP=(NEW,CATLG,DELETE),
001700 //      SPACE=(TRK,(100,10),RLSE),
001800 //      DCB=(LRECL=66,BLKSIZE=8844,RECFM=FB)
001900 //*****
002000 /*

```

**Example JCL for the RACFCLAS program**  
**Resources needed:**  
 BCARD lines 100 & 200  
 JOBLIB line 210  
 UNIT= lines  
 Highlevel qualifiers of dataset names from CIA04 to your userid

```

000100 //CIA0402S JOB (DPCOR0000,1076),'INTERNAL-AUDIT-2',CLASS=A,
000200 //      NOTIFY=CIA04,MSGCLASS=X,TIME=(,10)
000210 //JOBLIB DD DSN=CIA04.LOAD.COBOL,DISP=SHR
000220 //*****
000230 //* DELETE OUTPUT BEFORE EXECUTION
000240 //*****
000250 //DEL EXEC PGM=IEFBR14
000260 //DD1 DD DSN=CIA04.RACF.LISTUSER.GRP,
000270 //      DISP=(MOD,DELETE),UNIT=SYSALLDA,SPACE=(TRK,(0))
000280 //SYSPRINT DD SYSOUT=*
000290 /*
000300 //*****
000400 //** PROGRAM ID: RACFGRP COBOL VERSION
000500 //** AUDIT DEPARTMENT PROGRAM:
000600 //*****
000700 //STEP010 EXEC PGM=RACFGRP
000800 //SYSOUT DD SYSOUT=* * SYSTEM MESSAGES
000900 //SYSMSG DD SYSOUT=*
001000 //SYSPRINT DD SYSOUT=*
001100 //PRINT DD SYSOUT=* * REPORT PRINT
001200 //IN DD DSN=CIA04.IKJEFT01.LISTUSER,
001300 //      DISP=SHR
001400 //OUT DD DSN=CIA04.RACF.LISTUSER.GRP,
001500 //      UNIT=TEST,
001600 //      DISP=(NEW,CATLG,DELETE),
001700 //      SPACE=(TRK,(100,10),RLSE),
001800 //      DCB=(LRECL=52,BLKSIZE=8840,RECFM=FB)
001900 //*****
002000 /*

```

Sample JCL for the RACFGRP program

Changes needed:

BCARD lines 100 & 200

BLIB line 210

T= lines

Level qualifiers of dataset names from CIA04 to your userid

