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IBM

IBM File Manager for z/OS IMS feature

Program number 5655-V52

Tutorial

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This is the tutorial for the IMS™ feature of IBM's File Manager for z/OS®, one of the IBM zSeries® problem determination tools.

- **Using a view**

- Selecting segment types to display
- Selecting segments to display based on data content
- Save a view
- Customize how data is displayed
- Use edit or browse to format and generate a report



- **Extract and Load utilities**

- Extract utility
 - Extract using a key values file
 - Working with criteria sets
 - Extract using a criteria set
- Delete / define utility
- Load utility

In this section, you will learn how to use the File Manager IMS extract and load utilities.

Extract Utility



Use the extract utility to copy segments from a database to a file

- The file can be read by the load utility
- **Extract selection methods:**
 - 1. Do not use either a key values file or criteria set**
 - All segments are extracted
 - 2. Use a key values file**
 - A key values file is a list of root keys in a sequential file
 - Roots in the key file are extracted with all of their dependents
 - 3. Use a criteria set**
 - Complex criteria can be specified to select database records
 - Segment types can be selected

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The extract utility is used to copy segments from an IMS database to a file. The resulting file can be read by the load utility to reload the database or load another similar database. There are three ways to select segments to be extracted. First, you can choose not to perform any selection. If you do not specify either a key values data set or a criteria set, then all of the segments in the database will be extracted.

Second, you can use a special file called a key values file. A key values file contains a list of root key values that should be extracted. The extract utility uses the values in the file to read root segments, and extracts each matching root and all of its dependents.

The third method is to use a criteria set. A criteria set is similar to a view, and can be used to specify selection criteria and segment types to be extracted.

Extracting using a key values file



- Steps:
 - Create a root key value file with the required keys
 - Generate extract utility JCL
 - Run the JCL to extract the data

Next, you will see an example of using the extract utility with a root key values file.

XKEY creates a key file



```
Process  Options  Help
-----  -
FM/IMS                               Edit : IMS Database USRSCN
Command ==> xkey                               Scroll CSR
CHKPID FM000001 Autosave ON  SHOW SUP ON  Scope DB  Format TABL
Cmd Level Segment #2 #3 #4 +
AN 1:10 AN 11:10 AN 21:30
<---+---> <---+---> <---+---1---+--->
___ 1 CUSTADDR 0003874923 3273325564 BILL BUFFALO JR
___ 2 TOTUSE Key=200303
___ 3 PRMUSE Key=20030301
___ 3 PRMUSE Key=20030302
___ 3 PRMUSE Key=20030303
___ 3 PRMUSE Key=20030305
___ 3 PRMUSE Key=20030306
___ 3 PRMUSE Key=20030307
___ 3 PRMUSE Key=20030308
___ 3 PRMUSE Key=20030309
___ 3 PRMUSE Key=20030310
___ 3 PRMUSE Key=20030311
___ 3 PRMUSE Key=20030312
F1=Help F2=Format F3=Exit F4=CRetriev F5=RFind F6=RC F7=Up F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Ca Enter
```

The **XKEY** command is the easiest way to get a key file. Use it in either browse or edit. If segments were selected with a template, only selected root keys are written.

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The first step is to create a root key values file with a list of keys that you want to extract. One way is to create your own file, and manually enter a list of root key values, one per root segment. It can be a sequential file or a PDS member. But there is an easier way: the XKEY command.

You can use the XKEY command in either browse or edit. First, open the database. You can optionally modify the view so that only certain segments are selected. Then, type XKEY on the command line, and press Enter.

Navigate to ISPF edit to view / modify key file



Process Options Help

FM/IMS Edit : IM

Command ==> **start 2**

Start 2 splits the screen and starts an ISPF edit session

CHKPID FM000001 Autosave ON SHOW SUP ON Scope DB Format TABL CSR

Cmd	Level	Segment	#2	#3	#4	+
			AN 1:10	AN 11:10	AN 21:30	
			<---+--->	<---+--->	<---+---1---+---	
___	1	CUSTADDR	0003874923	3273325564	BILL BUFFALO JR	
___	2	TOTUSE	Key=200303			
___	3	PRMUSE	Key=20030301			
___	3	PRMUSE	Key=20030302			
___	3	PRMUSE	Key=20030303			
___	3	PRMUSE	Key=20030305			
___	3	PRMUSE	Key=20030306			
___	3	PRMUSE	Key=20030307			
___	3	PRMUSE	Key=20030308			
___	3	PRMUSE	Key=20030309			
___	3	PRMUSE	Key=20030310			
___	3					
___	3					

XKEY file DNET845.XKEY.D100111.T180303.USRSCN created

F1=Help F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Ca

Enter

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A root key value file is created automatically, and the name of the file is displayed on the screen. Next, you can use the ISPF editor to update the new file. On the system shown in this example, the ISPF editor can be started with a START 2 command, although there may be different commands to get there on your system.

The XKEY file can be edited



```
Menu RefList RefMode Utilities Workstation Help
-----
Edit Entry Panel
Command ==> _____ More: +
ISPF Library:
Project . . . . _____
Group . . . . _____ . . . . _____ . . . . _____
Type . . . . _____
Member . . . . _____ (Blank or pattern for member selection list)
Other Partitioned, Sequential or VSAM Data Set, or z/OS UNIX file:
Name . . . . 'DNET845.XKEY.D100111.T180303.USRSCN' +
Volume Serial . . . . _____ (If not cataloged)
Workstation File:
File Name . . . . _____
Options
Initial Macro . . . . _____ _ Confirm Cancel/Move/Replace
Profile Name . . . . _____ _ Mixed Mode
Format Name . . . . _____ _ Edit on Workstation
F1=Help F2=Split F3=Exit F7=Backward F8=Forward F9=Sw
F10=Actions F12=Cancel
Enter
```

The root key file name is specified for the ISPF editor. Enter.

The XKEY file can be edited



The screenshot shows the IBM File Manager interface for editing the file DNET845.XKEY.D100111.T180303.USRSCN. The file contains a list of root keys, with the following data segments:

Key	Data Segment
000001	0003874923
000002	0342323422
000003	0342334225
000004	1111111111
000005	2111111111
000006	2121111111
000007	2121111112
000008	3333333333
000009	4444444444
000010	6666666666
000011	9983874923
000012	9993874923

The interface also includes a menu bar (File, Edit, Edit_Settings, Menu, Utilities, Compilers, Test, Help), a command line (Command ==>), and a list of function keys (F1=Help, F2=Split, F3=Exit, F4=JCARD, F5=Rfind, F6=Rc, F7=Up, F8=Down, F9=Swap, F10=Left, F11=Right, F12=Ca). A yellow 'Enter' button is visible in the bottom right corner.

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Here is the file that was created by the XKEY command. If you do not want to extract all segments, you can delete some of the records. Here, the unwanted keys are deleted.

Create and save the file containing the root keys to extract

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      DNET845.XKEY.D100111.T180303.USRSCN      Columns 00001 00072
Command ==> _____ Scroll ==> CSR
***** ***** Top of Data *****
000001 0342323422
000002 2121111112
000003 3333333333
000004 4444444444
***** ***** Bottom of Data *****
```

F1=Help F2=Split F3=Exit F4=JCARD F5=Rfind F6=Rc F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Ca

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Now the file only contains the wanted root key values. Next, navigate to the File Manager IMS primary menu.

Navigate to the Utilities menu



```
Process  Options  Help
-----
FM/IMS                                     Primary Option Menu
Command ==>> 3
-----
0 Settings      Set processing options      User ID . . : DNET845
1 Browse        Browse data                  System ID  : DEMOMVS
2 Edit          Edit data                    Appl ID   : FMN1
3 Utilities     Perform utility functions   Version . . : 10.1.0
4 Templates     Template/view/criteria set utilities Terminal . : 3278
X Exit          Terminate FM/IMS            Screen . . : 1
                                           Date . . . : 2010/01/11
                                           Time . . . : 18:15

F1=Help      F2=Split    F3=Exit     F4=CRetriev F7=Backward F8=Forward
F9=Swap      F10=Actions F12=Cancel

Enter
```

From here, select option 3 for utilities. Enter.

Navigate to Extract



```
Process  Options  Help
-----
FM/IMS                                     Utility Menu
Command ==> 3
-----
1 Delete/Define  Delete/Define database data sets
2 Initialize     Initialize database
3 Extract        Extract data from database
4 Load          Load database
5 Print         Print data from database
6 Batch Edit    Edit data in batch
7 Batch Browse  Browse data in batch
8 Audit trail   Print audit trail report

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Fo
F9=Swap      F10=Actions   F12=Cancel

Enter
```

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From the utility menu, select option 3 for Extract.

Indicate extract using key values



```
Process  Options  Help
-----
FM/IMS                                     Extract Entry Panel
Command ===> _____

IMS:
  Subsystem name . . IMSB                 PSB name . . . . _____ (If static PSB)
  Database name . . URSCN                AGN name . . . . _____ (If BMP)
Criteria:
  Data set name . . . . _____
  Member . . . . . _____

Processing Options:
  PSB type           Region type           Fetch DB dsnames from (if DLI)
  1 1. Dynamic       1 1. DLI                 1 1. User profile
  2 2. Static        2 2. BMP                 2 2. DFSMDA members

Criteria usage      Enter "/" to select option
  3 1. New           / Use key values         - Create extract template
  2 2. Existing     / Edit criteria          - Skip DB data set panel (if DLI)
  3 3. None         -                        - SDEP in timestamp order

F1=Help    F2=Split    F3=Exit    F4=CRetriev  F7=Backward  F8=Fo
F9=Swap    F10=Actions F12=Cancel

Enter
```

The "extract entry panel" is displayed. Specify a subsystem, and a DBD name in the "database name" field. You can choose to access the database in DLI or BMP mode, as is appropriate for your system.

Specify if segment selection should be performed by specifying a key values file or criteria set. If neither is selected, then all segments will be extracted. In this example, the "use key values" option is selected with a slash. Press Enter to continue.

Confirm usage of data sets



```
Process  Options  Help
-----
FM/IMS          Extract : Database Data Set Specification
Command ==> _____ Scroll CSR

Subsystem IMSB Database USRSCN

DBD name  DD name  Data set name
USRSCN    USRSCN   ADLAB.USRSCN
USRSCNI   USRSCNI  ADLAB.USRSCNI
**** End of data ****

Processing Options:
Fetch dsnames from          Enter "/" to select option
 1 1. User profile          / Save dsnames in profile
 2 DFSMDA members

Press ENTER to confirm usage of the specified data set(s)

F1=Hel  F9=Swap  F10=Actions  F12=Cancel
```



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When accessing a database in DLI mode, this panel is displayed where you specify the database data sets. Provide or retrieve the data set names and press Enter to continue.

Specify key value usage and data set name



```
Process  Options  Help
-----
FM/IMS                                     Extract Options
Command ==>> _____

Database USRSCN

Key Values:
  Data set name . . . 'DNET845.XKEY.D100111.T180303.USRSCN'
  Member . . . . . _____

Extract Template:
  Data set name . . . _____
  Member . . . . . _____

Processing Options:
  Template create execution mode          Enter "/" to select option
  3 1. Foreground                         / Use key values
    2. Batch                               - Edit extract template
    3. Skip

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Forward
F9=Swap      F10=Actions  F12=Cancel

Enter
```

Since the “use key values” option was specified, the "extract options" panel is displayed. Type in the name of the key values data set. It can be a sequential file or a PDS member. Enter.

Specify the extract (output) file



```
Process  Options  Help
-----
FM/IMS          Extract : To Data Set Specification
Command ==>>> _____

Extract to:
Data set name . . . adlab.usrscn.extract
Disposition . . . new          (NEW or OLD)
Volume serial . . . _____ (If not cataloged)
Device type . . . _____ (Generic unit or device address)

Allocation parameters (if disposition is NEW):
Management class . . . _____ (Blank for default management class)
Storage class . . . _____ (Blank for default storage class)
Data class . . . _____ (Blank for default data class)
Space units . . . cu1         (BLK, TRK, CYL, KB or MB)
Primary quantity . 1         (in above units)
Secondary quantity . 1         (in above units)

F1=Help      F2=Split    F3=Exit      F4=CRetriev  F7=Backward  F8=Fo
F9=Swap      F10=Actions F12=Cancel

Enter
```

Next, specify the name of the output data set for the extract utility. It can be an existing file, or it will allocate a new file if it does not already exist. Make sure that the file is large enough to hold all data. Press enter to continue.

Submit the extract job



```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT DNET845.SPFTEMP1.CNTL Columns 00001 00072
Command ==> sub Scroll ==> PAGE
***** Top of Data *****
000001 //DNET845X JOB (ACCTG), 'IBM ADTOOLS WORKSHOP', REGION=4M, CLASS=B,
000002 //          MSGCLASS=H, NOTIFY=&SYSUID, MSGLEVEL=(1,1)
000003 //*
000004 //FILEMAN EXEC PGM=FMN1IMSB
000005 //STEPLIB DD DSN=FMN.SFMNMOD1, DISP=SUB
000006 //*          DD DSN=IGY.SIGYCOM
000007 //*FMNCOB DD DUMMY          Uncom
000008 //SYSPRINT DD SYSOUT=*, RECFM=
000009 //FMNTPRT DD SYSOUT=*
000010 //FMN1JIN DD DSN=FMN.SFMNSLI
000011 //SYSTEM DD SYSOUT=*
000012 //FMIMSIN DD *
000013 $$FILEM SET HEADERPG=NO, PAGESIZE=60
000014 $$FILEM IXB REGNTYPE=DLI,
000015 $$FILEM          PSBTYPE=DYNAMIC,
000016 $$FILEM          PROCOPT=G,
000017 $$FILEM          DBDDSN=DNET845.ADLAB.DBDLIB,
F1=Help      F2=Split   F3=Exit     F4=JCARD    F5=Rfind    F6=Rc
F7=Up        F8=Down    F9=Swap     F10=Left   F11=Right   F12=Ca
Enter
```

The JCL is created automatically. The JCL generated on your system will be different from this example, based on installation defaults.

JCL to run the extract utility is automatically generated. Verify that it has a valid job card, and use a SUBMIT command to submit the job to batch.

Job output showing extract utility report



```
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY DNET845X JOB08240 DSID 105 LINE 16 COLUMNS 06- 85
COMMAND INPUT ==> _ SCROLL ==> HALF
Use Criteria N
bases Extracted:
      DBD Name  ddname      Data set name
-----
      USRSCN   USRSCN   DNET845.ADLAB.USRSCN
      USRSCNI  USRSCNI  DNET845.ADLAB.USRSCNI
File Manager for z/OS IMS Component
Database Extract Statistics Report

      -Segm Length-  ----- Extract Statistics -----
      Database Segment Level  Min  Max  Read  Rejected  Extracted
-----
      USRSCN  CUSTADDR  01    90   90    4     0     4
      TOTUSE   02    80   80    5     0     5
      PRMUSE   03    80   80    3     0     3
      OFFUSE   03    80   80    3     0     3
      OFFDTL   04    80   80    6     0     6
      BALDUE   02    80   80    3     0     3
      BALHIST  03   170  170    6     0     6
```

The four roots from the key values file were read and extracted

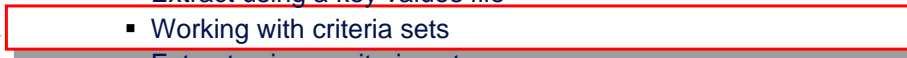
In this example, the job ran, and the output report is displayed here. The report gives statistics about the number of each type of segment that was extracted.

■ Using a view

- Selecting segment types to display
- Selecting segments to display based on data content
- Save a view
- Customize how data is displayed
- Use edit or browse to format and generate a report

■ Extract and Load utilities

- Extract utility
 - Extract using a key values file
 - Working with criteria sets
 - Extract using a criteria set
- Delete / define utility
- Load utility

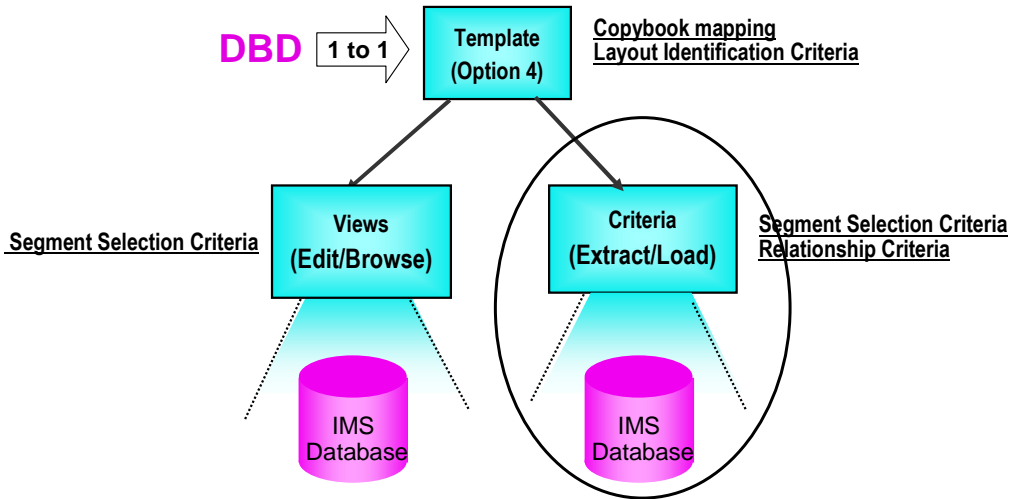


Next, you will see how to use a criteria set with the extract utility.

Templates, views and criteria



File Manager / IMS



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An extract criteria set is similar to a view. It can be used to specify criteria to select segments based on data values, and select the types of segments that should be extracted. A template is required before you can create and use a criteria set.

Extract using a criteria set



- Steps:
 - Create extract criteria for the IMS database
 - Generate extract utility JCL
 - Run the JCL to extract the data

In this example of using the extract utility, a criteria set will be created, and selection criteria will be specified. File Manager IMS will automatically generate JCL to run the utility, and the JCL will be submitted to run in batch.

Selection criteria



- A segment is a “match” if:
 - it matches its selection criteria, and
 - its root segment and all segments in the path from the root match their selection criteria at each level, and
 - no selection criteria is specified for a dependent level
- For each matching segment, these will be extracted:
 - its root segment and all segments in the path from the root to the matching segment
 - the matching segment and all of its dependent segments

The extract utility uses rules to determine whether to extract segments based on selection criteria. Any individual segment is a match if it matches its selection criteria, and its root segment and all segments in the path from the root match their selection criteria at each level, and no selection criteria is specified for any dependent level.

For each matching segment, its root segment and all segments in the path from the root to the matching segment will be extracted, along with the matching segment and all of its dependent segments.

Navigate to Template utilities



```
Process  Options  Help
-----
FM/IMS                                     Primary Option Menu
Command ==>> 4
-----
0 Settings      Set processing options      User ID . . : DNET845
1 Browse        Browse data                  System ID  : DEMOMVS
2 Edit          Edit data                    Appl ID   : FMN1
3 Utilities     Perform utility functions   Version . . : 10.1.0
4 Templates     Template/view/criteria set  Terminal . : 3278
X Exit          Terminate FM/IMS            Screen . . : 2
                                           Date . . . : 2010/01/11
                                           Time . . . : 19:50

F1=Help      F2=Split    F3=Exit     F4=CRetriev  F7=Backward  F8=Forward
F9=Swap      F10=Actions F12=Cancel

Enter
```

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From the File Manager IMS primary options menu, select "4" for utilities.

Navigate to Criteria sets panel



```
Process  Options  Help
-----
FM/IMS                                     Template/View/Criteria Set Menu
Command ==>> 3
-----
1  Templates      Create or update template
2  Views          Create, edit, or update view
3  Criteria Sets   Create, edit or update criteria set
4  Template update Update template(s) utility
5  View update    Update view(s) utility
6  Criteria update Update criteria set(s) utility

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Fo
F9=Swap      F10=Actions   F12=Cancel

Enter
```

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Then select "3" for Criteria sets.

Criteria set



Process Options Help

FM/IMS Criteria Set Entry Panel

Command ==> **CT**

CT Create criteria set from template E Edit criteria set
CM Create criteria set from model U Update criteria set from template

Template:
Data set name . **ADLAB.TEMPLATE**
Member **USRSCN**

Criteria:
Data set name . **ADLAB.CRITERIA**
Member **CRIT1**

Model Criteria:
Data set name . _____
Member _____

F1=Help F2=Split F3=Exit F4=CRetriev F7=Backward F8=Fo
F9=Swap F10=Actions F12=Cancel **Enter**

Use the CT option to create the initial criteria set.

Pre-define a criteria data set, PDS or PDSE, 80 FB

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The Criteria set entry panel is used to create new criteria sets or update existing ones. First, a new criteria set must be created. Type CT on the command line to create a new criteria set. Specify the template in the template data set name and member fields. The template must already exist. Also enter the name of a file and member where you want to save the new criteria set. Press Enter.

Criteria set was created



```
Process  Options  Help
-----
FM/IMS                                     Criteria Set Entry Panel  Criteria set created
Command ==>> E

CT Create criteria set from template  E  Edit criteria set
CM Create criteria set from model     U  Update criteria set from template

Template:
  Data set name . ADLAB.TEMPLATE
  Member       . . . . . USRSCN

Criteria:
  Data set name . ADLAB.CRITERIA
  Member       . . . . . CRIT1

Model Criteria:
  Data set name .
  Member       . . . . .

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Fo
F9=Swap      F10=Actions   F12=Cancel

Enter
```

Select edit to modify the criteria set

The new criteria set was created and saved. Next, type E (for edit) on the command line. Enter.

I (insert) new criteria



```
Process  Options  Help
-----
FM/IMS                      Criteria : Subset Selection
Command ==> _____ Scroll CSR

Criteria DNET845.ADLAB.CRITERIA (CRIT1)
Template DNET845.ADLAB.TEMPLATE (USRSCN)
Sub
Cmd Sel set Criteria subset description
i * R Relationship criteria
**** End of data ****

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F6=Describe  F7=Ba
F8=Forward   F9=Swap       F10=Actions  F12=Cancel

Enter
```

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That displayed the "criteria subset selection" panel, where you can edit the criteria set and specify selection criteria. To insert a criteria, type an "I" line command, and press Enter.

Add a description of the extract



```
Process  Options  Help
-----
FM/IMS          Criteria : Segment Selection
Command ==> _____ Scroll CSR

Criteria DNET845.ADLAB.CRITERIA (CRIT1)
Template DNET845.ADLAB.TEMPLATE (USRSCN)
Subset 1  Extract Criteria for IMS USRSCN data base

Cmd Sel Level Segment Description
* 1 CUSTADDR
e * 2 TOTUSE
- * 3 PRMUSE
- * 3 OFFUSE
- * 4 OFFDTL
- * 2 BALDUE
- * 3 BALHIST
**** End of data ****

F1=Help F2=Split F3=Exit F4=CRetriev F6=Describe F7=Ba
F8=Forward F9=Swap F10=Actions F12=Cancel
```

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That added a new criteria. The "criteria segment selection" panel is displayed, where you can edit the new criteria. Next, specify the selection criteria that will control whether segments will be extracted or not. In this example, selection criteria will be specified for data in TOTUSE segments. An E (for edit) line command is typed next to the TOTUSE segment type. Enter.

Enter selection criteria



Process		Options	Help
FM/IMS		Criteria : Segment Layout	Line 1 of 8
Command ==>			Scroll CSR
Criteria DNET845.ADLAB.CRITERIA(CRIT1)		Subset 1	
Template DNET845.ADLAB.TEMPLATE (USRSCN)		Segment TOTUSE	
----- Criteria - Enter 1 to specify expression by field -----			
1 Sel	#6 > 200		+
Offset 0			
Cmd	Seq	SHE Ref	Field Name
			Picture
			Type
			Start
			Length
			**** Top of data ****
---		1	1 SEGB-TOTAL-USAGE
			AN
			1 80
---		2K	2 USAGE-PERIOD
			AN
			1 6
---		3K	3 USAGE-YEAR
			X(4)
			AN
			1 4
---		4K	3 USAGE-MONTH
			X(2)
			AN
			5 2
---		5	2 ACCOUNT-INV-SEQ
			X
			AN
			7 1
---		6	2 ACCOUNT-TOTAL-USAGE
			9(9) V99
			PD
			8 6
---		7	2 CURRENT-PERIOD-AMT-DUE
			9(7) V99
			PD
			14 5
---		8	
			AN
			19 62
* Select only related segments with TOTUSE dependent segments with the ACCOUNT-TOTAL-USAGE > 200			
F1=Help	F2=Sp1	F3=	F8=D
F9=Swap	F10=Left	F11=Right	F12=Cancel

Select only related segments with
 TOTUSE dependent segments with the
 ACCOUNT-TOTAL-USAGE > 200

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On the "segment layout" panel, you can specify selection criteria for a segment. In this example, the criteria requires that the value of field number 6, the ACCOUNT-TOTAL-USAGE field, must be greater than 200. TOTUSE segments where this is true will be selected. F3 to return.

Selection criteria complete



```
Process  Options  Help
-----
FM/IMS          Criteria : Segment Selection      Must read all roots
Command ==>>> _____ Scroll CSR

Criteria DNET845.ADLAB.CRITERIA (CRIT1)
Template DNET845.ADLAB.TEMPLATE (USRSCN)
Subset 1      Extract Criteria for IMS USRSCN data base

Cmd Sel Level Segment Description
- * 1 CUSTADDR
- * 2 TOTUSE
- * 3 PRMUSE
- * 3 OFFUSE
- * 4 OFFDTL
- * 2 BALDUE
- * 3 BALHIST
- **** End of data ****

F1=Help      F2=Split  F3=Exit    F4=CRetriev F6=Describe F7=Ba
F8=Forward   F9=Swap   F10=Actions F12=Cancel

F3
```

All segments are selected for extract

Toggle segments on or off (extract or not) with an **S** line command

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If needed, you can edit other segments with an E line command. If you specify selection criteria for more than one segment type in the same criteria, then there must be a data match on all of the selections within a single database record.

By default, if there is a match, all segment **types** in the database will be extracted. However, on this panel you can use an S line command to toggle segments off and on. If a segment type is toggled off, no segments of that type will be extracted. F3 is pressed to return.

Exit criteria panels



```
Process  Options  Help
-----
FM/IMS          Criteria : Subset Selection
Command ==> _____ Scroll CSR

Criteria DNET845.ADLAB.CRITERIA (CRIT1)
Template DNET845.ADLAB.TEMPLATE (USRSCN)
Sub
Cmd Sel set Criteria subset description
- * R Relationship criteria
- * 1 Extract Criteria for IMS USRSCN data base
**** End of data ****
```

Use an I line command to insert more criteria

F1=Help F2=Split F3=Exit F4=CRetriev F6=Describe F7=Ba
F8=Forward F9=Swap F10=Actions F12=Cancel

F3

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Now a criteria has been entered. You can insert as many criteria as needed. If you have multiple criteria, they will be evaluated separately. That is, if any of the criteria produces a match, then data will be extracted. F3 to return.

Criteria set saved



Process	Options	Help
FM/IMS	Criteria Set Entry Panel	Criteria set saved
Command ==>		
CT	Create criteria set from template	E Edit criteria set
CM	Create criteria set from model	U Update criteria set from template
Template:		
	Data set name .	ADLAB.TEMPLATE
	Member	USRSCN
Criteria:		
	Data set name .	ADLAB.CRITERIA
	Member	CRIT1
Model Criteria:		
	Data set name .	
	Member	
F1=Help	F2=Split	F3=Exit
F9=Swap	F10=Actions	F12=Cancel
	F4=CRetriev	F7=Backward
		F8=Forward

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The new criteria set was saved.

■ Using a view

- Selecting segment types to display
- Selecting segments to display based on data content
- Save a view
- Customize how data is displayed
- Use edit or browse to format and generate a report

■ Extract and Load utilities

- Extract utility
 - Extract using a key values file
 - Working with criteria sets
 - Extract using a criteria set
- Delete / define utility
- Load utility



Next, the criteria set that was just created will be used with the extract utility.

Navigate to Utilities / Extract panel



```
Process  Options  Help
-----
FM/IMS                                     Primary Option Menu
Command ==>> 3,3
-----
0 Settings      Set processing options      User ID . : DNET845
1 Browse        Browse data                  System ID : DEMOMVS
2 Edit          Edit data                    Appl ID  : FMN1
3 Utilities     Perform utility functions   Version  : 10.1.0
4 Templates     Template/view/criteria set  Terminal : 3278
X Exit          Terminate FM/IMS            Screen.  : 2
                                           Date.   : 2010/01/11
                                           Time.   : 20:29

F1=Help      F2=Split    F3=Exit     F4=CRetriev F7=Backward F8=Fo
F9=Swap      F10=Actions F12=Cancel

Enter
```

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The extract utility panel is option 3.3 from the File Manager IMS main menu.

Extract data with criteria set



```
Process  Options  Help
-----
FM/IMS                                     Extract Entry Panel
Command ==> _____

IMS:
  Subsystem name . . . IMSB                PSB name . . . _____ (If static PSB)
  Database name . . . USRSCN              AGN name . . . _____ (If BMP)
Criteria:
  Data set name . . . ADLAB.CRITERIA
  Member . . . . . CRIT1
Processing Options:
  PSB type          Region type          Fetch DB dsnames from (if DLI)
  1 1. Dynamic      1 1. DLI                1 1. User profile
  2 2. Static        2 2. BMP                2 2. DFSMDA members

  Criteria usage    Enter "/" to select option
  2 1. New          - Use key values      - Create extract template
  3 2. Existing     - Edit criteria       - Skip DB data set panel (if DLI)
  3 3. None        -                     - SDEP in timestamp order

F1=Help    F2=Split    F3=Exit    F4=CRetriev  F7=Backward  F8=Forward
F9=Swap    F10=Actions F12=Cancel

Enter
```

On the "extract entry panel", specify a DBD. To use the criteria set, select "2" in the "criteria usage" option, and specify the name in the criteria data set name and member fields. Press Enter to continue.

Press enter to continue



```
Process  Options  Help
-----
FM/IMS          Extract : Database Data Set Specification
Command ==> _____ Scroll CSR


Subsystem IMSB Database USRSCN

DBD name  DD name  Data set name
USRSCN    USRSCN  ADLAB.USRSCN
USRSCNI   USRSCNI ADLAB.USRSCNI
**** End of data ****

Processing Options:
Fetch dsnames from          Enter "/" to select option
 1 1. User profile          / Save dsnames in profile
 2 DFSMDA members

Press ENTER to confirm usage of the specified data set(s)

F1=Hel  F9=Swap  F10=Actions  F12=Cancel
```



When accessing a database in DLI mode, this panel is displayed where you specify the database data set names. Provide or retrieve the data set names and press Enter to continue.

Specify data set to send the extracted data to



```
Process  Options  Help
-----
FM/IMS          Extract : To Data Set Specification
Command ==>>> _____

Extract to:
Data set name . . . ADLAB.USRSCN.EXTRACT2
Disposition . . . NEW (NEW or OLD)
Volume serial . . . _____ (If not cataloged)
Device type . . . _____ (Generic unit or device address)

Allocation parameters (if disposition is NEW):
Management class . . . _____ (Blank for default management class)
Storage class . . . _____ (Blank for default storage class)
Data class . . . _____ (Blank for default data class)
Space units . . . CYL (BLK, TRK, CYL, KB or MB)
Primary quantity . . . 1 (in above units)
Secondary quantity . . . 1 (in above units)

Record length will be
computed automatically

F1=Help      F2=Split    F3=Exit      F4=CRetriev  F7=Backward  F8=Forward
F9=Swap      F10=Actions F12=Cancel   _____  _____  _____  _____  _____  _____
Enter
```

On the next panel, specify the name of the output data set for the extract utility. It can be an existing file, or it will allocate a new file if it does not already exist. Make sure the file is large enough to hold all of the data that will be extracted. Press enter to continue.

Specifications were taken and JCL was built



```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT DNET845.SPFTEMP2.CNTL Columns 00001 00072
Command ==> sub Scroll ==> PAGE
***** Top of Data *****
000001 //DNET845X JOB (ACCTG), 'IBM ADTOOLS WORKSHOP', REGION=4M, CLASS=B,
000002 //          MSGCLASS=H, NOTIFY=&SYSUID, MSGLEVEL=(1,1)
000003 //*
000004 //FILEMAN EXEC PGM=FMN1MSB
000005 //SYSPRINT DD SYSOUT=*, RECFM=FBA, LRECL=133
000006 //FMNTSPRT DD SYSOUT=*
000007 //SYSTEM DD SYSOUT=*
000008 //FMIMSIN DD *
000009 $$FILEM SET HEADERPG=NO, PAGESIZ
000010 $$FILEM IXB REGNTYPE=DLI,
000011 $$FILEM PSBTYPE=DYNAMIC,
000012 $$FILEM PROCOPT=G,
000013 $$FILEM DBDDSN=DNET845.ADLAB.DBDLIB,
000014 $$FILEM DBDDSN2=IMS.DBDLIB,
000015 $$FILEM DBDMEM=USRSCN,
000016 $$FILEM CRITERIA=Y,
000017 $$FILEM IMSID=IMSB,
F1=Help F2=Split F3=Exit F4=JCARD F5=Rfind F6=Rc
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Ca
```

The JCL is created automatically. The JCL generated on your system will be different from this example, based on installation defaults.

Enter

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JCL to run the extract utility is automatically generated. Verify that it has a valid job card, and use a SUBMIT command to submit the job to batch.

Job output showing extract statistics report



Only segments related to TOTUSE with ACCOUNT-TOTAL-USAGE > 200 were selected

Display Filter View

SDSF OUTPUT DISPLAY DNET845X JOB08319 DSID 105 LINE 21 COLUMNS 05- 84
 COMMAND INPUT ==> _ SCROLL ==> HALF

USRSCNI USRSCNI DNET845.ADLAB.USRSCNI

File Manager for z/OS IMS Component

Database Extract Statistics Report

Database	Segment	Level	-Segm Length-		----- Extract Statistics -----		
			Min	Max	Read	Rejected	Extracted
USRSCN	CUSTADDR	01	90	90	12	0	8
	TOTUSE	02	80	80	14	0	8
	PRMUSE	03	80	80	73	0	73
	OFFUSE	03	80	80	32	0	32
	OFFDTL	04	80	80	39	0	39
	BALDUE	02	80	80	5	0	5
	BALHIST	03	170	170	9	0	9
Subtotal	USRSCN				184	0	174
Grand total					184	0	174

*** End of IMS Extract Report ***

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In this example, the job ran, and the output report is shown here. The report gives statistics about the number of each type of segment that was extracted.

▪ Using a view

- Selecting segment types to display
- Selecting segments to display based on data content
- Save a view
- Customize how data is displayed
- Use edit or browse to format and generate a report

▪ Extract and Load utilities

- Extract utility
 - Extract using a key values file
 - Working with criteria sets
 - Extract using a criteria set



- Delete / define utility
- Load utility

Next, you will see how the Load utility is used to load segments into an IMS database from a file created by the extract utility. And first, the delete and define utility will be described.

Navigate to delete/define on the utility menu



```
Process  Options  Help
-----
FM/IMS                                     Utility Menu
Command ==> 1
-----
1 Delete/Define  Delete/Define database data sets
2 Initialize     Initialize database
3 Extract        Extract data from database
4 Load          Load database
5 Print         Print data from database
6 Batch Edit    Edit data in batch
7 Batch Browse  Browse data in batch
8 Audit trail   Print audit trail report

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Fo
F9=Swap      F10=Actions   F12=Cancel

Enter
```

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Sometimes, you might have a requirement to clear all of the data from a database before using the Load utility. On the utility menu, there is a delete and define utility in addition to an Initialize utility. After you run delete and define, you can run initialize to prepare the database files before running the load utility. For delete and define, option one is selected.

Specify IMS subsystem and database name



```
Process  Options  Help
-----
FM/IMS          Delete/Define Entry Panel
Command ==>>> _____

IMS:
  Subsystem name . . IMSB
  Database name . . USRSCN

Processing Options:
  Fetch DB dsnames from          Enter "/" to select option
  1 1. User profile              _ Skip DB data set panel
  2 2. DFSMDA members

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Fo
F9=Swap      F10=Actions   F12=Cancel

Enter
```

Specify the subsystem, and the DBD name for the database. You can also optionally specify whether to fetch the database dataset names from your File Manager profile or from system dynamic allocation members. Press Enter to continue.

Press enter to continue



```
Process  Options  Help
-----
FM/IMS      Delete/Define : Database Data Set Specification
Command ==> _____ Scroll CSR

Subsystem IMSB Database USRSCN

DBD name  DD name  Data set name
USRSCN    USRSCN   ADLAB.USRSCN
USRSCNI   USRSCNI  ADLAB.USRSCNI
**** End of data ****

Processing Options:
Fetch dsnames from          Enter "/" to select option
 1 1. User profile          / Save dsnames in profile
 2 DFSMDA members

Press ENTER to confirm usage of the specified data set(s)

F1=Hel  F9=Swap  F10=Actions  F12=Cancel
```



Next, specify or fetch the database data set names, and press Enter.

Submit the delete/define batch job



```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT DNET845.SPFTEMP1.CNTL Columns 00001 00072
Command ==> sub Scroll ==> PAGE
***** Top of Data *****
000001 //DNET845X JOB (ACCTG), 'IBM ADTOOLS WORKSHOP', REGION=4M, CLASS=B,
000002 //          MSGCLASS=H, NOTIFY=&SYSUID, MSGLEVEL=(1,1)
000003 //* -----
000004 //*
000005 //*          Delete/Define Database Data Sets
000006 //*
000007 //* -----
000008 //IDCAMS EXEC PGM=IDCAMS
000009 //SYSPRINT DD SYSOUT=*
000010 //SYSIN DD *
000011 DELETE 'DNET845.ADLAB.USRSCN'
000012 DELETE 'DNET845.ADLAB.USRSCNI'
000013 DEFINE CLUSTER( NAME('DNET845.ADLAB.USRSCN') -
000014             MANAGEMENTCLASS(USRMGMT) -
000015             STORAGECLASS(USRBASE) -
000016             RECOVERY -
000017             NOERASE -
000018             SHAREOPTIONS(1 3) -
000019             VOLUME(DMPU35 ) -
```

The JCL is created automatically. The JCL generated on your system will be different from this example, based on installation defaults.

Enter

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JCL is automatically generated to perform the delete and defines. Use a SUBMIT command to submit the JCL to run as a batch job.

USRSCN database was deleted and redefined



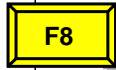
- View output in SYSPRINT

```
COMMAND INPUT ==>
***** TOP OF DATA *****
IDCAMS  SYSTEM SERVICES

DELETE 'DNET845.ADLAB.USRSCN'
IDC0550I ENTRY (D) DNET845.ADLAB.USRSCN.DATA DELETED
IDC0550I ENTRY (C) DNET845.ADLAB.USRSCN DELETED
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

DELETE 'DNET845.ADLAB.USRSCNI'
IDC0550I ENTRY (D) DNET845.ADLAB.USRSCNI.DATA DELETED
IDC0550I ENTRY (I) DNET845.ADLAB.USRSCNI.INDEX DELETED
IDC0550I ENTRY (C) DNET845.ADLAB.USRSCNI DELETED
IDC0001I FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

DEFINE CLUSTER( NAME('DNET845.ADLAB.USRSCN')
                MANAGEMENTCLASS(USRMGMT) -
                STORAGECLASS(USRBASE) -
                RECOVERY -
                NOERASE -
                SHAREOPTIONS(1 3) -
                VOLUME(DMPU35 ) -
                NONINDEXED -
                . . . . .
IDC0508I DATA ALLOCATION STATUS FOR VOLUME DMPU42 IS 0
```



Verify that the job completed successfully before running the initialize and load utilities. You can view the output with your SYSOUT viewer to see that the files were deleted and defined.

■ Using a view

- Selecting segment types to display
- Selecting segments to display based on data content
- Save a view
- Customize how data is displayed
- Use edit or browse to format and generate a report

■ Extract and Load utilities

- Extract utility
 - Extract using a key values file
 - Working with criteria sets
 - Extract using a criteria set
- Delete / define utility
- Load utility



Next, the you will see how to use the database load utility.

Navigate to load database option



```
Process  Options  Help
-----
FM/IMS                                     Utility Menu
Command ==> 4
-----
1 Delete/Define  Delete/Define database data sets
2 Initialize     Initialize database
3 Extract        Extract data from database
4 Load          Load database
5 Print          Print data from database
6 Batch Edit    Edit data in batch
7 Batch Browse  Browse data in batch
8 Audit trail   Print audit trail report

F1=Help      F2=Split      F3=Exit      F4=CRetriev  F7=Backward  F8=Forward
F9=Swap      F10=Actions   F12=Cancel

Enter
```

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The load utility is option "4" from the utility menu.

Select initial load



Process Options Help

FM/IMS Load Entry Panel
Command ==>

IMS:
Subsystem name . IMSB
Database name . USRSCN

Processing Options:
PSB type Region type Fetch DB dsnames from (if DLI)
1 1. Dynamic 1 1. DLI 1 1. User profile
2 2. Static 2 2. BMP 2 2. DFSMDA members

Load type IMS log (if DLI) Enter "/" to select option
3 1. No replace 3 1. Keep _ Skip DB data set panel (if DLI)
2 2. Replace 2 2. Delete
3 3. Initial 3 3. None

F1=Help F2=Split F3=Exit F4=CRetriev F7=Backward F8=Forward
F9=Swap F10=Actions F12=Cancel

Enter

The IMS database was deleted and re-defined, but not initialized. Option 3 will be specified.

1 - No replace, insert only
2 - Replace existing records
3 - Load into non-initialized database

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On the load entry panel, specify the subsystem, and the DBD name in "database name" field. Also choose whether to run the utility in DLI or BMP mode as is appropriate for your load task. Notice the "load type". It is important to set this correctly, based on your requirements.

Option 1 (no replace) means that if there are segments with duplicate keys already in the database, they will not be replaced. Only segments with new key values will be loaded.

Option 2 (replace) means that segments with duplicate keys will be replaced, and segments with new keys will be loaded also.

Option 3 (initial) can only be used if the output database is empty, and requires DLI mode. This option improves performance when you are doing a full or initial database load. In this example, option 3 is specified. Enter.

Press enter to continue



```
Process  Options  Help
-----
FM/IMS          Load : Database Data Set Specification
Command ==> _____ Scroll CSR

Subsystem IMSB Database USRSCN

DBD name  DD name  Data set name
USRSCN    USRSCN  ADLAB.USRSCN
USRSCNI   USRSCNI  ADLAB.USRSCNI
**** End of data ****

Processing Options:
Fetch dsnames from          Enter "/" to select option
 1 1. User profile          / Save dsnames in profile
 2 DFSMDA members

Press ENTER to confirm usage of the specified data set(s)

F1=Hel  F9=Swap  F10=Actions  F12=Cancel
```



In DLI mode, provide or retrieve the database data set names and press Enter.

Specify the name of the extract input file



Process Options Help

FM/IMS Initial Load Options

Command ==>

Load From:

Data set name . . . ADLAB.USRSCN.EXTRACT2

Volume serial . . . _____ (If not cataloged)

Device type _____ (Generic unit or device address)

Image Copy Skeleton:

Data set name . . . _____

Processing Options:

Enter "/" to select option

Delete/Define DB data sets

Submit image copy

If the database already exists, select this option to delete and define the database

If the database has already been created, leave it blank

F1=Help F2=Split F3=Exit F4=CRetriev F7=Backward F8=Fo

F9=Swap F10=Actions F12=Cancel

Enter

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Next, the "load options" panel is displayed. Specify the name of the data set that was created by the extract utility. Notice that you can specify the "delete and define DB data sets" option, to generate JCL to delete and define the database data sets in the load JCL. Press Enter.

Submit the job to load the IMS databases



File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT DNET845.SPFTEMP1.CNTL

Command ==> **sub**

000001 //DNET845X JOB (ACCTG), 'IBM
000002 // MSGCLASS=H,NOTI
000003 //*
000004 //* -----
000005 //*
000006 //* SORT LOAD FILE.
000007 //*
000008 //* -----
000009 //*
000010 //TESTRC IF (RC LE 4) THEN
000011 //SORTSTEP EXEC PGM=SORT
000012 //SYSOUT DD SYSOUT=*
000013 //SORTIN DD DSN=DNET845.ADLAB.USRSCN.EXTRACT2,
000014 // DISP=SHR
000015 //SORTOUT DD DSN=&&FMN1XTSD,
000016 // LIKE=DNET845.ADLAB.USRSCN.EXTRACT2,
000017 // UNIT=SYSALLDA,
000018 // DISP=(NEW,PASS)
000019 //SORTWK01 DD DISP=(NEW,DELETE,DELETE),

This JCL will

- _Delete and define the databases (if requested)
- _Preorg (logical rel. and sec. indexes)
- _Sort the extract file
- _Use File Manager IMS utility to load the data
- _Prefix Resolution IMS utility
- _Prefix Update IMS utility

Enter

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JCL is created to run the load utility. Validate the job card, and use a SUBMIT command to submit the job to batch.

Job output showing database load statistics report



```
Display Filter View Print Options Help
-----
SDSF OUTPUT DISPLAY DNET845X JOB08811 DSID 107 LINE 16 COLUMNS 02- 81
COMMAND INPUT ==> _ SCROLL ==> HALF
Databases loaded:
      DBD Name  ddname  Data set name
-----
      USRSCN   USRSCN   DNET845.ADLAB.USRSCN
      USRSCNI  USRSCNI  DNET845.ADLAB.USRSCNI
IBM File Manager for z/OS IMS Component
                                     Database Load Statistics Report

      DBD Name  Level  Segment  Read  Loaded  Rejected
-----
      USRSCN   1  CUSTADDR  8     8     0
      USRSCN   2  TOTUSE   8     8     0
      USRSCN   3  PRMUSE  73    73    0
      USRSCN   3  OFFUSE  32    32    0
      USRSCN   4  OFFDTL  39    39    0
      USRSCN   2  BALDUE   5     5     0
      USRSCN   3  BALHIST  9     9     0
Subtotal  USRSCN                174   174   0
Grand total                174   174   0
```

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After the load utility runs, you can view the report in SYSOUT to see statistics about the numbers of each type of segment that was loaded.

That is the end of this section, using the File Manager IMS extract and load utilities.

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This is the tutorial for the IMS feature of IBM's File Manager for z/OS, one of the IBM zSeries problem determination tools.



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