100 COOL MAINFRAME TIPS

JONATHAN JEBAN MARTIN

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Preface

This e-Book is collection of all the tips that have been published in the MVSTIPS Yahoo! Groups. The sources for these tips are manuals, books, websites, mainframe forums and group members' contribution. Also one can visit tips online at HTTP://GROUPS.YAHOO.COM/GROUP/MVSTIPS.

For comments, feedbacks, errata on this booklet, please send your mails to jjeban@yahoo.com.

With Warm Regards,

Jonathan Jeban Martin

20-Oct-04

ISPF

TIP # 001

ISPF

Lets start with a generic and simpler one.

Consider that you are editing a file/program and you want to know the changes you have done since the last SAVE command.

How to find that?

Answer:

Give COMPARE SESSION on the command line

Further use of COMPARE commands...

- Can be used like 3.13 option

TIP # 002

ISPF

Usually the PDS or PS bears the ID of the creator or the ID of the person who modified it recently.But is it possible to change these ID values without leaving trace of one's own ID?

Answer:

Yes its possible! In the command area against the member name or PS name, by giving 'G'. Dialog box will pop up allowing you to change the ID values.

TIP # 003

ISPF

 Suppose you are in a ISPF Screen and want to know in which TSO Region (Development, Production, or other TSO regions) you are now .

Answer:

Issue on the command line : SAREA

ISPF STATISTICS Pop-up window will show you the region(and other info too)

TIP # 004

ISPF

Any command entered in the COMMAND LINE disappears after the successful execution of its intended function.

If you want to repeat the same command , you got to re-type it or use some PF key to retrieve the last command entered.

But here is a cool method the make the command entered not to disappear and stay on the screen.

Precede commands with ' &'

```
For Example:
COMMAND ===> &C '110-PARA' '220-PARA'  SCROLL ===> CSR
****** ******************** TOP OF DATA *************
000001 IDENTIFICATION DIVISION.
000002 PROGRAM-ID. COBOLSAMY.
000003 DATE-WRITTEN. APRIL 2004.
```

After the execution of the command, the below command stays on the screen.

This way you can entering the same command or modifying the command a little and using it multiple times.

TIP # 005

ISPF

While trying to open any member in a PDS, we sometimes come across "member in use" message. In that situation, if you want to know who is using the member currently, press F1 *twice*.

TIP # 006

ISPF

We usual search for members in a PDS by the first string of the members.

Consider this situation .

I have a PDS and I want to search it for member only by middle string of the members.

e.g. there are some members like BESTJCL1,RESTJCL2,PEST**CBL**1, BEST**CBL**2, WEST**CBL**3,TESTASM1,BESTASM2...etc

I want to find members which have **CBL** in them.

How can I search and find these members?

Answer:

Use **ISPF 4.12** option.

Specify the dataset to be searched and the pattern of the string.

Specify the LANG type as COB

And select the browse option.

TIP # 007

ISPF

How can I find the last 10 datasets that I have *accessed* ?

Answer:

1.GO TO ISPF 3.4 option.

2. On the top, there is a MENUBAR. Select REFLIST

3. Select Option 1 in it.

Using this option you can find out the *last 30 datasets* that you have accessed....

TIP # 008

ISPF

Alternate to SuperCE Option(3.13) is to use the macro COMPARE .
Use this when you there is less difference between the two files.

1.Open a DSN in EDIT or VIEW Mode
2. On the Command line , issue COMP ' YOUR.SECOND.COMPARISON.DSN'
3. If you want only the changes to be listed, issue COMP
' YOUR.SECOND.COMPARISON.DSN'   EXC

TIP # 009

ISPF

While Browsing Internet, we have some cool option called address *autocomplete*…we enter some letters in the address bar and the browser auto completes it with the closest guess.

Does MAINFRAME has the same feature??

Answer:

Yes! It has "Autocomplete" feature!!!

How to use it?

1.go to ISPF 3.4 ,

2. enter KEYS in the command line,KEYS window will popup

3. set any key to AUTOTYPE, save and exit

2. now type any Dataset partially and press the assigned PFkey!!

Note: It will not retrieve GDGs and VSAM files.

TIP # 010

ISPF

I want to find a member but I don't know the PDS to which it belongs. I only know the high level qualifier of the PDS.

Answer:

For example, lets consider high level Qualifier as MYID.MYAPPLN.* and member as MYMEM

1. Go to 3.4 and list all PDS with MYID.MYAPPLN.*

2. Now issue, MEMBER MYMEM on the command line

TIP # 011

ISPF

I want to know what are the last 25 COMMAND LINE commands that I have issued from ISPF panel.

Answer:

To get that, I have to issue, RETP on the Command line.

TIP # 012

ISPF

I want to edit a member, which has CBL as middle string in the PDS MY.PDS.MEMBERS.

One shortcut way is to in the ISPF 3.4 listing of the PDS,

issue S *CBL* E in the command line. If we don't use E at the end, it will open in browse mode.

TIP # 013

ISPF

Here is another tip on ISPF 3.4 Option

Usually to find the last edited member, we issue SORT CHA or SORT CHANGED on the command line.

One can save few keystrokes by placing the cursor on any of the column header in the ISPF 3.4, and press ENTER.

In our case, if we place the cursor on the CHANGED header, we will get the members sorted on that column.

TIP # 014

ISPF

Here is a tip by which you can avoid ISPF 3.4 Option!!!

To Open a PS or PDS member, we usually use ISPF 3.4 to open in EDIT or BROWSE MODE.

Here is one way where one can open PS or PDS member in EDIT/VIEW/BROWSE mode from any command line.

Thus, we can avoid using 3.4 option.

Issue : EPDF `MYID.MYPS' . The Dataset will be opened in EDIT MODE

If you want to open in VIEW mode:

Issue : EPDF `MYID.MYPS' VIEW

Similarly, for opening in BROWSE mode, type BROWSE at the end.

TIP # 015

ISPF

Here is a situation. I have received a maintenance change request on one of the program.

While I am making changes to the program, one of my friend pops in and I leave with him for a cup of coffee without SAVING the changes I made.

After few minutes , when I am back, I am not sure what changes I made previously on the program?

How can I find the changes I have made (without getting out of this screen)?

Well, here is one simple command line command to achieve this...

Issue : COMP * X

TIP # 016

ISPF

When I issue CUT , I know that the CUT content are placed in a clipboard. And when I issue PASTE, the clipboard content are pasted.

But is it possible for me to view/edit the clipboard ?

One can view the clipboard after any valid CUT command was issued.

To view the clipboard, issue : CUT DISPLAY.

Clipboard manager will pop up and gives us options to edit or browse the content.

TIP # 017

ISPF

Here is another tip on ISPF CUT. I have a dataset with 10,000 lines.I want to cut the first 10 lines and last 10 lines and paste into another dataset.When I cut the first 10 lines and then again the last 10 lines ,only the last 10 lines are pasted into the new dataset.

Is there anyway out (other than doing a 2 cut & paste)?

The answer for the above question is to:

1.first cut 10 lines, then issue CUT APPEND

2.then cut last 10 lines, then issue CUT APPEND

3.When you PASTE it, you got both.

TIP # 017

ISPF

Tired of typing the often-used datasets repeated?!!!

We have seen AUTOTYPE previously. Here is another one that saves lots of key-strokes.

Use NRETRIEV.

How to use it?

1 enter KEYS in the command line,KEYS window will popup

2 set any key to NRETRIEV and exit

3 now when you are in 3.4 or whichever screen you have set the KEYS option, press the assigned PF keys.

4. Pressing them repeated will bring up one-by-one the last 30 accessed datasets from the reflist.

TIP # 018

ISPF

Here is one simple one.......

I want to search a string like **'abc' (including quote).**
In my pgm there may be more **abc** strings.But i don't want to retrieve all of them.
i need the **abc** enclosed with **quotes**.
How to search is in 3.14 option?.

In the ISPF 3.14 , search with '"abc"' string.(i.e. with 3 quotes at both sides of the string)

TIP # 019

ISPF

I have to compare one input file field with one output file field. The input file field in is column 1 to 10 and the output file field is in column 40 to 50.

How can I do it?

1. Use the standard 3.13 ISPF option. In the same screen itself, in the command line issue, E

2. then type,

      CMPCOLN 40:50

      CMPCOLO 1:10

3. press PF3 and exit

4. In the New dataset , type in the output dataset

5. In the Old dataset , type in the input dataset

TIP # 020

ISPF

```
Is an easy way to search member in Multiple PDS?

Go to 3.4 (where all the datasets will be displayed) .
In the Command line give
Command line==>M memname

This command will not work for the migrated PDS. So ensure all the PDS are in
Disk.

Now the message "MEMBER(S): memname found" will apppear in the right side of
the panel.
```

TIP # 021

ISPF

I have data which is of length 160. For some reasons, I want to wrap the data in each record to 80 characters and have the next 80 characters in the next line. So basically what I am looking for is , "Is there command similar to **Wordwrap** (as in Notepad or MS WORD) in mainframe?"

Yes, with ISPF, one can wrap the data as required.

To do that,

1.Open the dataset in ISPF EDIT mode.

2.In the first line, issue the line command: TF80 (as in this case I want to wrap to 80 chars per line)

3.All the subsequent lines will wrap to 80 chars per line.

TIP # 022

ISPF

Here is another tip on ISPF 3.4 option

From the ISPF 3.4 option listing, I can directly Edit/Browse/view the member without listing all the members and then select the particular member.

To do that,

In the Line command issue, **E / (member)**

use for Browse (B) and view (V)

```
Command - Enter "/" to select action              Message          Volume
-----------------------------------------------------------------------------
E /(MEMBER1)MYID.WORK.SRC                                           NV1E56
**************************** End of Data Set list ****************************
```

JCL

TIP # 023

JCL

Hero' s Method:

If you prefer a dataset to be not deleted accidentally, then

USING IDCAMS USING JCL COMMENTS

TO(04365) LABEL=RETPD=04365 Will protect till end of 2004

FOR(30) LABEL=RETPD=10 Will protect for 30 days

Villain' s Method:

If by chance of fate, you want to delete a dataset that is protected by the above method...

Use IDCAMS DELETE command with PURGE option.

e.g.,

//STEP1 EXEC PGM=EXEC

//SYSPRINT DD SYSOUT=*

//SYSIN DD *

DELETE TOP.SECRET.DATA -

PURGE

/*

TIP # 024

JCL

Is it possible to execute a program from any library using the referback?

The Answer is Yes!
//STEP1 EXEC PGM=IEFBR14
//PROGRAM DD DSN=SYSTEM.PGM.LOADLIB(COBOLPGM),DISP=SHR
//STEP2 EXEC PGM=*.STEP1.PROGRAM

TIP # 025

JCL

How does the system differentiates between JCL comment statements (i.e., //* statements) and JES3 Statements (which also start with //*) ?

If the 4th column contains **JES3 keyword**, the line is considered to be JES3 statement, else it is considered as normal JCL statement.

TIP # 026

JCL

We know JES2 and JES3 , but is there any JES1?

OS/VS1 (the forefather of MVS) supported only one job entry subsystem *namely* JES1

TIP # 027

JCL

Consider this situation.
I have a JCL with 10 steps.
For reasons known only to me, I want to execute step 5 only.
How can I do it?

One way to do it is to use RESTART from STEP05, but it will try to execute the subsequent steps too.

We have to insert null statement after step05 to prevent the execution of subsequent steps.

But one decent way is there in which we don't need to touch the job steps code, but alter only the Jobcard.

And that is....

In the JOBCARD, code COND parameter. Then, when the Job is executed , only the Step mentioned in the RESTART parameter will get executed.

e.g., RESTART=STEP05,COND=(0,LE)

TIP # 028

JCL

We know that JOBLIB statement must be placed after the JOB statement and before the first EXEC statement in the job.

But, the STEPLIB statement can be placed anywhere in the particular step's JCL (not necessarily the first DD statement in the STEP).

TIP # 029

JCL

```
Here is a quick question. Can Catalog Procedure have PEND
statement?
       Yes! Now it can have PEND Statement.
       Do check it out….
```

TIP # 030

JCL

How much data can TAPE store??

A typical **tape reel** might contain 170 MB whereas **tape cartridges** can contain as much as 10GB.

(Source: System 390 JCL by Gary DeWard Brown)

TIP # 031

JCL

Do you know why null statement was introduced in JCL?

Back when punched cards were used, a null coded on distinctive colored cards was used to help operators separate card decks. (Hence , it helped to identify the end-of-job card, and the start of next job for the operators)

(Source: System 390 JCL by Gary DeWard Brown)

TIP # 032

JCL

Do you know why JCL has '//' in col 1& 2 in each Statement??

The Slashes date back from when **PUNCHED CARDS** were used to submit JCL code for execution. If the cards were mistakenly put back to front in the reader, the slashes wouldn't be read first and so the card deck could be rejected. So '//' ensures that the punched cards are placed properly!!

(Source: System 390 JCL by Gary DeWard Brown)

TIP # 033

JCL

How can I specify dummy VSAM dataset in a JCL?

Code AMP='AMORG' . This parameter tells the OS to treat the file as VSAM file.

//NOVSAMIO DD DUMMY,AMP='AMORG'

TIP # 034

JCL

I can specify the max limit of TIME parameter as

TIME=NOLIMIT or

TIME=MAXIMUM.

Now which specification gives maximum time for a JOB?

TIME=MAXIMUM will allow the job to run for 357912 minutes (248.55 days)

TIME=NOLIMIT will allow the job for *unlimited amount of time*

Another advantage of NOLIMIT option is that it can remain in wait status for more than the installation time limit.

TIP # 035

JCL

I want to delete a member in a PDS, but someone is using it. How can I delete it?

One can use the following JCL

```
//DELMEMB EXEC PGM=IDCAMS

//SYSPRINT DD SYSOUT=*

//PDS DD DSN=libraryname,DISP=SHR

//SYSIN DD *

ALLOC DDN(INFILE) SHR REUSE DSN(' libraryname' )

DELETE libraryname(membername) FILE(PDS)
```

TIP # 036

JCL

&SYSUID is a "system symbol" for which the system substitutes your TSO ID.

It is the only system symbol that can be used in a batch job, and can be useful when more than one individual submits the same JCL.

TIP # 037

JCL

I am overriding 2 DD statements in a PROC from my JCL. The first DD statement is in step 10 and second DD statement is in step 40.

Usually , I specify as

```
//PS010.INPUT DD DSN=MYID.DATASET

//PS040.SYSIN DD DSN= MYID.NEW.DATASET
```

What will happen if I specify step 40 first and step 10 next?

zOS JCL will process it! It will override irrespective of the order it is specified. Formerly out-of-order DD overrides were ignored.

COBOL

TIP # 038

COBOL

If you are accessing ESDS VSAM file, then in COBOL do you know that SELECT clause has something different about it!!

For ESDS,

SELECT FILE ASSIGN TO AS-DDNAME

Yes, the DDNAMEs should be prefixed with AS- .
If you are not doing that then an S213 ABEND might occur when attempting to open data set.

TIP # 039

COBOL

When writing a COBOL program that is to be used as a CICS application program,do not use the compiler option DYNAM.

TIP # 040

COBOL

MERGE statement can have OUTPUT PROCEDURE but not INPUT PROCEDURE !!

TIP # 041

COBOL

Do you know how COBOL Compiler finds a dataset as VSAM dataset?

When the **ORGANIZATION** clause is coded for a file, the COBOL compiler interprets it as a VSAM dataset. Hence, the ORGANIZATION clause should not be coded with a non-VSAM dataset.

TIP # 042

COBOL

Do you know using an **odd** number of digits for PACKED DECIMAL (**COMP-3**) is 5% to 20% faster than using an **even** number of digits !!

TIP # 043

COBOL

Performance considerations for **indexes vs subscripts**:

    using COMP to address a table is 30% slower than using indexes!

    using COMP-3 to address a table is 300% slower than using indexes !!

    using DISPLAY data items to address a table is 450% slower than using indexes !!!

(source: Cobol performance tuning manual)

TIP # 044

COBOL

Rule of the THUMB:

For a table with less than 50 entries ==> go for SEARCH (Sequential Search)

greater than 50 entries ==> go for SEARCH ALL (Binary Search)

TIP # 045

COBOL

In COBOL, why we READ **FILE** but WRITE **RECORD** ?

You READ a FILE because you don't know in advance:

1. whether there actually is a RECORD to read or not

2. For variable or undefined length files, how long the next RECORD will be, if there is one.

You Write a RECORD because you know in advance the answers to both of the above questions.

TIP # 046

COBOL

Using OPEN OUTPUT to load a VSAM file will significantly improve the performance of your program. Using OPEN I-O or OPEN EXTEND will have a negative impact on your program's performance.

TIP # 047

COBOL

Avoid repetitive uses of the INITIALIZE statement.

INITIALIZE once and move it to a second like sized 01 level, then move the second 01 level to the first to initialize the fields.

TIP # 048

COBOL

Consider using an in-line PERFORM instead of a SEARCH when you have *less than 20* elements in a table.

TIP # 049

COBOL

One can generate a complete listing of compiler diagnostic messages, with their explanations, by compiling a program with the program-id of ERRMSG specified in the PROGRAM-ID paragraph.

EX:

IDENTIFICATION DIVISION

PROGRAM-ID.ERRMSG.

ENVIRONMENT DIVISION.

DATA DIVISION.

PROCEDURE DIVISION.

STOP RUN.

TIP # 050

COBOL

For KSDS or RRDS , when DELETE statement is used, the file must be opened in I-O Mode.

TIP # 051

COBOL

Performance Tuning

Taking constant expressions out of a loop speeds up a program with no ill effects.

Example

```
Move zero to total.
Perform varying I from 1 by 1 until I > 100
Compute total = total + item (i) * discount
End-perform
```

Remove multiply from loop

```
Move zero to total
Perform varying I from 1 by 1 until I > 100
Compute total = total + item (i)
End-perform
Compute total = total * discount
```

TIP # 052

COBOL

Sometimes my initialization doesn't work when I use INTIALIZE verb? Is there anything that I should take care of?

When we use **INITIALIZE** verb to initialize group verbs, group elements which are **FILLER**s will not be initialized!

TIP # 053

COBOL

I am using internal sort in my COBOL Program. Is there anyway to test the return code of sort operation?

The return-code or completion code is stored in a SORT-RETURN special register.

If SORT-RETURN = 0 (successful completion of SORT/MERGE)

If SORT-RETURN = 16 (Unsuccessful completion of SORT/MERGE)

TIP # 054

COBOL

In general, it is advantage to use COMP for numeric data and COMP-3 for decimal data.

TIP # 055

COBOL

Here is one better way of INITIALIZATION of a record or group item.

INTIALIZE WS-RECORD
        REPLACING ALPHANUMERIC DATA BY SPACES
                NUMERIC DATA BY ZEROES.

TIP # 056

COBOL

SEARCH ALL condition only test an equal condition.

TIP # 057

COBOL

In COBOL SELECT clause, I see sometimes see ASSIGN coded like this…

```
SELECT INFILE ASSIGN TO UT-S-INFILE
OR
SELECT INFILE ASSIGN TO DA-S-INFILE
```
What they mean actually…

First part in DDNAME: - Device Class
UT stands for Utility (Tape or Sequential Disk)
DA stands for Direct-Access (disk)

Second part in DDNAME: - Method of Organization
S – Sequential (Printer, terminal, disk or tape)
I, R, D – Disk files to be accessed randomly

TIP # 058

COBOL

When using INPUT /OUTPUT PROCEDURE with SORT
 We RELEASE *record-name* (for INPUT PROCEDURE) and
 We RETURN *file-name* (for OUTPUT PROCEDURE)

VSAM

TIP # 059

VSAM

Performance Tuning

One can speed up applications greatly by using memory to cut I/O when dealing with VSAM datasets.

For this VSAM Buffers can be enlarged.

In the DD statement code AMP parameters = BUFNI(index), BUFND(data), BUFSP (amount of virtual storage)

Increase number of Data buffers (BUFND) for sequential access

Increase number of Index buffers (BUFNI) for random access

TIP # 060

VSAM

IDCAMS Utility can' t be executed without 2 DD Statements.

They are SYSPRINT and SYSIN.

TIP # 061

VSAM

We know that FREESPACE(100,100) specification causes one record to be written for each Control interval, and one Control Interval would be written for each control area. But do you know why?

VSAM will always load the first record *before* taking FREESPACE option into consideration!!!

TIP # 062

VSAM

DEFINE PATH command creates *an alias* for the VSAM base cluster

DEFINE ALIAS command creates *an alias* for non-VSAM datasets

TIP # 063

VSAM

CICS, DB2, IMS *can process* records in existing VSAM datasets but *can't create* the dataset.
Even you *can process* VSAM data sets in COBOL programs only
afte*r you create* them with access method services.

TIP # 064

VSAM

How can I specify dummy VSAM dataset in a JCL?

Code AMP='AMORG' . This parameter tells the OS to treat the file as VSAM file.

//NOVSAMIO DD DUMMY,AMP='AMORG'

TIP # 065

VSAM

I want to process a KSDS thru an alternate key. Now what are the **5** IDCAMS commands that must be
executed before the records in a KSDS can be processed thru an alternate key?

1. DEFINE CLUSTER

2. REPRO   (the base cluster must be non-empty KSDS)

3. DEFINE ALTERNATEINDEX

4. DEFINE PATH

5. BLDINDEX

The first 3 IDCAMS commands should be executed in the above-mentioned order.

The last 2 IDCAMS can be done in any order.

TIP # 066

VSAM

I want to make my VSAM dataset read-only. How can I do it?

By using **INHIBIT** along with **ALTER** command

e.g.,

//STEP1 EXEC PGM=IDCAMS

//SYSPRINT DD SYSOUT=*

//SYSIN DD *

ALTER -

  SECRET.KSDS.DATA -

  INHIBIT

ALTER -

  SECRET.KSDS.INDEX -

  INHIBIT

/*

//

Notice that the ALTER command is used with DATA and INDEX and not with the cluster.

TIP # 067

VSAM

VSAM equivalent of temp dataset is to create VSAM file with REUSE option. A dataset created with REUSE can be treated as a new dataset at any subsequent time.

TIP # 068

VSAM

How should be VSAM file defined in order that it can be accessed both in CICS and in BATCH environment?

Define as SHAREOPTION (2,3)

TIP # 069

VSAM

While designing VSAM files, what's the best way to choose Control Interval (CI) size for the data and the index?

Well, it depends on whether the data will be accessed directly or sequentially.

For Direct access use small CI

For Sequential access use Lager CI

FILEAID

TIP # 070

FILEAID

The Easiest and Coolest way to locate bad data is thru File-Aid' ;FIND command.

1.OPEN the file in FILE-AID (in either browse or edit mode)

2.XREF with COPYBOOK.

3.Use FMT mode

4.Then issue ,

F /field-name INVALID

or

F /field-number INVALID

The control will take you to the first invalid data record for the given field.

e.g.,

The FILE has 3 fields namely NAME,AGE,COUNTRY.

If you want to find the invalid data in the age field, then issue

F /2 INVALID

TIP # 071

FILEAID

We always face a situation such that when we have opened a File in FILE-AID Browse mode but later wished it was EDIT Mode and vice versa. So in this situation, what we do is come out of the browse mode and again open in edit mode and vice versa. But there is a cool command available in FILE-AID to help us in this type of situation.

If u r in Browse Mode and want to change it into EDIT Mode , in the Line Command issue

COMMAND ==> GO EDIT

If u r in EDIT Mode and want to change it into BROWSE Mode , in the Line Command issue

COMMAND ==> GO BROWSE

TIP # 072

FILEAID

How to determine compile date of loadlib member ??

Use FILE-AID !!

1. Go to FILE-AID 3.1 option

2. In the Library Utility type in the *loadlib dataset name*

3. Type ' a' next to the member name

4. TDATE is compile date

TIP # 073

FILEAID

Whats the best way to count the number of records in a VSAM File?

1.Choose FILE-AID Option 3.8

2. At the prompt of ....ENTER NEXT FUNCTION OR END , enter TALLY

3. U will get the record count

4. Type END to exit.

TIP # 074

FILEAID

While working in MS Excel we have the option of "freeze Panes". By this options we can freeze some columns and have other columns scrolling. This feature is helpful in analysis when there are lots of columns(fields) in a file.

In mainframe too, we have similar such facility thru File-Aid.

1.Open the file in File-Aid

2. use VFMT format

3. If you want to freeze columns(fields) 1,2,3, and 6 and have the rest as scrollable

issue command **HOLD 1-3,6**

TIP # 075

FILEAID

Can I issue FIND command to find values that are less than or greater than 'certain value' at column 25??

We can't accomplish this task thru ISPF , but File -Aid provides us the facility to issue FIND command with relational operators like EQ,NE,LT,GT,LE and GE.

e.g.,

FIND LT '2004' 25 ALL

So if one wants to use relational operator along with FIND command, open the same dataset in FILE-AID.

TIP # 076

FILEAID

Consider this situation. I am doing a verification on an output file. The output file has 200 fields. I need to verify only 25th and 175th fields only.

I am using FILE-AID's VFMT mode and for each record I am scrolling between 25th and 175th field. Is there any efficient way to handle this situation?

Some people might use HOLD to freeze 25th and 175th field , but still other fields are displayed , which is an annoyance.

Here is one better way:

In the VFMT mode, issue DISPLAY 25 175 ONLY

Only 25th and 175th fields will be displayed.

TIP # 077

FILEAID

ABEND SOLVING

At midnight I receive production call.

One job abended due to classic S0C7. Thru analysis I located the particular field which is a COMP-3 and junk data is sitting in that field for some records.These bad records are not contiguous but occuring randomly in the input file.

Now to save my head I have to delete all the records with bad data in that particular field and re-execute the job quickly. Assume that input file has some 10 million records. How can I eliminate the bad records in an efficient and a fast method?

Here is the approach:

Using the following FILE-AID option in batch mode

$$DD01 DROP IF=(field-position, field-length, NEP)

NEP *means* **N**ot **E**qual to **P**ACK

One can generalize and customize the below JCL to deal with similar type of ABENDS.

For Example,

My input layout is:

01 TEST-RECORD.

05 NAME-FIELD PIC X(5).

05 AMOUNT-FIELD PIC 9(3) COMP-3.

My JCL to eliminate the bad records:

//STEP01 EXEC PGM=FILEAID

//*

//SYSUDUMP DD SYSOUT=*

//SYSPRINT DD SYSOUT=*

//SYSLIST DD SYSOUT=*

//SYSTOTAL DD SYSOUT=*

//DD01 DD DSN=MYID.CHECK.OUT,DISP=SHR

//DD01O DD DSN=MYID.CHECK.OUT,

// DISP=(NEW,CATLG,CATLG),

// DCB=(MYID.CHECK.OUT)

//SYSIN DD *

$$DD01 DROP IF=(6,2,NEP)

/*

This will drop the bad data records and retain only the good one.

TIP # 078

FILEAID

I want to do Fuzzy Comparison of files!!

My requirement is to compare 2 files of which for one certain field I can have + or - 1 value which should be acceptable while comparing.

Thru FILE-AID COMPARE (OPTION 10), one can set percentage amount for numeric fields that determines "close enough" matches. When the "Formatted Criteria" table appears after the 2 files are specified, use the "T" line command. This brings up a

"Tolerance Value/Percentage Specification" panel where you can set a plus or minus value for a numeric field.

SORT

TIP # 079

SORT

Do you know COBOL Internal SORT and MERGE is *actually done* by DFSORT ?!!

If you SORT or MERGE with COBOL, **the compiler** automatically generates a SORT or MERGE control statement for you with the correct DFSORT descriptions for the COBOL fields you specify.

TIP # 080

SORT

How can I replace all the low-values in a file to spaces??

Use ALTSEQ CODE .

Here's an example of how you could change all low values (X'00') to spaces (X'40'), in an FB data set with an LRECL of 80:

```
ALTSEQ CODE=(0040)
OUTREC FIELDS=(1,80,TRAN=ALTSEQ)
```

(Source: IBM SORT website)

TIP # 081

SORT

SYNCSORT

My Production job is such that, on one of the steps it has to copy a VSAM dataset to flat file, and then process that flat file in the subsequent steps. Sometimes the input VSAM may be empty. When its empty, my job abends. How can I prevent the job from abending when the VSAM is empty ?

Pass the parameter, VSAMEMT=YES for the SORT utility.

i.e,

```
//STEP3 EXEC PGM=SORT,PARM='VSAMEMT=YES'
//*
//SYSOUT DD SYSOUT=*
//SORTIN DD DSN=VSAM.DSN
// DISP=SHR
//SORTOUT DD DSN=FLATFILE.DSN
// DISP=SHR
//SYSIN DD *
SORT FIELDS=COPY
/*
```

SDSF

TIP # 082

SDSF

If you want to rearrange the columns in SDSF -

1.Go TO SDSF.
2.In command line type "arr ?".
3.This will bring the complete list of SDSF column names.
4.You can move the columns using "/" and "//".

One Column in the SDSF that we can bring to the front position is the MAX-RC (which usual is the last column in SDSF) which shows the completion code or the abend code of the job.

TIP # 083

SDSF

How to allow another user to browse my job?

Usually if we want other user to see our job, we supply them with jobname and jobid.

They use, OWNER urid and PRE urid* to browse your job.

One simple way to allow another user to browse is to change the DEST column in either the H /I or ST panel of the particular job to the another user id(who wants to view it).

The Other user need not issue commands or change panels to view your job. It will be available in his Hold/Output panel itself.

TIP # 084

SDSF

I have some 50 jobs in my SPOOL. I want to list only the jobs that are ABENDED.

For such a kind of listing, use the primary command **FILTER** on the command line as given in the examples below

FIL MAX AB* - shows jobs that has ABENDS

Other Examples are:

FIL MAX 'JCL ERROR' - shows jobs that has JCL errors

FIL MAX NE 'RC 0000' - shows jobs with "exceptional conditions"

FIL MAX EQ 'RC 0000' - shows successfully completed jobs

If you want to switch off the filter, then issue FIL OFF

TIP # 085

SDSF

For selecting jobs in the SDSF queue , I either use "?" or "S".

When I use "?" , I get the break-up output groups for example like JESMSGLG,JESJCL,JESYSMSG,SYSPRINT,SYSUT2 etc.

When I use "S" , the entire job is selected without this break-up.

Is there any command to navigate to view each output group when I use "S" to select the job?

After opening the job using "S", use "N" (next) or "P"(Previous) to navigate between different output groups.

CICS

TIP # 086

CICS

Use CALLs instead of LINKs in CICS

EXEC CICS LINK

- establishes a new run unit

- sets up environment

- Does CICS table-search

- For all this activities, it executes 1400 machine code instructions

CALL

- It executes around 12 machine code instructions

Just *replacing* EXEC CICS LINK with CALL statement on a case study, it was found that

Internal Transaction Response time improved 23 - 78 %

Total CPU Time improved 15 - 23 %

Dynamic storage use improved 11 - 30 %

* CALL used in the study is STATIC CALL . COBOL refered here is VS COBOL II

TIP # 087

CICS

You can use a COBOL CALL statement to call *only* a VS COBOL II or an Assembler language program in the **same** load module as the calling program.

For calls to programs written in languages other than VS COBOL II, including other versions of COBOL, you need to use the commands EXEC CICS LINK or EXEC CICS XCTL.

TIP # 088

CICS

Do you know how CICS was called initially ??

PUCICS!!!

PUCICS *stands for* Public Utilities Customer Information Control System.

After couple of years, it took the name CICS.

TIP # 089

CICS

What is the difference between getting the system time with EIBTIME and ASKTIME command?

ASKTIME = requests the current date and time

EIBTIME = field have the value at the task initiation time

TIP # 090

CICS

To access the system values like date, time, Userid etc and store in a variable, one can use

      EXEC CICS ASSIGN

TIP # 091

CICS

While doing a mass delete using a generic key, how can you determine the number of records deleted?

By using the **NUMREC(data-area)** option with the generic key. Upon completion of the delete the data-area will contain the number of records that are deleted.

TIP # 092

CICS

When generating Mapset, specify **TIOAPX=YES** for COBOL programs. YES generates a 12-byte FILLER item at the beginning of each symbolic map. It should always be specified for COBOL programs.

DB2

TIP # 093

DB2

Use the OS/390 – MVS solution `Move current-date to ……´ to obtain a date or to do a date calculation instead of DB2′s `SET CURRENT TIMESTAMP′.

TIP # 094

DB2

Avoid joins that involve more than two TABLES. Break it up into multiple SQL statements. In a case study, a 5-table join used 4190 CPU hours in a month for a weekly process. Breaking it up dropped the usage to 9 CPU hours per month!!

TIP # 095

DB2

If using CURSOR SQL for read only, use FOR FETCH ONLY in the SQL.

TIP # 096

DB2

How To Match Contoken Across Loadlib & Dbrmlib

Step 1.

Go to SYSIBM.SYSPACKAGE for that program - look at the latest bind - you can
look at the time stamp column to find the latest. There will be a column
called CONTOKEN. This will have a value.

Ex -
-+---------+---------+---------+---------+---------+---------+---------+----

COLLID NAME CONTOKEN OWNER CREATOR TIMESTAMP

-+---------+---------+---------+---------+---------+---------+---------+----
CBPR39WO PGMNAME .îÒ#.¹". DFDBS ABC
2004-04-21-06.42.00.

Step 2 .
Covert the CONTOKEN to zoned decimal format. From the above example it
is X' 1756ed7b02da7f32' . You can use HEX on to find the ZD format.

Step 3.

Go to the DBRMLIB - Search for this String like - F x' 1756ed7b02da7f32'
. If it is the correct DBRM lib using which it is bound then you will find a
match.
Also you can get the DBRMLIB used for binding from the above Query o/p
also if you scroll towards the end. There is a Column for that also.

Now How to match it to load lib .

Step 4.
Go to your load lib in browse mode. Search for the First 8 bytes in the
above ZD format of the CONTOKEN
Like =-- F ' 1756ed7b' . If you find a match then it is your matching
load !!!

The twist here is - on the SYSIBM.SYSPACKAGE and The DBRMLIB the
contoken is stored in the Same format, But in the Loadlib the date & time part of
the CONTOKEN is swapped and stored. This is why you need to search for the
8 bytes separately. Otherwise you need to swap the 16 bytes of the
CONTOKEN and search.

TIP # 097

DB2

To get only the first n rows
select *
from table name
fetch first n rows only
with ur;

TIP # 098

DB2

Performance Tuning
Use JOIN instead of Sub-Queries
SELECT EMPNO, LASTNAME FROM EMP, DEPT
WHERE WORKDEPT =DEPTNO
AND DEPTNAME = 'PLANNING'
SELECT EMPNO, LASTNAME FROM EMP
WHERE WORKDEPT IN
(SELECT DEPTNO FROM DEPT
WHERE DEPTNAME = 'PLANNING')

TIP # 099

DB2

How to select the duplicate rows from a table?

SELECT columns
FROM table
GROUP BY columns
HAVING COUNT(*) > 1

TIP # 100

DB2

For SQL declaration of DECIMAL(n,m),
the COBOL equivalent generated is PIC S9(n-m)v9(m) COMP-3