

## *MAINFRAME*

*FILES - DATASETS - FLAT - PS( PHYSICAL SEQUENTIAL)*

*FOLDER - PARTITIONED DATASET - PDS,PDSE,LIBRARY(LOAD MODULES)*

*FILES - MEMBERS*

*JOB - PROGRAM*

## *MAINFRAME*

*SOFTWARES - SUBSYSTEMS*

- 1. TSO -time sharing options· Logon*
- 2. ISPF/PDF -INTERACTIVE SYSTEM PRODUCTIVITY FACILITY/PROGRAM DEVELOPMENT FACILITY·*
- 3. JES - JOB ENTRY SUBSYSTEM·*
- 4. DB2 -RDBMS MAINFRAME*
- 5. CICS - OLTP*

*BATCH PROCESSING - MAINFRAME*

*ONLINE TRANSACTION PROCESSING -*

## *MEMORY·*

*MAIN - RAM*

*SECONDARY*

- 1. DASD - DIRECT ACCESS STORAGE DEVICE - 3390 HDD*
- 2. TAPE - AUDIO/VHS BACKUP·*

*PARTITIONED INTO VOLUMES/SERIAL NUMBERS*

Data set allocation parameters.

1. DSN

HLQ.Q2.Q3.Q4.Q5.Q6.Q7

HIGH LEVEL Q → USER MF ID → ARI001

Qualifiers → 8 chars max. first char must be an alphabet.

Alphanumeric

Every q must be separated by a period

Max 7 qs.

Total number of chars : 44.

OZAGSI.ALWYN.OUTPUT.DATA7.P5

2. SPACE UNITS.

BYTES, MB,KB, TRACKS, CYL

MB/TRACK. TRACKS/CYL

3. PRIMARY QUANTITY.

It is the initial amount of space units.

3

4. Secondary quantity.

It represents the number of space units that can be allocated **WHEN THE PREVIOUSLY ALLOCATED SPACE UNITS ARE FULLY UTILIZED.**

**2 x 15 TIMES**

**SPACE ABEND**

5. Directory blocks: folder(PDS,LIBRARY,PDSE)

It represents the max number of members inside the folder.

$(N \times 6) - 1$

6. Volume/serial (optional)

7. Logical REcord Length( LRECL)

The number of chars for each.

Min = 1, max num=32kb

Job/cobol program - 80

Dataset - depending on the num of chars per record

8. BLKSIZE = multiples of LRECL

Unit/min amount of data transfer between secondary and the main memory.

9. RECFM -record format

F - FIXED, FB- FIXED BLOCK, FBA - ADDRESSING

V - VARYING, VB - VARYING BLOCK , VBA- ADDRESSING

U - UNFORMATTED/UNKNOWN → LOAD MODULES.

10. DSORG/DS TYPE →

EMPTY → PS

PDS, PDSE, LIBRARY

11. EXPIRY

DAYS 200.

ISPF

3 → UTILITIES

2 → ALLOCATE

A parameters.

File commands:

D - DELETES

R - RENAMES

E - OPEN IN EDIT MODE

V- OPEN IN VIEW MODE ( CHANGES CAN BE DONE, BUT CANT BE SAVED)

B - OPEN IN BROWSE MODE ( READ ONLY)

I - INFORMATION

S - SHORT INFO

PDS

C - COPY A MEMBER

Z - COMPRESS

## *TSO EDIT COMMANDS*

### *EDIT RECORDS*

*I - INSERT*

*IX - X NUMBER OF LINES WILL BE INSERTED*

*D - DELETE*

*DX - X NUMBER OF LINES WILL BE DELETED.*

*R - REPEATS A LINE*

*RX - REPEATED X NUMBER OF TIMES.*

*C - COPY A RECORD/LINE*

*A-AFTER*

*B-BEFORE*

*CX - COPY X NUMBER OF LINES*

*M- MOVE ( CUT A LINE)*

*A - AFTER*

*B-BEFORE*

*MX - CUT X NUMBER OF LINES*

*X - HIDES A RECORD*

*XX - HIDES X NUMBER OF LINES.*

*) → moves the line 2 positions to the right*

*)x → moves the line with x number of positions*

*( → move the record to the left.*

*LC → LOWER CASE*

*LCX →*

*UC → UPPER CASE*

*UCX →*

*TS - SPLITS a record across next line*

*TF - text flow →*

*MASK → It allows the user to give titles for a the fields*

*COLS → DISPLAY THE COLUMN NUMBERS*

*BNDS → BOUNDARY INSIDE WHICH THE COMMANDS WILL WORK.*

*< >*

*LABELS → IDENTIFYING RECORDS BY LABELING IT. ".CHAR"*

### *Commands.*

- *SAVE*
- *END/EXIT → PREVIOUS SCREEN*
- *RESET(RES) → REFRESHING THE SCREEN.*

- FIND → F "STRN" , F ALL 'STRNG", F ALL ' STRNG' STPOS ENDPOS
- CHANGE → C 'NEW YORK' 'INDIA'
- SORT
- SUBMIT
- START → STARTS ANOTHER PARALLEL SCREEN. F9 TO SWAP
- PROFILE
  - CAPS ON
  - HILIGHT
  - UNNUM

Allocation of a PDS

## *JOBS.*

*Group of tasks.*

*Column definition.*

*Lrecl=80 only, recfm=fb only*

*1,2 → identifier field → //*

*3-10 → Name field ( max 8 chars. Starting with alphabet, then alpha numeric)*

*11 empty*

*12-15 operation field → JOB,EXEC,DD*

*16—PARAMETER FIELD*

*72-80 MUST NOT BE USED.*

*3 statements.*

*1. Job card (1)*

*PARAMETERS.*

*POSITIONAL(OPTIONAL)*

*AUTHOR NAME "ALWYN"*

*ACCOUNTING INFO (BNYM, CREDIT)*

*KEYWORD*

*NOTIFY(MANDATORY) → =&SYSUID*

*CLASS=A-Z, 0-9 → CLASSIFICATION*

*MSGCLASS= A-Z,0-9 → FORMAT OF THE REPORT*

*MSGLEVEL=(X,Y)(1,1)*

*X = what type (0,1,2)*

*Y = when do you want the report to be generated (0,1)*

*PRTY= PRIORITY → 1-15*

*TIME=(M,S) Requesting to allot time period for this job.*

*Time=2 → min*

*Time=(,3)→ 3 sec*

*REGION=OM ( max allowable memory space in the execution region)*

*COND = LATER*

*TYPRUN=SCAN/HOLD*

*SCAN→ Scans the job for syntax errors. It will not execute.*

*HOLD → Stays in the job queue until authorized user releases it for execution.*

*RESTART=STEPNAME*

*In a multiple step job, if you want execute from a particular step, skipping the previous steps, you can mention RESTART=STEPNAME.*

## 2. Job step (255)

//STEPNAME EXEC PGM=UTILITY,PARAMETERS  
UTILITY

SYSTEM

USER

IEFBR14 → DUMMY, BR14

IEBGENER → COPY FROM A PS TO A PS

IEBCOPY → COPY FROM PDS TO A PDS

IEBEDIT → EDIT

SORT → DATA PROCESSING.

IDCAMS → CATALOG DATASETS

PARAMETERS.(OPTIONALS)

REGION= means the same as in jobcard but this is for individual step.

TIME= means the same as in jobcard but this is for individual step.

COND= later

PARM= COMPILER OPTIONS, INPUT TO COBOL.

## 3. Dd statements(3273)

### a. USER DEFINED

//DDNAME DD

DDNAME: DEPENDS ON THE UTILITY

IEFBR14, IDCAMS → USER DEFINED

DD1, DD2, DD3

SORT → SORTIN, SORTIN01, SORTIN02 → INPUT

SORTOUT, SORTOF01, SORTOF02... → OUTPUT

IEBGENER/IEBCOPY → SYSUT1 → INPUT

SYSUT2 → OUTPUT

//DDNAME DD PARAMETERS.

MANDATORY:

DSN=DATASET NAME.

DISP=(D1,D2,D3)

D1 → CURRENT STATUS OF THE DATASET

NEW → It allocates/creates a new dataset

OLD → the DS exist, if you want read from it.

If you want write into it.

*SHR* → the DS exist, if you want read from it.

If you want write into it,

It writes data into the dataset by emptying it first.

*MOD* → if the exists, if it is used for output file,

It appends the new data

If the file doesn't exist, it acts as *NEW*

*D2* → status of the DS, after the successful execution of the job.

*KEEP* → LOCAL DIRECTORY

*DELETE* → PHYSICALLY REMOVES THE FILE FROM THE MEMORY.

*CATLG* → THE DS IS MOVED TO MAIN DIRECTORY

*UNCATLG* → REMOVES FROM THE CATLG AND PUT IN LOCAL.

*PASS* → WHEN A DATASET USED IN A STEP MIGHT ALSO BE USED IN CONSECUTIVE STEPS, *PASS* WILL RETAIN THE DATSET IN THE EXECUTION REGION.

*D3* → status of the DS, after A FAILURE of the job.

*KEEP*

*DELETE*

*CATLG*

*UNCATLG*

DEFAULT VALUES →

*DISP=NEW* → *DELETE,DELETE*

*DISP=OLD,SHR* → *KEEP,KEEP*

*DISP=MOD* → *DEPENDS.*

When *DISP* allocates a new dataset.

*SPACE=(SU,(PQ,SQ,DB),CONTIG,RLSE,ROUND)*

*SU* → *TRK,CYL,*

*PQ=2*

*SQ=3*

*DB=2* → *ONLY PDS.*

*CONTIG* → *ALLOCATE CONTINUOUS SPACE UNITS*

*RLSE* → *Release the unused space automatically.*

*ROUND* → *Release the memory rounding it to SPACE UNITS.*

*DCB( directory Control Block)=(LRECL=80,BLKSIZE=800,RECFM=FB,DSORG=PS)*

*DSORG= PS* → *PS*

*PO* → *PDS*

*LIB* → *LIBRARY*



b. *SYSTEM(MANDATORY)*

*OUTPUT*

*//SYSPRINT DD SYSOUT=\* →*

*SYSPRINT → REPORTS*

*SYSOUT=\* → PUT THAT IN THE SPOOL*

*//SYSOUT DD SYSOUT=\**

*SYSOUT → SORT CARD ERRORS*

*INPUT*

*//SYSIN DD \**

*SORT FIELDS=(1,4,CH,A)*

*/\**

*SYSIN DD DUMMY → no inputs/control cards are given in the job.*

*SYSIN DD \*, star represents that inputs(data,control cards) are in the next till the delimiter.*

*Note: When a data or the control cards are given in the job, it is called as INSTREAM DATA/CARDS.*

*When a job is submitted*

*A JOBID is generated by the JES.*

*The status of the job will be represented in 2 ways.*

*ABEND CODES - S806, SOC4, SOC7, 722,*

*CONDITION CODE/RETURN CODE*

*CC/RC → numerical representation of the status of the job.*

*0000 → successful*

*0004 → successful but with warning/info*

*>=0008, 12,16,20,22 ...4095 → severe errors.*

*JCL ERROR/INTERNAL ERRORS*

*SPOOL → a small buffer where the reports of all the jobs are deposited. Simultaneous Peripheral Output OnLine.*

