STORAGE ADMINISTRATION

z/OS POCKET REFERENCE

COURTESY OF DTS SOFTWARE
THE ORIGINAL STORAGE MANAGEMENT EXPERTS

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DTS
SOFTWARE, INC.

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TABLE OF CONTENTS

COMMON OUT-OF-SPACE ERROR CODES

Abend/Error Code	Reason
B37-04	insufficient space/extents on current volume and no additional volumes available
B37-08	VTOC conversion routine failed
B37-0C	too many open datasets on device
D37-04	no secondary space specified
E37-04	no more volumes specified
E37-08	no space available on new volume
E37-0C	DADSM exit rejected extend
837-08	Tape dataset requires gt 5 volumes
IEC070I 203-204	No secondary space specified
IEC070I 104-034	Max extents or max RBA limit reached
IEC070I 104-204	VSAM – Insufficient space on current volume and no additional volumes available, or max extents reached
DSNT408I SQLCODE –904 00D70025	Insufficient space to create a DB2 tablespace
00D70014	Insufficient space to extend a DB2 tablespace

DASD DEVICE INFORMATION
VTOC DSCB TYPES

0	Free	Available VTOC entry
1	Identifier	First 3 dataset extents
2	Index	ISAM indexes
3	Extension	4th and subsequent extents
4	VTOC	VTOC self-describing entry
5	Freespace	Available extents (nonindexed VTOC)
6	Split	VSE split-cyl extent (no longer used)
7	Freespace	Available extents > trk 65535 (nonindexed VTOC)

DASD DEVICE CAPACITIES

Model	Cyls	Bytes /Trk	Bytes /Cyl	Bytes /Vol
3380-J	885	47476	712140	630MB
3380-E	1770	47476	712140	1.26GB
3380-K	2655	47476	712140	1.89GB
3390-1	1113	56664	849960	946MB
3390-2	2226	56664	849960	1.89GB
3390-3	3339	56664	849960	2.83GB
3390-9	10017	56664	849960	8.51GB
3390-27	32760	56664	849960	27.84GB
3390-54	65520	56664	849960	55.68GB
9345-1	1440	46456	696840	1.0GB
9345-2	2156	46456	696840	1.5GB
EAV	262668	56664	849960	223GB

DATASET / DEVICE TYPE CODES

Dataset Type	DEVTYPE Code	
DUMMY dataset	0000 0000	
TSO terminal	0000 0101	
SYSIN/SYSOUT	0000 0102	
USS (HFS, zFS)	0000 0103	

Device Type	UCBTYP Code	
3380	3010 200E	
3390	3010 200F	
9345	3010 2004	
3400-2	30C0 8003	Models 3, 5, 7
3400-5	3200 8003	Models 4, 6, 8 (6250)
3400-6	3210 8003	Models 4, 6, 8 (6250/1600)
3400-9	3300 8003	3420C
3400-3	3400 8003	3430
3480	7800 8080	
3480X	7804 8080	3480 or 3490 with IDRC
3490	7804 8081	3490 enhanced
3590-1	7804 8083	3590
3592	7804 8083	

TAPE LABEL PROCESSING

        1,SL = 2,BLP
        2,SL = 5,BLP
        3,SL = 8,BLP
        4,SL = 11,BLP
 in general, BLP = 3*SL - 1

EXPDT CONVENTIONS

99000 = retain until uncatalogued
99365 = permanent retention
99366 = permanent retention
99ccc = retain 'ccc' cycles
98000 = foreign tape
98ddd = retain until 'ddd' days unused
97000 = retain until uncatalogued, then erase (DFSMSrmm)
90ddd = retain min of 'ddd' days, then until uncatalogued

NON-SMS DASD VOLUME USE ATTRIBUTES

Use Attribute	Perm Datasets	Temporary Datasets
PRIVATE	only if VOL=	only if VOL=
PUBLIC	only if VOL=	if no VOL=
STORAGE	only if VOL=	if no VOL= and no PUBLIC available

If the 'PRIVATE' subparameter of VOL= is specified, then the volume must have a use attribute of PRIVATE.

VOLUME MOUNT ATTRIBUTES

PERMRES – Volume cannot be demounted
RESERVED – Volume remains mounted until explicitly UNLOADed
REMOVABLE – Volume demounted at end of job/when needed

MOUNT VOLUME ON UNIT

```
MOUNT /nnnn,VOL=(SL,serial),USE=STORAGE
        Devt      NL            PUBLIC
                  AL            PRIVATE
```

3390 DEVICE SPACE CALCULATION

(IBM Standard R0, equal length records)

```
physical recs/trk = 1729/(10+K+D)
where
D = 9 + (DATALEN +
   (6 X ((DATALEN+6)/232)) + 6)/34
and K = 0 if no key, otherwise
K = 9 +(KEYLEN +
   (6 X ((KEYLEN+6)/232)) + 6)/34
```

3390 BLOCKSIZE CHART

Equal Length Physical Records w/o keys, IBM Standard R0

Min Recsz	Max Recsz	Pct Used	Rec /trk	Bytes Per Trk
27,999	56,664	100.0	1	56,664
18,453	27,998	98.8	2	55,996
13,683	18,452	97.7	3	55,356
10,797	13,682	96.6	4	54,728
8,907	10,796	95.3	5	53,980
7,549	8,906	94.3	6	53,436
6,519	7,548	93.2	7	52,836
5,727	6,518	92.0	8	52,144
5,065	5,726	90.9	9	51,534
4,567	5,064	89.4	10	50,640
4,137	4,566	88.6	11	50,226
3,769	4,136	87.6	12	49,632
3,441	3,768	86.4	13	48,984
3,175	3,440	85.0	14	48,160
2,943	3,174	84.0	15	47,610
2,711	2,942	83.1	16	47,072
2,547	2,710	81.3	17	46,070
2,377	2,546	80.9	18	45,828
2,213	2,376	79.7	19	45,144
2,083	2,212	78.1	20	44,240
1,947	2,082	77.2	21	43,722
1,851	1,946	75.6	22	42,812
1,749	1,850	75.1	23	42,550
1,647	1,748	74.0	24	41,952
1,551	1,646	72.6	25	41,150
1,483	1,550	71.1	26	40,300
1,387	1,482	70.6	27	40,014
1,319	1,386	68.5	28	38,808
1,251	1,318	67.5	29	38,222
1,183	1,250	66.2	30	37,500
1,155	1,182	64.7	31	36,642
1,087	1,154	65.2	32	36,928
1,019	1,086	63.2	33	35,838
985	1,018	61.1	34	34,612
951	984	60.8	35	34,440
889	950	60.4	36	34,200
855	888	58.0	37	32,856
821	854	57.3	38	32,452
787	820	56.4	39	31,980
753	786	55.5	40	31,440
719	752	54.4	41	30,832
691	718	53.2	42	30,156
657	690	52.4	43	29,670
623	656	50.9	44	28,864
589	622	49.4	45	27,990
555	588	47.7	46	27,048
521	554	46.9	48	26,592

Min Recsz	Max Recsz	Pct Used	Rec /trk	Bytes Per Trk
487	520	45.0	49	25,480
459	486	42.9	50	24,300
425	458	42.0	52	23,816
391	424	40.4	54	22,896
357	390	37.9	55	21,450
323	356	35.8	57	20,292
289	322	33.5	59	18,998
255	288	31.0	61	17,568
227	254	28.7	64	16,256
193	226	26.3	66	14,916
159	192	23.4	69	13,248
125	158	20.1	72	11,376
91	124	16.4	75	9,300
57	90	12.4	78	7,020
23	56	8.1	82	4,592
1	22	3.3	86	1,892

3390 BLOCKSIZE CHART – 3380 COMPATIBILITY MODE

Equal Length Physical Records w/o keys, IBM Standard R0

Min Recsz	Max Recsz	Pct Used	Rec /trk	Bytes Per Trk
23,477	47,476	100.0	1	47,476
15,477	23,476	98.9	2	46,952
11,477	15,476	97.7	3	46,428
9,077	11,476	96.6	4	45,904
7,477	9,076	95.5	5	45,380
6,357	7,476	94.4	6	44,856
5,493	6,356	93.7	7	44,492
4,821	5,492	92.5	8	43,936
4,277	4,820	91.3	9	43,380
3,861	4,276	90.0	10	42,760
3,477	3,860	89.4	11	42,460
3,189	3,476	87.8	12	41,712
2,933	3,188	87.2	13	41,444
2,677	2,932	86.4	14	41,048
2,485	2,676	84.5	15	40,140
2,325	2,484	83.7	16	39,744
2,165	2,324	83.2	17	39,508
2,005	2,164	82.0	18	38,952
1,877	2,004	80.2	19	38,076
1,781	1,876	79.0	20	37,520
1,685	1,780	78.7	21	37,380
1,589	1,684	78.0	22	37,048
1,493	1,588	76.9	23	36,524
1,397	1,492	75.4	24	35,808
1,333	1,396	73.5	25	34,900
1,269	1,332	72.9	26	34,632
1,205	1,268	72.1	27	34,236
1,141	1,204	71.0	28	33,712
1,077	1,140	69.6	29	33,060
1,045	1,076	67.9	30	32,280
981	1,044	68.1	31	32,364
949	980	66.0	32	31,360
917	948	65.8	33	31,284
853	916	65.6	34	31,144
821	852	62.8	35	29,820
789	820	62.1	36	29,520
757	788	61.4	37	29,156

Min Recsz	Max Recsz	Pct Used	Rec /trk	Bytes Per Trk
725	756	60.5	38	28,728
693	724	59.4	39	28,236
661	692	58.3	40	27,680
629	660	57.0	41	27,060
597	628	55.5	42	26,376
565	596	55.2	44	26,224
533	564	53.4	45	25,380
501	532	51.5	46	24,472
469	500	50.5	48	24,000
437	468	48.3	49	22,932
405	436	46.8	51	22,236
373	404	45.1	53	21,412
341	372	43.1	55	20,460
309	340	40.8	57	19,380
277	308	38.2	59	18,172
245	276	36.0	62	17,112
213	244	33.4	65	15,860
181	212	30.3	68	14,416
149	180	26.9	71	12,780
117	148	23.0	74	10,952
85	116	19.0	78	9,048
53	84	14.6	83	6,972
21	52	9.6	88	4,576
1	20	3.9	93	1,860

DATASET LIMITS
NON-VSAM, NON-EXTENDED-FORMAT

DS Type	Extents Per Volume	Max Extents	Max Vols	Size Limit
PS/DA	16	944	59	65535 trks
PS, LARGE	16	944	59	16,777,215 trks
PDS	16	16	1	65535 trks
PDSE/HFS	123	123	1	65535 trks
VIO	1	n/a	1	65535 trks (or 2M KB if SMS)
Tape	n/a	n/a	255	65535 files or 255 vols

DATASET LIMITS
NON-VSAM, EXTENDED-FORMAT

Type	Max Stripes	Extents /Stripe	Extents /Vol	Max Extents	Max Vols	Size Limit
PS, one stripe	1	123	123	7257	59	
PS, multistripe	59	123	123	7257	59	4GB 32K blocks
PDSE/HFS	1	123	123	123	1	

DATASET LIMITS
VSAM

DS Type	Extents /Comp	Max Stripes	Extents /Stripe	Extents /Vol	Max Extents	Max Vols /Comp	Size Limit
non- SMS	255	n/a	n/a	123	255	59	4GB
SMS	255	n/a	n/a	123	255	59	4GB
SMS, EA	255	n/a	n/a	123	255	59	16TB
SMS, striped	255	16	123	123	4080	59	4GB
SMS, striped, EA	255	16	123	123	4080	59	16TB
SMS, ECR	Unlimited	16	123	123	7257	59	4GB
SMS, ECR, EA	Unlimited	16	123	123	7257	59	16TB

DFSMSdss LOGICAL DUMP

REQUIRED PARAMETERS
```
DUMp DATAset(filter) | FILTerdd(ddn)
     OUTDDname(DDN)
```
OPTIONAL PARAMETERS
```
ADMINistrator  ALLExcp  ALLData(dsn)
CANcelerror  CHECKvtoc  CICSVRBACKUP  COMpress
CONCurrent  <NOTIFYCONCurrent>
DELete  DYNALloc  FCWITHDRAW FORCECP(days)
HWCOMPRESS
INCAT(catnames) <ONLYINCAT>
KEYPASSWORD(pwd) ICOUNT(*)
SELECTMulti(ALL | ANY | FIRST)
LOGINDDName (ddn)
LOGINDYnam((volser,<unit>))
OPTimize(n) PASsword(ddn|dsn/pswd)
PROCESS(SYS1)  PURge
READIOPacing(nnn) RESEt
RSA(label) ENCRYPT(alg)
SHAre  SPHERE  STORGRP(grpname)
STORGRP(grpname)
VALIDate | NOVALIDate
TOLerate( IOERror , ENQFailure)
UNCATalog
WAIT(nsecs,ntries)
```

DFSMSdss LOGICAL RESTORE

REQUIRED PARAMETERS
```
RESTore DATAset(filter) | FILTerdd(ddn)
        INDDname(ddn)
```
OPTIONAL PARAMETERS
```
ADMINistrator AUTORELBlockaddress
BYPASSACS(dsn) CANcelerror
CATalog | RECATalog(newcatname | *)| DELETECATALOGENTRY
DYNALloc FORce FORCECP(days)
FREESPACE (ci%,ca%) IMPORT MAKEMULTI
KEYPASSWORD(pwd)
MENtity(modeldsn) MVOLser(volser)
MGMTCLAS(mcname)| NULLMGMTCLAS
NOPACKing(dsn)
OUTDDname(ddn) | OUTDYnam(volser,unit)
PERCENTUtilized(n) PASsword( ddn|dsn/pswd)
PROCESS(UNDEFinedsorg) REBLock(dsn)
RELBlockaddress(dsn)
REName((pfx,(on,nn)))
RENAMEUnconditional((pfx,(on,nn)))
RENAME/RENAMEUnconditional(prefix
                         ((oldname,newname))
                         ((prefix,(oldname,newname)))
REPLACE REPLACEUnconditional SHAre SPHERE
STORCLAS(scname) | NULLSTORCLAS
TGTAlloc( BLK | CYL | TRK | SOURCE)
TGTGDS(DEFERRED | ACTIVE | ROLLEDOFF | SOURCE)
TOLerate(ENQFailure) TTRAddress(dsn)
VOLcount(* | SRC | N(nn) | ANY)
WAIT(nsecs,ntries) WRItecheck
```

DFSMSdss FILTERING

INClude(dsnmask) EXClude(dsnmask)
BY((criteria,op,value),(criteria,op,value)…)

BY Criteria	Operators	Possible Values
ALLOC	EQ, NE	CYL|TRK|BLK|ABSTR|MOV
CATLG	EQ	YES|NO
CREDT,REFDT, EXPDT	LT,GT,EQ, NE,GE,LE	Yyyyddd|*,<n,-n>|NEVER
DSCHA	EQ, NE	YES | NO
DSORG	EQ, NE	SAM|PAM|PDS|PDSE|HFS|
		BDAM|ISAM|VSAM|zFS|EXCP
DATACLAS, MGMTCLAS, STORCLAS	EQ, NE	Class name
EXTNT,FSIZE	LT,GT,EQ, NE,GE,LE	0-99999999
MULTI	EQ	YES|NO

*Wildcard Characters: % * ** or GDG generation number*

FDRABR **FULL OR INCREMENTAL BACKUP**

REQUIRED PARAMETERS
```
DUMP | SIM | SNAP | SPLIT | PSPLIT | CONSPLIT | SNAP | CONPSP
FCOPY | CONFCOPY                    TYPE=FDR | DSF | ABR | AUTO
```
OPTIONAL PARAMETERS
```
AUTOUPD=YES | NO
BCV=(USE,RET)
BUFNO=MAX | nn
COMPRESS=ALL | COPY1 | COPY2
COPY1=COPY2
DATA=ALL | USED
DATEP=NONE
DCT=YES | NO
DSNENQ=NONE | TEST | USE | HAVE
EMSG=OK
ENQ=OFF | ON | RESERVE
ENQERR=NO
ENQERR=BYPASS | PROCESS
FCOPY=(USE,REL)
FORMAT=NEW | SPLIT
HFS=QUIESCE
ICFCORE=nnnnnn
MAXAUTO=nnn
MAXCARDS=nnnn
MAXDD=nnnn
MAXERR=nnnn
MAXFILE=nnnn
ONLINE
ONLVOL
PPRC=(USE,RET)
PRINT=DSN | ABR | RPT
RETPD=dddd
RETPD2=dddd
RTC=YES | NO
SELTERR=NO | YES
SMSCONSTRUCT=YES | NO
SMSMANAGE=NO | YES
SMSPROT=NONE
SNAP=(USE,REL)
UPDATEFLAG=NOCHANGE
VERIFYVOLSER=YES | NO
VOLSORT=YES | NO
```

FDRABR **DATASET RESTORE FROM BACKUP**

REQUIRED PARAMETERS
```
RESTORE | SIMREST TYPE=ABR
```
OPTIONAL PARAMETERS
```
BLKF=nn   ,BYPASSACS   ,BYPASSSMS
CATIFALLOC ,COPY=n ,DATA=ALL
DSNENQ=NONE | TEST | USE | HAVE
DYNTAPE | DYNTAPE2 ,EMSG=OK
ICFCAT=ORIGINAL | STEPCAT | ALIAS
MAXCARDS=nn
NOCAT ,RECAT ,OPERATOR
PRESTAGE ,RLSE ,%FREE=nn
SELTERR=NO | YES
SMSGDG=DEFERRED | ACTIVE | ROLLEDOFF | INPUT
VRECAT
```

FDRABR **SELECT STATEMENT —**
RESTORE FROM BACKUP

REQUIRED PARAMETERS
```
SELECT | EXCLUDE   DSN=filter    DD=ddname
                   CATDSN=filter ALLDSN
```
OPTIONAL PARAMETERS
```
BLKF=nn   ,CATALOG=catname   ,MCATALOG=catname
CATLIMITGDG=n  ,COPY=n  ,CYCLE=nn
CATNEWN=newname
DATA=ALL | NONE ,DATACLAS=dataclass ,NULLDATACLAS
MGMTCLAS=managementclass  ,NULLMGMTCLAS
STORCLAS=storageclass ,NULLSTORCLAS
DSNENQ=NONE  ,GEN=nnnn
NEWNAME=newdsname  ,NEWGROUP=newgroup
NEWINDEX=newindex
NEWDD=ddname
NOCAT ,RECAT ,NOTIFY=userid
NVOL=(vvvvvv,vvvvvv,...) ,OLDBACKUP=nn
PRESTAGE ,PRTALIAS ,RLSE ,%FREE=nn ,TAPEDD=x
TRK=nnnnn ,CYL=nnnnn ,VOL=vvvvvv ,VRECAT
```

DFSMShsm INFORMATION

DELETE MIGRATED DATASET WITH MISSING/DAMAGED MCD RECORD
```
CONNECT (userid) GROUP(ARCCATGP) AUTHORITY(USE)
LOGON userid / password GROUP(ARCCATGP)
DELETE dsname NOSCRATCH
```

DFSMSHSM ADDVOL COMMAND
```
ADDVOL  volser UNIT(unit) BACKUP (bkup-parms)
                          DUMP    (dump-parms)
                          MIGRATION (mig-parms)
                          PRIMARY (prim-parms)
```

Options for BACKUP Volumes
```
DAILY(n) | SPILL    THRESHOLD(nnn)
```

Options for DUMP Volumes
```
DUMPCLASS(class) DENSITY(2|3|4)
```

Options for MIGRATION Volumes
```
AUTODUMP(classes) | NOAUTODUMP
DRAIN | NODRAIN
ML1 | ML2
OVERFLOW | NOOVERFLOW
SDSP | NOSDSP
THRESHOLD(nnn)
```

Options for PRIMARY Volumes
```
AUTOBACKUP | NOAUTOBACKUP
AUTODUMP(class) | NOAUTODUMP
AUTOMIGRATION | NOAUTOMIGRATION
AUTORECALL | NO AUTORECALL
BACKUPDEVICECATEGORY(TAPE|DASD|NONE)
MIGRATE(days) | DELETEBYAGE(days) |
DELETEIF BACKEDUP(days)
THRESHOLD(hi low)
```

DFSMSHSM QUERY COMMAND
```
QUERY
ABARS
ACTIVE
ARPOOL(aggregate)
AUTOPROGRESS
BACKUP(ALL | DAILY(day) | SPILL | UNASSIGNED
CDSVERSIONBACKUP
COMMONQUEUE<(RECALL)>
CONTROLDATASETS
COPYPOOL (cpname)
CSALIMITS
DATASETNAME(dsname)
REQUEST(reqnum)
USER(userid)
IMAGE
ML2
POOL
RETAIN
SECURITY
SETSYS
SPACE(volser)
STARTUP
STATISTICS
TRAPS
VOLUMEPOOL
WAITING
```

TSO COMMANDS FOR DFSMSHSM

Recall a Migrated Dataset
```
HRECALL(dsn) WAIT|NOWAIT EXTENDRC
 VOLUME(volser) UNIT(type)
 DAOPTION(SAMETRK|RELTRK|RELBLK)
```

Recover a Dataset From Backup
```
HRECOVER(dsn) GENERATION(nnnn) NEWNAME(newn)
 REPLACE WAIT|NOWAIT EXTENDRC
 DATE(date) VERSION(nnnn)FROMVOLUME(vol)
 TOVOLUME(vol) UNIT(type)
 DAOPTION(SAMETRK|RELTRK|RELBLK)
```

List BCDS and MCDS Information
```
HLIST BACKUPVOLUME(volser)

HLIST DATSETNAME(dsn) BCDS|MDCS|BOTH
 INCLUDEPRIMARY SELECT(AGE(min,max))
 ML1|ML2|VOLUME(vol) SDSP|NOSDSP|VSAM
 SUMMARY

HLIST LEVEL(qual) BCDS|MDCS|BOTH
 INCLUDEPRIMARY SELECT(AGE(min,max))
 ML1|ML2|VOLUME(vol) SDSP|NOSDSP|VSAM
 SUMMARY

HLIST MVOL|ML1|ML2(DASD|TAPE)|PVOL|VOLUME(vol)
 BCDS|MCDS|BOTH

HLIST USER(userid)

HLIST parms TERMINAL|OUTDATASET(dsn)
```

Delete Backup Versions
```
HBDELETE dsn VERSIONS(nnn) FROMVOLUME(volser)
```

Delete Migrated Datasets
```
HDELETE dsn PURGE WAIT|NOWAIT EXTENDRC
```

Issue Arbitrary DFSMShsm Commands
```
HSENDCMD WAIT|NOWAIT command
```

*The issuer of HSENDCMD must be a DFSMShsm-authorized user for
any commands other than ALTERDS, BDELETE, and QUERY*

USEFUL CONSOLE COMMANDS
Display SMS Subsystem Information
```
D SMS, ACTIVE
,CACHE
,CFCACHE(structurename|*)
,CFLS
,CFVOL(volid)
,DRIVE(name|ALL) ,STATUS|DETAIL
,DSNAME(dsn)<,WTOR>
,JOB(jobname)<,WTOR>
,{LIBRARY|LIB}(name|ALL)<,STATUS,LISTDRI,DETAIL>
,LOG(logstreamid|ALL)<,WTOR>
,MONDS(specmask|*)
,OAM
,OPTIONS
,OSMC<,TASK(name)>
,SHCDS
,SHUNTED,<SPHERE(sphere)|UR(urid|ALL)><,WTOR>
,SMSVSAM<,ALL>
,SMSVSAM,QUIESCE
,STORGRP(storgrp|ALL)<,LISTVOL|,DETAIL>
,TRACE
,TRANVSAM<,ALL,ALLLOGS,WTOR>
,URID(urid|ALL)<,WTOR>
,VOLUME(volume)
```

Display SMS Subsystem Information
```
D OPDATA,PREFIX-display subsytem command prefixes
D SSI, LIST, ALL<, SUB=sname>-display subsytems info
```

Automatically Allocate System Dump Datasets
```
DUMPDS
NAME=SYS1.DUMP.D&YYMMDD..T&HHMMSS..&SYSNAME..S&SEQ.
     (or other name pattern)
DUMPDS ALLOC=ACTIVE
DUMPDS ADD,SMS=((S=storclas,M=mgmtclas,D=dataclas))
     or
DUMPDS ADD,VOL=(volser list)
```

Activate an SMS Configuration
```
SETSMS SAVEACDS(backup.acds)
SETSMS SCDS(scds) <ACDS(acds)>
```
*The current ACDS should be saved to a backup ACDS before activating
a new configuration. Specifying the ACDS operand will cause the
named ACDS to be overlaid with the SCDS contents.*

Copy an SCDS to an ACDS without Activation
```
SETSMS COPYSCDS(scdsname,acdsname)
```

Display / Alter Volume and Storgrp Status
```
D SMS,VOL(vvvvvv)
D SMS,SG(storgrp),[LISTVOL]

VARY SMS,SG(storgrp) ,ENABLE
          VOL(volser),QUIESCE[,NEW]
                      ,DISABLE[,NEW]
```

Display Linklist, APF libraries, Dynamic Exits
```
D PROG,LNKLST
D PROG,APF
D PROG,EXIT,EXITNAME=exitname
  [,MODNAME=modname][,DIAG]
```

Add Dataset to Linklist
```
SETPROG LNKLST,DEFINE,NAME=listname,COPYFROM=CURRENT
SETPROG LNKLST,ADD,name=listname,DSNAME=dsn,
 ATTOP|ATBOTTOM|AFTER=dsn
SETPROG LNKLST,ACTIVATE,name=listname
```

Free a Linklisted Dataset
```
STOP LLA
MODIFY LNKLST,UNALLOCATE
```

APF-Authorize a Load Library
```
SETPROG APF,ADD,DSNAME=dsn,SMS | VOL=volser
```

Set SMS Subsystem Options
```
ACDS(dsname) COMMDS(dsname)
ACSDEFAULTS(YES/NO)
AKP(nnn,…)
ASID(asid/*)
BLOCKTOKENSIZE(REQUIRE/NOREQUIRE)
CACHETIME(nnn)
CF_TIME(nnnnn)
CICSVR_ …CICSVR values
COMPRESS(TAILORED/GENERIC)
DB2SSID(ssid)
DEADLOCK_DETECTION(nnnn)
DESELECT({event,…})
DINTERVAL(nnn)
DSNAME(dsname/*
DSNTYPE(LIBRARY/PDS/HFS)
DSSTIMEOUT(nnnn)
FAST_VOLSEL(ON/OFF
INTERVAL(nnn)
JOBNAME(jobname/*)
LOG_OF_LOGS(logstream)
MAXLOCKS(max,incr)
OAMPROC(procname)
OAMTASK(taskid)
OVRD_EXPDT(YES|NO)
PDSE_ … PDSE values
PDSESHARING(NORMAL/EXTENDED)
QTIMEOUT(nnn)
REVERIFY(YES/NO)
RLSINIT(YES/NO)
RLS_ … RLS values
TRACE(ON | OFF) trace-options
TRACEEXIT(name)
TVSNAME(nnnn..)
TV_START_TYPE(WARM/COLD)
TYPE(ERROR/ALL)
VOLSELMSG(ON/OFF/0/nnn/ALL)
```

Display SMF Dataset Names
```
D SMF,S
```

Display SMF Options
```
D SMF,O
```

Display Device Information
```
DEVSERV PATHS,devnum,nn,<ONLINE | OFFLINE>
        SMS

DEVSERV QDASD,devnum,<filters and options>
        QTAPE

DEVSERV QDASD |QTAPE,? displays syntax details

DEVSERV QPAVS,devnum,<VOLUME|UCB|UNBOX>
```

Display System Configuration Info
```
D PARMLIB
D IPLINFO
D M=CPU
  M=DEVICE(devnum)
  M=CHP(channel paths)
```

SMS AND OAM/LCS CONSOLE COMMANDS FOR SMS-MANAGED TAPE AND MANUAL TAPE LIBRARIES (MTL)

```
DISPLAY SMS,OAM      - display OAM status
DISPLAY SMS,LIBRARY
 (ALL),DETAIL       - display library status
                      (ALL or selected libraries)
VARY SMS,LIBRARY
 (libname),ONLINE   - vary a library online
VARY SMS,LIBRARY
 (libname),OFFLINE  - vary a library online
LIBRARY ENTER,volser,
 libname,MEDIAn     - enter a tape volume into a
                      library (MEDIAtype optional
                      if a default data class is
                      specified in library
                      definition)

LIBRARY EJECT,volser,
             PURGE  - eject a volume (no physical
                      movement from an MTL)
              KEEP
           LOCATION
LIBRARY SETCL,
  deviceno,   MEDIAn - set default media type for
                       cartridge loader
               ANY   (ANY applies only to MTL)
LIBRARY DISPDRV,
  deviceno            - display tape drive status
                        libraryname
DISPLAY SMS,VOL(volser) - display tape volume status

(It is also possible to display status of all the
volumes in a tape library via ISMF option 2 -
Volume List).
```

RACF INFORMATION

Allow Access to a RACF Resource
```
PERMIT profile-name ACCESS(access-type)
 CLASS(class-name) ID(userid)
```

Find all DSNs for a Profile
```
LD DA('profile') ALL DSNS
```

Find all Profiles for a User
```
LD ID(userid)
```

List Profile Information (even if Generic exists)
```
LD DA('dsname') GENERIC
```

List Group Information
```
LG group-name DFP
```

List User attributes
```
LU (user1,user2,user3) DFP TSO
```

Change a User Password
```
PW PASSWORD(current new) USER(userid)
```

Reset a User Password to Default Group
```
PW USER(userid)
```

Delete Access to a Tape Volume
```
PERMIT tapevolser CLASS(TAPEVOL)
USER(userid) DELETE
```

Add a Generic Profile
```
ADDSD 'hlq.qual2.*' UACC(access-type)
```

Restrict use of a Storage Class
```
SETROPTS CLASSACT(STORCLAS) RACLIST(STORCLAS)
RDEFINE STORCLASS storclas-name UACC(NONE)
PERMIT storclas-name CLASS(STORCLAS) -
  ID(userID) ACCESS(READ)
SETROPTS  REFRESH RACLIST(STORCLAS)
```

DFSMSDSS FACILITY CLASS PROFILES
```
STGADMIN.ADR.CONVERTV
STGADMIN.ADR.COPY.BYPASSACS
STGADMIN.ADR.COPY.INCAT
STGADMIN.ADR.COPY.PROCESS.SYS
STGADMIN.ADR.DUMP.INCAT
STGADMIN.ADR.DUMP.PROCESS.SYS
STGADMIN.ADR.RELEASE.PROCESS.SYS
STGADMIN.ADR.RESTORE.BYPASSACS
STGADMIN.ADR.STGADMIN.COMPRESS
STGADMIN.ADR.STGADMIN.COPY
STGADMIN.ADR.STGADMIN.COPY.DELETE
STGADMIN.ADR.STGADMIN.COPY.RENAME
STGADMIN.ADR.STGADMIN.DEFRAG
STGADMIN.ADR.STGADMIN.DUMP
STGADMIN.ADR.STGADMIN.DUMP.DELETE
STGADMIN.ADR.STGADMIN.PRINT
STGADMIN.ADR.STGADMIN.RELEASE
STGADMIN.ADR.STGADMIN.RESTORE
STGADMIN.ADR.STGADMIN.RESTORE.RENAME
```

ABARS FACILITY Class Profiles

```
STGADMIN.ARC.ABACKUP
STGADMIN.ARC.ABACKUP.agname
STGADMIN.ARC.ARECOVER
STGADMIN.ARC.ARECOVER.agname
STGADMIN.ARC.ARECOVER.agname.REPLACE
STGADMIN.ARC.ARECOVER.agname.RENTGT
```

IDCAMS FACILITY Class Profiles

```
STGADMIN.IDC.BINDDATA
STGADMIN.IDC.DCOLLECT
STGADMIN.IDC.DIAGNOSE.CATALOG
STGADMIN.IDC.DIAGNOSE.VVDS
STGADMIN.IDC.EXAMINE.DATASET
STGADMIN.IDC.LISTDATA
STGADMIN.IDC.LISTDATA.ACCESSCODE
STGADMIN.IDC.SETCACHE
STGADMIN.IDC.SETCACHE.DISCARDPINNED
STGADMIN.IDC.SETCACHE.PENDINGOFF
STGADMIN.IDC.SETCACHE.REINITIALIZE
STGADMIN.IDC.SETCACHE.SUBSYSTEM
```

Storage Admin Cmd Keyword Profiles

```
STGADMIN.DPDSRN.olddsname
STGADMIN.IFG.READVTOC.volser
STGADMIN.IGD.ACTIVATE.CONFIGURATION
STGADMIN.IGG.ALTBCS
STGADMIN.IGG.ALTER.SMS
STGADMIN.IGG.ALTER.UNCONVRT
STGADMIN.IGG.DEFDEL.UALIAS
STGADMIN.IGG.DEFNVSAM.NOBCS
STGADMIN.IGG.DEFNVSAM.NONVR
STGADMIN.IGG.DELETE.NOSCRTCH
STGADMIN.IGG.DELGDG.FORCE
STGADMIN.IGG.DELNVR.NOBCSCHK
STGADMIN.IGG.DIRCAT
STGADMIN.IGG.DLVVRNVR.NOCAT
STGADMIN.IGG.LIBRARY
STGADMIN.IGWSHCDS.REPAIR
```

DFSMSrmm FACILITY Class Profiles

```
STGADMIN.EDG.FORCE
STGADMIN.EDG.HOUSEKEEP
STGADMIN.EDG.HOUSEKEEP.RPTEXT
STGADMIN.EDG.IGNORE.TAPE.volser
STGADMIN.EDG.IGNORE.TAPE.volser
STGADMIN.EDG.IGNORE.TAPE.RMM.volser
STGADMIN.EDG.IGNORE.TAPE.RMM.volse
STGADMIN.EDG.IGNORE.TAPE.NORMM.vols
STGADMIN.EDG.LABEL.volser
STGADMIN.EDG.LISTCONTROL
STGADMIN.EDG.MASTER
STGADMIN.EDG.NOLABEL.volser
STGADMIN.EDG.OPERATOR
STGADMIN.EDG.OWNER.userid
STGADMIN.EDG.RELEASE
STGADMIN.EDG.RESET.SSI
STGADMIN.EDG.VRS
STGADMIN.EDG.INERS.WRONGLABEL
```

Other RACF Resources

Class	Resource Name
TSOPROC	PARMLIB
FIELD	RESOWNER
	(dataset profiles)
FIELD	DEF_DATACLAS
	DEF_STORCLAS
	DEF_MGMTCLAS
	DATAAPL
	(user/grp profiles)
STORCLAS	Class name
MGMTCLAS	Class name

VSAM / IDCAMS Information

Delete Orphan VVDS Record

```
//IDCAMS EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//DD1 DD UNIT=SYSDA,VOL=SER=vvvvvv,DISP=SHR
//SYSIN DD *
DELETE component.name VVR -
        FILE(DD1)              -
        CAT(cat.name.in.vvr)
```

If a non-VSAM record is to be removed, the 'NVR' parameter should be used instead of 'VVR'

Recatalog a VSAM Cluster that has become Uncatalogued

```
//GO EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
  DEFINE CL(NAME(cluster-name) RECATALOG type -
  VOL(volser) )
```

Note: the type of dataset (indexed, relative record, linear, etc.) and the volume on which the dataset resides must be specified in the DEFINE.

Delete Catalog Entry

```
//GO EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
  DELETE CL cluster-name NOSCRATCH
```

Scan a VVDS for Errors

```
//GO EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//VVDS DD DSN=SYS1.VVDS.Vvolser,
//    UNIT=SYSDA,VOL=SER=volser,
//    AMP='AMORG',DISP=SHR
//SYSIN DD *
  DIAGNOSE VVDS INFILE(VVDS)
```

Alter SMS Class Information

```
// EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
 ALTER entryname STORCLAS(new-storclas) -
   MGMTCLAS(new-mgmtclas)
```

List Aliases in the Master Catalog

```
// EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
 LISTC ALIAS ALL CAT(mastercatname)
```

Print the contents of the VVDS

```
//PRNTVVDS EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=A
//VVDS DD DSN=SYS1.VVDS.Vvolser,
// DISP=SHR, UNIT=SYSDA,
// VOL=SER=volser,AMP=AMORG
//SYSIN DD *
  PRINT INFILE(VVDS)
```

SMS Subsystem Information

Data Class Attributes
The data class describes the **physical characteristics** of the dataset. The ACS routines may assign a data class for both SMS and non-SMS datasets, although the class name is only retained for SMS datasets. Values in the data class can be roughly divided into the following categories:

Dataset Characteristics
 Values for RECFM, LRECL, RETPD/EXPDT, DSNTYPE, VSAM characteristics such as RECORG, KEYLEN, CISIZE, REUSE, SHROPT, RLS options, and other characteristics such as Compaction, additional volume amount, and similar items.

Space and Volume Characteristics
 Values for primary, secondary, and directory space, AVGREC, space constraint relief, dynamic and static volume count, VSAM extent constraint removal, media type, and others.

Storage Class Attributes
The storage class describes the **performance and availability requirements** of the dataset. If the ACS routines assign a storage class to a dataset, the dataset is SMS-managed. Datasets which are not assigned storage classes are non-SMS. Important storage class characteristics include:

Guaranteed Space — allows SMS-managed datasets to be placed on specific volumes

Sustained Data Rate — determines (with data class 'extended format') whether a dataset is striped

Availability / Acccessibility / Versioning – determines whether the dataset must be placed on a dual-copy, instant-copy, or other high-availability disk volume.

Multi-Tiered SG's — indicates whether the dataset is placed on a volume in the list of storage groups in the order in which the groups are assigned by the storage group routine.

Management Class Attributes
The management class describes the **backup, migration, and life-cycle requirements** of the dataset. Only SMS-managed datasets may be assigned a management class. The management class is used by the programs of the storage management subsystem, such as DFSMShsm and FDRABR, to determine when and how to back up, restore, or delete the dataset. Management class attributes are divided into four categories:

Space Management Attributes — values for when datasets should migrate, expire or in the case of GDGs, roll off.

Backup Attributes — values for how often backups should be made, how many copies are required, and how long the copies must be retained.

Object Attributes — values for backup and transition of OAM objects

Aggregate Backup Attributes — values for application backups using ABARS

Storage Group Attributes
The storage group describes **pools of disk or tape volumes**, not datasets. The system allocation routines use the data class, storage class, and management class attributes assigned to a dataset, along with the storage group attributes, to choose an appropriate volume on which to place the dataset. The storage group attributes are also used by the programs of the storage management subsystem, such as DFSMShsm and FDRABR, to determine how volumes in the group should be processed for storage management tasks such as migration/archiving and defragmentation.

The most important attributes in the storage group definition is probably the allocation / migration threshold. The High and Low fields in this attribute indicate: 1.) the value for volume utilization that will cause new allocations to be directed away from volumes that are 'too full' and, 2.) the levels of volume utilization at which migration/archiving should begin and end.

AUTOMATIC CLASS SELECTION READ-ONLY VARIABLES

Variable Name	Description	Language
&ACCT_JOB	Job acct info	0-142 char
&ACCT_STEP	Step acct info	0-142 char
&ACSENVIR	Environment	RECALL, RECOVER, RENAME, RMMPOOL, RMMVRS, CONVERT, ALLOC, ALLOCTST, STORE, CHANGE, CTRANS, other
&ALLVOL	Volsers	Volsers or REF=SD/ST/NS
&ANYVOL	Explicit volser	Volser or REF=SD/ST/NS
&APPLIC	RACF applic id	0-8 chars
&BLKSIZE	blocksize	0-2147483647
&DD	DD name	1-8 chars
&DEF_DATACLAS	RACF resowner DC	0-8 chars
&DEF_MGMTCLAS	RACF resowner MC	0-8 chars
&DEF_STORCLAS	RACF resowner SC	0-8 chars
&DSN	Dataset or cluster name, without relative generation	1-44 chars
&DSNTYPE	Type of dataset	BASIC, EXC, EXR, HFS, LARGE, LIBRARY, PDS, null
&DSORG	dataset org.	PS, PO, VS, DA, null
&DSOWNER	RACF owner id	0-8 chars
&DSTYPE	Type of dataset	GDS, PERM, TEMP, null
&EXPDT	Expiration date	YYYYDDD
&FILENUM	File seq no.	1-65535
&GROUP	RACF group	0-8 chars
&HLQ	First qual of dsn	1-8 chars
&JOB	Job name	1-8 chars
&LABEL	type of dataset label	NL, AL, SL, NSL, SUL, AUL, BLP, LTM, blank
&LIBNAME	Tape library name	0-8 chars
&LLQ	Last qual of dsn	1-8 chars
&MAXSIZE	Max dataset size in KB or MB	0KB - 2147483647KB or 0MB- 2097151MB
&MEMHLQ	Object first qual	0-8 chars
&MEMLLQ	Object last qual	0-8 chars
&MEMN	Object name	0-44 chars
&MEMNQUAL	Object no. quals	0-22
&MSPDEST	Tape mgmt dest	0-44 chars
&MSPARM	Tape mgmt parm	0-256 bytes, with 2 byte length fields
&MSPOLICY	VTS policy name	0-8 chars
&MSPOOL	SMS tape pool	0-8 chars
&MSVGP	unused	0-8 chars
&NQUAL	No. dsn qual	0-22
&NVOL	Max of vol count, unit, or VOL=	0- 2147483647

Variable Name	Description	Language
&PGM	program name	1-8 chars
&RECORG	type of VSAM org	KS, ES, RR, LS, null
&RETPD	retention period	0- 2147483647
&SECLABL	security label	1-8 chars
&SIZE	primary space in KB or MB	0KB - 2147483647KB or 0MB - 2097151MB
&SYSNAME	system name	1-8 chars
&SYSPLEX	sysplex name	1-8 chars
&UNIT	unit generic	1-8 chars
&USER	userid	1-8 chars
&XMODE	Type of task	BATCH/TSO/TASK

DATASET NAMING CONVENTIONS

DB2 Tablespace/Indexspace
`hlq.DSNDBx.dbname.spname.y0001.Ammm`
hlq = catalog alias
x = C (cluster) or D(data)
dbname =   database name
       DSNDB06 = DB2 catalog
       DSNDB01 = DB2 directory
       DSNDB07 = work database
       DSNDB04 = default database
spname = tablespace or indexspace name
y = I (standard) or S (shadow) or T (temp)
mmm = dataset no. or partition no.

DB2 BSDS / Active Log
`hlq.BSDS0n`
`hlq.LOGCOPYn.DSmmm`
hlq = catalog alias
n = copy no. (1 or 2)
mm = archive log no. (01-31)

DB2 Archive Log / BSDS Backup
`hlq.ARCHLOGn.Dyyddd.Thhmmsst.axxxxxx`
hlq = catalog alias
n = copy no. (1 or 2)
Dyyddd.Thhmmsst = timestamp (2 or 4 digit yr)
A = A (Archive Log) or B (BSDS bkup)
Xxxxxxx = file sequence

DB2 Image Copy
(sample, may vary by installation)
`hlq.wxiyyddd.Thhmmss.spname.Ammm`
hlq = catalog alias
w = copy type, P (primary) or S (secondary)
x = copy requirement, S(std) or H(critical)
I = copy frequency, D(daily),W(weekly),M(monthly)
yyddd.Thhmmss = date / time
spname = tablespace or indexspace name
mmm = dataset identifier

Dynamic Dump Datasets
`SYS1.DUMP.D&DATE..T&TIME..&SYSNAME.S&SEQ`

Temporary Datasets
`SYSyyddd.Thhmmss.RA000.jjobname.Rggnnnn`
`SYSyyddd.Thhmmss.RA000.jjobname.tempname.Hgg`
tempname = &DSNAME specified
gg = 01 or sysplex id
nnnn = unique no. within a system

Unix Systems Services Datasets
(sample, may vary by installation)
`OMVS.&SYSNAME..[&SYSR1].prdname.HFS`
&sysname = system name
&SYSR1 = sysres IPL volume (for ROOT HFS)
prdname = name of product installed in HFS

DFSMSHSM
TAPE DATASET NAMING CONVENTION

Backup to original
```
prefix.BACKTAPE.DATASET
```
Backup to alternate
```
prefix.copy.BACKTAPE.DATASET
```
Migration to original
```
prefix.HMIGTAPE.DATASET
```
Migration to alternate
```
prefix.COPY.HMIGTAPE.DATASET
```
Dump
```
prefix.DMP.dumpclass.Vvolser.Dyyddd.Tssmmhh
```
Spill
```
prefix.BACKTAPE.DATASET
```
Recycle Backup to original
```
prefix.BACKTAPE.DATASET
```
Tape copy (backup)
```
prefix.COPY.BACKTAPE.DATASET
```
Tape copy (migration)
```
prefix.COPY.HMIGTAPE.DATASET
```
Recycle Backup to alternate
```
prefix.COPY.BACKTAPE.DATASET
```
Recycle Migration to original
```
prefix.HMIGTAPE.DATASET
```
Recycle Migration to Alternate
```
prefix.COPY.HMIGTAPE.DATASET
```
CDS Backup (DATAMOVER=HSM)
```
uid.BCDS.BACKUP.Vnnnnnnn
UID.MCDS.BACKUP.Vnnnnnnn
UID.OCDS.BACKUP.Vnnnnnnn
UID.JRNL.BACKUP.Vnnnnnnn
```
CDS Backup (DATAMOVER=DSS)
```
UID.BCDS.BACKUP.Dnnnnnnn
UID.MCDS.BACKUP.Dnnnnnnn
UID.OCDS.BACKUP.Dnnnnnnn
UID.JRNL.BACKUP.Dnnnnnnn
```
ABARS Backup - control file
```
outputdatasetprefix.C.CccVnnnn
```
DFSMSdss data
```
outputdatasetprefix.D.CccVnnnn
```
Instruction file
```
outputdatasetprefix.I.CccVnnnn
```
'other' Mig and Tape file
```
outputdatasetprefix.O.CccVnnnn
```

FDRABR
TAPE DATASET NAMING CONVENTION

Incremental and Full Volume Backup
```
FDRABR.Vvolser.Cnggggcc
```
```
    n= copy number (1-9)
    gggg=generation number (1-9999)
    cc=cycle number (1-63)
```
Archive Backup
```
FDRABR.Vvolser.bnyydddx
```
```
    b=identifier (B,D-J)
    n=copy number (1-2)
    yyddd = Julian date
    x = occurrence number (A-Z, 0-9)
```
Application Backup
```
abrindex.Vvolser.bnyydddx
```
```
     abrindex = HLQ of Application A.C.F
     remainder = same as Archive Backup
```

SYS1.PARMLIB MEMBERS

ADYSETxx	Dump suppression
ALLOCxx	Allocation system defaults
APPCPMxx	Define APPC/MVS configuration
ASCHPMxx	APPC/MVS transaction scheduler
BLSCECT	Formatting exits for dump and trace analysis
BLSCUSER	Installation customization for dump and trace analysis
BPXPRMxx	z/OS UNIX System Services parameters
CLOCKxx	Time of day parameters
CNGRPxx	Specify alternate console groups
CNIDTRxx	Console ID Tracking facility exclusion list
CNLcccxx	Time and date format for translated messages
COFDLFxx	Hiperbatch parameters
COFVLFxx	Virtual lookaside facility parameters
COMMNDxx	Commands automatically issued at initialization
CONFIGxx	Standard configuration list
CONSOLxx	Console configuration definition
COUPLExx	Cross-system coupling facility (XCF) parameters
CSVLLAxx	Library lookaside (LLA) list
CSVRTLxx	Define the RTLS configuration
CTncccxx	Component trace parameters
CUNUNIxx	Unicode Conversion Environment
DEVSUPxx	Device Support Options
DIAGxx	Control common storage tracking and GFS trace
EPHWP00	BookManager® topic extraction
EXITxx	Allocation installation exit list
EXSPATxx	Excessive spin condition actions
GRSCNFxx	Global resource serialization configuration
GRSRNLxx	Global resource serialization resource name lists
GTFPARM	Generalized trace facility parameters
IEAABD00	ABDUMP written to a SYSABEND data set
IEAAPFxx	Authorized program facility list
IEAAPP00	Authorized I/O appendage routines
IEACMD00	IBM-supplied commands
IEADMCxx	DUMP command parmlib
IEADMP00	ABDUMP written to a SYSUDUMP data set
IEADMR00	ABDUMP written to a SYSMDUMP data set
IEAFIXxx	Fixed LPA list
IEAICSxx	Installation control specifications
IEAIPSxx	Installation performance specifications
IEALPAxx	Modified LPA list
IEAOPTxx	OPT parameters
IEAPAKxx	LPA pack list
IEASLPxx	SLIP commands
IEASVCxx	Installation-defined SVCs
IEASYMxx	Symbol definitions and IEASYSxx members
IEASYSxx	System parameter list
IECIOSxx	MIH, HOTIO, IOTIMING, IOS CTRACE, TERMINAL and FICON parameters
IEFSSNxx	Subsystem definitions - keyword parameter form
IFAPRDxx	Product enablement policy

SYS1.PARMLIB MEMBERS CONTINUED

IFGPSEDI	Enhanced data integrity
IGDDFPKG	DFSMS/MVS functional component list
IGDSMSxx	Storage Management Subsystem definition
IKJPRM00	TIOC parameters to control TSO/TCAM
IKJTSOxx	TSO/E commands and programs
IPCSPRnn	Interactive problem control system
IVTPRM00	Communication Storage Manager
LNKLSTxx	LNKLST concatenation
LOADxx	System configuration data sets
LPALSTxx	LPA library list
MMSLSTxx	MVS message service list
MPFLSTxx	Message processing facility list
MSTJCLxx	Master scheduler JCL
NUCLSTxx	Customizing the nucleus region
PFKTABxx	Program function key table definition
PROGxx	Authorized program list, exits, LNKLST sets and LPA
SCHEDxx	PPT, master trace table, and abend codes for automatic restart
SMFPRMxx	System management facilities (SMF parameters
TSOKEY00	TSO/VTAM time-sharing parameters
VATLSTxx	Volume attribute list
XCFPOLxx	XCF PR/SM policy

APAR Status Codes

OPEN	APAR has been opened
CLOSED	APAR has been closed (see resolution code)
REOP	Closed APAR has been reopened
INTRAN	APAR documentation is being sent to IBM
FIXTEST	APAR resolution is being tested
REACT	Reactivated after customer test of fix

APAR Resolution Codes

ADM	Partially closed APAR; admin info; technical info to follow
CAN	Cancelled by submitter
DOC	Documentation error
DUA	Duplicate of resolved APAR closed > 10 days
DUB	Duplicate of resolved APAR closed <= 10 days
DUU	Duplicate of unresolved APAR
FIN	Fixed in next release
MCH	Machine / microcode error
PER	Programming error
PRS	Permanent restriction
REQ	Requirement for future development
RET	Returned for additional information
STD	Open Systems Standards deficiency
SUG	Suggestion for enhancement
UR1	Programming error corrected in a release not yet available
UR2	Same as UR1 but for unsupported release
UR3	Error in the earlier release, no error in current release
UR4	Same as UR3 but written against an unsupported release
UR5	Unable to reproduce
USE	User error

PTF Closing Codes

ACL	Cancelled while in test
CAN	Cancelled by submitter
COR	Available from distribution
DUP	Duplicate of another PTF
PER	Available on preventive service
REJ	Rejected

ACC/SRS Sample Allocation and Error-Prevention Rules

Enforce System Naming and Space Standards

```
IF &DSNAME = SYSA.**
    &QUAL2 NE 'PROD'
    THEN ISSUE WRITEMSG(BADDSN)
               SET &JCLFAIL = YES

IF &QUAL2 = TEST*
    &SIZE-M GT 100
    &SYSID EQ 'SYSA'
    THEN SET &PSPACE = 200
              SET &SPACE = CYL
              ISSUE WRITEMSG(WARNSPC)

DEFMSG BADDSN 'DATASET &DSNAME NOT VALID FOR
PROD - JOB FAILED'

DEFMSG WARNSPC 'WARNING - TEST DATASETS LIMITED
TO 100MB OR 200 CYLS ON SYSB
```

Control DASD and Tape Allocation and Prevent Space Errors

```
IF &DSNAME = PROD*
    &UNITTYPE = DASD
    THEN SET &DISKPOOL = PRODPOOL

DEFPOOL PRODPOOL ALGORITHM(MAXSPACE)
 REDUCEP(PERCENT(10) LIMIT(10))
 REDUCES(YES PERCENT(10) LIMIT(10))
 ADDVOL(YES MAXVOL(20))

IF &SYSID = SYSA
    &CURDAY NE (SATURDAY, SUNDAY)
    &UNITTYPE = TAPE
    &VOLSER EQ X3????
    THEN SET &TAPEPOOL = TAPEP1

DEFPOOL TAPEP1
 UNITADDR=(1537,1538,1539)
```

Prevent Unnecessary DFSMShsm Recalls

```
IF &PGM = IEFBR14
    &DISP1 = (NEW,MOD)
    &DISP2 = (DELETE)
    THEN SET &HDELETE = YES
              SET &PSPACE = 0
              SET &SPACE = TRK
```

GENERAL PURPOSE REGISTER STANDARD 72-BYTE SAVE AREA

Byte Offset (Hex)	Content
0	any data
4	HSA
8	LSA
C	R14
10	R15
14	R0
18	R1
1C	R2
20	R3
24	R4
28	R5
2C	R6
30	R7
34	R8
38	R9
3C	R10
40	R11
44	R12

GENERAL PURPOSE REGISTER 144-BYTE SAVE AREA FOR PROGRAMS STARTING IN AMODE 64

Byte Offset (Hex)	Content
0	Reserved
4	C'F4SA'
8	R14
10	R15
18	R0
20	R1
28	R2
30	R3
38	R4
40	R5
48	R6
50	R7
58	R8
60	R9
68	R10
70	R11
78	R12
80	HSA
88	LSA

General Purpose Register 208-Byte Save Area for AMODE 24 or 31 Programs Calling AMODE 64 Programs

Byte Offset	Content
0	Reserved
4	C'F5SA'
8	R14
10	R15
18	R0
20	R1
28	R2
30	R3
38	R4
40	R5
48	R6
50	R7
58	R8
60	R9
68	R10
70	R11
78	R12
80	HSA
88	LSA
90	R0 high half
94	R1 high half
98	R2 high half
9C	R3 high half
A0	R4 high half
A4	R5 high half
A8	R6 high half
AC	R7 high half
B0	R8 high half
B4	R9 high half
B8	R10 high half
BC	R11 high half
C0	R12 high half
C4	R13 high half
C8	R14 high half
CC	R15 high half

Other Save Area Formats
Programs that use the linkage stack also supply a save area pointed to by R13:
- *C'F1SA' in the second word of the save area indicates an 18-word save area, with registers saved in the linkage stack*
- *C'F6SA' in the second word of the save area indicates a 36-word save area, with registers saved in the linkage stack*

Julian Perpetual Calendar - Non-Leap Years
(2005, 2006, 2007)

Day	Jan	Feb	Mar	Apr	May	Jun
1	001	032	060	091	121	152
2	002	033	061	092	122	153
3	003	034	062	093	123	154
4	004	035	063	094	124	155
5	005	036	064	095	125	156
6	006	037	065	096	126	157
7	007	038	066	097	127	158
8	008	039	067	098	128	159
9	009	040	068	099	129	160
10	010	041	069	100	130	161
11	011	042	070	101	131	162
12	012	043	071	102	132	163
13	013	044	072	103	133	164
14	014	045	073	104	134	165
15	015	046	074	105	135	166
16	016	047	075	106	136	167
17	017	048	076	107	137	168
18	018	049	077	108	138	169
19	019	050	078	109	139	170
20	020	051	079	110	140	171
21	021	052	080	111	141	172
22	022	053	081	112	142	173
23	023	054	082	113	143	174
24	024	055	083	114	144	175
25	025	056	084	115	145	176
26	026	057	085	116	146	177
27	027	058	086	117	147	178
28	028	059	087	118	148	179
29	029		088	119	149	180
30	030		089	120	150	181
31	031		090		151	

Day	Jul	Aug	Sep	Oct	Nov	Dec
1	182	213	244	274	305	335
2	183	214	245	275	306	336
3	184	215	246	276	307	337
4	185	216	247	277	308	338
5	186	217	248	278	309	339
6	187	218	249	279	310	340
7	188	219	250	280	311	341
8	189	220	251	281	312	342
9	190	221	252	282	313	343
10	191	222	253	283	314	344
11	192	223	254	284	315	345
12	193	224	255	285	316	346
13	194	225	256	286	317	347
14	195	226	257	287	318	348
15	196	227	258	288	319	349
16	197	228	259	289	320	350
17	198	229	260	290	321	351
18	199	230	261	291	322	352
19	200	231	262	292	323	353
20	201	232	263	293	324	354
21	202	233	264	294	235	255
22	203	234	265	295	326	356
23	204	235	266	296	327	357
24	205	236	267	297	328	358
25	206	237	268	298	329	359
26	207	238	269	299	330	360
27	208	239	270	300	331	361
28	209	240	271	301	332	362
29	210	241	272	302	333	363
30	211	242	273	303	334	364
31	212	243		304		365

Julian Perpetual Calendar - Leap Years (2004, 2008)

Day	Jan	Feb	Mar	Apr	May	Jun
1	001	032	061	092	122	153
2	002	033	062	093	123	154
3	003	034	063	094	124	155
4	004	035	064	095	125	156
5	005	036	065	096	126	157
6	006	037	066	097	127	158
7	007	038	067	098	128	159
8	008	039	068	099	129	160
9	009	040	069	100	130	161
10	010	041	070	101	131	162
11	011	042	071	102	132	163
12	012	043	072	103	133	164
13	013	044	073	104	134	165
14	014	045	074	105	135	166
15	015	046	075	106	136	167
16	016	047	076	107	137	168
17	017	048	077	108	138	169
18	018	049	078	109	139	170
19	019	050	079	110	140	171
20	020	051	080	111	141	172
21	021	052	081	112	142	173
22	022	053	082	113	143	174
23	023	054	083	114	144	175
24	024	055	084	115	145	176
25	025	056	085	116	146	177
26	026	057	086	117	147	178
27	027	058	087	118	148	179
28	028	059	088	119	149	180
29	029	060	089	120	150	181
30	030		090	121	151	182
31	031		091		152	

Day	Jul	Aug	Sep	Oct	Nov	Dec
1	183	214	245	275	306	336
2	184	215	246	276	307	337
3	185	216	247	277	308	338
4	186	217	248	278	309	339
5	187	218	249	279	310	340
6	188	219	250	280	311	341
7	189	220	251	281	312	342
8	190	221	252	282	313	343
9	191	222	253	283	314	344
10	192	223	254	284	315	345
11	193	224	255	285	316	346
12	194	225	256	286	317	347
13	195	226	257	287	318	348
14	196	227	258	288	319	349
15	197	228	259	289	320	350
16	198	229	260	290	321	351
17	199	230	261	291	322	352
18	200	231	262	292	323	353
19	201	232	263	293	324	354
20	202	233	264	294	325	355
21	203	234	265	295	326	356
22	204	235	266	296	327	357
23	205	236	267	297	328	358
24	206	237	268	298	329	359
25	207	238	269	299	330	360
26	208	239	270	300	331	361
27	209	240	271	301	332	362
28	210	241	272	302	333	363
29	211	242	273	303	334	364
30	212	243	274	304	335	365
31	213	244		305		366

EBCDIC – to – Hex Character Conversion Chart

	1	2	3	4	5	6	7	8	9
C	A	B	C	D	E	F	G	H	I
D	J	K	L	M	N	O	P	Q	R
E		S	T	U	V	W	X	Y	Z

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