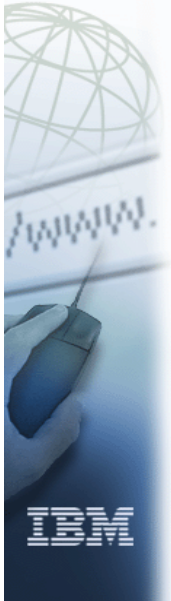


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# Service Aids Enhancements



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eNetwork	DFSMS/MVS	IMS	RMF
geoManager	DFSMSdftp	IMS/ESA	RS/6000
AD/Cycle	DFSMSdsss	IP PrintWay	S/390
ADSTAR	DFSMSshsm	IPDS	S/390 Parallel Enterprise Server
AFP	DFSMSrmm	Language Environment	SecureWay
APL2	DFSORT	Multiprise	StorWatch
APPN	Enterprise System 3090	MQSeries	Sysplex Timer
BookManger	Enterprise System 4381	MVS/ESA	System/390
BookMaster	Enterprise System 9000	Network Station	System REXX
C/370	ES/3090	NetSpool	SystemView
CallPath	ES/4381	OfficeVision/MVS	SOM
CICS	ES/9000	Open Class	SOMobjects
CICS/ESA	ESA/390	OpenEdition	SP
CICS/MVS	ESCON	OS/2	VisualAge
CICSPlex	First Failure Support Technology	OS/390	VisualGen
COBOL/370	FLowMark	Parallel Sysplex	VisualLift
DataPropagator	FFST	Print Services Facility	VTAM
DisplayWrite	GDDM	PrintWay	WebSphere
DB2	ImagePlus	ProductPac	3090
DB2 Universal Database	Intelligent Miner	PR/SM	3890/XP
DFSMS	IBM	QMFr	z/OS
	IBM System z	RACF	z/OS.e

Domino (Lotus Development Corporation)  
 DFS (Transarc Corporation)  
 Java (Sun Microsystems, Inc.)  
 Lotus (Lotus Development Corporation)

Tivoli (Tivoli Systems Inc.)  
 Tivoli Management Framework  
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 Windows (Microsoft Corporation)  
 Windows NT (Microsoft Corporation)



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## SADMP Support for EAV Volumes



- ❑ SADMP provides a new function to fully support placement of dump data set in cylinder-managed space on extended access volumes
- ❑ In z/OS V1R12 the REXX exec AMDSADDD and IPCS utility Option 6, SADMP DASD dump data set utility
  - Changed to provide support for SADMP data sets in cylinder managed space
  - SADMP data sets must be defined as extended format sequential data sets and are fully supported by IPCS



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## IPCS SADMP Dump Data Set Utility



- ❑ SADMP dump data set utility is accessed via IPCS Option 3.6

```
BLSPPRIM----- z/OS 01.12.00 IPCS PRIMARY OPTION MENU -----
OPTION  ===>

0  DEFAULTS      - Specify default dump and options          * USERID  - ROGERS
1  BROWSE        - Browse dump data set                      * DATE     - 10/08/17
2  ANALYSIS      - Analyze dump contents                    * JULIAN   - 10.229
3  UTILITY       - Perform utility functions                 * TIME     - 13:14
4  INVENTORY     - Inventory of problem data                       * PREFIX   - ROGERS
5  SUBMIT        - Submit problem analysis job to batch      * TERMINAL- 3278
6  COMMAND       - Enter subcommand, CLIST or REXX exec      * PF KEYS  - 24
T  TUTORIAL     - Learn how to use the IPCS dialog              *****
X  EXIT         - Terminate using log and list defaults

Enter END command to terminate IPCS dialog
```



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## SADMP Dump Data Set Utility Panel



```
AMDSAPUT ----- SADMP DASD Dump Data Set Utility -----
Command ==>

Enter/verify parameters. Use ENTER to perform function, END to terminate

Function ==> R ( C - Clear, D - Define, R - Reallocate)
DSNAME      ==>
Volume serial numbers: (1-32)
  1- 8  VOL001
  9-16
 17-24
 25-32
Unit ==> 3390 (3380, 3390, or 9345)
Cylinders ==> 500 (cylinders per volume)
DSNTYPE ==> E ( B - Basic, L - Large, E - ExtReq)
CATALOG ==> Y (Y or N)
EATTR ==> N ( N - No, O - Optional)

Optional SMS classes: (May be required by installation ACS routines)
StorClas ==>          DataClas ==>          MgmtClas ==>
```



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## IPCS Option 3.6 Panel



- ❑ The panel now supports DSNTYPE=EXTREQ
  - DASD dump data sets (extended-format data set (E)) with no operational changes required
  - The placement of dump data set on an EAV relies upon DSNTYPE and EATTR options and the BreakPointValue (BPV)
  - EATTR indicates the extended attributes of the dump data set
    - EATTR=OPT - indicates that extended attributes are optional for the dump data set
    - EATTR=NO - indicates that extended attributes are not requested for the dump data set



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## EAV and IGDSMSxx Parmlib Member



- ❑ **USEEAV(YESINO)**
  - Specifies, at the system level, whether SMS can select an extended address volume during volume selection processing
  - Check applies to new allocations and when extending data sets to a new volume
- ❑ **YES** - EAV volumes can be used to allocate new data sets or to extend existing data sets to new volumes
- ❑ **NO** - Default - SMS does not select any EAV during volume selection
  - SETSMS USEEAV(YESINO)



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## EAV and IGDSMSxx Parmlib Member



- ❑ **BreakPointValue (0- 65520) in cylinders**
  - Value used by SMS in making volume selection decisions and subsequently by DADSM
    - If the allocation request is less than the BreakPointValue, the system prefers to satisfy the request from free space available from the track-managed space
    - If the allocation request is equal to or higher than the BreakPointValue, the system prefers to satisfy the request from free space available from the cylinder-managed space

**SETSMS BreakPointValue(0-65520)**

If the preferred area cannot satisfy the request, both areas become eligible to satisfy the requested space amount



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## EXTREQ and EATTR in JCL DD Statement



- ❑ Results for the different combinations of EATTR and the data set size when DSNTYPE=EXTREQ is requested:
  - DSNTYPE=EXTREQ,EATTR=OPT - Cylinders requested is more than BPV
    - Result: Data set in cylinder managed space (format 8 DSCB)
  - DSNTYPE=EXTREQ,EATTR=OPT - Cylinder requested is less than BPV
    - Result: Data set in track-managed space (Format 8 DSCB)
  - DSNTYPE=EXTREQ,EATTR=NO
    - Result: Data set in track managed space (Format 1 DSCB)



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## Using the AMDSADDD Utility



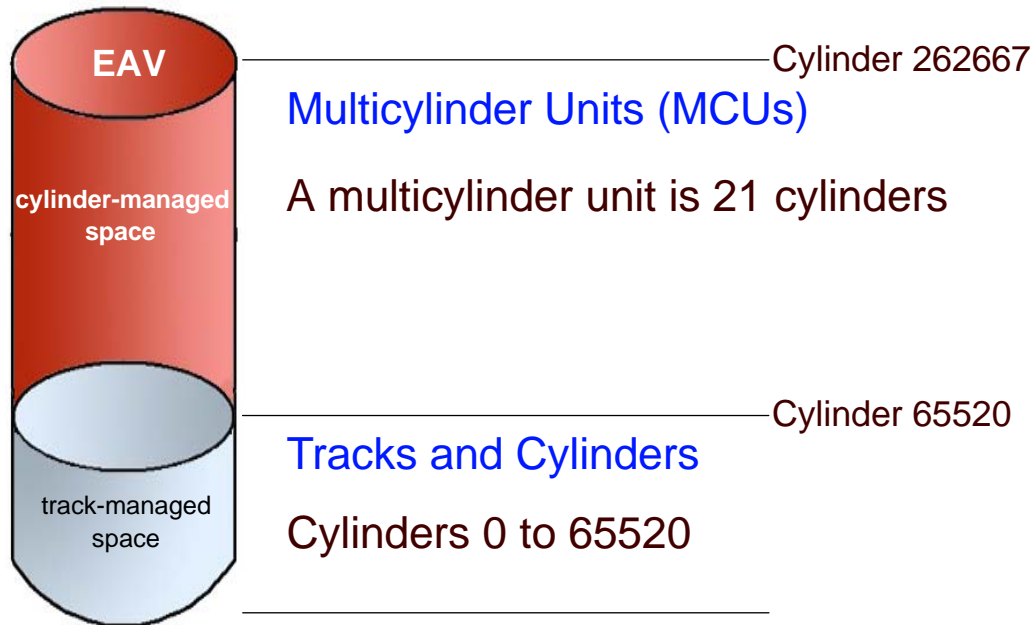
- ❑ The REXX utility AMDSADDD can be used to allocate and initialize the data set
  - Additional positional keywords were added to AMDSADDD syntax to allow allocation of SADMP data sets in cylinder managed spaced
    - DSNTYPE= [EXTREQ | LARGE | BASIC]
    - When DSNTYPE=EXTREQ is specified, EATTR=[OPT | NO] should be specified - The default is EATTR=NO

```
AMDSADDD {DEFINE|CLEAR|REALLOC}
volser{(data set name)}
(type[, [STORCLAS][, [DATACLAS][, [MGMTCLAS]]]) [space]
[YES|NO] [EXTREQ|LARGE|BASIC] {EATTR(OPT|NO)}
Or
AMDSADDD {DEFINE|CLEAR|REALLOC}
(volumelist){(data set name)}
(type[, [STORCLAS][, [DATACLAS][, [MGMTCLAS]]]) [space]
[YES|NO] [EXTREQ|LARGE|BASIC] {EATTR(OPT|NO)}
```



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## EAV Volumes and Multicylinder Units



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## Multicylinder Unit Considerations



- ❑ The 21 cylinder value for the MCU is derived from being the smallest unit that can map out the largest possible EAV volume and stay within the index architecture (with a block size of 8192 bytes), as follows:
  - Value that divides evenly into the 1GB storage segments of an IBM DS8000
  - These 1GB segments are the allocation unit in the IBM DS8000 and are equivalent to 1113 cylinders.
  - These segments are allocated in multiples of 1113 cylinders starting at cylinder 65520



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## Using AMDSADDD to allocate and initialize an extended SADMP data set



```
----- TSO COMMAND PROCESSOR -----
ENTER TSO COMMAND, CLIST, OR REXX EXEC BELOW:
===> exec 'sys1.sblscli0(amdsadd)'
What function do you want?
Please enter DEFINE if you want to allocate a new dump data set
define
Please enter VOLSER or VOLSER(dump_data set_name) or (VOLLIST)
or (VOLLIST)(dump_data set_name)
(SADPK1,SADPK2)(SADMP.SAMPLE)
Please enter the device type for the dump data set
Device type choices are 3380 or 3390 or 9345
(An SMS STORAGE CLASS, DATA CLASS, AND MANAGEMENT CLASS
MAY ALSO BE SPECIFIED WITH THE DEVICE TYPE)
(3390,STORCLAS,DATACLAS,MGMTCLAS)
Please enter the number of cylinders (per volume)
400
Do you want the dump data set to be cataloged?
Please respond Y or N
Y
Specify the DSNTYPE. Reply BASIC or LARGE or EXTREQ
EXTREQ
Specify the extended attributes for the dump data set. Reply OPT or NO
OPT
TIME-11:54:59 PM. CPU-00:00:00 SERVICE-58954 SESSION-00:07:25 AUGUST 1,2009
```



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## Using AMDSADDD to allocate and initialize an extended SADMP data set



### Continuation of messages

```
----- TSO COMMAND PROCESSOR -----
Note: Allocated space does not match requested amount
Amount allocated: 420
Amount requested: 400
Initializing output dump data set with a null record:
Dump data set has been successfully initialized
Results of the DEFINE request:
Dump data set Name : SADMP.SAMPLE
Volume : SADPK1 SADPK2
Device Type : 3390
Allocated Amount : 420 (per volume)
```



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## JCL Examples



- ❑ JCL to allocate and initialize the dump data set SADMP.DDS2 on VOL=SER=USRD53
  - Size of 2653 cylinders - BASIC type of data set no dsntype

```
//SAMPLE JOB 'S3031,B7100003,S=C','BATCH EXAMPLE',RD=R,  
// MSGLEVEL=(1,1),CLASS=E,NOTIFY=&SYSUID,MSGCLASS=H  
//STEP1 EXEC PGM=IKJEFT01,REGION=64M  
//SYSTSPRT DD SYSOUT=*  
//SYSTSIN DD *  
EXEC 'SYS1.SBLSCLI0.EXEC' 'DEFINE USRD53(SADMP.DDS2) 3390 2653 N'  
/*
```

- ❑ SADMP.DS on VOL=SER=USRDS1 with 2953 cylinders in the cylinder-managed space

```
//SAMPLE JOB 'S3031,B7100003,S=C','BATCH EXAMPLE',RD=R,  
// MSGLEVEL=(1,1),CLASS=E,NOTIFY=&SYSUID,MSGCLASS=H  
//STEP1 EXEC PGM=IKJEFT01,REGION=64M  
//SYSTSPRT DD SYSOUT=*  
//SYSTSIN DD *  
EXEC 'SYS1.SBLSCLI0.EXEC' 'DEFINE USRD53(SADMP.DDS2) 3390 2653 N'  
/*
```



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## Superzap Support For EAV Volumes



- ❑ AMASPZAP service aid, also called SPZAP or Superzap, dynamically updates or dumps programs and data sets - Support for EAV use:
  - VSAM objects (V1R10) - Extended-format data sequential data sets (V1R11)
- ❑ z/OS V1R12 adds the ability to place additional non-VSAM data set types such as:
  - Sequential (basic,large), partitioned (PDS & PDSE), and BDAM in cylinder-managed space



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## Superzap Control Statements (V1R12)



- ❑ Statements (commands) were changed to provide support for basic and large sequential, PDS, and BDAM //SYSLIB DD data sets residing in cylinder-managed space:
  - ABSDUMPT CCCCcccHRR CCCCcccHRR
  - CCHHR record address
  - DUMPT member-name
  - NAME member name
  - SETSSI ssi-info
  - VER/REP address data

## SYSLIB DD Statement (V1R12)



- ❑ When the SYSLIB DD statement describes a data set placed in an extended address volume (EAV)
  - The startaddr and stopaddr values must be specified in hexadecimal in the form CCCCcccHRR, where CCCCccc is referred to as a 28-bit cylinder address. The meanings of the codes are as follows:
    - CCCC is the 16 low order bits of the cylinder number.
    - ccc is the 12 high order bits of the cylinder number.
    - H is the track number.
    - RR is the record number.

## IPCS PDS Enhancements



- ❑ z/OS V1R12 to support formatting of high level reports into a repository in a scenario where responsibility for dump analysis may need to be passed from one analyst to another
  - Important information can be extracted from a dump and stored into a partitioned data set (PDS or PDSE)
    - The source can be from either SADMP or SVC dump
- ❑ Allows the responsibility for dump analysis to be passed from one analyst to another
  - Example: From a customer systems programmer to IBM support personnel connecting to the customer system
  - PDS is created once but can be shared among different teams and will help reduce the time spent on each customer problem



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## Directing IPCS Output



- ❑ A PDS must be allocated to DDNAME IPCSPDS - to store output from the IPCS subcommand or REXX exec
  - IPCS output is directed to DDNAME IPCSPDS via a new parameter PDS or NOPDS was added to SETDEF subcommand:
    - SETDEF PDS | NOPDS
    - The default is NOPDS
- ❑ Name of the PDS member will be equivalent to the name of the used IPCS subcommand

IPCS subcommand	PDS member
ANALYZE	RESOURCE ANALYZE
ASMK	ASMK
COMK	COMK



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## Printing into a PDS



- ❑ IPCS Default Values dialog panel (Option 0 — DEFAULTS) by modifying the following field
  - Message Routing ==> NOPRINT TERMINAL **PDS**

```
----- IPCS Default Values -----
Command ==>

You may change any of the defaults listed below.  The defaults shown before
any changes are LOCAL.  Change scope to GLOBAL to display global defaults.

Scope  ==> LOCAL  (LOCAL, GLOBAL, or BOTH)

If you change the Source default, IPCS will display the current default
Address Space for the new source and will ignore any data entered in
the Address Space field.

Source  ==> NODSNAME
Address Space ==>
Message Routing ==> NOPRINT TERMINAL PDS
Message Control ==> CONFIRM VERIFY FLAG(WARNING)
Display Content ==> NOMACHINE REMARK REQUEST NOSTORAGE SYMBOL

Press ENTER to update defaults.

Use the END command to exit without an update.
```

New



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## Using the PDS Value



- ❑ Using the PDS value routes and transmits the output messages of the IPCS subcommand to the appropriate PDS member
  - The following rules for routing output apply:
    - During the period between issuing “SETDEF PDS” and “SETDEF NOPDS”, the output messages of any IPCS subcommand are routed into a PDS member with a name equivalent to the name of the subcommand
    - If the same subcommand is used several times during an IPCS session, IPCS appends the new output to the previous output in the same member



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## PDS Data Set



- ❑ Allocating the partitioned data set for routing messages
- ❑ The user must create the PDS before trying to output subcommand messages to it
  - The name of the partitioned data set can be included in the JCL used to start IPCS in batch mode by means of DDNAME IPCSPDS, for example:
    - `//IPCSPDS DD DSN=IPCSU1.SESS7.PDS,DISP=SHR`
  - At the completion of the subcommand the data set for the PDS member will be closed
  - It will hold the report for further analysis
  - Any IPCS subcommand or REXX exec is eligible for PDS output



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## IPCSPDS Data Set Allocation Attributes



- ❑ The following commands give an example of using the new PDS function via IPCS dialog, Panel 6 commands:

```
ALLOC DDNAME (IPCSPDS) DSNAME('MVSSVA.IPCSPDS.FCT.PDS') SHR
ALLOC DDNAME(IPCSPRNT) DSNAME('MVSSVA.IPCSPRNT.FCT.PS') SHR
SETDEF PRINT PDS TERMINAL
```

**Recommendation:** Although either PDS or PDSE organization can be used, IBM recommends using PDSE (DSNTYPE=LIBRARY) for best performance and to avoid any fragmentation of the PDS space



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## Using the New PDS Function in Batch



```
//IPCSPRNT JOB   EEA,GO,MSGCLASS=A,MSGLEVEL=(1,1)
//L2REPORT EXEC  PGM=IKJEFT01,DYNAMNBR=20,REGION=3000K
//SYSPROC  DD   DSN=SYS1.SBLSCLI0,DISP=SHR
//IPCSDDIR DD   DSN=SYS2.DDIR,DISP=SHR
//IPCSPDS  DD   DSN=PMRXXXXX.YYY.ZZZ,DISP=SHR
//IPCSPRNT DD   SYSOUT=*
//IPCSTOC  DD   SYSOUT=*
//SYSTSPRT DD   SYSOUT=*
//SYSUT1   DD   UNIT=SYSDA,SPACE=(CYL,(50,50))
//DUMP     DD   DSN=DUMP.S00010,DISP=SHR
//INDD     DD   DSN=DUMP.S00010,DISP=SHR
//SYSTSIN  DD   *
            IPCSDDIR 'SYS2.DDIR'
            IPCS NOPARM
            SETDEF DDNAME(DUMP) LIST NOCONFIRM NOPRINT NOTERMINAL PDS
            SYSTRACE TTCH(LIST) TIME(LOCAL)
            SETDEF NOPDS
            END
```

R/\*

## Allocation Attributes for Print Partitioned Data Sets



- The FREE command to free the allocated partitioned data set - FREE DDNAME(IPCSPDS)

Attribute	IPCSPDS Partitioned Data Set
DDNAME or FILE	IPCSPDS
DISP	NEW, SHR or OLD
DSORG	PO
RECFM	VBA
LRECL	Minimum value: 83 Maximum value: 255 Default value: Value specified in session parameters or 137
BLKSIZE	Must be greater than or equal to LRECL + 4. If you specify none, IPCS uses 4 + (4 * LRECL) as BLKSIZE.
SPACE	You determine the space for the data sets.

## IPCS SYSTRACE Formatting z/OS V1R12



- ❑ Use the SYSTRACE subcommand to format system trace entries for all address spaces
- ❑ In z/OS V1R12 the IPCS SYSTRACE subcommand has been enhanced to:
  - Allows sorting by CPU
  - Generates a performance report based on data from the SYSTRACE output
- ❑ A SORTCPU option on SYSTRACE subcommand
  - Time parameter and the number of system trace entries before and after the specified time
  - System trace entries are sorted by CPU displaying the number of requested system trace entries before and after the specified time



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## SORTCPU Option Implementation



- ❑ When the SORTCPU option is specified, IPCS displays trace entries for each CPU separately in ascending order by CPU address
  - N indicates the number of the trace entries before and after a specified time, which are displayed for each CPU
  - The syntax is:

`SORTCPU[(mm/dd/yy, hh:mm:ss:dddddd,n) | [mm/dd/yy, hh:mm:ss:dddddd)]`

- Up to n system trace entries before and up to n after system trace entries after the specified date/time will be formatted for each CPU
- If the number of entries is not specified it will default to 10
- When a time is specified the date is required



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## SORTCPU Examples

---



- ❑ The following are examples on the usage of the SORTCPU parameter.
  - Show all data in CPU order:
    - SYSTRACE ALL SORTCPU
  - Show data in CPU order, showing a default of 10 entries around 11 am GMT:
    - SYSTRACE ALL TIME(GMT) SORTCPU(12/30/09,11)
  - Show data in CPU order, showing 5 entries around 11:45:21:939233 am local:
    - SYSTRACE ALL TIME(LOCAL) SORTCPU(12/30/09,11:45:21:939233,5)