Keeping the IMS Catalog Healthy: Utilities

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IMS

- IMS has a Catalog available
- IMS Managed ACBs
- Modernization steps toward a genless IMS
- Modernization steps toward dynamic to IMS resources changes with no outage

- As of June 2025 IMS 15.6 will require IMS Managed ACBs

Paradigms around IMS

From

Offline resource generations

DBDs, PSBs, ACB, MODBLKS

To

Dynamic changes without operational interruption

- Dynamic Resource Generation - DRD
- IMS Catalog Database
- IMS Managed ACBs
- DDL

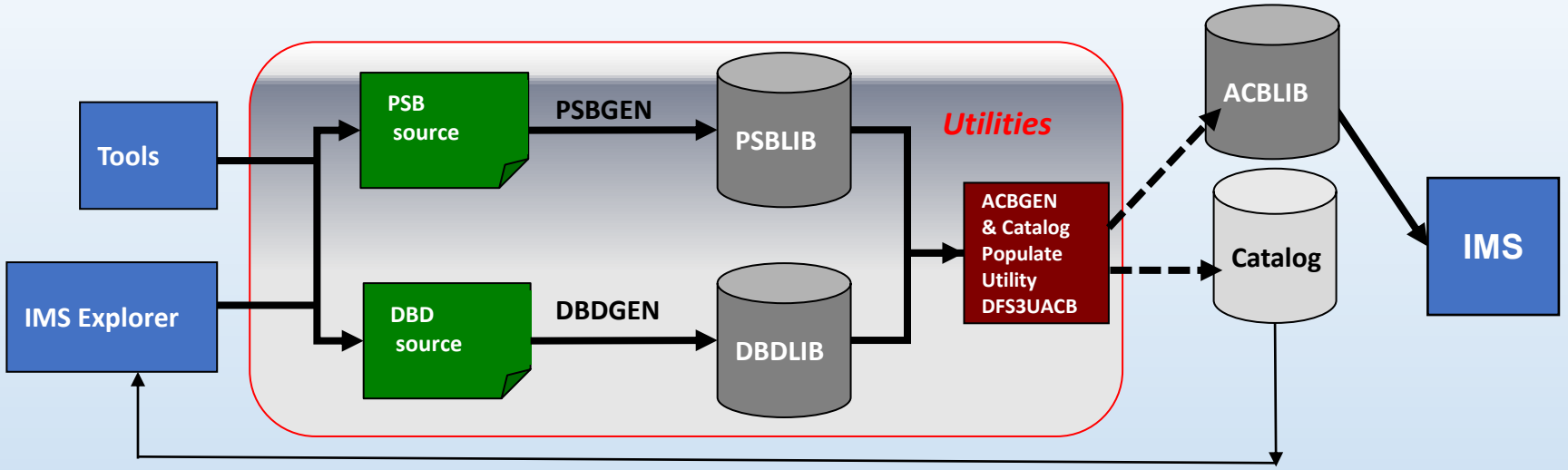
IMS Migrations – Catalog specific

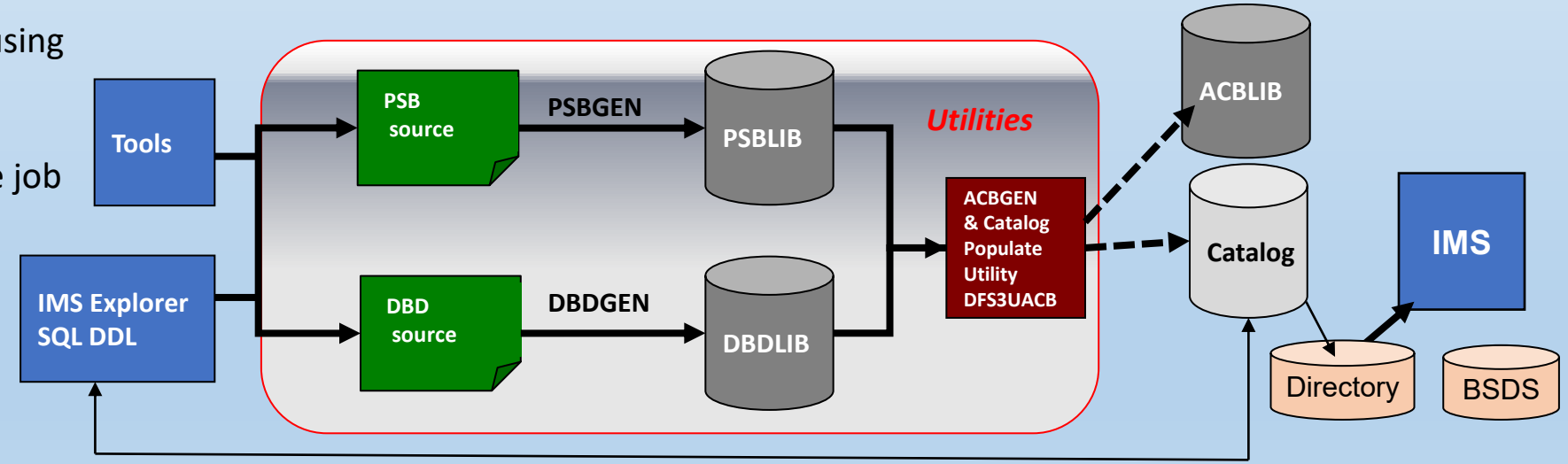
IMS 15

IMS Catalog @ ACBMGMT=ACBLIB

1. Implement IMS Catalog
   a) Add DFSDFnnn definitions
      1) CATALOG=YES
      2) ACBMGMT=**CATALOG**
   b) Restart IMS
   c) Perform control block gens using DFS3UACB
      1) Populate ACBLIB and Catalog entries in same job

      or
   d) Perform Control Block updates using DDL





IMS Catalog Utilities

DFS3UACB	ACBLIB and Catalog update
DFS3ALI0	Catalog Alias Names
DFS3CCEO / DFS3CCI0	Catalog Export / Import
DFS3RU00	Directory Recovery
DFS3LUOO	Catalog Library Build
DFS3CM00	Catalog Maintenance
DFS3UCD0	Catalog Partition Definition
DFS3PU00	Catalog Populate (Load)
DFS3PU10	Catalog Purge

IMS Catalog - DFSPU00

```
*-------------------------------------------------------------------*
* CATALOG SECTION                                                   *
*-------------------------------------------------------------------*
<SECTION=CATALOG>
CATALOG=Y                       /* CATALOG IS ON                  */
ALIAS=DFSC
RETENTION=(VERSIONS=5,DAYS=365)
STORCLAS=BASE
MGMTCLAS=STANDARD
SMSVOLCT=1
SPACEALLOC=(PRIMARY=500 SECONDARY=50)
GURCACHE=5
```

IMS must be restarted to read DFSDFxxx member

BUT!!

It seems best to Populate (Load) the Catalog with a batch job BEFORE the restart

IMS Catalog - DFSPU00

Catalog access using DFS3PU00 utility

- Load of ACBs
  - PSB= DFSCPL00
- Update ACBs
  - PSB= DFSCP001
- Analysis for space
  - PSB= DFSCP000

IMS Catalog - DFSPU00

DFSCP000

Analyze the current ACBLIB data for Dataset allocations

DFSCPL00

Read current ACBLIB members

Parse the information to IMS Catalog Database segments

Load the IMS catalog

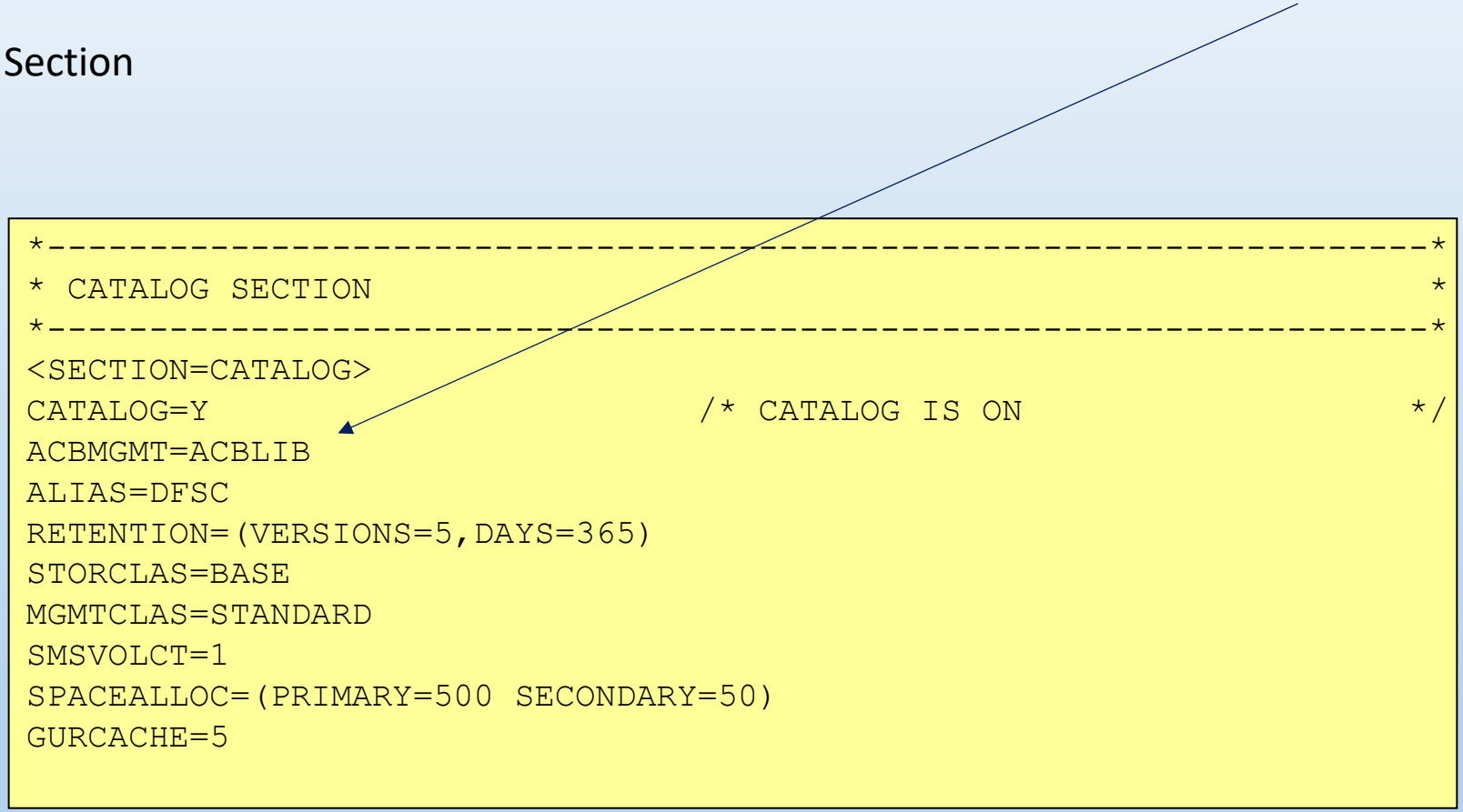
DFSCP001

Update IMS Catalog Database with current input

IMS Catalog Enablement

DFSDFxxx syntax

Catalog Section



```
*-------------------------------------------------------------*
* CATALOG SECTION                                             *
*-------------------------------------------------------------*
<SECTION=CATALOG>
CATALOG=Y                       /* CATALOG IS ON             */
ACBMGMT=ACBLIB
ALIAS=DFSC
RETENTION=(VERSIONS=5,DAYS=365)
STORCLAS=BASE
MGMTCLAS=STANDARD
SMSVOLCT=1
SPACEALLOC=(PRIMARY=500 SECONDARY=50)
GURCACHE=5
```

IMS Catalog Implementation

```
//LOADCAT EXEC PGM=DFS3PU00,
// PARM=(DLI,DFS3PU00,DFSCP000,,,,,,,,,,Y,N,,,,,,,,,,'DFSDF=001')
//STEPLIB  DD  DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD  DSN=IMS.SDFSRESL,DISP=SHR
//IMS      DD  DSN=IMS.PSBLIB,DISP=SHR
//         DD  DSN=IMS.DBDLIB,DISP=SHR
//PROCLIB  DD  DSN=IMS.PROCLIB,DISP=SHR
//SYSABEND DD  SYSOUT=*       Dump data set
//SYSPRINT DD  SYSOUT=*       Messages, statistics
//IEFRDER  DD  ...            Log data set
//DFSVSAMP DD  ...            Buffer pool parameters
//IMSACB01 DD  ...            First ACBLIB
//         DD  ...            Optional concatenated ACBLIB
//IMSACB02 DD  ...            Optional additional ACBLIBs
//IMSACB03 DD  ...            ...
```

Parameters
DBRC value
For DBRC Registered IMS
Catalog database
Must be Y

IMS Catalog Implementation

Catalog access using DFS3PU00 utility

- Analysis for space
  - PSB= DFSCP000

```
ESTIMATED SPACE REQUIREMENT TO HOLD INSERTED SEGMENTS
  DSG   BLKSIZE   BLOCKS
  ---   -------   ------
   A       4096       45
   B       4096      310
   C       4096     1004
   D       4096       15
```

3390 disk type:
There are:
56,664 bytes per track
15 tracks per cylinder

4K blocks per track = 13 (full block)
8K blocks per track = 6 (full block)

Size requirements
DSG A = 8 trks
DSG B = 51 trks
DSG C = 168 trks
DSG D = 3 trks

Allow for growth

IMS Catalog Implementation

SC	SEGMENT	INSERTED SEGMENTS	DSG	PARENT	AVERAGE SEGS/PARENT
1	HEADER	396	A		
2	DBD	137	A	HEADER	0.3
3	CAPXDBD	15	D	DBD	0.1
5	DSET	121	D	DBD	0.9
7	AREA	3	D	DBD	0.0
9	SEGM	596	B	DBD	4.4
10	CAPXSEGM	230	D	SEGM	0.4
12	FLD	2005	C	SEGM	3.4
14	MAR	2005	C	FLD	1.0
17	LCHILD	62	B	SEGM	0.1
20	XDFLD	10	B	LCHILD	0.2
37	PSB	259	A	HEADER	0.7
39	PCB	572	B	PSB	2.2
41	SS	2101	B	PCB	3.7
43	SF	2	B	SS	0.0
45	DBDXREF	367	D	PSB	1.4

IMS Catalog

```
//LOADCAT EXEC PGM=DFS3PU00,
// PARM=(DLI,DFS3PU00,DFSCP001,,,,,,,,,,Y,N,,,,,,,,,,'DFSDF=001')
//STEPLIB  DD  DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD  DSN=IMS.SDFSRESL,DISP=SHR
//IMS      DD  DSN=IMS.PSBLIB,DISP=SHR
//         DD  DSN=IMS.DBDLIB,DISP=SHR
//PROCLIB  DD  DSN=IMS.PROCLIB,DISP=SHR
//SYSABEND DD  SYSOUT=*        Dump data set
//SYSPRINT DD  SYSOUT=*        Messages, statistics
//IEFRDER  DD  ...             Log data set
//DFSVSAMP DD  ...             Buffer pool parameters
//IMSACB01 DD  ...             First ACBLIB
//         DD  ...             Optional concatenated ACBLIB
//IMSACB02 DD  ...             Optional additional ACBLIBs
//IMSACB03 DD  ...             ...
//SYSINP   DD  *               ISRTLIST DUPLIST /*
```

Parameters
DBRC value
For DBRC Registered IMS
Catalog database
Must be Y

When MANAGEDACBS=CATALOG
//SYSINP is required

AND

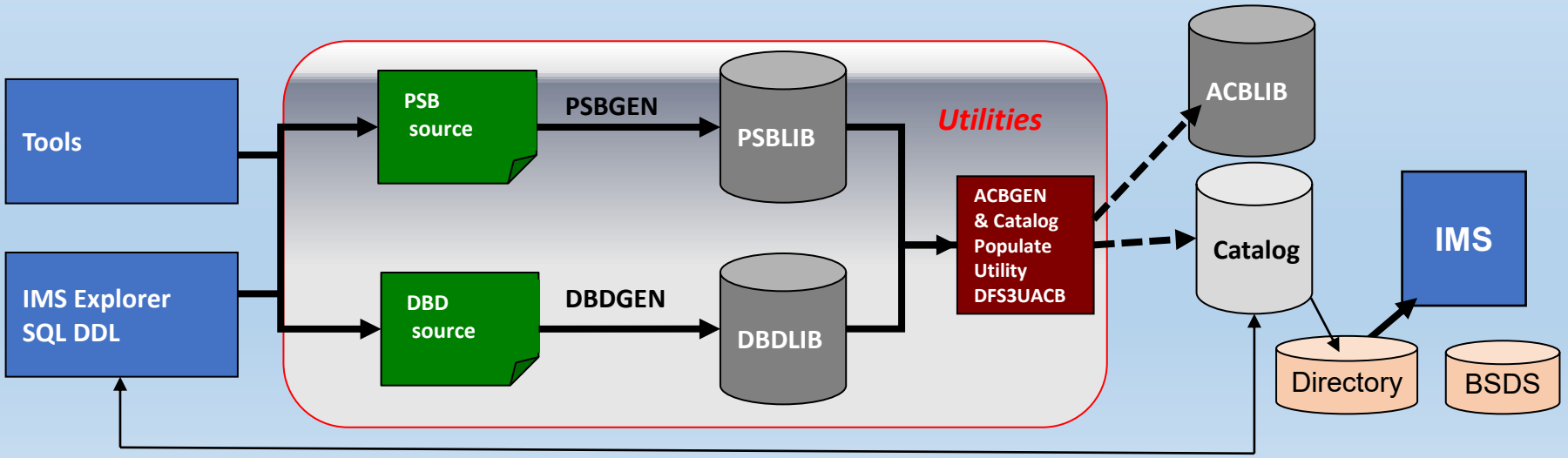
When creating the initial Managed ACBs load – Directory databases

IMS Catalog Implementation

ACB updates

IMS Macro path

- Update PSB source
- Update DBD source
- Gen PSB and DBD
- Use DFS3UACB to create ACB and Catalog entries

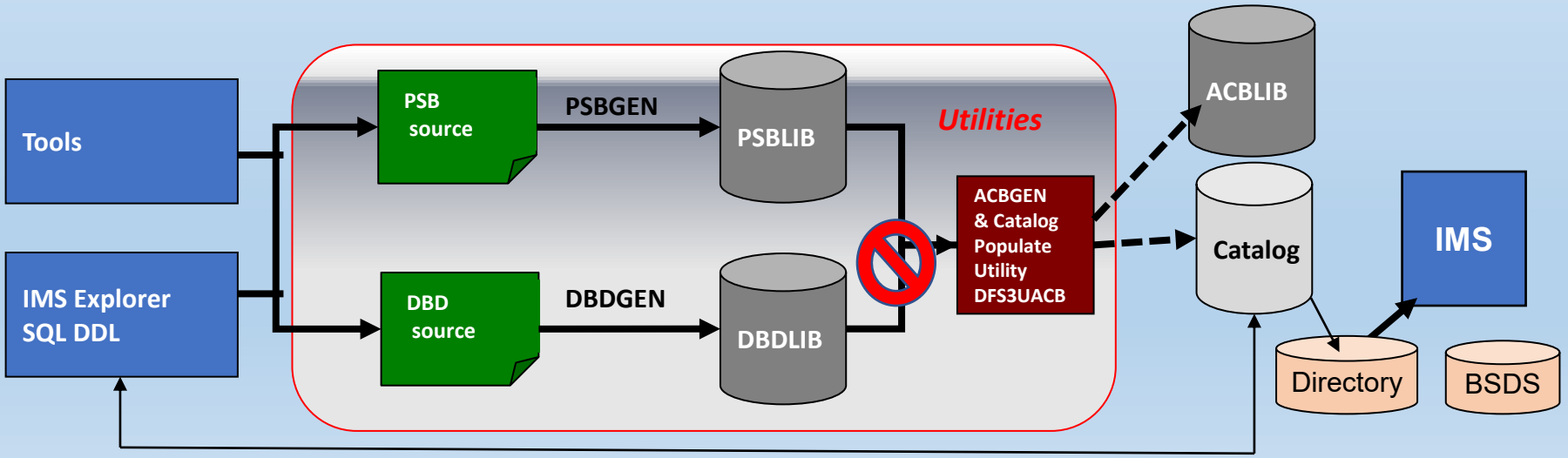


IMS Catalog Implementation considerations

ACB updates

IMS Macro path

- Update PSB source
- Update DBD source
- Gen PSB and DBD
- ~~Use DFS3UACB to create ACB and Catalog entries~~



IMS Managed ACB considerations

```
//LOADCAT EXEC PGM=DFS3PU00,
// PARM=(DLI,DFS3PU00,DFSCP001,,,,,,,,,,Y,N,,,,,,,,,,'DFSDF=001')
//STEPLIB  DD  DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD  DSN=IMS.SDFSRESL,DISP=SHR
//IMS      DD  DSN=IMS.PSBLIB,DISP=SHR
//         DD  DSN=IMS.DBDLIB,DISP=SHR
//PROCLIB  DD  DSN=IMS.PROCLIB,DISP=SHR
//SYSABEND DD  SYSOUT=*       Dump data set
//SYSPRINT DD  SYSOUT=*       Messages, statistics
//IEFRDER  DD  ...            Log data set
//DFSVSAMP DD  ...            Buffer pool parameters
//IMSACB01 DD  ...            First ACBLIB
//         DD  ...            Optional concatenated ACBLIB
//IMSACB02 DD  ...            Optional additional ACBLIBs
//IMSACB03 DD  ...            ...
//SYSINP   DD  *              ISRTLIST DUPLIST /*
```

When MANAGEDACBS=CATALOG
//SYSINP is required

BUT
Sequence of events is important

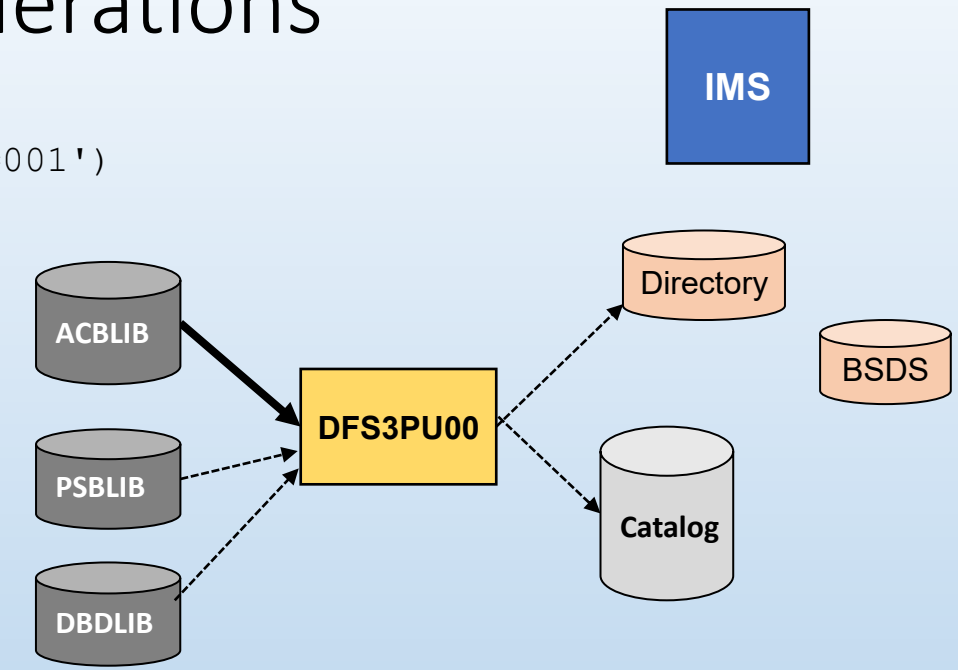
IMS Managed ACB considerations

```
//LOADCAT EXEC PGM=DFS3PU00,
//  PARM=(DLI,DFS3PU00,DFSCPL00,,,,,,,,,,Y,N,,,,,,,,,,'DFSDF=001')
//STEPLIB  DD  DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD  DSN=IMS.SDFSRESL,DISP=SHR
//IMS      DD  DSN=IMS.PSBLIB,DISP=SHR
//         DD  DSN=IMS.DBDLIB,DISP=SHR
//PROCLIB  DD  DSN=IMS.PROCLIB,DISP=SHR
//SYSABEND DD  SYSOUT=*       Dump data set
//SYSPRINT DD  SYSOUT=*       Messages, statistics
//IEFRDER  DD  ...            Log data set
//DFSVSAMP DD  ...            Buffer pool parameters
//IMSACB01 DD  ...            First ACBLIB
//         DD  ...            Optional concatenated ACBLIB
//IMSACB02 DD  ...            Optional additional ACBLIBs
//IMSACB03 DD  ...            ...
//SYSINP   DD  *              ISRTLIST DUPLIST /*
```

MANAGEDACBS=SETUP

- Directory is assumed to be new – no existing members
- Directory is populated or repopulated from ACBLIB
  or
- From DBDLIB / PSBLIB for
  GSAM & Logicals

First time only

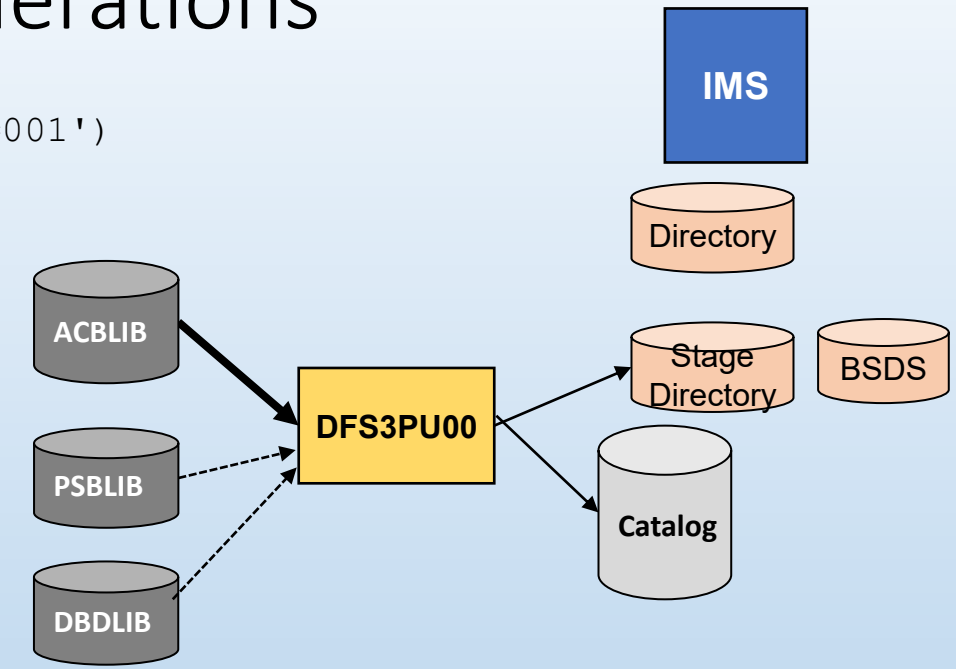


- First time IMS Catalog Database Load or/and Directory create ONLY
- Directory is created if not available
- BSDS is created if not available
- Catalog is offline – IMS down or DFSCD000 and DFSCX00 /DBR'd

- DFSDFxxx Member
  ACBMGMT=ACBLIB

IMS Managed ACB considerations

```
//LOADCAT EXEC PGM=DFS3PU00,
//  PARM=(DLI,DFS3PU00,DFSCP001,,,,,,,,,,Y,N,,,,,,,,,,'DFSDF=001')
//STEPLIB  DD  DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD  DSN=IMS.SDFSRESL,DISP=SHR
//IMS      DD  DSN=IMS.PSBLIB,DISP=SHR
//         DD  DSN=IMS.DBDLIB,DISP=SHR
//PROCLIB  DD  DSN=IMS.PROCLIB,DISP=SHR
//SYSABEND DD  SYSOUT=*       Dump data set
//SYSPRINT DD  SYSOUT=*       Messages, statistics
//IEFRDER  DD  ...            Log data set
//DFSVSAMP DD  ...            Buffer pool parameters
//IMSACB01 DD  ...            First ACBLIB
//         DD  ...            Optional concatenated ACBLIB
//IMSACB02 DD  ...            Optional additional ACBLIBs
//IMSACB03 DD  ...            ...
//SYSINP   DD  *              ISRTLIST DUPLIST /*
```



MANAGEDACBS=STAGE

Staging Directory is populated:

- From ACBLIB

  or

- From DBDLIB / PSBLIB for GSAM & Logicals

- Catalog is updated
- Staging Directory is updated

- Activation by command

IMPORT DEFN SOURCE(CATALOG)

IMS Managed ACB considerations

DFSDFxxx CATALOG SECTION

ACBMGMT=CATALOG

- Catalog access using DFS3PU00 utility
  - Load of ACBs - PSB=DFSCPL00
    - MANAGEDACBS=SETUP
      - First time load of catalog
      - Creates Directory
      - Creates Boot Strap Dataset
  - Update ACBs – PSB=DFSCP001
    - MANAGEDACBS=UPDATE
      - Updates current Directory
      - New ACBs based on generated time
      - New GSAM DBDs based on generated time
      - IMS must be down or Catalog Databases /DBR'd
    - MANAGEDACBS=STAGE
      - Updates new or existing Staging Directory
      - New ACBs based on generated time
      - New GSAM DBDs based on generated time
      - Activated by command
        - IMPORT DEFN SOURCE(CATALOG)

DFS3UACB

IMS ACBGEN with IMS Catalog update

- Same input
- Same Control statements
- Additional JCL DD statements
- IMS ACBLIB and Catalog are update in the same job

ACBLIB and Catalog always in sync

DFS3UACB

```
//DDS0027C JOB '&SYSUID',CLASS=A,MSGCLASS=H,
//           NOTIFY=&SYSUID,REGION=0M
//*****************************************************************
//* DFS3UACB GENERATES ACB MEMBERS IN AN ACB LIBRARY BY CALLING THE
//* ACB MAINTENANCE UTILITY. IN THE SAME JOB STEP,
//* DFS3UACB INSERTS RECORDS IN THE EXISTING IMS CATALOG BY CALLING
//* THE IMS CATALOG POPULATE UTILITY (DFS3PU00)
//*****************************************************************
//*
//ACBCATT EXEC PGM=DFS3UACB,REGION=0M
//*
//STEPLIB  DD  DSN=IMS.IMSA.SDFSRESL,DISP=SHR
//PROCLIB  DD  DSN=IMS.IMSA.PROCLIB,DISP=SHR
//DFSRESLB DD  DSN=IMS.IMSA.SDFSRESL,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SYSABEND DD  SYSOUT=*
//IMS      DD  DSN=IMS.IMSA.PSBLIB,DISP=SHR
//         DD  DSN=IMS.IMSA.DBDLIB,DISP=SHR
//ACBCATWK DD  SPACE=(CYL,(1,1)),UNIT=SYSDA
//*
//*****************************************************************
//* ACBGEN DATASETS
//*****************************************************************
//IMSACB   DD  DSN=IMS.IMSA.ACBLIB,DISP=OLD
//SYSUT3   DD  UNIT=SYSDA,SPACE=(80,(100,100))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(256,(100,100)),DCB=KEYLEN=30
//*****************************************************************
//* ACBGEN INPUT PARMS TO UPDATE ACBLIB
//*****************************************************************
//SYSIN    DD  *
         BUILD PSB=DFSIVP37
//*****************************************************************
//* POPULATE PART
//*****************************************************************
//IMSACB01 DD  DISP=OLD,DSN=*.IMSACB
//IEFRDER  DD  DISP=SHR,DSN=DDS0027.GENERAL.IMSLOG
//*
//DFSVSAMP DD  DISP=SHR,DSN=IMS.IMSA.PROCLIB(DFSVSM0A)
//DFS3PPRM DD  *
DLI,DFS3PU00,DFSCP001,,,,,,,,,,Y,N,,,,,,,,,,DFSDF=00A
//
```

DFS3CCEO / DFS3CCI0

Catalog Export / Import

- May be used to copy IMS Catalog to another location
- May be used to copy IMS Directory to another location
- May be used to export resource types
  - DBD
  - PSB
  - ACB

Customer usage indicates that

Image Copy / Restore the Catalog database

The Catalog Database / Directory are usually rebuilt

DFS3RU00 – Directory Recovery

Functions

- Rebuild the IMS Directory datasets
- Recover ACBs
- Reenter runtime control blocks to the IMS directory
- Clean up failed directory updates

Can be used to create a Directory without repopulating the Catalog

The IMS directory datasets seem to have disappeared.

DFS3RU00 – Directory Recovery

IMS Catalog Database MUST be available

- Disaster Recovery scenarios may require IMS Catalog database to be rebuilt also (and first)
- When ACBLIB is available and correct – the Catalog Populate utility may be used to recreate the Catalog and the Directory datasets in a single job

This a DLI batch job

- Specify IRLM=*irlmid*

IMS Directory datasets exist

- ACBMGMT=CATALOG

IMS Directory dataset being allocated

- ACBMGMT=ACBLIB

DFS3RU00 – Directory Recovery

```
//BATCH EXEC PGM=DFSRRC00,
//  PARM=(DLI,DFS3RU00,DFSCP000,,,,,,,,,,Y,N,,,,,,,,,,,'DFSDF=001')
//STEPLIB  DD DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD DSN=IMS.SDFSRESL,DISP=SHR
//PROCLIB  DD DSN=IMS.PROCLIB,DISP=SHR
//IMS      DD DSN=IMS.PSBLIB,DISP=SHR
//         DD DSN=IMS.DBDLIB,DISP=SHR
//IEFRDER  DD ...
//DFSVSAMP DD ...
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
MBR=ALL
```

IRLM=Y,*irlmnm*

ACBMGMT=CATALOG
for existing Directory datasets
ACBMGMT=ACBLIB
to create Directory datasets

```
*-------------------------------------------------------------------*
* CATALOG SECTION                                                   *
*-------------------------------------------------------------------*
<SECTION=CATALOG>
CATALOG=Y                        /* CATALOG IS ON                */
ACBMGMT=CATALOG
ALIAS=DFSC
RETENTION=(VERSIONS=5,DAYS=365)
STORCLAS=BASE
MGMTCLAS=STANDARD
SMSVOLCT=1
SPACEALLOC=(PRIMARY=500 SECONDARY=50)
GURCACHE=5
```

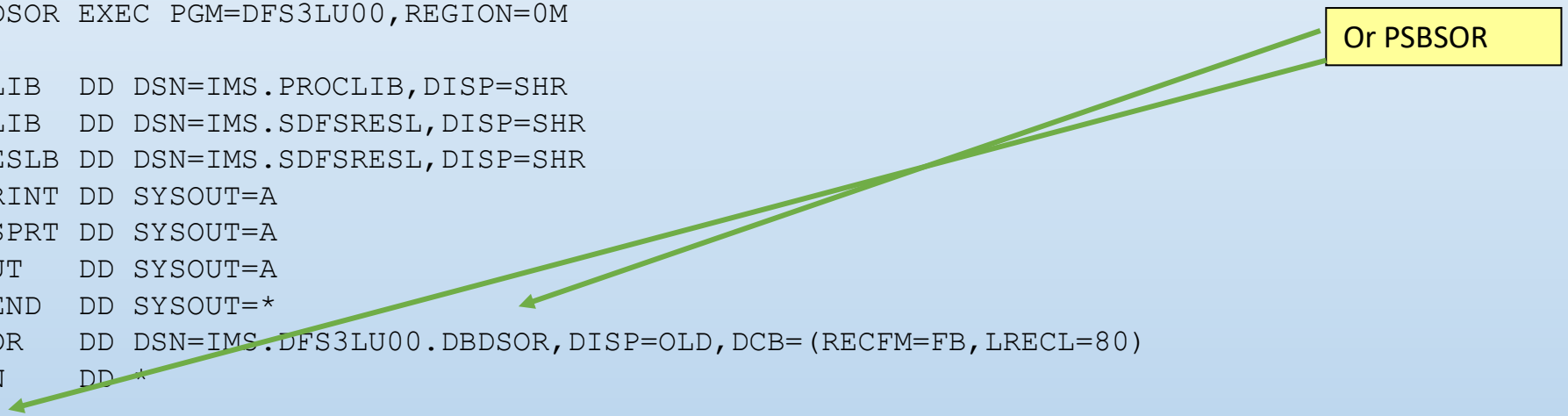
DFS3LU00 – Library Build

Extract resources from the IMS Catalog

- Create
  - ACBLIB
  - DBDLIB
  - PSBLIB
- Rebuild
  - DBD Macro source
  - PSB Macro source

DFS3LU00 – Library Build

```
//*****************************************************************
//* THIS STEP FILLS THE DBDSOR LIBRARY
//*****************************************************************
//LUDBDSOR EXEC PGM=DFS3LU00,REGION=0M
//*
//PROCLIB  DD DSN=IMS.PROCLIB,DISP=SHR
//STEPLIB  DD DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD DSN=IMS.SDFSRESL,DISP=SHR
//SYSPRINT DD SYSOUT=A
//LUSYSPRT DD SYSOUT=A
//SYSOUT   DD SYSOUT=A
/SYSABEND  DD SYSOUT=*
//DBDSOR   DD DSN=IMS.DFS3LU00.DBDSOR,DISP=OLD,DCB=(RECFM=FB,LRECL=80)
//SYSIN    DD *
DBDSOR
IMSCATHLQ=IMS.DFSCD000
//*
```



DFS3LU00 – Library Build

```
//*************************************************************
//* THIS STEP FILLS THE DBDLIB LIBRARY
//*************************************************************
//LUDBDLIB EXEC PGM=DFS3LU00,REGION=0M
//*
//PROCLIB  DD DSN=IMS.PROCLIB,DISP=SHR
//STEPLIB  DD DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD DSN=IMS.SDFSRESL,DISP=SHR
//SYSLIB   DD DISP=SHR,DSN=IMS.SDFSMAC
//SYSPRINT DD SYSOUT=A
//LUSYSPRT DD SYSOUT=A
//SYSOUT   DD SYSOUT=A
/SYSABEND  DD SYSOUT=*
//DBDLIB   DD DSN=IMS.DFS3LU00.DBDLIB,DISP=OLD
//SYSIN    DD *
DBDLIB
IMSCATHLQ=IMS.DFSCD000
//*
//*************************************************************
//* SYSAIN is used to compile the DBD source.
//*************************************************************
//SYSAIN   DD DSN=IMSTESTS.DFS3LU00.SYSAIN,DISP=OLD
//*************************************************************
//* SYSLIN is used to link the compiled DBD objects into libraries.
//*************************************************************
//SYSLIN   DD DSN=IMSTESTS.DFS3LU00.SYSLIN,DISP=OLD
//*
```

Or PSBLIB
Or ACBLIB

Unneeded for ACBLIB

DFS3CM00 – Library Maintenance

Correct Catalog database values of TIMESTAMP and PARTYPE based on the information stored in IMS the Directory

Input

- PARTYPE
- TIMESTAMP
- BOTH

DFS3CM00 – Library Maintenance

```
//DFS3CM00 EXEC PGM=DFSRRC00,
// PARM=(DLI,DFS3CM00,DFSCP001,,,,,,,,,,Y,Y,irlmnm,Y,,,,,,,,
// ,'DFSDF=001')
//PROCLIB  DD DISP=SHR,
// DSN=USER.PRIVATE.AUTOSRVR.PROCLIB
//STEPLIB  DD DSN=IMS.SDFSRESL,DISP=SHR
//DFSRESLB DD DSN=IMS.SDFSRESL,DISP=SHR
//SYSIN DD *
TIMESTAMP
/*
//DFSVSAMP DD
//SYSPRINT DD SYSOUT=*
//SYSABEND DD SYSOUT=*
//IEFRDER  DD
```

DFS3PU10 – Catalog Record Purge

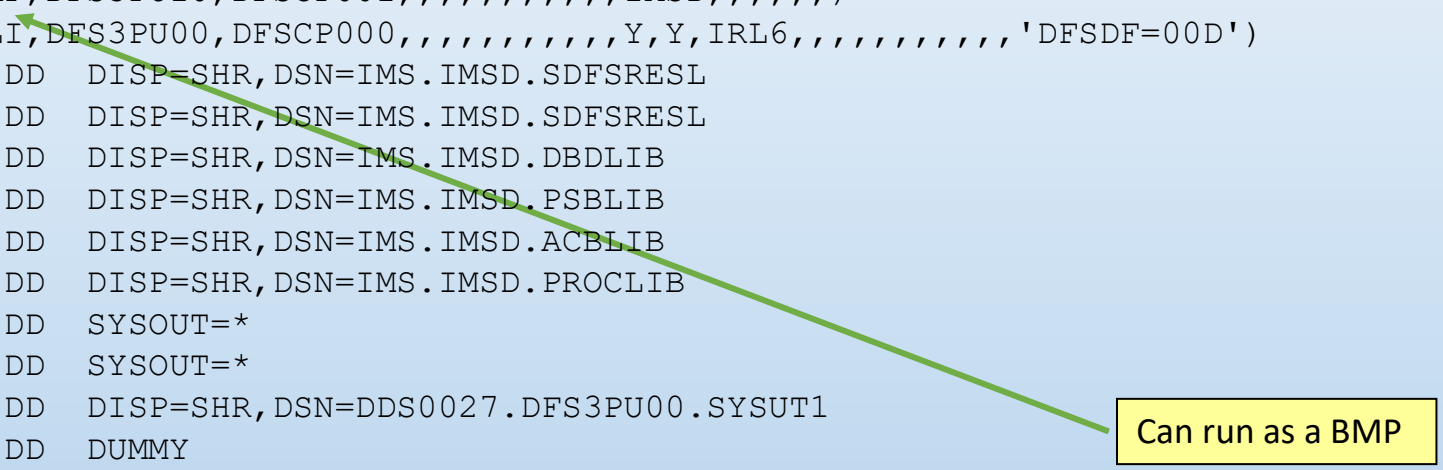
This will remove resources from the IMS Catalog database. The criteria is based on information stored in the resource header segment. The record header information is stored in the Catalog database based on the values in the DFSDFxxx member. The case below shows 5 versions or 365 days.

This information may be updated with DFS3PU10 and used to delete resources from the IMS Catalog.

```
*-------------------------------------------------------------------*
* CATALOG SECTION                                                   *
*-------------------------------------------------------------------*
<SECTION=CATALOG>
CATALOG=Y                          /* CATALOG IS ON                  */
ACBMGMT=ACBLIB
ALIAS=DFSC
RETENTION=(VERSIONS=5,DAYS=365)
STORCLAS=BASE
MGMTCLAS=STANDARD
SMSVOLCT=1
SPACEALLOC=(PRIMARY=500 SECONDARY=50)
GURCACHE=5
```

DFS3PU10 – Catalog Record Purge

```
//DDS0027P JOB '&SYSUID',CLASS=A,MSGCLASS=H,
//            NOTIFY=&SYSUID,REGION=0M
//CATLOAD  EXEC  PGM=DFS3PU00,
// PARM=(BMP,DFS3PU10,DFSCP001,,,,,,,,,,IMSD,,,,,,)
//*PARM=(DLI,DFS3PU00,DFSCP000,,,,,,,,,,Y,Y,IRL6,,,,,,,,,,'DFSDF=00D')
//STEPLIB  DD  DISP=SHR,DSN=IMS.IMSD.SDFSRESL
//DFSRESLB DD  DISP=SHR,DSN=IMS.IMSD.SDFSRESL
//IMS      DD  DISP=SHR,DSN=IMS.IMSD.DBDLIB
//         DD  DISP=SHR,DSN=IMS.IMSD.PSBLIB
//IMSACB01 DD  DISP=SHR,DSN=IMS.IMSD.ACBLIB
//PROCLIB  DD  DISP=SHR,DSN=IMS.IMSD.PROCLIB
//SYSABEND DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//SYSUT1   DD  DISP=SHR,DSN=DDS0027.DFS3PU00.SYSUT1
//IEFRDER  DD  DUMMY
//DFSVSAMP DD  DISP=SHR,DSN=IMS.IMSD.PROCLIB(DFSVSM01)
//SYSIN    DD  *
 MODE ANALYSIS
/*
```



DFS3PU10 – Catalog Record Purge

I no longer need database DI00PART and want to remove it. The first run showed no databases eligible for deletion.

1. In this example, UPDATE DBD DI00PART to 1 version and 7 days retention.
2. Using the DELDBVER finds the eligible resource and writes a delete record to the SYSUT1 dataset under the MODE ANALYSIS. This creates the control cards for the MODE DELETE step.

```
 IMS CATALOG PURGE UTILITY                  IMS V15.1  21:19  2/29/2024  PAGE

MODE ANALYSIS                                                          00161003
UPDATE DBD DI00PART 1 7                                                00161103
DELDBVER DI21PART 1                                                    00162003
DELDBVER DI00PART 1                                                    00163003
DFS4426I A DELETE STATEMENT WAS WRITTEN TO THE SYSUT1 DATA SET FOR DBD DI00PART INSTANCE=2221614200865 DBVER=0
/*
```

SYSUT1

```
 ********************************** Top of Da
 DELETE DBD      DI00PART 2221614200865
 ******************************** Bottom of
```

DFS3PU10 – Catalog Record Purge

When the job is run with MODE PURGE…….

And the DFSDFxxx member has ACBMGMT=CATALOG..

Abend U1002

```
JOB25146  +DFS035I BATCH INITIALIZATION COMPLETE  IMSD
JOB25146  IKJ56225I DATA SET IMS.IMSD.DFSCD000.DI1001 ALREADY IN USE, TRY LATER+
JOB25146  IKJ56225I DATA SET IS ALLOCATED TO ANOTHER JOB OR USER
JOB25146  IEFA110I DATA SET CONTENTION  362
          DATA SET IMS.IMSD.DFSCD000.DI1001 IN USE BY
          SYSNAME  JOBNAME  ASID
          MVS1     IMSDMAST 01D5
          MVS1     IMSDDLI  01D6
```

IMS Utilities

IMS Catalog is a Database
- HALDB as a single partition
- DBRC registration

The loading of a DBRC registered database causes the ICNEEDED flag to go on
- Image Copy required
- Image Copy frequently

IMS Online Reorganization – OLR
- Reorganize HALDB Databases in place
- Command driven
- No outage to user

IMS Catalog considerations

Now the shifts of paradigm

How will IMS Resources be updated?

- DBDgen, PSBgen, ACBgen using OLD program
  - DFSRRC00 then catalog utility DFSPU000
  1. Current method adding extra catalog update
- DBDgen, PSBgen, ACBgen using DFS3UACB
  1. Current method with Catalog and ACBLIB update
- Data Definition Language – DDL
  1. BMP, DLI, E4D

All processes now require the Type 2 command

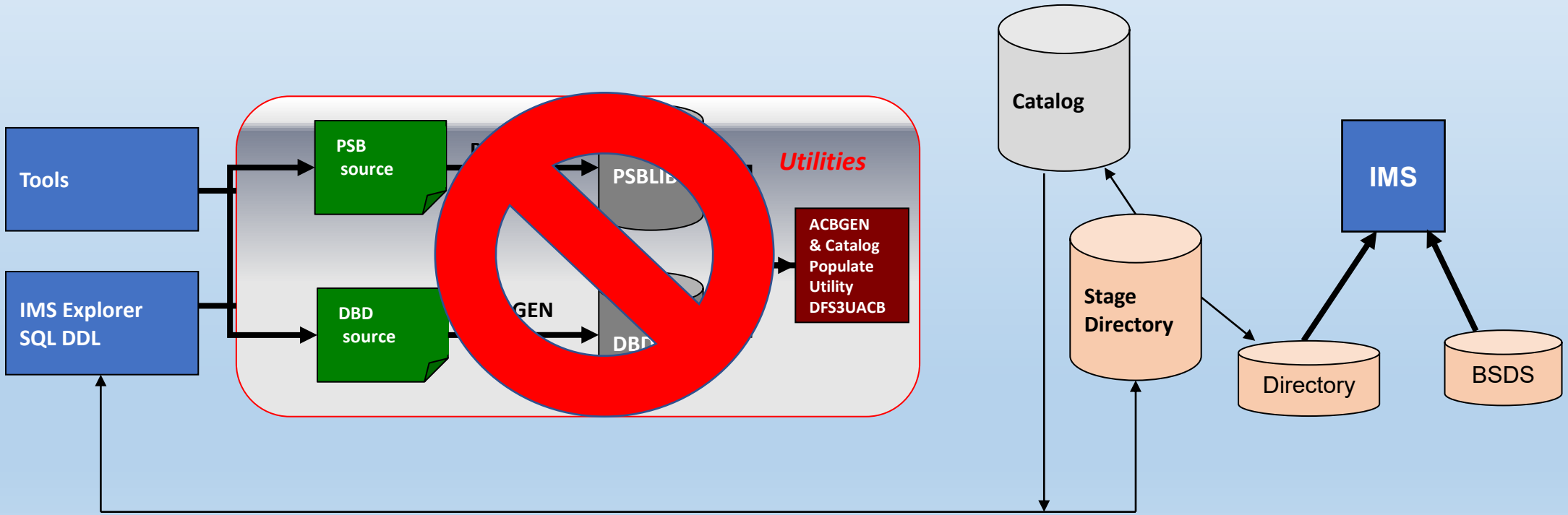
IMPORT DEFN SOURCE(CATALOG)

IMS Catalog considerations

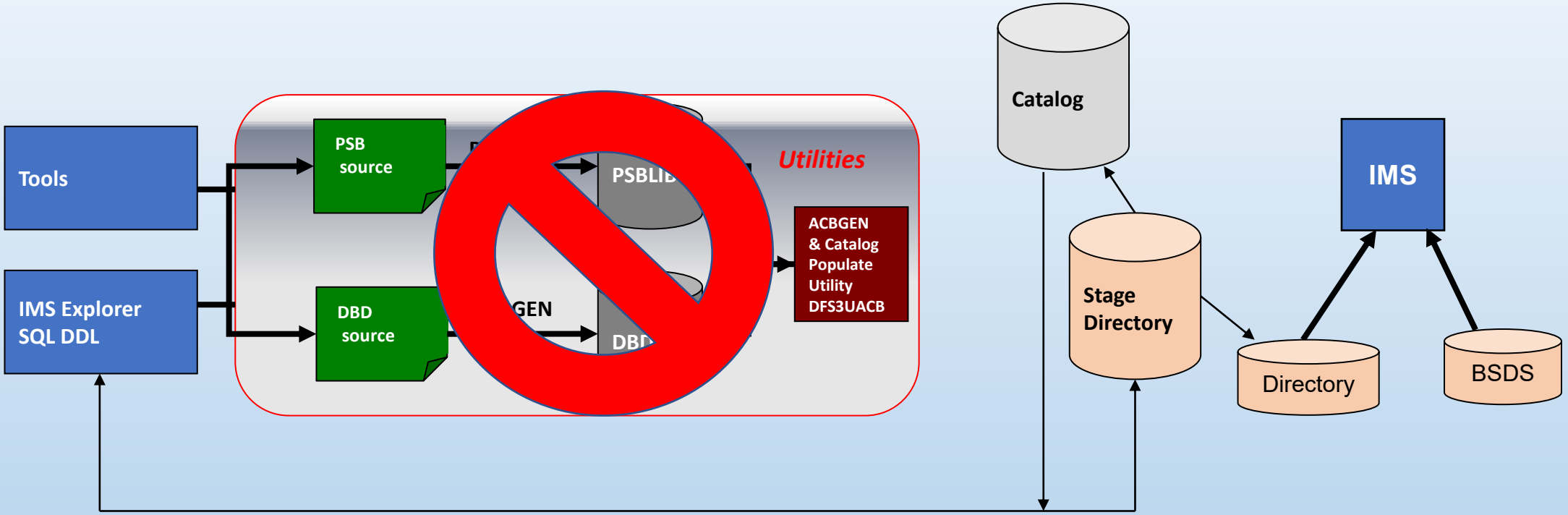
ACB updates

DDL path

updated information is sent to Catalog staging dataset
Activate with IMPORT DEFN SOURCE(CATALOG) command



IMS Catalog considerations



IMS BMP
IMS DLI

IMS Managed ACB considerations

```
 IMS NATIVE Z/OS DDL UTILITY                                          Page 1


//IMSD31D0 JOB  'IMS SYSTEM',CLASS=I,MSGLEVEL=(1,1),REGION=0M,
//             NOTIFY=&SYSUID
//BMP    EXEC  PGM=DFS3ID00,
//       PARM=(BMP,DFS3ID00,DFSCP001,,,,,,,,,,IMSD,,,,,,)
//STEPLIB  DD  DISP=SHR,DSN=IMS.IMSD.SDFSRESL
//DFSRESLB DD  DISP=SHR,DSN=IMS.IMSD.SDFSRESL
//PROCLIB  DD  DISP=SHR,DSN=IMS.IMSD.PROCLIB
//SYSPRINT DD  SYSOUT=*
//SYSABEND DD  SYSOUT=*
//*
//IMSSQL   DD  *
CREATE DATABASE DI99PART ACCESS HISAM
    PASSWDNO
    DATXEXITNO
    DATA CAPTURE NONE CCSID 'CP1047';
CREATE TABLESPACE DI99PART IN DI99PART
    RECORD(678,678)
    OVERFLOW(DI99PARO);
CREATE TABLE PARTROOT (

                  .
                  .
                  .
```

IMS 15.4

Supports DDL updates as DLI jobs

IMS down or Catalog /DBR

IMS Managed ACB considerations

DDL Generation Batch Utility

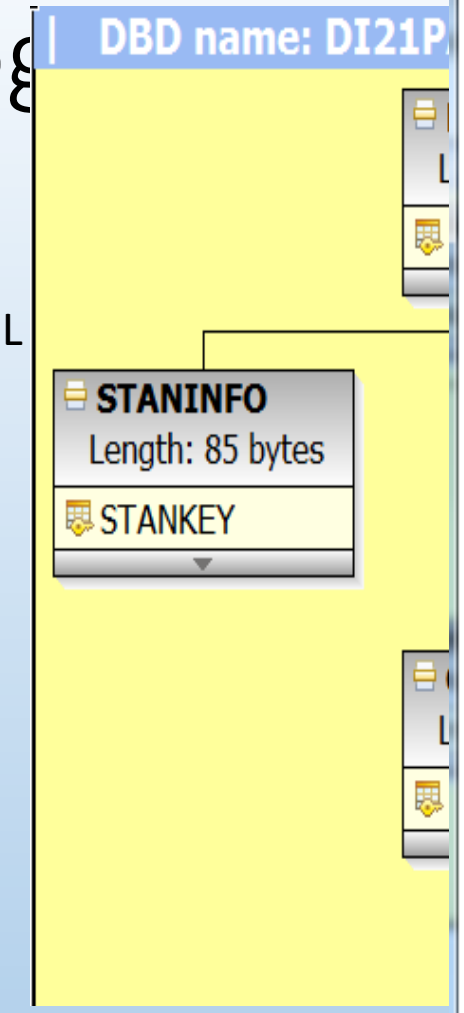
```
//DDS0027C JOB '&SYSUID',CLASS=A,MSGCLASS=H,NOTIFY=&SYSUID,REGION=0M
//*
// SET P1='COM.IBM.IMS.JDBC.BATCH.DDLGENERATOR'
//JOBLIB   DD DISP=SHR,DSN=JZOS.LOADLIB
//JAVAJVM1 EXEC PGM=JVMLDM76,REGION=0M,PARM='/ &P1'
//SYSPRINT DD SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//STDOUT   DD  SYSOUT=*
//STDERR   DD  SYSOUT=*
//CEEDUMP  DD  SYSOUT=*
//ABNLIGNR DD DUMMY
//STDENV   DD *
EXPORT JAVA_HOME=MYJAVAHOMEPATH
EXPORT PATH=/BIN:"${JAVA_HOME}"/BIN
LIBPATH=/LIB:/USR/LIB:"${JAVA_HOME}"/BIN
LIBPATH="$LIBPATH":"${JAVA_HOME}"/LIB
LIBPATH="$LIBPATH":"${JAVA_HOME}"/LIB/S390X
CLASSPATH=$APP_HOME:"${JAVA_HOME}"/LIB:"${JAVA_HOME}"/LIB/EXT
CLASSPATH="$CLASSPATH":MYLIBPATH/IMSUDB.JAR
EXPORT CLASSPATH="$CLASSPATH":
//PSBSRC DD DSN=IMS.PSB.SOURCE,DISP=SHR
//DBDSRC DD DSN=IMS.DBD.SOURCE,DISP=SHR
//DDLPSB DD DISP=(SHR,KEEP),DSN=MYPDS,
//DDLDBD DD DISP=(SHR,KEEP),DSN=MYPDS,
//SYSIN    DD *
CONNECT
JDBC:IMS://MYCONNECTSERVER:MYPORT/BMP255:DPSBONCOMMIT=TRUE;;
DBDCAT(*);
PSBCAT(AUTPSB*,BMP255);
/*
```

IMS Catalog

Meta data update

Use E4D to generation DDL for the Catalog

2. Generate ALTER DDL statements
3. Submit to Catalog
4. Import definitions



the changes made to the DBD, will be generated and displayed for your review. Click "Proceed" to submit the changes to IMS.

Profile: IMST V14

```
ALTER TABLE CYCCOUNT IN DATABASE DI21PART
ADD COLUMN CYCLDATE
          CHAR(8) START 3 TYPE C INTERNALNAME CYCLDATE
         INTERNAL TYPECONVERTER CHAR
         CCSID 'Cp1047';

ALTER TABLE BACKORDR IN DATABASE DI21PART
ADD COLUMN BACKNAME
          CHAR(12) START 11 INTERNALNAME BACKNAME
         INTERNAL TYPECONVERTER CHAR
         CCSID 'Cp1047'
ADD COLUMN BACKDATE
          CHAR(12) START 23 TYPE C INTERNALNAME BACKDATE
         INTERNAL TYPECONVERTER CHAR
         CCSID 'Cp1047'
ADD COLUMN BACKDESC
          CHAR(41) START 35 TYPE C INTERNALNAME BACKDESC
         INTERNAL TYPECONVERTER CHAR
         CCSID 'Cp1047';
```

Proceed Cancel

IMS Managed ACBs considerations

```
 IMS NATIVE Z/OS DDL UTILITY                                          Page 1


//IMSD31D0 JOB  'IMS SYSTEM',CLASS=I,MSGLEVEL=(1,1),REGION=0M,
//             NOTIFY=&SYSUID
//BMP    EXEC  PGM=DFS3ID00,
//       PARM=(BMP,DFS3ID00,DFSCP001,,,,,,,,,,IMSD,,,,,,)
//STEPLIB  DD  DISP=SHR,DSN=IMS.IMSD.SDFSRESL
//DFSRESLB DD  DISP=SHR,DSN=IMS.IMSD.SDFSRESL
//PROCLIB  DD  DISP=SHR,DSN=IMS.IMSD.PROCLIB
//SYSPRINT DD  SYSOUT=*
//SYSABEND DD  SYSOUT=*
//*
//IMSSQL   DD  *
CREATE DATABASE DI99PART ACCESS HISAM
    PASSWDNO
    DATXEXITNO
    DATA CAPTURE NONE CCSID 'CP1047';
CREATE TABLESPACE DI99PART IN DI99PART
    RECORD(678,678)
    OVERFLOW(DI99PARO);
CREATE TABLE PARTROOT (

                  .
                  .
                  .
```

IMS 15.4

Supports DDL updates as DLI jobs

IMS down or Catalog /DBR

IMS Managed ACBs considerations

```
 IMS NATIVE Z/OS DDL UTILITY                                                    Page 1


-9002: DBD previously defined: DI99PART
|-------------------------------------------------------------------------------------------------------------|
| FAILURE | CREATE DATABASE DI99PART ACCESS HISAM PASSWDNO DATXEXITNO DATA CAPTURE NONE CCSID 'CP1047';
|-------------------------------------------------------------------------------------------------------------|

|=============================================================|
|                          DDL EVENTS                         |
|=============================================================|
| Event    | Resource | Return   | Reason   | Status | Timestamp     |
|          |          | Code     | Code     | Code   | (TSVERS)      |
|=============================================================|
| INIT DMU | DFSD0011 | 00000000 | 00000000 |        |               |
| GHU      | DI99PART | 00000000 | 00000000 |        |               |
| ROLB     | DFSCD000 | 00000000 | 00000000 |        |               |
|-------------------------------------------------------------|
```

DI99PART

Is already defined

IMS Managed ACBs considerations

```
  IMS NATIVE Z/OS DDL UTILITY                                                                                    Page 1

|-------------------------------------------------------------------------------------------------------------------------------|
| PARSED  | CREATE DATABASE DI07PART ACCESS HISAM PASSWDNO DATXEXITNO DATA CAPTURE NONE CCSID 'CP1047';                         |
| PARSED  | CREATE TABLESPACE DI07PART IN DI07PART RECORD(678,678) OVERFLOW(DI07PARO);                                          |
| PARSED  | CREATE TABLE PARTROOT ( PART_NO_EDIT CHAR(17) START 1 TYPE C INTERNALNAME PARTKEY PRIMARY KEY INTERNAL TYPECONVERTE... |
| PARSED  | CREATE TABLE STANINFO ( STANKEY CHAR(2) START 1 TYPE C INTERNALNAME STANKEY PRIMARY KEY INTERNAL TYPECONVERTER CHAR... |
| PARSED  | CREATE TABLE STOKSTAT ( STOCKEY CHAR(16) START 1 TYPE C INTERNALNAME STOCKEY PRIMARY KEY INTERNAL TYPECONVERTER CHA... |
| PARSED  | CREATE TABLE CYCCOUNT ( FILL_0 CHAR(2) START 1 TYPE C INTERNALNAME CYCLKEY PRIMARY KEY INTERNAL TYPECONVERTER CHAR ... |
| PARSED  | CREATE TABLE BACKORDR ( BACKKEY CHAR(10) START 1 TYPE C INTERNALNAME BACKKEY PRIMARY KEY INTERNAL TYPECONVERTER CHA... |
| SUCCESS | COMMIT DDL;                                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------|

|=============================================================|
|                          DDL EVENTS                         |
|=============================================================|
| Event    | Resource | Return   | Reason   | Status | Timestamp    |
|          |          | Code     | Code     | Code   | (TSVERS)     |
|=============================================================|
| INIT DMU | DFSD0011 | 00000000 | 00000000 |        |              |
| GHU      | DI07PART | 00000900 | 00000000 | GE     |              |
| IR       | DI07PART | 00000000 | 00000000 |        | 2329614392203 |
| CHKP     | DFSCD000 | 00000000 | 00000000 |        |              |
```

DI07PART

Is not defined and shown by a GE status code

IMS Managed ACBs considerations

```
BROWSE              IMS.IMSD.DFSCD000.STG                  Row 0000001 of 00
Command ===>                                                     Scroll ===>
            Name      Prompt         Alias-of      Size       TTR      AC   AM
_________ DE00PART                              00291300   00025D          31
_________ DFSSAMJ2                              00261000   000263          24
_________ DFSSAMJ3                              00261000   000264          24
_________ DIALPART                              00000000   000260   ??     31
_________ DIJ1PART                              00392400   000262   ??     31
_________ DI01PART                              0688E308   00025F          31
_________ DI07PART                              00000000   000265          31
_________ DI21PART                              0688E308   00025A          31
_________ DI99PART                              00000000   00025C   ??     31
_________ DSE1PART                              00412700   00025E   ??     31
```

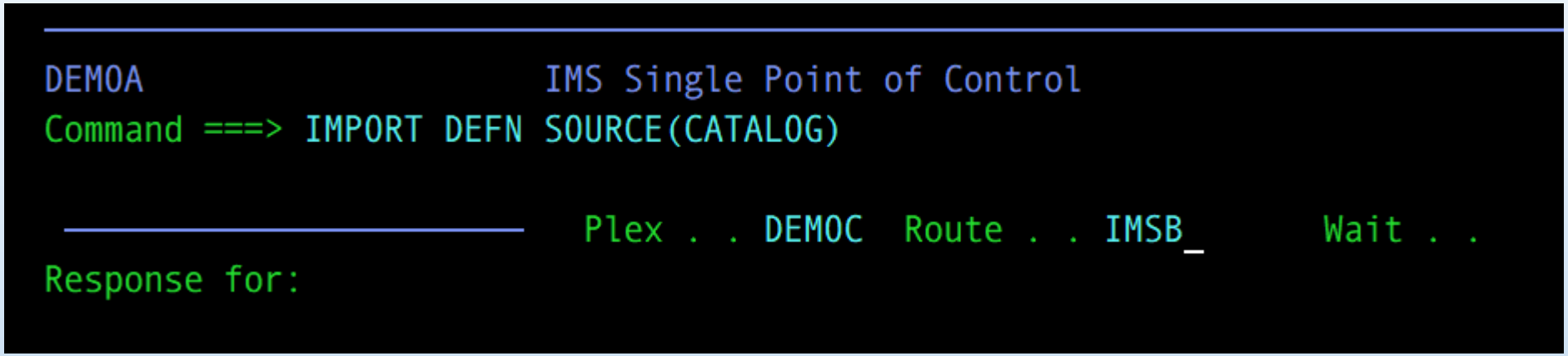
DI07PART
Added to Staging Directory

Awaiting IMPORT command

IMS Catalog Utilities

DFS3UACB	ACBLIB and Catalog update
DFS3ALI0	Catalog Alias Names
DFS3CCEO / DFS3CCI0	Catalog Export / Import
DFS3RU00	Directory Recovery
DFS3LUOO	Catalog Library Build
DFS3CM00	Catalog Maintenance
DFS3UCD0	Catalog Partition Definition
DFS3PU00	Catalog Populate (Load)
DFS3PU10	Catalog Purge

IMS Managed ACBs considerations



IMS Managed ACBs considerations

Thank You

Any questions?