



From Copybooks to SQL: Modernizing IMS Metadata with the IMS Catalog

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01. Adding copybook information
02. DECODE examples
03. Demo
03. SPUFI and SQL Generator
03. Demo

Agenda

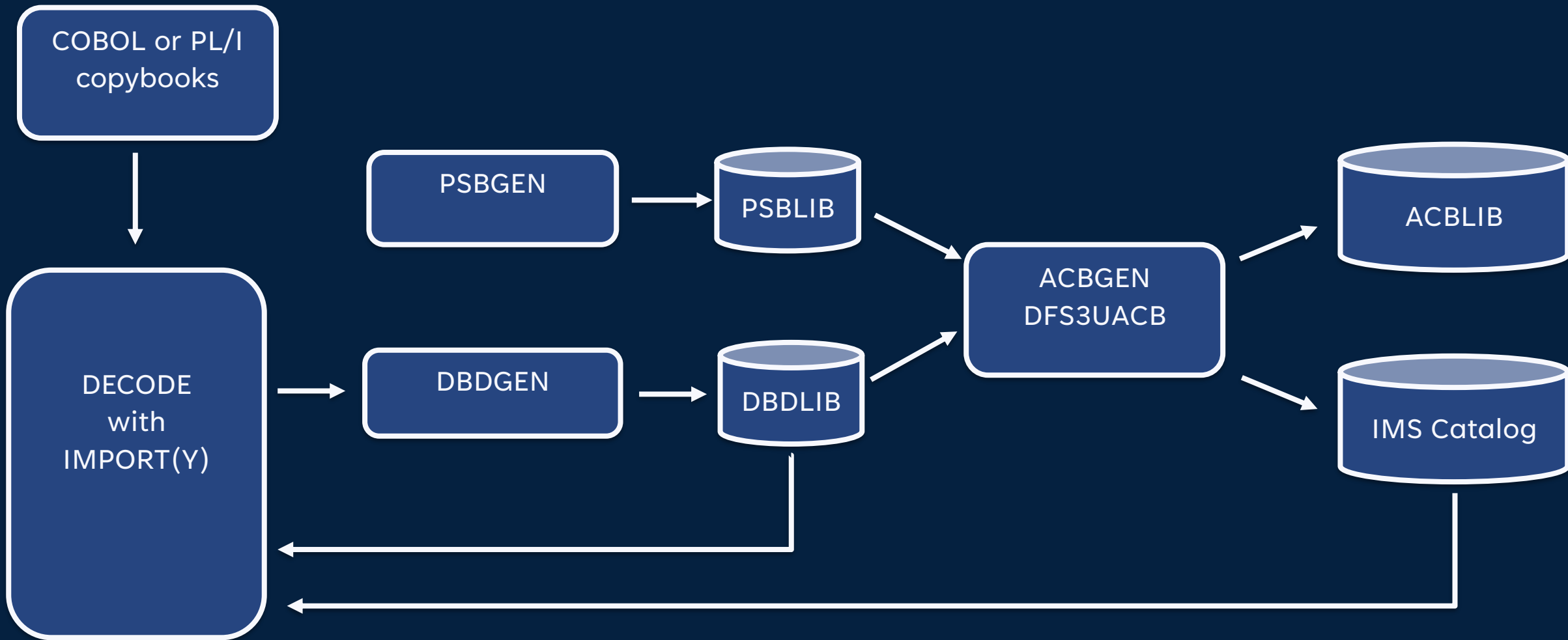
Vendor Options

- IMS Explorer for Development (E4D)
- BMC AMI Change Manager for IMS
- IMS Administration Tool for z/OS



https://mediacenter.ibm.com/media/t/1_f1cvlzu0

Populating IMS Catalog with metadata



Batch DECODE command

- **DBD**
 - Database object to disassemble. Can use wildcard *
- **SOURCE**
 - **IMS DBDLIB**
 - **Catalog**
 - **ACBLIB**
 - **Directory (Active or Staging)**
- **IMPORT**
 - Generate FIELD statements in the DBD source
- **ONEXIST**
 - FIELD name already exists, **IGNORE** or **UPDATE**
- **RELATED**
 - Include any logically related databases
- **DDL**
 - Generate DDL or GEN syntax (or both)

Decoding and Adding Copybook information

```
//DECODE EXEC PGM=DLIGENTR,REGION=QM,PARM='ULU,DBI'  
//STEPLIB DD DISP=SHR,DSN=BMCDBU.V51QA.SMPE.DBULIB  
// DD DISP=SHR,DSN=BMCDBU.V51QA.SMPE.CPCLIB  
// DD DISP=SHR,DSN=MVSGLT1.GT15.SDFSRESL  
// DD DISP=SHR,DSN=DBU.QA.ALL.PASSWORD  
// DD DISP=SHR,DSN=CSGI.CPWR.FILEAID.SXVJLOAD  
// DD DISP=SHR,DSN=CSGI.CPWR.FILEAID.CXVJLOAD  
//SRCLIB DD DISP=SHR,DSN=MVSGLT1.XRF.IMPORT  
//IMS DD DISP=SHR,DSN=MVSGLT1.GT15.DBDLIB  
// DD DISP=SHR,DSN=MVSGLT1.XRF.DBDLIB  
//DFSRESLB DD DISP=SHR,DSN=MVSGLT1.GT15.SDFSRESL  
//IXPC1 DD DISP=SHR,DSN=MVSGLT1.XRF.COBOLLIB  
//BMCTRACE DD SYSOUT=*  
//BMCMSG DD DISP=SHR,DSN=MVSGLT1.XRF.BMCMSG(#IMP01)  
//BMCPRI NT DD SYSOUT=*  
//DBDOUT DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//PLUSIN DD *  
DECODE DBD(MATST1) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE)
```

IXPC1 – COBOL or PL/I
SRCLIB – Output Source

```
04/11/2025          B M C   M E S S A G E   L O G          PAGE 1  
  
7:26:00.28  L O G   S T A R T  
7:26:00.30  BMC90022I  BMC UTILITY DRIVER STARTED  
7:26:00.31          LISTING OF 'PLUSIN ' CONTROL STATEMENTS:  
7:26:00.31  -----1-----2-----3-----4-----5-----6-----7-----8          REC  CMD  
7:26:00.31          DECODE DBD(MATST1) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE)          00260009  001  001  
7:26:00.31          DATA SET CONTAINS 0001 RECORDS  
7:26:00.35  BMC90026I  IMS 15.5  
7:26:00.92  BMC90000I  CPYBOOK: MATST1 .MA1ROOT -MA1ROOT [          ]**NOT FOUND  
7:26:00.92  BMC90000I  CPYBOOK: MATST1 .MA1DEP1 -MA1DEP1 [          ]**FOUND  
7:26:01.14  BMC90000I  CPYBOOK: MATST1 .MA1DEP2 -MA1DEP2 [          ]**FOUND  
7:26:01.35  BMC90023I  BMC UTILITY DRIVER ENDED. RETURN CODE IS 0000  
7:26:01.35  L O G   E N D
```

DBD + Copybook = Enhanced Source

```
DSG1 DATASET DD1=MA1DSG1,DEVICE=3390, X
      SIZE=( 1690) X
      SEGM NAME=MA1ROOT, X
          BYTES=300, X
          PARENT=0
      FIELD BYTES=8, X
          START=1, X
          NAME=( MA1RKEY, SEQ, U)
      FIELD BYTES=4, X
          START=9, X
          NAME=MA1CTL
*
      SEGM NAME=MA1DEP1, X
          BYTES=150, X
          PARENT=MA1ROOT
      FIELD BYTES=8, X
          START=1, X
          NAME=( MA1D1KEY, SEQ, U)
*
      SEGM NAME=MA1DEP2, X
          BYTES=250, X
          PARENT=MA1ROOT

      SEGM _NAME=MA1DEP1, X
          BYTES=150, X
          PARENT=MA1ROOT
      FIELD BYTES=8, X
          START=1, X
          NAME=(MA1D1KEY, SEQ, U)
      FIELD BYTES=18, X
          START=1, X
          EXTERNALNAME=MA1D1C1PFX, X
          DATATYPE=CHAR X
      FIELD BYTES=1, X
          START=19, X
          EXTERNALNAME=MA1D1C1_F00001, X
          DATATYPE=CHAR, X
          REMARKS='ADDED 2/12/18' X
      FIELD BYTES=1, X
          START=20, X
          EXTERNALNAME=MA1D1C1_F00002, X
          DATATYPE=CHAR X
      FIELD BYTES=1, X
          START=21, X
          EXTERNALNAME=MA1D1C1_F00003, X
          DATATYPE=CHAR X

01 MA1DEP1.
05 MA1D1C1PFX PIC X(18).
05 MA1D1C1-F00001 PIC X(1). *->ADDED 2/12/18
05 MA1D1C1-F00002 PIC X(1).
05 MA1D1C1-F00003 PIC X(1).
05 MA1D1C1-F00004 PIC X(1).
05 MA1D1C1-F00005 PIC X(1).
05 MA1D1C1-F00006 PIC X(1).
05 MA1D1C1-F00007 PIC X(1).
05 MA1D1C1-F00008 PIC X(1).
05 MA1D1C1-F00009 PIC X(1).
05 MA1D1C1-F00010 PIC X(1).
05 MA1D1C1-F00011 PIC X(1).
05 MA1D1C1-F00012 PIC X(1).
05 MA1D1C1-F00013 PIC X(1).
05 MA1D1C1-F00014 PIC X(1).
05 MA1D1C1-F00015 PIC X(1).
05 MA1D1C1-F00016 PIC X(1).
05 MA1D1C1-F00017 PIC X(1).
05 MA1D1C1-F00018 PIC X(1).
05 MA1D1C1-F00019 PIC X(1).
05 MA1D1C1-F00020 PIC X(1).
05 MA1D1C1-F00021 PIC X(1).
05 MA1D1C1-F00022 PIC X(1).
05 MA1D1C1-F00023 PIC X(1).
05 MA1D1C1-F00024 PIC X(1).
05 MA1D1C1-F00025 PIC X(1).
05 MA1D1C1-F00026 PIC X(1).
05 MA1D1C1-F00027 PIC X(1).
05 MA1D1C1-F00028 PIC X(1).
05 MA1D1C1-F00029 PIC X(1).
05 MA1D1C1-F00030 PIC X(1).
05 MA1D1C1-F00031 PIC X(1).
05 MA1D1C1-F00032 PIC X(1).
05 MA1D1C1-F00033 PIC X(1).
05 MA1D1C1-F00034 PIC X(1).
05 MA1D1C1-F00035 PIC X(1).
05 MA1D1C1-F00036 PIC X(1).
05 MA1D1C1-F00037 PIC X(1).
05 MA1D1C1-F00038 PIC X(1).
05 MA1D1C1-F00039 PIC X(1).
05 MA1D1C1-F00040 PIC X(1).
05 MA1D1C1-F00041 PIC X(1).
05 MA1D1C1-F00042 PIC X(1).
05 MA1D1C1-F00043 PIC X(1).
05 MA1D1C1-F00044 PIC X(1).
05 MA1D1C1-F00045 PIC X(1).
05 MA1D1C1-F00046 PIC X(1).
05 MA1D1C1-F00047 PIC X(1).
05 MA1D1C1-F00048 PIC X(1).
05 MA1D1C1-F00049 PIC X(1).
05 MA1D1C1-F00050 PIC X(1).
05 MA1D1C1-F00051 PIC X(1).
05 MA1D1C1-F00052 PIC X(1).
05 MA1D1C1-F00053 PIC X(1).
05 MA1D1C1-F00054 PIC X(1).
05 MA1D1C1-F00055 PIC X(1).
05 MA1D1C1-F00056 PIC X(1).
05 MA1D1C1-F00057 PIC X(1).
05 MA1D1C1-F00058 PIC X(1).
05 MA1D1C1-F00059 PIC X(1).
05 MA1D1C1-F00060 PIC X(1).
05 MA1D1C1-F00061 PIC X(1).
05 MA1D1C1-F00062 PIC X(1).
05 MA1D1C1-F00063 PIC X(1).
05 MA1D1C1-F00064 PIC X(1).
05 MA1D1C1-F00065 PIC X(1).
05 MA1D1C1-F00066 PIC X(1).
05 MA1D1C1-F00067 PIC X(1).
05 MA1D1C1-F00068 PIC X(1).
05 MA1D1C1-F00069 PIC X(1).
05 MA1D1C1-F00070 PIC X(1).
05 MA1D1C1-F00071 PIC X(1).
05 MA1D1C1-F00072 PIC X(1).
05 MA1D1C1-F00073 PIC X(1).
05 MA1D1C1-F00074 PIC X(1).
05 MA1D1C1-F00075 PIC X(1).
05 MA1D1C1-F00076 PIC X(1).
05 MA1D1C1-F00077 PIC X(1).
05 MA1D1C1-F00078 PIC X(1).
05 MA1D1C1-F00079 PIC X(1).
05 MA1D1C1-F00080 PIC X(1).
05 MA1D1C1-F00081 PIC X(1).
05 MA1D1C1-F00082 PIC X(1).
05 MA1D1C1-F00083 PIC X(1).
05 MA1D1C1-F00084 PIC X(1).
05 MA1D1C1-F00085 PIC X(1).
05 MA1D1C1-F00086 PIC X(1).
05 MA1D1C1-F00087 PIC X(1).
05 MA1D1C1-F00088 PIC X(1).
05 MA1D1C1-F00089 PIC X(1).
05 MA1D1C1-F00090 PIC X(1).
05 MA1D1C1-F00091 PIC X(1).
05 MA1D1C1-F00092 PIC X(1).
05 MA1D1C1-F00093 PIC X(1).
05 MA1D1C1-F00094 PIC X(1).
05 MA1D1C1-F00095 PIC X(1).
05 MA1D1C1-F00096 PIC X(1).
05 MA1D1C1-F00097 PIC X(1).
05 MA1D1C1-F00098 PIC X(1).
05 MA1D1C1-F00099 PIC X(1).
05 MA1D1C1-F00100 PIC X(1).
```

Decoding – Using File-Aid definitions

```
//DECODE EXEC PGM=DLIGENTR,REGION=0M,PARM='ULU,DBI'  
//STEPLIB DD DISP=SHR,DSN=BMCDBU.V51QA.SMPE.DBULIB  
// DD DISP=SHR,DSN=IMSVS.R15M.SDFSRESL  
// DD DISP=SHR,DSN=DBU.QA.ALL.PASSWORD  
// DD DISP=SHR,DSN=CSGI.CPWR.FILEAID.SXVJLOAD  
// DD DISP=SHR,DSN=CSGI.CPWR.FILEAID.CXVJLOAD  
//SRCLIB DD DISP=SHR,DSN=MVSGLT1.XRF.IMPORT  
//IMS DD DISP=SHR,DSN=MVSGLT1.XRF.DBDLIB  
//DFSRESLB DD DISP=SHR,DSN=BNB.IMSVS.R15.SDFSRESL  
// DD DISP=SHR,DSN=IMSVS.R15M.SDFSRESL  
//IXPC1 DD DISP=SHR,DSN=MVSGLT1.XRF.COBOLLIB  
//IXPFD DD DISP=SHR,DSN=MVSGLT1.XRF.XREFC  
//BMCTRACE DD SYSOUT=*  
//BMCMSG DD DISP=SHR,DSN=MVSGLT1.XRF.BMCMSG(#IMP03)  
//BMCPRINT DD SYSOUT=*  
//DBDOUT DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//PLUSIN DD *  
DECODE DBD(MCTST*) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE)
```

IXPC1 – COBOL or PL/I
IXPFD – File-Aid XREF
SRCLIB – Output Source



```
***** Bottom of Data *****  
11:35:56.26 LOG START  
11:35:56.28 BMC90022I BMC UTILITY DRIVER STARTED  
11:35:56.29 LISTING OF 'PLUSIN ' CONTROL STATEMENTS:  
11:35:56.29 -----1-----2-----3-----4-----5-----6-----7-----8 REC CMD  
11:35:56.29 DECODE DBD(MCTST*) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE) 00280000 001 001  
11:35:56.29 DATA SET CONTAINS 0001 RECORDS  
11:35:56.34 BMC90026I IMS 15.5  
11:35:57.01 BMC90000I CPYBOOK: MCTST1 .MC1ROOT -MC1RCPY [ ]**FOUND  
11:35:57.31 BMC90000I CPYBOOK: MCTST1 .MC1DEP1 -MC1D1CPY[ ]**FOUND  
11:35:57.54 BMC90000I CPYBOOK: MCTST1 .MC1DEP2 -MC1D2CPY[ ]**FOUND  
11:35:57.85 BMC90000I CPYBOOK: MCTST2 .MC2ROOT -MC2RCPY [ ]**FOUND  
11:35:58.06 BMC90000I CPYBOOK: MCTST2 .MC2DEP1 -MC2D1CPY[ ]**FOUND  
11:35:58.29 BMC90000I CPYBOOK: MCTST2 .MC2DEP2 -MC2D2CPY[ ]**FOUND  
11:35:58.58 BMC90023I BMC UTILITY DRIVER ENDED. RETURN CODE IS 0000  
11:35:58.58 LOG END
```

Decoding – Mapping Segment to Copybook

```
//DECODE EXEC PGM=DLIGENTR,REGION=0M,PARM='ULU,DBI'  
//STEPLIB DD DISP=SHR,DSN=BMCDBU.V51QA.SMPE.DBULIB  
// DD DISP=SHR,DSN=BNB.IMSVS.R15.SDFSRESL  
// DD DISP=SHR,DSN=DBU.QA.ALL.PASSWORD  
//SRCLIB DD DISP=SHR,DSN=MVSGLT1.XRF.IMPORT  
//IMS DD DISP=SHR,DSN=MVSGLT1.XRF.DBDLIB  
//DFSRESLB DD DISP=SHR,DSN=BNB.IMSVS.R15.SDFSRESL  
// DD DISP=SHR,DSN=IMSVS.R15M.SDFSRESL  
//IXPC1 DD DISP=SHR,DSN=MVSGLT1.XRF.COBOLLIB  
//IXPFD DD DISP=SHR,DSN=MVSGLT1.XRF.XREFC  
//XREFCTL DD * (COLUMNS DON'T MATTER, ONLY SPACES)  
    MAP MATST2 MA2ROOT MA2RC1  
    MAP MATST2 MA2DEP1 MA2D1C1  
    MAP MATST2 MA2DEP2 MA2D2C1  
//BMCTRACE DD SYSOUT=*  
//BMCMSG DD DISP=SHR,DSN=MVSGLT1.XRF.BMCMSG(#IMP02)  
//BMCPRI NT DD SYSOUT=*  
//DBDOUT DD SYSOUT=*  
//SYSUDUMP DD SYSOUT=*  
//PLUSIN DD *  
DECODE DBD(MATST2) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE)
```

```
11:35:33.51 LOG START  
11:35:33.54 BMC90022I BMC UTILITY DRIVER STARTED  
11:35:33.55 LISTING OF 'PLUSIN ' CONTROL STATEMENTS:  
11:35:33.55 -----1-----2-----3-----4-----5-----6-----7-----8 REC CMD  
11:35:33.55 DECODE DBD(MATST2) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE) 00460008 001 001  
11:35:33.55 DATA SET CONTAINS 0001 RECORDS  
11:35:33.58 BMC90026I IMS 15.5  
11:35:34.19 BMC90000I CPYBOOK: MATST2 .MA2ROOT -MA2RC1 [ ]**FOUND  
11:35:34.49 BMC90000I CPYBOOK: MATST2 .MA2DEP1 -MA2D1C1 [ ]**FOUND  
11:35:34.69 BMC90000I CPYBOOK: MATST2 .MA2DEP2 -MA2D2C1 [ ]**FOUND  
11:35:34.93 BMC90023I BMC UTILITY DRIVER ENDED. RETURN CODE IS 0000  
11:35:34.93 LOG END
```

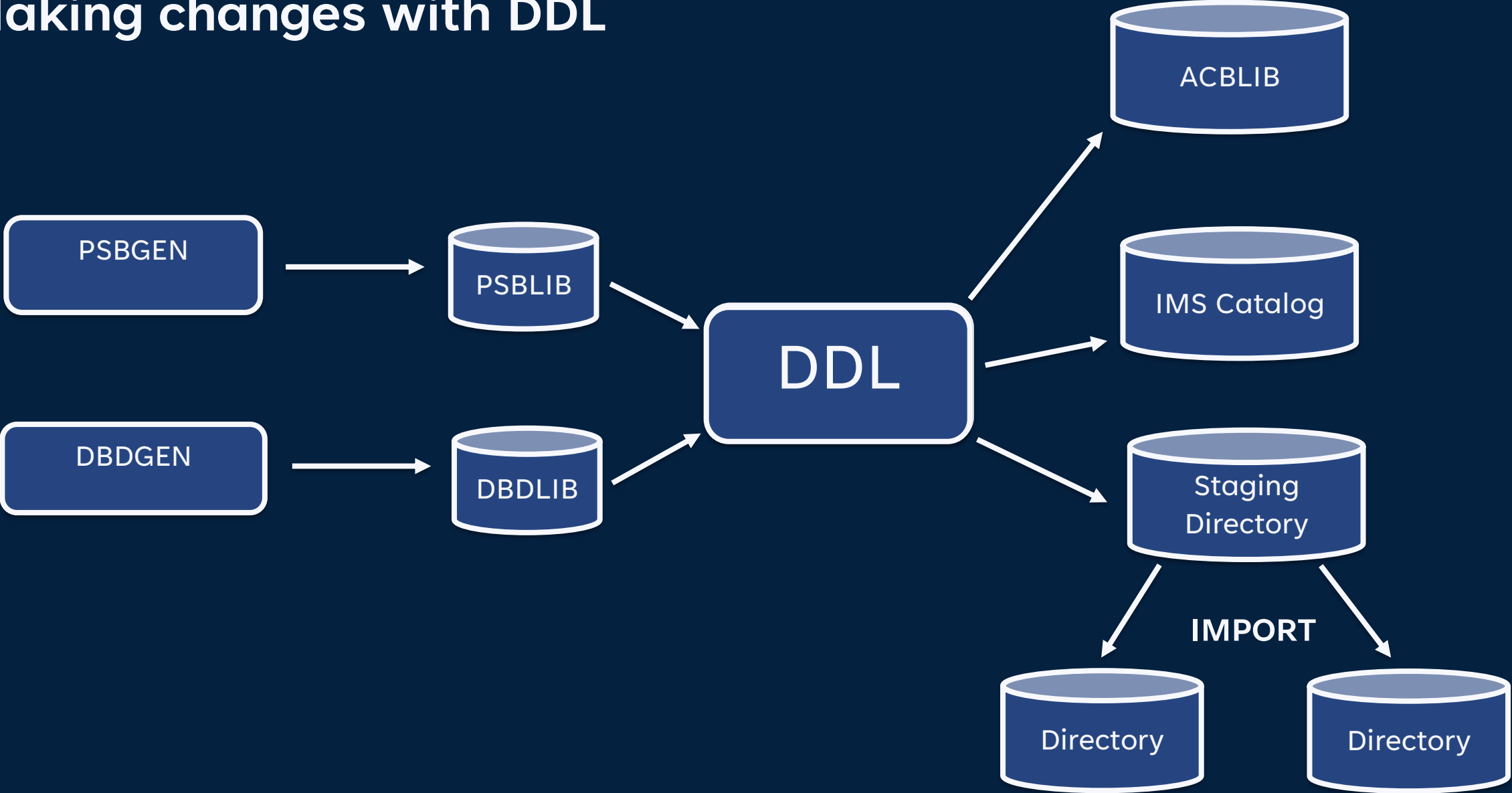
Decoding – Using all together

```
//DECODE EXEC PGM=DLIGENTR,REGION=0M,PARM='ULU,DBI'  
//STEPLIB DD DISP=SHR,DSN=BMCDBU.V51QA.SMPE.DBULIB  
// DD DISP=SHR,DSN=IMSVS.R15M.SDFSRESL  
// DD DISP=SHR,DSN=DBU.QA.ALL.PASSWORD  
// DD DISP=SHR,DSN=CSGI.CPWR.FILEAID.SXVJLOAD  
// DD DISP=SHR,DSN=CSGI.CPWR.FILEAID.CXVJLOAD  
//SRCLIB DD DISP=SHR,DSN=MVSGLT1.XRF.IMPORT  
//IMS DD DISP=SHR,DSN=MVSGLT1.XRF.DBDLIB  
//DFSRESLB DD DISP=SHR,DSN=BNB.IMSVS.R15.SDFSRESL  
// DD DISP=SHR,DSN=IMSVS.R15M.SDFSRESL  
//IXPC1 DD DISP=SHR,DSN=MVSGLT1.XRF.COBOLLIB  
//IXPFD DD DISP=SHR,DSN=MVSGLT1.XRF.XREFC  
//* MCTSTX IS A COMBINED XREF THAT HAS BOTH MCTST1 AND MCTST2 DBDS  
//XREFCTL DD *  
XREF MCTST1 MCTSTX  
XREF MCTST2 MCTSTX  
//BMCTRACE DD SYSOUT=*  
//BMCMSG DD DISP=SHR,DSN=MVSGLT1.XRF.BMCMSG(#IMP04)  
//BMCPRINT DD SYSOUT=*  
//PLUSIN DD *  
DECODE DBD(MCTST*) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE)
```

```
11:36:21.88 DECODE DBD(MCTST*) SOURCE(IMS) IMPORT(Y) ONEXIST(UPDATE) 00210000 001 001  
11:36:21.88 DATA SET CONTAINS 0001 RECORDS  
11:36:21.91 BMC90026I IMS 15.5  
11:36:22.37 BMC90000I CPYBOOK: MCTST1 .MC1ROOT -MC1RCPY [ ]**FOUND  
11:36:22.62 BMC90000I CPYBOOK: MCTST1 .MC1DEP1 -MC1DEP1 [ ]**FOUND  
11:36:22.80 BMC90000I CPYBOOK: MCTST1 .MC1DEP2 -MC1DEP2 [ ]**FOUND  
11:36:23.09 BMC90000I CPYBOOK: MCTST2 .MC2ROOT -MC2RC1 [ ]**FOUND  
11:36:23.31 BMC90000I CPYBOOK: MCTST2 .MC2ROOT -MC2RC2 [ ]**FOUND  
11:36:23.53 BMC90000I CPYBOOK: MCTST2 .MC2ROOT -MC2RC3 [ ]**FOUND  
11:36:23.75 BMC90000I CPYBOOK: MCTST2 .MC2DEP1 -MC2D1C1 [ ]**FOUND  
11:36:23.93 BMC90000I CPYBOOK: MCTST2 .MC2DEP1 -MC2D1C2 [ ]**FOUND  
11:36:24.15 BMC90000I CPYBOOK: MCTST2 .MC2DEP1 -MC2D1C3 [ ]**FOUND  
11:36:24.36 BMC90000I CPYBOOK: MCTST2 .MC2DEP2 -MC2D2C3 [ ]**FOUND  
11:36:24.55 BMC90000I CPYBOOK: MCTST2 .MC2DEP2 -MC2D2C1 [ ]**FOUND  
11:36:24.71 BMC90000I CPYBOOK: MCTST2 .MC2DEP2 -MC2D2C2 [ ]**FOUND  
11:36:24.97 BMC90023I BMC UTILITY DRIVER ENDED. RETURN CODE IS 0000  
11:36:24.97 LOG END
```

DDL – The Next Generation

Making changes with DDL



Before and After - DBD

DBD	NAME=B1FVDP,	X	CREATE DATABASE B1FVDP ACCESS HDAM VSAM
	ACCESS=(HDAM,VSAM),	X	VERSION '09/25/2410.03'
	RMNAME=(DFSHDC40,8,64,),	X	RMNAME(DFSHDC40 RMANCH 8 RMRBN 64);
	VERSION='09/25/2410.03'		
*			
DSG1	DATASET DD1=B1DDN,DEVICE=3390,	X	CREATE TABLESPACE B1DDN IN B1FVDP SIZE
	,SIZE=4096		PRIMARY 4096;
*			
	SEGM NAME=SEGO,	X	CREATE TABLE SEGO (
	BYTES=256,	X	KEY0 CHAR(8) START 1 TYPE X INTERNALNAME
	PARENT=0		KEY0 PRIMARY KEY
	FIELD BYTES=8,	X)
	START=1,	X	MAXBYTES 256 TWIN INTERNALNAME SEGO IN
	TYPE=X,	X	B1FVDP.B1DDN;
	NAME=(KEY0,SEQ,U)		

Before and After - PSB

```
PCB TYPE=DB,DBDNAME=GLT01D,KEYLEN=51,PROCOPT=A,      X
    PCBNAME=A1
    SENSEG NAME=PROOT,PARENT=0
    SENSEG NAME=PLVL2,PARENT=PROOT
    SENSEG NAME=PLVL3,PARENT=PLVL2
*
PCB TYPE=DB,DBDNAME=GLT01D,KEYLEN=51,PROCOPT=A,
X
    PCBNAME=B1
    SENSEG NAME=PROOT,PARENT=0
    SENSEG NAME=PLVL2,PARENT=PROOT
    SENSEG NAME=PLVL3,PARENT=PLVL2
*
PSBGEN
PSBNAME=GLT01P,LANG=COBOL,CMPAT=YES,SSASIZE=840,    X
    IOASIZE=600
END
```

```
CREATE PROGRAMVIEW GLT01P (
    CREATE SCHEMA DB A1 USING GLT01D AS PCB_A1_A
    (CREATE SENSEGVIEW PROOT WITH PROCOPT
'A',CREATE SENSEGVIEW
    PLVL2 WITH PROCOPT 'A',CREATE SENSEGVIEW PLVL3
WITH PROCOPT 'A' )
    PROCOPT 'A',

    CREATE SCHEMA DB B1 USING GLT01D AS PCB_B1_A
    (CREATE SENSEGVIEW PROOT WITH PROCOPT
'A',CREATE SENSEGVIEW
    PLVL2 WITH PROCOPT 'A',CREATE SENSEGVIEW PLVL3
WITH PROCOPT 'A' )
    PROCOPT 'A')
    IOASIZE 600 SSASIZE 840 CMPATYES LANGASSEM ;
```

Executing DDL

- Can't use SPUFI – SQL Processing Using File Input
- SQL Batch – requires ODBM
- zDDL – native IMS DDL calls – DFS3ID00 – Data Definition Utility
- IMS supports the standard CREATE, ALTER, and DROP DDL statements to create, modify, and delete IMS databases and program views.

SQL Batch

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
EDIT      MVSGLT1.GT15.JCL(SQL2) - 01.06      Columns 00001 00080
Command ==>                               Scroll ==> CSR
***** ***** Top of Data *****
000001 //GT15SQLJ JOB (5810), 'SQL JOB',CLASS=A,MSGCLASS=X,
000002 //          NOTIFY=&SYSUID,REGION=0M
000003 //*-----
000004 //*  SQL BATCH UTILITY
000005 //*-----
000006 //          EXPORT SYMLIST=*
000007 // SET P1='com.ibm.ims.jdbc.batch.BatchUtil'
000008 //*
000009 //DDLSQL EXEC PGM=JVMLDM80,REGION=0M,PARM='/ &P1'
000010 //STEPLIB DD DISP=SHR,DSN=SYS1.SIEALNKE
000011 // DD DISP=SHR,DSN=CEE.SCEERUN
000012 //SYSPRINT DD SYSOUT=*
000013 //SYSOUT DD SYSOUT=*
000014 //STDERR DD SYSOUT=*
000015 //STDOUT DD SYSOUT=*
000016 //IMSSQL DD *,SYMBOLS=JCLONLY
000017 CONNECT jdbc:ims://sysp:8435/DFSCP001;
000018 DROP PROGRAMVIEW C1PSBA IF EXISTS;
000019 COMMIT DDL;
000020 DISCONNECT;
000021 //STDENV DD DISP=SHR,DSN=MVSGLT1.GT15.PROCLIB($$ENV)
```

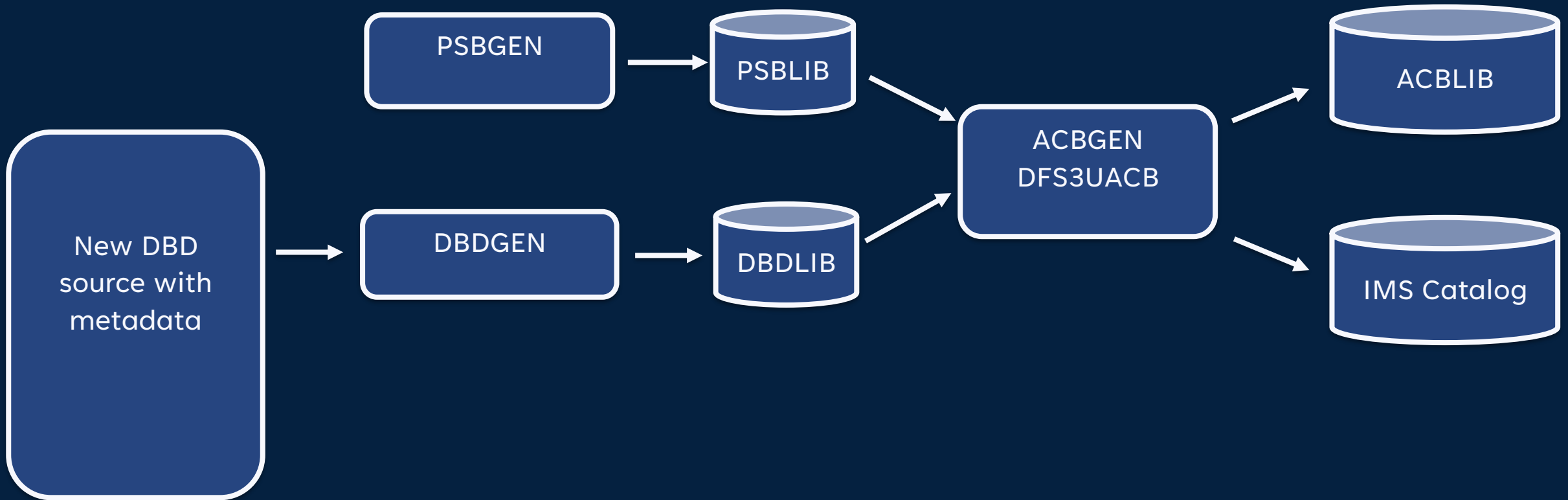
IMS Data Definition utility (DFS3ID00)

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          MVSGLT1.GT15.JCL(ZDDLJOB) - 01.04          Columns 00001 00080
Command ==>                                         Scroll ==> CSR
***** Top of Data *****
000001 //GT15ZDDL JOB (5810), 'TURNER',MSGCLASS=X,
000002 //          NOTIFY=&SYSUID,
000003 //          CLASS=A,REGION=0M
000004 //*
000005 //*      SAMPLE ZDDL BATCH UTILITY
000006 //*
000007 //BMP      EXEC  PGM=DFS3ID00,
000008 //          PARM=(BMP,DFS3ID00,DFSCP001,,,,,,,,,GT15,,,,,)
000009 //*
000010 //STEPLIB DD  DSN=MVSGLT1.GT15.SDFSRESL,DISP=SHR
000011 //          DD  DSN=MVSGLT1.GT15.DYNLIB,DISP=SHR
000012 //DFSRESLB DD  DSN=MVSGLT1.GT15.SDFSRESL,DISP=SHR
000013 //PROCLIB DD  DSN=MVSGLT1.GT15.PROCLIB,DISP=SHR
000014 //SYSPRINT DD  SYSOUT=*
000015 //IMSSQL   DD  *
000016 DROP PROGRAMVIEW C1PSBA IF EXISTS;
000017 DROP DATABASE C1FVDP IF EXISTS;
000018 COMMIT DDL;
000019 //
***** Bottom of Data *****
```

—

DEMO

Populating IMS Catalog with metadata





Guided SPUFI: Making SQL simple for IMS Dinosaurs!



Gary Turner

IMS Solution Engineer

What is SPUFI?

SPUFI – SQL Processor Using File Input

- **Build and execute SQL commands interactively**
- **View the results immediately**
- **Uses IMS Connect and ODBM**
- **SQL Interface provided with Command Center**

SPUFI - Original

BMC AMI Database Management

Welcome | IMS | Jobs | Data Sets | Catalog Manager

+ IMS SQL Processor | New Tab X

Catalog Manager for IMS

Environment Explorer
View your RECONS, IMS subsystems, and IMSPLEXes.

Catalog Viewer
View the contents of an IMS Catalog

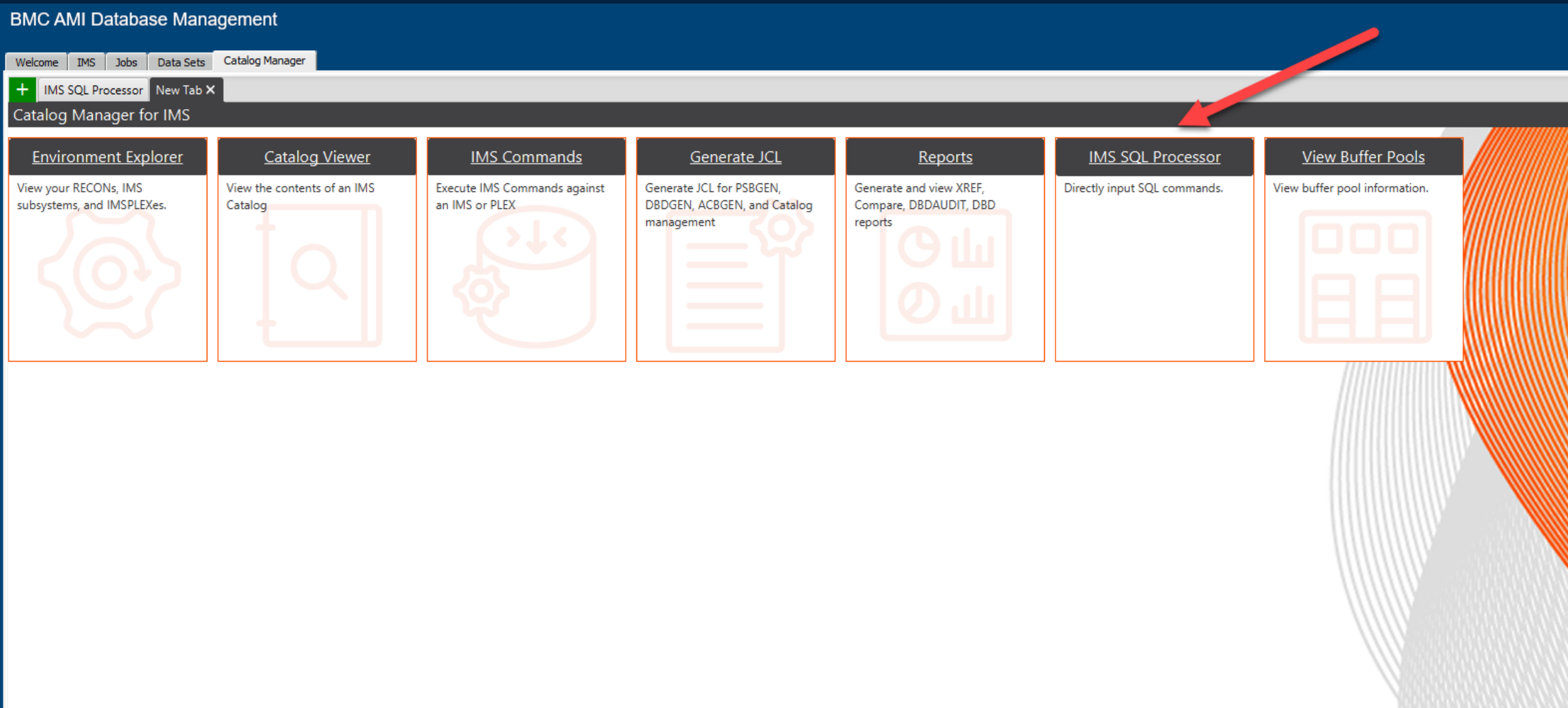
IMS Commands
Execute IMS Commands against an IMS or PLEX

Generate JCL
Generate JCL for PSBGEN, DBDGEN, ACBGEN, and Catalog management

Reports
Generate and view XREF, Compare, DBDAUDIT, DBD reports

IMS SQL Processor
Directly input SQL commands.

View Buffer Pools
View buffer pool information.

The image shows a screenshot of the BMC AMI Database Management web interface. At the top, there is a navigation bar with tabs for 'Welcome', 'IMS', 'Jobs', 'Data Sets', and 'Catalog Manager'. Below this is a browser-like tab bar with a green plus icon, a tab labeled 'IMS SQL Processor', and a 'New Tab X' button. The main content area is titled 'Catalog Manager for IMS' and contains seven functional tiles. A red arrow points to the 'IMS SQL Processor' tile, which is the focus of the slide. The tiles are: 'Environment Explorer' (gear icon), 'Catalog Viewer' (book with magnifying glass icon), 'IMS Commands' (cylinder with gear icon), 'Generate JCL' (document with gear icon), 'Reports' (document with clock icon), 'IMS SQL Processor' (empty text area), and 'View Buffer Pools' (table icon). The interface has a dark blue header and a light gray background with orange accents.

SPUFI - Original

BMC AMI Database Management

Welcome IMS Jobs Data Sets Catalog Manager

IMS SQL Processor X New Tab

Catalog Manager for IMS

IMS PLEX: IMSPL IMS Alias: IBPL ODBM Port: 8432 PSB Name: DFSCP001 Total row to fetch in SELECT query:

SQL Query:

```
SELECT HEADER.ACTTS, HEADER.IMSNAME, HEADER.LEN, HEADER.RHDRSEQ, DBD.CATVERS, DBD.RMNAME, DBD.TSVERS FROM HEADER,DBD
```

Run Clear Abort

Messages:



Severity	Time	Message







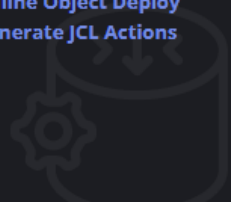

Tab 1 X

Export...

ACTTS	IMSNAME	LEN	RHDRSEQ	CATVERS	RMNAME	TSVERS	
0x25028F11271920	CUSTHDAM	200	DBD CUSTHDAM	0	DFSHDC40	2502811271920	
0x25028F11271920	CUSTHIDM	200	DBD CUSTHIDM	0		2502811271920	
0x25028F11271920	CUSTHISM	200	DBD CUSTHISM	0		2502811271920	
0x25028F11271920	CUSTINDX	200	DBD CUSTINDX	0		2502811271920	
0x0000000000000000	DBFSAMD1	200	DBD DBFSAMD1	0		1816608331261	
0x0000000000000000	DBFSAMD2	200	DBD DBFSAMD2	0		1816608331261	

SPUFI

 **New Tab** 

Diagnose/Explore 	Tune 	Implement 	Config 
<ul style="list-style-type: none">Environment ExplorerData ExplorerDBD Schema EditorPSB Schema EditorSPUFIDatabase Integrity ReportsCatalog Explorer 	<ul style="list-style-type: none">Buffer Pool Editor 	<ul style="list-style-type: none">IMS CommandsOnline Object DeployGenerate JCL Actions 	<ul style="list-style-type: none">Maintain Migration Groups 

IMS Connect

Establish connection to IMS Connect for SQL calls ✕

IMS Connect not connected, Please connect!

[↻ Refresh](#)

ODBM (IMS Connect): (required)

S0W1:8432 (BMC1HWS) ▾

ALIAS: (required)

BMC1 ▾

PSB: (required)

GLT01P ✕

User Name (required)

mvsglt1

Password (required)

.....

Connect Close

SQL Editor

bmc AMI Command Center for IMS Database Management Console BMC AMI Command Center for DB2 Connection List

[Change Manager for IMS](#) [Database Advisor for IMS](#) [System Administration for IMS](#)

Projects **Apps**

+ SPUI ×

S0W1:8432 (BMC1HWS) | BMC1 | GLT01P Connected [Edit Connection](#)

SQL Editor SQL Generator History **Result** ×

Query Info

ODBM
S0W1:8432 (BMC1HWS)
ALIAS
BMC1
PSB
GLT01P
SQL
SELECT A1.PROOT.DESC_COL, A1.PROOT.PROOTK FROM A1.PROOT

Export

desc_col ↑↓	prootk ↑↓
RECEPTION CHAIR	4676465
COPY MACHINE	1922462
TAPE DISPENSER	1041227
PLASTIC KNIVES	4822855
3420 BLANK TAPES	3172332

SQL Generator

The screenshot displays the BMC SQL Generator interface. At the top, the navigation bar includes the BMC logo, 'AMI Command Center for IMS', and links for 'Database Management Console', 'BMC AMI Command Center for DB2', and 'Connection List'. Below this, there are links for 'Change Manager for IMS', 'Database Advisor for IMS', and 'System Administration for IMS'. The main interface is divided into 'Projects' and 'Apps' tabs. Under 'Apps', there is a '+ SPUFI x' button. Below that, connection details for 'S0W1:8432 (BMC1HWS) | BMC1 | GLT01P' are shown, with a 'Connected' status and an 'Edit Connection' link. The 'SQL Editor' section has tabs for 'SQL Editor', 'SQL Generator' (which is active), and 'History'. The 'SQL Generator' section contains three dropdown menus: 'Select PCB:' (set to 'A1'), 'Select Table:' (set to 'A1.PROOT'), and 'Select Fields:' (set to 'PROOTK, DESC_COL'). Below these is a 'Selected fields' section with two items: 'A1.PROOT.DESC_COL x' and 'A1.PROOT.PROOTK x'. The 'SQL Query' section displays the generated query: 'SELECT A1.PROOT.DESC_COL, A1.PROOT.PROOTK FROM A1.PROOT'. A 'Copy to Editor' button is located below the query.

History

+ SPUFI ×

S0W1:8432 (BMC1HWS) | BMC1 | GLT01P Connected [Edit Connection](#)

[EDIT query Criteria](#)

▶ Recently executed Query

📄 Saved Query

🔄 Run [Delete](#)

	SQL query	Edit
<input type="checkbox"/>	SELECT A1.PROOT.DESC_COL, A1.PROOT.PROOTK FROM A1.PROOT	/
<input type="checkbox"/>	SELECT A1.PROOT.DESC_COL, A1.PROOT.PROOTK FROM A1.PROOT WHERE A1.PROOT.PROOTK > '4766465'	/
<input type="checkbox"/>	SELECT A1.PLV2.PLV2K FROM A1.PLV2	/

—

DEMO

Summary

- **Minimize the effort to add COPYBOOK information to DBD source**
- **Native to z/OS, no transferring files back/forth**
- **Several methods available for IMPORT**
- **Build correct SQL every time**
- **Support for DDL or GEN syntax**



Gary Turner
IMS Software Consultant



Thank You!