No Cost Way to Manage The IMS Catalog

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BMC Software

November 2018
Session HF

Abstract

The IMS Catalog has been around for a few releases, but is only recently getting attention from most IMS practitioners due to the IBM statement of direction that the IMS Catalog will be required in the future. Why should you use the catalog and how do you know what's in your catalog? Learn why you need to consider using the IMS catalog, the impact it is likely to have on your current processes and procedures and how the no-charge Catalog Manager for IMS offering from BMC can help you understand what is in your catalog, compare the catalog and ACBLIB and implement managed ACBs effectively.

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IBM Will Require the IMS Catalog

- **IMS 15 announcement - October 3, 2017**

  - "IBM intends to require **IMS management of ACBs** in the future.

  - **IMS and the IMS catalog must be set up to support ACB management.** IMS provides a utility for this.

  - After the requirement for IMS-managed ACBs is in place, IBM also intends to remove the generation processes for PSBLIB, DBDLIB, and ACBLIB. At that time, the IMS catalog, SQL, and DDL become the interface to IMS database management."

Why should you use the IMS Catalog?

- **Enables scalable and flexible IMS Open Database solutions**
  - Main purpose: Allow direct access to IMS databases from Java
  - Introduced the Single Source of Truth Concept with IMS v12

- **Natural next step for IMS Users with long-term IMS plans**

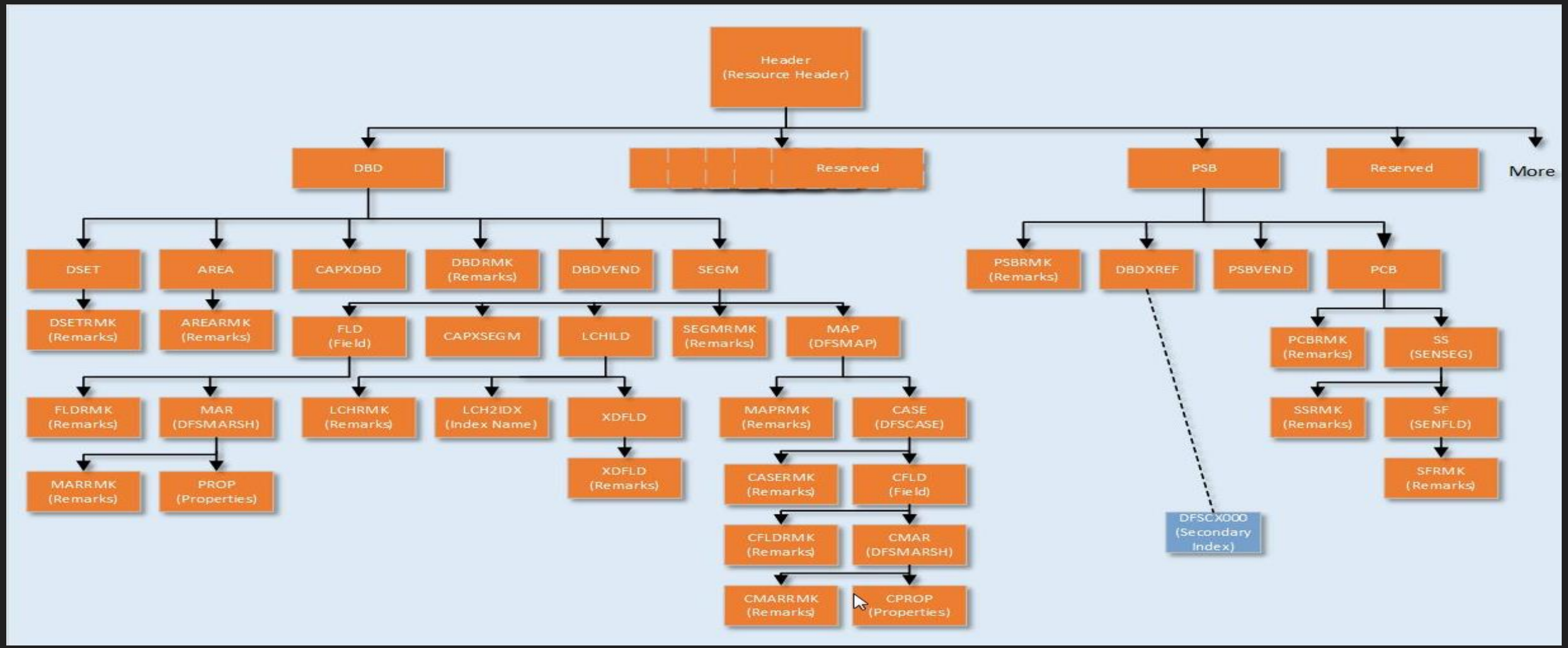
- **Provides a trusted online source for two types of metadata**
  - IMS Database
  - IMS Application

IMS Catalog Deployment Components

- **IMS Catalog database**
  - New repository for IMS application metadata
  - Data feed through catalog populate utility or DDL

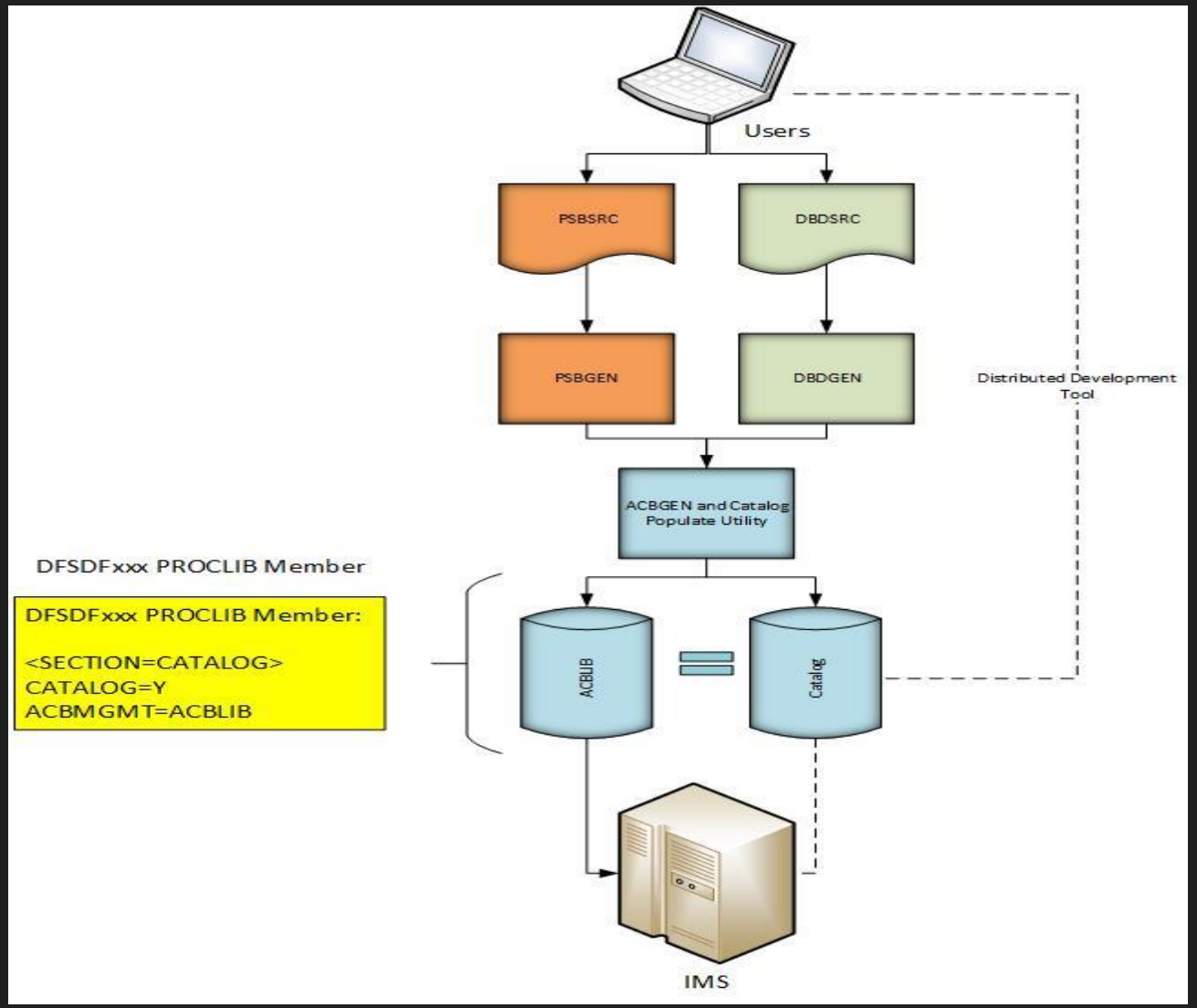
- **IMS-managed ACBs**
  - New process for building and managing IMS Data Management blocks (DMBs) and Application Control Blocks (ACBs)
  - IMS Directory
    - New component that replaces the ACBLIB
  - IMS type-2 command commits changes to IMS DMB and ACB content into IMS subsystems

IMS Catalog is a HALDB database



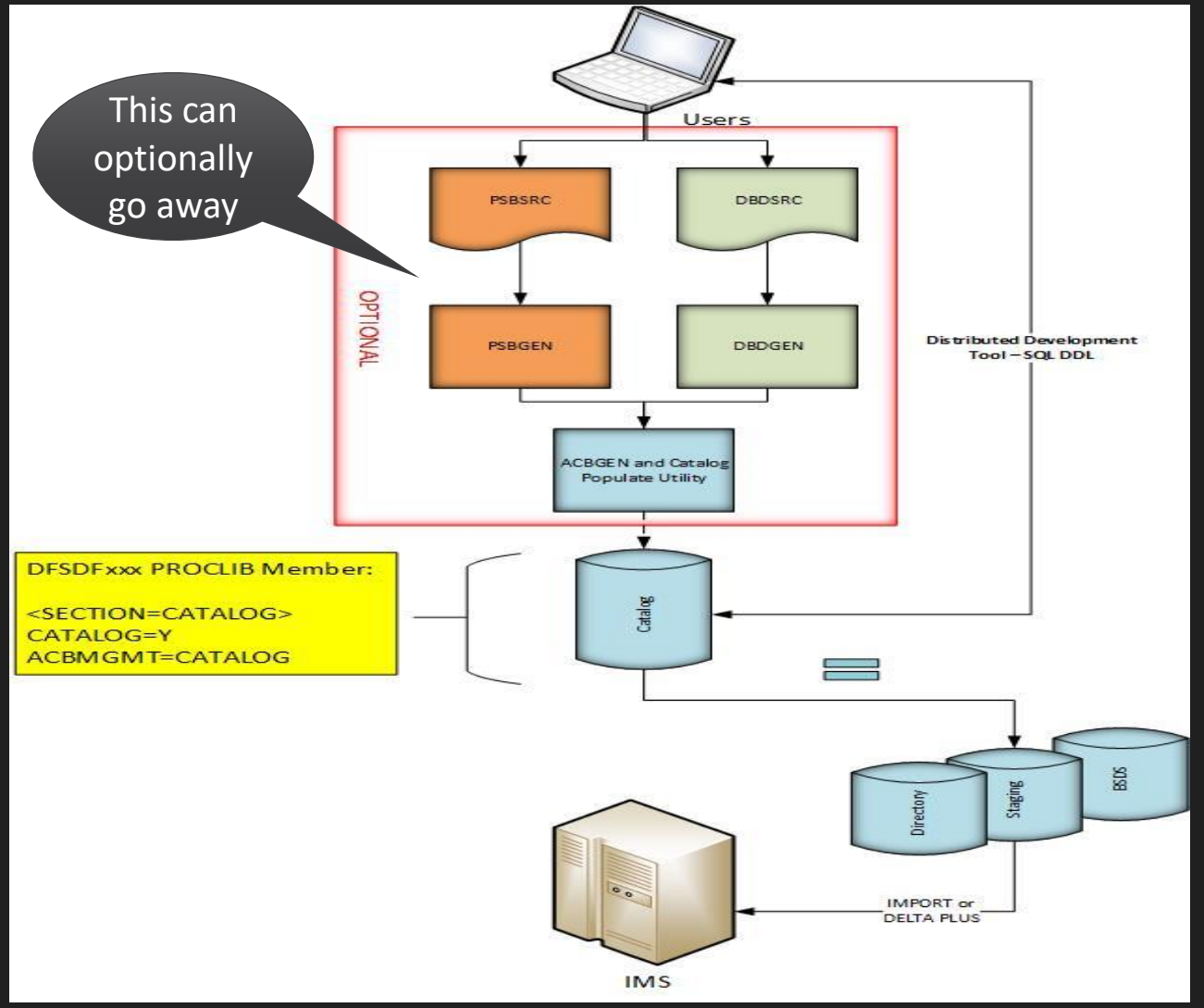
Using the Catalog Without IMS Managed ACB's

- Seen as an initial implementation approach
- Traditional DBD/PSB Gen Process
- New ACBGEN & Catalog Populate process
- Catalog must stay in sync with ACBLIB



Using the Catalog With IMS Managed ACB‘s

- Full Catalog Adoption
- DBD/PSB/ACB Gen‘s replaced by DDL
- Introduces the IMS Directory
- IMS type-2 IMPORT commands to commit changes to IMS
- DELTA PLUS to load ACB macros

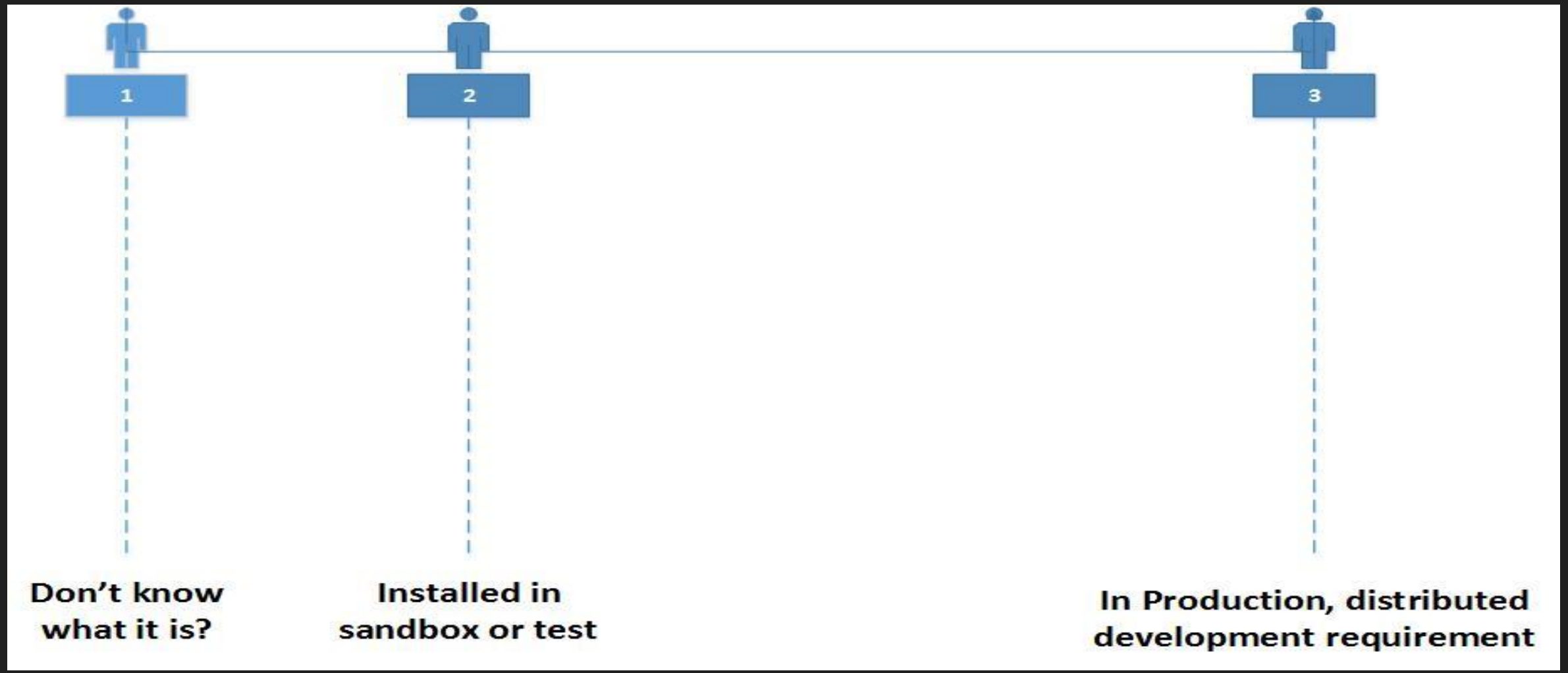


Risks Associated with the IMS Catalog

- Changes to stable IMS maintenance procedures
- Batch out of sync conditions
- Purge out of sync conditions
- Catalog size will increase significantly
- Data sharing and backup and recovery advantages concerns

BMC Is All About The Catalog

IMS Catalog User Status



How can I access the metadata? DLT0?

```
//SYSIN    DD *
O  LCASE=C
S1111 1 1 1   1DFSCAT00      AIB
L  U0001 GUR   HEADER  (RHDRSEQ ==DBD     CUSTHDAM)
L              DBD     (TSVERS  ==172320737561 9)
L  Z9999 DATA
```

Results are XML instance documents?

CALL=GUR SEG=DBD FIELD=TSVERS OPER=== VALUE=1723207375619)
337 276776 32323226 6 66 6324733332277 6 632767233
SEGMENT =(CF8_%065239?>D21E0205>3?49>7D23010472034/>4/%?>5D29532FE<ns2:dbd xmlns:ns2="http://www.ibm.com/ims/D)
(BD" dbdName="CUSTHDAM" timestamp="1723207375619" version="01/11/0012.22" xmlSchemaVersion="1"><acces)
(s dbType="HDAM"><hdam datxexit="N" password="N" osAccess="OSAM"><rmName name="DFSHDC40"><subOptions)
(anchorPoints="3" maxRBN="20" bytes="500"/></rmName><dataSetContainer><dataSet ddname="CUSTHDAM" lab)
(el="DSG1" searchA="0" scan="3"><size size="1690"/><frspc fspf="0" fbff="0"/></dataSet></dataSetConta)
(iner></hdam></access><hdam label="DSG1)
("><bytes maxBytes="30"/><rules insertionRule="L" deletionRule="L" replacementRule="L" insertionLocat)
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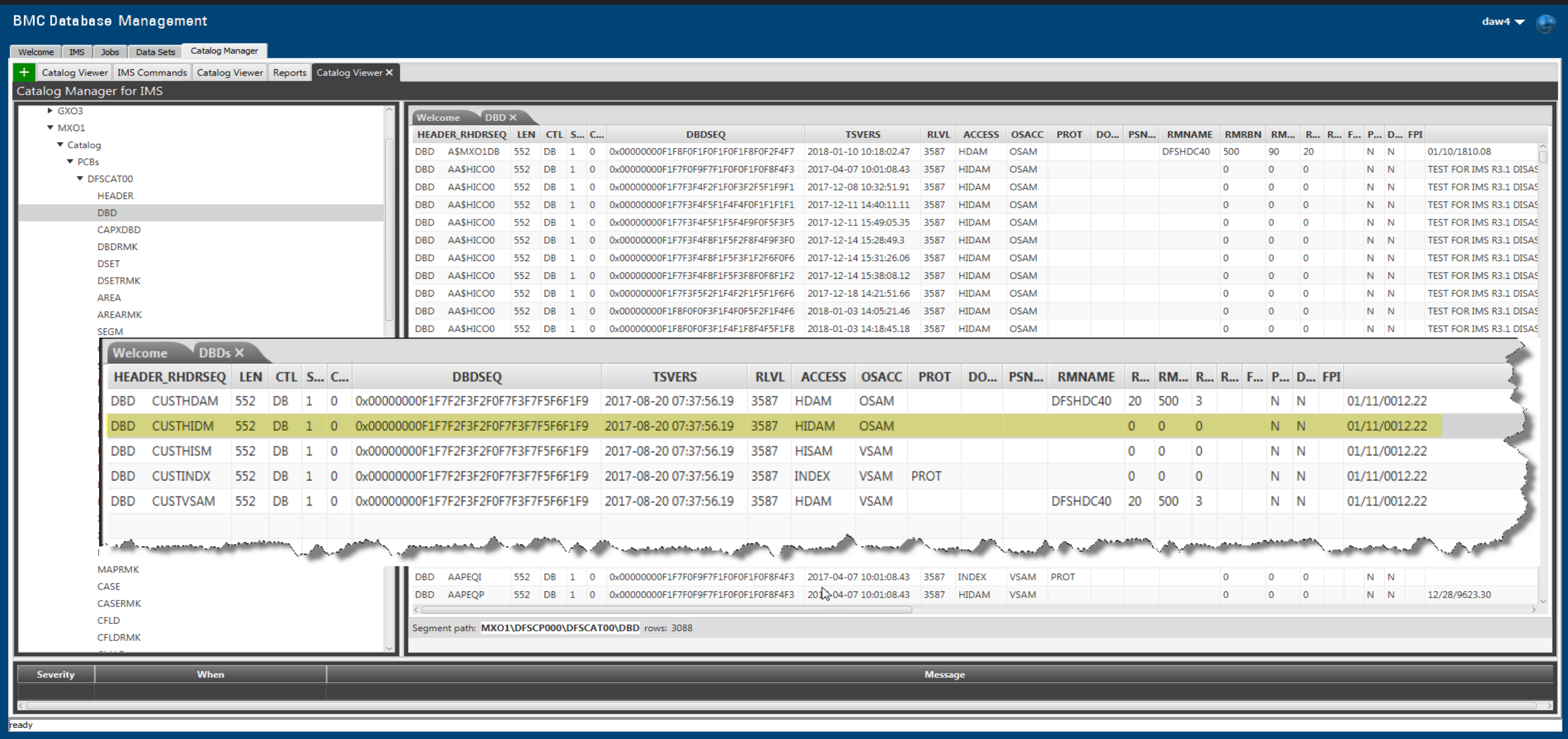
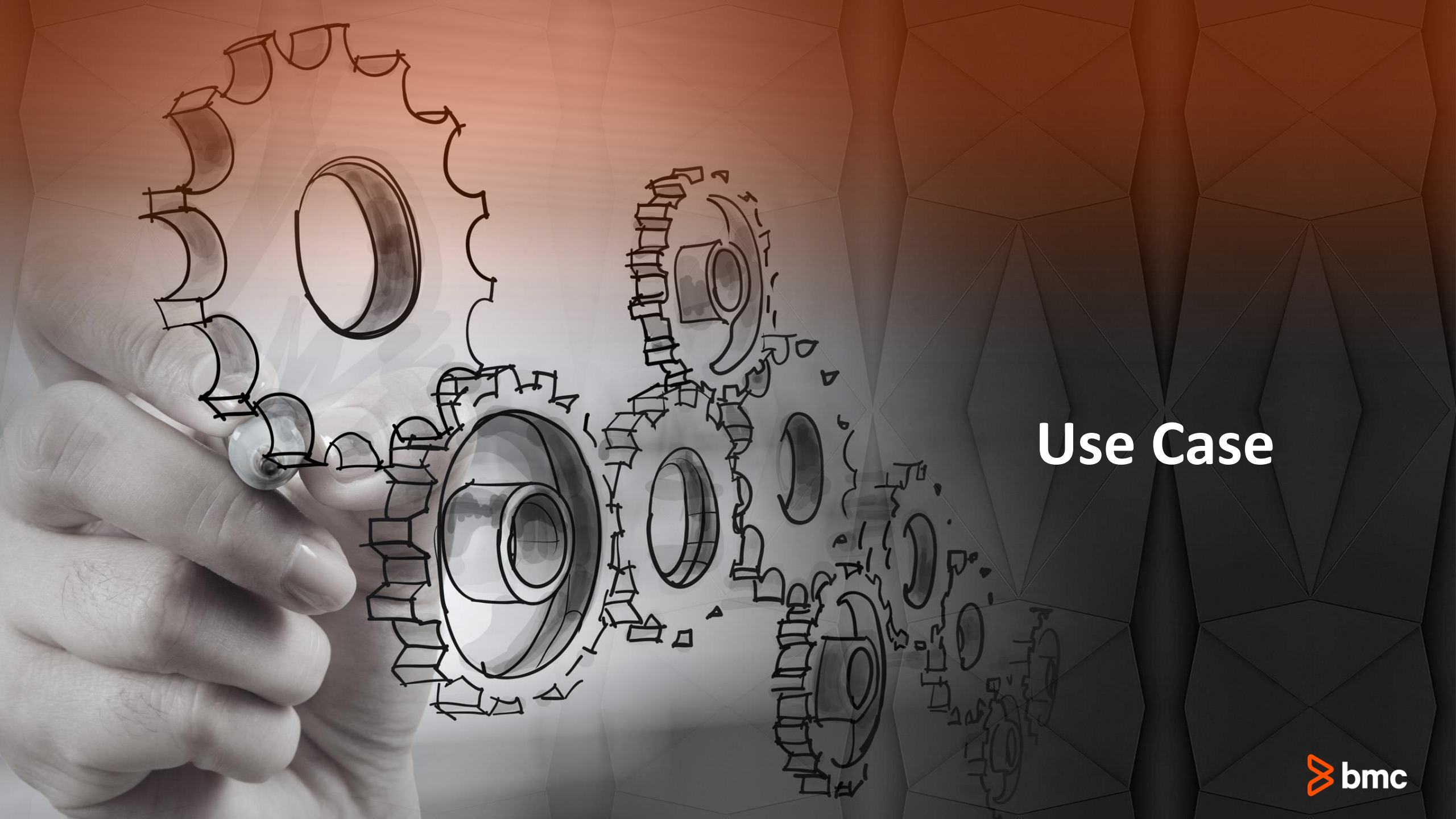
(<startPos>21</startPos><bytes>5</bytes><marshaller encoding="Cp1047"><typeConverter>CHAR</typeConver)

Catalog Viewer: Search Results



BMC Catalog Manager for IMS

- **Functional capabilities**
  - Catalog Viewer
  - IMS commands
  - Database Integrity Plus Catalog reports
  - JCL generator for PSBs, DBDs, ACBs
  - Environment Explorer



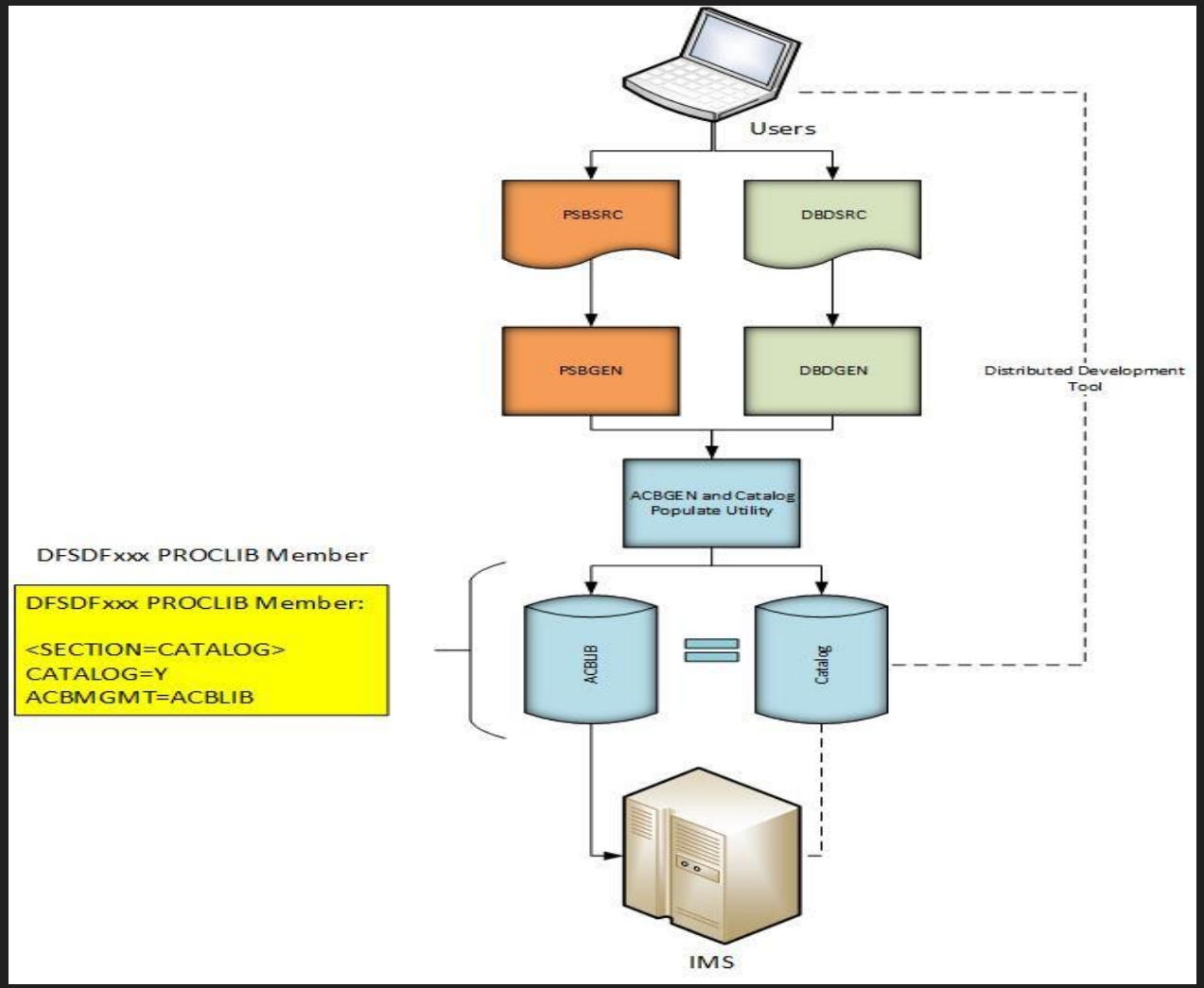
Use Case

Assume Catalog Implementation Without Managed ACB's

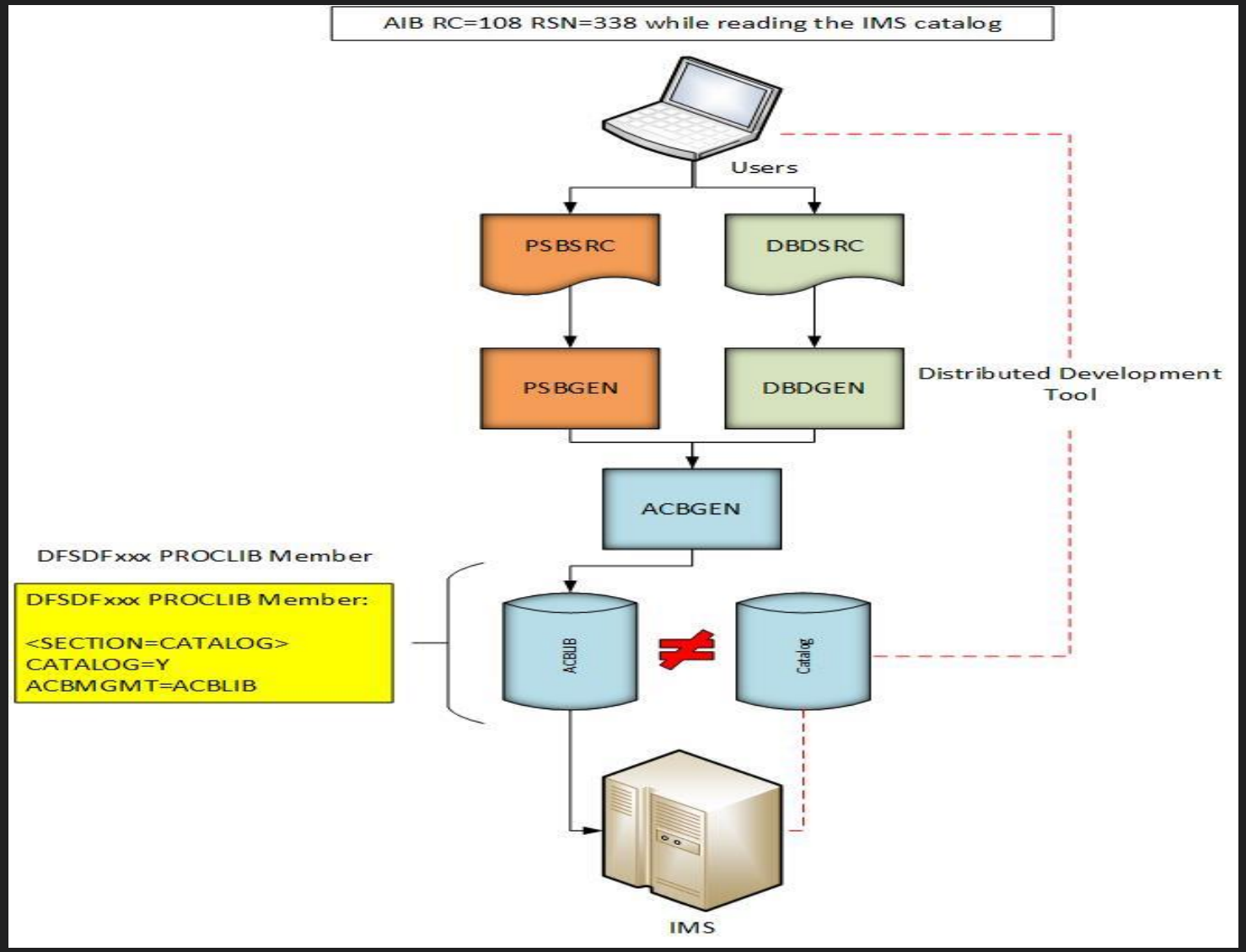
It's a new release weekend

You've made a change to a database

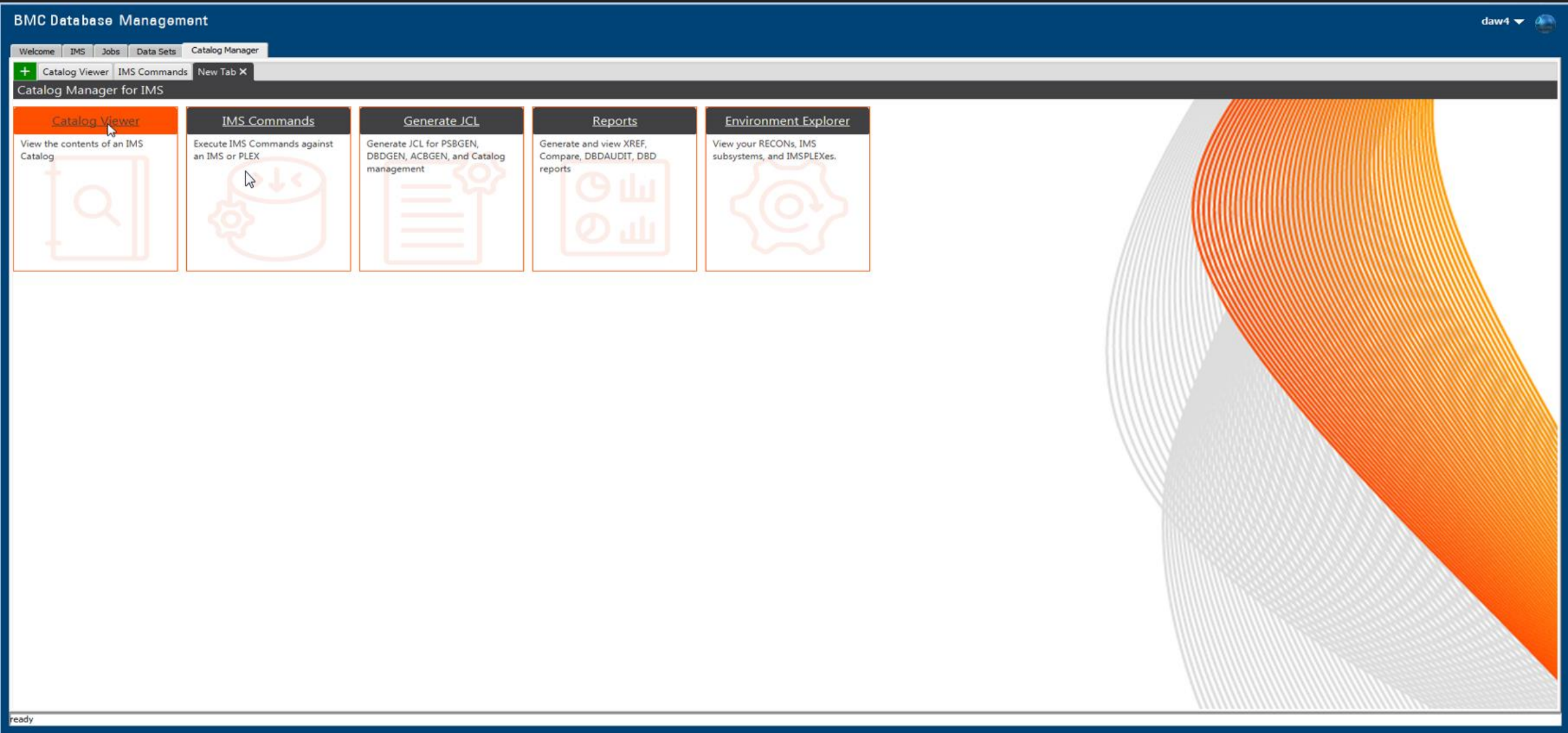
You want to verify everything is ready for Monday morning



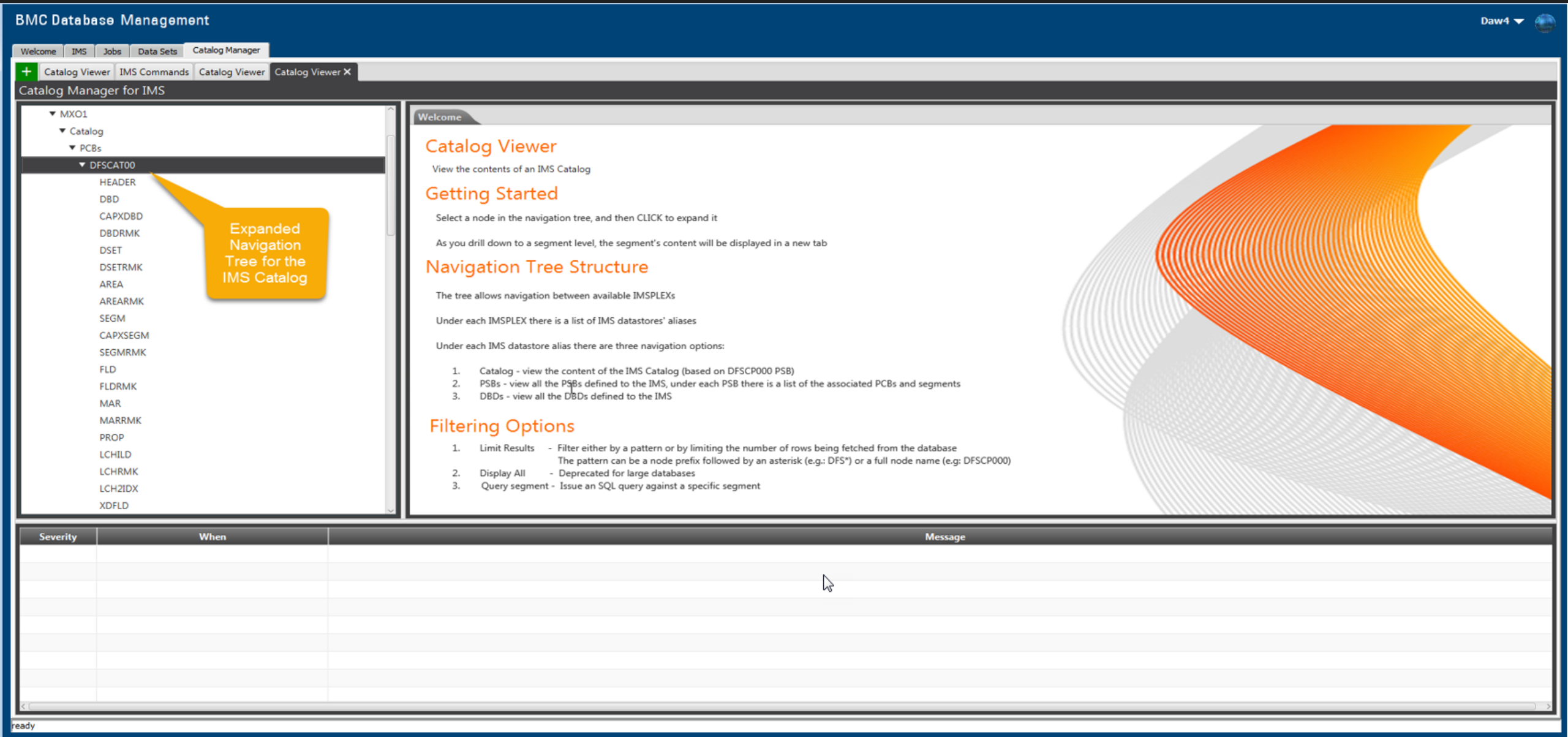
We want to make sure this doesn‘t happen



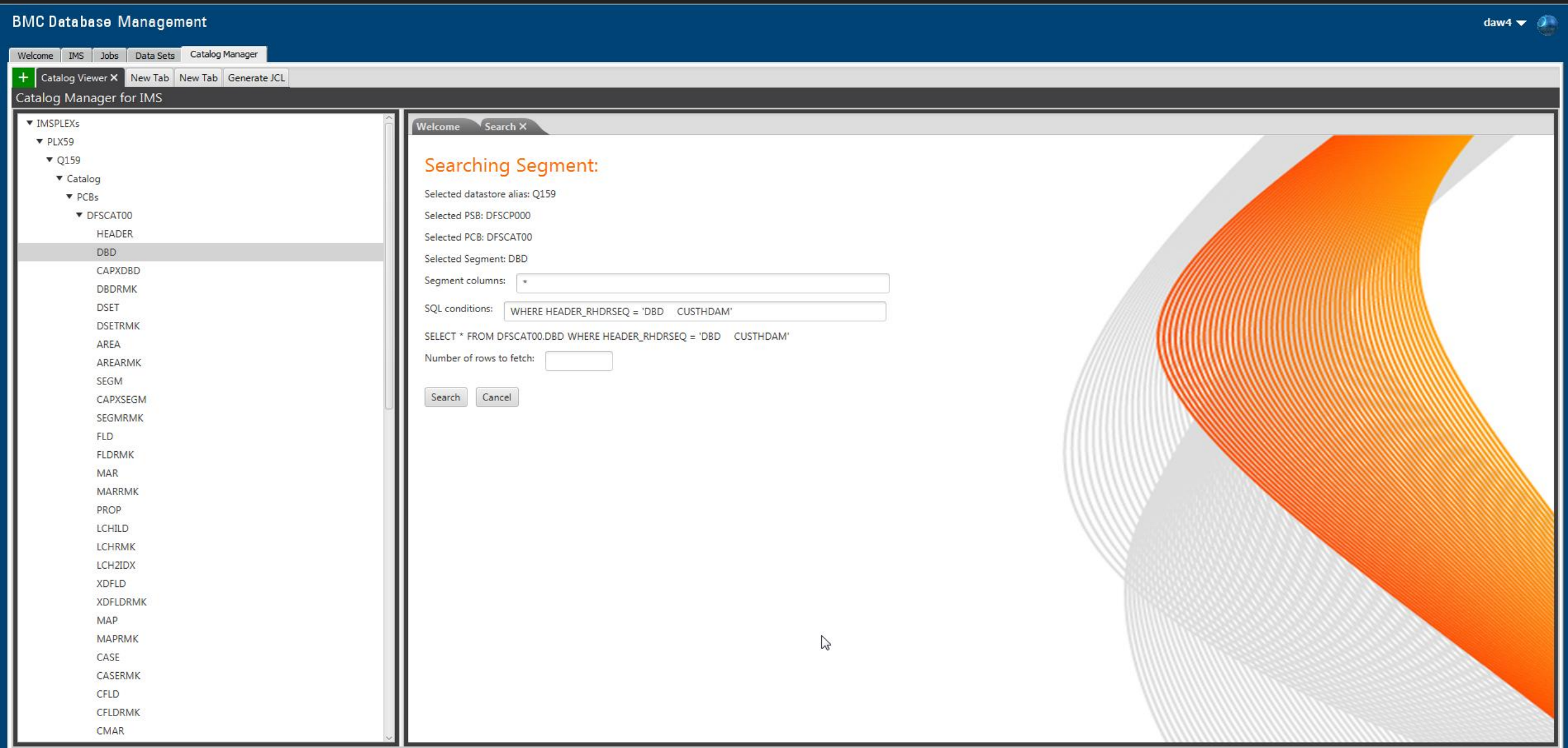
Quickly Access IMS Catalog Metadata



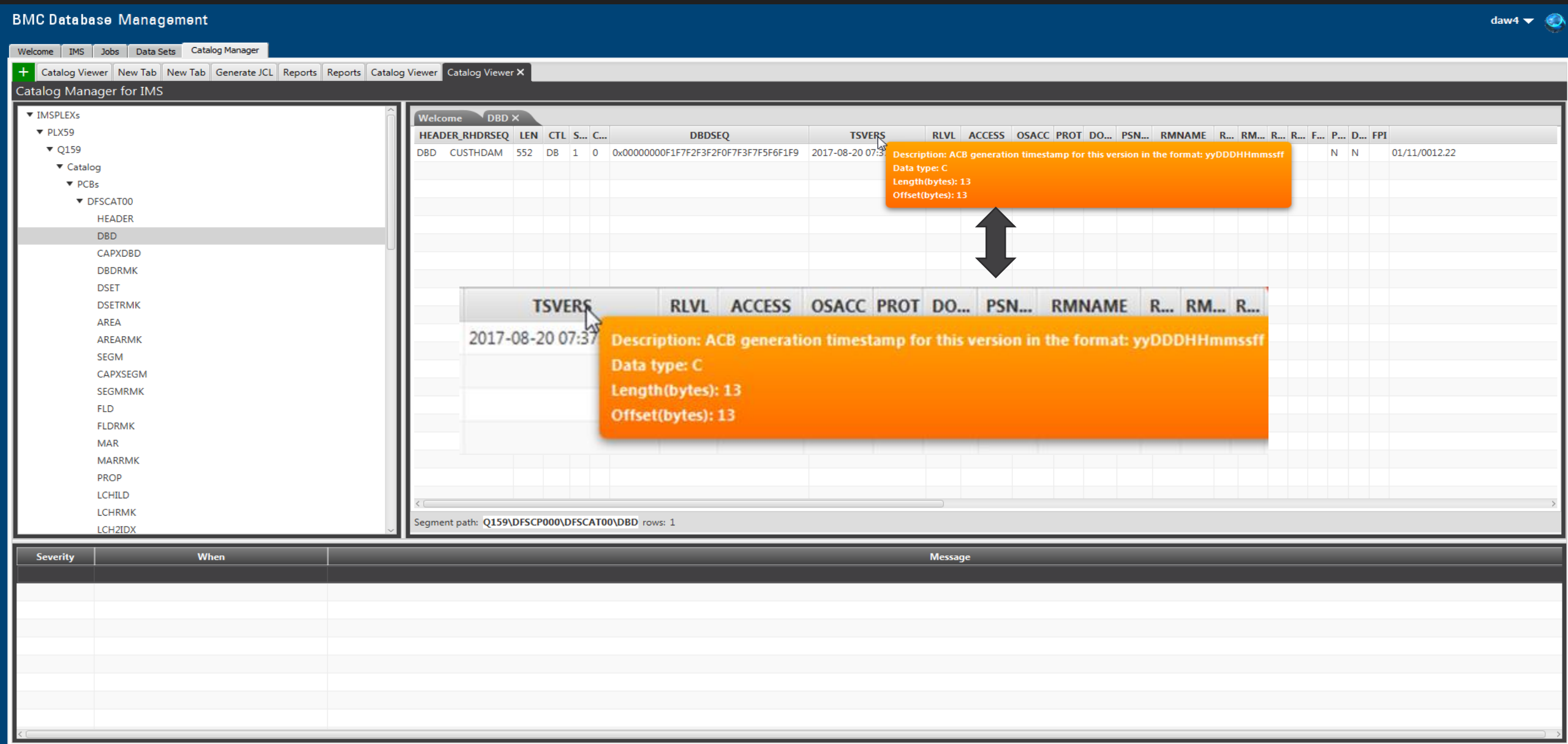
Expand the Navigation Tree



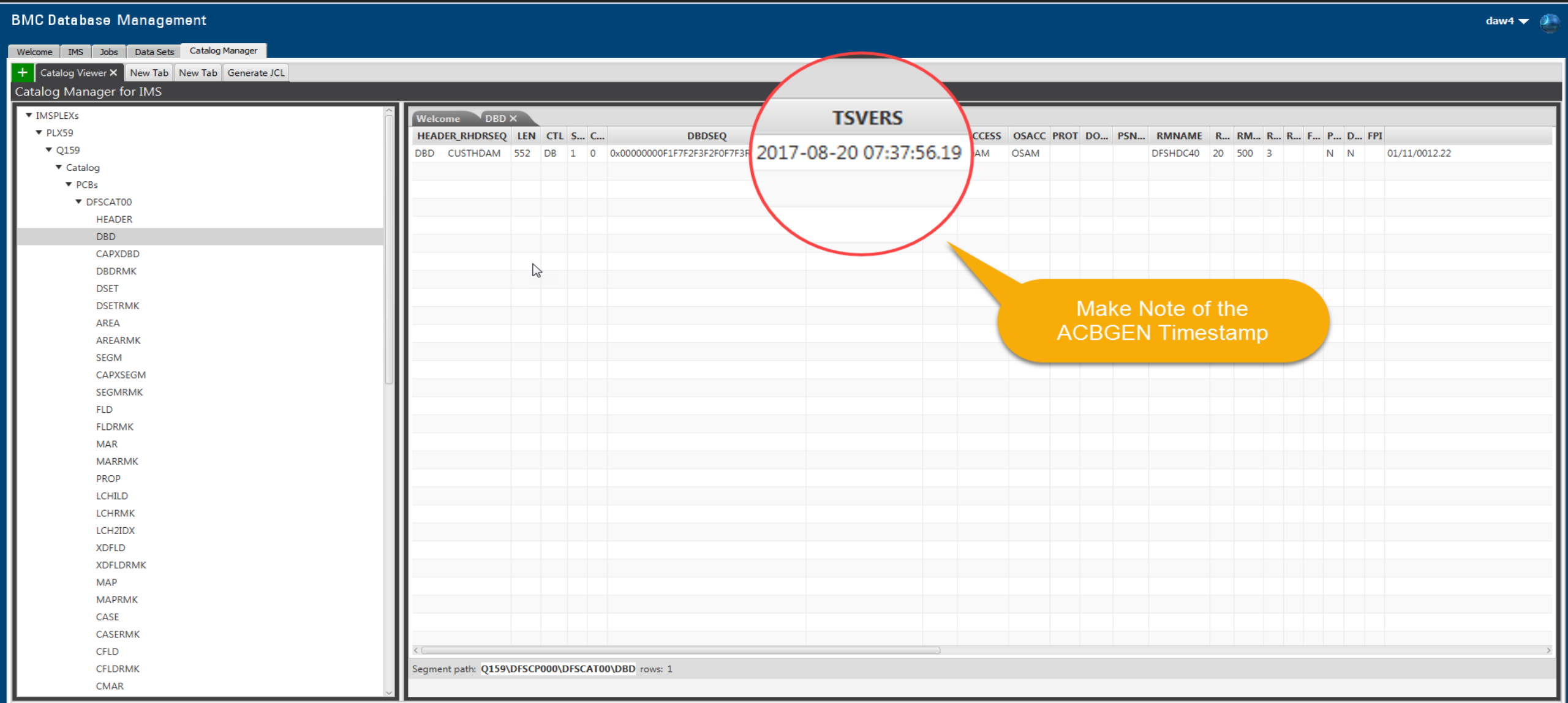
Use SQL to Filter Results



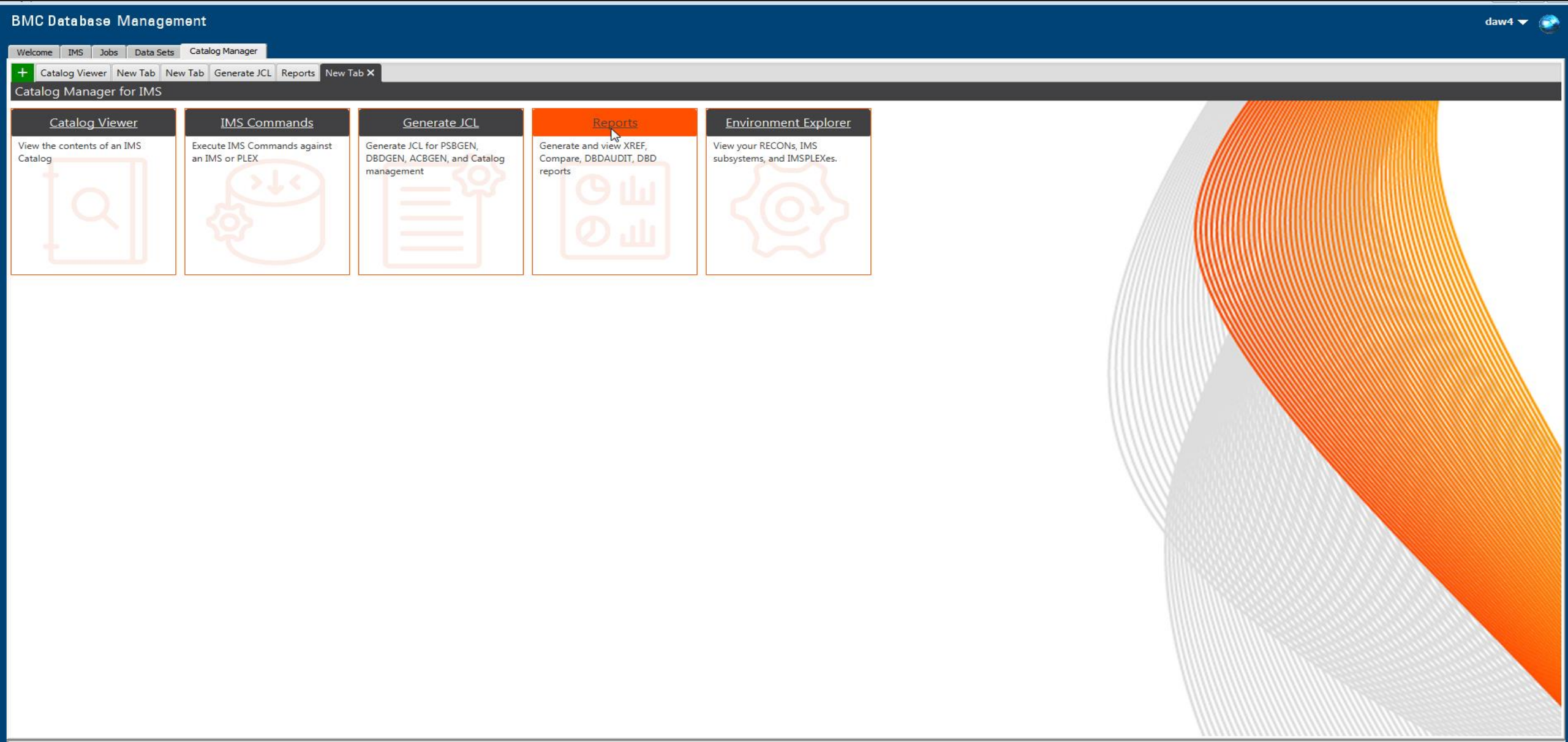
DBD ACBGEN Timestamp



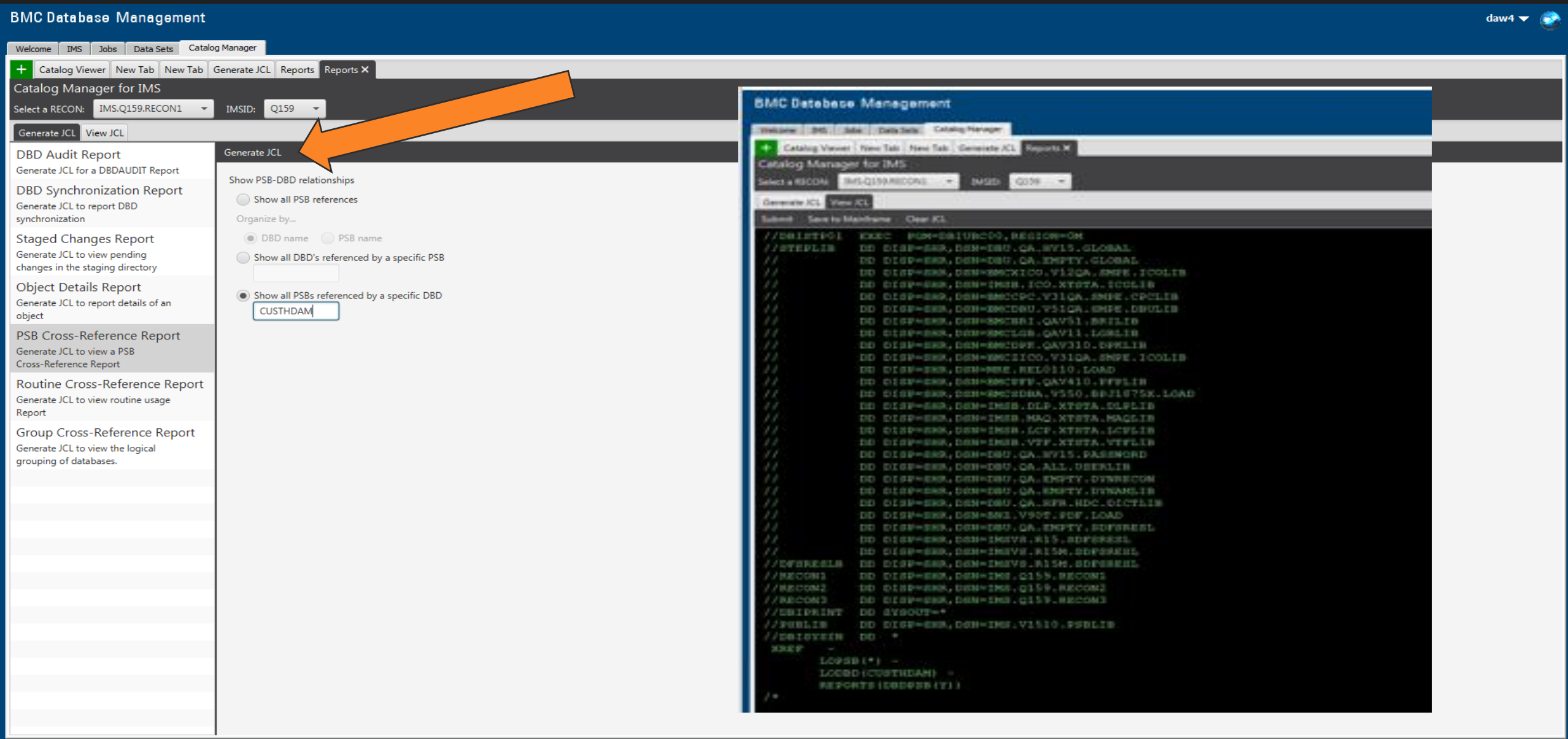
Let's verify the DBD & PSB Timestamps in the Catalog (the Metadata)



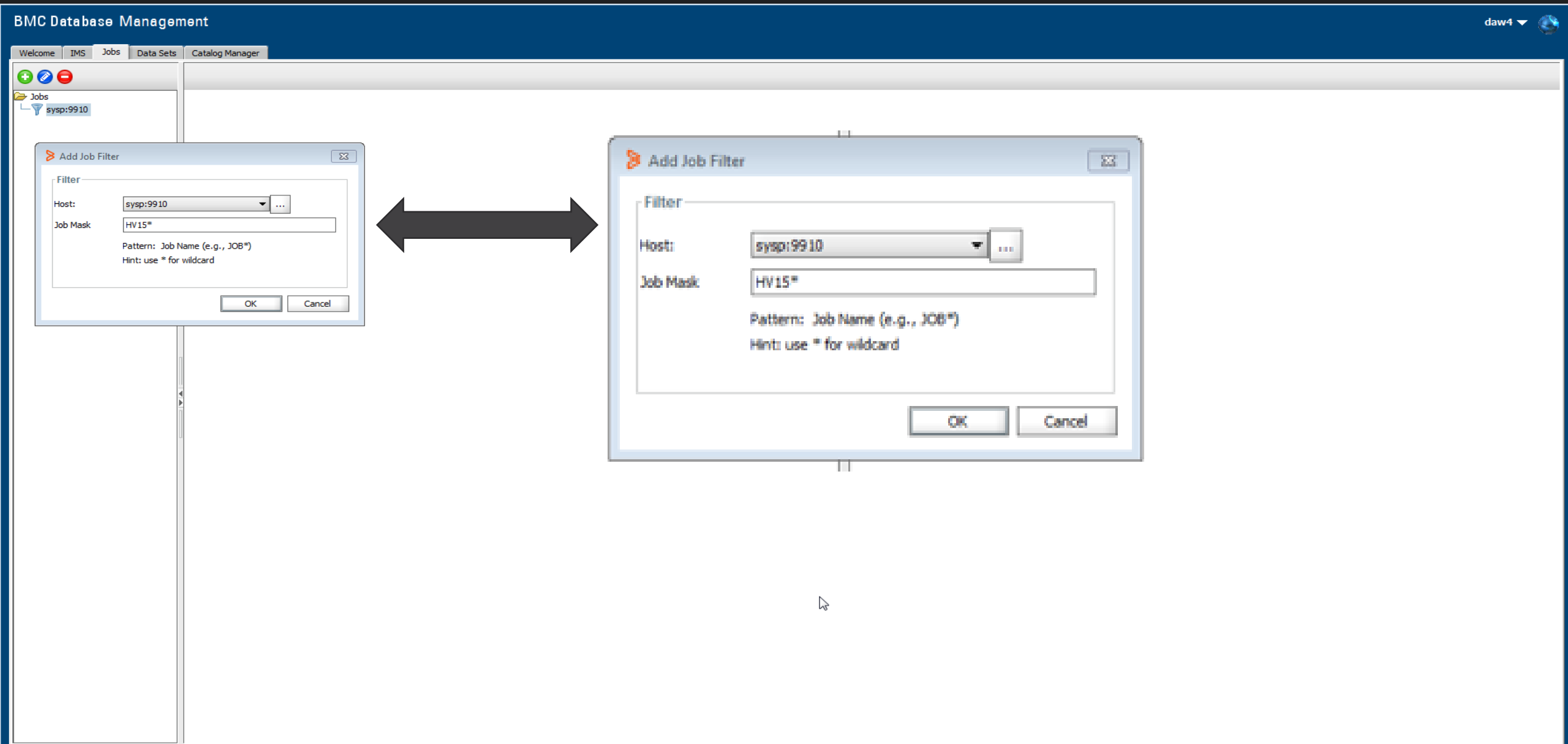
User Can’t Access CUSTHDAM



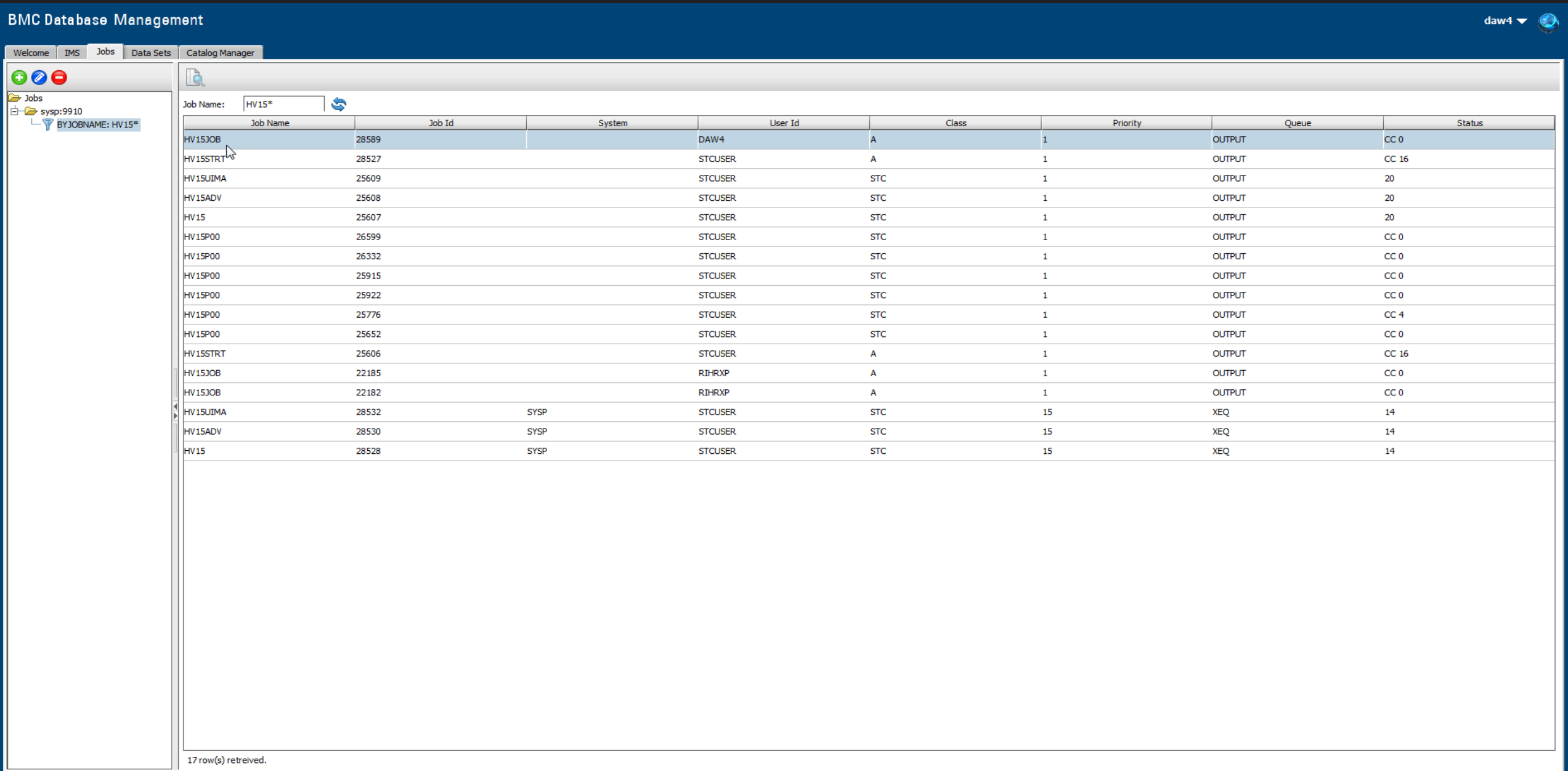
User PSB PTEST01 issue?



JES Viewer to review Xref SYSOUT

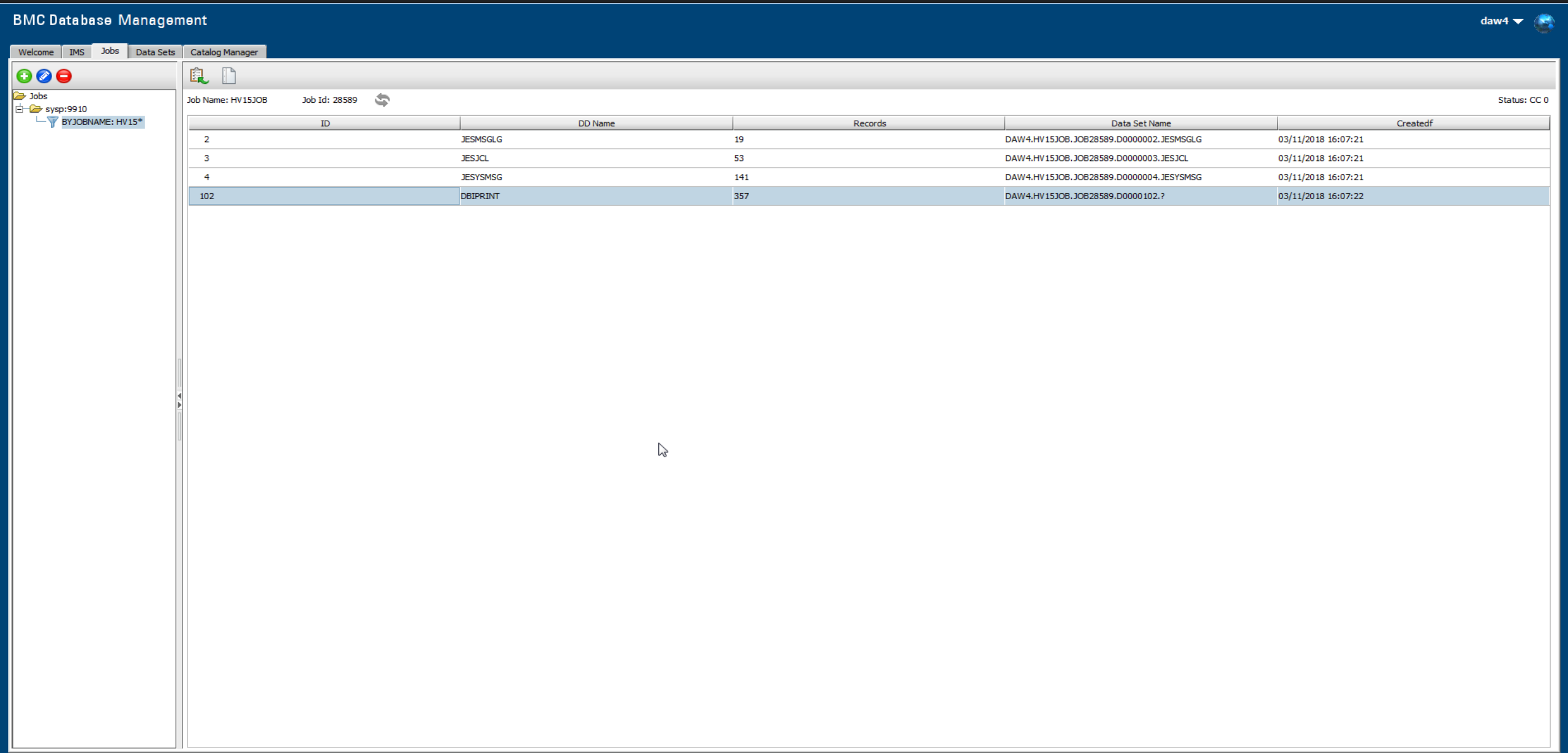


JES Viewer to review Xref SYSOUT



Job Name	Job Id	System	User Id	Class	Priority	Queue	Status
HV15JOB	28589		DAW4	A	1	OUTPUT	CC 0
HV15STRT	28527		STCUSER	A	1	OUTPUT	CC 16
HV15UIMA	25609		STCUSER	STC	1	OUTPUT	20
HV15ADV	25608		STCUSER	STC	1	OUTPUT	20
HV15	25607		STCUSER	STC	1	OUTPUT	20
HV15P00	26599		STCUSER	STC	1	OUTPUT	CC 0
HV15P00	26332		STCUSER	STC	1	OUTPUT	CC 0
HV15P00	25915		STCUSER	STC	1	OUTPUT	CC 0
HV15P00	25922		STCUSER	STC	1	OUTPUT	CC 0
HV15P00	25776		STCUSER	STC	1	OUTPUT	CC 4
HV15P00	25652		STCUSER	STC	1	OUTPUT	CC 0
HV15STRT	25606		STCUSER	A	1	OUTPUT	CC 16
HV15JOB	22185		RIHRXP	A	1	OUTPUT	CC 0
HV15JOB	22182		RIHRXP	A	1	OUTPUT	CC 0
HV15UIMA	28532	SYSP	STCUSER	STC	15	XEQ	14
HV15ADV	28530	SYSP	STCUSER	STC	15	XEQ	14
HV15	28528	SYSP	STCUSER	STC	15	XEQ	14

JES Viewer to review Xref SYSOUT



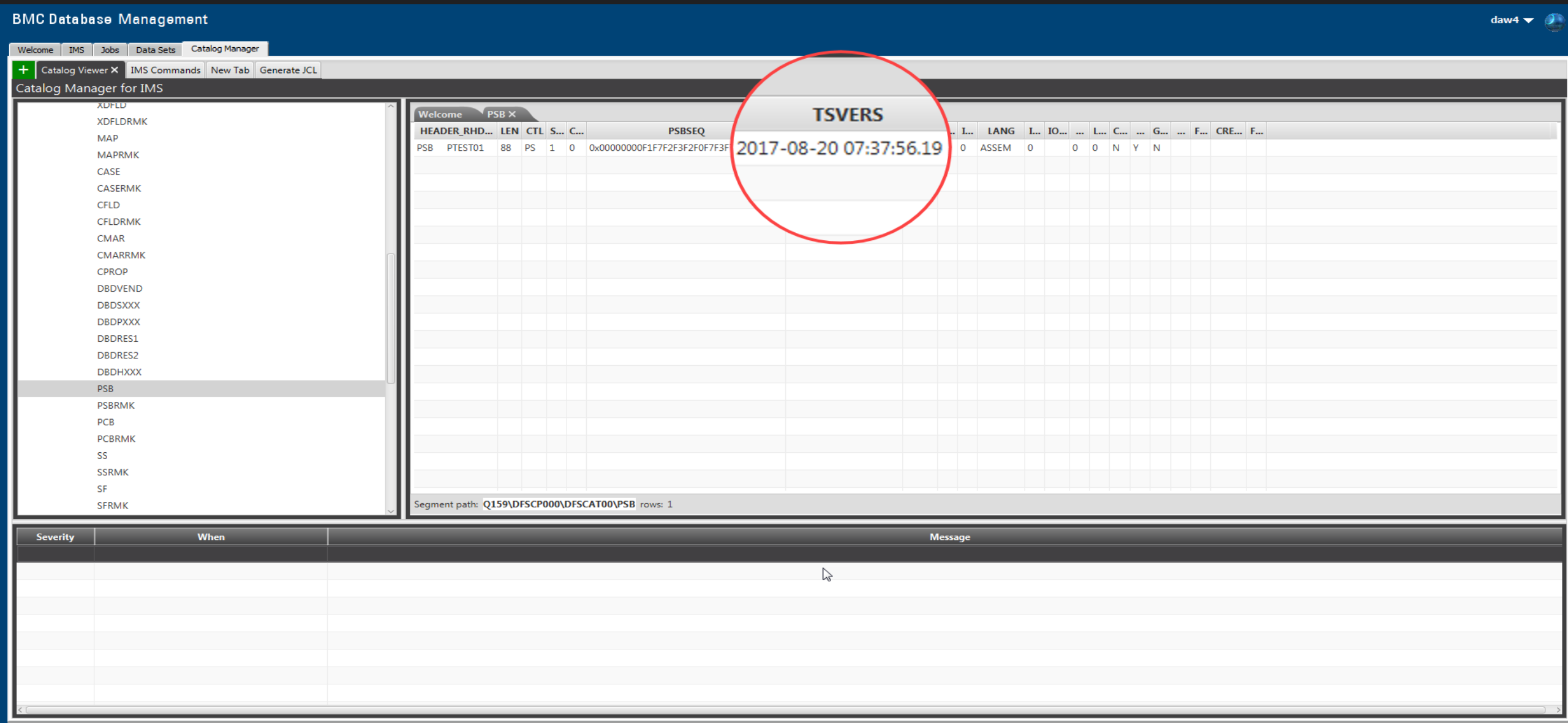
JES Viewer to review Xref SYSOUT

DAW4.HV15JOB.JOB28589.D0000102.?

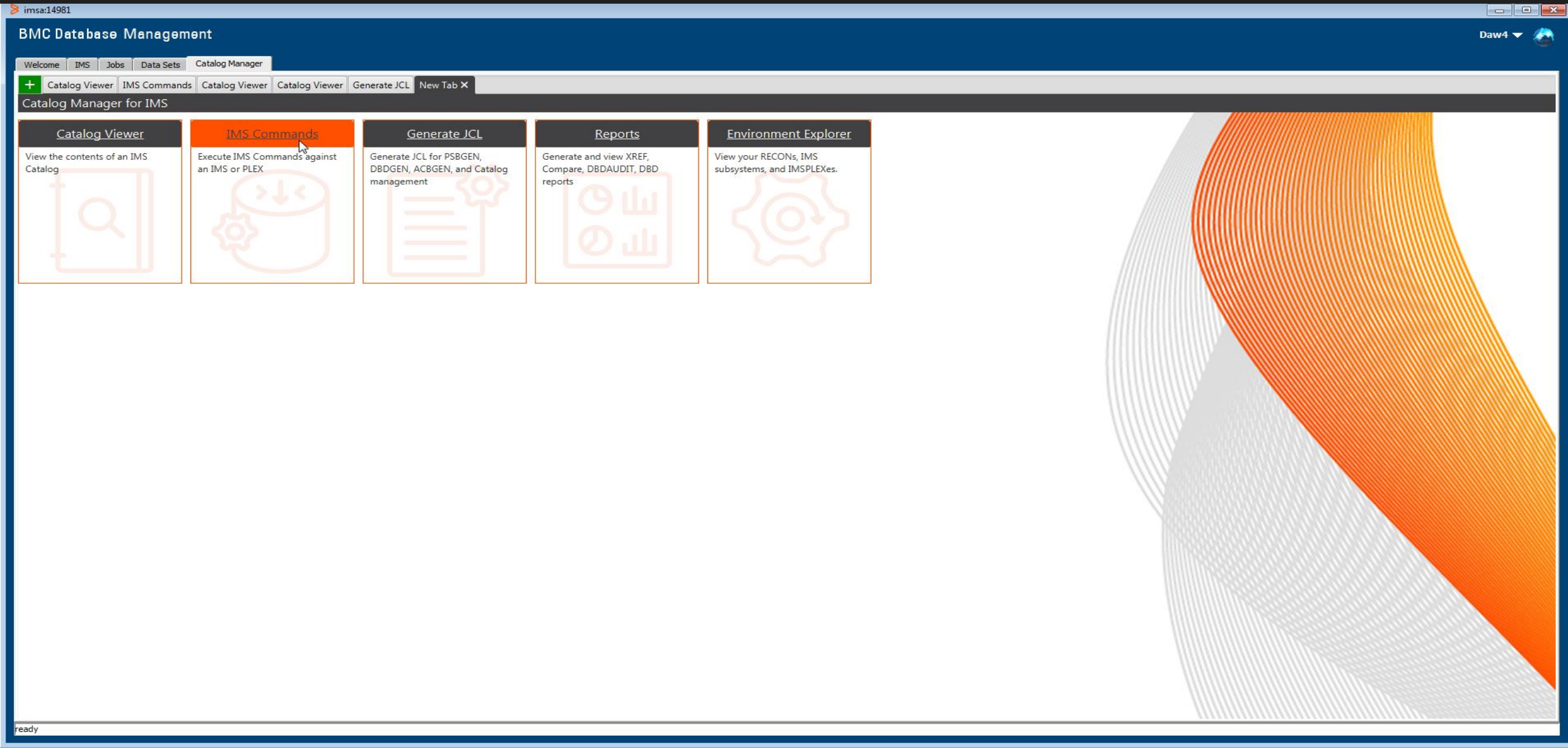
Find | Print | Print Preview | Cancel | Change Font | Help

```
                    +-----------------------+
                    | P S B L I B    X R E F |
                    +-----------------------+


          DATE=2018.070      3/11/2018      TIME=16:07

          PSBLIB    = IMS.V1510.PSBLIB


                   +--------------------------+
                   | PSBLIB XREF - DBD TO PSB |
                   +--------------------------+


          PSB(S) REFERENCING THIS DATABASE.....................
                              PCB  IN-   SEN                PCB  IN-   SEN
DBDNAME    COUNT    PSBNAME    #   TENT  SEG    PSBNAME     #   TENT  SEG
--------   -----    --------  ---  ----  ---    --------   ---  ----  ---
CUSTHDAM      34    EFHPSBM1    2  READ    4    EFHPSBM1     5  READ    4
                    EFHPSBM1    8  READ    4    EFHPSBM1    11  READ    4
                    EFHPSBM1   14  READ    4    EFHPSBM1    17  READ    4
                    EFHPSBM1   20  READ    4    EFHPSBM1    23  READ    4
                    EFHPSBM1   26  READ    4    EFHPSBM1    29  READ    4
                    EFHPSBM1   32  READ    4    GBGPSBB1     4  UPDT    4
                    GBGPSBB1   11  READ    4    GBGPSBB2     2  UPDT    4
                    GBGPSBB2   10  UPDT    4    GBGPSBB3     2  UPDT    4
                    HDAMLOAD    1  LOAD    4    IMSPI00      1  UPDT    4
                    JFMPSBB1    1  UPDT    4    PHDAMINQ     1  UPDT    4
                    PHDAMINX    1  UPDT    4    PHDAMINY     1  UPDT    4
                    PHDAMMSC    1  UPDT    4    PHDAMUPD     1  UPDT    4
                    PMSG1       2  UPDT    4    PMSG1V       2  UPDT    4
                    PMSG2       1  UPDT    4    PTEST01      2  UPDT    4
                    PTEST01     9  READ    4    PTEST02      2  UPDT    4
                    PTEST02    10  UPDT    4    RSDPSBB1     1  UPDT    4
                    RSDPSBF1    1  UPDT    4    RSDPSBM2     1  UPDT    4
```

PTEST01 PSB ACBGEN Timestamp

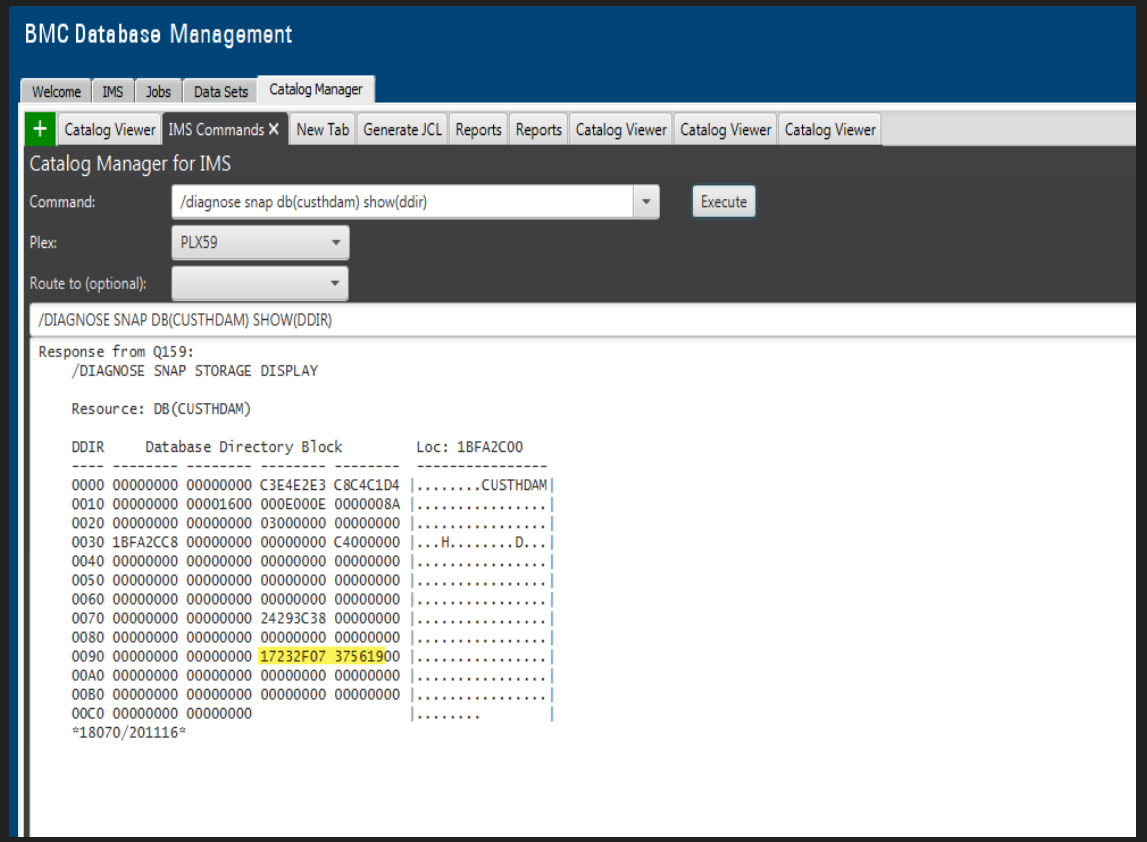


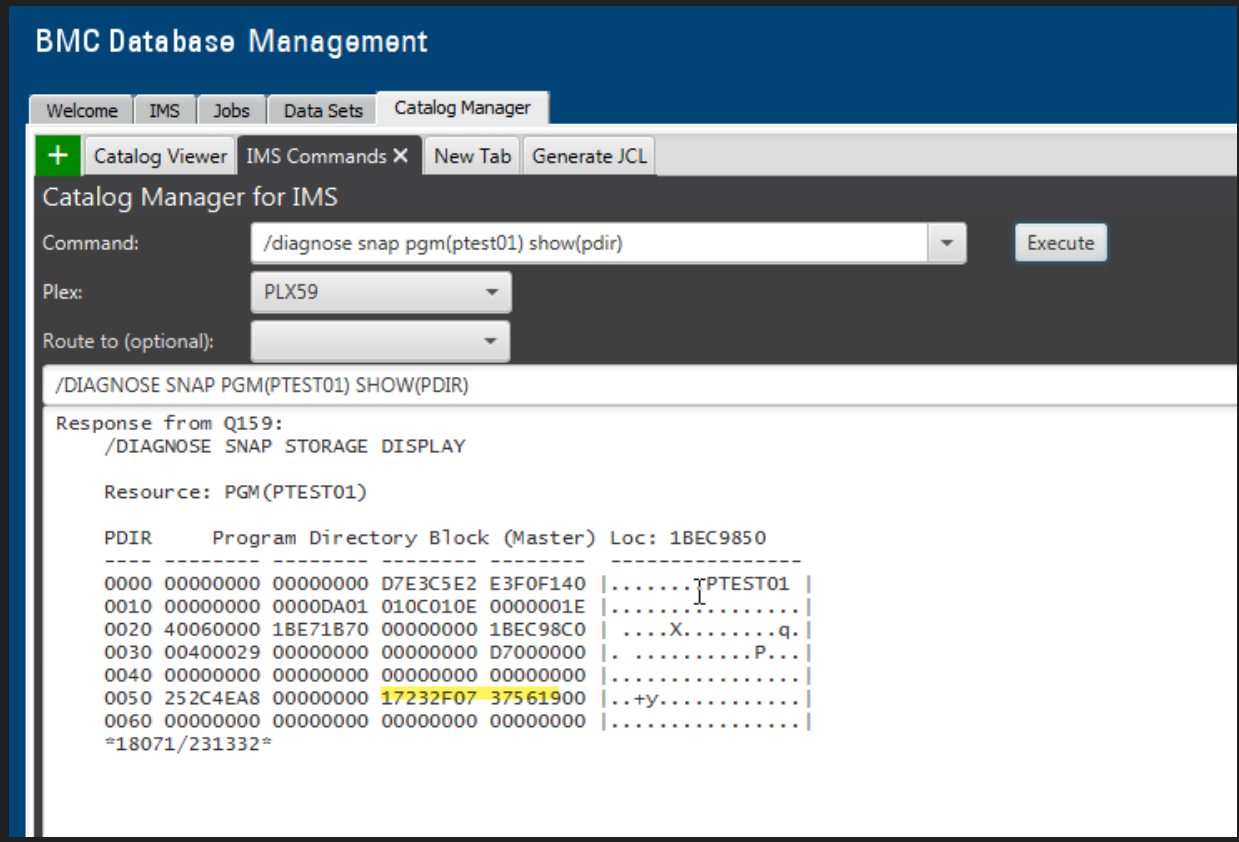
Other Side of this Consistency Equation



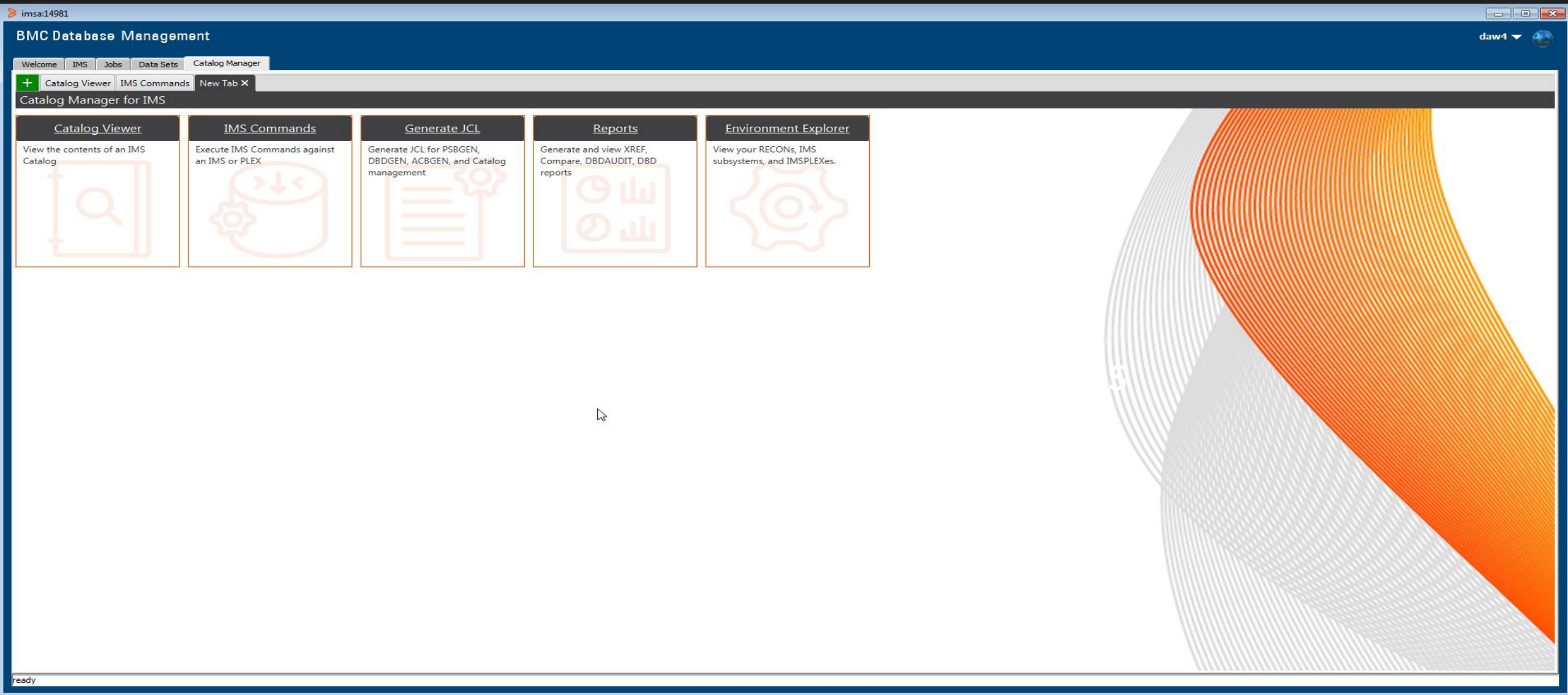
Now let's see what gets loaded into memory from the control blocks in ACBLIB

Use the IMS Command interface to snap the DBD & PSB blocks in memory





Everything is lined up!!!



BMC Catalog Manager for IMS

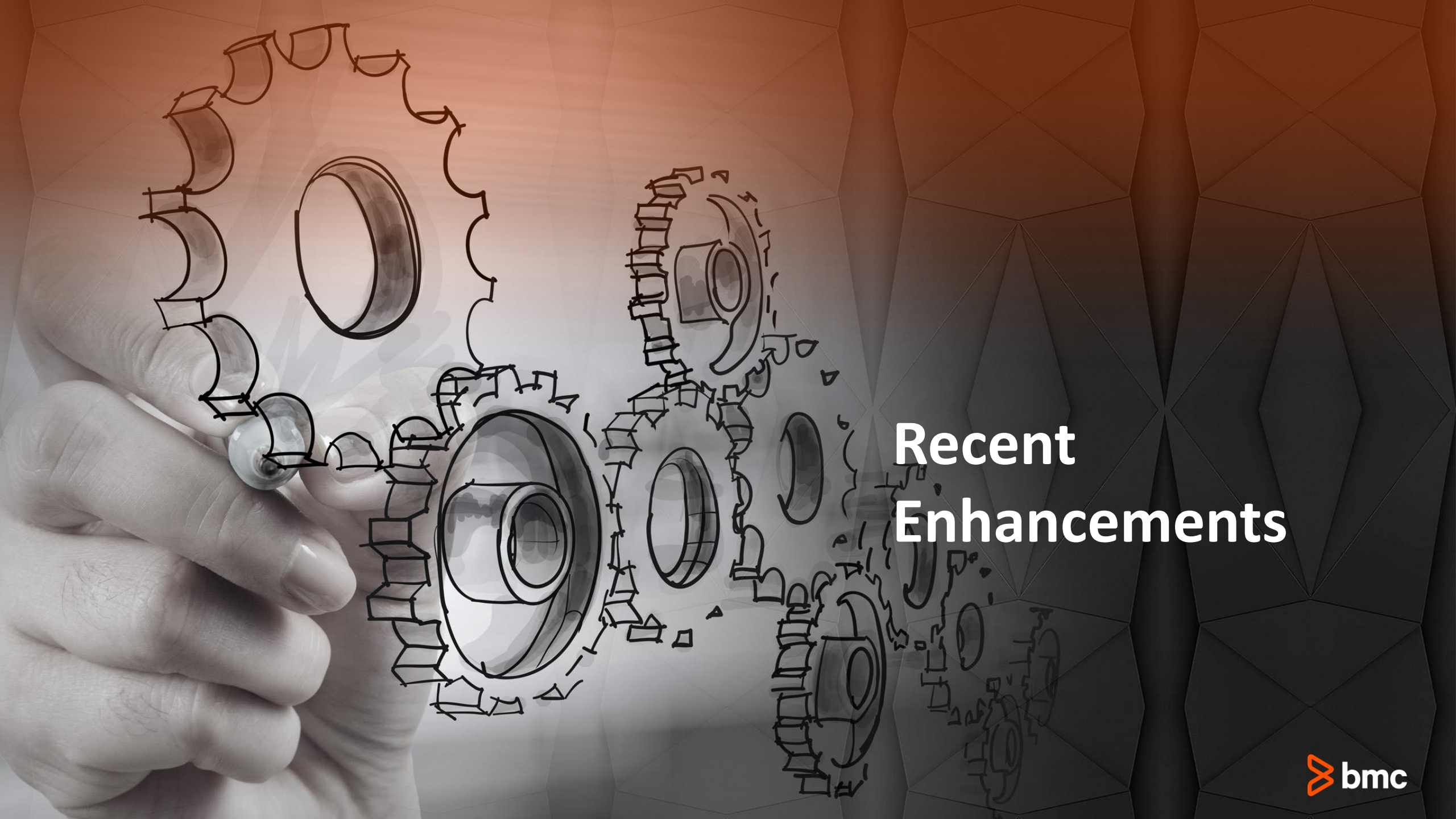
- **Addresses common IMS Catalog and Directory user needs**

- **Delivered as extension of BMC DBA Toolkit**
  - Additional Catalog Manager tab in the GUI
  - Seamless integration into familiar interface

- **Activation via PTFs**
  - No additional product installation required
  - Does require current BMC IMS Solution version

BMC Catalog Manager for IMS

- No charge for existing BMC IMS tools customers
- Has the capabilities you need to manage the IMS Catalog
- Integrated into existing Database Management GUI
  - IMS Console GUI leverages best database managment practices
- Extensive reporting capabilities



Recent Enhancements

Catalog Manager – Recent Enhancements

- Customer driven
- Continuous delivery
- Useability enhancements
- Security enhancements
- New functionality

Usability Enhancements

- “Enter” key can now be used to initiate or cancel a search
- Long running searches can be aborted
- Search criteria can be saved (CSV file), modified and reused
- Generic search in Catalog Viewer using wild card character (“*”)
- Results table automatically adjusted to heading width
- Progress indicator when loading data
- Ability to sort segments under DFSCAT00

Security Enhancement

- **RACF Facility Class support added to limit access**
  - CATVIEW – Catalog viewer access
  - IMSCMD – IMS command execution permission
  - SPUFI – SPUFI execution

Rule Name	Resource	
SDBA_CATMAN_ICM	BBM.SDBA.CATMAN.&IMSID.CATVIEW BBM.SDBA.CATMAN.&IMSID.IMSCMD BBM.SDBA.CATMAN.&IMSID.SPUFI	**Access**

New Functionality

- **SPUFI processing**
  - Ability to save previous entries
- **Disassembly of PSB and DBD objects to create DDL or DBDGEN/PSBGEN syntax**
  - Batch execution
  - DECODE command
  - Source from PSBLIB, DBDLIB, ACBLIB, IMS Catalog, IMS Directory

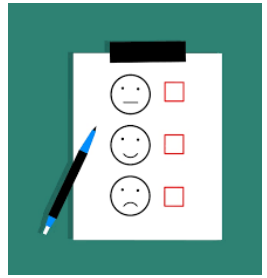
THANK YOU

We want your feedback!

- Please submit your feedback online at ….
  - http://conferences.gse.org.uk/2018/feedback/HF

- Paper feedback forms are also available from the Chair person

- This session is HF



Tuesday 6th November

Start Time	End Time	Stream	Room	Title	Speaker
11:45	12:45	IMS	Wellington B	The No Cost Way to Manage the IMS Catalog	David Schipper
15:00	16:00	IMS	Wellington B	Current Trends in IMS Analytics	David Schipper
16:30	17:30	zCMPA	Woodcote	zIIP stealing GCP MSUs time for Capacity Management	Donald Zeunert

Wednesday 7th November

Start Time	End Time	Stream	Room	Title	Speaker
09:30	10:30	Db2	Nurburgring	Know your onions when it comes to Db2 indexes	Randy Bright
09:30	10:30	IMS	Wellington B	IMS Checkpoint Pacing	David Schipper
10:45	11:45	zCMPA	Nurburgring	How many GCP MSU is my CF stealing?	Donald Zeunert