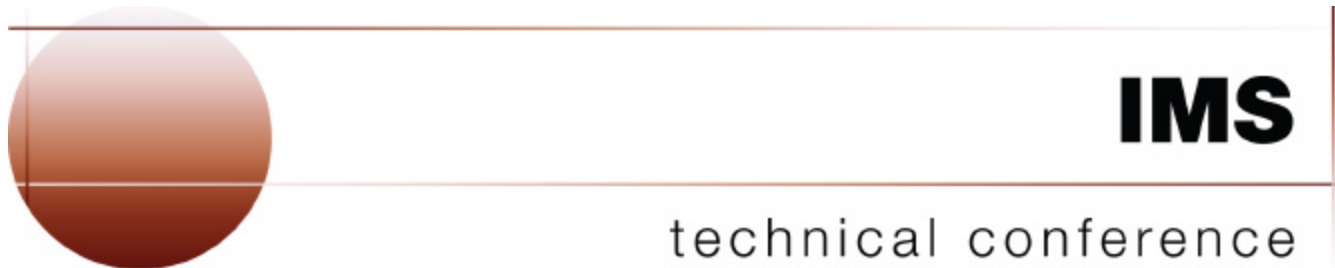


# Session C05

## IMS DB Control Suite at Nationwide Insurance

Presented by John Kanouse of Nationwide Insurance

kanousj@nationwide.com



**Las Vegas, NV**

**September 15 – September 18, 2003**

# Disclaimers

The purpose of this presentation is to provide the experience I've had with **DCS (IMS Database Control Suite)** at **NI (Nationwide Insurance)**. Anytime I introduce a new acronym, it will be in blue.

I am an Applications DBA, not a Systems DBA/Programmer.

I am not a professional speaker, spokesman or comedian.

I am not endorsing IBM and/or DCS. Each participant should evaluate this material and any available product(s) themselves.

DCS V3.1 was Beta at the time this presentation was created.





# Nationwide Is on Your Side

Nationwide is one of the largest insurance and financial services companies in the world, with more than \$117 billion in statutory assets.

Nationwide consists of three core businesses:

domestic property and casualty insurance

**(NI) Nationwide Mutual Insurance Company**

Allied Insurance

Farmland Mutual Insurance Company

Scottsdale Insurance

life insurance and retirement savings

Nationwide Retirement Solutions, Inc

Nationwide Provident

asset management

Gartmore Global Investments, Inc

Gartmore Investment Limited

Taken from: [www.nationwide.com/about\\_us/our\\_companies/affsub.htm](http://www.nationwide.com/about_us/our_companies/affsub.htm)





# IMS DB (Database) Organization and Environment at a Glance

NSC      Nationwide Services Company      Systems Programmers  
NIS      Nationwide Insurance Systems      Application DBA/Programmers  
NF      Nationwide Financial      Application DBA/Programmers

<b>DBD TYPE</b>	<b>Count</b>	<b>Percentage</b>
GSAM,BSAM	6	0.14%
HDAM,VSAM	274	6.18%
HIDAM,VSAM	1466	33.05%
HISAM,VSAM	60	1.35%
INDEX,ISAM,NOPROT	4	0.09%
INDEX,VSAM,PROT	2271	51.19%
LOGICAL	26	0.59%
SHISAM	329	7.42%
<b>Total</b>	<b>4436</b>	<b>100.00%</b>

As this chart depicts, Nationwide primarily uses HIDAM. We do not use Fastpath databases at all.

We primarily use IMS/DC as our transaction manager.

# What does DCS do?

1. Will build database maintenance and recovery jobs.
2. Will register databases and **DBDSGRP (database dataset groups)** to **DBRC (Database Recovery and Control)**.
3. Provides an ISPF front end to DBRC.
4. ISPF access to IMS Library Management Facilities.

This presentation discusses the first 2 points. Building DB maintenance jobs and registering DB & DBDSGRP to DBRC

# The Business Need

My group, NI-[DSG\(Database Support Group\)](#), is a new centralized DBA group (3-4 years old) for the application areas. DBA work used to be the responsibility of each application area.

DSG was manually building database reorgs and define clusters, for databases which had none. We also built pointer checkers, and pointer checker PSBs when they were needed.

Nationwide is in the process of migrating from an in-house written [DBRECOV \(database recovery system\)](#) to DBRC. This introduced the use of many new tools to our environment.

# Problems to be Solved

## Lack of Standardization

- different set(s) of tools
- different PROCs/JCL
- different naming standards
- pieces and parts missing
- databases with no maintenance jobs

## DBRC Migration

- implementing **IC (image copy)**
- implementing index builder
- registration process
- maintaining the Recon datasets

# DCS V3.1 Installation

We didn't do an SMP/E install, but had with an earlier version.

Our Sys Prog received 5 files via FTP.

SIDLCEXE	REXX Routines
SIDLJPDS	Skeleton JCL
SIDLLMD0	Load Modules
SIDLMLIB	Messages Library
SIDLPLIB	ISPF Panels

I increased my TSO logon size to 16 MB, as documented in the DCS User's Guide. Although, DCS appears to work OK with less.





# DCS V3.1 Installation

With the help of IBM, I created this CLIST:

```
EX 'T410.KANOUSJ.RECEIVED.SIDLC EXE(IDLC000)' +  
    'T410.KANOUSJ.RECEIVED T410.KANOUSJ.CSV3 SYSPREF'
```

Which translates to:

```
EX `smphlq.SIDLC EXE(IDLC000) smphlq permdshlq csvol syspref`
```

## Mandatory parameters

smphlq	SMP/E high-level qualifier for DCS
permdshlq	high-level qualifier for DCS permanent datasets ALTER access required

## Optional parameters

csvol	DASD unit for DCS datasets (non-SMS shops only)
syspref	system prefix for work datasets



# DCS V3.1 Installation

The last step was to execute our new CLIST "CSV3" in ISPF option 6 Enter TSO or Workstation commands.

```
Press ENTER to continue.

----- *
-----
===
===
===
===
=====
=====

Information Management System IMS Database Control Suite
(IMS DB CS) Version 3 Release 1

-----
| Licensed Materials - Property of IBM |
| 5655-L08 (C) Copyright IBM Corp. 2003 |
| All Rights Reserved. |
| US Government Users Restricted Rights - |
| Use, duplication or disclosure restricted |
| by GSA ADP Schedule Contract with IBM Corp. |
-----

* Trademark of International Business Machines
```

**UP CAME DCS!!**

Since I am not a Systems Programmer and have never installed a tool like this, I could never have imagined it would be so easy.



# Setup - Create CS ID (Control Suite ID)

CS ID is normally the IMS subsystem, but could be an application or group of related databases.

```
Command ==> _____

Press END to exit

Enter F string on the ISPF command line to find a CSID or other field
Enter F by itself to redisplay the full table.

Control Suite ID List

New CS IMS ID . . . AUS53

Select (S) or delete (D)

      IMS                                                    Non-S
CS ID  Version      Date      Time      ID      VOLSE
***** Bottom of data *****
```



# Setup – Select CS ID

The following items are defined at the “CS ID” level:

- available tools and their load library and/or libraries
- JCL parameters for DCS datasets
- IMS system libraries (Recons, DBD, PSB, ACB, RESLIB....)
- Space Management History Library

```
Control Suite ID List

New CS IMS ID . . _____

Select (S) or delete (D)
      IMS

   CS ID      Version      Date      Time      ID
  S AUS53      ?          08/04/03  22:10:16  T187

***** Bottom of data *****
```



# Setup - CS ID Main Menu

```
IMS DB CONTROL SUITE(C) V3.1 - BASE
for CS ID AUS53 IMS Version ?

Command ==> _____

Select a task or press END to exit

Tasks      . . 1  1. Set up environment
              2. Run jobs
              3. Maintain RECON
              4. Perform library integrity checking
              5. ISPF links to other IMS tools
              6. System administration
```



# CS ID Setup - Main Setup Menu

Select "1" Add or Remove IMS Tools

```
IMS DB CONTROL SUITE(C) V3.1 - B
SETUP          function for CS ID AUS53 IMS Versi
Command ==> _____

Select a subtask to continue or END to exit

Subtask . . 1  1. Add or remove IMS tools
                2. Define Control Suite environment
                3. Collect/update/delete DBDSGRPs
                4. Review defined/collected data
```



# CS ID Setup - Add or Remove IMS Tools

Load library existence is checked, but tool installation is not.  
Note: dataset names are entered in DCS without ticks 'dsn'

```
Product name                Load library name or 'N' if not install
Image Copy Extensions       . .  IMSVS.UTILITY.PGMLIB
High Performance Unload     . .  IMSVS.UTILITY.PGMLIB
High Performance Load       . .  IMSVS.UTILITY.PGMLIB
IMS Parallel Reorg          . .  IMSVS.UTILITY.PGMLIB
Fast Prefix Resolution      . .  IMSVS.UTILITY.PGMLIB
Index Builder               . .  IMSVS.UTILITY.PGMLIB
High Performance Ptr Checker . .  IMSVS.UTILITY.PGMLIB
Library Integrity Utilities . .  IMSVS.UTILITY.PGMLIB
Fast Path Basic Tools       . .  N
Database Recovery Facility  . .  IMSVS.UTILITY.PGMLIB
REXX/CLIST libraries required to launch ISPF links to other products
Product name                Library name or 'N' if not installed
Database Repair Facility    . .  IMSVS.UTILITY.PGMLIB
High Performance Change Accum . .  IMSVS.UTILITY.PGMLIB
HALDB Conversion Aid        . .  N
```



# CS ID Setup - Add or Remove IMS Tools

Invalid load library entered.

```
Product name          Load library name or 'N' if not installed
Age Copy Extensions  . . >>> IMSVS.UTILITY.PGMLIB.JOHN
High Performance Unload . [-----]
High Performance Load . | Data set or member not found. |
S Parallel Reorg     . | Error data set(s) name(s) prefixed with |
List Prefix Resolution . | ">>>". |
Index Builder        . | IMSVS.UTILITY.PGMLIB |
High Performance Ptr Checker . [-----]
Library Integrity Utilities . . IMSVS.UTILITY.PGMLIB
List Path Basic Tools . . N
Database Recovery Facility . . IMSVS.UTILITY.PGMLIB
XX/CLIST libraries required to launch ISPF links to other products
Product name          Library name or 'N' if not installed
Database Repair Facility . . IMSVS.UTILITY.PGMLIB
High Performance Change Accum . . IMSVS.UTILITY.PGMLIB
LDB Conversion Aid    . . N
```





# CS ID Setup - Main Setup Menu

Select "2" Define Control Suite Environment

```
Subtask . . 2_ 1. Add or remove IMS tools
                2. Define Control Suite environment
                3. Collect/update/delete DBDSGRPs
                4. Review defined/collected data
```

```
| AUS53 SETUP IMS TOOLS function completed successfully. |
```

# CS ID Setup – DCS Dataset JCL Parameters

```
C - EXTRA!® Enterprise
Edit View Tools Session Options Help

          IMS DB CONTROL SUITE(C) V3.1 - BASE
SETUP      DEFINE      JCL PRMS function for CS ID AUS53 IMS Version ?
Command ==> _____

Press ENTER to continue or END to exit                               Panel 1 of 3

SMS class      . . 1_      (N, 1=storage, 2=mgmt or 3=data)
DASD device type . . 3390   (3380 or 3390)
DASD unit      . . SYSALLDA (Esoteric name or blank if SMS N)
TAPE unit      . . CART____ (Esoteric name)
Tape retention . . 21      (Days)
IMS utility buffers . . 50_ (VSAM)
               . . 50_    (OSAM)
```

This is for DCS internal jobs & datasets. This is not used for the database maintenance jobs which are built.



# CS ID Setup - Input Needed to Build JCL

DBD Library

database relationships

RECON datasets

database dataset name  
(if registered to DBRC)

Dynamic Allocation

database dataset name  
(if not registered to DBRC)

VSAM Catalog

delete/define information



# CS ID Setup – Define IMS Libraries

Press ENTER to continue or END to exit

## IMS RECON data sets

RECON1 . . T187.KANOUSJ.RECON1

RECON2 . . T187.KANOUSJ.RECON2

RECON3 . . T187.KANOUSJ.RECON3

## IMS system data sets

DBDLIB . . IMSVS.COL.DBDLIB

PSBLIB . . IMSVS.COL.PSBLIB

SDFSRESL . . IMSVS.R51COLGN.RESLIB

ACBLIB . . IMSVS.COL.ACBLIB

EXITLIB . . IMSVS.COL.DICTONRY

DYNLIB . . IMSVS.COL.PRODYNA

SDFSMAC . . IMSVS.MACLIB

MODBLKS . . IMSVS.COL.MODBLKS

PROCLIB . . IMSVS.COLIMS.PROCLIB



Recons not dynamically allocated? The JCL is built with them.

Recon dynamic allocation JCL is also built.

```
Use RECONs if inconsistent with SDFSRESL/DYNLIB/another CSID . . N_ (Y or N)
```

```
IMS RECON data sets
```

```
RECON1 . . T187.KANOUSJ.RECON1 _____ VOLSER . .  
RECON2 . . T187.KANOUSJ.RECON2 _____ VOLSER . .  
RECON3 . . T187.KANOUSJ.RECON3 _____ VOLSER . .
```

```
IMS system data sets
```

```
DBDLIB . . IMSVS.COL.DBDLIB _____  
PSBLIB . . IMSVS.COL.PSBLIB _____  
SDFSRESL . . IMSVS.COL.RESLIB _____  
ACBLIB . . IMSVS.COL.ACBLIB _____  
EXITLIB . . IMSVS.COL.DICTONRY _____
```

```
-----  
| Member not found in the specified DYNLIB or DFSRESLB. Control  
| Suite will build all utility jobs with RECON DD JCL statements. Dynamic  
| allocation of RECON data sets will not be performed by those jobs.  
|-----
```



# CS ID Setup – Define IMS Libraries

IMS version is checked for CS support

```
RECON1 . . T187.KANOUSJ.RECON1
```

```
RECON2 . . T187.KANOUSJ.RECON2
```

```
RECON3 . . T187.KANOUSJ.RECON3
```

```
IMS system data sets
```

```
DBDLIB . . IMSVS.COL.DBDLIB
```

```
PSBLIB . . IMSVS.COL.PSBLIB
```

```
SDFSRESL . . IMSVS.R51COLGN.RESLIB
```

```
ACBLIB . . IMSVS.COL.ACBLIB
```

```
EXITLIB . . IMSVS.COL.DICTONRY
```

```
DYNLIB . . IMSVS.COL.PRODYNA
```

```
-----  
| Invalid IMS Release detected in IMSVS.R51COLGN.RESLIB |  
| . not supported by IMS DB CONTROL SUITE(C) V3.1 - BASE |  
-----
```

# CS ID Setup – Define Space Mgmt History Dataset

**Warning:** Dataset is allocated if it doesn't exist.  
Nothing happens if it does exist.

(good for 2<sup>nd</sup> time.....bad for 1<sup>st</sup> time)

```

Edit View Tools Session Options Help
                                IMS DB CONTROL SUITE(C) V3.1 - BASE
SETUP      DEFINE      IMS LIBS function for CS ID AUS53 IMS V
Command ==> _____

Press ENTER to continue or END to exit

Space Management History Data Set Information

Data set name      . .  T410.KANOUSJ.CSV
CYLS                . .  5_____
VOLSER             . .  *_____
```



# CD ID Setup - Completed

Most of the setup to build our database maintenance jobs is completed. Remember DCS uses the following to build the JCL:

DBD Library	database relationships
RECON datasets	database dataset name (if registered to DBRC)
Dynamic Allocation	database dataset name (if not registered to DBRC)
VSAM Catalog	delete/define information

Now .....on with building JCL!!!!!!





# JCL Build – CS ID Main Setup Menu

Select "3" Collect/update/delete DBDSGRPs

```
IMS DB CONTROL SUITE(C) V3.1 - B
SETUP          function for CS ID AUS53 IMS Versi
Command ==> _____

Select a subtask to continue or END to exit

Subtask . . 3_  1. Add or remove IMS tools
                2. Define Control Suite environment
                3. Collect/update/delete DBDSGRPs
                4. Review defined/collected data
```



# JCL Build – Collect DBDSGRP Main Menu

There are 2 ways to define the databases to build JCL for:

1. Interactive
2. Batch

Select "1" **Collect/update/delete IC information (interactive)**

```
Edit View Tools Session Options Help
      IMS DB CONTROL SUITE(C) V3.1 - BASE
SETUP   COLLECT   function for CS ID AUS53 IMS Version 7.1
Command ===>
                                           TIME.  .22:52:27.9
                                           DATE.  .2003/08/04
                                           JDTE.  .2003.216

Select a DBDSGRP subtask to continue or END to exit

Subtask . . 1  1. Collect/update/delete image copy naming convention data
                2. Collect/update database data set data
                3. Update jobcard data only
                4. Batch collect DBDSGRPs and jobs for ALL DBDLIB members
```



# Interactive JCL Build

## Add a new DBDSGRP

Description will retain lower case characters.

```
SETUP      COLLECT      function for CS ID AUS53 IMS Version 7.1
Command ==> _____

Press END to exit

Enter F string on the ISPF command line to find a DBDSGRP, DBD/DDN/DSN, USER
      DATE or Description. Enter F by itself to redisplay the full table.

Add a new DBDSGRP. . Y (Y or N)
Description      . . AUS Region 53 Activity Log Database (RK53HAUL)

Select (S) or delete (D)

  DBDSGRP  USER      STATUS      DESCRIPTION
***** Bottom of data *****
```



# Interactive JCL Build

## Select Added DBDSGRP

```
Add a new DBDSGRP. . N_ (Y or N)
```

```
Description . . _____
```

```
Select (S) or delete (D)
```

DBDSGRP	USER	STATUS	DESCRIPTION
<u>S</u> AUS53002	T187	Never collected	AUS Region 53 Activity Log Databa
***** Bottom of data *****			

```
[ AUS53002 DBDSGRP added to table. It can now be collected. ]
```

# Interactive JCL Build

## Specify JCL and Unload Options

```
Specify JCL options for DBDSGRP . . AUS53002

Image Copy indexes      . . Y_          (Y or N)
Concurrent Image Copy  . . N_          (Y or N)
ICE Compress parm      . . N_          (Y or N)
Job name prefix        . . RK53
DBDSGRP title          . . AUS Region 53 Activity Log Database (RK

Unload data set options
Use GDGs                . . N_          (Y or N)
DASD low level qual    . . RK53_____
Tape low level qual    . . RK53_____
Tape volume count      . . 99          (1 to 99)
```



## Interactive JCL Build – Specify JCL & Unload Options

I found that the `permdshlq` defined in your CLIST and DASD are always used for the unload datasets in the reorg jobs.

I have no idea what these fields are for, but don't fill them both in.....

```
Image Copy indexes      . . Y          (Y or N)
Concurrent Image Copy  . . N          (Y or N)
ICE Compress parm     . . N          (Y or N)
Job name prefix       . . RK53
DBDSGRP title        . . AUS Region 53 Activity Log Database (RK53HAU

Unload data set options
Use GDGs              . . N          (Y or N)
DASD low level qual   . . RK53
Tape low level qual   . . RK53
Tape volume count     . . 99        (1 to 99)
```

```
|-----|
| DISK and TAPE low level qualifiers are mutually exclusive. |
|-----|
```

# Interactive JCL Build

## Image Copy Options

```
Press ENTER to continue or END to exit Panel 2 of 3

Specify user GENJCL parms . . N_ (Y or N)

Specify Global Image Copy Options for DBDSGRP . . AUS53002
Image copy DSNs hlq . . IMSBKUP_____
Second image copy DSNs hlq . . IMSBKCP_____
IC middle qualifiers . . 2_ (1=DDN, 2=DBD.DDN)
IC low-level qualifier . . $TIME_____ (blank if GDG, name, $TIME, nn.$TIME)
GDG device type . . _____ (SYSDA, TAPE, ATL2, other)
Type . . T_ (D=DASD, T=Tape)
Unit . . 8_ (8=3380, 9=3390, G=GDG, *=SMS)
Recovery period in RECON . . 21_ RECON GENMAX . . 5_
Tape retention period . . 99_ Tape data set vol count . . 99_

Online Image Copy Options (if OIC is going to be used)
PSB. . _____ DESTNAME . . _____ Applic Group Name (AGN) . . _____
```



# Interactive JCL Build – IC Dataset Limitations

IC dataset naming options are limited. HLQ takes 17 of 44, which only allows for DDN (9), date (6) and time (8).

```
Specify user GENJCL parms      . . N_          (Y or N)

Specify Global Image Copy Options for DBDSGRP . . AUS53002
Image copy DSNs hlq           . . IMSBKUP_____
Second image copy DSNs hlq    . . IMSBKCP_____
IC middle qualifiers           . . 2            (1=DDN, 2=DBD.DDN)
IC low-level qualifier         . . $TIME_____ (blank if GDG, name, $TIME, nn.$TIME)
GDG device type                . . TAPE_____ (SYSDA, TAPE, ATL2, other)
Type                           . . T_          (D=DASD, T=Tape)
Unit                           . . 8_          (8=3380, 9=3390, G=GDG, *=SMS)
Recovery period in RECON      . . 21_          RECON GENMAX . . 5_
Tape retention period         . . 99_          Tape data set vol count . . 99_
```

```
-----
| IC middle qualifier 2 (DBD.DDN) cannot be used with $TIME low level |
| qualifier. IC middle qualifier 1 (DDN) can only be specified.      |
|-----
```



# Dynamic Allocation of IC Datasets

DCS does not handle dynamic allocation of image copy datasets or stacking at this time.

These are the control cards for dynamic allocation and stacking.....

```
//ICEIN DD *  
GLOBAL DBRC=Y,COMP=Y,UNIT=TAPE,VOLCNT=99,  
ICHLQ=IMSBKUP,ICHLQ2=IMSBKCP,  
DSN=&ICHLQ.&DBD.&DDN..D&DATE..T&TIME.,  
RETPD=21,  
DSN2=&ICHLQ2.&DBD.&DDN..D&DATE..T&TIME.  
GROUP DBDSGRP=RCVCPS52,STACK=(STACK1,STACK2),FUNC=IC
```

Which allocates **IMSBKUP.RK53HAUL.RK53HAUL.D2003193.T225052**

With the number of database datasets at Nationwide we have to stack image copies. IBM is working to add dynamic allocation and allow shorter HLQ support to DCS. In the mean time, we should be able to work around this with our own skeleton JCL.



# DCS IC Datasets

DCS created this JCL in the on-line collect function:

```
//RXAPHP53 DD DISP=OLD,DSN=IMSDBRC.RXAPHP53
//IC1     DD UNIT=TAPE,
//         DISP=(,CATLG,DELETE),
//         LABEL=RETPD=21,VOL=(,,,99),
//         DSN=IMSBKUP.RXAPHP53.D03221.T094442
.
.
//RXAPIP53 DD DISP=OLD,DSN=IMSDBRC.RXAPIP53
//IC2     DD UNIT=TAPE,
//         DISP=(,CATLG,DELETE),
//         LABEL=RETPD=21,VOL=(,,,99),
//         DSN=IMSBKUP.RXAPIP53.D03221.T094442
.
.
//ICEIN   DD *
GLOBAL DBRC=Y,UNIT=TAPE,COMP=,RETPD=21
IC   DBD=RXAPHP53,DDN=RXAPHP53,ICOUT=(IC1,IC21),HDPC=(Y,HISTORY),
COMP=N
IC   DBD=RXAPIP53,DDN=RXAPIP53,ICOUT=(IC2,IC22),HDPC=(Y,HISTORY),
COMP=N
```



# Interactive JCL Build – Catalog Check IC HLQ

DCS verifies that the alias exists in the catalog for the HLQ

```
Specify Global Image Copy Options for DBDSGRP . . AUS53002
Image copy DSNs hlq . . IMSBKUP
Second image copy DSNs hlq . . IMSBKCP
IC middle qualifiers . . 1 (1=DDN, 2=DBD.DDN)
IC low-level qualifier . . $TIME (blank if GDG, name, $TIME, nn)
GDG device type . . TAPE (SYSDA, TAPE, ATL2, other)
Type . . T (D=DASD, T=Tape)
Unit . . G (8=3380, 9=3390, G=GDG, *=SMS)
Recovery period in RECON . . 21 RECON GENMAX . . 5
Tape retention period . . 99 Tape data set vol count . . 99

Online Image Copy Options (if OIC is going to be used)
PSB. [-----]
| Invalid image copy high level qualifier IMSBKUP specified. |
[-----]
```

# Interactive JCL Build – IC HLQ Catalog Check

DCS alias check when a valid HLQ is entered

```
SYC - EXTRA!@ Enterprise
File Edit View Tools Session Options Help

ALIAS ----- T410
      IN-CAT --- MVSCAT.MVSD02

ALIAS ----- T410
      IN-CAT --- MVSCAT.MVSD02

***
```

# Interactive JCL Build

## Specify DBDs to DBDSGRP

There are 2 ways to specify DBDs to your DBDSGRP.

1. Select DBD(s) on selection screen and let DCS build the list.

given any part of the database

primary DB

primary index

secondary index

logical relationships

the other parts will be found

The list of DBDs on selection screen is the index of the DBD library provided during "CS ID Setup", or the index of alternate DBD library provided during DBDSGRP collection setup.



# Build JCL – Specify DBDs to DBDSGRP

2. Build a list of DBDs in dataset `permdshlq.csid.FDBDLIST(dbdsgrp)`

`permdshlq` high-level qualifier for DCS permanent datasets  
`csid` control suite id – IMS subsystem and/or application

Example

```
EDIT      T410.KANOUSJ.CSV3.AUS53.FDBDLIST(AUS53003)
Command ==>
000001 RK53HAUL
.
.
000012 RKAUHC53
***** Bottom of Data
```

Must create DBDSGRP in “collect/update/delete image copy naming convention data”. Member name is CS ID + next number in series.

In the example DBDSGRP AUS53001 & AUS53002 were already created.

# Interactive DBDSGRP build – Build DBD List

Select "3" Collect/update/delete DBDSGRPs

```
Select a subtask to continue or END to exit
```

```
Subtask . . 3 1. Add or remove IMS tools  
2. Define Control Suite environment  
3. Collect/update/delete DBDSGRPs  
4. Review defined/collected data
```

# Interactive DBDSGRP Build – Build DBD List

“Build DBD list file” specifies if member in FDBDLIST dataset should be created/updated. Select “N” if you built a list, or for second time through.

“Check ACBLIB” verifies the DBD(s) selected exist on the ACB library provided during “CS ID Setup”.

If “Alternate DBD library” entered, it is used for index on next screen. The JCL is built with this library concatenated first in the //IMS DD.

```
Press ENTER to continue or END to exit.
```

```
Specify DBD input for DBDSGRP . . AUS53002
```

```
Build DBD list file . . Y_ (Y or N)
```

```
Check ACBLIB . . Y_ (Y or N)
```

```
Alternate DBD library . . _____
```





# Interactive DBDSGRP build – select DBDs

```
Select DBDs to be included in DBDSGRP

DBD name filter      . . PDDH*

Select (S) or Delete (D)

  DBD
—   ADF3AUDT
—   ADF3MSGs
—   ADF3SIGN
—   ADF3WORK
—   AWBCNAM
—   AWBCNMPI
—   AWBPNAM
—   AWBPNMPI
—   AWBPRMDB
—   AWBXRFD
—   BTCHVS91
—   CBACHM51
```

limitation - only 12 DBDs can be selected and they have to be on the screen. The list is build when <enter>, <PF7> or <PF8> is hit.

Building a member in FDBDLIST can help, because you can just list one part of each database (DB, index, 2nd index or logical relationship). You still have to select the DBD on this screen.

The DBD name filter will only handle an "\*" at the end. IBM is looking to improving this function.



# DCS Selects All Parts of Database

I selected DBD PDDHSALE and DCS selected the following:

```

*****SXD*
* DSMDBIOG*
*****001*
.-----|-----.
|         |         |
-----
LC=DSMDBIOI  *****
DB=PDDISALE  * DSMDSTCY*
              *****002*
              |
              |
              |
-----
LC=DSMDJOBS  LP=DSCDSTCY
DB=PDDSSALE  DB=PDDHSTCY
-----
    
```

database	PDDHSALE
primary index	PDDISALE
secondary index	PDDSSALE
logically related DB	PDDHSTCY
logical DB index	PDDISTCY

**You will see this on the next slide.**



# Database Not In Recon or Dynamic Allocation

If the database isn't registered in the Recons and no dynamic allocation member exists, the process fails because the database dataset name can't be determined.

```
BROWSE      T187.TEMP01                               Line 00000000
Command ==> _____                               Scro
***** Top of Data *****
ERROR PDDHSALE NOT FOUND IN EITHER RECON OR DYNLIB  DSMDBIOG 16  **
ERROR PDDISALE NOT FOUND IN EITHER RECON OR DYNLIB  DSMDBIOI 16  **
ERROR PDDSSALE NOT FOUND IN EITHER RECON OR DYNLIB  DSMDJOBS 29  **
ERROR PDDHSTCY NOT FOUND IN EITHER RECON OR DYNLIB  DSCDSTCY 5   **
ERROR PDDISTCY NOT FOUND IN EITHER RECON OR DYNLIB  DSCDSTCI 5   **
***** Bottom of Data *****

-----
| Capture this screen and message image and inform your system prog
| Invalid return code 12 received from program IDLGINPT
| ***** AUS53 SETUP COLLECT failed *****
```



# Interactive DBDSGRP Build – Update Recons

On this panel specify DBRC share level for DDBDSGRP.

If DB(s) registered share level will show in place of “?” .

If DB(s) aren't registered DCS will register them.

With V3.1 init DB/DBDS JCL isn't built. Problem for us, we don't want to update Recons interactively with DCS.

Remember, I'm not a Sys Prog. I don't have access to production Recons.

```
Update DBRC share levels DBDSGRP . . AUS53002

Propagate global SHR LVL . . 1_ (N, 0, 1, 2, or 3)

Change share level (0, 1, 2 or 3)
SHR
LVL  DBD          DDNAME          PART          PRIMEDB          INDEX
?    RK53HAUL     RK53HAUL      N/A           RK53HAUL         N/A
***** Bottom of data *****
```



# Batch DBDSGRP/JCL Build

**In my opinion this is the best option.**

Creates JCL for all DBDs in DBD library provided during "CS ID Setup", or for alternate DBD library given during "Batch collect DBDSGRPs & jobs.

## **Advantages of Batch Collect**

The JCL is build into a PDS that you can edit. With the interactive DBDSGRP collect, each job has to be created interactively.

The JCL is build in a format that can be scheduled and run repeatedly.

There is no limitation to the number of DBDs processed.

Build function is done in batch, instead of interactively.

It takes about one minute per DB.

**Don't have to create DBDSGRP in "collect/update/delete image copy naming convention data", but do have to enter the same parameters.**

# Batch DBDSGRP Build

Select "4"      Batch collect DBDSGRPs & jobs for ALL  
DBDLIB members

```
JDTE. .2003.222
Select a DBDSGRP subtask to continue or END to exit

Subtask . . 4_  1. Collect/update/delete image copy naming convention data
                2. Collect/update database data set data
                3. Update jobcard data only
                4. Batch collect DBDSGRPs and jobs for ALL DBDLIB members
```

# Batch DBDSGRP Build

Specify DBDSGRP JCL, DBRC and Unload Options

```
Specify default JCL options for the DBDSGRPs to be built in batch
```

```
Image Copy index data sets . . Y (Y or N)
Concurrent Image Copy . . N (Y or N)
ICE Compress parm . . N (Y or N)
Share Level . . 1 (0, 1, 2, or 3)
```

```
Unload data set options
```

```
Use GDGs . . N (Y or N)
DASD data set low level qual . . _____
Tape data set low level qual . . RX53
Tape data set volume count . . 99 (1 to 99)
```





# Batch DBDSGRP Build

## Specify DBDSGRP Image Copy Options

```
Specify user GENJCL parms . . N_ (N - not applicable for batch c

Specify Global Image Copy Options for DBDSGRP . .
Image copy DSNs hlq . . T410.UP
Second image copy DSNs hlq . . T410.CP
IC middle qualifiers . . 1_ (1=DDN, 2=DBD.DDN)
IC low-level qualifier . . $TIME_ (blank if GDG, name, $TIME, nn.$
GDG device type . . TAPE_ (SYSDA, TAPE, ATL2, other)
Type . . T_ (D=DASD, T=Tape)
Unit . . 8_ (8=3380, 9=3390, G=GDG, *=SMS)
Recovery period in RECON . . 21_ RECON GENMAX . . 5_
Tape retention period . . 21_ Tape data set vol count . . 99_
```

# Batch DBDSGRP Build

## Specify Alternate DBD Library

If "Alternate DBD library" entered the JCL is built for the DBDs on this library and it is concatenated first in the //IMS DD.

```
Command ==> _____  
  
Press ENTER to continue or END to exit.  
  
Specify DBD input for batch collection  
  
Alternate DBD library . . . _____
```

# Batch DBDSGRP Build – Specify Job Card

```
Command ==> _____

Press ENTER to continue or END to exit                               Last panel in

Specify job card information for all batch built DBDSGRPs jobs.

. . //&JOBNAME JOB (4101,310,023110,CL3,195,20195),'JK-03-15-02',
. . //*
. . //*
. . //*
```

# Batch DBDSGRP Build – Batch JCL

JCL to run the batch DBDSGRP collection is presented in ISPF edit. You can submit and/or save it.

**Caution – the DBD library name used for build is in JCL.**

The next panel allows the JCL to be saved.

```
File Edit Edit_Settings Menu Utilities Compilers I
-----
EDIT          T187.AUS53.ISPFILE.SYSIN
Command ==>
***** ***** Top of Data *****
==MSG> -Warning- The UNDO command is not available until y
==MSG>          your edit profile using the command RECOV
000001 //T1876 JOB (4101,310,023110,CL3,195,20195),'JK-03-
000002 //*
```



# The Maintenance JCL Built (interactive & batch)

Batch - JCL is in `permdshlq.csid.CNTL`. ### incremented for each DB.

One member per database is built in `permdshlq.csid.FDBDLIST(dbdsgrp)`.

<u>JOBNAME</u>	<u>DESCRIPTION</u>
A###IC1	IMAGE COPY DATABASES
A###I21	IMAGE COPY 2 DATABASES
A###PD1	POINTER CHECKER FOR DATABASES
A###RE1	REORG DATABASES
A###RE21	IMAGE COPY/REORG/IMAGE COPY DATABASES
A###REI1	REORG/IMAGE COPY DATABASES
A###RP1	PARALLEL REORG DATABASES
A###RP21	IMAGE COPY/PARALLEL REORG/IMAGE COPY DATABASES
A###RX1	REBUILD A HIDAM PRIMARY OR ANY DBORG SECONDARY INDEX
A###RI1	RECOVER A DATABASE/INDEX USING ICE
A###RI2	ICE RECOV DB & PRIME IDX/PTR CHK/REBUILD SECONDARIES
A###RD2	DBDSGRP DATABASE RECOVERY FACILITY
A###MON	SPACE MONITOR DATABASES
A###DYND	BUILD DYNLIB MEMBERS FOR DATABASES
A###DYNR	BUILD DYNLIB MEMBERS FOR RECON DATA SETS



# Run JCL Interactively

To run the JCL interactively, go back to the "CS ID Main Menu". Select "2" **Run jobs**.

```
Select a task or press END to exit

Tasks      . . 2_  1. Set up environment
              2. Run jobs
              3. Maintain RECON
              4. Perform library integrity checking
              5. ISPF links to other IMS tools
              6. System administration
```

JCL for DBDSGRPs collected in batch are still interactively built. The JCL in [permdshlq.csid.CNTL](#) is not used.

# Run JCL Interactively

Select the type of DB maintenance you would like to perform.

```
Select a job list or press END to exit

Job lists . . 6  1. Backup databases
                  2. Recover databases
                  3. Monitor/Reorganize databases
                  4. Fast Path Support
                  5. Database Recovery Facility
                  6. All jobs
```

# Run JCL Interactively

Select DBDSGRP to perform maintenance against.

```
Enter F string on the ISPF command line to find a D  
Description. Enter F by itself to redisplay the full
```

```
Select (S)
```

DBDSGRP	DESCRIPTION
<u>S</u> AUS53002	NAPS Activity History (RXAPHH53)
_ A001G	Batch logical/index PRIME=PDRHHI53
_ A002G	Batch logical/index PRIME=PDRHHI53
_ A003G	Batch logical/index PRIME=RAOLHP53
_ A004G	Batch logical/index PRIME=RAOLHV53
_ A005G	Batch logical/index PRIME=RKAUHC53
_ A006G	Batch logical/index PRIME=RKAUHP53
_ A007G	Batch logical/index PRIME=RKAUHR53



# Run JCL Interactively

Select job you want to build/run

The screen flashes.....

```
ALL JOBS    job list for DBDSGRP  AUS53002
USERID for jobname . . ___ (Y or N)          USERID jobname suffix . .
Edit last job built . . N_ (Y or N)
Alternate DBDLIB . . IMSVS.COL.DBDLIB
User JCLPDS library . . _____

Select (S)
  JOBNAME  ALTNAME  DESCRIPTION
  ___ RX53IC1  _____ IMAGE COPY DATABASES
  ___ RX53I21  _____ IMAGE COPY 2 DATABASES
  S RX53PD1  _____ POINTER CHECKER FOR DATABASES
  ___ RX53RE1  _____ REORG DATABASES
  ___ RX53RE21 _____ IMAGE COPY/REORG/IMAGE COPY DATABASES
  ___ RX53REI1 _____ REORG/IMAGE COPY DATABASES
  ___ RX53RP1  _____ PARALLEL REORG DATABASES
  ___ RX53RP21 _____ IMAGE COPY/PARALLEL REORG/IMAGE COPY DATABASES
  ___ RX53RX1  _____ REBUILD A HIDAM PRIMARY OR ANY DBORG SECONDARY INDEX
  ___ RX53RI1  _____ RECOVER A DATABASE/INDEX USING ICE
```



# Run JCL Interactively

JCL to run the maintenance job you selected is presented in ISPF edit. You can submit and/or save it.

The next panel allows the JCL to be saved.

IC dataset names are given the date/time of JCL creation.

```
EDIT          T187.D223.JCLOUT2                               Col
Command ==> _____
*****  ***** Top of Data *****
000001  //RX53PD1 JOB (4108,310,024300),KANOUSJ,REGION=4M
000002  //*
000003  //*
000004  //*
000005  //*
```

# The Reorg Job Challenges

Getting the JCL built by DCS into the production jobs which are already defined to scheduler.

Generating dynamic Image Copies to our preferred naming standards and stacking Image Copies.

Adding our DBRECOV Image Copy (CA-FAVER).

Using the generated delete/defines in non-standard DB maintenance jobs, like reorganizing indexes with repro.

Getting the correct libraries (DBD, PSB, Recons) into the JCL.

# Questions?



For additional information please contact

John Kanouse - [kanousj@nationwide.com](mailto:kanousj@nationwide.com)