

Simplifying IMS Dynamic Resource Definition: A Basic Approach with Best Practices

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August 12, 2013
Session Number 14020

Agenda



- DRD review
- Basic components of a DRD environment
 - System Resource Definition Data Set (RDDS)
 - Common Service Layer (CSL)
 - DRD-enabled IMS system(s)
 - Single Point of Control (SPOC)
- Simplified setup of DRD components
 - RDDS allocation
 - PROCLIB members
 - DFSDFxxx – IMS
 - CSLOIxxx – OM
 - CSLSIxxx – SCI
 - RDDS population
 - TSO SPOC application and DRD commands
- Best practices for migration and usage

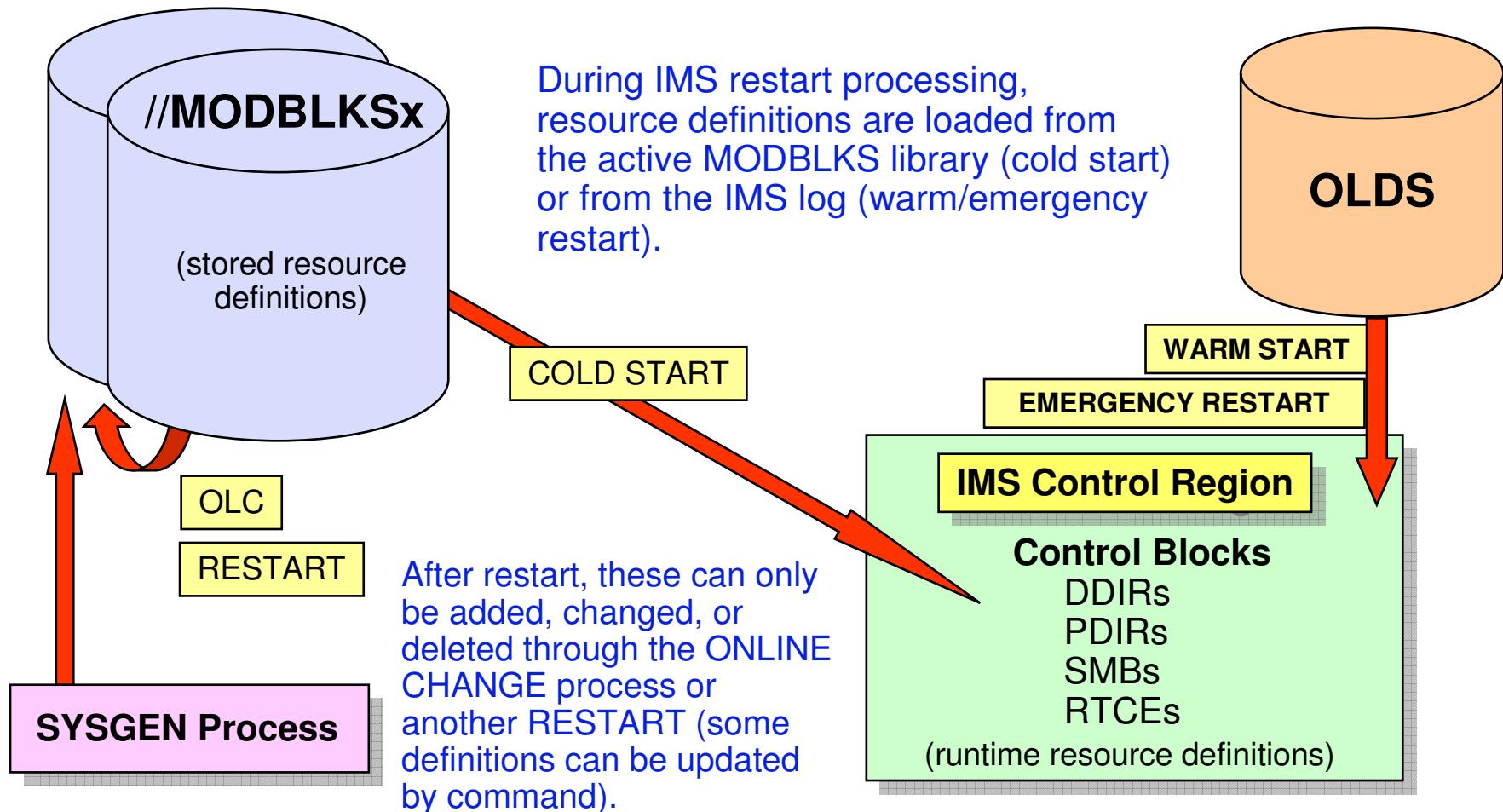
DRD Review

DRD Review



- OBJECTIVE: Improve the availability of the IMS online environment
- Allow user to dynamically define and enable MODBLKS resource definitions
 - *Databases*
 - *Programs*
 - *Transactions*
 - *Routing Codes*
- Benefits
 - No requirement for MODBLKS SYSGEN
 - No requirement for IMS restart/MODBLKS online change
 - Limitations associated with these methods eliminated
 - Increased resource availability
- Type-2 commands: CREATE, DELETE, UPDATE, EXPORT, IMPORT

Modifying MODBLKS Resources without DRD

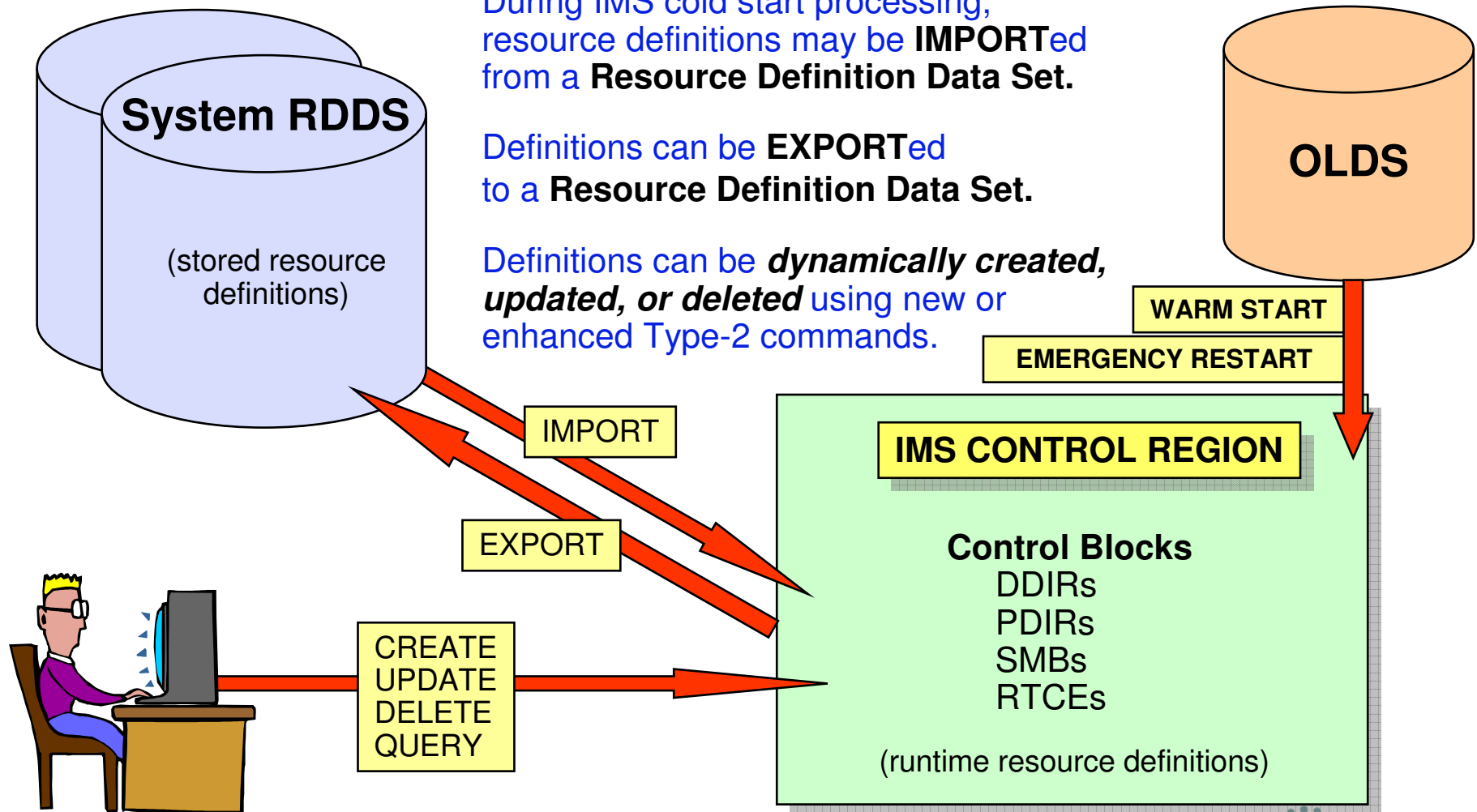


Modifying MODBLKS Resources with DRD

During IMS cold start processing, resource definitions may be **IMPORTed** from a Resource Definition Data Set.

Definitions can be **EXPORTed** to a Resource Definition Data Set.

Definitions can be *dynamically created, updated, or deleted* using new or enhanced Type-2 commands.



Basic DRD Components

Basic DRD Environment Components

- System RDDS
 - Data set that contains stored resource definitions for transactions, programs, databases, and routing codes
- CSL
 - Structured Call Interface (SCI) enables communication between IMSplex address spaces
 - Operations Manager (OM) does command routing/response to/from IMS
- IMS systems enabled for DRD to allow dynamic resource management
- SPOC
 - Command origin point and response formatter
 - Interface between user and OM

Simplified DRD Setup

System RDDS

- Provides a single system view of an IMS's resources and descriptors
- Contains all resource and descriptor definitions for an IMS
- Each IMS must define its own set of system RDDS data sets
- A set of system RDDS data sets must be defined for automatic import and automatic export
- BSAM data set
- Minimum of 2 system RDDSs, but ideal to have 3

Sample JCL for RDDS Allocation



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMPOT19.TESTXYZ(DFSRDDAL) - 01.32      Line 00000000 Col 001 080
***** Top of Data *****
//RDDSALC    JOB  CLASS=A,MSGCLASS=H,MSGLEVEL=(1,1)
//S1         EXEC PGM=IEBGENER
//SYSOUT     DD  SYSOUT=*
//SYSPRINT   DD  SYSOUT=*
//SYSUT1     DD  DUMMY,BLKSIZE=32760,RECFM=VB
//SYSUT2     DD  DSN=IMS.IMSD.RDDS1,
//           DCB=(RECFM=VB,LRECL=32756,BLKSIZE=32760),
//           UNIT=SYSDA,
//           DISP=(,CATLG),SPACE=(TRK,(10,10))
//SYSIN      DD  DUMMY
***** Bottom of Data *****

Command ==>
F1=Help    F2=Split  F3=Exit   F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

DFSDFxxx – CSL Settings



```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) - 01.11      Line 00000000 Col 001 080
***** Top of Data *****
*-----*
* COMMON SERVICE LAYER SECTION                      *
*-----*
<SECTION=COMMON_SERVICE_LAYER>
CMDSEC=R,
IMSPLEX=DEMOM,
LEOPT=Y,
OLC=LOCAL,
MODBLKS=DYN,
RMENV=N,
OMPROC=CSLDM,
SCIPROC=CSLSCI
*-----*
* DYNAMIC RESOURCES SECTION                        *
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
Command ==>
F1=Help    F2=Split  F3=Exit   F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

DFSDFxxx – CSL Settings

Specify the IMSplex name with
IMSPLEX=, which should match the
IMSplex name setting in the OM/SCI
initialization PROCLIB members

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) -
***** Top of
*-----*
* COMMON SERVICE LAYER SECTION
*-----*
<SECTION=COMMON_SERVICE_LAYER>
CMDSEC=R,
IMSPLEX=DEMOM, ←
LEOPT=Y,
OLC=LOCAL,
MODBLKS=DYN,
RMENV=N,
OMPROC=CSLDM,
SCIPROC=CSLSCI
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
Command ==>
F1=Help    F2=Split  F3=Exit   F5=Rfind  F7=Up     F8=Down   F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

DFSDFxxx – CSL Settings

RMENV=N activates the enhanced command environment, in which OM and SCI are automatically started during IMS initialization

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) -
***** Top of
*-----*
* COMMON SERVICE LAYER SECTION
*-----*
<SECTION=COMMON_SERVICE_LAYER>
CMDSEC=R,
IMSPLEX=DEMOM,
LEOPT=Y,
OLC=LOCAL,
MODBLKS=DYN,
RMENV=N,
OMPROC=CSL,
SCIPROC=CSLSCI
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
Command ==>
F1=Help    F2=Split  F3=Exit   F5=Rfind  F7=Up     F8=Down   F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

DFSDFxxx – CSL Settings

OMPROC and SCIPROC indicate which procedures will be invoked to start the OM and SCI address spaces during IMS initialization

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) -
***** Top of
*-----*
* COMMON SERVICE LAYER SECTION
*-----*
<SECTION=COMMON_SERVICE_LAYER>
CMDSEC=R,
IMSPLEX=DEMOM,
LEOPT=Y,
OLC=LOCAL,
MODBLKS=DYN,
RMENV=N,
OMPROC=CSLQM,
SCIPROC=CSLSCI
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
Command ==>
F1=Help    F2=Split  F3=Exit   F5=Rfind  F7=Up     F8=Down   F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

Sample CSLOM Procedure

OMINIT=00D specifies the suffix of the CSLOIxxx initialization member that will be read during OM startup:
CSLOI00D

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMPOT19.TESTXYZ(CSLOM) - 01.59
***** Top of
//CSLOM      PROC RGN=3000K,SOUT=A,
//           RESLIB='IMS.IMSD.SDFSRESL
//           BPECFG=BPECFG,
//           OMINIT=00D,
//           PARM1='ARMRST=Y,CMDSEC=N,OMNAME=OM1,CMDLANG=ENU'
// *
//OMPROC     EXEC PGM=BPEINI00,REGION=&RGN,
// PARM='BPECFG=&BPECFG,BPEINIT=CSLOINI0,OMINIT=&OMINIT,&PARM1'
// *
//STEPLIB    DD DSN=&RESLIB,DISP=SHR
//           DD DSN=SYS1.CSSLIB,DISP=SHR
//PROCLIB    DD DSN=IMS.IMSD.PROCLIB,DISP=SHR
//SYSPRINT   DD SYSOUT=&SOUT
//SYSUDUMP   DD SYSOUT=&SOUT
// *
***** Bottom of Data *****

Command ==>
F1=Help    F2=Split  F3=Exit   F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

MA B
```


CSLOIxxx - OM Initialization

Specify the IMSplex name with
IMSPLEX=, which should match the
IMSplex name setting in the
DFSDFXxx and CSLSIxxx members

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(CSLOI00D) - 0
***** Top of I
*-----*
* OPERATIONS MANAGER INITIALIZATION PARAM
*-----*

ARMRST=N,                /* SHOULD ARM RESTART OM ON FAILURE? */
CMDLANG=ENU,             /* USE ENGLISH FOR COMMAND DESC      */
CMDSEC=N,                /* COMMAND SECURITY DELEGATED TO IMS  */
OMNAME=IMSD,             /* OM NAME (OMID = XXXXXXOM)         */
IMSPLEX(
  NAME=DEMOM,             /* IMSPLEX NAME                       */
  AUDITLOG=SYSLOG.MVSQ01.LOG), /* MVS LOG STREAM                     */
CMDTEXTDSN=IMS.V12R1.SDFSDATA /* PDS WITH CMD SYNTAX TRANSL TEXT  */

*-----*
* END OF MEMBER
*-----*
***** Bottom of Data *****
Command ==> _____ Scroll ==> PAGE
F1=Help   F2=Split  F3=Exit   F5=Rfind  F7=Up    F8=Down  F9=Swap
F10=Left  F11=Right F12=Cancel

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```

Sample CSLSCI Procedure

```
Session B - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE IMPOT19.TESTXYZ(CSLSCI) - 01.
***** Top of
//CSLSCI PROC RGN=3000K,SOUT=A,
// RESLIB='IMS.IMSD.SDFSRESL
// BPECFG=BPECFG,
// SCIINIT=00D,
// PARM1=PARM1='ARMRST=Y,SCINAME=SCI1'
//*
//SCIPROC EXEC PGM=BPEINI00,REGION=&RGN,
// PARM='BPECFG=&BPECFG,BPEINIT=CSLSINI0,SCIINIT=&SCIINIT,&PARM1'
//*
//STEPLIB DD DSN=&RESLIB,DISP=SHR
// DD DSN=SYS1.CSSLIB,DISP=SHR
//PROCLIB DD DSN=IMS.IMSD.PROCLIB,DISP=SHR
//SYSPRINT DD SYSOUT=&SOUT
//SYSUDUMP DD SYSOUT=&SOUT
//*
***** Bottom of Data *****

Command ==> _____ Scroll ==> PAGE
F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

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```

SCIINIT=00D specifies the suffix of the CSLSIxxx initialization member that will be read during SCI startup: CSLSI00D

CSLSIxxx - SCI Initialization

Specify the IMSpIex name with IMSPLEX=, which should match the IMSpIex name setting in the DFSDFxxx and CSLOIxxx members

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE IMS.IMSD.PROCLIB(CSLSI00D) - C
***** Top of *****
*-----*
* STRUCTURED CALL INTERFACE INITIALIZATION
*-----*

ARMRST=Y, /* SHOULD ARM RESTART SCI ON FAILURE? */
SCINAME=IMSD, /* SCI NAME (SCIID = XXXXXSCI) */
IMSPLEX(NAME=DEM0D) /* IMSPLEX NAME (CSLXXXXX) */

*-----*
* END OF MEMBER
*-----*
***** Bottom of Data *****

Command ==> PAGE
F1=Help F2=Split F3=Exit F5=Rfind F7=Up F8=Down F9=Swap
F10=Left F11=Right F12=Cancel

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```

DFSDFxxx – DRD Enablement for IMS

MODBLKS=DYN indicates that DRD will be used to manage MODBLKS resource definitions instead of online change

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) - 0
*****
*-----*
* COMMON SERVICE LAYER SECTION
*-----*
<SECTION=COMMON_SERVICE_LAYER>
CMDSEC=R,
IMSPLEX=DEMOM,
LEOPT=Y,
OLC=LOCAL,
MODBLKS=DYN,
RMENV=N,
OMPROC=CSLDM,
SCIPROC=CSLSCI
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
Command ==>
F1=Help    F2=Split  F3=Exit    F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

DFSDFxxx – DRD Enablement for IMS

AUTOEXPORT=AUTO
will cause IMS to automatically
export all resource and descriptor
definitions to the system RDDS
at every system checkpoint,
including right after coldstart

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) -
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
AUTOIMPORT=AUTO,
RDDSDSN=(
    IMS.IMSD.RDDS1,
    IMS.IMSD.RDDS2,
    IMS.IMSD.RDDS3)
***** Bottom of Data *****

Command ==>
F1=Help    F2=Split  F3=Exit    F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

DFSDFxxx – DRD Enablement for IMS

AUTOIMPORT=AUTO
will cause IMS to read
resource and descriptor
definitions from the system RDDS
during coldstart, and from
MODBLKS if RDDS is empty

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) -
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
AUTOIMPORT=AUTO,
RDDSDSN=(
    IMS.IMSD.RDDS1,
    IMS.IMSD.RDDS2,
    IMS.IMSD.RDDS3)
***** Bottom of Data *****

Command ==>
F1=Help    F2=Split  F3=Exit    F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

MA A
```

DFSDFxxx – DRD Enablement for IMS

Use RDDSDSN= to specify system RDDS names that you previously allocated

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Help

BROWSE      IMS.IMSD.PROCLIB(DFSDF00D) -
*-----*
* DYNAMIC RESOURCES SECTION
*-----*
<SECTION=DYNAMIC_RESOURCES>
AUTOEXPORT=AUTO,
AUTOIMPORT=AUTO,
RDDSDSN=(
  IMS.IMSD.RDDS1,
  IMS.IMSD.RDDS2,
  IMS.IMSD.RDDS3)
***** Bottom of Data *****

Command ==>
F1=Help    F2=Split  F3=Exit    F5=Rfind   F7=Up      F8=Down    F9=Swap
F10=Left   F11=Right  F12=Cancel

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```

Populating System RDDS First Time

- AUTOIMPORT=AUTO and AUTOEXPORT=AUTO will populate RDDS with definitions from MODBLKS
 - When coldstarting IMS for the first time after enabling DRD, its system RDDS will be empty, so IMS will autoimport definitions from MODBLKS dataset
 - Autoexport will occur after coldstart complete, populating the system RDDS with the definitions just read in from MODBLKS data set
 - At next coldstart, IMS will autoimport from the system RDDS since it now contains definitions

TSO SPOC & DRD Commands

Invoking TSO SPOC Application for Commands

```
Session A - [24 x 80]
File Edit View Communication Actions Window Help
Help
IMS Application Menu                                Enter option
Select an application and press Enter.

1 Single Point of Control (SPOC)
2 Manage resources
3 Reserved for future use
4 HALDB Partition Definition Utility (PDU)
5 Syntax Checker for IMS parameters (SC)
6 Installation Verification Program (IVP)
7 IVP Export Utility (IVPEX)
8 IPCS with IMS Dump Formatter (IPCS)
9 Abend Search and Notification (ASN)

To exit the application, press F3.

Command ===>
F1=Help  F12=Cancel
MA A
```

Invoking TSO SPOC Application for Commands

Session A - [24 x 80]

File Edit View Communication Actions Window Help

File Action Manage resources SPOC View Options Help

DEMOD IMS Single Point of Control

Command ==> _____

_____ Plex . . _____ Route . . _____ Wait . . _____

Response for:

CSLM000I Copyright IBM Corp. 2000. All rights reserved.

F1=Help F3=Exit F4=Showlog F6=Expand F9=Swap F12=Cancel

MA A 04/015

Invoking TSO SPOC Application for Commands

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
File Action Manage resources SPOC View Options Help
DEMOD                      IMS Single Point o 1 _1. Preferences...
Command ==>                  2. Set IMS groups...
Plex . .                    Route . .          Wait . .
Response for:
CSLM000I      Copyright IBM Corp. 2000. All rights reserved.

F1=Help      F3=Exit      F4=Showlog      F6=Expand      F9=Swap      F12=Cancel
MA A
03/050

```

Invoking TSO SPOC Application for Commands

Session A - [24 x 80]

File Edit View Communication Actions Window Help

Help

DEMODOIMS Single Point of Control Preferences

Command ==> _____
Select your options and press the Enter key.

More: +

Command Entry Preferences

Default IMSplex DEMODO

Default routing _____

Wait interval _____

Waiting preference . . . 1 1. Wait for command to complete.
2. Do not wait for command response.

Command shortcuts . . . 2 1. Use command shortcuts.
2. Do not use command shortcuts.

Shortcut processing . . . — 1. Merge explicit and default parameters.
2. Explicit parameters override defaults.

F1=Help F12=Cancel

MA A A 11/026

Dynamically Creating a Program Resource

Session A - [24 x 80]

File Edit View Communication Actions Window Help

File Action Manage resources SPOC View Options Help

DEMOD IMS Single Point of Control

Command ==> _____

_____ Plex . . _____ Route . . _____ Wait . . _____

Response for: CREATE PGM NAME(PGMXXC) SET(SCHDTYPE(SERIAL))

PgmName	MbrName	CC
PGMXXC	IMSD	0

F1=Help F3=Exit F4=Showlog F6=Expand F9=Swap F12=Cancel

MA A A 04/015

Updating a Resource Attribute Value

Session A - [24 x 80]

File Edit View Communication Actions Window Help

File Action Manage resources SPOC View Options Help

DEMOD IMS Single Point of Control

Command ==> _____

_____ Plex . . _____ Route . . _____ Wait . . _____

Response for: UPDATE PGM NAME(PGMXXC) SET(SCHDTYPE(PARALLEL))

PgmName	MbrName	CC
PGMXXC	IMSD	0

F1=Help F3=Exit F4=Showlog F6=Expand F9=Swap F12=Cancel

MA A A 04/015

Updating a Resource Status

Session A - [24 x 80]

File Edit View Communication Actions Window Help

File Action Manage resources SPOC View Options Help

DEMOD IMS Single Point of Control

Command ==> _____

_____ Plex . . _____ Route . . _____ Wait . . _____

Response for: UPDATE PGM NAME(PGMXXC) STOP(SCHD)

PgmName	MbrName	CC
PGMXXC	IMSD	0

F1=Help F3=Exit F4=Showlog F6=Expand F9=Swap F12=Cancel

MA A A 04/015

Dynamically Deleting a Resource

Session A - [24 x 80]

File Edit View Communication Actions Window Help

File Action Manage resources SPOC View Options Help

DEMOD IMS Single Point of Control

Command ==> _____

_____ Plex . . _____ Route . . _____ Wait . . _____

Response for: DELETE PGM NAME(PGMXXC)

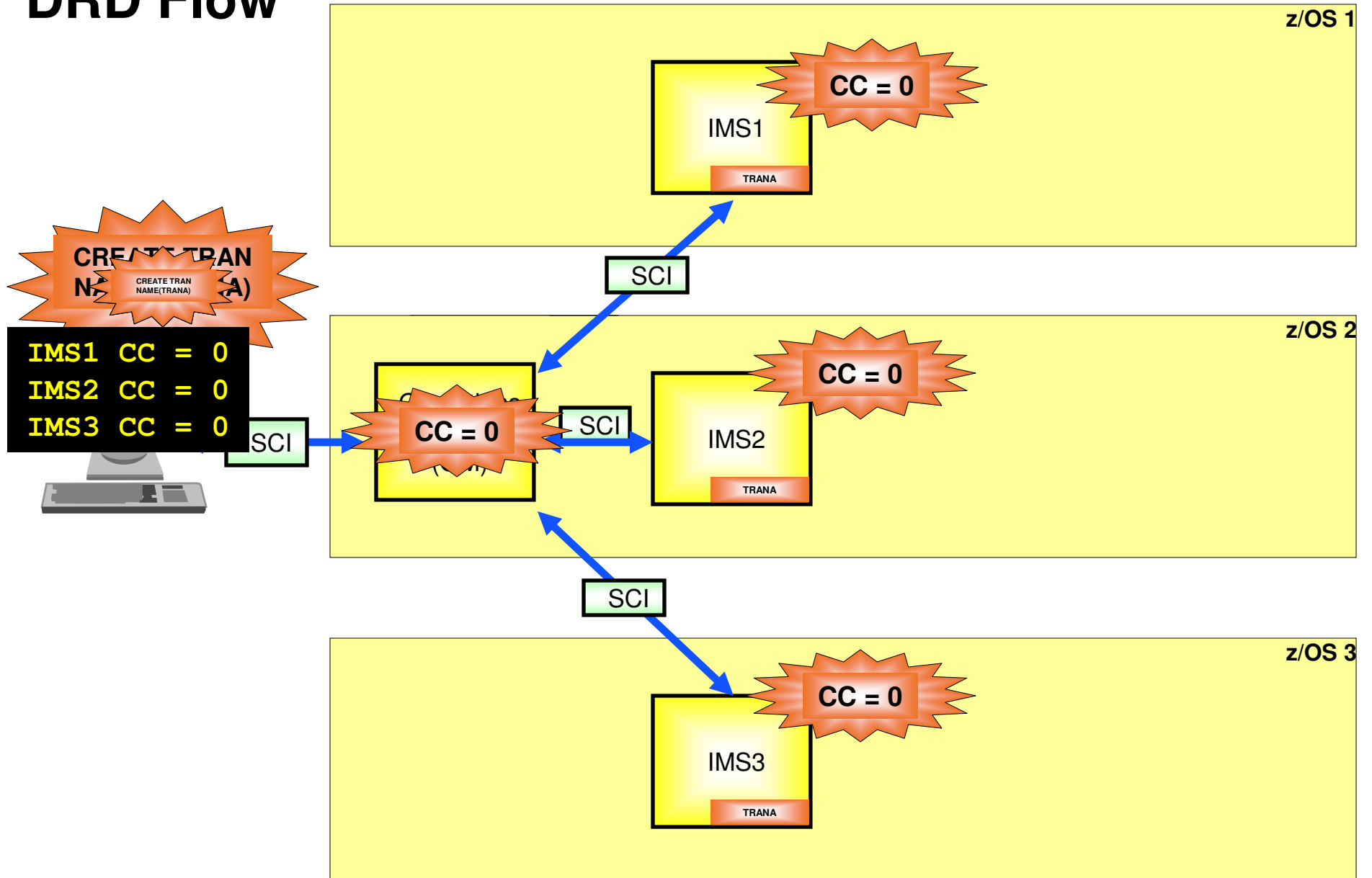
PgmName	MbrName	CC
PGMXXC	IMSD	0

F1=Help F3=Exit F4=Showlog F6=Expand F9=Swap F12=Cancel

MA A 04/015

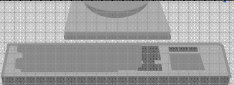
DRD in Action!

DRD Flow



SCI enables communication between the SPOC/OM as well as OM/IMS

```
IMS1 CC = 0
IMS2 CC = 0
IMS3 CC = 0
```



SCI

Operations Manager (OM)

SCI

SCI

IMS2
TRANA

SCI

IMS3
TRANA

IMS1
TRANA

z/OS 1

z/OS 2

z/OS 3

OM routes command to each IMS to create the TRANA transaction resource and consolidates the command response from each system

Best Practices for Migration and Usage

Managing Data Sets During Migration

- Keep MODBLKS data set and system RDDS synchronized during migration process
 - Why?
 - Enables fallback to OLC with MODBLKS data set in case DRD needs to be disabled
 - How?
 - Keep an up-to-date MODBLKS data set that matches most recently updated system RDDS
 - Use Extract RDDS Contents utility to generate STAGE1 macro definitions that reflect system RDDS contents
 - Generate MODBLKS data set with these STAGE1 definitions that are synchronized with the system RDDS

Managing Data Sets During Migration

- Keep MODBLKS data set and system RDDS synchronized during migration process
 - When?
 - Every time resource changes are made with DRD, keep MODBLKS data set up-to-date until migration process has been completed

Managing Data Sets After Migration

- Data set cleanup
 - System RDDS (most current) used for automatic import when IMS coldstarts unless MODBLKS is specified as the data set to import from
 - Delete MODBLKS data sets once DRD migration complete with successful testing

Deleting/Updating Resources with DRD

- Resource cannot be “in use”, for example:
 - Transaction with messages queued
 - Database referenced by a scheduled program
- Recommendation for deleting or updating a resource:
 - QUERY the resources with SHOW(WORK) specified to confirm no work in progress exists for resource
 - Stop resource before attempting to delete or update

Learning Type-2 Commands

- Become familiar with DRD commands
- UPDATE and QUERY commands all have type-1 command equivalents
 - See the *IMS Commands* manual for a chart that lists type-1 commands with their type-2 DRD command equivalents
 - Sneak Peek:

Task	Type-1 command	Type-2 command
Create or change the limit on the size of application program output segments allowed in message queues for each GU call.	/ASSIGN SEGSZ new_segsize_number TO TRAN tranname	UPDATE TRAN NAME(tranname) SET(SEGSZ(new_segment_size))
Change the class number of a transaction.	/ASSIGN TRAN tranname TO CLS new_class_number	UPDATE TRAN NAME(tranname) SET(CLASS(new_class_number))
Stop updates to a database.	/DBDUMP DB dbname	UPDATE DB NAME(dbname) STOP(UPDATES) OPTION(FEOV) ¹

Learning Type-2 Commands



- How do you find that neat table?
- Type “Equivalent IMS type-1 and type-2 commands” into a search engine and the first result leads to this page:

The screenshot shows the IBM website interface. The top navigation bar includes links for Home, Business solutions, IT services, Products, Support & downloads, and My IBM. A search bar is present with the text 'Search: [input] GO' and a 'Search scope: All topics' dropdown. The left sidebar contains a 'Contents' list with various topics, including 'Equivalent IMS type-1 and type-2 commands' which is highlighted. The main content area displays the search results for 'Equivalent IMS type-1 and type-2 commands' under the 'IMS Version 11' section. The page title is 'Equivalent IMS type-1 and type-2 commands'. The text explains that certain IMS type-1 commands and type-2 commands perform similar tasks. A table, 'Table 1. Type-2 equivalents for the /ASSIGN command', lists tasks, the corresponding /ASSIGN command, and the similar IMS type-2 command.

Task	/ASSIGN command	Similar IMS type-2 command
Changes the value for the limit count of a transaction.	/ASSIGN LCT new_lmct_number TO TRAN tranname	UPDATE TRAN NAME (tranname) SET(LCT(new_limit_count))
Changes the value for the limit priority of a transaction.	/ASSIGN LPRI new_lpri_number TO TRAN tranname	UPDATE TRAN NAME(tranname) SET(LPRI(new_limit_priority))
Changes the value for the normal priority of a transaction.	/ASSIGN NPRI new_npri_number TO TRAN tranname	UPDATE TRAN NAME(tranname) SET(NPRI(new_normal_priority))
Changes the value for the	/ASSIGN PARLIM new_parlim_number	UPDATE TRAN NAME(tranname) SET(PARLIM(new_parallel_limit))

Creating New Databases

- When adding a new database with DRD, create a corresponding DBD in ACBLIB using online change
 - Traditional (local) OLC
 - Global OLC
 - Member OLC
 - Highest availability, quiesces least amount of members
 - Does not support MSDBs
- Otherwise: newly created database will have a NOTINIT status until this ACBLIB step is completed

Creating New Databases

- Connect other IMS resources to newly created database, such as programs and transactions
- Choose to use DRD for managing MODBLKS resources or online change
 - Coldstart required to switch between the two, which can impact availability

Resources Created using LIKE()

- If updating a resource/descriptor, resources previously created from it will not automatically be updated
- Use Batch SPOC utility to submit UPDATE commands against resources requiring update separately
- Example:
 - CREATE TRANDESC NAME(TDESC1) SET(SERIAL(N))
 - CREATE TRAN NAME(TRAN1, TRAN2, ...) LIKE(TDESC1)
 - UPDATE TRANDESC NAME(TDESC1) SET(SERIAL(Y))
 - UPDATE TRAN NAME(TRAN1,TRAN2) SET(SERIAL(Y))
 - TRAN1, TRAN2, ... will still have SERIAL=N so must update separately

Batch DRD Updates

- Change management process that requires batch updates
 - Use Batch SPOC utility to submit DRD commands to IMS systems
 - Run in batch, commands submitted via JCL statements
 - Example

```
//SPOCJOB    JOB ,  
//MSGCLASS=H,NOTIFY=&SYSUID,USER=&SYSUID  
//SPOC      EXEC PGM=CSLUSPOC,  
//  PARM= ( ' IMSPLEX=PLEX1,ROUTE=IMS3,WAIT=30 ' )  
//STEPLIB   DD DISP=SHR,DSN=IMS.SDFSRESL  
//SYSPRINT  DD SYSOUT=*  
//SYSIN     DD *  
    CREATE TRAN NAME (TRAN1,TRAN2) SET (SERIAL(Y))  
    UPDATE TRAN NAME (TRAN3) SET (PARLIM(65535))  
/*EOF
```

Track DRD Activity with OM Audit Trail

- Enable OM Audit Trail to track IMSplex activity, including resources being dynamically managed
 - Displays DRD input commands + responses
 - Includes timestamps
 - Example showing an updated database and program...

OM Audit Trail Showing DRD Activity



- Enable OM Audit Trail to track IMSplex activity, including resources being dynamically managed
- Tracks DRD input commands/responses + timestamps

File	Action	Manage resources	SPOC	View	Options	Help
PLEX1						
IMSpdex Audit Trail						
Command ==> _____						
Members . . _____ Type . . _____						
More: -->						
MbrName	Time	Message				
USRT004	2008.149 09:43:47.14	Cmd input . : QRY DB NAME(B*) SHOW(ALL)				
USRT004	2008.149 09:43:47.14	Response for: QRY DB NAME(B*) SHOW(ALL)				
USRT004	2008.149 09:44:13.42	Cmd input . : UPD DB NAME(BANKTERM) SET(RESIDENT(Y				
USRT004	2008.149 09:44:13.42	Response for: UPD DB NAME(BANKTERM) SET(RESIDENT(Y				
USRT005	2008.149 09:44:54.83	Cmd input . : QRY MEMBER TYPE(IMS) SHOW(ATTRIB)				
USRT005	2008.149 09:44:54.83	Response for: QRY MEMBER TYPE(IMS) SHOW(ATTRIB)				
USRT005	2008.149 09:45:02.18	Cmd input . : QRY TRAN SHOW(ALL) STATUS(DYN,IOPREV				
USRT005	2008.149 09:45:02.18	Response for: QRY TRAN SHOW(ALL) STATUS(DYN,IOPREV				
USRT005	2008.149 09:45:25.23	Cmd input . : QRY DB SHOW(ALL) STATUS(ALLOCF,BACKO				
USRT005	2008.149 09:45:25.23	Response for: QRY DB SHOW(ALL) STATUS(ALLOCF,BACKO				
USRT001	2008.149 09:46:38.78	Cmd input . : QRY MEMBER TYPE(IMS) SHOW(ATTRIB)				
USRT001	2008.149 09:46:38.78	Response for: QRY MEMBER TYPE(IMS) SHOW(ATTRIB)				
USRT001	2008.149 09:46:42.76	Cmd input . : QRY PGM SHOW(ALL)				
USRT001	2008.149 09:46:42.76	Response for: QRY PGM SHOW(ALL)				
USRT001	2008.149 09:47:03.33	Cmd input . : UPD PGM NAME(APOL1) SET(DOPT(Y))				
F1=Help F3=Exit F5=Rfind F7=Up F8=Down F12=Cancel						

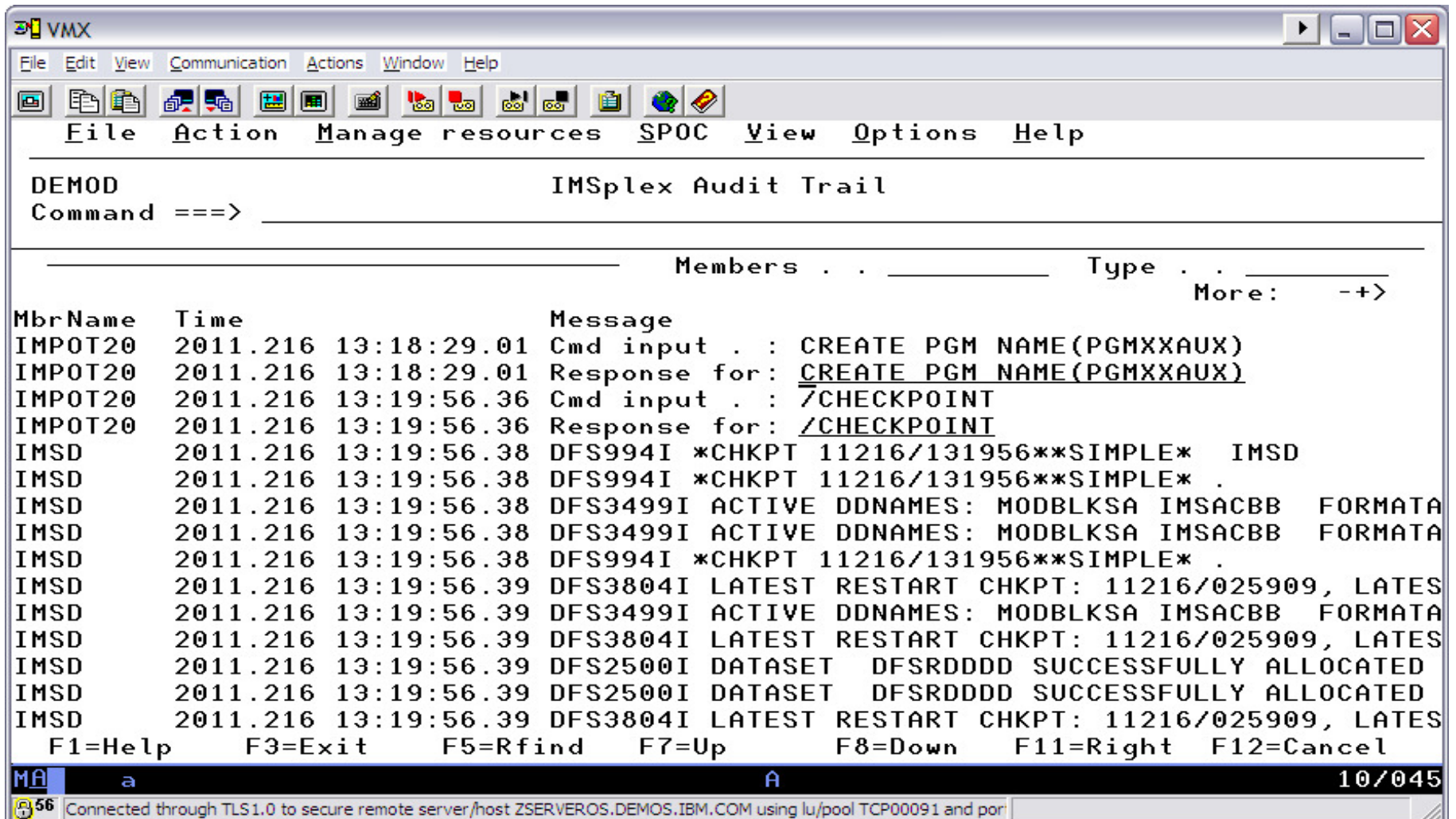
OM Audit Trail Showing DRD Activity

- Filter by user ID

File	Action	Manage resources	SPOC	View	Options	Help
PLEX1		IMSpdex Audit Trail				
Command ==>						
		Members	. <u>usrt002</u>	Type	. .	
						More: -+>
MbrName	Time	Message				
USRT002	2008.148 10:47:26.43	Response for: <u>DIS STATUS</u>				
USRT002	2008.148 11:08:37.49	Cmd input . : <u>DIS DB ALL</u>				
USRT002	2008.148 11:08:37.49	Response for: <u>DIS DB ALL</u>				
USRT002	2008.148 11:08:42.45	Cmd input . : <u>DIS STATUS</u>				
USRT002	2008.148 11:08:42.45	Response for: <u>DIS STATUS</u>				
USRT002	2008.148 11:39:12.95	Cmd input . : <u>DIS DB ALL</u>				
USRT002	2008.148 11:39:12.95	Response for: <u>DIS DB ALL</u>				
USRT002	2008.148 11:39:27.71	Cmd input . : <u>DIS STATUS</u>				
USRT002	2008.148 11:39:27.71	Response for: <u>DIS STATUS</u>				
USRT002	2008.148 12:52:48.28	Cmd input . : <u>QRY TRAN NAME (A*)</u>				
USRT002	2008.148 12:52:48.28	Response for: <u>QRY TRAN NAME (A*)</u>				
USRT002	2008.148 12:53:01.85	Cmd input . : <u>QRY DB NAME (A*)</u>				
USRT002	2008.148 12:53:01.85	Response for: <u>QRY DB NAME (A*)</u>				
USRT002	2008.148 12:53:13.26	Cmd input . : <u>DIS DB ALL</u>				
USRT002	2008.148 12:53:13.26	Response for: <u>DIS DB ALL</u>				
F1=Help		F3=Exit	F5=Rfind	F7=Up	F8=Down	F12=Cancel

OM Audit Trail Showing DRD Activity

- Includes type-1 and type-2 command input/response as well as unsolicited messages (anything that goes through OM)



VMX

File Edit View Communication Actions Window Help

File Action Manage resources SPOC View Options Help

DEMOD IMSplex Audit Trail

Command ==> _____

Members . . _____ Type . . _____

More: -+>

MbrName	Time	Message
IMPOT20	2011.216 13:18:29.01	Cmd input . : CREATE PGM NAME(PGMXXAUX)
IMPOT20	2011.216 13:18:29.01	Response for: <u>CREATE PGM NAME(PGMXXAUX)</u>
IMPOT20	2011.216 13:19:56.36	Cmd input . : /CHECKPOINT
IMPOT20	2011.216 13:19:56.36	Response for: <u>/CHECKPOINT</u>
IMSD	2011.216 13:19:56.38	DFS994I *CHKPT 11216/131956**SIMPLE* IMSD
IMSD	2011.216 13:19:56.38	DFS994I *CHKPT 11216/131956**SIMPLE* .
IMSD	2011.216 13:19:56.38	DFS3499I ACTIVE DDNAMES: MODBLKSA IMSACBB FORMATA
IMSD	2011.216 13:19:56.38	DFS3499I ACTIVE DDNAMES: MODBLKSA IMSACBB FORMATA
IMSD	2011.216 13:19:56.38	DFS994I *CHKPT 11216/131956**SIMPLE* .
IMSD	2011.216 13:19:56.39	DFS3804I LATEST RESTART CHKPT: 11216/025909, LATES
IMSD	2011.216 13:19:56.39	DFS3499I ACTIVE DDNAMES: MODBLKSA IMSACBB FORMATA
IMSD	2011.216 13:19:56.39	DFS3804I LATEST RESTART CHKPT: 11216/025909, LATES
IMSD	2011.216 13:19:56.39	DFS2500I DATASET DFSRDDDD SUCCESSFULLY ALLOCATED
IMSD	2011.216 13:19:56.39	DFS2500I DATASET DFSRDDDD SUCCESSFULLY ALLOCATED
IMSD	2011.216 13:19:56.39	DFS3804I LATEST RESTART CHKPT: 11216/025909, LATES

F1=Help F3=Exit F5=Rfind F7=Up F8=Down F11=Right F12=Cancel

MA a A 10/045

56 Connected through TLS1.0 to secure remote server/host ZSERVEROS.DEMOS.IBM.COM using lu/pool TCP00091 and por

Summary

- DRD review
- Basic components of a DRD environment
 - System Resource Definition Data Set (RDDS)
 - Common Service Layer (CSL)
 - DRD-enabled IMS system(s)
 - Single Point of Control (SPOC)
- Simplified setup of DRD components
 - RDDS allocation
 - PROCLIB members
 - DFSDFxxx – IMS
 - CSLOIxxx – OM
 - CSLSIxxx – SCI
 - RDDS population
 - TSO SPOC application and DRD commands
- Best practices for migration and usage