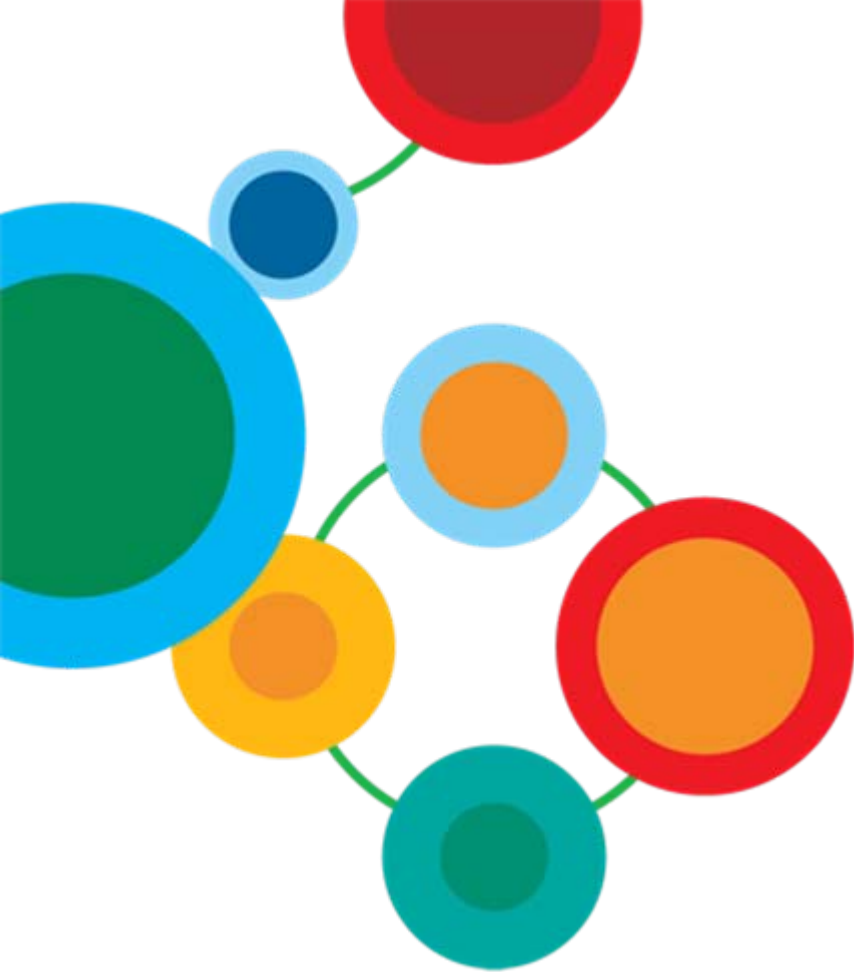




Improving the Manageability of IMS with IMS Configuration Manager

Session Number 1433

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IBM Software

Information On Demand **2011**

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Dynamic Resource Definition

- IMS 10 introduced dynamic resource definitions (DRD)
 - DRD allows IMS resources (transactions, programs, database and fast path routing codes) to be installed dynamically
 - DRD means you can introduce changes more frequently with no IMS down time
 - Maybe, but is it better than on-line change or IMS type 1 command?
 - DRD means you no longer need to perform a SYSGEN
- The DRD environment is a growing feature in IMS as the direction for a world without systems generations.



What are the challenges to success with DRD?

- Organizations usually have established processes around their IMSGEN – tight control of the change process
 - Stage 1 source is system definition base
 - Stage 1 source is constantly evolving
 - Changes deployed on regular scheduled basis
 - Cold start
 - Online Change or dynamic resource update
 - Migration to systems level by copying source
- With DRD, how do you achieve the same integrity in the system definition process?
 - What becomes your system definition base?
 - How do you know if the current MODBLKS are correct?
 - How do you stage changes into the system?
 - How do you migrate changes between system levels?
 - How to you bridge the ‘gap’ between SYSGEN and DRD?



Life Without SYSGEN: the challenges

- With DRD all MODBLKS changes look the same
 - How do they tell the difference between a schedules change and an ad hoc one?
 - How do you relate a change to a logical change request?
 - How do you schedule the installation of a change?
 - How do you get 'Change Control' approval?
 - how do you restore a system to a previous state?
 - What if updates to some of your applications still come as stage 1 source?
 - What do you consider your system image base?
- Some DRD changes require resource conditioning. For example, when can you stop a database or an application if necessary for DRD conditioning



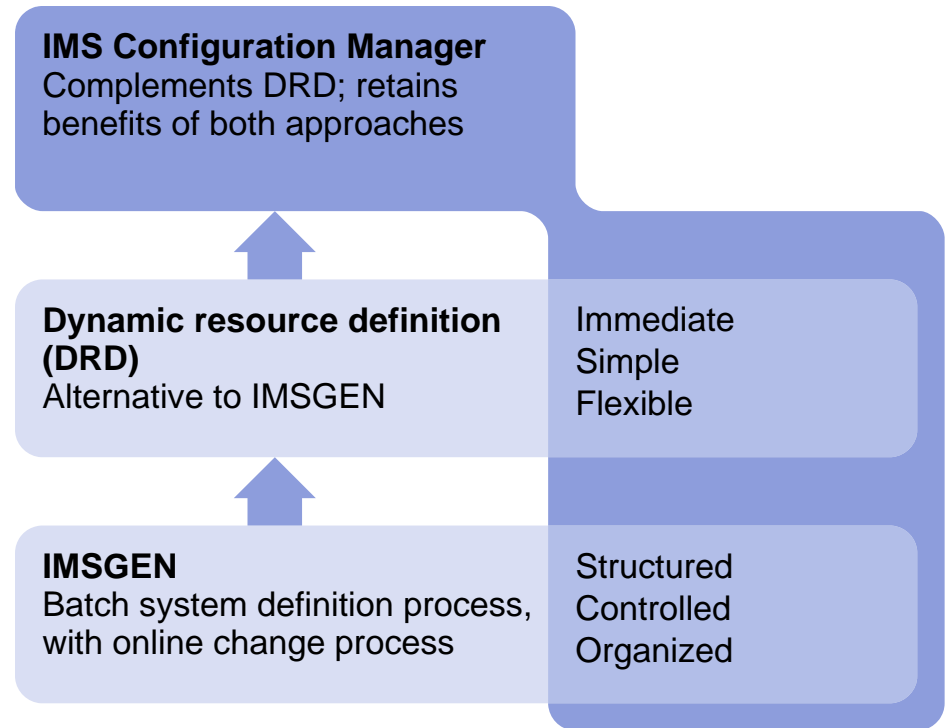
Introduction to IMS Configuration Manager

- IMS Configuration Manager consists of a resource manager and a parameter manager
- The resource manager provides offline management of IMS resources with an online resource installer that leverages the capabilities of DRD
 - Includes support for traditional SYSGEN environments to support a staged DRD conversion
 - Allows scheduled deployment of changed resources
 - Enables Change Control Process
 - Serves as system definition base
 - Provides history of resource deployment
 - Enables back out of incorrectly applied resource changes
- The parameter manager provides a robust smart editor for IMS parameters, syntax checking, and an edit history



How Configuration Manager helps

- Create and update IMS resources consistent with your needs
 - Delegate change entry as required
- Create collections of changed that need to be installed together
- Integrate DRD into existing change management processes
- Schedule install and/or backout with an intelligent resource installer
- Gain a complete audit history of all install activity performed through the product
- Migrate changes to different systems
- Enable an IMSPLEX view of changes



Configuration Manager Approach

- Changes to be installed reflected in change packages
 - You can see changes and status of each change package
- Install change package to RDDS or Stage 1
- Simplified resource definitions
 - Use models and apply system-specific attributes of resources
- Ability to use product without IMSPLEX definitions
- View resource definitions by IMS system
- DRD changes made via batch process
 - Can be scheduled for install 'window'
 - Audit logs for all install and/or back out executions



Getting Started

- Resource take-up: gathers resources from stage 1 source or RDDS and adds them to IMS Configuration Manager repository
 - Resources are organized into logical resource groups
 - Associate resource groups with IMS systems
- Edit and/or add resources to resource groups as required
- Add changes to resources into change packages:
 - Close and schedule change packages: create JCL for implementing the package
 - Command change packages: install updates using DRD commands
 - GEN change packages: generate an RDDS or Stage 1 source for cold-start processing and/or on-line change
- Run scheduled jobs: create stage 1/RDDS or install resources into live systems depending upon change package type



Takeup (simple)

```

File Help
-----
Resource Groups                               Row 1 of 8 More: <>
Command ==> NEW                               Scroll ==> PAGE

Select a Resource Group to process.

/
Resource Group      IMSID  Created      Changed      ID
*                   *      *            *            *
BILLING             2011-01-27  2011-03-16  17.16.23    REA
BILLING_TEMP       2011-01-27  2011-03-14  12.00.50    REA
GENERAL            2011-01-27  2011-01-31  13.18.16    REA
-----

New Resource Group

*****
Name . . . . . _____
IMSID . . . . . _____
Description . . _____

_ Add resources via Takeup
  Input type . . 1 1. Stage 1 macros
                  2. RDDS
  Input file . . 'IADK.VA10.CNTL(STAGE1)'
  User macro file 'FUNDID.IMS.MSGEN'
  _ Create notes from comments (stage 1 only)
  
```



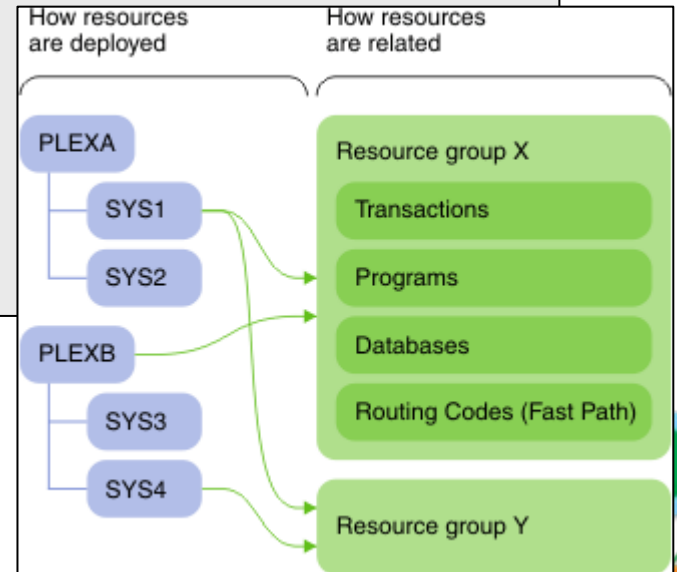
Take-up places resources in logical groups; includes associations



```
File Help
-----
Resource Groups                               Row 1 of 4 More: <>
Command ==> _____ Scroll ==> PAGE

Select a Resource Group to process.

/      Resource Group      Description
-----
_____ BANKING           Banking application definitions
_____ COMMON            Definitions common to all applications
_____ HR                HR application definitions
_____ PAYROLL           Payroll application definitions
***** Bottom of data *****
```



Support for the systems generation model

- IMS CM allows you to manage resources around your current cold-start windows
 - You can create changes for a cold start window, add those changes to a generate change package, and then continue work for the next window
 - If there are any emergencies or any changes that need to be scheduled straight away you can use on-line change just like you do now

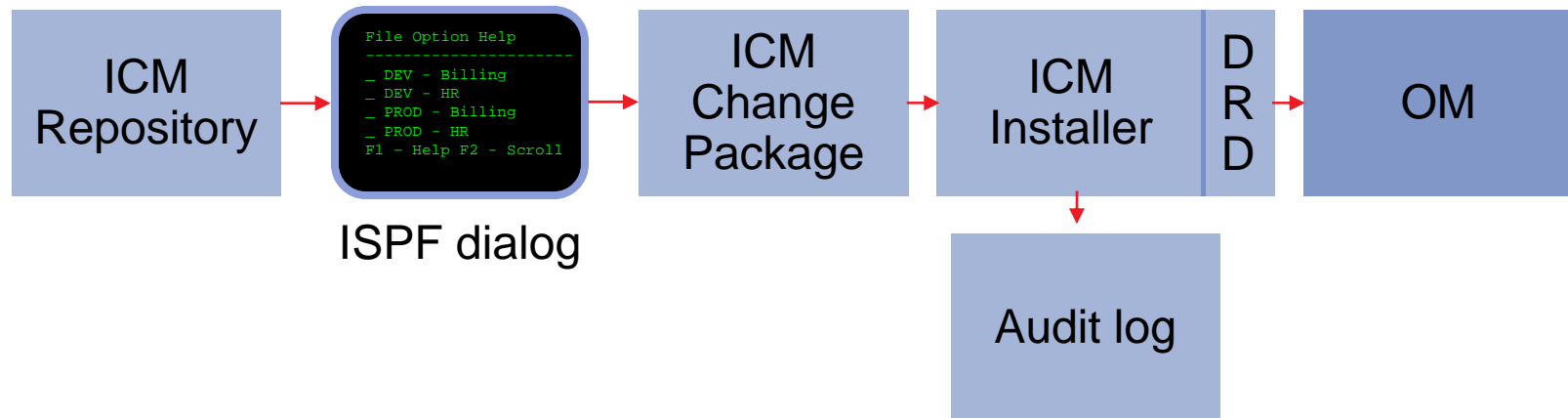


Workflow: updating and implementing changes to resources

- Even if you are DRD-enabled, all modification to resources are performed against the ICM repository
 - Build a change package from the required resources
 - Opportunity to review changes
 - Once closed a change package cannot be modified
 - Change package approval
 - Consolidate changes made by multiple groups within the organization
- Once you have put the changes in a change package you make more changes between update cycles
 - Deletes are the exception as they must be included in change package at the time of deletion if they will be implemented via DRD
- Workflows are provided for both GEN processes and DRD



ICM Processes: updating resources using DRD



- An ISPF dialog is provided to edit and manage resources
- An audit log is maintained of all live changes made through IMS Configuration Manager change packages



Simple forms for creating and updating resources

File Help

EDIT Transaction TX001

Command ==> _____

Update transaction definition.

Transaction . : TX001

Description . : You can use descriptions and notes -----> Notes... More: +

Attribute	Description
AOCMD <u>N</u>	AOI command option (CMD, N, TRAN, Y)
CLASS <u>1</u>	Class (1-999)
CMTMODE <u>SNGL</u>	Commit mode (SNGL, MULT)
CONV <u>N</u>	Conversational (Y, N)
DCLWA <u>N</u>	Log write-ahead option (Y, N)
DIRROUTE <u>N</u>	MSC direct routing option (Y, N)
EDITRTN _____	Input edit routine
EDITUC <u>Y</u>	Edit to uppercase (Y, N)
EMHBSZ _____	EMH buffer size (12-30720)
EXPTIME <u>0</u>	Expiration time (0-65535)
FP <u>N</u>	Fastpath processing option (N, E, P)
INQ <u>N</u>	Inquiry option (Y, N)
LCT <u>65535</u>	Limit count (1-65535)

- Context sensitive help
- Extensive validation
- Notes



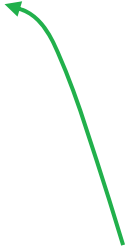
Create changes for the next cycle

```

File Help
-----
Change Packages - System View
Command ==> _____ Row 1 of 5 More: <>
                          Scroll ==> PAGE

IMSID . . . . . : IMSA  Version . . . : 11.1
System Description :
IMSplex . . . . . : PLXA

  Create Date/Time      Change Package Name      Status      Condition      Type
  *                    *                    *            *            *
/-----/
2011-03-17 15.56.21 EMER PLXREGEN            OPEN        NOTSCHED       CMD
2011-03-17 15.55.53 PLXREGEN                 CLOSED      NOTSCHED       GEN
2011-03-17 15.54.43 PLX REGEN                CLOSED      NOTSCHED       GEN
2011-03-17 15.52.35 EMER UPDATE TO APPS     CLOSED      NOTSCHED       CMD
2011-03-17 15.51.45 APRIL SYSGEN             CLOSED      NOTSCHED       GEN
***** Bottom of data *****
6 More: <>
I ==> PAGE
  
```

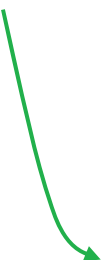


```

Resource Group . : BILL
IMSID . . . . . : IMSA  Version . . . : 11.1
Description . . . _____ Notes...

Select a resource to update its definition.

  Name      Prompt      Type      Created      Changed      ID
  *        *        *        *            *            *
/-----/
BILL      DATABASE  2011-03-16  2011-03-16  14.27.51    REA
BILL      TRAN      2011-03-16  2011-03-16  14.27.51    REA
BILLPGM   PROGRAM   2011-03-16  2011-03-16  14.27.51    REA
BILLPGM2  PROGRAM   2011-03-16  2011-03-16  14.29.17    REA
BILLSYSO  TRAN      2011-03-16  2011-03-16  14.28.43    REA
BILL5     TRAN      2011-03-16  2011-03-16  14.27.51    REA
***** Bottom of data *****
  
```



Create command change packages

```

File  Help
-----
Change Packages - System View                               Row 1 of 5 More: <>
Command ==> NEW                                           Scroll ==> PAGE

IMSID . . . . . : IMSA  Version . . : 11.1
System Description :
IMSplex . . . . . : PLXA

/
Create Date/Time      Change Package Name      Status      Condition      Type
*                    *                    *           *           *
2011-03-17 15.56.21  EMER PLXREGEN            CLOSED      NOTSCHED      CMD
2011-03-17 15.55.53  PLXREGEN                 CLOSED      NOTSCHED      GEN
-----
Create Change Package
*****
Command ==> _____
Change Package . . . APP2.01
Description . . . . Updates to new app
IMSplex . . . . . : PLXA
IMSID . . . . . : IMSA  Version . . : 11.1

Change Package type 1  1. COMMAND (CMD) - Selected resources
                     2. GENERATE (GEN) - Complete system image

Output Type . . . . - 1. Stage 1 Macros
                     2. Cold Start RDDS

```



Select the resources you want to include

```

File  Help
-----
                                Select Change Package Resources          Row 1 to 15 of 15
Command ==> _____ Scroll ==> PAGE

CP Name . . . . . : APP2.01
CP description . . : Updates to new app
IMSp lex . . . . . : PLXA
IMS ID . . . . . : IMSA  Version . . : 11.1

View . . . . . 2  1. Resource Groups
                  2. Resource Group elements

/  CP  Resource  Type      Resource Group  Lev  Changed
 *  *  *         *         *                 *  *
--  --  --      --      --
s  BI LL      DATABASE  BI LL          S    2011-03-16 14.27
--  --  --      --      --
s  BI LL      TRAN       BI LL          S    2011-03-16 14.27
--  --  --      --      --
  BI LLPGM    PROGRAM    BI LL          S    2011-03-16 14.27
--  --  --      --      --
  BI LLPGM2   PROGRAM    BI LL          S    2011-03-16 14.29
s  BI LLSYSO  TRAN       BI LL          S    2011-03-16 14.28
--  --  --      --      --
  BI LL2     TRAN       BI LL          C    2011-03-16 14.26
--  --  --      --      --
  BI LL3     TRAN       BI LL          C    2011-03-16 14.26
s  BI LL4     TRAN       BI LL          C    2011-03-16 14.26
--  --  --      --      --
  BI LL5     TRAN       BI LL          S    2011-03-16 14.27
--  --  --      --      --
  DBPART     DATABASE  UTIL          C    2011-03-17 15.50
--  --  --      --      --
  IVP        TRAN       UTIL          C    2011-03-18 14.41
--  --  --      --      --
  PART       PROGRAM    UTIL          C    2011-03-18 14.42
--  --  --      --      --
  UTI LPGM   PROGRAM    UTIL          C    2011-03-17 15.50
s  UTI LT1   TRAN       UTIL          C    2011-03-17 15.50
--  --  --      --      --
  UTI LT2   TRAN       UTIL          C    2011-03-17 15.50
***** Bottom of data *****

```



Close and schedule the change package

Schedule a COMMAND Change Package

Specify scheduling information and press Enter to process.
Press Cancel or Exit to cancel the request.

```

Create Date . . . . : 2011-08-01 11.42.14
Change Package . . : Command CP
Description . . . . : Closed and Scheduled
Type . . . . . : CMD
IMSID . . . . . : IMAB Version . . . : 12.1

Submit Immediately 2 1. Yes      2. No      3. Edit
Force . . . . . 2 1. Yes      2. No
NotReady . . . . . 1 1. Stop    2. Ignore
OnFailure . . . . . 1 1. Stop    2. Continue 3. Roll Back

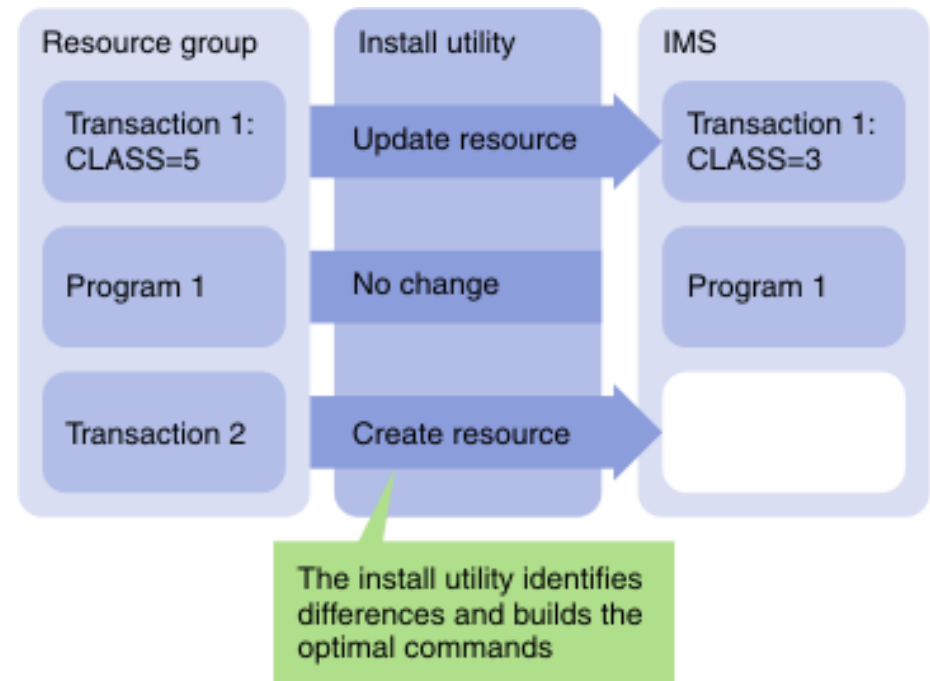
Output Type . . . . : ICMI (Install via DRD Type 2 commands)

JCL data set . . . . 'MY.JCL(INSTL)'
Journal data set _____
  
```



IMS Configuration Manager resource installer

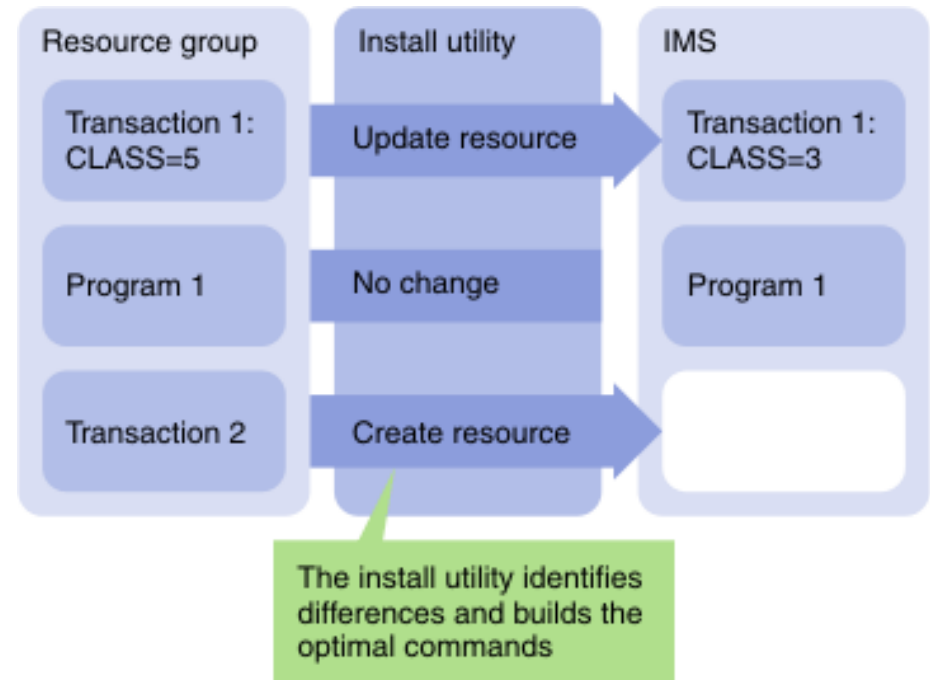
- The installer provides enhanced services on top of the IMS type-2 command interface
- Automatically determines whether an install or update is required
- Rollback option
- Full-logging and auditing of install activity



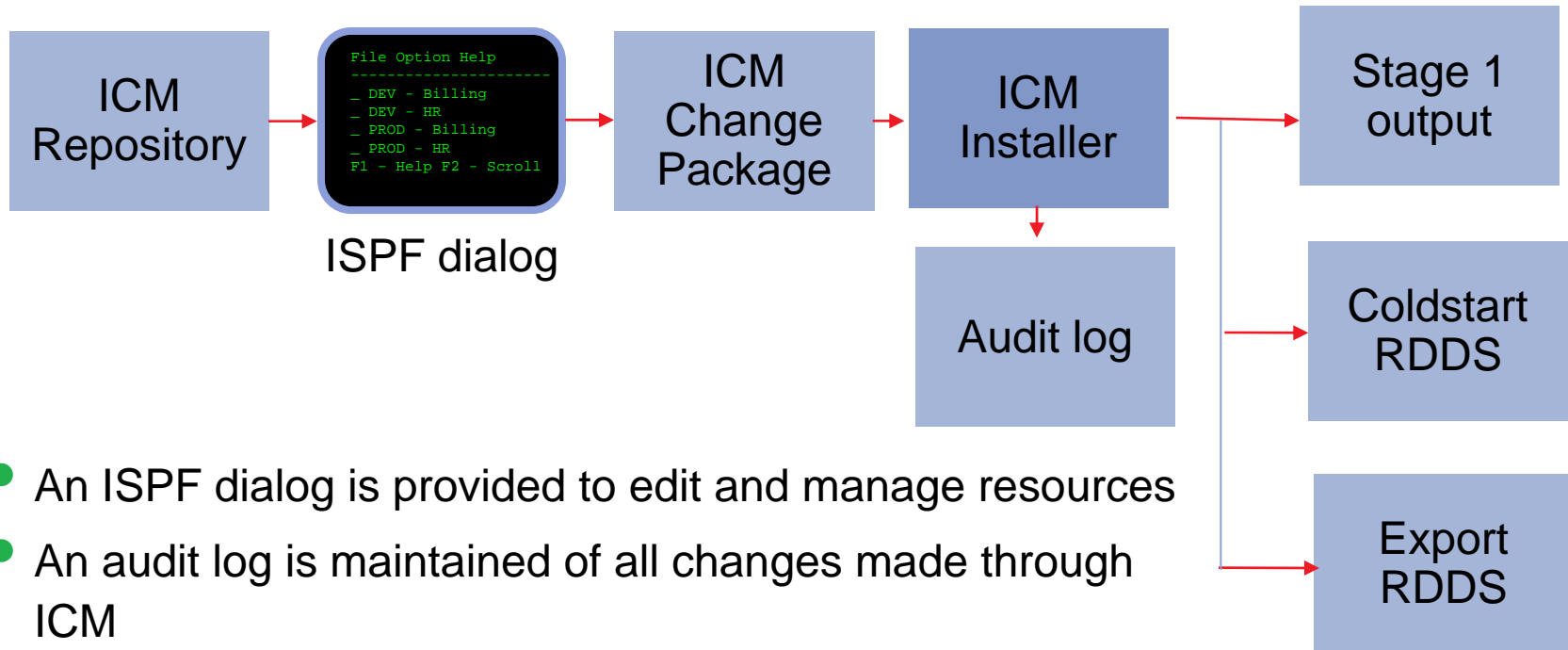
IMS Configuration Manager resource installer - BACKOUT



- Each change that is made is tracked in the journal
- A BACKOUT command can be used to reverse the changes



ICM Processes: Generate



- An ISPF dialog is provided to edit and manage resources
- An audit log is maintained of all changes made through ICM
- Used to enable support for current Sysgen environments during DRD conversion
- Enables DRD resource updates via IMS System Coldstart



GEN processing

- Also uses change packages
- A GEN change package contains an entire system image
- It is closed as soon as it is created
- Can create Stage 1 macros or a system RDDS

```

File  Help
-----
C      Command ===> _____ Create Change Package
I      Change Package . . . . . APRIL UPDATES
S      Description . . . . . Contains all updates for next cold start
I      IMSplex . . . . . : PLXA
      IMSID . . . . . : IMSA  Version . . . : 11.1

/      Change Package type 2  1. COMMAND (CMD) - Selected resources
      . . . . .                2. GENERATE (GEN) - Complete system image

      Output Type . . . . . 1  1. Stage 1 Macros
      . . . . .                2. Cold Start RDDS

*      * . . . . . * . . . . . * . . . . . * . . . . . * . . . . . * . . . . . *

```

Parameter management

- Enhanced parameter listing and search
 - Semantic search: finds parameters and members based on keywords; identifies missing parameters and members
 - Listing of PROCLIB members that are active on a given system
 - Edit history for all members
- Enhanced ISPF edit session that provides:
 - Checking of parameter syntax
 - Ability to insert parameters from a model
 - Context sensitive help for all parameters
 - Retains many ISPF edit functions
 - Does not alter or modify the member in anyway (unless you explicitly add or modify parameters)
 - Allows you to back up members before saving them
 - In the future may be extended to perform checking of entire PROCLIBs



Parameter semantic search

```

File Help
-----
EDIT      DVP. I BDF. VB10. PROCLIB                      Row 11 of 32
Command ==> _____ Scroll ==> CSR

Search . . . DRD
-----

Member
/ *
- DFSDFDVP          1  2009/02/11  2009/02/11 13:26:45  NMC2
  _ COMMON_SERVICE_L=...
  _ MODBLKS=...      How MODBLKS resources are changed
  _ DYNAMIC_RESOURCE=...
  _ AUTOEXPORT=...   Definitions exported at checkpoint time
  _ AUTOIMPORT=...   Definitions automatically imported in COLD
  _ DCLWA=...        Default log write ahead option for created
  _ IMPORTERR=...    Action on error during automatic import
  _ RDDSERR=...      Action on error when accessing RDDS
  _ RDDSDSN=...      List of DSNs for RDDS processing
-----
- DFSDFOO          1
  _ COMMON_SERVICE_L=...
  _ MODBLKS=DYN      /* DRD ENABLED; MODBLKS OLC
  _ DYNAMIC_RESOURCE

```

Finds members and parameters even if they do not exist
 Help for each parameter





File Edit Edit_Settings Help

```

EDIT      REA. CLIST(DFSDFBLN) - 01.01      Columns 00001 00072
Command ===> _____ Scroll ===> CSR
CHECK    Validate the member syntax
MODEL    Insert a new parameter with syntax assistance
HELP     Press F1 to request parameter sensitive help
*****  ***** Top of Data *****
000001   /*****
000002   /* Dynamic Resource Definition Section          */
000003   /*****
000004   <SECTION=DYNAMIC_RESOURCES>
000005   RDDSDSN=IMSTESTL. IMS1. RDDS1,
=====  +.....
==MSG>   Unmatched parenthesis. RDDSDSN=IMSTESTL
000006           IMSTESTL. IMS1. RDDS2,
000007           IMSTESTL. IMS1. RDDS3,)
000008   AUTOIMPORT=AUTO
000009   AUTOEXPORT=AUTO
000010   IMPORTER=ABORT
=====  +.....
==MSG>   Unknown parameter: 'IMPORTER
000011   RDDSERR=ABORT
000012   /*****

```

New parameter smart editor
 Syntax validation
 Parameter value validation
 Context sensitive help
 Works with existing members

Future possibilities

- Graphical user interface
 - Access from distributed platforms
 - Improved analytics



Firefox

IMS Configuration Manager - Web Admini... x +

http://jovial:9004/

Google SSL

Most Visited Slashdot Ars Technica Coding Horror Joel on Software BBC News - Home Guardian The Age

Version 0.0.1 IMS Configuration Manager - Web Administration Console Copyright (c) 2010 Fundi Softw

Connection Commands

Select an IMSplex: PLXDP

Recent

Databases Programs

Filtered <Locate value> <Find value> Compare

5/05/2011 08:25:41

Command: QUERY PGM NAME(*) SHOW(ALL)

Route: * % I9DP IBDP IADP

	PGMNAME	MBRNAME	CC	CCTEXT	RGNTYPE	BMPTYPE	FP	DOPT	GPSB	RSNT	LRSNT	TRANSTAT
	AUTPSB11	IADP	0		JMP	N	N	N	N		Y	N
<input checked="" type="checkbox"/>	BILLPGM	IADP	0		MPP	N	N	N	N		N	N
<input checked="" type="checkbox"/>	BMPAOI	IADP	0		BMP	Y	N	N	N		N	N
<input checked="" type="checkbox"/>	BMPTRNO	IADP	0		BMP	Y	N	N	N		N	N
<input checked="" type="checkbox"/>	BMPTRNOP	IADP	0		BMP	Y	N	N	N		N	N
<input checked="" type="checkbox"/>	BOPGM1	IADP	0		IFP	N	E	N	N		N	Y
<input checked="" type="checkbox"/>	BOPGM2	IADP	0		IFP	N	E	N	N		N	Y
<input checked="" type="checkbox"/>	BOPGM3	IADP	0		IFP	N	E	N	N		N	N
<input checked="" type="checkbox"/>	BOPGM4	IADP	0		BMP	Y	N	N	N	Y	N	Y
<input checked="" type="checkbox"/>	BOPGM5	IADP	0		IFP	N	E	N	N		N	Y
	BOPGM7	IADP	0		MPP	N	N	Y	N		N	Y
<input checked="" type="checkbox"/>	CEBPGM01	IADP	0		MPP	N	N	N	N		N	N
<input checked="" type="checkbox"/>	CEXPGM01	IADP	0		MPP	N	N	N	N		N	N
<input checked="" type="checkbox"/>	CEXSPGM	IADP	0		MPP	N	N	N	N		N	N
<input checked="" type="checkbox"/>	CEXTPGM	IADP	0		MPP	N	N	N	N		N	N
<input checked="" type="checkbox"/>	COMB	IADP	0		MPP	N	N	N	N		N	N
<input checked="" type="checkbox"/>	COMMON	IADP	0		MPP	N	N	N	N		N	N

Command History



Navigation

- IMS
 - Live View
 - PLXDP
 - Commands
 - Run
 - Saved Commands
 - Saved Results
 - Session History
 - Systems
 - Databases
 - Programs
 - Transactions
 - Routing Codes
 - Members
 - PLXD4
 - Repository View

PLXDP

MS Command:

Route: * % I9DP I8DP IADP

05/05/2011 7:05:50 AM

PgmName	MrName	CC	CCText	RgnType	BMType	FP	DOPT	GPSB	Rsdnt	LRsdnt	TranStat	PgmLang	SchdType	Lcl
AUTPSB11	IADP	0		JMP	N	N	N	N		Y	N		PARALLEL	
BILLPGM	IADP	0		MPP	N	N	N	N		N	N		PARALLEL	NO
BMPAOI	IADP	0		BMP	Y	N	N	N		N	N		SERIAL	NO
BMPTRNO	IADP	0		BMP	Y	N	N	N		N	N		SERIAL	NO
BMPTRNOP	IADP	0		BMP	Y	N	N	N		N	N		PARALLEL	NO
BOPGM1	IADP	0		BMP	Y	N	N	N		N	Y		SERIAL	NO
BOPGM2	IADP	0		BMP	Y	N	N	N		N	Y		PARALLEL	NO
BOPGM3	IADP	0		BMP	Y	N	N	N		N	N		PARALLEL	NO
BOPGM4	IADP	0		BMP	Y	N	N	N	Y	N	Y		PARALLEL	NO
BOPGM5	IADP	0		BMP	Y	N	N	N		N	Y		SERIAL	NO
BOPGM7	IADP	0		BMP	Y	N	N	N		N	Y		SERIAL	
CEBPGM01	IADP	0		BMP	Y	N	N	N		N	N		PARALLEL	NO
CEXPGM01	IADP	0		BMP	Y	N	N	N		N	N		PARALLEL	NO
CEXSPGM	IADP	0		MPP	N	N	N	N		N	N		PARALLEL	NO
CEXTPGM	IADP	0		MPP	N	N	N	N		N	N		PARALLEL	NO
COMIB	IADP	0		MPP	N	N	N	N		N	N		PARALLEL	NO
COMMON	IADP	0		MPP	N	N	N	N		N	N		PARALLEL	NO

Run Saved Results Session History Transactions Members

Console

Console

```
[05/05/2011 7:05:03 AM] Reason code: 00000048
[05/05/2011 7:05:03 AM] Message : RSM returned. See return code and reason code.
```

Context menu:

- Databases - Summary
- Databases - Detail
- Routing Codes - Summary
- Routing Codes - Detail
- Transactions - Summary
- Transactions - Detail

Conclusions

- IMS Configuration Manager simplifies the management of IMS resources and parameters
 - Using DRD or traditional SYSGEN processes
- Provides the same level of controls you had in a SYSGEN environment
- The resource installation process is streamlined making it easy to synchronize offline source with online systems
- The availability of rollback helps customers introduce changes as a unified set
- Back out provides auditors with peace of mind
- IMS Configuration Manager provides a foundation from which an end-to-end IMS administration and management system can evolve



Thank You!

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