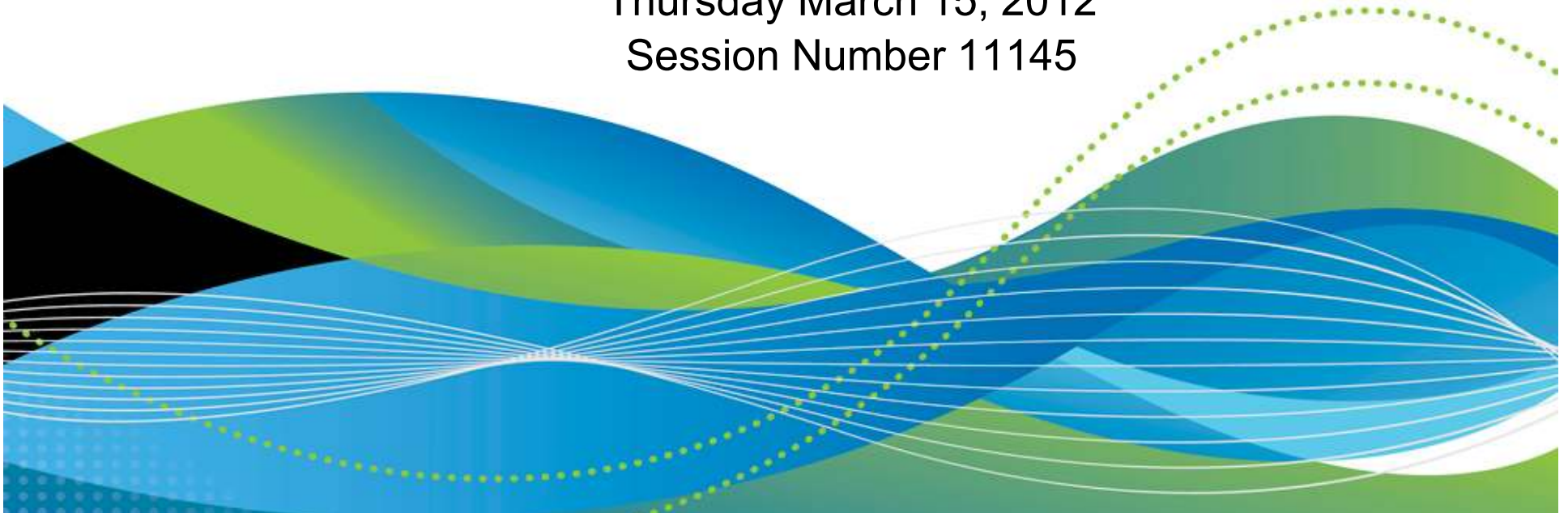


Improving the Manageability of IMS with IMS Configuration Manager

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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
- DRD means you no longer need to perform a SYSGEN

Resource changes using SYSGEN

- Traditional Systems Generation approach
 - Highly automated
 - In-house application or TSO Edit to PDS source
 - Source updates for a cycle
 - Periodic cycle close – extract to Stage 1 source
 - Generation of Stage 1 – introduced via cold start and/or online change
 - Adhoc changes made using:
 - Online change
 - BMC Delta
 - High Performance Sysgen Tool
 - *Adhoc changes updated in Stage 1 source*

How do you get to Full DRD?

- Process is highly automated and years old
- Stage 1 source is the basis for knowing what the IMS system resources look like (i.e. Modblks)
 - The idea is that with DRD you no longer have Stage 1 source.
- DRD changes applied using TSO SPOC or similar
 - How do you keep track of what is applied?
 - How do you backout unwanted changes (i.e. partial or full)
 - How do you audit the change process?
 - How do you accommodate change control approval
 - How do you migrate approved changes between levels

ICM Provides the Framework

- Resource repository provides for Stage 1 emulation
 - Supports both Sysgen and DRD installations
 - Batch install process enables
 - Backout
 - Audit
 - Change control (i.e. update scheduling)
 - Changes bundled into ‘Change Packages’
 - Source for change control approvals
 - Migration of changes to next level system (i.e. Development to Test)
 - Customer requirement to provide ‘Access Control’
 - Enables distributed control to applications for development systems while protecting all other systems from harm.

Product Growing and Changing



- Significantly enhanced usability and robustness of the product
- Changes include:
 - Resource access control (requirement)
 - Graphical user interface (requirement)
 - Change packages
 - Export to RDDS
 - More easily model, track, and apply system-specific attributes of resources
 - Ability to use product without defining IMSplexes
 - A system view of resource and live system compare

Using ICM to Manage Resources

- Takeup: allows you to take resources from stage 1 source or RDDS and enter them into IMS Configuration Manager
- Resources are organized into logical resource groups
- Associate resource groups with your IMS systems
- Edit and add resources to resource groups
- Package changes to resources into change packages:
 - GEN change packages: generate an RDDS or Stage 1 source for cold-start processing
 - Command change packages: install updates using DRD commands
- Close and schedule change packages: create JCL for implementing the package
- Run scheduled jobs: create stage 1, an RDDS, or install resources into live systems

ICM Processes - Takeup



- Transforms stage 1 source into an IMS Configuration Manager repository
- Maintain logical structure of resource definitions and annotations
- Add as either COMMON or SYSTEM Resource Group
 - Can split Stage 1 into multiple Resource Groups
- Associate COMMON Resource Groups with target IMS Systems
- System Resource groups automatically associated with target IMS System

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

- Context sensitive help
- Extensive validation
- Notes

Create a package when ready

```

File  Help
-----
E      Create System Change Package
C  Command ==> _____
I  Change Package . . . JUNE CP
S  Description . . . CP for June Cold-Start window
I  IMSplex . . . PLXB
   IMSID . . . IMSB  Version . . : 12.1

/  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

```

- Contains all resources for the IMS image
- You can now continue to make changes for the *next* cold-start window
- Generate stage 1 or RDDS when you are ready to schedule the package...

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 :
IMSpIex . . . . . : 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
IMSpIex . . . . . : 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
  
```


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. RollBack

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

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

```

Create changes for the next cycle



```

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

IMSID . . . . . : IMSA  Version . . : 11.1
System Description :
IMSpIex . . . . . : 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 *****
F 6 More: <>
11 ==> PAGE
    
```



```

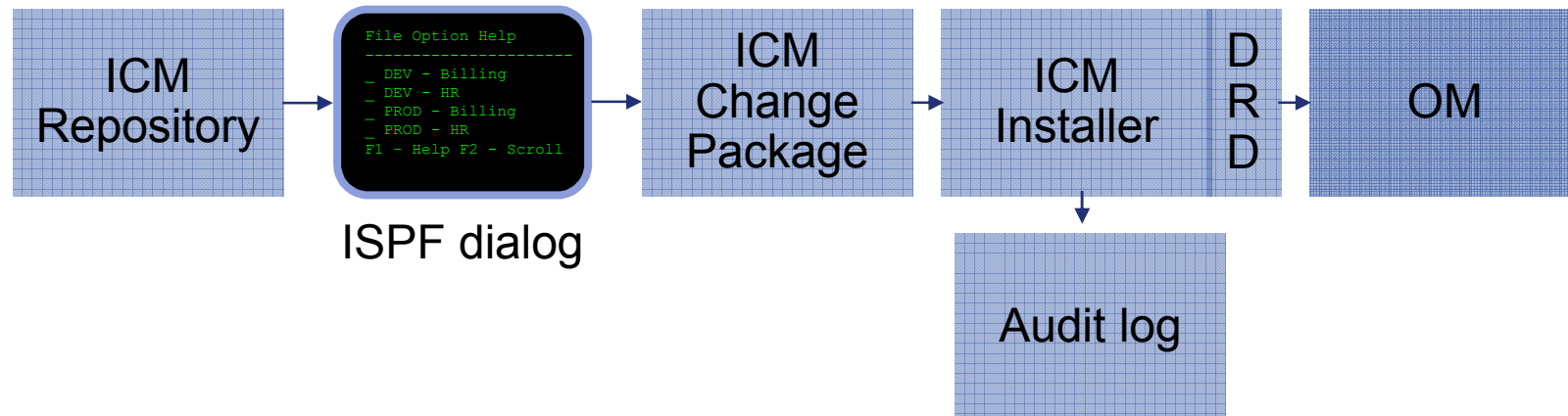
Resource Group . : BILL
IMSID . . . . . : IMSA  Version . . : 11.1
Description . . . _____ Notes...

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 *****
    
```



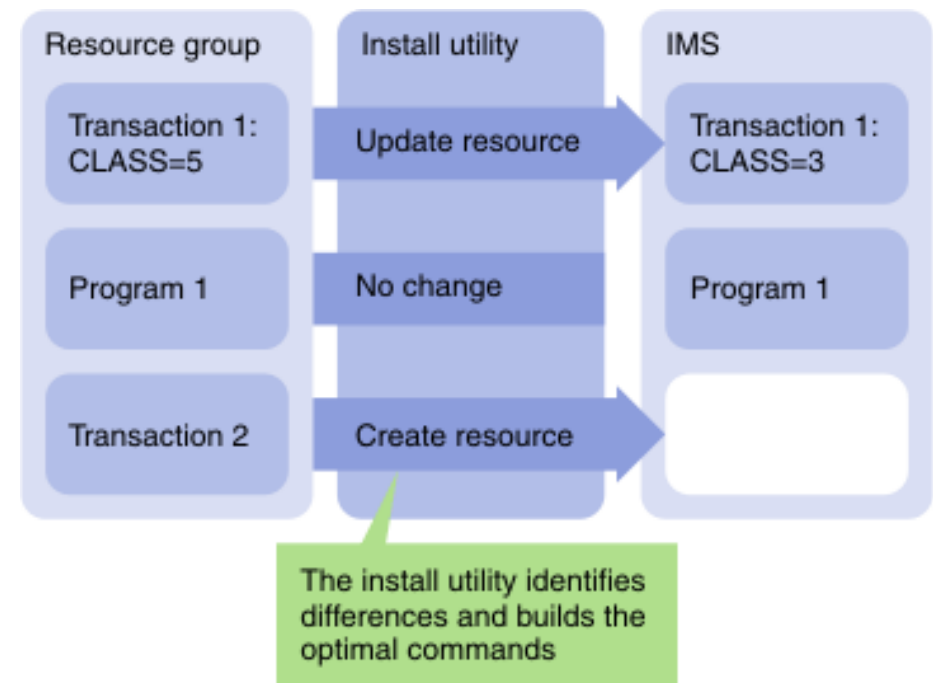
ICM Processes: updating resources using DRD



- 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

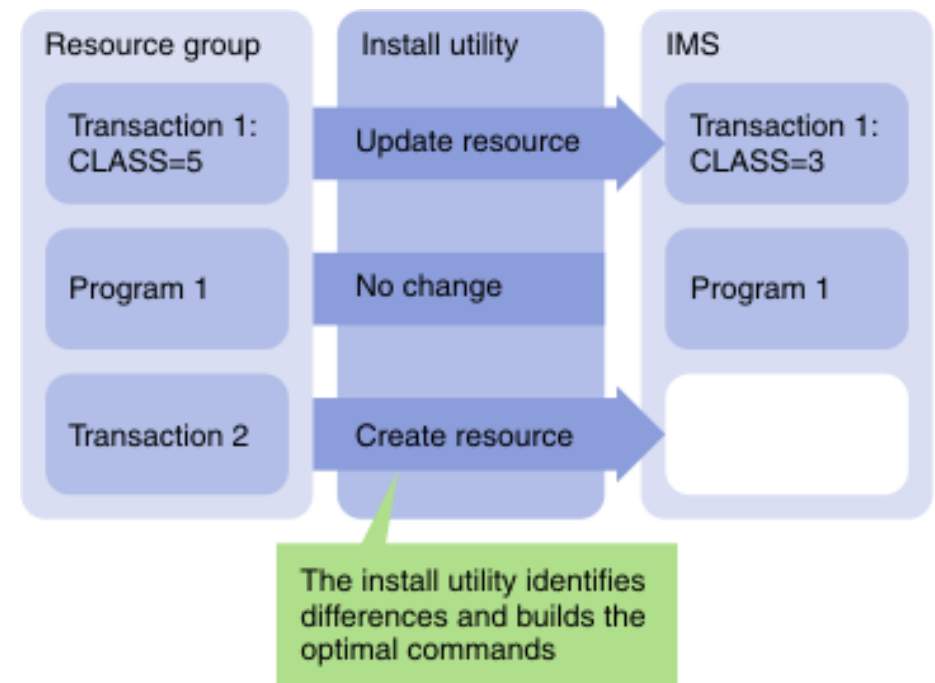
IMS Configuration Manager resource installer

- 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
- Quiescing of resources
- Full-logging and auditing of install activity

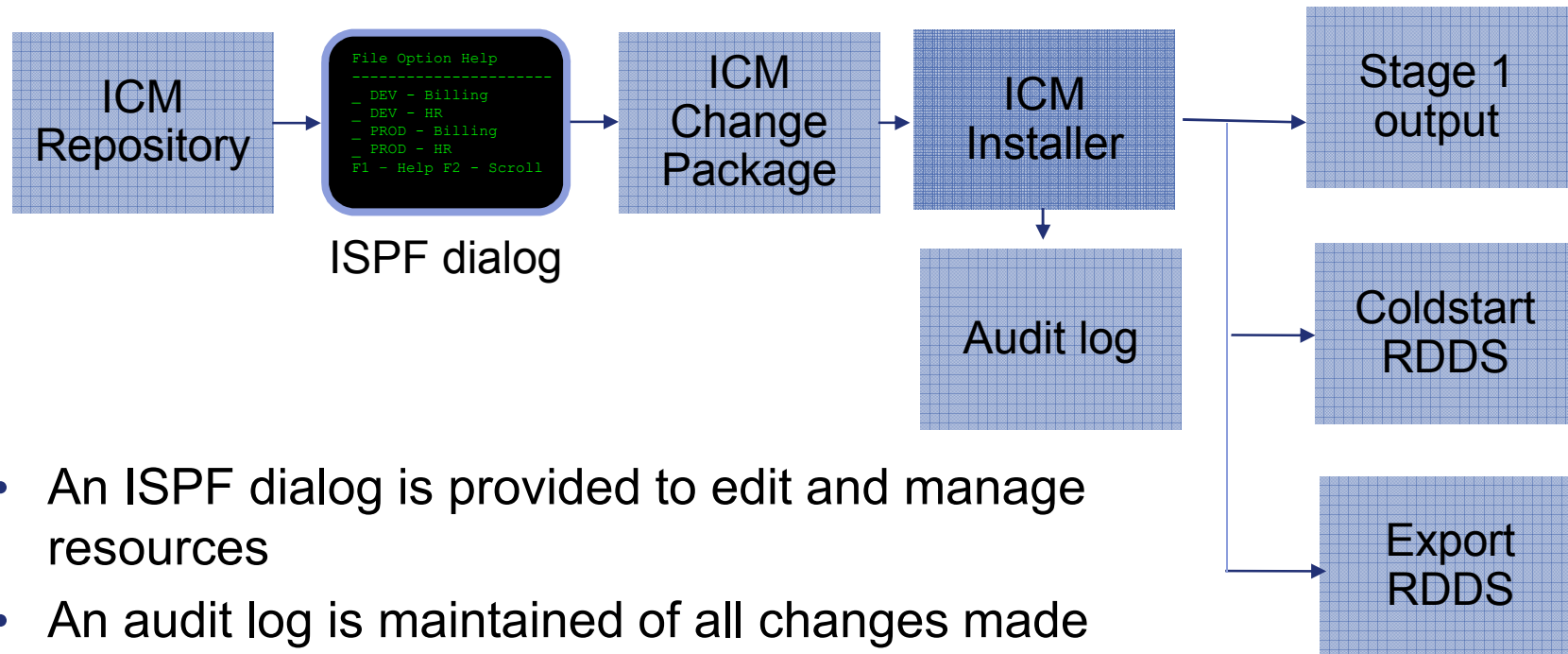


IMS Configuration Manager resource installer - BACKOUT

- Each change that is made is tracked in the journal
- If any change fails, previous changes can be reversed so that all changes must be successful if any are to be made



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

IMS Configuration Manager GUI

- Customer requirement
 - Provide more than resource management
 - Introductory administration of IMS environment
- Possible future enhancement
 - Not a reality until announced by IBM



Navigation

- Configuration
 - IMSplices
 - PLXD4
 - PLXDP
 - Commands
 - Databases
 - Descriptors
 - Members
 - Programs
 - Routing Codes
 - Systems
 - Transactions
 - Members
 - Repositories
 - TESTCASE
 - Systems
 - IADP (PLXDP)
 - IBDP (PLXDP)
 - ICDP (PLXDP)
 - Connection Servers
 - REA server

IMS Command:

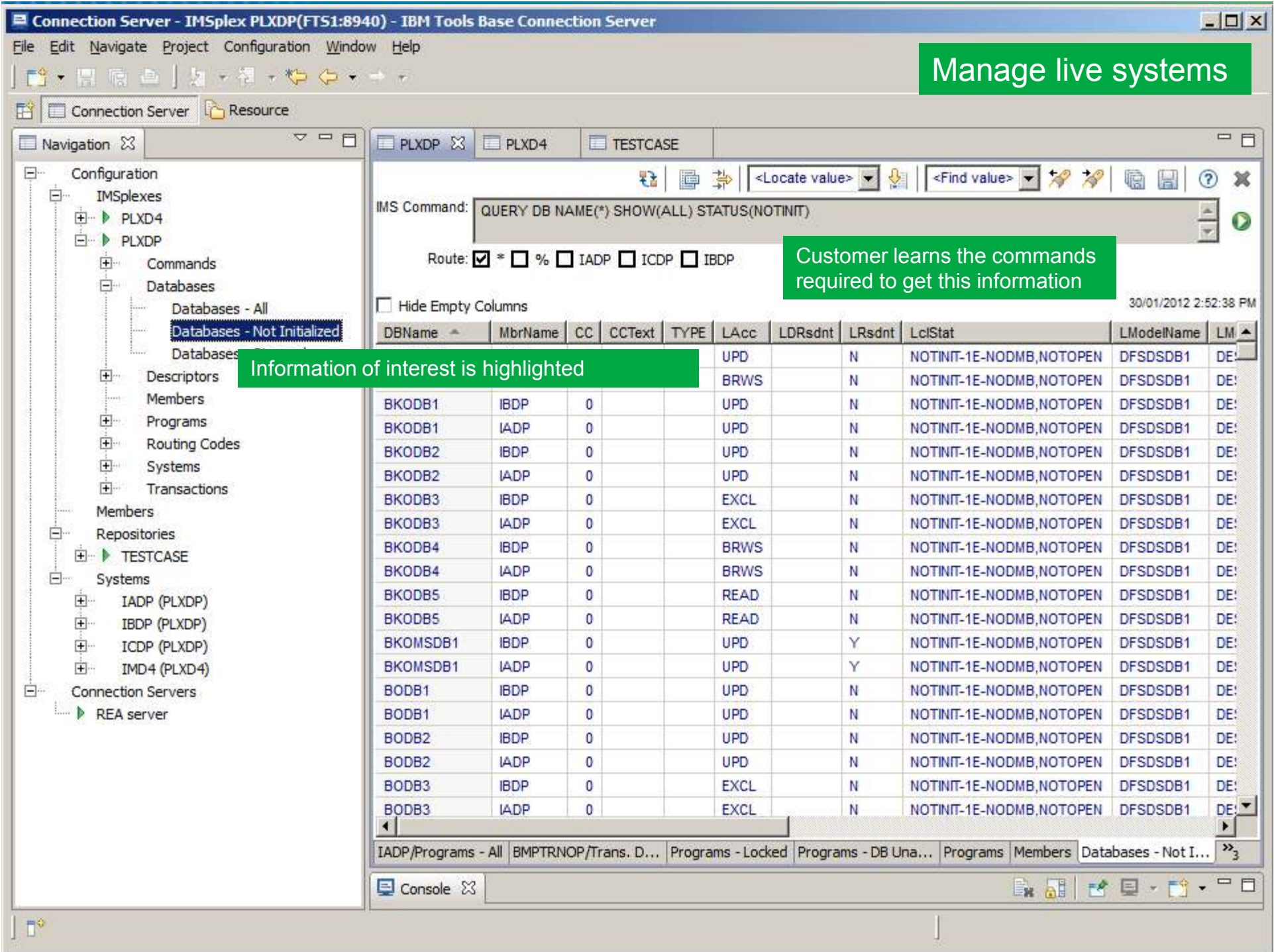
Route: * % IADP ICDP IBDP

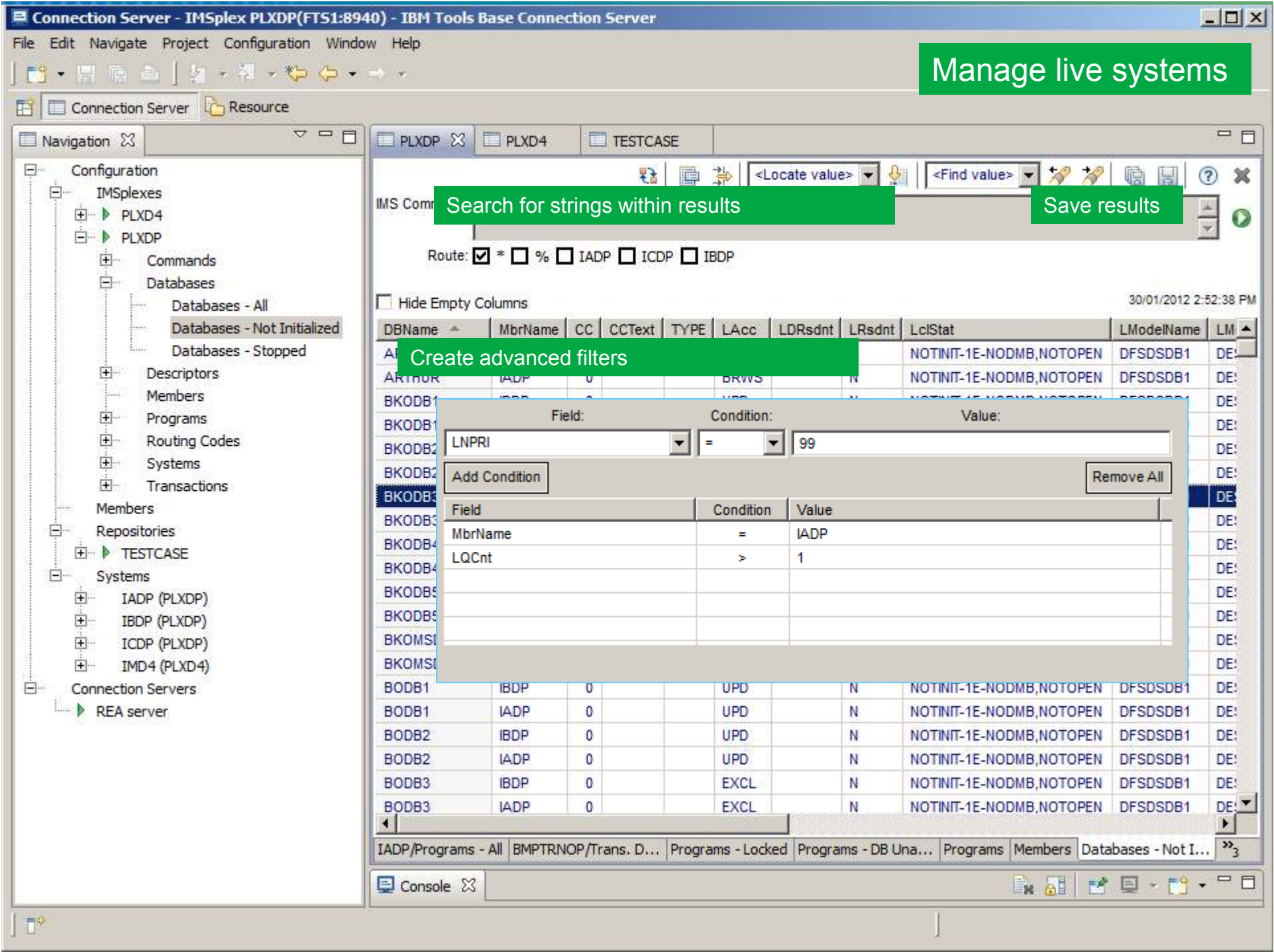
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Manage live systems

IMSplices	MbrName	CC	Member	JobName	Type	Subtype	Version	OSName	Status
CSLPLXDP	S1XDPOM	0	S1XDPOM	PLXDPOM	OM		1.5.0	FTS1	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	GU1PLXDP	ICOND01	IMSCON		12.1.0	FTS1	ACTIVE
CSLPLXDP	S1XDPOM	0	IADP	IADPCTL	IMS	DBDC	10.1.0	FTS3	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	GU0PLXDP	ICOND00	IMSCON		12.1.0	FTS1	ACTIVE
CSLPLXDP	S1XDPOM	0	CDP1CQS	PLXDPCQS	CQS		1.7.0	FTS1	ACTIVE
CSLPLXDP	S1XDPOM	0	S3XDPOM	PLXDPOM	OM		1.5.0	FTS3	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	S1XDPRM	PLXDPRM	RM	SNGLRM	1.5.0	FTS1	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	S1XDpsc	PLXDpsc	SCI		1.5.0	FTS1	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	IBDPBRC	IBDPBRC	DBRC	001	11.1.0	FTS1	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	ICDP	ICDPCTL	IMS	DBDC	12.1.0	FTS1	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	CDP3CQS	PLXDPCQS	CQS		1.7.0	FTS3	ACTIVE
CSLPLXDP	S1XDPOM	0	IBDP	IBDPCTL	IMS	DBDC	11.1.0	FTS1	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	IADPBRC	IADPBRC	DBRC	001	10.1.0	FTS3	READY,ACTIVE
CSLPLXDP	S1XDPOM	0	S3XDpsc	PLXDpsc	SCI		1.5.0	FTS3	READY,ACTIVE

View resources in the source repository





Manage live systems



Navigation

- Configuration
 - IMSplexes
 - PLXD4
 - PLXDP
 - Commands
 - Databases
 - Databases - All
 - Databases - Not Initialized
 - Databases - Stopped
 - Descriptors
 - Members
 - Programs
 - Routing Codes
 - Systems
 - Transactions
- Members
- Repositories
- TESTCASE
- Systems
 - IADP (PLXDP)
 - IBDP (PLXDP)
 - ICDP (PLXDP)
 - IMD4 (PLXD4)
- Connection Servers
 - REA server

IMS Command:

Route: * % IADP ICDP IBDP

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DBName	MbrName	CC	CCText	TYPE	LAcc	LDRsdnt	LRsdnt	LclStat	LModelName	LM
ARTHUR	IBDP	0			UPD		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
ARTHUR	IADP	0			BRWS		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB1	IBDP	0			UPD		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB1	IADP	0			UPD		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB2	IBDP	0			UPD		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB2	IADP	0			UPD		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB3	IBDP	0			EXCL		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB3	IADP	0			EXCL		N	NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB4	IADP	0						NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB4	IADP	0						NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:
BKODB5	IBDP	0						NOTINIT-1E-NODMB,NOTOPEN	DFSDSDB1	DE:

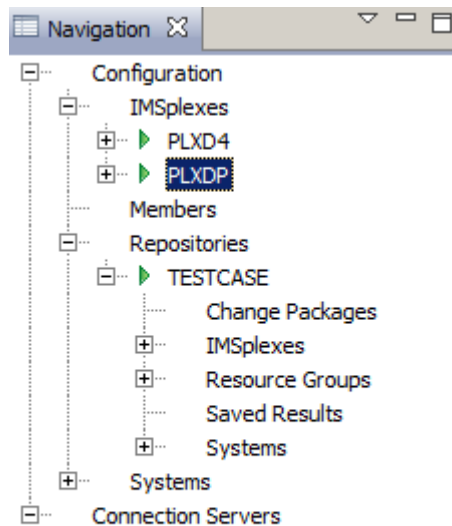
- Programs - Detail
- Programs - Summary

Logical navigation through context menus

PgmName	MbrName	CC	CCText	RgnType	BMPTType	FP	DOPT	GPSB	Rsdnt	LRsdnt	TranStat	PgmLang	SchdType
DBFSAMP3	IADP	0		IFP	N	E	N	N		N	N		SERIAL
DBFSAMP4	IADP	0		MPP	N	N	N	N		N	N		SERIAL

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

Browse all IMS Configuration Manager objects

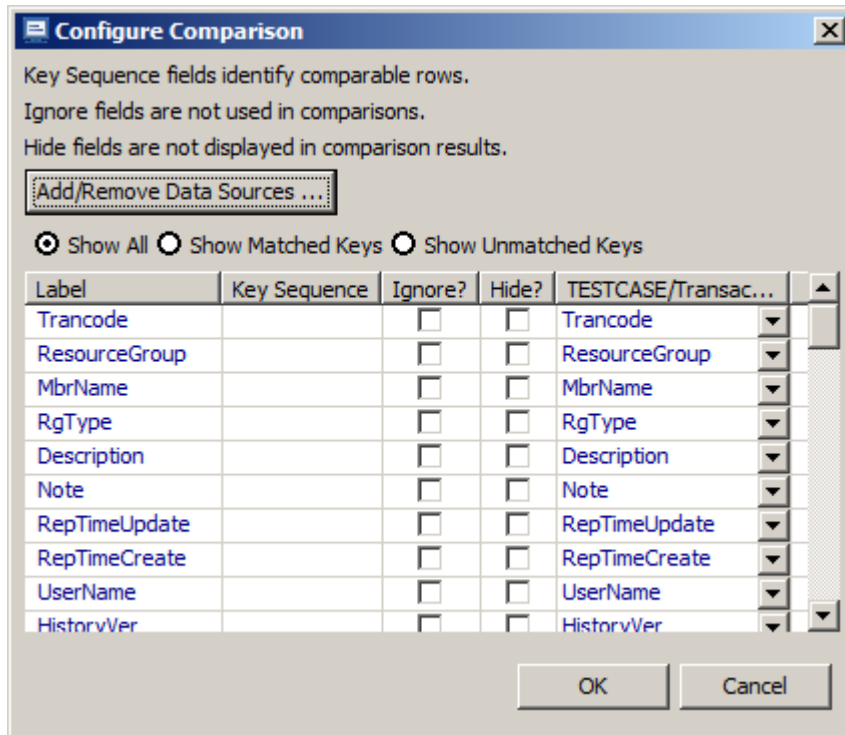


- You can view change packages
- Plex and system definitions
- Resource groups

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ChangePackage ^	MbrName	ChangePackageID	ScheduleDate	CloseDate	Status	Condition	PackageType	OutputType
Command CP	IMAB	20110801114015...		2011.213 11:41:50.00	Closed		Command	
Command CP	IMAB	20110801114214...	2011.213 11:43...	2011.213 11:42:36.00	Closed	Scheduled	Command	
Command CP	IMAB	20110801114335...		2011.213 11:43:46.00	Closed	Aborted	Command	
Command CP	IMAC	2011081817415...			Open		Command	
Gen change package	IMAC	2011081817413...		2011.230 17:41:37.00	Closed		Generate	System RDDS
GEN CP	IMAB	20110801114434...		2011.213 11:44:34.00	Closed		Generate	Stage1
GEN CP	IMAB	20110801114503...	2011.213 11:47...	2011.213 11:45:03.00	Closed	Scheduled	Generate	System RDDS

Powerful compare capabilities



- Compare command output on different days
- Compare between source and live systems
- Compare between various systems in the same or different IMSplexes.
- Compare allows you to ignore or hide fields that you expect to change
- Define your own keys for comparison purposes

Example compare output

Source	PgmName	MbrName	RgnType	BMPTType	FP	DOPT	GPSB	Rsdnt	LRsdnt	TranStat	PgmLang	SchdType	LclStat
1	DBFSAMP2	IADP	BMP	Y	N	N	N		N	N		SERIAL	
2	DBFSAMP2	IBDP	BMP	Y	N	N	N		N	N		SERIAL	
1	DBFSAMP3	IADP	IFP	N	E	N	N		N	N		SERIAL	
2	DBFSAMP3	IBDP	IFP	N	E	N	N		N	N		SERIAL	DB-NOTAVL

Highlight status differences relative to a baseline

Source	PgmName	MbrName	RgnType	BMPTType	FP	DOPT	GPSB	Rsdnt	LRsdnt	TranStat	PgmLan
2	ABORTPRG	IBDP	MPP	N	N	N	N		N	N	
1	AUTPSB11	IADP	JMP	N	N	N	N		N	N	
2	AUTPSB11	IBDP	JMP	N	N	N	N		N	N	
1	BADNAME	IADP	MPP	N	N	N	N	Y	N	N	
1	BILLPGM	IADP	MPP	N	N	N	N		N	N	
2	BILLPGM	IBDP	MPP	N	N	N	N		N	N	

Identify resources that exist on one system but do not exist on the other

Source	PgmName	MbrName	RgnType	BMPTType	FP	DOPT	GPSB	Rsdnt	LRsdnt	TranStat
1	FUNPSB41	IADP	MPP	N	N	N	N		N	N
2	FUNPSB41	IBDP	IFP		N	N	N		N	N

Find inconsistencies

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
- Backout 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

More information

- IBM IMS Configuration Manager website:
<http://www.ibm.com/software/data/db2imstools/imstools/ims-configuration-manager/>
- Jim Martin:
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- James Martin:
james_martin@fundi.com.au