Managing Changes in IMS Environments

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Goal

- Discuss types of changes and environments
- Cover general steps
- Specific challenges for various environments

Types of Environments

Environment	Object Definitions Stored in…	Changes Activated With…
Legacy	DBDLIB, PSBLIB, ACBLIBs	ACBGEN->OLC commands
Catalog	DBDLIB, PSBLIB, ACBLIBs, Catalog	(ACBGEN+CatPop)->OLC commands
IMS Managed ACBs	Catalog, Directories	DDL ->IMPORT command

DBRC,
MDALIB,
IDCAMS

General Steps

- Determine scope of the change
  - What objects are changing
  - Any secondary changes required
  - What processes will perform the changes
  - How to reset if errors occur

Object Change Inventory

Secondary changes: other objects that have to be changed to agree with the changed object

Initial change + secondary changes = full change inventory

Examples:

Desired Result	Initial Change	Secondary Changes
Add compression routine to a segment	DBD	ACB
Increase segment length	DBD	ACB, Application programs
Add dataset group to full function database	DBD	ACB, MDA member, DBRC definition, IDCAMS statements

Change Processes

- Backup original objects (source and/or generated)
  - Version control systems can help
- Change the **source** of full change inventory
  - DBDSRC or DDL, MDASRC, DBRC statements, IDCAMS commands
- Generate produced objects to **staging areas**
  - DBDGEN, ACBGEN, IDCAMS defines
- Perform db maintenance (dbrc changes, reorgs,…)
- Copy staged objects to active objects
- Issue commands to active the new copies
  - OLC, IMPORT, Delta RELOAD

Varies by environment

Non-managed ACBs, no Catalog

- DBDGEN/ACBGEN to staging datasets
  - Staging datasets are external to IMS
- Take Offline, move in mda changes
- Issue DBRC updates
- Perform reorg/index build/image copy

Single step w/DBRCUPDT

- Copy staged ACB to inactive ACBLIB
  - /DISPLAY MODIFY shows which is active
  - Perform OLC commands to switch ACBLIBs
    - /MODIFY PREPARE and /MODIFY COMMIT

Single step w/Delta

Non-managed ACBs w/Catalog

Catalog is mostly added “for free”

- DBDGEN/ACBGEN+Catalog populate to staging datasets
  - Staging datasets are external to IMS
  - Catalog maintains the staging record
- Reorg/dbrc/mda change exactly as without catalog
  - Catalog determines the active entry by timestamp (Matches to the active ACB)
- Remember catalog purge over time as new entries are added with each change.

IMS-managed ACBs

Catalog and “Bootstrap dataset” required.

- ACBGEN+Catalog populate or submit DDL
  - DDL works through batch or by IMS Explorer for Development
  - Produces staged record in catalog
  - Adds directory member to “staging directory”
  - Staging directory is not external like ACBLIB was
- Reorg/db maintenance as usual
- IMPORT DEFN SOURCE(CATALOG) command activates staged changes
  - Moves staged directory members to “active directory”

DB Maintenance steps

Not all DBD changes require a reorg

- Any Physical layout change: reorganization needed
  - Add/remove/change compression routine
  - Change randomizer parameters
- Any dataset changes: DBRC and/or MDA changes needed
  - Add/remove/change dataset groups
  - Add/remove/change partitions
- Strictly logical changes: no reorg, ACB change only
  - Adding FLD metadata
  - Adding FLD definitions to previously unused space
  - Renaming/Reordering non-key FLDs
  - Adding/changing REMARKS

Thank

You