



CA Datacom Version 15.0 Installation and Upgrade Paths

CTC 14 – DB – Thursday, April 28 2016

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Abstract

CA Datacom Version 15.0 provides a variety of installation methods, the standard new installation and three upgrade installation paths. The path can be chosen according to your specific needs.

An overview of these installation methods will be covered in this session, along with details about their specific attributes.



Installation Tasks

- Installation and Upgrade resources
- Installation programs
- Pre-installation considerations
- Installation Procedures
- Maintenance



Installation and Upgrade Resources

Available for download from CA Support Online (CSO)

- Product package files (.pax.Z)
- CA Recommended Service (CA RS) maintenance packages (monthly)
- Individual PTFs
- Documentation



Installation and Upgrade Resources (cont'd)

MSPS (CA Mainframe Software Packaging System) standards

- All MSPS products are configured similarly
- PTFs are object and source replacements (no zaps)
- SMP/E Error HOLDDATA supported
- Source members under SMP/E control
- Last node of the SMP/E target libraries contain a 3-character product identifier, for example
 - Datacom/DB - CABDLOAD
 - Datacom/AD - CAAXLOAD



Installation Programs

- IBM's SMP/E for z/OS
 - IBM standards for product installation
 - Supported release of z/OS SMP/E required
 - Automates and manages installation of products
 - Automates and manages maintenance of products
 - Ensures integrity of product installation and modifications



Installation Programs (cont'd)

- CA Technologies CSM (Chorus Software Manager)
 - Easy to use user interface (UI)
 - Direct access to CA Support Online
 - Ensures integrity of product installation, deployment and configuration
 - Displays all available PTFs
 - Identifies HIPER PTFs
 - Identifies PTFs that have been applied and those that have not
 - CA RS maintenance support



Pre-Installation Considerations

- Review README solutions
- Review installation manuals
- Fill out installation worksheet
- Use SMP/E or CSM to apply all available PTFs
- Review hardware and software requirements
 - Z/OS
 - CICS
 - IPC (required for DB)
 - CA Common Services (CCS)



Installation Procedures

Product Installation

- Dataset Creation
- SMP/E resource creation
- Shared Processes (more dataset creation)



Installation Procedures (cont'd)

Post Installation

- New Installation
- Upgrades
 - Active MUF Upgrade (new with 15.0)
 - Traditional MUF upgrade
 - Parallel MUF Upgrade
- Post Install and tailoring



Installation Procedures (cont'd)

Installation Changes between versions 14.0 and 15.0

- Minor member name changes, still recognizable as 14.0 names
- Installation Changes between versions 15.0 and 15.1
- Very similar, almost no changes



Dataset Creation

- Download product package file (.pax.Z)
- Copy Pax file into USS directory
- Create zFS file system data
- 'Un-Pax' installation datasets using SMP/E GIMUNZIP utility
 - Produces datasets:
 - CAI.HLQ.SAMPJCL
 - CAI.THLQ.CABDSAMP (by member in SAMPJCL)



Dataset Creation (cont'd)

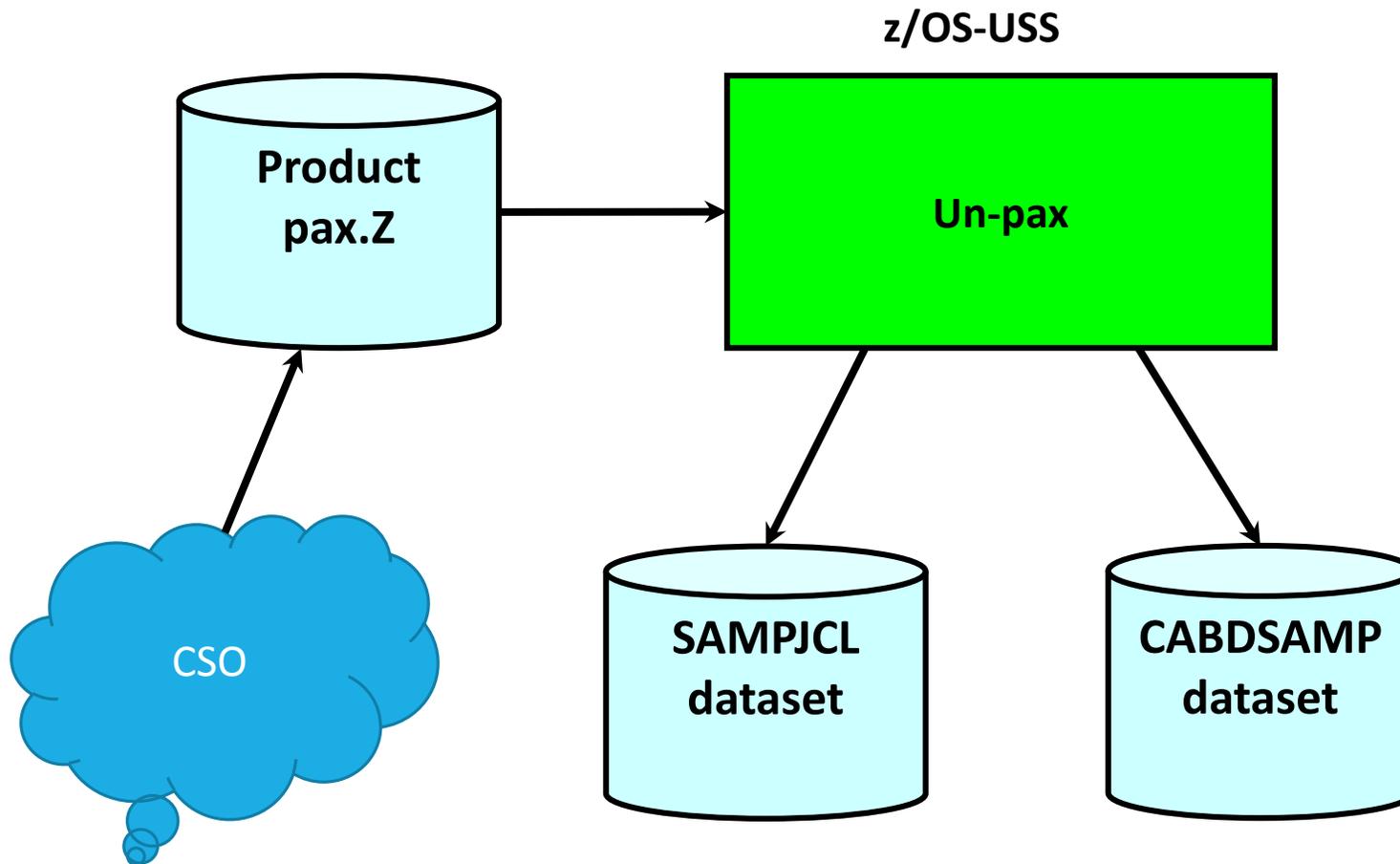
Sample JCL Datasets

- CAI.HLQ.SAMPJCL
 - Contains SMP/E related JCL members

- CAI.THLQ.CABDSAMP
 - Target Library – contains Post-Install JCL to create/upgrade MUF



SMP/E Resource Creation



SMP/E Resource Creation – ESD

Create SMP/E environment using CAI.HLQ.SAMPJCL dataset

- Edit/Review the following members:
 - DCMAREAD – Provides information about the members
 - DCMSEEDIT – Edit macro used to customize members
 - DCM2ALL – Allocate product and SMP/E datasets
 - DCM3CSI – Create and customize SMP/E CSI
 - DCM4RECD – SMP/E Receive of Base Functions from DASD
 - DCM5APP – SMP/E Apply of Base Functions
 - DCM6ACC – SMP/E Accept of Base Functions



SMP/E Resource Creation - ESD (cont'd)

- Modify DCMSEEDIT using member edit instructions

```
/* **** */
/*
/*   Set the High Level Qualifiers, Units, and Zone names below
/*
/* **** */
ISREDIT CHANGE ALL EMAILADR      CSO_ID@ca.com
ISREDIT CHANGE ALL GLOBALHLQ     CAI
ISREDIT CHANGE ALL CAITOHLQ      CAI
ISREDIT CHANGE ALL PRODHLQ       CAI
ISREDIT CHANGE ALL DASDHLQ       CAI
ISREDIT CHANGE ALL SMPETEMP      CAI
ISREDIT CHANGE ALL DISKUNIT      SYSALLDA
ISREDIT CHANGE ALL ZNCAITO       CAITO
ISREDIT CHANGE ALL ZNCAIDO       CAIDO
```

- Save DCMSEEDIT in a SYSPROC or TSO CLIST library before using
- When invoked, it will replace JCL members with your changes

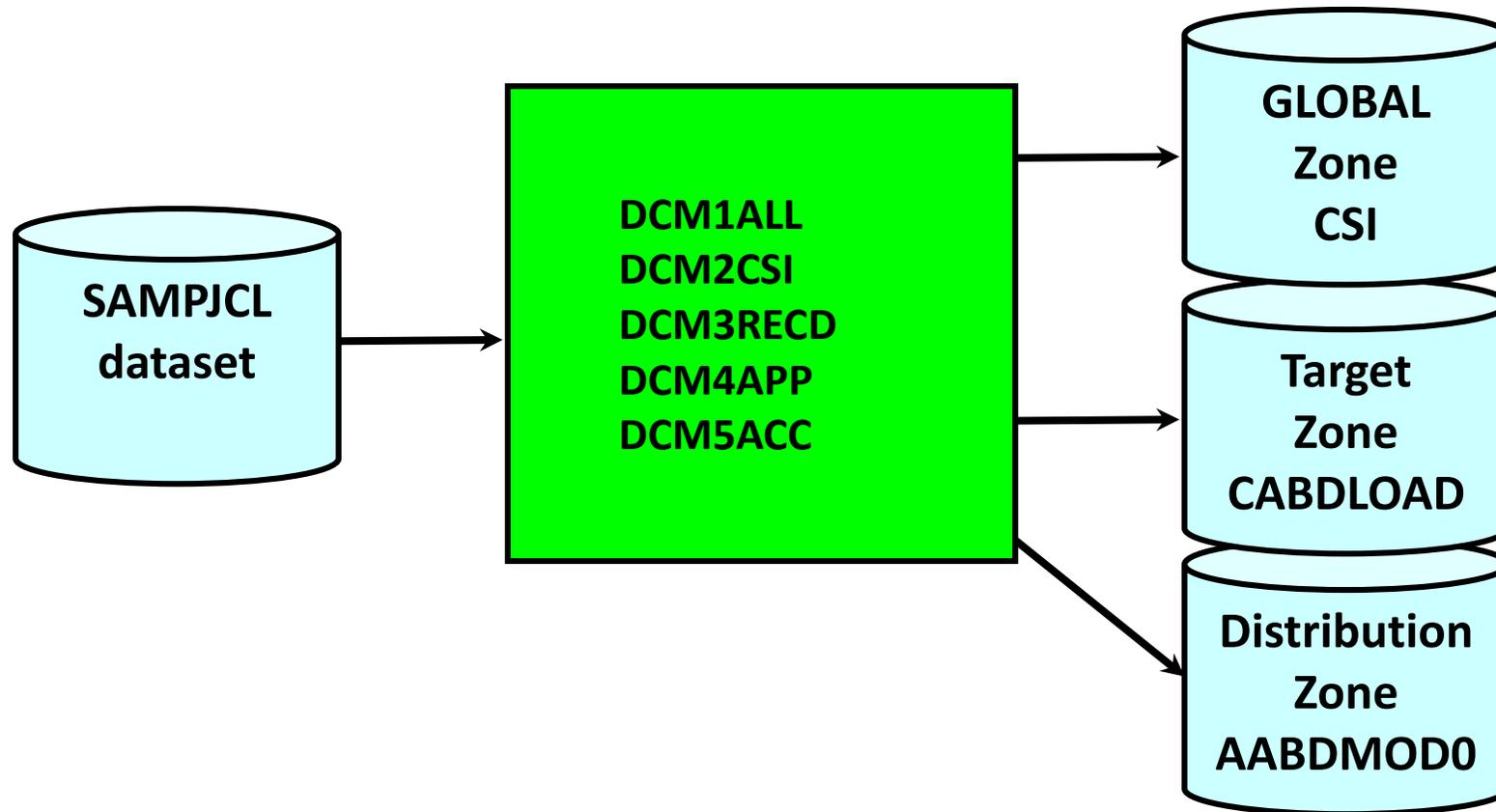


SMP/E Resource Creation - ESD (cont'd)

- Select first CAI.HLQ.SAMPJCL member DCM2ALL
 - Type “DCMSEEDIT” in command line to invoke macro
 - Submit the modified member for execution
 - Cancel out of the modified member so changes are not saved
- Select next CAI.HLQ.SAMPJCL member
 - Type “DCMSEEDIT” in command line to invoke macro
 - Submit the modified member for execution
 - Cancel out of the modified member so changes are not saved
- Repeat for remaining members



SMP/E Resource Creation - ESD (cont'd)



Create CAI.HLQ.INSTJCL and Custom Libraries

- Allocate and copy the new and upgrade JCL from the target library
- Browse CAI.HLQ.CABDSAMP and open member BDCUS00
- Modify it using the flower box instructions and submit it
- In 15.0, allocates and populates the following datasets
 - CAI.HLQ.INSTJCL
 - CAI.HLQ.CUSLIB
 - CAI.HLQ.CUSMAC
 - CAI.HLQ.CUSPROC
- Cancel out of member BDCUS00 after it has executed successfully
 - SMP/E managed dataset



Create CAI.HLQ.INSTJCL and Custom Libraries (cont'd)

- Modify member \$DCBDEDT (worksheet)
 - Edit and save in SYSPROC or TSO CLIST library
 - Save using member name that relates to its intended use
 - TSTMUF
 - QAMUF1
 - PRODM

- Select the first CAI.HLQ.INSTJCL member to be modified and executed
 - Enter “TSTMUF” in command line
 - JCL variables will be updated
 - Submit the member



Create CAI.HLQ.INSTJCL and Custom Libraries (cont'd)

- \$DCBDEDT macro variable examples

```
/*
ISREDIT C ALL "CAI.NEWHLQ"          "CAI.NEWHLQ"          /* WKSHT #06 */
ISREDIT C ALL "CAI.SHLQ"           "CAI.SHLQ"           /* WKSHT #07 */
ISREDIT C ALL "CAI.THLQ"           "CAI.THLQ"           /* WKSHT #08 */
ISREDIT C ALL "CAI.CHLQ"           "CAI.CHLQ"           /* WKSHT #09 */
ISREDIT C ALL "CAI.VHLQ"           "CAI.VHLQ"           /* WKSHT #10 */
ISREDIT C ALL "CAI.HLQ"             "CAI.HLQ"             /* WKSHT #11 */
ISREDIT C ALL "CAI.PCHLQ"           "CAI.PCHLQ"          /* WKSHT #12 */
ISREDIT C ALL "CAI.PTHLQ"           "CAI.PTHLQ"          /* WKSHT #13 */
ISREDIT C ALL "CAI.PHLQ"           "CAI.PHLQ"           /* WKSHT #14 */
ISREDIT C ALL "V150"                "V150"                /* WKSHT #15 */
ISREDIT C ALL "SYSDA"               "SYSDA"               /* WKSHT #16 */
/*
```



New Installations



New Installation

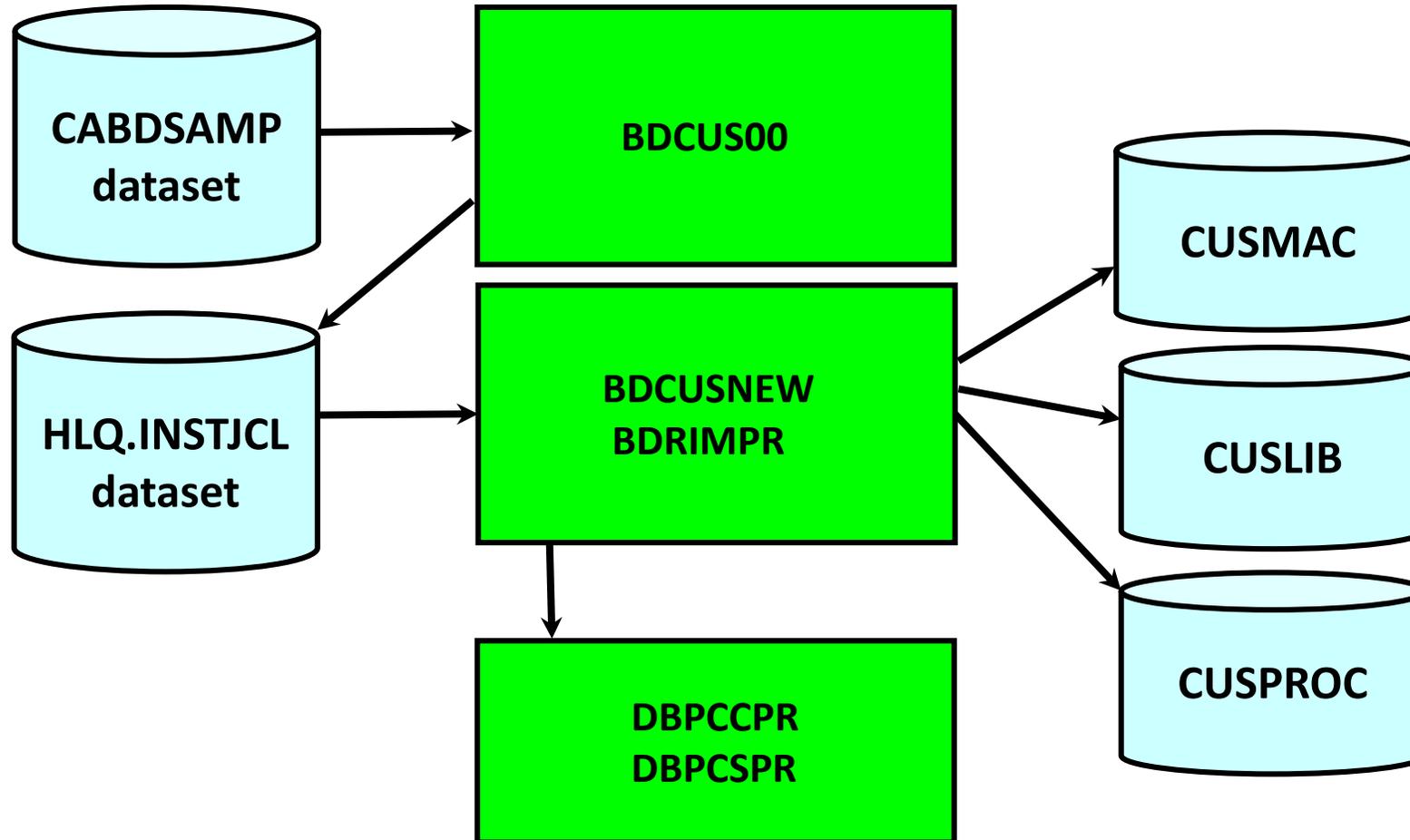
New install datasets and JCL members

- CAI.THLQ.CABDSAMP dataset JCL members
 - @BDWKSHT – Install/upgrade member worksheet
 - \$DCBDEDT – Edit Macro used to customize members
 - BDCUS00 – Allocate and Populate CAI.HLQ.INSTJCL dataset as well as custom libraries

- CAI.THLQ.INSTJCL dataset JCL members
 - BDRIM01 – Installs the Datacom PC CALL modules
 - BDCUSNEW – Populates members:
 - CAI.HLQ.CUSMAC
 - CAI.HLQ.CUSLIB
 - CAI.HLQ.CUSPROC



New Installation (cont'd)



New Installation (cont'd)

INSTJCL member names

- BDCUS indicates a customization job with MUF-specific SYSIN generation, assemblies, and link- edits.
- BDNEW indicates a job for new installations.
- BDUPG indicates a job for upgrading a MUF from Version 14.
- IVPNEW indicates a job to execute sample jobs for new installs.
- IVPUPG indicates a job to execute sample jobs for upgrades.



New Installation (cont'd)

- BDFBK indicates a job for returning to the previous version after completing the upgrade installation jobs.
- BDFFW indicates a job for falling forward back from Version 14 to Version 15.0 for some future date.
- BDCDC indicates a job for implementing the Change Data Capture feature.
- BDRIM indicates a job for installing the CA Datacom PC CALLS.

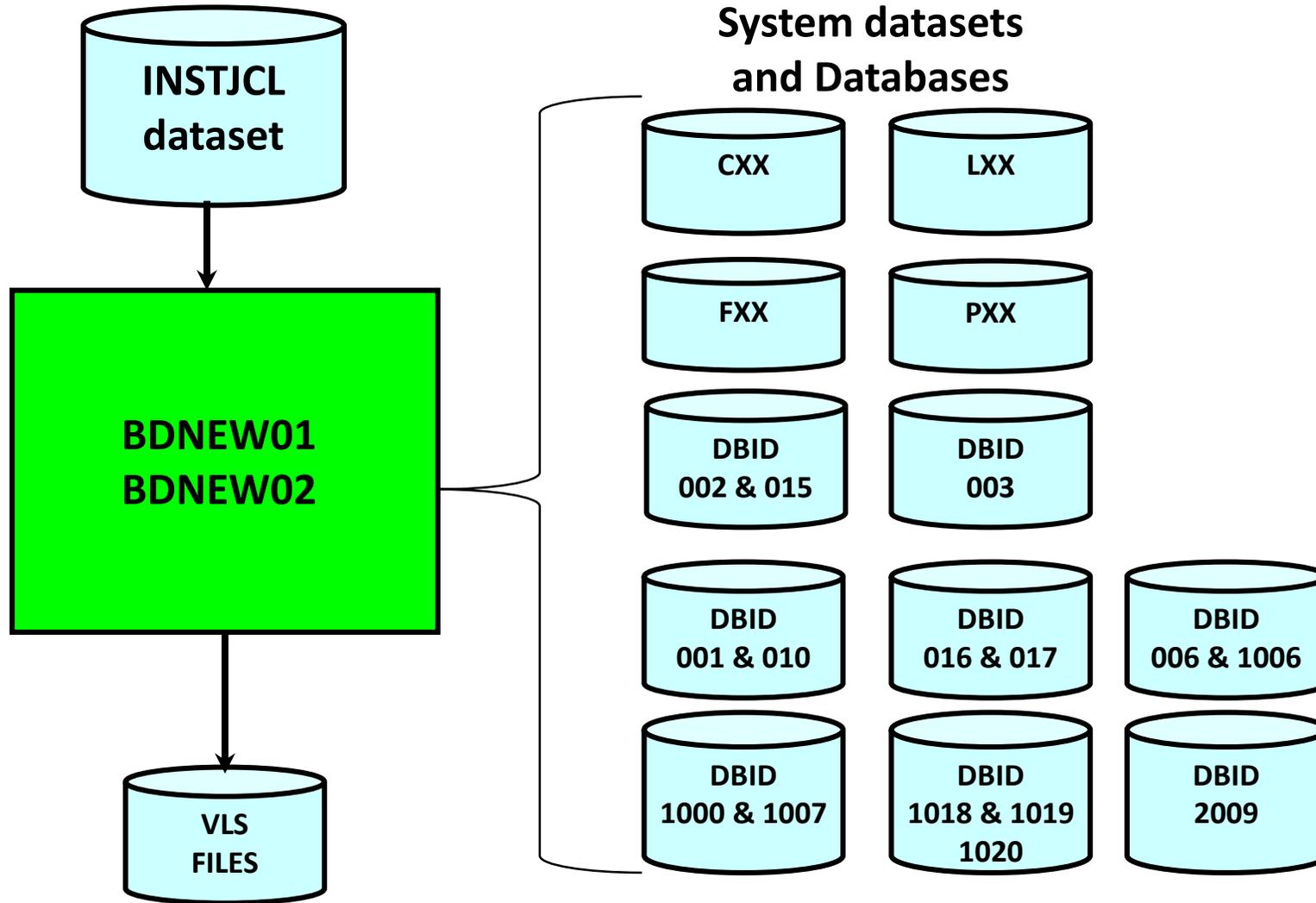


New Installation (cont'd)

- CAI.HLQ.INSTJCL
 - BDNEW01
 - Allocate and populate custom library datasets
 - Allocate, initialize, and load MUF system datasets (CXX, LXX, FXX)
 - Allocate, initialize, and load MUF system databases
 - BDNEW02
 - Allocate, format, and load VLS files
 - ADRPNL
 - DDMAP
 - DDOL1
 - DDOL2



New Installation (cont'd)



New Installation (cont'd)

- CAI.HLQ.INSTJCL
 - APFADD
 - APF authorize CUSLIB and target library
 - MUFSTRTS
 - MUF startup job
 - IVPNEW##
 - Series of jobs that verify successful installation



Active MUF Upgrade



Active MUF Upgrade

- Screenshot of 15.0 MUF with 14.0 DD,DDD,DST

```
OPSRNOTIFY CASTATE API received for MUFSTRUZ with state UP , Version 15.0 and Level UPGRMUF
MUFSTRUZ:UPGRMUF:DB00903I - OPENED, BASE - 17
MUFSTRUZ:UPGRMUF:DB00288I - MODULE INFO DBINRPR 2016/04/13-1420 15.0 RO89473
MUFSTRUZ:UPGRMUF:DB00903I - OPENED, BASE - 2
MUFSTRUZ:UPGRMUF:DB00915I - CXX DBID 2 DATA-DICT DEFINITION VERSION 14.0 CHANGE LEVEL 0
MUFSTRUZ:UPGRMUF:DB00903I - OPENED, BASE - 15
MUFSTRUZ:UPGRMUF:DB00915I - CXX DBID 15 DDD-DATABASE DEFINITION VERSION 14.0 CHANGE LEVEL 0
MUFSTRUZ:UPGRMUF:DB00133I - JOB OPEN QA15DDUP 61249 SILJA09 JOB08844
MUFSTRUZ:UPGRMUF:DB00133I - JOB OPEN QA@#MUF 61250 SILJA09 JOB08853 XCF-CA32
MUFSTRUZ:UPGRMUF:DB00914I - CXX UPGRADE BASE 1000 FORMAT TO 3
MUFSTRUZ:UPGRMUF:DB00915I - CXX DBID 1000 CASYSTEMTABLES DEFINITION VERSION 14.0 CHANGE LEVEL 0
MUFSTRUZ:UPGRMUF:DB00102I - ENDED JOB-QA@#MUF NUMBER-61250 XCF-CA32
```



Active MUF Upgrade (cont'd)

Different than all prior version upgrades

- CXX now release independent, supports access from either Version 14.0 or 15.0 MUF
 - Lay down Version 15.0 code, then substitute 14.0 target libraries with 15.0 target libraries

- When upgrading CA Datacom Datadictionary, the following databases can be open and active in MUF
 - CA Datacom Datadictionary (DD)
 - CA Datacom Data Definition Dictionary (DDD)
 - CA Datacom Dynamic System Tables (DST)



Active MUF Upgrade (cont'd)

- Screenshot of 15.0 MUF with 15.0 DD,DDD,DST

```
OPSRNOTIFY CASTATE API received for MUFSTRUZ with state UP , Version 15.0 and Level UPGRMUF
MUFSTRUZ:UPGRMUF:DB00903I - OPENED, BASE - 17
MUFSTRUZ:UPGRMUF:DB00288I - MODULE INFO DBINRPR 2016/04/13-1420 15.0 RO89473
MUFSTRUZ:UPGRMUF:DB00903I - OPENED, BASE - 2
MUFSTRUZ:UPGRMUF:DB00915I - CXX DBID 2 DATA-DICT DEFINITION VERSION 15.0 CHANGE LEVEL 0
MUFSTRUZ:UPGRMUF:DB00903I - OPENED, BASE - 15
MUFSTRUZ:UPGRMUF:DB00915I - CXX DBID 15 DDD-DATABASE DEFINITION VERSION 15.0 CHANGE LEVEL 0
MUFSTRUZ:UPGRMUF:DB00133I - JOB OPEN QA15DDUP 61349 SILJA09 JOB31120
MUFSTRUZ:UPGRMUF:DB00133I - JOB OPEN QA@#MUF 61350 SILJA09 JOB31163
MUFSTRUZ:UPGRMUF:DB00915I - CXX DBID 1000 CASYSTEMTABLES DEFINITION VERSION 15.0 CHANGE LEVEL 0
MUFSTRUZ:UPGRMUF:DB00102I - ENDED JOB-QA@#MUF NUMBER-61350
```



Active MUF Upgrade (cont'd)

Benefits

- Target MUF remains fully operational and available while upgrading system resources
 - CA Datacom Datadictionary (DD)
 - CA Datacom Data Definition Dictionary (DDD)
 - CA Datacom Dynamic System Tables (DST)
- User applications can continue to run at Version 14.0 code level while MUF is running at Version 15.0
- Chance of Fallback is minimized
- The DD, DDD, DST system resource upgrades do not need to be done at the same time
 - Upgrade for system resources typically only take a few minutes, but can be postponed until comfortable staying at release 15.0



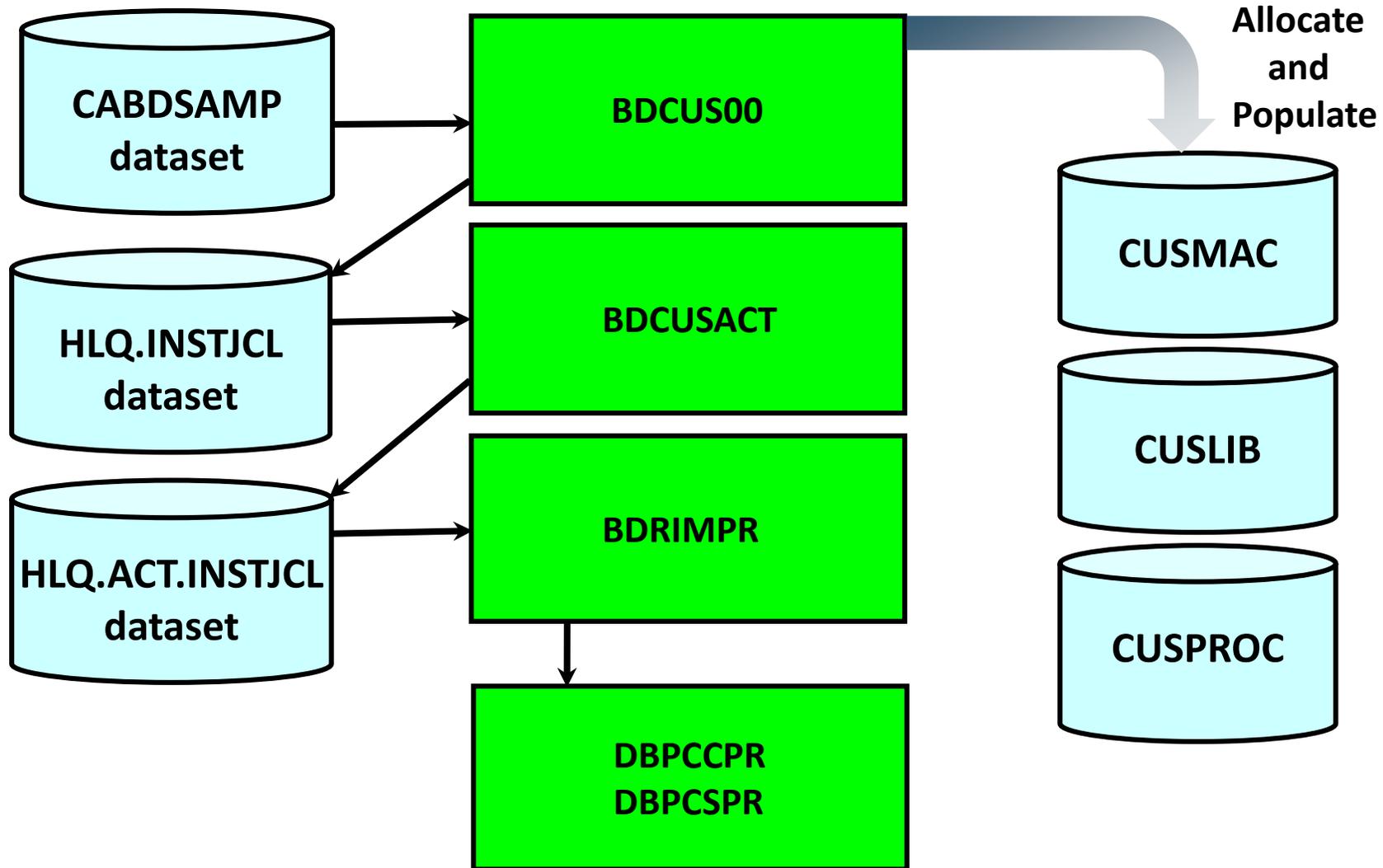
Active MUF Upgrade (cont'd)

Active MUF upgrade involves the following datasets and JCL members

- CAI.THLQ.CABDSAMP
 - @BDWKSHT – Install/Upgrade member worksheet
 - \$DCBDEDT – Edit macro used to customize members
 - BDCUS00 – Allocate and populate INSTJCL and custom libraries
- CAI.HLQ.INSTJCL
 - BDRIM01 – Installs the Datacom PC CALL modules
 - BDCUSACT – allocates and populates the CAI.HLQ.ACT.INSTJCL dataset



Active MUF Upgrade (cont'd)



Active MUF Upgrade (cont'd)

Active MUF Upgrade datasets and JCL members

- CAI.HLQ.ACT.INSTJCL
 - BDCUSUPG
 - Assemble custom macros and link edit to CAI.CHLQ.CUSLIB
 - ADSDC15
 - Run Datadictionary compare utility
 - Do not proceed until any identified issues addressed
 - BDACTALC
 - Allocate backup datasets
 - Populate CAI.CHLQ.CUSPROC

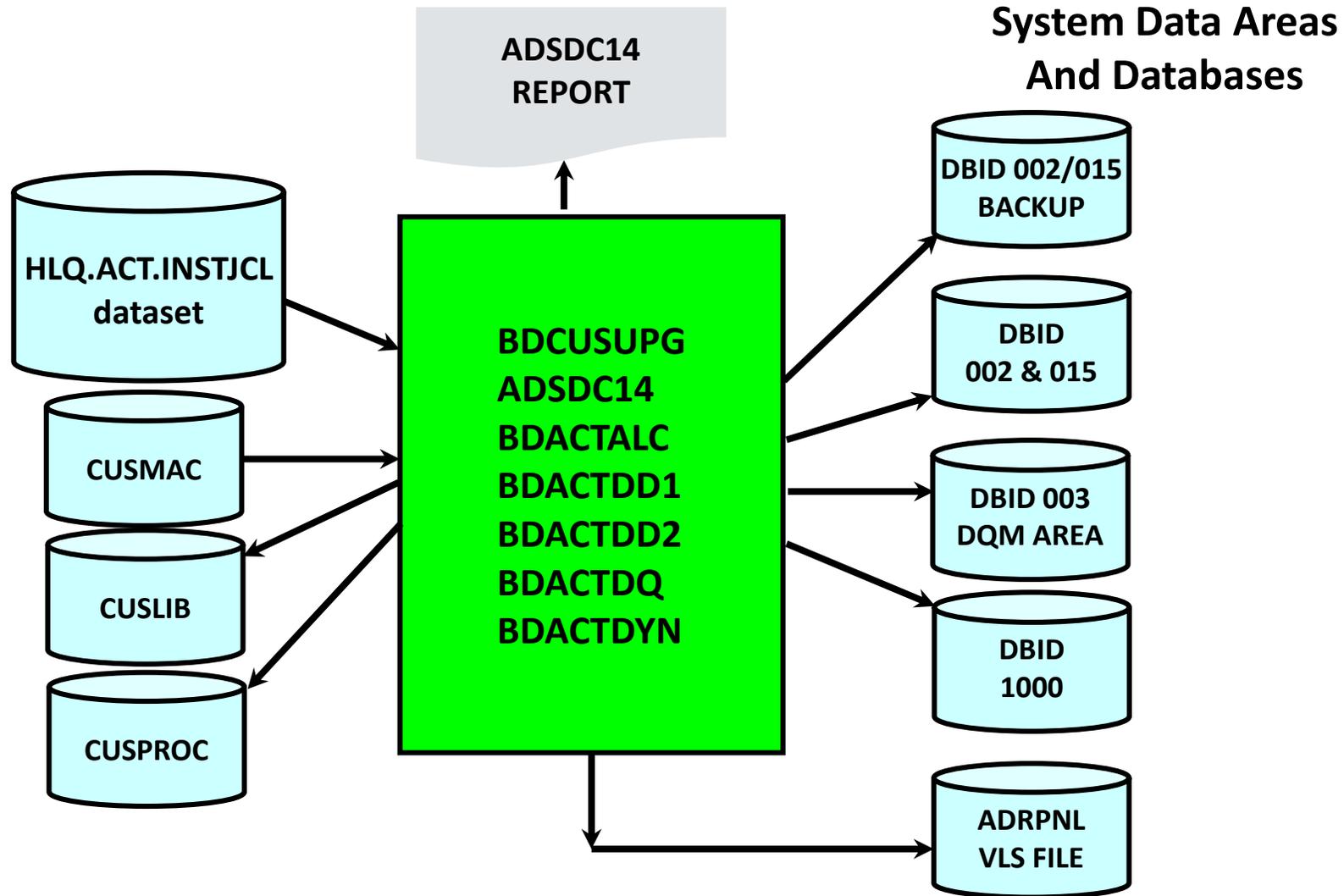


Active MUF Upgrade (cont'd)

- BDACTDD1
 - Backup 14.0 CXX, DD & DDD databases
- BDACTDD2
 - Upgrade 14.0 DD database to 15.0
- BDACTDQ
 - Upgrade DQM data area to 15.0 in DQ database
- BDACTDYN
 - Upgrade DST database to 15.0



Active MUF Upgrade (cont'd)



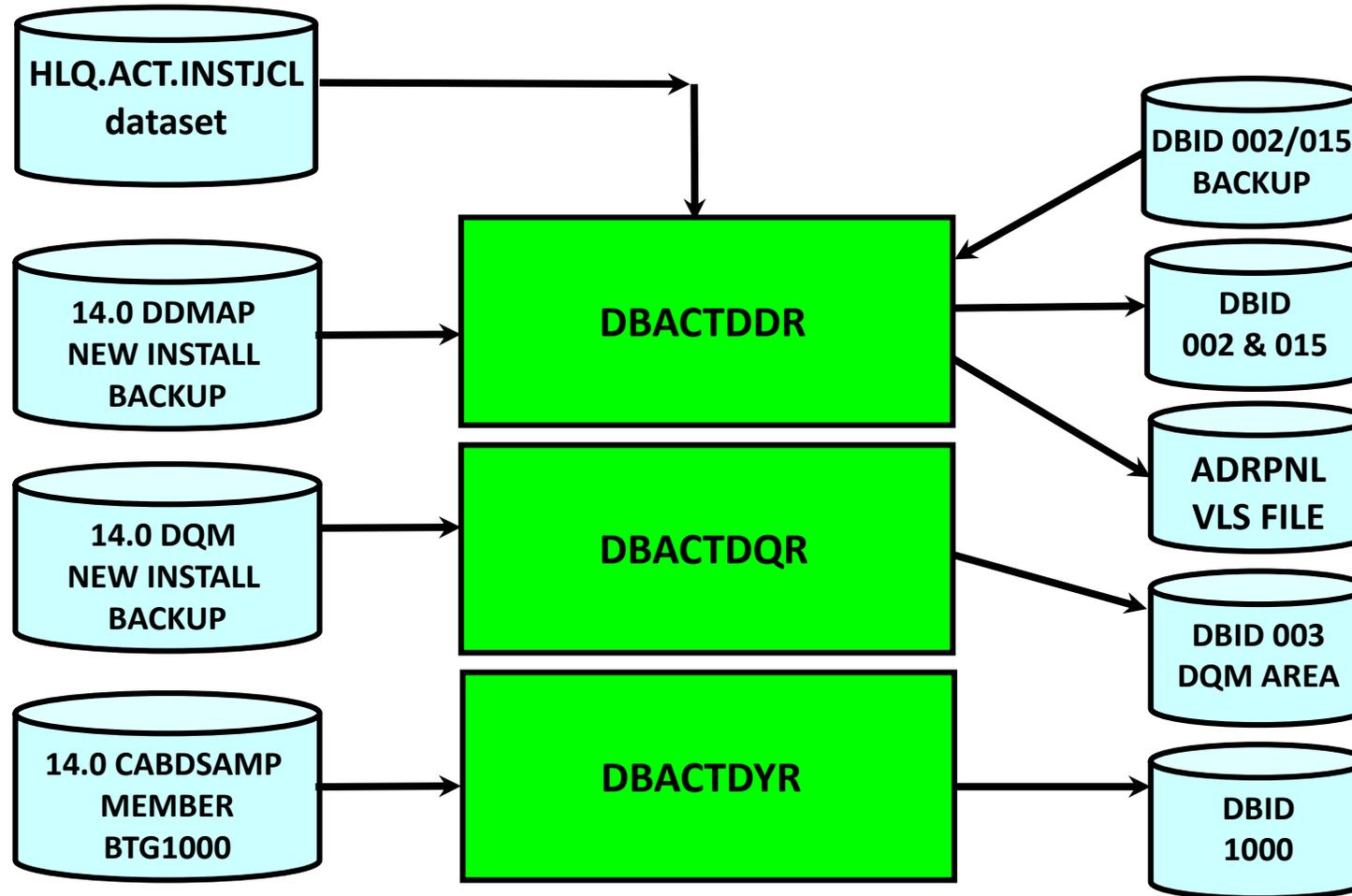
Active MUF Upgrade (cont'd)

Active MUF Upgrade fallback members

- CAI.HLQ.ACT.INSTJCL
 - BDACTDDR
 - Restores the 14.0 DD, DDD databases
 - BDACTQR
 - Restores the 14.0 DQM data area for DQ database
 - BDACTDYR
 - Restores the 14.0 DST database



Active MUF Upgrade (cont'd)



Traditional MUF Upgrade



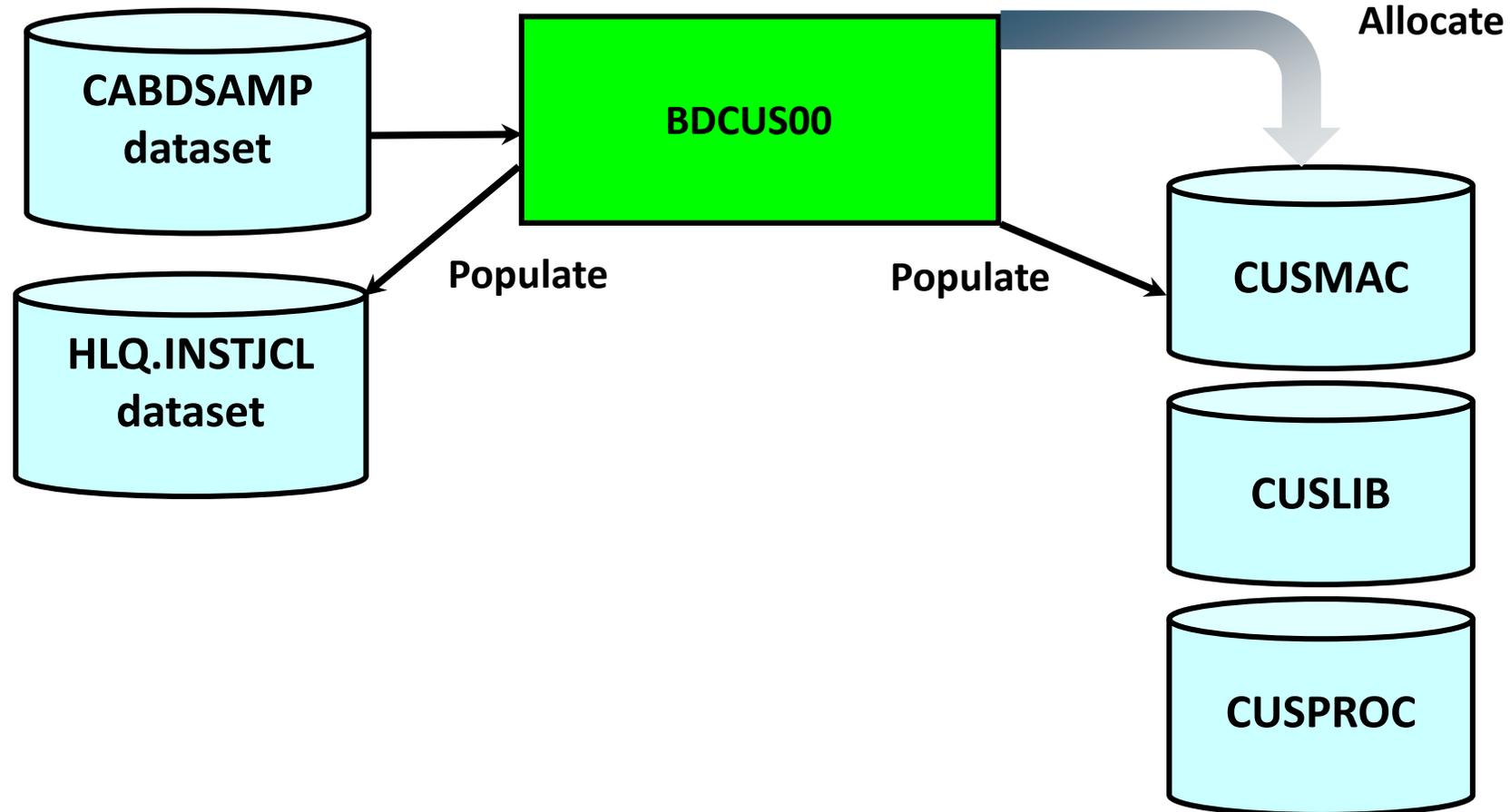
Traditional MUF Upgrade

Traditional MUF Upgrade datasets and JCL members

- CAI.THLQ.CABDSAMP
 - BDCUS00
 - CAI.HLQ.INSTJCL
 - CAI.CHLQ.CUSMAC
 - CAI.CHLQ.CUSLIB
 - CAI.CHLQ.CUSPROC



Traditional MUF Upgrade (cont'd)



Traditional MUF Upgrade (cont'd)

- CAI.THLQ.INSTJCL
 - @BDWKSHT
 - \$DCBDEDT
 - BDRIM01
 - Must be run on any system that can access MUF

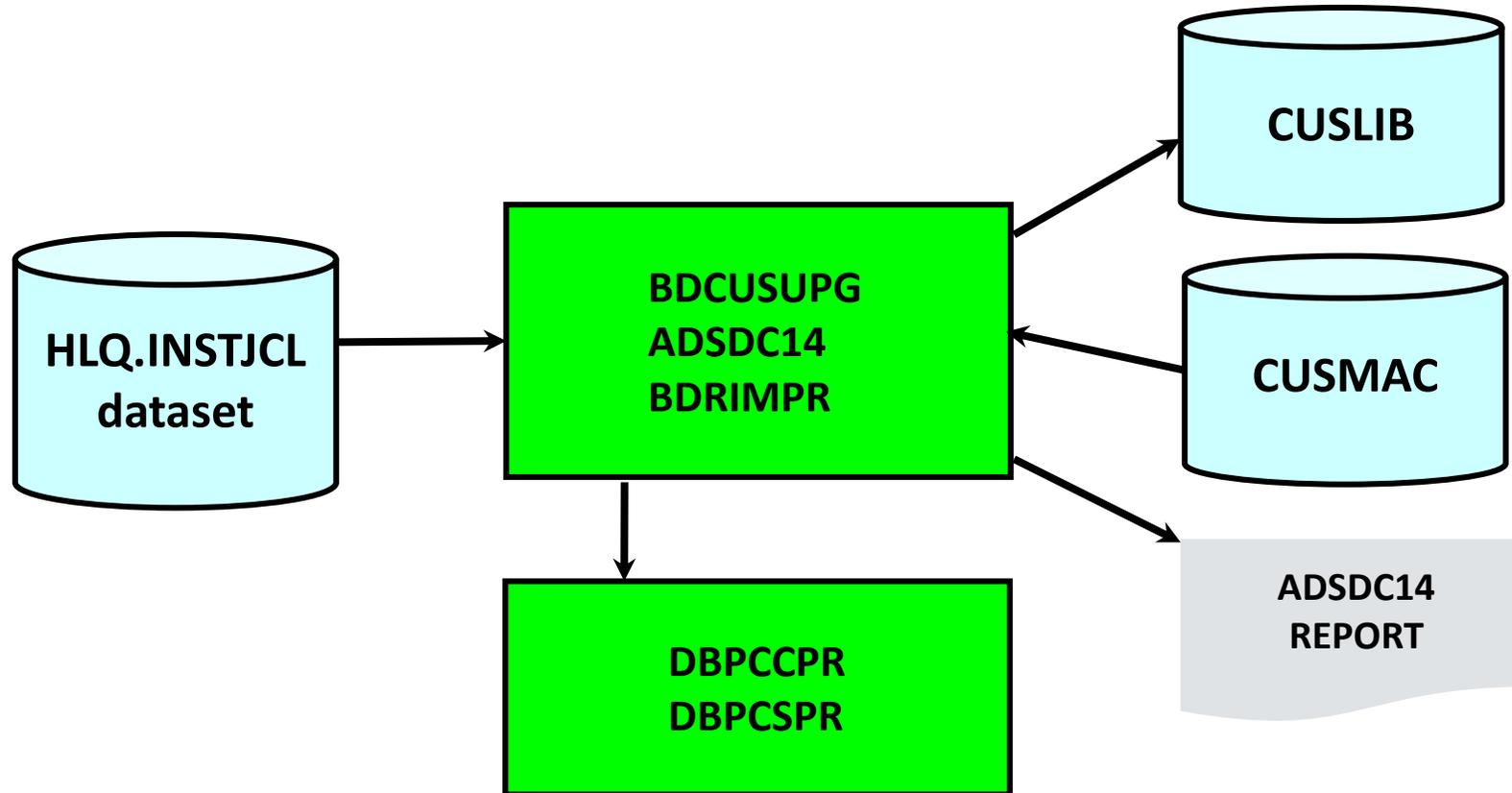


Traditional MUF Upgrade (cont'd)

- BDCUSUPG
 - Assemble CAI.CHLQ.CUSMAC macros and link edit them into the CAI.CHLQ.CUSLIB dataset
 - All BDCUSUPG members need to be reviewed and updated for the MUF being upgraded
 - DBSYSID
 - DDSYSTBL
 - DQOPTLST
 - DBMSTLST



Traditional MUF Upgrade (cont'd)



Traditional MUF Upgrade (cont'd)

- CAI.THLQ.INSTJCL
 - BDUPG01 – Populate CAI.CHLQ.CUSPROC dataset
 - BDUPG01 – Start 14.0 MUF
 - BDUPG03 – Backup 14.0 CXX, DD, and DDD databases
 - BDUPG03B – Backup 14.0 DQ database DQM data area
 - BDUPG03R – Reload CXX, DD, DDD and DQ databases
 - BDUPG04 – Shut down r14.0 MUF

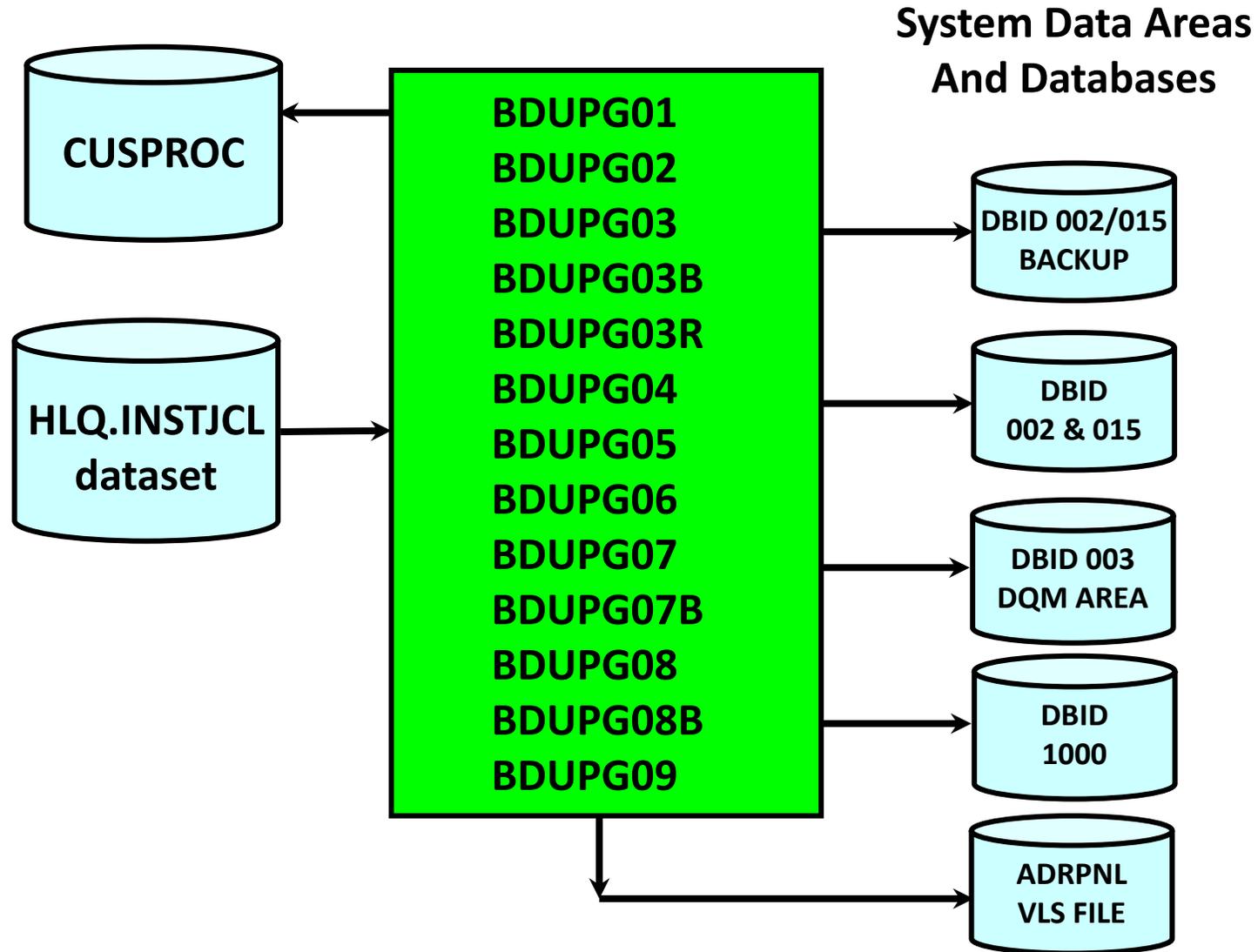


Traditional MUF Upgrade (cont'd)

- BDUPG05 – Start 15.0 upgrade MUF
- BDUPG06 – Upgrade 14.0 DD to 15.0 and replace DST database (DBID 1000) with 15.0 version
- BDUPG06B – DQ 14.0 to 15.0 upgrade (DQM)
- BDUPG07 – Backup 15.0 CXX, DD, and DDD databases
- BDUPG07B – Backup 15.0 DQ database
- BDUPG08 – Shut down 15.0 VLS file upgrade MUF
- BDUPG09 – Replace DDOL signon/signoff panels in ADRPNL



Traditional MUF Upgrade (cont'd)



Traditional MUF Upgrade (cont'd)

Post Install CAI.HLQ.INSTJCL dataset members

- BDCICS – Generate CICS CSD members
- BDCDC01 – Install Change Data Capture (CDC) database
- BDFBK01 – Not Used
- BDFBK02 – 14.0 MUF startup place holder
- BDFBK03B – Restore 14.0 DQM table
- BDFBK04 – Restore 14.0 DST database
- BDFBK05 – Restore 14.0 DDOL signon/signoff panels
- BDFFW01 – Not Used
- BDFFW02 – 15.0 MUF startup place holder
- BDFFW03B – Load 15.0 DQM data area
- BDFFW04 – Replace 14.0 DST database with 15.0
- BDFFW05 – Load 14.0 DDOL VLS files



Parallel MUF Upgrade



Parallel MUF Upgrade

Overview

- Similar process to Traditional Upgrade except:
 - One Source MUF and one Target MUF
- Backup Source MUF CXX/DD/DDD databases then load them into Target MUF
- Upgrade Target MUF to Version 15.0
- May or may not have a freeze on source MUF
 - Freeze on DD/DDD changes for some time period
- Backup Target MUF CXX/DD/DDD databases then load them into Source MUF 15.0
- Start up or reconnect user applications



Parallel MUF Upgrade (cont'd)

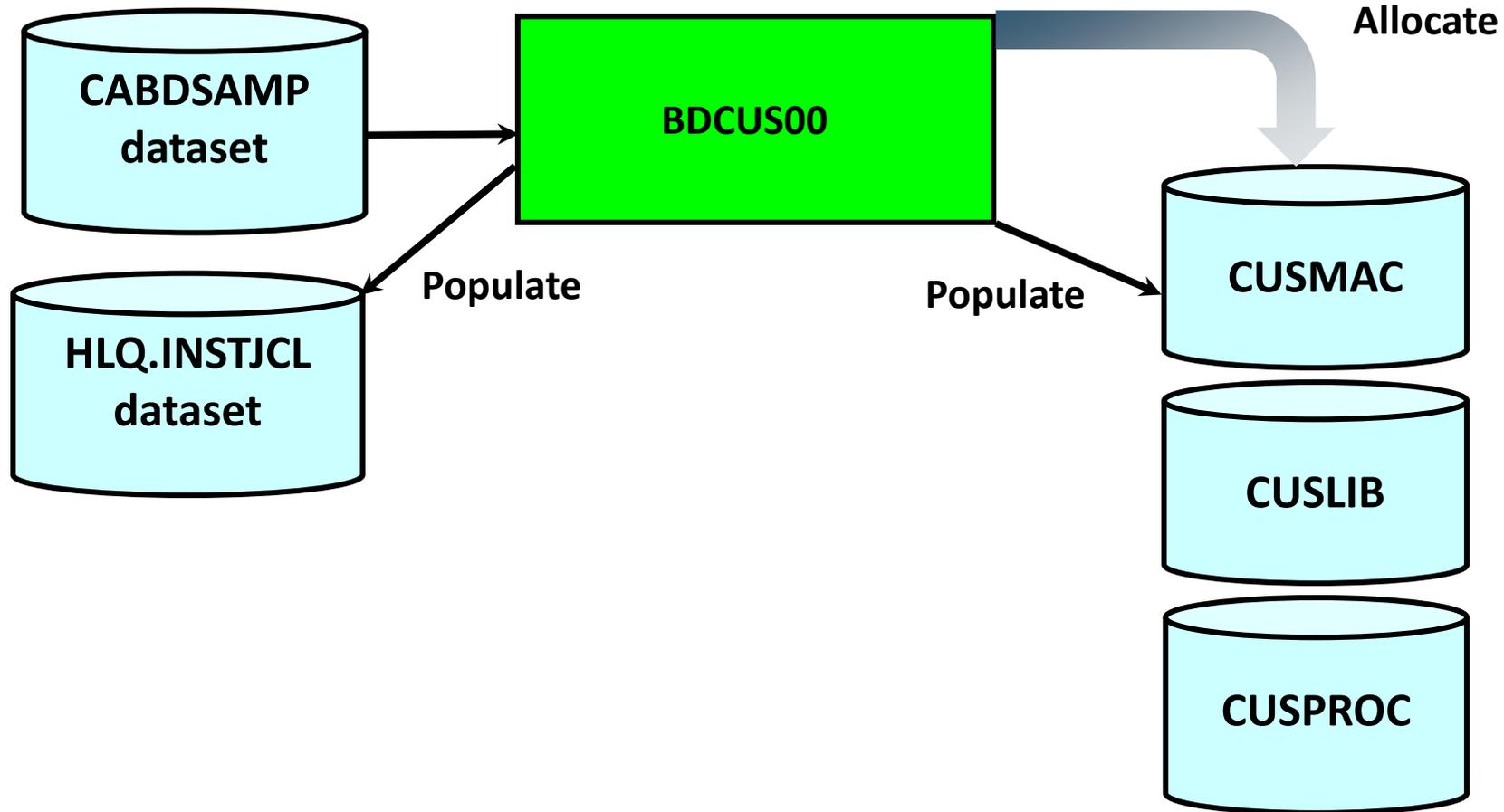
Parallel MUF upgrade datasets and JCL members

CAI.THLQ.CABDSAMP dataset JCL members

- BDCUS00 – Allocate and populate the following datasets
 - Allocate
 - CAI.HLQ.INSTJCL
 - CAI.CHLQ.CUSMAC
 - CAI.CHLQ.CUSLIB
 - CAI.CHLQ.CUSPROC
 - Populate
 - CAI.HLQ.INSTJCL
 - CAI.CHLQ.CUSMAC



Parallel MUF Upgrade (cont'd)

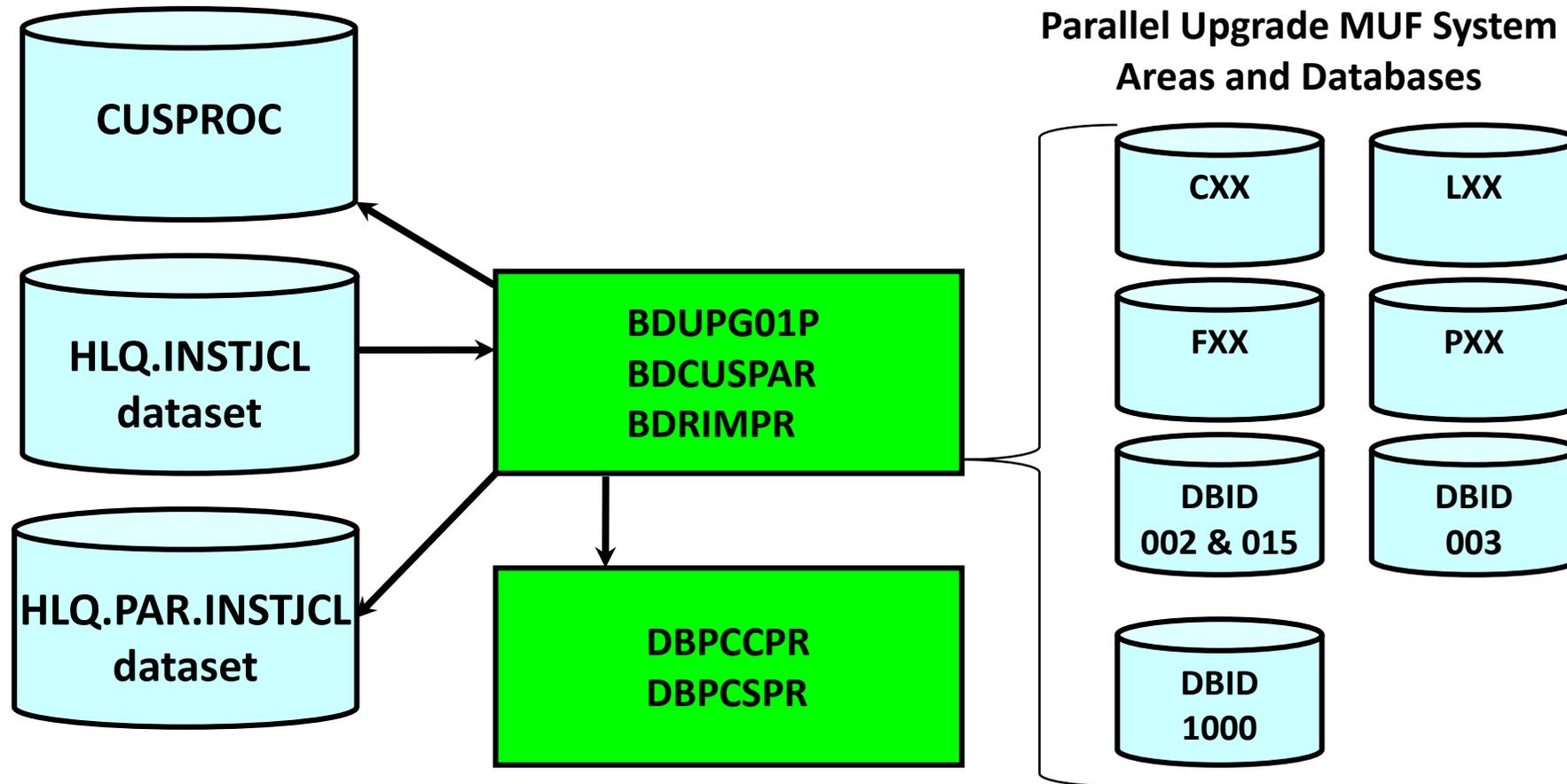


Parallel MUF Upgrade (cont'd)

- CAI.HLQ.INSTJCL dataset JCL members
 - @BDWKSHT – Install/upgrade member work sheet
 - \$DCBDEDT – Edit Macro used to customize members
 - BDRIM01 – Install the Datacom PC CALL modules
 - BDUPG01P - Populate the upgrade MUF CAI.HLQ.CUSPROC dataset
 - BDCUSPAR
 - Allocate and populate CAI.HLQ.PAR.INSTJCL
 - Allocate Initialize and load MUF system datasets (CXX, LXX, FXX)
 - Allocate Initialize and load MUF system databases (002, 015, 003 etc.)



Parallel MUF Upgrade (cont'd)

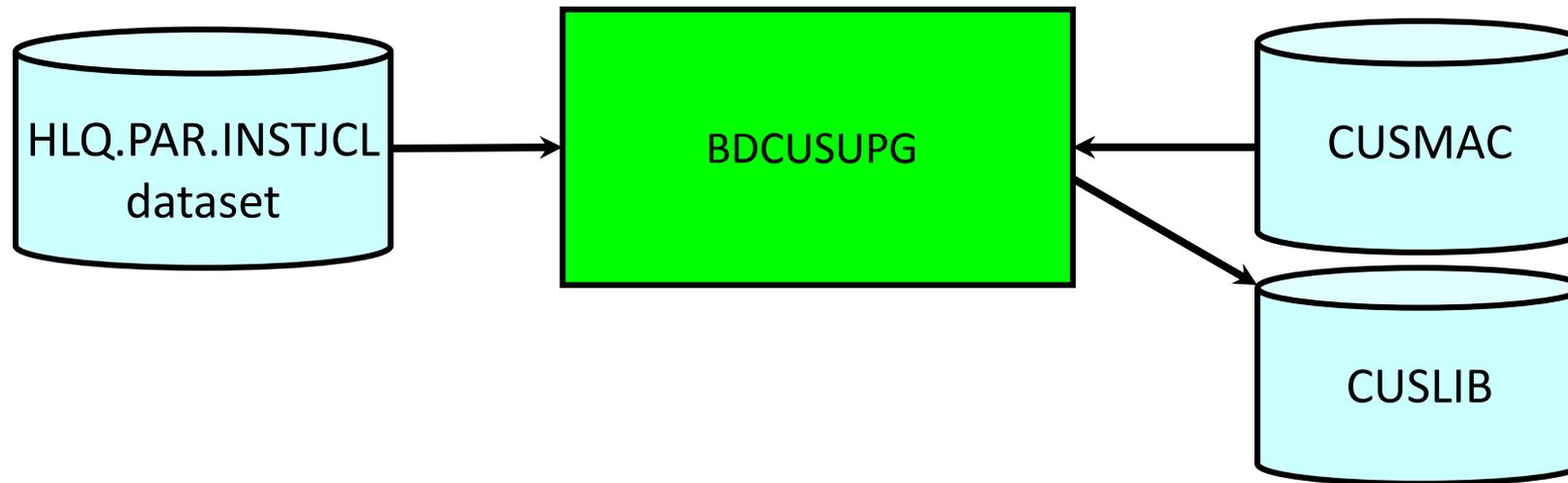


Parallel MUF Upgrade (cont'd)

- CAI.HLQ.PAR.INSTJCL dataset JCL member
 - BDCUSUPG
 - Assemble all CAI.CHLQ.CUSMAC macros and link edit them into the CAI.CHLQ.CUSLIB dataset



Parallel MUF Upgrade (cont'd)

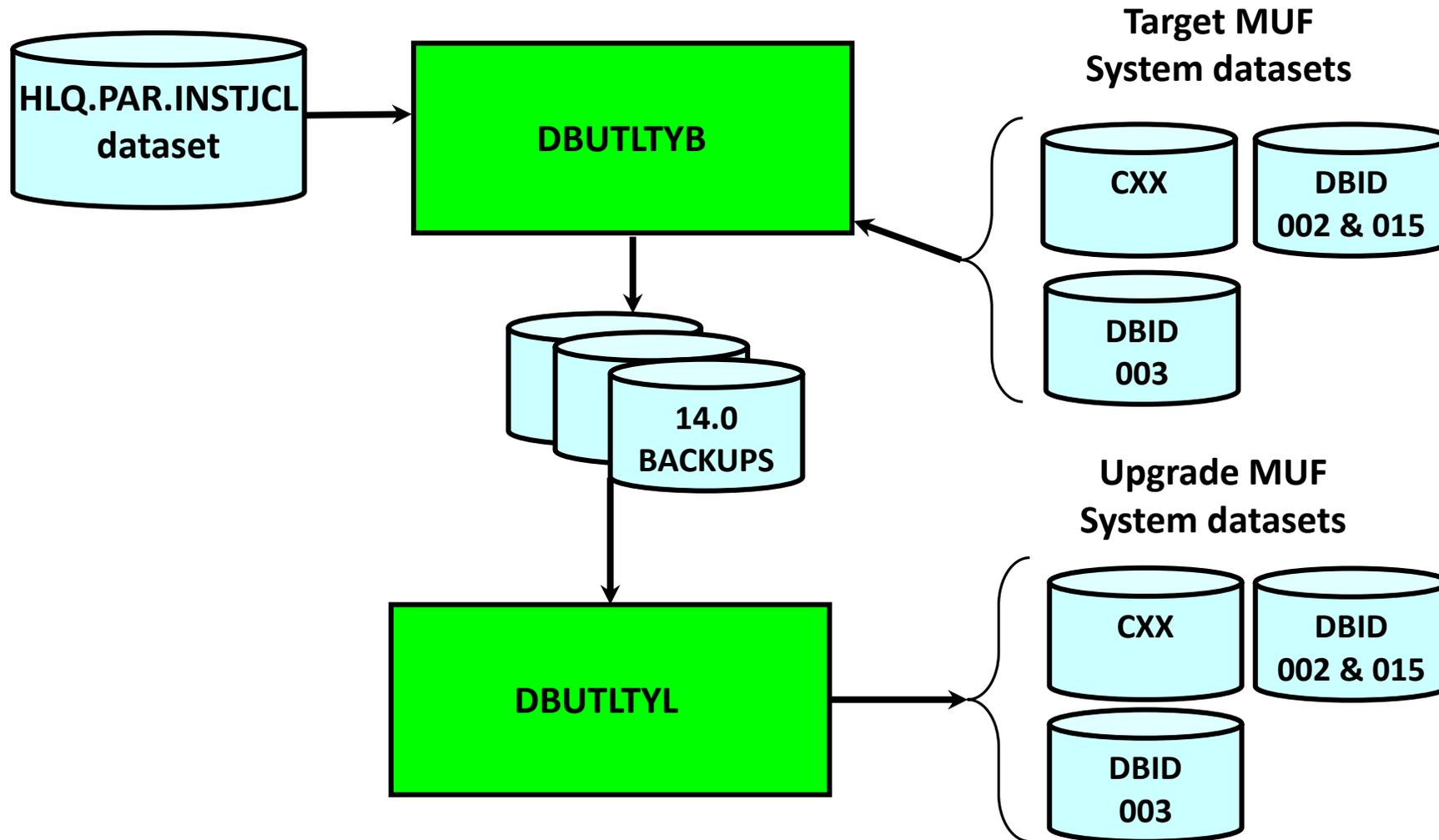


Parallel MUF Upgrade (cont'd)

- CAI.HLQ.PAR.INSTJCL dataset JCL members
 - DBUTLTYB – Backup Target MUF System datasets
 - DBUTLTYL – Load Target MUF System datasets



Parallel MUF Upgrade (cont'd)



Parallel MUF Upgrade (cont'd)

- CAI.HLQ.PAR.INSTJCL dataset JCL members
 - ADSCD14 – Runs Datadictionary compare utility
 - Do not proceed until any identified issues addressed
 - BDUPG02 – Start 14.0 Parallel Upgrade MUF
 - BDUPG03 – Backup 14.0 CXX, DD & DDD databases
 - BDUPG03B – Backup 14.0 DQ database DQM data area
 - BDUPG03R – Reload CXX, DD, DDD & DQ databases
 - BDUPG04 – Shut down 14.0 MUF

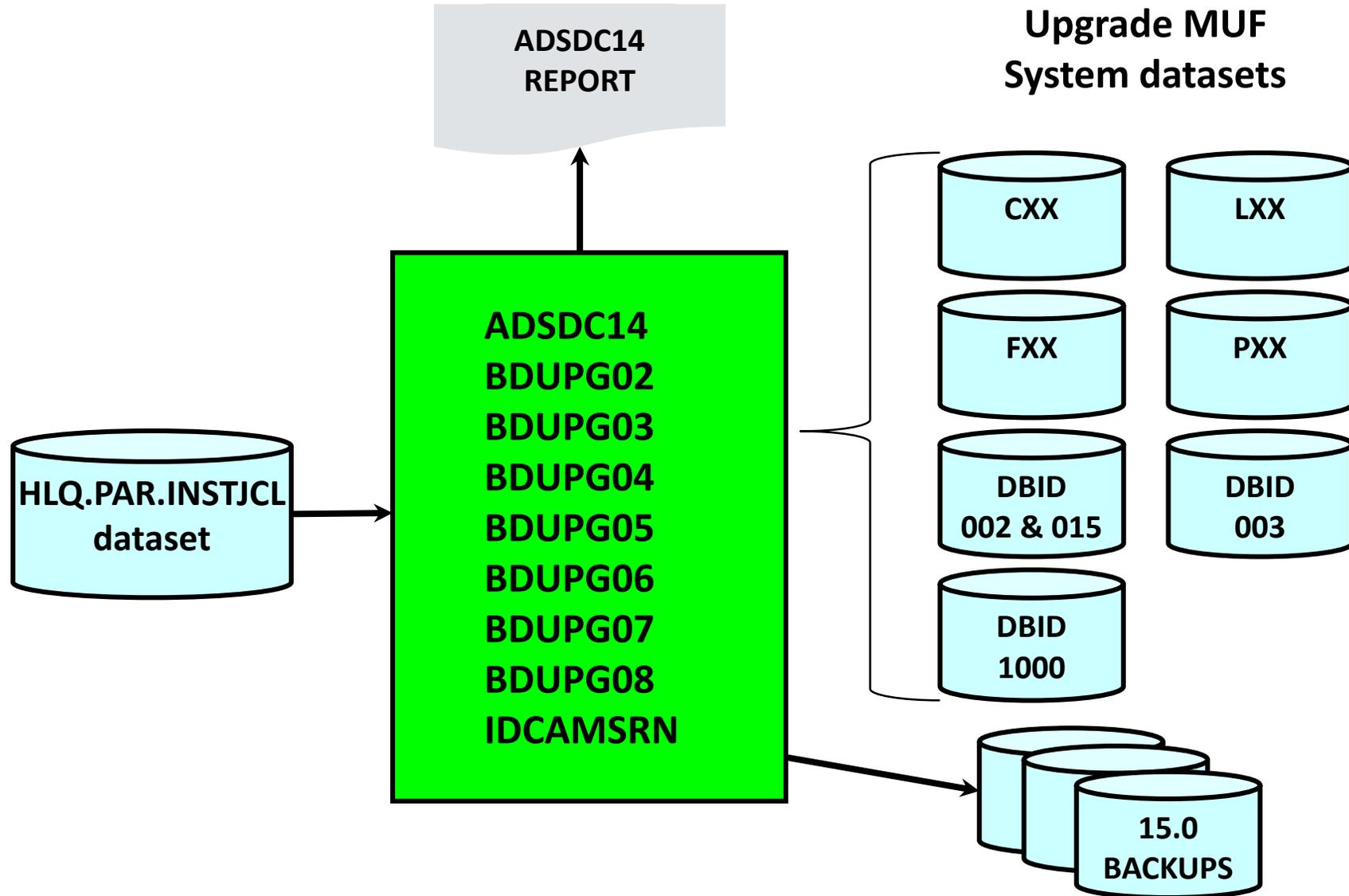


Parallel MUF Upgrade (cont'd)

- CAI.HLQ.PAR.INSTJCL dataset JCL members
 - BDUPG05 – Start 14.0 upgrade MUF
 - BDUPG06 – Upgrade 14.0 DD to 15.0 and replace Dynamic System Table database (DBID 1000) with a 15.0 version
 - BDUPG06B – DQ 14.0 to 15.0 upgrade (DQM)
 - IDCAMSRN – Rename the CXX, DD & DDD backup datasets



Parallel MUF Upgrade (cont'd)



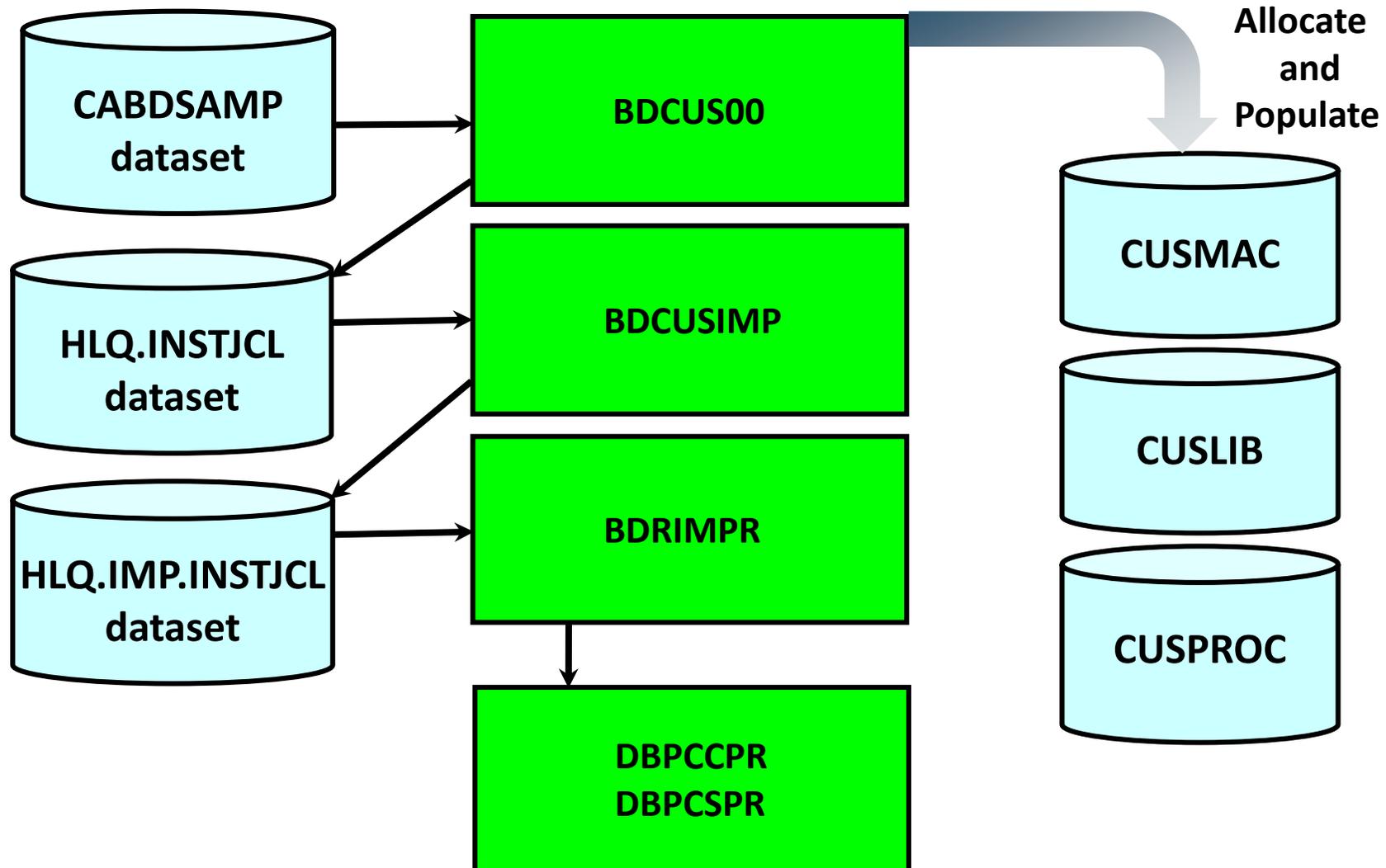
Parallel MUF Upgrade (cont'd)

Parallel MUF Upgrade Implementation

- Pre-upgrade CAI.HLQ.INSTJCL dataset members
 - @BDWKSHT – Install/upgrade member work sheet
 - \$DCBDEDT – Edit Macro used to customize members
 - BDRIM01 – Install the Datacom PC CALL modules
 - BDCUS00 – Allocate and Populate
 - CAI.HLQ.INSTJCL
 - CAI.CHLQ.CUSMAC
 - CAI.CHLQ.CUSLIB
 - CAI.CHLQ.CUSPROC
 - BDCUSIMP – Allocate and populate CAI.HLQ.IMP.INSTJCL



Parallel MUF Upgrade (cont'd)

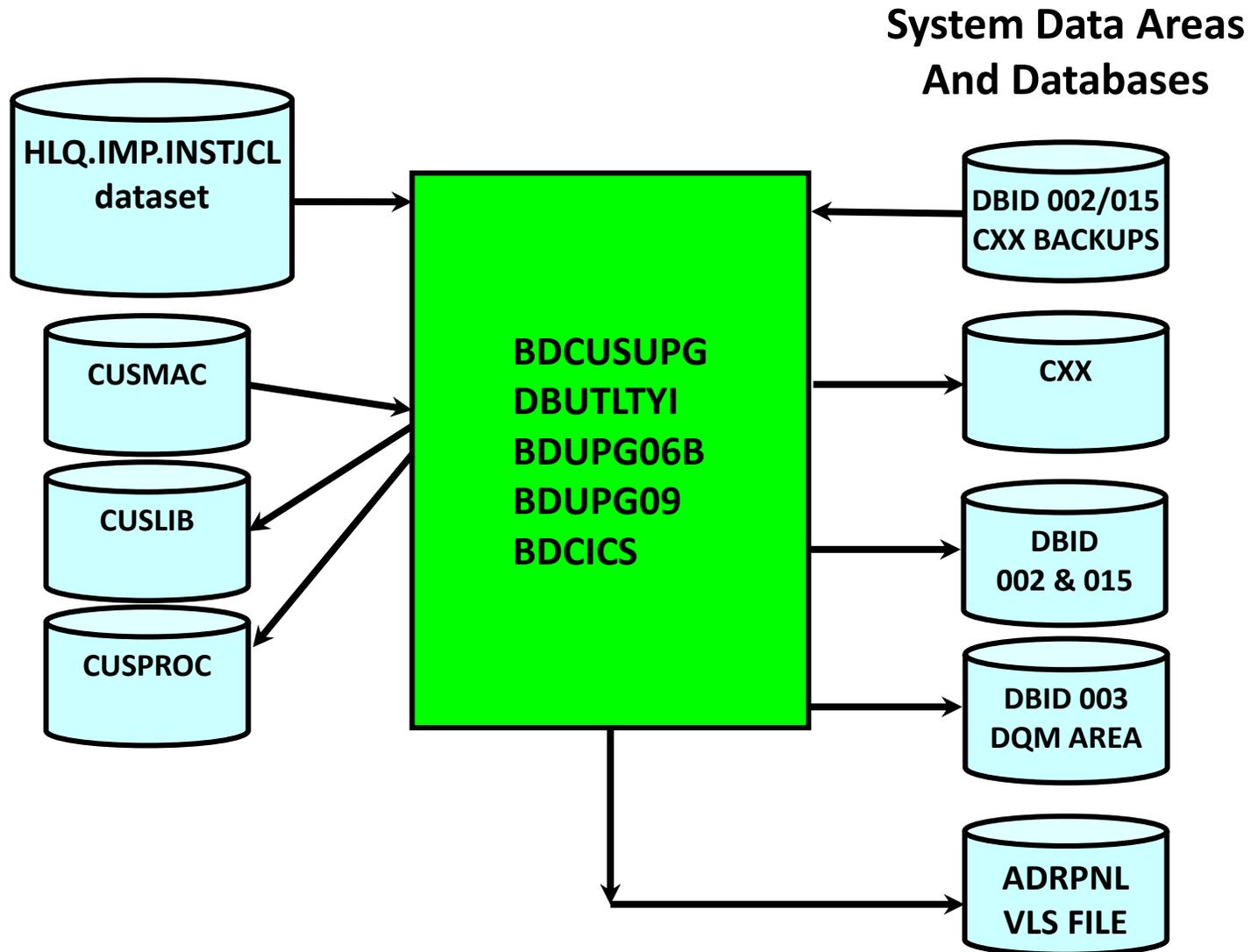


Parallel MUF Upgrade (cont'd)

- Shut down all user application access and the 14.0 MUF
 - BDCUSUPG – Assemble and link edit custom macros
 - BDUPG01P – Populate CAI.CHLQ.CUSPROC dataset
 - DBUTLTYI – LOAD 2, 15 & 1000 CXX definitions and DD and DDD databases
 - BDUPG06B – DQ 14.0 to 15.0 upgrade (DQM)
 - BDUPG09 – Replace DDOL signon/signoff panels in ADRPNL
 - BDCICS – Generate CICS CSD members
- Incorporate 15.0 code into MUF startup and bring it up
- Start up or reconnect user applications



Parallel MUF Upgrade (cont'd)



Maintenance



Maintenance Procedures

- Keep your 15.0 MUF healthy by using one of the following SMP/E maintenance strategies
 - Download and apply each successive monthly CA RS solution set
 - Receive them all but do not apply until you need them
 - Frequently download error HOLDDATA
 - ESD needs HOLDDATA with PTFs or CARS
 - Do regular review of available CSO solutions, download and RECEIVE them all on a regular basis



Maintenance Procedures (cont'd)

- Using Shadow MUF to implement maintenance
 - Download and apply maintenance
 - Put maintenance into the Shadow MUF startup STEPLIB
 - Shadow MUF gives you the ability to position maintenance without compromising current MUF
 - Transition MUF roles
 - Transition Primary MUF to the Shadow MUF
 - Restart the Primary MUF as a Shadow MUF(without maintenance)



Summary

- Provide explanation of installation process
- Recognize members and libraries needed for the product installation
- Keep the new environment healthy



Thank you very much, questions are welcome!



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