



# CA Datacom/AD Report Utilization and Information Gathering for Support

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# Objectives

- What are the main components/system files for CA Datacom/AD?
- What is DBUTLTY?
- What is the most important report in CA Datacom/AD?
- Demo on running/executing a CXX Report?
- Review of a CXX report
- Review of other significant reports and functions for CA Datacom/AD
- Basic overview of parameters for reporting in CA Datacom/AD
- Overview of information posted to the Statistics and Diagnostics Area (PXX)
- Summary



# What are the main components for CA Datacom/AD?

- CXX System File
  - This file is the heart of the CA Datacom/AD environment
  - Is the Catalog/Directory – metadata used at run-time
- LXX System File
  - Transaction Log File
  - Used for logging and recovery
- FXX System File
  - Force area – utilized to keep track of long running transactions
- RXX System File
  - Recovery File – created when the LXX fills up
  - Run DBUTLTY to SPILL all eligible records from the LXX
- PXX System File
  - Print and Diagnostics Area – contains information that could be utilized for Tuning or Diagnosing issues in CA Datacom/AD

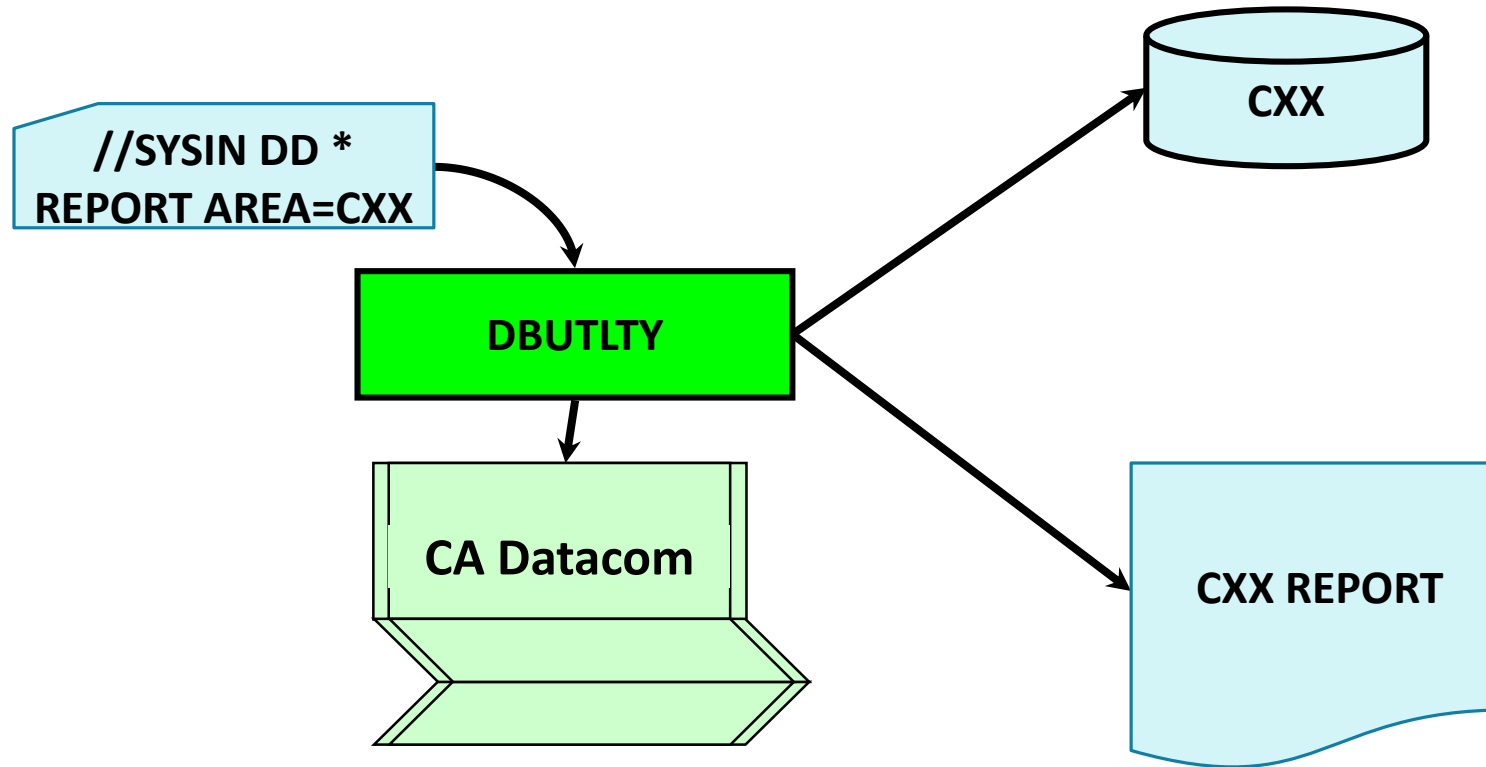


# What is DBUTLTY?

- CA Datacom/AD has only one Utility to perform all aspects of managing and maintaining the Environment. It includes such functions as:
  - Initialization(INIT) – Indexes and Data Areas
  - LOAD – Data Areas only, Index will rebuild automatically
  - Backup – Data Areas and Database level
  - Recovery – Forward and Backward
  - Reports – there are a variety of reports available
  - Sending commands to MUF (Multi-User Facility)
  - Making databases offline/online
  - Automated monitoring
  - Online Reorg
  - Online Area Move
  - And a whole lot more...



# DBUTLTY execution diagram



# Demo on running/executing a CXX Report?

- This is the execution JCL for running a CXX Report
  - The most important parameter here is the DBID (use the DBID your application was assigned)
  - If you don't know, you can always run with Control Card of REPORT AREA=CXX which will report on the entire CA Datacom/AD environment

```
//*  
//DBUTLTY EXEC PGM=DBUTLTY,REGION=4M  
//STEPLIB DD DSN=@DCMHLQ.CUSLIB,DISP=SHR  
// DD DSN=@DCMHLQ.CAAXLOAD,DISP=SHR  
//SYSOUT DD SYSOUT=*  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD *  
REPORT AREA=CXX,DBID=????  
//
```



# Review of a CXX Report

```
Date: 4/06/2016 ***** Page: 3
Time: 17.37.19 * CA Datacom/DB *
* General Utility * version: 15.0
* COPYRIGHT (C) 1990-2013 CA. ALL RIGHTS RESERVED. *
Base: 2 ***** Directory: DB15CX2

TABLE NAME - AGR AREA NAME - DD1
OCCURRENCE - AGGREGATE P008 OCCURRENCE - DATA-DICT-AREA-1 P004
TABLE ID - 17 AREA SQLNAME - DATA_DICT_AREA_1
RECORD LENGTH - 809 / 821 BLOCK LENGTH - 4,096 SLACK - 0
RECORDS IN TABLE - 284 OVERFLOWS IN AREA - 0
LENGTH OF KEY/ELEMENTS - 1,080 BLOCKS IN USE - 1,070 HIGH USED TRACK - 128
NUMBER OF KEYS - 8 BLOCKS UNUSED - 9,730
NUMBER OF ELEMENTS - 3 TOTAL BLOCKS - 10,800 CXXMAINT LINK - YES
CHANGE MASTER KEY - YES TOTAL TRACKS - 900 DYNAMIC EXTEND - YES
DUPLICATE MASTER KEY - YES PERCENT FULL - 9 DYN.EXT.TRACKS - 10
RECOVER - YES ENCRYPTION - NONE DEVICE TYPE - 3390 SECONDARY CYLS - 10
LOGGING - YES BLOCKS/TRACK - 12
PIPELINE - YES DSOP MODE - RANDOM
DB COMPRESSION - YES TRANSITION - NEVER TABLE LOADED - YES, DATE--3/30/2016, TIME-21.27.08
USER COMPRESSION - NO INDEX LOADED - YES
CLUSTER KEY ID - 0 DATADITIONARY BASE - 2
CLUSTER KEY LENGTH - 0 DATA BASE ID CHANGE - NO
DEFINITION POSTED VIA - LOAD FROM BACKUP
AUTHID - SYSADM SQL-INTENT - R
TABLE SQLNAME - AGGREGATE UNIQUE ROW IDENTIFIERS (URI) - 17,703 URI-REUSE NO
DOMAIN CONSTRAINT - NO TABLE BEING REFERENCED - NO
DL1-T CONSTRAINT - NO TABLE REFERENCING - NO
TABLE CONSTRAINED - NO ALL REFERENCING IN THIS BASE - YES
CURRENT CHECK PENDING - LOAD SET - NO HISTORY CHECK PENDING - LOAD SET - NO
RELATED TABLE - NO RELATED TABLE - NO
FORWARD RECOVERY - NO FORWARD RECOVERY - NO
FORCED OFF - NO
TRIGGER(S) - NO HISTORY ROW(S) VIOLATE CONSTRAINT(S) - NO
CURRENT ROW(S) VIOLATE CONSTRAINT(S) - NO
DATA SET NAME - DCMQA.AX15V2.DB15CX2.DD1002 DATA DTF/DDNAME - DD1002
VOLUMES - DCMQAX
```



# Review of CXX Report

- The CXX report is considered the Bible of the Datacom environment
- CXX report is a summary of all of the metadata that resides in the Directory
- Support almost always requires it when submitting documentation for diagnosis
- Most AD issues can be resolved via the CXX report
- It also has current specific information such as record count
- It contains a detailed listing of all of the databases in the environment
- There are many other reports providing specific information regarding the CXX





# Review of CXX Report (cont'd)

- Key Components/Information provided in CXX Report
  - Base: (this field displays the Database ID that you're reporting on)
  - Version: (displays the Version/Release that you're running)
  - Directory: (each CXX has a CXXNAME, this field displays it)
  - Table Name: (internal three byte name defined in the metadata (Dictionary))
  - Area Name: (physical Area where data is posted)
  - Occurrence 1: (Dictionary Table occurrence - metadata)
  - Occurrence 2: (Dictionary Area occurrence - metadata)
  - Record Length: (size of record + 12 bytes for RCE (Record Control Element))
  - Block Length: (length of the block where the data is being stored)
  - Records in Table: (number of records physically stored in this table)



# Review of CXX Report (cont'd)

- Key Components/Information provided in CXX Report
  - Change Master Key: (whether the definition allows for modification of the Master Key)
  - Duplicate Master Key: (whether the definition allows for duplicate Master Keys)
  - Total Blocks: (number of blocks allocated to the Data Area)
  - Total Tracks: (conversion of Totals Blocks into tracks)
  - Percent Full: (how full the Data Area is)
  - Device Type: (type of DASD for the Data Area)
  - Blocks/Track: (ratio of blocks per track))
  - Recover: (whether this table is eligible for Transaction Backout)
  - Logging: (whether the table updates are being logged in the LXX)
  - Pipeline: (performance parameter buffer updates)



# Review of CXX Report (cont'd)

- Key Components/Information provided in CXX Report
  - DB Compression: (whether DB Compression was defined in the definition of this table)
  - User Compression: (whether the user is using a different tool for Compression)
  - Index Loaded: (whether the Index Area has been loaded )
  - Table Loaded: (whether the Data Area has been Loaded)
  - AUTHID: (Schema Authorization Name)
  - Table SQLNAME: (name of the Table in SQL mode)
  - SQL Intent: (type of SQL processing (Read, Write)
  - Data Set Name: (this is the Area Data Set Name)
  - Volume: (the volume(s) where the data set Resides)
  - DDNAME: (the DDNAME assigned to the Data Area)



# Review of Other Significant Reports and Functions for CA Datacom/AD

- CXX Report – The Directory (CXX) Report shows the current status and control information for the index, database, area, table, key, element and special fields

```
//SYSIN      DD *  
REPORT AREA=CXX
```

- Type B Report – The Directory (CXX) Report with TYPE=B keyword shows the current status and control information for the index, database, area and table. It excludes information for special fields

```
//SYSIN      DD *  
REPORT AREA=CXX,TYPE=B
```

- Type A Report – The Space Utilization Report (selected by using the TYPE=A keyword) provides information about total tracks, records, blocks, and maximum percentages of block utilization and the space reclamation option specified

```
//SYSIN      DD *  
REPORT AREA=CXX,TYPE=A
```



# Review of Other Significant Reports and Functions for CA Datacom/AD (cont'd)

- Type I Report – The Directory (CXX) Report with TYPE=I shows the impact report of the table status results of the last CA Datacom Datadictionary catalog of the database

```
//SYSIN      DD *  
REPORT AREA=CXX,TYPE=I
```

- Type K Report – The Directory (CXX) Report with TYPE=K shows the full CXX options in place and also provides information about encryption as defined to the CXX and tables

```
//SYSIN      DD *  
REPORT AREA=CXX,TYPE=K
```



# Basic Overview of Parameters For Reporting on CA Datacom/AD

- SYSOUT parameter in the MUF Startup Options (AXDATIN1) allows you to specify new output processing for diagnostics and tracing information that would otherwise be routed to the Statistics and Diagnostics Area (PXX)

```
SYSOUT      0, 5M, 1M, 3M, 1M, 1M      CLASS, ML, CBS, SQL, DD, DST
```

- CLASS – The Job Entry Subsystem (JES) class to which a dynamically allocated SYSOUT data set is assigned when closed/deallocated
- ML – Specifies that output is to be redirected to the same output as the Master List snaps, PXXML
- CBS – Specifies that output is to be redirected to the same output as the CBS traces, PXXCBS
- SQL - Specifies that output is to be redirected to the same output as the SQL traces, PXXSQL
- DD - Specifies that output is to be redirected to the same output as the CA Datacom/DB Datadictionary traces, PXXDD
- DST - Specifies that output is to be redirected to the same output as the Dynamic System Tables traces, PXXDST



# Overview of Information Posted to the Statistics and Diagnostics Area (PXX)

- The Statistics and Diagnostics Area (PXX) contains CA Datacom/AD operational statistics for monitoring and tuning CA Datacom/AD. Each physical MUF must have its own PXX data set (no sharing). You are not required to initialize or format the PXX. Each MUF opens it for output during startup and writes to it as needed.
- The Statistics and Diagnostics Area stores many types of statistics, each of which is accumulated and reported on separately:
  - Systems statistics
  - I/O statistics
  - Job statistics
  - SQL and Compound Boolean Selection Facility traces
  - CA Datacom/AD generated dumps
  - Dynamic System Tables
  - Audit records



# Displaying and Resetting the Statistics and Diagnostics Area (PXX)

- Printing the Statistics and Diagnostics Area

- Execute the DBUTLTY program
- The PXX must be one of the DDNAMES in the execution

```
//SYSIN      DD *  
REPORT AREA=PXX,DUMPS=FULL,JOBSTAT=SUMMARY,SYSSTAT=SUMMARY
```

- REPORT – Invokes the function to produce a report
- AREA=PXX – Requests the Statistics and Diagnostics Area Report
- DUMPS= – Specifies that formatted dumps are to be printed
  - FULL – Dumps Master List, Buffer areas, Request Area, and Compound Boolean Selection Facility (CBS) Diagnostic Report
  - REQUEST – Prints only the Request Area portion of the dumps
  - TRACE – Produces only the Compound Boolean Selection Facility (CBS) Diagnostic Report and the SQL trace information requested through the DBUTLTY COMM ALTER function
- JOBSTAT= – Indicates that a job statistics report is to be printed
  - DETAIL – Performs a top of form and prints JOBSTAT detail, causing each JOBSTAT to start on a new page
  - DETAILX – Skips three lines and prints JOBSTAT detail, causing each JOBSTAT to print on the same page with other information
  - SUMMARY – Performs a top of form and prints only the summary information from each job close





# Displaying and Resetting the Statistics and Diagnostics Area (PXX) (cont'd)

- SYSSTAT= – Indicates that that system statistics information is to be printed. The value you code for this keyword specifies the format of the Statistics Report
  - DETAIL – Performs a top of form and prints system statistics for each CLOSE request
  - DETAILX – Skips three lines and prints system statistics for each CLOSE request, causing SYSSTAT information to print on the same page with other information
  - SUMMARY – Performs a top of form and prints the system statistics from the last CLOSE record in the Report Area (PXX)
- Optional Keywords
  - JOBNAME= – Specifies the name of the job for any dumps and statistics that are to be reported
  - RTNCODE= – Specifies that dumps are to be printed only if the named return code is found in the
- The COMM CLRPXX option clears the Statistics and Diagnostics Area (PXX) of all data. This option has the same effect as disabling and enabling the MUF. That is, CA Datacom/AD begins to write data to logical block one, and all data previously in Statistics and Diagnostics Area (PXX) is lost



# Summary:

- Better understanding as to the information in a CXX reports
- The different types of reports available
- Information gather for support
- Usage of MUF Startup Options for SYSOUT



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