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Getting Ready for a DB2 10 Migration

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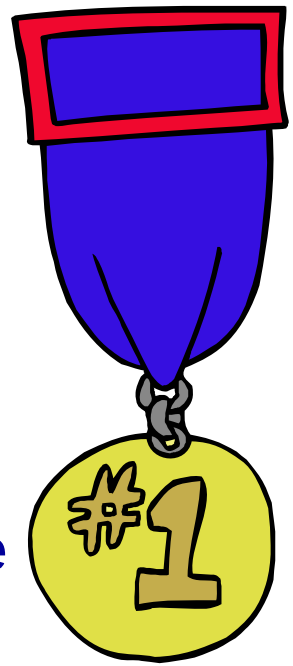
Why is it Time to Upgrade

Top 10 in DB2 10 for z/OS

- CPU reductions for transactions, queries, & batch
- Ten times more users by avoiding memory constraints
- More concurrency for catalog, utilities, and SQL
- More online change: data definition, utilities, & subsystem
- Improved security with more granularity
- Temporal or versioned data
- SQL enhancements improve portability
- pureXML performance and usability
- Hash, index include columns, skip migration, … Pick your favorite!
- Productivity improved for database & systems administrators, and application programmers

Top Items Driving DB2 10 Decisions

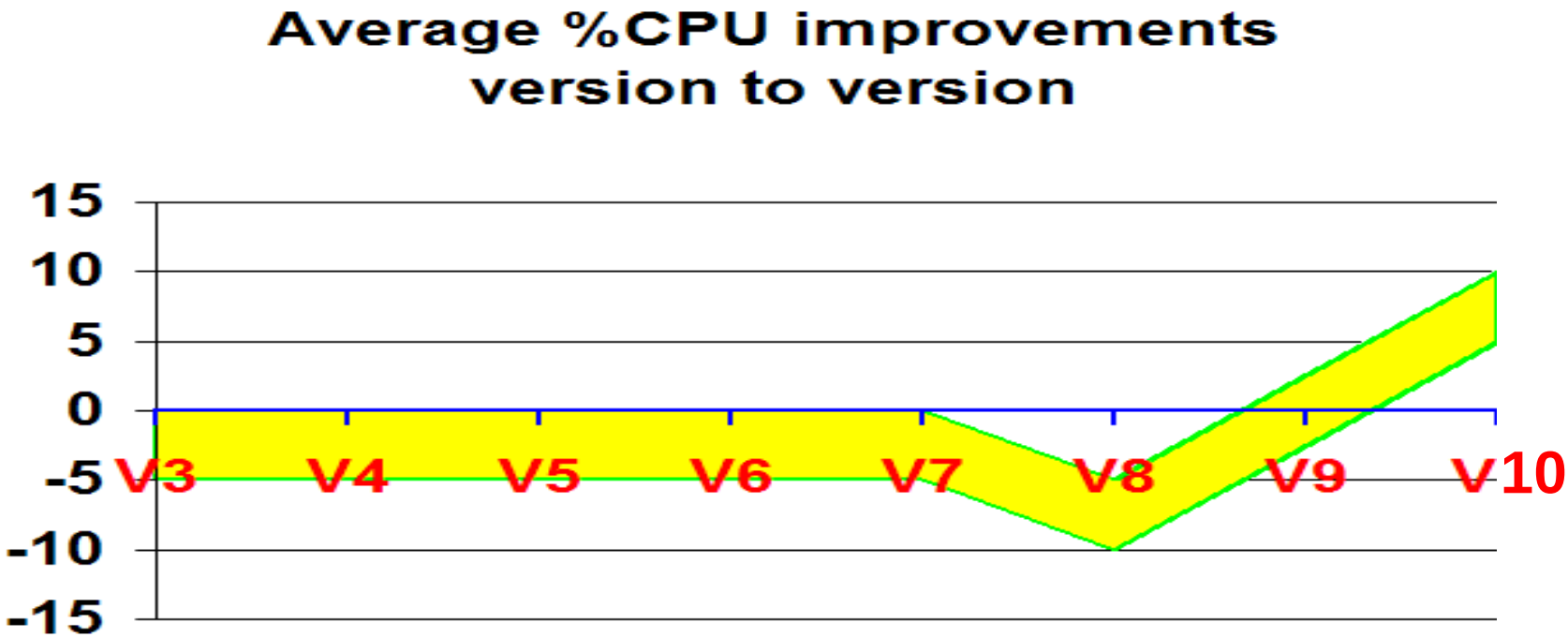
- CPU / Performance improvements
- Virtual storage enhancements
  - Reduce number of members, save money
- Stability & regression
- Security enhancements
  - Built-in security, trace & audit features, new roles, end-to-end auditing
  - Cleaner/safer environment; Better audit/compliance
- Temporal
- Skip-level migration DB2 V8 → DB2 10



Vast majority of beta customers plan production in 2011

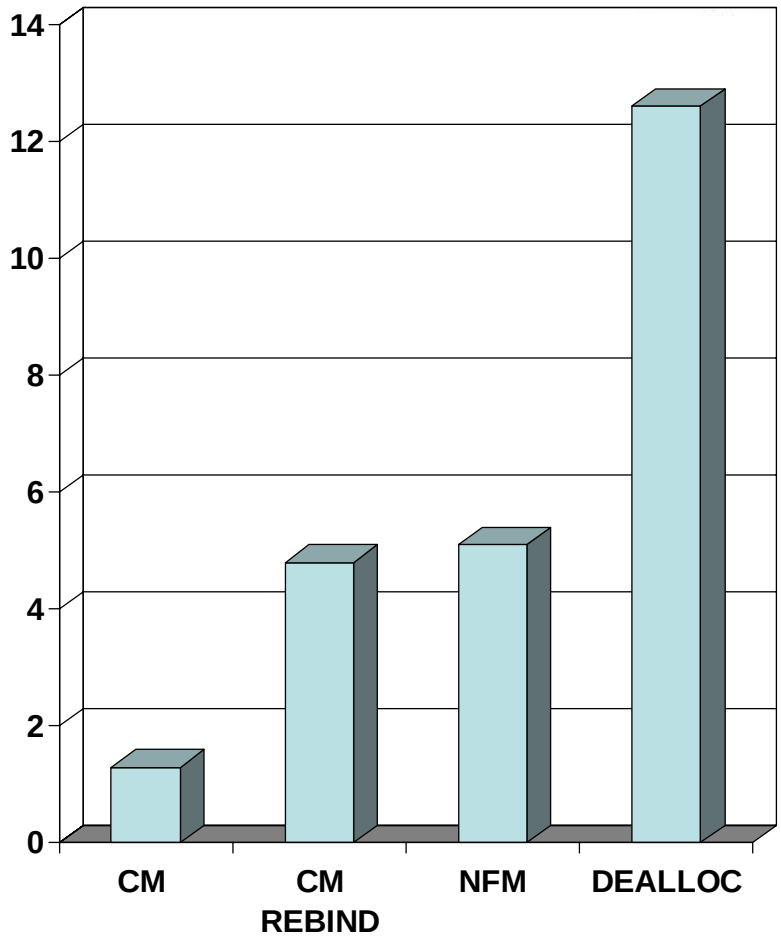
DB2 10 Performance

- Most customers 5% - 10% CPU reduction out of the box after rebind
- Some workloads and customer situations can reduce CPU time up to 20%



Measurement of IRWW* with Data Sharing

- Base: DB2 9 NFM REBIND with PLANMGMT EXTENDED
- DB2 9 NFM → DB2 10 CM without REBIND showed 1.3% CPU reduction
- DB2 10 CM REBIND with same access path showed 4.8% CPU reduction
- DB2 10 NFM brought 5.1% CPU reduction
- DB2 10 CM or NFM with RELEASE DEALLOCATE 12.6% CPU reduction from DB2 9



CPU Percent reduced from DB2 9

*IRWW = IBM Relational Warehouse Workload

DB2 10 - Now 1 Year 5 Months Old

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October 22, 2011

Link (URL) to October 19, 2010 DB2 10 for z/OS GA Announcement 210-380

DB2 10 for z/OS 8 General Availability GA)

DB2 V8 – Soon to be Unsupported

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April 30, 2012

Just 47 more days from today

DB2 for z/OS Version 8 End of Service (EoS)

However, It Is Getting Old

March 26, 2004

DB2 V8 has been around for 7 years, 11 months, 18 days

DB2 for z/OS Version 8 General Availability (GA)

DB2 9 EoS on the Horizon

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June 27, 2014

835 days or 2 years, 3 months, 13 days from today;
a bit more wiggle room

DB2 9 for z/OS
End of Service (EoS)

DB2 for z/OS Version Availability Summary

Version	PID	General Availability	Marketing Withdrawal	End of Service
V3	5685-DB2	Dec 1993	Feb 2000	Mar 2001
V4	5695-DB2	Nov 1995	Dec 2000	Dec 2001
V5	5655-DB2	Jun 1997	Dec 2001	Dec 2002
V6	5645-DB2	Jun 1999	Jun 2002	Jun 2005
V7	5675-DB2	Mar 2001	Mar 2007	Jun 30, 2008
V8	5625-DB2	Mar 26, 2004	Sep 8, 2009	**Apr 30, 2012**
V9	5635-DB2	Mar 16, 2007	Dec 10, 2012	**Jun 27, 2014**
V10	5605-DB2	Oct 22, 2011	Not Announced	Not Announced

Link (URL) to DB2 for z/OS Support Lifecylce

Link (URL) to DB2 for z/OS VUE Support Lifecycle

Start Your DB2 10 Migration Planning:
The Sooner the Better

Step 1 – Look into an MPW

- IBM's No-Charge

  DB2 10 Migration Planning Workshop (MPW)

  – Sample agenda
    - DB2 10 for z/OS Overview
      – Application Development Topics
      – Topics for Application Development & Systems / Administration
      – Systems / Administration Topics
    - DB2 10 Migration
      – Packaging
      – Preparations
      – Process
      – Project Planning

Step 2 – Know Your Prerequisite

- z/Architecture (z890, z990, z9, z10, z196, z114)*
- Establish performance benchmarks
- Configure a minimum of
  - 128GB of shared private - HVSHARE (V9)
  - 6GB of shared extended private – HVCOMMON (V10)
- z/OS 1.10 or above
  - Some features require z/OS V1.11
- Migrate from
  - DB2 for z/OS V8 NFM
  - DB2 9 for z/OS NFM
  - With Fallback SPE (PK56922)
- Coming from V8
  - BSDS reformatted for larger active / archive tracking
  - Check use of Java drivers

More on Next Page

z/OS (5694-A01) Product Support

Product Name	Version	General Availability (GA)	End of Support (Eos)	Product ID
z/OS	1.13	Sep 30 2011*		5694-A01
z/OS	1.12	Sep 24 2010		5694-A01
z/OS	1.11	Sep 25 2009	Sep 30 2012	5694-A01
z/OS	1.10	Sep 26 2008	Sep 30 2011	5694-A01
z/OS	1.9	Sep 28 2007	Sep 30 2010	5694-A01
z/OS	1.8	Sep 29 2006	Sep 30 2009	5694-A01

Link (URL) to z/OS Support Lifecycle webpage

* Last release of z/OS on **one** year cycle. Future releases will be on **two** year cycle.

DB2 Deep Synergy With System z

- Key integration points include:
  - Data sharing (availability and scale out)
  - zIIP and other specialty engines
  - Unicode conversion
  - Encrypted communication & data
  - Hardware data compression & encryption
  - Cross-memory, memory protection keys
  - Sorting
  - Multi-core, large N-way

DB2 Deep Synergy With System z

- Key integration points include:
  - 64-bit addressing and large memory
  - z/OS Workload Manager
  - z/OS Security Server (RACF)
  - z/OS RRS integrated commit coordinator
  - System z10 1 MB page size, decimal float
  - Solid state disks
  - zEnterprise z196, zBX, z10, …

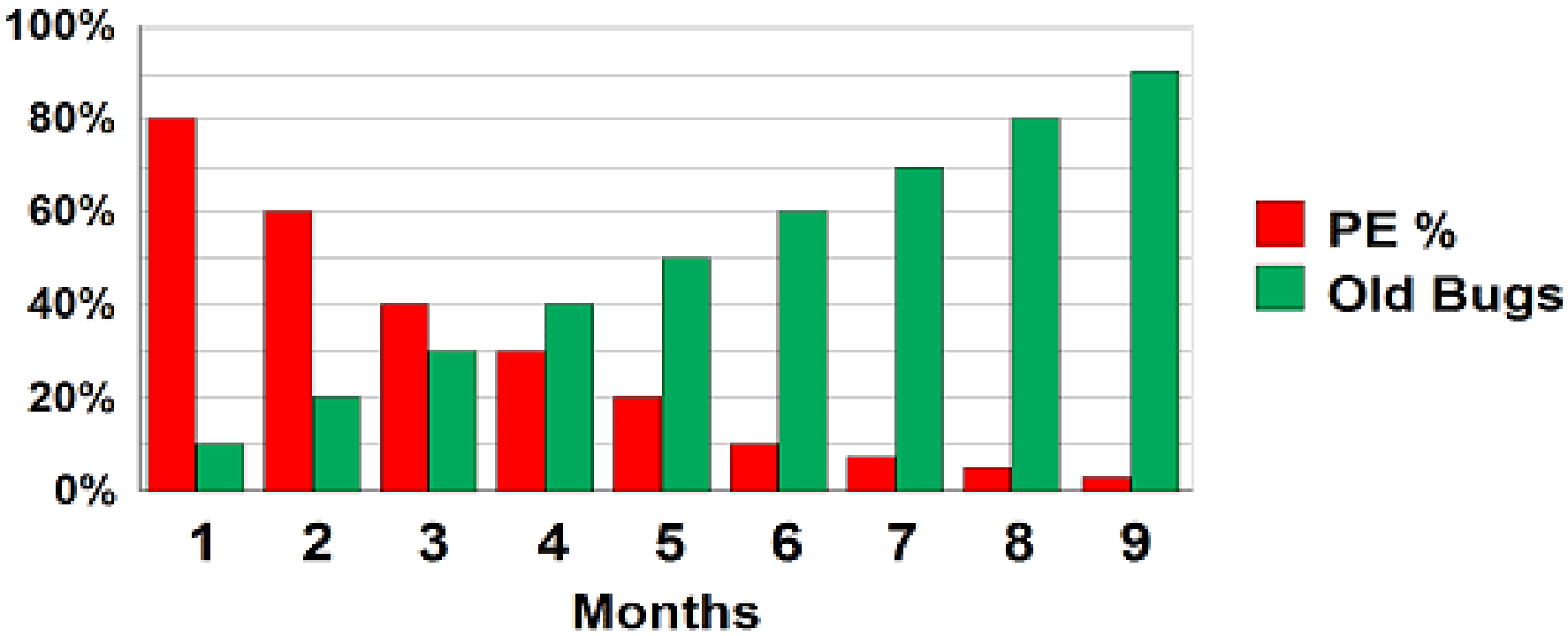
Secrets to a successful migration

- Spend time and effort in testing to keep fires away from production
- Perform Pre-migration catalog migration testing
- Perform systematic testing of release fallback toleration
- Perform Batch regression testing
- Use RMF and DB2 PE to build performance baseline and monitor
- Save EXPLAIN data

Applying Preventative Service

- Must balance for severity
  - Problems encountered vs problems avoided
  - Potential for PTF in Error (PE)
  - Application work load type
  - Windows available for installing service
- Need adaptive service strategy that is adjusted based on
  - Experience over previous 12-18 months
  - Aggression in changing environment and exploiting new function
  - DB2 product and service plans

Roger's Maintenance "Sweet Spot"

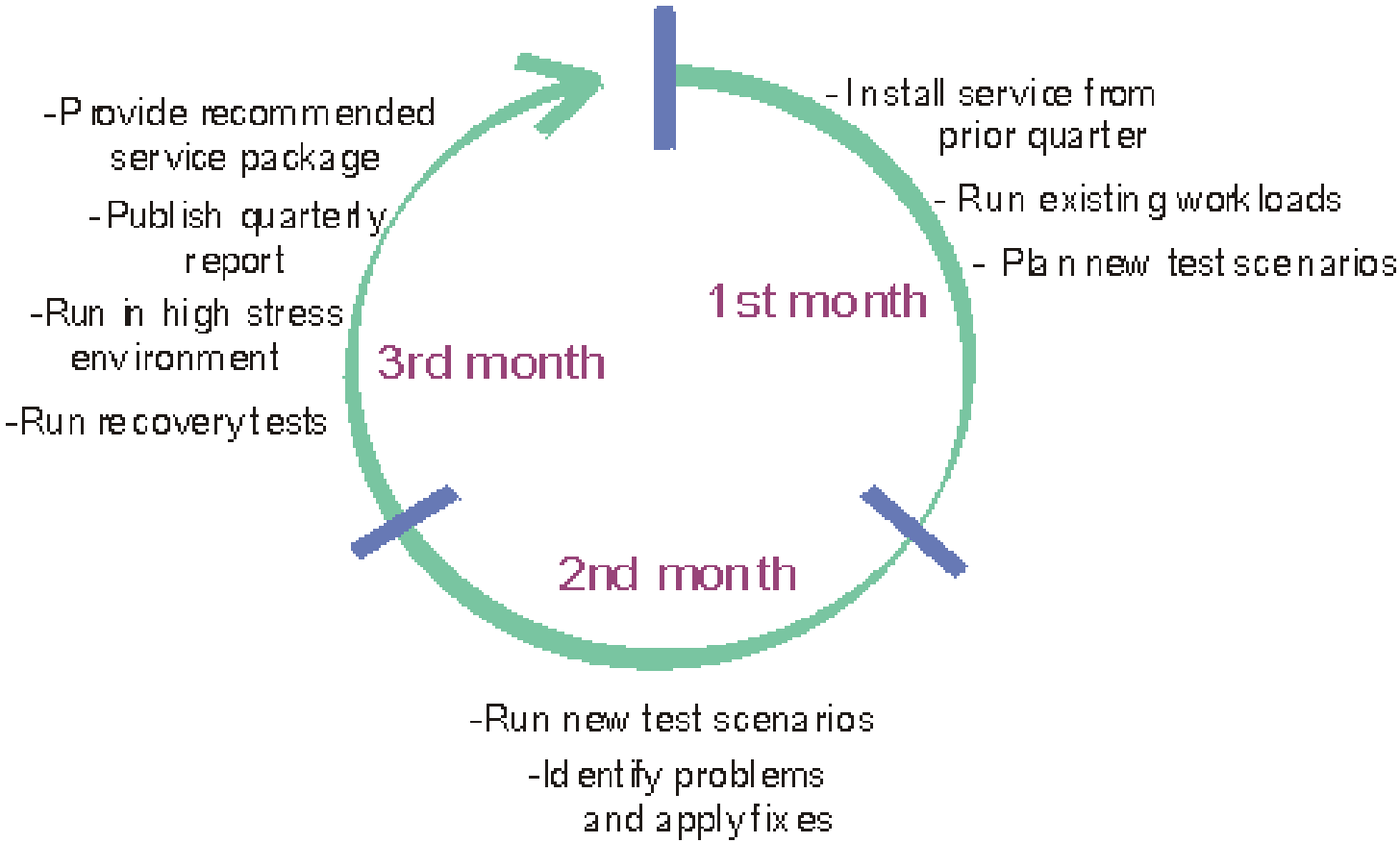


Applying Preventative Service

- Recommendations
  - Recognize that the world is not perfect
  - Stay reasonably current with DB2 fixes, do not be reckless
  - Follow new Revised Service Update (RSU) maintenance philosophy
    - Take advantage of extended testing performed by IBM Consolidated Service Test (CST)
    - Provides consolidated, tested, recommended set of service for z/OS and key subsystems like DB2
    - Use latest quarterly Revised Service Update (RSU) as the starting point to establish a new DB2 code level
  - Customer responsibility to still test and stabilize in their environment
    - Test and stabilize the new code level for 8 weeks before promoting new level to business production
    - Promote to least critical subsystem first and most critical last
    - Service will be 3-5 months back before it hits production

Click here to link to Consolidated Service Test website

CST Quarterly Test Cycle



Applying Preventative Service

- Recommendations ...
  - Apply preventative service 2-4 times each year
    - User latest available quarterly RSU as a base
    - Hold onto each package for 3-6 months
    - Aim for an absolutely minimum of twice per year
  - Receive PSP information on HIPERs and PEs on at least a weekly basis - especially just before a new maintenance package is promoted
  - Pull all HIPERs and bring all maintenance on site so it is readily available
  - Apply absolutely critical HIPERS/PEs on a weekly basis, any others in a 6 weekly rollout

Current RSU as of March 2012 is ***RSU1202***

Click here for more

Capturing Documentation for IBM

- Methods for capturing documentation for all releases is documented here
  - https://www.ibm.com/support/docview.wss?uid=swg21206998
  - OSC and DB2PLI8 do not support DB2 10
- SYSPROC.ADMIN_INFO_SQL supports DB2 9 and DB2 10
  - developerWorks article here:
    - http://www.ibm.com/developerworks/data/library/techarticle/dm-1012capturequery/index.html
  - It is installed in V10 base and is subject to the installation verification process
    - *DB2HLQ*.SDSNSAMP(DSNTESR) will create and bind it
    - Calling program is DSNADMSB, and sample JCL in DSNTEJ6I
  - Ensure DB2 9 and DB2 10 have APAR PM39871 applied
- Data Studio V3.1 incorporates this procedure into a GUI (Best Practice)
  - http://www.ibm.com/developerworks/downloads/im/data/
    - No charge product, replacement for OSC and Visual Explain
    - Several versions:
      - DBA's should download the Administration Client
    - Incorporates Statistics Advisor
    - Will FTP doc directly to DB2 Level 2
    - Can be used to duplicate stats in TEST environment

Step 3 - Documentation

- ✓ The latest product specific documentation
  - Link to Program Directory - GI10-8829
    - http://www.ibm.com/support/docview.wss?uid=swg27019288#db210-pd
  - Link to DB2 10 Product publications
    - http://www.ibm.com/support/docview.wss?uid=swg27019288#manuals

      - Administration Guide
      - Application Programming Guide and Reference for Java
      - Application Programming and SQL Guide
      - Codes
      - Command Reference
      - Data Sharing: Planning and Administration
      - Installation and Migration Guide
      - Internationalization Guide
      - Introduction to DB2 for z/OS
      - Managing Performance
      - Managing Security (new)
      - Messages
      - ODBC Guide and Reference
      - RACF Access Control Module Guide
      - SQL Reference
      - Utility Guide and Reference
      - What's New?
      - pureXML Guide

    - *Last publications refresh was February 2012*
  - Link to DB2 10 for z/OS Information Center

Make sure you are ALWAYS using the latest documentation.

Good Stuff to Help Your Planning

- ✓ When migrating from **DB2 V8** to DB2 10
  - V8 Premigration checklist:
    - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/src/tpc/db2z_premigr8checklist.htm
    - DB2 10 for z/OS Installation and Migration Guide (GC19-2974-05)
      - Chapter 1, “Introduction to migration from DB2 Version 8”, Page 14 (PDF page 38)
  - V8 Migration checklist:
    - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/src/tpc/db2z_migrcm8checklist.htm
    - DB2 10 for z/OS Installation and Migration Guide (GC19-2974-05)
      - Chapter 1, “Introduction to migration from DB2 Version 8”, Page 15 (PDF page 39)

Make sure you are ALWAYS using the latest documentation.

Good Stuff to Help Your Planning

- ✓ When migrating from **DB2 9** to DB2 10
  - V9 Premigration checklist:
    - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/src/tpc/db2z_premigr9checklist.htm
    - DB2 10 for z/OS Installation and Migration Guide (GC19-2974-05)
      - Chapter 1, “Introduction to migration from DB2 Version 9”, Page 24 (PDF page 48)
  - V9 Migration checklist:
    - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/src/tpc/db2z_migrcm9checklist.htm
    - DB2 10 for z/OS Installation and Migration Guide (GC19-2974-05)
      - Chapter 1, “Introduction to migration from DB2 Version 9”, Page 25 (PDF page 49)

Make sure you are ALWAYS using the latest documentation.

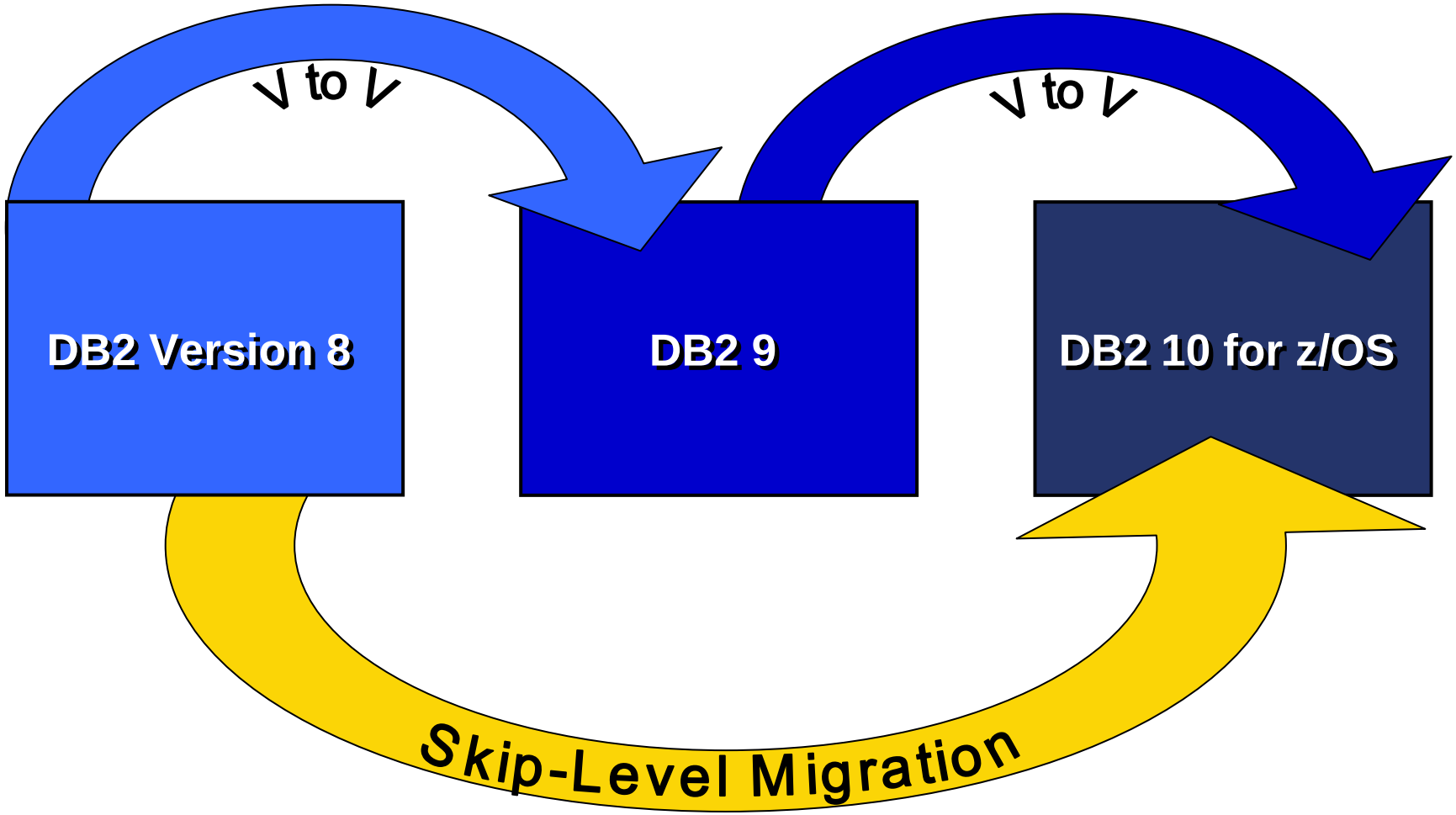
Based on Customer Feedback…

- Improvements to installation & migration information was based on customer feedback
- Pre-migration and migration checklists were added to help plan for and keep track of the migration process. The checklists include links to the pre-migration and migration steps. Access the checklists from the following locations:
  - Introduction to migration from DB2 Version 8: http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/src/tpc/db2z_intro2migrfromv8.htm
  - Introduction to migration from DB2 Version 9.1:
  - http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/src/tpc/db2z_intro2migrfromv9.htm
- Installation and migration steps clearly define tasks to complete. Related concept and reference information are included as links from the tasks.
- Several new jobs simplify the setup and installation of DB2-supplied stored procedures and user-defined functions. The process is documented in Installation step 20: Set up DB2-supplied routines (optional) and Migration step 26: Set up DB2-supplied routines (optional)

Steps 4 through n

DB2 10 - From DB2 V8 or DB2 9

Your choice….



But which is best?….

DB2 10 for z/OS: Skip-Level Migration

- May move from V8 to DB2 10,
  but just because you can, doesn't mean you always should….
- Migration, fallback and data sharing coexistence fully supported
- Mix of DB2 9 and 10 or DB2 V8 and 10
- Key considerations:
  - Risk/reward analysis
    - What's your risk? Tolerance level?
    - How will you do it? What's your mitigation plan? Are ISVs ready?
    - What workloads do you need to test and can you test them properly?
    - Do you have best practice service and test processes?
  - Migration cost savings is not 2X versus two migrations
    - Migration considerations for two versions still apply
    - Larger migration project, longer migration timeline
    - Applications and ISVs need to be ready
  - Timing: V8 end of service April 2012, other software, service & test process

DB2 9 for z/OS At a Glance

What you may not notice if you skip over DB2 9…

Performance, Scalability	• Utility CPU reductions • Insert performance • Index compression
Availability Security Productivity	• More online schema changes & online utilities • Trusted contexts and roles • Clone tables • Volume based backup / recovery • Universal table spaces, partition by growth
Application Enablement	• pureXML • Native SQL procedures • SQL improvements simplify porting
Dynamic Warehousing	• Many SQL improvements, OLAP expressions • Query optimization improvements • Improved statistics for optimization • Increased query parallelism, zIIP

Prerequisite Planning

- Run a current DSNTIJPA pre-migration job
  - PM33991
    - MISCELLANEOUS DB2 FOR Z/OS INSTALLATION FIXES
- Eliminate use of Private Protocol & DBRMs bound into Plans
  - See PM17665 / PM37300 for Plan Ownership Authorization
- Check programming language requirements
  - DSNHPC7 included in the base for older COBOL and PL/I
- SMS managed catalog and directory
  - DSNTIJSS provided as a sample for configuration
    - A copy of DSNTIJSS can be obtained from developerWorks
      - Use hyperlink or search for file dsntijss.copy
- PDSEs required for SDSNLOAD, SDSNLOD2, ADSNLOAD
  - See Consolidated Checklist

Migrating to DB2 10

- FMIDs HDBAA10, HIYAA10, HIZAA10, HIR2230
- Complete pre-migration checks (DSNTIJPA)
  - This will be the same as DSNTIJPM delivered with DB2 10
  - 35 reports
- Plans and Packages prior to V6 will require REBIND
  - This also impacts Package copies (PLANMGMT). SWITCHing to these requires REBIND
- Check / correct incompatibilities
  - The BSDS needs to be expanded to V8 format (DSNJCNVB)
  - If not done before migrating to V10, DSNTIJUZ will convert the BSDS(s)
  - Release Incompatibilities documented in:
    - Installation Guide
    - Application Programming and SQL Guide
    - For example:
      - Eliminate Private Protocol / DBRMs bound into Plans
      - Review the Release Incompatibilities in the MPW Checklist
- Must be on DB2 for z/OS V8 or DB2 9 New Function Mode
  - With the Fallback SPE

Migrating to DB2 10

- Reestablish V8 or V9 IVP to test DB2 10 before NFM
- Assess ISV Requirements / Readiness
  - Tools and applications
  - Some vendors may add instructions for migration and / or require maintenance
- Assess the training requirements for your organization

Migrating to DB2 10

- Establish a project team and project plan
  - Review the Installation Guide checklists
- Develop conversion and coexistence goals
  - How did your V8 / V9 test plans work?
  - Reuse and improve upon your experiences
- Establish performance baselines
- Migration occurs in three familiar phases
  - Conversion Mode (CM)
  - Enable New Function Mode (ENFM)
  - New Function Mode (NFM)
- Numerical suffix mode names indicate the “migrate from” version
  - CM8 & ENFM8, or
  - CM9 & ENFM9

Migrating to DB2 10

- Use the proactive PMR process
- REBIND while in CMx
  - Use Plan Management (Package / Bind Stability)
  - Consider REBIND ... EXPLAIN (YES) ... APREUSE(ERROR)
- Single Version Charging (SVC)
  - Up to 12 months SVC when migrating from V9
  - Skip Level Migration (V8 to V10)
    - Up to 18 month SVC
      - See the Announcement Letter (ENUS210-380, or appropriate document for your country)
  - From the Announcement Letter:
    - "To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on."
  - The SVC concern ends when in CM for a migration (not including fall back).
    - Ensure no previous version libraries are being referenced

Features Removed by DB2 10

- DB2 8 to DB2 10
- DB2 Managed Stored Procedures
- Legacy Java Drivers
  - Include WLM SPAS JCL
- Creation of Simple Table Space
- AIV Extender
- Text Extender
- Net Search Extender
- Visual Explain
- Net.Data
- DB2 Estimator
- DB2 9 to DB2 10
- msys
- Optimization Service Center
- Private Protocol
- DBRMs bound into Plans
- Explain tables prior to V8
- DB2 Management Clients Package
- Book Manager
- XML Extender
- REORG TABLESPACE SHRLEVEL NONE on LOB
- Several parameters
- Monitoring and optimizing queries with profile tables

Features Deprecated in DB2 10

- V8 / V9 Explain Table formats
  - EBCDIC encoded PLAN_TABLEs
- Simple Table Spaces
- Mapping DSNHDECP
- Classic partitioning
- DSNHPC7
- NEWFUN(YES) and NEWFUN(NO) are deprecated and NEWFUN(V8), NEWFUN(V9), and NEWFUN(V10) options are added in Version 10.
- Several DB2 supplied stored procedures and user defined functions
- Several system parameters (DSNZPARM keywords)
  - DISABSCL, DPSEGSZ, OJPERFEH, OPTIOWGT, OPTIXIO, PTCDIO, RETVLCFK, SEQCACH, SEQPRES, SMSDCFL, SMSDCIX
  - STATCLUS
- Password protection for active log and archive log data sets

DSNTIJPM / DSNTIJPA...

- JPA shipped for V8 & V9 with APAR PM04968
- Uses REXX Language Support
  - DSNTIJRX will bind needed packages if not done already
  - Requires use of a special package in collection DSNREXX_500 (see JPA job)
- PM33991/PM15965
  - Adds 3 reports
  - Several corrections
- PM30748
  - Adds report 29
- PM47246
  - Report 25 fixed
  - Add report 32
- PM54699
  - Fix reports 11, 13, 29, 30, 31, 32
  - Add reports 33, 34, 35
- PM48451
  - Add reports 30, 31, 32

```
READY
  DSNTPMQ DB1S DBA015
DSNTPMQ entry:
  Subsystem ID ..........................................  DB1S
  Authorization ID ......................................  DBA015

  Report 1 completed
  Report 2 completed
  Report 3 completed
  Report 4 completed
  Report 4 completed
  Report 6 completed
  Report 7 completed
  Report 8 completed
  Report 9 completed
  Report 10 completed
  Report 11 completed
  Report 12 completed
  Report 13 completed
  Report 14 completed
  Report 15 completed
  Report 16 completed
  Report 17 completed
  Report 18 completed
  Report 19 completed
  Report 20 completed
  Report 21 completed
  Report 22 completed
  Report 23 completed
  Report 24 completed
  Report 25 completed
```

DSNTIJPM(A) Checks For….

1. Check for previous-release sample database
2. User-defined indexes that reside on user-managed storage and are defined on DB2 catalog tables that are processed during enabling-new-function mode
3. User-defined indexes that reside on DB2-managed storage and are defined on DB2 catalog tables that are processed during enabling-new-function mode
4. Stored procedures that use the DB2 SPAS (from V8)
5. Plans that are autobind candidates in V10
6. Packages that are autobind candidates in V10
7. Use of external module DSNWZPR (from V8)
8. Incomplete table definitions
9. Incomplete column definitions

Return to Migration Process

DSNTIJPM(A) Checks For….

10. Occurrences of the DSN_PTASK_TABLE explain table with one or more column names that contain a hash mark character
11. Plans that contain DBRMs
12. Plans bound with ACQUIRE(ALLOCATE)
13. Static queries bound with query parallelism
14. EBCDIC explain tables
15. Explain tables that are not in current-release format
16. MQTs on the DB2 catalog that are affected by CATMAINT
17. MQTs on the DB2 catalog that are affected by CATENFM
18. Plans bound with DBPROTOCOL(PRIVATE) that can be converted to DRDA via REBIND

Return to Migration Process

DSNTIJPM(A) Checks For….

19. Plans bound with DBPROTOCOL(PRIVATE) that can be converted to DRDA via DSNTIJPD
20. Packages bound with DBPROTOCOL(PRIVATE) that can be converted to DRDA via REBIND
21. Packages bound with DBPROTOCOL(PRIVATE) that can be converted to DRDA via DSNTIJPD
22. Authorization IDs and roles that use EBCDIC-encoded routines for DB2 Metadata
23. Obsolete DB2-supplied objects
24. Packages that use UDF SYSFUN.DSN_XMLVALIDATE
25. Existence of inconsistent UTF-8 encoding of the collection IDs and the package names that were bound by a remote client system (must rebind on client)

Return to Migration Process

DSNTIJPM(A) Checks For….

26. Reports those with EXECUTE authority on SYSPROC.DSNLEUSR. This is dropped / recreated during NFM migration.
27. Reports on DATACAPTURE that will be disabled during migration to CM8
28. Reports on DATACAPTURE that will be disabled during migration to ENFM
29. UPDATE / DELETE table authority now also requires SELECT.
30. Identifies presence of AMI-based DB2 MQ functions and provides guidance for converting callers to use the MQI-based replacement functions.
31. Identifies instances of DB2 MQ XML routines and provides guidance for converting callers to use native DB2 XML support.

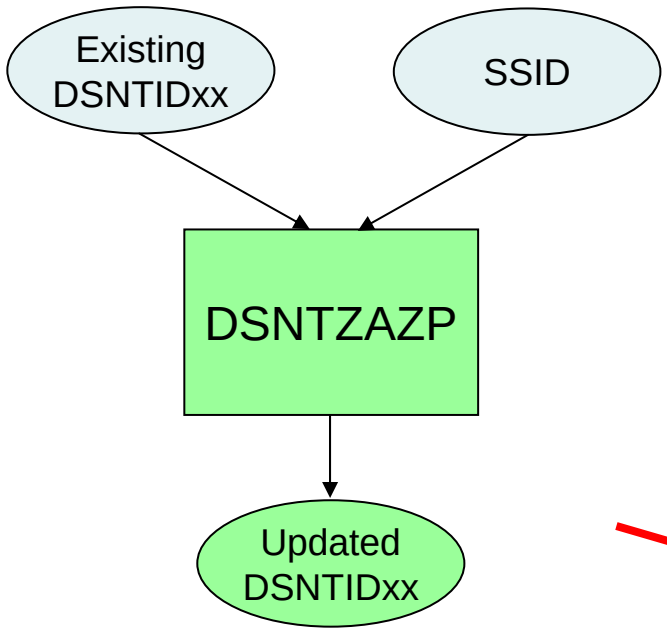
Return to Migration Process

DSNTIJPM(A) Checks For….

32. Alerts you when the SYSIBM.SYSTABAUTH table contains more than one row having the same owner, name, and timestamp
33. Identifies existing simple table spaces (other than DB2 system and sample table spaces)
34. Identifies trigger packages that reference DB2 special registers and that were last bound prior to DB2 V8
35. Identifies trigger packages that have an invalid statement section number (SECTNOI) in the SYSIBM.SYSPACKSTMT catalog table

DSNTXAZP (Job DSNTIJXZ)

- Job to update the installation CLIST input (DSNTIDxx) to reflect current:
  - System parameters
  - Buffer pool settings




```
CLIST INPUT MEMBER GENERATION REPORT ** 2010-05-21 06:28:18
-----------------------------------------------------------

CLIST PARAMETER REPORT:

0001 PARAMETER NAME              = ABEXP
     ZPARM/BUFFERPOOL PARAMETER  = ABEXP
     PARAMETER TYPE              = CHAR
     DATA SHARING SCOPE          = M
     MINIMUM VALUE               = NO
     MAXIMUM VALUE               = YES
     CURRENT CLIST VALUE         = YES
     CURRENT INSTALLED VALUE     = YES
     STATUS                      = RETAINED
    ------------------------------------------------------------
0030 PARAMETER NAME              = AUDIT
     ZPARM/BUFFERPOOL PARAMETER  = AUDITST
     PARAMETER TYPE              = CHAR
     DATA SHARING SCOPE          = M
     MINIMUM VALUE               = NONE
     MAXIMUM VALUE               = NONE
     CURRENT CLIST VALUE         = YES
     CURRENT INSTALLED VALUE     = 1
     STATUS                      = UPDATED
   ------------------------------------------------------------
CHANGE SUMMARY REPORT:

-------------------------------------------------------------------------------
  CLIST PARAMETER NAME           ZPARM/BUFFERPOOL NAME          VALUE
-------------------------------------------------------------------------------
  ABEXP                          -SAME-                         YES
  ASSIST                         -SAME-                         NO
* AUDIT                          AUDITST                        1 (YES)
```

Return to Migration Process

DSNTXAZP Continued

- "*" in summary report indicates a change
- The new value is indicated along with the old value in "()"
- Maps CLIST field names to ZParm names
- DSNTIDxx will include opaque parameters
- Some fixes you should be aware of…
  - PM47246 – Fix setting for DSN6SYSP.URLGWTH
  - PM33991 – Fix setting for DSNLOGP.OUTBUFF
  - PM56483 – Fix setting for DSN6SPRM.DISALLOW_DEFAULT_COLLID

Catalog Must be DB2 (DFSMS*) Managed

- Catalog must be DB2 managed
  - BEFORE moving to DB2 10 conversion mode (CM)
  - Before upgrading or a new installation
- DFSMS is a set of IBM software products that automatically manages your data (see slide xx)
- With DB2 10 DFSMS will manage and control
  - All new catalog changes
  - All conversions to universal table spaces
  - All new catalog and directory indexes and table spaces
- All the new indexes and table spaces being added in DB2 10 will also use Extended Addressability (EA).

* **Data Facility Storage Management System**

Catalog Must be DB2 Managed

- Migration job DSNTIJSS
  - Provides DFSMS classes for customers currently not using DFSMS
  - Environment created by DSNTIJSS only for the DB2 catalog and DB2 directory objects
  - No other DB2 data sets are covered
  - DSNTIJSS must be completed before the installation/migration jobs DSNTIJTC or DSNTIJEN are executed.

- No conversion step to SMS is required
  - Data sets are converted when related table space is next reorganized

Storage Definitions

- Installation/migration panel DSNTIPA2
  - Panel contains SMS data classes, management classes, and storage classes needed for DB2 10 catalog, directory, and their indexes
    - Similar to what's currently available on the DB2 9 panel DSNTIPA3
- DB2 10 DSNZPARM parameters for
  - Catalog and directory
    - CATDDACL, CATDMGCL, and CATDSTCL on the DSN6SPRM macro
  - Catalog and directory indexes
    - CATXDACL, CATXMGCL, and CATXSTCL also on the DSN6SPRM macro

Storage Definitions

- Storage administrator should provide data classes, management classes, storage classes, and Automatic Class Selection (ACS) routines
- SMS must be configured to allocate all DB2 catalog and directory data sets in extended format using extended addressability (EA)

DB2 10 for z/OS Migration Status

- What's the status of the DB2 10 migration?
- PM27073 Adds SPT01 Inline Length message, prep for PM27811

```
DSN7100I  -DB2A DSN7GCMD
*** BEGIN DISPLAY OF GROUP(........) CATALOG LEVEL(101) MODE(NFM )
```

```
DSN7100I  -DB2A DSN7GCMD
*** BEGIN DISPLAY OF GROUP(........) CATALOG LEVEL(101) MODE(EN8 )
                    PROTOCOL LEVEL(2)  GROUP ATTACH NAME(....)
------------------------------------------------------------------
DB2
MEMBER    ID
--------  --
........
----------
TABLE     EN
SPACE     NE
--------  --
SYSUTILX
SPT01
DBD01
SYSLGRNX
SYSDBASE
SYSDBAUT
SYSGROUP
SYSOBJ
SYSPKAGE
SYSPLAN
SYSVIEWS
SYSRTSTS
----------
*** END DIS
DSN9022I  -
***
```

```
DSN7100I  @ DSN7GCMD
*** BEGIN DISPLAY OF GROUP(DSNCAT  ) CATALOG LEVEL(101) MODE(NFM )
                    PROTOCOL LEVEL(2)  GROUP ATTACH NAME(DSNG)
-------------------------------------------------------------------
DB2                                                 DB2 SYSTEM    IRLM
MEMBER    ID  SUBSYS CMDPREF   STATUS   LVL NAME      SUBSYS IRLMPROC
--------  --- ---- --------   -------- --- --------  ---- --------
VA1A        1 VA1A   @          ACTIVE   101 DTEC657   PR21 PRLM21
VA1B        2 VA1B   &VA1B      ACTIVE   101 DTEC657   QR21 QRLM21
VA1C        3 VA1C   &VA1CDB2   ACTIVE   101 DTEC657   RRLM RRLM21
-------------------------------------------------------------------
DB2       PARALLEL    PARALLEL
MEMBER    COORDINATOR ASSISTANT
--------  ----------- ---------
VA1A                NO         NO
VA1B                NO         NO
VA1C                NO         NO
-------------------------------------------------------------------
DISPLAY SUBGROUP ATTACH INFORMATION FOR GROUP ATTACH DSNG
-------------------------------------------------------------------
-------------------------------------------------------------------
SCA   STRUCTURE SIZE:     4096 KB, STATUS= AC,   SCA IN USE:     5 %
LOCK1 STRUCTURE SIZE:     4096 KB
NUMBER  LOCK ENTRIES:      524288
NUMBER  LIST ENTRIES:        7767, LIST ENTRIES  IN USE:          9
SPT01 INLINE LENGTH:        32138
*** END DISPLAY OF GROUP(DSNCAT  )
DSN9022I  @ DSN7GCMD 'DISPLAY GROUP ' NORMAL COMPLETION
```

```
L(101) MODE(CM9 )
 NAME(....)
----------

 MODE(CM8 )
....)
-------------
LM
BSYS  IRLMPROC
--    --------
21    PRLMPR21
-------------

TION
```

DB2 10 for z/OS Migration Status

- **Mode may show as "X" while in coexistence (PM23243)**

Coexistence

```
DSN7100I  -DB2A DSN7GCMD
*** BEGIN DISPLAY OF GROUP(DSNCAT  ) CATALOG LEVEL(101) MODE(X    )
                  PROTOCOL LEVEL(2)  GROUP ATTACH NAME(DSNG)
-------------------------------------------------------------------
DB2                                      DB2 SYSTEM    IRLM
MEMBER   ID  SUBSYS CMDPREF   STATUS     LVL NAME      SUBSYS IRLMPROC
-------- --- ---- --------  --------     --- --------  ---- --------
DB2A       1 DB2A   -DB2A     ACTIVE     101 FVTEC706  PR21   PRLM21
DB2B       2 DB2B   -DB2B     ACTIVE     910 FVTEC706  QR21   QRLM21
DB2C       3 DB2C   -DB2C     ACTIVE     101 FVTEC706  RRLM   RRLM21
-------------------------------------------------------------------
DB2      PARALLEL    PARALLEL
```

Fallback

```
DSN7100I  -DB2A DSN7GCMD
*** BEGIN DISPLAY OF GROUP(DSNCAT  ) CATALOG LEVEL(101) MODE(X )
                  PROTOCOL LEVEL(2)  GROUP ATTACH NAME(DSNG)
-------------------------------------------------------------------
DB2                                      DB2 SYSTEM    IRLM
MEMBER   ID  SUBSYS CMDPREF   STATUS     LVL NAME      SUBSYS IRLMPROC
-------- --- ---- --------  --------     --- --------  ---- --------
DB2A       1 DB2A   -DB2A     ACTIVE     910 FVTEC706  PR21   PRLM21
DB2B       2 DB2B   -DB2B     ACTIVE     910 FVTEC706  QR21   QRLM21
DB2C       3 DB2C   -DB2C     ACTIVE     910 FVTEC706  RRLM   RRLM21
-------------------------------------------------------------------
DB2      PARALLEL    PARALLEL
MEMBER   COORDINATOR ASSISTANT
-------- ----------- ---------
DB2A              NO         NO
DB2B              NO         NO
DB2C              NO         NO
-------------------------------------------------------------------
SCA   STRUCTURE SIZE:     4096 KB, STATUS= AC,    SCA IN USE:     10 %
LOCK1 STRUCTURE SIZE:     4096 KB
```

Additional Information

Shameless Self promotion

My DB2 for z/OS blog…

http://blogs.ittoolbox.com/database/db2zos

References

DB2 10 Migration Planning Workshop

IBM

For additional information, contact you local IBM Team

Thank You for Attending!

Willie

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