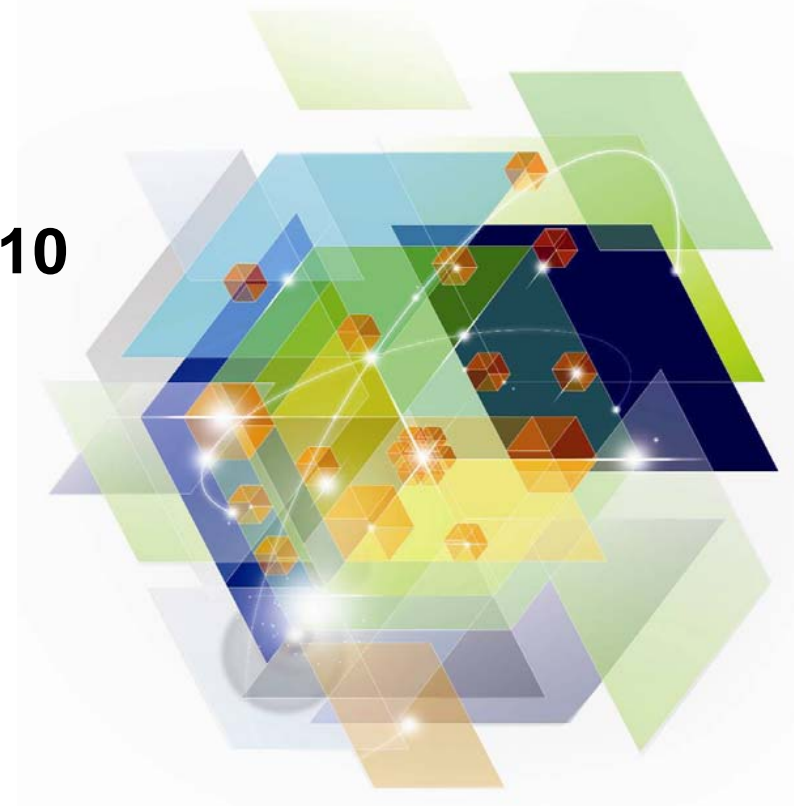# IBM System z Technology Summit

**Migration Best Practices and
Customer Experiences with DB2 10**

# Agenda: DB2 10 for z/OS migration

- **Why DB2 10 for z/OS (How to Justify the Migration)**

- **Prerequisites and Planning the Upgrade**
  - Removed Features
  - Deprecated Features

- **Documentation**

- **The Migration Process**
  - Preparation Jobs
  - Migration Summary
  - Review of Modes

- **What to expect (day 1 and later)**

# 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 DB2 10 for z/OS Beta customers planned production in 2011**
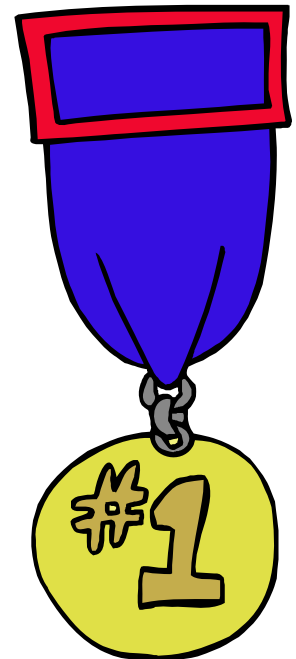
# DB2 Migration Planning Workshops

- **Understand breadth of features in DB2 for z/OS**

- **Bring together a toolbox of resources for your migration planning**

- **Explain the current migration process**

- **Bring a project focus to migration**

- **Remain relevant through GA life of the product**
  - **Updated with field experiences**

- **Check with IBM sales team for workshop availability**

# Are you ready for DB2 10?

❑ Check prerequisites

❑ Migration Planning Workshop

❑ Identify project participants and roles (including Application Development)

❑ Build detailed migration plan

❑ Contact vendors – Verify Tools, Applications, etc.

❑ Check information APARs (II14474 / II14477)

❑ Gather performance baselines

❑ Ensure needed landscapes are available

❑ Apply required service

❑ Run pre-migration checks DSNTIJPA (or M) early

❑ Resolve incompatible changes

❑ Get rid of private protocol

❑ Convert to packages from DBRMs in plans

❑ Upgrade explain table formats to Unicode, at least V8 (preferably V10 level)

❑ Get ready for SMS

# DB2 10 for z/OS

- Base Pre-requisites:
  - zSeries z890, z990, z9, z10, z196 or later
  - z/OS V1.10 or above
  - Defined shared memory objects (V9)
- Catalog changes:
  - Additions for new features
  - Hashes and links removed
  - Many tables changed to:
    - Single table, table spaces (UTS, PBG)
    - Row level locking
    - Using Inline LOBs
- DB2 Connect Minimum Levels
  - V9 FP1 / V9.7 FP3a for new features
- PM24292 for Sysplex Workload Balancing
- See **CST RSU** for current recommendation
- Migration Process:
  - From Version 8 or 9 NFM
  - Data sharing coexistence in CM8 or CM9
  - DSNTIJPA in V8 or V9 / DSNTIJSS for SMS

# DB2 10 for z/OS Documentation

http://www-01.ibm.com/support/docview.wss?uid=swg27019288

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
Messages
ODBC Guide and Reference
RACF Access Control Module Guide
SQL Reference
Utility Guide and Reference
What's New?
pureXML Guide

Diagnosis Guide and Reference
        SDSNIVPD library member DSNDR

# Prerequisite Summary & Planning

- **z/Architecture (z890, z990, z9, z10, z196)\***

- **Establish performance benchmarks**

- **Configure a minimum of**
  - 128GB of shared private - HVSHARE (V9)
  - 6GB of shared extended private – HVCOMMON (V10)
  - 10 – 30% more real memory possible
  - Ensure enough MAXSPACE (9 – 16GB)

- **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

# Prerequisite Summary & Planning

- **Run a current DSNTIJPA pre-migration job**

- **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

- **Tools, Utilities, Applications, Third Party Vendors...**

- **PDSEs required for SDSNLOAD, SDSNLOD2, ADSNLOAD**

# Removed Features

**DB2 8 to DB2 10**

- **DB2 Managed Stored Procedures**

- **Legacy Java Drivers**
  - Include WLM SPAS JCL

- **Creation of Simple Table Space**

- **AIV & Text Extenders**

- **Visual Explain**

**DB2 9 to DB2 10**

- **Optimization Service Center**

- **Private Protocol**

- **DBRMs bound into Plans**

- **Explain tables before V8**

- **DB2 Management Clients Package**

- **Book Manager**

- **XML Extender**

- **REORG TABLESPACE SHRLEVEL NONE on LOB**

- **Several parameters**

# Deprecated Features

- **V8 / V9 Explain Table formats**

    – EBCDIC encoded PLAN_TABLEs

- **Simple Table Spaces**

- **Mapping DSNHDECP**

- **DSNHPC7**

- **Several DB2 supplied stored procedures**

- **Several parameters**

# New Parameters

- **IBM DB2 Analytics Accelerator**

  - ACCEL, QUERY_ACCELERATION

  - PM50434, PM50435, PM50436, PM50437, and PM51918

- **Authorization, Access, Signon Control Modules**

  - ACCESS_CNTL_MODULE, IDAUTH_MODULE, SIGNON_MODULE

  - Requires DB2 10 NFM & DB2 10 ERLY Code

- **Function Compatibility**

  - BIF_COMPATIBILITY

  - Migrations default to "V9" vs. "CURRENT" for installs

  - "V9" returns the CHAR function back to V9 behavior

# New Parameters (continued)

- **SMS Definitions for the Catalog / Directory**
  - CATDDACL, CATDMGCL, CATDSTCL
  - CATXDACL, CATXMGCL, CATXSTCL

- **CHECK DATA / LOB Utility Behavior Change**
  - CHECK_SETCHKP defaults to NO
  - CHECK will not set CHKP status

- **Autonomic Checkpoints**
  - CHKLOGR, CHKMINS, CHKTYPE

- **SPT01 Management**
  - COMPRESS_SPT01 returned
  - SPT01_INLINE_LENGTH

# New Parameters (continued)

- **DB2 Sort**
  - DB2SORT defaults to ENABLE when the product is installed

- **.NET Applications**
  - DDF_COMPATIBILITY (PM54662)
  - Controls Server Stored Procedure parameter behavior for .NET applications
  - V10 returns parms according to the declared type
  - V9 returned parms according to the CALL statement

- **Data Sharing DR**
  - DEL_CFSTRUCTS_ON_RESTART

# New Parameters (continued)

- **Realtime Statistics**

  - DISABLE_EDMRTS (NO)

  - YES disables externalization of RTS

- **BIND / REBIND**

  - DISALLOW_DEFAULT_COLLID (NO)

  - YES would stop automatic conversation of DBRMs bound in plans

- **Default Key Range Table Space**

  - DPSEGSZ (32)

  - When set to 0, make Classic Partitioned Table Space the default for key range partitioning

# New Parameters (continued)

- **Implicit Database**

  – IMPDSSIZE (4) & IMPTKMOD (NO)

  – To set DSSIZE and Track Modification defaults

- **OPTIMIZE FOR 1 ROW sort elimination**

  – OPT1ROWBLOCKSORT (ENABLE)

  – DISABLE returns to V9 technique to avoid sorts

- **Plan Ownership Authorization**

  – PRIVATE_PROTOCOL (NO) returns via PM37300

  – AUTH can be used to enable POA.

# New Parameters (continued)

- **Real Storage Management**

  - REALSTORAGE_MANAGEMENT (AUTO)

  - REALSTORAGE_MAX (NOLIMIT)

- **Production Modeling**

  - SIMULATED_CPU_COUNT (OFF)

  - SIMULATED_CPU_SPEED (OFF)

- **XML**

  - XML_RANDOMIZE_DOCID (NO)

# New Parameters (continued)

- **New Feature Support**

  - TIMESTAMP w/TIMEZONE: IMPLICIT_TIMEZONE (CURRENT)

  - Parallel Index Maintenance: INDEX_IO_PARALLELISM (YES)

  - Inline LOBs: LOB_INLINE_LENGTH (0)

  - Alter tables with CDC: RESTRICT_ALT_COL_FOR_DCC (NO)

  - Cascading Revokes: REVOKE_DEP_PRIVILEGES (SQLSTMT)

  - Security Administration
    - SECADM1/2, SECADM1/2_TYPE, SECADM1/2_INPUT_STYLE
    - SEPARATE_SECURITY

# New Parameters (continued)

- **New Feature Support (Continued)**

  – SMF Compression: SMFCOMP (OFF)

# Parameters For Flashcopy

- **CHECK_FASTREPLICATION**

- **FCCOPYDDN**

- **FLASHCOPY_COPY**

- **FLASHCOPY_LOAD**

- **FLASHCOPY_PPRC**

- **FLASHCOPY_REBUILD_INDEX**

- **FLASHCOPY_REORG_INDEX**

- **FLASHCOPY_REORG_TS**

- **REC_FASTREPLICATION**

# Deprecated / Removed Parameters

| V8 Deprecated | V9 Deprecated | V8 Removed | V9 Removed |
|---|---|---|---|
| – DISABSCL | – DISABSCL | – EDMBFIT | – EDMBFIT |
| – DPSEGSZ | – DPSEGSZ | – LOGAPSTG | – INLIST_PTC |
| – OJPERFEH | – OJPERFEH | – MAX_OPT_ELAP | – LOGAPSTG |
| – OPTIOWGT | – OPTIOWGT | – MAX_UTIL_PARTS | – MAX_UTIL_PARTS |
| – OPTIXIO | – OPTIXIO | – MORE_UNION_DISTRI BUTION | – OPTHYBCST |
| – PTCDIO | – PTCDIO | – OPTIXOPREF | – OPTOIRCPF |
| – RETVLCFK | – RETVLCFK | – PARTKEYU | – PARTKEYU |
| – SEQCACH | – SEQCACH | – RELCURHL | – PREVALKEEP |
| – SEQPRES | – SEQPRES | – SJMISSKY | – REORG_IGNORE_FRE ESPACE |
| – SMSDCFL | – SMSDCFL | – STORPROC | – SJMISSKY |
| – SMSDCIX | – SMSDCIX | – SUPRESS_TS_CONV_ WARNING | – XMLTABJPD |
| | – STATCLUS | – TABLES_JOINED_THR EASHOLD | |

# Parameters Default Changes

- **CACHEPAC** (5M)

- **CACHERAC** (5M)

- **CONTSTOR** (YES)

- **EDM_SKELETON_POOL** (10240)

- **EDMDBDC** (23400)

- **EDMPOOL** (0)

- **EDMSTMTC** (113386)

- **IRLMRWT** (30)

- **IRLMSWT** (120)

- **PLANMGMT**( EXTENDED)

- **LRDRTHLD** (10)

- **MAXRBLK** (400000K)

- **MINSTOR** (NO)

- **MONSIZE** (1048576)

- **NUMLKTS** (2000)

- **RRULOCK** (YES)

- **SRTPOOL** (10000K)

- **STATIME** (1)

- **STATROLL** (YES)

- **UTSORTAL** (YES)

# DSNTIJPM / DSNTIJPA...

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

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

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

# DSNTIJPM / DSNTIJPA...

Checks for:

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).

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. AMI-based MQ function use.

31. MQ XML Functions to be converted.

32. Finds duplicate owner, name, timestamp rows in SYSTABAUTH which cause DSNTIJTC failure.

33. Identify simple table spaces.

34. Trigger packages bound before V8 that reference special registers need to be rebound.

35. Triggers created in V8 before UK42129 should be rebound due to possible invalid section number (SECTNOI).

# 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
  - Check maintenance for currency

- **Plans and Packages prior to V6 will require REBIND**
  - This also impacts Package copies (PLANMGMT). SWITCHing to these requires REBIND

- **Must be on DB2 for z/OS V8 or DB2 9 New Function Mode**
  - With the Fallback SPE

- **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

- **Check catalog health before migration**

# Release Incompatibilities aren't just for DBAs

- **Close coordination with DBA and System Programming teams make for a better experience**

- **Review the documentation:**
  - From V8
  - From V9

- **Reserved Words**

- **Changes in Functions**
  - For instance the CHAR function behavior

- **Bind changes & minimum package levels**

- **Database metadata stored procedures**

- **Compiler levels and options**

- **UPDATE / DELETE authority also requires SELECT in most cases**

- **Explain tables**

- **SQLSTATE changes**

- **Also consider disallowed Timestamp format**
  - YYYY-MM-DD-HH:MM:SS.nnnnnn

# Migrating to DB2 10

- **The DB2 10 Catalog & Directory must be managed by DB2 & SMS**

  - Job DSNTIJSS provided to set up the SMS environment

  - SMS environment must be set up before migration

  - Not required to convert catalog / directory before migrating

    - Will be converted during the next REORG

  - Data Class attributes of

    - Extended Format

    - Extended Addressability

- **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

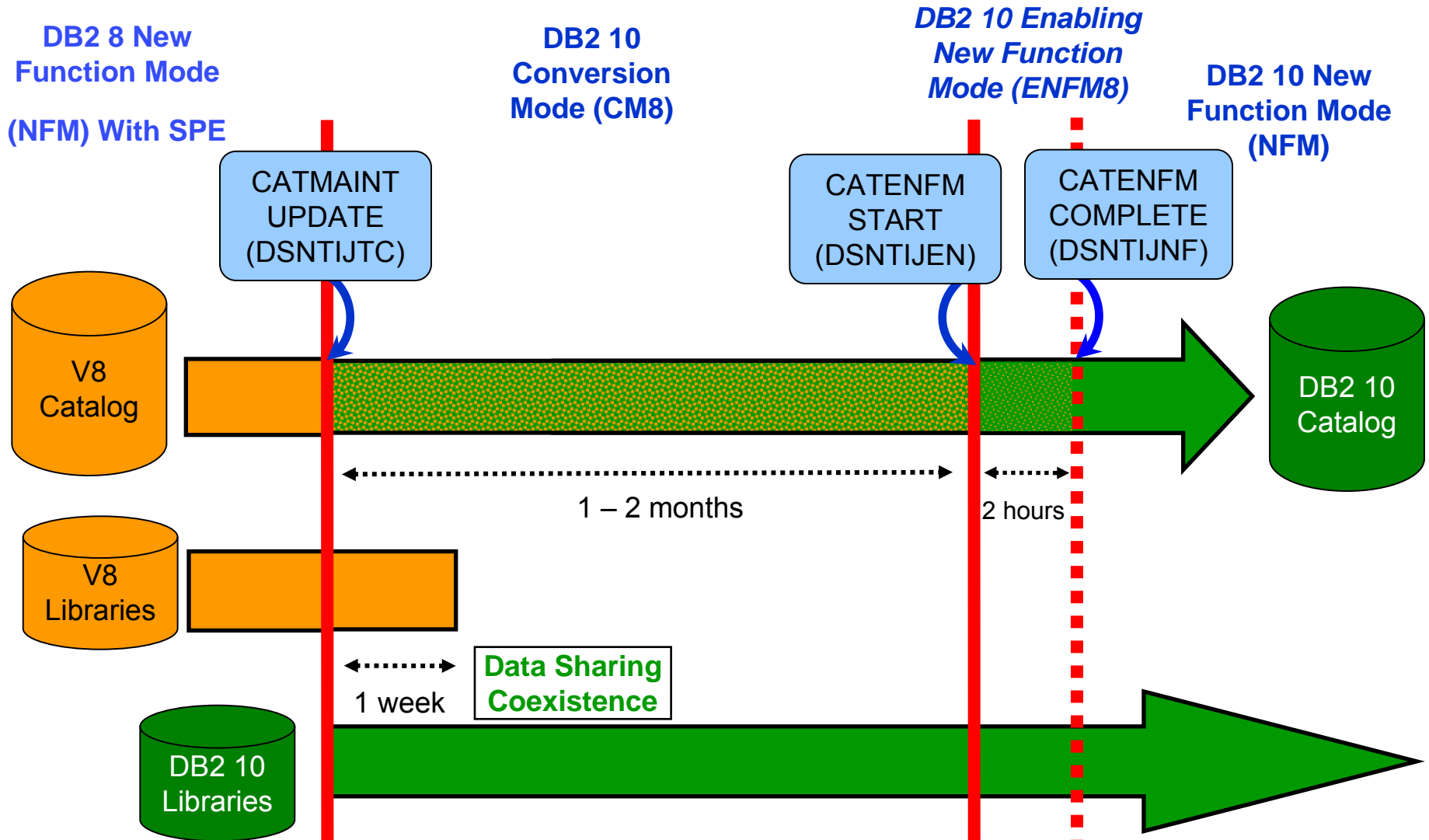- **Assess the training requirements for your organization**

# 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**

- **Use DSNTIJXZ to refresh the installation clist input**

- **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**
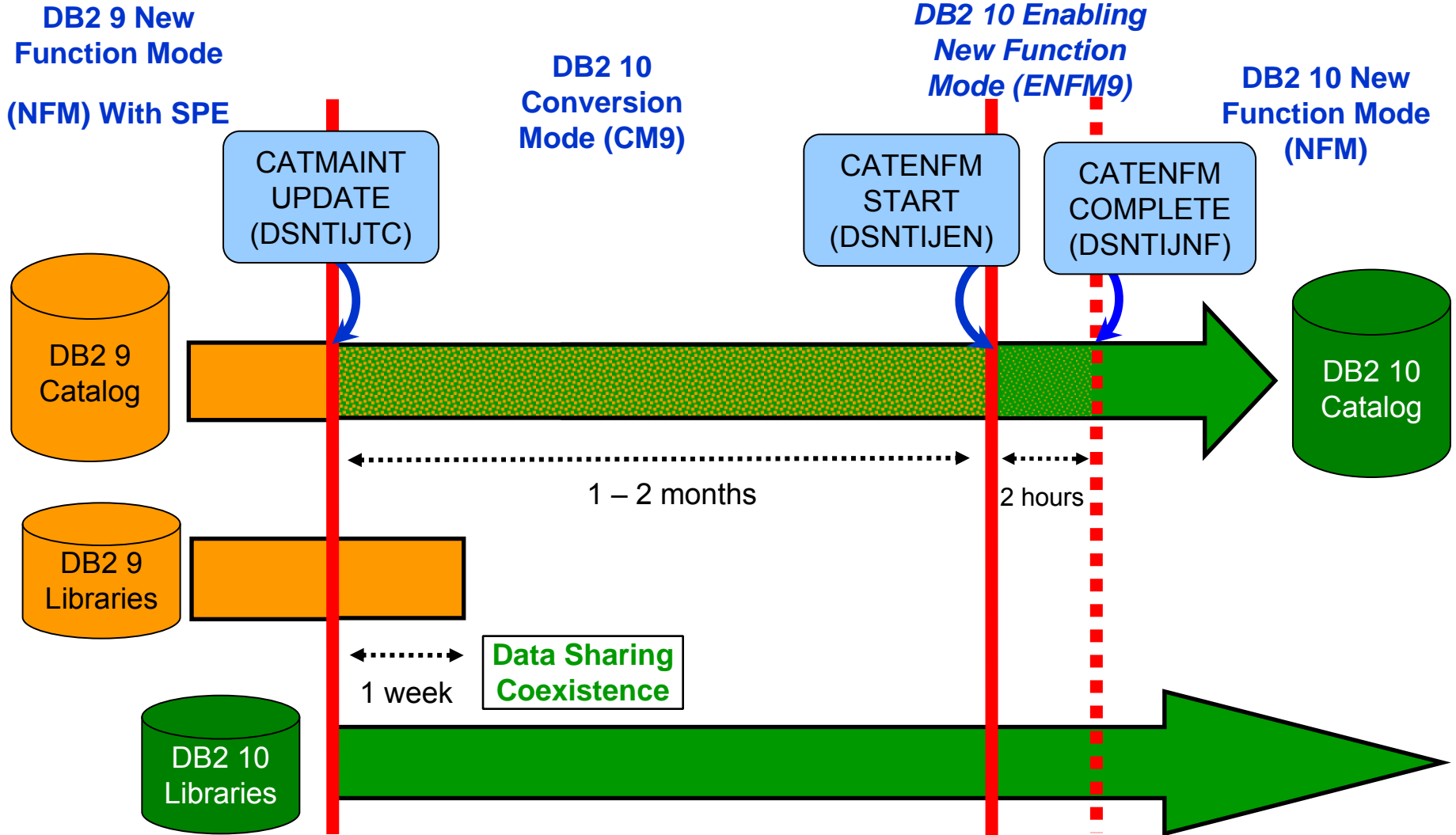  - CM8 & EN8, or
  - CM9 & EN9

# Migrating to DB2 10

- **Use the proactive PMR process**

- **REBIND while in CMx**
  - Use Plan Management (Package / Bind Stability)
  - Consider **REBIND ... EXPLAIN (YES) ... APREUSE** or **APCOMPARE**

- **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

# Skip Migration Overview V8 → 10

**DB2 8 New Function Mode**

**(NFM) With SPE**

**DB2 10 Conversion Mode (CM8)**

*DB2 10 Enabling New Function Mode (ENFM8)*

**DB2 10 New Function Mode (NFM)**

CATMAINT UPDATE (DSNTIJTC)

CATENFM START (DSNTIJEN)

CATENFM COMPLETE (DSNTIJNF)

V8 Catalog

DB2 10 Catalog

1 – 2 months

2 hours

V8 Libraries

**Data Sharing Coexistence**

1 week

DB2 10 Libraries

# Normal Migration   DB2 9 → DB2 10



**DB2 9 New Function Mode**

**(NFM) With SPE**

**DB2 10 Conversion Mode (CM9)**

*DB2 10 Enabling New Function Mode (ENFM9)*

**DB2 10 New Function Mode (NFM)**

CATMAINT UPDATE (DSNTIJTC)

CATENFM START (DSNTIJEN)

CATENFM COMPLETE (DSNTIJNF)

DB2 9 Catalog

DB2 10 Catalog

1 – 2 months

2 hours

DB2 9 Libraries

1 week

**Data Sharing Coexistence**

DB2 10 Libraries

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# DB2 10 Modes

- **CMx Considerations (1)**
  - Address Incompatibilities before migration
  - Fall back SPE must be on all members (and restarted)
  - Catalog is tailored
  - Data Sharing group
    - V8 & CM8
    - V9 & CM9
  - Test, test, test
  - Fallback possible (CM8 to V8 **OR** CM9 to V9)
    - CM8 fall back to V8 CANNOT subsequently migrate to CM9
    - Fallback from CMx* not allowed
  - Backup and Recover catalog objects in the specified order of the "migrate from" version.
    - Add new objects per:
      http://publib.boulder.ibm.com/infocenter/dzichelp/v2r2/topic/com.ibm.db2z10.doc.inst/db2z_modifydsntijic.htm

# DB2 10 Modes

## CM8 Considerations

– Workfile / Temp DB Consolidation (II14587)

– Increased 32k workfile use

– RUNSTATS

  - Collects DATAREPEATFACTOR added in V9
  - New Cluster Ratio formula

– DSNTIJXA migrates DSN_STATEMENT_CACHE_TABLE to V9 format (due to BIGINT data type)

  - Will need to be run again in NFM

## CMx Considerations (2)

– REBIND

  - Re-enable SPROCs
  - Find additional incompatibilities
  - Potential virtual storage and performance improvements

# DB2 10 Modes

- **ENFMx Considerations**

  - This is running the same code as CMx

  - Catalog conversion takes place

  - All members of a data sharing group must be at the CMx level before converting to ENFMx

  - Can revert to CMx* from ENFMx

  - Beyond CMx, Backup and Recover objects V10 specified order

- **NFM Considerations**

  - Can revert to ENFMx* or CMx*

    - Must be the same ENFM or CM mode as previous executed
      - CM8 / CM9
      - ENFM8 / ENFM9

  - REORG TABLESPACE for LOBs SHRLEVEL NONE no longer supported.

    - As of NFM, these jobs will complete with an RC=0, but will not do anything

# SMS now a prerequisite for DB2 catalog & directory

> **Important – All new catalog indexes and new table spaces WILL be SMS controlled.**
>
> *"SMS now a prerequisite of DB2 10".  So be prepared!*

- **All new indexes & new table spaces in the catalog and directory created SMS-controlled with extended addressability (EA & EF)**
- **DSNTIJSS provides SMS classes for customers without SMS in use**
  - Environment ONLY for DB2 Catalog & Directory data sets
    - Other DB2 data sets such as logs and BSDS not covered.
- **Useful SMS reference material includes:**
  - z/OS DFSMS Introduction.
  - z/OS DFSMS Implementing System Managed Storage.
  - z/OS DFSMS Storage Administration Reference.
  - IBM Redbooks publication: Maintaining your SMS environment

# DB2 10 Catalog...

- **V10 catalog restructure provides greater concurrency for catalog operations**
  - Concurrent binds

- **V8 migrations will include new Catalog table spaces for**
  - Real-Time Statistics
  - New page size possible
  - XML
  - Trusted Context
  - Extended Index definitions

- **V8 and V9 migrations see many table space changes for the catalog restructure**
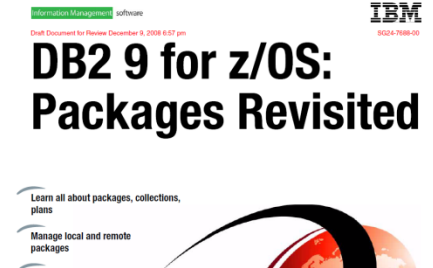
- **Several LOB columns**
  - Using Inline LOBs

# DB2 10 Catalog...

- **SYSDBASE, SYSPLAN, SYSDBAUT, SYSVIEW, SYSGROUP and DBD01 had links**

- **These table spaces used page level locking because of the links.**

- **SPT01, SYSOBJ, and SYSPKAGE are also processed in ENFM.**

- **All of these table spaces will be removed and the tables within each will be moved to new PBG table spaces**
  - Row level locking
  - New row format
  - Partition-by-growth
  - One table per table space
  - Referential Integrity in place of links
  - DSSIZE 64 G
  - MAXPARTS 1
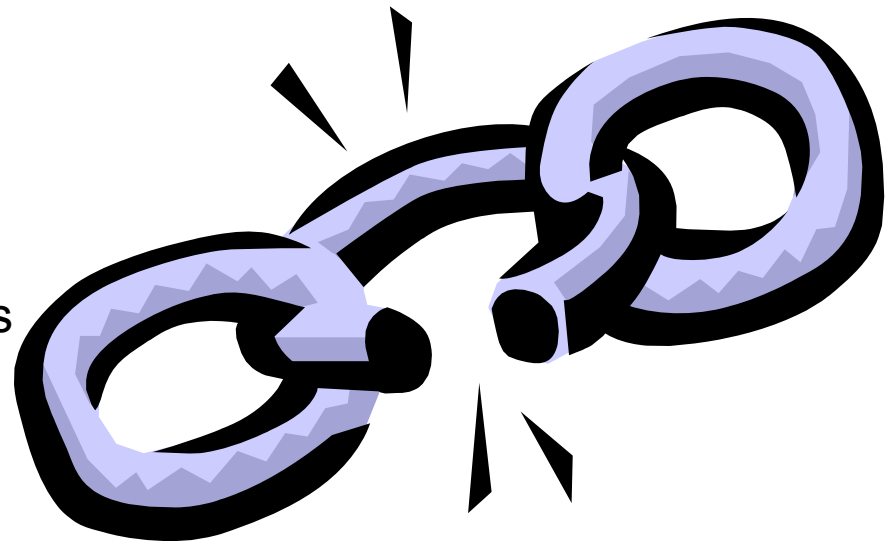
# Convert plans with DBRMs to packages

- Convert from DBRMs in PLAN to packages

- Specify the collection id for the packages

- REBIND plan option: COLLID

- Default collection id DSN_DEFAULT_COLLID_planname

- Able to specify plan name, list of plans, *

- DB2 9 APARs PK62876, PK85833, PM01821

- V8 APARs PK79925, PM01821

- See Packages Revisited book                    SG24-7688 chapter 4

# Convert private protocol to DRDA

- Trace to find use of private protocol

- Private protocol trace analysis program DSN1PPTP

- Use DRDA protocol REXX tool DSNTP2DP

- Private protocol statement checker DSNTPPCK

- Set PRIVATE_PROTOCOL parameter to NO

    – Consider the addition of PRIVATE_PROTOCOL=AUTH

# Best Practices/Recommendations

- **Start with latest RSU + Identified Hipers**
- **Thoroughly research all prereqs, incompatibilities, deprecation / removed items**
- **Leverage CST/RSU process: DB2 9 & 10**
  - Apply 2 to 3 preventative service drops annually
  - Exploit Enhanced HOLDDATA to be vigilant on HIPERs and PEs
- **Use the DB2 9 Plan Management function for static SQL**
  - Offers access path preserving option.
  - Fallback capability to prior access path is preserved
- **Minimize potential query performance issues**
  - REBIND in CMx
  - Use Data Studio to capture SQL statements
  - Run Stats Advisor to generate the recommendation for stats collection
  - Run RUNSTATS to ensure critical stats are collected as recommended by the advisor
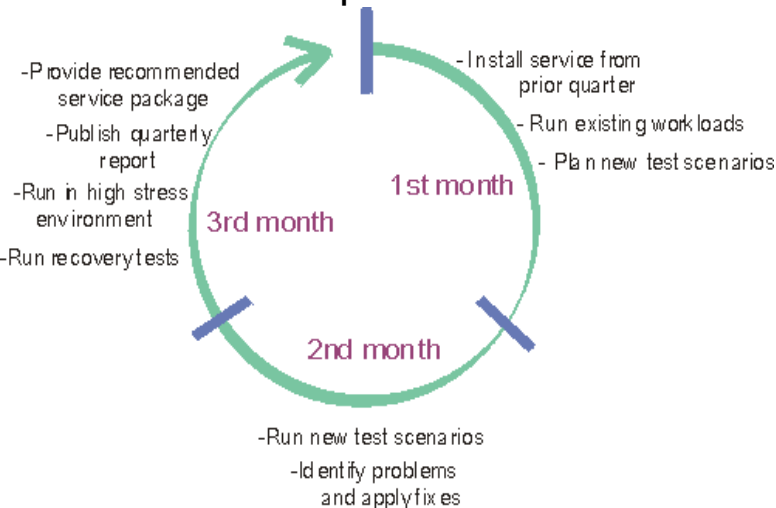- **Ensure a PMR is opened prior to migration start**

# Products supported in CST and RSU

**CST is provided: "AS IS"**
**CST does not remove the need to do your own testing**

- Free offering to customers

- CST testing is done at an IBM test lab simulating a customer-like production sysplex environment in an IBM test lab with batch and data-sharing applications that exploit and stress the latest functions with up to two levels of subsystems on

The key products specifically tested in CST include:

**Cycle diagram (left):**

- Provide recommended service package
- Publish quarterly report
- Run in high stress environment
- Run recovery tests

**3rd month**

**1st month**
- Install service from prior quarter
- Run existing workloads
- Plan new test scenarios

**2nd month**
- Run new test scenarios
- Identify problems and apply fixes

**Key products (left column):**

- CICS Transaction Gateway for z/OS
- CICS Transaction Server for z/OS
- DB2 for z/OS
- DB2 Connect
- Geographically Dispersed Parallel Sysplex (GDPS/PPRC)
- IMS

**Key products (right column):**

- IRLM
- JAVA
- WebSphere Application Server for z/OS
- WebSphere MQ for z/OS
- z/OS
- eServer zSeries AD Tools
- IBM DB2 and IMS Tools
- IBM Tivoli

# Benefits of CST for RSU

- **Better testing of maintenance by each of the products in customer-like parallel sysplex environment**

- **Recommendation for RSU identified by product experts**

- **Maintenance recommended after successful testing for a least one month**

- **Allows for consistent maintenance recommendations across the z/OS and OS/390 platform products**

- **Testing is performed in addition to existing testing programs and does not replace any current testing performed by the products.**

- **E-mail sent to you when we've completed testing of a new RSU service package.**
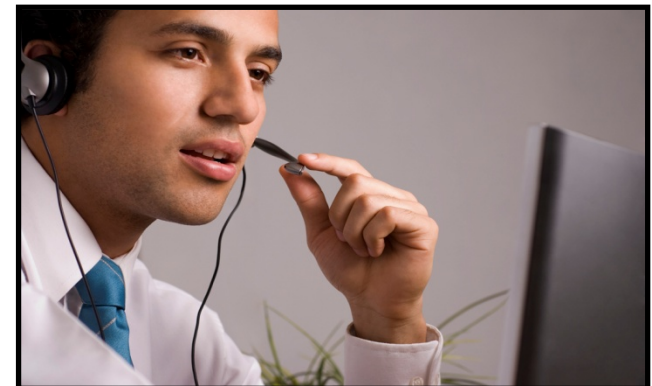
# How to subscribe

- Order a current preventative service deliverable such as CBPDO or ESO for the products you need. You can order products and maintenance for the z/OS and OS/390 platforms using ShopzSeries on the Web. – https://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp

- Register here if you'd like us to notify you by e-mail when we've completed testing of a new RSU service package. http://www.ibm.com/servers/eserver/zseries/zos/servicetst/

- Questions and comments for the Consolidated Service Test team http://www.ibm.com/servers/eserver/zseries/zos/servicetst/contact.html

# Open Proactive PMRs during migrations

- Use your normal support process to open a PMR

- Use the description to briefly describe what environment is being migrated and to which mode

- Provide good contact information
  - Several names and contact numbers

- Should a problem arise during the migration, call Support and escalate the PMR

- If the problem is serious, ask to be transferred to a Duty Manager

# So where do I go from here?

- **No need to fear DB2 migration; but be cautious & thoughtful**

  - Ensure good planning, staying reasonably current on preventative service and application regression testing

  - Follow best practices/recommendations

  - Don't spend your savings before they are realized

  - PMR opened

  - Trends are improving!

- **Procedural upgrade easier**

- **Every customer experience is different**

- **Compared to DB2 V8 /DB2 9?**

  - Lower overall PMR volume

  - Less Severity 1 APARs

  - Lower PE rate

  - Lower HIPER rate

# Questions?