**DB2 10 Migration Planning Workshop**

**Functional Inventory**

### SQL
- Access Currently Committed
- Extended SQL Procedure Language
  - Enhancements to Native SQL Procedures
  - SQL Scalar Functions
    - Inline
    - Non-inline
  - SQL Table Functions
- Extended Indicator Variables
- Additional OLAP Specifications
- TIMESTAMP Precision
- TIMESTAMP WITH TIMEZONE
- 64-bit ODBC Driver for z/OS

### pureXML
- Multi-version support
  - Reducing XML document locking
  - Enables other new features
- Sub-document update (XMLMODIFY)
- XML Schema Improvements
  - XML Column Type Modifier
    - Automatic XML Schema support
    - Schema versioning
  - DSN_XMLVALIDATE Built In Functions
  - XMLXSROBJECTID to identify document schema
  - CHECK DATA extended for schema validation
- Support for Native Stored Procedures
  - XML Parameters
  - Declared XML Variables
  - Date & Time Support
  - Binary XML

### Temporal Data
- Business Time
- System Time
  - History Table
  - Post-GA data type, ALTER, and high value changes
- Temporal Uniqueness
- Temporal SQL table reference
  - FOR BUSINESS_TIME
  - FOR SYSTEM_TIME
  - FOR PORTION_OF
- Support for:
  - Temporal Insert, Update, Delete behaviors
  - PM31313, PM31314 System Time changes.

### LOB Enhancement
- Inline LOBs
- AUX/XML DEFINE NO
- UNLOAD / LOAD spanned record support
- LOB Streaming / Materialization improvements

### Advanced Design / DBA Productivity
- Classic Partitioned Table Spaces deprecated
- UTS
  - MEMBER CLUSTER
DB2 10 Migration Planning Workshop
Functional Inventory

- PBG NUMPARTS
- ALTER TABLE ADD PARTITION

  - Pending ALTERs
    - AREOR status
    - Table space type (Single table table spaces)
    - Hash organization
    - SEGSIZE
    - DSSIZE (128 & 256 options)
    - MAXPARTITIONS
    - Page size
    - DROP PENDING CHANGES
    - Materialized via Online REORG

- Compress on Insert
- Implicit casting
- Extended Address Volumes

Optimization
- Literal replacement
- Access Path Stability
  - Statement Level Optimization Hints
  - Plan Management Policy
    - APRETAINDUP
  - ACOMPARE, APREUSE
- EXPLAIN
  - EXPLAIN PACKAGE
  - EXPLAIN CAPTURE special register
  - Explain table formats changes
- Safe Query Optimization
- IN List improvements
- SQL Pagination / Complex OR

- Row level sequential detection
- Parallelism
  - Dynamic record range partitioning
  - Straw model
- Statistics
  - Index / RTS probing
    - DSN_COLDIST_TABLE
  - Autostats
  - RUNSTATS Profile

Indexing
- Parallel index inserts
- INCLUDE columns
- RID list overflow to workfiles
- RI use of index lookaside
- Cluster index space management improvements
- Reduced need for index REORG
  - Use of List Prefetch as index becomes disorganized

Security
- SECADM
  - SEPARATE_SECURITY
- DBADM ON SYSTEM
- ACCESSCTRL
- DATAACCESS
- SQLADM
- EXPLAIN
- BIND
  - EXPLAIN(ONLY)
  - SQLERROR(CHECK)
DB2 10 Migration Planning Workshop
Functional Inventory

- Revoke without cascade
- Audit Policies
- Row Filter (PERMISSION)
- Column Mask

**Distributed**
- Local (Type 2) driver improvements
- Optimization for single row result sets
- DDF restart light
- High performance DBAT
- Online CDB change
- Removal of Private Protocol

**Utilities**
- UTSERIAL lock removal
- Online REORG TABLESPACE
  - REORG for LOB space SHRLEVEL NONE is not supported in NFM (but finishes w/RC0)
  - Materializes pending Table Space changes
  - Available for REORP
  - AUX YES for LOB / XML
  - Stats collection moved outside SWITCH
  - Non-contiguous part range syntax
  - CANCEL threads on last RETRY
- Online REORG INDEX
  - Materializes pending index changes (Buffer Pool)
  - UNLOAD / LOAD spanned records
  - Flashcopy support
    - Consistent image copy
  - Incremental image copy enhancements

- RECOVER..BACKOUT
- RUNSTATS zIIP exploitation

**Virtual Storage**
- Movement above the bar
  - Virtual storage relief
- In memory Table / Index Spaces (PGSTEAL=NONE)
- Workfile enhancements
  - Spanned records
  - Support for PBG
- 1MB frame size support
- Reduced latching
- LRSN spin enhancement
- On demand Buffer Pool storage
- Log buffer page fixing
- IFCID 0225 enhanced for real memory

**Data Sharing**
- Migration coexistence
- Subgroup attach
- ACCESS DB wildcarding
- Index split recording
- Alter Table / Index without stopping
- Optimization for removing GBP dependency
- DSN_STATEMENT_CACHE GROUP_MEMBER
- DEL_CFSTRUCTS_ON_RESTART CF structure clean up

**Serviceability / Instrumentation**
- Online add of active log datasets
- Autonomic check pointing
DB2 10 Migration Planning Workshop
Functional Inventory

- Statement level monitoring
  - STMT_ID
- System level monitoring
  - Profiles for:
    - Idle thread timeout
    - Threads
    - Connections
    - With more granularity
- SMF Compression
- Fixed 1 minute interval for critical diagnosis IFCIDs
- Prefetch / Deferred Write & RUNSTAT zIIP exploitation
- WLM information added to DIS THREAD

Migration
- Migrate from DB2 V8 NFM or DB2 9 NFM
  - DB2 V8 NFM -> DB2 10 CM8, EN8, NFM
  - DB2 9 NFM -> DB2 10 CM9, EN9, NFM
  - X Mode indicates coexistence or group fall back
- See the Program Directory, Installation Guide, Announcement Letter, Consolidated Checklist and other current documentation for additional points, Product IDs, and helpful links
- Consider additional product orders
  - DB2 Utilities Suite
  - DB2 Accessories Suite
- Support for migration from DB2 for z/OS V8 NFM or DB2 9 for z/OS NFM
- Fallback SPE is required on the previous version before starting the migration
- Plan for ERLY code enablement
- Once a migration path is started, it must be completed.
- Ensure HW & SW prerequisites are met
- Check with third party vendors for product support
- Check Program Directory for program language requirements
- Use the DSNTIJPA job early (from V8 or V9)
- Research (accumulated) incompatibilities
- SMS, EF, EA required for Catalog / Directory
- Use of PDSE’s required for DB2 9 & beyond
- Extended BSDS format required for DB2 9 & beyond
- Review (accumulated) removed features
- Review (accumulated) deprecated features
- Use DSNTIJXZ for an update DSNTIDxx Installation CLIST input member
- Review DSNTIDXB for SAP recommended configuration
- Build a project plan
- Use the planning to ensure single version charge goals are met
- Develop a REBIND strategy for CMx
  - Include RUNSTATS if migrating from V8
  - Consider the use of PLANMGMT
- Plan to migrate EXPLAIN tables to DB2 10 format and Unicode encoding (DSNTIJXA, DSNTIJXB)
Review new installation jobs (DSNTIJRW, T, V)

Catalog Restructure

- Removing hashes and links
- Most tables are:
  - In single-table table spaces
  - Use row level locking
  - Are UTS PBG (MAXPARTITIONS 1)
- Several use Inline LOBs
  - SPT01_INLINE_LENGTH ZParm
    - COMPRESS_SPT01
    - DIS GROUP DETAIL shows SPT01 Inline Length