

DB2 for z/OS V10 Migration

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



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
- **Review Information APARs**
 - II14474/II14477 Migration and Fallback
 - II14619 & II14730 for DDF maintenance
- **PDSEs required for SDSNLOAD, SDSNLOD2, ADSNLOAD**
 - See Consolidated Checklist



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**
- **SYSPROC.XDBDECOMPXML & XDBDECOMPXML100MB stored procedures**
- **Several parameters**

New Parameters ...

▪ **Function Compatibility**

- BIF_COMPATIBILITY
- Migrations default to “V9_DECIMAL_VARCHAR” vs. “CURRENT” for installs
- “V9” returns the CHAR function back to V9 behavior (PM29124 & PM66095)
- “V9_DECIMAL_VARCHAR” returns CHAR, VARCHAR, CAST...AS VARCHAR return to V9 behavior (PM48741)
 - Also allows for unsupported Time Stamp string (more on this coming up)

▪ **SMS Definitions for the Catalog / Directory**

- CATDDACL, CATDMGCL, CATDSTCL
- CATXDAACL, CATXMGCL, CATXSTCL

▪ **Autonomic Checkpoints**

- CHKLOGR, CHKMINS, CHKTYPE

New Parameters ...

- **Real Storage Management (PM24723)**
 - REALSTORAGE_MANAGEMENT (AUTO)
 - REALSTORAGE_MAX (NOLIMIT)
 - See PM49816 for real storage management performance fix
- **Remote Connection Queue Depth and Wait (PM43293)**
 - MAXCONQN (OFF) for depth
 - MAXCONQW (OFF) for wait
- **New Feature Support (Continued)**
 - SMF Compression: SMFCOMP (OFF)

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_DISTRIBUTION | - OPTHYBCST |
| - PTCDIO | - PTCDIO | - OPTIXOPREF | - OPTOIRCPF |
| - RETVLCFK | - RETVLCFK | - PARTKEYU | - PARTKEYU |
| - SEQCACH | - SEQCACH | - RELCURHL | - PREVALKEEP |
| - SEQPRES | - SEQPRES | - SJMISSKY | - SJMISSKY |
| - SMSDCFL | - SMSDCFL | - STORPROC | - XMLTABJPD |
| - SMSDCIX | - SMSDCIX | - SUPRESS_TS_CONV_WARNING | |
| | - STATCLUS | - TABLES_JOINED_THRESHOLD | |

Parameters Default Changes

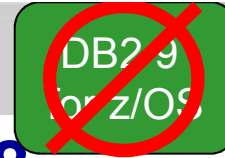
- **CACHEPAC** (5M)
- **CACHERAC** (5M)
- **CONTSTOR** (YES)
- **EDM_SKELETON_POOL** (10240)
- **EDMDBDC** (23400)
- **EDMPOOL** (0)
- **EDMSTMTC** (113386)
- **IRLMRWT** (30)
- **IRLMSWT** (120)
- **PLANMGMT**(EXTENDED)
- **LRDRTHLD** (10)
- **MAXRBLK** (400000K)
- **MINSTOR** (NO)
- **MONSIZE** (1048576)
- **NUMLKTS** (2000)
- **RRULOCK** (YES)
- **SRTPOOL** (10000K)
- **STATIME** (1)
- **STATROLL** (YES)
- **UTSORTAL** (YES)

Information APAR Recommendations (II14474 / II14564)

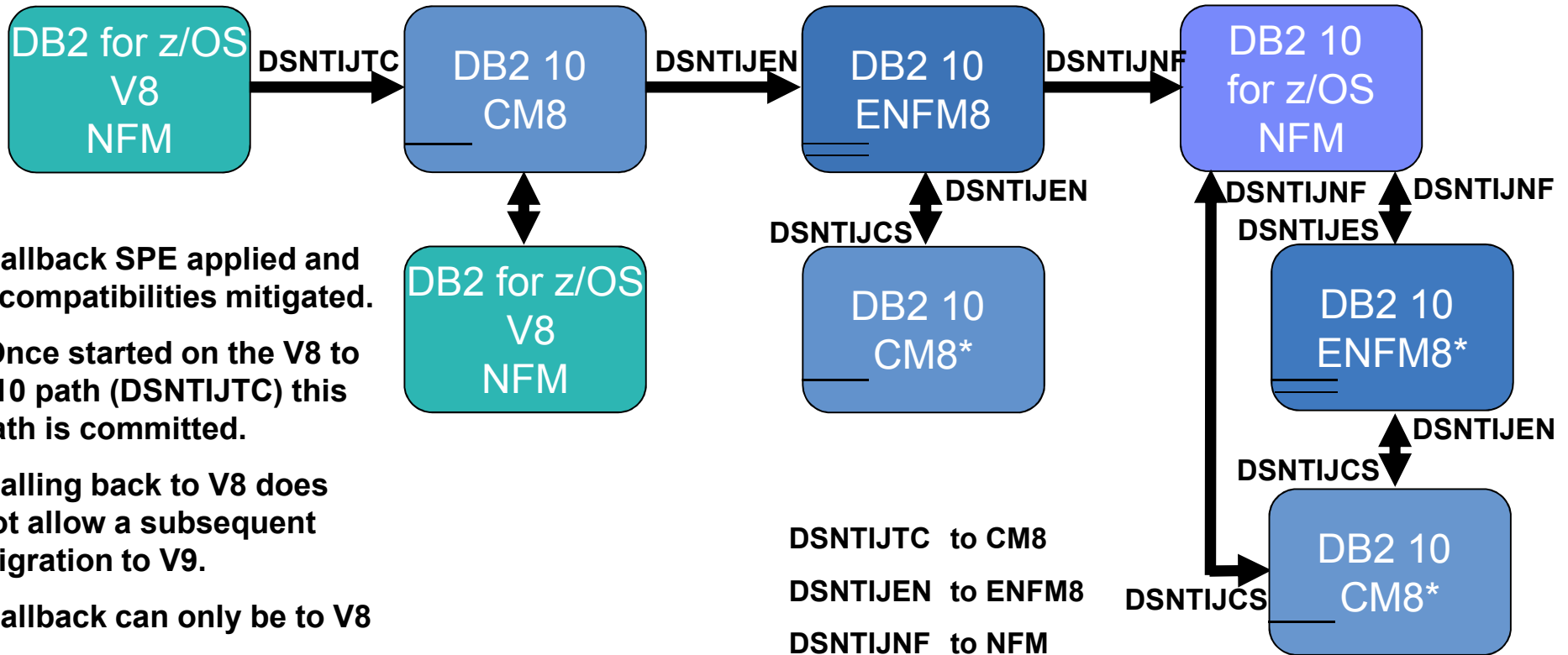
- OPTIOWGT=ENABLED
- OPTIXIO=ON
- OPTXQB=ON
- STATCLUS=ENHANCED
- These are the defaults in DB2 10
 - Check with DB2 Support before choosing a value other than the default
- See the appropriate Information APAR for more details
- **Plans and Packages prior to V6 will require REBIND**
 - This also impacts Package copies (PLANMGMT). SWITCHing to these requires REBIND

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

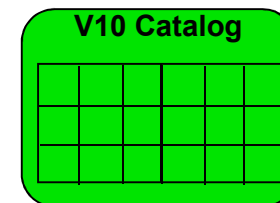
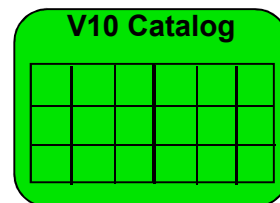
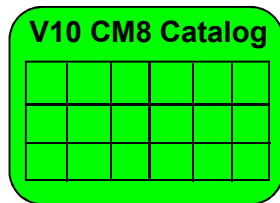
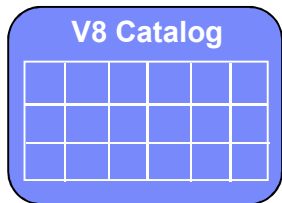


DB2 10 for z/OS Migration Modes from V8

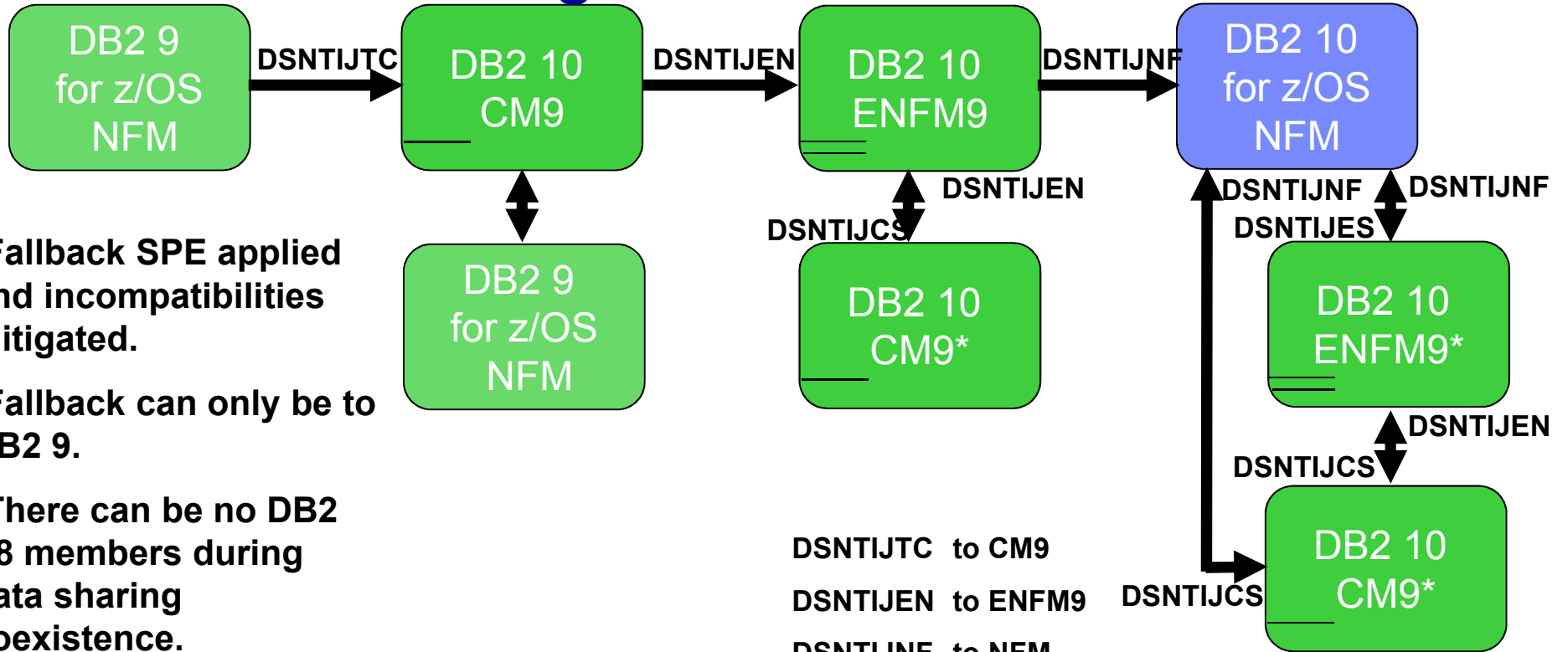


- Fallback SPE applied and incompatibilities mitigated.
- Once started on the V8 to V10 path (DSNTIJTC) this path is committed.
- Falling back to V8 does not allow a subsequent migration to V9.
- Fallback can only be to V8
- There can be no DB2 9 members during data sharing coexistence.

DSNTIJTC to CM8
 DSNTIJEN to ENFM8
 DSNTIJNF to NFM
 DSNTIJCS to CM8*
 DSNTIJES to ENFM8*

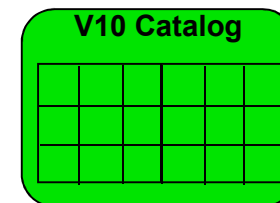
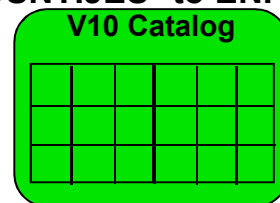
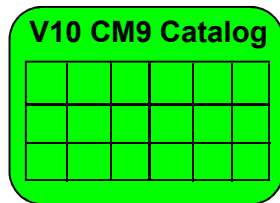
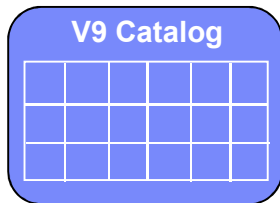


DB2 10 for z/OS Migration Modes from V9



- Fallback SPE applied and incompatibilities mitigated.
- Fallback can only be to DB2 9.
- There can be no DB2 V8 members during data sharing coexistence.

DSNTIJTC to CM9
 DSNTIJEN to ENFM9
 DSNTIJNF to NFM
 DSNTIJCS to CM9*
 DSNTIJES to ENFM9*



DB2 10 Catalog...

▪ Migrating to CM

- New columns on existing tables
- Alter existing columns
- New indexes on existing tables
- Alter existing indexes
- New check constraints on existing tables
 - New constraints added without CHECK PENDING
- Alter existing check constraints
- New table spaces
- New tables
- New RI
- New sequences

DB2 10 Catalog...

▪ Summary

- SMS Catalog / Directory
 - Remove user defined shadow datasets for Online REORG
- 55 spaces are UTS Partition By Growth
- All are Unicode, except
 - SYSCOPY
 - SYSEBCDC
 - SYSTSASC
- All are row level locking, except the following (page level):
 - SYSEBCDC
 - Contains SYSDUMMY1 & SYSDUMMYE
 - SYSSEQ
 - Has MAXROWS set to 1
- 68 are RRF
- 18 LOB Columns
 - 7 use Inline LOBs

TABlename	COLNAME	INLINE_LENGTH
SYSPACKSTMT	STATEMENT	15360
SYSPACKSTMT	STMTBLOB	7168
SYSCTRLS	RULETEXT	16000
SYSCTRLS	DESCRIPTOR	12000
SYSQUERY	STMTTEXT	2048
SYSVIEWS	PARSETREE	27670

DB2 9 and DB2 10 Resources

- **Website** <http://www.ibm.com/software/data/db2/zos/db2-10/>
 - Case Studies, Customer statements
 - Demos: DB2 10 for z/OS, QMF 10
 - Brochures: DB2 10 for z/OS Highlights, QMF 10 What's New
- **Presentations**
 - DB2 10's new functions – <ftp://public.dhe.ibm.com/software/data/db2/zos/presentations/v10-new-function/>
 - Overviews - <ftp://public.dhe.ibm.com/software/data/db2/zos/presentations/overview>
 - Migration - <ftp://public.dhe.ibm.com/software/data/db2/zos/presentations/migration>
- **Books**
 - DB2 10 for z/OS Technical Overview <http://www.redbooks.ibm.com/abstracts/sg247892.html>
 - DB2 10 for z/OS Performance Topics – *coming soon* <http://www.redbooks.ibm.com/abstracts/sg247942.html>
 - Extremely pureXML in DB2 10 for z/OS <http://www.redbooks.ibm.com/abstracts/sg247915.html>
 - DB2 10 for z/OS Book <ftp://public.dhe.ibm.com/common/ssi/ecm/en/imm14075usen/IMM14075USEN.PDF>
 - DB2 10 Security – *coming*
 - DB2 9 Technical Overview <http://www.redbooks.ibm.com/abstracts/sg247330.html>
 - DB2 9 Performance Topics <http://www.redbooks.ibm.com/abstracts/sg247473.html>
 - DB2 9 Stored Procedures <http://www.redbooks.ibm.com/abstracts/sg247604.html>
 - DB2 9 Resource Serialization and Concurrency Control <http://www.redbooks.ibm.com/abstracts/sg244725.html>
 - DB2 9 Distributed Functions <http://www.redbooks.ibm.com/abstracts/sg246952.html>
 - DB2 9 Utilities <http://www.redbooks.ibm.com/abstracts/sg246289.html>
 - DB2 and Storage Management <http://www.redbooks.ibm.com/abstracts/sg247823.html>
 - Index Compression with DB2 9 for z/OS <http://www.redbooks.ibm.com/abstracts/redp4345.html>
 - Enterprise Data Warehousing with DB2 9 for z/OS <http://www.redbooks.ibm.com/abstracts/sg247637.html>
 - 50 TB Data Warehouse Benchmark on IBM System z <http://www.redbooks.ibm.com/abstracts/sg247674.html>
 - LOBs with DB2 for z/OS <http://www.redbooks.ibm.com/abstracts/sg247270.html>
 - Deploying SOA Solutions <http://www.redbooks.ibm.com/abstracts/sg247663.html>
 - Data Sharing in a Nutshell <http://www.redbooks.ibm.com/abstracts/sg247322.html>



DB2 10 for z/OS
Technical Overview

Extremely pureXML
in DB2 10 for z/OS

DB2 10 for z/OS
Performance Topics

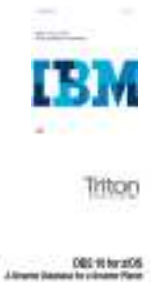
DB2 10 Resources ...

• (cont) Books

- Securing DB2 and Implementing MLS on z/OS <http://www.redbooks.ibm.com/abstracts/sg246480.html>
- DB2 9 for z/OS Data Sharing: Distributed Load Balancing and Fault Tolerant <http://www.redbooks.ibm.com/abstracts/redp4449.html>
- DB2 9 for z/OS Packages Revisited <http://www.redbooks.ibm.com/abstracts/sg247688.html>
- Ready to Access DB2 for z/OS Data on Solid-State Drives <http://www.redbooks.ibm.com/abstracts/redp4537.html>
- DB2 9 for z/OS: Buffer Pool Monitoring and Tuning <http://www.redbooks.ibm.com/abstracts/redp4604.html>
- Securing and Auditing Data on DB2 for z/OS <http://www.redbooks.ibm.com/abstracts/sg247720.html>

• Whitepapers

- Business Value Whitepaper – Julian Stuhler, Triton Consulting: “DB2 10 for z/OS: A Smarter Database for a Smarter Planet” <http://public.dhe.ibm.com/software/data/sw-library/db2/analystreports/tritonconsulting-db210forzos-smarterdatabase.pdf>
- A Matter of Time: Temporal Data Management http://public.dhe.ibm.com/software/data/sw-library/db2/papers/A_Matter_of_Time_-_DB2_zOS_Temporal_Tables_-_White_Paper_v1.4.1.pdf
- Why DB2 for z/OS is Better than Oracle RAC https://www14.software.ibm.com/webapp/iwm/web/signup.do?lang=en_US&source=sw-infomgt&S_PKG=db2z-better-thank-oracle-rac-wp
- zJournal article by Willy Favero <http://www.mainframezone.com/z-journal>



DB2 10 Resources ...

▪ SAP Whitepapers

- SAP article on DB2 10 (*published by SAP*) <http://www.sdn.sap.com/irj/sdn/db2>
- SAP Best Practice Guide for Migrating to DB2 10 for z/OS (*published by SAP*) <https://websmp207.sap-ag.de/~sapidb/011000358700001414122010E>
- (Updated) Business Continuity Guide for Running SAP on System z – based on DB2 10 for z/OS, DB2 Connect 9.7 FP3a, SAP NetWeaver 7.10 and Tivoli Automation for z/OS V3.3 <http://publibfp.dhe.ibm.com/epubs/pdf/iapacs03.pdf>
- DB2 10 for z/OS with SAP on IBM System z Performance Report – new techdocs white paper <http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/WP101845>
- DB2 10 for z/OS – Optimized for SAP – <http://cattail.boulder.ibm.com/cattail/?source=s#view=andreas.r.mueller@de.ibm.com/files/3198290001883DDBA202FBE4093F23B6>
- SAP on DB2 10 for z/OS - Being More Productive, Reducing Costs and Improving Performance – <http://www.sdn.sap.com/irj/sdn/db2?rid=/library/uuid/005c6b33-aaf0-2d10-fcbb-b42e89ac5791>
- Enhancing SAP by Using Db2 9 for z/oS <http://www.redbooks.ibm.com/abstracts/sg247239.html>
- Best Practices for SAP BI using DB2 9 for z/OS <http://www.redbooks.ibm.com/abstracts/sg246489.html>

Some Certifications so far...

- SAP NetWeaver 7.30 and SAP R/3 4.6 is certified for DB2 10
- SAP NetWeaver 7.00 and 7.01 are certified for DB2 10
- PeopleSoft PeopleTools 8.50 and 8.51 is certified for DB2 10

THANK
YOU

