



# **Program Directory for IBM DB2 9 for z/OS**

V09.01.00

Program Number 5635-DB2

FMIDs HDB9910, HIY9910, HIZ9910, HIR2220,

for Use with  
z/OS

Service Updated PDO 1238

Document Date: November, 2012

GI10-8737-06

**Note**

Before using this information and the product it supports, be sure to read the general information under Appendix B, "Notices" on page 68.

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## 1.0 Introduction

This Program Directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of IBM DB2 9 for z/OS. This publication refers to IBM DB2 9 for z/OS as DB2 9 for z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for DB2 9 for z/OS.
- 3.0, “Program Support” on page 10 describes the IBM support available for DB2 9 for z/OS.
- 4.0, “Program and Service Level Information” on page 14 lists the APARs (program level) and PTFs (service level) incorporated into DB2 9 for z/OS.
- 5.0, “Installation Requirements and Considerations” on page 15 identifies the resources and considerations required for installing and using DB2 9 for z/OS.
- 6.0, “Installation Instructions” on page 36 provides detailed installation instructions for DB2 9 for z/OS. It also describes the procedures for activating the functions of DB2 9 for z/OS, or refers to appropriate publications.

Before installing DB2 9 for z/OS, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that were supplied with this program in softcopy form as well as this Program Directory and then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 10 tells you how to find any updates to the information and procedures in this Program Directory.

DB2 9 for z/OS is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The Program Directory is provided in softcopy form on the CBPDO tape which is identical to the hardcopy form provided with your order. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for DB2 9 for z/OS are included on the CBPDO tape.

Do not use this Program Directory if you are installing DB2 9 for z/OS with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the Program Directory as required.

---

### 1.1 DB2 9 for z/OS Description

- DB2 Base

DB2 is a relational database management system for z/OS. In a relational database, data is perceived to exist in one or more tables, each containing a specific number of columns and a number of unordered rows. Each column in a row is related in some way to the other columns. Thinking of the data as a collection of tables gives you an easy way to visualize the stored data and enables you to explain your needs in easy-to-understand terms.

DB2 operates as a formal subsystem of z/OS. DB2 utilities run in the batch environment, and applications that access DB2 resources can run in the batch, TSO, IMS, WebSphere or CICS environments. Utilities can also run via stored procedure. IBM provides attachment facilities to connect DB2 to each of these environments and for distributed connections.

- **IRLM V2R2**

The Internal Resource Lock Manager (IRLM) is distributed with and is required by DB2 9 for z/OS. IRLM is responsible for managing all requests for locks and for controlling access to both DB2 and IMS databases. IRLM V2R2 was introduced with DB2 for z/OS V8, and has only been tested and approved for use on DB2 for z/OS V8 and DB2 9 for z/OS. We recommend levels of DB2 for z/OS prior to V8, and IMS levels without a note of IRLM V2R2 support in their program directory, continue to run with IRLM V2R1.

---

## 1.2 DB2 9 for z/OS FMIDs

DB2 9 for z/OS consists of the following FMIDs:

### 1. Required FMIDs:

- HDB9910 (contains DB2 Base, msys plug-in, REXX, MQSeries, MQListener)
- HIY9910 (IMS Attach - must be installed even if you do not have IMS)
- HIZ9910 (Subsystem Initialization)
- HIR2220 (IRLM V2R2)
- HDRE910 (DB2 RACF Authorization Exit)
- JDB9914 (DB2 English Panels)

### 2. Optional FMIDs:

- JDB9912 (DB2 JDBC/SQLJ)
- JDB9917 (DB2 ODBC)
- JDB991X (DB2 XML Extender)
- JDB9911 (DB2 Kanji Panels)



---

## 2.0 Program Materials

An IBM program is identified by a program number. The program number for DB2 9 for z/OS is 5635-DB2.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature numbers, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature numbers, and are not required for the product to function.

The program announcement material describes the features supported by DB2 9 for z/OS. Ask your IBM representative for this information if you have not already received a copy.

---

### 2.1 Basic Machine-Readable Material

The distribution medium for this program is magnetic tape or downloadable files. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 36 for more information about how to install the program.

Information about the physical tapes for the Basic Machine-Readable Materials for DB2 9 for z/OS can be found in the *CBPDO Memo To Users Extension*.

#### NOTE

If DB2 9 for z/OS was shipped to you in a CBPDO, you will need to reference the CBPDO Memo To Users Extension for the physical tapes layout of the Basic Machine-Readable Materials.

Figure 1 describes the physical tapes for DB2 for z/OS.

Medium	Feature Number	Physical Volume	External Label	VOLSER
3480 cart.	5950	1 of 6	DB2 Vol1	DB9910
		2 of 6	DB2 Vol2	DB991A
		3 of 6	DB2 Vol3	DB991B
		4 of 6	IRLM V2R2	IR2220
		5 of 6	ODBC JDBC/SQLJ	DB9917
		6 of 6	XML Extender	DB991X

Figure 2 describes the physical tape for Kanji.

<i>Figure 2. Basic Material: Program Tape - Kanji</i>				
Medium	Feature Number	Physical Volume	External Label	VOLSER
3480 cart.	5963	1 of 1	DB2 Kanji	DB9911

Figure 3 describes the program file content for DB2 9 for z/OS.

**Notes:**

1. The data set attributes in the following tables should be used in the JCL of jobs reading the data sets, but since the data sets are in IEBCOPY unloaded format, their actual attributes may be different.
2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

<i>Figure 3. Program File Content: DB2 Base</i>				
Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HDB9910.F1	PDS	FB	80	8800
IBM.HDB9910.F2	PDSE	U	0	6144
IBM.HDB9910.F3	PDS	FB	80	8800
IBM.HDB9910.F4	PDS	FB	80	8800
IBM.HDB9910.F5	PDS	VB	8188	8192
IBM.HDB9910.F6	PDS	VB	255	23476
IBM.HDB9910.F7	PDS	VB	255	27998
IBM.HIY9910.F1	PDS	FB	80	8800
IBM.HIY9910.F2	PDS	FB	80	8800
IBM.HIY9910.F3	PDSE	U	0	6144
IBM.HIZ9910.F1	PDS	FB	80	8800
IBM.HIZ9910.F2	PDSE	U	0	6144
IBM.JDB9914.F1	PDS	FB	80	8800
IBM.HDRE910.F1	PDS	FB	80	8800

Figure 4. Program File Content: IRLM Version 2 Release 2

<b>Name</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>BLK SIZE</b>
SMPMCS	SEQ	FB	80	6400
IBM.HIR2220.F1	PDS	FB	80	8800
IBM.HIR2220.F2	PDS	U	0	6144
IBM.HIR2220.F3	PDS	FB	80	27920

Figure 5. Program File Content: DB2 ODBC/JDBC/SQLJ

<b>Name</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>BLK SIZE</b>
SMPMCS	SEQ	FB	80	6400
IBM.JDB9917.F1	PDS	FB	80	8800
IBM.JDB9917.F2	PDS	U	0	6144
IBM.JDB9917.F3	PDS	FB	80	8800
IBM.JDB9912.F1	PDS	FB	80	8800
IBM.JDB9912.F2	PDSE	U	0	6144
IBM.JDB9912.F3	PDS	FB	80	27998
IBM.JDB9912.F4	PDSE	VB	255	6144

Figure 6 (Page 1 of 2). Program File Content: DB2 XML Extender

<b>Name</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>BLK SIZE</b>
SMPMCS	SEQ	FB	80	6400
IBM.JDB991X.F1	PDS	FB	80	8800
IBM.JDB991X.F2	PDS	VB	255	23476
IBM.JDB991X.F3	PDS	VB	255	23476
IBM.JDB991X.F4	PDS	VB	255	27998
IBM.JDB991X.F5	PDS	FB	80	8800

Figure 6 (Page 2 of 2). Program File Content: DB2 XML Extender

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.JDB991X.F6	PDS	FB	80	8800
IBM.JDB991X.F7	PDS	FB	80	8800
IBM.JDB991X.F8	PDS	VB	255	23476
IBM.JDB991X.F9	PDSE	U	0	6144
IBM.JDB991X.F10	PDS	VB	255	23476
IBM.JDB991X.F11	PDS	VB	255	23476
IBM.JDB991X.F12	PDS	VB	255	23476
IBM.JDB991X.F13	PDS	FB	80	8800
IBM.JDB991X.F14	PDS	VB	255	27998
IBM.JDB991X.F15	PDS	FB	80	8800

Figure 7. Program File Content: DB2 Kanji

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JDB9911.F1	PDS	FB	80	8800

## 2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for DB2 9 for z/OS.

## 2.3 Program Publications

The following sections identify the basic and optional publications for DB2 9 for z/OS.

## 2.3.1 Basic Program Publications

Figure 8 on page 7 identifies the basic unlicensed program publications for DB2 9 for z/OS. One copy of each of these publications is included when you order the basic materials for DB2 9 for z/OS. For additional copies, contact your IBM representative.

<b>Publication Title</b>	<b>Form Number</b>
DB2 Version 9.1 for z/OS Installation Guide	GC18-9846
DB2 Version 9.1 for z/OS Licensed Programming Specifications	GC18-9848

Figure 9 identifies the basic unlicensed or licensed publications that are not available in hardcopy form, but are available through the internet or other media for DB2 9 for z/OS.

<b>Publication Title</b>	<b>Form Number</b>	<b>How Available</b>
Internationalization Guide (Unicode)	SC19-1161	See <b>Note</b> below
z/OS Managed System Infrastructure for Setup DB2 Customization Center User's Guide	n/a	See <b>Note</b> below
RACF Access Control Module Guide and Reference	SC18-9852	See <b>Note</b> below
Reference for Remote DRDA Requesters and Servers	SC18-9853	See <b>Note</b> below

**Note:** Unlicensed Publications can be found at either of the following Web addresses:

<http://publib.boulder.ibm.com/infocenter/imzic>

or

<http://www.ibm.com/software/db2zos/v9books.html>

## 2.3.2 Optional Program Publications

Figure 10 identifies the optional unlicensed program publications for DB2 9 for z/OS. Each of these publications is included in the Library Collection Kit CD-ROM when you order DB2 9 for z/OS.

Figure 10 identifies the optional unlicensed program publications for DB2 9 for z/OS.

*Figure 10. Optional Material: Unlicensed Publications*

<b>Publication Title</b>	<b>Form Number</b>
DB2 Version 9.1 for z/OS Administration Guide	SC18-9840
DB2 Version 9.1 for z/OS Application Programming and SQL Guide	SC18-9841
DB2 Version 9.1 for z/OS Application Programming Guide and Reference for Java	SC18-9842
DB2 Version 9.1 for z/OS Codes	GC18-9843
DB2 Version 9.1 for z/OS Command Reference	SC18-9844
DB2 Version 9.1 for z/OS Data Sharing: Planning and Administration	SC18-9845
DB2 Version 9.1 for z/OS Introduction to DB2	SC18-9847
DB2 Version 9.1 for z/OS Messages	GC18-9849
DB2 Version 9.1 for z/OS ODBC Guide and Reference	SC18-9850
DB2 Version 9.1 for z/OS Performance Monitoring and Tuning Guide	SC18-9851
DB2 Version 9.1 for z/OS Reference Summary (available hardcopy only)	SX26-3854
DB2 Version 9.1 for z/OS SQL Reference	SC18-9854
DB2 Version 9.1 for z/OS Utility Guide and Reference	SC18-9855
DB2 Version 9.1 for z/OS What's New? (not on CD-ROM, please visit Info Center)	GC18-9856
DB2 Version 9.1 for z/OS XML Extender Administration and Programming	SC18-9857
DB2 Version 9.1 for z/OS XML Guide for DB2	SC18-9858

Figure 11 identifies the optional licensed program publications for DB2 9 for z/OS. Order copies using the 8xxx Feature Number.

An asterisk (\*) beside the Form Number indicates it contains "Restricted Materials of IBM."

*Figure 11. Optional Material: Licensed Publications*

<b>Publication Title</b>	<b>Form Number</b>	<b>Feature Number</b>
DB2 Version 9.1 for z/OS Diagnosis Guide and Reference	LY37-3218 *	8000
DB2 Version 9.1 for z/OS Diagnostic Quick Reference (hardcopy only)	LY37-3219 *	8001

## 2.4 Program Source Materials

Customers with access to View Program Listings (VPL), such as through S/390 SoftwareXcel, can use the VPL facility for online viewing of available program listings. Those customers without access to VPL can contact their IBM representative.

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## 2.5 Publications Useful During Installation

The publications listed in Figure 12 on page 9 may be useful during the installation of DB2 9 for z/OS. To order copies, contact your IBM representative or visit the IBM Publications Center on the World Wide Web at:

<http://www.ibm.com/shop/publications/order>

<i>Figure 12. Publications Useful During Installation</i>	
<b>Publication Title</b>	<b>Form Number</b>
<i>IBM SMP/E for z/OS and OS/390 User's Guide</i>	SA22-7773
<i>IBM SMP/E for z/OS and OS/390 Commands</i>	SA22-7771
<i>IBM SMP/E for z/OS and OS/390 Reference</i>	SA22-7772
<i>IBM SMP/E for z/OS and OS/390 Messages, Codes, and Diagnosis</i>	GA22-7770

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## 3.0 Program Support

This section describes the IBM support available for DB2 9 for z/OS.

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### 3.1 Program Services

Contact your IBM representative for specific information about available program services.

**The product levels documented in both the Program Directory and the Preventive Service Planning bucket are the levels with which DB2 9 for z/OS was tested.** Products at lower levels of maintenance may function, but we are unable to guarantee this. If you are using a downlevel release or version of a product and experience problems, it is likely IBM will require that **maintenance be brought up** to the recommended levels before problem resolution will continue.

---

### 3.2 Preventive Service Planning

Before installing DB2 9 for z/OS, you should review the current Preventive Service Planning (PSP) information.

#### Note

The service level in which the PTF/APAR fixes were incorporated into the product tape is PDO 1238. There are several HOLD items associated with the incorporated DB2 and IRLM 2.2 fixes that you must be aware of and take necessary action as part of the installation of DB2 and IRLM 2.2.. These HOLDS are provided in the below technote:

<http://www-01.ibm.com/support/docview.wss?uid=swg21470318>

If you obtained DB2 9 for z/OS as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO.

If the CBPDO for DB2 9 for z/OS is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

For program support, access the Software Support Web site at <http://www.ibm.com/software/support/>

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for DB2 9 for z/OS are:



Figure 13. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
DB2910	HDB9910/1238	DB2 BASE/TSO
	HIY9910/1238	IMS ATTACH
	HIZ9910/1238	DB2 SUBSYSTEM INIT
	HIR2220/1238	IRLM V2R2
	HDRE910/1238	RACF AUTHORIZATION EXIT
	JDB9912	DB2 JDBC/SQLJ
	JDB9914/1238	DB2 ENGLISH PANELS
	JDB9917	DB2 ODBC
	JDB991X	DB2 XML EXTENDER
	JDB9911	DB2 KANJI PANELS

The PSP **SUBSET** name reflects the Function Module Identifier (FMID) that was updated and the corresponding CBPDO weekly service offering used to supply the integrated PTFs.

Example: FMID/YYWW where 'YY' is the year and 'WW' is the week number the CBPDO was created.

The CBPDO weekly Service tape is the Service Level Indicator for any products updated by the Software Delivery Center (SDC) processes. If you wish to determine the latest level of PDO (Product Delivery Offering) maintenance installed in this product, please refer to the 4.0, "Program and Service Level Information" on page 14 section of this program directory.

Additionally, these upgrades contain HIPER (High Impact PERvasive) APARs and should be reviewed on a monthly basis.

**Note:** When pulling PTFs from IBMLink, you need to include your Service Type/Level:

```
Example: Service Type      PDO
         Service Level     0830
```

Authorized Program Analysis Report (APAR) fixes will be distributed as PTFs containing either object module or macro replacements with control statements used by the System Modification Program/Extended (SMP/E).

The normal process for applying maintenance to DB2 9 for z/OS includes the following steps:

1. Check for prerequisites and corequisites as well as additional steps that may be needed as noted in the following sections
2. Use SMP/E to receive and apply the fix.
3. Perform any needed special procedures.
4. Stop and start DB2 to make the fix active, as required.
5. Test the fix.
6. Accept the fix (after testing is complete).

Fixes to some parts of the subsystem or subsystem data may involve special procedures. For example, a BIND may be required for some changes. CLISTs and jobs that are customized during the installation process often require some additional work. When applicable, the install CLIST can be used for customizing. If the DSN6xxxx macros are changed, the DSNZPxxx subsystem parameters load module must be reassembled and link edited. For information on assembling and link editing DSNZPxxx, refer to the description of job DSNTIJUZ in the DB2 Installation Guide.

Notification of these required special procedures will be via the SMP/E EXCLUDE list, PTF prologues, and RETAIN information. The SMP/E control statement ++HOLD will be used when there is additional work necessary to incorporate the fix into the DB2 system.

### 3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 14 identifies the component IDs (COMPID) for DB2 9 for z/OS.

<i>Figure 14. Component IDs</i>			
<b>F MID</b>	<b>COMPID</b>	<b>Component Name</b>	<b>RETAIN Release</b>
HDB9910	5740XYR00	BASE/TSO	910
HIY9910	5740IY100	IMS ATTACH	910
HIZ9910	5740XYR01	SUBSYSTEM INIT	910
HIR2220	569516401	IRLM V2R2	220
HDRE910	5740DRE00	RACF AUTHORIZATION EXIT	910
JDB9912	5740XYR02	DB2 JDBC/SQLJ	912
JDB9914	5740XYR00	DB2 ENGLISH PANELS	914
JDB9917	5740XYR02	DB2 ODBC	917
JDB991X	5740XYR06	DB2 XML EXTENDER	91X
JDB9911	5740XYR00	DB2 KANJI PANELS	911

**Note:** Due to the size of the DB2 SVC dumps in the cross-memory environment, it is recommended that the SYS1.DUMPxx data set be transferred to a tape or a similar device. IPCS can be used to transfer the SYS1.DUMPxx data set contents to another data set for archiving until the problem is resolved.

Depending on the nature of the problem, the IBM Support Center may ask you to send in the entire dump on tape. This allows the Support Center to extract any additional data needed for problem resolution (for example, CSA, SQA, or the private storage area).

Refer to *z/OS V01.07.00 MVS Diagnosis: Tools and Service Aids (GA22-7589)* for information on transferring the SYS1.DUMPxx data set.

For information about the product life cycle dates for DB2 for z/OS and related products, see [www.ibm.com/software/db2zos/support/plc/index.html](http://www.ibm.com/software/db2zos/support/plc/index.html)

For information about the operating system availability and withdrawal-of-service dates, see [www.ibm.com/servers/eserver/zseries/zos/support/zos\\_eos\\_dates.html](http://www.ibm.com/servers/eserver/zseries/zos/support/zos_eos_dates.html)

For a variety of support-related information about DB2 for z/OS, see [www.ibm.com/software/db2zos/support.html](http://www.ibm.com/software/db2zos/support.html). At this site, you can click **Technotes**, specify V9 migration in the search field, and click **Go**.

---

## 4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of DB2 9 for z/OS. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs incorporated into the program.

---

### 4.1 Program Level Information

Please refer to the PSP Facility for DB2 9 for z/OS APAR information.

---

### 4.2 Service Level Information

PTFs containing APAR fixes against this release of DB2 9 for z/OS have been incorporated into the product tapes. For a list of included PTFs, examine the ++VER statement in the product's SMPMCS.

**Note**

The service level in which the PTF/APAR fixes were incorporated into the product tape is PDO 1238. There are several HOLD items associated with the incorporated DB2 and IRLM 2.2 fixes that you must be aware of and take necessary action as part of the installation of DB2 and IRLM 2.2.. These HOLDS are provided in the below technote:

<http://www-01.ibm.com/support/docview.wss?uid=swg21470318>

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### 4.3 Usage License Charges (ULC) Measurement and Reporting

Support for Usage License Charges is part of z/OS and DB2 9 for z/OS. By default, ULC detail is turned off to avoid overhead. To implement ULC, be sure that SMF record 89 is collected, USAGE PRICING DETAIL CPU may be changed to YES, (DSN6SYSP SMF89 parameter), lowering the amount of CPU time recorded, but increasing the total CPU used.

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## 5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DB2 9 for z/OS. The following terminology is used:

- *Driving system*: the system used to install the program.
- *Target system*: the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate copy of the running system which you can IPL. The clone should include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.
- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

For example, if you install DB2 9 for z/OS with IRLM V2R2 into the same SMP/e zone as any version of IMS currently running with IRLM V2R1, **IRLM V2R1 will be deleted by the installation of IRLM V2R2.**

**Note:** IBM recommends that levels of DB2 and IMS without a note of IRLM V2R2 support in their program directory, continue to run with IRLM V2R1.

---

### 5.1 Driving System Requirements

This section describes the environment of the driving system required to install DB2 9 for z/OS.

#### 5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

#### 5.1.2 Programming Requirements

Figure 15. Driving System Software Requirements

Program Number	Product Name and Minimum VRM/Service Level
Any <b>one</b> of the following:	
5694-A01	z/OS V1.07.0 or later
5655-G44	IBM SMP/E for z/OS V3.03.0 or later

## 5.2 Target System Requirements

This section describes the environment of the target system required to install and use DB2 9 for z/OS.

DB2 9 for z/OS installs in the DBS (P115) SREL.

### 5.2.1 Machine Requirements

DB2 9 for z/OS operates on any processor that supports z/Architecture, including IBM System z9, zSeries z800, z890, z900, z990, or a comparable processor. The processor must have enough real storage to satisfy the combined requirements of:

- DB2 9 for z/OS
- z/OS
- Other customer-required applications

The following restrictions apply:

- For z900 systems, microcode level 3G or later is required. For more information about how to determine or upgrade your microcode level you can search for technotes on this subject in one of the following two places:

At the DB2 for z/OS Support site at:

[www.ibm.com/software/db2zos/support.html](http://www.ibm.com/software/db2zos/support.html)

On the Web search page (under "Troubleshooting and support") in the Information Management Software for z/OS Solutions Information Center at:

<http://publib.boulder.ibm.com/infocenter/imzic>

- DB2 9 for z/OS may run on other compatible hardware that supports the Long Displacement Facility of the z/Architecture.
- Some workloads might require increased real storage when they run on Version 9.1 of DB2 for z/OS as compared to Version 8 of DB2 for z/OS. Sufficient disk storage must be available to satisfy the user's information storage requirements and can consist of any direct-access facility that is supported by the system configuration and the programming system.

In addition to listing auxiliary storage and data communication devices, the following section identifies function-dependent hardware requirements and virtual storage requirements.

### **Auxiliary Storage**

DB2 for z/OS is independent of both disk and tape device type. You can use any magnetic, optical or tape device that is supported by the data facilities component of z/OS for the DB2 data sets.

The following data set types are supported by the following device types:

- Active recovery log data sets: disk
- Archive recovery log data sets: disk, tape
- Image copy data sets: disk, tape
- Bootstrap data sets: disk
- User data sets: disk or tape (if migrated by DFSMSHsm(TM) )
- DB2 catalog data sets: disk
- Work data sets (for utilities): disk, tape

If these data sets are on disk that is shared with other z/OS systems, you should use global resource serialization to prevent concurrent access by more than one z/OS system. The minimum disk space requirement, based on installing DB2 9 for z/OS using the panel default values, is approximately 1 GB. You need additional disk space for your data. If you use dual logging and tape for the log archiving device, you need at least two tape drives.

### **Data Communications Devices**

DB2 operations can be controlled from

- The system console
- Authorized IMS Transaction Manager terminals
- Authorized CICS terminals
- TSO terminals (by authorized users)

For information about the data communication devices that are supported by IMS Transaction Manager, CICS, and z/OS, refer to the documentation for these products.

### **DRDA Data Stream Encryption**

DRDA Data Stream Encryption can use cryptographic hardware in a Cryptographic Coprocessor, Cryptographic Accelerator, or Cryptographic instructions.

DRDA Data Stream Encryption uses the following ICSF APIs : CSNECKM, CSNERNG, CSNFPKB, CSNFPKE, CSNEENC and CSNEDEC.

Refer to *z/OS ICSF Application Programmer's Guide* for additional information on the usage of these APIs including hardware requirements.

### **DRDA AES User ID Password Encryption**

DRDA AES User ID Password Encryption uses the following ICSF APIs: CSNEOWH, CSNERNG, CSNFPKB, CSNFPKE, CSNESYE and CSNESYD.

Refer to *z/OS ICSF Application Programmer's Guide* for additional information on the usage of these APIs including hardware requirements.

### **DSNLEUSR**

The use of DSNLEUSR stored procedure can optionally require cryptographic hardware in a Cryptographic Coprocessor, Cryptographic Accelerator or Cryptographic instructions..

DSNLEUSR uses the following ICSF APIs : CSNBCKM, CSNBENC, and CSNEDEC.

Refer to *z/OS ICSF Application Programmer's Guide* for additional information on the usage of these APIs including hardware requirements.

### **Encryption and decryption functions**

Built-in functions for encryption and decryption require cryptographic hardware in a Cryptographic Coprocessor, Cryptographic Accelerator or Cryptographic instructions.

### **Virtual Storage Requirements**

The amount of space that is needed for the common service area (CSA) below the 16-MB line is less than 40 KB for each DB2 for z/OS subsystem and 24 KB for each IRLM subsystem. High concurrent activity, parallelism, or high contention can require more CSA. Most of the DB2 common data resides in the extended common service area (ECSA). Most modules, control blocks, and buffers reside in the extended private area above the 16MB line and above the 2-GB bar.

DB2 9 for z/OS requires 128GB of 64-bit shared virtual storage for each DB2 subsystem above the 2-GB bar. This storage is virtual, controlled by the z/OS HVSHARE parameter in IEASYSxx. This storage is not backed at allocation, only as it is used.

## **5.2.2 Programming Requirements**

**5.2.2.1 Installation Requisites:** An installation requisite is defined as a product that is required and **must** be present or one that is not required but **should** be present on the system for the successful installation of this product.

A mandatory installation requisite identifies products that are required, without exception, or this product **will not install** on your system. This includes products specified as PREs or REQs.



Figure 16. Mandatory Installation Requisites

Program Number	Product Name and Minimum VRM/Service Level
5635-DB2	DB2 V9 for z/OS, which includes IRLM V02.02.00
Any <b>one</b> of the following:	
5694-A01	z/OS V01.07.00 or later, Base Services, DFSMS, Language Environment and Security Server (RACF), plus APAR OA16303
5655-G52	z/OS.e V01.07.00 or later, Base Services, DFSMS, Language Environment and Security Server (RACF), plus APAR OA16303

**Note:** z/OS Unicode Services APARs OA14231 and OA19072, and appropriate conversion definitions, are required.

**Note:** Some of the basic operation of a DBMS is provided by utility functions, such as backup, recovery, reorganization, loading and unloading data, gathering statistics and checking data, indexes and large objects. You should ensure that these functions are provided either by ordering DB2 Utilities Suite for z/OS, Version 9, (5655-N97), or by obtaining equivalent function elsewhere.

A conditional installation requisite identifies products that are **not** required for successful install but may resolve such things as certain warning messages at installation time. They include products that are specified as IF REQs.

DB2 9 for z/OS has no conditional installation requisites.

**5.2.2.2 Operational Requisites:** An operational requisite is defined as a product that is required and **must** be present or a product that is not required but **should** be present on the system in order for this product to operate all or some of its functions.

**NOTE**

DB2 9 for z/OS requires the "partitioned data set extended" or PDSE format for the SDSNLOAD target library. Prior versions of DB2 have allowed the regular partitioned data set or PDS format.

**There are some operational differences between PDS and PDSE data sets.** The PDS format may be shared by more than one z/OS system and no special precautions are necessary. However the PDSE format may only be shared by z/OS systems which are part of a sysplex or which are connected using a Global Resource Serialization or GRS ring. If z/OS systems share use of a PDSE data set outside of a sysplex or GRS environment, you may experience severe problems when the data set is updated. This is due to the fact that PDSE directory information is cached in storage, and when the data set is updated from one system the other system(s) have no knowledge of the update, and their cached directory information will be incorrect. In the case of DB2, this could lead to any variety of abends or incorrect operation.

You must take care not to share the SDSNLOAD data set between z/OS systems unless they are in a sysplex or are connected by a GRS ring. If you need to share the content of the SDSNLOAD data set, a separate copy must be created for each z/OS system, or sharing systems must IPL after the update is made. Refer to the PDESARING KWD on IGDSMSxx document in the publication z/OS MVS Initialization and Tuning Reference.

A mandatory operational requisite identifies a product which is required, without exception, or this product **will not operate** its basic function unless the requisite is met. This includes products specified as PREs or REQs.

*Figure 17. Mandatory Operational Requisites*

<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>
Any <b>one</b> of the following:	
5694-A01	z/OS V01.07.00 or later, plus APAR PQ92594 for DFSORT (see additional <b>Notes</b> below)
5655-G52	z/OS.e V01.07.00 or later, plus APAR PQ92594 for DFSORT (see additional <b>Notes</b> below)

**Note:** For **DDF FUNCTIONALITY**, please see DB2 9 for z/OS, Informational APAR II14203 for DDF/DRDA related maintenance.

**Note:** For Unicode data storage and manipulation capabilities in a 64 bit environment. DB2 9 for z/OS requires the z/OS Unicode Services and appropriate conversion definitions to perform most Unicode conversions. For additional information on Unicode conversions, please see the *DB2 Installation Guide, GC18-9846* and also *Support for Unicode: Using Conversion Services, SA22-7649*. For additional information on setup, read Information APARs II13048, and II13049, and go to:

<http://www.ibm.com/downloads>

<http://www.s390.ibm.com/os390/bkserv/v2r10books.html>

A conditional operational requisite identifies products that are **not required** for the basic function but are needed at run time for this product to utilize specific functions. They may include products specified as IF REQs.

<i>Figure 18 (Page 1 of 4). Conditional Operational Requisites</i>		
<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>	<b>Function</b>
5694-A01	z/OS V01.08.00, DFSMSHsm, DFSMSdss and FlashCopy V02.00.00	System level Utilities: BACKUP SYSTEM, RESTORE SYSTEM, and RECOVER
5694-A01	z/OS V01.07.00, DFSMSHsm, DFSMSdss and FlashCopy V02.00.00	System level utilities: BACKUP SYSTEM and RESTORE SYSTEM (if you cannot currently satisfy one or more of the preceding program requirements you can use the Version 8 of DB2 functions in the BACKUP SYSTEM and RESTORE SYSTEM utilities if you can satisfy these program requirements.
5694-A01	z/OS V01.07.00, DFSMSdss and FlashCopy V02.00.00 is highly recommended (although not technically required) for performance reasons	Utilities: CHECK INDEX, CHECK DATA, and CHECK LOB currently satisfy one or more of the preceding program requirements you can use the Version 8 of DB2 functions in the BACKUP SYSTEM and RESTORE SYSTEM utilities if you can satisfy these program requirements.
5694-A01	z/OS Cryptographic Services Integrated Cryptographics Service Facility (ICSF). To use Encryption you must have <b>SCSFMOD0 in LNKLST</b>	Built-in functions for Encryption and Decryption
5655-I56	IBM SDK for z/OS, Java 2 Technology Edition, Version 1.4 (SDK1.4.2)	Decimal Float conversion
5694-A01	You can optionally use z/OS Cryptographic Services Integrated Cryptographics Service Facility (ICSF). To use Encryption you must have <b>SCSFMOD0 in LNKLST</b>	DRDA Data Stream Encryption
5635-DB2	See Section <b>5.2.2.3 Optional Program Requirements</b> for details.	DRDA Connectivity

Figure 18 (Page 2 of 4). Conditional Operational Requisites

<b>Program Number</b>	<b>Product Name and Minimum VRM/Service Level</b>	<b>Function</b>
5694-A01	z/OS V01.07.00 Coupling Facility (CF) level 12 is required for all group buffer pool batching. -Coupling Facility (CF) level 13 is recommended for castout enhancement or the lock table clean up enhancement -Coupling Facility (CF) level 14 is recommended when using System Managed Duplexing for lock or SCA structures	Group Bufferpool (GBP) Batching
5655-C56	IMS V08.01.00 APARs PQ80039, PQ90404, PQ82033, PK04766, and PK09558.	IMS Attach toleration of SDSNLOAD PDSE allocation
5655-J38	IMS V09.01.00 APARs PQ82493, PQ89871, PQ84553, PK04774, and PK09519.	IMS Attach toleration of SDSNLOAD PDSE allocation
5694-A01	z/OS V01.04.00 DB2 Customization Center plug-in for msys	msys plug-in (you must retain and install the msys for Setup components from z/OS V01.04.00)
5694-A01	z/OS V01.07.00 or later (Language Environment in Base Services)	Application Execution: Applications written in high-level programming languages, such as applications or stored procedures written in the C language and using the ODBC interfaces to DB2
5655-I56	IBM SDK for z/OS, Java 2 Technology Edition, Version 1.4 (SDK1.4.2)	Application Execution: Applications or stored procedures written in Java, such as those using the JDBC or SQLJ interfaces to DB2
5694-A01	z/OS V01.07.00 or later (Language Environment) z/OS V.01.7.00 or later (UNIX System Services), activated IBM XML Parser for z/OS, C++ Edition, which is provided with Release 1.9 for XML Toolkit for z/OS (5655-J51). 5655-J51 requires z/OS Version 1 Release 6 or later.	XML Extender
5694-A01	UNIX System Services element of z/OS	XMLFile type or the 'Getting Started' material
5694-A01	XML System Services (XMLSS). XMLSS requires either z/OS V01.08.00 or z/OS Version V01.07.00 with APAR OA16303. In addition, use of XML schemas requires 31-bit SDK for z/OS, Java 2 Technology Edition, Version 5 (5655-N98) (SDK5)	XML support
5655-N01	If you use WebSphere Application Server for z/OS, requires V06.01.00	Trusted contexts

Figure 18 (Page 3 of 4). Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
	RACF SAF User-mapping plug-in Enterprise Identity Mapping (EIM) requires z/OS, V01.08.00	Trusted contexts
	Full RACF support of roles (not limited to ownership checks for roles only), RACF Access Control Module (DSNXRXAC) requires z/OS, V01.08.00	Trusted contexts
	IBM WebSphere Data Integration Suite, which consists of the following products: <ul style="list-style-type: none"> <li>- IBM WebSphere DataStage for z/OS</li> <li>- IBM WebSphere DataStage MVS Edition</li> <li>- IBM WebSphere DataStage Service Oriented Architecture (SOA Edition)</li> <li>- IBM WebSphere DataStage TX for z/OS Edition</li> <li>- IBM WebSphere QualityStage for z/OS</li> <li>- IBM WebSphere DataStage Changed Data Capture DB2 z/OS</li> <li>- IBM WebSphere DataStage for DB2 Warehouse</li> </ul>	Data Warehouse Support
5655-L82	IBM WebSphere MQ V06.00.00, or later	MQListener
5724-B56	DB2 Connect V09.01.00 Fix pack 1 for ODBC Support of MERGE.  <b>Note:</b> There is no support for embedded static SQL support.	Web Connectivity using ODBC MERGE and SELECT from MERGE
5724-B56	DB2 Connect at one of the following levels: Version 9.5 (with fix pack 1 or later) or Version 9.1 (with fix pack 1 or later) or Version 8.1 (with fix pack 13 or later, which is equivalent to Version 8.2 with fix pack 6). Note any of the following editions are supported: <ul style="list-style-type: none"> <li>- DB2 Connect Personal Edition (CPE) (5724-B56)</li> <li>- DB2 Connect Enterprise Edition (CEE) (5765-F30)</li> <li>- DB2 Connect Unlimited Edition for zSeries (CUE) (5724-B62)</li> <li>- DB2 Connect Application Server Edition (CASE) (5724-D54)</li> <li>- DB2 Connect Unlimited Edition for iSeries (5724-M15)</li> </ul>	Web Connectivity to DB2 9 for z/OS
5724-B62	DB2 Connect Unlimited Edition for zSeries V08.02.00 (Fix pack 13 or later is required to use with DB2 9 for z/OS)	Web Connectivity to DB2 9 for z/OS
5724-D54	DB2 Connect Application Server Edition V08.02.00 (Fix pack 13 or later is required to use with DB2 9 for z/OS)	Web Connectivity to DB2 9 for z/OS

Figure 18 (Page 4 of 4). Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
Any <b>one</b> of the following:		
5755-N01	WebSphere Application Server for z/OS V06.01.00	Web Connectivity to DB2 9 for z/OS
5724-H89	WebSphere Application Server for Developers	Web Connectivity to DB2 9 for z/OS
5724-H88	WebSphere Application Server Network Deployment	Web Connectivity to DB2 9 for z/OS
5724-I63	WebSphere Application Server - Express	Web Connectivity to DB2 9 for z/OS
Any <b>one</b> of the following:		
5655-J38	Information Management System (IMS) V09.01.00	Transaction Management
5655-C56	Information Management System (IMS) V08.01.00	Transaction Management
5655-M15	Customer Information Control System (CICS) Transaction Server for z/OS V03.01.00	Transaction Management
5697-E93	Customer Information Control System (CICS) Transaction Server for z/OS V02.03.00	Transaction Management
5655-L82	WebSphere MQ for z/OS V06.00.00	Transaction Management
5655-F10	WebSphere MQ for z/OS V05.03.01	Transaction Management
5724-E84	WebSphere MQ Extended Security Edition V06.00.00	Transaction Management
5655-BPM	WebSphere MQ Workflow for z/OS V03.06.00	Transaction Management
5697-FM3	WebSphere MQ Workflow for Multiplatforms V03.06.00	Transaction Management
	<ul style="list-style-type: none"> <li>- WebSphere Application Server</li> <li>- CICS Transaction Server</li> <li>- IBM TXSeries (CICS and Encina)</li> <li>- WebSphere MQ</li> <li>- Microsoft Transaction Server (MTS)</li> <li>- BEA (Tuxedo and WebLogic)</li> <li>- Java applications that support Java Transaction API (JTA) and Java 2 Platform, Enterprise Edition (J2EE)</li> </ul>	Application environments that use DB2 Connect to access DB2 9 for z/OS remotely can use any of these transaction manager products.

**5.2.2.3 Optional Program Requirements:** The following functions are enabled in conjunction with the specified optional licensed programs when used together with DB2.

- **DRDA Connectivity:** DB2 9 for z/OS supports any of the following IBM relational database products:
  - In the Linux, UNIX, and Windows environment, either Version 9.1 of IBM DB2 for Linux, UNIX, and Windows (with fix pack 1 or later) or Version 8.1 of DB2 Universal Database (DB2 UDB) for Linux, UNIX, and Windows (with fix pack 13 or later). (Version 8.1 with fix pack 13 is equivalent to Version 8.2 with fix pack 6). Any of the following editions are supported:
    - DB2 Enterprise Server Edition (ESE) (5765-F41)

- DB2 Workgroup Server Edition (5765-F35)
- DB2 Workgroup Server Unlimited Edition (5765-F43)
- DB2 Universal Database Universal Developer's Edition (5765-F34)
- IBM DB2 Universal Database for iSeries OS/400 Version 5 Release 3 (5722-SS1) (Info APAR I113348), including the following options:
  - DB2 DataPropagator for iSeries Version 8 Release 1 (5722-DP4)
  - DB2 Query Manager and SQL Development Kit for iSeries (5722-ST1)
- IBM DB2 Server for VSE & VM Version 7 Release 4 (5697-F42)
- Any other DRDA-compliant client or relational DBMS server

**Note:** For **DDF FUNCTIONALITY**, please see DB2 9 for z/OS, Informational APAR I114203 for DDF/DRDA related maintenance.

## Development Tools

The following application development tools can be used to build applications for DB2 9 for z/OS:

- DB2 Development Center, or IBM Developer Workbench, both of which are included in all editions of DB2, DB2 Connect, and DB2 Software Developer's Kit (SDK).
- WebSphere Studio Enterprise Developer V05.01.02 (5724-B67), which has the following program requirements of its own: **Program Requirements:**
  - IBM SDK for z/OS, Java 2 Technology Edition, Version 1.4 (5655-I56) (SDK1.4.2) For more information about Java 2 for z/OS, including a link to software prerequisites, visit:  
[www.ibm.com/servers/eserver/zseries/software/java/](http://www.ibm.com/servers/eserver/zseries/software/java/)  
<http://www.ibm.com/servers/eserver/zseries/software/java/>
- IBM WebSphere Developer for System z(TM) Version 7.0 (5724-L44)
- IBM Rational tools, including those listed here:
  - IBM Rational Application Developer for WebSphere Software Version 6.0 (5724-J19)
  - IBM Rational Web Developer for WebSphere Software Version 6.0 (5724-J18)
  - IBM Rational Data Architect Version 7.0 (5724-L66) or Version 6.1 (5724-L66)
  - IBM Rational Software Architect Version 6.0 (5724-I70)

For more information on IBM Rational products, visit:

[www.ibm.com/software/rational](http://www.ibm.com/software/rational)

- IBM DB2 Alphablox for Linux, UNIX, and Windows Version 8.4 (5724-L14)

## Programming Languages

The following application development programming languages can be used to build applications for DB2 9 for z/OS:

Building applications using the **DB2 precompiler:**

**Assembler** High Level Assembler, which is part of the System Services element of z/OS. Note that PTF UK14811 is required for DFP support on z/OS Version 1 Release 7 and later

**C/C++** C/C++ (with or without Debug Tool), which are optional features of z/OS

- COBOL** Enterprise COBOL for z/OS Version 3 Release 3 (5655-G53) or later. Please note Enterprise COBOL for z/OS Version 3 Release 3 is going End of Service April 2007
- Fortran** VS Fortran Version 2 Release 6 (5668-806). Note that data types that are new to DB2 9 for z/OS are not supported
- PL/I** IBM Enterprise PL/I for z/OS Version 3 Release 4 (5655-H31) or later

Building applications by using the **DB2 coprocessor**:

- C/C++** C/C++ (with or without Debug Tool), are optional features of z/OS Version 1 Release 8

Use of the DB2 Coprocessor can use any of the following:

- (5694-A01) z/OS V1R7 C/C++ with APAR PK20435 for C
- (5694-A01) z/OS V1R7 C/C++ with APAR PK33665 for C++
- (5694-A01) z/OS V1R8 C/C++ with APAR PK33170 for C++ (no APAR required for C)

**Note:** Use of DB2 9 for z/OS new functions requires z/OS Version 1 Release 8 plus APAR PK38679.

- COBOL** Enterprise COBOL for z/OS Version 3 Release 4 (5655-G53) or later.

**Note:** Use of DB2 9 for z/OS new functions requires Enterprise COBOL Version 3 Release 4 plus APAR PK09731.

- PL/I** IBM Enterprise PL/I for z/OS Version 3 Release 4 (5655-H31) or later

**Note:** Use of DB2 9 for z/OS new functions requires Enterprise COBOL Version 3 Release 4.

Building applications that are **supported with processes other than precompiler or coprocessor**:

- Java** Applications or stored procedures written in Java, such as those using the JDBC or SQLJ interfaces to DB2 for z/OS, require IBM SDK for z/OS, Java 2 Technology Edition Version 1.4 (SDK1.4.2). Two editions are available: the 31-bit edition (5655-O56) and the 64-bit edition (5655-M30). However, the 64-bit edition does not support persistent reusable function.

Sharing class objects between Java virtual machine (JVM) processes that run in the same address space requires IBM SDK for z/OS, Java 2 Technology Edition Version 1.4 (SDK1.4.2). Two editions are available: 31-bit edition (5655-I56) and the 64-bit edition (5655-M30); these are independent products that can coexist on the same z/OS system.

- REXX** IBM TSO Extensions for MVS REXX, which is part of z/OS

### SQL Procedure Language

- External SQL Procedure Language

A C language compiler is required on z/OS to develop stored procedures using the external SQL procedural language. Specific C compiler to use is C/C++ (with or without Debug Tool), which are optional features of z/OS.

Native SQL Procedure Language does not require a C compiler



## APL2

- Mainframe APL2 Version 2 Release 2 (5688-228) (full APL2)
- APL2 Application Environment Version 2 Release 2 (5688-229)

**5.2.2.4 Operational Support:** The following programs can provide operational support for DB2 9 for z/OS:

- DFSMS features, which are part of the Systems Management optional feature of z/OS, specifically:
  - DFSMSHsm for archiving
  - DFSMSDss for concurrent copy in Utilities
- IBM Softcopy Reader or Library Readers, which are included on the CD-ROMs for BookManager books
- WebSphere Information Integrator Replication for z/OS Version 8 Release 2 (5655-L88), which can be used in DB2 9 for z/OS conversion mode. IBM WebSphere Replication Server Version 9 (5655-R55) and IBM Data Event Publishes Version 9 work with the following DB2 for z/OS versions:
  - DB2 9 for z/OS
  - DB2 Universal Database for z/OS, Version 8 (5625-DB2)
  - DB2 for z/OS and OS/390, Version 7 (5675-DB2)

To work with a DB2 9 for z/OS source server in new-function mode, you must install IBM WebSphere Replication Server Version 9 and you must migrate your QCapture control tables because of changes in the DB2 log record format for new-function mode.

- The following IBM tools:
  - IBM DB2 Tools for Recovery Management
  - IBM DB2 Tools for Application Management
  - IBM DB2 Tools for Database Administration
  - IBM DB2 Tools for Utilities Management
  - IBM DB2 Tools for Business Analysis
  - IBM WebSphere Information Integration Tools
  - IBM DB2 Tools for Performance Management

The minimum levels of two key database performance-management tools are IBM Tivoli® OMEGAMON® XE for DB2 Performance Expert on z/OS, Version 4 (5655-Q07) and IBM Tivoli OMEGAMON XE for DB2 Performance Monitor on z/OS, Version 4 (5655-Q08). Both of these tools require APAR PK36297 for support of new functions that are available in DB2 Version 9.1 for z/OS. Details about other performance-management products can be found on the Web sites that are listed below.

For a current list of products, visit the IBM DB2 and IMS Tools Web page at [www.ibm.com/software/data/db2imstools](http://www.ibm.com/software/data/db2imstools)

For recent news about DB2 Tools compatibility with DB2 Version 9.1 for z/OS, visit the IBM DB2 and IMS Tools Support Web page at [www.ibm.com/software/data/db2imstools/support.html](http://www.ibm.com/software/data/db2imstools/support.html)

- IBM Tivoli Decision Support for z/OS (5698-A07), Version 1.7.2 with APAR PK30134, or Version 1.7.1

- Database Administration and Systems Management Support is provided by the DB2 Management Clients Package, an optional feature of DB2 Version 9.1 for z/OS, which includes:
  - DB2 Administration Server (DAS) (z/OS installable component)
  - z/OS Enablement (z/OS installable component)
  - DB2 Connect Personal Edition Kit (workstation CD), which includes the following tools and a limited-use license for these tools to access DB2 Version 9.1 for z/OS:
    - Control Center
    - Replication Center
    - Development Center
    - Command Center
    - IBM Developer Workbench

The DB2 Connect limited-use license is also authorized for use with IBM DB2 for z/OS Optimization Service Center (workstation CD included in 5655-R14, IBM Accessories Suite for DB2 for z/OS).

If you have any questions about information in these sections which identified the requirements that are associated with specific DB2 capabilities, as well as optional programs that you can use with DB2 Version 9.1 for z/OS, refer to the following Web sites for the most current information, including support for subsequent versions or versions of products listed here:

**5.2.2.5 Query Support:** The following query programs work with DB2 9.1 for z/OS:

- Currently supported releases of QMF Management Facility (QMF) Classic Edition and Enterprise Edition. Certain versions of QMF may require that you apply PTF maintenance for QMF to operate properly. See the following web page for details:  
<http://www.ibm.com/support/docview.wss?rs=434&uid=swg21256800>
- DataQuant for z/OS V1R2 (5697-N64)

**5.2.2.6 Toleration/Coexistence Requisites:** A toleration/coexistence requisite is defined as a product that must be present on a sharing system. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD at different time intervals.

DB2 9 for z/OS has no toleration/coexistence requisites.

**5.2.2.7 Incompatibility (Negative) Requisites:** A negative requisite identifies products that must *not* be installed on the same system as this product.

The requirement for 64-bit virtual addressing means that z/OS Bimodal Migration Accommodation software cannot be used with DB2 9 for z/OS.

## 5.2.3 DASD Storage Requirements

DB2 9 for z/OS libraries can reside on all supported DASD types.

Figure 19 on page 29 lists the total space required for each type of library.

<i>Figure 19. Total DASD Space Required by DB2 9 for z/OS</i>	
<b>Library Type</b>	<b>Total Space Required</b>
Target	10690 (3390 tracks)
Distribution	10348 (3390 tracks)
HFS	usr/lpp/db2910_base (16576 512 byte blocks)
	usr/lpp/db2910_jdbc (7640 512 byte blocks)
	usr/lpp/db2910_mql (3144 512 byte blocks)
	usr/lpp/db2910_worf (2456 512 byte blocks)

### Notes:

1. IBM recommends use of system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.
2. Abbreviations used for the data set type are:
  - U** Unique data set, allocated by this product and used only by this product. To determine the correct storage needed for this data set, this table provides all required information; no other tables (or Program Directories) need to be referenced for the data set size.
  - S** Shared data set, allocated by this product and used by this product and others. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other Program Directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
  - E** Existing shared data set, used by this product and others. This data set is NOT allocated by this product. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information on the names and sizes of the required data sets, please refer to 6.1.7, "Allocate SMP/E Target and Distribution Libraries" on page 40.

3. Abbreviations used for the HFS Path type are:

- N** New path, created by this product.
- X** Path created by this product, but may already exist from a previous release.
- P** Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:

- The default name of the data set may be changed.
- The default block size of the data set may be changed.
- The data set may be merged with another data set that has equivalent characteristics.
- The data sets SDSNLOAD and SDSNLOD2 **must** be **PDSE**.

5. All target libraries listed have the following attributes:

- The data set may be SMS-managed.
- It is not required for the data set to be SMS-managed.
- It is not required for the data set to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.

6. All target libraries listed which contain load modules have the following attributes:

- The data set may be in the LPA.
- It is not required for the data set to be in the LPA.
- The data set may be in the LNKLIST.
- It is not required for the data set to be APF-authorized.

The following table provides an estimate of the storage needed in the SMP/E data sets for DB2 9 for z/OS. The estimates must be added to those of any other programs and service being installed to determine the total additional storage requirements.

If the table indicates that the SMPLTS data set must be a PDSE, but, your existing SMPLTS is a PDS, you will need to allocate a new PDSE and copy your existing SMPLTS into it and then change the SMPLTS DDDEF entry to indicate the new PDSE data set.

<i>Figure 20. Storage Requirements for SMP/E Data Sets</i>						
<b>Library DDNAME</b>	<b>T Y P E</b>	<b>O R G A N I Z A T I O N</b>	<b>R E C O R D L E N G T H</b>	<b>L O A D I N T E R F A C E</b>	<b>No. of 3390 Trks</b>	<b>No. of DIR Blks</b>
SMPLTS	U	PDSE	U	0	1560	N/A
SMPMTS	E	PDS	FB	80	15	60
SMPPTS	E	PDS	FB	80	3765	300
SMPSCDS	E	PDS	FB	80	975	300
SMPSTS	E	PDS	FB	80	75	150

The following figures describe the target and distribution libraries and HFS paths required to install DB2 9 for z/OS. The storage requirements of DB2 9 for z/OS must be added to the storage required by other programs having data in the same library or path.

**Note:** The data in these tables should be used when determining which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

*Figure 21 (Page 1 of 2). Storage Requirements for DB2 9 for z/OS Target Libraries*

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SDSNBASE	Sample	Any	S	PDS	FB	80	41	25
SDSNCHDR	Data	Any	S	PDS	FB	80	21	4
SDSNCLST	CLIST	Any	S	PDS	FB	80	159	20
SDSNDBRM	Macro	Any	S	PDS	FB	80	93	25
SDSNEXIT	Data	Any	S	PDS	U	0	6	30
SDSNIVPD	Data	Any	S	PDS	VB	8188	461	3
SDSNLINK	LMOD	Any	S	PDS	U	0	7	5
SDSNLOAD	LMOD	Any	S	PDSE	U	0	5688	N/A
SDSNLOD2	LMOD	Any	S	PDSE	U	0	338	N/A
SDSNMACS	Macro	Any	S	PDS	FB	80	713	50
SDSNPFPE	Panel	Any	S	PDS	FB	80	40	100
SDSNPFPK	Panel	Any	S	PDS	FB	80	78	100
SDSNSAMP	Sample	Any	S	PDS	FB	80	2386	100
SDSNSPFM	Message	Any	S	PDS	FB	80	7	10
SDSNSPFP	Panel	Any	S	PDS	FB	80	81	15
SDSNSPFS	SKEL	Any	S	PDS	FB	80	6	5
SDSNSPFT	Table	Any	S	PDS	FB	80	3	5
SDSNXML	Sample	Any	U	PDS	VB	255	4	5
SDXRRESL	LMOD	Any	S	PDS	U	0	126	10
SDXRSAMP	Sample	Any	S	PDS	FB	80	6	3
SDXXADM	Data	Any	U	PDS	VB	255	26	5
SDXXC	Data	Any	U	PDS	FB	80	7	5
SDXXCLI	Data	Any	U	PDS	VB	255	4	5
SDXXCLP	Data	Any	U	PDS	VB	255	2	5

Figure 21 (Page 2 of 2). Storage Requirements for DB2 9 for z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D S	L R E C O R D S	No. of 3390 Trks	No. of DIR Blks
SDXXCMD	Data	Any	U	PDS	VB	255	4	5
SDXXDAD	Data	Any	U	PDS	VB	255	2	5
SDXXDBRM	Macro	Any	U	PDS	FB	80	7	5
SDXXDTD	Data	Any	U	PDS	VB	255	2	5
SDXXH	Data	Any	U	PDS	FB	80	3	5
SDXXJCL	Sample	Any	U	PDS	FB	80	11	5
SDXXJDBC	Sample	Any	U	PDS	VB	255	4	5
SDXXLOAD	LMOD	Any	U	PDSE	U	0	301	N/A
SDXXSDDF	Text	Any	U	PDS	FB	80	51	20
SDXXXML	Sample	Any	U	PDS	VB	255	2	5

The following types of data sets are created during the DB2 9 for z/OS installation process. The sizes are based upon user preferences:

- CATALOG
- DIRECTORY
- LOG

Figure 22 (Page 1 of 2). DB2 9 for z/OS HFS Paths

DDNAME	TYPE	Path Name
SDSNABIN	N	/usr/lpp/db2910_base/bin/IBM/
SDSNACLS	N	/usr/lpp/db2910_base/classes/IBM/
SDSNAHFS	N	/usr/lpp/db2910_base/IBM/
SDSNALIB	N	/usr/lpp/db2910_base/lib/IBM/
SDSNASMP	N	/usr/lpp/db2910_base/samples/IBM/
SDSNJBIN	N	/usr/lpp/db2910_jdbc/bin/IBM/
SDSNJCLS	N	/usr/lpp/db2910_jdbc/classes/IBM/
SDSNJCC	N	/usr/lpp/db2910_jdbc/IBM/
SDSNJLIB	N	/usr/lpp/db2910_jdbc/lib/IBM/
SDSNJSMP	N	/usr/lpp/db2910_jdbc/samples/IBM/
SDSNMQLS	N	/usr/lpp/db2910_mql/IBM/

Figure 22 (Page 2 of 2). DB2 9 for z/OS HFS Paths

DDNAME	TYPE	Path Name
SDSNWORF	N	/usr/lpp/db2910_worf/IBM/
SDSNWLIB	N	/usr/lpp/db2910_worf/lib/IBM/
SDSNWSCH	N	/usr/lpp/db2910_worf/schemas/IBM/
SDSNWTLB	N	/usr/lpp/db2910_worf/tools/lib/IBM/

Figure 23 (Page 1 of 2). Storage Requirements for DB2 9 for z/OS Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
ADSNBASE	U	PDS	FB	80	41	30
ADSNDKF	S	PDS	FB	80	78	100
ADSNENU	S	PDS	FB	80	23	100
ADSNHFS	U	PDS	VB	255	376	10
ADSNIVPD	S	PDS	VB	8188	461	3
ADSNLOAD	S	PDSE	U	0	5001	N/A
ADSNLOD2	S	PDSE	U	0	801	N/A
ADSNMACS	S	PDS	FB	80	2886	100
ADSNXML	U	PDS	VB	255	4	5
ADXRLOAD	S	PDS	U	0	140	70
ADXRSAMP	S	PDS	FB	80	6	3
ADXXADM	U	PDS	VB	255	26	5
ADXXC	U	PDS	FB	80	13	5
ADXXCLI	U	PDS	VB	255	4	5
ADXXCLP	U	PDS	VB	255	2	5
ADXXCMD	U	PDS	VB	255	4	5
ADXXDAD	U	PDS	VB	255	2	5
ADXXDBRM	U	PDS	FB	80	6	5
ADXXDTD	U	PDS	VB	255	2	5
ADXXH	U	PDS	FB	80	3	5
ADXXJCL	U	PDS	FB	80	11	5
ADXXJDBC	U	PDS	VB	255	4	5

Figure 23 (Page 2 of 2). Storage Requirements for DB2 9 for z/OS Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
ADXXLOAD	U	PDSE	U	0	401	N/A
ADXXSDDF	U	PDS	FB	80	51	20
ADXXXML	U	PDS	VB	255	2	5

### 5.3 FMIDs Deleted

Installing DB2 9 for z/OS may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install DB2 9 for z/OS into separate SMP/E target and distribution zones.

**Note:** These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

### 5.4 Special Considerations

DB2 9 for z/OS has no special considerations for the target system.

**Note**

The service level in which the PTF/APAR fixes were incorporated into the product tape is PDO 1238. There are several HOLD items associated with the incorporated DB2 and IRLM 2.2 fixes that you must be aware of and take necessary action as part of the installation of DB2 and IRLM 2.2.. These HOLDS are provided in the below technote:

<http://www-01.ibm.com/support/docview.wss?uid=swg21470318>



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## 5.5 Migration, Fallback, and Remigration

**Migration to DB2 9 for z/OS is permitted only from DB2 for z/OS Version 8** and DB2 for z/OS Version 8 must be running in New Function Mode (NFM).

To prepare for migration to DB2 9 for z/OS, you must apply APAR PK11129 and start DB2 prior to migrating. Please read the HOLD data for PK11129, and note that, due to the possibility of prerequisite APARs, it may be necessary to acquire additional APARs not related to fallback. See APAR II12423 for additional APAR information, and see *DB2 Installation Guide, GC18-9846* for details on Migration, Fallback, and Remigration steps. Please download the latest version of the *DB2 Installation Guide, GC18-9846* from the following Website before proceeding:

**<http://www.ibm.com/software/data/db2/zos/v9books.html>**

For additional information about migrating to DB2 9 for z/OS, please read Information APAR II14224.

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## 6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of DB2 9 for z/OS.

Please note the following:

- If you want to install DB2 9 for z/OS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.
- Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.
- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

---

### 6.1 Installing DB2 9 for z/OS

#### 6.1.1 SMP/E Considerations for Installing DB2 9 for z/OS

This release of DB2 9 for z/OS is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

#### 6.1.2 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 24. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

<b>SUB-ENTRY</b>	<b>Value</b>	<b>Comment</b>
DSSPACE	400,400,400	3390 DASD Tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.
UTILITY	IEWBLINK	Program Binder must be used for installation of <b>DB2 V9, JDBC/SQLJ</b>

### 6.1.3 SMP/E CALLLIBS Processing

DB2 9 for z/OS uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When DB2 9 for z/OS is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB
- SCEEBIND
- SCEEBND2
- SCEELIB
- SCEELKED
- SCEELKEX
- SCSFMOD0

**Note:** The DDDEFs above are used only to resolve the link-edit for DB2 9 for z/OS using CALLLIBS. These data sets are not updated during the installation of DB2 9 for z/OS.

### 6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install DB2 9 for z/OS:

<i>Figure 25 (Page 1 of 2). Sample Installation Jobs</i>			
<b>Job Name</b>	<b>Job Type</b>	<b>Description</b>	<b>RELFILE</b>
DSNTIJAA	SMP/E	Sample job to create the CSI and allocate the SMP/E control data sets ( <b>Optional</b> )	IBM.HDB9910.F3
DSNRECV1	RECEIVE	Sample RECEIVE job for DB2	IBM.HDB9910.F3
DSNRECV2	RECEIVE	Sample RECEIVE job for IRLM	IBM.HDB9910.F3
DSNRECV3	RECEIVE	Sample RECEIVE job for ODBC/JDBC/SQLJ	IBM.HDB9910.F3
DSNRECV4	RECEIVE	Sample RECEIVE job for DB2 Kanji Panels	IBM.HDB9910.F3
DXXRECEV	RECEIVE	Sample RECEIVE job for XML Extender	IBM.HDB9910.F3
DSNALLOC	ALLOCATE	Sample job to allocate target and distribution libraries and define SMP/E DDDEFs	IBM.HDB9910.F3
DSNASMKD	MKDIR	Sample job to invoke the supplied DSNAMKDR EXEC to allocate HFS paths for DB2 base	IBM.HDB9910.F3
DSNL SMKD	MKDIR	Sample job to invoke the supplied DSNLMKDR EXEC to allocate HFS paths for MQL listener	IBM.HDB9910.F3
DSNWSMKD	MKDIR	Sample job to invoke the supplied DSNWMKDR EXEC to allocate HFS paths for WORF	IBM.HDB9910.F3
DSNISMKD	MKDIR	Sample job to invoke the supplied DSNMKDIR EXEC to allocate HFS paths for JDBC/SQLJ	IBM.HDB9910.F3
DSNDDEF1	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HDB9910.F3
DSNTIJUD	OPTIONAL	Clean up job	IBM.HDB9910.F3

Figure 25 (Page 2 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
DSNAPPL1	APPLY	Sample APPLY CHECK and APPLY job	IBM.HDB9910.F3
DSNACEP1	ACCEPT	Sample ACCEPT CHECK and ACCEPT job	IBM.HDB9910.F3

You may also choose to copy the jobs from the tape or product files by submitting the job below. Use either the //TAPEIN or the //FILEIN DD statement, depending on your distribution medium, and comment out or delete the other statement. Add a job card and change the lowercase parameters to uppercase values to meet your site's requirements before submitting.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HDB9910.F3,UNIT=tunit,
// VOL=SER=volser,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HDB9910.F3,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(20,10,10))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=xxxxIN,OUTDD=OUT
/*
```

In the sample above, update the statements as noted below:

If using TAPEIN:

**tunit** is the unit value matching the product tape.

**volser** is the volume serial matching the product tape.

**x** is the tape file number where the data set name is on the tape.

Refer to the documentation provided by CBPDO to see where IBM.HDB9910.F3 is on the tape.

If using FILEIN

**filevol** is the volume serial of the DASD device where the downloaded files reside.

OUT

**jcl-library-name** is the name of the output data set where the sample jobs will be stored.

**dasdvol** is the volume serial of the DASD device where the output data set will reside.

SYSIN

**xxxxIN** is either TAPEIN or FILEIN depending on your input DD statement.

You can access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the relfiles to a work data set for editing and submission. See Figure 25 on page 37 to find the appropriate relfile data set.

### Special Considerations:

- It is assumed that DB2 9 for z/OS and IRLM V2R2 are installed into the same zones. If this is not the case, you will need to modify jobs DSNALLOC, DSNDDDEF1 and DSNAPPL1.
- Recompile your existing Validation Exit Routines to pick up the updated version of the macro DSNDRVAL. No logic change is required. Although it is optional to recompile your Validation Exit Routine, it is recommended.

### 6.1.5 Allocate CSI and SMP/E Control data sets

Edit and submit **optional** sample job DSNTIJAA to create the desired CSI for DB2 9 for z/OS. Please note this job allocates some data sets in **PDSE** format, as appropriate. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** You will get a condition code of 0 if the job runs correctly.

### 6.1.6 Perform SMP/E RECEIVE

Having obtained DB2 9 for z/OS as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the DB2 9 for z/OS FMIDs as well as any service, HOLDDATA, or preventive service planning (PSP) information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

You can also choose to edit and submit the following sample jobs to perform the SMP/E RECEIVE for DB2 9 for z/OS. Consult the instructions in the sample jobs for more information.

- Edit and submit sample job DSNRECV1 to perform the SMP/E RECEIVE for DB2 9 for z/OS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** This job should complete with a condition code of 0 if the job runs correctly.

- Edit and submit sample job DSNRECV2 to perform the SMP/E RECEIVE for IRLM V2R2. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** This job should complete with a condition code of 0 if the job runs correctly.

- Edit and submit sample job DSNRECV3 to perform the SMP/E RECEIVE for ODBC/JDBC/SQLJ. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** This job should complete with a condition code of 0 if the job runs correctly.

- Edit and submit sample job DSNRECV4 to perform the SMP/E RECEIVE for DB2 Kanji Panels. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** This job should complete with a condition code of 0 if the job runs correctly.

- Edit and submit sample job DXXRECEV to perform the SMP/E RECEIVE for XML Extender. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** This job should complete with a condition code of 0 if the job runs correctly.

## 6.1.7 Allocate SMP/E Target and Distribution Libraries

- Edit and submit sample job DSNALLOC to allocate the SMP/E target and distribution libraries for DB2 9 for z/OS. Consult the instructions in the sample job for more information.

Refer back to the Operational Requisites section of this document for information about allocations of PDSE data sets.

**Expected Return Codes and Messages:** You will get a condition code of 0 if the job runs correctly.

## 6.1.8 Allocate HFS Paths

**6.1.8.1 Allocating HFS Data Sets:** If you plan to install the HFS components of DB2 9 for z/OS into a separate HFS data set instead of installing into the root file system, you can use the following sample JCL to allocate an HFS data set. Add a job card and modify the parameters in boldface to uppercase values to meet your site's requirements before submitting.

```
//ALLOCHFS EXEC PGM=IEFBR14
//SYSPRINT DD SYSOUT=*
//*
//SDSNAHFS DD DSN=db2hlq.SDSNAHFS,
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=dunit,
//          SPACE=(CYL,(5,1,1)),
//          DSNTYPE=HFS,STORCLAS=storclas
//*
```

where **db2hlq** is the high level data set qualifier used for this DB2, **dasdvol** is the volume serial of the DASD device where the data set will reside, **dunit** is the DASD unit type of the volume, and **storclas** is an appropriate SMS storage class defined on the your system.

## Optional

If you have decided to install the HFS components of DB2 9 for z/OS into a separate HFS data set instead of installing into the root file system, mount the new HFS data set created in step 6.1.8.1, "Allocating HFS Data Sets," on the DB2 base HFS install mountpoint. (The following command must be on one line.)

```
TSO MOUNT FILESYSTEM('db2hlq.SDSNAHFS')
MOUNTPOINT('/user-defined-prefix/usr/lpp/db2910_base') TYPE(HFS)
```

Where db2hlq is the high level data set qualifier used in step 6.1.8.1, "Allocating HFS Data Sets."

Where 'user-defined-prefix' is the value you have chosen for your alternate installation directory. If you have chosen the default installation directory, do not specify a value for 'user-defined-prefix'.

After mounting the new HFS data set, it is necessary to re-apply the directory permission bits. This may be accomplished using the following TSO command:

```
TSO OSHELL chmod 755 /usr/lpp/db2910_base
```

Please read the additional instructions for DSNASMKD:

```
/** IF YOU ARE APPLYING THIS FUNCTION FOR THE FIRST TIME, */
/** THE MKDIR EXEC WILL RESIDE IN AN SMP/E TEMPORARY */
/** LIBRARY SO UPDATE //SYSEEXEC STATEMENT AS BELOW. */
/** //SYSEEXEC DD DSN=dsprefix.HDB9910.F3, */
/** CHANGE dsrefix TO THE QUALIFIER SPECIFIED FOR DSPREFIX */
/** OPTIONS ENTRY OF THE GLOBAL ZONE THAT WAS USED TO */
/** SMP/E RECEIVE THIS FUNCTION. */
/** */
/** IF YOU ARE RUNNING THIS JOB TO INSTALL SERVICE ON A */
/** FUNCTION THAT HAS ALREADY BEEN APPLYed, THE MKDIR EXEC */
/** WILL RESIDE IN A TARGET LIBRARY, SO USE THE EXISTING */
/** STATEMENT BELOW */
/** //SYSEEXEC DD DSN=hlqual.SDSNBASE, */
/** CHANGE hlqual TO THE APPROPRIATE HIGH-LEVEL QUALIFIER */
/** THAT COMPLIES WITH YOUR SITE'S NAMING STANDARDS. */
/** 'DSN910' IS SUGGESTED AS YOUR HIGH-LEVEL QUALIFIER. */
/** */
```

- Edit and submit sample job DSNASMKD to allocate the HFS paths for DB2 base, which includes msys. You must run this job as part of the DB2 installation. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** You will get a condition code of 0 if these jobs run correctly.

If you plan to install DB2 9 for z/OS MQListener into a separate HFS data set instead of installing into the root file system, you can use the following sample JCL to allocate an HFS data set. Add a job card and modify the parameters in boldface to uppercase values to meet your site's requirements before submitting.

```
//ALLOCHFS1 EXEC PGM=IEFBR14
//SYSPRINT DD SYSOUT=*
//*
//SDSNMQLS DD DSN=db2hlq.SDSNMQLS,
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=dunit,
//          SPACE=(CYL,(5,1,1)),
//          DSNTYPE=HFS,STORCLAS=storclas
//*
```

Where **db2hlq** is the high level data set qualifier used for this DB2, **dasdvol** is the volume serial of the DASD device where the data set will reside, **dunit** is the DASD unit type of the volume, and **storclas** is an appropriate SMS storage class defined on the your system.

#### Optional

If you have decided to install MQListener into a separate HFS data set instead of installing into the root file system, mount the new HFS data set created in step 6.1.8.1, "Allocating HFS Data Sets" on page 40, on the MQListener HFS install mountpoint. (The following command must be on one line.)

```
TSO MOUNT FILESYSTEM('db2hlq.SDSNMQLS')
MOUNTPOINT('/user-defined-prefix/usr/lpp/db2910_mql') TYPE(HFS)
```

Where db2hlq is the high level data set qualifier used in step 6.1.8.1, "Allocating HFS Data Sets" on page 40.

Where 'user-defined-prefix' is the value you have chosen for your alternate installation directory. If you have chosen the default installation directory, do not specify a value for 'user-defined-prefix'.

After mounting the new HFS data set, it is necessary to re-apply the directory permission bits. This may be accomplished using the following TSO command:

```
TSO OSHELL chmod 755 /usr/lpp/db2910_mql
```

Please read the additional instructions for DSNLSMKD:



```

/** IF YOU ARE APPLYING THIS FUNCTION FOR THE FIRST TIME, */
/** THE MKDIR EXEC WILL RESIDE IN AN SMP/E TEMPORARY */
/** LIBRARY SO UPDATE //SYSEXEC STATEMENT AS BELOW. */
/** //SYSEXEC DD DSN=dsprefix.HDB9910.F3, */
/** CHANGE dsprefix TO THE QUALIFIER SPECIFIED FOR DSPREFIX */
/** OPTIONS ENTRY OF THE GLOBAL ZONE THAT WAS USED TO */
/** SMP/E RECEIVE THIS FUNCTION. */
/** */
/** IF YOU ARE RUNNING THIS JOB TO INSTALL SERVICE ON A */
/** FUNCTION THAT HAS ALREADY BEEN APPLIED, THE MKDIR EXEC */
/** WILL RESIDE IN A TARGET LIBRARY, SO USE THE EXISTING */
/** STATEMENT BELOW */
/** //SYSEXEC DD DSN=h1qua1.SDSNBASE, */
/** CHANGE h1qua1 TO THE APPROPRIATE HIGH-LEVEL QUALIFIER */
/** THAT COMPLIES WITH YOUR SITE'S NAMING STANDARDS. */
/** 'DSN910' IS SUGGESTED AS YOUR HIGH-LEVEL QUALIFIER. */
/** */

```

- Edit and submit sample job DSNLSMKD to allocate the HFS paths for MQListener. You must run this job as part of the DB2 installation. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** You will get a condition code of 0 if these jobs run correctly.

If you plan to install DB2 9 for z/OS WOrk into a separate HFS data set instead of installing into the root file system, you can use the following sample JCL to allocate an HFS data set. Add a job card and modify the parameters in boldface to uppercase values to meet your site's requirements before submitting.

```

//ALLOCHFS2 EXEC PGM=IEFBR14
//SYSPRINT DD SYSOUT=*
/**
//SDSNAHFS DD DSN=db2h1q.SDSNWOrF,
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=dunit,
//          SPACE=(CYL,(5,1,1)),
//          DSNTYPE=HFS,STORCLAS=storclas
/**

```

Where **db2h1q** is the high level data set qualifier used for this DB2, **dasdvol** is the volume serial of the DASD device where the data set will reside, **dunit** is the DASD unit type of the volume, and **storclas** is an appropriate SMS storage class defined on the your system.

## Optional

If you have decided to install the HFS components of DB2 9 for z/OS WORF into a separate HFS data set instead of installing into the root file system, mount the new HFS data set created in step 6.1.8.1, “Allocating HFS Data Sets” on page 40, on the DB2 9 for z/OS WORF HFS install mountpoint. (The following command must be on one line.)

```
TSO MOUNT FILESYSTEM('db2hlq.SDSNWORF')  
MOUNTPOINT('/user-defined-prefix/usr/lpp/db2910_worf') TYPE(HFS)
```

Where db2hlq is the high level data set qualifier used in step 6.1.8.1, “Allocating HFS Data Sets” on page 40.

Where 'user-defined-prefix' is the value you have chosen for your alternate installation directory. If you have chosen the default installation directory, do not specify a value for 'user-defined-prefix'.

After mounting the new HFS data set, it is necessary to re-apply the directory permission bits. This may be accomplished using the following TSO command:

```
TSO OSHELL chmod 755 /usr/lpp/db2910_worf
```

Please read the additional instructions for DSNWSMKD:

```
/** IF YOU ARE APPLYING THIS FUNCTION FOR THE FIRST TIME, */  
/** THE MKDIR EXEC WILL RESIDE IN AN SMP/E TEMPORARY */  
/** LIBRARY SO UPDATE //SYSEXEC STATEMENT AS BELOW. */  
/** //SYSEXEC DD DSN=dsprefix.HDB9910.F3, */  
/** CHANGE dsprefix TO THE QUALIFIER SPECIFIED FOR DSPREFIX */  
/** OPTIONS ENTRY OF THE GLOBAL ZONE THAT WAS USED TO */  
/** SMP/E RECEIVE THIS FUNCTION. */  
/** */  
/** IF YOU ARE RUNNING THIS JOB TO INSTALL SERVICE ON A */  
/** FUNCTION THAT HAS ALREADY BEEN APPLYed, THE MKDIR EXEC */  
/** WILL RESIDE IN A TARGET LIBRARY, SO USE THE EXISTING */  
/** STATEMENT BELOW */  
/** //SYSEXEC DD DSN=hlqua1.SDSNBASE, */  
/** CHANGE hlqua1 TO THE APPROPRIATE HIGH-LEVEL QUALIFIER */  
/** THAT COMPLIES WITH YOUR SITE'S NAMING STANDARDS. */  
/** 'DSN910' IS SUGGESTED AS YOUR HIGH-LEVEL QUALIFIER. */  
/** */
```

- Edit and submit sample job DSNWSMKD to allocate the HFS paths for DB2 9 for z/OS WORF which includes msys. You must run this job as part of the DB2 installation. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** You will get a condition code of 0 if these jobs run correctly.

If you plan to install DB2 9 for z/OS JDBC/SQLJ into a separate HFS data set instead of installing into the root file system, you can use the following sample JCL to allocate an HFS data set. Add a job card and modify the parameters in boldface to uppercase values to meet your site's requirements before submitting.

```
//ALLOCHFS3 EXEC PGM=IEFBR14
//SYSPRINT DD SYSOUT=*
//*
//SDSNJCC DD DSN=db2hlq.SDSNJCC,
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=dunit,
//          SPACE=(CYL,(5,1,1)),
//          DSNTYPE=HFS,STORCLAS=storclas
//*
```

Where **db2hlq** is the high level data set qualifier used for this DB2, **dasdvol** is the volume serial of the DASD device where the data set will reside, **dunit** is the DASD unit type of the volume, and **storclas** is an appropriate SMS storage class defined on the your system.

#### Optional

If you have decided to install JDBC/SQLJ into a separate HFS data set instead of installing into the root file system, mount the new HFS data set created in step 6.1.8.1, "Allocating HFS Data Sets" on page 40, on the JDBC/SQLJ HFS install mountpoint. (The following command must be on one line.)

```
TSO MOUNT FILESYSTEM('db2hlq.SDSNJCC')
MOUNTPOINT('/user-defined-prefix/usr/lpp/db2910_jdbc') TYPE(HFS)
```

Where db2hlq is the high level data set qualifier used in step 6.1.8.1, "Allocating HFS Data Sets" on page 40.

Where 'user-defined-prefix' is the value you have chosen for your alternate installation directory. If you have chosen the default installation directory, do not specify a value for 'user-defined-prefix'.

After mounting the new HFS data set, it is necessary to re-apply the directory permission bits. This may be accomplished using the following TSO command:

```
TSO OSHELL chmod 755 /usr/lpp/db2910_jdbc
```

Please read the additional instructions for DSNISMKD:

```

/** IF YOU ARE APPLYING THIS FUNCTION FOR THE FIRST TIME, */
/** THE MKDIR EXEC WILL RESIDE IN AN SMP/E TEMPORARY */
/** LIBRARY SO UPDATE //SYSEXEC STATEMENT AS BELOW. */
/** //SYSEXEC DD DSN=dsprefix.HDB9910.F3, */
/** CHANGE dsprefix TO THE QUALIFIER SPECIFIED FOR DSPREFIX */
/** OPTIONS ENTRY OF THE GLOBAL ZONE THAT WAS USED TO */
/** SMP/E RECEIVE THIS FUNCTION. */
/** */
/** IF YOU ARE RUNNING THIS JOB TO INSTALL SERVICE ON A */
/** FUNCTION THAT HAS ALREADY BEEN APPLIED, THE MKDIR EXEC */
/** WILL RESIDE IN A TARGET LIBRARY, SO USE THE EXISTING */
/** STATEMENT BELOW */
/** //SYSEXEC DD DSN=h1qua1.SDSNBASE, */
/** CHANGE h1qua1 TO THE APPROPRIATE HIGH-LEVEL QUALIFIER */
/** THAT COMPLIES WITH YOUR SITE'S NAMING STANDARDS. */
/** 'DSN910' IS SUGGESTED AS YOUR HIGH-LEVEL QUALIFIER. */
/** */

```

- Edit and submit sample job DSNISMKD to allocate the HFS paths for DB2 9 for z/OS JDBC/SQLJ. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** You will get a condition code of 0 if the job runs correctly.

If you plan to create a new HFS for this product, you should consider updating the BPXPRMxx PARMLIB member to mount the new HFS at IPL time. This may be helpful if an IPL occurs before the installation is complete.

## 6.1.9 Create DDDEF Entries

- Edit and submit sample job DSNDDDEF1 to create DDDEF entries for the SMP/E target and distribution libraries for DB2 9 for z/OS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** You will get a condition code of 0 if the job runs correctly.

**Note:** If you decide to install the JDBC/SQLJ FMID in to an alternate install directory, you will need to modify job DSNDDDEF1 to specify your *'user-defined-prefix'*. Consult the instructions in the sample job for more information, and please be aware that, though all JCL must normally be in uppercase to run, HFS path names may be mixed case. Be careful when editing DSNDDDEF1 to ensure that the mixed case in the job is preserved.

## 6.1.10 Optional: Cleanup job for migration: DSNTIJUD

Job DSNTIJUD should be run before the SMP/E APPLY (job DSNAPPL1). Running job DSNTIJUD is not necessary if you are installing DB2 9 for z/OS for the first time. If you accidentally run it, it will have no adverse effect.

**Expected Return Codes and Messages:** This job should complete with a return code 4 or less.

## 6.1.11 Perform SMP/E APPLY

Edit and submit sample job DSNAPPL1 to perform an SMP/E APPLY CHECK for DB2 9 for z/OS. Consult the instructions in the sample job for more information. Ensure FMIDs are listed in the following order: HDB9910, HIY9910 and HIZ9910 together, then HIR2220.

Perform an SMP/E APPLY CHECK for DB2 9 for z/OS.

### Note

The service level in which the PTF/APAR fixes were incorporated into the product tape is PDO 1238. There are several HOLD items associated with the incorporated DB2 and IRLM 2.2 fixes that you must be aware of and take necessary action as part of the installation of DB2 and IRLM 2.2.. These HOLDS are provided in the below technote:

<http://www-01.ibm.com/support/docview.wss?uid=swg21470318>

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Enhanced HOLDDATA introduced ERROR HOLDS against FMIDs for HIPER APARs. Prior to installing, you should ensure you have the latest Enhanced HOLDDATA (available at url <http://service.software.ibm.com/holddata/390holddata.html>). The FMID(s) should be installed regardless of the status of unresolved HIPERs, however, the software should not be deployed until the unresolved HIPERs have been analyzed to determine applicability.

There are two methods to complete an FMID installation where ++HOLDS for HIPERs exist for the FMID(s) being installed:

1. To ensure that all critical service is installed with the FMID(s), add the SOURCEIDs of PRP, and HIPER to the APPLY command. There may be PE or HIPER APARs that do not have resolving PTFs available yet. You need to analyze the symptom flags to determine if you want to BYPASS the specific ERROR HOLDS and continue the FMID installation.

```
APPLY S(fmid,fmid,...)
FORFMID(fmid,fmid,...)
SOURCEID(PRP,HIPER,...)
GROUPEXTEND .
```

This method requires more initial research, but will provide resolution for all HIPERs that have fixes available and are not in a PE chain. There may still be unresolved PEs or HIPERs that require the use of BYPASS.

2. To install the FMID(s) as it would have been installed prior to Enhanced HOLDDATA, you can add a BYPASS(HOLDCLASS(HIPER)) operand to the APPLY command. This will allow the FMID to be installed even though there are HIPER ERROR HOLDS against it. Note that not all ERROR HOLDS

were bypassed, only the HIPER ERROR HOLDS. After the FMID(s) are installed, the SMP/E REPORT ERRSYSMODS command should be run to identify any missing HIPER maintenance.

```
APPLY S(fmid,fmid,...)
BYPASS(HOLDCLASS(HIPER))
other parameters documented in the program directory...
```

This method is the quicker of the two, but requires subsequent review of the REPORT ERRSYSMODS to investigate any HIPERs.

If you bypass any HOLDS during the installation of the FMID(s) because fixing PTFs were not yet available you can use the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink to be notified when the fixing PTF is available.

Once you have taken any actions indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

**Note:** The GROUPEXTEND operand indicates that SMP/E apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Expected Return Codes and Messages from APPLY CHECK:** This job should complete with a return code 4 or less, and may issue any of the following messages that do not affect product installation:

- GIM23903W, GIM23913W, GIM43401W, GIM61903W, GIM67301W, GIM69138W
- IEW2480W, IEW2482W, IEW2454W, IEW2609W, IEW2646W

**Note:** All messages pertaining to members with prefix name 'DSN' or 'DXR' can be ignored. If this job fails or abends, correct the problem and rerun the job.

**Expected Return Codes and Messages from APPLY:** This job should complete with a return code 4 or less, and may issue any of the following messages that does not affect product installation:

- GIM23903W, GIM23913W, GIM43401W, GIM61903W, GIM67301W, GIM69138W
- IEW2480W, IEW2482W, IEW2454W, IEW2609W, IEW2646W

**Note:** All messages pertaining to members with prefix name 'DSN' can be ignored. If this job fails or abends, correct the problem and rerun the job.

## 6.1.12 Perform SMP/E ACCEPT

Edit and submit sample job DSNACEP1 to perform an SMP/E ACCEPT CHECK for DB2 9 for z/OS. Consult the instructions in the sample job for more information.

Perform an SMP/E ACCEPT CHECK for DB2 9 for z/OS.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

Once you have taken any actions indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

**Note:** The GROUPEXTEND operand indicates that SMP/E accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Expected Return Codes and Messages from ACCEPT CHECK:** This job should complete with a return code 4 or less. You may receive message GIM61903W.

**Expected Return Codes and Messages from ACCEPT:** This job should complete with a return code 4 or less. You may receive message GIM61903W.

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored, because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

### 6.1.13 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command will identify requisites defined for products that have been installed in separate zones. This command will also create APPLY and ACCEPT commands in the SMPPUNCH data set that you can use to install those cross-zone requisites it identifies.

After you have installed DB2 9 for z/OS, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries describing all the target and distribution libraries to be reported on.

For more information on REPORT CROSSZONE, see the SMP/E manuals.

## 6.1.14 Set Up Controls for English Panel Selection

Each of the display language control techniques described below is a way to set or change the current allocation of the DDNAMES.

**6.1.14.1 Logon Procedures:** To switch languages, you need only change the data set allocation currently in effect under the standard ISPF panel library DDNAME. A user's logon procedure can allocate DDNAME ISPPLIB to select the current display language. Following is an example from a logon procedure:

```
/**                THIS VERSION DISPLAYS ENGLISH PANELS */
//ISPPLIB DD DSN=DSN910.SDSNSPPF,DISP=SHR      ENGLISH
//                DD DSN=DSN910.SDSNPFPE,DISP=SHR      ENGLISH
```

**6.1.14.2 Language-switching CLISTs:** An ordinary CLIST can be used (outside of ISPF) to free and reallocate ISPPLIB. Following is an example of a CLIST:

```
PROC 0 LANGUAGE(E)          /* Execute this CLIST outside of ISPF */
FREE DD(ISPPLIB)
WRITE Do you want English or Japanese panels: Enter E or J.
READ &LANGUAGE
IF &LANGUAGE = E +
    THEN ALLOC DD(ISPPLIB) DS('DSN910.SDSNSPPF' 'DSN910.SDSNPFPE') +
        SHR /* English */
    ELSE ALLOC DD(ISPPLIB) DS('DSN910.SDSNSPPF' 'DSN910.SDSNPFPE') +
        SHR /* Japanese */
```

Some users allocate the ISPF panel library from their DEFAULT CLIST. Allocation of DDNAME ISPPLIB controls the current language just as it does for the LOGON procedure.

## 6.1.15 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The following data sets, allocated and used by previous releases of this product, are no longer used in this release. You may choose to delete these obsolete data sets after you delete the previous release from your system.

Please refer to job DSNTIJUD in the Sample Installation Jobs table for more information.

The following HFS paths, created and used by previous releases of this product, are no longer used in this release. You may choose to delete these obsolete HFS paths after you delete the previous release from your system.

- usr/lpp/db2/db2710/
- usr/lpp/db2810/
- usr/lpp/db2mq1810/
- usr/lpp/db2810\_msys/



- usr/lpp/db2810\_worf/
- usr/lpp/db2ext\_07\_01\_00/
- usr/lpp/db2ext\_08\_01\_00/
- usr/lpp/db2tx/

The following DDDEF entries, created and used by previous releases of this product, are no longer used in this release. You may choose to delete these obsolete DDDEF entries after you delete the previous release from your system.

ADESDB2I	ADMBSAMP	SDESSCR1	SDMBSMPC
ADESHFS1	ADMBSMP	SDMBBASE	SDMBSMPH
ADESJCL1	ADMBSMPC	SDMBDBRM	SDSNBKS
ADESMOD1	ADMBSMPH	SDMBEXP	SDSNCLAS
ADMBBASE	ADSNBKS	SDMBEXP2	SDSNINDEX
ADMBDBRM	ADSNINDEX	SDMBLOA2	SDSNINST
ADMBEXP	ADSNINST	SDMBLOAD	SDSNJDBC
ADMBEXP2	ADSNSHLF	SDMBMAC2	SDSNOBIN
ADMBLOA2	SDESDB2I	SDMBMACS	SDSNOLIB
ADMBLOAD	SDESHFS1	SDMBSAMP	SDSNOSP1
ADMBMAC2	SDESJCL1	SDMBSMP	SDSNSHLF
ADMBMACS	SDESMOD1		

---

## 6.2 Activating DB2 9 for z/OS

The publication *DB2 Installation Guide, GC18-9846* contains the step-by-step procedures to activate the functions of DB2 9 for z/OS.

### 6.2.1 HFS Execution

If you choose to have any of the HFS functions that you have installed, mounted in read-only mode during execution, then no further tasks are required to accomplish this.

- **msys:** Refer to publication: *Managed System Infrastructure for Setup Installation (SC33-7997)* for additional information and instructions to activate msys.
- **MQListener:** Refer to publication: *DB2 9 for z/OS Application Programming and SQL Guide (SC18-9841)* which provides information about MQListener. A README file is included with MQListener which documents additional instructions regarding the use of MQListener. The README file is installed to the following HFS file by running job DSNTIJML:

```
/usr/lpp/db2910_mq1/listener/README
```

- **JDBC Driver:** A README file is included with the JDBC Driver that documents additional instructions regarding the use of JDBC Driver. The README file is installed to the following HFS file that is created during the SMP/E APPLY step:

```
/usr/lpp/db2910_jdbc/README
```

---

## Appendix A. Included PTFs for DB2 9 for z/OS

---

### A.1 Included PTFs for FMID HIR2220

- FMID HIR2220

UK02488	UK15076	UK34736	UK50522	UK56996	UK68555
UK02778	UK15841	UK37941	UK50523	UK57680	UK69953
UK04485	UK16057	UK38073	UK50525	UK58815	UK72194
UK04865	UK16124	UK39437	UK51423	UK59338	UK73955
UK06058	UK16503	UK40078	UK51453	UK59947	UK75693
UK07062	UK17556	UK40296	UK52560	UK60306	UK76630
UK07431	UK18216	UK42215	UK53455	UK60439	UK77876
UK10422	UK18241	UK43896	UK53457	UK60950	UK77884
UK10447	UK18652	UK44263	UK54108	UK61477	UK78605
UK10454	UK19131	UK45701	UK54387	UK62065	UK78778
UK12331	UK20151	UK45704	UK54625	UK62155	UK79003
UK13840	UK20342	UK46177	UK54762	UK62170	UK79285
UK13975	UK20563	UK46417	UK54763	UK63650	UK79363
UK13977	UK21089	UK46865	UK54838	UK63937	UK79709
UK14216	UK31968	UK47043	UK55224	UK65149	UK80505
UK14531	UK31970	UK47758	UK55650	UK65702	UK80551
UK14534	UK32699	UK47878	UK55889	UK66173	UQ91678
UK14615	UK34478	UK48386	UK56995	UK66258	

---

### A.2 Included PTFs for FMID HDB9910

- FMID HDB9910

UK15092	UK15146	UK15736	UK16117	UK16968	UK18080
UK15094	UK15147	UK15737	UK16119	UK17378	UK18081
UK15099	UK15148	UK15738	UK16126	UK17379	UK18082
UK15100	UK15668	UK15739	UK16431	UK17388	UK18083
UK15125	UK15725	UK15740	UK16432	UK17389	UK18084
UK15136	UK15726	UK15741	UK16433	UK17390	UK18157
UK15137	UK15727	UK15742	UK16434	UK17772	UK18180
UK15138	UK15728	UK15765	UK16435	UK17773	UK18198
UK15139	UK15729	UK16092	UK16436	UK17774	UK18409
UK15140	UK15730	UK16093	UK16437	UK17775	UK18410
UK15141	UK15731	UK16097	UK16438	UK17784	UK18411
UK15142	UK15732	UK16103	UK16964	UK17785	UK18412
UK15143	UK15733	UK16110	UK16965	UK17830	UK18413
UK15144	UK15734	UK16112	UK16966	UK17890	UK18414
UK15145	UK15735	UK16115	UK16967	UK18079	UK18415

UK18419	UK20421	UK23318	UK24001	UK24755	UK25655
UK18741	UK20423	UK23375	UK24030	UK24778	UK25666
UK18743	UK20424	UK23383	UK24075	UK24815	UK25744
UK18744	UK20425	UK23398	UK24082	UK24817	UK25783
UK18745	UK20426	UK23404	UK24101	UK24844	UK25809
UK18746	UK20430	UK23410	UK24121	UK24850	UK25823
UK18747	UK20431	UK23425	UK24143	UK24857	UK25826
UK18748	UK21239	UK23434	UK24187	UK24885	UK25842
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### A.3 Included PTFs for FMID HIY9910

- FMID HIY9910

UK16970  
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### A.4 Included PTFs for FMID HIZ9910

- FMID HIZ9910

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UK20427					



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## **A.5 Included PTFs for FMID HDRE910**

- FMID HDRE910

UK21268  
UK55938  
UK62634

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## **A.6 Included PTFs for FMID JDB9914**

- FMID JDB9914

UK17393	UK37399	UK44463
UK17776		UK70884

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## **A.7 Included PTFs for FMID JDB9912**

- FMID JDB9912

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## **A.8 Included PTFs for FMID JDB9917**

- FMID JDB9917

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Distributed Relational Database Architecture	SystemPac
DFSMS/VM	SQL/DS
DFSMSdfp	TCP/IP
DFSMSdss	Tivoli
DFSMSHsm	Unix
DFSMS/MVS	VTAM
DRDA	WebSphere
Language Environment	z/OS
OpenEdition	zSeries

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Open Database Connectivity	Microsoft Corporation
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Java Database Connectivity	Sun Microsystems
Java Virtual Machine	Sun Microsystems
JDBC	Sun Microsystems

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**Note:** COBOL is used to represent the IBM COBOL language

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# Reader's Comments

## Program Directory for IBM DB2 9 for z/OS, November, 2012

You may use this form to comment about this document, its organization, or subject matter with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

For each of the topics below please indicate your satisfaction level by circling your choice from the rating scale. If a statement does not apply, please circle N.

RATING SCALE						
very satisfied	<----->				very dissatisfied	not applicable
1	2	3	4	5	N	

	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of Program Directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
Time to install the product	1	2	3	4	5	N
Readability and organization of Program Directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

How did you order this product?

- CBPDO
- CustomPac
- ServerPac
- Independent
- Other

Is this the first time your organization has installed this product?

- Yes
- No

Were the people who did the installation experienced with the installation of z/OS products?

- Yes





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