IBM

Program Directory for

IBM DB2 Universal Database for z/OS

V08.01.00

Program Number 5625-DB2
FMIDs HDB8810, HIY8810, HIZ8810, HIR2220

for Use with
z/OS

Service Level PDO0424

Document Date: July 2004

GI10-8566-02

```
┌─ Note! ──────────────────────────────────────────────────────────────────────┐
│                                                                                │
│ Before using this information and the product it supports, be sure to read the general information under Appendix B, "Notices" │
│ on page 64.                                                                    │
│                                                                                │
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Contents

Figures

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 Universal Database for z/OS. This publication refers to IBM DB2 Universal Database for z/OS as DB2 for z/OS V8.

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 5 identifies the basic and optional program materials and documentation for DB2 for z/OS V8.

- 3.0, "Program Support" on page 13 describes the IBM support available for DB2 for z/OS V8.

- 4.0, "Program and Service Level Information" on page 17 lists the APARs (program level) and PTFs (service level) incorporated into DB2 for z/OS V8.

- 5.0, "Installation Requirements and Considerations" on page 18 identifies the resources and considerations required for installing and using DB2 for z/OS V8.

- 6.0, "Installation Instructions" on page 37 provides detailed installation instructions for DB2 for z/OS V8. It also describes the procedures for activating the functions of DB2 for z/OS V8, or refers to appropriate publications.

Before installing DB2 for z/OS V8, 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 13 tells you how to find any updates to the information and procedures in this Program Directory.

DB2 for z/OS V8 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 for z/OS V8 are included on the CBPDO tape.

Do not use this Program Directory if you are installing DB2 for z/OS V8 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 for z/OS V8 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, or CICS environments. Utilities can also run via stored procedure. IBM provides attachment facilities to connect DB2 to each of these environments.

- IRLM V2R2

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

- msys for Setup DB2 Customization Center

msys for Setup DB2 Customization Center is enabled for the IBM Managed System Infrastructure (msys). The DB2 Customization Center provides installation and customization for DB2 for z/OS V8 DB2 Customization Center is available as a plug-in for msys for Setup and therefore requires msys for Setup (available in z/OS v01.04.00) In addition, msys for Setup has three components:

1. msys workplace code, which runs on the workstation and provides the user with a Windows Explorer-style GUI to manage z/OS products. The workplace code has to be downloaded from the z/OS host.

2. msys host program, which runs on a driving system that manages all installation/customization tasks.

3. msys management directory, which uses an LDAP server to store the configuration data for all msys-enabled products.

- RACF Authorization Exit

DSNXRXAC is the IBM-supplied "plug-in" which allows RACF to be used to control access to DB2 objects. DSNXRXAC augments existing RACF controls, such as connection controls and protection for DB2's data stores with RACF controls for DB2 objects, such as tables, views, indices, table spaces, data bases, buffer pools, etc. Use of RACF as the access control manager allows the definition of access lists before the data objects exists, and allow the access lists to exist after a data object is deleted.

- REXX Language Support

Provides REXX Language Support for DB2 access from REXX programs running either in a standard MVS Rexx procedure environment or for stored procedures written to use the REXX language.

- ODBC

DB2 Open Database Connectivity (ODBC) is IBM's callable SQL interface used by the DB2 family of products. It is a 'C' and 'C++ ' application programming interface for relational database access, and it uses function calls to pass dynamic SQL statements as function arguments. It is an alternative to embedded dynamic SQL, but unlike embedded SQL, it does not require a precompiler.

DB2 ODBC is based on the Microsoft ™ Open Database Connectivity (ODBC) specification, and the X/Open Call Level Interface specification. These specifications were chosen as the basis for DB2

ODBC in an effort to follow industry standards and to provide a shorter learning curve for those application programmers already familiar with either of these data source interfaces. In addition, some DB2 specific extensions were added to help the DB2 application programmer specifically exploit DB2 features.

- JDBC/SQLJ

The Java Database Connectivity (JDBC) feature of DB2 for z/OS V8 provides Java for z/OS and OS/390 applications access to local DB2 for z/OS data or remote relational data stored at some DRDA Application Server. The DB2 for z/OS JDBC function is provided by two separate driver implementations. As in previous versions of DB2 for z/OS and OS/390, a Type 2 driver (one of four types of JDBC drivers defined by JavaSoft) is provided, based on the JDBC 2.0 specification. A Type 2 driver translates JDBC calls into native DBMS programming requests.

Also provided is the DB2 Universal JDBC Driver which is a new JDBC and SQLJ driver implementation that is being provided with DB2 on multiple platforms and that can operate as a Type 2 Driver or as a Type 4 Driver. A Type 4 Driver operates as a pure-Java, stand-alone client that translates JDBC calls into the network protocol used by the DBMS - in this case DRDA. This driver is based on the JDBC 3.0 specification.

Included in both drivers is support for SQLJ applications. SQLJ is an industry standard for providing support for embedded static SQL within java applications. SQLJ was initially developed to complement the dynamic SQL JDBC model with a static SQL model which would provide the vehicle for better performance. Applications using dynamic SQL will continue to use JDBC, while applications which want the functional and performance benefits of a static SQL model with use SQLJ.

- DB2 Image, Audio, Video (IAV) Extenders

IAV Extenders provide the capacity to handle and store new complex data types. The DB2 Extenders build on the object-relational infrastructure of DB2. Each extender provides a UDT for its domain, and UDFs for requesting operations specific to its data type. Each extender package also provides stored procedures for implementing administrative requests, and triggers that ensure referential integrity between image, audio, and video objects and their stored attributes. For example, the Image Extender defines a UDT for image objects, and included UDFs for operations as varied as retrieving images from a table or querying attributes such as the number of colors in an image.

- DB2 Text Extender

Text Extender adds the power of full-text retrieval to SQL queries. Using the Text Extender, you can search unstructured documents of up to 2 gigabytes in size in a DB2 database. The Text Extender provides a UDT needed for text indexing, and UDFs for requesting operations. Text Extender offers a lot of search power and flexibility. For example, you can search for documents that contain specific text, synonyms, or words in proximity, such as in the same sentence. You can also search through many thousands of large text documents at high speed, finding not only what you directly ask for, but also word variations and synonyms.

- DB2 XML Extender

DB2 XML Extender with support for data using the XML data type. This extender allows you to store an XML object either:

  - in an XML column for the entire document

– in several columns containing the fields from the document structure

1.2 DB2 for z/OS V8 FMIDs

DB2 for z/OS V8 consists of the following FMIDs:

1. **Required FMIDs:**

   HDB8810 (DB2 Base/TSO, msys plug-in, REXX Language Support)

   HIY8810 (IMS Attach - must be installed even if you do not have IMS)

   HIZ8810 (Subsystem Initialization)

   HIR2220 (IRLM V2R2)

   HDRE810 (DB2 RACF Authorization Exit)

   JDB8814 (DB2 English Panels)

2. **Optional FMIDs:**

   HDB881A (Online Help Books and Bookshelves)

   JDB8812 (DB2 JDBC/SQLJ)

   JDB8817 (DB2 ODBC)

   JDB881B (DB2 IAV Extenders)

   JDB881C (DB2 Text Extender)

   JDB881X (DB2 XML Extender)

   JDB8811 (DB2 Kanji Panels)

2.0 Program Materials

An IBM program is identified by a program number. The program number for DB2 for z/OS V8 is 5625-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 for z/OS V8. 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 37 for more information about how to install the program.

Information about the physical tapes for the Basic Machine-Readable Materials for DB2 for z/OS V8 can be found in the *CBPDO Memo To Users Extension*.

Figure 1 describes the physical tapes.

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┌─ NOTE! ─────────────────────────────────────────────────────────────────────
│ If DB2 for z/OS V8 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.
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Figure 3 on page 6 describes the file content.

Figure 1 (Page 1 of 2). Basic Material: Program Tapes - DB2 for z/OS				
Medium	**Feature Number**	**Physical Volume**	**External Label**	**VOLSER**
3480 cart.	6020	1 of 7	DB2 Vol1	DB8810
		2 of 7	DB2 Vol2	DB881A
		3 of 7	IRLM V2R2	IR2220
		4 of 7	ODBC JDBC/SQLJ	DB8817

Figure 1 (Page 2 of 2). Basic Material: Program Tapes - DB2 for z/OS				
Medium	**Feature Number**	**Physical Volume**	**External Label**	**VOLSER**
		5 of 7	IAV Extenders	DB881B
		6 of 7	Text Extender	DB881C
		7 of 7	XML Extender	DB881X
4mm cart.	6022	1 of 7	DB2 Vol1	DB8810
		2 of 7	DB2 Vol2	DB881A
		3 of 7	IRLM V2R2	IR2220
		4 of 7	ODBC JDBC/SQLJ	DB8817
		5 of 7	IAV Extenders	DB881B
		6 of 7	Text Extender	DB881C
		7 of 7	XML Extender	DB881X

Figure 2. Basic Material: Program Tape - Kanji				
Medium	**Feature Number**	**Physical Volume**	**External Label**	**VOLSER**
3480	6021	1 of 1	DB2 Kanji	DB8811
4mm	6019	1 of 1	DB2 Kanji	DB8811

Figure 3 describes the program file content for DB2 for z/OS V8.

Notes:

1. The data set attributes in this table 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.

		R E C F	L R E C	
	O R G			
Name		M	L	BLK SIZE

Figure 3. Program File Content: DB2 Base

Name	ORG	RECFM	LRECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HDB8810.F1	PDS	FB	80	8800
IBM.HDB8810.F2	PDSE	U	0	6144
IBM.HDB8810.F3	PDS	FB	80	8800
IBM.HDB8810.F4	PDS	FB	80	8800
IBM.HDB8810.F5	PDS	VB	8188	8192
IBM.HDB8810.F6	PDS	VB	255	23476
IBM.HDB8810.F7	PDS	VB	255	27998
IBM.HIY8810.F1	PDS	FB	80	8800
IBM.HIY8810.F2	PDS	FB	80	8800
IBM.HIY8810.F3	PDSE	U	0	6144
IBM.HIZ8810.F1	PDS	FB	80	8800
IBM.HIZ8810.F2	PDSE	U	0	6144
IBM.HDB881A.F1	PDS	FB	80	8800
IBM.HDB881A.F2	PDS	FB	4096	28672
IBM.HDB881A.F3	PDS	FB	4096	28672
IBM.HDB881A.F4	PDS	FB	80	8800
IBM.JDB8814.F1	PDS	FB	80	8800
IBM.HDRE810.F1	PDS	FB	80	8800

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

Name	ORG	RECFM	LRECL	BLK SIZE
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	8800

Figure 5. Program File Content: DB2 ODBC/JDBC/SQLJ				
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.JDB8817.F1	PDS	FB	80	8800
IBM.JDB8817.F2	PDS	U	0	6144
IBM.JDB8817.F3	PDS	FB	80	8800
IBM.JDB8812.F1	PDS	FB	80	8800
IBM.JDB8812.F2	PDSE	U	0	6144
IBM.JDB8812.F3	PDS	VB	255	27998
IBM.JDB8812.F4	PDSE	U	0	6144
IBM.JDB8812.F5	PDS	FB	80	8800

Figure 6. Program File Content: DB2 IAV Extenders				
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.JDB881B.F1	PDS	FB	80	8800
IBM.JDB881B.F2	PDS	FB	80	8800
IBM.JDB881B.F3	PDS	U	0	6144
IBM.JDB881B.F4	PDS	FB	80	8800
IBM.JDB881B.F5	PDS	VB	255	19069
IBM.JDB881B.F6	PDS	VB	255	19069
IBM.JDB881B.F7	PDS	FB	80	880
IBM.JDB881B.F8	PDS	VB	255	19069

Figure 7. Program File Content: DB2 Text Extender				
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.JDB881C.F1	PDS	FB	80	8800
IBM.JDB881C.F2	PDS	VB	255	6220
IBM.JDB881C.F3	PDS	U	0	6144
IBM.JDB881C.F4	PDS	FB	80	8800

Figure 8. Program File Content: DB2 XML Extender				
Name	**O R G**	**R E C F M**	**L R E C L**	**BLK SIZE**
SMPMCS	SEQ	FB	80	6400
IBM.JDB881X.F1	PDS	FB	80	8800
IBM.JDB881X.F2	PDS	VB	255	23476
IBM.JDB881X.F3	PDS	VB	255	23476
IBM.JDB881X.F4	PDS	VB	255	27998
IBM.JDB881X.F5	PDS	FB	80	8800
IBM.JDB881X.F6	PDS	FB	80	8800
IBM.JDB881X.F7	PDS	FB	80	8800
IBM.JDB881X.F8	PDS	VB	255	23476
IBM.JDB881X.F9	PDSE	U	0	6144
IBM.JDB881X.F10	PDS	VB	255	23476
IBM.JDB881X.F11	PDS	VB	255	23476
IBM.JDB881X.F12	PDS	VB	255	23476
IBM.JDB881X.F13	PDS	FB	80	8800
IBM.JDB881X.F14	PDS	VB	255	27998
IBM.JDB881X.F15	PDS	FB	80	8800

Figure 9. 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.JDB8811.F1	PDS	FB	80	8800

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for DB2 for z/OS V8.

2.3 Program Publications

The following sections identify the basic and optional publications for DB2 for z/OS V8.

2.3.1 Basic Program Publications

Figure 10 identifies the basic unlicensed program publications for DB2 for z/OS V8. One copy of each of these publications is included when you order the basic materials for DB2 for z/OS V8. For additional copies, contact your IBM representative.

Figure 10. Basic Material: Unlicensed Publications	
Publication Title	**Form Number**
DB2 for z/OS V8 Installation Guide	GC18-7418
DB2 for z/OS V8 License Programming Specifications	GC18-7420
DB2 for z/OS V8 Messages and Codes	GC18-7422

Figure 11 identifies the basic licensed program publications for DB2 for z/OS V8. Order copies using the 8xxx Feature Number.

Figure 11. Basic Material: Licensed Publications		
Publication Title	**Form Number**	**Feature Number**
DB2 for z/OS V8 Diagnosis Guide and Reference	LY37-3201	8001
DB2 for z/OS V8 Diagnostic Quick Reference	LY37-3202	8002

Figure 12 on page 11 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 for z/OS V8.

Figure 12. Basic Material: Other Unlicensed or Licensed Publications		
Publication Title	**Form Number**	**How Available**
Internationalization Guide (Unicode)	n/a	Internet (see **Note** below)
z/OS Managed System Infrastructure for Setup DB2 Customization Center User's Guide	n/a	Internet (see **Note** below)
RACF Access Control Module Guide and Reference	SC18-7433	Internet (see **Note** below)
Reference for Remote DRDA Requesters and Servers	SC18-7424	Internet (see **Note** below)

Note: Internet web address for other Unlicensed Publications:

`http://www.ibm.com/software/db2zos/v8books.html`

2.3.2 Optional Program Publications

No optional publications are provided for DB2 for z/OS V8.

Figure 13 identifies the optional unlicensed program publications for DB2 for z/OS V8.

Figure 13 (Page 1 of 2). Optional Material: Unlicensed Publications	
Publication Title	**Form Number**
DB2 for z/OS V8 Administration Guide	SC18-7413
DB2 for z/OS V8 Application Programming Guide and Reference for Java	SC18-7414
DB2 for z/OS V8 Application Programming & SQL Guide	SC18-7415
DB2 for z/OS V8 Command Reference	SC18-7416
DB2 for z/OS V8 Data Sharing: Planning and Administration	SC18-7417
DB2 for z/OS V8 The Official Introduction to DB2 UDB for z/OS	SC18-7419
DB2 for z/OS V8 ODBC Guide and Reference	SC18-7423
DB2 for z/OS V8 Reference Summary	SX26-3853
DB2 for z/OS V8 Release Planning Guide	SC18-7425
DB2 for z/OS V8 SQL Reference	SC18-7426
DB2 for z/OS V8 Utility Guide and Reference	SC18-7427
DB2 for z/OS V8 What's New?	GC18-7428
DB2 for z/OS V8 IAV Extenders Administration and Programming	SC18-7429
DB2 for z/OS V8 Text Extender Administration and Programming	SC18-7430

Figure 13 (Page 2 of 2). Optional Material: Unlicensed Publications	
Publication Title	**Form Number**
DB2 for z/OS V8 XML Extender Administration and Programming	SC18-7431

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.

2.5 Publications Useful During Installation

The publications listed in Figure 14 may be useful during the installation of DB2 for z/OS V8. 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

Figure 14. Publications Useful During Installation	
Publication Title	**Form Number**
IBM SMP/E for z/OS and OS/390 User's Guide	SA22-7773
IBM SMP/E for z/OS and OS/390 Commands	SA22-7771
IBM SMP/E for z/OS and OS/390 Reference	SA22-7772
IBM SMP/E for z/OS and OS/390 Messages, Codes, and Diagnosis	GA22-7770

3.0 Program Support

This section describes the IBM support available for DB2 for z/OS V8.

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 for z/OS V8 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 for z/OS V8, you should review the current Preventive Service Planning (PSP) information. If you obtained DB2 for z/OS V8 as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO.

If the CBPDO for DB2 for z/OS V8 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-3.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 for z/OS V8 are:

UPGRADE	SUBSET	Description
Figure 15 (Page 1 of 2). PSP Upgrade and Subset ID		
DB2810	HDB8810/0424	DB2 BASE/TSO
	HIY8810/0336	IMS ATTACH
	HIZ8810/0424	DB2 SUBSYSTEM INIT
	HIR2220/0424	IRLM V2R2
	HDB881A/0424	DB2 ONLINE HELP BOOKS AND BOOKSHELVES
	HDRE810/0405	RACF AUTHORIZATION EXIT
	JDB8812/0424	DB2 JDBC/SQLJ
	JDB8814/0405	DB2 ENGLISH PANELS

UPGRADE	SUBSET	Description
	JDB8817/0424	DB2 ODBC
	JDB881B	DB2 IAV EXTENDERS
	JDB881C	DB2 TEXT EXTENDER
	JDB881X	DB2 XML EXTENDER
	JDB8811	DB2 KANJI PANELS

Figure 15 (Page 2 of 2). PSP Upgrade and Subset ID

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 17 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       0405
```

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 for z/OS V8 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 DSNZP*xxx* 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. A z/OS IPL may be required following changes to HIZ8810 load modules.

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 16 identifies the component IDs (COMPID) for DB2 for z/OS V8.

FMID	COMPID	Component Name	RETAIN Release
Figure 16. Component IDs			
HDB8810	5740XYR00	BASE/TSO	810
HIY8810	5740IY100	IMS ATTACH	810
HIZ8810	5740XYR01	SUBSYSTEM INIT	810
HIR2220	569516401	IRLM V2R2	220
HDB881A	5740XYR00	ONLINE HELP BOOKS AND BOOKSHELVES	81A
HDRE810	5740DRE00	RACF AUTHORIZATION EXIT	810
JDB8812	5740XYR02	DB2 JDBC/SQLJ	812
JDB8814	5740XYR00	DB2 ENGLISH PANELS	814
JDB8817	5740XYR02	DB2 ODBC	817
JDB881B	5740XYR04	DB2 IAV EXTENDERS	81B
JDB881C	5740XYR03	DB2 TEXT EXTENDER	81C
JDB881X	5740XYR06	DB2 XML EXTENDER	81X
JDB8811	5740XYR00	DB2 KANJI PANELS	811

Note: Due to the size of the DB2 SVC dumps in the cross-memory environment, it is recommended that the SYS1.DUMP*xx* data set be transferred to a tape or a similar device. The PRDMP service aid program, or 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 1.3 MVS Diagnosis: Tools and Service Aids* (GA22-7589) for information on transferring the SYS1.DUMPxx data set.

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of DB2 for z/OS V8. 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 for z/OS V8 APAR information.

4.2 Service Level Information

PTFs containing APAR fixes against this release of DB2 for z/OS V8 have been incorporated into the product tapes. For a list of included PTFs, examine the ++VER statement in the product's SMPMCS.

4.3 Usage License Charges (ULC) Measurement and Reporting

Support for Usage License Charges is part of z/OS and DB2 for z/OS V8. By default, ULC detail is turned off to avoid overhead. To implement ULC, be sure that SMF record 89 is collected and USAGE PRICING DETAIL is changed to YES, (DSN6SYSP SMF89 parameter).

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DB2 for z/OS V8. 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 IPL-able copy of the running system. 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 for z/OS V8 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: IRLM V2R2 is being introduced with DB2 for z/OS V8 and has only been tested and approved for use with DB2 for z/OS V8. 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 for z/OS V8.

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 17. Driving System Software Requirements		
Program Number	**Product Name and Minimum VRM/Service Level**	
Any **one** of the following:		
5694-A01	z/OS V1.03.0 or later	
5655-G44	IBM SMP/E for z/OS and OS/390 V3.02.0 or later	

5.2 Target System Requirements

This section describes the environment of the target system required to install and use DB2 for z/OS V8.

DB2 for z/OS V8 installs in the DBS (P115) SREL.

5.2.1 Machine Requirements

DB2 for z/OS V8 operates on any processor that supports the IBM z/Architecture, including z800, z890, z900 and z990, or a comparable processor, with some restrictions:

- For z900 systems, microcode level 3G or later is required.
- For emulation packages or other comparable processors, the Long Displacement Facility of the z/Architecture must be available.

You can find more information about how to determine or upgrade your microcode level in Technotes in the DB2 for z/OS V8 Support site

`http://www.ibm.com/software/db2zos/support.html`

To find these Technotes, search for the following keyword: microcode. Alternatively, you can search for relevant Technotes on the Web search page (under Troubleshooting and support) in the DB2 Information Management Software Information Center for z/OS Solutions, available at

`http://publib.boulder.ibm.com/infocenter/dzichelp/index.jsp`

The processor must have enough real storage to satisfy the combined requirements of:

- DB2
- z/OS
- Other user-required applications

The 64-bit virtual addressing support can require increased real storage for a workload as compared to DB2 for z/OS and OS/390 Version 7. The requirement for 64-bit addressing means that z/OS Bimodal Migration Accommodation software cannot be used with DB2 for z/OS V8.

The configuration must include sufficient I/O devices to support the requirements for system output, system residence, and system data sets. Sufficient disk storage must be available to satisfy information

storage requirements; disk storage 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, this section identifies function-dependent hardware requirements and virtual storage requirements.

Auxiliary Storage

DB2 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.

All of the following data set types are supported by disk storage; some data set types are supported by both disk and tape storage devices where indicated:

- Active recovery log data sets
- Archive recovery log data sets (also supported by tape devices)
- Bootstrap data sets
- DB2 catalog data sets
- Image copy data sets (also supported by tape devices)
- User data sets
- Work data sets for utilities (also supported by tape devices)

If these data sets are on a disk that is shared with other z/OS systems, use global resource serialization to prevent concurrent access by more than one z/OS system.

The minimum disk space requirement, based on using the default values when installing DB2 for z/OS V8, is approximately 1 GB. Users need additional disk space for their data.

At least two tape drives are needed if you use dual logging and tape for the log archiving device.

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 supported by IMS Transaction Manager, CICS, and TSO, refer to the documentation for these products.

DRDA Data Stream Encryption

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

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 needed for the common service area (CSA) below the 16-MB line is less than 40 KB for each DB2 subsystem and 24 KB for each IRLM. 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.

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.

Program Number	Product Name and Minimum VRM/Service Level
Figure 18. Mandatory Installation Requisites	
5694-A01	z/OS V01.03.00 or later (Base Services) or z/OS.e V01.03.00 (5655-G52)
5694-A01	z/OS V01.03.00 or later (DFSMS)
5694-A01	z/OS V01.03.00 or later (Language Environment in Base Services)
5694-A01	z/OS V01.03.00 or later (Security Server (RACF))
5625-DB2	DB2 for z/OS V08.01.00 (IRLM V02.02.00)

Note: z/OS Unicode Services 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. Customers should ensure that these functions are provided either by ordering DB2 Utilities Suite for z/OS, Version 8, 5655-K61, 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 for z/OS V8 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 for z/OS V8 uses the "partitioned dataset extended" or PDSE format for our SDSNLOAD target library. Prior versions of DB2 have used the regular partitioned dataset or PDS format.
>
> **There are some operational differences between PDS and PDSE datasets.** 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 dataset outside of a sysplex or GRS environment, you may experience severe problems when the dataset is updated. This is due to the fact that PDSE directory information is cached in storage, and when the dataset 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 dataset 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 dataset, a separate copy must be created for each z/OS system.

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 19. Mandatory Operational Requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
Any **one** of the following:	
5694-A01	z/OS V01.03.00 or later plus APARs OW56073, OW56074, OA03519, OA03095 and OA04607 (see **Note** below)
5694-A01	z/OS V01.04.00 or later plus APARs OW56073, OW56074, OA03519, OA03095 and OA04607 (see **Note** below)
5694-A01	z/OS V01.05.00 plus APARs OA03519, OA05960 and OA06130

Note: For Unicode data storage and manipulation capabilities in a 64 bit environment. DB2 for z/OS V8 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,*

GC18-7418 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 requisites 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.

Program Number	Product Name and Minimum VRM/Service Level	Function
Figure 20 (Page 1 of 3). Conditional Operational Requisites		
5694-A01	z/OS V01.05.00, DFSMShsm, DFSMSdss and FlashCopy V01.00.00 FlashCopy V02.00.00 is recommended. RESTORE SYSTEM LOGONLY option has no dependency on z/OS V01.05.	System level Point-in-Time Backup and Recovery
5694-A01	z/OS V01.05.00 Security Server (RACF), RACF Access Control Module	Multilevel Security with Row Granularity (MLS)
5694-A01	z/OS V01.04.00 plus APAR OA05967	RACF Authorization exit
5694-A01	z/OS Cryptographic Services Integrated Cryptographics Service Facility (ICSF). To use Encryption you must have **SCSFMOD0 in LNKLST**	Built-in functions for Encryption and Decryption
5694-A01	Can optionally use ICSF. To use Encryption you must have **SCSFMOD0 in LNKLIST**	DRDA Data Stream Encryption
5625-DB2	See **Section 5.2.2.3 Optional Program Requirements** for details	DRDA Connectivity
5694-A01	z/OS V01.04.00 Coupling Facility (CF) level 12	Group Bufferpool (GBP) Batching
5694-A01	z/OS V01.03.00 or later, Unicode Services APARs OA04069 and OA04043	Unicode Performance and Function
5694-A01	z/OS V01.05.00	More secure port of entry mechanism
5694-A01	z/OS V01.05.00 recommended, plus TCP/IP APAR PQ87360	TCP/IP Performance (see Info APAR II13818 for more information)
5694-A01	z/OS V01.03.00 or later plus APAR OW56108	All WLM-managed Stored Procedures/Server Task Management
5655-B01	IMS V07.01.00 APAR PQ79118	IMS Attach toleration of SDSNLOAD PDSE allocation
5694-A01	z/OS V01.04.00 DB2 Customization Center plug-in for msys, plus PTF OA04581	msys plug-in
5625-DB2	DB2 for z/OS V8 PDO 0424 or later	Serviceability

Figure 20 (Page 2 of 3). Conditional Operational Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5694-A01	z/OS V01.03.00 or later (Application Enablement 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 or CLI interfaces to DB2)
5655-D35	IBM Developer Kit for OS/390, Java 2 Technology Edition	Application Execution (Applications or stored procedures written in Java, such as those using the JDBC or SQLJ interfaces to DB2)
5625-DB2	DB2 for z/OS V08.01.00 (ODBC FMID JDB8817)	Image, Audio and Video Extenders (IAV)
5694-A01	z/OS V01.03.00 or later (Language Environment)	Image, Audio and Video Extenders (IAV)
5694-A01	z/OS V01.03.00 or later (Text Search Element, Language Environment and Unix System Services)	Text Extender
5694-A01	z/OS V01.03.00 or later (Language Environment) and IBM XML Parser for z/OS (C++ Edition)	XML Extender
5655-D44	XML Toolkit for z/OS and OS/390 Release 4 (Parser)	XML Extender
5655-I61	DB2 Warehouse Manager for z/OS V08.01.00	Warehouse Management Support
5655-F10	WebSphere MQSeries for OS/390 V05.02.00	WebSphere MQSeries for OS/390
5625-DB2	DB2 Estimator for Windows V08.01.00 see **Note** below for url	Capacity Planning
Any **one** of the following:		
5655-I35	WebSphere Application Server V05.00.00	Connectivity to DB2 for z/OS V8 from the Web
5655-F31	WebSphere Application Server V04.00.00	Connectivity to DB2 for z/OS V8 from the Web
5724-B56	IBM DB2 Connect Personal Edition (CPE) V08.01.00 (V08.01.04, also known as Fixpack 4, is the recommended level to use with DB2 for z/OS V8)	Connectivity to DB2 for z/OS V8 from the Web
5765-F30	IBM DB2 Connect Enterprise Edition (CEE) V08.01.00	Connectivity to DB2 for z/OS V8 from the Web
5724-B62	IBM DB2 Connect Unlimited Edition (CUE) V08.01.00	Connectivity to DB2 for z/OS V8 from the Web
5724-D54	IBM DB2 Connect Application Server Edition (CASE) V08.01.00	Connectivity to DB2 for z/OS V8 from the Web

Figure 20 (Page 3 of 3). Conditional Operational Requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5648-D40	IBM DB2 Connect Personal Edition (CPE) V07.02.00 or later	Connectivity to DB2 for z/OS V8 from the Web
5648-D42	IBM DB2 Connect Enterprise Edition (CEE) V07.02.00 or later	Connectivity to DB2 for z/OS V8 from the Web
5625-DB2	Net.Data V07.01.00 (feature of DB2 for z/OS V8)	Connectivity to DB2 for z/OS V8 from the Web
Any **one** of the following:		
5655-J38	IBM Information Management System (IMS) V09.01.00	Transaction Management
5655-C56	IBM Information Management System (IMS) V08.01.00	Transaction Management
5655-B01	IBM Information Management System (IMS) V07.01.00	Transaction Management
5697-E93	CICS Transaction Server for z/OS V02.02.00 or V02.03.00	Transaction Management
5655-147	CICS Transaction Server for OS/390 V01.03.00	Transaction Management
5655-F10	WebSphere MQSeries for OS/390 V05.02.00	Transaction Management

Note: DB2 Estimator information can be found at the following url:

`http:/www.ibm.com/software/data/db2/os390/estimate/`

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 for z/OS V8 supports the following IBM relational database products:

  – IBM DB2 Universal Database (UDB) for Linux, UNIX, Windows Version 8 or
    - DB2 Enterprise Server Edition (ESE) V8.1 (5765-F41)
    - DB2 Workgroup Server Edition V8.1 (5765-F35)
    - DB2 Workgroup Server Unlimited Edition V8.1 (5765-F43)
    - DB2 Universal Database Universal Developer's Edition V8.1 (5765-F34)
  – IBM DB2 UDB for Linux, UNIX, Windows Version 7
    - DB2 Universal Developer's Edition (5648-D37)
    - DB2 Enterprise Edition (5648-D48)
    - DB2 Enterprise Extended Edition (5648-D50)
    - DB2 UDB Workgroup Edition (5648-D46)

- DB2 Workgroup Unlimited Edition (5648-D46)
– IBM DB2 Universal Database for iSeries OS/400 Version 5 Release 1 or Version 5 Release 2 (5722-SS1) (Info APAR II13348)
- DB2 DataPropagator for iSeries V8.1 (5722-DP4)
- DB2 Query Manager and SQL Development Kit for iSeries (5722-ST1)
– IBM DB2 Server for VSE & VM Version 7 (5697-F42)
– Any other DRDA-compliant client or relational DBMS server

Application Development Tools and Programming Languages

The DB2 Development Center, which is part of the Software Developer's Kit (SDK) on Windows, AIX and Solaris is delivered with all editions of DB2 Universal Database and DB2 Connect products.

DB2 Development Center provides a graphical application that supports rapid development and deployment of DB2 Stored Procedures.

The following application development tools and programming can be used to build applications for DB2 for z/OS V8:

Assembler High Level Assembler, part of the System Services element of z/OS

C/C++ Any of the following:
- C/C++ (with or without Debug Tool), optional features of z/OS
- IBM SAA AD/Cycle C/370 Compiler Version 1 Release 2 (5688-216)

  Use of the DB2 Precompiler Services with C requires the DB2 Coprocessor provided with z/OS V01.R05.00, and the DB2 UDB Server for z/OS and OS/390 V07.01.00 libraries. For use of DB2 UDB for z/OS function, use the precompiler as an alternative.

COBOL Any of the following:
- Enterprise COBOL Version 3 Release 2 or Release 3 (5655-G53)
- IBM COBOL for OS/390 & VM Version 2 Release 2 (5648-A25),

  Note: To use the DB2 Precompiler Services with DB2 for z/OS V8 new function you must have the DB2 Coprocessor that is provided with Enterprise COBOL (5655-G53) Version 3 Release 2 or later. Use of the new DB2 for z/OS V8 function with the Coprocessor and COBOL requires COBOL APAR PQ83744.

Fortran VS Fortran Version 2 Release 6 (5668-806, 5688-087, or 5668-805)

Java Applications or stored procedures written in Java, such as those using the JDBC or SQLJ interfaces to DB2, require IBM Developer Kit for OS/390, Java 2 Technology Edition (5655-D35) at run time.

WebSphere WebSphere Studio Enterprise Developer Version 5.0 (5724-B67)

  Program Requirements:
  - IBM SDK for z/OS, Java 2 Technology Edition, Version 1.4 (5655-I56) with APAR PQ74985 (also known as Version 1.4.1) is the recommended level
  - IBM SDK for z/OS, Java 2 Technology Edition, Version 1.3.1

  For more information on Java 2 for z/OS including a link to software prerequisites, see:

  `http://www.ibm.com/servers/eserver/zseries/software/java/`

PL/I   Any of the following:
  - IBM Enterprise PL/I for z/OS and OS/390 Version 3 Release 2 (5655-H31)
  - IBM PL/I for MVS & VM Version 1 Release 1 (5688-235)

    Note: Use of the DB2 Precompiler Services requires the DB2 Coprocessor provided with IBM Enterprise PL/I for z/OS and OS/390 Version 3 Release 2 and APAR PQ84513 or later releases.

REXX   Any of the following:
  - IBM TSO Extensions for MVS REXX, which is part of z/OS
  - REXX Version 1 Release 3 (5695-013 or 5695-014)

SQL Procedure Language A C language compiler is required on z/OS to develop stored procedures using the SQL procedure language. Specific C compilers include:
  - C/C++ (with or without Debug Tool), optional features of z/OS
  - IBM SAA AD/Cycle C/370 Compiler Version 1 Release 2 (5688-216)
    – Restriction: This compiler is not supported for SQL Procedures used with the SQL Debugger

5.2.2.4 Operational Support

The following programs provide operational support for DB2:

- DFSMS features, 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
- IBM Tools for Replication Management and Database Recovery

  – IBM Tools for Replication Management including the following tools:

    - IBM DB2 DataPropagator for z/OS Version 8 (5655-I60)
    - IBM IMS DataPropagator for z/OS Version 3 (5655-E52)

  – IBM Tools for Database Recovery, including the following tools:

    - IBM Application Recovery Tool for IMS and DB2 Databases V1R2 (5697-F56)
    - IBM DB2 Archive Log Accelerator Version 2 (5697-I73)
    - IBM DB2 Change Accumulation Tool for z/OS Version 1 Release 3 (5655-F55)
    - IBM DB2 Object Restore for z/OS Version 2 Release 1 (5697-I20)
    - IBM Log Analysis Tool for z/OS Version 2 Release 1 (5655-E56)
    - IBM DB2 Recovery Expert for Multiplatforms Version 1 (5724-B91)

  – The IBM Tools for Database Application Management, including the following tools

    - IBM DB2 Information Integrator Classic Federation for z/OS Version 8 (5697-I82)
    - IBM DB2 Data Archive Expert for z/OS Version 1 (5655-I95)
    - IBM DB2 Bind Manager for z/OS Version 2 Release 2 (5655-E43)
    - IBM DB2 Web Query Tool for z/OS Version 1 Release 3 (5655-E71)
    - IBM DB2 Web Query Tool for Multiplatforms Version 1 Release 3 (5724-B34)

- IBM DB2 Test Database Generator for z/OS Version 2 (5697-I02)
- IBM DB2 Path Checker for z/OS Version 2 Release 1 (5697-I23)
- IBM DB2 Table Editor for z/OS Version 4 Release 3 (5697-G65)
- IBM DB2 Table Editor for Multiplatforms Version 4 Release 3 (5724-B33)
- IBM DB2 Table Editor for Workgroups 4 Release 3 (5724-E55)

- IBM Tools for Database Administration and System Management Support:

    - The IBM Tools for Database Administration, including the following tools:

        - IBM DB2 Administration Tool for z/OS Version 5 Release 1 (5697-K90)
        - IBM DB2 Object Comparison Tool for z/OS Version 3 Release 1 (5697-K40)

    - The IBM Tools for Utilities Management

        - IBM DB2 Automation Tool for z/OS Version 1 Release 3 (5697-G63)
        - IBM DB2 Utilities Suite for z/OS Version 8 (5655-K61)
        - IBM DB2 High Performance Unload for z/OS Version 2 (5655-I19)
        - IBM DB2 High Performance Unload for Multiplatforms Version 2 (5724-B90)
        - IBM DB2 High Performance Unload for Workgroups Version 2 (5724-E56)

    - The IBM Tools for Database Performance Management, including the following tools:

        - IBM DB2 Performance Expert for z/OS Version 2 (5655-J49)
        - IBM DB2 Performance Monitor for z/OS Version 8 (5655-J50)
        - IBM DB2 Buffer Pool Analyzer for z/OS Version 2 Release 1 (5697-H82)
        - IBM DB2 SQL Performance Analyzer for z/OS Version 2 (5655-I22)
        - IBM DB2 Query Monitor for z/OS Version 1 Release 1 (5655-E67)

    Refer to the IBM Data Management Tools website for a current list of products.

    http://ibm.com/software/data/db2imstools/

    Refer to the Support page of the Tools website for recent news about DB2 Tools compatibility with DB2 for z/OS V8.

    http://ibm.com/software/data/db2imstools/support.html

Database Administration and Systems Management Support: The following tools support database administration and systems management and application development for DB2:

- The DB2 Management Clients Package, a feature of DB2 for z/OS V8 that includes:
    - DB2 Administration Server (DAS) (z/OS installable component)
    - z/OS Enablement (z/OS installable component)
    - DB2 Visual Explain (workstation CD-Rom)
    - DB2 Connect Personal Edition Kit (workstation CD-Rom) which includes:

        - Control Center

        - Development Center

- Replication Center

- Command Center

A restricted-use copy of DB2 Connect Personal Edition V08.01.00 (5724-B56) for Windows is provided in the DB2 Management Clients Package feature of DB2 for z/OS V8.

5.2.2.5 Toleration/Coexistence Requisites

A toleration/coexistence requisite is defined as a product which 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 for z/OS V8 has no toleration/coexistence requisites.

5.2.2.6 Incompatibility (Negative) Requisites

A negative requisite identifies products which 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 for z/OS V8.

5.2.3 DASD Storage Requirements

DB2 for z/OS V8 libraries can reside on all supported DASD types.

Figure 21 lists the total space required for each type of library.

Figure 21. Total DASD Space Required by DB2 for z/OS V8	
Library Type	**Total Space Required**
Target	9945 (3390 tracks)
Distribution	9170 (3390 tracks)
HFS	usr/lpp/db2810 (300, 3390 tracks)
	usr/lpp/db2810_msys (250, 3390 tracks)
	usr/lpp/db2ext_08_01_00 (550, 3390 tracks)
	usr/lpp/db2tx (50, 3390 tracks)

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 or not 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 41.

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 set may be either a PDS or a PDSE (SDSNLOAD **may** be a **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 LNKLST.
- 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 for z/OS V8. 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.

Figure 22. Storage Requirements for SMP/E Data Sets						
Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SMPLTS	U	PDSE	U	0	1560	N/A
SMPMTS	E	PDS	FB	80	15	60
SMPPTS	E	PDS	FB	80	3270	10
SMPSCDS	E	PDS	FB	80	30	10
SMPSTS	E	PDS	FB	80	15	5

The following figures describe the target and distribution libraries and HFS paths required to install DB2 for z/OS V8. The storage requirements of DB2 for z/OS V8 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 23 (Page 1 of 3). Storage Requirements for DB2 for z/OS V8 Target Libraries								
Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SDSNBASE	Sample	Any	S	PDS	FB	80	31	25
SDSNBKS	Book	Any	S	PDS	FB	4096	334	2
SDSNCHDR	Data	Any	S	PDS	FB	80	21	3
SDSNCLST	CLIST	Any	S	PDS	FB	80	120	20
SDSNDBRM	Macro	Any	S	PDS	FB	80	67	12
SDSNEXIT	Data	Any	S	PDS	U	0	5	10
SDSNINDX	Book	Any	S	PDS	FB	4096	70	1

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SDSNINST	Sample	Any	S	PDS	FB	80	4	5
SDSNIVPD	Data	Any	S	PDS	VB	8188	113	20
SDSNLINK	LMOD	Any	S	PDS	U	0	7	10
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	536	100
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	1251	35
SDSNSHLF	Macro	Any	S	PDS	FB	80	2	1
SDSNSPFM	Message	Any	S	PDS	FB	80	6	10
SDSNSPFP	Panel	Any	S	PDS	FB	80	61	30
SDSNSPFS	SKEL	Any	S	PDS	FB	80	6	10
SDSNSPFT	Table	Any	S	PDS	FB	80	6	10
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	4	10
SDMBBASE	Sample	Any	U	PDS	FB	80	3	5
SDMBDBRM	Data	Any	U	PDS	FB	80	3	5
SDMBEXP	Data	Any	U	PDS	FB	80	3	5
SDMBLOAD	LMOD	Any	U	PDS	U	0	345	50
SDMBMACS	Macro	Any	U	PDS	VB	255	10	10
SDMBSAMP	Sample	Any	U	PDS	FB	80	3	5
SDMBSMPC	Sample	Any	U	PDS	VB	255	10	10
SDMBSMPH	Sample	Any	U	PDS	VB	255	3	5
SDESDB2I	Data	Any	U	PDS	FB	80	4	6
SDESMOD1	LMOD	Any	U	PDS	U	0	288	16
SDXXADM	Data	Any	U	PDS	VB	255	26	5
SDXXC	Data	Any	U	PDS	FB	80	7	5

Figure 23 (Page 2 of 3). Storage Requirements for DB2 for z/OS V8 Target Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SDXXCLI	Data	Any	U	PDS	VB	255	4	5
SDXXCLP	Data	Any	U	PDS	VB	255	2	5
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	6	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	8	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	34	20
SDXXXML	Sample	Any	U	PDS	VB	255	2	5

Figure 23 (Page 3 of 3). Storage Requirements for DB2 for z/OS V8 Target Libraries

Note: If you are installing Online Help into a DASD type that does not support a block size of 28672, change all occurrences of 28672 to 16384 before you run jobs DSNALC and DSNUNL2.

The following types of data sets are created during the DB2 for z/OS V8 installation process. The sizes are based upon user preferences:

- CATALOG
- DIRECTORY
- LOG

DDNAME	TYPE	Path Name
SDSNOBIN	N	/usr/lpp/db2810/bin/IBM/
SDSNCLAS	N	/usr/lpp/db2810/classes/IBM/
SDSNJDBC	N	/usr/lpp/db2810/IBM/
SDSNOLIB	N	/usr/lpp/db2810/lib/IBM/
SDSNOSP1	N	/usr/lpp/db2810/samples/IBM/

Figure 24 (Page 1 of 2). DB2 for z/OS V8 HFS Paths

DDNAME	T Y P E	Path Name
Figure 24 (Page 2 of 2). DB2 for z/OS V8 HFS Paths		
SDSNJBIN	N	/usr/lpp/db2810/jcc/bin/IBM/
SDSNJCLS	N	/usr/lpp/db2810/jcc/classes/IBM/
SDSNJCC	N	/usr/lpp/db2810/jcc/IBM/
SDSNJLIB	N	/usr/lpp/db2810/jcc/lib/IBM/
SDSNHFS	N	/usr/lpp/db2810_msys/IBM/
SDMBLOA2	N	/usr/lpp/db2ext_08_01_00/bin/IBM/
SDMBMAC2	N	/usr/lpp/db2ext_08_01_00/include/IBM/
SDMBEXP2	N	/usr/lpp/db2ext_08_01_00/lib/IBM/
SDMBSMP	N	/usr/lpp/db2ext_08_01_00/samples/IBM/
SDESHFS1	X	/usr/lpp/db2tx/IBM/

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
Figure 25 (Page 1 of 3). Storage Requirements for DB2 for z/OS V8 Distribution Libraries						
ADSNBASE	U	PDS	FB	80	31	30
ADSNBKS	U	PDS	FB	4096	334	2
ADSNDKF	S	PDS	FB	80	50	100
ADSNENU	S	PDS	FB	80	23	100
ADSNHFS	U	PDS	VB	255	201	5
ADSNINDX	U	PDS	FB	4096	70	1
ADSNINST	U	PDS	FB	80	4	5
ADSNIVPD	S	PDS	VB	8188	114	20
ADSNLOAD	S	PDSE	U	0	3751	N/A
ADSNLOD2	S	PDSE	U	0	601	N/A
ADSNMACS	S	PDS	FB	80	1341	100
ADSNSHLF	U	PDS	FB	80	2	1
ADSNXML	U	PDS	VB	255	4	5
ADXRLOAD	S	PDS	U	0	101	70

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
				Figure 25 (Page 2 of 3). Storage Requirements for DB2 for z/OS V8 Distribution Libraries		
ADXRSAMP	S	PDS	FB	80	5	10
ADMBBASE	U	PDS	FB	80	3	5
ADMBDBRM	U	PDS	FB	80	3	5
ADMBEXP	U	PDS	FB	80	3	5
ADMBEXP2	U	PDS	FB	80	2	5
ADMBLOAD	U	PDS	U	0	377	50
ADMBLOA2	U	PDS	U	0	51	40
ADMBMACS	U	PDS	VB	255	10	5
ADMBMAC2	U	PDS	VB	255	10	5
ADMBSAMP	U	PDS	FB	80	3	5
ADMBSMP	U	PDS	VB	255	1380	10
ADMBSMPC	U	PDS	VB	255	10	10
ADMBSMPH	U	PDS	VB	255	3	5
ADESDB2I	U	PDS	FB	80	3	4
ADESHFS1	U	PDS	VB	255	48	4
ADESMOD1	U	PDS	U	0	451	16
ADXXADM	U	PDS	VB	255	26	5
ADXXC	U	PDS	FB	80	16	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	8	5
ADXXJDBC	U	PDS	VB	255	4	5
ADXXLOAD	U	PDSE	U	0	301	N/A
ADXXSDDF	U	PDS	FB	80	34	20

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
Figure 25 (Page 3 of 3). Storage Requirements for DB2 for z/OS V8 Distribution Libraries						
ADXXXML	U	PDS	VB	255	2	5

5.3 FMIDs Deleted

Installing DB2 for z/OS V8 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 for z/OS V8 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 for z/OS V8 has no special considerations for the target system.

Note: Text Extender does not support the DB2 for z/OS V8 data sharing function in a Parallel Sysplex environment.

5.5 Migration, Fallback, and Remigration

Migration to DB2 for z/OS V8 is permitted only from DB2 for z/OS and OS/390 Version 7.

To prepare for migration to DB2 for z/OS V8, you must apply APAR PQ48486. Please read the HOLD data for PQ48486, and note that, due to the possibility of prerequisite APARs, it may be necessary to acquire additional APARs not related to fallback.

See *DB2 Installation Guide, GC18-7418* for details on Migration, Fallback, and Remigration steps. Please download the latest version of the *DB2 Installation Guide, GC18-7418* from the following website before proceeding:

`http://www.ibm.com/software/data/db2/zos/v8books.html`

For additional information about migrating to DB2 for z/OS V8, please read Information APAR II13695.

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 for z/OS V8.

Please note the following:

- If you want to install DB2 for z/OS V8 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 for z/OS V8

6.1.1 SMP/E Considerations for Installing DB2 for z/OS V8

This release of DB2 for z/OS V8 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 26. 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.

Figure 26. SMP/E Options Subentry Values

SUB-ENTRY	Value	Comment
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 **DB2 V8, JDBC/SQLJ, IAV Extenders and Text Extender**

6.1.3 SMP/E CALLLIBS Processing

DB2 for z/OS V8 uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When DB2 for z/OS V8 is installed, ensure that DDDEFs exist for the following libraries:

- SCEELKED
- SDSNLOAD

DB2 for z/OS V8 (JDBC/SQLJ) uses the following CALLLIBS:

- CSSLIB
- SCEEBIND
- SCEEBND2
- SCEELIB
- SCEELKEX

Note: The DDDEFs above are used only to resolve the link-edit for DB2 for z/OS V8 using CALLLIBS. These data sets are not updated during the installation of DB2 for z/OS V8.

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install DB2 for z/OS V8:

Figure 27 (Page 1 of 2). Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**RELFILE**
DSNTIJAA	SMP/E	Sample job to create the CSI and allocate the SMP/E control data sets **(Optional)**	IBM.HDB8810.F3
DSNRECV1	Receive	Sample RECEIVE job for DB2	IBM.HDB8810.F3
DSNRECV2	Receive	Sample RECEIVE job for IRLM	IBM.HDB8810.F3
DSNRECV3	Receive	Sample RECEIVE job for ODBC/JDBC/SQLJ	IBM.HDB8810.F3
DSNRECV4	Receive	Sample RECEIVE job for DB2 Kanji Panels	IBM.HDB8810.F3
DMBRECEV	Receive	Sample RECEIVE job for IAV Extenders	IBM.HDB8810.F3
DESRECEV	Receive	Sample RECEIVE job for Text Extender	IBM.HDB8810.F3
DXXRECEV	Receive	Sample RECEIVE job for XML Extender	IBM.HDB8810.F3
DSNALLOC	ALLOCATE	Sample job to allocate target and distribution libraries and define SMP/E DDDEFs	IBM.HDB8810.F3
DSNMSMKD	MKDIR	Sample job to invoke the supplied DSNMMKDR EXEC to allocate HFS paths for msys plug-in	IBM.HDB8810.F3
DSNISMKD	MKDIR	Sample job to invoke the supplied DSNMKDIR EXEC to allocate HFS paths for JDBC/SQLJ	IBM.HDB8810.F3
DMBISMKD	MKDIR	Sample job to invoke the supplied DMBMKDIR EXEC to allocate HFS paths for IAV Extenders	IBM.HDB8810.F3

Job Name	Job Type	Description	RELFILE
DESISMKD	MKDIR	Sample job to invoke the supplied DESMKDIR EXEC to allocate HFS paths for Text Extender	IBM.HDB8810.F3
DSNDDEF1	DDDEF	Sample job to define SMP/E DDDEFs for Required FMIDs	IBM.HDB8810.F3
DSNDDEF2	DDDEF	Sample job to define SMP/E DDDEFs for Optional FMIDs	IBM.HDB8810.F3
DSNTIJUD	Optional	Clean up job	IBM.HDB8810.F3
DSNAPPL1	Apply	Sample APPLY CHECK and APPLY job for Required FMIDs	IBM.HDB8810.F3
DSNACEP1	Accept	Sample ACCEPT CHECK and ACCEPT job for Required FMIDs	IBM.HDB8810.F3
DSNAPPL2	Apply	Sample APPLY CHECK and APPLY job for Optional FMIDs	IBM.HDB8810.F3
DSNACEP2	Accept	Sample ACCEPT CHECK and ACCEPT job for Optional FMIDs	IBM.HDB8810.F3

Figure 27 (Page 2 of 2). Sample Installation Jobs

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.HDB8810.F3,UNIT=tunit,
//           VOL=SER=volser,LABEL=(x,SL),
//           DISP=(OLD,KEEP)
//FILEIN   DD DSN=IBM.HDB8810.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.HDB8810.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 27 on page 38 to find the appropriate relfile data set.

Special Considerations:

- It is assumed that DB2 for z/OS V8 and IRLM V2R2 are installed into the same zones. If this is not the case, you will need to modify jobs DSNALLOC, DSNDDEF1 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 for z/OS V8. Please note this job allocates some datasets 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 for z/OS V8 as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the DB2 for z/OS V8 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 for z/OS V8. Consult the instructions in the sample jobs for more information.

- Edit and submit sample job DSNRECV1 to perform the SMP/E RECEIVE for DB2 for z/OS V8. 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. 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 DMBRECEV to perform the SMP/E RECEIVE for IAV Extenders. 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 DESRECEV to perform the SMP/E RECEIVE for Text 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.

- 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 for z/OS V8. 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 datasets.

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

6.1.8 Allocate HFS Paths

- Edit and submit sample job DSNMSMKD to allocate the HFS paths for DB2 for z/OS V8 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 the job runs correctly.

- Edit and submit sample job DSNISMKD to allocate the HFS paths for DB2 for z/OS V8 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.

- Edit and submit sample job DMBISMKD to allocate the HFS paths for DB2 for z/OS V8 IAV Extenders. 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.

- Edit and submit sample job DESISMKD to allocate the HFS paths for DB2 for z/OS V8 Text Extender. 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 DSNDDEF1 to create DDDEF entries for the SMP/E target and distribution libraries for DB2 for z/OS V8. 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.

- Edit and submit sample job DSNDDEF2 to create DDDEF entries for the SMP/E target and distribution libraries for Optional FMIDs of DB2 for z/OS V8. 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, IAV Extenders and/or the Text Extender FMIDs in to an alternate install directory, you will need to modify job DSNDDEF2 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 DSNDDEF2 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 or DSNAPPL2). Running job DSNTIJUD is not necessary if you are installing DB2 for z/OS V8 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 for z/OS V8. Consult the instructions in the sample job for more information. Ensure FMIDs are listed in the following order: HDB8810, HIY8810 and HIZ8810 together, then HIR2220.

Perform an SMP/E APPLY CHECK for DB2 for z/OS V8.

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).

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 which 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' 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 which 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' 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 for z/OS V8. Consult the instructions in the sample job for more information.

Perform an SMP/E ACCEPT CHECK for DB2 for z/OS V8.

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 Perform SMP/E APPLY for the Optional FMIDs

Edit and submit sample job DSNAPPL2 to perform an SMP/E APPLY CHECK for the optional FMIDs for DB2 for z/OS V8. Consult the instructions in the sample job for more information.

Perform an SMP/E APPLY CHECK for DB2 for z/OS V8.

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).

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: You will get a condition code of 0 if the job runs correctly.

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

6.1.14 Perform SMP/E ACCEPT for the Optional FMIDs

Edit and submit sample job DSNACEP2 to perform an SMP/E ACCEPT CHECK for DB2 for z/OS V8. Consult the instructions in the sample job for more information.

Perform an SMP/E ACCEPT CHECK for DB2 for z/OS V8.

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.

6.1.15 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 which you can use to install those cross-zone requisites it identifies.

After you have installed DB2 for z/OS V8, 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.

6.1.16 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.

6.1.16.1 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=DSN810.SDSNSPFP,DISP=SHR     ENGLISH
//         DD DSN=DSN810.SDSNPFPE,DISP=SHR     ENGLISH
```

6.1.16.2 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('DSN810.SDSNSPFP' 'DSN810.SDSNPFPE') +
        SHR    /* English */
   ELSE ALLOC DD(ISPPLIB) DS('DSN810.SDSNSPFP' 'DSN810.SDSNPFPK') +
        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.

6.1.17 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/db2ext_07_01_00/

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.

- AIHSMODB
- AIHSSMPB
- AIHSCLSB
- SIHSMODB
- SIHSSMPB
- SIHSCLSB
- SDSNENU

6.2 Activating DB2 for z/OS V8

The publication *DB2 Installation Guide, GC18-7418* contains the step-by-step procedures to activate the functions of DB2 for z/OS V8. Please download the latest version of the *DB2 Installation Guide, GC18-7418* from the following website before proceeding:

`http://www.ibm.com/software/data/db2/zos/v8books.html`

6.2.1 HFS Execution

If you choose to have the HFS in which you have installed msys, JDBC/SQLJ or the Extenders mounted in read-only mode during execution, then no further tasks are required to accomplish this.

- **msys:** Refer to Managed System Infrastructure for Setup Installation (SC33-7997) for additional information and instructions to activate msys.

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

    `/usr/lpp/db2810/README`

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

    `/usr/lpp/db2810/jcc/README`

- **Text Extender:** A README file is included with Text Extender which documents additional instructions regarding the use of Text Extender. The README file is installed to the following HFS file which is created during the SMP/E APPly step:

    `/usr/lpp/db2tx/install/readme`

6.2.2 Activating IAV Extenders

6.2.3 Choose Environments and Security Options

This section should be reviewed by the database administrator, security analyst, and extenders application developer. Before you perform post-installation setup, you need to make decisions about WLM environments and about external security. See *DB2 Image, Audio, and Video Extenders Administration and Programming* for details about these choices.

6.2.4 Planning Considerations for Files, Tables, Applications

- If data is being stored in files, the underlying file system must be mounted under the UNIX services paradigm and operate in a UNIX-like fashion. HFS is supported, but other file systems can be used. Note that data sets do not operate like UNIX files; they are not supported at this time.

- Plan directory structures to hold files separately for each application, as needed.

- Depending on the level of your system, HFS file systems can be mounted R/W on one node of a SYSPLEX but a client/server file system such as NFS can be used to logically mount it on other nodes.

- The OS/390 server does not have to be the fileserver. Unless applications retrieve files via a CONTENT UDF (or use play/browse APIs so that they retrieve data as a BLOB), the server only looks at files during import or update operations (and for some other operations such as get inaccessible files). A file system that can be mounted on clients and on the OS/390 server (or the nodes of a SYSPLEX) is acceptable.

6.2.5 Edit the DB2 Sample WLM Application Environment Procedure

The source procedure to be edited, DSNWLM, is embedded in the DSNTIJMV job in the DB2 sample data set.

Add the extender load module data set to the STEPLIB, check the C runtime, and add a DD card for your environment variable definitions. See *DB2 Image, Audio, and Video Extenders Administration and Programming* for details on environment variables. The DDNAME for the environment variables is DMBENVAR and the data set should be a small variable blocked sequential data set (a blocksize slightly larger than the size of the data is efficient). If you are using two WLM environments you can use two procs or one, depending on how you parameterize the procedure and what parms you supply in your WLM environment definition. The member name of the procedure will determine the started task name; this is used later to associate a user ID with the address spaces.

Typical edits

```
//DMBWLM1 PROC RGN=0K,APPLENV=DMBWLM1,DB2SSN=DSN,NUMTCB=8
//IEFPROC EXEC PGM=DSNX9WLM,REGION=&RGN,TIME=NOLIMIT,
//        PARM='&DB2SSN,&NUMTCB,&APPLENV'
//STEPLIB  DD  DISP=SHR,DSN=DMB.V8R1M0.SDMBLOAD
//*       DD  DISP=SHR,DSN=CEE.SCEERUN      in linklist
//        DD  DISP=SHR,DSN=DSN810.SDSNLOAD
//DMBENVAR DD  DISP=SHR,DSN=joeadmin.DMB.ENVAR
```

Check *DB2 V8 Installation Guide*, and *DB2 V8 Administration Guide* for instructions on providing JCL for WLM Application Environments.

6.2.6 Establishing WLM Application Environments

An authorized system administrator should define the WLM Application environments. The **NUMTCB** value depends on your system. If you are using two environments, the WLM environment for the lightweight UDFs can have a relatively high number of TCBs. If you are using image conversion, the memory requirement for the UDFs might be more than three times the size of the image depending on the image formats involved. All extender UDFs are AMODE(31) and are REENT. Use of memory below the line is probably the limiting factor. Check the *DB2 V8 Administration Guide*, "Chapter 5-13. Monitoring and Tuning Stored Procedures and User-defined Functions" for notes on memory requirements.

Use the WLM ISPF Panels to define your WLM Application environment. Note name changes and parameters that the specified procedure needs. This is a typical screen:

```
 Application-Environment  Notes  Options
Help


---------------------------------------------------------
                    Modify an Application Environment
Command ===> _____
_____

Application Environment Name : DMBWLM1
Description  . . . . . . . . . Extenders UDF/STP applenv 1
Subsystem Type . . . . . . . . DB2
Procedure Name . . . . . . . . DMBWLM1
Start Parameters . . . . . . . DB2SSN=DSN,
                       NUMTCB=10,APPLENV=DMBWLM1

                        _____
                        _____


Limit on starting server address spaces for a subsystem
instance:
1  1.  No limit
   2.  Single address space per system
   3.  Single address space per sysplex
```

Check *DB2 Installation Guide, GC18-7418*, and *DB2 for z/OS Administration Guide* for instructions on defining WLM Application Environments for DB2 UDFs and stored procedures. It is useful to check the indexes of these books.

The system administrator should move the WLM application environment JCL procedures to the PROCLIB.

After defining new environments, the WLM Policy should be reread. The command V WLM,POLICY= ... can be used to do this.

6.2.7 RACF Administration

- The extenders use an SQLID of MMDBSYS. This ID should be secured. Create the user MMDBSYS. If secondary authorization IDs are used by DB2, take any steps to secure MMDBSYS as a secondary authorization ID. It might be useful to have this ID available to login. If so, provide TSO, data set, and DB2 attach authorization.

- Create userid(s) for WLM environment address spaces with OE segment UID and GID assignment as planned. Home directory does not have to be specified.

- Set up the RACF STARTED class to associate the WLM environment address spaces with a userid, or the assembled module approach (legacy). Note that the started task name (member name of the procedure) is used for the association, not the WLM application environment name.

  – ready STARTED class if needed
  – (typical command) RDEFINE STARTED DMBWLM1.DMBWLM1 STDATA(USER(<wlm-userid>))
  – SETROPTS RACLIST(STARTED) REFRESH

- Permit WLM started task user ID SERVER class authority if this is being used on your system. The SERVER class is used to protect against unauthorized userids establishing themselves as WLM application environment providers.

  – ready SERVER class if needed
  – (typical command) PERMIT SERVER(DB2.<db2-subsystem>.DMBWLM1)
  – (typical command) PERMIT DB2.<db2-subsystem>.DMBWLM1 CLASS(SERVER)
        ID(<wlm-userid>) ACCESS(READ)
  – SETROPTS RACLIST(SERVER) REFRESH

- Grant read access to all data sets specified in the WLM application environment JCL procedures.

- Permit WLM started task userids DB2 RRSAF attach authority

  – (typical command) PERMIT <db2-subsystem>.RRSAF CLASS(DSNR)
        ID(<wlm-userid>) ACCESS(READ)

- WLM application environment "use" authority is granted to the future caller of enable server so that UDF and STPs can be created in that environment.

  You might need to issue the following statements. MMDBSYS or the enable server caller may need the authority to create UDFs or stored procedures using the WLM environments. Because a DB2 SYSADM normally invokes enable server, this check should be bypassed.

  – (typical command) RDEFINE DSNR (<db2-subsystem>.WLMENV.DMBWLM1)
  – (typical command) PERMIT <db2-subsystem>.WLMENV.DMBWLM1 CLASS(DSNR)
    ID(MMDBSYS) ACCESS(READ)
  – SETROPTS RACLIST(DSNR) REFRESH

6.2.8 DB2 IAV Extenders Initialization

The DB2 SYSADM should edit the DMBSETUP job SQL script in the extenders sample PDS (SDMBSAMP) and submit it. Note that the job DSNTEP2 is used to issue SQL statements. This job does the following:

* Database MMDBSYS is created to hold global metadata tables which keep track of the extenders enabled on the server and each table and column enabled for the extenders. You may want to specify default stogroup and bufferpool.

* User MMDBSYS is granted DBADM on database MMDBSYS with grant option.

* User MMDBSYS granted any needed rights to the catalog.

* User MMDBSYS is granted BINDADD and PACKADM to extenders collections:

    – MMDBSYS_CLIENT
    – MMDBSYS_RUN
    – MMDBSYS_BIND
    – MMDBSYS_INVOKE

* Extender Enable Server stored procedure definitions are set up. The WLM environment should be adjusted to match one of the WLM environments set up for the extenders.

* As a default, execute on package collections MMDBSYS_CLIENT and or MMDBSYS_RUN are granted to public.

* Sample tablespace, MMDBSYSG, suitable for enable server invocations is provided in comments.

If future bind work is to done by another DB2 administrator, then authority to the MMDBSYS user ID, or secondary should be given to the administrator. BINDAGENT FROM MMDBSYS might be more convenient.

6.2.9 DB2 IAV Extenders Bind

The following JCL is provided to bind the extenders packages. The extenders also bind ODBC into extenders collections.

* Job DMBBCLT binds the client interface into MMDBSYS_CLIENT collection.

* Job DMBBCLI binds ODBC for extender stored procedures and UDFs. ODBC is bound into MMDBSYS_RUN and MMDBSYS_BIND.

* Job DMBBSRV binds extenders packages for stored procedures and UDFs.

* Job DMBCLIC provides a sample plan for using ODBC and extenders APIs.

* The extenders define plan DB2EXT for the DB2EXT command, DMBAPI for possible use by applications which use extender APIs but don't use ODBC or embedded SQL, and optionally, DMBACLI for applications which use ODBC and extenders APIs. Provide grants to these plans. Because these plans use dynamic SQL, granting these plans to public should be considered.

The administrator can adjust performance-related values for these packages including KEEPDYNAMIC. All extender packages are owned by MMDBSYS. OWNER and DYNAMICRULES options should not be altered. However the sample command DMBCLI can be modified to suit application needs. An administrator with the appropriate authority must bind these packages.

6.2.10 DB2 Extender Notes

After following the above instructions, the DB2 system should be ready for the extender enabling. Note that enable server operations must be performed by a DB2 SYSADM or user ID MMDBSYS. These operations are provided by DB2EXT commands, and by APIs. Refer to *DB2 Image, Audio, and Video Extenders Administration and Programming* for more information.

6.2.10.1 Useful Administration Commands

- Display WLM and vary WLM console commands with the applenv specification.

- DB2 commands to start and stop functions and procedures.

- DB2 display thread command.

- DB2 Extenders command line processor.

6.2.10.2 DB2 Extender Requirements

- UDFs/STPs in WLM Application Environments. WLM Goal mode is strongly recommended.

- Resource Recovery Services (RRS), with associated system logger setup, as needed by DB2 RRSAF Attach.

- Unix Services, including temp space in the unix file system. Each concurrent extenders import, update, conversion request could require as much as 2 times the size of the multimedia object to be available as temporary space in the unix file system. Extenders Environment variables specify the directory for temporary files.

Appendix A. Included PTFs for DB2 for z/OS V8

A.1 Included PTFs for FMID HDB8810

```
HDB8810
 UQ76822 - PUT0305
 UQ77880 - PUT0306
 UQ77881 - PUT0306
 UQ77882 - PUT0306
 UQ77883 - PUT0306
 UQ77884 - PUT0306
 UQ77885 - PUT0306
 UQ77886 - PUT0306
 UQ77887 - PUT0306
 UQ77888 - PUT0306
 UQ77889 - PUT0306
 UQ77890 - PUT0306
 UQ77891 - PUT0306
 UQ77892 - PUT0306
 UQ77893 - PUT0306
 UQ77894 - PUT0306
 UQ77895 - PUT0306
 UQ77896 - PUT0306
 UQ77897 - PUT0306
 UQ77898 - PUT0306
 UQ77899 - PUT0306
 UQ77904 - PUT0306
 UQ78059 - PUT0306
 UQ78347 - SMCCOR
 UQ78378 - SMCCOR
 UQ78388 - SMCCOR
 UQ78389 - SMCCOR
 UQ78390 - SMCCOR
 UQ78391 - SMCCOR
 UQ78392 - SMCCOR
 UQ78393 - SMCCOR
 UQ78394 - SMCCOR
 UQ78709 - SMCCOR
 UQ78711 - SMCCOR
 UQ78712 - SMCCOR
 UQ78713 - SMCCOR
 UQ79121 - SMCCOR
 UQ79122 - SMCCOR
 UQ79123 - SMCCOR
 UQ79124 - SMCCOR
 UQ79125 - SMCCOR
 UQ79126 - SMCCOR
```

```
UQ79127 - SMCCOR
UQ79128 - SMCCOR
UQ79171 - SMCCOR
UQ79300 - SMCCOR
UQ79482 - SMCCOR
UQ79486 - SMCCOR
UQ79487 - SMCCOR
UQ79488 - SMCCOR
UQ79489 - SMCCOR
UQ79490 - SMCCOR
UQ79491 - SMCCOR
UQ79492 - SMCCOR
UQ79493 - SMCCOR
UQ79504 - SMCCOR
UQ79601 - SMCCOR
UQ79602 - SMCCOR
UQ79669 - SMCCOR
UQ79670 - SMCCOR
UQ79671 - SMCCOR
UQ79672 - SMCCOR
UQ79673 - SMCCOR
UQ79675 - SMCCOR
UQ79713 - SMCCOR
UQ80147 - RSU0312
UQ80148 - RSU0312
UQ80149 - RSU0312
UQ80150 - RSU0312
UQ80151 - RSU0312
UQ80152 - RSU0312
UQ80153 - RSU0312
UQ80154 - RSU0312
UQ80155 - RSU0312
UQ80156 - RSU0312
UQ80157 - RSU0312
UQ80622 - RSU0312
UQ80624 - RSU0312
UQ80625 - RSU0312
UQ80626 - RSU0312
UQ80627 - RSU0312
UQ80666 - RSU0312
UQ80748 - PUT0310
UQ80749 - PUT0310
UQ81018 - PUT0310
UQ81019 - PUT0310
UQ81020 - PUT0310
UQ81021 - PUT0310
UQ81022 - PUT0310
UQ81023 - PUT0310
UQ81024 - PUT0310
```

```
UQ81025 - PUT0310
UQ81026 - PUT0310
UQ81027 - PUT0310
UQ81028 - PUT0310
UQ81029 - PUT0310
UQ81280 - PUT0310
UQ81448 - PUT0310
UQ81450 - PUT0310
UQ81453 - PUT0310
UQ81454 - PUT0310
UQ81455 - PUT0310
UQ81519 - PUT0310
UQ81985 - PUT0311
UQ81986 - PUT0311
UQ81987 - PUT0311
UQ81988 - PUT0311
UQ81989 - PUT0311
UQ81990 - PUT0311
UQ82021 - PUT0311
UQ82454 - PUT0311
UQ82455 - PUT0311
UQ82456 - PUT0311
UQ82457 - PUT0311
UQ82458 - PUT0311
UQ82459 - PUT0311
UQ82460 - PUT0311
UQ82465 - PUT0311
UQ82886 - PUT0312
UQ82887 - PUT0312
UQ82888 - PUT0312
UQ82889 - PUT0312
UQ82890 - PUT0312
UQ82891 - PUT0312
UQ82892 - PUT0312
UQ82894 - PUT0312
UQ82895 - PUT0312
UQ82896 - PUT0312
UQ82897 - PUT0312
UQ82898 - PUT0312
UQ82932 - PUT0312
UQ83327 - PUT0312
UQ83331 - PUT0312
UQ83333 - PUT0312
UQ83334 - PUT0312
UQ83335 - PUT0312
UQ83336 - PUT0312
UQ83652 - SMCCOR
UQ83653 - SMCCOR
UQ83654 - SMCCOR
```

```
UQ83656 - SMCCOR
UQ83657 - SMCCOR
UQ83658 - SMCCOR
UQ83900 - SMCCOR
UQ83901 - SMCCOR
UQ83902 - SMCCOR
UQ83903 - SMCCOR
UQ83965 - SMCCOR
UQ83966 - SMCCOR
UQ84119 - SMCCOR
UQ84120 - SMCCOR
UQ84122 - SMCCOR
UQ84123 - SMCCOR
UQ84124 - SMCCOR
UQ84125 - SMCCOR
UQ84362 - SMCCOR
UQ84419 - SMCCOR
UQ84420 - SMCCOR
UQ84421 - SMCCOR
UQ84604 - PUT0402
UQ84605 - PUT0402
UQ84606 - PUT0402
UQ84607 - PUT0402
UQ84608 - PUT0402
UQ84609 - PUT0402
UQ84610 - PUT0402
UQ84611 - PUT0402
UQ84612 - PUT0402
UQ84844 - PUT0402
UQ84846 - PUT0402
UQ84848 - PUT0402
UQ84849 - PUT0402
UQ85164 - PUT0402
UQ85165 - PUT0402
UQ85166 - PUT0402
UQ85169 - PUT0402
UQ85198 - PUT0402
UQ85393 - PUT0402
UQ85413 - PUT0402
UQ85414 - PUT0402
UQ85415 - PUT0402
UQ85416 - PUT0402
UQ85537 - PUT0402
UQ85911 - RSU0404
UQ85912 - PUT0403
UQ85913 - PUT0403
UQ85915 - PUT0403
UQ85916 - PUT0403
UQ85917 - PUT0403
```

```
UQ85918 - PUT0403
UQ85919 - PUT0403
UQ85920 - PUT0403
UQ85921 - PUT0403
UQ85922 - PUT0403
UQ85924 - PUT0403
UQ86161 - PUT0405
UQ86208 - PUT0404
UQ86246 - PUT0404
UQ86251 - PUT0404
UQ86275 - PUT0404
UQ86276 - RSU0404
UQ86284 - PUT0404
UQ86295 - PUT0404
UQ86334 - PUT0404
UQ86337 - PUT0404
UQ86339 - RSU0404
UQ86392 - RSU0404
UQ86413 - RSU0404
UQ86414 - PUT0404
UQ86432 - RSU0404
UQ86444 - RSU0404
UQ86467 - PUT0404
UQ86482 - PUT0404
UQ86495 - PUT0404
UQ86499 - PUT0404
UQ86532 - PUT0404
UQ86534 - PUT0404
UQ86540 - PUT0404
UQ86541 - PUT0404
UQ86544 - RSU0405
UQ86546 - PUT0404
UQ86568 - RSU0405
UQ86667 - PUT0404
UQ86729 - PUT0404
UQ86806 - PUT0404
UQ86829 - PUT0405
UQ86834 - PUT0404
UQ86836 - RSU0405
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UQ86872 - PUT0404
UQ86875 - PUT0404
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UQ86901 - PUT0404
UQ86905 - PUT0404
UQ86924 - PUT0404
UQ86928 - PUT0404
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UQ86931 - RSU0405
UQ86940 - PUT0404
UQ86941 - PUT0404
UQ86952 - PUT0404
UQ86971 - PUT0404
UQ87001 - PUT0404
UQ87006 - RSU0405
UQ87008 - PUT0405
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UQ87013 - RSU0405
UQ87014 - PUT0404
UQ87015 - PUT0404
UQ87056 - PUT0404
UQ87060 - PUT0404
UQ87070 - PUT0404
UQ87097 - PUT0404
UQ87117 - PUT0404
UQ87127 - PUT0404
UQ87128 - PUT0404
UQ87129 - PUT0405
UQ87133 - RSU0405
UQ87135 - PUT0404
UQ87169 - PUT0405
UQ87185 - PUT0404
UQ87190 - PUT0404
UQ87194 - PUT0404
UQ87197 - PUT0404
UQ87200 - RSU0405
UQ87218 - PUT0404
UQ87220 - PUT0404
UQ87222 - PUT0405
UQ87228 - RSU0405
UQ87229 - PUT0404
UQ87232 - PUT0404
UQ87234 - PUT0405
UQ87242 - RSU0405
UQ87252 - PUT0404
UQ87256 - PUT0404
UQ87261 - PUT0404
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UQ87373 - PUT0404
UQ87374 - PUT0404
UQ87380 - PUT0405
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UQ87593 - PUT0405
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UQ87623 - PUT0405
UQ87633 - PUT0405
UQ87638 - PUT0405
UQ87639 - PUT0405
UQ87641 - PUT0405
UQ87643 - SMCCOR
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UQ87669 - PUT0405
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UQ87682 - PUT0405
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UQ87731 - PUT0405
UQ87732 - PUT0405
UQ87735 - PUT0405
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```
UQ87751 - PUT0405
UQ87754 - PUT0405
UQ87758 - PUT0405
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UQ87804 - PUT0405
UQ87825 - PUT0405
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UQ87850 - PUT0405
UQ87887 - PUT0405
UQ87888 - PUT0405
UQ87903 - PUT0405
UQ87920 - PUT0405
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UQ87983 - PUT0405
UQ87985 - PUT0405
UQ87986 - PUT0405
UQ87989 - PUT0405
UQ88023 - PUT0405
UQ88026 - SMCCOR
UQ88028 - PUT0405
UQ88046 - PUT0405
UQ88082 - PUT0405
UQ88089 - PUT0405
UQ88107 - PUT0405
UQ88112 - PUT0405
UQ88117 - SMCCOR
UQ88133 - PUT0405
UQ88138 - PUT0405
UQ88140 - PUT0405
UQ88142 - PUT0405
UQ88150 - PUT0405
UQ88175 - PUT0405
UQ88183 - PUT0405
UQ88202 - PUT0405
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UQ88258 - PUT0405
UQ88274 - PUT0405
UQ88291 - PUT0405
UQ88305 - PUT0405
```

```
UQ88366 - PUT0405
UQ88382 - SMCCOR
UQ88407 - PUT0405
UQ88432 - PUT0405
UQ88440 - PUT0405
UQ88497 - SMCCOR
UQ88499 - SMCCOR
UQ88500 - SMCCOR
UQ88512 - SMCCOR
UQ88513 - SMCCOR
UQ88514 - SMCCOR
UQ88518 - SMCCOR
UQ88519 - SMCCOR
UQ88534 - SMCCOR
UQ88542 - SMCCOR
UQ88544 - SMCCOR
UQ88553 - SMCCOR
UQ88554 - SMCCOR
UQ88555 - SMCCOR
UQ88567 - SMCCOR
UQ88570 - SMCCOR
UQ88577 - SMCCOR
UQ88582 - SMCCOR
UQ88586 - SMCCOR
UQ88591 - SMCCOR
UQ88592 - SMCCOR
UQ88619 - SMCCOR
UQ88625 - SMCCOR
UQ88628 - SMCCOR
UQ88634 - SMCCOR
UQ88657 - SMCCOR
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UQ88665 - SMCCOR
UQ88667 - SMCCOR
UQ88680 - SMCCOR
UQ88717 - SMCCOR
UQ88740 - SMCCOR
UQ88743 - SMCCOR
UQ88754 - SMCCOR
UQ88831 - SMCCOR
UQ88905 - SMCCOR
UQ88906 - SMCCOR
UQ88964 - SMCCOR
UQ88972 - SMCCOR
```

A.2 Included PTFs for FMID HIR2220

```
HIR2220
 UQ76924 - PUT0306
 UQ77364 - PUT0306
 UQ85909 - PUT0403
 UQ87591 - PUT0405
 UQ88719 - SMCCOR
 UQ88828 - SMCCOR
```

A.3 Included PTFs for FMID HIY8810

```
HIY8810
 UQ79674 - SMCCOR
```

A.4 Included PTFs for FMID HIZ8810

```
HIZ8810
 UQ77900 - PUT0306
 UQ79129 - SMCCOR
 UQ81460 - PUT0310
 UQ82461 - PUT0311
 UQ83659 - SMCCOR
 UQ85168 - PUT0402
 UQ85923 - PUT0403
 UQ87121 - PUT0404
 UQ88085 - PUT0405
```

A.5 Included PTFs for FMID HDRE810

```
HDRE810
 UQ84501 - SMCCOR
```

A.6 Included PTFs for FMID HDB881A

```
HDB881A
 UQ87007 - PUT0405
```

A.7 Included PTFs for FMID JDB8814

```
JDB8814
 UQ77903 - PUT0306
 UQ81459 - PUT0310
 UQ82462 - PUT0311
```

A.8 Included PTFs for FMID JDB8812

```
JDB8812
UQ77540 - RSU0309
UQ80418 - PUT0309
UQ83308 - RSU0403
UQ84182 - PUT0401
UQ85151 - PUT0402
UQ85385 - RSU0404
UQ85928 - RSU0404
UQ86912 - PUT0404
UQ88239 - PUT0405
```

A.9 Included PTFs for FMID JDB8817

```
JDB8817
UQ85954 - RSU0404
UQ87683 - PUT0405
UQ88394 - PUT1423
UQ88837 - SMCCOR
```

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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                            very        not
│  satisfied  <====================>  dissatisfied  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

___ No

If yes, how many years? ___

If you have any comments to make about your ratings above, or any other aspect of the product installation, please list them below:

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Please provide the following contact information:

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