



**Program Directory for
IBM DB2 Object Restore for z/OS**

V02.01.00

Program Number 5697-I20

FMIDs H23L210, H25F132

for Use with
z/OS

Document Date: December 2003

GI10-8580-00

Note!

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

A form for reader's comments appears at the back of this publication. When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

© **Copyright International Business Machines Corporation 2000, 2003. All rights reserved.**

© **Rocket Software, Inc. 2000, 2003 All rights reserved.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Notices	v
Trademarks	vi
1.0 Introduction	1
1.1 DB2 Object Restore Description	1
1.2 DB2 Object Restore FMIDs	2
2.0 Program Materials	4
2.1 Basic Machine-Readable Material	4
2.2 Optional Machine-Readable Material	5
2.3 Program Publications	5
2.3.1 Basic Program Publications	6
2.3.2 Optional Program Publications	6
2.4 Program Source Materials	6
2.5 Publications Useful During Installation	6
3.0 Program Support	8
3.1 Program Services	8
3.2 Preventive Service Planning	8
3.3 Statement of Support Procedures	9
4.0 Program and Service Level Information	10
4.1 Program Level Information	10
4.2 Service Level Information	10
5.0 Installation Requirements and Considerations	11
5.1 Driving System Requirements	11
5.1.1 Machine Requirements	11
5.1.2 Programming Requirements	11
5.2 Target System Requirements	12
5.2.1 Machine Requirements	12
5.2.2 Programming Requirements	12
5.2.2.1 Mandatory Requisites	12
5.2.2.2 Functional Requisites	12
5.2.2.3 Toleration/Coexistence Requisites	12
5.2.2.4 Incompatibility (Negative) Requisites	13
5.2.3 DASD Storage Requirements	13
5.3 FMIDs Deleted	15
5.4 Special Considerations	16
6.0 Installation Instructions	17
6.1 Installing DB2 Object Restore	17

6.1.1 SMP/E Considerations for Installing DB2 Object Restore	17
6.1.2 SMP/E Options Subentry Values	17
6.1.3 SMP/E CALLLIBS Processing	18
6.1.4 Sample Jobs	18
6.1.5 Allocate SMP/E CSI (Optional)	20
6.1.6 Initialize CSI zones (Optional)	20
6.1.7 Perform SMP/E RECEIVE	20
6.1.8 Allocate SMP/E Target and Distribution Libraries	21
6.1.9 Create DDDEF Entries	21
6.1.10 Perform SMP/E APPLY	21
6.1.11 Perform SMP/E ACCEPT	22
6.1.12 Run REPORT CROSSZONE	23
6.2 Activating DB2 Object Restore	23
Reader's Comments	24

Figures

1. Program File Content	4
2. Program File Content for - DB2 Change Accumulation - FEC Common Code	5
3. Basic Material: Unlicensed Publications	6
4. Basic Material: Other Unlicensed or Licensed Publications	6
5. Publications Useful During Installation	7
6. PSP Upgrade and Subset ID	8
7. Component IDs	9
8. Driving System Software Requirements	11
9. Mandatory Requisites	12
10. Total DASD Space Required by DB2 Object Restore	13
11. Storage Requirements for DB2 Object Restore Target Libraries	14
12. Storage Requirements for DB2 Object Restore Distribution Libraries	15
13. SMP/E Options Subentry Values	17
14. Sample Installation Jobs	18

Notices

References in this document to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe on any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, is the user's responsibility.

APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, New York 10504-1785
USA

For online versions of this book, we authorize you to:

- Copy, modify, and print the documentation contained on the media, for use within your enterprise, provided you reproduce the copyright notice, all warning statements, and other required statements on each copy or partial copy.
- Transfer the original unaltered copy of the documentation when you transfer the related IBM product (which may be either machines you own, or programs, if the program's license terms permit a transfer). You must, at the same time, destroy all other copies of the documentation.

You are responsible for payment of any taxes, including personal property taxes, resulting from this authorization.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some jurisdictions do not allow the exclusion of implied warranties, so the above exclusion may not apply to you.

Your failure to comply with the terms above terminates this authorization. Upon termination, you must destroy your machine readable documentation.

Trademarks

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

CBPDO
IBM®
IBMLink
DB2®
z/OS®

OS/390®
S/390®
SystemPac®
ServerPac®

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 Object Restore for z/OS. This publication refers to IBM DB2 Object Restore for z/OS as DB2 Object Restore.

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 4 identifies the basic and optional program materials and documentation for DB2 Object Restore.
- 3.0, "Program Support" on page 8 describes the IBM support available for DB2 Object Restore.
- 4.0, "Program and Service Level Information" on page 10 lists the APARs (program level) and PTFs (service level) incorporated into DB2 Object Restore.
- 5.0, "Installation Requirements and Considerations" on page 11 identifies the resources and all for installing and using DB2 Object Restore.
- 6.0, "Installation Instructions" on page 17 provides detailed installation instructions for DB2 Object Restore. It also describes the procedures for activating the functions of DB2 Object Restore, or refers to appropriate publications.

Before installing DB2 Object Restore, read the *CBPDO Memo To Users* and the *CBPDO Memo to Users Extension* that were supplied with this program softcopy as well as this Program Directory and then keep them for future reference. Section 3.2, "Preventive Service Planning" on page 8 tells you how to find any updates to the information and procedures in this Program Directory.

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

Do not use this Program Directory if you are installing DB2 Object Restore 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 Object Restore Description

DB2 Object Restore for z/OS, V02.01.00 (5697-I20) is an affordable and robust tool that enables you to recover valuable data assets on demand by quickly restoring dropped DB2 objects and their attributes without downtime, even if they no longer exist in the DB2 catalog. Such dropped objects may include databases, table spaces, tables, indexes and data, as well as table authorizations. V02.01.00 exploits DB2 V8 enhancements, improves the administration of the tool's Versioning Repository, and provides increased functionality to improve your efficiency.

The following enhancements have been made to V02.01.00:

- **Support for DB2 V8**
Allows you to exploit the features available in DB2 V8.
- **Double-byte character set (DBCS) support**
DBCS is supported for input and output. This allows you to use DB2 Object Restore with DBCS object names.
- **Single thread Versioning Repository update**
To prevent your users from unnecessarily consuming valuable system resources, Object Restore prevents multiple, concurrent Versioning Repository updates. This ensures that your system's resources are available when they are most needed.
- **Partial Versioning Repository refresh**
Object Restore has implemented a method through which you can perform a partial Versioning Repository refresh. You are no longer required to refresh the entire Versioning Repository if you know the individual database that contains the changes that you want to save. This will save you time and system resources.
- **DB2 subsystem ID (SSID) list**
No longer do you have to remember the numerous DB2 subsystems at your site. Object Restore displays a list of defined DB2 SSIDs from which you can select the one you want to use.
- **Single table recovery**
Object Restore allows you to recover a single table from image copies, UNLOAD utility backups, and dropped tables in table space VSAM data sets. If you have DB2 High Performance Unload installed, then you can use it when doing single table recovery from an image copy. This is much more efficient than recovering an entire table space when all you need is one table.
- **Point-in-time SQL JCL recovery**
Object Restore can restore a DB2 table to a point in time of your choosing by using an interface with DB2 Log Analysis Tool. This makes the point-in-time restoration a one step rather than a multiple step process as in prior versions.
- **SYSCOPY recovery**
Object Restore can recover any SYSCOPY rows that have been archived in the Versioning Repository. These rows would have been either irretrievably lost or recoverable only through a lengthy resource and time intensive restore from backup resources.

1.2 DB2 Object Restore FMIDs

DB2 Object Restore consists of the following FMIDs:

- H23L210 (DB2 Object Restore)
- H25F132 (DB2 Change Accumulation - FEC Common Code)

Note

FMID H25F132 contains common code and is shared among multiple DB2 Data Management Tools. Therefore, it is made available with multiple DB2 Data Management Tools. The parent product for H25F132 is DB2 Change Accumulation for z/OS, V01.03.00, program number 5655-F55.

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for DB2 Object Restore is 5697-I20 and its feature number is 5802.

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

The program announcement material describes the features supported by DB2 Object Restore. 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 17 for more information about how to install the program.

Information about the physical tape for the Basic Machine-Readable Materials for DB2 Object Restore can be found in the *CBPDO Memo To Users Extension*.

Non-CBPDO Customers

If you receive the product tape and program directory outside the CBPDO process, refer to 6.1.4, "Sample Jobs" on page 18 for details (media volser, file name, tape file number) and how to proceed.

Figure 1 describes the program file content for DB2 Object Restore and Figure 2 on page 5 describes the program file content for DB2 Change Accumulation - FEC Common Code. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the tape.

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.

Figure 1 (Page 1 of 2). Program File Content

Name	ORG	RECFM	RECL	BLK SIZE
SMPMCS	SEQ	FB	80	6400

Figure 1 (Page 2 of 2). Program File Content

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.H23L210.F1	PDS	FB	80	3120
IBM.H23L210.F2	PDS	U	0	6144
IBM.H23L210.F3	PDS	FB	80	27920
IBM.H23L210.F4	PDS	FB	80	27920
IBM.H23L210.F5	PDS	FB	80	27920
IBM.H23L210.F6	PDS	FB	80	27920
IBM.H23L210.F7	PDS	FB	80	27920

Figure 2. Program File Content for - DB2 Change Accumulation - FEC Common Code

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.H25F132.F1	PDS	FB	80	3120
IBM.H25F132.F2	PDS	U	0	6144
IBM.H25F132.F3	PDS	FB	80	27920
IBM.H25F132.F4	PDS	FB	80	27920
IBM.H25F132.F5	PDS	FB	80	27920
IBM.H25F132.F6	PDS	FB	80	27920

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for DB2 Object Restore.

2.3 Program Publications

The following sections identify the basic and optional publications for DB2 Object Restore.

2.3.1 Basic Program Publications

Figure 3 on page 6 identifies the basic unlicensed program publications for DB2 Object Restore. One copy of each of these publications is included when you order the basic materials for DB2 Object Restore. For additional copies, contact your IBM representative.

<i>Figure 3. Basic Material: Unlicensed Publications</i>	
Publication Title	Form Number
DB2 Object Restore License Information	GC18-9134

Figure 4 identifies the basic unlicensed or licensed publications that are not available hardcopy, but are available through the internet or other media for DB2 Object Restore.

<i>Figure 4. Basic Material: Other Unlicensed or Licensed Publications</i>		
Publication Title	Form Number	How Available
DB2 Object Restore User's Guide	SC18-9135	http://www.ibm.com/software/data/db2imstools/library.html

Publications on CD-ROM for DB2 Object Restore will be available on the next release of software product libraries:

- *OS/390 Software Products Collection, SK2T-6700*, BookManager format
- *z/OS Software Products Collection, SK3T-4270*, BookManager and PDF formats

2.3.2 Optional Program Publications

No optional publications are provided for DB2 Object Restore.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for DB2 Object Restore.

2.5 Publications Useful During Installation

The publications listed in Figure 5 may be useful during the installation of DB2 Object Restore. To order copies, contact your IBM representative or visit the IBM Publications Center on the world wide web at: <http://www.elink.ibmink.ibm.com/applications/public/applications/publications/cgibin/pbi.cgi>

Figure 5. Publications Useful During Installation

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

3.0 Program Support

This section describes the IBM support available for DB2 Object Restore.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing DB2 Object Restore, you should review the current Preventive Service Planning (PSP) information. If you obtained DB2 Object Restore as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO.

If you obtained DB2 Object Restore on product tape, or if the CBPDO 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 access to RETAIN, visit <http://www.ibm.link.ibm.com/> on the Internet.

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 Object Restore are:

UPGRADE	SUBSET	Description
5697120	H23L210	DB2 Object Restore
5655F55	H25F132	DB2 Change Accumulation - FEC Common Code

For additional Service related information, visit
<http://www.ibm.com/software/data/db2imstools/support.html>

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 7 identifies the component IDs (COMPID) for DB2 Object Restore.

<i>Figure 7. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
H23L210	5697I2000	DB2 Object Restore	210
H25F132	5655F5504	DB2 CHG ACCUMFEC	132

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of DB2 Object Restore. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

4.1 Program Level Information

The following APAR fixes against previous releases of DB2 Object Restore have been incorporated into this release. They are listed by FMID.

- FMID H23L120

PQ69145
PQ70677
PQ72392

PQ74217
PQ74786

PQ76056
PQ80048

4.2 Service Level Information

No PTFs against this release of DB2 Object Restore have been incorporated into the product tape.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating DB2 Object Restore. 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.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install DB2 Object Restore.

5.1.1 Machine Requirements

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

5.1.2 Programming Requirements

<i>Figure 8. Driving System Software Requirements</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 V02.10.00 8 or higher
5694-A01	z/OS V01.01.00 or higher
5655-G44	IBM SMP/E for z/OS and OS/390 Version 3 Release 1 or higher

5.2 Target System Requirements

This section describes the environment of the target system required to install and use DB2 Object Restore.

DB2 Object Restore installs in the DBS (P115) SREL.

5.2.1 Machine Requirements

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

5.2.2 Programming Requirements

5.2.2.1 Mandatory Requisites: A mandatory requisite is defined as a product that is required without exception; this product either **will not install** or **will not function** unless this requisite is met. This includes products that are specified as REQs or PREs.

<i>Figure 9. Mandatory Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5645-DB2	DB2 for OS/390 V06.01.00
5675-DB2	DB2 for OS/390 V07.01.00
Any one of the following:	
5685-054	ISPF Version 3 Release 3 or higher
5665-402	ISPF/PDF Version 3 Release 3 or higher
5665-042	ISPF Version 4

5.2.2.2 Functional Requisites: A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the basic function of the product, but **is** needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

DB2 Object Restore has no functional requisites.

5.2.2.3 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 Object Restore has no toleration/coexistence requisites.

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

DB2 Object Restore has no negative requisites.

5.2.3 DASD Storage Requirements

DB2 Object Restore libraries can reside on all supported DASD types.

Figure 10 lists the total space required for each type of library.

<i>Figure 10. Total DASD Space Required by DB2 Object Restore</i>	
Library Type	Total Space Required
Target	732 tracks for DB2 Object Restore 61 tracks for DB2 Change Accumulation - FEC Common Code
Distribution	732 tracks for DB2 Object Restore 61 tracks for DB2 Change Accumulation - FEC Common Code

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 6.1.8, "Allocate SMP/E Target and Distribution Libraries" on page 21.

3. 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

4. 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.

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

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

The following figures describe the target and distribution libraries required to install DB2 Object Restore. The storage requirements of DB2 Object Restore must be added to the storage required by other programs having data in the same library.

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 11 (Page 1 of 2). Storage Requirements for DB2 Object Restore Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SAUOLOAD	LMOD	any	U	PDS	U	0	353	77
SAUOSAMP	Sample	any	U	PDS	FB	80	61	10
SAUOPENU	Panel	any	U	PDS	FB	80	195	130
SAUOMENU	MSG	any	U	PDS	FB	80	10	10
SAUODBRM	Macro	any	U	PDS	FB	80	94	14
SAUOSLIB	SKEL	any	U	PDS	FB	80	19	10
SFECLOAD	LMOD	any	S	PDS	U	0	26	25

Figure 11 (Page 2 of 2). Storage Requirements for DB2 Object Restore Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SFECSAMP	Sample	any	S	PDS	FB	80	3	5
SFECPENU	Panel	any	S	PDS	FB	80	26	15
SFECMENU	MSG	any	S	PDS	FB	80	3	5
SFECDBRM	Macro	any	S	PDS	FB	80	3	5

Figure 12. Storage Requirements for DB2 Object Restore Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AAUOLOAD	U	PDS	U	0	353	77
AAUOSAMP	U	PDS	FB	80	61	10
AAUOPENU	U	PDS	FB	80	195	130
AAUOMENU	U	PDS	FB	80	10	10
AAUODBRM	U	PDS	FB	80	94	14
AAUOSLIB	U	PDS	FB	80	19	10
AFECLOAD	S	PDS	U	0	26	25
AFECSAMP	S	PDS	FB	80	3	5
AFECPENU	S	PDS	FB	80	26	15
AFECMENU	S	PDS	FB	80	3	5
AFECDBRM	S	PDS	FB	80	3	5

5.3 FMIDs Deleted

Installing DB2 Object Restore 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 Object Restore 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 Change Accumulation - FEC Common Code

FMID H25F132 Considerations:

It is strongly recommended to install all the DB2 Data Management Tools into the same SMP/E CSI. Several of the DB2 Data Management Tools will be delivering common code, shipping the same FMID on a separate SMP/E Relfile tape. You will only be required to install the common code FMID once. If you use different SMP/E CSIs, you will have to install and maintain multiple instances of the common code FMID which will increase your maintenance and DASD requirements.

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 Object Restore.

Please note the following:

- If you want to install DB2 Object Restore into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMP/CSI 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 Object Restore

6.1.1 SMP/E Considerations for Installing DB2 Object Restore

This release of DB2 Object Restore 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 13. 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.

SUB-ENTRY	Value	Comment
DSSPACE	(200,200,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

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

- SISPLD
- CSSLIB

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

6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install DB2 Object Restore:

<i>Figure 14. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
AUOALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.H23L210.F4
AUOALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.H23L210.F4
AUORECV2	RECEIVE	Sample RECEIVE job for DB2 Change Accumulation - FEC Common Code	IBM.H23L210.F4
AUORECEV	RECEIVE	Sample RECEIVE job	IBM.H23L210.F4
AUOALOC2	ALLOCATE	Sample job to allocate target and distribution libraries for DB2 Change Accumulation - FEC Common Code	IBM.H23L210.F4
AUOALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.H23L210.F4
AUODDEF2	DDDEF	Sample job to define SMP/E DDDEFs for DB2 Change Accumulation - FEC Common Code	IBM.H23L210.F4
AUODDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.H23L210.F4
AUOAPPLY	APPLY	Sample APPLY job	IBM.H23L210.F4
AUOACCEP	ACCEPT	Sample ACCEPT job	IBM.H23L210.F4

You may 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=*
//*****
/* If you wish to create a new global zone do not run the *
/* RCVPDO job supplied with CBPDO. RCVPDO assumes that *
/* you will be installing into an existing global zone. *
/* Make the //TAPEIN DD statement below active if you install*
/* from a CBPDO tape by uncommenting the DD statement below. *
//*****
/*TAPEIN DD DSN=IBM.H23L210.F4,UNIT=tunit,
/* VOL=SER=volser,LABEL=(X,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //TAPEIN DD statement below active if you install*
/* from a product tape received outside the CBPDO process *
/* (using the optional SMP/E RECEIVE job) by uncommenting *
/* the DD statement below. *
//*****
/*TAPEIN DD DSN=IBM.H23L210.F4,UNIT=tunit,
/* VOL=SER=23L210,LABEL=(5,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
//*****
/*FILEIN DD DSN=IBM.H23L210.F4,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
SELECT MEMBER=(AUOALA,AUOALB,AUOALLOC,AUOALOC2,AUODDDEF)
SELECT MEMBER=(AUODDEF2,AUORECEV,AUORECV2,AUOAPPLY,AUOACCEP)
/*

```

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.H23L210.F4 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 also access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the SMPTLIBs to a work data set for editing and submission. See Figure 14 on page 18 to find the appropriate SMPTLIB data set.

6.1.5 Allocate SMP/E CSI (Optional)

If you are using an existing CSI, do not execute this job.

If you are allocating a new SMP/E data set for this install, edit, and submit sample job AUOALA to allocate the SMP/E data set for DB2 Object Restore.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.6 Initialize CSI zones (Optional)

Edit and submit sample job AUOALB to initialize SMP/E zones for DB2 Object Restore. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 if this job runs correctly.

6.1.7 Perform SMP/E RECEIVE

Note: If you obtained DB2 Object Restore as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the DB2 Object Restore 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.

Note: DB2 Change Accumulation - FEC Common Code FMID H25F132 is an unconditional requisite for DB2 Object Restore. If you have already installed DB2 Change Accumulation - FEC Common Code, FMID H25F132, **do not** receive this FMID again.

- If you are installing the DB2 Change Accumulation - FEC Common Code for the first time, FMID H25F132, then edit and submit sample job AUORECV2 to perform the SMP/E RECEIVE for the DB2 Change Accumulation - FEC Common Code. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages for AUORECV2: You will receive a return code 0 if this job runs correctly.

- Edit and submit sample job AUORECEV to perform the SMP/E RECEIVE for DB2 Object Restore. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages for AUORECEV: You will receive a return code 0 if this job runs correctly.

6.1.8 Allocate SMP/E Target and Distribution Libraries

- Edit and submit sample job AUOALLOC to allocate the SMP/E target and distribution libraries for DB2 Object Restore. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages for AUOALLOC: You will receive a return code of 0 if this job runs correctly.

- If you are installing the DB2 Change Accumulation - FEC Common Code then edit and submit sample job AUOALOC2 to allocate the SMP/E target and distribution libraries for the DB2 Change Accumulation - FEC Common Code. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages for AUOALOC2: You will receive a return code 0 if this job runs correctly.

6.1.9 Create DDDEF Entries

- Edit and submit sample job AUODDDEF to create DDDEF entries for the SMP/E target and distribution libraries for DB2 Object Restore. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages for AUODDDEF: You will receive a return code of 0 if this job runs correctly.

- If you are installing the DB2 Change Accumulation - FEC Common Code then edit and submit sample job AUODDEF2 to create DDDEF entries for the SMP/E target and distribution libraries for the DB2 Change Accumulation - FEC Common Code. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages for AUODDEF2: You will receive a return code 0 if this job runs correctly.

6.1.10 Perform SMP/E APPLY

Edit and submit sample job AUOAPPLY to perform an SMP/E APPLY CHECK for DB2 Object Restore. Consult the instructions in the sample job for more information.

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 may complete with a return code 4 or 8, and may issue any of the following messages which do not affect product installation: GIM50602I, GIM61903W, IEW2470E, IEW2648E, and IEW2651W.

Expected Return Codes and Messages from APPLY: This job may complete with a return code 4 or 8, and may issue any of the following messages which do not affect product installation: GIM50602I, GIM61903W, IEW2470E, IEW2648E, and IEW2651W.

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job AUOACCEP to perform an SMP/E ACCEPT CHECK for DB2 Object Restore. Consult the instructions in the sample job for more information.

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 may complete with a return code 4 and may issue the following messages which do not affect product installation: GIM20501I and GIM61903W

Expected Return Codes and Messages from ACCEPT: This job may complete with a return code 4 and may issue the following message which does not affect product installation: GIM20501I and 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.

6.1.12 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 Object Restore, 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.

6.2 Activating DB2 Object Restore

The publication *DB2 Object Restore User's Guide, SC18-9135* contains the step-by-step procedures to activate the functions of DB2 Object Restore.

Reader's Comments

Program Directory for IBM DB2 Object Restore for z/OS December 2003

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

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

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

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

How did you order this product?

- CBPDO
- CustomPac
- ServerPac
- Independent
- Other

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

- Yes
- No

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

- Yes

___ 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:

Please provide the following contact information:

Name and Job Title

Organization

Address

Telephone

Thank you for your participation.

Please send the completed form to (or give to your IBM representative who will forward it to the IBM DB2 Object Restore for z/OS Development group):

IBM Corporation
Silicon Valley Laboratory
Department DTX/H150
555 Bailey Avenue
San Jose, California 95141

FAX Number: (408) 463-4393

E-Mail: dcso@us.ibm.com



Printed in U.S.A.

G110-8580-00

