Program Directory for

IBM Data Gate for z/OS

3.2.0

Program Number 5698-DG3

FMIDs HAQT710, JAQT712, HAQB320, HABIB30, JABIB3H, JABIB3I, JABIB3K

for use with
z/OS

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Note

Before using this information and the product it supports, be sure to read the general information under 7.0, “Notices” on page 30.

Contents

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1.0 Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of IBM Data Gate for z/OS. This publication refers to IBM Data Gate for z/OS as IBM Data Gate for z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 5 identifies the basic program materials and documentation for IBM Data Gate for z/OS.
- 3.0, “Program Support” on page 7 describes the IBM support available for IBM Data Gate for z/OS.
- 4.0, “Program and Service Level Information” on page 8 lists the APARs (program level) and PTFs (service level) that have been incorporated into IBM Data Gate for z/OS.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using IBM Data Gate for z/OS.
- 6.0, “Installation Instructions” on page 21 provides detailed installation instructions for IBM Data Gate for z/OS. It also describes the procedures for activating the functions of IBM Data Gate for z/OS, or refers to appropriate publications.

For most recent information on prerequisites and installation information for IBM Db2 for z/OS Data Gate please check it on the recent IBM Cloud Pak for Data menu
https://www.ibm.com/docs/en/cloud-paks/cp-data/5.1.x

Before installing IBM Data Gate for z/OS, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; after which, keep the documents for your reference. Section 3.2, “Preventive Service Planning” on page 7 tells you how to find any updates to the information and procedures in this program directory.

IBM Data Gate for z/OS is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The program directory that is provided in softcopy format on the CBPDO is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for IBM Data Gate for z/OS are included on the CBPDO.

Do not use this program directory if you install IBM Data Gate for z/OS with a ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

1.1 IBM Data Gate for z/OS Description

IBM Data Gate for z/OS offers an end-to-end solution to ensure Db2 for z/OS data is available and synchronized from sources on IBM Z to targets optimized on IBM Cloud Pak for Data. IBM technology is used to directly capture change logs from Db2 for z/OS and apply the data to either Db2 Warehouse on IBM Cloud Pak for Data or Cloud Pak for Data Db2. Processing is fully zIIP enabled to ensure that there is little impact to general processing on IBM Z. Targets are determined based on consuming applications and are fully optimized to ensure low latency and high throughput.

IBM Data Gate for z/OS delivers synchronized data from Db2 for z/OS to Db2 or Db2 Warehouse on IBM Cloud Pak for Data. IBM Data Gate for z/OS brings new essential integration with Watson Knowledge Catalog on Cloud Pak for Data. The metadata managed by IBM Data Gate for z/OS, related to tables and databases where those tables reside, can be registered in the Watson Knowledge Catalog by a single click. There, the data can then be classified, and data protection rules can be used to define at a fine granular level which user is allowed to work with IBM Z data. Data quality can be automatically assessed and provided to data scientists and data stewards for further analysis right away.

IBM Data Gate for z/OS enables that analytical queries against Db2 for z/OS can be accelerated by routing to Db2 Warehouse on Cloud Pak for Data. With that capability, applications accessing Db2 for z/OS can use complex analytical queries in an efficient way without driving resource consumption on Db2 for z/OS. This use case also adds functions such as storage saver technology, which enables online accessible Db2 for z/OS archived tables on Cloud Pak for Data on any cloud deployment, and the semantic query access technology to ensure that latest committed data is used when accelerating queries through IBM Data Gate for z/OS.

As of the date of this announcement, the cloud deployment options available for IBM Data Gate for z/OS include:

- On premises, private cloud
- IBM Cloud Pak for Data System
- IBM Cloud
- Amazon Web Services (AWS)

Contact your IBM representative for the latest platforms supported by Cloud Pak for Data and IBM Data Gate for z/OS.

IBM InfoSphere Classic Change Data Capture for z/OS supports IMS Databases and VSAM files as a data source when used with InfoSphere Change Data Capture, targeting both z/OS and distributed platforms. This combination of products enables unidirectional movement of IMS and VSAM data to:

- Local or remote relational database management systems
- Message queues
- Flat files
- Transformation engines such as InfoSphere DataStage
- Database appliances such as IBM's PureData System for Analytics, powered by Netezza technology

The result is fast and consistent delivery of business-critical IMS and VSAM data changes to drive:

- Dynamic data warehousing
- Service-oriented architecture (SOA) initiatives
- Live reporting
- Data consolidation and migration projects
- Master data management initiatives

1.2 IBM Data Gate for z/OS FMIDs

IBM Data Gate for z/OS consists of the following FMIDs:

HAQT710 - IBM Db2 Analytics Accelerator for z/OS
JAQT712 - IBM Db2 Analytics Accelerator for z/OS on IBM Z
HAQB320 - IBM Data Gate for z/OS IZSAM ID .
HABIB30 - Classic Fed/Rep/EP Core (Base)
JABIB3H - Classic CDC Unique
JABIB3I - Classic CDC IMS
JABIB3K - Classic CDC VSAM

Note

The IBM Db2 Analytics Accelerator for z/OS and IBM Data Gate for z/OS IZSAM ID FMIDs install into the MVS (P115) SREL:

HAQT710 - IBM Db2 Analytics Accelerator for z/OS
JAQT712 - IBM Db2 Analytics Accelerator for z/OS on IBM Z
HAQB320 - IBM Data Gate for z/OS IZSAM ID

The Classic FMIDs install into the DB2/IMS (Z038) SREL:

HABIB30 - Classic Fed/Rep/EP Core (Base)
JABIB3H - Classic CDC Unique
JABIB3I - Classic CDC IMS
JABIB3K - Classic CDC VSAM

Sample installation jobs are provided to intall these FMIDs into the respective SRELs.

2.0 Program Materials

An IBM program is identified by a program number. The program number for IBM Data Gate for z/OS is 5698-DG3.

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product.

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

2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, “Installation Instructions” on page 21 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for IBM Data Gate for z/OS in the *CBPDO Memo To Users Extension*.

2.2 Program Publications

The following sections identify the basic publications for IBM Data Gate for z/OS.

The Data Gate related chapter in IBM Cloud Pak for Data document
https://www.ibm.com/docs/en/cloud-paks/cp-data/5.1.x?topic=new-data-gate

Figure 1 identifies the basic licensed program publications for IBM Data Gate for z/OS.

Figure 1. Basic Material: Licensed Publications

Publication Title	Form Number	Media Format
IBM Db2 for z/OS Data Gate License Information	LC28-3295	CD

2.3 Program Source Materials

No program source materials or viewable program listings are provided for IBM Data Gate for z/OS.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during the installation of IBM Data Gate for z/OS which can be found at IBM Products documentation
https://www.ibm.com/docs/en/zos/2.5.0?topic=zos-smpe.

Figure 2. Publications Useful During Installation

Publication
IBM SMP/E for z/OS User's Guide
IBM SMP/E for z/OS Reference
IBM SMP/E for z/OS Commands
IBM SMP/E for z/OS Messages, Codes, and Diagnosis

3.0 Program Support

This section describes the IBM support available for IBM Data Gate for z/OS.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IBM Data Gate for z/OS, make sure that you review the PSP bucket information for IBM Z products document **https://www.ibm.com/support/pages/node/7127792**. It contains the latest information concerning the installation of IBM products, including the latest service recommendations and cross-product dependencies. This information was previously available in traditional PSP buckets, which are no longer published for IBM Z products.

For support, access the Software Support Website at **https://www.ibm.com/mysupport/**

3.3 Statement of Support Procedures

Report any problems which you feel might be an error in the product materials to your IBM Support Center. You may be asked to gather and submit additional diagnostics to assist the IBM Support Center in their analysis.

Figure 3 identifies the component IDs (COMPID) for IBM Data Gate for z/OS.

Figure 3. Component IDs

FMID	COMPID	Component Name	Release
HAQT710	5697DA700	IBM Db2 Analytics Accelerator for z/OS	710
JAQT712	5697DA700	IBM Db2 Analytics Accelerator for z/OS on IBM Z	712
HAQB320	5698DG300	IBM Data Gate for z/OS IZSAM ID	320
HABIB30	5697I8200	Classic Fed/Rep/EP Core (Base)	B30
JABIB3H	5697I8200	Classic CDC Unique	B3H
JABIB3I	5697I8200	Classic CDC IMS	B3I
JABIB3K	5697I8200	Classic CDC VSAM	B3K

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of IBM Data Gate for z/OS. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

4.1 Program Level Information

The following APAR fixes against previous releases of IBM Data Gate for z/OS have been incorporated into this release. They are listed by FMID.

- FMID HABIB30

  PI23983 PI09441 PI10137 PI10636 PI07428 PI07982 PI07682 PI08232
  PI08967 PI11012 PI12186 PI13300 PI13515 PI15367 PI16844 PI17053
  PI18811 PI21271 PI21561 PI22088 PI22731 PI23010 PI22986 PI23077
  PI24859 PI25693 PI25902 PI26500 PI27178 PI27271 PI06408 PI21564
  PI23066

- FMID JABIB3H

  PI05904 PI07900 PI08987 PI13221 PI21141 PI25633 PI27733 PI28197

4.2 Service Level Information

No PTFs against this release of IBM Data Gate for z/OS have been incorporated into the product package.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IBM Data Gate for z/OS. The following terminology is used:

- *Driving system*: the system on which SMP/E is executed to install the program.

  The program might have specific operating system or product level requirements for using processes, such as binder or assembly utilities during the installation.

- *Target system*: the system on which the program is configured and run.

  The program might have specific product level requirements, such as needing access to the library of another product for link-edits. These requirements, either mandatory or optional, might directly affect the element during the installation or in its basic or enhanced operation.

In many cases, you can use a system as both a driving system and a target system. However, you can make a separate IPL-able clone of the running system to use as a target system. The clone must 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.

Use separate driving and target systems in the following situations:

- When you install a new level of a product that is already installed, the new level of the product will replace the old one. By installing the new level onto a separate target system, you can test the new level and keep the old one in production at the same time.
- When you install a product that shares libraries or load modules with other products, the installation can disrupt the other products. By installing the product onto a separate target system, you can 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 IBM Data Gate for z/OS.

5.1.1 Machine Requirements

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

5.1.2 Programming Requirements

Figure 4. Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	2.5 or higher	N/A	No

Notes:

1. SMP/E is a requirement for installation and is an element of z/OS.
2. Installation might require migration to new z/OS releases to be service supported. See **https://www.ibm.com/support/lifecycle/**.

The **HAQT710** component of IBM Data Gate for z/OS is installed into a file system.

Before installing IBM Data Gate for z/OS, you must ensure that the target system file system data sets are available for processing on the driving system. OMVS must be active on the driving system and the target system file data sets must be mounted on the driving system.

zFS must be active on the driving system. Information on activating and using zFS can be found in z/OS Distributed File Service zSeries File System Administration.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use IBM Data Gate for z/OS.

The IBM Db2 Analytics Accelerator for z/OS and IBM Data Gate for z/OS IZSAM ID FMIDs install into the DB2/IMS (**P115**) SREL, FMIDs; **HAQT710. JAQT712, HAQB320**.

The Classic FMIDs of IBM Data Gate for z/OS install into the MVS (**Z038**) SREL, FMIDs; **HABIB30, JABIB3H, JABIB3J, JABIB3K**.

5.2.1 Machine Requirements

IBM Data Gate for z/OS has the following hardware requirements:

- For the z/OS platform, any one of these Z systems:

  IBM z15, IBM z14, IBM z14 Model ZR1, IBM z13, or IBM z13s

- For the Linux platform:

  IBM Data Gate for z/OS integrated with IBM Cloud Pak for Data. For each Data Gate instance, IBM recommends allocation of 4 cores and 16 GB memory.

5.2.2 Programming Requirements

5.2.2.1 Installation Requisites

Installation requisites identify products that are required and *must* be present on the system or products that are not required but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product. These products are specified as PREs or REQs.

IBM Data Gate for z/OS has no mandatory installation requisites.

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

IBM Data Gate for z/OS has no conditional installation requisites.

5.2.2.2 Operational Requisites

Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions.

Figure 5. Target System Mandatory Operational Requisites

Program Number	**Product Name and Minimum VRM/Service Level**
5650-ZOS	z/OS V2.5 or higher, plus Product Registration Services (for Db2 Utilities Suite for z/OS, V12.1)
5737-H76	IBM Cloud Pak for Data V4.5
5770-AF4	IBM Db2 Utilities Suite for z/OS, V12.1
Any **one** of the following:	
5650-DB2	IBM Db2 12 for z/OS, Function Level 505 activated (APAR PH06628), or higher
5770-AF3	IBM Db2 12 for z/OS Value Unit Edition, Function Level 505 activated (APAR PH06628), or higher
5698-DB2	IBM Db2 for z/OS 13.1.0
5698-DBV	IBM Db2 for z/OS Value Unit Edition 13.1

Note: Installation might require migration to new releases to obtain support. See **https://www.ibm.com/support/lifecycle/**

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions. These products are specified as IF REQs.

Figure 6. Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
5635-A06	IBM IMS 15.2 or higher	
5655-DS5	IBM IMS Database Value Unit Edition 15.2 or igher	
5655-Y04	CICS Transaction Server for z/OS 5.5 or higher	
5655-Y24	CICS VSAM Recovery for z/OS 5.2.0	

Note: Installation might require migration to new releases to obtain support. See https://www.ibm.com/support/lifecycle/

5.2.2.3 Toleration/Coexistence Requisites

Toleration/coexistence requisites identify products that must be present on sharing systems. 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 environment at different time intervals.

IBM Data Gate for z/OS has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (Negative) Requisites

Negative requisites identify products that must *not* be installed on the same system as this product.

IBM Data Gate for z/OS has no negative requisites.

5.2.3 DASD Storage Requirements

IBM Data Gate for z/OS libraries can reside on all supported DASD types.

Figure 7 lists the total space that is required for each type of library.

Figure 7. Total DASD Space Required by IBM Data Gate for z/OS

Library Type	Total Space Required in 3390 Trks *	Description
Target	5341	
Distribution	6493	
File System(s)	750	

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.
2. Abbreviations used for data set types are shown as follows.

   U Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.

   S Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in 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 other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in 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.

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

   For more information about the names and sizes of the required data sets, see 6.1.8, “Allocate SMP/E Target and Distribution Libraries” on page 24.
3. Abbreviations used for the file system path type are as follows.

   N New path, created by this product.

X Path created by this product, but might 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 can be changed.
   - The default block size of the data set can be changed.
   - The data set can be merged with another data set that has equivalent characteristics.
   - The data set can be either a PDS or a PDSE, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be a PDSE.
5. All target libraries listed have the following attributes:
   - These data sets can be SMS-managed, but they are not required to be SMS-managed.
   - These data sets are not required to reside on the IPL volume.
   - The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.
6. All target libraries that are listed and contain load modules have the following attributes:
   - These data sets can not be in the LPA, with some exceptions. If the data set should be placed in the LPA, see the Special Considerations section below.
   - These data sets can be in the LNKLST. If so, see the Special Considerations section below.
   - These data sets are not required to be APF-authorized, with some exceptions. If the data set must be APF-authorized, see the Special Considerations section below.

The following figures describe the target and distribution libraries and file system paths required to install IBM Data Gate for z/OS. The storage requirements of IBM Data Gate for z/OS must be added to the storage required by other programs that have data in the same library or path.

Note: Use the data in these tables to determine 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 8. Storage Requirements for IBM Data Gate for z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SAQTBASE	SAMP	Any	U	PDS	FB	80	10	5
SAQTDBRM	MAC	Any	U	PDS	FB	80	12	5
SAQTICU	PROGRAM	Any	U	PDSE	U	0	10	N/A
SAQTLICI	SAMP	Any	U	PDS	FB	80	5	5
SAQTMOD	PROGRAM	Any	U	PDSE	U	0	4000	N/A
SAQTSAMP	SAMP	Any	U	PDS	FB	80	120	5
SAQBLOAD	LMOD	Any	U	PDS	U	0	2	44
SAQBPKGI	Data	Any	U	PDS	FB	80	2	44
SCACBASE	SAMP	Any	S	PDS	FB	80	10	6
SCACCONF	SAMP	Any	S	PDS	FB	80	6	6
SCACLOAD	LMOD	Any	S	PDSE	U	0	900	N/A
SCACMAC	Macro	Any	S	PDS	FB	80	10	6
SCACMSGS	MSGS	Any	S	PDS	FB	80	60	6
SCACSAMP	SAMP	Any	S	PDS	FB	80	105	20
SCACSIDE	LMOD	Any	S	PDS	FB	80	45	10
SCACSKEL	SKEL	Any	U	PDS	FB	80	60	10

Figure 9. IBM Data Gate for z/OS File System Paths

DDNAME	TYPE	Path Name
SAQTHFS	X	/usr/lpp/IBM/aqt/v7r1m0/IBM

Figure 10. Storage Requirements for IBM Data Gate for z/OS Distribution Libraries

Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
AAQTBASE	U	PDS	FB	80	10	5
AAQTDBRM	U	PDS	FB	80	12	5
AAQTHFS	U	PDSE	VB	1028	1125	N/A
AAQTICU	U	PDSE	U	0	10	N/A
AAQTLICI	U	PDS	FB	80	5	5
AAQTMOD	U	PDSE	U	0	4000	N/A
AAQTSAMP	U	PDS	FB	80	120	5
AAQBLOAD	U	PDS	U	0	2	44
AAQBPKGI	U	PDS	FB	80	2	44
ACACBASE	S	PDS	FB	80	10	6
ACACCONF	S	PDS	FB	80	6	6
ACACLOAD	S	PDSE	U	0	900	N/A
ACACMAC	S	PDS	FB	80	10	6
ACACMSGS	S	PDS	FB	80	60	6
ACACSAMP	S	PDS	FB	80	105	20
ACACSIDE	S	PDS	FB	80	45	10
ACACSKEL	U	PDS	FB	80	60	10

5.2.4 DASD Storage Requirements by FMID

The tables in this section can help determine the specific space required for components not already installed in an existing environment. There is a table for each FMID included with the product.

Figure 11. Storage Requirements for HAQT710 Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SAQTBASE	SAMP	Any	U	PDS	FB	80	10	5
SAQTDBRM	MAC	Any	U	PDS	FB	80	8	5
SAQTICU	PROGRAM	Any	U	PDSE	FB	0	10	N/A
SAQTLICI	SAMP	Any	U	PDS	FB	80	5	5
SAQTMOD	PROGRAM	Any	U	PDSE	U	0	4000	N/A
SAQTSAMP	SAMP	Any	U	PDS	FB	80	90	5
AAQTBASE			U	PDS	FB	80	10	5
AAQTDBRM			U	PDS	FB	80	8	5
ASAQTICU			U	PDSE	FB	0	10	N/A
AAQTLICI			U	PDS	FB	80	5	5
AAQTMOD			U	PDSE	U	0	4000	N/A
AAQTSAMP			U	PDS	FB	80	90	5

Figure 12. Storage Requirements for JAQT712 Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SAQTLICI	SAMP	Any	U	PDS	FB	80	5	5
SAQTMOD	PROGRAM	Any	U	PDSE	U	0	4000	N/A
AAQTLICI			U	PDS	FB	80	5	5
AAQTMOD			U	PDSE	U	0	4000	N/A

Figure 13. Storage Requirements for HAQB320 Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SAQBLOAD	LMOD	Any	U	PDS	U	0	2	44
SAQBPKGI	Data	Any	U	PDS	FP	80	2	44
AAQBLOAD			U	PDS	U	0	2	44
AAQBPKGI			U	PDS	FP	80	2	44

Figure 14. Storage Requirements for HABIB30 Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SCACBASE	SAMP	Any	S	PDS	FB	80	10	6
SCACCONF	SAMP	Any	S	PDS	FB	80	6	6
SCACLOAD	LMOD	Any	S	PDSE	U	0	900	N/A
SCACMAC	Macro	Any	S	PDS	FB	80	10	6
SCACMSGS	MSGS	Any	S	PDS	FB	80	60	6
SCACSAMP	SAMP	Any	S	PDS	FB	80	105	20
SCACSIDE	LMOD	Any	S	PDS	FB	80	45	10
SCACSKEL	SKEL	Any	U	PDS	FB	80	60	10
ACACBASE			S	PDS	FB	80	10	6
ACACCONF			S	PDS	FB	80	6	6
ACACLOAD			S	PDSE	U	0	900	N/A
ACACMAC			S	PDS	FB	80	10	6
ACACMSGS			S	PDS	FB	80	60	6
ACACSAMP			S	PDS	FB	80	105	20
ACACSIDE			S	PDS	FB	80	45	10
ACACSKEL			U	PDS	FB	80	60	10

Figure 15. Storage Requirements for JABIB3H Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SCACCONF	SAMP	Any	S	PDS	FB	80	6	6
SCACLOAD	LMOD	Any	S	PDSE	U	0	900	N/A
SCACSAMP	SAMP	Any	S	PDS	FB	80	105	20
SCACSIDE	LMOD	Any	S	PDS	FB	80	45	10
SCACSKEL	SKEL	Any	U	PDS	FB	80	60	10
ACACCONF			S	PDS	FB	80	6	6
ACACLOAD			S	PDSE	U	0	900	N/A
ACACSAMP			S	PDS	FB	80	105	20
ACACSIDE			S	PDS	FB	80	45	10
ACACSKEL			U	PDS	FB	80	60	10

Figure 16. Storage Requirements for JABIB3I Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SCACSAMP	SAMP	Any	S	PDS	FB	80	105	20
ACACSAMP			S	PDS	FB	80	105	20

Figure 17. Storage Requirements for JABIB3K Libraries

Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
SCACSKEL	SKEL	Any	U	PDS	FB	80	60	10
ACACSKEL			U	PDS	FB	80	60	10

5.3 Special Considerations

IBM Data Gate for z/OS uses the "partitioned data set extended" or PDSE format for the SAQTMOD and SCACLOAD target libraries. There are some operational differences between PDS and PDSE data sets. The PDS format may be shared by more than one z/OS system and no special precautions are necessary. However the PDSE format may only be shared by z/OS systems which are part of a sysplex or which are connected using Global Resource Serialization (are in a GRS complex). If z/OS systems share use of a PDSE data set outside of a sysplex or GRS environment, you may experience severe problems when the data set is updated. This is due to the fact that PDSE directory information is cached in storage, and when the data set is updated from one system the other system(s) have no knowledge of the update, and their cached directory information will be incorrect.

You must take care not to share the SAQTMOD and SCACLOAD data set between z/OS systems unless they are in a sysplex or are connected in a GRS complex. If you need to share the content of the SAQTMOD and SCACLOAD data sets, a separate copy must be made for each z/OS system.

Note

The IBM Db2 Analytics Accelerator for z/OS and IBM Data Gate for z/OS IZSAM ID FMIDs install into the **DB2/IMS (P115) SREL** :

HAQT710 - IBM Db2 Analytics Accelerator for z/OS
JAQT712 - IBM Db2 Analytics Accelerator for z/OS on IBM Z
HAQB320 - IBM Data Gate for z/OS IZSAM ID

The Classic FMIDs install into the **MVS (Z038) SREL**:

HABIB30 - Classic Fed/Rep/EP Core (Base)
JABIB3H - Classic CDC Unique
JABIB3I - Classic CDC IMS
JABIB3K - Classic CDC VSAM

Sample install jobs are provided for the installation of the respective FMIDs into the respective **MVS (Z038)** and **DB2/IMS (P115)** SRELs.

6.0 Installation Instructions

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

Please note the following points:

- If you want to install IBM Data Gate for z/OS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.
- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.
- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing IBM Data Gate for z/OS

6.1.1 SMP/E Considerations for Installing IBM Data Gate for z/OS

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of IBM Data Gate for z/OS.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 18. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

Figure 18. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(5000,2500,900)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

The **HABIB30 and JABIB3H** components of IBM Data Gate for z/OS use the CALLLIBS function provided in SMP/E to resolve external references during installation. When IBM Data Gate for z/OS is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB
- LINKLIB
- SCEECPP
- SCEELKED
- SCEELKEX
- SEZACMTX
- SEZARNT1

Note: CALLLIBS uses the previous DDDEFs only to resolve the link-edit for IBM Data Gate for z/OS. These data sets are not updated during the installation of IBM Data Gate for z/OS.

6.1.4 Sample Jobs

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

This will require you to research and tailor each of the jobs accordingly. The RELFILEs and member names for these sample jobs are provided in the following tables.

Figure 19. Sample Installation Jobs for IBM Db2 Analytics Accelerator and IZSAM FMIDs

Job Name	Job Type	Description	SMPTLIB Data Set
AQBALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set **(Optional)**	IBM.HAQB320.F1
AQBALB	SMP/E	Sample job to allocate SMP/E data sets **(Optional)**	IBM.HAQB320.F1
AQBRECEV	RECEIVE	Sample RECEIVE job	IBM.HAQB320.F1
AQBALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAQB320.F1
AQBZFS	ALLOMTZFS	Sample job to allocate new ZFS data set **(Optional)**	IBM.HAQB320.F1
AQBISMKD	MKDIR	Sample job to invoke the supplied AQBMKDIR EXEC to allocate HFS or zFS paths	IBM.HAQB320.F1
AQBDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAQB320.F1
AQBAPPLY	APPLY	Sample APPLY job	IBM.HAQB320.F1
AQBACCEP	ACCEPT	Sample ACCEPT job	IBM.HAQB320.F1

Figure 20. Sample Installation Jobs for Classic FMIDs

Job Name	Job Type	Description	SMPTLIB Data Set
AQB1ALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set **(Optional)**	IBM.HAQB320.F1
AQB1ALB	SMP/E	Sample job to allocate SMP/E data sets **(Optional)**	IBM.HAQB320.F1
AQB1RECE	RECEIVE	Sample RECEIVE job	IBM.HAQB320.F1
AQB1ALLO	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAQB320.F1
AQB1DDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HAQB320.F1
AQB1APPL	APPLY	Sample APPLY job	IBM.HAQB320.F1
AQB1ACCE	ACCEPT	Sample ACCEPT job	IBM.HAQB320.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 24) then copy the jobs from the SMPTLIB data sets to a work data set for editing and submission. See Figure 19 on page 22 and Figure 20 to find the appropriate data set.

You can also copy the sample installation jobs from the product files by submitting the following job. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1    EXEC PGM=IEBCOPY,REGION=4M
//SYSPRINT DD SYSOUT=*
//IN       DD DSN=IBM.HAQB320.F1,UNIT=SYSALLDA,DISP=SHR,
//         VOL=SER=filevol
//OUT      DD DSNAME=jcl-library-name,
//         DISP=(NEW,CATLG,DELETE),
//         VOL=SER=dasdvol,UNIT=SYSALLDA,
//         SPACE=(TRK,(20,10,5))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
    COPY INDD=IN,OUTDD=OUT
/*
```

See the following information to update the statements in the previous sample:

IN:

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 are stored.
dasdvol is the volume serial of the DASD device where the output data set resides.

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 **AQBALA** to allocate the SMP/E data set for IBM Db2 Analytics Accelerator for z/OS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: 0

Note: **AQB1ALA** sample job for **Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K**

6.1.6 Initialize CSI zones (Optional)

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

Edit and submit sample job **AQBALB** to initialize SMP/E zones for IBM Db2 Analytics Accelerator for z/OS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: 0

Note: **AQB1ALB** sample job for Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K

6.1.7 Perform SMP/E RECEIVE

If you have obtained IBM Data Gate for z/OS as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the IBM Data Gate for z/OS FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

You can also choose to edit and submit the **AQBRECEV** sample job to perform the SMP/E RECEIVE forIBM Data Gate for z/OS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: 0

Note: **AQB1RECE** sample job for Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K

6.1.8 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job AQBALLOC to allocate the SMP/E target and distribution libraries for IBM Data Gate for z/OS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: 0

Note: **AQB1ALLO** sample job for Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K

6.1.9 Allocate, create and mount ZFS Files (Optional)

This job allocates, creates a mountpoint, and mounts zFS data sets.

If you plan to install IBM Data Gate for z/OS into a new z/OS UNIX file system, you can edit and submit the optional **AQBZFS** job to perform the following tasks:

- Create the z/OS UNIX file system
- Create a mountpoint
- Mount the z/OS UNIX file system on the mountpoint

Consult the instructions in the sample job for more information.

The recommended z/OS UNIX file system type is *zFS*. The recommended mountpoint is *&mntpnt1.*.

Before running the sample job to create the z/OS UNIX file system, you must ensure that OMVS is active on the driving system. zFS must be active on the driving system if you are installing IBM Data Gate for z/OS into a file system that is zFS.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is completed.

```
MOUNT FILESYSTEM('#dsn')
MOUNTPOINT('&mntpnt1.')
MODE(RDWR)        /* can be MODE(READ) */
 TYPE(ZFS) PARM('AGGRGROW') /* zFS, with extents */
```

See the following information to update the statements in the previous sample:

#dsn is the name of the data set holding the z/OS UNIX file system.
&mntpnt1. is the name of the mountpoint where the z/OS UNIX file system will be mounted.

Expected Return Codes and Messages: 0

6.1.10 Allocate File System Paths

The target system zFS data set must be mounted on the driving system when running the sample **AQBISMKD** job since the job will create paths in the file system.

Before running the sample job to create the paths in the file system, you must ensure that OMVS is active on the driving system and that the target system's zFS file system is mounted to the driving system. zFS must be active on the driving system.

If you plan to install IBM Data Gate for z/OS into a new zFS file system, you must create the mountpoint and mount the new file system to the driving system for IBM Data Gate for z/OS.

The recommended mountpoint is */usr/lpp/IBM/aqt/v7r1m0*.

Edit and submit sample job **AQBISMKD** to allocate the file system paths for IBM Data Gate for z/OS. Consult the instructions in the sample job for more information.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is completed.

Expected Return Codes and Messages: 0

6.1.11 Create DDDEF Entries

Edit and submit sample job **AQBDDDEF** to create DDDEF entries for the SMP/E target and distribution libraries for IBM Data Gate for z/OS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages:

Note: **AQB1DDE** sample job for Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K

6.1.12 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job **AQBAPPLY** to perform an SMP/E APPLY CHECK for IBM Data Gate for z/OS. Consult the instructions in the sample job for more information.

   Note: **AQB1APPL** sample job for Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K

   The latest HOLDDATA is available through several different portals, including https://public.dhe.ibm.com/s390/assigns/ or https://www.ibm.com/support/pages/enhanced-holddata-zos for usage instructions. The latest HOLDDATA may identify HIPER and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve the APARs, if a fixing PTF is available.

   You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

   To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

   Here are sample APPLY commands:

   a. To ensure that all recommended and critical service is installed with the FMIDs, receive the latest HOLDDATA and use the APPLY CHECK command as follows

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND .
```

Some HIPER APARs might not have fixing PTFs available yet. You should analyze the symptom flags for the unresolved HIPER APARs to determine if the reported problem is applicable to your environment and if you should bypass the specific ERROR HOLDs in order to continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixing PTFs available and are not in a PE chain. Unresolved PEs or HIPERs might still exist and require the use of BYPASS.

b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER)) .
 ..any other parameters documented in the program directory
```

This method is quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX command and specify Fix Category IBM.PRODUCTINSTALL-REQUIREDSERVICE to investigate missing recommended service.

If you bypass HOLDs during the installation of the FMIDs because fixing PTFs are not yet available, you can be notified when the fixing PTFs are available by using the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink.

Expected Return Codes and Messages from APPLY CHECK: 0

2. After you take actions that are 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 applies all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from APPLY: 0

6.1.13 Perform SMP/E ACCEPT

Edit and submit sample job **AQBACCEP** to perform an SMP/E ACCEPT CHECK for IBM Data Gate for z/OS. Consult the instructions in the sample job for more information.

Note: **AQB1ACCE** sample job for Classic FMIDs, HABIB30, JABIB3H, JABIB3I, JABIB3K

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the ACCEPT CHECK. The SMP/E root cause analysis identifies the cause of *errors* but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands documentation for details.

Expected Return Codes and Messages from ACCEPT CHECK: 0

After you take actions that are 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 accepts all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

Expected Return Codes and Messages from ACCEPT: 0

6.1.14 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMPPUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install IBM Data Gate for z/OS, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

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

6.2 Activating IBM Data Gate for z/OS

6.2.1 File System Execution

If you mount the file system in which you have installed IBM Data Gate for z/OS in read-only mode during execution, then you do not have to take further actions to activate IBM Data Gate for z/OS.

6.3 Product Customization

The Data Gate related chapter in IBM Cloud Pak for Data document
https://www.ibm.com/docs/en/cloud-paks/cp-data/5.1.x

The publication IBM InfoSphere Classic Change Data Capture for z/OS End User Documentation (GC19-4172) contains the step-by-step procedures to activate the functions of InfoSphere Classic Change Data Capture.

The documentation is located at http://www.ibm.com/support/docview.wss?uid=swg27039728

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