



**Program Directory for
IBM
Connect:Direct Standard Edition
for z/OS**

V06.00.00

Program Number 5655-X11

FMIDs HDGA600 JDA6000

for Use with
z/OS V 2.02 and higher with zNALC

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GI13-4384-00

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 27.

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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 Connect:Direct for z/OS Standard Edition. This publication refers to IBM Connect:Direct for z/OS Standard Edition as Connect:Direct.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for Connect:Direct.
- 3.0, “Program Support” on page 6 describes the IBM support available for Connect:Direct.
- 4.0, “Program and Service Level Information” on page 8 lists the APARs (program level) and PTFs (service level) that have been incorporated into Connect:Direct.
- 5.0, “Installation Requirements and Considerations” on page 12 identifies the resources and considerations that are required for installing and using Connect:Direct.
- 6.0, “Installation Instructions” on page 20 provides detailed installation instructions for Connect:Direct. It also describes the procedures for activating the functions of Connect:Direct, or refers to appropriate publications.

Before installing Connect:Direct, 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 6 tells you how to find any updates to the information and procedures in this program directory.

Connect:Direct 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 Connect:Direct are included on the CBPDO.

Do not use this program directory if you install Connect:Direct with a SystemPac or 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 Connect:Direct Description

IBM Connect:Direct for z/OS Standard Edition is peer-to-peer file-based integration middleware optimized for assured delivery, high-volume and secure data exchange within and between enterprises. It is optimized for high performance and moves files containing any type of data across multiple platforms, disparate file systems, and disparate media.

Connect:Direct enables business to:

- Move large amounts of data internally and externally

- Share information with business partners
- Schedule business information-related application activities
- Automate data distribution
- Control and audit network activities
- Maintain network security
- Use one common command structure for information management with platform-specific interfaces

1.2 Connect:Direct FMIDs

Connect:Direct consists of the following FMID:

HDGA600 - Base

JDGA600 - License Feature (required)

2.0 Program Materials

An IBM program is identified by a program number. The program number for Connect:Direct is 5655-X11.

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 Connect:Direct. 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 20 for more information about how to install the program.

Figure 1 describes the program file content for Connect:Direct for FMID HDGA600. You can find information about the physical media for the basic machine-readable materials for Connect:Direct in the *CBPDO Memo To Users Extension*.

<i>Figure 1. Program File Content</i>				
Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.HDGA600.F1	PDS	FB	80	8800
IBM.HDGA600.F2	PDSE	U	0	6144
IBM.HDGA600.F3	PDSE	U	0	6144
IBM.HDGA600.F4	PDS	VB	2048	23476
IBM.HDGA600.F5	PDS	FB	80	8800
IBM.HDGA600.F6	PDS	FB	80	8800
IBM.HDGA600.F7	PDS	FB	80	8800
IBM.HDGA600.F8	PDS	FB	80	8800

Figure 2 on page 4 describes the program file content for Connect:Direct for FMID JDGA600. You can find information about the physical media for the basic machine-readable materials in the *CBPDO Memo To Users Extension*.

<i>Figure 2. Program File Content for JDGA600</i>				
Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	8800
IBM.JDGA600.F1	PDS	FB	80	8800
IBM.JDGA600.F2	PDSE	U	0	6144
IBM.JDGA600.F3	PDS	FB	80	8800

Notes:

1. The data set attributes in these tables must be used in the JCL of jobs that read the data sets. However, because the data sets are in *unloaded format, their actual attributes might be different.
2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

2.2 Program Publications

The following sections identify the basic publications for Connect:Direct.

The Connect:Direct program publications can be found at the Connect:Direct V06.00.00 Knowledgecenter site at the URL below:

http://www.ibm.com/support/knowledgecenter/SS4PJT_6.0.0/

There are no licensed program publications for Connect:Direct.

Figure 3 identifies the basic unlicensed publications for Connect:Direct. One copy of each of these publications is included when you order the basic materials for Connect:Direct. Additional copies can be obtained from the IBM Publications Center website at <http://www.ibm.com/shop/publications/order/>.

<i>Figure 3 (Page 1 of 2). Basic Material: Unlicensed Publications</i>		
Publication Title	Form Number	Media Format
IBM Connect:Direct for z/OS Standard Edition for z/OS Program Directory	GI13-4384-00	http://www.ibm.com/shop/ publications/order/

Figure 3 (Page 2 of 2). Basic Material: Unlicensed Publications

Publication Title	Form Number	Media Format
IBM Connect:Direct for z/OS Standard Edition Agreements and License Information	GI13-4386-00	http://www.ibm.com/shop/publications/order/

There are no optional publications provided for Connect:Direct.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for Connect:Direct.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 4 during the installation of Connect:Direct.

Figure 4. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	http://www.ibm.com/shop/publications/order/

3.0 Program Support

This section describes the IBM support available for Connect:Direct.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install Connect:Direct, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.PRODUCTINSTALL-REQUIREDSERVICE fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on the **APPLY CHECK** command. See 6.1.8, “Perform SMP/E APPLY” on page 23 for a sample APPLY command

If you obtained Connect:Direct as part of a CBPDO, HOLDDATA is included.

If the CBPDO for Connect:Direct is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

<http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp>

You can also use S/390 SoftwareXcel or contact the IBM Support Center to obtain the latest PSP Bucket information.

For program support, access the Software Support Website at <http://www.ibm.com/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 Connect:Direct are included in Figure 5.

<i>Figure 5. PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
STRCD600	HDGA600	Connect:Direct for z/OS
STRCD600	JDGA600	Connect:Direct for z/OS Standard Edition

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 6 on page 7 identifies the component IDs (COMPID) for Connect:Direct.

<i>Figure 6. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HDGA600	5655X1200	Connect:Direct	600
JDGA600	5655X1100	Connect:Direct Standard Edition	600

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of Connect:Direct. 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 Connect:Direct have been incorporated into this release. They are listed by FMID.

- FMID HDGA600

PH00100	PI14169	PI23730
PH00541	PI14662	PI24064
PH01726	PI15392	PI24076
PH02858	PI16204	PI24126
PH03851	PI16622	PI24168
PI11025	PI17651	PI24785
PI11028	PI17824	PI24967
PI11029	PI18148	PI25431
PI11030	PI18537	PI25522
PI11032	PI19103	PI25816
PI11033	PI19460	PI26132
PI11227	PI19648	PI26292
PI12710	PI19846	PI26333
PI12745	PI19848	PI26868
PI12900	PI19854	PI26869
PI12963	PI20117	PI27365
PI13033	PI20132	PI27452
PI13040	PI20155	PI27811
PI13043	PI20273	PI27920
PI13133	PI20533	PI27925
PI13134	PI20575	PI28335
PI13137	PI20759	PI28343
PI13141	PI20815	PI28574
PI13211	PI21154	PI28664
PI13290	PI21161	PI28917
PI13513	PI21232	PI29262
PI13516	PI21988	PI29345
PI13775	PI22079	PI29714
PI13937	PI22245	PI29717
PI13981	PI22581	PI29720
PI14079	PI23605	PI29724

PI30333	PI39197	PI47371
PI30676	PI39454	PI47450
PI30802	PI39476	PI47471
PI31232	PI39524	PI47547
PI31319	PI39728	PI47636
PI31324	PI39756	PI47910
PI32238	PI39759	PI48129
PI32249	PI40001	PI48738
PI32261	PI40176	PI49065
PI32490	PI40284	PI49092
PI32947	PI40982	PI49206
PI33272	PI41422	PI49405
PI33283	PI41462	PI49449
PI33615	PI41466	PI49502
PI33749	PI42351	PI49504
PI33797	PI42402	PI49689
PI34005	PI42760	PI49894
PI34085	PI43077	PI50293
PI34107	PI43156	PI50797
PI34168	PI43539	PI51218
PI34391	PI43739	PI51294
PI34402	PI43750	PI51712
PI34409	PI44226	PI52427
PI34840	PI44413	PI52429
PI34905	PI44423	PI52702
PI34936	PI44677	PI53750
PI35011	PI44849	PI54005
PI35050	PI45022	PI54706
PI35318	PI45068	PI54714
PI35607	PI45395	PI55282
PI35611	PI45410	PI55992
PI35613	PI45488	PI56416
PI35961	PI45552	PI56417
PI35984	PI45602	PI56573
PI36268	PI45802	PI56830
PI36393	PI46077	PI56843
PI36427	PI46261	PI57538
PI36621	PI46328	PI58272
PI37385	PI46338	PI58273
PI37975	PI46381	PI58285
PI38422	PI46488	PI58397
PI38738	PI46778	PI58905
PI38794	PI46785	PI58922
PI38810	PI46960	PI59343
PI39084	PI47221	PI59437
		PI59673

PI59728	PI66940	PI77728
PI60154	PI67027	PI77762
PI60169	PI67168	PI78172
PI60200	PI67653	PI78792
PI60345	PI67768	PI78982
PI60417	PI67770	PI79113
PI60420	PI67856	PI79403
PI60750	PI67890	PI79927
PI6092B	PI68017	PI80157
PI60926	PI68397	PI80539
PI61261	PI69031	PI80627
PI61380	PI69035	PI80686
PI61518	PI69145	PI81258
PI61604	PI69167	PI81491
PI61631	PI69185	PI81556
PI61673	PI69754	PI81627
PI61763	PI69895	PI81727
PI61881	PI69973	PI82312
PI61974	PI70329	PI82370
PI61999	PI70678	PI82641
PI62622	PI71055	PI82971
PI62910	PI71131	PI83133
PI62983	PI71604	PI83205
PI63150	PI71674	PI83771
PI63202	PI72128	PI84169
PI63358	PI72217	PI84720
PI63494	PI72236	PI84886
PI63593	PI72440	PI84976
PI63655	PI73258	PI85189
PI63743	PI73275	PI85192
PI64221	PI73352	PI85271
PI64808	PI73373	PI85311
PI64815	PI74121	PI85581
PI65062	PI74232	PI86161
PI65186	PI74504	PI86271
PI65444	PI75683	PI86371
PI65625	PI76075	PI86681
PI65641	PI76113	PI86776
PI65643	PI76648	PI86967
PI65752	PI77024	PI87794
PI65988	PI77144	PI87977
PI66149	PI77316	PI88181
PI66161	PI77372	PI88225
PI66525	PI77379	PI88234
PI66937	PI77402	PI88468
		PI88645

PI89447	PI92761	PI96798
PI89597	PI93275	PI97093
PI89969	PI93544	PI97152
PI90076	PI93545	PI97217
PI90433	PI94224	PI97456
PI90880	PI94381	PI97513
PI91244	PI94473	PI97884
PI91530	PI95290	PI98523
PI92013	PI95606	PI98651
PI92098	PI95611	PI98784
PI92109	PI96190	PI99071
PI92523	PI96282	PI99078

4.2 Service Level Information

No PTFs against this release of Connect:Direct have been incorporated into the product package.

Frequently check the Connect:Direct PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.PRODUCTINSTALL-REQUIREDSERVICE)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating Connect:Direct. 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 Connect:Direct.

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 7. 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	V02.02.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS but can also be ordered as a separate product, 5655-G44, minimally V03.06.00.

Note: Installation might require migration to new z/OS releases to be service supported. See https://www-01.ibm.com/software/support/lifecycle/index_z.html.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use Connect:Direct.

Connect:Direct installs in the z/OS (Z038) 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 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.

Connect:Direct has no mandatory installation requisites.

Note: Installation might require migration to new z/OS releases to be service supported. See http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html.

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.

Connect:Direct 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.

Connect:Direct has no mandatory operational requisites.

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 8 (Page 1 of 2). Target System Conditional Operational Requisites		
Program Number	Product Name and Minimum VRM/Service Level	Function
For zFBA Support at z/OS level below:		
5850-ZOS	z/OS V2.02.00 or higher	zFBA Support
For TLS1.2 Support:		
5850-ZOS	z/OS V2.02.00 or higher	TLS1.2 Support
For NSA Suite B Support:		
5850-ZOS	z/OS V2.02.00 or higher	NSA Suite B Support
For z/OS Encryption Readiness Technology (zERT):		
5850-ZOS	z/OS V2.02.00 or higher	zERT Support
For zEDC Express Accelerator Support:		
---	zEC12 GA2 or zBC12 Server with zEDC Express Accelerator	zEDC Express Accelerator Support
5850-ZOS	z/OS V2.02.00 or higher	zEDC Express Accelerator Support
Microcode Level Support:		
---	For DS/8700 and DS/8800 the fixes will be available in Release 6.3SP5 or higher	For DS8700, MCL 76.31.63.0 or higher For DS8S8800, MCL 86.31.78.0 or higher
---	For DS/8870 the fixes will be available in Release 7.1.5 or higher	For DS8870, MCL 87.10.97.0 or higher
For EAV, Extended Address Volume Support		
---	Requires IBM System Storage DS8000 Series with release 4.0 licensed internal code	Extended Address Volume Support

Figure 8 (Page 2 of 2). Target System Conditional Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level	Function
Any one of the following for CICS Interface:		
5655-Y04	CICS TS for z/OS V5.01.00 or higher	CICS Interface
5722-DFJ	CICS TS for z/OS Value Unit Edition V5.01.00 or higher	CICS Interface

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.

Connect:Direct 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.

Connect:Direct has no negative requisites.

5.2.3 DASD Storage Requirements

Connect:Direct libraries can reside on all supported DASD types.

Figure 9 lists the total space that is required for each type of library.

Figure 9. Total DASD Space Required by Connect:Direct

Library Type	Total Space Required in 3390 Trks	Description
Target	4000	
Distribution	4000	

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 6.1.6, "Allocate SMP/E Target and Distribution Libraries" on page 23.

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 value in the "Member Type" column specifies "LPA", it is advised to place the data set in the LPA.
- These data sets can be in the LNKLIST.
- These data sets are not required to be APF-authorized, with some exceptions. If the value in the "Member Type" column specifies "APF", the data set must be APF-authorized.

The following figures describe the target and distribution libraries and file system paths required to install Connect:Direct. The storage requirements of Connect:Direct 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 10. Storage Requirements for Connect:Direct 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
SDGACICS	LMOD	ANY	U	PDSE	U	0	268	-
SDGACNTL	Sample	ANY	U	PDS	FB	80	7	10
SDGADATA	Data	ANY	U	PDS	VB	2048	151	20
SDGAISPC	Clist	ANY	U	PDS	FB	80	81	20
SDGAJCL	Sample	ANY	U	PDS	FB	80	9	20
SDGALINK	LMOD	ANY	U	PDSE	U	0	2334	-
SDGAMAC	MACRO	ANY	U	PDS	FB	80	135	40
SDGAMAP	Data	ANY	U	PDS	FB	80	51	40
SDGAMENU	PNL	ANY	U	PDS	FB	80	12	50
SDGAMIB	Sample	ANY	U	PDS	VB	256	15	10
SDGAMSGS	MSGs	ANY	U	PDS	FB	80	30	50
SDGAOPLS	Sample	ANY	U	PDS	FB	80	4	20
SDGAPARM	Sample	ANY	U	PDS	FB	80	6	20
SDGAPENU	PNL	ANY	U	PDS	FB	80	135	200
SDGAPROC	PROC	ANY	U	PDS	FB	80	15	50
SDGAPROF	Sample	ANY	U	PDS	FB	80	2	7
SDGASAMP	Sample	ANY	U	PDS	FB	80	302	50
SDGASENU	PNL	ANY	U	PDS	FB	80	5	15
SDGATRP	Sample	ANY	U	PDS	VB	256	15	10

Figure 11. Storage Requirements for Connect:Direct 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
ADGACICS	U	PDSE	U	0	268	-
ADGACNTL	U	PDS	FB	80	7	10
ADGADATA	U	PDS	VB	2048	151	20
ADGAISPC	U	PDS	FB	80	81	20
ADGAJCL	U	PDS	FB	80	9	20
ADGALINK	U	PDSE	U	0	2334	-
ADGAMAC	U	PDS	FB	80	135	40
ADGAMAP	U	PDS	FB	80	51	40
ADGAMENU	U	PDS	FB	80	12	50
ADGAMIB	U	PDS	VB	256	15	10
ADGAMSGS	U	PDS	FB	80	30	50
ADGAOPLS	U	PDS	FB	80	4	20
ADGAPARM	U	PDS	FB	80	6	20
ADGAPENU	U	PDS	FB	80	135	200
ADGAPROC	U	PDS	FB	80	15	50
ADGAPROF	U	PDS	FB	80	2	7
ADGASAMP	U	PDS	FB	80	302	50
ADGASENU	U	PDS	FB	80	5	15
ADGATRP	U	PDS	VB	256	15	10

5.3 FMIDs Deleted

Installing Connect:Direct might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install Connect:Direct into separate SMP/E target and distribution zones.

Note: These FMIDs are not automatically deleted from the Global Zone. If you want to delete these FMIDs from the Global Zone, use the SMP/E REJECT NOFMID DELETEFMID command. See the SMP/E Commands book for details.

5.4 Special Considerations

Even though you can install Connect:Direct into any SMP/E environment, it is HIGHLY recommended to install into a separate environment. This is to avoid the possibility of any collisions with other products.

FMIDs HDGA600 and JDGA600 are assumed to be installed into the same zones. If this is not the case, you will need to modify the sample jobs accordingly.

Before you start using Connect:Direct, check the Release Notes for the latest information on implementing this version, and refer to the *IBM Connect:Direct for z/OS Configuration Guide* for step-by-step instructions on how to customize the product for your environment.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of Connect:Direct.

Please note the following points:

- If you want to install Connect:Direct 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.
- 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 Connect:Direct

6.1.1 SMP/E Considerations for Installing Connect:Direct

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of Connect:Direct.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 12. 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 12. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	2500,100,300	This is the minimum allocation for SMPTLIB data, any larger value is acceptable.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install Connect:Direct:

Figure 13. Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
DGASMPE (Optional)	DEFINE SMP/E	Sample job to create SMP/E environment	IBM.HDGA600.F1
DGARECVE	RECEIVE	Sample RECEIVE job	IBM.HDGA600.F1
DGARECV2	RECEIVE	Sample RECEIVE job for JDGA600	IBM.JDGA600.F3
DGAALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HDGA600.F1
DGADDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HDGA600.F1
DGAAPPLY	APPLY	Sample APPLY job	IBM.HDGA600.F1
DGAAPPL2	APPLY	Sample APPLY job for JDGA600	IBM.JDGA600.F3
DGAACCP2	ACCEPT	Sample ACCEPT job	IBM.HDGA600.F1
DGAACCP2	ACCEPT	Sample ACCEPT job for JDGA600	IBM.JDGA600.F3

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 22) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 13 on page 20 to find the appropriate relfile 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
//SYSPRINT DD SYSOUT=*
//IN DD DSN=IBM.HDGA600.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,(5,5,5))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=IN,OUTDD=OUT
/*
//STEP2 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//IN DD DSN=IBM.JDGA600.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,(5,5,5))
//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.

6.1.4 Allocate and Initialize the SMP/E Data Sets (Optional)

You can install Connect:Direct in the same SMP/E zone as z/OS V2.02.0 (or later), or in a different zone.

- If you install into existing SMP/E data sets, ensure that you have enough space.
- If you plan to install into an existing zone, the cluster should have already been allocated and primed. You can go on to the next step to perform an SMP/E RECEIVE.
- To install into a new zone, edit and submit sample job DGASMPE to define and prime a new SMP/E CSI cluster. Consult the instructions in the sample job for more information.

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

6.1.5 Perform SMP/E RECEIVE

If you have obtained Connect:Direct as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the Connect:Direct 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 sample jobs DGARECVE and DGARECV2 to perform the SMP/E RECEIVE for Connect:Direct base FMID HDGA600 and License Feature JDGA600 as follows:

1. Edit and submit sample job DGARECVE to perform the SMP/E RECEIVE for Connect:Direct base FMID HDGA600. 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.

Note: Please note that if the installation data sets have been loaded to a cataloged data set with an HLQ other than IBM.fmid, then the SMP/E RECEIVE SELECT command must change the HLQ by specifying the RFPREFIX(hlq) parameter as below:

```
RECEIVE SELECT(HDGA600) RFPREFIX(hlq) .
```

2. Edit and submit sample job DGARECV2 to perform the SMP/E RECEIVE for the mandatory Connect:Direct License Feature for Standard Edition FMID JDGA600. 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.

Note: Please note that if the installation data sets have been loaded to a cataloged data set with an HLQ other than IBM.fmid, then the SMP/E RECEIVE SELECT command must change the HLQ by specifying the RFPREFIX(hlq) parameter as below:

```
RECEIVE SELECT(JDGA600) RFPREFIX(hlq) .
```

6.1.6 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job DGAALLOC to allocate the SMP/E target and distribution libraries for Connect:Direct. 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. You will receive a return code of 0 if this job runs correctly.

6.1.7 Create DDDEF Entries

Edit and submit sample job DGADDDEF to create DDDEF entries for the SMP/E target and distribution libraries for Connect:Direct. 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.

6.1.8 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job DGAAPPLY to perform an SMP/E APPLY CHECK for Connect:Direct. Consult the instructions in the sample job for more information.

The latest HOLDDATA is available through several different portals, including <http://service.software.ibm.com/holdata/390holddata.html>. 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.

2. After you take actions that are indicated by the APPLY CHECK for DGAAPPLY, 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 CHECK for DGAAPPLY: You will receive a return code of 0 if this job runs correctly.

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

3. Upon a successful APPLY from job DGAAPPLY, edit and submit sample job DGAAPPL2 to perform an SMP/E APPLY CHECK for Connect:Direct License Feature, FMID JDGA600. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages from APPLY CHECK for DGAAPPL2: You will receive a return code of 0 if this job runs correctly.

4. After you have taken any actions indicated by the APPLY CHECK, remove the CHECK operand and run DGAAPPL2 again to perform the APPLY.

Expected Return Codes and Messages from APPLY for DGAAPPL2: You will receive a return code of 0 if this job runs correctly.

6.1.9 Perform SMP/E ACCEPT

1. Edit and submit sample job DGAACCP2 to perform an SMP/E ACCEPT CHECK for Connect:Direct base FMID HDGA600. 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 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 book for details.

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.

Expected Return Codes and Messages from ACCEPT CHECK for DGAACCP2: You will receive a return code of 0 if this job runs correctly.

Expected Return Codes and Messages from ACCEPT for DGAACCP2: You will receive a return code of 0 if this job runs correctly.

2. Edit and submit sample job DGAACCP2 to perform an SMP/E ACCEPT CHECK for Connect:Direct License Feature, FMID JDGA600. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages from ACCEPT CHECK for DGAACCP2: You will receive a return code of 0 if the job runs correctly.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run DGAACCP2 again to perform the ACCEPT.

Expected Return Codes and Messages from ACCEPT for DGAACCP2: You will receive a return code of 0 if this job runs correctly.

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.

6.1.10 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 Connect:Direct, 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 and Customizing Connect:Direct

The Connect:Direct program publications can be found at the Connect:Direct V06.00.00 Knowledgecenter site at the URL below:

http://www.ibm.com/support/knowledgecenter/SS4PJT_6.0.0/

The publication *Connect:Direct Configuration Guide*, contains the necessary information to customize and use Connect:Direct.

Before you start using Connect:Direct, check the Release Notes for the latest information on implementing this version, and then refer to the *IBM Connect:Direct for z/OS Configuration Guide* for step-by-step instructions on how to customize the product for your environment.

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