



**Program Directory for
z/OS V1R2/3/4 Bimodal Migration Accommodation**

Version 1 Release 2/3/4, Modification Level 0

Program Number 5694-A01

FMIDs JBB7737 JBB7747 JBB7757

for Use with
z/OS V1R2/3/4

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GI11-2827-00

Note!

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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".

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1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains updates to existing R2, R3 and R4 product publications for Bimodal support, and information concerning the material and procedures associated with the installation of z/OS V1R2/3/4 Bimodal Migration Accommodation. This publication refers to z/OS V1R2/3/4 Bimodal Migration Accommodation Web deliverable as z/OS V1R2/3/4 Bimodal Migration Accommodation. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

- 2.0, "Program Materials" on page 3 identifies the basic and optional program materials and documentation for z/OS V1R2/3/4 Bimodal Migration Accommodation.
- 3.0, "Program Support" on page 5 describes the IBM support available for z/OS V1R2/3/4 Bimodal Migration Accommodation.
- 4.0, "Program and Service Level Information" on page 7 lists the APARs (program level) and PTFs (service level) incorporated into z/OS V1R2/3/4 Bimodal Migration Accommodation.
- 5.0, "Installation Requirements and Considerations" on page 9 identifies the resources and considerations for installing and using z/OS V1R2/3/4 Bimodal Migration Accommodation.
- 6.0, "Installation Instructions" on page 15 provides detailed installation instructions for z/OS V1R2/3/4 Bimodal Migration Accommodation. It also describes the procedures for activating the functions of z/OS V1R2/3/4 Bimodal Migration Accommodation, or refers to appropriate publications.

Before installing z/OS V1R2/3/4 Bimodal Migration Accommodation, read 3.2, "Preventive Service Planning" on page 5. This section tells you how to find any updates to the information and procedures in this program directory. This Bimodal Migration Accommodation is only available on the web.

1.1 z/OS V1R2/3/4 Bimodal Migration Accommodation Description

The z/OS Bimodal Migration Accommodation software assists customers in migrating from OS/390 to z/OS. This addresses customer requests to have a "fall-back" option to 31-bit mode when first migrating to z/OS in 64-bit mode on a z/Architecture server. IBM has reconsidered the investment in 31-bit support on a zSeries server to encourage our customers to move forward. This software is available for six months for each z/OS license (5694-A01) starting from the registration of a z/OS license to a z/Architecture server. It only applies to z/OS Version 1 Releases 2, 3, and 4, and is being provided at no additional charge. This software may not be used in conjunction with z/OS.e (5655-G52). Refer to "Terms and Conditions" on page vi for specific terms regarding the use of this support and duration of the accommodation period. This information is also documented in the "Program unique terms" in the *IBM International License Agreement for Non-Warranted Programs*.

z/OS V1R2/3/4 Bimodal Migration Accommodation function has been fully system tested with z/OS V1R2, R3, and R4.

1.2 z/OS V1R2/3/4 Bimodal Migration Accommodation FMIDs

z/OS V1R2/3/4 Bimodal Migration Accommodation consists of the following FMIDs:

JBB7737 - BCP Base - R2 Bimodal

JBB7747 - BCP Base - R3 Bimodal

JBB7757 - BCP Base - R4 Bimodal

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for z/OS V1R2/3/4 Bimodal Migration Accommodation is 5694-A01. There is no feature number for z/OS V1R2/3/4 Bimodal Migration Accommodation as it is being delivered via the Web download site.

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.

The program announcement material describes the features supported by z/OS V1R2/3/4 Bimodal Migration Accommodation. 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 z/OS V1R2/3/4 Bimodal Migration Accommodation is via Web delivery. The code for this deliverable can be downloaded from the Web site:

<http://www.ibm.com/eserver/zseries/zos/downloads/>. The deliverable contains all the programs and data needed for installation. It is installed using SMP/E, and, once unpacked, is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 15 for more information about how to install the program.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for z/OS V1R2/3/4 Bimodal Migration Accommodation.

2.2.1 Basic Program Publications

No basic publications are provided for z/OS V1R2/3/4 Bimodal Migration Accommodation. The program directory contains all the information needed to use z/OS V1R2/3/4 Bimodal Migration Accommodation.

2.2.2 Optional Program Publications

No optional publications are provided for z/OS V1R2/3/4 Bimodal Migration Accommodation.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for z/OS V1R2/3/4 Bimodal Migration Accommodation.

2.4 Publications Useful During Installation

The publications listed in Figure 1 on page 4 may be useful during the installation of z/OS V1R2/3/4 Bimodal Migration Accommodation. The publications listed in this table should be used for all driving system levels. To order copies, contact your IBM representative or visit the IBM Publications Center on the world wide web at: elink.ibm.link.ibm.com/applications/public/applications/publications/cgibin/pbi.cgi on the Internet.

<i>Figure 1. Publications Useful During Installation</i>	
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 z/OS V1R2/3/4 Bimodal Migration Accommodation.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing z/OS V1R2/3/4 Bimodal Migration Accommodation, you should review the current Preventive Service Planning (PSP) information.

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 z/OS V1R2/3/4 Bimodal Migration Accommodation are:

<i>Figure 2. PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
ZOSV1R2	BIMODAL	z/OS Bimodal Migration JBB7737
ZOSV1R3	BIMODAL	z/OS Bimodal Migration JBB7747
ZOSV1R4	BIMODAL	z/OS Bimodal Migration JBB7757

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 3 identifies the component IDs (COMPID) for z/OS V1R2/3/4 Bimodal Migration Accommodation.

<i>Figure 3 (Page 1 of 2). Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
JBB7737	5752SC1C9	Initial Program Load (IPL)	737
JBB7747	5752SC1C9	Initial Program Load (IPL)	747

Figure 3 (Page 2 of 2). Component IDs

F MID	COMP ID	Component Name	RETAIN Release
JBB7757	5752SC1C9	Initial Program Load (IPL)	757

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of z/OS V1R2/3/4 Bimodal Migration Accommodation. 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

No APARs have been incorporated at this time for:

- JBB7737
- JBB7747
- JBB7757

4.2 Service Level Information

No PTFs against z/OS V1R2, V1R3 and V1R4 have been incorporated into z/OS V1R2/3/4 Bimodal Migration Accommodation.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating z/OS V1R2/3/4 Bimodal Migration Accommodation. The following terminology is used:

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

Set up a clone of your system to use as the target 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.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install z/OS V1R2/3/4 Bimodal Migration Accommodation.

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 4. Driving System Software Requirements</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 V2R9 or higher with IBM SMP/E V3R1 or OS/390 V2R9 SMP/E and PTFs UR51069,UR52471
5694-A01	z/OS V1R1 with IBM SMP/E V3R1 (5655-G44) or z/OS V1R1 SMP/E and PTFs UR51069, UR52471
5694-A01	z/OS V1R3, z/OS V1R2, or z/OS V1R4.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use z/OS V1R2/3/4 Bimodal Migration Accommodation.

5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software. z/OS V1R2/3/4 Bimodal Migration Accommodation can be installed and used on all processors supported by z/OS, but this function only takes effect when running on a z800, z900, or equivalent server.

5.2.2 Programming Requirements

5.2.2.1 Mandatory Requisites

Note: z/OS V1R2/3/4 Bimodal Migration Accommodation should not be installed concurrently with installing z/OS. However, z/OS V1R2/3/4 Bimodal Migration Accommodation can be installed concurrently with the requisite PTF.

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 5. Mandatory Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Install any one of the following based on the z/OS release level of your target system:	
5694-A01	z/OS V1R2 and PTF UW90737 for HBB7705
5694-A01	z/OS V1R3 and PTF UW90738 for HBB7706
5694-A01	z/OS V1R4 and PTF UW90739 for HBB7707

5.2.2.2 Functional Requisites

Considerations for VM Guest: Minimum VM level during the accommodation period is VM 2.4. But, when you stop using the accommodation and move to 64-bit, you must be using z/VM.

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.

z/OS V1R2/3/4 Bimodal Migration Accommodation 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.

z/OS V1R2/3/4 Bimodal Migration Accommodation 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.

z/OS V1R2/3/4 Bimodal Migration Accommodation has no negative requisites.

5.2.3 DASD Storage Requirements

z/OS V1R2/3/4 Bimodal Migration Accommodation libraries can reside on all supported DASD types.

Figure 6 lists the total space required for each type of library.

For z/OS V1R2/3/4 Bimodal Migration Accommodation the requirements are:

<i>Figure 6. Total DASD Space Required by z/OS V1R2/3/4 Bimodal Migration Accommodation for JBB7737, JBB7747, JBB7757</i>	
Library Type	Total Space Required
Target	3 tracks on 3390 DASD
Distribution	1 track on 3390 DASD

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.

The following figures describe the target and distribution libraries required to install z/OS V1R2/3/4 Bimodal Migration Accommodation. The storage requirements of z/OS V1R2/3/4 Bimodal Migration Accommodation 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.

z/OS V1R2/3/4 Bimodal Migration Accommodation installs into pre-existing libraries and there is a minimal space increase.

Figure 7. Storage Requirements for z/OS V1R2/3/4 Bimodal Migration Accommodation JBB7737, JBB7747, and JBB7757 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
NUCLEUS	Module	TVOL1	E	PO	U	0	3	1

Figure 8. Storage Requirements for z/OS V1R2/3/4 Bimodal Migration Accommodation JBB7737, JBB7747, and JBB7757 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
AOSC5	E	PO	U	0	1	1

5.3 FMIDs Deleted

Installing z/OS V1R2/3/4 Bimodal Migration Accommodation does not result in the deletion of other FMIDs.

5.4 Special Considerations

Previously, if you were running z/OS on a processor that supported z-Architecture mode, you were required to IPL in z-Architecture mode (64-bit). This support was enforced with APAR OW51521. z/OS V1R2/3/4 Bimodal Migration Accommodation removes this requirement under the terms and conditions of this support.

The Bimodal Accommodation Migration Offering does not extend support to those functions previously announced as requiring z-Architecture (64-bit). This includes, but is not limited to: Intelligent Resource Director, HiperSockets, 64-bit Real Storage, 64-bit Virtual Storage, IPv6, OSA-Express Token-Ring, WLM in Real Swap. In addition, Workload License Charges on z900 servers will not be available. z/OS.e is not supported by the Bimodal Migration Accommodation Offering.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of z/OS V1R2/3/4 Bimodal Migration Accommodation.

Please note the following:

- If you want to install z/OS V1R2/3/4 Bimodal Migration Accommodation 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.
- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing z/OS V1R2/3/4 Bimodal Migration Accommodation

6.1.1 SMP/E Considerations for Installing z/OS V1R2/3/4 Bimodal Migration Accommodation

z/OS V1R2/3/4 Bimodal Migration Accommodation is packaged using the SMP/E GIMZIP function, which was introduced in z/OS V1R2. Although GIMZIP and GIMUNZIP are used for the packaging, the full SMP/E RECEIVE FROMNETWORK function is not available with this package. The SMP/E GIMUNZIP function is required to process the downloaded package. Refer to *z/OS SMP/E Reference* for information about using GIMZIP and GIMUNZIP.

You need to ensure that you have met the driving system requirements as documented in 5.1.2, “Programming Requirements” on page 9.

You will need to perform the following tasks:

1. Allocate a R/W HFS directory on the OS/390 or z/OS driving system where the package will be staged. This is the repository for the download package.
2. Download one of the following “z/OS V1R2/3/4 Bimodal Migration Accommodation” packages shown in Figure 9 based on your z/OS target system level.

The packages are available from the following web site:

<http://www.ibm.com/eserver/zseries/zos/downloads/>

There are three packages:

FMID	Description	File Name
JBB7737	R2 Bimodal Migration Accommodation for HBB7705	R2BIMODAL.pax.Z R2BIMODAL.README.txt

Figure 9 (Page 2 of 2). z/OS V1R2/3/4 Bimodal Migration Accommodation Packages

FMID	Description	File Name
JBB7747	R3 Bimodal Migration Accommodation for HBB7706	R3BIMODAL.pax.Z R3BIMODAL.README.txt
JBB7757	R4 Bimodal Migration Accommodation for HBB7707	R4BIMODAL.pax.Z R4BIMODAL.README.txt

3. RnBIMODAL.README.txt (where Rn will be the release level: R2, or R3, or R4)

This is a sample job that performs the following tasks:

- Executes the UNIX System Services pax command to extract the GIMZIP archives from the downloaded package
- Executes the GIMUNZIP program to expand the GIMZIP archives and places their contents in data sets that can be processed by SMP/E
- Executes the SMP/E RECEIVE from DASD function to receive the FMID

This job must be updated to reflect your environment.

4. RnBIMODAL.pax.Z (where Rn will be the release level: R2, or R3, or R4)

This pax archive file consists of the base function . The file contains the SMPMCS and the associated RELFILE.

- The file must be downloaded to a node (workstation) that has connectivity to the OS/390 or z/OS driving system.
- The file must then be uploaded to the OS/390 or z/OS driving system

Please make sure that this file is transferred from the Web and to the host system in binary format.

5. Run the sample job provided in RnBIMODAL.README.txt.

This job will perform the required tasks up to and including the SMP/E RECEIVE from DASD step.

6. Complete the installation using the instructions in this program directory.

6.1.2 SMP/E Options Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 10. Use of values lower than these may result in failures in the installation process. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. Refer to the SMP/E manuals for instructions on updating the global zone.

Figure 10. SMP/E Options Subentry Values

SUB-ENTRY	Value	Comment
DSSPACE	Existing target CSI value	IBM recommends using your existing target system CSI's DSSPACE value
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Sample Jobs

No sample jobs are provided. z/OS V1R2/3/4 Bimodal Migration Accommodation requires no new libraries, it uses existing target and distribution libraries and you need not create any new DDDEF entries.

6.1.4 Perform SMP/E APPLY

Edit and submit sample job shown in Figure 11 to perform an SMP/E APPLY CHECK for z/OS V1R2/3/4 Bimodal Migration Accommodation.

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.

```
//APPLY JOB
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//SMPCSI DD DSN=csiname,DISP=SHR
//SMPCNTL DD *
    SET BOUNDARY(targetzone) .
    APPLY CHECK
    FORFMID(JBB77x7)
    SELECT(JBB77x7)
    GROUPEXTEND(NOAPARS,NOUSERMODS)
    BYPASS(HOLDSYSTEM,
    HOLDUSER,HOLDCLASS(UCLREL,ERREL,HIPER)) .
/*
```

Figure 11. SMP/E APPLY

Required Updates

1. Update the job parameters.
2. Replace the csiname on the SMPCSI DD statement with your CSI name.
3. Update targetzone to your target zone name.
4. Update JBB77x7 to JBB7737, or JBB7747, or JBB7757.

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: RC=0

Expected Return Codes and Messages from APPLY: RC=0

6.1.5 Perform SMP/E ACCEPT

Edit and submit sample job shown in Figure 12 to perform an SMP/E ACCEPT CHECK for z/OS V1R2/3/4 Bimodal Migration Accommodation.

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

See Figure 12 for a sample ACCEPT of z/OS V1R2/3/4 Bimodal Migration Accommodation and service.

```
//ACCEPT JOB
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//SMPCSI DD DSN=csiname,DISP=SHR
//SMPCNTL DD *
    SET BOUNDARY(dlibzone) .
    ACCEPT CHECK
    FORFMID(JBB77x7)
    SELECT(JBB77x7)
    GROUPEXTEND(NOAPARS,NOUSERMODS)
    BYPASS(HOLDSYSTEM,
    HOLDUSER,HOLDCLASS(UCLREL,ERREL,HIPER)) .
/*
```

Figure 12. SMP/E ACCEPT sample

Required Updates

1. Update the job parameters.
2. Replace the csiname on the SMPCSI DD statement with your CSI name.
3. Update dlibzone to your dlib zone name.
4. Update JBB77x7 to JBB7737, or JBB7747, or JBB7757.

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: RC=0

Expected Return Codes and Messages from ACCEPT: RC=0

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.

6.2 Activating z/OS V1R2/3/4 Bimodal Migration Accommodation

z/OS V1R2/3/4 Bimodal Migration Accommodation is supported only on a zSeries processor. To activate this support, update the ARCHLVL parameter of the LOADxx parmlib member. The ARCHLVL statement specifies the mode in which the operating system runs and will override the default on a zSeries processor. The default on a zSeries processor for z/OS is 2 (64-bit). To specify ESA/390 (31-bit) mode, specify an ARCHLVL of 1.

For your migration to z/Architecture mode on a zSeries processor, it is recommended that you initially use ESA/390 mode, specifying ARCHLVL 1. Then, perform your testing in z/Architecture mode, specifying ARCHLVL 2. Upon completion of testing, you should remove the ARCHLVL parameter from the LOADxx parmlib member; the default will be z/Architecture mode.

To specify ESA/390 mode, specify an ARCHLVL of 1.

```
ARCHLVL 1
```

To specify z/Architecture mode, specify an ARCHLVL of 2.

```
ARCHLVL 2
```

To activate the ARCHLVL change, an IPL is required.

ARCHLVL 2 is supported only on zSeries processors.

Reader's Comments

Program Directory for z/OS V1R2/3/4 Bimodal Migration Accommodation September 27, 2002

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