

IBM

Program Directory for IBM SMP/E for z/OS and OS/390

Version 3 Release 2, Modification Level 0

Program Number 5655-G44

for Use with
z/OS, z/OS.e, and OS/390

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Note!

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1.0 Introduction

This Program Directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of IBM SMP/E for z/OS and OS/390. This publication refers to IBM SMP/E for z/OS and OS/390 as SMP/E.

The Program Directory contains the following sections:

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

Before installing SMP/E, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that were supplied with this program softcopy as well as this Program Directory and then keep them for future reference. Section 3.2, "Preventive Service Planning" on page 5 tells you how to find any updates to the information and procedures in this Program Directory.

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

Do not use this Program Directory if you are installing SMP/E with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the Program Directory as required.

1.1 SMP/E Description

SMP/E is the software installation and maintenance tool for the z/OS and OS/390 platforms. It also maintains an inventory of the installed software and service.

1.2 SMP/E FMIDs

SMP/E consists of the following FMIDs:

FMID	Description
HMP1E00	SMP/E Base
JMP1E11	SMP/E Japanese
HBCND0B	SMP/E Planning and Migration Assistant
JBCND1B	SMP/E Planning and Migration Assistant Japanese
HBCNC00	SMP/E Planning and Migration Assistant Software Info Base

2.0 Program Materials

An IBM program is identified by a program number and a feature number. The program number for SMP/E is 5655-G44 and its feature numbers are 5812 (English) and 5802 (Japanese).

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

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

2.1 Basic Machine-Readable Material

The distribution medium for this program is magnetic tape or downloadable files. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation Instructions" on page 15 for more information about how to install the program.

Information about the physical tape for the Basic Machine-Readable Materials for SMP/E can be found in the *CBPDO Memo To Users Extension*.

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for SMP/E.

2.3 Program Publications

The following sections identify the basic and optional publications for SMP/E.

2.3.1 Basic Program Publications

Figure 1 identifies the basic unlicensed program publications for SMP/E. A CDROM containing these publications is included when you order the basic materials for SMP/E.

Publication Title	Form Number
IBM SMP/E for z/OS and OS/390 Messages, Codes, and Diagnosis	GA22-7770
IBM SMP/E for z/OS and OS/390 Commands	SA22-7771

Figure 1 (Page 2 of 2). Basic Material: Unlicensed Publications

Publication Title	Form Number
IBM SMP/E for z/OS and OS/390 Reference	SA22-7772
IBM SMP/E for z/OS and OS/390 User's Guide	SA22-7773

2.3.2 Optional Program Publications

No optional publications are provided for SMP/E.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for SMP/E.

2.5 Publications Useful During Installation

The publications listed in Figure 2 may be useful during the installation of SMP/E. To order copies, contact your IBM representative or visit the IBM Publications Center on the world wide web at: <http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi>

Figure 2. Publications Useful During Installation

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

3.0 Program Support

This section describes the IBM support available for SMP/E.

3.1 Program Services

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

3.2 Preventive Service Planning

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

If the CBPDO for SMP/E is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

For access to RETAIN, visit <http://www.ibm.link.ibm.com/> on the Internet.

PSP Buckets are identified by UPGRADEs, which specify product levels, and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for SMP/E are:

<i>Figure 3. PSP Upgrade and Subset ID</i>		
UPGRADE	SUBSET	Description
SMPE320	SMPE	SMP/E

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 4 identifies the component IDs (COMPID) for SMP/E.

<i>Figure 4 (Page 1 of 2). Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HMP1E00	566894901	SMP/E Base	E00
JMP1E11	566894901	SMP/E Japanese	E11

Figure 4 (Page 2 of 2). Component IDs

FMID	COMPID	Component Name	RETAIN Release
HBCND0B	566894902	SMP/E Planning and Migration Assistant	D0B
JBCND1B	566894902	SMP/E Planning and Migration Assistant Japanese	D1B
HBCNC00	566894902	SMP/E Planning and Migration Assistant Software Info Base	C00

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of SMP/E. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated.

4.1 Program Level Information

The following APAR fixes against previous releases of SMP/E have been incorporated into this release. They are listed by FMID.

- FMIDs HMP1E00 and JMP1E11.

IR45719	IR47235	IR48087	IR49087
IR45791	IR47340	IR48099	IR49501
IR45826	IR47345	IR48132	IR49674
IR46031	IR47460	IR48147	IR49683
IR46168	IR47471	IR48323	IR49702
IR46220	IR47507	IR48387	IR49805
IR46242	IR47515	IR48404	IR49813
IR46256	IR47640	IR48434	IR49857
IR46265	IR47782	IR48535	IR49858
IR46268	IR47809	IR48638	IR49968
IR46269	IR47837	IR48701	IR50037
IR46738	IR47883	IR48870	IR50045
IR46815	IR47884	IR48891	IR50142
IR46826	IR47938	IR48947	IR50279
IR46941	IR47984	IR48989	IR50335
IR46970	IR47993	IR49023	IR50834
IR46980	IR48026	IR49032	

- FMID HBCND0B and JBCND1B

IR39002	IR39923	IR41032	IR42543
IR39263	IR39982	IR41082	IR42962
IR39454	IR40499	IR41093	IR43513
IR39791	IR40721	IR41714	

- FMID HBCNC00

No APARs have been incorporated at this time.

4.2 Service Level Information

No PTFs against this release of SMP/E have been incorporated into the level of SMP/E included with this order.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating SMP/E. The following terminology is used:

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

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.
- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to assess these impacts without disrupting your production system.

5.1 Driving System Requirements

This section describes the environment of the driving system required to install SMP/E.

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 5 (Page 1 of 2). Driving System Software Requirements</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 Version 2 Release 7 SMP/E or higher
5694-A01	z/OS Version 1 Release 1 SMP/E or higher
5655-G44	IBM SMP/E for z/OS and OS/390 Version 3 Release 1 or higher
Any one of the following:	

Figure 5 (Page 2 of 2). Driving System Software Requirements

Program Number	Product Name and Minimum VRM/Service Level
5647-A01	OS/390 Version 2 Release 10 or higher
5694-A01	z/OS Version 1 Release 1 or higher
5655-G52	z/OS.e Version 1 Release 3 or higher

5.2 Target System Requirements

This section describes the environment of the target system required to install and use SMP/E.

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

Figure 6. Mandatory Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 Version 2 Release 10 or higher
5694-A01	z/OS Version 1 Release 1 or higher
5655-G52	z/OS.e Version 1 Release 3 or higher

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

To support the update of Java Archive (JAR) files, SMP/E requires the services of Java and the BPXCOPY program as identified below. See 6.2, "Activating SMP/E" on page 21 for a more detailed discussion of products and components that must be operational for certain SMP/E functions to operate.

<i>Figure 7. Functional Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following to provide the required level of Java:	
5655-D35	IBM Developer Kit for OS/390, Java 2 Technology Edition Version 1 Release 1, or its successor.
5655-F31	WebSphere Application Server Version 4 Release 0 Modification 1 for z/OS and OS/390, or its successor.
Any one of the following to provide the required function in the BPXCOPY program:	
5647-A01	OS/390 Version 2 Release 10 or higher, with PTF UA01380.
5694-A01	z/OS Version 1 Release 2 or higher, with PTF UA01381.
5694-A01	z/OS Version 1 Release 3 or higher, with PTF UA01382.
5655-G52	z/OS.e Version 1 Release 3 or higher, with PTF UA01382.
5694-A01	z/OS Version 1 Release 4 or higher, with PTF UA01383.
5655-G52	z/OS.e Version 1 Release 4 or higher, with PTF UA01383.

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.

<i>Figure 8. Toleration/Coexistence Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5647-A01	OS/390 Version 2 Release 7, 8, 9, or 10 SMP/E with PTF UR53976
5694-A01	z/OS Version 1 Release 1 SMP/E with PTF UR53976
5655-G44	IBM SMP/E for z/OS and OS/390 Version 3 Release 1 with PTF UR53977

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

SMP/E has no negative requisites.

5.2.3 DASD Storage Requirements

SMP/E libraries can reside on all supported DASD types.

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

Figure 9. Total DASD Space Required by SMP/E

Library Type	Total Space Required
Target	1482 tracks
Distribution	1475 tracks

Notes:

1. IBM recommends use of system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, IBM recommends a block size of 32760, which is the most efficient from a performance and DASD utilization perspective.

2. Abbreviations used for the data set type are:

- U** Unique data set, allocated by this product and used only by this product. To determine the correct storage needed for this data set, this table provides all required information; no other tables (or Program Directories) need to be referenced for the data set size.
- S** Shared data set, allocated by this product and used by this product and others. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other Program Directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and others. This data set is NOT allocated by this product. To determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other Program Directories). This existing data set must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information on the names and sizes of the required data sets, please refer to 6.1.6, "Allocate SMP/E Target and Distribution Libraries and Paths" on page 16.

3. All target and distribution libraries listed have the following attributes:

- The default name of the data set may be changed
- The default block size of the data set may be changed
- The data set may be merged with another data set that has equivalent characteristics
- The data set may be either a PDS or a PDSE

4. All target libraries listed have the following attributes:

- The data set may be SMS managed
- It is not required for the data set to be SMS managed
- It is not required for the data set to reside on the IPL volume

- The values in the "Member Type" column are not necessarily the actual SMP/E element types identified in the SMPMCS.
5. All target libraries listed which contain load modules have the following attributes:
 - The data set may be in the LPA
 - It is not required for the data set to be in the LPA
 - The data set may be in the LNKLIST
 6. It is required for the **MIGLIB** data set to be **APF authorized**.

The following figures describe the target and distribution libraries required to install SMP/E. The storage requirements of SMP/E must be added to the storage required by other programs having data in the same library or path.

Note: The data in these tables should be used when determining which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Figure 10. Storage Requirements for SMP/E 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
MACLIB	Macro	TVOL2	E	PDS	FB	80	6	2
MIGLIB	LMOD	TVOL1	E	PDS	U	0	132	6
SAMPLIB	Sample	TVOL2	E	PDS	FB	80	6	2
SGIMCLS0	CLIST and EXEC	TVOL1	U	PDS	FB	80	20	4
SGIMLMD0	LMOD	TVOL1	U	PDS	U	0	65	10
SGIMMENU	Message	TVOL1	U	PDS	FB	80	9	7
SGIMMJPN	Message	TVOL1	U	PDS	FB	80	9	7
SGIMPENU	Panel	TVOL1	U	PDS	FB	80	138	82
SGIMPJPN	Panel	TVOL1	U	PDS	FB	80	137	82
SGIMSENU	Skeleton	TVOL1	U	PDS	FB	80	18	6
SGIMTENU	Table	TVOL1	U	PDS	FB	80	940	2
Note: The documented space requirement for SGIMTENU includes significant free space to accommodate anticipated future growth.								
SGIMTJPN	Table	TVOL1	U	PDS	FB	80	2	2

Figure 11. Storage Requirements for SMP/E 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
AMACLIB	E	PDS	FB	80	6	2
AOS12	E	PDS	U	0	190	104
ASAMPLIB	E	PDS	FB	80	6	2
AGIMCLS0	U	PDS	FB	80	20	4
AGIMMENU	U	PDS	FB	80	9	7
AGIMMJPN	U	PDS	FB	80	9	7
AGIMPENU	U	PDS	FB	80	138	82
AGIMPJPN	U	PDS	FB	80	137	82
AGIMSENU	U	PDS	FB	80	18	6
AGIMTENU	U	PDS	FB	80	940	2
Note: The documented space requirement for AGIMTENU includes significant free space to accommodate anticipated future growth.						
AGIMTJPN	U	PDS	FB	80	2	2

5.3 FMIDs Deleted

Installing SMP/E may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS.

If you do not wish to delete these FMIDs at this time, you must install SMP/E into separate SMP/E target and distribution zones.

Note: These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

5.4 Special Considerations

SMP/E has no special considerations for the target system.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of SMP/E.

Please note the following:

- Sample jobs have been provided to help perform some or all of the installation tasks (see 6.1.4, “Sample Jobs” on page 16). The SMP/E installation jobs described in this book assume all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.
- The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing SMP/E

6.1.1 SMP/E Considerations for Installing SMP/E

This release of SMP/E is installed using the SMP/E RECEIVE, APPLY, and ACCEPT commands. The SMP/E dialogs may be used to accomplish the SMP/E installation steps.

6.1.2 SMP/E OPTIONS Subentry Values

The recommended values for some SMP/E CSI subentries are shown in Figure 12. Use of values lower than these may result in failures in the installation process. DSSPACE and PEMAX are subentries in the active OPTIONS entry. Refer to the SMP/E manuals for instructions on updating the global zone.

<i>Figure 12. SMP/E OPTIONS Subentry Values</i>		
SUB-ENTRY	Value	Comment
DSSPACE	20,20,100	20 primary tracks, 20 secondary tracks, and 100 directory blocks.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

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

- SCEELKED
- SISPLOAD
- SISPLPA

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

6.1.4 Sample Jobs

Sample installation jobs are provided as part of the product to help you install SMP/E and are shown in Figure 13 on page 16. You can access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the SMPTLIB data set to a work data set for editing and submission. See Figure 13 on page 16 to find the appropriate SMPTLIB data set.

Job Name	Job Type	Description	SMPTLIB Data Set
GIMALLC	ALLOCATE	Sample job to allocate target and distribution libraries	dsprefix.HMP1E00.F1
GIMDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	dsprefix.HMP1E00.F1

Note: *dsprefix* is the data set prefix value specified for the DSPREFIX subentry in either the SMPTLIB DDDEF entry or the OPTIONS entry used during RECEIVE processing.

6.1.5 Perform SMP/E RECEIVE

Perform an SMP/E RECEIVE for SMP/E.

Having obtained SMP/E as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the SMP/E FMIDs (HMP1E00, HBCND0B, HBCNC00, JMP1E11, JBCND1B) as well as any service, HOLDDATA, or preventive service planning (PSP) information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

Notes:

1. If any of the following FMIDs have been previously installed from a prior SMP/E release, then you are not required to re-install these FMIDs:

HBCND0B	SMP/E Planning and Migration Assistant
JBCND1B	SMP/E Planning and Migration Assistant Japanese
HBCNC00	SMP/E Planning and Migration Assistant Software Info Base

2. If the Japanese feature has not been ordered, then you can remove these Japanese FMIDs from the sample job:

JMP1E11	SMP/E Japanese
JBCND1B	SMP/E Planning and Migration Assistant Japanese

6.1.6 Allocate SMP/E Target and Distribution Libraries and Paths

Since you are likely installing SMP/E onto a clone of your system, the target and distribution libraries should already exist. If you will be installing using existing libraries, verify the data sets contain enough space as described in Figure 10 on page 13 and Figure 11 on page 14.

If you will not be using existing data sets, but want to allocate new data sets, edit and submit sample job

GIMALLC to allocate the SMP/E target and distribution libraries for SMP/E. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: This job should complete with a return code of zero.

6.1.7 Create DDDEF Entries

Since you are likely installing onto a clone of your system, the necessary DDDEF entries should already exist in the target and distribution zones. However, if you will not be using existing DDDEF entries, edit and submit sample job GIMDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for SMP/E. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: This job should complete with a return code of zero.

6.1.8 Perform SMP/E APPLY

Perform an SMP/E APPLY CHECK for SMP/E. See Figure 14 on page 18 for a sample job.

```

//APPJOB  JOB job parameters
//STEP1   EXEC PGM=GIMSMP
//SMPCSI  DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(targetzone).
  APPLY CHECK
    SELECT(
      HMP1E00
      /* HBCND0B see Note 1 below */
      /* HBCNC00 see Note 1 below */
      /* JMP1E11 see Note 2 below */
      /* JBCND1B see Note 2 below */
    )
  FORFMID(
    HMP1E00
    HBCND0B
    HBCNC00
    /* JMP1E11 see Note 2 below */
    /* JBCND1B see Note 2 below */
  )
  GROUPEXTEND(NOAPARS,NOUSERMODS)
  BYPASS(HOLDSYSTEM,
    HOLDUSER,
    HOLDCLASS(UCLREL,ERREL,HIPER)
    /* see Note 3 below */
  ).
/*

```

Notes:

1. If HBCNC00 and HBCND0B (SMP/E Planning and Migration Assistant) have not been previously installed from a prior SMP/E release, then uncomment these lines.
2. If the Japanese feature has been ordered, then uncomment these lines.
3. If you specify BYPASS(HOLDCLASS(HIPER)), you should later run the SMP/E REPORT ERRSYSMODS command to identify missing HIPER fixes before putting your system into production.

Figure 14. Sample SMP/E APPLY CHECK job

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace *targetzone* on the SET BOUNDARY command with the name of your target zone.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

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

Note: The GROUPEXTEND operand indicates that SMP/E apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from APPLY CHECK: This job should complete with a return code of zero.

Expected Return Codes and Messages from APPLY: This job should complete with a return code of zero.

6.1.9 Perform SMP/E ACCEPT

Perform an SMP/E ACCEPT CHECK for SMP/E. See Figure 15 on page 20 for a sample job.

```

//ACCJOB  JOB job parameters
//STEP1   EXEC PGM=GIMSMP
//SMPCSI  DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(dlibzone).
  ACCEPT CHECK
    SELECT(
      HMP1E00
      /* HBCND0B see Note 1 below */
      /* HBCNC00 see Note 1 below */
      /* JMP1E11 see Note 2 below */
      /* JBCND1B see Note 2 below */
    )
  FORFMID(
      HMP1E00
      HBCND0B
      HBCNC00
      /* JMP1E11 see Note 2 below */
      /* JBCND1B see Note 2 below */
    )
  GROUPEXTEND(NOAPARS,NOUSERMODS)
  BYPASS(HOLDSYSTEM,
        HOLDUSER,
        HOLDCLASS(UCLREL,ERREL,HIPER)
    ).
/*

```

Notes:

1. If HBCNC00 and HBCND0B (SMP/E Planning and Migration Assistant) have not been previously installed from a prior SMP/E release, then uncomment these lines.
2. If the Japanese feature has been ordered, then uncomment these lines.

Figure 15. Sample SMP/E ACCEPT CHECK job

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace *dlibzone* on the SET BOUNDARY command with the name of your dlib zone.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis

identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

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

Note: The GROUPEXTEND operand indicates that SMP/E accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: This job should complete with a return code of zero.

Expected Return Codes and Messages from ACCEPT: If no PTFs are being accepted, this job should complete with a return code of zero.

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored, because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

6.1.10 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command will identify requisites defined for products that have been installed in separate zones. This command will also create APPLY and ACCEPT commands in the SMP/PUNCH data set which you can use to install those cross-zone requisites it identifies.

After you have installed SMP/E, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries describing all the target and distribution libraries to be reported on.

For more information on REPORT CROSSZONE, see A.3.7, "The REPORT CROSSZONE Command" on page 35.

6.2 Activating SMP/E

SMP/E is operational once the SMP/E installation is complete. No further customization is required to activate SMP/E, however, see Appendix A, "Setting Up SMP/E for Easier Operation" on page 27 for ideas on how to make SMP/E tasks easier and more efficient. Also see the *IBM SMP/E for z/OS and OS/390 Commands* and *IBM SMP/E for z/OS and OS/390 Reference* for information on how to operate SMP/E.

Although the majority of SMP/E functions are operational once the installation is complete, certain functions require the services of other software products and components in order to operate properly.

6.2.1 Java Archive (JAR) File Update Capability

To support the update of Java Archive (JAR) files, SMP/E requires the services of Java and the BPXCOPY program as follows:

<i>Figure 16. Operational requisites for Java Archive update processing</i>	
Program Number	Product Name and Minimum VRM/Service Level
Any one of the following to provide the required level of Java:	
5655-D35	IBM Developer Kit for OS/390, Java 2 Technology Edition Version 1 Release 1, or its successor.
5655-F31	WebSphere Application Server Version 4 Release 0 Modification 1 for z/OS and OS/390, or its successor.
Any one of the following to provide the required function in the BPXCOPY program:	
5647-A01	OS/390 Version 2 Release 10 or higher, with PTF UA01380.
5694-A01	z/OS Version 1 Release 2 or higher, with PTF UA01381.
5694-A01	z/OS Version 1 Release 3 or higher, with PTF UA01382.
5655-G52	z/OS.e Version 1 Release 3 or higher, with PTF UA01382.
5694-A01	z/OS Version 1 Release 4 or higher, with PTF UA01383.
5655-G52	z/OS.e Version 1 Release 4 or higher, with PTF UA01383.

In more detail, to update Java Archive (JAR) files, SMP/E must invoke the Java Archive Tool provided as part of the Java Development Kit (JDK). More specifically, SMP/E uses the update (u) option of the Java Archive Tool which is provided in version 1.2 of the JDK. Therefore, in order to perform APPLY or ACCEPT command operations for a software product that uses JARUPD elements (++JARUPD), SMP/E requires the software product *IBM Developer Kit for OS/390, Java 2 Technology Edition Version 1 Release 1* (5655-D35) or its successor.

At the time of this writing, *Java 2 Technology Edition* is a no-charge product available for users of OS/390 Version 2 Release 8 and above, and z/OS Version 1 Release 1 and above. In addition, *WebSphere Application Server V4R0M1 for z/OS and OS/390* (5655-F31) or its successor also contains the required level of Java.

Further, Java must be available in the execution environment for SMP/E. That is, the PATH and LIBPATH UNIX variables must specify the directories where the Java product resides (Java can not be accessed using STEPLIB). This can be setup for all UNIX users by defining them in the common profile, /etc/profile, or they can be defined in an individual user's .profile file. That is, Java must be available to all users, or the user that performs the SMP/E operations must have Java defined in their individual profile.

6.2.2 RECEIVE FROMNETWORK and GIMZIP

To use the RECEIVE FROMNETWORK feature and the GIMZIP Packaging service routine, SMP/E requires the Integrated Cryptographic Services Facility (ICSF) One-Way Hash Generate callable service to be active in order to compute SHA-1 hash values. ICSF is provided as a base element in z/OS and OS/390. See the *ICSF System Programmer's Guide* for details on how to configure and start ICSF. See the *IBM SMP/E for z/OS and OS/390 Commands* for details on the RECEIVE FROMNETWORK command and see the *IBM SMP/E for z/OS and OS/390 Reference* for details on the GIMZIP service routine.

6.3 Optional Migration Activities

In the latest releases of SMP/E, some functions have been removed, and some of the optional customization activities have been changed. If you use these functions, or if you have previously performed one or more of the customization activities, you will need to take some action now to ensure your SMP/E tasks operate properly, and your desired changes take affect.

In addition, new functions in SMP/E sometimes cause incompatible changes to SMP/E data sets. That is, to support new and enhanced capabilities, the latest release of SMP/E may make changes to SMP/E zones and data sets that cannot be properly processed by prior SMP/E releases. Read on to understand what functions could cause such incompatibilities, how you can control when to exploit these functions, and how to maintain compatibility.

6.3.1 Migrating from SMP/E Version 3 Release 1

SMP/E Version 3 Release 1 is the release level of SMP/E integrated into z/OS Version 1 Release 2, 3, and 4. SMP/E Version 3 Release 1 may also have been installed on OS/390 Version 2 Release 8, 9, and 10, and z/OS Release 1. If you are migrating from this release level of SMP/E, you should be aware of the following changes:

Restricting Program Execution with module GIMUTTBL

If you previously used macro **GIMDFUT** or module **GIMUTTBL** to restrict the utility programs that SMP/E could use and you want to maintain those restrictions, you must now use the z/OS Security Server (RACF) by creating a profile for the program in the PROGRAM general resource class. Macro GIMDFUT and module GIMUTTBL no longer exist in SMP/E Version 3 Release 2. Defining profiles for programs in the PROGRAM class controls who (which userids) can execute the programs.

SMP/E Dialog Customization with panel GIM@UPRM

If you previously used non-display panel **GIM@UPRM** to customize settings for the SMP/E dialogs and you wish to keep those customized settings, you must now use the new SETTINGS option from the SMP/E Primary Option Menu. Panel GIM@UPRM no longer exists in SMP/E Version 3 Release 2. Using the new SETTINGS option means the information is persistent because it is stored in your ISPF profile, and that you do not need to update panel GIM@UPRM every time a new release of SMP/E is installed.

UPGRADE Command

In addition to the changes mentioned above, the new UPGRADE command is key in migrating to the latest release of SMP/E. The UPGRADE command allows you to make the trade-off between fully exploiting new SMP/E functions and preserving compatibility of your zones and SMP/E data sets with prior SMP/E releases.

New SMP/E functions must sometimes make changes to SMP/E data sets that cannot be properly processed by prior SMP/E releases. Rather than arbitrarily making such incompatible changes on its own, SMP/E will continue to use processing that is compatible with prior releases until you use the UPGRADE command.

For example, the following functions will cause incompatible changes to be made to SMP/E data sets:

- APPLY or ACCEPT of a SYSMOD that contains a ++JAR or ++JARUPD element. New types of entries in the SMPCSI data sets require specific support in SMP/E to correctly process them. Therefore, a target or distribution zone that contains a JAR element entry is not fully compatible with previous releases of SMP/E.
- APPLY or ACCEPT of a SYSMOD that contains a Hierarchical File System element with a LINK value longer than 64-characters. Changes to subentries in the SMPCSI data sets require specific support in SMP/E to correctly process them. Therefore, a target or distribution zone that contains a Hierarchical File System element with a LINK value longer than 64-characters is not fully compatible with previous releases of SMP/E.
- SMP/E Version 3 Release 2 will allow a smaller SMPLTS data set. In prior SMP/E releases the SMPLTS data set is quite large and used for all load modules that have a CALLLIBS subentry (load modules that exploit the link edit autocall facility). The SMPLTS data set will now be used only for load modules that both contain cross-zone modules and use CALLLIBS. Therefore, SMP/E will delete unneeded load modules from the SMPLTS data set during APPLY, RESTORE, and CLEANUP command processing. The result is a much smaller, possibly empty, SMPLTS data set. However, such an SMPLTS data set is not fully compatible with prior releases of SMP/E.

Therefore, until the UPGRADE command is used, SMP/E will not exploit the functions described above, and will not allow a SYSMOD that exploits the functions described above to be applied or accepted. This means your SMP/E zones and data sets will remain compatible with prior SMP/E releases until you use the UPGRADE command. However, once you use the UPGRADE command, you authorize SMP/E to exploit these new functions and to make incompatible changes to SMP/E zones and data sets. See the *IBM SMP/E for z/OS and OS/390 Commands* for further information on the UPGRADE command.

6.3.2 Migrating from OS/390 Version 2 Release 7 SMP/E, or earlier

OS/390 Version 2 Release 7 SMP/E is the release level of SMP/E integrated into OS/390 Version 2 Release 7, 8, 9, and 10, and z/OS Release 1. If you are migrating from this release level of SMP/E or earlier, you should be aware of the changes mentioned above (Migrating from SMP/E Version 3 Release 1) as well as the following changes:

Backing up IEANUC01

The function to save a target system's nucleus load module (IEANUC01) during APPLY, LINK, and RESTORE command processing has been removed from SMP/E. The **NUCID** operand of the APPLY command and the NUCID subentry for an OPTIONS entry are no longer supported and will be ignored by SMP/E if specified.

Dynamic Allocation of Temporary Data Sets using module GIMMPDFT

If you previously used module **GIMMPDFT** to define allocation information for temporary data sets, you must now use another method because module GIMMPDFT no longer exists. You can use DDDEF entries, DD statements, or use member GIMDDALC in the SMPPARM data set. Putting the dynamic allocation information in a member of the SMPPARM data set means that the information is persistent and you will not need to update module GIMMPDFT every time a new release of SMP/E is installed.

Defining SMP/E Exit Routines using module GIMMPUXD

If you previously used module **GIMMPUXD** to define SMP/E exit routines, you must now use member GIMEXITS in the SMPPARM data set because module GIMMPUXD no longer exists. Putting the exit routine information in a member of the SMPPARM data set means that the information is persistent and you will not need to update module GIMMPUXD every time a new release of SMP/E is installed.

See the *IBM SMP/E for z/OS and OS/390 Reference* for details on using members GIMDDALC and GIMEXITS, and the SMPPARM data set.

Appendix A. Setting Up SMP/E for Easier Operation

SMP/E provides several optional facilities that you can use to make SMP/E operations easier and more efficient. To take advantage of these facilities, you must set up a few SMP/E options. Normally, these set up procedures need only be done once.

The major tasks are:

- Specifying SMP/E OPTIONS entry
- Specifying link edit utility output DDDEF entries
- Specifying automatic cross-zone requisite checking

A.1 Recommended Values for OPTIONS Entry

IBM recommends the following OPTIONS entry values:

MSGFILTER(YES)

MSGFILTER(YES) causes SMP/E to filter the messages it writes to SMPOUT during APPLY, ACCEPT, and RESTORE command processing. When SMP/E filters messages, most non-critical informational messages are not written to SMPOUT. The result is less output to read through when it is necessary to investigate an SMP/E operation. MSGFILTER(NO) is the default.

MSGWIDTH(80)

MSGWIDTH(80) causes SMP/E to format its messages to an 80 character width. This makes online viewing simpler by eliminating the need to scroll right to view the entire message text. MSGWIDTH(120) is the default.

RECZGRP

Often the RECEIVE command will receive a PTF that has already been accepted and purged from the global zone and SMPPTS data set. There is no need to receive such PTFs and they only add to the space used by the SMPPTS. To prevent RECEIVE from receiving such PTFs, you need to tell SMP/E what dlib zones to check when determining if a PTF has already been accepted. You can specify the list of dlib zones using the RECEIVE Zone Group (RECZGRP) subentry in an OPTIONS entry.

The RECZGRP subentry allows you to set a policy and specify the list of zones once. This list is then used for all future RECEIVE operations whenever the OPTIONS entry is active. With the list of dlib zones set, during RECEIVE processing, SMP/E will check each of the zones specified first before receiving a PTF. If that PTF is accepted in any of the specified zones, the PTF will not be received again.

RETRYDDN(ALL)

RETRYDDN(ALL) causes SMP/E to compress out-of-space libraries and retry processing after an x37 abend. When you use this option, make sure you are **not** updating production data sets.

Note: Do not specify a PEMAX value. Allow SMP/E to use its default value.

A.1.1 Sample UCLIN Job

Here is a sample UCLIN job to build an OPTIONS entry with the recommended values:

```
//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
  SET BOUNDARY(GLOBAL).
  UCLIN.
  ADD OPTIONS(OPTENT)
  MSGFILTER(YES)
  MSGWIDTH(80)
  RETRYDDN(ALL)
  RECZGRP( zosdlib
           os390dlib
           jes2dlib
           jes3dlib
           cicsdlib
           db2dlib
           imsdlib ).
  ENDUCL.
/*
```

Figure 17. Sample UCLIN job to build an OPTIONS entry

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace the zone names on RECZGRP with your actual zone names.

A.1.2 Activating the OPTIONS Entry

After the OPTIONS entry has been defined, IBM recommends that you make it active by defining it as the default OPTIONS entry for the global, target, and DLIB zones. Otherwise, you must specify it on the SET command before using any other SMP/E command.

A.2 Recommended Link Edit Utility Output DDDEF Entries

To exploit utility multi-tasking in SMP/E, ensure the ddname that is to contain the link edit utility output is defined with a DDDEF entry that identifies a SYSOUT class. SMP/E's default ddname for utility output is SYSPRINT, but can be changed using the PRINT subentry of the LKED UTILITY entry. If using the default, ensure you have a SYSPRINT DDDEF entry with a SYSOUT class. Also ensure you do not override the DDDEF entry by specifying a DD statement for the ddname.

When multi-tasking, SMP/E will invoke multiple instances of the link edit utility at the same time, thus decreasing the total time required to complete an APPLY, ACCEPT, or RESTORE command. If you do not define the print ddname using a DDDEF entry, if the DDDEF entry identifies something other than a SYSOUT class, or if you override the DDDEF entry by using a DD statement, then SMP/E can not multi-task link edit utility operations.

A.3 Specifying Automatic Cross-Zone Requisite Checking

The installation of software service often requires the synchronization of service levels across multiple SMP/E zones. For example, service for software in the MVS zone may require related service for the JES2, CICS, DB2, and other zones to permit all software within the system image to operate properly. To help ensure proper synchronization across zones, you can tell SMP/E to automatically check for cross-zone requisites during APPLY, ACCEPT, and RESTORE command processing.

This checking is very much like that performed by the REPORT CROSSZONE command, except it is performed automatically during APPLY, ACCEPT, and RESTORE command processing.

To enable automatic cross-zone requisite checking, you must tell SMP/E which zones contain software to be checked for requisites. The set of zones identified for cross-zone requisite checking is called the *zone group*. SMP/E provides two methods to identify the zones within the group:

1. Define a default zone group
2. Specify the zones directly on the APPLY, ACCEPT, or RESTORE command.

A.3.1 Defining a Default Zone Group

You can define a default zone group by creating a ZONESET entry that contains the XZREQCHK(YES) subentry and the list of zones to be included in the default zone group. SMP/E will use this default zone group to determine which zones to check for requisites whenever the APPLY, ACCEPT, or RESTORE commands process a zone named in this ZONESET. To create such a ZONESET, use the SMP/E Administration Dialogs or use the UCLIN command, as in this example:

```

//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
  SET BOUNDARY(GLOBAL).
  UCLIN.
  ADD ZONESET(ZONEGRP)
    XZREQCHK(YES) /* use this ZONESET for
                  cross-zone req checking */
    ZONE(zostgt  zosdlib
         os390tgt os390dlib
         jes2tgt  jes2dlib
         jes3tgt  jes3dlib
         cicstgt  cicsdlib
         db2tgt   db2dlib
         imstgt   imsdlib).
  ENDUCL.
/*

```

Figure 18. Sample UCLIN job to build a ZONESET entry

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace the zone names in the ZONESET with your actual zone names.

The ZONESET should contain the names of all the zones to be checked for cross-zone requisites. Once the ZONESET is created and the XZREQCHK(YES) subentry is set, the zones defined in the ZONESET are used as the default zone group any time the APPLY, ACCEPT, or RESTORE commands process any zone found in the ZONESET. For example, if an APPLY command is initiated for the *cicstgt* zone, all zones found in the ZONESET entry named ZONEGRP are used for the zone group.

A.3.2 Specifying the Zone Group on a Command

If you don't have a default zone group defined, or you want to use a different set of zones for the zone group, you can specify the zones on the APPLY, ACCEPT, or RESTORE command using the XZGROUP operand. This is simply a matter of specifying the zones to be checked for cross-zone requisites, as shown in this example:

```

//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
    SET BOUNDARY(zostgt).
    APPLY SOURCEID(HIPER)
        CHECK
        XZGROUP(os390tgt,jes2tgt,jes3tgt,
                cicstgt,db2tgt,imstgt)
        BYPASS(HOLDSYS).
/*

```

Figure 19. Sample APPLY with XZGROUP job

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace *zostgt* on the SET BOUNDARY command with your actual target zone name.
4. Replace the zone names in XZGROUP with your actual zone names.

A.3.3 Define a ZONEINDEX for Each Zone

Each of the zones specified in a ZONESET or on the XZGROUP operand must be defined by a ZONEINDEX in the current global zone, even if the zones are already defined in another global zone (more than one global zone may contain a ZONEINDEX for the same target or dlib zone). This allows the APPLY, ACCEPT, and RESTORE commands initiated from the current global zone to access the specified zones. To add ZONEINDEX subentries for each of the zones, use the SMP/E Administration Dialogs or use the UCLIN command, as in this example:

```

//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
  SET BOUNDARY(GLOBAL).
  UCLIN.
  ADD GLOBALZONE ZONEINDEX(
    (zostgt,   zos.target.csi,  TARGET)
    (zosdlib,  zos.dlib.csi,    DLIB)
    (os390tgt, os390.target.csi, TARGET)
    (os390dlib, os390.dlib.csi, DLIB)
    (jes2tgt,  jes2.target.csi,  TARGET)
    (jes2dlib, jes2.dlib.csi,    DLIB)
    (jes3tgt,  jes3.target.csi,  TARGET)
    (jes3dlib, jes3.dlib.csi,    DLIB)
    (cicstgt,  cics.target.csi,  TARGET)
    (cicsdlib, cics.dlib.csi,    DLIB)
    (db2tgt,   db2.target.csi,   TARGET)
    (db2dlib,  db2.dlib.csi,     DLIB)
    (imstgt,   ims.target.csi,   TARGET)
    (imsdlib,  ims.dlib.csi,     DLIB)
  ).
ENDUCL.
/*

```

Figure 20. Sample UCLIN job to build ZONEINDEXs

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace the zone and data set names in ZONEINDEX with your actual zone and data set names.

A.3.4 Cross-Zone Requisite Checking

Whether you define a default zone group or specify a zone group on the APPLY, ACCEPT, and RESTORE command, SMP/E will determine during command processing whether any cross-zone requisites are unsatisfied. Cross-zone requisites are caused by ++IF statements, where a SYSMOD containing a ++IF statement resides in one zone and the function (FMID) identified on the ++IF resides in another zone. If the requisite identified on the ++IF statement does not reside in the same zone as the identified function, then the condition is not satisfied.

Unsatisfied cross-zone requisite conditions will cause APPLY, ACCEPT, and RESTORE command processing to fail for the SYSMOD containing the ++IF statement. Processing will continue to fail until the

requisite is satisfied in the other zone, unless the BYPASS(XZIFREQ) operand is specified on the command.

A.3.5 Bypassing Unsatisfied Cross-Zone Requisites

The BYPASS(XZIFREQ) operand on the APPLY, ACCEPT, and RESTORE commands tells SMP/E to continue processing the command even if missing cross-zone requisites are detected. SMP/E warning messages will be issued to identify the missing cross-zone requisites.

```
//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
           SET BOUNDARY(zostgt).
           APPLY SOURCEID(HIPER)
             CHECK
             BYPASS(HOLDSYS
                   XZIFREQ).
/*
```

Figure 21. Sample APPLY with BYPASS(XZIFREQ) job

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace *zostgt* on the SET BOUNDARY command with your actual target zone name.

Note: This example assumes a default zone group has been defined and will therefore be used during APPLY command processing.

You can be broad or very granular in the specification of what cross-zone requisites to bypass. You can indicate all cross-zone requisites are to be bypassed (as in the previous example), you can indicate that specific cross-zone requisite SYSMODs are to be bypassed, or you can indicate that only specific cross-zone requisite SYSMODs from specific zones are to be bypassed. Details of the BYPASS(XZIFREQ) operand and processing can be found in *IBM SMP/E for z/OS and OS/390 Commands*.

A.3.6 Resolving Cross-Zone Requisites

If cross-zone requisites are bypassed and therefore cause unsatisfied cross-zone requisites, you must resolve those unsatisfied requisites. To do this, you need to APPLY or ACCEPT those requisites to the appropriate zones. To aid in this task, SMP/E provides a method to identify missing cross-zone requisite SYSMODs and make them candidates for APPLY and ACCEPT processing to resolve missing cross-zone requisites.

In order to select cross-zone requisite SYSMODs to be installed in a particular zone, the XZREQ operand can be used on the APPLY and ACCEPT commands. The XZREQ operand causes SMP/E to search the zones in the zone group for unsatisfied cross-zone requisites. If any are found which can be satisfied by installing a requisite SYSMOD to the current zone, those SYSMODs are made candidates for the APPLY and ACCEPT commands. Here is an example:

```
//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
           SET BOUNDARY(cicstgt).
           APPLY CHECK
             BYPASS(HOLDSYS)
             XZREQ.
/*
```

Figure 22. Sample APPLY job with XZREQ

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.
3. Replace *cicstgt* on the SET BOUNDARY command with your actual target zone name.

Note: This example assumes a default zone group has been defined and will therefore be used during APPLY command processing.

Using the XZREQ operand identifies and installs the needed requisites. You can also use the REPORT CROSSZONE command to identify the needed cross-zone requisites.

A.3.7 The REPORT CROSSZONE Command

The REPORT CROSSZONE command identifies unresolved cross-zone requisites, very much like the cross-zone requisite checking that can be performed automatically during APPLY, ACCEPT, and RESTORE command processing. REPORT CROSSZONE lists the needed requisites in the Cross-Zone Requisite SYSMOD report, and also generates the APPLY and ACCEPT commands needed to install the identified requisites. These generated commands can be used as an alternative to APPLY and ACCEPT using the XZREQ operand.

Here is an example of using the REPORT CROSSZONE command:

```
//job      JOB job parameters
//STEP1    EXEC PGM=GIMSMP
//SMPCSI   DD DSN=smp.global.csi,DISP=SHR
//SMPCNTL  DD *
           SET BOUNDARY(GLOBAL).
           REPORT CROSSZONE
             ZONESET(ZONEGRP).
/*
```

Figure 23. Sample REPORT CROSSZONE job

Required Updates

1. Update the JOB statement parameters.
2. Replace the SMPCSI data set name on the SMPCSI DD statement with the name of your data set.

Note: This example assumes the ZONESET entry named ZONEGRP has been defined as shown in Figure 18 on page 30.

For further details, see the REPORT CROSSZONE Command in *IBM SMP/E for z/OS and OS/390 Commands*.

Reader's Comments

Program Directory for IBM SMP/E for z/OS and OS/390 20 March 2003

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