IBM

Program Directory for

IBM Health Checker for z/OS

Program Number 5694-A01 and 5655-G52

FMID HZS7720

for Use with
V1.4.0/V1.5.0/V1/6.0 of z/OS and z/OS.e

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GI11-2856-01

Note!

Before using this information and the product it supports, be sure to read the general information under 7.0, “Notices” on page 25.

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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 Health Checker for z/OS. This publication refers to IBM Health Checker for z/OS as IBM Health Checker for z/OS.

The Program Directory contains the following sections:

2.0, “Program Materials” on page 3 identifies the basic and optional program materials and documentation for IBM Health Checker for z/OS.

3.0, “Program Support” on page 5 describes the IBM support available for IBM Health Checker for z/OS.

4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) incorporated into IBM Health Checker for z/OS.

5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations required for installing and using IBM Health Checker for z/OS.

6.0, “Installation Instructions” on page 17 provides detailed installation instructions for IBM Health Checker for z/OS. It also describes the procedures for activating the functions of IBM Health Checker for z/OS, or refers to appropriate publications.

Before installing IBM Health Checker for z/OS, read section 3.2, “Preventive Service Planning” on page 5, which tells you how to find any updates to the information and procedures in this Program Directory.

1.1 IBM Health Checker for z/OS Description

IBM Health Checker for z/OS is a z/OS component that installations can use to gather information about their system environment and system parameters to help identify potential configuration problems before they impact availability or cause outages. Individual products, z/OS components, platform products, or ISVs can provide checks that can take advantage of the IBM Health Checker for z/OS framework, provided in HZS7720. You should also refer to the IBM Health Checker for z/OS web page at:

http://www.ibm.com/servers/eserver/zseries/zos/hchecker/

This program directory reflects instructions specific to z/OS V1.4.0, V1.5.0, V1.6.0 and z/OS.e V1.4.0, V1.5.0, and V1.6.0.

To download the IBM Health Checker for z/OS web deliverable see

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

1.2 IBM Health Checker for z/OS FMID

IBM Health Checker for z/OS consists of the following FMID:

HZS7720 (IBM Health Checker for z/OS)

The IBM Health Checker for z/OS web deliverable has been fully system tested with z/OS and z/OS.e V1.4.0, V1.5.0, and V1.6.0.

2.0 Program Materials

An IBM program is identified by a program number. The program numbers for IBM Health Checker for z/OS are 5694-A01 and 5655-G52.

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

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

2.1 Basic Machine-Readable Material

The distribution medium for this program is via Web Delivery. The code for this deliverable can be downloaded from URL -

http://www.ibm.com/servers/eserver/zseries/zos/downloads/

The deliverable contains all the programs and data needed for installation. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, “Installation Instructions” on page 17 for more information about how to install the program.

No optional machine-readable materials are provided for IBM Health Checker for z/OS.

2.2 Program Publications

The following sections identify the basic and optional publications for IBM Health Checker for z/OS.

2.2.1 Basic Program Publications

Figure 1 identifies the basic unlicensed program publications for IBM Health Checker for z/OS. The publications can be found in the z/OS V1R7 level bookshelf at URL -

http://www.ibm.com/servers/eserver/zseries/zos/bkserv

Figure 1. Basic Material: Unlicensed Publications

Publication Title	Form Number
IBM Health Checker for z/OS User's Guide	SA22-7994

2.2.1.1 Looking up IBM Health Checker for z/OS messages

Checks are provided by components, as described in 5.2.2.2, “Operational Requisites” on page 10, however, the message manuals for z/OS V1.4.0, V1.5.0, and V1.6.0 do not reflect these messages. IBM Health Checker for z/OS messages (HZS prefixed), are documented in the *IBM Health Checker for z/OS User's Guide*. We recommend that you use the following approach for retrieving component check messages.

1. Use the LOOKAT Internet tool to look up the messages. This can be found at: www.ibm.com/servers/eserver/zseries/zos/bkserv/lookat/
2. Specify "z/OS V1R7" as the release to search.

   Many of the messages are documented in the applicable component message manuals for this release.
3. If the message was not found, specify a search of the APAR and HOLD documentation.

   Checks delivered in the service stream, provide their messages in the ++APAR.

2.2.2 Optional Program Publications

If you use SDSF, refer to *z/OS SDSF Operation and Customization*, SA22-7670, for information about the CK display that assists with the management of checks.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for IBM Health Checker for z/OS.

2.4 Publications Useful During Installation

The publications listed in Figure 2 may be useful during the installation of IBM Health Checker for z/OS. To order copies, contact your IBM representative or visit the IBM Publications Center on the World Wide Web at:
http://www.ibm.com/shop/publications/order

Figure 2. Publications Useful During Installation

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

3.0 Program Support

This section describes the IBM support available for IBM Health Checker for z/OS.

3.1 Program Services

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

3.2 Preventive Service Planning

Before installing IBM Health Checker for z/OS, you should review the current Preventive Service Planning (PSP) information.

For access to RETAIN, visit **http://www.ibmlink.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 PSP UPGRADE and SUBSET values for IBM Health Checker for z/OS are:

Figure 3. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
HCHECKER	HZS7720	IBM Health Checker for z/OS

3.2.1 Identifying checks with the Technical Help Database

Checks for IBM Health Checker for z/OS may be integrated with components or elements when delivered with z/OS or with IBM products. Or, checks may be distributed as PTFs. The use of PTFs to provide checks facilitates updates of checks on non-z/OS release boundaries.

To identify checks that have been provided in PTFs, use the Technical Help database for mainframe Preventive Service Planning buckets:
http://www14.software.ibm.com/webapp/set2/psp/srchBroker

There are several ways to retrieve a list of checks. One way is to select a Type of "Function" and then select the type for the IBM Health Checker for z/OS checks. Refer to information on this Web site for additional usage information.

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 on page 6 identifies the component IDs (COMPID) for IBM Health Checker for z/OS.

Figure 4. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HZS7720	5752SCHZS	Health Checker	720

4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of IBM Health Checker for z/OS. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs incorporated into the program.

4.1 Program Level Information

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

FMID HZS7720

No APARs have been incorporated (initial release).

4.2 Service Level Information

No PTFs against this release of IBM Health Checker for z/OS have been incorporated into the web deliverable.

You should frequently check the HCHECKER PSP bucket, subset HZS7720 for HIPER PTFs against HZS7720 that should be installed.

4.3 Understanding IBM Health Checker for z/OS Service

You did not receive any service with your web deliverable.

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IBM Health Checker for z/OS. 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 IBM Health Checker for z/OS.

5.1.1 Machine Requirements

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

5.1.2 Programming Requirements

Figure 5. Driving System Software Requirements

Program Number	**Product Name and Minimum VRM/Service Level**
Any **one** of the following:	
5694-A01	z/OS V1.4.0 or higher
5655-G52	z/OS.e V1.4.0 or higher

5.2 Target System Requirements

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

IBM Health Checker for z/OS 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

An installation requisite is defined as a product that is required and **must** be present or one that is not required but **should** be present on the system for the successful installation of this product.

A mandatory installation requisite identifies products that are required, without exception, or this product **will not install** on your system. This includes products specified as PREs or REQs.

Figure 6. Mandatory Installation Requisites

Program Number	Product Name and Minimum VRM/Service Level
5694-A01	z/OS V1.4.0 or higher, with PTFs UA19064, UA18205, UA20020, and APARs OA10798, and OA10663.
5655-G52	z/OS.e V1.4.0 or higher, with PTFs UA19064, UA18205, UA20020, and APARs OA10798, and OA10663.

A conditional installation requisite identifies products that are **not** required for successful install but may resolve such things as certain warning messages at installation time. They include products that are specified as IF REQs.

IBM Health Checker for z/OS has no conditional installation requisites.

5.2.2.2 Operational Requisites

An operational requisite is defined as a product that is required and **must** be present or a product that is not required but **should** be present on the system in order for this product to operate all or some of its functions.

A mandatory operational requisite identifies products that are required, without exception, or this product

will not operate its basic function unless the requisite is met. This includes products specified as PREs or REQs.

The IBM Health Checker for z/OS consists of the framework, as provided by HZS7720, and checks, which can be provided as either PTFs or as part of a component. The following table describes the initial set checks and operational support for IBM Health Checker for z/OS. To identify checks provided after this initial set, you can use the procedures described in 3.2.1, “Identifying checks with the Technical Help Database” on page 5. Refer to the *IBM Health Checker for z/OS User's Guide*, SA22-7994, for a description of the checks.

Figure 7 (Page 1 of 2). Mandatory Operational Requisites

Component	Component Checks available in (++APAR) or PTF
Consoles	OA09095 /
	UA20373 (R6, HBB7709)
	UA20377 (R5, JBB7728)
	UA20376 (R4, JBB7727)
	UA20375 (JBB772J (Kanji))
Contents Supervisor	OA12777
GRS	OA10830 /
	UA19874 (R6, HBB7709)
	UA19873 (R5, HBB7708)
	UA19872 (R4, HBB7707)
RRS	OA12219 /
	UA20247 (R6, HBB7709)
	UA20246 (R5, HBB7708)
	UA20245 (R4, HBB7707)
RSM	OA09366
SDUMP	OA09306 /
	UA20254 (R6, HBB7709)
	UA20253 (R5, HBB7708)
	UA20252 (R4, HBB7707)
Security Server RACF	OA11833 /
	UA20286 (R6, HRF7709)
	UA20285 (R5, HRF7708)
	UA20284 (R4, HRF7707)

Figure 7 (Page 2 of 2). Mandatory Operational Requisites

Component	Component Checks available in (++APAR) or PTF
VSM	OA09367 / UA20381 (R6, HBB7709) UA20380 (R5, HBB7708) UA20379 (R4, HBB7707)
XCF/XES	OA07513 / UA20439 (R6, HBB7709) UA20438 (R5, HBB7708) UA20437 (R4, HBB7707)
z/OS UNIX System Services	OA09276 / UA20349 (R6, HBB7709) UA20348 (R5, HBB7708) UA20347 (R4, HBB7707)
Note: Checks are provided via PTFs (APAR fixes). All checks are not applicable to all releases. Function may be dependent on function in a specific z/OS release.	

In addition, other z/OS elements have provided support related to the IBM Health Checker for z/OS web deliverable.

Figure 8. Optional Operational Requisites

Component	Function available in	Description
SDSF	PK00561	SDSF CK panel support that shows information for IBM Health Checker for z/OS See *z/OS SDSF Operation and Customization*, SA22-7670.
Security Server RACF	UA18194 (R6, HRF7709) UA18193 (R5, HRF7708) UA18192 (R4, HRF7707)	New XFACILIT and GXFACILI classes. See *z/OS Security Server RACF Security Administrator's Guide,*, SA22-7683.

A conditional operational requisite identifies products that are **not required** for the basic function but are needed at run time for this product to utilize specific functions. They may include products specified as IF REQs.

IBM Health Checker for z/OS has no conditional operational 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.

IBM Health Checker for z/OS 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.

IBM Health Checker for z/OS has no negative requisites.

5.2.3 DASD Storage Requirements

IBM Health Checker for z/OS 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 IBM Health Checker for z/OS

Library Type	Total Space Required
Target	982 tracks on 3390 DASD
Distribution	848 tracks 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.

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.

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 LNKLST.
   It is not required for the data set to be APF-authorized.

The following figures describe the target and distribution libraries and HFS paths required to install IBM Health Checker for z/OS. The storage requirements of IBM Health Checker for z/OS 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 (Page 1 of 2). Storage Requirements for IBM Health Checker for z/OS Target Libraries

	Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
1	LINKLIB	LMOD	T1	E	PDS	U	0	12	5
1	MACLIB	MAC	T2	E	PDS	FB	80	61	2
1	SBLSCLI0	CLST	T1	E	PDS	FB	80	17	2

Figure 10 (Page 2 of 2). Storage Requirements for IBM Health Checker for z/OS Target Libraries

	Library DDNAME	Member Type	Target Volume	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
1	SAMPLIB	SAMP	T2	E	PDS	FB	80	2	2
1	PARMLIB	PARM	T1	E	PDS	FB	80	2	2
1	MIGLIB	LMOD	T1	E	PDS	U	0	3	2

Figure 11. Storage Requirements for IBM Health Checker for z/OS Distribution Libraries

	Library DDNAME	TYPE	ORG	RECFM	LRECL	No. of 3390 Trks	No. of DIR Blks
1	ABLSCLI0	E	PDS	FB	80	17	2
1	AMACLIB	E	PDS	FB	80	61	2
1	AOSC5	E	PDS	U	0	19	11
1	ASAMPLIB	E	PDS	FB	80	2	2
1	APARMLIB	E	PDS	FB	80	2	2
1	AMIGLIB	E	PDS	U	0	3	2

5.3 FMIDs Deleted

Installing IBM Health Checker for z/OS will not result in the deletion of other FMIDs because this is the initial release.

5.4 Special Considerations

IBM Health Checker for z/OS 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 IBM Health Checker for z/OS.

Please note the following:

If you want to install IBM Health Checker for z/OS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets.

Sample jobs have been provided to help perform some or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries required for SMP/E execution have been defined in the appropriate zones.

The SMP/E dialogs may be used instead of the sample jobs to accomplish the SMP/E installation steps.

6.1 Installing IBM Health Checker for z/OS

6.1.1 SMP/E Considerations for Installing IBM Health Checker for z/OS

IBM Health Checker for z/OS 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 z/OS driving system where the package will be staged. This is the repository for the download package. The hchecker.README.txt that will be downloaded in step 2, contains a sample job that can be used to allocate and mount an HFS on the host system.
2. Download the “IBM Health Checker for z/OS” package.

   The package is available from the following web site:
   http://www.ibm.com/eserver/zseries/zos/downloads

   There are two parts of the package:

   hchecker.README.txt

   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 contained in the hchecker.pax.Z package.

This job must be updated to reflect your environment.

Please make sure that this file is transferred from the download site as a text file.

hchecker.pax.Z

This pax archive file consists of the base function. The file contains the SMP/E MCS and the associated RELFILEs.

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

This file must be transferred from the Web and to the host system in binary format.

3. Run the sample job provided in hchecker.README.txt.

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

   Expected return codes: RC=0

4. You must upgrade your target system (z/OS or z/OS.e V1.4.0, V1.5.0, or V1.6.0) with current service. To obtain PTF service for the IBM Health Checker for z/OS FMID, refer to 3.2, “Preventive Service Planning” on page 5.
5. 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 12. 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 12. SMP/E Options Subentry Values

SUB-ENTRY	Value	Comment
DSSPACE	Existing target CSI value	IBM recommends using your existing target system'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. IBM Health Checker for z/OS requires no new libraries, it uses existing target and distribution libraries. You do not need to create any new DDDEF entries.

6.1.4 Perform SMP/E APPLY

Edit and submit the sample job shown in Figure 13 on page 20 to perform an SMP/E APPLY CHECK for IBM Health Checker for z/OS information.

Perform an SMP/E APPLY CHECK for IBM Health Checker for z/OS.

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).

Enhanced HOLDDATA introduced ERROR HOLDs against FMIDs for HIPER APARs. Prior to installing, you should ensure you have the latest Enhanced HOLDDATA (available at url http://service.software.ibm.com/holdata/390holddata.html). The FMID(s) should be installed regardless of the status of unresolved HIPERs, however, the software should not be deployed until the unresolved HIPERs have been analyzed to determine applicability.

There are two methods to complete an FMID installation where ++HOLDs for HIPERs exist for the FMID(s) being installed:

1. To ensure that all critical service is installed with the FMID(s), add the SOURCEIDs of PRP, and HIPER to the APPLY command. There may be PE or HIPER APARs that do not have resolving PTFs available yet. You need to analyze the symptom flags to determine if you want to BYPASS the specific ERROR HOLDs and continue the FMID installation.

```
1   APPLY S(HZS7720)
1   FORFMID(HZS7720)
    SOURCEID(PRP,HIPER,...)
    GROUPEXTEND .
```

   This method requires more initial research, but will provide resolution for all HIPERs that have fixes available and are not in a PE chain. There may still be unresolved PEs or HIPERs which will require the use of BYPASS.

2. To install the FMID(s) as it would have been installed prior to Enhanced HOLDDATA, you can add a BYPASS(HOLDCLASS(HIPER)) operand to the APPLY command. This will allow the FMID to be installed to the APPLY command. This will allow the FMID to be installed even though there are HIPER ERROR HOLDs against it. Note that not all ERROR HOLDs were bypassed, only the HIPER ERROR HOLDs. After the FMID(s) are installed, the SMP/E REPORT ERRSYSMODS command should be run to identify any missing HIPER maintenance.

```
1   APPLY S(HZS7720)
    BYPASS(HOLDCLASS(HIPER))
    other parameters documented in the program directory...
```

   This method is the quicker of the two, but requires subsequent review of the REPORT ERRSYSMODS to investigate any HIPERs.

If you bypass any HOLDs during the installation of the FMID(s) because fixing PTFs were not yet available you can use the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink to be notified when the fixing PTF is available.

Once you have taken any actions indicated by the APPLY CHECK, remove the CHECK operand and run
1 the job again to perform the APPLY. In addition to installing HZS7720, you must also:

1 obtain and install the required service (see 3.2, “Preventive Service Planning” on page 5)

1 obtain and install checks, provided as PTFs (see 3.2.1, “Identifying checks with the Technical Help
1 Database” on page 5)

1 When installing the check PTFs, you can simplify this by specifying a sourceid, such as HCHECKS or one
1 of your own choice. If the check PTFs are received by SMP/E using a sourceid, add the sourceid to the
1 APPLY CHECK and APPLY command shown in the sample APPLY job. This enables SMP/E to APPLY
1 the group of PTFs having the specified sourceid at the same time FMID HZS7720 is installed.

```
//APPLY JOB
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//SMPCSI DD DSN=csiname,DISP=SHR
//SMPCNTL DD *
  SET BOUNDARY(targetzone) .
  APPLY CHECK
  FORFMID(HZS7720)
  SELECT(HZS7720)
  GROUPEXTEND(NOAPARS,NOUSERMODS)
1 SOURCEID(HCHECKS)
  BYPASS(HOLDSYSTEM,
  HOLDUSER,HOLDCLASS(UCLREL,ERREL,HIPER)) .
/*
```

Figure 13. 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.
1 4. Update the HCHECKS sourceid with the name used during the SMP/E RECEIVE of required
1 service, such as those identified in the software PSP bucket, upgrade HCHECKER, subset
1 HZS7720. If you did not use a sourceid during the SMP/E RECEIVE of the required service, then
1 remove the statement SOURCEID(HCHECKS) from the sample.

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

Expected Return Codes and Messages from APPLY CHECK: RC=0

1 If you are installing only HZS7720, RC=0 is expected. However, if service is installed concurrently with
1 FMID HZS7720, you may receive RC=4 during the APPLY CHECK processing of the service.

Expected Return Codes and Messages from APPLY: RC=0

During APPLY CHECK and APPLY processing, the following message may be issued if BYPASS was specified:

GIM42001W THE FOLLOWING CONDITIONS FOR
SYSMOD aaaaaaa WERE NOT SATISFIED, BUT WERE
IGNORED BECAUSE THE BYPASS OPERAND WAS specified.
PROCESSING CONTINUES.

where aaaaaaa is the sysmod ID. This message, and the resulting return code of 4, is acceptable.

6.1.5 Perform SMP/E ACCEPT

Edit and submit sample job shown in Figure 14 on page 22 to perform an SMP/E ACCEPT CHECK for IBM Health Checker for z/OS.

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.

```
//ACCEPT JOB
//STEP1 EXEC PGM=GIMSMP,REGION=0M,TIME=NOLIMIT
//SMPCSI DD DSN=csiname,DISP=SHR
//SMPCNTL DD *
 SET BOUNDARY(dlibzone) .
 ACCEPT CHECK
 FORFMID(HZS7720)
 SELECT(HZS7720)
 GROUPEXTEND(NOAPARS,NOUSERMODS)
 SOURCEID(HCHECKS)
 BYPASS (HOLDSYSTEM,
 HOLDUSER,HOLDCLASS (UCLREL,ERREL,HIPER)) .
//
```

Figure 14. SMP/E ACCEPT

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 the HCHECKS sourceid with the name used during the SMP/E RECEIVE and APPLY the set of check PTFs for IBM Health Checker for z/OS If you did not use a sourceid during the SMP/E RECEIVE of the required service, then remove the statement SOURCEID(HCHECKS) from the sample.

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

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.

If you are installing only HZS7720, RC=0 is expected. However, if service is installed concurrently with FMID HZS7720, you may receive RC=4 during the ACCEPT CHECK processing of the service.

Expected Return Codes and Messages from ACCEPT if no PTFs are being installed: RC=0

If you are installing only HZS7720, RC=0 is expected. However, if service is installed concurrently with FMID HZS7720, you may receive RC=4 during the ACCEPT processing of the service.

During ACCEPT CHECK and ACCEPT processing, the following message may be issued if BYPASS was specified:

GIM42001W THE FOLLOWING CONDITIONS FOR SYSMOD aaaaaaa
WERE NOT SATISFIED, BUT WERE IGNORED BECAUSE
THE BYPASS OPERAND WAS specified. PROCESSING CONTINUES.

where aaaaaaa is the sysmod ID. This message, and the resulting return code of 4, is acceptable.

6.1.6 Run REPORT CROSSZONE

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

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

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

6.2 Activating IBM Health Checker for z/OS

The publication *IBM Health Checker for z/OS User's Guide, SA22-7994* contains the step-by-step procedures to activate the functions of IBM Health Checker for z/OS.

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