

# **Program Directory for HCL Workload Automation for Z**

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# 1. Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of HCL Workload Automation for Z.

The following list describes the sections provided in the Program Directory:

- [Program Materials](#) identifies the basic program materials and documentation for HCL Workload Automation for Z.
- [Program Support](#) describes the support available for HCL Workload Automation for Z.
- [Installation Requirements and Considerations](#) identifies the resources and considerations that are required for installing and using HCL Workload Automation for Z.
- [Installation Instructions](#) provides detailed instructions about how to install HCL Workload Automation for Z. It also describes the procedures for activating the functions of HCL Workload Automation for Z, or refers to the appropriate publications.

## 1.1 HCL Workload Automation for Z Description

HCL Workload Automation for Z is a program for enterprise-wide production workload scheduling. It enables you to plan, schedule, and track the workload, not only on z/OS platforms, but also in a distributed environment.

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 HCL Workload Automation for Z. You should read all this document before installing the program, and keep it for future reference.

## 1.2 HCL Workload Automation for Z FMIDs

HCL Workload Automation for Z consists of the following FMIDs:

- HWAZ950
- JWAZ952
- JWAZ95B

- JWAZ953

## 2. Program Materials

An HCL program is identified by a program number. The program number for HCL Workload Automation for Z is 19OP1249.

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

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### 2.1 Basic Machine-Readable Material

The distribution media for this program are downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E.

For information about the content and download process, refer to the HWAZ950.readme.txt file.

For detailed information about how to install the program, see [Installation Instructions](#).

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### 2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for HCL Workload Automation for Z.

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### 2.3 Program Publications

Table 1 lists the basic unlicensed publications related to HCL Workload Automation for Z. All the publications can be accessed on the Information Center at the following link:

<https://workloadautomation.hcldoc.com/help/index.jsp>

<i>Table 1. Basic Material: Unlicensed</i>	
<b>Publication Title</b>	<b>Media Format</b>
Program Directory	PDF
HCL Workload Automation: Overview	HTML

Quick Reference	HTML
Planning and Installation	HTML
Customization and Tuning	HTML
Managing the Workload	HTML
Diagnosis Guide and Reference	HTML
Scheduling End-to-End with z-centric Capabilities	HTML
Dynamic Workload Console User's Guide	HTML
Messages and Codes	HTML
Developer's Guide: Driving HCL Workload Automation for Z	HTML
Workload Automation Programming Language for z/OS User's Guide and Reference	HTML

## 2.4 Program Source Materials

No program source materials or viewable program listings are provided for HCL Workload Automation for Z.

## 2.5 Publications Useful During Installation

You might want to use the publications listed in Table 2 during the installation of HCL Workload Automation for Z.

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

### 3. Program Support

This section describes the HCL support available for HCL Workload Automation for Z. Report any problems which you feel might be an error in the product materials to HCL Support. HCL Support can be contacted through the Contact Support Form located at:

<https://www.hcltech.com/software/support>

You may be asked to gather and submit additional diagnostics to assist HCL Support in their analysis.

Table 3 lists the components for HCL Workload Automation for Z.

<i>Table 3. Component IDs</i>			
<b>FMID</b>	<b>PID</b>	<b>Component Name</b>	<b>Release</b>
HWAZ950	19OP1249	Agent	950
JWAZ952	19OP1249	Engine	952
JWAZ95B	19OP1249	Engine English	95B
JWAZ953	19OP1249	Java Enablers	953

### 4. Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating HCL Workload Automation for Z. The following terminology is used:

- *Driving system*: the system where SMP/E is run to install the program.

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

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

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

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

must include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Use separate driving and target systems in the following situations.

- When you install a new level of a product that is already installed, the new level of the product will replace the old one. By installing the new level onto a separate target system, you can test the new level and keep the old one in production at the same time.
- When you install a product that shares libraries or load modules with other products, the installation can disrupt the other products. By installing the product onto a separate target system, you can assess these impacts without disrupting your production system.

## 4.1 Driving System Requirements

This section describes the environment of the driving system required to install HCL Workload Automation for Z.

### 4.1.1 Machine Requirements

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

### 4.1.2 Programming Requirements

<i>Table 4. Driving System Software Requirements</i>				
<b>Program Number</b>	<b>Product Name</b>	<b>Minimum VRM</b>	<b>Minimum Service Level will satisfy these APARs</b>	<b>Included in the shipped product?</b>
<i>Any of the following:</i>				
5650-ZOS	z/OS	V02.02.00	N/A	No

**Notes:**

1. SMP/E is a requirement for the installation process and is an element of z/OS, but can also be ordered as a separate product, 5655-G44. The minimum supported version is V03.06.00.
2. Installation might require migration to new z/OS releases to be service supported. For details, see [http://www-03.ibm.com/systems/z/os/zos/support/zos\\_eos\\_dates.html](http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html).

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## 4.2 Target System Requirements

This section describes the environment of the target system that is required to install and use HCL Workload Automation for Z.

HCL Workload Automation for Z installs in the z/OS (Z038) SREL.

### 4.2.1 Machine Requirements

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

### 4.2.2 Programming Requirements

See the following sections.

#### 4.2.2.1 Installation Requisites

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

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

*Table 5. Target System Mandatory Installation Requisites*

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.02 o later	N/A	No

**Note:** Installation might require migration to new z/OS releases to be service supported. For details, see

[http://www-03.ibm.com/systems/z/os/zos/support/zos\\_eos\\_dates.html](http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html).

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

HCL Workload Automation for Z has no conditional installation requisites.

#### **4.2.2.2 Operational Requisites**

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

Mandatory operational requisites identify products that are required for this product to operate its basic functions. These products are specified as PREs or REQs.

HCL Workload Automation for Z has no mandatory operational requisites.

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

HCL Workload Automation for Z has no conditional operational requisites.

#### **4.2.2.3 Toleration/Coexistence Requisites**

Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

HCL Workload Automation for Z has no toleration/coexistence requisites.

#### **4.2.2.4 Incompatibility (Negative) Requisites:**

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

HCL Workload Automation for Z has no negative requisites.

### **4.2.3 DASD Storage Requirements**

HCL Workload Automation for Z libraries can reside on all supported DASD types. Table 6 lists the total space that is required for each type of library.

<i>Table 6. Total DASD Space Required by HCL Workload Automation for Z</i>		
<b>Library Type</b>	<b>Total Space Required in 3390 Trks</b>	<b>File System Description</b>
Target	5006	
Distribution	5909	
File System(s)	8000	

**Notes:**

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

2. Abbreviations used for data set types are shown as follows.

- U** Unique data set, allocated by this product and used only by this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.
- S** Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size shown in this document to those given in other documents (for example, other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

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

For more information about the names and sizes of the required data sets, see [5.1.9 Allocate SMP/E Target and Distribution Libraries](#).

3. Abbreviations used for the file system path type are as follows:

- N** New path, created by this product.

- X** Path created by this product, but might already exist from a previous release.
- P** Previously existing path, created by another product.

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

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

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

6. All target libraries that are listed and contain load modules have the following attributes:

- These data sets can be in the LPA, but they are not required to be in the LPA.
- These data sets can be in the LNKLIST.
- These data sets are not required to be APF-authorized.

The following tables describe the target and distribution libraries and file system paths required to install HCL Workload Automation for Z. The storage requirements of HCL Workload Automation for Z must be added to the storage required by other programs that have data in the same library or path.

**Note:** Use the data in these tables to determine which libraries can be merged into common data sets. In addition, because some ALIAS names may not be unique, ensure that no naming conflicts is introduced before merging libraries.

<i>Table 7. Storage Requirements for HCL Workload Automation for Z Target</i>								
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
SEQQLMD0	LMOD	ANY	U	PDS	U	0	1400	160
SEQQMISC	Data	ANY	U	PDS	FB	80	400	100
SEQQCLIB	CLIST	ANY	U	PDS	FB	80	30	2
SEQQDATA	Data	ANY	U	PDS	VB	6156	3	3
SEQQMAC0	Macro	ANY	U	PDS	FB	80	30	4

SEQQMSG0	Message	ANY	U	PDS	FB	80	500	120
SEQQPNL0	Panel	ANY	U	PDS	FB	80	60	8
SEQQSAMP	Sample	ANY	U	PDS	FB	80	200	30
SEQQWAPL	Sample	ANY	U	PDS	FB	80	200	30
SEQQSKL0	Skeleton	ANY	U	PDS	FB	80	30	8
SEQQTBL0	Table	ANY	U	PDS	FB	80	3	3
SEQQPENU	Panel	ANY	U	PDS	FB	80	2000	200
SEQQGENU	Advanced ISPF panels	ANY	U	PDS	FB	80	130	70
SEQQLENU	Advanced ISPF Panel templates	ANY	U	PDS	FB	80	20	70

*Table 8. Storage Requirements for HCL Workload Automation for Z Distribution*

<b>Library DDNAME</b>	<b>T Y P E</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>No. of 3390 Trks</b>	<b>No. of DIR Blks</b>
AEQQMOD0	U	PDS	U	0	2300	500
AEQQMISC	U	PDS	FB	80	400	100
AEQQCLIB	U	PDS	FB	80	30	2
AEQQDATA	U	PDS	VB	6156	6	6
AEQQMAC0	U	PDS	FB	80	30	4
AEQQMSG0	U	PDS	FB	80	500	120
AEQQPNL0	U	PDS	FB	80	60	8
AEQQSAMP	U	PDS	FB	80	200	30
AEQQWAPL	U	PDS	FB	80	200	30
AEQQSKL0	U	PDS	FB	80	30	8
AEQQTBL0	U	PDS	FB	80	3	3
AEQQPENU	U	PDS	FB	80	2000	200
AEQQGENU	U	PDS	FB	80	130	70
AEQQLENU	U	PDS	FB	80	20	70
AEQQHFS0	U	PDS	VB	30000	8000	100

*Table 9. HCL Workload Automation for Z File System Paths*

<b>DDNAME</b>	<b>T Y P E</b>	<b>Path Name</b>
SEQQ0001	N	/usr/lpp/TWS/V9R5M0/bin/HCL
SEQQ0002	N	/usr/lpp/TWS/V9R5M0/catalog/C/HCL
SEQQ0003	N	/usr/lpp/TWS/V9R5M0/codeset/HCL
SEQQ0004	N	/usr/lpp/TWS/V9R5M0/config/HCL
SEQQ0005	N	/usr/lpp/TWS/V9R5M0/zoneinfo/HCL
SEQQ0006	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Africa/HCL
SEQQ0007	N	/usr/lpp/TWS/V9R5M0/zoneinfo/America/HCL
SEQQ0008	N	/usr/lpp/TWS/V9R5M0/zoneinfo/America/Argentina/HCL
SEQQ0009	N	/usr/lpp/TWS/V9R5M0/zoneinfo/America/Indiana/HCL
SEQQ0010	N	/usr/lpp/TWS/V9R5M0/zoneinfo/America/Kentucky/HCL/
SEQQ0011	N	/usr/lpp/TWS/V9R5M0/zoneinfo/America/North_Dakota/HCL/
SEQQ0012	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Antarctica/HCL/
SEQQ0013	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Arctic/HCL/
SEQQ0014	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Asia/HCL/
SEQQ0015	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Atlantic/HCL/
SEQQ0016	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Australia/HCL/
SEQQ0017	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Brazil/HCL/
SEQQ0018	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Canada/HCL/
SEQQ0019	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Chile/HCL/
SEQQ0020	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Etc/HCL/
SEQQ0021	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Europe/HCL/
SEQQ0022	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Indian/HCL/
SEQQ0023	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Mexico/HCL/
SEQQ0024	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Mideast/HCL/
SEQQ0025	N	/usr/lpp/TWS/V9R5M0/zoneinfo/Pacific/HCL/
SEQQ0026	N	/usr/lpp/TWS/V9R5M0/zoneinfo/US/HCL/
SEQQ0028	N	/usr/lpp/TWS/V9R5M0/apps/applicationJobPlugins/HCL/
SEQQ0029	N	/usr/lpp/TWS/V9R5M0/apps/HCL
SEQQ0030	N	/usr/lpp/TWS/V9R5M0/scripts/HCL
SEQQ0031	N	/usr/lpp/TWS/V9R5M0/HCL

## 5. Installation Instructions

This section describes the installation method and the step-by-step procedures to install and activate the functions of HCL Workload Automation for Z.

Consider that:

- To install HCL Workload Automation for Z into its own SMP/E environment, you find the instructions about creating and initializing the SMPCSI and SMP/E control data sets in the SMP/E manuals.
- To perform part or all the installation tasks, you can use the sample jobs that are provided. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.
- To accomplish the SMP/E installation steps, you can use the SMP/E dialogs instead of the sample jobs.

### 5.1 Installing HCL Workload Automation for Z

The following list provides you with an overview of the required installation steps:

1. Allocate file system to hold web download package
2. Upload the web download package to the host
3. Extract and expand the compressed SMPMCS and RELFILES
4. Extract the sample jobs
5. Perform SMP/E RECEIVE
6. Allocate SMP/E target and distribution libraries
7. Create DDDEF entries
8. Perform SMP/E APPLY
9. Perform SMP/E ACCEPT

#### 5.1.1 SMP/E Considerations for Installing HCL Workload Automation for Z

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of HCL Workload Automation for Z.

#### 5.1.2 SMP/E Options Subentry Values

Table 10 shows the recommended values for certain SMP/E CSI subentries. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the

GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. For instructions about updating the global zone, see the SMP/E manuals.

<i>Table 10. SMP/E Options Subentry Values</i>		
<b>Subentry</b>	<b>Value</b>	<b>Comment</b>
DSSPACE	400,400,400	Space allocation for temporary libraries
PEMAX	SMP/E Default	HCL recommends using the SMP/E default for PEMAX.

### 5.1.3 Allocate file system to hold web download package

The SMP/E input data sets to install HCL Workload Automation for Z are provided as compressed files in archive HWAZ950.zip, which is part of HCL Workload Automation for Z downloadable package together with HWAZ950.readme.txt file.

First, you need to download the HCL Workload Automation for Z package on your workstation (Unix or Windows).

### 5.1.4 Upload the web download package to the host

The HWAZ950.readme.txt contains indications and scripts to download from your workstation the SMP/E input data set to the z/OS system where CSI must reside.

### 5.1.5 Extract and expand the compressed SMPMCS and RELFILES

The HWAZ950.readme.txt file that you uploaded in the previous step describes how to use the downloaded JCL to expand the compressed SMPMCS and RELFILES from the HWAZ950.zip files into data sets, for use by the SMP/E RECEIVE job.

The extracted files (RELFILES and SMPMCS) are needed as input for SMP/E installation process.

### 5.1.6 SMP/E CALLLIBS Processing

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

- MACLIB
- SCEELKED
- CSSLIB
- SEZACMTX

**Note:** CALLLIBS uses the previous DDDEFs only to resolve the link-edit for HCL Workload Automation for Z. These data sets are not updated during the installation of HCL Workload Automation for Z.

### 5.1.7 Sample Jobs

Table 11 shows the sample installation jobs provided as part of the product to help you install HCL Workload Automation for Z:

<i>Table 11. Sample Installation Jobs</i>			
<b>Job Name</b>	<b>Job Type</b>	<b>Description</b>	<b>RELFILE</b>
EQQRECVE	RECEIVE	Sample RECEIVE job	HCL.HWAZ950.F3
EQQALLOC	ALLOCATE	Sample job to allocate target and libraries	HCL.HWAZ950.F3
EQQISMKD	MKDIR	Sample job to invoke the supplied EQQMKDIR EXEC to allocate file paths	HCL.HWAZ950.F3
EQQDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	HCL.HWAZ950.F3
EQQAPPLE	APPLY	Sample APPLY job	HCL.HWAZ950.F3
EQQACPTTE	ACCEPT	Sample ACCEPT job	HCL.HWAZ950.F3

You can access the sample installation jobs by performing an SMP/E RECEIVE (for details, see [5.1.8 Perform SMP/E RECEIVE](#)), then copy the jobs from the RELFILES to a work data set for editing and submission. To identify the appropriate RELFILE data set, see Table 11.

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

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//FILEIN DD DSN=HCL.HWAZ950.F3,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(15,10,15))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=FILEIN,OUTDD=OUT
S M=EQQDDDEF
S M=EQQALLOC
S M=EQQISMKD
```

```
S M=EQQMKDIR
S M=EQQRECVE
S M=EQQAPPLE
S M=EQQACPTE
/*
```

To update the statements in the previous sample, see the following information:

**FILEIN:**

**filevol** is the volume serial of the DASD device where the downloaded files reside.

**OUT:**

**jcl-library-name** is the name of the output data set where the sample jobs are stored.

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

### 5.1.8 Perform SMP/E RECEIVE

To perform the SMP/E RECEIVE for HCL Workload Automation for Z, you can also choose to edit and submit sample job EQQRECVE. For more information, consult the instructions in the sample job.

**Expected Return Codes and Messages:** RC=00

### 5.1.9 Allocate SMP/E Target and Distribution Libraries

To allocate the SMP/E target and distribution libraries for HCL Workload Automation for Z, edit and submit the EQQALLOC sample job. For more information, consult the instructions in the sample job.

**Expected Return Codes and Messages:** RC=00

### 5.1.10 Allocate File System Paths

When running the EQQISMKD sample job, the target system HFS or zFS data set must be mounted on the driving system because the job creates paths in the HFS or zFS.

Before running the sample job to create the paths in the file system, you must ensure that OMVS is active on the driving system and that the target system's HFS or zFS file system is mounted to the driving system. If you are installing HCL Workload Automation for Z into a file system that is zFS, ensure that zFS is active on the driving system.

If you plan to install HCL Workload Automation for Z into a new HFS or zFS file system, you must create the mountpoint and mount the new file system to the driving system for HCL Workload Automation for Z.

The recommended mountpoint is `/usr/lpp/TWS`.

To allocate the HFS or zFS paths for HCL Workload Automation for Z, edit and submit EQQISMKD sample job. For more information, consult the instructions in the sample job.

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

**Expected Return Codes and Messages:** RC=00

### 5.1.11 Create DDDEF Entries

To create DDDEF entries for the SMP/E target and distribution libraries for HCL Workload Automation for Z, edit and submit the EQQDDDEF sample job. For more information, consult the instructions in the sample job.

**Expected Return Codes and Messages:** RC=00

### 5.1.12 Perform SMP/E APPLY

Ensure that you have the latest HOLDDATA; then edit and submit the EQQAPPLE sample job to perform an SMP/E APPLY CHECK for HCL Workload Automation for Z. For more information, consult the instructions in the sample job.

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

After you take the actions that are indicated by the APPLY CHECK, remove the CHECK operand and perform the APPLY by running the job again.

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

## Expected Return Codes and Messages from APPLY CHECK: RC=00

## Expected Return Codes and Messages from APPLY: RC=00 or RC=04

The APPLY step may end with *RC=04* depending on the service level of your operating system. The binder may issue several warning messages like IEW2646W and IEW2651W, while SMP/E may issue messages GIM23903W or GIM23913W.

This is normal behavior and can be ignored.

### Note

Using GROUPEXTEND in APPLY with maintenance with HOLDDATA may cause a return code other than 0.

## 5.1.13 Perform SMP/E ACCEPT

Edit and submit the EQQACPTTE sample job to perform an SMP/E ACCEPT CHECK for HCL Workload Automation for Z. For more information, consult the instructions in the sample.

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

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

After you take the actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and perform the ACCEPT by running the job again.

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

## **Expected Return Codes and Messages from ACCEPT CHECK: RC=00**

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

## **Expected Return Codes and Messages from ACCEPT: RC=00**

## **5.2 Activating HCL Workload Automation for Z**

### **5.2.1 File System Execution**

If you mount the file system where you have installed HCL Workload Automation for Z in read-only mode during execution, you do not have to take further actions to activate HCL Workload Automation for Z.

### **5.2.2 HCL License Certificate Implementation**

HCL should have provided you with the license certificates that you need to run this product on your z/OS systems. If you have not received them, contact your HCL representative.

This section describes how you install the license certificates on your systems.

#### **5.2.2.1 Installing an HCL Software Z product certificate**

HCL software Z products validate entitlement by examining a license certificate during execution. Accordingly, these license certificates must be made available to executing software by performing the steps described in [License certificate installation steps](#).

Some steps may have already been performed if this is not the first time that an HCL software Z licensed product is installed on your system.

HCL software Z product license certificates are 800 bytes in size, and the first 80-byte section contains readable EBCDIC text to help support staff identify the systems, products, and date ranges to which individual certificates pertain.

## License certificate installation steps

1. Create a **TE MPCERT** DASD sequential data set with fixed-length 800-byte records to hold the license certificate to be uploaded. One track is sufficient for this temporary holding data set. A suggested name is *prefix*.**TE MPCERT** where *prefix* would typically be your user ID.
2. Transfer in **BINARY** mode any license certificates you have received to the **TE MPCERT** data set.
3. Make the certificate data accessible to address spaces executing on your system as follows:  
If you have already performed the first-time set up necessary for HCL Software Z products, proceed to step 3.b.
  - a. If this is the first HCL Software Z product you have licensed, perform these once-only steps:
    - i. Create an **HCLZCERT** HCL software Z product license certificate repository. Ideally it will have a data set name that facilitates sufficiently wide read access. This data set will be read by all address spaces that run HCL software Z product components that verify license entitlement. You may elect to place this data set on shared DASD and use it for multiple z/OS systems. The ability to update this data set should be restricted to support personnel.  
The attributes of this DASD sequential data set are RECFM=FB and LRECL=800. An allocation of 2 tracks primary and 1 secondary should suffice. It must be cataloged on all systems from which it is to be referenced
    - ii. Create a member in the system PARMLIB concatenation called **HCLLICFN**. Create this member in any suitable library in the concatenation. If you are going to share the license repository across multiple systems, and these systems share a common PARMLIB library, you may wish to add the member to that library. The member is to contain a single record which has the data set name of the system's **HCLZCERT** HCL software Z license repository data set. Start the data set name in column 1. The name must be completely specified within the first 71 columns of the record. Leave the rest of the columns blank
    - iii. Load the data in the **TE MPCERT** data set into **HCLZCERT** data set. Because the **HCLZCERT** data set has no previous data to preserve, you can simply copy the records across using IEBGENER, IDCAMS REPRO, ISPF Move/Copy Utility, or your preferred equivalent copy utility program.
    - iv. When the license certificates are stored in the permanent **HCLZCERT** data set you can delete the **TE MPCERT** data set. Make a backup copy of the **HCLZCERT** data set using DFDSS or other means for data recovery purposes.
  - b. After the update, back up your **HCLZCERT** data set again, then delete the **TE MPCERT** data set. If this is the first HCL software Z product you have licensed, perform this once-only step:

- i. If you have already set up an **HCLZCERT** data set and the associated PARMLIB pointer to it, activate the new licenses by loading the new certificates into the permanent **HCLZCERT** data set. Ensure that you do *not* overwrite any previous certificates that may still be active. Ensure that you also have a backup of the HCLZCERT data set, before updating it. The simplest procedure is to append the new records after any pre-existing records. Specifying DISP=MOD in JCL when using IEBGENER and setting the Sequential Disposition to Mod when using the ISPF Move/Copy Utility are two easy ways to achieve this.

After the new certificate information is loaded into the **HCLZCERT** data set, the newly licensed HCL software Z product is able to verify entitlement successfully.

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### 5.3 Product Customization

For detailed information to customize and use HCL Workload Automation for Z, see *HCL Workload Automation for Z: Planning and Installation*, available on the Information Center at the following link:

<https://workloadautomation.hcldoc.com/help/index.jsp>