

z/OS



IBM Knowledge Center for z/OS Configuration and User Guide

Version 2 Release 2

Note

Before using this information and the product it supports, read the information in "Notices" on page 19.

First Edition (August 2015)

This edition applies to Version 2 Release 2 of z/OS (5650-ZOS) and to all subsequent releases and modifications until otherwise indicated in new editions.

© **Copyright IBM Corporation 2015.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

About this document v

Where to find more information v

How to send your comments to IBM vii

If you have a technical problem vii

Chapter 1. Overview of Knowledge Center for z/OS 1

Software delivery options for Knowledge Center for z/OS 1

Software prerequisites 2

What setup is needed for Knowledge Center for z/OS? 2

Receiving service updates for Knowledge Center for z/OS 3

Chapter 2. Configuring Knowledge Center for z/OS 5

The configuration process 5

Creating space for configuration, data, and logging 5

 Creating mount point directories 5

 Creating and mounting the configuration, data, and log filesystems 6

 Adding ipl-time mount commands for the newly created filesystems 6

Configuring initial setup 6

 Configuring RACF 6

 Creating target subdirectories. 7

 Copying Knowledge Center configuration files 7

 Verifying the installation 8

 Configuring the Knowledge Center server started task to run with system IPL 8

Configuring additional setup and default overrides 9

 Connecting additional administrator users to the HKCADMIN group 9

 Configuration files reference 9

Chapter 3. Manually adding content to Knowledge Center for z/OS 13

Content examples 14

Chapter 4. Using Knowledge Center 15

Finding information by searching Knowledge Center 15

Narrowing search results by selecting products 16

Refining search results by specifying category attributes 16

Browsing content 17

Viewing content in your own language 17

Notices 19

Policy for unsupported hardware 20

Minimum supported hardware 21

Trademarks 21

Glossary of terms and abbreviations 23

Index 27

About this document

This document provides information for configuring IBM® Knowledge Center for z/OS®. This document also provides information related to the use of IBM Knowledge Center for z/OS.

Where to find more information

For an overview of the information associated with z/OS, see *z/OS Information Roadmap*.

IBM z/OS Basic Skills Education

IBM z/OS Basic Skills Education is a web-based information resource intended to help users learn the basic concepts of z/OS, the operating system that runs most of the IBM mainframe computers in use today. It is designed to introduce a new generation of Information Technology professionals to basic concepts and help them prepare for a career as a z/OS professional, such as a z/OS system programmer.

Specifically, IBM z/OS Basic Skills Education is intended to achieve the following objectives:

- Provide basic education and information about z/OS without charge
- Shorten the time it takes for people to become productive on the mainframe
- Make it easier for new people to learn z/OS.

To access IBM z/OS Basic Skills Education, open your web browser to the following web site, which is available to all users (no login required): <http://www.ibm.com/support/knowledgecenter/zosbasics/com.ibm.zos.zbasics/homepage.html?cp=zosbasics%2F0>.

How to send your comments to IBM

We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

Use one of the following methods to send us your comments:

1. Send an email to mhvrcfs@us.ibm.com
2. Send an email from the "Contact us" web page for z/OS (<http://www.ibm.com/systems/z/os/zos/webqs.html>)
3. Mail the comments to the following address:
IBM Corporation
Attention: MHVRCFS Reader Comments
Department H6MA, Building 707
2455 South Road
Poughkeepsie, NY 12601-5400
U.S.A
4. Fax the comments to us, as follows:
From the United States and Canada: 1+845+432-9405
From all other countries: Your international access code +1+845+432-9405

Include the following information:

- Your name and address
- Your email address
- Your telephone or fax number
- The publication title and order number:
IBM Knowledge Center for z/OS Configuration and User Guide
SC27-6805-00
- The topic and page number related to your comment
- The text of your comment.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you.

IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you submit.

If you have a technical problem

Do not use the feedback methods that are listed for sending comments. Instead, take one of the following actions:

- Contact your IBM service representative.
- Call IBM technical support.
- Visit the IBM Support Portal at z/OS support page (<http://www.ibm.com/systems/z/support>).

Chapter 1. Overview of Knowledge Center for z/OS

Knowledge Center for z/OS is a web application that provides IBM product publication content to web browser clients from the z/OS server system.

Knowledge Center is IBM's strategic platform for delivering technical content. There are two types of Knowledge Center:

Knowledge Center - Hosted (KC-hosted)

The outward-facing server of IBM content running on the IBM web site. This Knowledge Center can be found by pointing your web browser to <https://www.ibm.com/support/knowledgecenter/>.

Knowledge Center - Customer Installable (KC-CI)

A customer installable version of the hosted Knowledge Center packaged for product use.

IBM Knowledge Center for z/OS (KC4Z) is an SMP/E packaging of KC-CI Version 1.5.1, with no additional function added. It is a Java™ web application deployed by the WebSphere® Liberty Profile packaged with the z/OSMF base element of z/OS V2R2. Starting with z/OS V2R2, Knowledge Center for z/OS is a new base element of z/OS. All z/OS customers have access to it as part of the base operating system.

Knowledge Center for z/OS provides the ability to display, navigate and search content in a manner similar to Knowledge Center on the IBM Support site. You can manually add content to Knowledge Center for z/OS by copying it to z/OS directories. You can also automatically add content using the SoftCopy Librarian tool. By adding content, you can make Knowledge Center for z/OS serve product publications for many different IBM products.

WebSphere Liberty Profile provides an application server runtime environment for Knowledge Center for z/OS.

Software delivery options for Knowledge Center for z/OS

Knowledge Center for z/OS is available for installation through the ServerPac order delivery process or as a Custom-Built Product Delivery Option (CBPDO) software delivery package. How your installation sets up Knowledge Center for z/OS — the procedures you use and the instructions that you follow—depends in part on the software delivery option that you use.

These differences are explained as follows:

ServerPac users:

- If you select the full system replacement installation type, a default instance of Knowledge Center for z/OS is set up for you. Here, a base Knowledge Center for z/OS configuration is created through a ServerPac post-installation job, using IBM-supplied defaults.
- If you select the software upgrade installation type, you require the planning and configuration information in this document to create a Knowledge Center for z/OS configuration. Your system programmer can use the provided shell scripts to set up Knowledge Center for z/OS on your system, and add content plug-ins to it.

ServerPac provides customization guidance for configuring Knowledge Center for z/OS. See the copy of *ServerPac: Installing Your Order* that is supplied with your order.

CBPDO users:

If you receive Knowledge Center for z/OS in a Custom-Built Product Delivery Option (CBPDO)

software delivery package, you require the planning and configuration information in this document. Your installation's system programmer must set up Knowledge Center for z/OS through shell scripts that are provided with the product.

Software prerequisites

Determine on which z/OS operating system image you want to run this product. Knowledge Center for z/OS V2R2 must be run on z/OS Version 2 Release 2.

Ensure that the following product is installed and operational on your system:

IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7.1 (program number 5655-W44). For the required PTF's, see z/OS V2R2.0 Program Directory for CBPDO Installation and ServerPac Reference (GI11-9848-01).

Websphere Liberty Profile 8.5.5 (packaged with the z/OSMF base element of V2R2). By default, the Knowledge Center for z/OS server started task (HKCSVR1) specifies `/usr/lpp/zosmf` as the root directory of the WebSphere Liberty Profile `wlp/` directory tree.

This set-up must be done before you run the Knowledge Center for z/OS configuration scripts. By default, the Java SDK resides in the directory `/usr/lpp/java/J7.1_64/` on your system. If you installed it in another location, be sure to configure the `JAVA_HOME` variable in the WebSphere `server.env` file before running your shell session.

For ServerPac users, use the jobs and documentation supplied with your ServerPac order to create an initial instance of Knowledge Center for z/OS. During the ServerPac process, you will need sections of this document to complete certain actions. Thereafter, you can refer to this document for information about performing various post-configuration actions.

Installations that install Knowledge Center for z/OS from a Custom-Built Product Delivery Option (CBPDO) software delivery package, or from a ServerPac order using the software upgrade method of installation, should plan to manually run the configuration script procedures described in this document. In contrast, installations that install Knowledge Center for z/OS as part of a ServerPac full system replacement will have these scripts run automatically during the ServerPac post-installation process.

The following web browsers are supported by Knowledge Center for z/OS, and are recommended for best results:

- Microsoft Internet Explorer Version 9 or later
- Mozilla Firefox Version 17 or later
- Google Chrome Version 20 or later
- Apple Safari Version 5 or later

What setup is needed for Knowledge Center for z/OS?

Configuring Knowledge Center for z/OS on your system requires certain z/OS resources to be set up, shell scripts to be run, and security set up to be performed for RACF (or the equivalent).

Using Knowledge Center for z/OS requires sufficient authority in z/OS. Specifically, on the z/OS system to be managed, the resources to be accessed on behalf of Knowledge Center for z/OS users (data sets, operator commands, and so on) are secured through the security management product at your installation; for example, Resource Access Control Facility (RACF®). Your installation's security administrator must create the authorizations in your security management product. Knowledge Center for z/OS provides scripts and the information in this document to assist your security administrator.

Receiving service updates for Knowledge Center for z/OS

As with other IBM software products, IBM ships service for Knowledge Center for z/OS in the form of program temporary fixes (PTFs).

When planning for service updates, consider that all Knowledge Center for z/OS functions are provided together as one functional modification identifier (FMID): HKCZ100.

For the most current information on APAR fixes and service updates, review the product Preventive Service Planning (PSP) bucket, as referenced in z/OS V2R2.0 Program Directory for CBPDO Installation and ServerPac Reference (GI11-9848-01). You can also use the IBM: Support for z/OS Web page or the IBMLink web site <http://www.ibm.com/ibmlink/servicelink>. For a list of fix category (FIXCAT) values and descriptions, go to the SMP/E web site: <http://www.ibm.com/systems/z/os/zos/smpe/fixcategory.html>.

When working with service updates, check the PTF ++HOLD action for specific instructions for deploying the updated code, such as whether you must restart the Knowledge Center for z/OS server to have the updates take effect.

Chapter 2. Configuring Knowledge Center for z/OS

It is strongly recommended that you review all of these steps before performing the configuration.

The configuration process

The shell scripts and configuration files that are provided with Knowledge Center for z/OS are run in the z/OS UNIX System Services environment for proper execution. The scripts and configuration files are installed into default installation directory `/usr/lpp/kc4z/samples`. If the default installation and runtime directories are used, the scripts and configuration files can be used without modification. If either the default installation or runtime directories are customized, you must also modify copies of the scripts and configuration files before running them.

In Knowledge Center for z/OS V2R2, the default path is `/usr/lpp/kc4z`. If this location is different on your system, you will need to substitute the customized location in the scripts before running them.

Similarly, the `/sharedapps/kc4z` path represents the default path for the server configuration files and for data directories. If you override the default value, the customized value must be substituted in the scripts which refer to `/sharedapps/kc4z`.

The `/var/kc4z` directory is the default root directory for both Knowledge Center and WebSphere Liberty Profile logs files, as specified by the `LOG_DIR` and `WLP_OUTPUT_DIR` parameters in `server.env`. To override this default value, both the `server.env` file and the scripts that refer to `/var/kc4z` must be modified.

The configuration process occurs in several stages, and in the following order:

- Creating space for configuration, data repository, and logging
- Performing and verifying initial configuration
- Performing additional configuration

This sequence is critical to a successful configuration. Earlier steps create resources, such as directories, that later steps must act upon, such as changing ownership of the directories. This document assumes that you will carry out the steps in the order in which they are presented.

Creating space for configuration, data, and logging

Before continuing with the Knowledge Center for z/OS configuration process, ensure that the following work is done.

Creating mount point directories

Before configuring Knowledge Center for z/OS, you must create mount point directories for the configuration, data, and log file systems. You can choose to use the default mount point directories, or you can customize the locations.

Default mount points use subdirectories under the `/sharedapps/kc4z` directory for server configuration files and for content-related data, and subdirectories under the `/var/kc4z` directory for log data. If choosing to customize the mount point defaults, only the `/sharedapps/kc4z` or `/var/kc4z` directory prefixes should be changed, not the names of their subdirectories.

Using a privileged or UID 0 userid, you run the `/usr/lpp/kc4z/samples/makemountpoints.cmd` script to create the mount points.

If you are customizing the `/usr/lpp/kc4z/samples/makemountpoints.cmd` script, make a backup copy of the file in a writeable directory first.

Important: Customizing `makemountpoints.cmd` will necessitate corresponding changes to several of the process steps and associated files used in the configuration process.

Creating and mounting the configuration, data, and log filesystems

Using a privileged or UID 0 user ID (required for the mount step in each job), copy, customize and submit the three sample jobs that define, format, and temporarily mount the three zFS linear sequential VSAM cluster filesystems. These sample jobs are installed in `SYS1.SAMPLIB`.

The three JCL sample job files are:

- HKCCFGFZ
- HKCDATFZ
- HKCLOGFZ

Each of these jobs calls the HKCMNTFS REXX exec.

Important: If not using the default mount point directories, the `PATHPREF=` value in the mount step for each of these jobs will also need to be modified with the correct customized directories.

Attention: Although both HFS and zFS filesystems are supported by Knowledge Center, the sample JCL file is provided only for zFS filesystems.

Adding ipl-time mount commands for the newly created filesystems

Add the mount commands for the three zFS filesystem datasets to the `BPXPRMxx` member of your system parmlib. Use the `HKCMOUNZ` sample mount commands included in `SYS1.SAMPLIB` as a model.

Important: If not using the default mount point directories, the value of the `MOUNTPOINT()` arguments will need to be modified with the correct customized directories

Configuring initial setup

The configuration process for the initial default IBM Knowledge Center for z/OS setup involves configuring RACF, creating mount point target subdirectories, copying sample files to the configuration directories, verifying installation, and setting up the Knowledge Center server started task.

Configuring RACF

You configure RACF for your IBM Knowledge Center for z/OS system by creating the user id and group to own the subdirectories and run the Knowledge Center server started task `HKCSVR1`.

Procedure

1. Run the `/usr/lpp/kc4z/samples/defracf1.cmd` script. The script runs the `ADDGROUP` and `ADDUSER RACF` commands for a user id to be assigned to the `HKCSVR1` started task.

If you are using the default configuration settings:

Run the `defracf1.cmd` script using a user id with RACF SPECIAL authority. The script will establish the following values assigned to the `HKCSVR1` started task:

- User id: `hkcsvr`
- Group id: `hkadmin`
- OMVS Home: `/u/hkcsvr`

If you do not want to use the provided defaults:

Before making your desired modifications to the `defracf1.cmd` script, make a backup copy in a writable directory. You can specify a customized user id, group id or HOME directory. In

addition, if the **AUTOUID** and **AUTOGID RACF** features are not supported, you will need to specify an existing user id using the `UID()` parameter, as well as an existing group id using the `GID()` parameter, instead of the **AUTOUID** and **AUTOGID** defaults specified in `defracf1.cmd`.

2. After running the `defracf1.cmd` script, if the specified OMVS Home directory (`/u/hkcsvr` by default) does not already exist, create it (using the `mkdir` command) with 755 permissions, and assign it the specified user id (`hkcsvr`, by default) and group id (`hkadmin`, by default) using the `chown` and `chgrp` commands, respectively.
3. If the TCPIP profile name is under an HLQ other than `SYS1` or `TCPIP`, then a **RACF PERMIT ACCESS(READ)** is needed for the `hkcsvr` User id to the profile name.

Creating target subdirectories

You must create target subdirectories under the mount points for the three execution time file systems that you mounted. You also need to permit the `HKCSVR1` started task to use these subdirectories.

If the filesystems are mounted on the default mount points, then you can use a privileged or UID 0 user id to run the `/usr/lpp/kc4z/samples/maketargetdirs.cmd` script to create the following target subdirectories:

- `/sharedapps/kc4z/servers/kc4zServer`
- `/sharedapps/kc4z/data/conf`
- `/sharedapps/kc4z/data/content`
- `/sharedapps/kc4z/data/runtime`
- `/sharedapps/kc4z/data/runtime/index`
- `/sharedapps/kc4z/data/runtime/diskcache`
- `/sharedapps/kc4z/data/runtime/datacache`
- `/var/kc4z/logs`

If you have customized the default user id or group id, or if the filesystems are not mounted on the default mount points, make a backup copy of `maketargetdirs.cmd` to a writable directory before modifying the values with your changes and running the script.

Copying Knowledge Center configuration files

You must copy the sample configuration files from the Knowledge Center installation directory to the execution time configuration directory.

If you are using the default installation directory and execution time mount point directories, you can run the `/usr/lpp/kc4z/samples/copycfg.cmd` script to copy the configuration files. Using a privileged or UID 0 user id, run the script to copy the following files from the `/usr/lpp/kc4z/samples` source directory to the `/sharedapps/kc4z/servers/kc4zServer` target directory:

- `server.env`
- `kc.properties`
- `server.xml`
- `bootstrap.properties`
- `jvm.options`
- `jvm.security.override.properties`
- `hkc.properties`

If you are not mounting the configuration filesystem on the default mount point, or if you did not use the default product installation directory in the root filesystem, make a backup copy of the `copycfg.cmd` script in a writable directory before modifying the values with your changes and running the script.

Verifying the installation

After having performed the space creation and initial configuration, you can verify that IBM Knowledge Center for z/OS has been successfully installed and configured, and is ready for additional Knowledge Center content deployment.

Before you begin

Restriction: This procedure will only work if you have used the default settings during configuration.

Attention: By default, the SDK resides in the directory `/usr/lpp/java/J7.1_64/` on your system. If you installed it in another location, be sure to configure the `JAVA_HOME` variable in the `Websphere server.env` file before verifying the installation.

Note: There are several references to the `SYS1.PROCLIB` dataset in this publication, however, in practice a different PROCLIB dataset may apply in your case. Specifically IBM supplies the KC for z/OS catalogued procedure (`HKCSVR1`) in your order, as follows:

ServerPac orders

For a ServerPac order, IBM supplies the cataloged procedures in `SYS1.IBM.PROCLIB`. You can rename this data set through the installation dialog if you choose to do so.

CBPDO orders

For a CBPDO order, the procedure is installed in the SMP/E defined PROCLIB. IBM recommends using `SYS1.PROCLIB`. You can rename this data set and set it up as such in your DDDEF for PROCLIB. During installation, you can optionally catalog the data set, or you can defer this step.

Procedure

To verify installation and configuration:

1. Start the `HKCSVR1` started task that is included in `SYS1.PROCLIB`. For example, run the following command on the Command Input line of the SDSF "ST" function:

```
/s hkcsvr1
```

If the installation has succeeded, the resulting Job Log for the started task should include the following message near the beginning of the log:

```
CWWKF0011I: The server kc4zServer is ready to run a smarter planet.
```

In addition, assuming default http port 9080 is used, the resulting `console.log` file in `/var/kc4z/logs/` should include the following message:

```
CWWKT0016I: Web application available (default_host): http://yourHostName:9080/zos/knowledgecenter/
```

2. Load the URL from the end of the `CWWKT0016I` message in a web browser. The framed display of the IBM Knowledge Center welcome page should load in the browser with a single Library Server or IBM Knowledge Center product listed in the table of contents frame. When that product link is clicked, it should expand, and navigation to topics under that product tree should be possible if the configuration was successful.

Configuring the Knowledge Center server started task to run with system IPL

`HKCSVR1` is the started task that drives the Websphere Liberty Profile to launch the IBM Knowledge Center for z/OS web application. The installed copy of `HKCSVR1` in `SYS1.PROCLIB` contains a `USERDIR` parameter whose value is the prefix of the default configuration directory (`/sharedapps/kc4z`), and a `ROOT` parameter whose value is the prefix of the default Websphere Liberty Profile location (`/usr/lpp/zosmf`).

Remember: IBM Knowledge Center for z/OS shares the Websphere Liberty Profile that is packaged with the `z/OSMF` base element.

If you are not using the default configuration directory or Websphere Liberty Profile location, copy SYS1.PROCLIB(HKCSVR1) to USER.PROCLIB(HKCSVR1), and customize the new copy with the correct values.

Add a start directive for HKCSVR1 to the COMMANDxx member of your system parmlib so that the Knowledge Center server starts with each system IPL. For example, add the following line to SYS1.PARMLIB(COMMNDxx):

```
COM='S HKCSVR1'
```

Configuring additional setup and default overrides

You can configure additional administrators for IBM Knowledge Center for z/OS and override the default settings.

Connecting additional administrator users to the HKCADMIN group

Running the /usr/lpp/kc4z/samples/defracf1.cmd script created group id hkadmin and user id hkcsvr by default as a member of the HKCADMIN group. Other user id's that need to copy content-related data, delete logs, etc. in the Knowledge Center execution time directories (/shredapps/kc4z and /var/kc4z, by default) and owned by hkcsvr must also be included in the HKCADMIN group.

Procedure

To connect any additional administrator users to the HKCADMIN group:

1. Using a privileged user id with RACF SPECIAL authority, run the following RACF command on the TSO command line for another such administrative user. For example, for an administrator user named adminuser:

```
CONNECT ADMINUSER GROUP(HKCADMIN)
```

2. Verify that the user id is connected to the group by running the following RACF command on the TSO command line (using adminuser as an example):

```
LISTUSER ADMINUSER
```

Attention: If the default group id hkadmin was not used in the defracf1.cmd script, modify the **CONNECT** command with the correct value.

Configuration files reference

The configuration files copied into the configuration directory by the copycfg.cmd script during configuration can be customized to use values other than the default, if desired. The following list provides some customization considerations for each configuration file. Using a privileged or UID 0 user id, modify the files in the configuration directory to override default values.

server.env

This file specifies important environment variables to be used by Websphere Liberty Profile when launching the Knowledge Center server. The /sharedapps/kc4z and /var/kc4z default directory path prefixes should be modified if you specified values other than the default in the setup and configuration instructions. The **JAVA_HOME** setting needs to be modified if you choose to point to another Java installation directory (IBM Java SDK7 64-bit is supported by Knowledge Center).

The following parameters need to be updated with new path prefixes if you do not use the default values shown here:

```
KC_HOME=/sharedapps/kc4z/servers/kc4zServer
LOG_DIR=/var/kc4z/logs
WLP_OUTPUT_DIR=/var/kc4z
JAVA_HOME=/usr/lpp/java/J7.1_64
```

kc.properties

This file specifies important settings required by the Knowledge Center application. The `/sharedapps/kc4z` default directory path prefixes should be modified if you specified values other than the default in the setup and configuration instructions. Also, if Knowledge Center is installed in a customized *PathPrefix* directory other than the default root filesystem, then all `/usr/lpp/kc4z` occurrences should be changed to *PathPrefix*/`usr/lpp/kc4z`.

The following parameters need to be updated with new path prefixes if you do not use the default values shown here:

```
conf.path=/sharedapps/kc4z/data/conf,/usr/lpp/kc4z/kc4z.infocr/conf
taxonomy.path=/usr/lpp/kc4z/samples/KC_taxonomy.ditamap
diskcache.path=/sharedapps/kc4z/data/runtime/diskcache
ditacache.path=/sharedapps/kc4z/data/runtime/ditacache
index.path=/sharedapps/kc4z/data/runtime/index
```

Important: The `conf.path` file is a list of comma-delimited directories that Knowledge Center monitors for product properties files. These properties files are normally deployed with product content by the Softcopy Librarian tool. If Softcopy Librarian is configured to deploy product properties files to customized locations instead of the default `/sharedapps/kc4z/data/conf` path specified in `conf.path`, additional directories need to be appended to the list.

server.xml

This is the Knowledge Center server configuration file. It should not be modified, because it contains a digital signature that is enforced by the Websphere Liberty Profile. Most modifications to this file will invalidate its signature, and prevent Knowledge Center from launching. The `server.xml` file is configured so that the `bootstrap.properties` file is used to specify values for the parameters within `server.xml`. Modify the `bootstrap.properties` file to make changes to the default server configuration if necessary.

bootstrap.properties

This file contains Knowledge Center configuration settings that are used by the digitally signed `server.xml` configuration file. The `/var/kc4z` default directory path prefixes should be modified if you specified values other than the default in the setup and configuration instructions. Also, if Knowledge Center is installed in a customized *PathPrefix* directory other than the default root filesystem, then all `/usr/lpp/kc4z` occurrences should be changed to *PathPrefix*/`usr/lpp/kc4z`. There are other settings such as host, port numbers, context root, ssl information, and trace settings that may be customized, as necessary.

The following parameters need to be updated with new path prefixes or with other settings if you do not use the default values shown here:

hkc.ssl.client.auth.supported

Choose whether an ssl port is enabled. The default value is `true`.

com.ibm.ws.logging.trace.specification

Trace settings string. The default value is `*=warning`.

com.ibm.ws.logging.log.directory and hkc.log.dir

The names of directories to contain logs. The default values are:

```
com.ibm.ws.logging.log.directory=/var/kc4z/logs
hkc.log.dir=/var/kc4z/logs/
```

hkc.install.dir

The parent directory of the `kc.war` file. The default value is `/usr/lpp/kc4z/`.

hkc.context.root

The Knowledge Center URL prefix. The default value is `zos/knowledgecenter`.

hkc.httpHost, hkc.httpPort, and hkc.httpsPort

The *httpEndpoint* variables. The default values are as follow, but care should be taken to ensure the specified values do not conflict with those specified for another server, such as z/OSMF:

```
hkc.httpHost=*  
hkc.httpPort=9080  
hkc.httpsPort=9443
```

hkc.unauthenticated.user

This is the guest RACF userid. The default value is HKCGUEST.

jvm.options

This file specifies the Java options that are used by the Knowledge Center JVM. The /sharedapps/kc4z default directory path prefix specified should be modified if another path prefix has been specified in the setup and configuration instructions. Other option settings may be overridden or added, as required, but you should consult the Java documentation before making changes to these values.

The following parameter needs to be updated with the new path prefix or with other settings if you do not use the default value shown here:

```
-Djava.security.properties=/sharedapps/kc4z/servers/kc4zServer/jvm.security.override.properties
```

jvm.security.override.properties

This file contains Java security property information and should not be modified.

hkcz.properties

This file contains Knowledge Center product identifiers and should not be modified.

Chapter 3. Manually adding content to Knowledge Center for z/OS

Knowledge Center for z/OS monitors the `conf.path` directories specified in the `kc.properties` configuration file for changes. Knowledge Center displays new entries in the table of contents when you add new product properties files to `conf.path` that point to a corresponding set of product content. Files in `conf.path` connect the content to the taxonomy which defines the table of contents.

About this task

Attention: The preferred method for deploying content to Knowledge Center for z/OS is to use SoftCopy Librarian. For more information about using SoftCopy Librarian to deploy new or updated content to Knowledge Center for z/OS, see the *IBM Softcopy Librarian: User's Guide (GC23-3414-16)*.

To add content to Knowledge Center for z/OS, you copy product plugins to a content directory, add a product properties file to a `conf.path` directory, and register the product id with the Knowledge Center taxonomy file.

Procedure

1. Copy a product's plugins to a content directory. The default location for the content directory is `/sharedapps/kc4z/data/content`. If your content directory is named `/example`, then you place your content in `/sharedapps/kc4z/data/content/example`.
2. Create a `product.properties` file in ASCII format in a directory specified by the `conf.path` property. For example, if the product id for your content is `SSBLLD`, then your properties file should be named `SSBLLD.properties`. The following is an example of the contents of a properties file for a product with an id value of `SSBLLD` and a content directory named `/example`:

```
product=SSBLLD
path=/sharedapps/kc4z/data/content/example/
toc=com.ibm.zos.v2r1.isp_isp.ditamap
```

The `toc` property defines the name of the product's master map file which is located within the `path` directory. The master map defines the table of contents structure for the product.

Important: The `conf.path` property is specified in the `kc.properties` file located in `/sharedapps/kc4z/servers/kc4zServer/`. You can specify one directory for the value of `conf.path`, or multiple directories delimited by commas. The default path is `/sharedapps/kc4z/data/conf`.

3. Register the product in the Knowledge Center taxonomy file if it has not been registered already. The `kc.properties` file contains a configuration parameter called `taxonomy.path`. The value for this parameter is the path to the `KC_taxonomy.ditamap` file. For example:

```
taxonomy.path=/usr/lpp/kc4z/samples/KC_taxonomy.ditamap
```

You edit the `KC_taxonomy.ditamap` file to register your content with Knowledge Center. For example, to add a product named "ISPF for z/OS Version 1.9.0" with a product id of `SSBLLD`, you might add the following line to the `KC_taxonomy.ditamap` file:

```
<subjectdef type="CT701" class="- map/topicref subjectScheme/subjectdef "
  id="SSBLLD" keys="SSBLLD" navtitle="ISPF for z/OS 1.9.0"
  toc="no" processing-role="resource-only" product="product"/>
```

4. After modifying `KC_taxonomy.ditamap`, stop and restart the HKCSVR1 Knowledge Center Server started task in order to pick up the taxonomy changes.

Content examples

Your product's content is stored in content directories indicated by the path keyword in the `product.properties` files located in `conf.path`. The content directory contains all of your plugins as well as the the master map file which defines the product table of contents. Plugins can be stored as directories or a `.jar` files.

Remember: Your product's `product.properties` file referred to in the `conf.path` must identify the table of contents master ditamap file. In these examples, the `product.properties` file might look like this:

```
product=SSBLLD
path=/sharedapps/kc4z/data/content/demo/
toc=com.ibm.zos.v2r1.isp_isp.ditamap
```

Directory example

If your content plugins are “directory style”, each plugin directory is placed under the content directory along with the table of contents master ditamap file. In the following example, the content directory has three content plugin directories, their root plugin directory, and the table of contents master ditamap file:

```
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.f54em00
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.f54pd00
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.f54u200
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.isp
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.isp_isp.ditamap
```

.jar file example

If your content plugins are “.jar style”, each plugin `.jar` file is placed under the content directory along with the table of contents master ditamap file. In the following example, the content directory has three content plugin `.jar` files, their root plugin `.jar` file, and the table of contents master ditamap file:

```
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.f54sg00.jar
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.f54u200.jar
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.f54ug00.jar
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.isp.jar
/sharedapps/kc4z/data/content/demo/com.ibm.zos.v2r1.isp_isp.ditamap
```

Chapter 4. Using Knowledge Center

Knowledge Center for z/OS is a central location for finding and organizing information about your products. You can use advanced search tools to sort and filter your search. From either the search results or Table of Contents pane, you can browse through product or solution sets of information.

Accessing Knowledge Center for z/OS in a web browser

To access Knowledge Center content, point your web browser to your Knowledge Center for z/OS landing page, such as:

```
http://yourHostName:9080/zos/knowledgecenter/
```

The URL for your Knowledge Center for z/OS landing page is logged by the Knowledge Center for z/OS server started task (HKCSVR1) in the `/var/kc4z/logs/console.log` file. For example:

```
CWWKT0016I: Web application available (default_host):  
http://yourHostName:9080/zos/knowledgecenter/
```

Accessibility

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully. Documentation is provided in HTML so that it is easily accessible through assistive technology.

With the accessibility features of Knowledge Center for z/OS, you can do the following tasks:

- Use screen-reader software and digital speech synthesizers to hear what is displayed on the screen. Consult the product documentation of the assistive technology for details on using assistive technologies with HTML-based information.
- Use screen magnifiers to magnify what is displayed on the screen.
- Operate specific or equivalent features by using only the keyboard.

Keys help:

- To move through the user interface controls, links, and subject areas, press the Tab key. To return to the previous control, link, or subject area, press Shift+Tab. Control keys vary, depending on the browser or operating system. For example, the operating system on recent Macintosh machines uses Ctrl+Opt instead of Shift+Alt and Chrome browsers use Alt instead of Shift+Alt.
- To go directly to the content area, press Shift+Alt+V.
- To go directly to the search field, press Shift+Alt+X.
- To go to the navigation area, press Shift+Alt+Z.
- To go directly to the Table of Contents tab, press Shift+Alt+T.
- To go directly to the Search Results tab, press Shift+Alt+S.
- To print the content that is in focus, press Shift+Alt+P.

Finding information by searching Knowledge Center

To search for information in Knowledge Center, enter your search terms into the search field. Knowledge Center returns a list of pages, ordered by relevance, that match your search terms. By default, only the documents that contain all the terms are returned.

Each search result shows which product and version that page is from. You can use operators to refine your searches.

Quotations

Use quotation marks to search for an exact word or set of words (“database management system”).

Wildcards

Use an asterisk (*) in a search string as a placeholder for any missing or wildcard words in a phrase. Place the phrase in quotation marks for a more precise result (“DB2 * table”).

OR To search for pages that have one of two or more terms, include OR (capitalized) between the terms. Without OR, only pages that have all the terms in the string are returned in the search results.

Minus signs

Use a minus sign (hyphen) before a word to exclude results that include that word. For example, to search for “business management” without the word “process,” use “business -process management” as a search string.

Each search displays a maximum of 500 results in ranked order. To see more than the first 20 search results, click Next 20 results to show 40 results. Click again to see 60 results in a single list, and so on.

Narrowing search results by selecting products

If a general search provides too many results, reduce the scope of the search to one or more products. You specify your product search scope by using the dialog presented when clicking **Add Products...** under the search field. Click **Done** to apply your search scope. Only results from the version, product, or products that you selected are returned. The products you selected are shown on the search bar.

Knowledge Center for z/OS tracks products as you browse content and follow links. This is called auto-select. To turn it off so that product filters are not added as you browse, clear the **Auto-select** check box. Auto-select does not add a product if you come to a topic through search; however, if you click a topic in the navigation tree after a search, the context is set to the product that contains that topic.

To broaden the scope of your search, click **Add Products...**, select another version or product, and click **Done**. Click **Clear All** to remove all the selected products from the search scope.

The product filters remain active until you select another option.

Refining search results by specifying category attributes

To find information more quickly, you can limit your search results by specifying attributes in the categories appearing beneath Search Results in the Navigation pane.

You can refine your search results by selecting attributes within any or all of the following categories:

Date Range

See only topics added or changed in the last week, month, or year, or define your own range of dates.

Tasks Limit results to specific task types, such as installing, migrating, or troubleshooting. Only documents that are defined as that task type are included in search results. Results might be incomplete if some documents have not been assigned task types.

Operating System

You can limit search results to specific operating systems and versions.

Your specified search result refinements within categories can be removed by clicking any or all of **Any Time**, **Any Task** or **Any Operating System** in the corresponding category, as desired.

Browsing content

To browse content, click **Table of Contents**, then select a product, version, and topic. Expand the contents tree to see more content. When you select a version of a product, the Table of Contents scope adjusts to show the contents of the product that you have chosen. You can move back up the tree by clicking the link in the contents tree that has an up-arrow.

You can also browse content from any topic. For example, you can browse content from search results. When you click a search result, the topic opens and the Table of Contents shows the content structure for the product in which that topic appears. In the Table of Contents, you can then find related topics in that product.

Viewing content in your own language

By default, Knowledge Center shows content in the language that is specified in the Languages setting for your browser. For example, if your browser is set to French, then French content is shown if it exists. If content does not exist in your preferred language, that content is shown in English. You can also set your language preference in Knowledge Center by selecting a language from the **Language** list.

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A

For license inquiries regarding double-byte character set (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
1623-14, Shimotsuruma, Yamato-shi
Kanagawa 242-8502 Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

Site Counsel
IBM Corporation
2455 South Road
Poughkeepsie, NY 12601-5400
USA

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

COPYRIGHT LICENSE:

This information might contain sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Policy for unsupported hardware

Various z/OS elements, such as DFSMS, HCD, JES2, JES3, and MVS™, contain code that supports specific hardware servers or devices. In some cases, this device-related element support remains in the product even after the hardware devices pass their announced End of Service date. z/OS may continue to service element code; however, it will not provide service related to unsupported hardware devices. Software problems related to these devices will not be accepted for service, and current service activity will cease if a problem is determined to be associated with out-of-support devices. In such cases, fixes will not be issued.

Minimum supported hardware

The minimum supported hardware for z/OS releases identified in z/OS announcements can subsequently change when service for particular servers or devices is withdrawn. Likewise, the levels of other software products supported on a particular release of z/OS are subject to the service support lifecycle of those products. Therefore, z/OS and its product publications (for example, panels, samples, messages, and product documentation) can include references to hardware and software that is no longer supported.

- For information about software support lifecycle, see: <http://www.ibm.com/software/support/systemsz/lifecycle/>
- For information about currently-supported IBM hardware, contact your IBM representative.

Trademarks

IBM, the IBM logo, and [ibm.com](http://www.ibm.com)[®] are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at <http://www.ibm.com/legal/copytrade.shtml>.

Adobe and the Adobe logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Intel is a trademark of Intel Corporation or its subsidiaries in the United States and other countries.

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names might be trademarks or service marks of others.

Glossary of terms and abbreviations

This glossary defines technical terms and abbreviations used in Knowledge Center for z/OS help information. If you do not find the term you are looking for, refer to the IBM Glossary of Computing Terms. The following cross-references are used in this glossary:

- **Contrast with:** This refers to a term that has an opposed or substantively different meaning.
- **See:** This refers the reader to (a) a related term, (b) a term that is the expanded form of an abbreviation or acronym, or (c) a synonym or more preferred term.
- **Synonym for:** This indicates that the term has the same meaning as a preferred term, which is defined in its proper place in the glossary.
- **Synonymous with:** This is a reference from a defined term to all other terms that have the same meaning.
- **Obsolete term for:** This indicates that the term should not be used and refers the reader to the preferred term.

This glossary includes terms and definitions from American National Standard Dictionary for Information Systems, ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies may be purchased from the American National Standards Institute, 11 West 42nd Street, New York, New York 10036. Definitions are identified by an asterisk (*) that appears between the term and the beginning of the definition; a single definition taken from ANSI is identified by an asterisk after the item number for that definition.

C

client A system or process that is dependent on another system or process (usually called the server) to provide it with access to data, services, programs, or resources. Contrast with *server*.

component ID

Alphanumeric identifier that uniquely identifies the z/OS component.

content area

In a web page that is based on a page template, the editable region of the page.

Area of the Knowledge Center for z/OS browser interface (the central pane) in which data for the active task is displayed.

Custom-built Product Delivery Option (CBPDO)

A software delivery package consisting of uninstalled products and unintegrated service. Installation requires the use of SMP/E. CBPDO is one of the two entitled methods for installing z/OS; the other method is ServerPac.

D

deploy

To install software into an operational environment.

I

IBM Support Center

The IBM organization responsible for software service.

installation

A particular computing system, including the work it does and the people who manage it, operate it, apply it to problems, service it, and use the results it produces.

J

JCL See *job control language*.

job control language (JCL)

A command language that identifies a job to an operating system and describes the job's requirements.

P

plugin

In Knowledge Center for z/OS, a collection of a product's content. A plugin can be added or updated to Knowledge Center for z/OS.

PMR See *problem management record*.

problem management record (PMR)

The number in the IBM support mechanism that represents a service incident with a customer.

A record of the activities performed during the course of resolving a customer reported problem. Customers with access to IBMLink can view their PMRs.

R

RACF See *Resource Access Control Facility*.

Remote Technical Assistance and Information Network (RETAIN)

Database used by IBM Support Centers to record all known problems with IBM licensed programs.

Resource Access Control Facility (RACF)

A component of z/OS Security Server that provides access control by identifying and verifying the users to the system, authorizing access to protected resources, logging detected unauthorized attempts to enter the system, logging unauthorized attempts to enter the system, and logging detected accesses to protected resources.

RETAIN

See *Remote Technical Assistance and Information Network*.

S

server In a network, hardware or software that provides facilities to clients. Examples of a server are a file server, a printer server, or a mail server.

A computer that contains programs, data, or provides the facilities that other computers on the network can access.

The party that receives remote procedure calls. Contrast with *client*.

ServerPac

A software-delivery package consisting of products and service for which IBM has performed the System Modification Program/Extended (SMP/E) installation steps and some of the post-SMP/E installation steps.

software deployment

Process of making software available to be used on a system by users and other programs.

software instance

For z/OS platform software, the SMP/E target and distribution zones associated with a product set and the target and distribution libraries described by those zones.

Collection of one or more SMP/E target and distribution zone pairs defined under a single global zone, the related libraries, and any additional data sets associated with a product set.

Deployable unit of SMP/E installed software.

Z

z/OS An IBM mainframe operating system that uses 64-bit real storage.

z/OS host system

The system on which Knowledge Center for z/OS is running.

Index

A

About this document v, vii
adding content manually 13

B

base configuration
description 5

C

configuration 5
configuration file
description 5
configuration process
overview 5
configuring 5
additional 9
additional administrators 9
creating mount point directories 5
default 6
mount points 7
RACF 6
started task 8
creating mount point directories 5

E

environment variables 5

F

full system replacement installation
considerations 1

H

host system
required software 5

I

IBM Knowledge Center for z/OS
base configuration 5
configuration process 5
overview 1, 2
publications v
ipl-time mount commands 6

M

mounting filesystems 6
ipl-time mount commands 6

O

override file
description 5

P

prerequisites 5

S

ServerPac order
considerations 1
service
applying updates to KC4Z 3
software upgrade installation
considerations 1

V

verifying installation 8

Z

z/OS Basic Skills Education v



Product Number: 5650-ZOS

Printed in USA

SC27-6805-00

