## IBM Z Common Data Provider Hands-On Guide for streaming SMF data to Splunk



## Contents

Overview	1
Scenario in this book	2
Preparation checklist	3
Installing	4
<b>Configuring the Configuration Tool on Liberty</b> Configuring user IDs, group IDs, and security product Setting up a Liberty server directory and a working directory for the Configuration Tool Creating the started tasks of the Configuration Tool server and its angel server Starting the Configuration Tool server Accessing the Configuration Tool	
Enable the HTTP Event Collector feature on Splunk and create the token	9
Creating a policy to stream SMF data	10
Creating the System Data Engine started task for streaming SMF data	12
Configuring the Data Streamer	12
Starting components	
Stopping components	14

## **Overview**

IBM<sup>®</sup> Z Common Data Provider provides the infrastructure for accessing IT operational data from z/OS<sup>®</sup> systems and streaming it to the analytics platform in a consumable format. It is a single data provider for sources of both structured and unstructured data, and it can provide a near real-time data feed of z/OS log data and System Management Facilities (SMF) data to your analytics platform.

### **Purpose of this book**

This book provides step-by-step instructions for setting up a Proof-of-Value environment with minimum configuration and customization. The purpose of this book is to help users who are new to IBM Z Common Data Provider understand its installation and configuration flow, and its basic functions.

### Basic concepts used in the book

Ensure that you understand the following concepts that are generally used in the book before you get started:

### Data stream

A stream of data is a set of logically associated data in a standard format. It can be a real log, or a virtual log. It is routed to, and transformed by, the Data Streamer in a predictable way, and is delivered to one or more subscribers.

### Subscriber

A subscriber is the software that you define to receive operational data. It can be analytics software like Splunk, or intermediary software like Logstash.

### Policy

A policy defines how the data is collected, transformed, and streamed. It is created in the Configuration Tool and includes the following information:

- The source from which you want to collect data.
- How to alter the operational data in the data stream so that it is consumable at its target destination.
- The subscribers that receive the data.

### **Working directory**

When you configure some IBM Z Common Data Provider components, you must define a working directory for the component to store its runtime files.

### **IBM Z Common Data Provider basic components**

IBM Z Common Data Provider includes the following basic components:

- A Configuration Tool for defining the sources from which you want to collect operational data
- The data gatherer components (System Data Engine and Log Forwarder) for gathering different types of operational data
- A Data Streamer for streaming all data to its destination

### **Configuration Tool**

The IBM Z Common Data Provider Configuration Tool is a web-based user interface that is provided as an application for IBM WebSphere<sup>®</sup> Application Server for z/OS Liberty, or as a plug-in for IBM z/ OS Management Facility (z/OSMF). In the tool, you specify the configuration information as part of creating a *policy* for streaming operational data to its destination.

### **Data gatherer components**

Each of the following components gathers a different type of data:

### **System Data Engine**

The System Data Engine gathers System Management Facilities (SMF) data and IBM Information Management System (IMS) log data in near real time. It can also gather SMF data and IMS data in batch.

### Log Forwarder

The Log Forwarder gathers z/OS log data from the following sources:

- Job log, which is output that is written to a data definition (DD) by a running job
- z/OS UNIX log file, including the UNIX System Services system log (syslogd)
- Entry-sequenced Virtual Storage Access Method (VSAM) cluster
- z/OS system log (SYSLOG)
- IBM Tivoli<sup>®</sup> NetView<sup>®</sup> for z/OS messages
- IBM WebSphere Application Server for z/OS High Performance Extensible Logging (HPEL) log
- IBM Information Management System (IMS) log
- IBM Resource Measurement Facility (RMF) Monitor III reports

### **Data Streamer**

The Data Streamer streams operational data to configured subscribers in the appropriate format. It receives the data from the data gatherers, alters the data to make it consumable for the subscriber, and sends the data to the subscriber.

### **Data Receiver**

The Data Receiver acts as a target subscriber if the intended subscriber of a data stream cannot directly ingest the data feed from IBM Z Common Data Provider. The Data Receiver writes any data that it receives to disk files, which can then be ingested into an analytics platform such as Splunk.

## Scenario in this book

A Proof-of-Value environment with basic functions will be set up to demonstrate the installation and configuration flow.

This scenario includes the following features:

- A Configuration Tool on Liberty.
- A System Data Engine for collecting SMF data.
- A Data Streamer for sending data to the subscriber.
- SMF 30 and SMF\_110\_1\_KPI are streamed to Splunk via the HTTP Event Collector (HEC). To do that, you must enable the HEC function on Splunk and create a token before you create the policy in the Configuration Tool.

The following high-level tasks demonstrate the roadmap for setting up the Proof-of-Value environment.

- 1. Go through the preparation checklist and make sure that your environment meets the requirements.
- 2. Install the product image.
- 3. Configure the Configuration Tool on Liberty.
- 4. Enable the HTTP Event Collector feature on Splunk.
- 5. Create a policy in the Configuration Tool.
- 6. Configure the System Data Engine.
- 7. Configure the Data Streamer.
- 8. Start the components.

## **Preparation checklist**

Before you install and configure the IBM Z Common Data Provider components, ensure that your environment meets the system and security requirements in this checklist.

### **System requirements**

Prepare your system according to the following requirements.

### z/OS system requirements

You must run the IBM Z Common Data Provider in each z/OS logical partition (LPAR) from which you want to gather z/OS operational data.

IBM Z Common Data Provider must be run with the following software:

• IBM z/OS V2.2, or later (product number 5655-ZOS)

**For z/OS V2.2 only:** If you use IBM z/OS V2.2, the following software is also required on the system where configuration is done:

### For z/OS V2.2

IBM z/OS Management Facility V2.2 (product number 5650-ZOS), with APAR/PTF PI52426/ UI36315

- The following Java<sup>™</sup> library:
  - IBM 64-bit SDK for z/OS Java Technology Edition V8 (product number 5655-DGH)
- On an IBM z/OS V2.2 system, to collect System Management Facilities (SMF) data from SMF inmemory resources, you must apply APAR OA49263.

### SMF requirements

This scenario uses in-memory resource, therefore, the SMF must be running in log stream recording mode instead of data set recording mode.

### **Configuration Tool browser requirements**

You can access the Liberty-based Configuration Tool by using the following web browsers:

- Apple Safari
- Google Chrome
- Microsoft Internet Explorer 10 or later
- Mozilla Firefox

### Working directory requirements

When you configure the Configuration Tool and Data Streamer, you must define a working directory for each component. Prepare the working directories for these components according to the following guidelines:

- The working directory must be readable and writable by the user ID that runs the component.
- To avoid possible conflicts, the working directory for each component must be unique.

### **Data Streamer port definition**

When you configure the Data Streamer, you define the port number on which the Data Streamer listens for data from the data gatherers. Prepare an available port before you configure the Data Streamer. The default port is 51401.

### **Security requirements**

Prepare user IDs with requested authorities before you configure the components.

### **Configuration Tool**

- You must have a user ID with the RACF SPECIAL authority to run a script that creates the users and groups for the Liberty-based Configuration Tool.
- You must have a user ID that has the UID 0 attribute to run the setup script that creates the working directory and the Liberty server directory.

### **Data Streamer**

The user ID that is associated with the Data Streamer started task must have the appropriate authority to access the IBM Z Common Data Provider program files, which include the installation files and the policy file. It must also have read and execute permissions to the Java libraries in the UNIX System Services file system.

### **System Data Engine**

The user ID that is associated with the System Data Engine started task must have authority to read the SMF in-memory resource.

For example, if you are using the RACF<sup>®</sup> as your System Authorization Facility (SAF) product, you must give the System Data Engine user ID read authority to the profile that you set up to secure your SMF in-memory resource. In the following examples, *IFASMF.resource* represents the name of the SMF in-memory resource that is being used to gather SMF records, and *userid* represents the System Data Engine user ID.

### In-memory resource example

PERMIT IFA.IFASMF.resource CLASS(FACILITY) ACCESS(READ) ID(userid)

## **Installing Z Common Data Provider**

Install IBM Z Common Data Provider by using SMP/E. For installation instructions, see the IBM Z Common Data Provider Program Directory.

### About this task

Install all IBM Z Common Data Provider components according to the instructions in the Program Directory.

• IBM Z Common Data Provider Program Directory

Because this scenario runs the Configuration Tool on IBM WebSphere Application Server for z/OS Liberty, you must install the IBM Z Common Data Provider Embedded Liberty.

Table 1 on page 4 lists the target libraries.

Table 1. Target libraries for IBM Z Common Data Provider components		
Component	Target library	
Configuration Tool	<ul> <li>/usr/lpp/IBM/zcdp/v2r1m0/UI</li> </ul>	
	For the following libraries, customize the high-level qualifier $(.hlq)$ according to site requirements.	
	• hlq.SHBODEFS	
	• hlq.SHBOSAMP	

Table 1. Target libraries for IBM Z Common Data Provider components (continued)		
Component	Target library	
Data Streamer	• /usr/lpp/IBM/zcdp/v2r1m0/DS	
	For the following library, customize the high-level qualifier $(.hlq)$ according to site requirements.	
	• hlq.SHBOSAMP	
Log Forwarder	<ul> <li>/usr/lpp/IBM/zcdp/v2r1m0/LF</li> </ul>	
	For the following libraries, customize the high-level qualifier $(.hlq)$ according to site requirements.	
	• hlq.SHBOCLST	
	• hlq.SHBOLPA	
System Data Engine	For the following libraries, customize the high-level qualifier $(.hlq)$ according to site requirements.	
	• hlq.SHBOLLST	
	• hlq.SHBOLOAD	
Common dependencies	<pre>• /usr/lpp/IBM/zcdp/v2r1m0/DEPS</pre>	

## Configuring the Configuration Tool on Liberty

In this scenario, the IBM Z Common Data Provider Configuration Tool will be deployed as an application to IBM WebSphere Application Server for z/OS Liberty. The other scenario where the Configuration Tool is deployed as a plug-in for IBM z/OS Management Facility (z/OSMF) is not covered in this guide.

## Configuring user IDs, group IDs, and security product

You must create user IDs and group IDs with necessary permissions to run the IBM Z Common Data Provider Configuration Tool.

### About this task

A default properties file /usr/lpp/IBM/zcdp/v2r1m0/UI/LIB/cdpui.properties is provided with default user IDs and group IDs to run the Configuration Tool. You can run the defracf.cmd script to change the default values. The new values are saved in /var/cdp-uiconfig/cdpui.properties for the savingpolicy.sh script to use in the next task. If you are using RACF as your SAF product, you can allow the script to run necessary RACF commands to create the IDs and permissions. If you do not use RACF, you can exit the script after verifying or changing the values and continue with the configuration.

In this scenario, RACF is used as the SAF product, and we will allow the script to create the IDs and permissions.

To run the defracf.cmd script, you must be logged in to the z/OS system with a user ID that has the RACF SPECIAL authority.

### Procedure

1. Run the following script under UNIX System Services. Only the default z/OS shell is supported.

/usr/lpp/IBM/zcdp/v2r1m0/UI/LIB/defracf.cmd

2. Verify the default user IDs and group IDs.

### STC\_USRID

The user ID that is assigned to the Configuration Tool server started task procedure. The default value is HBOSTCID.

### STC\_GROUP

The group that contains **STC\_USRID**. The default value is HBOSTCGP.

### AUTHORIZED\_GROUP

The group that is granted the permission of logging in and using the Configuration Tool. The default value is HBOUSRGP.

### GUEST\_USER

The user ID that is used by Liberty for accessing the Configuration Tool login page. The default value is HBOGUEST.

### GUEST\_GROUP

The group that contains **GUEST\_USER**. The default value is HBOUNGRP.

### AUTHORIZED\_USER

The user ID that is granted the permission of logging in and using the Configuration Tool. The default value is HBOUSER.

**Remember:** You must specify an existing user for this parameter. If you don't specify any value for this parameter, no user is able to access the Configuration Tool.

### AUTOID

Determines whether the UID and GID are automatically assigned. The default value is OFF, and you can set values for the following parameters. Make sure that the UIDs and GIDs that you specify meet the requirements of your environment. If the UIDs and GIDS are not accepted by your security product, the Configuration Tool cannot be installed successfully. If you don't specify any value for these parameters, default values will take effect.

### STC\_USRID\_UID

The UID for **STC\_USRID**.

STC\_GROUP\_GID

The GID for **STC\_GROUP**.

AUTHORIZED\_GROUP\_GID The GID for AUTHORIZED\_GROUP.

### GUEST\_USER\_UID

The UID for **GUEST\_USER**.

### GUEST\_GROUP\_GID

The GID for GUEST\_GROUP.

If automatic assignment of UID and GID is enabled on your environment, you can change the value of this parameter to ON to have required UIDs and GIDs automatically assigned by the system. In this case, skip the UID and GID parameters that are listed previously.

3. When you are prompted to choose exit or go, enter GO.

Check the output from the RACF commands in the /var/cdp-uiconfig/defracf.log file and verify that all commands are successfully issued by the script.

- There should be no RACF error messages from the UNIX System Services issued to the terminal after the script finishes running.
- If you see the messages ICH10006I, ICH06011I, and IRRD175I indicating that RACLISTED PROFILES must be refreshed before they are effective, and a message "All related RACLIST CLASS"

are refreshed successfully" after the script finishes running, it means that the RACLISTED PROFILES are refreshed by the script and are effective.

 Message ICH10102I that says BBG.AUTHMOD.BBGZSAFM, and BBG.AUTHMOD.BBGZSAFM.SAFCRED are already defined, can be safely ignored. These profiles are shared with other Liberty Angel Servers, and they might be defined by a Liberty Angel Server that was created before.

## Setting up a Liberty server directory and a working directory for the Configuration Tool

You must set up a Liberty server directory to contain the configuration of the Configuration Tool server, and a working directory to store the policy definition files. A setup script (savingpolicy.sh) is provided to automate this process. Default values are used in this scenario.

### About this task

### User ID criteria for running the setup script

To run the setup script, you must be logged in to the z/OS system with a user ID that has the UID 0 attribute.

### Procedure

1. Enter the directory that contains the setup script.

```
cd /usr/lpp/IBM/zcdp/v2r1m0/UI/LIB/
```

2. Run the following command to start the setup script. Only the default z/OS shell is supported.

savingpolicy.sh

- 3. Follow the prompts of the script to provide necessary values.
  - To accept the default value that is shown in the parentheses, enter a blank value.
  - a) When you are prompted to choose if you are deploying the Configuration Tool on z/OSMF or Liberty, enter 2 to select Liberty.
  - b) When you are prompted to specify the full path of directory where the Configuration Tool server is installed, accept the default value.
    - Ensure that the directory is readable by the **STC\_USRID** and **STC\_GROUP** that are specified in the /var/cdp-uiconfig/cdpui.properties file that is created in <u>"Configuring user IDs, group</u> IDs, and security product" on page 5.
  - c) When you are prompted to specify the Java home directory, accept the default value, or specify the Java home directory for your system.
  - d) When you are prompted to specify the Configuration Tool Source Script Directory, accept the default value.

### Results

The directory *config\_tool\_server\_install\_dir/servers/cdp\_ui\_server* is created as the Liberty server directory, and the directory *config\_tool\_server\_install\_dir/cdpConfig* is created as the working directory, where *config\_tool\_server\_install\_dir* is the value that is specified in <u>"3.b" on page 7</u>.

## Creating the started tasks of the Configuration Tool server and its angel server

Before you can start the IBM Z Common Data Provider Configuration Tool server, you must create the started tasks for the Configuration Tool server and its angel server by copying the sample procedures into a user procedure library, and updating the copies.

### Procedure

To create the started tasks, complete the following steps:

- 1. Copy the procedure HBOCFGT from *hlq*. SHBOSAMP to a user procedure library.
- 2. Update the procedure HBOCFGT.
  - Change the value of the variable INSTDIR to the path where the WebSphere Application Server for z/ OS Liberty is installed.
  - Change the value of the variable USERDIR to the path where the Configuration Tool server is installed. This value is specified in <u>Step 3.b</u> in Setting up a Liberty server directory and a working directory for the Configuration Tool.
- 3. Copy the procedure HBOCFGA from *hlq*. SHBOSAMP to a user procedure library.
- 4. Change the value of the variable WLPDIR in HBOCFGA to the path where the WebSphere Application Server for z/OS Liberty is installed.

### **Starting the Configuration Tool server**

Start the angel server and the Configuration Tool server before you can access the Configuration Tool in a web browser.

### Procedure

1. Start the angel server for the Configuration Tool server by running the following z/OS system console command:

START HBOCFGA

2. Verify that the angel server starts successfully.

You see the following message in the job log if the server starts successfully:

CWWKB0069I INITIALIZATION IS COMPLETE FOR THE HBOCFGA ANGEL PROCESS

3. Start the Configuration Tool server by running the following console command:

START HBOCFGT

4. Verify that the Configuration Tool server starts successfully.

You see the following messages in the job log if the server starts successfully:

CWWKF0011I: The server cdp\_ui\_server is ready to run a smarter planet. CWWKT0016I: Web application available (default\_host): https://hostname:port/cdp/ 5. Verify that the Configuration Tool server and the angel server are connected successfully. In the log file /var/local/CDPServer/servers/cdp\_ui\_server/logs/messages.log, you can see the following message:

CWWKB0103I: Authorized service group KERNEL is available.

If the SAF authorized user registry services and SAF authorization services (SAFCRED) are enabled, the following message is in the log file:

CWWKB0103I: Authorized service group SAFCRED is available

**Tip:** The user ID that can read the file messages.log must belong to the **STC\_GROUP** user group that is specified in the /var/cdp-uiconfig/cdpui.properties file that is created in <u>"Configuring</u> user IDs, group IDs, and security product" on page 5.

### **Accessing the Configuration Tool**

After the Configuration Tool server and the angel server are started, you can access the Configuration Tool in a web browser.

### Procedure

1. Access the following URL in a web browser:

### https://HostName:port/cdp

*HostName* is the host name of your server that runs the Configuration Tool server. *port* is the port number that is used by the Configuration Tool server. The default port number is 17977.

2. Log in as the user ID that is connected to the user group that is defined by the **AUTHORIZED\_GROUP** parameter in the /var/cdp-uiconfig/cdpui.properties file that is created in <u>"Configuring user</u> IDs, group IDs, and security product" on page 5.

### Results

The "Common Data Provider" tab opens. Predefined policies are listed.

# Enable the HTTP Event Collector feature on Splunk and create the token

To stream data to Splunk directly via the HTTP Event Collector (HEC), you must enable HEC in Splunk and create a token that allows an application to communicate with Splunk without using user credentials.

### About this task

The following steps are based on the operations in Splunk Enterprise version 7.3.0. For more information, see the topic *Set up and use HTTP Event Collector in Splunk Web* in the Splunk documentation of your version.

### Procedure

- 1. Log on your Splunk server.
- 2. Go to Settings > Data Inputs > HTTP Event Collector > Global Settings.

- 3. Edit the Global Settings.
  - a) Click the **Enabled** button for the **All Tokens** option.
  - b) In the **HTTP Port Number** field, specify a port number for the HEC to listen on.
  - c) Click **Save**.
- 4. Go to **Settings** > **Data Inputs**.
- 5. Click +Add New in the HTTP Event Collector row to create a new HEC token.
  - a) In the **Name** field, specify a name for the token.
  - b) If you want to replace the source name for events that this input generates, specify the value in the **Source name override** field.
  - c) Click Next.
  - d) In the **Index** section, select the index in which Splunk stores the HEC event data.

It is suggested that you use a test index to verify your data before pushing it to a production index.

Note:

### Source type

The source type is determined by the Data Streamer. Any option you choose for Input Settings will be overridden by the Data Streamer.

### App context

Application contexts are folders within your Splunk instance that contains configurations for the specific data domain.

- e) Click **Review** and confirm all settings are correct.
- f) Click **Submit** to create the HEC token.

### Results

The HEC token is created. Take note of the token value for creating policies in the IBM Z Common Data Provider Configuration Tool.

## Creating a policy to stream SMF data

From IBM Z Common Data Provider Configuration Tool, you can create a policy to stream SMF data to various subscribers.

### About this task

In the policy, select SMF\_30 and SMF\_110\_1\_KPI data streams, and add a subscriber with the **CDP Splunk via HEC via HTTP** protocol. No transforms will be applied.

### Procedure

- 1. From the Configuration Tool, click the **Create a new policy** box.
- 2. In the resulting **Policy Profile Edit** window, type the required policy name and, optionally, a policy description.
- <sup>3.</sup> Click the Add Data Stream icon 🕀 DATA STREAM.

The "**Select data stream**" window is shown with a list of categorized data streams. You can expand the categories to view the possible data streams that you can define for this policy.

- 4. Select the following data streams and click Select.
  - Expand Starter Sets > Common Data Provider for z System > General z/OS system monitoring and select SMF\_030.
  - Expand Starter Sets > Common Data Provider for z System > CICS and select SMF\_110\_1\_KPI.

Each data stream that you choose is shown as a node in the graph.

**10** IBM Z Common Data Provider Hands-On Guide for streaming SMF data to Splunk

- 5. Click the Subscribe icon on the SMF\_30 data stream node, the "Subscribe to a data stream" window opens where you can define a new subscriber by completing the following steps.
  - a) Click the **Add Subscriber** icon  $\oplus$  ADD SUBSCRIBER.
  - b) In the resulting "Add subscriber" window, update the associated configuration values.

You can update the following values in the "Add subscriber" window:

### Name

The name of the subscriber.

### Description

An optional description for the subscriber.

### Protocol

The streaming protocol that the Data Streamer uses to send data to the subscriber. Select **CDP Splunk via HEC via HTTP**.

### Host

The host name or IP address of the subscriber.

### Port

The port on which the subscriber listens for data from the Data Streamer.

### **Auto-Qualify**

A specification of whether to prepend system names and sysplex names to data source names in the data streams that are sent to the subscriber. The data source name is the value of the **dataSourceName** field in the data stream configuration. Accept the default value **None**.

### Number of threads

The number of threads that will send data to the subscriber. Accept the default value 12.

### Token

Specifies the token value that is generated by the HEC function on Splunk.

- c) Click **OK** to save the subscriber.
- 6. In the "Subscribe to a data stream" window, select the new subscriber, and click Update Subscriptions.

The subscriber that you choose is then shown on the graph.

- <sup>7</sup>. Click the Subscribe <sup>3</sup> icon on the SMF\_110\_1\_KPI data stream node. Select the same subscriber and click Update Subscriptions.
- 8. Click the **SYSTEM DATA ENGINE** button to set the CDP Concatenation value for your System Data Engine environment.

### **CDP** Concatenation

This value must be the name of the SHBODEFS data set that is installed with IBM Z Common Data Provider in your environment. This data set is also referenced in the concats.json file, which is in the working directory for the IBM Z Common Data Provider Configuration Tool.

9. To save the policy, click **Save**.

### Results

The following files are created in the Configuration Tool working directory:

- policy\_name.policy
- policy\_name.layout
- policy\_name.sde
- policy\_name.zlf.conf
- policy\_name.config.properties

# Creating the System Data Engine started task for streaming SMF data

To have the IBM Z Common Data Provider System Data Engine stream SMF data to the Data Streamer, you must create the started task for the System Data Engine by copying the sample procedure HBOSMF in the hlq.SHBOSAMP library, and updating the copy. In this scenario, all default values are accepted.

### Before you begin

For the System Data Engine to gather System Management Facilities (SMF) data, the SHBOLOAD library must be authorized with APF.

To authorize the SHBOLOAD library, a library name and volume ID must be in the list of authorized libraries in the PROG*xx* member of the SYS1.PARMLIB library. To do that, add the following statement to a PROG*xx* member:

APF ADD DSNAME(*hlq*.SHBOLOAD) VOLUME(*volname*)

### Procedure

To create the started task, complete the following steps:

- 1. Copy the procedure HBOSMF in the hlq.SHBOSAMP library to a user procedure library.
- 2. Update the high-level qualifier to the one for your IBM Z Common Data Provider target libraries that were installed by using SMP/E.
- 3. Update the port value for IBM\_UPDATE\_TARGET to specify the TCP/IP port that is configured for the Data Streamer.

The default port for Data Streamer is 51401.

- 4. Replace the value /u/userid/cdpConfig/Sample1.sde with the *policy\_name*.sde file path and name that is created in "Creating a policy to stream SMF data" on page 10.
- 5. Update the value for IBM\_RESOURCE with the SMF in-memory resource name to specify the source from which SMF data is to be gathered.

**Important:** If the in-memory method is not allowed in your environment, consider using the SMF user exit method by specifying EXIT for this parameter. For more information about how to install the SMF user exit, see Installing the SMF user exit in the IBM Knowledge Center.

- 6. Verify that the user ID that is associated with the System Data Engine started task has the required authorities, as described in Preparation checklist.
- 7. Update the SAF product that is protecting your system, such as the Resource Access Control Facility (RACF), to permit the System Data Engine started task to run in your environment.

## **Configuring the Data Streamer**

The IBM Z Common Data Provider Data Streamer streams operational data to configured subscribers in the appropriate format. It receives the data from the data gatherers like the System Data Engine, and sends the data to the subscriber.

### About this task

To configure the Data Streamer, you must create the Data Streamer started task by copying the sample procedure HB0DSPR0 in the hlq. SHB0SAMP library, and updating the copy. Only parameters that are related to basic functions are updated in this scenario.

The user ID that is associated with the Data Streamer started task must have the appropriate authority to access the IBM Z Common Data Provider program files, which include the installation files and the policy file. It must also have read/execute permissions to the Java libraries in the UNIX System Services file system.

### Procedure

To create the started task, complete the following steps:

- 1. Copy the procedure HBODSPRO in the *hlq*. SHBOSAMP library to a user procedure library.
- 2. In your copy of the procedure HBODSPRO, customize the following parameter values for your environment:

### /usr/lpp/IBM/zcdp/v2r1m0/DS/LIB

Replace this value with the directory where the Data Streamer is installed in your environment. This directory contains the startup.sh script for the Data Streamer.

### /etc/cdpConfig/myPolicy.policy

Replace this value with the *policy\_name*.policy file path and name that is created in <u>"Creating</u> a policy to stream SMF data" on page 10.

nnnnn

Replace this value with the port number on which the Data Streamer listens for data from the data gatherers. The default port on which the Data Streamer listens for data is 51401.

3. In your copy of the procedure HBODSPRO, set the following environment variables for your environment:

### JAVA\_HOME

Specify the Java installation directory.

### CDP\_HOME

Specify the location of the Data Streamer working directory. The Data Streamer working directory contains files that are created and used during the operation of the Data Streamer, including the Data Streamer truststore and file buffers.

### **Guidelines for the working directory**

Use the following guidelines to help you decide which directory to use as the working directory:

- The directory must be readable and writable by the user ID that runs the Data Streamer.
- To avoid possible conflicts, do not use a directory that is defined as the Configuration Tool working directory.

**Important:** Do not update, delete, or move the files in the *CDP\_HOME* directory.

4. Update your security software, such as the Resource Access Control Facility (RACF), to permit the Data Streamer started task to run in your environment.

## **Starting components**

The best practice for the order in which to start the components is from the destination end to the source end. Start the Data Streamer first and then start the System Data Engine.

### Procedure

1. Start the Data Streamer by running the following z/OS console command:

START HBODSPRO

2. After the Data Streamer is started successfully, run the following z/OS console command to start the System Data Engine:

START HBOSMF

### Results

If the activation is successful, IBM Z Common Data Provider starts sending data to Splunk.

## **Stopping components**

The best practice for the order in which to stop the components is from the source end to the destination end. Stop the System Data Engine first, and then stop the Data Streamer.

### Procedure

1. Run the following z/OS console command to stop the System Data Engine:

STOP HBOSMF

2. After the System Data Engine is stopped successfully, stop the Data Streamer by running the following z/OS console command:

STOP HBODSPRO

