CA SMF Director®

Installation Guide

Release 12.7

Second Edition

CA Technologies Product References

This document references the following CA Technologies products:

- CA Mainframe Software Manager™ (CA CSM)
- CA MIM™ Resource Sharing
- CA Service Desk
- CA ACF2™ for z/OS
- CA Top Secret® for z/OS
- CA Auditor for z/OS

Contact CA Technologies

Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information that you need for your Home Office, Small Business, and Enterprise CA Technologies products. At http://ca.com/support, you can access the following resources:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

Providing Feedback About Product Documentation

If you have comments or questions about CA Technologies product documentation, you can send a message to techpubs@ca.com.

To provide feedback about CA Technologies product documentation, complete our short customer survey which is available on the CA Support website at http://ca.com/docs.

Documentation Changes

The following documentation updates have been made since the last release of this documentation:

Note: In PDF format, page references identify the first page of the topic in which a change was made. The actual change may appear on a later page.

- Updated CA Common Services Requirements (see page 14) section.

Contents

Chapter 1: Overview

This section contains the following topics:

Audience

Readers of this book should have knowledge in the following areas:

- JCL
- TSO/ISPF
- IBM MVS System Management Facilities (SMF)
- z/OS environment and installing software in this environment
- z/OS UNIX System Services
- Your organization's IT environment, enterprise structure, and region structure

You may need to work with the following personnel:

- Systems programmer for z/OS definitions
- Storage administrator for DASD allocations

How the Installation Process Works

CA Technologies has standardized product installations across all mainframe products. Installation uses the following process:

- Acquisition—Transports the software to your z/OS system.
- Installation using SMP/E—Creates an SMP/E environment and runs the RECEIVE, APPLY, and ACCEPT steps. The software is untailored.
- Deployment—Copies the target libraries to another system or LPAR.
- Configuration—Creates customized load modules, bringing the software to an executable state.

CA Chorus™ Software Manager (CA CSM) - formerly known as CA Mainframe Software Manager™ (CA MSM) - is an intuitive web-based tool that can automate and simplify many CA Technologies product installation activities on z/OS systems. This application also makes obtaining and applying corrective and recommended maintenance easier. A web-based interface enables you to install and maintain your products faster and with less chance of error. As a best practice, we recommend that you install mainframe products and maintenance using CA CSM. Using CA CSM, someone with limited knowledge of JCL and SMP/E can install a product.

Note: If you do not have CA CSM, you can download it from the Download Center at http://ca.com/support. Follow the installation instructions in the CA Chorus Software Manager documentation bookshelf on the CA Chorus Software Manager product page.

You can also complete the standardized installation process manually using pax files that are downloaded from http://ca.com/support or a product DVD.

To install your product, do the following tasks:

1. Prepare for the installation by confirming that your site meets all installation requirements.
2. Verify that you acquired the product using one of the following methods:
   - Download the software from http://ca.com/support using CA CSM.
   - Download the software from http://ca.com/support using Pax-Enhanced Electronic Software Delivery (Pax ESD).
   - Order a product DVD. To do so, contact your account manager or a CA Technologies Support representative.
3. Perform an SMP/E installation using one of the following methods:
   - If you used CA CSM to acquire the product, start the installation process from the SMP/E Environments tab in CA CSM.
   - If you used Pax ESD to acquire the product, you can install the product in the following ways:
     - Install the product manually.
     - Complete the SMP/E installation using the Add Product option in CA CSM.
   - If you used a DVD, install the product manually.

   Note: If a CA Recommended Service (CA RS) package is published for your product, install it before continuing with deployment.

4. Deploy the target libraries using one of the following methods:
   - If you are using CA CSM to configure your products, a CA CSM deployment is required.
   - If you are using a manual configuration process, a manual deployment is an optional step.

   Note: Deployment is considered part of starting your product (see page 63).
5. Configure your product using CA CSM or manually.

   Note: Configuration is considered part of starting your product (see page 63).

Chapter 2: Preparing for Installation

This section describes what you need to know and do before you install the product.

This section contains the following topics:

Hardware Requirements

CA SMF Director runs on any processor that supports z/OS 1.9 or above.

CA SMF Director works with any DASD device using 3380 or 3390 geometry.

Software Requirements

The following software is required for CA SMF Director:

- IBM supported release of z/OS 1.9 or above
- SMP/E
- The CA Resource Initialization Manager (CAIRIM), one of the CA Common Services for z/OS.

- We recommended that the target library, CASFLOAD, be in the LINKLST, but this library is not required.
- We recommend that CASFLOAD be APF-authorized. If you prefer not to authorize CASFLOAD, the following load modules *must* reside in an APF-authorized library:
  - SMFD
  - SMFDLS
  - SMFDLX1
  - SMFDLX2
  - SMFDLX3
  - SMFINIT
  - SMFIX110
  - SMFIXDB2
- The SMF Control Data Set (SCDS) can be shared with two or more LPARs. All LPARs sharing the SCDS must either belong to the same Global Resource Serialization (GRS) ring or be connected to each other through CA MIM.
- When using CA MIM define a QNAME of CAIMSMF for CA SMF Director. For more information about QNAME definitions, see the *CA MII Data Sharing for z/OS Programming Guide*.
- When setting up CA SMF Director to open CA Service Desk requests, the CA Common Services SOAP Client Service (CAISDI/soap) address space must be up and running. For more information about SOAP, see the *CA Common Services for z/OS Service Desk Integration Guide.*

CA Common Services Requirements

The following CA Common Services are used with CA SMF Director:

- CAIRIM
- CA LMP
- CA Common Services SOAP Client Service (CAISDI/soap) if using Service Desk

Note: If other CA Technologies products are installed at your site, some of these services may already be installed.

LMP Key Requirements

The CA License Management Program (CA LMP) tracks licensed software in a standardized and automated way. It uses common real-time enforcement software to validate the user's configuration. CA LMP reports on activities related to the license, usage, and financials of CA Technologies products.

CA LMP features include the following:

- Common Key Data Set can be shared among many CPUs.
- Check digits are used to detect errors in transcribing key information.
- Execution keys can be entered without affecting any CA Technologies software product already running.
- No special maintenance is required.

CA SMF Director is licensed with an LMP key. You acquire the LMP key with one of the following methods:

- From your product media
- With ESD
- From CA Support Online

Tailor LMP Keys

If you are upgrading from a previous release of this product, skip this procedure.

The CA License Management Program (LMP) is comprised of three components: the CA product, the LMP Product Key Certificate, and the common LMP Enforcement software.

The LMP Product Key Certificate contains an execution key for each CPU licensed at your site. These keys must be entered into the CASFPARM data set LMP product key member, which has a default name of KEYS.

Define the LMP execution key now. For more information, see the CA Common Services for z/OS documentation.

Security Requirements

To complete the tasks in this guide, you need the following security privileges:

- Read authority for all *of the CA* SMF Director installed data sets.

Secure Functions

CA SMF Director allows its functions to be secured by an external security product, such as CA Top Secret, CA ACF2 for z/OS, or IBM RACF. The resource class CA$MSMF must be defined to the external security product before using CA SMF Director. The resource class must allow resource names to be greater than eight characters and access levels of UPDATE, READ, or NONE. To allow use of a function, the required resources must be defined to a user's security record with the proper access levels.

For more information about securing functions, see the *CA SMF Director Systems Programmer Guide.*

Storage Requirements

Ensure that you have the following storage available:

- For an ESD installation, use one cylinder for the downloaded files and four cylinders for the unzipped files.
- For an installation and setup:
  - Installation = a minimum of eight cylinders.
  - SMP/E temporary libraries = four cylinders.
- To run this product, the region size must be set to at least 2 MB (2048 KB) of main storage. This storage does not include main storage for the operating system and user routines, but does include buffers for the SMF records. We recommend setting REGION=0M in your JCL for all executions of CA SMF Director. Use this setting especially when performing a logstream or substream dump process, or an EXTRACT of SMF Data.
- Sufficient space (see page 16) for the SCDS file.

Calculating SCDS Space Requirements

In calculating the size of the SCDS file, it is helpful to understand the factors that affect its size. These factors are:

- The number of systems (SMF IDs) for which SMF history and inventory information are kept.
- The number of systems that are recording to logstreams and the number of logstreams.
- The number of substreams that are used on any systems using substreams.

- The number of history data sets.
- The number of magnetic tape volume serials to be defined for use by this product, and how long the SMF data is kept.

The SCDS consists of 4096-byte blocks with a minimum of at least six blocks that are needed for use by CA SMF Director. One block is required for every four system configurations defined. If specific magnetic tape volumes are used, one block can contain 135 volume serials. These volumes are predefined to this product using the DUMPTAPES Control Statement. If no volumes are defined, CA SMF Director requests a scratch tape (non-specific tape request), when a new magnetic tape volume is needed. For more information on DUMPTAPES, see the *CA SMF Director User Guide*.

The number of history data sets depends upon how frequently SMF dumps occur. Up to 30 data sets can be described per block, with one block that is required for every different year of SMF data retained. The following formula can be used to calculate the number of blocks that are needed for the SCDS file. For the numbers that are estimates, make sure that you estimate at the high end of your estimate:

```
 n1 = (c/4)
+ n2 = (v/135)
+ n3 = (((d * 365)/30)* y)* c
+ n4 = (cl * l) + (cs * (l + s)/4)
+ y
+ 6
_____________________
z  Total number of SCDS blocks (note: round up fractional numbers)
```

Where:

c

Number of different systems for which SMF data is retained.

v

Number of specific magnetic tape volumes to be defined.

d

The average number of SMF dump requests per day.

y

Number of years for which SMF data is kept.

cl

Number of systems that are recording SMF data to logstreams.

l

The maximum number of logstreams that any system will be using to record SMF data.

cs

Number of systems that will be using any streams (logstreams or substreams).

s

The maximum number of substreams that any system can use.

Example:

```
  1 = (3/4)                  Three systems (remember to always round up)
+ 0 = (0/135)                No dedicated tapes (using DASD or SCRATCH)
+ 365 = (((2 * 365/30) * 5) * 3   Two dumps a day per system for 5 years
+ 4 = (1 * 2) + (2 * (2 + 2)/4)   Three systems: one with 2 logstreams,
                                  one with 2 substreams
+ 5                        Five years of SMF data
+ 6                        Six management blocks
_____________________________________________________________________
381                        Total blocks needed
```

Target Libraries

The following table lists the amount of disk space needed to install the target libraries:

Note: If you are using PDS/Es to install CA SMF Director, you can ignore the directory block amounts.

Library Name	Blksize	Tracks	Dir Blks	Description
CASFEXEC	3120	5	8	EXECs library
CASFJCL	3120	3	5	JCL library
CASFLOAD	6144	14	5	Common load library
CASFMAC	3120	2	2	Macro library
CASFMSG0	3120	2	3	ISPF message library
CASFPARM	3120	2	2	Parameter library
CASFPNL0	3120	5	12	ISPF panel library
CASFPROC	3120	5	12	Common procedure library
CASFSRC	3120	3	2	Source library
CASFTBL0	3120	2	2	ISPF table library
CASFXML	32760	31	2	MSM XML Metadata

Distribution Libraries

The following table lists the amount of disk space needed to install the distribution libraries:

Note: If you are using PDS/Es to install CA SMF Director, you can ignore the directory block amounts.

Library Name	Blksize	Tracks	Dir Blks	Description
AASFEXEC	3120	5	8	EXECs library
AASFJCL	3120	3	5	JCL library
AASFMAC	3120	2	2	Macro library
AASFMOD0	6144	19	18	Load library
AASFMSG0	3120	2	3	ISPF message library
AASFPARM	3120	2	2	Parameter library
AASFPNL0	3120	5	12	ISPF panel library
AASFPROC	3120	2	2	Procedure library
AASFSRC	3120	3	2	Source library
AASFTBL0	3120	2	2	ISPF table library
AASFXML	32760	31	2	MSM XML Metadata

Concurrent Releases

You can install this release of CA SMF Director and continue to use an older release for your production environment. If you plan to continue to run a previous release, consider the following points:

- When installing into an existing SMP/E environment, this installation deletes previous releases.

  Note: For migration purposes, you must back up your SCDS before the previous release is deleted.

- If you acquired your product from tape or with Pax-Enhanced ESD, select different target and distribution zones for your new release from where your current release is installed. The new zones use different libraries than your current release.

  Note: CA CSM installs into a new CSI by default.

Define DDDEF entries in your new zones to point SMP/E to the proper libraries for installation. Ensure that they point to the new release libraries.

Chapter 3: Installing Your Product Using CA CSM

This section contains the following topics:

How to Install Your Product Using CA CSM

As a system programmer, your responsibilities include acquiring, installing, maintaining, deploying, and configuring CA Technologies mainframe products on your system.

CA CSM is an application that simplifies and unifies the management of your CA Technologies mainframe products on z/OS systems. As products adopt the CA CSM services, you can install your products in a common way according to industry best practices.

This scenario describes the steps for a system programmer to acquire, install, deploy, and configure products and maintenance. Not all tasks may apply to your organization. For example, you may decide not to deploy and configure products. In this case, do not perform the product deployment task and the product configuration task.

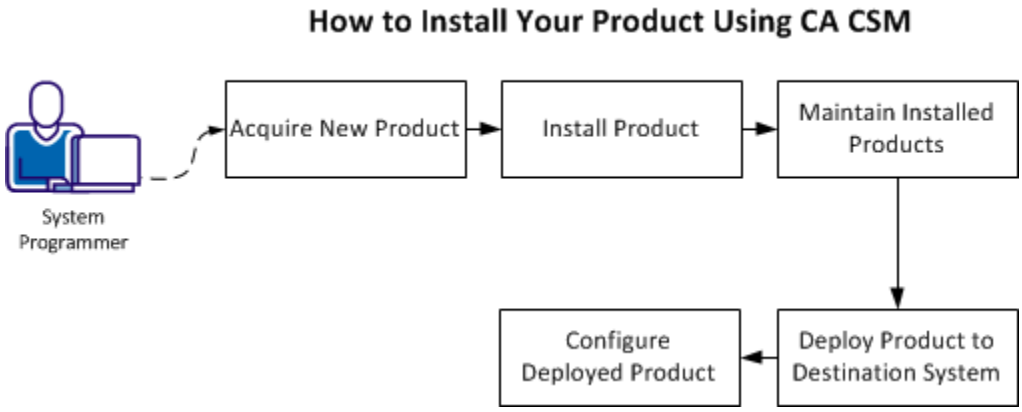
Before you use this scenario, you must have CA CSM installed at your site. If you do not have CA CSM installed, you can download it from the Download Center at http://ca.com/support. This web page also contains links to the complete documentation for CA CSM.

You access CA CSM (see page 22) from a web browser.

Note: This scenario applies to the latest version of CA CSM. If you are using an earlier version, see the appropriate bookshelf on the CA Chorus Software Manager product page.

This scenario is a high-level overview of steps that you perform using CA CSM. For more detailed information, use the online help that is included in CA CSM.

You perform the following tasks to install products and manage them on your system:



1. Acquire a new product (see page 23).
2. Install the product (see page 24).
3. Maintain the installed products (see page 26).
4. Deploy the product to the destination system (see page 27).
5. Configure the deployed product (see page 28).

Access CA CSM Using the Web-Based Interface

You access CA CSM using the web-based interface.

You need the URL of CA CSM from the CA CSM administrator.

Follow these steps:

1. Start your web browser, and enter the access URL.

   The login page appears.

   Note: If the Notice and Consent Banner appears, read and confirm the provided information.

2. Enter your z/OS login user name and password.

   The initial page appears. If you log in for the first time, you are prompted to define your account on the CA Support Online website.

   Note: For more information about the interface, click the online help link at the top right corner of the page.

3. Click New.

   You are prompted for the credentials to use on the CA Support Online website.

4. Specify the credentials, click OK, and then click Next.

   You are prompted to review your user settings.

   Note: These settings are available on the User Settings page.

5. Change the settings or keep the defaults, and then click Finish.

   A dialog opens, which shows the progress of the configuration task. You can click Show Results to view the details of the actions in a finished task.

Important! If your site uses proxies, review your proxy credentials on the User Settings, Software Acquisition page.

Acquire a New Product

Acquisition allows you to download products and product maintenance from the CA Support Online website at http://ca.com/support to a USS directory structure on your system. The products to which your site is entitled and the releases available are displayed in the Available Products section on the Products page.

You perform the following high-level tasks to acquire a product using CA CSM:

1. Set up a CA Support Online account at http://ca.com/support.

   To use CA CSM to acquire or download a product, you must have a CA Support Online account. If you do not have an account, create one on http://ca.com/support.

2. Determine the CA CSM URL for your site.

   To access CA CSM (see page 22), you require its URL. You can get the URL from your site CA CSM administrator and log in using your z/OS credentials. When you log in for the first time, you are prompted to create a CA CSM account with your credentials that you use to access http://ca.com/support. This account enables you to download product packages.

3. Log in to CA CSM and go to the Products page to locate the product that you want to acquire.

   After you log in to CA CSM, you can see the products to which your organization is entitled on the Products tab.

   If you cannot find the product that you want to acquire, update the product list. CA CSM refreshes the product list through http://ca.com/support using the site IDs associated with your credentials.

4. Download the product installation packages.

   After you find your product in the product list, you can download the product installation packages. To do so, use the Update Product Release action.

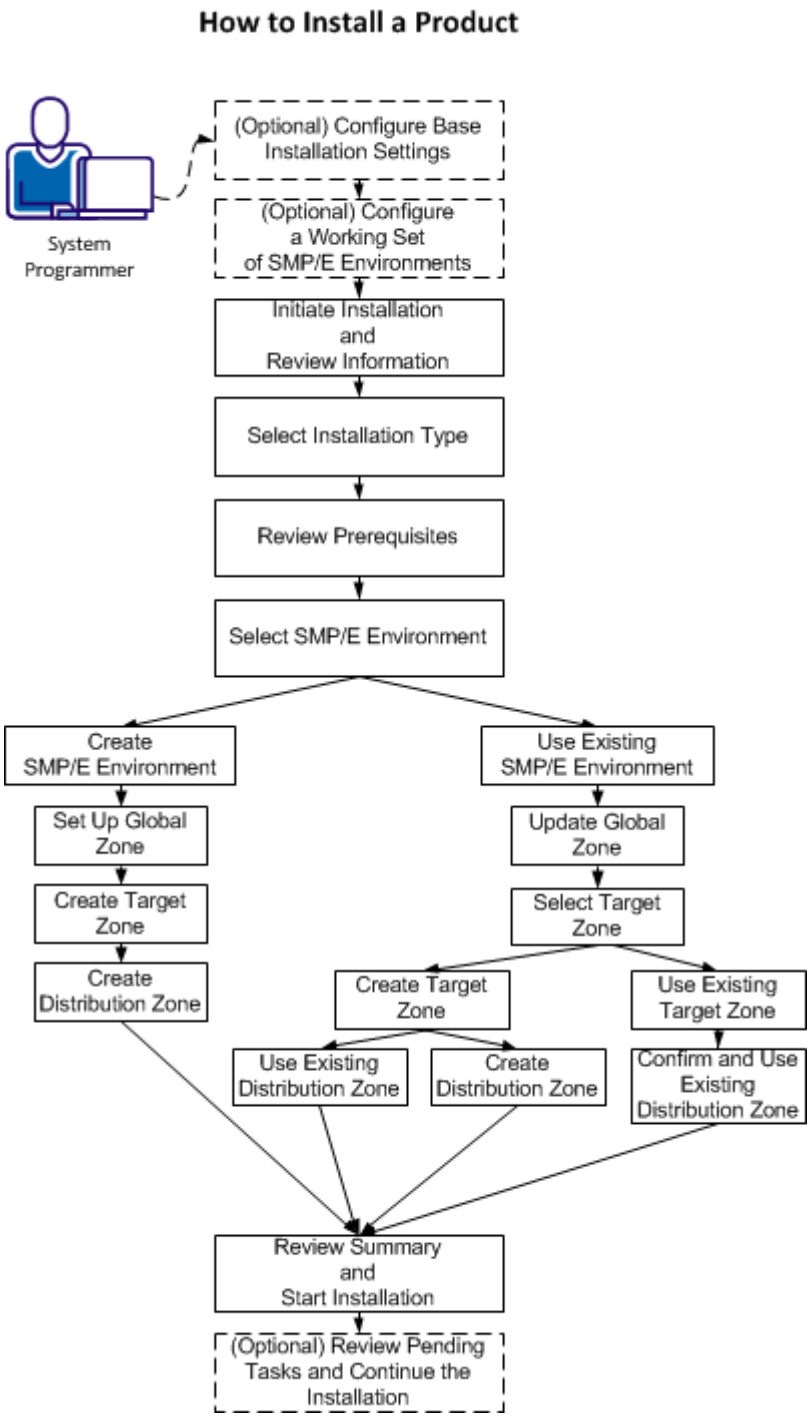
   CA CSM downloads (acquires) the packages (including any maintenance packages) from the CA Support Online website.

After the acquisition process completes, the product is ready for you to install or apply maintenance.

Install a Product

CA CSM simplifies and manages SMP/E installation tasks. You can browse and install a product that you acquired and that is available in the product list on the Products page. You can also install the maintenance for the products that are currently installed in a managed SMP/E environment on the driving system.

You perform the following high-level tasks to install a product using CA CSM:



1. (Optional) On the Settings tab, click Software Installation under System Settings, and configure base installation settings.
2. (Optional) Click the SMP/E Environments tab, and configure a working set of SMP/E environments.
3. Click the Products tab and select a product that you want to install. Start the installation wizard and review product information.
4. Select an installation type.
5. Review installation prerequisites if any are presented.
6. Take *one* of the following steps to select an SMP/E environment:
   - Create an SMP/E environment:
     a. Set up the global zone.
     b. Create a target zone.
     c. Create a distribution zone.
   - Use an existing SMP/E environment from your working set:
     a. Update the global zone.
     b. Set up the target zone: Create a target zone or use an existing target zone.
     c. Set up the distribution zone: Create a distribution zone or use an existing distribution zone.

     Note: If you install a product or its components into an existing target or distribution zone, older versions are deleted from the zone and associated data sets. We recommend that you use new target and distribution zones for this installation so that you can apply maintenance to your current version, if necessary.
7. Review the installation summary and start the installation.
8. (Optional) Review pending tasks for the SMP/E environment where you are installing your product. Continue the installation, if applicable.

   CA CSM installs the product.

After the installation process completes, check for and install available product maintenance. The product is ready for you to deploy. Sometimes, there are other steps to perform manually outside of CA CSM before continuing.

Maintain the Installed Products

You can migrate existing SMP/E environments into CA CSM to maintain all your installed products in a unified way from a single web-based interface.

You can use CA CSM to maintain a CA Technologies product.

You perform the following high-level tasks to maintain a product using CA CSM:

1. Verify that CA CSM recognizes the SMP/E environment where your product is installed. If not, migrate the SMP/E environment to CA CSM.

   During the migration, CA CSM stores information about the SMP/E environment in the database.

2. From the Product tab, download the latest maintenance for the installed product releases.

   If you cannot find the required release, perform the following steps to download the maintenance:

   a. Add the release to the catalog manually.

   b. Update the added release.

3. Apply the maintenance.

   CA CSM applies the maintenance to your product.

After the maintenance process completes, the product is ready for you to deploy to systems that are defined in the system registry.

If you are an existing customer, after installing the new version of this product, migrate your existing SCDS to the new version. For more information, see Migration Information (see page 77).

Deploy the Product to the Destination System

Deployment is a process of copying SMP/E target libraries to a destination system. The destination system could be the local z/OS system, a remote z/OS system, or a sysplex. You identify the destination system, deployed data set names, and the transport mechanism as part of the deployment process. Deploying a product makes it available for configuration.

Important! Before you deploy a product, set up the destination systems and remote credentials in the system registry.

You perform the following high-level tasks to deploy your products using CA CSM:

1. On the Deployments tab, set up methodologies.

   Note: You can also set up methodologies when creating a deployment, or use existing methodologies, if you have set up any previously. If you do so, you can skip this step.

2. Start the New Deployment wizard to create a deployment. Complete each of the steps in the wizard. The wizard guides you through choosing deployment settings for your site. At any point, you can save your work and come back to it later.

3. Deploy:
   a. Take a snapshot of the deployment.
   b. Transmit the deployment to a destination system.
   c. Deploy (unpack) to the mainframe environment.

   CA CSM deploys the product to the destination system.

After the deployment process completes, the product is ready for you to configure.

Configure the Deployed Product

Configuration is a process of copying the deployed libraries to run-time libraries and customizes the product for your site to bring it to an executable state. You can configure CA Technologies products that you have already acquired, installed, and deployed using CA CSM. You cannot use CA CSM to configure a product unless you have already used CA CSM to deploy the product.

You perform the following high-level tasks to configure your products using CA CSM:

1. Select a configurable deployment on the Deployments tab to view details and products for that deployment.
2. Select a product in the deployment and start the Configuration wizard to create a configuration. Complete each of the steps in the wizard. The wizard has multiple levels of detailed instructions and guides you through choosing configuration settings for your site. At any point, you can save your work and come back to it later. Configurations where you have partially completed the steps in the wizard are listed on the Configurations tab. The steps in the wizard include the following:
   a. Define a configuration name and select a system for the configuration.
   b. Select configuration functions and options.
   c. Define system preferences.
   d. Create target settings.
   e. Select and edit resources.
3. Build the configuration. The last step of the Configuration wizard lets you build the configuration. If needed, you can edit the configuration and can build the configuration again. Building the configuration closes the wizard and creates a configuration with all your settings.
4. (Optional) Validate the configuration. Validation verifies access to resources that are going to be used when you implement the configuration.

5. Implement the configuration. You implement a configuration to make your deployed software fully functional. Implementation executes on the destination system, applying the variables, resources, and operations that are defined in the configuration.

   CA CSM configures the product.

After the configuration process completes, the product is ready for you to use.

Chapter 4: Installing Your Product Using Pax ESD or DVD

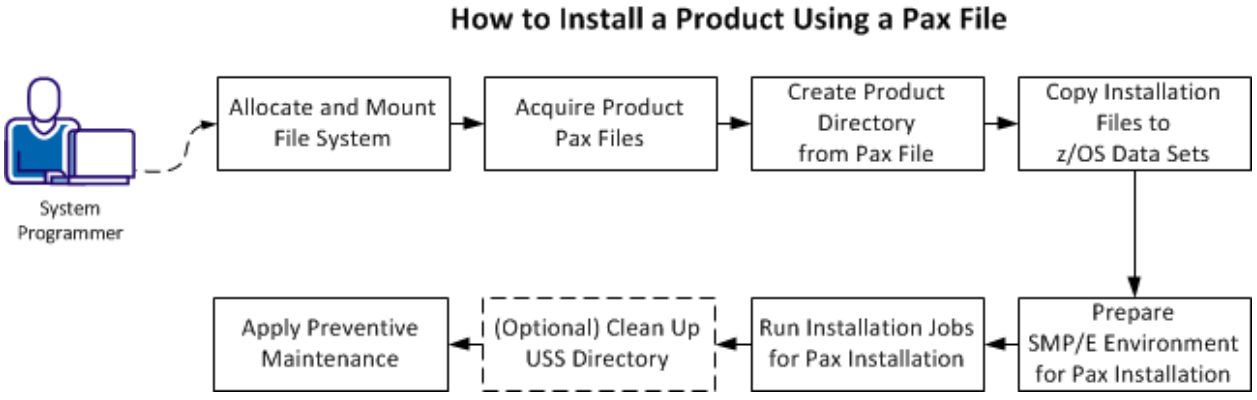
This section contains the following topics:

How to Install Your Product Using a Pax File

As a system programmer, your responsibilities include installing products on your mainframe system. With this option, you acquire a product pax file from http://ca.com/support or from a product DVD.

The DVD contains a folder that includes the pax file for the product. Product updates may have occurred after you acquired the product DVD. The files on the online site always have the most current product updates. To determine if you have the latest updates, go to http://ca.com/support and click Download Center.

You perform the following tasks to install a product with a pax file:



1. Allocate and mount the file system (see page 33).
2. Acquire the product pax files (see page 35).

3. Create a product directory from the pax file (see page 40).
4. Copy the installation files to z/OS data sets (see page 41).
5. Prepare the SMP/E environment for a pax installation (see page 43).
6. Run the installation jobs for a pax installation (see page 45).
7. (Optional) Clean up the USS directory (see page 46).
8. Apply preventive maintenance (see page 47).

USS Environment Setup

You need a UNIX System Services (USS) directory and a file system with adequate space to perform the following tasks:

- Receive product pax files from http://ca.com/support.
- Perform utility functions to unpack the pax file into MVS data sets that you can use to complete the product installation.

We recommend that you allocate and mount a file system that is dedicated to Pax ESD. The amount of space that you need for the file system depends on the following variables:

- The size of the pax files that you intend to download.
- Whether you plan to keep the pax files after unpacking them. We do not recommend this practice.

We recommend that you use one directory for downloading and unpacking pax files. Reusing the same directory minimizes USS setup. You need to complete the USS setup only one time. You reuse the same directory for subsequent downloads. Alternatively, you can create a directory for each pax download.

Important! Downloading pax files for the SMP/E installation as part of the Pax ESD process requires write authority to the UNIX System Services (USS) directories that are used for the Pax ESD process. In the file system that contains the Pax ESD directories, you also need free space approximately 3.5 times the pax file size to download the pax file and unpack its contents. For example, to download and unpack a 14 MB pax file, you need approximately 49 MB of free space in the file system hosting your Pax ESD directory.

Allocate and Mount a File System

The product installation process requires a USS directory to receive the pax file and to perform the unpack steps. We recommend that you allocate and mount a file system that is dedicated to the product acquisition and create the directory in this file system.

You can use the zSeries File System (zFS) or hierarchical file system (HFS) for product downloads.

This procedure describes how to perform the following tasks:

- Allocate a zFS or an HFS.
- Create a mount point in an existing maintenance USS directory of your choice.
- Mount the file system on the newly created mount point.

  Note: You must have either SUPERUSER authority, or the required SAF profile setting to allow you to issue the USS mount command for the file system.
- Optionally, permit write access to anyone in the same group as the person who created the directory.

  Important! USS commands are case-sensitive.

Follow these steps:

1. Allocate the file system by customizing one of the following samples to your site requirements:

   - On a zFS, use the following sample:

```
//DEFINE   EXEC PGM=IDCAMS
//SYSPRINT DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//AMSDUMP  DD   SYSOUT=*
//SYSIN    DD *
  DEFINE CLUSTER ( +
  NAME(your_zFS_data_set_name) +
  STORAGECLASS(class) +
  LINEAR +
  CYL(primary secondary) +
  SHAREOPTIONS(3,3) +
  )
/*
//FORMAT   EXEC PGM=IOEAGFMT,REGION=0M,
// PARM=('-aggregate your_zFS_data_set_name -compat')
//SYSPRINT DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//STDOUT   DD   SYSOUT=*
//STDERR   DD   SYSOUT=*
//CEEDUMP  DD   SYSOUT=*
//*
```

- On an HFS, use the following sample:

```
//ALCHFS EXEC PGM=IEFBR14
//CAPAX  DD   DSN=yourHFS_data_set_name,
//         DISP=(NEW,CATLG,DELETE),UNIT=3390,
//         DSNTYPE=HFS,SPACE=(CYL,(primary,secondary,1))
```

The file system is allocated.

Note: Ensure that the zFS or HFS data set name that you use conforms to your data set naming conventions for USS file systems. If the allocation of the file system data set fails, it is because of environmental settings not allowing for the allocation. On an HFS, try using the ISPF 3.2 Data Set Utility to allocate your HFS data set.

2. Create a mount point for the file system. This example shows how to create a /CA/CAPAX directory in an existing directory, /u/maint. From the TSO OMVS shell, enter the following commands:

```
cd /u/maint/
mkdir CA
cd CA
mkdir CAPAX
```

Note: This document refers to this structure as *yourUSSpaxdirectory*.

The mount point is created.

3. Mount the file system by customizing one of the following samples to your site requirements:

- On a zFS, use the following sample:

```
MOUNT FILESYSTEM('your_zFS_data_set_name')
   MOUNTPOINT('yourUSSpaxdirectory')
   TYPE(ZFS)  MODE(RDWR)
   PARM(AGGRGROW)
```

- On an HFS, use the following sample:

```
MOUNT FILESYSTEM('your_HFS_data_set_name')
   MOUNTPOINT('yourUSSpaxdirectory')
   TYPE(HFS)  MODE(RDWR)
```

The file system is mounted.

4. (Optional) Set security permissions for the directory. You can use the chmod command to let other users access the Pax ESD directory and its files. For example, to allow write access to the Pax ESD directory for other users in your USS group, from the TSO OMVS shell, enter the following command:

```
chmod -R 775 /yourUSSpaxdirectory/
```

Write access is granted.

Note: For more information about the chmod command, see the IBM *z/OS UNIX System Services User Guide* (SA22-7802).

Acquire the Product Pax Files

To begin the CA Technologies product installation procedure, copy the product pax file into the USS directory that you set up.

Important! Downloading pax files for the SMP/E installation as part of the Pax ESD process requires write authority to the UNIX System Services (USS) directories that are used for the Pax ESD process. Also, you must have available USS file space before you start the procedures in this guide.

Use one of the following methods:

- Download the product pax file from http://ca.com/support to your PC (see page 36), and then upload it to your USS file system.

  If you download a zip file, you must unzip it before uploading to your USS file system.
- Download the pax files from http://ca.com/support directly to your USS file system (see page 36).
- Download the pax file from the product DVD to your PC, and then upload the pax files to your USS file system. (see page 39)

This section includes the following information:

- A sample batch job to download a product pax file from the CA Support Online FTP server directly to a USS directory on your z/OS system
- Sample commands to upload a pax file from your PC to a USS directory on your z/OS system

Important! The FTP procedures vary due to local firewall and other security settings. Consult your local network administrators to determine the appropriate FTP procedure to use at your site.

Ensure that sufficient free space is available in the USS file system that you are using to hold the product pax file. If you do not have sufficient free space, error messages similar to the following appear:

```
EZA1490I Error writing to data set
EZA2606W File I/O error 133
```

When the download finishes, the pax file size in your USS directory matches the value in the Size column for the corresponding pax file on the CA Technologies Products Download window.

Download Files to a PC Using Pax ESD

You can download product installation files from http://ca.com/support to your PC.

Follow these steps:

1. Log in to http://ca.com/support, and click Download Center.

   The Download Center web page appears.

2. Under Download Center, select Products from the first drop-down list, and specify the product, release, and gen level (if applicable), and click Go.

   The CA Product Download window appears.

3. Download an entire CA Technologies product software package or individual pax files to your PC. If you download a zip file, you must unzip it before continuing.

   Note: For traditional installation downloads, see the *Traditional ESD User Guide*. For information about download methods, see the Download Methods and Locations article. Go to http://ca.com/support, log in, and click Download Center. Links to the guide and the article appear under the Download Help heading.

Download Using Batch JCL

You download a pax file from http://ca.com/support by running batch JCL on the mainframe. Use the sample JCL attached to the PDF file as CAtoMainframe.txt (see page 38) to perform the download.

Important! The PDF version of this guide includes sample JCL jobs that you can copy directly to the mainframe. To access these jobs, click the paper clip icon at the left of the PDF reader. A window displaying attachments opens. Double-click a file to view a sample JCL. We recommend that you use the latest version of Adobe Reader for viewing PDF files.

Note: We recommend that you follow the preferred download method as described on http://ca.com/support. This JCL procedure is our preferred download method for users who do not use CA CSM. We also include the procedure to download to the mainframe through a PC in the next section.

Follow these steps:

1. Replace *ACCOUNTNO* with a valid JOB statement.
2. Replace *yourTCPIP.PROFILE.dataset* with the name of the TCP/IP profile data set for your system. Consult your local network administrators, if necessary.

   The job points to your profile.

3. Replace *YourEmailAddress* with your email address.

   The job points to your email address.

4. Replace *yourUSSpaxdirectory* with the name of the USS directory that you use for Pax ESD downloads.

   The job points to your USS directory.

5. Locate the product component to download on the CA Support Product Download window.

   You have identified the product component to download.

6. Click Download for the applicable file.

   Note: For multiple downloads, add files to a cart.

   The Download Method window opens.

7. Click FTP Request.

   The Review Download Requests window displays any files that you have requested to download.

   Note: We send you an email when the file is ready to download or a link appears in this window when the file is available.

8. Select one of the following methods:

   Preferred FTP

   Uses CA Technologies worldwide content delivery network (CDN). If you cannot download using this method, review the security restrictions for servers that company employees can download from that are outside your corporate network.

   Host Name: ftp://ftpdownloads.ca.com

   Alternate FTP

   Uses the original download servers that are based on Long Island, New York.

   Host Name: ftp://scftpd.ca.com for product files and download cart files and ftp://ftp.ca.com for individual solution files.

   Both methods display the host, user name, password, and FTP location, which you then can copy into the sample JCL.

   Note: The following links provide details regarding FTP: the FTP Help document link in the Review Download Requests window and the Learn More link available in the Download Methods window.

9. Submit the job.

   Important! If your FTP commands are incorrect, it is possible for this job to fail and still return a zero condition code. Read the messages in the job DDNAME SYSPRINT to verify the FTP succeeded.

   After you run the JCL job, the pax file resides in the mainframe USS directory that you supplied.

Example: CAtoMainframe.txt, JCL

The following text appears in the attached CAtoMainframe.txt JCL file:

```
//GETPAX   JOB (ACCOUNTNO),'FTP GET PAX ESD PACKAGE',
//         MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
//*********************************************************************
//* This sample job can be used to download a pax file directly from  *
//* CA Support Online to a USS directory on your z/OS system.         *
//*                                                                   *
//* When editing the JCL ensure that you do not have sequence numbers *
//* turned on.                                                        *
//*                                                                   *
//* This job must be customized as follows:                           *
//* 1. Supply a valid JOB statement.                                  *
//* 2. The SYSTCPD and SYSFTPD JCL DD statements in this JCL may be   *
//*    optional at your site. Remove the statements that are not      *
//*    required. For the required statements, update the data set     *
//*    names with the correct site-specific data set names.           *
//* 3. Replace "Host" based on the type of download method.           *
//* 4. Replace "YourEmailAddress" with your email address.           *
//* 5. Replace "yourUSSpaxdirectory" with the name of the USS         *
//*    directory used on your system for Pax ESD downloads.           *
//* 6. Replace "FTP Location" with the complete path                  *
//*    and name of the pax file obtained from the FTP location        *
//*    of the product download page.                                  *
//*********************************************************************
//GETPAX   EXEC PGM=FTP,PARM='(EXIT TIMEOUT 120',REGION=0M
//SYSTCPD  DD   DSN=yourTCPIP.PROFILE.dataset,DISP=SHR
//SYSFTPD  DD   DSN=yourFTP.DATA.dataset,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//OUTPUT   DD   SYSOUT=*
//INPUT    DD   *
Host
anonymous YourEmailAddress
lcd yourUSSpaxdirectory
binary
get FTP_location
quit
/*
```

Download Files to Mainframe through a PC

You download the product installation files to your PC and transfer them to your USS system.

Follow these steps:

1. Download the product file to your PC using one of the following methods:

   - Pax ESD (see page 36). If you downloaded a zip file, first unzip the file to use the product pax files.
   - DVD. Copy the entire product software package (or individual pax files) to your PC.

   The pax file resides on your PC.

   Note: Do *not* change the format of the pax.Z.

2. Open a Windows command prompt.

   The command prompt appears.

3. Customize and enter the following FTP commands:

   FTP *mainframe*
   userid
   password
   bin
   lcd C:*PC\folder\for\thePAXfile*
   cd */yourUSSpaxdirectory/*
   put *paxfile*.pax.Z
   quit
   exit

   mainframe

   Specifies the z/OS system IP address or DNS name.

   userid

   Specifies your z/OS user ID.

   password

   Specifies your z/OS password.

   C:*PC\folder\for\thePAXfile*

   Specifies the location of the pax file on your PC.

   Note: If you specify a location that has blanks or special characters in the path name, enclose that value in double quotation marks.

yourUSSpaxdirectory

Specifies the name of the USS directory that you use for Pax ESD downloads.

***paxfile*.pax.Z**

Specifies the name of the pax file to upload.

The pax file is transferred to the mainframe.

Create a Product Directory from the Pax File

The pax command performs the following actions:

- Extracts the files and directories that are packaged within the pax file.
- Creates a USS directory in the same directory structure where the pax file resides.
- Automatically generates a product and level-specific directory name.

Set the current working directory to the directory containing the pax file, and create a directory in your USS directory by entering the following command:

pax -rvf *pax-filename*

Use the sample JCL that is attached to the PDF file as Unpackage.txt (see page 41) to extract the product pax file into a product installation directory.

Important! The PDF version of this guide includes sample JCL jobs that you can copy directly to the mainframe. To access these jobs, click the paper clip icon at the left of the PDF reader. A window displaying attachments opens. Double-click a file to view a sample JCL. We recommend that you use the latest version of Adobe Reader for viewing PDF files.

Follow these steps:

1. Replace *ACCOUNTNO* with a valid JOB statement.
2. Replace *yourUSSpaxdirectory* with the name of the USS directory that you use for product downloads.

   The job points to your specific directory.
3. Replace *paxfile.pax.Z* with the name of the pax file.

   The job points to your specific pax file.
4. Submit the job.

   The job creates the product directory.

Note: If the PARM= statement exceeds 71 characters, uncomment and use the second form of UNPAXDIR instead. This sample job uses an X in column 72 to continue the PARM= parameters to a second line.

Example: JCL File, Unpackage.txt, to Customize

The following text appears in the attached Unpackage.txt JCL file:

```
//ESDUNPAX JOB (ACCOUNTNO),'UNPAX PAX ESD PACKAGE',
// MSGCLASS=X,CLASS=A,NOTIFY=&SYSUID
//*********************************************************************
//* This sample job can be used to invoke the pax command to create   *
//* the product-specific installation directory.                      *
//*                                                                   *
//* This job must be customized as follows:                           *
//* 1. Supply a valid JOB statement.                                  *
//* 2. Replace "yourUSSpaxdirectory" with the name of the USS         *
//*    directory used on your system for Pax ESD downloads.           *
//* 3. Replace "paxfile.pax.Z" with the name of the pax file.         *
//* NOTE: If you continue the PARM= statement on a second line,       *
//*       start entering characters in column 16 and make sure        *
//*       the 'X' continuation character is in column 72.             *
//*********************************************************************
//UNPAXDIR EXEC PGM=BPXBATCH,
// PARM='sh cd /yourUSSpaxdirectory/; pax -rvf paxfile.pax.Z'
//*UNPAXDIR EXEC PGM=BPXBATCH,
//* PARM='sh cd /yourUSSpaxdirectory/; pax                          X
//*           -rvf paxfile.pax.Z'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
```

Copy Installation Files to z/OS Data Sets

Use this procedure to invoke the SMP/E GIMUNZIP utility to create MVS data sets from the files in the product-specific directory.

The file UNZIPJCL in the product directory contains a sample job to GIMUNZIP the installation package. You edit and submit the UNZIPJCL job to create z/OS data sets.

Follow these steps:

1. Locate and read the product readme file or installation notes, if applicable, which resides in the product-specific directory that the pax command created. This file contains the product-specific details that you require to complete the installation procedure.

   You have identified the product-specific installation details.

2. Use ISPF EDIT or TSO ISHELL to edit the UNZIPJCL sample job. You can perform this step in one of the following ways:

   - Use ISPF EDIT. Specify the full path name of the UNZIPJCL file.
   - Use TSO ISHELL. Navigate to the UNZIPJCL file and use the E line command to edit the file.

   The job is edited.

3. Change the SMPDIR DD PATH to the product-specific directory created by the pax command.

   Your view is of the product-specific directory.

4. If ICSF is not active, perform the following steps:

   a. Change the SMPJHOME DD PATH to your Java runtime directory. This directory varies from system to system.

   b. Perform one of the following steps:

      - Change the SMPCPATH DD PATH to your SMP/E Java application classes directory, typically /usr/lpp/smp/classes/.
      - Change HASH=YES to HASH=NO on the GIMUNZIP parameter.

   One of the following occurs: ICSF is active or you are using Java.

5. Change all occurrences of y*ourHLQ* to the high-level qualifier (HLQ) for z/OS data sets that the installation process uses. We suggest that you use a unique HLQ for each expanded pax file to identify uniquely the package. Do *not* remove CAI after *yourHLQ*. Do *not* use the same value for y*ourHLQ* as you use for the SMP/E RELFILEs.

   All occurrences of y*ourHLQ* are set to your high-level qualifier for z/OS data sets.

6. Submit the UNZIPJCL job.

   The UNZIPJCL job completes with a zero return code. Messages GIM69158I and GIM48101I in the output and IKJ56228I in the JES log are acceptable.

   GIMUNZIP creates z/OS data sets with the high-level qualifier that you specified in the UNZIPJCL job. You use these data sets to perform the product installation. The pax file and product-specific directory are no longer needed.

   Note: For more information, see the IBM *SMP/E for z/OS Reference (SA22-7772)*.

Prepare the SMP/E Environment for a Pax Installation

The following steps describe the process to install products using native SMP/E JCL:

1. Download external HOLDDATA.
2. Allocate product data sets and SMP/E data sets.
3. Create an SMP/E environment.
4. Receive base functions and HOLDDATA.
5. Download and RECEIVE PTFs from http://ca.com/support.
6. Run an SMP/E APPLY CHECK operation.
7. Apply base functions using SELECT GROUPEXTEND.
8. Run an SMP/E ACCEPT CHECK operation.
9. Accept base functions using SELECT GROUPEXTEND.
10. Configure the product according to your site requirements.

Note: Steps 1 through 3 of this process are documented in detail in this section. Steps 4 through 9 are documented in the section describing how to run installation jobs for a Pax installation. If applicable to your product, Step 10 is documented in the section describing starting your product.

The members that are used in this procedure prepare the data sets, initialize the zones, and create the DDDEFs for your product.

Establishing a hierarchical file system (HFS) may be required as part of the product installation or required as a feature of the product.

For information about the members, see the comments in the JCL.

Follow these steps:

1. Customize the macro ASFSEDIT with your site-specific information and then copy the macro to your SYSPROC location. Replace the rightmost parameters for each ISREDIT CHANGE command. Each time you edit an installation member, type ASFSEDIT on the command line, and press Enter to replace the defaults with your specifications.

   The macro is ready to customize the *yourHLQ*.SAMPJCL members.

   Note: Set the DASD HLQ to the same value specified for *yourHLQ* within the JCL that is used to unzip the pax file.

   Note: The following steps include instructions to execute the ASFSEDIT macro each time you open a new SAMPJCL member. To edit all SAMPJCL members simultaneously, read and follow the instructions in the ASFAREAD member, and submit the ASFEDALL member.

2. Open the SAMPJCL member ASF1HOLD in an edit session and execute the ASFSEDIT macro from the command line.

   ASF1HOLD is customized.

3. Submit ASF1HOLD.

   This job downloads the error and FIXCAT HOLDDATA from http://ca.com/support.

4. Open the SAMPJCL member ASF2ALL in an edit session and execute the ASFSEDIT macro from the command line.

   ASF2ALL is customized.

5. Submit ASF2ALL.

   This job produces the following results:

   - The target and distribution data sets for your product are created.
   - Unique SMPLTS, SMPMTS, SMPSCDS, and SMPSTS data sets for this target zone are created.

6. If your product requires a USS file system or if you want to install a feature of the product that requires a USS file system, allocate and mount the file system:

   Note: You can customize the supplied HFS JCL to zFS, if your site requires it.

   a. Open the SAMPJCL member *ccc2*ALLU in an edit session and execute the ASFSEDIT macro from the command line.

      Note: All instances of *ccc* in this section indicate a three-character component code based on the FMID.

      *ccc2*ALLU is customized.

   b. Submit *ccc2*ALLU.

      This job allocates your HFS or zFS data sets.

   c. Open the SAMPJCL member *ccc3*MKD in an edit session and execute the ASFSEDIT macro from the command line.

      *ccc3*MKD is customized.

   d. Submit *ccc3*MKD.

      This job creates all directories and mounts the file system.

7. Open the SAMPJCL member ASF3CSI in an edit session and execute the ASFSEDIT macro from the command line.

   ASF3CSI is customized.

8. Submit ASF3CSI.

   This job produces the following results:

   - The CSI data set is defined.
   - The SMPPTS and SMPLOG data sets are allocated.

- The global, target, and distribution zones are initialized.
- The DDDEF entries for your product are created.
- The DDDEFs for the required SMP/E data sets are created.

9. If your product requires HFS or if you want to install a feature of the product that requires HFS, add the DDDEFS that are required for the file system to your SMP/E environment:

   a. Open the SAMPJCL member *ccc*3CSIU in an edit session and execute the ASFSEDIT macro from the command line.

      *ccc*3CSIU is customized.

   b. Submit *ccc*3CSIU.

      This job customizes the CSI by adding the DDDEFs associated with the directory.

Run the Installation Jobs for a Pax Installation

Submit and run these SAMPJCL members in sequence. Do not proceed with any job until the previous job has completed successfully.

Note: The following steps include instructions to execute the ASFSEDIT macro each time you open a new SAMPJCL member. To edit all SAMPJCL members simultaneously, read and follow the instructions in the ASFAREAD member, and submit the ASFEDALL member.

Follow these steps:

1. Open the SAMPJCL member ASF4RECD in an edit session, and execute the ASFSEDIT macro from the command line.

   ASF4RECD is customized.

2. Submit ASF4RECD to receive SMP/E base functions and error HOLDDATA.

   Your product is received and now resides in the global zone.

3. If an FMID was placed in error, download and receive PTFs (see page 47) from http://ca.com/support.

4. Open the SAMPJCL member ASF5APP in an edit session, and execute the ASFSEDIT macro from the command line.

   ASF5APP is customized.

5. Submit ASF5APP to apply SMP/E base functions with the CHECK option. If you find unresolved hold errors, we recommend that you note these errors and verify that resolving PTFs are applied before implementing products in production. Update the JCL to BYPASS the unresolved hold error IDs. After successful completion, rerun APPLY with the CHECK option removed.

   Your product is applied and now resides in the target libraries.

6. Open the SAMPJCL member ASF6ACC in an edit session, and execute the ASFSEDIT macro from the command line.

   ASF6ACC is customized.

7. Submit ASF6ACC to accept SMP/E base functions with the CHECK option. After successful completion, rerun APPLY with the CHECK option removed.

   Your product is accepted and now resides in the distribution libraries.

Clean Up the USS Directory

This procedure is optional. If you decide to perform the procedure, do so after you complete the installation process and when you do not need the installation files anymore.

To free file system disk space for subsequent downloads after downloading and processing the pax files for your CA Technologies product, we recommend removing the files from your USS directory and deleting unnecessary MVS data sets. You can delete the following items:

- Pax file
- Product-specific directory that the pax command created and all of the files in it
- SMP/E RELFILEs, SMPMCS, and HOLDDATA MVS data sets

  These data sets have the HLQ that you assigned in the UNZIPJCL job.

Note: Retain non-SMP/E installation data sets such as *yourHLQ*.INSTALL.NOTES for future reference.

Follow these steps:

1. Navigate to your Pax ESD USS directory.

   Your view is of the applicable USS directory.

2. Delete the pax file by entering the following command:

   rm *paxfile*

   paxfile

   Specifies the name of the CA Technologies pax file that you downloaded.

   The pax file is deleted.

3. Delete the product-specific directory by entering the following command:

   rm -r *product-specific_directory*

   product-specific_directory

   Specifies the product-specific directory that the pax command created.

   The product-specific directory is deleted.

Note: You can also use TSO ISHELL to navigate to the pax file and product-specific directory, and delete them using the D line command.

Apply Preventive Maintenance

Important! We strongly recommend that you use CA CSM to maintain your CA Technologies z/OS-based products. The procedure that is discussed in this section is fully automated when you use CA CSM.

CA Support Online at http://ca.com/support has maintenance and HOLDDATA published since the installation data was created. After the maintenance process completes, the product is ready to deploy.

Use this procedure during product installation and for ongoing preventive maintenance in non-installation use cases according to your maintenance strategy.

Note: To review the CA Technologies mainframe maintenance philosophy, see your *Best Practices Guide* or visit the CA Next-Generation Mainframe Management page.

This procedure directs you to use the CAUNZIP utility. The CAUNZIP utility processes ZIP packages directly on z/OS without the need for an intermediate platform, such as a Microsoft Windows workstation. If you are not familiar with this utility, see the *CA Common Services for z/OS Administration Guide*. This guide includes an overview and sample batch jobs. To use this utility, you must be running CA Common Services for z/OS Version 14.0 with PTF RO54887 or CA Common Services for z/OS Release 14.1 with PTF RO54635 and RO58216. These PTFs are included in CA Common Services for z/OS Release 14.1 at the S1401 Service Update level.

Follow these steps:

1. Check the Download Center at http://ca.com/support for PTFs that have been published since this release was created. If the base release was created recently, no PTFs will have been published yet. If PTFs exist, add published solutions for your product to your Download Cart, and click Checkout.
2. Specify that you want a complete package.

   When processing completes, a link appears on the Review Download Requests page. You also receive an email notification.

3. Click the Alternate FTP link for your order to obtain FTP login information and the ZIP file location. Download the ZIP file into a USS directory on your z/OS system.
4. Run the CAUNZIP utility.

   CAUNZIP unzips the package of published solutions and creates a SMPNTS file structure that the SMP/E RECEIVE FROMNTS command can process. For sample JCL to run the utility that is located in *yourHLQ*.CAW0JCL(CAUNZIP), see the *CA Common Services for z/OS CAUNZIP Administration Guide*. After execution completes, the ZIPRPT data set contains the summary report. The summary report does the following:

   - Summarizes the content of the product order ZIP file.
   - Details the content of each data set and the z/OS UNIX files produced.
   - Provides a sample job to receive the PTFs in your order.
5. Review the sample job that is provided in the CAUNZIP output ZIPRPT file. Cut and paste the JCL into a data set, specify your SMP/E CSI on the SMPCSI DD statement and submit the job to receive the PTFs in your order.
6. Verify that you have the values from the base installation in the ASFSEDIT macro that was customized in the installation steps.
7. Open the SAMPJCL member ASF1HOLD in an edit session and execute the ASFSEDIT macro from the command line.

   Note: Update ASF1HOLD SAMPJCL to download the HOLDDATA file.

   ASF1HOLD is customized.
8. Submit ASF1HOLD.

   The job downloads the external HOLDDATA file.
9. Open the SAMPJCL member ASF7RECH in an edit session and execute the ASFSEDIT macro from the command line.

   ASF7RECH is customized.
10. Submit ASF7RECH.

    The job receives the external HOLDDATA file.

11. (CA Recommended Service (CA RS)) installation only) Do the following:
    a. Determine which ASSIGN statements to download.
        - The yearly CA RS ASSIGN statements are stored in the following file:

          ftp.ca.com/pub/ASSIGN/YEARLY/CAR*yyyy*.TXT
        - The quarterly CA RS ASSIGN statements are stored in the following file:

          ftp.ca.com/pub/ASSIGN/CAR*yymm*.TXT

    b. Open the SAMPJCL member ASF7CARS in an edit session, update ASF7CARS SAMPJCL to download ASSIGN statements from http://ca.com/support, and execute the ASFSEDIT macro from the command line.

    ASF7CARS is customized.
12. (CA RS installation only) Submit ASF7CARS.

    The job downloads the CA RS ASSIGN statements.
13. (CA RS installation only) Open the SAMPJCL member ASF7RECP in an edit session, manually add the data set that contains the ASSIGN statements to the SMPPTFIN DD, and execute the ASFSEDIT macro from the command line.

    ASF7RECP is customized.
14. (CA RS installation only) Submit ASF7RECP.

    The job receives the external HOLDDATA file and CA RS ASSIGN statements.
15. Open the SAMPJCL member ASF8APYP in an edit session and execute the ASFSEDIT macro from the command line.

    ASF8APYP is customized.
16. Submit ASF8APYP.

    The PTFs are applied.
17. (Optional) Open the SAMPJCL member ASF9ACCP in an edit session and execute the ASFSEDIT macro from the command line.

    ASF9ACCP is customized.
18. (Optional) Submit ASF9ACCP.

    The PTFs are accepted.

    Note: You do not have to submit the job at this time. You can accept the PTFs according to your site policy.

HOLDDATA

When you apply maintenance, you typically encounter SMP/E HOLDDATA. We use HOLDDATA to notify your SMP/E system of SYSMODs that have errors or special conditions. We support system and external HOLDDATA.

System HOLDDATA

System HOLDDATA indicates data that is an in-stream part of the SYSMOD, informing you of special conditions. The following reasons are used with SYSTEM HOLDDATA for your product:

ACTION

Indicates that you must perform special processing before or after you apply this SYSMOD.

AO

Affects automated operations. It changes either the message identifier or the displacement of a field inside the message.

DDDEF

Indicates that data sets and DDDEFs are being added or modified.

DELETE

Deletes the SYSMOD load module. You cannot reverse this type of SYSMOD with the SMP/E RESTORE command.

DEP

Indicates a dependency for this SYSMOD that you must externally verify.

DOC

Indicates a documentation change with this SYSMOD.

DYNACT

Describes the steps to dynamically activate this fix without performing an IPL.

ENH

Introduces a small programming enhancement. The hold contains the instructions to implement the enhancement. If no action is needed to implement the enhancement, give a summary of the enhancement.

EXIT

Indicates that changes delivered by this SYSMOD require reassembly of user exits.

EXRF

Indicates that the SYSMOD must be installed in both the Active and Alternate Extended Recovery Facility Systems.

MSGSKEL

Indicates that the SYSMOD contains internationalized message versions that must be run through the message compiler for each language.

MULTSYS

Apply this SYSMOD to multiple systems for either pre-conditioning, coexistence, or exploitation.

Code a BYPASS(HOLDSYS) operand on your APPLY command to install SYSMODs that have internal holds. Code the BYPASS(HOLDSYS) operand only after you have performed the required action, or if you are performing the action after the APPLY, if that is appropriate.

External HOLDDATA

External HOLDDATA is not part of the PTF. The HOLDDATA resides in a separate file and contains both error and FIXCAT HOLDDATA. The error HOLDDATA is used for SYSMODs that have been distributed and later are discovered to cause problems. The FIXCAT HOLDDATA helps identify maintenance that is required to support a particular hardware device, software, or function.

Download the external HOLDDATA from http://ca.com/support to a DASD file, and allocate the file to the SMPHOLD DD statement. To take care of the external HOLDDATA, receive it into your SMP/E environment. SMP/E receives the HOLDDATA from CA-supplied jobs.

You can find JCL to download the external HOLDDATA in your SAMPJCL member. Open ASF1HOLD in an edit session and execute the ASFSEDIT macro on the command line. Then, submit the JCL.

Error HOLDDATA

If a SYSMOD has unresolved error HOLDDATA, SMP/E does not install it unless you add a bypass to your APPLY command. You can bypass error HOLDDATA in situations that are not applicable to you. Error HOLDDATA that is not applicable to you can include a problem that happens only with a hardware device that you do not have or in a product feature that you do not use.

When CA Technologies publishes a SYSMOD that resolves the error HOLDDATA, the resolving SYSMOD supersedes the error HOLDDATA. This action lets you apply the original SYSMOD in conjunction with the fixing SYSMOD.

The only manual task is running a REPORT ERRSYSMODS. This report identifies the following:

- Any held SYSMODs already applied to your system
- Any resolving SYSMODs that are in RECEIVE status

SMP/E identifies the SYSMOD to apply to correct the situation.

FIXCAT HOLDDATA

CA Technologies provides FIXCAT HOLDDATA to help identify maintenance that is required to support a particular hardware device, software, or function. Fix categories are supplied as SMP/E FIXCAT HOLDDATA statements. Each FIXCAT HOLDDATA statement associates an APAR and its related fixing PTF to one or more fix categories.

Chapter 5: Starting Your Product

This section contains the following topics:

Introduction

How to Prepare for Deployment

Important! It is not necessary to deploy this product if the intention is to run the product from the target libraries.

This section contains topics that describe the manual tasks you need to perform before beginning the deployment process.

Apply IBM APARs

For our customers running on IBM z/OS 1.12 or 1.13 that are recording SMF Data to logstreams, we recommend that customers apply IBM APAR OA41156. This APR adds the SOFTINFLATE Directive to the IBM SMF logstream utility IFASMFDL, which this product uses.

Note: For a current list of IBM APARs, contact CA Support.

How to Complete Deployment With CA CSM

The topics in this section describe the manual tasks that you perform when deploying your product using CA CSM (see page 27).

How to Deploy Without CA CSM

The topics in this section describe the manual tasks that you perform if you are not deploying your product using CA CSM.

Deploy without CA CSM

The application does not require any additional procedures when deploying this product without CA CSM. However, you will need to follow the procedures in How to Configure Without CA CSM (see page 60) before starting the product.

Note: It is not required to deploy the product at all, CA SMF Director can be run directly from the Target Libraries.

How to Complete Configuration With CA CSM

The topics in this section describe the manual tasks that you perform when configuring your product using CA CSM (see page 28).

Set Up the Online Interface (Optional)

An online ISPF interface lets you view information in the SCDS. For more information about this interface, see the *CA SMF Director User Guide.*

To set up the online interface, customize CASFEXEC(SMFDOL) so that the 'prefix' variable points to the high-level qualifier of the target libraries.

To bring up the online interface, run the SMFDOL EXEC under ISPF. The EXEC allocates the required libraries automatically.

We recommend that you copy the SMFDOL EXEC to any convenient library in your SYSPROC or SYSEXEC TSO allocation. This procedure allows you to start it as a TSO command from any ISPF panel. You can also modify the ISPF primary panel (or some other menu panel) by assigning 'CMD(%SMFDOL)' to the &ZSEL. variable in the)PROC section.

Set Up Automatic Dump Processing

Enabling Automatic Dump Processing for Traditional MAN File Recording

This product uses the CA Common Services for z/OS program CAIRIM to install its own copy of CA SMF Director exit IEFU29. This exit receives control when an SMF SYSx.MANx file is full or when the file was switched. The IEFU29 exit is designed to issue a z/OS START command for the procedure CASFDUMP, which executes CA SMF Director to dump and clear the SMF files.

To activate this facility, the following control statement must be added to the CARIMPRM member pointed to by the CAS9 procedure that executes CAIRIM:

```
PRODUCT(CA-SMF AUTODUMP) VERSION(SFC7) INIT(SMFINIT) PARM(ENABLE)
```

A sample of this statement is provided in the member CASFRIMP in the CASFPARM library.

Note: To provide a user exit to alter the START command issued to initiate the dump process, indicate it in the PARM operand by providing the MX subparameter. See the *CA SMF Director Systems Programmers Guide* for more information on coding and activating the user exit.

Enabling Automatic Dump Processing for Logstream Recording

This product uses the CA Common Services for z/OS program CAIRIM to install its own copy of SMF exit IEFU29L. This exit receives control when a SWITCH SMF (or I SMF) command is issued. The IEFU29L exit is designed to issue a z/OS START command for the CASFDUML procedure, once for each logstream that is actively recording SMF data. The CASFDUML procedure executes the CA SMF Director logstream interface program, which invokes CA SMF Director to archive the records from the logstream.

To activate this facility, the following control statement must be added to the CARIMPRM member pointed to by the CAS9 procedure that executes CAIRIM:

```
PRODUCT(CA-SMF AUTODUMP) VERSION(SFC7) INIT(SMFINIT) PARM(ENABLELS)
```

Note: This form of the statement is not included in the CASFRIMP member in the CASFPARM library.

Note: To provide a user exit to alter the START command issued to initiate the dump process, indicate it in the PARM operand by providing the LX subparameter. See the *CA SMF Director Systems Programmers Guide* for more information on coding and activating the user exit.

Disabling Automatic Dump Processing

Change the keyword ENABLE or ENABLELS to DISABLE in the control statement (see page 55) and rerun CAIRIM. To permanently disable this feature, remove the control statement (see page 55) from the CARIMPRM member.

Registering Logstream Dump Process Exits

Skip this procedure, if you are not using the SMF logstream recording. However if you are planning to use it in the future, you can perform this step now. The SMF logstream recording has no impact on your operation. When you convert to the SMF logstream recording, the logstream dump process exits are already registered.

When using the SMF logstream recording with a level of z/OS that supports the SMFDLEXIT parameter in the SMFPRMxx member of PARMLIB, this procedure must be completed.

Note: SMFDLEXIT was added to z/OS 1.9 through 1.11 with a PTF and is built into z/OS 1.12 and higher.

CA SMF Director uses the IBM utility IFASMFDL to dump data from the SMF logstream. For this procedure, these three user exits controls how IFASMFDL obtains the data for this product:

Exit Point	CA SMF Director Exit Name
USER1	SMFDLX1
USER2	SMFDLX2
USER3	SMFDLX3

In order for these exits to be called, they must be registered with SMF in the SMFDLEXIT statement in the SMFPRMxx member that is active. Code this statement:

```
SMFDLEXIT (USER1(SMFDLX1),USER2(SMFDLX2),USER3(SMFDLX3))
```

If more user exits for IFASMFDL are needed, they can be added to the USER1, USER2, and USER3 operands as needed. For example, if your site has another IFASMFDL user exit 2 named UX2TEST, it can be coded like this example:

```
SMFDLEXIT (USER1(SMFDLX1),USER2(SMFDLX2,UX2TEST),USER3(SMFDLX3))
```

For more information on the SMFDLEXIT parameter, see the IBM *MVS Initialization and Tuning Reference* guide.

Tailor the JCL Procedures

The CASFPROC target library contains all the procedures relevant to this product. These procedures were placed here during SMP APPLY processing.

To conform to your installation standards and the previously completed worksheet, edit each JCL procedure. The optional JCL modifications are discussed individually.

After these modifications are completed, copy these procedures into your PROCLIB, or the CA Common Procedure library can be added to the system PROCLIB concatenations.

The following procedures are supplied with this product:

- CASFDUML dumps SMF data from logstreams.
- CASFDUMP dumps the SMF SYSx.MANx files.
- CASFXSMF extracts SMF data.

Note: All CA SMF Director procedures begin with CASF.

Further modifications to the CASFDUMP and CASFDUML procedures are discussed in Modify and Copy Dump Procedure (see page 57).

Modify and Copy Dump Procedure (Optional)

Modifying the SYSx.MANx Dump Procedure CASFDUMP

CA SMF Director provides a JCL procedure that is automatically executed whenever the MAN files are switched under z/OS.

Procedure CASFDUMP uses this product to dump the SMF MAN files. If you use this feature and you want to change the task name, edit the SMFIDTBL member in the CASFSRC target library. Replace the CASFDUMP constant in the source code with the new task name. In a later step, this task starts the dumping of the appropriate MAN files.

Edit the sample JCL member SMFIDTBJ, to conform to your installation standards, and submit the job.

For the dump procedure name to take effect, when the automatic SMF dumping feature is active:

Follow these steps:

1. Deactivate the automatic dump feature. Accomplished by rerunning the CA Common Services for z/OS program CAIRIM with this control statement:

   PRODUCT(CA-SMF AUTODUMP) VERSION(SFC7) INIT(SMFINIT) PARM(DISABLE)

2. If your CASFLOAD target library is in the link list, perform a Linklist Look Aside refresh. Issue this command from the operator console:

   F LLA,REFRESH

   If your CASFLOAD target library is not in the system link list, the SMFIDTBL program that you assembled and linked must be copied to a data set in the system link list. Once the program is copied to a link list data set, perform a Linklist Look Aside refresh with the same command.

3. Reactivate the automatic dump feature. Rerun the CA Common Services for z/OS procedure CAS9, which executes the program CAIRIM, with the control statement:

   PRODUCT(CA-SMF AUTODUMP) VERSION(SFC7) INIT(SMFINIT) PARM(ENABLE,MX=*name*)

   Where the *name* is the name of your exit. For example, the name is SMFIDTBL if you have not renamed the sample exit.

Modifying the Logstream Dump Procedure CASFDUML

This product provides a JCL procedure that is automatically executed when a switch command is issued for the logstreams. Procedure CASFDUML uses the CA SMF Director logstream interface as well as CA SMF Director to archive SMF data that has been recorded to the logstreams. This product keeps an inventory on a logstream basis by SMF ID.

To change the started task name or to limit which of the SMF logstreams are managed, modify the user exit SMFLSTBL. A sample skeleton exit is provided in the sample library. Sample JCL to assemble and link this exit are provided in the sample library.

The default action for automatic dumping is to start the CASFDUML procedure for all logstreams that are actively recording SMF data. When using the default setting for CASFDUML, when the SWITCH SMF command is issued, no action is needed with SMFLSTBL.

Do this procedure if other than the default setting for CASFDUML is used.

Follow these steps:

1. Make any necessary changes to the SMFLSTBL sample program as needed by your data center. For more information about the SMFLSTBL user exit, see the *CA SMF Director Systems Programmer Guide*.
2. Modify the sample JCL member LSTBLAL to your data center standards, submit it to assemble the SMFLSTBL exit, and link it.
3. If your CASFLOAD target library is in the link list, perform a Linklist Look Aside refresh. Issue this command from the operator console:

   F LLA,REFRESH

   If your CASFLOAD target library is not in the system link list, the SMFLSTBL program that you assembled and linked must be copied to a data set in the system link list. Once the program is copied to a link list data set, perform a Linklist Look Aside refresh with the same command.
4. Disable the automatic dumping exit intercept by running the CAS9 procedure with this statement:

   PRODUCT(CA-SMF AUTODUMP) VERSION(SFC7) INIT(SMFINIT) PARM(DISABLE)
5. To re-enable the intercept, run the CAS9 procedure again with this statement:

   PRODUCT(CA-SMF AUTODUMP) VERSION(SFC7) INIT(SMFINIT) PARM(ENABLELS,LX=*name*)

   Where the *name* is the name of your exit. For example, the name is SMFLSTBL if you have not renamed the sample exit.

Review the Checklist

1. Complete *one* of these substeps.
   a. Copy the CASFDUMP and CASFDUML procedures into your System Procedure library.
   b. Include the CASFPROC target procedure library in the PROC00 concatenation in the JES2/JES3 Startup JCL.
2. If you have upgraded from a previous release, we recommend that you use the DYNAM Option to allocate dynamically the SMF history files. This option eliminates the need for the HISTORY1 and HISTORY2 DD Statements in the CASFDUMP procedure. The HISTORY1 and HISTORY2 DD Statements can be used for further tuning of the history files. Use this statement when the operands OPTIONS or DUMPOPTIONS are not sufficient, or you want to override these operands. For more information, see *the CA SMF Director User Guide fo*r an explanation of how to activate this facility.

- If automatic dumping of z/OS SMF data sets is used, the CA Common Services for z/OS procedure CAS9 executes CAIRIM, must contain the parameter that is generated in the Modify and Copy Dump Procedure (see page 57). Automatic dumping does not start until the CAS9 procedure is started.

3. If the automatic dumping of z/OS SMF data sets is used, check the following procedures:
   - If your site is using a security product such as CA Top Secret, CA ACF2 for z/OS, or IBM RACF, define the resources that are stated in the Secure Functions (see page 16) to allow CA SMF Director functions. The userid that is assigned to the CASFDUMP procedure must allow access to resources CMD.DUMP and PRM.DUMP. If other functions are performed within the CASFDUMP procedure such as BACKUP, the userid must allow access to that function as well. In addition, the userid must allow CREATE access for the history files.
   - CA SMF Director must run as an authorized program, in an authorized Library, when dumping SMF data sets.
4. If Release 1.5 or lower was installed, remove this release from the system runs CA SMF Director. Verify that you have migrated your SCDS to the current release because this product cannot use an SCDS file from a previous release.
5. If CA Auditor for z/OS is installed, and this product load library is not in the system link list. Copy the load module CAIXASF$ from the CA SMF Director load library to the link library identified in the worksheet (see page 79) you prepared.

   If the load library is in the system link list, perform a link-list look-aside refresh in order for CA Auditor for z/OS to pick up the information about this product. Issue the following command on the z/OS console:

   ```
   F LLA,REFRESH
   ```

Save Configuration Materials

Be sure to save all of your configuration materials and all output from the configuration process. This material is essential for timely and accurate CA maintenance and support of the product.

How to Configure Without CA CSM

The topics in this section describe the manual tasks you perform if you are not configuring your product using CA CSM.

Allocate the Control Data Set (SCDS)

For a first-time CA SMF Director installation, use the JCL member CASFJCL(CASFNCDS) to allocate the control data set. For more information on how to define a system configuration, see the *CA SMF Director User Guide* on.

- When upgrading from a previous release of CA SMF Director do the following process using member CASFJCL(CASFSCNV):
- Back up the existing SCDS file using the previous version load library.
- Allocate an SCDS for the new release.
- Restore the SCDS file using the backup file using the new version load library.

This process converts the old SCDS records to the format used by the new release.

After editing the supplied JCL and adjusting the space (see page 16) value for the SCDS data set, submit the job.

Customize the Product

Note: You may also use the SCS component of CA CSM to customize the product by adding system (see page 66) and stream (see page 73) definitions to the SCDS. If you want to do that, skip this procedure.

You can tailor CA SMF Director to your environment. If this installation is **not** an upgrade from a previous release, you can create a batch job to define the customized configuration of your system complex to CA SMF Director. For more information, see the *CA SMF Director User Guide* and Customization Considerations in the *CA SMF Director Systems Programmer Guide.*

If you are upgrading from a previous release of this product, the previous SCDS file is converted to the format needed by the new release. The previous configuration is copied intact.

Complete the Configuration

To finish configuration of CA SMF Director, complete the procedures in How to Complete Configuration with CA CSM (see page 54).

Chapter 6: Starting Your Product

This section describes what you need to do to start CA SMF Director.

This section contains the following topics:

How to Configure the SCDS with CA CSM

The topics in this section describe the manual tasks you can use to configure the SMF Control Data Set (SCDS).

Prepare for the SCDS Allocation

Before configuring the SCDS with the SCS component of CA CSM, you must plan how it will be allocated.

Follow these steps:

1. Calculate the size needed for your SCDS by following the instructions in Calculating SCDS Space Requirements (see page 16).

   Note: The calculation gives you the number of blocks you need, but SCS only allows allocations in tracks or cylinders. Allocations smaller than 10 cylinders must be made in tracks.

   - For devices with 3390 track geometry, use 12 blocks per track.
   - For devices with 3380 track geometry, use 10 blocks per track.

   Perform the calculation as indicated and if you are not sure of the value, estimate and be generous. Make sure you round up the final total to a multiple of the number of blocks as indicated. For example, in the sample calculation the number of blocks needed comes to 381. For a 3390, allocating 32 tracks would provide space for 384 blocks.

2. Select a DASD volume or storage class for the SCDS.

   - To put the SCDS on a specific volume, select the volume and appropriate unit esoteric.
   - If you want SMS to select a volume, just specify a storage class.

3. Select a meaningful data set name for the SCDS.

Allocate the SCDS

You can use SCS to allocate and initialize the SCDS.

Build the Configuration for the SCDS

Configure the SCDS before allocating it.

Follow these steps:

1. Display the configurable deployments on the CA CSM Deployments page.
2. Select the CA SMF Director deployment that is being configured.
3. Click Actions.

   The Actions Menu is displayed.
4. Click Create Configuration.

   The Configuration Wizard opens. The first panel is displayed.
5. Name your configuration or generate a name.
6. (Optional) Describe the operation that you are going to perform.
7. Select the system where you are going to build the configuration.
8. Click Next at the bottom.
9. Click Next to go past panel two.
10. Click Next to go past panel three.

    Panel four, Target Settings, is displayed. This panel contains all the configuration options that are specified for CA SMF Director.

11. Perform this procedure on the Target Settings panel:
    - Expand the Global Variables tree.
    - Enter the data set name that is selected in the GL-SCDS Name field.
    - Expand the SCDS Attributes tree branch.
    - Enter the number of tracks or cylinders that are required to store the SCDS in the GL-SCDS Space Primary field.

      Setting this value initializes the SCDS allocation process.
    - Indicate whether the space indicated is for tracks or cylinders in the GL-SCDS Space Type field.
    - If an SMS allocation is desired, enter the SMS storage class to use in the GL-SCDS STORCLAS field.
    - If SMS is not being used or a more precise SCDS allocation is wanted, enter a unit esoteric in the GL-SCDS Unit field.
    - If a specific DASD volume is needed, enter the volume serial number in the GL-SCDS Vol Ser field.
12. Click Next at the bottom of the panel when all the options are filled in.

    Panel five is displayed.
13. Click Next to move on.

    Panel six displays the information about the configuration you have entered.
14. Click Build to build the configuration.

Allocate and Initialize the SCDS

After the build completes, allocate and initialize the SCDS.

Follow these steps:

1. Click Hide at the bottom of the Build Configuration Task display.
2. Proceed to the Configurations display.

   The configuration that you built is available with a status of Build Complete.
3. Click Action at the far right of the line with the SCDS allocation configuration.
4. Select Implement from the menu.

   The Configuration Implementation Wizard appears, showing one step that allocates and initializes the SCDS.

5. Click Release Next or Release All at the top to start the allocation.

   CA CSM runs the SCDS allocation. If successful, the SCDS is allocated and initialized and ready for further configurations that adds systems, logstreams, and substreams.

   The output from CA SMF Director is available on the system where CA CSM is running as an output generated from an auxiliary address space.

   Note: For more information about locating JES2 output from CA CSM processes, see the CA CSM documentation.

Add the First System to the SCDS

Once the SCDS is allocated, the systems whose SMF data is managed must be defined to the SCDS. To define each system, a configuration must be built to install that system's information into the SCDS.

Build the Configuration for the First System

Building the configuration, adds the first system to the SCDS.

Since this configuration is the first, set up global options to provide default values for all systems that CA SMF Director manages. The global options are listed on the OPTIONS control statement outside of SCS. To determine which options from the OPTIONS control statement you want to set now, use this list:

Global Options Defined on SCS Panels	Options on the OPTIONS Control Statement
GL-Dynamic History Allocation	DYNAM, NODYNAM, DYNAMVTS
GL- Site Name	SITE
GL-SDAY Hour, SDAY Minute	SDAY
GL-Primary Allocation Units and SMS Classes	PSTORC, PDATAC, PMGMTC, PDEVN
GL-Alternate Allocation Units and SMS Classes	ASTORC, ADATAC, AMGMTC, ADEVN
GL-Max Print Lines	MAXLINES
GL-MAXFILES on Volume	MAXFILESONVOL
GL-Overlap	OVERLAP
GL-Autodelete	AUTODEL, NOAUTODEL
GL-Primary EXPDT Year and Date	EXPDT
GL-Alternate EXPDT Year and Date	AEXPDT
GL-Primary RETPD	RETPD

GL-Alternate RETPD	ARETPD
GL-Primary DSN Large	PDSNLARGE
GL-Alternate DSN Large	ADSNLARGE
GL-Daystack	DAYSTACK
GL-First Year	FIRSTYEAR
GL-Primary TRTCH	TRTCH
GL-Alternate TRTCH	ATRTCH
GL-Prefix	PREFIX
GL-Alternate Prefix	APREFIX
GL-Catalog	CATLG, NOCATLG
GL-Copies	COPIES
GL-Scratch	SCRATCH, NOSCRATCH
GL-WTO Errors	WTOERR

Note: For more information about the global options, see the OPTIONS control statement in the *CA SMF Director User Guide*.

Other options can be used to set management criteria for SMF data that CA SMF Director manages for this system only. The system options are listed on the DUMPOPTIONS control statement outside of SCS. To see which options are available, use this list:

System Options Defined on SCS Panels	Options on the DUMPOPTIONS Control Statement
SYS-Dynamic History Allocation	DYNAM, NODYNAM, DYNAMVTS, UPDYNAM
SYS-SDAY Hour and Minute	SDAY
SYS-Primary Allocation Units and SMS Classes	PSTORC, PDATAC, PMGMTC, PDEVN
SYS-Alternate Allocation Units and SMS Classes	ASTORC, ADATAC, AMGMTC, ADEVN
SYS-MAXFILES on Volume	MAXFILESONVOL
SYS-Primary EXPDT Year and Date	EXPDT
SYS-Alternate EXPDT Year and Date	AEXPDT
SYS-Primary RETPD	RETPD
SYS-Alternate RETPD	ARETPD

SYS-Primary DSN Large	PDSNLARGE
SYS-Alternate DSN Large	ADSNLARGE
SYS-Daystack	DAYSTACK
SYS-First Year	FIRSTYEAR
SYS-TRTCH	TRTCH
SYS-Alt TRTCH	ATRTCH
SYS-Prefix	PREFIX
SYS-Alt Prefix	APREFIX
SYS-Catalog	CATLG, NOCATLG, UPCATLG
SYS-Copies	COPIES
SYS-Scratch	SCRATCH, NOSCRATCH, UPSCRATCH

Note: The EXPDT, AEXPDT, RETPD, ARETPD, PREFIX, APREFIX, and COPIES options allow an asterisk to default to the value on the OPTIONS control statement. The asterisk is only valid if you create the system using the DUMPOPTIONS control statement outside of SCS.

Note: For more information about the system values, see the DUMPOPTIONS control statement in the *CA SMF Director User Guide*.

To build the configuration for the first system.

Follow these steps:

1. Display the configurable deployments on the CA CSM Deployments page.
2. Select the CA SMF Director deployment that is being configured.
3. Click Actions.

   The Actions Menu is displayed.
4. Click Create Configuration.

   The Configuration Wizard opens. The first panel is displayed.
5. Name your configuration or generate a name.
6. (Optional) Describe the operation that you are going to perform.
7. Select the system where you are going to build the configuration.
8. Click Next at the bottom.
9. Click Next to go past panel two.

10. Click Next to go past panel three.

    Panel four, Target Settings, is displayed. This panel is where all the configurations are specified for CA SMF Director.

11. Perform this procedure on the Target Settings panel:

    - Expand the Global Variables tree.
    - Reenter the data set name of the SCDS if you did not prepopulate the options.
    - Set the global options that are listed at the top of this topic.
    - Expand the System Variables Tree.
    - Enter the SMF ID of the system being added to the SCDS in the SYS-SMF ID field.

      Setting this value indicates to SCS that you are adding a system to the SCDS.
    - Assign a unique number to this system configuration in the SYS-Config Number field.

      Value: 1 to 255

      Note: The SCDS checks for uniqueness, but you will not see an error for a duplicate number until the configuration is implemented.
    - (Optional) Assign a name to the system configuration in the SYS-Name field.
    - Set the DUMPOPTIONS values for this system. The DUMPOPTIONS are listed on the previous page.

12. Click Next at the bottom of the panel when all the options are filled in.

    Panel five is displayed.

13. Click Next to move on.

    Panel six displays the information about the configuration you have entered.

14. Click Build to build the configuration.

Add the First System to the SCDS

After the build completes, you are ready to add a system to the SCDS.

Follow these steps:

1. Click Hide at the bottom of the Build Configuration Task display.
2. Proceed to the Configurations display.

   The configuration that you built is available with a status of Build Complete.
3. Click Action at the far right of the line with the SCDS allocation configuration.

4. Select Implement from the menu.

   The Configuration Implementation Wizard appears, showing one step that allocates and initializes the SCDS.

5. Click Release Next or Release All at the top to start the allocation.

   CA CSM runs the SCDS allocation. If successful, the SCDS is set up to index and to manage SMF data from the system with the SMF ID. The SMF ID is indicated in the SYS-SMF ID field.

   The output from CA SMF Director is available on the system where CA CSM is running as an output generated from an auxiliary address space.

   Note: For more information about locating JES2 output from CA CSM processes, see the CA CSM documentation.

Add More Systems to the SCDS

Once the first system is added to the SCDS, the addition of more systems is fairly straightforward.

Build Configurations for Additional Systems

Build the configuration for additional systems, before adding these systems.

In addition to the global options you set to provide default values for all systems, other options can be used to set management criteria for this system only. These options are listed on the DUMPOPTIONS control statement available outside of SCS. To determine which options you want to set for this system, use this list:

System Options Defined on SCS Panels	Options on the DUMPOPTIONS Control Statement
SYS-Dynamic History Allocation	DYNAM, NODYNAM, DYNAMVTS, UPDYNAM
SYS-SDAY Hour and Minute	SDAY
SYS-Primary Allocation Units and SMS Classes	PSTORC, PDATAC, PMGMTC, PDEVN
SYS-Alternate Allocation Units and SMS Classes	ASTORC, ADATAC, AMGMTC, ADEVN
SYS-MAXFILES on Volume	MAXFILESONVOL
SYS-Primary EXPDT Year and Date	EXPDT
SYS-Alternate EXPDT Year and Date	AEXPDT
SYS-Primary RETPD	RETPD
SYS-Alternate RETPD	ARETPD

SYS-Primary DSN Large	PDSNLARGE
SYS-Alternate DSN Large	ADSNLARGE
SYS-Daystack	DAYSTACK
SYS-First Year	FIRSTYEAR
SYS-TRTCH	TRTCH
SYS-Alt TRTCH	ATRTCH
SYS-Prefix	PREFIX
SYS-Alt Prefix	APREFIX
SYS-Catalog	CATLG, NOCATLG, UPCATLG
SYS-Copies	COPIES
SYS-Scratch	SCRATCH, NOSCRATCH, UPSCRATCH

Note: The EXPDT, AEXPDT, RETPD, ARETPD, PREFIX, APREFIX, and COPIES options allow an asterisk to default to the value on the OPTIONS control statement. The asterisk is only valid if you create the system using the DUMPOPTIONS control statement outside of SCS.

Note: For more information on the values, see the DUMPOPTIONS control statement in the *CA SMF Director User Guide*.

To build a configuration for each additional system.

Follow these steps:

1. Display the configurable deployments on the CA CSM Deployments page.
2. Select the CA SMF Director deployment that is being configured.
3. Click Actions.

   The Actions Menu is displayed.
4. Click Create Configuration.

   The Configuration Wizard opens. The first panel is displayed.
5. Name your configuration or generate a name.
6. (Optional) Describe the operation that you are going to perform.
7. Select the system where you are going to build the configuration.
8. Click Next at the bottom.
9. Click Next to go past panel two.
10. Click Next to go past panel three.

    Panel four, Target Settings, is displayed.

11. Perform this procedure on the Target Settings panel:
    - If the new system, has the same values as the first system click Use Configuration Values on the right of the Wizard. This action prepopulates the options.
    - Expand the Global Variables Tree.
    - Enter YES in the GL-Skip OPTIONS field since you have already set the global options for the SCDS.
    - Expand the System Variables Tree.
    - Enter the SMF ID of the system being added to the SCDS in the SYS-SMF ID field.

      Note: Setting this value indicates to SCS that you are adding a system to the SCDS.
    - Assign a unique number to this system configuration in the SYS-Config Number field.

      Value: 1 to 255

      Note: The SCDS checks for uniqueness, but you do not see an error for a duplicate number until the configuration is implemented.
    - (Optional) Assign a name to the system configuration in the SYS-Name field.
    - Set the DUMPOPTIONS values for this system only.

      Note: If you have prepopulated the global options in SCS or on the OPTIONS control statement, only change the options that are different for this system.
12. Click Next at the bottom of the panel when all the options are filled in.

    Panel five is displayed.
13. Click Next to move on.

    Panel six displays the information about the configuration you have entered.
14. Click Build to build the configuration.

Add the System to the SCDS

After the build completes, you are ready to add the system to the SCDS.

Follow these steps:

1. Click Hide at the bottom of the Build Configuration Task display.
2. Proceed to the Configurations display.

   The configuration that you just built is available with a status of Build Complete.
3. Click Action at the far right of the line with the SCDS allocation configuration.

4. Select Implement from the menu.

   The Configuration Implementation Wizard appears, showing one step that allocates and initializes the SCDS.

5. Click Release Next or Release All at the top to start the allocation.

   CA CSM runs the SCDS allocation. If successful, the SCDS is set up to index and to manage SMF data from the system with the SMF ID. The SMF ID is indicated in the SYS-SMF ID field.

   The output from CA SMF Director is available on the system where CA CSM is running as an output generated from an auxiliary address space.

Note: For more information about locating JES2 output from CA CSM processes, see the CA CSM documentation.

Add Logstreams and Substreams to Systems in the SCDS

If a system is using SMF logstreams to record SMF data or you want to use CA SMF Director substreams, you can define the streams in SCS. If you are only using the traditional SMF MAN File recording method and you want to keep all of the SMF data for the same amount of time, skip this section.

Build the Configuration for a Stream

Configure a system in the SCDS, before adding a logstream or a substream to this system.

The stream options can be used to set management criteria for a stream only for this system. These options are in addition to the global options that were set to provide default values to all system and individual systems. The stream options are listed on the STREAMOPTIONS control statement available outside of SCS. To determine which options you want to set for this stream use this list:

Stream Options Defined on SCS Panels	Options on the STREAMOPTIONS Control Statement
ST-SDAY Hour and Minute	SDAY
ST-Primary Allocation Units and SMS Classes	PSTORC, PDATAC, PMGMTC, PDEVN
ST-Alternate Allocation Units and SMS Classes	ASTORC, ADATAC, AMGMTC, ADEVN
ST-MAXFILES on Volume	MAXFILESONVOL
ST-Primary EXPDT Year and Date	EXPDT
ST-Alt EXPDT Year and Date	AEXPDT
ST-Primary RETPD	RETPD

ST-Alt RETPD	ARETPD
ST-Primary DSN Large	PDSNLARGE
ST-Alt DSN Large	ADSNLARGE
ST-Daystack	DAYSTACK
ST-First Year	FIRSTYEAR
ST-Primary TRTCH	TRTCH
ST-Alt TRTCH	ATRTCH
ST-Prefix	PREFIX
ST-Alt Prefix	APREFIX
ST-Catalog	CATLG, NOCATLG, UPCATLG
ST-Copies	COPIES

Note: The EXPDT, AEXPDT, RETPD, ARETPD, PREFIX, APREFIX, and COPIES options allow an asterisk to default to the value on the OPTIONS or DUMPOPTIONS control statement. The asterisk is only valid if you create the stream using the STREAMOPTIONS control statement outside of SCS.

Note: For more information on the options, see the STREAMOPTIONS control statement in the *CA SMF Director User Guide*.

To build a configuration for each additional system.

Follow these steps:

1. Display the configurable deployments on the CA CSM Deployments page.
2. Select the CA SMF Director deployment that is being configured.
3. Click Actions.

   The Actions Menu is displayed.
4. Click Create Configuration.

   The Configuration Wizard opens. The first panel is displayed.
5. Name your configuration or generate a name.
6. (Optional) Describe the operation that you are going to perform.
7. Select the system where you are going to build the configuration.
8. Click Next at the bottom.
9. Click Next to go past panel two.
10. Click Next to go past panel three.

    Panel four, Target Settings, is displayed.

11. Perform this procedure on the Target Settings panel:
    - Click Use Configuration Values on the right of the Wizard and select the configuration that added the system to which you are adding the stream.

      This action prepopulates the options that are used to configure the system for the stream.
    - Expand the Global Variables Tree.
    - Enter YES in the GL-Skip OPTIONS field since you have already set the global options for the SCDS.
    - Expand the System Variables Tree.
    - Expand the Stream Variables Tree under the System Variables Tree.
    - Enter the name of the stream in the ST-Stream Name field.
      - If you are defining an SMF logstream, enter the name of the logstream as coded in the active SMFPRMxx member in PARMLIB.
      - If you are defining a substream, the name can be any two or three node names. The first node cannot begin with an “I” or the string “SYS.”

        Note: This action cannot be edited when defined in SCS.
    - Indicate in the ST-Stream Type field if the stream is an SMF logstream or a CA SMF Director substream.
    - For a substream, select either the ST-Select or the ST-Exclude field and insert the record types that you want the substream to archive (Select) or not archive (Exclude). Set only one of the options and leave the other empty.

      Note: For more information about the syntax for specifying record types, see the description of the SELECT and EXCLUDE options on the STREAMOPTIONS statement in the *CA SMF Director User Guide*.

      For a logstream, skip this step.
    - Set the STREAMOPTIONS values for this logstream or substream only.

      Note: We recommend that you only change the values that override the values that are set for the system.
12. Click Next at the bottom of the panel when all the options are filled in.

    Panel five is displayed.
13. Click Next to move on.

    Panel six displays the information about the configuration you have entered.
14. Click Build to build the configuration.

Add a Stream to a System in the SCDS

After the build completes, you are ready to add a logstream or substream to a system in the SCDS.

Follow these steps:

1. Click Hide at the bottom of the Build Configuration Task display.
2. Proceed to the Configurations display.

   The configuration that you just built is available with a status of Build Complete.
3. Click Action at the far right of the line with the SCDS allocation configuration.
4. Select Implement from the menu.

   The Configuration Implementation Wizard appears, showing one step that allocates and initializes the SCDS.
5. Click Release Next or Release All at the top to start the allocation.

   CA CSM runs the SCDS allocation. If successful, the SCDS is set up to index and to manage SMF data from the system. The system that is named in the SYS-SMF ID field and the logstream or substream named in the ST-Stream Name field.

   The output from CA SMF Director is available on the system where CA CSM is running as an output generated from an auxiliary address space.

   Note: For more information about locating JES2 output from CA CSM processes, see the CA CSM documentation.

Post-Installation Considerations

For information on stopping the automated dumping of SMF data by CA SMF Director, see the *CA SMF Director System Programmers Guide*.

Chapter 7: Migration Information

CA SMF Director FMID CASFC70 deletes all components belonging to a previous release of this product. If you want to retain the current production level of this product, we recommend installing the new version to a different CSI or copying the current modules into a separate load library before performing the SMP APPLY of CASFC70.

Notes:

- To migrate from your installed release, to the new release; use the installed release to back up the SCDS for this migration.
- CA CSM installs this product into a new CSI and SMP/E environment by default.

Important! Be sure to back up your existing SCDS so you can restore it when you have installed the new version of this product. When the SCDS migration is complete, the previous configurations with all existing options are copied intact.

More information:

Allocate the Control Data Set (SCDS) (see page 61)

Appendix A: Preparation Worksheets

You can print out the worksheet in this section to record the values needed for your site when installing the product.

Unload Tape

If you are installing from tape, what is the generic tape drive unit name (the default is TAPE)?

TAPE = _____

DASD

What is your generic unit name for permanent DASD volumes (the default is SYSDA)?

PERMDA = _____

What is your generic unit name for temporary work DASD volumes (the default is SYSDA)?

WORK = _____

Which DASD volume do you plan to use for CA SMF Director target libraries?

LIBSER = _____

Which DASD volume do you plan to use for CA SMF Director distribution libraries?

DLIB = _____

Which DASD volume do you plan to use for your SMP temporary libraries?

TLIB = _____

SYSOUT Class

What is your standard SYSOUT class for CA product installations and SMP output (the default is *)?

SYSOUT = _____

What is the SYSOUT class for CA SMF Director product operation (the default is A)?

A = _____

High-level Qualifiers

What data set high-level qualifiers will you assign to your CA SMF Director target and distribution libraries (the default is CAI)?

CAI = _____

What data set high-level qualifiers will you assign to the SMP libraries for your installation of CA products (the default is CAI)?

SMP = _____

Data Set Names

What is the name of the control data set (SCDS)?

_____

If you are upgrading from a previous release, what was the name of the control data set (SCDS) for the previous release?

_____

What is the name of the backup file?

_____

Usage

What is the maximum number of z/OS systems CA SMF Director will maintain?

_____

What is the estimated number of years of SMF data that CA SMF Director will track?

_____

What is the average number of times per week the SMF data sets, logstreams, and substreams will be dumped?

_____

Tape Usage

What is the estimated number of tape volume serial numbers?

_____

Will a specific pool of tape volume serial numbers be used (Y/N)?

Note: If you plan to manage SMF data being recorded to logstreams or plan to use substreams to manage SMF data being recorded to MAN files, specify N.

_____

Dumping

Do you want to use the automatic SMF dump capability (Y/N)?

_____

What is the procedure or started task name used for dumping SMF data sets?

_____

Logstreams

Are you recording SMF data to System Logger logstreams (Y/N)?

_____

If so, what is the maximum number of logstreams and substreams that will be used for recording SMF data on any system?

_____

CA Auditor

Have you installed CA Auditor for z/OS (Y/N)?

_____

If Y, will the CA SMF Director load library be placed in the z/OS link list on all systems where CA SMF Director will be managing SMF data (Y/N)?

_____

If the load library will not be placed in the z/OS link list, provide the name of a library in the system link list in which CA Auditor is running where the CA SMF Director load module for CA Auditor can be placed.

_____

Appendix B: Troubleshooting

This section contains the following topics:

Verifying the Problem

Before contacting Technical Support, attempt to resolve the problem using the following steps.

1. Examine the procedure that you used and compare it to the documented procedure for performing the required activity.
2. If you find no discrepancies between your procedures and the documented procedures, repeat the activity under conditions similar to those that existed when the problem first appeared. (If you no longer get unsatisfactory results, an inadvertent error may have caused the problem.)
3. If the same error occurs when you repeat a given activity, and you can find nothing in the documentation to suggest that your procedure is flawed, check with others at your site to determine if they have had the same or similar problem and how they handled it.

Collecting Diagnostic Data

In this table, use the left column to categorize the problem that your site has encountered. Then, follow the instructions in the corresponding right column to generate useful diagnostic data.

Type of Problem	Procedure
SMP error message	See IBM's *System Modification Program Extended Messages and Codes* and check the listing for all messages. Save all SMP output.
Installation with SAMPJCL members	See the installation steps in this guide and all installation PDCs. Save all output.
SMFD not link edited correctly, or not selected on APPLY install step	The APPLY step must have the following APPLY select statement: APPLY SELECT (CASFC70) Save all SMP output.

Type of Problem	Procedure
SMP error message	See IBM's *System Modification Program Extended Messages and Codes* and check the listing for all messages. Save all SMP output.
CA error message	Review message in the *CA SMF Director Message Guide*. Before rerunning the SMFD program, make sure the JCL contains the SYSXDIAG SYSOUT DD statement and the SYSMDUMP DD statement. Save output from SYSXDIAG, SYSPRINT, JES job and messages log.
SMFD program abend	Review the audit trail for error messages. See the *CA SMF Director Message Guide* to determine if the problem can be resolved. If not, save output from SYSXDIAG, SYSMDUMP, SYSPRINT DD statements, along with the JES job and messages log. **Note:** For the last two problems that are listed in this table, back up the SCDS file at the time of the error.

Interpreting Diagnostic Data

When you have collected the specified diagnostic data, write down your answers to the following questions.

- What was the sequence of events prior to the error condition?
- What circumstances existed when the problem occurred and what action did you take?
- Has this situation occurred before? What was different then?
- Did the problem occur after a particular PTF was applied or after a new release of the software was installed?
- Have you recently installed a new release of the operating system?
- Has the hardware configuration (tape drives, disk drives, and so forth) changed?

From your response to these questions and the diagnostic data, try to identify the cause and resolve the problem.

If you determine that the problem is a result of an error in a CA product, you can make use of the CA online support system to see if a fix (APAR or PTF) or other solution to your problem has been published. Otherwise, contact Technical Support.

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