

# CA Spool™

## Installation Guide

Release 11.7



This Documentation, which includes embedded help systems and electronically distributed materials, (hereinafter referred to as the "Documentation") is for your informational purposes only and is subject to change or withdrawal by CA at any time.

This Documentation may not be copied, transferred, reproduced, disclosed, modified or duplicated, in whole or in part, without the prior written consent of CA. This Documentation is confidential and proprietary information of CA and may not be disclosed by you or used for any purpose other than as may be permitted in (i) a separate agreement between you and CA governing your use of the CA software to which the Documentation relates; or (ii) a separate confidentiality agreement between you and CA.

Notwithstanding the foregoing, if you are a licensed user of the software product(s) addressed in the Documentation, you may print or otherwise make available a reasonable number of copies of the Documentation for internal use by you and your employees in connection with that software, provided that all CA copyright notices and legends are affixed to each reproduced copy.

The right to print or otherwise make available copies of the Documentation is limited to the period during which the applicable license for such software remains in full force and effect. Should the license terminate for any reason, it is your responsibility to certify in writing to CA that all copies and partial copies of the Documentation have been returned to CA or destroyed.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, CA PROVIDES THIS DOCUMENTATION "AS IS" WITHOUT WARRANTY OF ANY KIND, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT. IN NO EVENT WILL CA BE LIABLE TO YOU OR ANY THIRD PARTY FOR ANY LOSS OR DAMAGE, DIRECT OR INDIRECT, FROM THE USE OF THIS DOCUMENTATION, INCLUDING WITHOUT LIMITATION, LOST PROFITS, LOST INVESTMENT, BUSINESS INTERRUPTION, GOODWILL, OR LOST DATA, EVEN IF CA IS EXPRESSLY ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH LOSS OR DAMAGE.

The use of any software product referenced in the Documentation is governed by the applicable license agreement and such license agreement is not modified in any way by the terms of this notice.

The manufacturer of this Documentation is CA.

Provided with "Restricted Rights." Use, duplication or disclosure by the United States Government is subject to the restrictions set forth in FAR Sections 12.212, 52.227-14, and 52.227-19(c)(1) - (2) and DFARS Section 252.227-7014(b)(3), as applicable, or their successors.

Copyright © 2011 CA. All rights reserved. All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

## CA Technologies Product References

This document references the following CA Technologies products:

- CA ACF2® for z/OS
- CA Bundl®
- CA Common Services
- CA IDMS®/DC
- CA LPD Report Convergence
- CA Roscoe® Interactive Environment
- CA Spool™
- CA SymDump® System
- CA Top Secret® for z/OS
- CA View®

# 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](mailto: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>.

# Contents

---

<b>Chapter 1: Overview</b>	<b>9</b>
Audience .....	9
How the Installation Process Works.....	10
<b>Chapter 2: Preparing for Installation</b>	<b>13</b>
Software Requirements .....	13
CA Common Services Requirements .....	13
How CA MSM Works .....	14
Storage Requirements.....	16
Distribution Libraries.....	16
Target Libraries .....	17
Concurrent Releases .....	18
<b>Chapter 3: Installing Your Product Using CA MSM</b>	<b>19</b>
How to Use CA MSM: Scenarios.....	19
How to Acquire a Product .....	19
How to Install a Product.....	20
How to Maintain Existing Products .....	21
How to Deploy a Product .....	22
How to Configure a Product.....	23
Access CA MSM Using the Web-Based Interface .....	24
<b>Chapter 4: Installing Your Product from Pax-Enhanced ESD</b>	<b>25</b>
How to Install a Product Using Pax-Enhanced ESD .....	25
How the Pax-Enhanced ESD Download Works .....	27
ESD Product Download Window .....	27
USS Environment Setup .....	30
Allocate and Mount a File System.....	31
Copy the Product Pax Files into Your USS Directory .....	34
Download Using Batch JCL .....	35
Download Files to Mainframe through a PC .....	38
Create a Product Directory from the Pax File .....	39
Sample Job to Execute the Pax Command (Unpackage.txt) .....	40
Copy Installation Files to z/OS Data Sets.....	40
Receive the SMP/E Package .....	41

---

How to Install Products Using Native SMP/E JCL .....	42
Prepare the SMP/E Environment for Pax Installation .....	42
Run the Installation Jobs for a Pax Installation .....	44
Clean Up the USS Directory .....	45
Apply Maintenance .....	46
HOLDDATA .....	47

## **Chapter 5: Installing Your Product from Tape** **49**

Unload the Sample JCL from Tape .....	50
Prepare the SMP/E Environment for Tape Installation .....	51
Run the Installation Jobs for a Tape Installation .....	53
Clean Up the USS Directory .....	53
Apply Maintenance .....	54
HOLDDATA .....	55
System HOLDDATA .....	55
External HOLDDATA .....	56

## **Chapter 6: Installing Your Product from DVD** **59**

Overview .....	59
Purpose .....	59
Audience .....	59
Frequently Asked Questions .....	59
CA Product Documentation .....	62
Introduction to Electronic Software Delivery .....	62
What is Electronic Software Delivery? .....	62
Pax-Enhanced ESD Procedures .....	65
How to Install a Product from a DVD Using Pax-Enhanced ESD .....	65
The Installation Procedure .....	65
References .....	69
IBM Reference Manual .....	69
Common USS Commands .....	69

## **Chapter 7: Starting Your Product** **71**

Introduction .....	71
How to Prepare for Deployment With CA MSM .....	71
Run UCLIN .....	71
Run Post-Install Jobs as Required for Other Environments .....	71
Run Any Other Optional Jobs .....	72
How to Complete Deployment With CA MSM .....	72
How to Complete Configuration With CA MSM .....	72

---

Add the JES Initialization Parameters (Optional) .....	73
Configure TCP/IP Setup .....	73
Start CA Spool Release 11.7 for the First Time.....	74
Verify the Installation.....	75
How to Configure Without CA MSM .....	77
Run UCLIN .....	77
Verify the SAS/C Runtime Library .....	78
APF Authorize the CA Spool Libraries .....	78
Add the JCL Procedure .....	79
Enter the LMP Code .....	82
Add the VTAM Resource Definition .....	84
Add the JES Initialization Parameters (Optional) .....	84
Configure TCP/IP Setup .....	85
Define directories for the CA Spool Web Interface.....	85
Allocate the Spool and Checkpoint Data Sets .....	85
Assign Values to the Initialization Parameters.....	85
Run Post-Install Jobs as Required for Other Environments .....	87
Run Any Other Optional Jobs .....	87
Start CA Spool Release 11.7 for the First Time.....	88
Verify the Installation.....	89
Post-Installation Considerations .....	91

## **Chapter 8: Migration Information** **93**

Migration Considerations.....	93
Revert to a Previous Release.....	94
Initialization Statements .....	94
Added Initialization Statements.....	94
Changed Initialization Statements .....	97
Deleted Initialization Statements.....	99
New Initialization Parameters and Options .....	99

## **Appendix A: Integration with CA OPS/MVS EMA** **101**

Overview .....	101
Ensure that CA OPS/MVS Is Enabled for Capturing These Events.....	102
CA Spool Active State Events.....	102
CA Spool Heartbeat Events .....	104

## **Index** **107**



# Chapter 1: Overview

---

This guide describes how to install and implement CA Spool.

This section contains the following topics:

[Audience](#) (see page 9)

[How the Installation Process Works](#) (see page 10)

## Audience

CA Spool is a comprehensive, flexible print spooling subsystem for IBM mainframe environments that use JES2 or JES3 as the primary spooling system.

This guide is targeted to the systems administrator who will install, use, and maintain CA Spool.

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

- JCL
- TSO/ISPF
- z/OS environment and installing software in this environment
- Your organization's IT environment, enterprise structure, and region structure

You may need to work with the following personnel:

- System programmer for z/OS, JES2/JES3, VTAM and TCP/IP
- 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—Optionally creates a CSI environment and runs the RECEIVE, APPLY and ACCEPT steps. The software is untailed.
- Deployment—Copies the target libraries to another system or LPAR.
- Configuration—Creates customized load modules, bringing the software to an executable state.

CA MSM provides a web-based interface to make the standardized installation process easier. Using CA MSM, someone with limited knowledge of JCL and SMP/E can install a product.

**Note:** If you do not have CA MSM, you can download it from the Download Center at [the CA Support Online website](#). Follow the installation instructions in the CA Mainframe Software Manager documentation bookshelf on the CA Mainframe Software Manager product page. The standardized installation process can also be completed manually.

To install your product, do the following tasks:

1. Prepare for the installation by [confirming that your site meets all installation requirements](#) (see page 13).
2. Use one of the following methods to acquire the product:
  - [Download the software from CSO using CA MSM](#) (see page 19).
  - [Download the software from CSO using Pax-Enhanced Electronic Software Delivery \(ESD\)](#) (see page 25).
  - Order a tape or a DVD.
3. Perform an SMP/E installation using one of the following methods:
  - If you used CA MSM to acquire the product, start the SMP/E step from the SMP/E Environments tab in CA MSM.
  - If you used ESD to acquire the product, you can install the product in the following ways:
    - Install the product manually.
    - Use the Insert New Product option in CA MSM to complete the SMP/E installation.
  - If you used a [tape](#) (see page 49) or 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 MSM, deployment is required; it is a prerequisite for configuration.
  - If you are using a manual process, deployment is an optional step.

**Note:** Deployment is considered part of [starting your product](#) (see page 71).

5. Configure your product using CA MSM or manually.

**Note:** Configuration is considered part of [starting your product](#) (see page 71).



# 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:

[Software Requirements](#) (see page 13)

[CA Common Services Requirements](#) (see page 13)

[How CA MSM Works](#) (see page 14)

[Storage Requirements](#) (see page 16)

[Concurrent Releases](#) (see page 18)

## Software Requirements

The following software is required for CA Spool:

- 5694-A01 any z/OS release that is supported by IBM
- z/OS UNIX System Services running in full function mode
- SAS/C 7.50 (or higher) Runtime Library included with CA Spool as FMID ASARB75
- CA Common Services Release 11 SP8 for z/OS or higher

## CA Common Services Requirements

We recommend that you maintain CA Common Services at a current maintenance level to ensure compatibility. For the latest information on maintenance requirements, contact CA Support Online.

**Note:** If you intend to use CA MSM for your installation and maintenance tasks, there may be certain additional CA Common Service requirements. For more information about software requirements, see the the *CA Mainframe Software Manager Product Guide*.

The following CA Common Services are used with CA Spool:

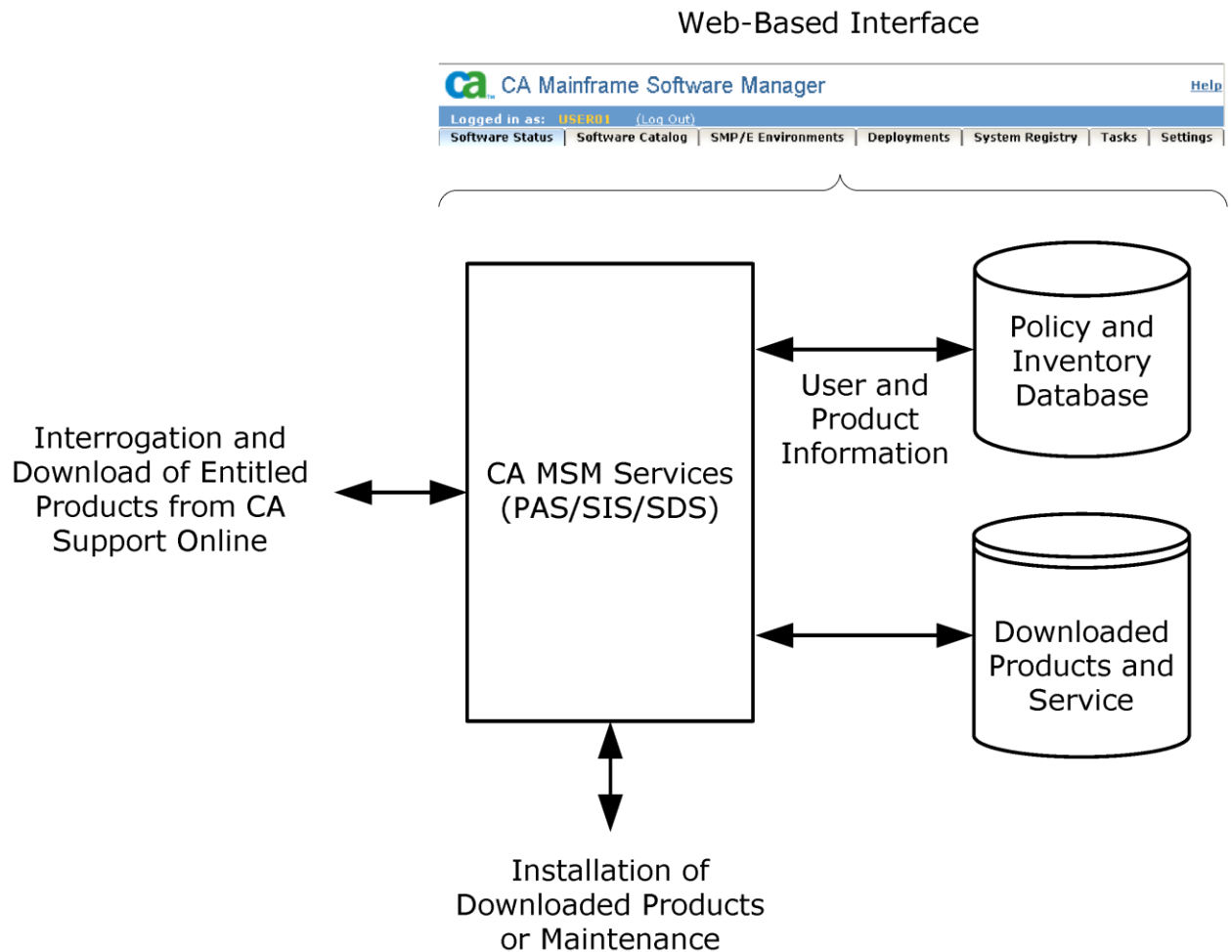
- CAIRIM
- CA LMP
- CAISDI Service
- CA Health Checker Common Service

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

## How CA MSM Works

CA MSM is a program that runs in the address space of an application server environment hosted on a z/OS system. Typically, this system is where you use SMP/E to install and maintain your products. The system is known as the SMP/E driving system. The CA MSM web-based interface enables you to submit SMP/E batch jobs dynamically without having to code those jobs manually.

The following illustration shows the main components and data flows:



CA MSM has the following main components:

### **CA MSM Services**

Provides the following services:

#### **Product Acquisition Service (PAS)**

Facilitates the acquisition of CA mainframe products and the service for those products, such as program temporary fixes (PTFs). The service retrieves information about the products to which your site is entitled and records these entitlements in a software inventory maintained on your driving system. The service can also download the LMP keys (licenses) for those products. The web-based interface enables you to browse the software inventory for available software and fixes, and download them from [the CA Support Online website](#) to the driving system.

#### **Software Installation Service (SIS)**

Facilitates the installation and maintenance of CA mainframe products in the software inventory of the driving system. The web-based interface enables you to browse and manage the software inventory, and automate installation tasks. You can browse downloaded software packages, and browse and manage SMP/E consolidated software inventories (CSIs) on the driving system.

#### **Software Deployment Service (SDS)**

Facilitates the deployment of CA Technologies mainframe products from the software inventory of the driving system. This service enables you to deploy installed products that are policy-driven with a set of appropriate transport mechanisms across a known topology. The enterprise system topology can include shared DASD environments, networked environments, and z/OS systems. Policies represent a combination of metadata input and user-supplied input. Metadata input identifies the component parts of a product. User-supplied input identifies the deployment criteria, such as where it goes and what it is named.

### **Database**

Stores information for use by CA MSM.

#### **Policy**

Stores site and user information for downloading and processing CA mainframe products.

#### **Inventory**

Stores information about the CA mainframe products to which you are entitled.

### **Web-Based Interface**

Enables you to acquire, install, maintain, and deploy your CA mainframe products from the CA MSM catalog, and manage your SMP/E environments. The web-based interface includes online help that provides information about how to use CA MSM.

## Storage Requirements

Installation of CA Spool requires about 300 MB disk storage including 60 MB disk storage for the CA Spool distribution data sets, and about 20 MB for the test spool and checkpoint data sets.

### Distribution Libraries

Use the following table to estimate disk space for the distribution libraries that are needed to install CA Spool.

Library Name	Blksize	TRKS	Dir. Blks.	Description
CAI.ABQ4MOD	32760	136	58	Load library
CAI.ABQ4CLS0	27920	17	16	CLIST library
CAI.ABQ4GEN	32760	63	22	GENLIB library
CAI.ABQ4HFS	32760	37	40	HFS library
CAI.ABQ4JCL	27920	23	28	JCL library
CAI.ABQ4MAC	27920	140	95	Macro library
CAI.ABQ4NATU	32760	18	16	Natural Menu library
CAI.ABQ4OPTN	27920	72	63	Options library
CAI.ABQ4PARM	27920	34	34	Parameter library
CAI.ABQ4PLD	32760	6	NO LIMIT	PDSE load library
CAI.ABQ4PNL0	27920	17	16	ISPF Panel library
CAI.ABQ4PROC	27920	33	32	Procedure library
CAI.ASARLOAD	32760	111	57	SAS/C runtime library
CAI.ABQ4SRC	27920	141	61	Source library
CAI.ACSRMOD	32760	48	18	Load library
CAI.ACSRMAC	27920	140	95	Macro library
CAI.ACSRPARM	27920	34	34	Parameter library
CAI.ACSRPROC	27920	33	32	Procedure library
CAI.ACSR SRC	27920	141	61	Source library
CAI.ABQ4XML	32760	42	16	CA MSM Deployment and Configuration Services

## Target Libraries

**Note:** Allocate these libraries *only* if they do not already exist.

Use the following table to estimate disk space for the target libraries that are needed to install CA Spool.

Library Name	Blksize	TRKS	Dir. Blks.	Description
CAI.CBQ4LOAD	32760	804	102	Load library
CAI.CBQ4CLS0	27920	17	16	CLIST library
CAI.CBQ4GEN	32760	63	22	GENLIB library
CAI.CBQ4JCL	27920	23	28	JCL library
CAI.CBQ4MAC	27920	140	95	Macro library
CAI.CBQ4NATU	32760	18	16	Natural Menu library
CAI.CBQ4OPTN	27920	72	63	Options library
CAI.CBQ4PARM	27920	34	34	Parameter library
CAI.CBQ4PLD	32760	402	NO LIMIT	PDSE load library
CAI.CBQ4PNL0	27920	17	16	ISPF Panel library
CAI.CBQ4PROC	27920	33	32	Procedure library
CAI.CBQ4SRC	27920	141	61	Source library
CAI.CSARLOAD	18452	111	57	SAS/C runtime library
/usr/lpp/caspool	-	2250	-	HFS directory
CAI.CBQ4XML	32760	42	16	CA MSM Deployment and Configuration Services

## Concurrent Releases

You can install this release of CA Spool Java Transformers 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.
- 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 MSM 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 MSM

---

These topics provide information to get you started managing your product using CA MSM. You can use the online help included in CA MSM to get additional information.

Before using these topics, you must already have CA MSM installed at your site. If you do not have CA MSM installed, you can download it from the Download Center at [the CA Support Online website](#), which also contains links to the complete documentation for CA MSM.

## How to Use CA MSM: Scenarios

Imagine that your organization has started using CA MSM to simplify the installation of CA Technologies products and unify their management. You have also licensed a new CA Technologies product. In addition, you have a number of existing CSIs from previously installed CA Technologies products.

You can use the following scenarios to guide you through the process:

1. [Acquire the new product](#) (see page 19).
2. [Install the new product](#) (see page 20).
3. [Maintain products already installed in your environment](#) (see page 21).
4. [Deploy the product to your target systems](#) (see page 22).
5. [Configure the deployed product to your target systems](#) (see page 23).

## How to Acquire a Product

The *Product Acquisition Service (PAS)* facilitates the acquisition of mainframe products and the service for those products, such as program temporary fixes (PTFs). PAS retrieves information about products to which your site is entitled. Then it records these entitlements in a software inventory that is maintained on your driving system.

You can use the PAS component of CA MSM to acquire a CA Technologies product.

**Follow these steps:**

1. Set up a CA Support Online account.

To use CA MSM to acquire or download a product, you must have a CA Support Online account. If you do not have an account, you can create one on [the CA Support Online website](#).

2. Determine the CA MSM URL for your site.

To [access CA MSM](#) (see page 24), you require its URL. You can get the URL from your site's CA MSM administrator and log in using your z/OS credentials. When you log in for the first time, you are prompted to create a CA MSM account with your credentials for [the CA Support Online website](#). This account enables you to download product packages.

3. Log in to CA MSM and go to the Software Catalog page to locate the product that you want to manage.

After you log in to CA MSM, you can see the products to which your organization is entitled on the Software Catalog tab.

If you cannot find the product you want to acquire, update the catalog. CA MSM refreshes the catalog through [the CA Support Online website](#) using the site IDs associated with your credentials for [the CA Support Online website](#).

4. Download the product installation packages.

After you find your product in the catalog, you can download the product installation packages.

CA MSM downloads (acquires) the packages (including any maintenance packages) from the CA FTP site.

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

## How to Install a Product

The *Software Installation Service (SIS)* facilitates the installation and maintenance of mainframe products in the software inventory of the driving system. This facilitation includes browsing downloaded software packages, managing SMP/E consolidated software inventories on the driving system, and automating installation tasks.

You can use the SIS component of CA MSM to install a CA Technologies product.

**Follow these steps:**

1. Initiate product installation and review product information.
2. Select an installation type.
3. Review installation prerequisites if any are presented.

4. 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: Either create a target zone or use an existing target zone.
    - c. Set up the distribution zone: Either create a distribution zone or use an existing distribution zone.
5. Review the installation summary and start the installation.

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 MSM before beginning the deployment process.

## How to Maintain Existing Products

If you have existing CSIs, you can bring those CSIs into CA MSM so that you can maintain all your installed products in a unified way from a single web-based interface.

You can use the PAS and SIS to maintain a CA Technologies product.

### Follow these steps:

1. Migrate the CSI to CA MSM to maintain an existing CSI in CA MSM.

During the migration, CA MSM stores information about the CSI in the database.
2. Download the latest maintenance for the installed product releases from the Software Catalog tab.

If you cannot find a release (for example, because the release is old), you can add the release to the catalog manually and then update the release to download the maintenance.

3. Apply the maintenance.

**Note:** You can also install maintenance to a particular CSI from the SMP/E Environments tab.

After the maintenance process completes, the product is ready for you to deploy. You may have to perform other steps manually outside of CA MSM before beginning the deployment process.

## How to Deploy a Product

The *Software Deployment Service (SDS)* facilitates the mainframe product deployment from the software inventory of the driving system to the target system. This facilitation includes deploying installed products that are policy-driven with a set of appropriate transport mechanisms across a known topology.

You can use the SDS component of CA MSM to deploy a CA Technologies product that you have already acquired and installed.

### Follow these steps:

1. Set up the system registry:
  - a. Determine the systems you have at your enterprise.
  - b. Set up remote credentials for those systems.
  - c. Set up the target systems (non-sysplex, sysplex or monoplex, shared DASD cluster, and staging), and validate them.
  - d. Add network information, including data destination information, to each system registry entry.
2. Set up methodologies.
3. Create the deployment, which includes completing each step in the New Deployment wizard.

After creating the deployment, you can save it and change it later by adding and editing systems, products, custom data sets, and methodologies, or you can deploy directly from the wizard.

**Note:** If you must deploy other products to the previously defined systems using the same methodologies, you must create a separate deployment.

4. Deploy the product, which includes taking a snapshot, transmitting to target, and deploying (unpacking) to your mainframe environment.

After the deployment process completes, the product is ready for you to configure. You may have to perform other steps manually outside of CA MSM before beginning the configuration process.

**More information:**

[How to Complete Deployment With CA MSM](#) (see page 72)

## How to Configure a Product

The *Software Configuration Service (SCS)* facilitates the mainframe product configuration from the software inventory of the driving system to targeted z/OS operating systems.

You can use the SCS component of CA MSM to configure a CA Technologies product that you have already acquired, installed, and deployed.

**Follow these steps:**

1. Select a deployed product to configure from the Deployments tab to open the Create Configuration wizard.
2. Create the configuration, which includes completing each step in the Create Configuration wizard, including the following:
  - a. Define a configuration name and select a target system.
  - 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 Create Configuration wizard lets you build the configuration.
4. Implement the configuration. The implementation process in CA MSM is a step-by-step process that carefully guides you and provides detailed instructions to start, stop, and manage the steps of the implementation process.

After the configuration process completes, the product is ready for you to use. You may have to perform other steps manually outside of CA MSM.

**Note:** You cannot use CA MSM to configure a product to a staging system.

**More information:**

[How to Complete Configuration With CA MSM](#) (see page 72)

## Access CA MSM Using the Web-Based Interface

You access CA MSM using the web-based interface. Obtain the URL of CA MSM from the CA MSM 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, and click the Log in button.

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](#).

**Important!** The account to which the credentials apply *must* have the Product Display Options set to BRANDED PRODUCTS. You can view and update your account preferences by logging into [the CA Support Online website](#) and clicking My Account. If you do not have the correct setting, you are not able to use CA MSM to download product information and packages.

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 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.

# Chapter 4: Installing Your Product from Pax-Enhanced ESD

---

This section contains the following topics:

[How to Install a Product Using Pax-Enhanced ESD](#) (see page 25)

[Allocate and Mount a File System](#) (see page 31)

[Copy the Product Pax Files into Your USS Directory](#) (see page 34)

[Create a Product Directory from the Pax File](#) (see page 39)

[Copy Installation Files to z/OS Data Sets](#) (see page 40)

[Receive the SMP/E Package](#) (see page 41)

[Clean Up the USS Directory](#) (see page 45)

[Apply Maintenance](#) (see page 46)

## How to Install a Product Using Pax-Enhanced ESD

This section describes the Pax-Enhanced ESD process. We recommend that you read this overview and follow the entire procedure the first time you complete a Pax-Enhanced ESD installation. For experienced UNIX users, the *Pax-Enhanced ESD Quick Reference Guide* has sufficient information for subsequent installations.

**Important!** Downloading pax files for the SMP/E installation as part of the Pax-Enhanced ESD process requires write authority to the UNIX System Services (USS) directories that are used for the ESD process.

If you prefer not to involve all CA Technologies product installers with z/OS UNIX System Services, assign a group familiar with USS to perform Steps 1 through 4 and provide the list of the unpacked MVS data sets to the product installer. USS is not required for the actual SMP/E RECEIVE of the product or for any of the remaining installation steps.

To install files using Pax-Enhanced ESD, use the following process:

1. Allocate and mount the file system. This 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 Pax-Enhanced ESD and create the directory in this file system. Ensure that all users who will be working with pax files have write authority to the directory.

2. Copy the product pax files into your USS directory. To download files, choose one of the following options:

- Download a zip file from CA Support Online to your PC, unzip the file, and then upload the product pax files to your USS file system.
- FTP the pax files from CA Support Online directly to your USS directory.

**Note:** Perform Steps 3 through 6 for each pax file that you upload to your USS directory.

3. Create a product directory from the pax file. 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
```

4. Use the SMP/E GIMUNZIP utility to create z/OS installation data sets. The file UNZIPJCL in the directory that the pax command created in Step 3 contains a sample job to GIMUNZIP the installation package. Edit and submit the UNZIPJCL job.
5. Receive the SMP/E package. Use the data sets that GIMUNZIP created in Step 4. Perform a standard SMP/E RECEIVE using the SMPPTFIN and SMPHOLD (if applicable) DASD data sets. Also, specify the high-level qualifier for the RELFILES on the RFPREFIX parameter of the RECEIVE command.
6. Proceed with product installation. Consult product-specific documentation, including AREADME files and installation notes to complete the product installation.
7. (Optional) Clean up the USS directory. Delete the pax file, the directory that the pax command created, all of the files in it, and the SMP/E RELFILES, SMPMCS, and HOLDDATA data sets.

**More Information:**

[USS Environment Setup](#) (see page 30)

[Allocate and Mount a File System](#) (see page 31)

[Copy the Product Pax Files into Your USS Directory](#) (see page 34)

[Create a Product Directory from the Pax File](#) (see page 39)

[Copy Installation Files to z/OS Data Sets](#) (see page 40)

[Receive the SMP/E Package](#) (see page 41)

## How the Pax-Enhanced ESD Download Works

**Important!** To download pax files for the SMP/E installation as part of the Pax-Enhanced ESD process, you must have write authority to the UNIX System Services (USS) directories used for the ESD process and available USS file space before you start the procedures in this guide.

Use the following process to download files using Pax-Enhanced ESD:

1. Log in to <https://support.ca.com/>, and click Download Center.

The CA Support Online web page appears.

2. Under Download Center, select Products from the first drop-down list, and specify the product, release, and genlevel (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 or mainframe. If you download a zip file, you must unzip it before continuing.

For both options, [The ESD Product Download Window](#) (see page 27) topic explains how the download interface works.

**Note:** For traditional installation downloads, see the *Traditional ESD User Guide*. Go to <https://support.ca.com/>, log in, and click Download Center. A link to the guide appears under the Download Help heading.

4. Perform the steps to install the product based on the product-specific steps.

The product is installed on the mainframe.

## ESD Product Download Window

You can download CA Technologies product ESD packages multiple ways. Your choices depend on the size of the individual files and the number of files that you want to download. You can download the complete product with all components, or you can select individual pax and documentation files for your product or component.

The following illustration shows sample product files. The illustration lists all components of the product. You can use the Download Cart by selecting one or more components that you need, or selecting the check box for Add All to cart. If you prefer to immediately download a component, click the Download link.

CA Earl - MVS

- [Pax Enhanced Electronic Software Delivery \(ESD\) Guide](#)
- [Pax Enhanced Electronic Software Delivery \(ESD\) Quick Reference Guide](#)
- [Traditional Electronic Software Delivery \(ESD\) Guide](#)
- [Learn more about Using pkzip with your Downloaded Mainframe Products](#)
- [Learn more about downloading components of CA product](#)
- [Mounting ISO Images with OpenVMS](#)

If you have comments or suggestions about CA product documentation, send a message to [techpubs@ca.com](mailto:techpubs@ca.com).

**Note:** Related Published Solutions are available on the other results tab on this page. You must add these solutions to your Download Cart to include them with your product files for download.

[View Download Cart](#)

				<input type="checkbox"/> Add All to cart	
Product Components				Add to cart	Download
CCS - LEGACY - ESD ONLY 140000AW030.pax.Z	14.0 /0000	07/06/2011	4.89MB	<input type="checkbox"/>	<a href="#">Download</a>
CCS - MFNSM - ESD ONLY 140000AW040.pax.Z	14.0 /0000	07/06/2011	202.01MB	<input type="checkbox"/>	<a href="#">Download</a>
CCS - BASE - ESD ONLY 140001AW010.pax.Z	14.1 /0000	06/05/2012	27.44MB	<input type="checkbox"/>	<a href="#">Download</a>
CCS - OPTIONAL - ESD ONLY 140001AW020.pax.Z	14.1 /0000	06/05/2012	14.49MB	<input type="checkbox"/>	<a href="#">Download</a>
CA EARL PRODUCT PACKAGE 610106AEO00.pax.Z	6.1 /0106	10/30/2008	1.85MB	<input type="checkbox"/>	<a href="#">Download</a>
EARL PIPPACK AEO61010600.pdf	6.1 /0106	01/29/2010	93.92KB	<input type="checkbox"/>	<a href="#">Download</a>
CA EASYTRIEVE PRODUCT PACKAGE B60000ESA00.pax.Z	11.6 /0000	07/05/2011	6.12MB	<input type="checkbox"/>	<a href="#">Download</a>
DATACOM/AD PROD INFO PACKET CAIE00000P0.pdf	14.0 /0000	06/01/2012	220.53KB	<input type="checkbox"/>	<a href="#">Download</a>
DATACOM/AD XPRESS INSTALL				<input type="checkbox"/>	<a href="#">Download</a>

Clicking the link for an individual component takes you to the Download Method page.

### Download Method

---

Please choose a download method to complete your download request. [Learn More](#)

---

**HTTP via Download Manager**  
This is the CA recommended method for download. The Download Manager allows you to download your files faster and more efficiently.  
[Download](#)

---

**HTTP via Internet Browser**  
If Download Manager cannot be used or fails to start you may access your file(s) via your internet browser.  
[View File Link\(s\)](#)

---

**FTP**  
This method allows you to download your file(s) via FTP from CA's content delivery network or via native FTP servers.  
**Note:** Processing is required and an email notification will be sent when your request is ready for downloading.  
[FTP Request](#)

Depending on the size and quantity of ordered product files, the Download Method screen could also have these options:

**Note:** For mainframe downloads using this HTTP method, click the Learn More link.

### Download Method

---

Please choose a download method to complete your download request. [Learn More](#)

---

**HTTP via Download Manager**  
This is the CA recommended method for download. The Download Manager allows you to download your files faster and more efficiently.  
[Download](#)

---

**Create a Zip File**  
This method allows you to bundle your download files into one or more zip files of up to 3.5 GB each. These zip files can then be downloaded via HTTP or FTP.  
**Note:** Processing is required and an email notification will be sent when your request is ready for downloading.  
[Create Zip](#)

The HTTP method lets you start downloading immediately. The FTP method takes you to the Review Orders page that displays your order, first in a Pending status changing to Ready when your order has been processed.

Preferred FTP uses the new content delivery network (CDN). Alternate FTP uses the CA Technologies New York-based FTP servers.

The Create a Zip File option first creates the zip, and when ready, offers the options that the Zip Download Request examples show in the next illustration.

**Review Download Requests**

Below is a list of the FTP and large HTTP downloads that have been requested by your site. When status is set to **'Ready'** a link will appear.

- For FTP requests, click on the FTP link to view the path information for your download. For more information view our [FTP Help document](#)
- For HTTP requests, click on the HTTP link to initiate your download.
- To view the details of your request, click on the desired order number.

**Today's Downloads**

Order #	Status	Description	Date Placed	Download Options
<a href="#">10000961</a>	Ready	FTP Download Request	04/30/2010	<a href="#">Preferred FTP</a> ▼   <a href="#">Alternate FTP</a> ▼

**Previous 6 day Download History**

Order #	Status	Description	Date Placed	Download Options
<a href="#">10000949</a>	Ready	ZIP Download Request	04/29/2010	<a href="#">HTTP via DLM</a>   <a href="#">Preferred FTP</a> ▼   <a href="#">Alternate FTP</a> ▼
<a href="#">10000948</a>	Ready	ZIP Download Request	04/29/2010	<a href="#">HTTP via DLM</a>   <a href="#">Preferred FTP</a> ▼   <a href="#">Alternate FTP</a> ▼

## 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 CA Support Online.
- 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-Enhanced 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-Enhanced ESD process requires write authority to the UNIX System Services (USS) directories that are used for the ESD process. The USS file system that is used for Pax-Enhanced ESD must have sufficient free space to hold the directory that the pax command created, and its contents. You need approximately 3.5 times the pax file size in free space 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 ESD directory.

## Allocate and Mount a File System

You can use the zSeries File System (zFS) or hierarchical file system (HFS) for ESD 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
//CAESD 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/CAESD directory in an existing directory, /u/maint. From the TSO OMVS shell, enter the following commands:

```
cd /u/maint/  
mkdir CA  
cd CA  
mkdir CAESD
```

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

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('yourUSSESDdirectory')  
TYPE(ZFS) MODE(RDWR)  
PARM(AGGRGROW)
```

- On an HFS, use the following sample:

```
MOUNT FILESYSTEM('your_HFS_data_set_name')  
MOUNTPOINT('yourUSSESDdirectory')  
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 ESD directory and its files. For example, to allow write access to the ESD directory for other users in your USS group, from the TSO OMVS shell, enter the following command:

```
chmod -R 775 /yourUSSESDdirectory/
```

Write access is granted.

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

## Copy the Product Pax Files into Your USS Directory

To begin the CA Technologies product installation procedure, copy the product pax file into the USS directory that you set up. Use one of the following methods:

- Download the product pax files directly from the CA Support Online FTP server to your z/OS system.
- Download the product pax file from the CA Support Online FTP server to your computer, and upload it to your z/OS system.
- Download the product file from CA Support Online to your computer. If your download included a zip file, unzip the file, and upload the unzipped pax files to your z/OS system.

This section includes 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 and sample commands to upload a pax file from your computer 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 for Pax-Enhanced ESD 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.

### More Information:

[How the Pax-Enhanced ESD Download Works](#) (see page 27)  
[ESD Product Download Window](#) (see page 27)

## Download Using Batch JCL

Use this process to download a pax file from the CA Support Product Downloads window by running batch JCL on the mainframe. Use the sample JCL attached to the PDF file as CAt>Mainframe.txt to perform the download.

**Important!** To simplify the Pax-Enhanced ESD process, the PDF version of this guide includes a sample JCL job that you can copy directly to the mainframe. To access this job, click the paper clip icon at the left of the PDF reader. A window displaying attachments opens. Double-click the file to view the sample JCL.

**Note:** We recommend that you follow the preferred method as described on CA Support Online. This procedure is our preferred download method; however, we do include the procedure to download to the mainframe through a PC in the next section.

### Follow these steps:

1. Supply 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 *yourUSSESDdirectory* with the name of the USS directory that you use for 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://ftpdnloads.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 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 "yourUSSESDdirectory" with the name of the USS    *
/* directory used on your system for 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',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 yourUSSESDdirectory
binary
get FTP_location
quit
```

## Download Files to Mainframe through a PC

If you download pax or zip files from CA Support Online to your PC, use this procedure to upload the pax file from your PC to your z/OS USS directory.

### Follow these steps:

1. Follow the procedures in How the Pax-Enhanced ESD Download Works to download the product pax or zip file to your PC. If you download a zip file, first unzip the file to use the product pax files.

The pax or zip file resides on your PC.

2. Open a Windows command prompt.

The command prompt appears.

3. Customize and enter the FTP commands with the following changes:

- a. Replace *mainframe* with the z/OS system IP address or DNS name.
- b. Replace *userid* with your z/OS user ID.
- c. Replace *password* with your z/OS password.
- d. Replace *C:\PC\folder\for\thePAXfile* with the location of the pax file on your PC.
- e. Replace *yourUSSESDdirectory* with the name of the USS directory that you use for ESD downloads.
- f. Replace *paxfile.pax.Z* with the name of the pax file to upload.

The pax file is transferred to the mainframe.

### Example: FTP Commands

This list is a sample of FTP commands to upload the pax file from your PC to your USS Pax-Enhanced ESD directory:

```
ftp mainframe
userid
password
bin
lcd C:\PC\folder\for\thePAXfile
cd /yourUSSESDdirectory/
put paxfile.pax.Z
quit
exit
```

## Create a Product Directory from the Pax File

Use the sample job attached to the PDF file as `Unpackage.txt` to extract the product pax file into a product installation directory.

**Important!** To simplify the Pax-Enhanced ESD process, the PDF version of this guide includes a sample JCL job that you can copy directly to the mainframe. To access this job, click the paper clip icon at the left of the PDF reader. A window displaying attachments opens. Double-click the file to view the sample JCL.

### Follow these steps:

1. Supply a valid JOB statement.
2. Replace *yourUSSESDdirectory* with the name of the USS directory that you use for ESD 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 runs and 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.

## Sample Job to Execute the Pax Command (Unpackage.txt)

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

```
//ESDUNPAX JOB (ACCOUNTNO), 'UNPAX 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 "yourUSSESDdirectory" with the name of the USS *
/* directory used on your system for 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, make *
/* sure the 'X' continuation character is in column 72. *
//*****
//UNPAXDIR EXEC PGM=BPXBATCH,
// PARM='sh cd /yourUSSESDdirectory/; pax -rvf paxfile.pax.Z'
/*UNPAXDIR EXEC PGM=BPXBATCH,
/* PARM='sh cd /yourUSSESDdirectory/; 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.

### 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 *yourHLQ* 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* use the same value for *yourHLQ* as you use for the SMP/E RELFILES.

All occurrences of *yourHLQ* 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)*.

## Receive the SMP/E Package

If you are installing the package into a new SMP/E environment, see the product documentation and the sample jobs included with the product to set up an SMP/E environment before you proceed. The sample jobs can be found in *yourHLQ.SAMPJCL*.

Complete the SMP/E RECEIVE using files on DASD that the UNZIPJCL job created. Consult the product sample JCL library that contains a sample job that is customized to receive the product from DASD. Specifically, you specify the following values:

- DASD data set names for SMPPTFIN and SMPHOLD (if applicable)
- The HLQ that you used in the UNZIPJCL job on the RFPREFIX parameter on the RECEIVE command

## How to Install Products Using Native SMP/E JCL

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

1. Allocate product data sets and SMP/E data sets.
2. Create SMP/E CSI.
3. Receive base functions.
4. Apply base functions.
5. Accept base functions.
6. Configure the product according to your site requirements.

## Prepare the SMP/E Environment for Pax Installation

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

Before you begin this procedure, confirm whether your product uses UNIX System Services (USS). If it does, 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.

### To prepare the SMP/E environment for your product

1. Customize the macro SPLSEDIT with your site-specific information and then copy the macro to your SYSPROC location. Replace the rightmost parameters for each ISREDIT CHANGE macro command. Each time you edit an installation member, type SPLSEDIT on the TSO 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* for the unzip to DASD ESD JCL.

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

2. Open the SAMPJCL member SPL1ALL in an edit session and execute the SPLSEDIT macro from the command line.

SPL1ALL is customized.

**Note:** When upgrading into an existing CSI, comment out any allocation DD statements for currently existing files.

---

3. Submit SPL1ALL.

This job produces the following results:

- The target and distribution data sets for CA Spool are created.
- Unique SMPPTS, SMPMDS, SMPSCDS, and SMPSTS data sets for this target zone are created.

4. If your product requires HFS or if you want to install a feature of the product that requires HFS, complete the following substeps:

- a. Open the SAMPJCL member BQ41ALLU in an edit session and execute the SPLSEEDIT macro from the command line.

BQ41ALLU is customized.

- b. Submit BQ41ALLU.

This job allocates your HFS data sets.

- c. Open the SAMPJCL member BQ42MKD in an edit session and execute the SPLSEEDIT macro from the command line.

BQ42MKD is customized.

- d. Submit BQ42MKD.

This job creates all directories and mounts the file system.

5. Open the SAMPJCL member SPL2CSI in an edit session and execute the SPLSEEDIT macro from the command line.

SPL2CSI is customized.

**Note:** When upgrading into an existing CSI, comment out any allocation DD statements for files which currently exist and delete the CREATCSI step. Change all ADD's to REP's.

6. Submit SPL2CSI.

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.

7. If your product requires HFS or if you want to install a feature of the product that requires HFS, complete the following substeps:
  - a. Open the SAMPJCL member BQ43CSIU in an edit session and execute the SPLSEEDIT macro from the command line.  
BQ43CSIU is customized.
  - b. Submit BQ43CSIU.  
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 *yourHLQ*.SAMPJCL members in sequence. Do not proceed with any job until the previous job has completed successfully.

### Follow these steps:

1. Open the SAMPJCL member SPL3RECD in an edit session, and execute the SPLSEEDIT macro from the command line.  
SPL3RECD is customized.
2. Submit the *yourHLQ*.SAMPJCL member SPL3RECD to receive SMP/E base functions.  
Third-Party Software for CA Spool is received and now resides in the global zone.
3. Open the SAMPJCL member SPL4APP in an edit session, and execute the SPLSEEDIT macro from the command line.  
SPL4APP is customized.
4. Submit the *yourHLQ*.SAMPJCL member SPL4APP to apply SMP/E base functions.  
Third-Party Software for CA Spool is applied and now resides in the target libraries.
5. Open the SAMPJCL member SPL5ACC in an edit session, and execute the SPLSEEDIT macro from the command line.  
SPL5ACC is customized.
6. Submit the *yourHLQ*.SAMPJCL member SPL5ACC to accept SMP/E base functions.  
Third-Party Software for CA Spool is accepted and now resides in the distribution libraries.

## Clean Up the USS Directory

**Important!** This procedure is optional. Do not use this procedure until you complete the entire installation process.

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-Enhanced 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 Maintenance

CA Support Online has maintenance and HOLDDATA published since the installation data was created. After the maintenance process completes, the product is ready to deploy.

### Follow these steps:

1. Check CA Support Online and download any PTFs and HOLDDATA published since this release was created. If the base release was created recently, no PTFs or HOLDDATA will have been published yet.
  2. Transfer the downloaded files to two separate FB 80 sequential data sets. Use one data set to contain the PTFs and the other to contain the HOLDDATA.  
  
The PTFs and HOLDDATA become accessible to the *yourHLQ.SAMPJCL* maintenance members.
  3. The SPLSEEDIT macro was customized in the installation steps. Verify that you still have the values from the base installation.
  4. Open the SAMPJCL member SPL6RECP in an edit session and execute the SPLSEEDIT macro from the command line.  
  
SPL6RECP is customized with your JOB statement, CSI location, and zone names.
  5. Customize the SPL6RECP SMPPTFIN and SMPHOLD DD statements to reference the FB 80 data sets for the PTFs and HOLDDATA.
  6. Submit SPL6RECP.  
  
The PTFs and HOLDDATA are received.
  7. Open the SAMPJCL member SPL7APYP in an edit session and execute the SPLSEEDIT macro from the command line.  
  
SPL7APYP is customized.
  8. Submit SPL7APYP.  
  
The PTFs are applied.
  9. (Optional) Open the SAMPJCL member SPL8ACCP in an edit session and execute the SPLSEEDIT macro from the command line.  
  
SPL8ACCP is customized.
  10. (Optional) Submit *yourHLQ.SAMPJCL* member SPL8ACCP.  
  
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.

**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.

**EC**

Indicates that this SYSMOD requires a hardware engineering change. An EC hold SYSMOD usually does not affect the product unless the EC is present on the hardware device.

Code a bypass operand on your APPLY command to install SYSMODs that have internal holds. Code the bypass 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. The HOLDDATA is commonly used for SYSMODs that have been distributed and later are discovered to cause problems.

Download the external HOLDDATA from CA 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.

If a SYSMOD has an unresolved hold error, SMP/E does not install it unless you add a bypass to your APPLY command. You can bypass an error hold in situations that are not applicable to you. Error holds that are 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 hold, the resolving SYSMOD supersedes the hold error. This action lets you apply the original SYSMOD in conjunction with the fixing SYSMOD.

A special HOLDDATA class that is called ERREL exists. We have determined that the problem fixed by the SYSMOD is more important than the one that it causes. We recommend that you apply these SYSMODs.

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.

**Note:** When you have completed the procedures in this section, go to [Configuring Your Product](#).

# Chapter 5: Installing Your Product from Tape

---

This section contains the following topics:

[Unload the Sample JCL from Tape](#) (see page 50)

[Prepare the SMP/E Environment for Tape Installation](#) (see page 51)

[Run the Installation Jobs for a Tape Installation](#) (see page 53)

[Clean Up the USS Directory](#) (see page 53)

[Apply Maintenance](#) (see page 54)

## Unload the Sample JCL from Tape

To simplify the process, the PDF version of this guide includes a sample JCL job that you can copy directly to the mainframe. To access this job, click the paper clip icon at the left of the PDF reader. A window displaying attachments opens. Double-click the UnloadJCL.txt file to view the sample JCL job.

**Note:** The sample JCL to install the product is also provided in the CAI.SAMPJCL library on the distribution tape.

### Follow these steps:

1. Run the following sample JCL:

```
//COPY      EXEC  PGM=IEBCOPY,REGION=4096K
//SYSPRINT  DD   SYSOUT=*
//SYSUT1    DD   DSN=CAI.SAMPJCL,DISP=OLD,UNIT=unitname,VOL=SER=nnnnnn,
//          LABEL=(1,SL)
//SYSUT2    DD   DSN=yourHLQ.SAMPJCL,
//          DISP=(,CATLG,DELETE),
//          UNIT=sysda,SPACE=(TRK,(15,3,6),RLSE)
//SYSUT3    DD   UNIT=sysda,SPACE=(CYL,1)
//SYSIN     DD   DUMMY
```

#### ***unitname***

Specifies the tape unit to mount the tape.

#### ***nnnnnn***

Specifies the tape volume serial number.

#### ***yourHLQ***

Specifies the data set prefix for the installation.

#### ***sysda***

Specifies the DASD where you want to place the installation software.

The SAMPJCL data set is created and its contents are downloaded from the tape.

2. Continue with one of the following options:
  - If you already have set up the SMP/E environment, go to Run the Installation Jobs for a Tape Installation.
  - If you have *not* set up the SMP/E environment, go to Prepare the SMP/E Environment for Tape Installation.

## Prepare the SMP/E Environment for Tape Installation

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

Before you begin this procedure, confirm whether your product uses UNIX System Services (USS). If it does, 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.

### To prepare the SMP/E environment for your product

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

The macro is ready to customize your SPL.SAMPJCL members.

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

2. Open the SAMPJCL member SPL1ALL in an edit session and execute the SPLSEEDIT macro from the command line.

SPL1ALL is customized.

**Note:** When upgrading into an existing CSI, comment out any allocation DD statements for existing files.

3. Submit SPL1ALL.

This job produces the following results:

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

4. If your product requires HFS or if you want to install a feature of the product that requires HFS, complete the following substeps:
  - a. Open the SAMPJCL member BQ41ALLU in an edit session and execute the SPLSEEDIT macro from the command line.

BQ41ALLU is customized.
  - b. Submit BQ41ALLU.

This job allocates your HFS data sets.
  - c. Open the SAMPJCL member BQ42MKD in an edit session and execute the SPLSEEDIT macro from the command line.

BQ42MKD is customized.
  - d. Submit BQ42MKD.

This job creates all directories and mounts the file system.
5. Open the SAMPJCL member SPL2CSI in an edit session and execute the SPLSEEDIT macro from the command line.

SPL2CSI is customized.

**Note:** When upgrading into an existing CSI, comment out any allocation DD statements for existing files and delete the CREATCSI step. Change all ADD's to REP's.
6. Submit SPL2CSI.

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.
7. If your product requires HFS or if you want to install a feature of the product that requires HFS, complete the following substeps:
  - a. Open the SAMPJCL member BQ43CSIU in an edit session and execute the SPLSEEDIT macro from the command line.

BQ43CSIU is customized.
  - b. Submit BQ43CSIU.

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

## Run the Installation Jobs for a Tape Installation

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

**Follow these steps:**

1. Open the SAMPJCL member SPL3RECT in an edit session and execute the SPLSEEDIT macro from the command line.  
SPL3RECT is customized.
2. Submit the *yourHLQ*.SAMPJCL member SPL3RECT to receive SMP/E base functions.  
CA Spool is received and now resides in the global zone.
3. Open the SAMPJCL member SPL4APP in an edit session and execute the SPLSEEDIT macro from the command line.  
SPL4APP is customized.
4. Submit the *yourHLQ*.SAMPJCL member SPL4APP to apply SMP/E base functions.  
Your product is applied and now resides in the target libraries.
5. Open the SAMPJCL member SPL5ACC in an edit session and execute the SPLSEEDIT macro from the command line.  
SPL5ACC is customized.
6. Submit the *yourHLQ*.SAMPJCL member SPL5ACC to accept SMP/E base functions.  
Your product is accepted and now resides in the distribution libraries.

## Clean Up the USS Directory

**Important!** This procedure is optional. Do not use this procedure until you complete the entire installation process.

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-Enhanced 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 Maintenance

CA Support Online has maintenance and HOLDDATA published since the installation data was created. After the maintenance process completes, the product is ready to deploy.

**Follow these steps:**

1. Check CA Support Online and download any PTFs and HOLDDATA published since this release was created. If the base release was created recently, no PTFs or HOLDDATA will have been published yet.

2. Transfer the downloaded files to two separate FB 80 sequential data sets. Use one data set to contain the PTFs and the other to contain the HOLDDATA.

The PTFs and HOLDDATA become accessible to the *yourHLQ.SAMPJCL* maintenance members.

3. The SPLSEDIT macro was customized in the installation steps. Verify that you still have the values from the base installation.

4. Open the SAMPJCL member SPL6RECP in an edit session and execute the SPLSEDIT macro from the command line.

SPL6RECP is customized with your JOB statement, CSI location, and zone names.

5. Customize the SPL6RECP SMPPTFIN and SMPHOLD DD statements to reference the FB 80 data sets for the PTFs and HOLDDATA.
6. Submit SPL6RECP.  
The PTFs and HOLDDATA are received.
7. Open the SAMPJCL member SPL7APYP in an edit session and execute the SPLSEEDIT macro from the command line.  
SPL7APYP is customized.
8. Submit SPL7APYP.  
The PTFs are applied.
9. (Optional) Open the SAMPJCL member SPL8ACCP in an edit session and execute the SPLSEEDIT macro from the command line.  
SPL8ACCP is customized.
10. (Optional) Submit *yourHLQ*.SAMPJCL member SPL8ACCP.  
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.

### **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.

### **EC**

Indicates that this SYSMOD requires a hardware engineering change. An EC hold SYSMOD usually does not affect the product unless the EC is present on the hardware device.

Code a bypass operand on your APPLY command to install SYSMODs that have internal holds. Code the bypass 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. The HOLDDATA is commonly used for SYSMODs that have been distributed and later are discovered to cause problems.

Download the external HOLDDATA from CA 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.

If a SYSMOD has an unresolved hold error, SMP/E does not install it unless you add a bypass to your APPLY command. You can bypass an error hold in situations that are not applicable to you. Error holds that are 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 hold, the resolving SYSMOD supersedes the hold error. This action lets you apply the original SYSMOD in conjunction with the fixing SYSMOD.

A special HOLDDATA class that is called ERREL exists. We have determined that the problem fixed by the SYSMOD is more important than the one that it causes. We recommend that you apply these SYSMODs.

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.

**Note:** When you have completed the procedures in this section, go to [Configuring Your Product](#).



# Chapter 6: Installing Your Product from DVD

---

This section contains the following topics:

[Overview](#) (see page 59)

[Introduction to Electronic Software Delivery](#) (see page 62)

[Pax-Enhanced ESD Procedures](#) (see page 65)

[References](#) (see page 69)

## Overview

### Purpose

Welcome to the CA Electronic Software Delivery (ESD) program using the Pax-Enhanced ESD process for SMP/E installations for z/OS systems. This guide provides the information and steps that you need to copy your CA products from the CA products DVD using the Pax-Enhanced ESD process.

### Audience

We created this guide to explain the entire Pax-Enhanced ESD process for novice users. Each chapter explicitly states the required steps. We strongly suggest that you read this entire document and follow the procedures the first time you copy a product from a DVD using the Pax-Enhanced ESD program.

## Frequently Asked Questions

This section lists common questions and answers related to the Pax-Enhanced ESD process.

### #1: What is the Pax-Enhanced ESD process?

The enhanced process lets you download software directly to your mainframe and eliminates the need to download files to tape. We implemented the Pax-Enhanced ESD process in response to customer requests.

## **#2: How is the process different? What has changed?**

When using the traditional ESD process, you upload the ESD file to the mainframe and create a product installation tape using a utility program provided by CA.

The Pax-Enhanced ESD process eliminates the need for a tape and uses superior compression technology that reduces file transfer times. This process uses a UNIX portable archive interchange (pax) file. Standard z/OS utilities can read and expand the file directly to your mainframe system.

## **#3: Why did CA choose to use and require customers to use UNIX System Services (USS)?**

To improve the CA product installation process for our customers. The following list details some of the benefits of using the USS pax format to distribute software packages:

- Supports all z/OS data types including, VSAM, PDS, PDSE, HFS, and zFS.
- Allows a large number of MVS data sets to be *zipped* into a single file that can be received in a single download.
- Can be un-packed using standard utilities that are available on every z/OS system. No additional utilities or licensed products are required.
- Supports the CA Mainframe Software Manager (MSM). CA MSM makes it faster and easier to install all CA products from a browser-based user interface and eliminates many of the complexities and software knowledge of SMP/E, JCL, and other utilities.

## **#4: Do I need to do anything differently as a result? Are there any new requirements or any dependencies? Am I required to have an in-depth knowledge of UNIX System Services (USS) to use the Pax-Enhanced ESD process?**

A basic understanding of USS is sufficient if you understand UNIX and follow the steps in this guide. The appendix in this guide lists and defines common USS commands. In addition, the appendix lists IBM documents that provide detailed information about USS.

## **#5: What can I expect when I transition to the Pax-Enhanced ESD process?**

You may experience a slight learning curve the first time you use the enhanced process. We recommend reading this guide in its entirety before using the Pax-Enhanced ESD process.

**#6: Why did CA implement the new process?**

We received customer requests to eliminate the need to create an intermediate tape during the software installation process. Pax-Enhanced ESD supports installation completely from files on DASD, allowing customers to obtain and benefit from the latest CA product software releases and updates quickly, and with less manual effort.

In addition, Pax-Enhanced ESD is one of the first deliverables based on our Mainframe 2.0 strategy, which is designed to simplify software installation and other system administration functions on z/OS. We invite you to visit <http://www.ca.com/mainframe2> to learn more about Mainframe 2.0.

**#7: Does CA still provide products and maintenance on cartridge tapes?**

Yes. You can still order cartridge tapes. However, we strongly recommend using the Pax-Enhanced ESD process because it is faster and more secure than the physical tape delivery method.

**#8: Are there software prerequisites for the Pax-Enhanced ESD process?**

Yes. The Pax-Enhanced ESD process requires SMP/E 3.4 with IBM APAR IO07810 (or higher). You can get the latest release of SMP/E from IBM at no charge.

**#9: What version of Java do I need?**

The Pax-Enhanced ESD process does not require Java. If the Integrated Cryptographic Services Facility (ICFS) is not active, the GIMUNZIP SMP/E utility requires Java 1.4 or higher to generate an SHA-1 hash value.

**#10: Does this process require a specific version of z/OS?**

No. You can use Pax Enhanced-ESD on any supported version of z/OS.

**#11: How do I know that the files I'm working with are the most current?**

Check the <https://support.ca.com/> site. Log in and click Download Center. The product files on this online site will always be the most up-to-date.

## CA Product Documentation

After completing the procedures in this ESD guide, you are ready to begin the standard installation procedure. To continue the installation process, see your CA product-specific documentation.

Each CA product documentation set includes the latest technology available for online viewing, keyword searching, book marking, and printing. Documentation sets reside in one repository and are available at the CA Support Online web site. You can view and download all CA product documentation from this central repository. The following procedure details how to access product documentation.

### To download documentation from Support Online

1. On the Web, go to <https://support.ca.com/>.  
The CA Support Online Web page appears.
2. Click login at the top of the page.  
The Log in window opens.
3. Type a registered CA Support Online email address and password, and click Login.  
The CA Support Online Web page re-opens, and you are logged into CA Support Online.
4. Select Documentation located on the left side.  
The Documentation Web page opens.
5. In Find a Product Documentation Bookshelf, choose your product from the drop-down list, and click Go.  
The CA product documentation bookshelf web page opens.
6. Locate and view the HTML pages of your product-specific documentation; you can also view and download the PDF file.

## Introduction to Electronic Software Delivery

### What is Electronic Software Delivery?

CA supports a Pax-Enhanced ESD process that uses a UNIX portable archive interchange (pax) file that contains the product package.

The CA Electronic Software Delivery (ESD) process lets you download a product package in a zip file or compressed individual product components from the CA Support Online Download Center or from directories on your CA product DVD. This guide explains the steps to copy pax files from a product DVD. To download pax files from support online, go to the Download Center on <https://support.ca.com/>.

The steps in this guide provide instructions for SMP/E CA product installation on z/OS systems.

The [pax](#) (see page 64) format provides several advantages for ESD:

- It supports virtually any file type or data set type, including those for products that are based on new technology (for example, Java).
- It supports combining a large number of data sets into a single file to receive in a single download.
- It can be unpacked using standard utilities that are available on every z/OS system. Customers no longer have to install CA-proprietary utility programs or download additional software to complete the installation process.

The Pax Enhanced ESD process is the foundation on which the CA Mainframe Software Manager (MSM) was built. CA MSM can perform the required un-packing tasks.

**Important!** Most CA products have transitioned to the pax format and must be processed using the Pax-Enhanced ESD process. A small number of products are still packaged using the traditional ESD format or as legacy .AWS or .CDTAPE files. For traditional installation downloads, see the *Traditional ESD User Guide*.

## ESD Product Copy from a DVD

The DVD contains folders that include the pax files for the base product and a README file.

See [Check for the Latest Updates](#) (see page 63) for currency information and the [Pax Command](#) (see page 64) for an explanation about how this command works.

## Check for the Latest Updates

**Important!** The files provided for copy from the CA product DVD might not be the most current.

Go to <https://support.ca.com/>, log in, and click Download Center. The files on this online site will always have the most current product updates.

## File Types that Might Be Found in a Zip File Package

**Important!** If your package includes file types other than those types in the following list, see the *Traditional Electronic Software Delivery (ESD) Guide*. To access this guide, go to <https://support.ca.com/>, log in, and click Download Center. A link to the guide appears under the Download Help heading.

If you download the product from a CA product DVD, you see one or more files with the following file types:

#### ESD Pax Files:

##### [.pax.Z](#) (see page 64)

Identifies a compressed UNIX file containing product files for the enhanced ESD process.

#### Documentation Files:

##### [readme\\_CA\\_VIEW\\_DVD.html](#) or [Readme.html](#)

Lists a description of the files and instructions for accessing product installation documentation. The actual file name may differ based on the product name.

**Important!** The product-specific directory may also contain an AREADME file that describes the pax download and installation process for your CA product or maintenance update. Read the AREADME file before running UNZIPJCL. If your directory includes install notes, read them before continuing. Failure to read these files impacts your installation.

## The PAX Command

The pax command does the following:

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

For example, the directory created by CA MIM Resource Sharing - MVS release 11.6, genlevel 0809 pax is MIM1160809. The remaining samples in this guide show this sample folder.

**Important!** Ensure that you have sufficient free space in the USS file system that you are using for Pax ESD to hold the directory created by the pax command and its contents. You need approximately 3.5 times the pax file size in free space.

If you do not have sufficient free space, you receive EDC5133I error messages similar to the following:

```
pax: FSUM6260 write error on file "MIM116SP2/UNZIPJCL": EDC5133I
```

```
No space left on device.
```

# Pax-Enhanced ESD Procedures

## How to Install a Product from a DVD Using Pax-Enhanced ESD

This section describes the Pax-Enhanced ESD DVD install process. We recommend that you read this overview carefully *and* follow the entire procedure the first time you complete a Pax-Enhanced ESD installation.

**Important!** Downloading pax files for the SMP/E installation as part of the Pax-Enhanced ESD process requires write authority to the UNIX System Services (USS) directories that are used for the ESD process.

**Important!** If you prefer not to involve all CA product installers with z/OS UNIX System Services, assign a group familiar with USS to perform Steps 1 through 3 and provide the list of the unpacked MVS data sets to the product installer. Be aware that some products may require USS and/or USS SuperUser authority for additional installation steps.

### More Information:

[USS Environment Setup](#) (see page 30)

[Allocate and Mount a File System](#) (see page 31)

[Copy the Product Pax Files into Your USS Directory](#) (see page 34)

[Create a Product Directory from the Pax File](#) (see page 39)

[Copy Installation Files to z/OS Data Sets](#) (see page 40)

[Receive the SMP/E Package](#) (see page 41)

## The Installation Procedure

There are four parts to the installation procedure:

1. Copy the files.
2. Install the files using the pax.z file.
3. Create a product Directory from the Pax File.
4. Complete the installation using your product documentation.

## Copy the Files

To copy the files

- Copy the entire product software package to your PC from the CA product DVD.

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

## Install the Files Using the pax.Z File

After copying the pax.Z files to your PC, do the following to upload the files from your PC to your z/OS USS directory.

### To install files using the pax.Z file

1. Open a Windows command prompt.

The command prompt appears.

2. Customize and enter the FTP commands with the following changes:

- Replace *mainframe* with the z/OS system's IP address or DNS name.
- Replace *userid* with your z/OS user ID.
- Replace *password* with your z/OS password.

- Type **bin**

This sets the transfer type to binary.

- Replace C:\PC\folder\for\thePAXfile with 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, you must enclose that value in double quotation marks.

- Replace *yourUSSESDdirectory* with the name of the USS directory that you use for ESD downloads.
- Replace *paxfile.pax.Z* with the name of the pax file to upload.

3. Click Enter.

The pax file is transferred to the mainframe.

The following list is a sample of the FTP commands needed to upload the pax file from your PC to your USS Pax-Enhanced ESD directory:

```
FTP mainframe
userid
password
```

```
bin
lcd C:\PC\folder\for\thePAXfile
cd /yourUSSESDdirectory/
put paxfile.pax.Z
quit
exit
```

## Create a Product Directory from the Pax File

**Important!** The sample job [Unpackage.txt](#) (see page 68) simplifies the Pax-Enhanced ESD process; you can copy this JCL job directly to the mainframe.

### To create a product installation directory using the Unpackage.txt sample job

1. Supply a valid JOB statement.
2. Replace *yourUSSESDdirectory* with the name of the USS directory that you use for ESD 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 runs and creates the product directory.

**Note:** After making the changes noted in the job, 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.

## Sample Job to Execute the Pax Command (Unpackage.txt)

The following is the text for the Unpackage.txt JCL file:

```
//ESDUNPAX JOB (ACCOUNTNO),'UNPAX 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 "yourUSSESDdirectory" with the name of the USS *
/* directory used on your system for 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, make *
/* sure the 'X' continuation character is in column 72. *
//*****
//UNPAXDIR EXEC PGM=BPXBATCH,

// PARM='sh cd /yourUSSESDdirectory/; pax -rvf paxfile.pax.Z'
/*UNPAXDIR EXEC PGM=BPXBATCH,

/* PARM='sh cd /yourUSSESDdirectory/; pax X
/* -rvf paxfile.pax.Z'
//STDOUT DD SYSOUT=*
//STDERR DD SYSOUT=*
```

## Complete the Installation

At this point, the product has been copied from the DVD onto the PC and the file has been FTP'd to USS unpaxed, the product directory created, and is now ready to be *installed*.

### To complete the installation

1. Access the *Installation Guide* in the documentation set for your product.
2. See the "Installing your product from PAX-Enhanced Electronic Software Delivery" chapter, in this guide:

In the How to Install a Product Using Pax-Enhanced ESD topic, see the Use the SMP/E GIMUNZIP Utility step to proceed with the installation.

## References

### IBM Reference Manual

If you need additional information on UNIX System Services (USS) or SMP/E, see these IBM reference manuals:

- SMP/E for z/OS Reference (SA22-7772)
- z/OS UNIX System Services User's Guide (SA22-7801)
- z/OS UNIX System Services Command Reference (SA22-7802)

### Common USS Commands

This section includes basic definitions for common UNIX System Services (USS) commands:

**cd**

Changes directory.

**chgrp**

Changes ownership of one or more files to a new group ID.

**chmod**

Changes file permissions.

**chown**

Changes the file owner. This command changes the owning UID, GID, or both.

**diff**

Compares file or directory contents. `diff -gr dir1/ dir2/` lists files that are different in `dir1` and `dir2`.

**find**

Finds files with specified attributes.

**grep**

Finds text strings in files. For example, `grep -i string *` scans all files in the current directory for the specified string. The `-i` means that the search is not case-sensitive.

**iconv**

Converts from one character set to another.

**lp**

Directs output to line printer.

**ls**

Lists the file in a directory.

**man**

Displays the UNIX help for a command. For example, `man chmod` displays the UNIX help for the `chmod` command.

**mkdir**

Creates a directory.

**mv**

Moves or renames one or more files or directories.

**nm**

Displays the symbol table from an executable file.

**rm**

Deletes a file or directory.

**od**

Produces an octal dump of a file. Also does hexadecimal dumps.

**ps**

Displays information about active processes.

**strings**

Lists text strings in an executable file.

**wall**

Sends a message to all logged in users.

**whence**

Identifies the location of an executable file.

**who**

Displays the logged on users and information about them.

# Chapter 7: Starting Your Product

---

This section describes what you need to do to start CA Spool.

This section contains the following topics:

[Introduction](#) (see page 71)

[How to Prepare for Deployment With CA MSM](#) (see page 71)

[How to Complete Deployment With CA MSM](#) (see page 72)

[How to Complete Configuration With CA MSM](#) (see page 72)

[How to Configure Without CA MSM](#) (see page 77)

[Post-Installation Considerations](#) (see page 91)

## Introduction

Choose the topics in this chapter that relate to the type of installation technique you use.

## How to Prepare for Deployment With CA MSM

The topics in this section describe the manual tasks you perform before deploying your product using CA MSM.

### Run UCLIN

Run member CBQ4JCL(BQ4JIUCL) to update SMP/E with information about the relationship between source and macros. A return code of 04 is acceptable.

### Run Post-Install Jobs as Required for Other Environments

Ignore this step if it was done previously as part of the instructions in 'How to Prepare for Deployment With CA MSM'.

CA Spool has interfaces to a number of different environments. In some environments, some of these interfaces require that you run extra installation jobs. The jobs are in the CBQ4JCL data set and begin with "BQ4J" and the remaining characters indicate the relevant environment.

BQ4Jxxxx are SMP/E jobs that update SMP/E with the information that a foreign product is present. Some of the source distributed with CA Spool assembles differently when a BQ4Jxxxx job is executed.

The optional jobs are as follows:

- BQ4JACF2 for CA ACF2 support
- BQ4JCICS for CICS menu support
- BQ4JCOMP (Complete) for Software AG's Complete support
- BQ4JIDMS for CA IDMS support
- BQ4JIMS for IMS menu support
- BQ4JJES for JES2 support; used with XFER interface
- BQ4JNATU for Software AG's NATURAL support
- BQ4JROSC for Advantage CA Roscoe support
- BQ4JSAP for SAP's R/2 support

## Run Any Other Optional Jobs

Ignore this step if it was done previously as part of the instructions in 'How to Prepare for Deployment With CA MSM'.

Run the following jobs according to the needs of your site:

- BQ4JIU\*\*\* jobs for usermod maintenance
- BQ4JF\*\*\* jobs for fix applies

## How to Complete Deployment With CA MSM

The topics in this section describe the manual tasks you perform when [deploying your product using CA MSM](#) (see page 22).

You can use CA MSM to deploy a configurable runtime copy of all of the CA Spool SMP/E-installed Target libraries to one or more systems in your enterprise.

All post-deployment steps are detailed in [How to Complete Configuration with CA MSM](#).

## How to Complete Configuration With CA MSM

The topics in this section describe the manual tasks you perform when [configuring your product using CA MSM](#) (see page 23).

## Add the JES Initialization Parameters (Optional)

**Note:** This step is optional.

Run *one* of the following jobs in CBQ4JCL, depending on which version of JES you are running, and how your JES system is configured:

### BQ4JJES2

If JES2 is configured with DESTDEF NODENAME= OPTIONAL, which is the JES2 default, there is no need to define the destination ESF to JES2, and this step can be skipped.

If JES2 is configured with DESTDEF NODENAME= REQUIRED, run this job to add the destination identifier ESF to the JES2 initialization parameter deck (JES2PARM) and associate an unused local JES2 route code.

**Note:** You can also define the destination ESF with a JES2 \$ADD command, as follows:

```
$ADD DESTID(ESF) ,DEST=Unnn
```

where *Unnn* must specify an unused local JES2 route code.

### BQ4JJES3

This job adds the destination identifier ESF to the JES3 initialization-parameter deck (JES3IN).

Unless it was added dynamically, JES2 or JES3 has to be restarted to make the destination ESF known. The Automatic File Transfer interface JESTOESF cannot be used until the destination is known to JES, but all the remaining CA Spool facilities will function.

This job is self-documenting. Be sure to adjust the JCL to your site's standards and assign proper values to various installation-dependent parameters.

## Configure TCP/IP Setup

To use the CA Spool TCP/IP interfaces, the CA Spool Started Task User ID must have an OMVS segment assigned. Contact your security administrator to have an OMVS segment defined for your CA Spool user ID.

## Start CA Spool Release 11.7 for the First Time

Start the CA Spool Release 11.7 system for the first time as follows:

1. Enter the following command to activate the CA Spool VTAM resource:

```
V NET,ACT,ID=aaaaaaaa
```

where *aaaaaaaa* is the applid defined for CA Spool. Perform the following to start the system:

- a. Enter the following MVS start command on the MVS operator console:

```
S procname,OPTION=FORMAT
```

where *procname* is the member name of the CA Spool proc in your system procedure library.

The following WTOR message asks you to confirm that the checkpoint data set must be overwritten:

```
*yy ESF053 REPLY Y OR N TO CONFIRM CHECKPOINT RECORD CHANGE
```

- b. To confirm, enter:

```
R yy,Y
```

- c. CA Spool displays initialization progress with the following WTO messages:

```
-ESF059 CHKPTDS1 COLD-START IS IN PROGRESS  
-ESF024 FORMATTING VOLUME=vvvvvv DSN=ddddddd.sssssss.nnnnnnn  
-ESF024 FORMAT COMPLETE V=vvvvvv DSN=ddddddd.sssssss.nnnnnnn  
-ESF041 INTERNAL TRACE REQUESTED, 512 ENTRIES ALLOCATED  
-ESF719 CA Spool BASE option enabled  
-ESF4117 Transformer Interface initialized  
-ESF100 SIMPLE COLD START COMPLETED  
-ESF301 VIRTUAL PRINTER INTERFACE STARTED  
-ESF490 NETWORK INTERFACE STARTED
```

The message NETWORK INTERFACE STARTED confirms a successful initialization.

2. As a quick check, enter the following display-status command from the MVS operator console (where "-" is a communication character defined by COMCHAR statement in CAIQPARM):

-DS

CA Spool responds by writing the following messages to the MVS console:

```
-ESF809 VERSION.LEVEL CA Spool r11.7 SP00
-ESF816      0 OUTSTANDING I/O-REQUESTS
-ESF817 OPEN FILE COUNT:      0/      0 OUTPUT,      0/      0 INPUT
-ESF818      0 % SPOOL UTILIZATION / HWM UTILIZATION      0 %
-ESF820      0 FILE QUEUE ELEMENTS IN USE - MAX      500 / HWM      0
-ESF823 VTAM ACB OPEN - LOGONS ENABLED
-ESF865      NO ACTIVE COMMUNICATION CHANNELS
-ESF889 SUBSYS Interface is active
-ESF857 Printers Defined(      1) Remaining(      10)
-ESF853 TCP/IP printer subtasks:      0
-ESF318 VPS      10(      0) ACB(S)      0(      0) STG(      9K)
-ESF827 SAR INTERFACE IS NOT ACTIVE
-ESF878 Transformer Interface is active,      0 files
-ESF886 LPD Interface is undefined
-ESF885 A(ESFSSM )=X'25270000' A(ESFUSS )=X'254E74C0'
-ESF854      Current Hour      Max Hour      Grand Total
-ESF854 Files printed:      0      0      0
-ESF854 Pages printed:      0      0      0
-ESF854 Lines printed:      0      0      0
```

If there are no errors, you can proceed to the Verify the Installation step.

## Verify the Installation

This section contains information that lets you verify the installation of the basic system and optional features.

The CBQ4JCL library includes some sample test jobs. These jobs are self-documenting but each job should be adjusted to your local JCL standards.

**Note:** The CA Spool CBQ4LOAD must be available to the user's session in linklist or STEPLIB to complete some of the following steps.

## Basic System Verification

Verification of the basic system normally includes these steps:

1. To operate from a 3270 display terminal, first log on through VTAM. To start a session, enter the logon APPLID. For example:

```
LOGON APPLID(ESF)
```

- a. CA Spool prompts for a user ID and password. Enter the userid and password which is specified in CAIQPARM.

When the session is successfully established, CA Spool formats the screen into a message-output area and a command-entry area.

- b. Enter the display-file command. For example:

```
DF
```

CA Spool responds to the display-file command with the message:

```
ESF840 QUEUE EMPTY
```

2. Run the supplied sample job IVPBPRNT to test the ESFPRINT utility in batch mode, to generate the first CA Spool file.

After the job has terminated, start the specified CA Spool printer. CA Spool starts printing the spool file if the printer setup matches the file setup.

3. To test the CA Spool to JES file transfer interface, enter the following:

```
RF1,ND=LOCAL => ESF850 1 FILE(S) ROUTED  
RF1           => ESF850 1 FILE(S) REQUEUED
```

The file is copied to a JES2 or JES3 spin-off SYSOUT data set.

4. Run the supplied sample job IVPBJESX to test the automatic JESTOESF file transfer interface.

After the job has terminated, a new file starts printing on the specified printer.

5. To test the ESFPRINT/DSPRINT TSO command, start a TSO session:

```
ESFPRINT DSN('CAI.CBQ4PARM(CAIQPARM)')  
         DEST(destination) SUB(ESF)
```

Specify the name of the test printer as the destination.

## SUBSYS Verification

### To verify the SUBSYS parameter interface

1. Run the supplied sample job IVPBSUBS to test the SUBSYS-parameter interface.  
After the job has terminated, a new file starts printing on the specified CA Spool printer.
2. To test the ESFALLOC TSO command, first start a TSO session. After the session is started, you can use the ESFALLOC command, as follows:

```
ALLOC    DUMMY FILE(SYSPRINT)
ALLOC    DUMMY FILE(SYSIN)
ALLOC    CAI.CBQ4PARM(CAIQPARM) FILE(SYSUT1) SHR
ESFALLOC SYSUT2 DEST(destination) SUBSYS(ESF)
CALL     'SYS1.LINKLIB(IEBGENER) '
FREE     FILE(SYSPRINT, SYSIN, SYSUT1, SYSUT2)
```

Specify the name of the test printer as the destination.

## Menu Verification

### To verify the menu system and the Advanced Communication Interface

1. Start a TSO session and test the menu system from TSO.
2. Start the menu system by entering the native TSO command:

```
ESFM TSO
```

## How to Configure Without CA MSM

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

## Run UCLIN

Ignore this step if it was done previously as part of the instructions in 'How to Prepare for Deployment With CA MSM'.

Run member CBQ4JCL(BQ4JIUCL) to update SMP/E with information about the relationship between source and macros. A return code of 04 is acceptable.

## Verify the SAS/C Runtime Library

The SAS/C runtime library is installed by SMP/E.

If you did not install ASARB75 and need the SAS/C runtime libraries then you must do a RECEIVE, APPLY, and ACCEPT of FMID ASARB75.

## APF Authorize the CA Spool Libraries

APF authorize the CA Spool CAILIB library and the SAS/C Runtime library by adding the following to the PROGxx member in SYS1.PARMLIB:

- APF ADD DSNAME(cai.CBQ4LOAD) VOLUME(volume)
- APF ADD DSNAME(cai.CSARLOAD) VOLUME(volume)

Use the MVS System Command SET PROG=xx to activate the updated SYS1.PARMLIB PROGxx member.

## Add the JCL Procedure

The CAI Common Procedure library (CBQ4PROC) contains all the procedures relevant to CA Spool. These procedures were placed in this library during SMP APPLY processing.

Edit each JCL procedure to conform to your site's installation standards.

After completing these modifications, you can do either of the following:

- Copy the procedures into a PROCLIB of your choice.
- Copy the following procedure into a common procedure library, which can be added to the system PROCLIB concatenations.

```
//CAIQPOOL PROC MEMBER=CAIQPARAM,           * Initialization Parm
//      LOADLIB='CAI.SPOOL.CBQ4LOAD',      * CA Spool Load Library
//      SASCLIB='CAI.CSARLOAD',            * SAS/C Runtime Library
//      PARMLIB='CAI.CBQ4PARAM',           * Parmlib library
//      OPTION=WARM                        * Start options
//*****
//*
//*          CA Spool r11.7
//*
//* Tailor the Proc as required by your setup
//*
//* Copyright (c) 2010 CA. All rights reserved.
//*****
//IEFPROC EXEC PGM=ESFMAIN,TIME=1440,REGION=0M,PARM=&OPTION
//STEPLIB DD DISP=SHR,DSN=&LOADLIB          * CA Spool Load Library
//      DD DISP=SHR,DSN=CEE.SCEERUN        * LE run-time library
//      DD DISP=SHR,DSN=&SASCLIB           * SAS/C Load Library
//*      DD DISP=SHR,DSN=CAI.VIEW.CBRMLoad * CA View Load Library
//*      DD DISP=SHR,DSN=CAI.XCOM.CBGXLOAD * CA XCOM Load Library
//*      DD DISP=SHR,DSN=$CD.LINKLIB       * Connect:Direct Load Lib
//ESFPARM DD DISP=SHR,DSN=&PARMLIB(&MEMBER) * Initialization Parm
//ESFLIST DD SYSOUT=*,OUTLIM=0
//SYSPRINT DD SYSOUT=*
//SYSTEM DD DUMMY
//SYMDUMP DD DUMMY
//*NJESNAP DD SYSOUT=*                    * NJE trace
//*SAPISNAP DD SYSOUT=*                    * SAPI trace
//*SECUSNAP DD SYSOUT=*                    * SAF trace
```

```
/*-----*
/* Local IMAGELIB libraries. *
/*-----*
//IMAGELIB DD DISP=SHR,DSN=SYS1.IMAGELIB
/*          DD DISP=SHR,DSN=**YOUR**.IMAGELIB
/*-----*
/* Local TCPIP.DATA file. *
/*-----*
/*SYSTCPD DD DISP=SHR,DSN=**YOUR**.TCPIP.DATA.FILE
/*-----*
/* CA Spool Print formatting resource libraries. *
/*-----*
/*PJLLIB DD DISP=SHR,DSN=**YOUR**.PJM.RESOURCE.LIBRARY
/*PCLLIB DD DISP=SHR,DSN=**YOUR**.PCL.RESOURCE.LIBRARY
/*BINLIB DD DISP=SHR,DSN=**YOUR**.BIN.RESOURCE.LIBRARY
/*OVLVLIB DD DISP=SHR,DSN=**YOUR**.OVLV.RESOURCE.LIBRARY
/*HTMLIB DD DISP=SHR,DSN=**YOUR**.HTML.RESOURCE.LIBRARY
/*MAILLIB DD DISP=SHR,DSN=**YOUR**.MAILBOOK.RESOURCE.LIBRARY

/*-----*
/* CA Spool AFP Transformer libraries. *
/*-----*
/*A2PCPARAM DD DISP=SHR,DSN=CAI.CBQ4GEN(A2PCPARAM)
/*A2PCFCOR DD DISP=SHR,DSN=**YOUR**.A2PCFCT <= Font Correlation Table
/*A2PCREPT DD SYSOUT=*
/*A2PSPARM DD DISP=SHR,DSN=CAI.CBQ4GEN(A2PSPARM)
/*AFPMFCT DD DISP=SHR,DSN=CAI.CBQ4GEN(AFPMFCT)
/*A2PSREPT DD SYSOUT=*
/*A2PDPARM DD DISP=SHR,DSN=CAI.CBQ4GEN(A2PDPARM)
/*A2PDREPT DD SYSOUT=*
/*PSEGPDS DD DISP=SHR,DSN=**PSF**.PSEGLIB
/*FDEFPS DD DISP=SHR,DSN=**PSF**.FDEFPS
/*PDEFPS DD DISP=SHR,DSN=**PSF**.PDEFPS
/*OVLVPS DD DISP=SHR,DSN=**PSF**.OVLVPS
/*FONTPS DD DISP=SHR,DSN=**PSF**.FONTLIB
/*FONTPS3 DD DISP=SHR,DSN=**PSF**.FONT300
```

```

/*-----*
/* Common FTP, CA XCOM and Connect:Direct userid/password file *
/*-----*
/*NETRC DD DISP=SHR,DSN=&PARMLIB(IQNETRC)
/*-----*
/* CA XCOM libraries. *
/*-----*
/*XCOMCTL DD DISP=SHR,DSN=CAI.XCOM.CBGXPARM
/*XCOMSYSI DD DISP=SHR,DSN=&PARMLIB(IQXCOMPR)
/*SYSIN01 DD DSN=&SYSIN01,UNIT=SYSDA,SPACE=(TRK,(1,1))
/*LCLDS01 DD DSN=&LCLDS01,UNIT=SYSDA,SPACE=(CYL,(10,10))
/*-----*
/* Connect:Direct libraries. *
/*-----*
/*DMNETMAP DD DISP=SHR,DSN=$CD.NETMAP
/*DMPUBLIB DD DISP=SHR,DSN=$CD.PROCESS
/*DMMSGFIL DD DISP=SHR,DSN=$CD.MSG
/*DMPRINT DD SYSOUT=*
/*

```

## Standard Data Sets

The standard CA Spool data sets are as follows:

### STEPLIB

Points to the CA Spool load library, the LE run-time library and the SAS/C runtime library. If you are not using the STEPLIB DD statement, these libraries must be in linklist and APF authorized.

**Note:** If the direct interface to CA View is used, or the CA Roscoe menu interface is used, or the CA XCOM or Connect:Direct print drivers are used. The load libraries from these products must also be included in the steplib or in linklist and be APF authorized.

### ESFPARM

Points to the CA Spool initialization parameter file.

### ESFLIST

The CA Spool initialization parameters are listed here if PARM=LIST was specified when the task was started.

### SYSTEM

Points to the SAS/C error message file. Activate this DD when necessary for debugging.

**SYMDUMP**

Used in conjunction with the CA SymDump System for abend debugging.

**NJESNAP**

Points to the NJE trace file.

**SAPISNAP**

Points to the SAPI trace file.

**SECUSNAP**

Points to the security trace file.

**IMAGELIB**

Points to the system image library.

**SYSTCPD**

Points to the optional TCPIP.DATA file.

**PJLLIB**

Points to the PJL resource library.

**PCLLIB**

Points to the PCL resource library.

**BINLIB**

Points to the binary resource library.

**OVLYLIB**

Points to the OVLY resource library.

**HTMLIB**

Points to the email HTML skeleton resource library.

**MAILLIB**

Points to the email MAILBOOK resource library.

## Enter the LMP Code

CA Spool requires CA LMP (License Management Program), one of the CA Common services to initialize correctly. CA LMP provides a standardized, automated approach to the tracking of licensed software. Examine the CA LMP Key Certificate you received with your installation cartridge.

## LMP Codes

The CA Spool LMP product codes:

**OA**

CA Spool Base Product

**OB**

CA Spool Advanced Laser Printer option

**OC**

CA Spool NATURAL Interface option

**OD**

CA Spool NJE Interface option

**OF**

CA Spool PSF Interface option

**OG**

CA Spool VPI Interface option

**JT**

CA Spool MAS Interface option

**OI**

CA Spool Package (CA Spool Base and all the above options)

**JX**

CA Spool AFP to PCL Transformer option

**J1**

CA Spool AFP to PostScript Transformer option

**O2**

CA Spool AFP to PDF Transformer option

When the CA Spool NJE interface was first added, one NJE connection was included in the base product, so that NJE could be used as the preferred interface, instead of the XFER interface, when exchanging reports with JES2/JES3. If more than one NJE connection is needed, it is necessary to license the NJE interface option or the CA Spool package option.

## Add the VTAM Resource Definition

Run job BQ4JVTAM in CBQ4JCL to add the special CA Spool VTAM resource definition member APPLESF to SYS1.VTAMLST. This member only contains the definition of the VTAM application ESF.

This job is self-documenting. Be sure to adjust the JCL deck to your site's standards and assign proper values to various installation-dependent parameters.

## Add the JES Initialization Parameters (Optional)

**Note:** This step is optional.

Run *one* of the following jobs in CBQ4JCL, depending on which version of JES you are running, and how your JES system is configured:

### BQ4JJES2

If JES2 is configured with DESTDEF NODENAME= OPTIONAL, which is the JES2 default, there is no need to define the destination ESF to JES2, and this step can be skipped.

If JES2 is configured with DESTDEF NODENAME= REQUIRED, run this job to add the destination identifier ESF to the JES2 initialization parameter deck (JES2PARM) and associate an unused local JES2 route code.

**Note:** You can also define the destination ESF with a JES2 \$ADD command, as follows:

```
$ADD DESTID(ESF),DEST=Unnn
```

where *Unnn* must specify an unused local JES2 route code.

### BQ4JJES3

This job adds the destination identifier ESF to the JES3 initialization-parameter deck (JES3IN).

Unless it was added dynamically, JES2 or JES3 has to be restarted to make the destination ESF known. The Automatic File Transfer interface JESTOESF cannot be used until the destination is known to JES, but all the remaining CA Spool facilities will function.

This job is self-documenting. Be sure to adjust the JCL to your site's standards and assign proper values to various installation-dependent parameters.

## Configure TCP/IP Setup

To use the CA Spool TCP/IP interfaces, the CA Spool Started Task User ID must have an OMVS segment assigned. Contact your security administrator to have an OMVS segment defined for your CA Spool user ID.

## Define directories for the CA Spool Web Interface

Run the BQ4JHFSD job in CBQ4JCL to define swap and logs directories for use by the CA Spool Web Interface. The job must be run with a userid that has the required permissions to define the directories and allow access to these directories.

## Allocate the Spool and Checkpoint Data Sets

Run the BQ4JALOC job in CBQ4JCL to allocate the CA Spool spool and checkpoint data sets onto any type of disk storage.

This job is self-documenting. Be sure to adjust the JCL deck to your site's standards and assign proper values to various installation-dependent parameters.

## Assign Values to the Initialization Parameters

Assign suitable values to initialization parameters in the member CAIQPARM in CBQ4PARM. Define a test network group containing printer nodes and user IDs, and for internal security, the user IDs should also be defined.

## SVCCODE

The SVCCODE statement specifies the user SVC number used by CA Spool. The CA Spool SVC is designed so it can run as a normal type-4 user SVC routine. The system administrator responsible for the MVS system must decide which unused Type 4 SVC number to use.

During startup, CA Spool verifies if the specified SVC number in the SVC table points to a valid SVC routine. If the SVC table entry corresponding to the specified SVC number is not in use, CA Spool dynamically loads the SVC routine module into the CSA and updates the SVC table entry to point to it.

Note the following:

- If both the ESRCODE and SVCCODE statements are specified, the ESRCODE definition is used and the SVCCODE definition is ignored.
- During startup CA Spool verifies if the specified SVC number in the SVC table points to a valid CA Spool SVC routine.
- If the SVC table entry corresponding to the specified SVC number is not in use, CA Spool dynamically loads the SVC routine module into the CSA and updates the SVC table entry to point to it.
- If an installation wants to pre-load the CA Spool SVC routine into the PLPA during IPL, the supplied ESFSVC module must be renamed to the SVC module name matching the specified SVC number and made accessible using LPA1STxx or MLP1A. For example, if SVCCODE=241 is specified, then the corresponding CA Spool SVC module name must be IGC0024A.

## ESRCODE

The CA Spool SVC is designed to use the extended SVC-router (ESR) support. This means that the CA Spool SVC does not need to occupy an SVC number by itself. ESR is called (SVC 109) with a routing code in register 15, indicating the module to be given control.

Note the following:

- If both the ESRCODE and SVCCODE statements are specified, the ESRCODE definition is used and the SVCCODE definition is ignored.
- During startup CA Spool verifies if the specified ESR number in the ESR table points to a valid CA Spool SVC routine.
- If the ESR table entry corresponding to the specified ESR number is not in use, CA Spool dynamically loads the SVC routine module into the CSA and updates the ESR table entry to point to it.
- If an installation wants to pre-load the CA Spool SVC routine into the PLPA during IPL, the supplied ESFSVC module must be renamed to the SVC module name matching the specified ESR number and made accessible using LPA1STxx or MLP1A. For example, if ESRCODE=241 is specified, then the corresponding CA Spool SVC module name must be IGX00241.

## Run Post-Install Jobs as Required for Other Environments

Ignore this step if it was done previously as part of the instructions in 'How to Prepare for Deployment With CA MSM'.

CA Spool has interfaces to a number of different environments. In some environments, some of these interfaces require that you run extra installation jobs. The jobs are in the CBQ4JCL data set and begin with "BQ4J" and the remaining characters indicate the relevant environment.

BQ4Jxxxx are SMP/E jobs that update SMP/E with the information that a foreign product is present. Some of the source distributed with CA Spool assembles differently when a BQ4Jxxxx job is executed.

The optional jobs are as follows:

- BQ4JACF2 for CA ACF2 support
- BQ4JCICS for CICS menu support
- BQ4JCOMP (Complete) for Software AG's Complete support
- BQ4JIDMS for CA IDMS support
- BQ4JIMS for IMS menu support
- BQ4JJES for JES2 support; used with XFER interface
- BQ4JNATU for Software AG's NATURAL support
- BQ4JROSC for Advantage CA Roscoe support
- BQ4JSAP for SAP's R/2 support

## Run Any Other Optional Jobs

Ignore this step if it was done previously as part of the instructions in 'How to Prepare for Deployment With CA MSM'.

Run the following jobs according to the needs of your site:

- BQ4JIU\*\*\* jobs for usermod maintenance
- BQ4JF\*\*\* jobs for fix applies

## Start CA Spool Release 11.7 for the First Time

Start the CA Spool Release 11.7 system for the first time as follows:

1. Enter the following command to activate the CA Spool VTAM resource:

```
V NET,ACT, ID=aaaaaaaa
```

where *aaaaaaaa* is the applid defined for CA Spool. Perform the following to start the system:

- a. Enter the following MVS start command on the MVS operator console:

```
S procname,OPTION=FORMAT
```

where *procname* is the member name of the CA Spool proc in your system procedure library.

The following WTOR message asks you to confirm that the checkpoint data set must be overwritten:

```
*yy ESF053 REPLY Y OR N TO CONFIRM CHECKPOINT RECORD CHANGE
```

- b. To confirm, enter:

```
R yy,Y
```

- c. CA Spool displays initialization progress with the following WTO messages:

```
-ESF059 CHKPTDS1 COLD-START IS IN PROGRESS  
-ESF024 FORMATTING VOLUME=vvvvvv DSN=ddddddd.sssssss.nnnnnnn  
-ESF024 FORMAT COMPLETE V=vvvvvv DSN=ddddddd.sssssss.nnnnnnn  
-ESF041 INTERNAL TRACE REQUESTED, 512 ENTRIES ALLOCATED  
-ESF719 CA Spool BASE option enabled  
-ESF4117 Transformer Interface initialized  
-ESF100 SIMPLE COLD START COMPLETED  
-ESF301 VIRTUAL PRINTER INTERFACE STARTED  
-ESF490 NETWORK INTERFACE STARTED
```

The message NETWORK INTERFACE STARTED confirms a successful initialization.

2. As a quick check, enter the following display-status command from the MVS operator console (where "-" is a communication character defined by COMCHAR statement in CAIQPARM):

-DS

CA Spool responds by writing the following messages to the MVS console:

```
-ESF809 VERSION.LEVEL CA Spool r11.7 SP00
-ESF816      0 OUTSTANDING I/O-REQUESTS
-ESF817 OPEN FILE COUNT:      0/      0 OUTPUT,      0/      0 INPUT
-ESF818      0 % SPOOL UTILIZATION / HWM UTILIZATION      0 %
-ESF820      0 FILE QUEUE ELEMENTS IN USE - MAX      500 / HWM      0
-ESF823 VTAM ACB OPEN - LOGONS ENABLED
-ESF865      NO ACTIVE COMMUNICATION CHANNELS
-ESF889 SUBSYS Interface is active
-ESF857 Printers Defined(      1) Remaining(      10)
-ESF853 TCP/IP printer subtasks:      0
-ESF318 VPS      10(      0) ACB(S)      0(      0) STG(      9K)
-ESF827 SAR INTERFACE IS NOT ACTIVE
-ESF878 Transformer Interface is active,      0 files
-ESF886 LPD Interface is undefined
-ESF885 A(ESFSSM )=X'25270000' A(ESFUSS )=X'254E74C0'
-ESF854      Current Hour      Max Hour      Grand Total
-ESF854 Files printed:      0      0      0
-ESF854 Pages printed:      0      0      0
-ESF854 Lines printed:      0      0      0
```

If there are no errors, you can proceed to the Verify the Installation step.

## Verify the Installation

This section contains information that lets you verify the installation of the basic system and optional features.

The CBQ4JCL library includes some sample test jobs. These jobs are self-documenting but each job should be adjusted to your local JCL standards.

**Note:** The CA Spool CBQ4LOAD must be available to the user's session in linklist or STEPLIB to complete some of the following steps.

## Basic System Verification

Verification of the basic system normally includes these steps:

1. To operate from a 3270 display terminal, first log on through VTAM. To start a session, enter the logon APPLID. For example:

```
LOGON APPLID(ESF)
```

- a. CA Spool prompts for a user ID and password. Enter the userid and password which is specified in CAIQPARM.

When the session is successfully established, CA Spool formats the screen into a message-output area and a command-entry area.

- b. Enter the display-file command. For example:

```
DF
```

CA Spool responds to the display-file command with the message:

```
ESF840 QUEUE EMPTY
```

2. Run the supplied sample job IVPBPRNT to test the ESFPRINT utility in batch mode, to generate the first CA Spool file.

After the job has terminated, start the specified CA Spool printer. CA Spool starts printing the spool file if the printer setup matches the file setup.

3. To test the CA Spool to JES file transfer interface, enter the following:

```
RF1,ND=LOCAL => ESF850 1 FILE(S) ROUTED  
RF1           => ESF850 1 FILE(S) REQUEUED
```

The file is copied to a JES2 or JES3 spin-off SYSOUT data set.

4. Run the supplied sample job IVPBJESX to test the automatic JESTOESF file transfer interface.

After the job has terminated, a new file starts printing on the specified printer.

5. To test the ESFPRINT/DSPRINT TSO command, start a TSO session:

```
ESFPRINT DSN('CAI.CBQ4PARM(CAIQPARM)')  
         DEST(destination) SUB(ESF)
```

Specify the name of the test printer as the destination.

## SUBSYS Verification

### To verify the SUBSYS parameter interface

1. Run the supplied sample job IVPBSUBS to test the SUBSYS-parameter interface.  
After the job has terminated, a new file starts printing on the specified CA Spool printer.
2. To test the ESFALLOC TSO command, first start a TSO session. After the session is started, you can use the ESFALLOC command, as follows:

```
ALLOC    DUMMY FILE(SYSPRINT)
ALLOC    DUMMY FILE(SYSIN)
ALLOC    CAI.CBQ4PARM(CAIQPARM) FILE(SYSUT1) SHR
ESFALLOC SYSUT2 DEST(destination) SUBSYS(ESF)
CALL     'SYS1.LINKLIB(IEBGENER) '
FREE     FILE(SYSPRINT, SYSIN, SYSUT1, SYSUT2)
```

Specify the name of the test printer as the destination.

## Menu Verification

### To verify the menu system and the Advanced Communication Interface

1. Start a TSO session and test the menu system from TSO.
2. Start the menu system by entering the native TSO command:

```
ESFM TSO
```

## Post-Installation Considerations

Now that you have successfully installed CA Spool, consider the following:

- For information on shutting down CA Spool, see the *Operations, Commands, and Messages Guide*.
- For information on tuning CA Spool for optimal performance, see the *Best Practices Guide*.
- For information on the parameter statements required to define the printers in your enterprise, see the *Customization Guide*.



# Chapter 8: Migration Information

---

This chapter discusses the guidelines for migrating from an earlier release of CA Spool to CA Spool Release 11.7. It also provides information about the Initialization statements, Macros, and Encryption.

This section contains the following topics:

[Migration Considerations](#) (see page 93)

[Initialization Statements](#) (see page 94)

## Migration Considerations

When migrating from CA Spool Release 11, Release 11.5, or Release 11.6 to Release 11.7 consider the following:

- The file queue has *not* been restructured.
- CA Spool Release 11.7 can be *warm* started on your existing CA Spool Release 11, Release 11.5, or Release 11.6 spool and checkpoint configuration. In addition, should it become necessary to fall back from CA Spool Release 11.7 to CA Spool Release 11, Release 11.5, or Release 11.6 you can do this by simply *warm* starting the CA Spool Release 11.7 checkpoint and spool configuration on your CA Spool Release 11, Release 11.5, or Release 11.6 system.
- CA Spool Release 11.7 members may coexist with CA Spool Release 11, Release 11.5, or Release 11.6 members in the same EMAS/MAS complex.
- If CA Spool Release 11.7 and CA Spool Release 11.5 have to be started on the same MVS system, or as a member in the same EMAS/MAS complex with Release 11.5, we recommend that you install the CA Spool Release 11.5 fixes RO17296 and RO22958.
- If CA Spool Release 11.7 and CA Spool Release 11 have to be started on the same MVS system, or as a member in the same EMAS/MAS complex with Release 11, we recommend that you install the CA Spool Release 11 fixes RO18777 and RO22970.

If you have files under control of any previous release, which must now be used with Release 11.7, do the following:

1. Use your current version of ESFSPTP to unload these files.
2. Use the Release 11.7 version of ESFSPTP to reload the files.

When migrating from any previous CA Spool release to Release 11.7 consider that:

- Any application programs using pre-V8.0 interface routines (AESFPRIV) must be re-linked with the Release 11.7 interface routines.
- All user exits have been renumbered in CA Spool Release 11.7. Source updates to exits in IEBUPDTE format must use these new numbers, so be sure to check the sequence numbers before applying the updates.

## Revert to a Previous Release

If you have CA Spool Release 11.7 encrypted reports and have to revert to CA Spool Release 11, Release 11.5, or to Release 11.6 without encryption, do the following:

1. Run the ESFSPTP utility with ENCRYPT=NO against the CA Spool Release 11.7 system to unload all reports.

**Note:** To be able to use ENCRYPT=NO parameter ESFSPTP must be executed from an APF authorized library and requestor's userid has to have read access to SAFTYPE 12, 13 and 14.

2. Restart CA Spool Release 11, Release 11.5, or Release 11.6 system with a COLD start.
3. Reload the ESFSPTP backup to the CA Spool Release 11, Release 11.5, or Release 11.6 system.

**Note:** If you have no CA Spool Release 11.7 encrypted reports and have to revert to CA Spool Release 11, Release 11.5, or Release 11.6, restart CA Spool Release 11, Release 11.5, or Release 11.6 on the same spool configuration. If both Release 11.7 and Release 11.6 have encrypted reports and you have to revert back to Release 11.6, restart CA Spool Release 11.6 on the same spool configuration.

## Initialization Statements

The following initialization statements have been added, changed, or deleted in CA Spool Release 11.7.

For a full description of these statements, see the "Initialization" chapter in the *Customization Guide*.

## Added Initialization Statements

The following parameter has been added to initialization statements:

## LOADEXIT

### Syntax

```
LOADEXIT UEX000=esfu000,  
         UEX003=esfu003,  
         UEX006=esfu006,  
         UEX007=esfu007,  
         UEX008=esfu008,  
         UEX009=esfu009,  
         UEX010=esfu010,  
         UEX011=esfu011  
         UEX012=esfu012  
         UEXPRIO=esfprio  
         UEXMSG0=esfmsg0  
         UEXSEP=esfsepa0  
         UEXSEC4=esfsecu4  
         UEXSEC5=esfsecu5
```

### LOADEXIT Parameters

This section defines the LOADEXIT parameters.

#### **UEX000=esfu000**

Defines the name of a user defined standalone exit that is called by ESFU000X.  
There is no default.

#### **UEX003=esfu003**

Defines the name of a user defined standalone exit that is called by ESFU003X.  
There is no default.

#### **UEX006=esfu006**

Defines the name of a user defined standalone exit that is called by ESFU006X.  
There is no default.

#### **UEX007=esfu007**

Defines the name of a user defined standalone exit that is called by ESFU007X.  
There is no default.

#### **UEX008=esfu008**

Defines the name of a user defined standalone exit that is called by ESFU008X.  
There is no default.

#### **UEX009=esfu009**

Defines the name of a user defined standalone exit that is called by ESFU009X.  
There is no default.

**UEX010=esfu010**

Defines the name of a user defined standalone exit that is called by ESFU010X.  
There is no default.

**UEX011=esfu011**

Defines the name of a user defined standalone exit that is called by ESFU011X.  
There is no default.

**UEX012=esfu012**

Defines the name of a user defined standalone exit that is called by ESFU012X.  
There is no default.

**UEXPRI0=esfprio**

Defines the name of a user defined standalone exit that is called by ESFUPRIOX.  
There is no default.

**UEXMSG0=esfmsg0**

Defines the name of a user defined standalone exit that is called by ESFMSG0X.  
There is no default.

**UEXSEP=esfsepa0**

Defines the name of a user defined standalone exit that is called by ESFSEPAX.  
There is no default.

**UEXSEC4=esfsecu4**

Defines the name of a user defined standalone exit that is called by ESFSEC4X.  
There is no default.

**UEXSEC5=esfsecu5**

Defines the name of a user defined standalone exit that is called by ESFSEC5X.  
There is no default.

**X2YYDEF**

```
fsname,  
PROC=xxxxxxx,  
MAXTASK=nn,  
DEFAULT=NO|YES|A2PC|A2PS|A2PD|BCOCA
```

This statement specifies the characteristics of a X2YY functional subsystem (FSS). The X2YYDEF statement must be defined before it can be referenced in a NODE definition.

**fssname,**

Specifies the name of the functional subsystem, the fssname parameter is required. The fssname must be alphanumeric, consisting of 1 to 8 characters. There is no default value.

**PROC=xxxxxxx**

Specifies the procedure used to start the functional subsystem. There is no default value.

**MAXTASK=nn**

Defines the maximum number of files that can be transformed concurrently by the X2YYDEF. The default value and maximum value is 10.

**DEFAULT= NO | YES | A2PC | A2PS | A2PD | BCOCA**

Specifies whether this X2YYDEF per default must take care of AFP transformations or not. Valid values are:

- NO—(Default) Do not default to this X2YYDEF for AFP transformations.
- YES—Default to this X2YYDEF for all AFP transformations.
- A2PC—Default to this X2YYDEF for all A2PC transformations.
- A2PS—Default to this X2YYDEF for all A2PS transformations.
- A2PD—Default to this X2YYDEF for all A2PD transformations.
- BCOCA—Default to this X2YYDEF for all retries of CA Spool C-based (non-Java) AFP transformations that fail with AFPP-207-W: Barcode objects are not supported.

## Changed Initialization Statements

The following initialization statements have been changed in Release 11.7:

**DESTID**

The following enhancement has been added:

- New DCC and FCC to set a default CC attribute or force a CC attribute if A or M on any file.

## **NODE**

The following enhancements have been added:

- New X2YY=cccccc parameter specifies that the transformation must be performed by the Transformer functional subsystem with the name ccccccc.
- New VFC6 for nodes using the SMTP driver to add an extra linefeed at the end of each page in a .txt attachment.
- New VFC7 for TCP/IP nodes to add new vertical form control sequence x'OD0A0C'. Line feed sequence X'0A' is used when VFC7 parameter is defined instead of default line feed sequence X'OD0A'.
- New VPSOPT=23 to allow all blank lines written to an LU3 Virtual printer to be written into the resulting Spool file.
- New TCPDRIV option - Automatic include of existing FCB, Form and Chars PCLLIB resource members before the actual print file, and the RESET member after the print file. Commands are entered in EBCDIC. An asterisk or blank in column 1 indicates a comment line. A blank terminates the command string on each line. Data after the first blank is ignored. DEVICE statements are supported. PCL and Non PCL commands can exist in the same PCLLIB member.

## **XEQOPT**

The following XEQ processing option has been added:

- 28 - allows CICS applications to write files record lengths up to the size of the CA Spool BUFSIZE.
- 30 - sets the Irecl to the largest possible value that the BUFSIZE parameter will permit when the PRMODE for incoming files is blank or equal to LINE. That value is equal to the BUFSIZE minus the fixed portion of each Spool buffer that is used by CA Spool to store information about it's format and contents. This option takes precedence over XEQOPTs 9, 10, 13 and 14.

## **XFEROPT**

The following XFER processing option has been added:

- 22 - set OUTDISP=HOLD outdisp=hold if XFEROPT=11 is also set.
- 23 - when the FORM name passed from JES to the SAPI interface is equal to the DEFFORM in the ESFPARM file, do not use that form name on the open request for the file. This allows either a DESTID or the NODE FORM parameter to provide the default FORM name. If no DESTID or NODE FORM is defined, the DEFFORM value will be used.

## **USEALIAS**

The following USEALIAS option has been added:

- ALL—In addition to the actions that are taken for USEALIAS=YES, CA Spool also uses the alias name of the printer in the CA Spool subtype 11 and JES type 6 SMF records.

## Deleted Initialization Statements

DEFSID

## Deleted Sections and Initialization Statements for Obsolete Functions

Information about the following have been removed:

- All references to the PSO version of the XFER Interface
- The VM/CMS menu section
- All references to Natural V2 and V2.3.x
- All references to PC Download
- All reference to CMA Connection
- All references to the SDSF Print command support
- All references to the SASWTR replacement

## New Initialization Parameters and Options

None.



# Appendix A: Integration with CA OPS/MVS EMA

---

This section contains the following topics:

[Overview](#) (see page 101)

[Ensure that CA OPS/MVS Is Enabled for Capturing These Events](#) (see page 102)

[CA Spool Active State Events](#) (see page 102)

[CA Spool Heartbeat Events](#) (see page 104)

## Overview

CA Spool provides seamless integration with CA OPS/MVS by automatically communicating both active status events and heart beat events to CA OPS/MVS. The enabling technology for this is through a generic event API call that CA OPS/MVS provides the other mainframe products so that they can communicate events to CA OPS/MVS.

You do not need to do anything for CA Spool to enable this event communication interface to CA OPS/MVS. If CA Spool and CA OPS/MVS are active in the same z/OS image, CA Spool automatically communicates these automation events to CA OPS/MVS.

By generating active status events CA Spool and other CA products are able to communicate to CA OPS/MVS's System State Manager (SSM) component when they are starting, up, stopping or down.

SSM is a built-in feature that uses an internal relational data framework to proactively monitor and manage started tasks, online applications, subsystems, JES initiators, and other z/OS resources including your CA mainframe products. SSM compares the current state of online systems, hardware devices, and the other resources with their desired state, and then automatically makes the necessary corrections when a resource is not in its desired state. This provides proactive and reactive state management of critical resources.

Before the CA OPS/MVS interface existed, CA OPS/MVS could automate active status events for your CA products; however this typically required monitoring unique messages for each CA product. With this interface, CA OPS/MVS can capture these events for any of your CA products with a single automation event rule.

With the heart beat event, CA Spool can communicate a normal, warning, or problem overall health status and reasoning to CA OPS/MVS on a regular interval. Once CA Spool begins generating heart beat events for CA OPS/MVS, CA OPS/MVS can also react to the lack of a heart beat event from CA Spool, treating this as an indication that there is either a potential problem with CA Spool, or there is a larger system-level problem that is taking place.

## Ensure that CA OPS/MVS Is Enabled for Capturing These Events

To ensure that this CA OPS/MVS interface is active, make sure the CA OPS/MVS parameter APIACTIVE is set to its default of ON. This allows CA OPS/MVS to acknowledge and process the events generated by CA Spool and other CA products through this interface.

## CA Spool Active State Events

CA Spool provides a direct interface to the CA OPS/MVS System State Manager (SSM) application to notify CA OPS/MVS of the current operating state of the given CA Spool address space. The CA OPS/MVS SSM application can use this information to automatically control the operation of the CA Spool address space, and any other address space that is dependent upon the CA Spool address space being active. For more information on using CA OPS/MVS SSM see the CA OPS/MVS User Guide.

The CA Spool product active state is presented to CA OPS/MVS and can be processed by the following rule:

```
)API CASTATE
```

The available OPS/REXX variables for CA Spool product state management are:

<b>OPS/REXX Variable</b>	<b>Value</b>
API.APPLICATION	CA Spool
API.VERSION	Current release
API.LEVEL	00
API.EVENTID	CASTATE
API.MSGID	CASTATE
API.TEXT	State of CA Spool

The API.TEXT variable has the following format:

State of *appl\_id* is *current\_state*'

**appl\_id**

Specifies the same value as the API.APPLICATION variable

**current\_state**

**STARTING**

Indicates that CA Spool is initializing

**UP**

Indicates that CA Spool is active

**STOPPING**

Indicates that CA Spool is terminating

**DOWN**

Indicates that CA Spool is exiting the system

For more information on how to use the CASTATE API, see the member SSMCAAPI of opsmvsHLQ.STATEMAN.RULES.

## CA Spool Heartbeat Events

CA Spool provides a continuous heartbeat event directly to CA OPS/MVS. CA OPS/MVS can use this information in several ways to determine the operational health of the CA Spool product.

CA Spool issues a heartbeat update every nnnn seconds that notifies CA OPS/MVS of the current operational health of the CA Spool product.

If CA Spool detects a health state change, it immediately generates a heartbeat update without waiting for the nnnn second heartbeat interval to expire. In this way, CA Spool provides CA OPS/MVS with a constant operational health state view of the CA Spool product.

CA OPS/MVS can also react to the lack of a heartbeat update from CA Spool and an indication that there is either a potential problem with CA Spool, or there is a larger system level problem that is taking place.

The CA Spool product heartbeat event is presented to CA OPS/MVS and can be processed by the following rule:

```
)API CAHEARTBT
```

The available OPS/REXX variables for CA Spool state management are:

<b>OPS/REXX Variable</b>	<b>Value</b>
API.APPLICATION	CA Spool
API.VERSION	Current release
API.LEVEL	00
API.EVENTID	CAHEARTBT
API.MSGID	CAHEARTBT
API.TEXT	State of CA Spool

The API.TEXT variable has the following format:

appl\_id Status: *heartbeat\_state* Reason: reason\_text

**appl\_id**

Specifies the value of the API.APPLICATION variable.

**heartbeat\_state**

Heart\_beat\_state can be one of the following:

**NORMAL**

Indicates that CA Spool is operating normally, without any detected problems.

**WARNING**

**PROBLEM**

**reason\_text**

reason\_text explains the problem as reported by the event API call.

For information on how you use the CAHEARTBT API, see members APIHRTB1, APIHRTB2, and APIHRTB3 of opsmvsHLQ.SAMPLE.RULES.



# Index

---

## A

allocate and mount • 31

## C

CA MSM access

login • 24

CA MSM usage scenarios • 19

CAI.SAMPJCL

library • 50

sample jobs • 50

contacting technical support • 4

copy files to USS directory • 34, 35, 38

customer support, contacting • 4

## D

database

purpose • 14

download

files using ESD • 27

options • 34

overview • 25

to mainframe through a PC • 38

using batch JCL • 35

## E

external HOLDDATA • 47

## F

free space • 30

## G

GIMUNZIP utility • 40

## H

hash setting • 40

high-level qualifier • 40

HOLDDATA • 47

external • 47

internal • 47

## I

IEBCOPY • 50

installing

from Pax-Enhanced ESD • 25

from tape • 49

Integrated Cryptographic Services Facility (ICSF) • 40

internal HOLDDATA • 47

inventory • 14

## J

Java version support • 40

## L

libraries

allocate and mount • 31

CA MSM access

login • 24

CA MSM usage scenarios • 19

CAI.SAMPJCL

library • 50

sample jobs • 50

contacting technical support • 4

copy files to USS directory • 34, 35, 38

customer support, contacting • 4

database

purpose • 14

download

files using ESD • 27

options • 34

overview • 25

to mainframe through a PC • 38

using batch JCL • 35

external HOLDDATA • 47

free space • 30

GIMUNZIP utility • 40

hash setting • 40

high-level qualifier • 40

HOLDDATA • 47

IEBCOPY • 50

installing

from Pax-Enhanced ESD • 25

from tape • 49

Integrated Cryptographic Services Facility (ICSF) • 40

internal HOLDDATA • 47

inventory • 14

Java version support • 40

maintenance • 46

---

- pax ESD procedure
  - copy product files • 34
  - create product directory • 39
  - download files • 27
  - receive the SMP/E package • 41
  - set up USS directory • 30
- pax file
  - copy files to USS directory • 34, 35, 38
- policy • 14
- process overview • 25
- product download window • 27
- product-level directory • 39
- read me • 25, 40
- sample JCL • 50
- sample jobs • 35, 39
  - CAt>Mainframe.txt • 35
  - Unpackage.txt • 39
- services • 14
- SMP/E
  - GIMUNZIP utility • 40
  - receive the package • 41
- software
  - inventory • 14
- support, contacting • 4
- tape, installing from • 49
- technical support, contacting • 4
- UNIX System Services (USS)
  - access requirements • 25, 30
  - directory cleanup • 45
  - directory structure • 30
- UNZIPJCL • 40
- user interface
  - overview • 14
- web interface
  - purpose • 14

## M

maintenance • 46

## P

- pax ESD procedure
  - copy product files • 34
  - create product directory • 39
  - create product-specific directory • 40
  - download files • 27
  - receive the SMP/E package • 41
  - set up USS directory • 30
- pax file

- copy files to USS directory • 34, 35, 38
- policy • 14
- process overview • 25
- product download window • 27
- product-level directory • 39

## R

read me • 25, 40

## S

- sample JCL • 50
- sample jobs • 35, 39
  - CAt>Mainframe.txt • 35
  - Unpackage.txt • 39
- services • 14
- SMP/E
  - GIMUNZIP utility • 40
  - receive the package • 41
- software
  - inventory • 14
- support, contacting • 4

## T

- tape, installing from • 49
- technical support, contacting • 4

## U

- UNIX System Services (USS)
  - access requirements • 25, 30
  - directory cleanup • 45
  - directory structure • 30
  - product directory cleanup • 45
- UNZIPJCL • 40
- user interface
  - overview • 14

## W

- web interface
  - purpose • 14