

# CA SymDump<sup>®</sup> for CICS

## Best Practices Guide

Release 9.1.00



Second Edition

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## CA Technologies Product References

This document references the following CA products:

- CA Endeavor® Software Change Manager (SCM)
- CA InterTest™ Batch
- CA InterTest™ for CICS
- CA JCLCheck™
- CA Chorus Software Manager (CA CSM)
- CA Optimizer®/II
- CA SymDump® Batch
- CA SymDump® for CICS

## 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

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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>.

### **Best Practices Guide Process**

These best practices are based on customer experience reported through interviews with development, technical support, and technical services. Therefore, many of these best practices are a collaborative effort stemming from customer feedback.

To continue to build on this process, we encourage you to share common themes of product use that might benefit other users. Please [consider sharing](#) your best practices with us.

To share your best *practices*, contact us at [techpubs@ca.com](mailto:techpubs@ca.com) and preface your email subject line with "Best Practices for product name" so that we can easily identify and categorize them.

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# Chapter 1: Introduction

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This guide describes the best practices for installing and configuring your product.

The intended audience of this guide is systems programmers and administrators who install, maintain, deploy, and configure your product.



# Chapter 2: Installation and Configuration Best Practices

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This section contains the following topics:

[Use CA Chorus Software Manager for Installation](#) (see page 9)

[Use Electronic Software Delivery](#) (see page 10)

[CA Common Services](#) (see page 10)

[IBM APARs](#) (see page 10)

[Installation in a Test Environment](#) (see page 11)

[Common Symbolic Component](#) (see page 11)

[Symbolic Files](#) (see page 12)

[Dynamic Symbolic Support for CA Endeavor SCM](#) (see page 14)

[PROTDMP Files](#) (see page 15)

[Performance Considerations for CICS Regions Using DB2](#) (see page 16)

## Use CA Chorus Software Manager for Installation

Use CA CSM to acquire, install, deploy, and maintain your product. Although CA CSM is the preferred method for installing CA Technologies mainframe products, some sites may decide to use the Electronic Software Delivery (ESD) installation method instead.

### **Business Value:**

CA CSM provides a web interface, which works with ESD and standardized installation, to provide a common way to manage CA Technologies mainframe products. You can use it to download, install, and deploy your product.

CA CSM lets you download product and maintenance releases over the Internet directly to your system from the CA Support website. After you use CA CSM to download your product or maintenance, you use the same interface to install the downloaded software packages using SMP/E. After installation, deployments allow system objects to be deployed across your enterprise's different environments.

For more information about CA CSM, see the *CA Chorus Software Manager Product Guide*. For more information about installation, see the *Installation Guide*.

## Use Electronic Software Delivery

Although CA CSM is the preferred method for installing your CA Technologies mainframe products, some sites may decide to use the Electronic Software Delivery (ESD) method instead. For sites who have decided to use ESD, download the installation files from [ca.com/support](http://ca.com/support) and install directly from your disk.

**Business Value:**

Using electronic software delivery (ESD) avoids ordering, shipping, and processing physical tape media to install the application. It is more timely, more cost-effective, and environmentally friendly. It uses standard z/OS utilities to prepare the product installation image on your system.

For information about how to download your CA Technologies products from the CA Support Online web site for installation using the enhanced ESD pax process, see the *Installation Guide*.

## CA Common Services

Make sure you have installed the most current release of CA Common Services.

**Business Value:**

The latest release of CA Common Services contains the most current infrastructure updates, allowing you to successfully use the latest features and preventing potential errors that can occur from using out-of-date services.

For more information about CA Common Services, see the *Installation Guide*.

## IBM APARs

No IBM APARs are required at this time.

**Business Value:**

There are no known IBM APARs that impact the operation or performance of the product. You may apply the most recent IBM APARs appropriate for your environment as needed.

## Installation in a Test Environment

Perform your installation and initial evaluations of a new release of the product and its components on a test system.

### **Business Value:**

New releases of CA Technologies testing tools can always co-exist with previous releases, letting you test a new release on a test system while still running the older version on a production system. Evaluating the product in a test environment lets you detect any possible problems before you roll out the product to a production system.

### **Additional Considerations:**

Always be sure to review any migration considerations in the *Installation Guide* before upgrading your CA Technologies product.

## Common Symbolic Component

When installing more than one of the CA Technologies mainframe testing tools, we recommend that you install and maintain only one version of CA Technologies common symbolic component that is shared by all of the testing tool products.

Several testing tool products (CA InterTest Batch, CA InterTest for CICS, CA SymDump for CICS, CA SymDump Batch, CA Optimizer/II, and CA Mainframe Application Tuner) each distribute the common symbolic component in the VH FMID. This FMID was named CVHrr00 in previous versions and is now named CAVHrr0. The *rr* portion of the FMID contains the version number. For example, CAVH910 contains the symbolic common component provided with Release 9.1.00.

When installing any of these CA Technologies testing tool products, first query your Consolidated Software Inventory (CSI) to determine whether you already have a version of CVHrr00 or CAVHrr0 installed. If you use one CSI for all of your testing tool products then you need to perform only one query for these FMIDs. If you have one CSI for each testing tool product then you will need to query each CSI.

If you locate an installed version of CVHrr00 or CAVHrr0 during your query, compare the *rr* in your installed version of that FMID with the *rr* in the FMID provided with the product you are installing. Replace your existing FMID only if the *rr* in the product you are installing is higher than the *rr* in your existing function.

**Business Value:**

By installing and maintaining a single version of the CA Technologies common symbolic component, you reduce your maintenance effort, save disk space, and eliminate the possibility of executing symbolic utilities that are not up to date with the latest maintenance.

**Additional Considerations:**

The APPLY job of the installation places an SMP/E copy of the CAVHrr0 function in a library; however, many companies do not execute the testing tool products from this library. Therefore, always be sure to make the executables for the common symbolic component available for the testing tools products to use.

There are many ways to make the executables for the common symbolic component available, including:

- LNKLIST  
Always update your LNKLIST library after applying maintenance to CAVHrr0 if you have copied the executables for the common symbolic component from CAVHrr0 into a separate load library that you have added to your LNKLIST for all products to share.
- STEPLIBs
- CLISTs (for ISPF interfaces)

We recommend using the LNKLIST method because it has the specific advantage of making the executables available to all CA Technologies products with no additional changes to any JCL or CLISTs. If you cannot use LNKLIST for some reason (for example, your company has issues with updating LNKLIST or has specific rules prohibiting or limiting the use of LNKLIST), it is acceptable to add these executables to your STEPLIB or CLIST allocations. However, using STEPLIB or CLIST requires more initial setup and can be difficult to maintain if library names change.

## Symbolic Files

Before configuring your CA Technologies testing tool product, carefully consider how to best organize your symbolic information that is stored in your PROTSYM files. Well organized symbolic information allows the most effective and efficient access to your symbolics during testing.

There is no one correct way to organize symbolic information that works best for everyone. How you organize your symbolic information will always depend on your environments, your application systems, and the number of programs and programmers involved in your testing. Although there is no best organization that works for everyone, you should consider the following guidelines when planning for symbolic support:

- In a *production environment*, consider maintaining a separate PROTSYM file for each application system that can be shared by all of your programmers. Because only one copy of each program is typical in a production environment, the same symbolic information could be shared by any programmer debugging in that environment.

In production environments, symbolic information is often limited to a single version of each program, and testing or debugging is typically less frequent and often limited to critical, real-time failures. Separate, shared PROTSYM files allow you to maintain a single set of symbolic information for each production application system that would be ready and available for access in the event of a failure.

- In a *test environment*, multiple versions of the same program are more likely to exist, and shared executable libraries are complimented by *sandbox* libraries that house test fixes or various works in progress. For this environment, a single shared symbolic repository is adequate for the shared executables. However, each programmer may want to own their own PROTSYM file, as it will provide them with the freedom to test using the correct symbolic information without impacting other members of the team.

#### **Business Value:**

Well organized symbolic information lets your application programmers easily locate, access, and share symbolic information for their programs. As a result, you could see better performance for your CA Technologies testing tools, optimal use of your DASD space, and the best possible productivity for your application programmers.

#### **Additional Considerations:**

As a general rule, think of your PROTSYM files as nothing more than a match for your load libraries, remembering that for each unique version of a load module you may require symbolic information for testing or debugging. Like the load libraries that exist at each level or stage of your development environment, the corresponding symbolic files should vary in size depending on the maximum number of programs expected at each level, with the individual PROTSYM files being the smallest by far.

If you are also licensed for CA Endeavor Software Change Manager (CA Endeavor SCM), CA testing tools provide an additional level of automation through dynamic symbolic support. This feature lets you populate your PROTSYM file dynamically on demand with symbolic information for programs built using CA Endeavor SCM.

We recommend that you set the threshold for used space in the symbolic file to monitor the space utilization percentage. When the threshold is reached, a message is issued that indicates that the symbolic file is almost full. Set the threshold by specifying the USEDSPACMSG parameter with the INITIALIZE or UPDATE functions of IN25UTIL.

**More Information:**

For more information about creating, populating, maintaining, and using your PROTSYM symbolic repositories to enhance your testing, see the *CA Application Quality and Testing Tools Symbolic Guide*, which is provided with each CA Technologies testing tool product.

For more information about dynamic symbolic support, see the *Installation Guide*.

## Dynamic Symbolic Support for CA Endeavor SCM

If you are licensed for CA Endeavor Software Change Manager (CA Endeavor SCM), CA Technologies recommends using the dynamic symbolic support feature provided by the CA Technologies testing tools. This feature allows you to populate your PROTSYM file dynamically on demand with symbolic information for programs built using CA Endeavor SCM.

Because there are many ways to maintain the content of your PROTSYM files, you may encounter the scenario where you have multiple versions of the same program for which you need to locate and select the correct symbolic information. Using dynamic symbolic support gives you the option to create your symbolic information only when it is needed, rather than always reloading your PROTSYM file after each compilation or assembly. This can save you time, CPU utilization, and even DASD space.

**Business Value:**

The dynamic symbolic support feature is available with many of CA Technologies testing tool products including CA InterTest Batch, CA InterTest for CICS, CA SymDump Batch, and CA SymDump for CICS. This feature simplifies the setup requirements for using symbolic support, while simultaneously eliminating the majority of potential setup errors associated with it. By improving the accuracy of the content of your symbolic file and eliminating common setup errors, dynamic symbolic support can greatly increase the productivity of your programmers.

**Additional Considerations:**

Dynamic symbolic support requires that you compile or assemble your applications using a CA Endeavor SCM process with the footprint feature active. When symbolic information is required by one of the CA Technologies testing tools, your PROTSYM files are inspected first for the matching symbolic information. When no matching information is found, the executable is inspected for a CA Endeavor SCM footprint. If this footprint is found, that footprint is used to locate the matching listing that is dynamically loaded into your specified PROTSYM file. The matching symbolic information is then used by your test session.

**More Information:**

For specific instructions related to setting up and using dynamic symbolic support, see the *Installation Guide* and the *User Guide*.

## PROTDMP Files

You can view transaction dumps from multiple CICS regions using a single dump viewing CICS region. Because the CA SymDump for CICS dump viewer runs as a CICS transaction, it is possible to view dumps from multiple CICS regions from a single dump viewing region. To do this, add remote CICS file definitions for the dump data sets from all CICS regions.

**Note:** The CICS releases for all related dump data sets must match the dump viewing region. You cannot mix dump data sets from different CICS releases in the same dump viewing region.

**Business Value:**

By providing access to dumps from multiple CICS regions through a single viewing region, CA SymDump for CICS simplifies the process of locating dumps and ensures that dumps remain available even when the CICS region, in which those dumps were produced, becomes unavailable. This improves programmer productivity, reduces time to resolution, and helps to control or eliminate costly down time.

**More Information:**

For more information on creating PROTDMP files and estimating their size, see Step 12: Create the PROTDMP File, in the chapter "Base Product Installation Steps", in the *CA SymDump for CICS Installation Guide*. For more information on maintaining and reporting on the contents of your PROTDMP files, see the chapter "Batch Utility" in the *CA SymDump for CICS User Guide*.

## Performance Considerations for CICS Regions Using DB2

CA recommends that customers starting CA SymDump for CICS in a region with DB2 activity should review the XRMIO option and set it according to their needs.

When the XRMIO option is set to YES (the default), CA SymDump for CICS can provide additional diagnostic information about the application through the use of the CORE=LASTSQL command. This command causes CA SymDump for CICS to display the last SQL statement executed by the application. However, if you set XRMIO to YES and the applications that run in your CICS region heavily use EXEC SQL calls, performance in that region can be degraded.

### **Business Value:**

Although using the XRMIOOUT global user exit from IBM can affect performance in regions that use EXEC SQL calls extensively, this exit can provide valuable diagnostic information for DB2 applications that contain EXEC SQL statements. This information can be useful in identifying or resolving problems and can improve time to resolution.

### **Additional Considerations:**

You must carefully weigh the value of the information you receive against the performance considerations of using XRMIOOUT in regions where heavy DB2 activity exists. Especially in production regions where performance is most critical, consider carefully whether the additional diagnostic information provided by XRMIOOUT is valuable enough to risk the possible performance impact of using this option where extensive DB2 activity exists.

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