CA Deliver™

Best Practices Guide

Version 12.0

CA Technologies Product References

This document references the following CA Technologies products:

- CA 11™ Restart and Tracking (CA 11)
- CA Deliver™ (CA Deliver)
- CA Mainframe Software Manager (CA MSM)
- CA Output Management Web Viewer (CA OM Web Viewer)
- CA Spool™ (CA Spool)
- CA View® (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.

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 represent years of product experience, much of which is based on customer experience reported through interviews with development, technical support, and technical services. Therefore, many of these best practices are truly a collaborative effort stemming from customer feedback.

To continue and build on this process, we encourage users 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 and preface your email subject line with "Best Practices for *product name*" so that we can easily identify and categorize them.

Contents

Chapter 1: Introduction

This section contains the following topics:

Purpose of this Guide

The guide provides a brief introduction to the CA Technologies mainframe management strategy and features, and describes the best practices for installing and configuring CA Deliver.

Audience

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

Mainframe 2.0 Overview

Mainframe 2.0 is our strategy for providing leadership in the mainframe operating environment. We intend to lead the mainframe marketplace for customer experience, Out-Tasking solutions, and solution innovation. After listening to customer needs and requirements to keep the mainframe operating environment viable and cost-effective, we are providing new tools to simplify usage and to energize this operating environment for years to come.

CA Mainframe Software Manager™ (CA MSM) is an important step in realizing the Mainframe 2.0 strategy. CA MSM simplifies and standardizes the delivery, installation, and maintenance of mainframe products on z/OS systems. CA MSM has a web-based interface with a modern look and feel for managing those solutions. As products adopt Mainframe 2.0 features and CA MSM services, you can acquire, install, and manage your software in a common way.

We follow the IBM z/OS packaging standards using SMP/E, with some additional CA Technologies qualities of service added, to make installation simple and consistent. Additionally, through the synchronization of product releases and the use of common test environments, we will declare a yearly mainframe software stack that includes many new releases with enhanced functionality. This stack is certified for interoperability across the CA Technologies mainframe product portfolio and the base IBM z/OS product stack.

Mainframe 2.0 Features

Mainframe 2.0 has the following main features:

CA Mainframe Software Manager (CA MSM)

Delivers simplified acquisition, installation, and deployment capabilities using a common z/OS-based web application delivered through a browser-based UI. CA MSM includes the following services:

Product Acquisition Service (PAS)

Facilitates the acquisition of our mainframe products and services, including product base installation packages and program temporary fixes (PTFs). This service integrates the inventory of products available on your system with CA Support, providing a seamless environment for managing and downloading software and fixes onto your system.

Software Installation Service (SIS)

Facilitates the installation and maintenance of our mainframe products in the software inventory of the driving system. This service enables you to browse and manage the software inventory using a web interface, and automates tasks for products that use SMP/E to manage installation. You can browse downloaded software packages, and browse and manage one or more 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.

Software Configuration Service (SCS)

Facilitates the mainframe products configuration from the software inventory of the driving system to the targeted z/OS mainframe operating system. The SCS guides you through the configuration creation process, and through the manual steps to implement the configuration. In addition, the SCS includes an address space communications service running on each targeted z/OS system.

Electronic Software Delivery (ESD)

Enables you to get our products from an FTP server. We have improved this process so that you no longer need to build a tape to install the product.

Best Practices Management

Integrates with IBM Health Checker for z/OS to verify that deployed software follows our best practices. The health checks continually monitor the system and software to provide feedback on whether the software continues to be configured optimally.

Best Practices Guide

Provides best practices for product installation and configuration.

Active and Heartbeat Event Management through CA OPS/MVS EMA

CA Technologies mainframe products can automatically communicate both active status events and heartbeat events to CA OPS/MVS in a consistent manner. The enabling technology for this feature is through a generic event API call that CA OPS/MVS provides to the other products so that they can communicate events to CA OPS/MVS.

Two versions of this API call are provided to support this initiative:

- An active status event API call that allows other products to generate events for the CA OPS/MVS EMA System State Manager (SSM) component when they are starting, up, stopping, or down.
- A heartbeat API call that allows other CA products to communicate a normal, warning, or problem overall health status and reasoning to CA OPS/MVS EMA on a regular interval.

After a CA product begins generating heart beat events for CA OPS/MVS, CA OPS/MVS can also react to the lack of a heart beat event from another CA product's address space, treating this as an indication that there is either a potential problem with the CA product's address space, or there is a larger system-level problem.

SSM is a built-in feature of CA OPS/MVS 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. As previously noted, SSM is particularly interested in receiving active status events consistently from all CA products when they are starting, up, stopping, or down. Without these consistent type of events, SSM must maintain separate rules in CA OPS/MVS for each product's unique messages associated with starting and stopping.

Note: For additional information about the CA Mainframe 2.0 initiative, see http://ca.com//mainframe2.

Chapter 2: Installation and Configuration

This section contains the following topics:

Installation

Use CA MSM to acquire, install, and maintain your product.

Business Value:

CA MSM provides a common way to manage mainframe products. CA MSM provides a web interface, which works with Electronic Software Delivery (ESD) and standardized installation and management of mainframe products. You can use it to download and install CA Deliver.

CA MSM lets you download product and maintenance releases over the Internet directly to your system from the CA Support website. After you use CA MSM to download your product or maintenance, you use the same interface to install the downloaded software packages using SMP/E.

Additional Considerations:

After you install the product, use the *Installation Guide* to set it up. CA MSM can continue to help you maintain your product.

More Information:

For more information about CA MSM, see the *CA Mainframe Software Manager Guide*. For more information about product setup, 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.

Note: CA Common Services Release 11 SP8 is required to take advantage of the Health Checker feature.

More Information:

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

Installation in a Test Environment

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

Business Value:

New releases of CA Deliver can be installed in different SMP/E zones or data sets to allow a new release to run on a test system while the old release continues to run on production systems. Evaluating the product in a test environment lets you detect any possible problems before you roll it out to a production system, which helps ensure a seamless transition to the new release.

More Information:

Always be sure to review any upgrade considerations in the *Installation Guide* before upgrading CA Deliver.

Use a Common CA High Level Qualifier Symbolic

When installing more than one of CA's Mainframe Enterprise Report Management (ERM) Version 12.0 products, we recommend that you install using one common high-level qualifier for the '**CAI**' symbolic that is shared by all of the products.

Business Value:

By installing and maintaining a single version of a CA common high-level qualifier, you reduce your maintenance effort, save disk space, and eliminate the possibility of executing symbolic utilities that may not be up-to-date with the latest maintenance.

Additional Considerations:

In particular, it is a best practice to install CA Deliver Version 12.0 and CA View Version 12.0 into the same SMP/E CSI data set and SMP/E zones.

CA View and CA Deliver both require the EBC Common Component. Having both products in the same SMP/E environment is the best way to enforce cross-product dependencies and to insure that both products are at current maintenance levels.

Note:

- While it is a best practice for CA Deliver Version 12.0 and CA View Version 12.0 to share a common SMP/E CSI, CA Deliver Version 12.0 cannot be installed into an SMP/E target and distribution zone that contains a different version or release of CA View and the EBC Common Component.
- If CA Deliver Version 12.0 and CA View Version 12.0 are in the same SMP/E CSI and SMP/E zones, each MSM configuration of CA View and CA Deliver contains the complete set of libraries of the combined products.

If you want to upgrade to CA Deliver Version 12.0 in a shared SMP/CSI that contains a different version or release of CA Deliver and CA View, you can do one of the following options:

- RECEIVE CA Deliver Version 12.0 and CA View Version 12.0, then APPLY and ACCEPT CA Deliver Version 12.0 and CA View Version 12.0 simultaneously.
- Install CA Deliver Version 12.0 and CA View Version 12.0 into new SMP/E target and distribution zones.

  Note: You have to allocate new target data sets.

Downward Compatibility

Use direct archival from CA Deliver Version 12.0 to CA View Release 11, Release 11.5, Release 11.6, or Release 11.7 databases.

Business Value:

Maintains compatibility between CA Deliver Version 12.0 and CA View Release 11, Release 11.5, Release 11.6, and Release 11.7 databases.

If CA Deliver is used to archive reports to several CA View databases, it is not necessary to invest excessive time and resources to immediately upgrade all of the databases at the same time that Deliver is upgraded to Version 12.0. Alternatively, it would be less resource-intensive, and would reduce the risk of configuration errors, to gradually upgrade the CA View databases to the Version 12.0 level.

Additional Considerations:

CA View Version 12.0 is also downward compatible with CA Deliver Release 11.7, Release 11.6, Release 11.5, and Release 11. Therefore, if it is preferable to upgrade CA View first, then CA Deliver Release 11.7, Release 11.6, Release 11.5, and Release 11 reports and bundles can be archived and reprinted from a CA View Version 12.0 database.

Note: A cross memory region is limited to accessing a single version of CA Deliver. A CA Deliver Version 12.0 cross memory region cannot access any previous CA Deliver release.

More Information:

For additional details on the cross-product compatibility of CA View and CA Deliver, refer to the Upgrade Considerations section of “Introduction” chapter in the *Installation Guide*.

Special Character Support

The report and distribution identifiers are 1-to 32-character fields with a limited set of acceptable characters. Version 12.0 provides additional character support for these fields.

Business Value:

If you use these new special characters and later decide to revert to a previous release, you cannot access these definitions in batch. If you have started using any of these new characters, avoid reverting to a previous release.

More Information:

For more information about special characters, see the *Release Notes*.

Implementation

Once installation is complete, CA Deliver can be implemented. This section discusses the best practices for implementing CA Deliver.

Library Authorization

APF-authorize the target library by adding an entry for CAI.CVDELOAD to member PROGxx of SYS1.PARMLIB.

Business Value:

Running an APF-authorized library ensures that CA Deliver executes with the appropriate permissions and approvals.

Multiple System Images with Shared Database and Checkpoint File

You can run CA Deliver started tasks on multiple system images and share the CA Deliver database and checkpoint file. This allows CA Deliver to pre-spool process sysout data sets on each system image, rather than having to post-spool process work through a single CA Deliver started task.

Business Value:

Faster and more efficient processing speed is achieved by allowing CA Deliver to run on multiple CPUs. The checkpoint is designed to handle up to thirty-two system images, which allows for faster processing and system integrity.

Additional Considerations:

If you set the CA Deliver initialization parameter HDETAIL to YES, the amount of history detail data can significantly increase the size of your database, slow down report processing, and eventually cause your started task to abend.

You can run an RMODBASE with the STATUS control statement to display usage statistics on the CA Deliver database. For more information about this parameter, see the *Reference Guide*.

More Information:

See the Set Up on Multiple CPU's step in the "Installation" chapter in the *Installation Guide*.

Configuration

Initialization Parameters

When starting a CA Deliver system of the first time, it is a good practice to focus on the basic initialization parameters that comprise the minimum requirements for successful startup. After that occurs, examine the other initialization parameters to add more detailed processing options for your environment

Business Value:

Focusing on a basic subset of the initialization parameters simplifies a first-time installation and results in a faster implementation of CA Deliver. Additional options and parameters can be specified later, based on the evaluation of business requirements at your site.

Additional Considerations:

The following initialization parameters are the minimal requirements to specify when starting a CA Deliver system for the first time.

Database Names

Set NAME to the high level qualifier of the CA Deliver database and SAR to the high level qualifier of the primary CA View database.

System Identifier

Set SYSID to specify the parameter that identifies the CA Deliver started task. If multiple started tasks are run on the same system image, their SYSID parameters must be different.

Pre-spool processing

Set JOBCLSL to the job classes and SYSCLSL to the SYSOUT classes where Deliver intercepts reports using pre-spool processing.

Post-spool Processing

Set NETCLSL, NETDEST, and NETFORM to the SYSOUT class, destination, and form where Deliver picks up reports from JES using post-spool processing. Post-spool processing is referred to as the CA Deliver Network Input Interface. Use NETONLY to state whether CA Deliver does only post-spool processing.

Archival Parameters

Use the ARCHnn parameters to specify criteria for the archival of reports into CA View. You can specify up to 99 ARCHnn parameters.

Use ARCH to specify the default ARCH parameter to use if a report definition does not specify an ARCH parameter.

History Tracking Parameters

Use HDETAIL, BNDLHDTL, and MAXHIST to specify whether detail history is being kept and how many generations of historical data are to be kept.

Bundling Parameters

Use BNDLMOUT and OUTPUT together to allow bundled reports with unlike attributes to be printed together.

To avoid performance degradation when multiple RMOSTCs access the same database, specify BOT=YES for only one started task. Specify BOT=NO for the other started tasks.

Daily Cycle Parameters

Use TIME, BEGINDAY, and DAYS to specify the time of day and the days of the week when the CA Deliver daily cycle and bundle cycles are to occur.

If there are multiple CA Deliver RMOSTCs accessing the same database, we suggest that BOT=YES, and TIME be set in one RMOSTC only, and BEGINDAY be set to the same value in each RMOSTC.

The other tasks should have BOT=NO and TIME=0000.

More Information:

See the “Initialization Parameters” chapter of the *Reference Guide*.

Cross-Memory Services Parameters

For first-time configuration of a cross memory region, thoroughly review the cross memory parameters to determine the most appropriate settings for your environment. In particular, consider how security is used in conjunction with the XMS region, what type of online interfaces are available to the XMS region, and how inactive and cancelled users are handled.

Business Value:

Cross memory services provide an efficient mechanism to manage online user access to CA Deliver through a number of interfaces. This enables the CA Deliver administrator to use a cross memory region as a central point of administration for hundreds of users.

Additional Considerations:

The following cross-memory parameters are the most critical parameters to consider when starting a CA Deliver cross-memory task for the first time.

Control of Idle Users

Use CANCEL and LONGWAIT together to specify how long to wait before canceling a user that is inactive.

Security Controls

Use the LGNPROP and LGNSEC parameters together to determine the type of security and the USERID that are used for security checking and job submission.

Online Interface And Logon Control

Use the XMS and XMSSUB parameters TO determine whether cross memory users can log onto the XMS region and whether there is support for the ISPF, TSO, and CA Roscoe interfaces.

More Information:

See “Installing Online Interfaces” chapter in the *Installation Guide* for complete information.

Bundle Initialization and Timing Parameters

Use all of the bundle timing parameters on the Bundle Definition Attributes Panel to control when bundles are produced. The LATE, INTERVAL, WAIT, and WAIT for LATE fields work together to control bundle production.

Bundle Initialization and Timing parameters selection are the most critical parameters to consider when starting a CA Deliver system for the first time.

Business Value:

Time management and planning of bundled output production maximizes operational efficiency by load balancing system resources and printer usage.

Additional Considerations:

The following bundle initialization and timing parameter are most critical.

BEGINDAY, TIME, and DAYS

Specify the time of day and the days of the week when BEGINDAY and possibly a bundle BEGINDAY are run.

If there are multiple CA Deliver RMOSTCs accessing the same database, we suggest that the value of TIME be set in one RMOSTC only, in conjunction with BOT=YES in the same RMOSTC only.

The other tasks must have BOT=NO and TIME=0000.

Additionally, the value of BEGINDAY must be set to the same value on every RMOSTC region.

Time

The TIME parameter controls when the new daily cycle begins.

BEGINDAY

If BEGINDAY is not specified, then the start of the daily cycle and the bundle BEGINDAY are the same. If the processing of bundles requires that bundles have a BEGINDAY at a time different from the start of the daily cycle then the bundle BEGINDAY time is specified by the BEGINDAY= parameter.

More Information:

See the "Initialization Parameters" chapter of the *Reference Guide.*

See the Determine When a Bundle Is Produced table in the "Creating a Bundle of Reports" chapter in the *CA Deliver Administration Guide*.

Scheduled Distribution

Use the Scheduled Distribution feature to control report production. This feature can control a document distribution based on the day of a week.

Business Value:

Customers requiring printed or emailed output based on a particular distribution ID can specify which days of the week reports are to be sent. This can reduce report distribution and printing costs by eliminating unnecessary or redundant production work.

Additional Considerations:

A DAYS field has been added to the distribution specifications to identify the days of week that the recipient is to receive output. The default is Y (yes); the recipient receives a new report each day of the week. The field can be set to Y (yes) or N (no) for each day of the week from Monday to Sunday. The DAYS field can be specified on the Report Definition Attribute Distribution Specification panel and the Distribution List Distribution Specifications pane.

Data Set Collector

Use the Data Set Collector feature to allow CA Deliver to process reports directly from a mainframe data set. The data set collector, RMODSC, provides added flexibility by allowing multiple files to be processed, allowing distribution based on a specific report definition, and allowing manipulation or sectioning of input data through a named user exit.

Business Value:

The Data Set Collector enables more flexibility for report collection and provides an easy transition for customers when they are converting from other report distribution systems, which collect reports from a data set.

More Information:

For more information about the CA Deliver data set collector, RMODSC, see the chapter "Utilities" in the *Reference Guide*.

Direct Archival to CA View

We recommend using direct archival to send reports directly to a CA View database. Using direct archival can reduce the need for the CA View archival task to use system resources to collect output from the JES spool, can allow bundle holding copies to be stored in CA View instead of JES, and can eliminate distribution of printed output when it is not needed.

Business Value:

Direct archival reduces the system I/O, CPU, and JES resources required for electronic distribution of reports and can reduce costs associated with printing and delivering output. It can also improve productivity by allowing users to view bundled reports online immediately, without having to wait for bundles to be collected from JES.

Additional Considerations:

The ARCH and ARCHnn initialization parameters are used with the ARCH parameter in CA Deliver Report Attributes panel to determine how reports are to be archived to different CA View databases.

Archive Reports Parameter

Use CA Deliver to take advantage of the CA View Functional Subsystem (FSS) collectors to archive fully composed AFP reports into CA View databases. This can be accomplished by using the ARCH parameter in the CA Deliver Report Definition Panel to send the report into JES with characteristics that fit the selection criteria of the FSS printer.

Business Value:

Maintain the value of your fully composed AFP data without losing the tracking data and security of your reports that are provided by CA Deliver.

More Information:

See Installing the FSS Collector section in the *CA View Installation Guide*.

Modify Report ID and Arch ID

CA View MODE EXP loses all connection to reports when the CA Deliver Report ID and or Arch ID is changed. CA View MODE EXP requires CA View to obtain a DIST ID for the report from CA Deliver. When you change the Report ID or the Arch ID, the database path to obtain the Dist ID is broken. CA View does not display the reports archive under the old report ID or Arch ID.

Therefore, we recommend that you do not change existing Report ID and or Arch IDs. Instead, leave the existing definition and create a version of the report definition (using COPY ALL) with the new Report ID or Arch ID. After the new definition has been created, modify the DDName associated with the old original report, for example, 'DUMMY' or 'OLDRPT', so that no new reports are processed under that definition.

Business Value:

This allows you to continue to view all of the reports archived under both the new and old Report ID and Arch IDs.

More information:

For more information about the CA Deliver copy command, see the chapter "Basics", "Input Commands" section in the *Administration Guide*.

Integration and Interface Points

Integrate CA View with CA Deliver

Use CA Deliver in conjunction with CA View as a complete Output Management solution for managing reports. As indicated by other best practices in this guide, CA Deliver reports can be archived directly to CA View databases, viewed online, and backed up on storage media. All CA Deliver report attributes and distribution data are retained in the CA View database.

Business Value:

Creating a complete solution optimizes report management. By implementing an automated archival and retrieval system you can automate day-to-day report management, minimize time-consuming manual tasks, and lower document delivery costs. Viewing reports online and printing fewer reports saves cost and reduces time spent reformatting, tracking, handling, and rerunning reports.

Integrate Email Notification by way CA Spool, CA OM Web Viewer

Use the CA Spool Email Print Driver to notify report recipients that documents are available for viewing in CA Output Management Web Viewer, or to send copies of reports directly to recipients. The notification emails can include a link to the report, and deliver the report as an attachment in text, HTML, or PDF format.

Business Value:

Automates notification of report availability and simplifies database search and retrieval. The CA Deliver Email Notification feature is an efficient and robust method to track and distribute reports processed by CA Deliver. It helps you to distribute and track an entire report or selected pages of a report to recipients for online viewing. This can save the recipient's time when waiting for a report to arrive. Instead of repeatedly checking for report arrival in CA OM Web Viewer, the recipient knows the report is ready when an email arrives.

More Information:

See the "Setting Up Email and Email Notification" chapter in the *Administration Guide*. Also, view the *CA Spool Customization Guide*.

Automate Job Reruns

Manage CA Deliver report and job reruns by implementing the CA 11 Workload Automation Restart and Tracking interface.

Business Value:

Automatically managing report data requiring job reruns provides reliable tracking of reports and eliminates the potential of time consuming manual effort when operating errors occur in output production.

Additional Considerations:

See the NETRERUN and RMSWARN initialization parameters, and the RMORMS and RMOPRE utilities in the *Reference Guide*, and the PREVRUN job parameter in the *Administrator Guide*.

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