CA View®

Reference Guide

Release 12.1

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CA Technologies Product References

This document references the following CA Technologies products:

- CA ACF2™
- CA Balancing™
- CA Common Services
- CA Deliver™
- CA DRAS™
- CA Output Management Document Viewer
- CA Output Management Web Viewer
- CA Roscoe®
- CA Spool™
- CA Top Secret® for z/OS

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Chapter 1: Introduction

Welcome to CA View, a SYSOUT archival and retrieval system that stores computer output on either DASD or tape and retrieves that output upon demand.

This section contains the following topics:

Who Should Read This Guide? (see page 25)
Conventions Used in This Guide (see page 25)
Processing and Features (see page 26)
General Processing Information (see page 28)
Overview of Cooperative Viewing (see page 32)
SMF Record Layouts (see page 34)

Who Should Read This Guide?

This guide is designed as a reference for system programmers, administrators, and end users of the product.

This guide assumes that you are familiar with CA View and IBM computer system terms and concepts. You also need a working knowledge of operating system online facilities such as ISPF, because the CA View panels behave in a similar fashion.

Conventions Used in This Guide

For conventions used in all guides, see the *User Guide*.

Processing and Features

CA View is a facility that archives and retrieves computer output (SYSOUT). Any SYSOUT can be specified for archiving. In a production environment, CA View is well suited to the management of the following classes of data:

- Production JCL listings and messages
- Production reports
- SYSLOG data

SYSLOG data is archived whenever it is queued for output. The automatic command facility can be used to queue SYSLOG data at regular intervals. Production reports can be automatically archived and printed. If a report gets lost or must be reprinted, the retrieval system reprints it from archival, eliminating the need for reruns. Large reports can be archived directly to tape to minimize disk requirements.

If a job, started task, or time-sharing session has output queued for processing, any output that meets the archival criteria is written to the current disk generation or tape. At a specified time (or at specified intervals), the current generation on disk is backed up to tape. A new disk generation is created, and archiving continues with this new generation.

Exceptional Condition Checking

Using CA View, production JCL listings and messages can be automatically archived and retained for as long as you want. You can optionally specify the action to take whenever an exceptional condition is encountered; actions include issuing a message to the operator and printing the SYSOUT for the job.

CA View checks for the following exceptional conditions:

- Nonzero condition code
- System or user abend
- JCL error
- Data set cataloging error
- Data set not deleted error
- Allocation request canceled by operator
- User-specified condition

The conditions can be modified as needed by using control statement inputs to the CA View started task (SARSTC).

Retention and Retrieval

Compilation listings, production reports, and SYSOUT can be retained on a long-term basis on disk or tape as a feature of the Expanded Retention Option.

You can retrieve SYSOUT easily from an online terminal using the online retrieval facility. You can select one or all generations of archived SYSOUT. You are presented with a selection list of the SYSOUT groups (a group of data sets having the same job name) to which you are authorized access.

You can do the following:

- Select a SYSOUT group for browsing or printing.
- Scroll through the SYSOUTs using the SYSOUT indexing and logical view features of the Browse facility.

  This type of scrolling allows you to automatically display only the portion of a SYSOUT that you need.
- Search for specific character strings with the FIND command.

Full batch retrieval capability is also provided with the SARBCH utility.

Integration with CA Service Desk

CA View generates LOGREC events whenever an ABEND occurs within the View started task or one of the utilities.

Note: For more information about capturing and reacting to these events, see the Service desk documentation.

Downloading and Printing

With CA View, you can do the following:

- Print to VTAM printers using the CA View VTAM Print option and CA Spool Print Management (CA Spool).
- Print to other external printing products with the External Printing Interface.
- Download SYSOUT data to personal computer using CA Output Management Web Viewer.

Health Checker

The CA View Health Checker feature raises alerts about possible problem conditions. These conditions could prevent CA View from running properly if left uncorrected. Health Checker also provides guides to help you address the problem. These guides are best practices for running CA View. For more information, see the "CA View Health Checker" appendix later in this document.

General Processing Information

The following are the general processing information.

SYSOUT Groups

SYSOUT is archived in units named *SYSOUT groups*.

A SYSOUT group is comprised of one or more SYSOUT data sets for a job that have the same characteristics. For example, these data sets could have the same SYSOUT ID, the same SYSOUT class, the same forms name, and the same FCB and are presented to CA View sequentially. Any change in characteristics causes the current SYSOUT group to close and a new SYSOUT group is allocated. Once a SYSOUT group is closed, it cannot be reopened to receive more output.

SYSOUT Group Considerations:

- Each individual SYSOUT group is assigned a 1- to 32-character name referred to as the SYSOUT ID.
- The default ID assigned to a SYSOUT group is its job name.
- You can override the default ID for a SYSOUT group.

  To override the ID, code a writer-name as the second positional parameter of the SYSOUT parameter on its DD statement.
- The ID is coded as a 1-to 8-character writer-name conforming to standard JCL syntax rules.

Syntax:

```
SYSOUT=(class,writer-name,form)
```

Specify a dollar sign as the first character of the program name. A dollar sign indicates that the remaining characters of the writer-name are to be appended to the job name to form the SYSOUT ID. If the resulting ID is longer than 32 characters, it is truncated on the right.

Two other national characters—the at sign (@) and pound sign (#)\-—are reserved for CA View. Do not use these characters as the first character of the writer-name.

Record Length

The logical record for reports processed by CA View cannot exceed 32752 for fixed-length records or 32756 for variable-length records. This includes the carriage control character.

Example of SYSOUT ID Assignments

This example assumes the following DD statements are contained in a job named PRODJOB:

```
//DD1 DD SYSOUT=A
//DD2 DD SYSOUT=(A,REPORT1)
//DD3 DD SYSOUT=(A,$R1)
//DD4 DD SYSOUT=(A,$SUMMARY)
```

The SYSOUT IDs that are assigned to data sets are:

DDname	SYSOUT ID
DD1	PRODJOB
DD2	REPORT1
DD3	PRODJOBR1
DD4	PRODJOBSUMMARY

Other Features

These features are also available.

User Exits

The product provides a number of user exits that allow you to tailor the product to meet your site's requirements. These user exits are links to the source code.

Alternate Date Format

The default date format for all dates is mm/dd/yyyy (month, day, year). You can set alternate formats of dd/mm/yyyy, yyyy/mm/dd, or yyyy/dd/mm. The mm/dd/yyyy format is used throughout the documentation.

Printing Capabilities

You can:

- Specify variables that range from lines-printed and pages-printed limits to multiple printer systems.
- Print to standard printers and VTAM printers.
- Print through CA Spool.
- Use the provided external printing interface to print to other products.

PC Transmission

You can transmit (or download) SYSOUT data to CA Output Management Web Viewer (formerly CA-Document Viewer). This product runs on a PC running on a supported Microsoft Windows operating system.

A SYSOUT group is queued for transmission to your PC session by printing it in batch mode or online using the J or P SYSOUT selection code. From the Print Attribute panels that are displayed by these options, you specify a destination of PC as follows:

```
DEST ===> pc
```

To queue a SYSOUT group for transmission to another user's PC session, you append a period and the user's ID to the destination PC. For example, to queue a SYSOUT group to user TOM, specify:

```
DEST ===> pc.tom
```

Alternatively, you can use a device synonym as specified using the Define Device command.

As with printing a SYSOUT group, you can modify the page format by specifying a logical view, and you can limit the data that is transmitted by specifying ranges of pages or records.

Double-Byte Character Sets (DBCS)

CA View provides support for DBCS characters such as Chinese, Japanese, or Korean. For the product to recognize and process DBCS data, ensure the following:

- DBCS data is enclosed by shift out (X'0E')/shift-in (X'0F') characters
- Shift-out/shift-in pairing is completed in each logical record
- PRMODE=SOSI1 or PRMODE=SOSI2 is specified for the data set in its //OUTPUT statement (an IBM requirement for printing to a 3800 printer)

You can view DBCS data only on a workstation that provides DBCS input/output capability such as 3270 information display. Currently, only the ISPF and Native TSO online retrieval options support the viewing of DBCS data.

To reprint a SYSOUT group containing DBCS data, use selection code J from online retrieval or the batch retrieval print function.

Note: The Print Services Facility (PSF) must control the printer to which the output is directed.

Overview of Cooperative Viewing

CA DRAS enables cooperative report viewing from a Windows-based viewer. This product is middle-ware that runs as a started task on the mainframe. CA DRAS communicates with a CA View agent on one end and with Windows-based viewers such as CA Output Management Web Viewer on the other.

Terminology

DRAS – the Distributed Repository Access System—A distributed relational database server that provides access to data in a large variety of formats residing on different media.

CA DRAS provides a uniform, consistent view of data throughout the enterprise. CA DRAS treats all the data as relational tables, regardless of the original format or storage medium.

Cooperative Processing/Cooperative Viewing—This is the ability to view or print a z/OS-based report from a windows application or web browser.

Client Applications or *Clients*—These terms apply to the CA Viewing solutions that work with CA DRAS and CA View to provide the cooperative viewing process.

Cooperative viewing is currently available with the following viewing solutions:

- CA Output Management Web Viewer
- CA Output Management Document Viewer

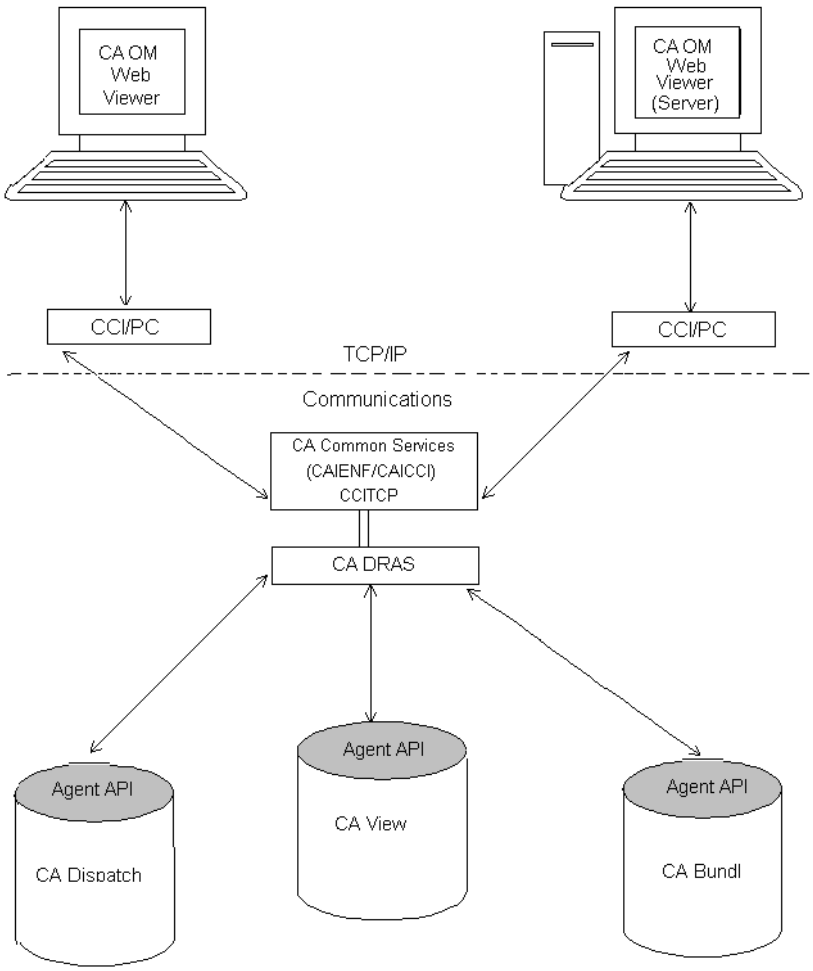
Repository Agent or Agents—Agent code is supplied for CA View. This code processes the requests received from CA DRAS. When the Client makes a request through CA DRAS, the Agents send that request to the repository and pass back its response.

Cooperative Processing

To successfully connect the desktop client to the CA View database, several key elements need to be properly installed and configured.

The following illustration shows how the workflow is processed and where each solution fits into what is called *cooperative processing*.

This diagram provides a basic view of how cooperative processing works to provide end-user access to reports residing in a z/OS-based report repository.



1. The Client initiates a request using an initial login or a report data request from CA Output Management Web Viewer.
2. An SQL request is formatted by the Client API and passed through CA Common Services, Common Communications Interface (CAICCI).

   The Common Communications Interface uses the TCP/IP communication protocol to pass the request from the windows environment, through CAICCI/PC, to the z/OS-platform running the Common Communication Interface (CCITCP) task.
3. CA DRAS receives the request from the Common Communications Interface (CAICCI) and passes it on to the CA View Agent API for interpretation. The Agent API formats the request and passes it to CA View for processing.
4. The request is validated and processed in CA View. Once processed, it is returned to an SQL format and passed back to CA DRAS.
5. CA DRAS processes and packages the response and passes it back through the Common Communications Interface to the Viewer system, where it is processed and displayed to the Client.

SMF Record Layouts

The Type 6 External Writer SMF record is optional and is created if the startup parameter SMF= is set to YES. The Z/OS Type 6 record format definition can be found in the assembler language macro SYS1.MACLIB(IFASMFR).

In a Cross Memory Services (XMS) session, SMF records can also be created. The creation and record type number is controlled by the XMS startup parameter SMFSESS=. The record format definition can be found in the assembler language macro CAI.CVDEMAC(EBCSMFU1).

Note:

- The format of the XMS session SMF record does not follow the same header conventions as the CA View Metrics SMF records.
- SMF records can also be created by CA Deliver.

  For more information about CA Deliver SMF records, see the *CA Deliver Reference Guide*.

More Information:

Metrics (see page 357)

Chapter 2: Initialization Parameters

This chapter explains how to:

- Set and change the initialization parameters, that control the customization options
- Set and change the expanded retention initialization parameters

This section contains the following topics:

Setting and Changing Initialization Parameters (see page 35)
Initialization Parameter Descriptions (see page 36)
Activate, Modify an Initialization Parameter (see page 103)
Expanded Retention Initialization Parameters (see page 108)
Initialization Parameter Examples (see page 121)

Setting and Changing Initialization Parameters

The SARINIT program sets or changes initialization parameters in the CA View database. Use these parameters to modify the customization options. Any references to *the database* in this chapter refer to the CA View database unless otherwise noted.

Job Control Statements

Sample execution JCL can be found in member HAEXINIT in your CVDEJCL data set.

The following job control statements are required to execute SARINIT:

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARINIT) and, optionally, the high-level name of the database as the PARM parameter (PARM=dbname).

STEPLIB DD

Defines the load library containing SARINIT.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines the sequential output data set used for listing the statements and messages.

If this is not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded, where nnn is a multiple of 133.

SYSIN DD

Defines a card-image data set containing the parameter statements.

Initialization Parameter Descriptions

The SARINIT program reads a set of parameter statements.

- For a new database, SARINIT initializes a new Master Control Record (MCR) and writes it out to the master index. If a statement for one of the parameters is omitted, the default values are used.
- For an existing database, SARINIT updates the existing MCR.
  - Any parameter for which a statement is provided is set to the value supplied.
  - Any parameter for which no statement is supplied remains unchanged.
  - If a parameter statement is supplied without a value, the parameter is set to its default value.

You must stop the archival started task (SARSTC) before you change any parameters in its master index.

Format of SARINIT Statements

Parameter statements are coded as card images and have the following format:

`parameter=value`

- The parameter must begin in column 1, followed by an equal sign and the value to be assigned to the parameter.
- No blanks can be coded between the parameter and the equal sign nor between the equal sign and the value.
- Only one parameter can be coded per card image.
- Comments can be included within the parameter statements by coding an asterisk in column 1 of the card image containing the comment.

ACIFCOMP

This parameter specifies whether to use a compression algorithm for ACIF reports and resources using MVS compression services to improve compression and minimize CPU usage.

Syntax:

`ACIFCOMP=YES|NO`

The default is NO.

Yes

Activates the compression algorithm for any new ACIF reports processed by the FSS/ACIF collector.

No

Deactivates this feature and reverts to standard compression for ACIF reports and resources.

ACIFRES

This parameter specifies whether CA View should reprint AFP reports with embedded resources, allowing CA View to manage the resources associated with a report.

Syntax:

```
ACIFRES=YES|NO
```

The default is NO. The user can also override this value for an individual reprint.

YES

Reprints AFP reports with embedded resources, even if a resource on your system has been updated since the report was archived.

The product uses the appropriate older resource at reprint time.

NO

Reprints AFP reports without embedded resources.

AFPSPACE

This parameter is used to 'tweak' horizontal and vertical character formatting in the AFPACIF mainframe viewer.

Syntax:

```
AFPSPACE=horizontal|vertical
```

horizontal

Changes the horizontal character value from 20 to 12, causing CA View to expand the line in a horizontal direction. This change fixes the problem that occurs when applications use small fonts and online viewing shows characters overlaying words from the same line.

Do not exceed the original value of 20.

vertical

Changes the vertical character value from 30 to 20. Use vertical if the viewer is overlaying a line with data from another line and is showing too many blank lines.

Do not exceed the original value of 30.

ANNODLFT

This parameter is used to set the annotation default creation to PRIVATE or PUBLIC.

Syntax:

```
ANNODFLT=PRIVATE|PUBLIC
```

The default is PRIVATE.

PRIVATE

Causes all new annotations to default to PRIVATE unless the value is changed.

PUBLIC

Causes all new annotations to default to PUBLIC unless the value is changed.

ARCHCOPY

This parameter controls whether one or all copies of a sysout which has a COPIES parameter with a value greater than one, are archived to the database.

Syntax:

```
ARCHCOPY=NO|YES
```

The default is NO.

YES

Archive as many copies of a report equal to the number of copies coded on the sysout or OUTPUT statement.

NO

Archive only one copy of a report even though the sysout was coded with a COPIES parameter with a value greater than one.

Note: Setting ARCHCOPY=YES performs the same as in CA View 2.0.

ARCHMSG

This parameter specifies whether the SARSTC22 processing *jobname/dsname* archival message is issued for each SYSOUT processed.

Syntax:

```
ARCHMSG=YES|NO
```

The default is NO.

ARCHSWAP

This parameter specifies whether the CA View started task is swappable.

Syntax:

```
ARCHSWAP=YES|NO
```

The default is NO.

Values are as follows:

YES

Marks the started task as swappable.

NO

Marks the started task as non swappable.

BCHMAXRC

This parameter specifies the maximum return code that the SARBCH program can issue.

Syntax:

```
BCHMAXRC=nnn
```

The default is 255.

Valid values are 1-255.

BNDWDAYS

This parameter specifies the number of days that are to transpire before a report is forcibly removed from bundle wait status (BNDW).

Syntax:

```
BNDWDAYS=nnn
```

The default is 7. The number of days (*nnn*) can be 1 to 100 days.

CCONDISP

This parameter specifies the CA View system-wide default value that controls the viewing of carriage control characters in online logical viewing.

Syntax:

```
CCONDISP=YES|NO
```

The default is YES.

Values are as follows:

YES

Sets the carriage control character viewing default to YES for online viewing.

NO

Sets the carriage control character viewing default to NO for online viewing.

CENTADR

This parameter specifies a comma-separated string of IP addresses or DNS names for Centera access nodes. The Centera disk interface uses these addresses when it connects to the Centera pool.

Syntax:

```
CENTADR=IP addresses or DNS names
```

Note: For more information about this parameter, see the chapter "EMC Centera Disk Option."

CENTNAME

This parameter specifies the four-character subsystem name of the SARCAS server task.

Syntax:

```
CENTNAME=cas-name
```

CENTPDSN

This parameter specifies the dataset name of the Centera Pool Entry Authorization (PEA) dataset. This dataset is only required if the default Centera access profile is being overridden. For information about creating and using PEA files, review EMC Centera documentation or contact EMC Centera technical support.

Syntax:

```
CENTPDSN=dataset name
```

CLEAN

This parameter specifies whether the CA View backup cycle is to invoke cleanup processing of CA Deliver direct-to-CA View reports with OPEN status.

Syntax:

```
CLEAN=YES|NO
```

The default is YES.

Values are as follows:

YES

Specifies cleanup processing during all backup cycles, standard and interim.

NO

Specifies no cleanup processing.

Sites that run in a nonshared JES environment should set CLEAN=NO. Use this setting because CA View cannot determine if the report was left in OPEN status or if it is actually being processed.

Notes:

- If CLEAN=NO, cleanup must be done manually with the online C command.
- The modify clean command does not affect CA Deliver OPEN subfiles, only SYSOUT subfiles left open by SARSTC or a CA View FSS collector.
- SYSOUT files originating from CA Deliver left in OPEN status can only be cleaned with the online C command.
- If long-running jobs are archiving SYSOUTs direct-to-View such as a started task archiving a log of some type, CLEAN must be set to NO because two consecutive backup cycles completed four hours apart would delete the SYSOUT and corrupt the database.

Deleting an OPEN SYSOUT

Never delete a SYSOUT in OPEN status because CA View might not be able to determine whether the report was left in OPEN status or whether it is actually being processed. The SYSOUT is marked as in delete status and is hidden in the database.

If the SYSOUT originated in CA View, it is still deleted after two consecutive backup cycles complete processing. If the SYSOUT originated in CA Deliver, it is marked for deletion. If CLEAN is set to NO, it is never deleted and continues to occupy space until CLEAN is set to YES and two consecutive backup cycles complete four hours apart.

Manually Cleaning CA Deliver Open SYSOUTs with CLEAN=NO

Use the online C command to mark a SYSOUT for cleanup.

F**oll**ow these steps:

1. Execute the online C command.

   The command responds with CLEAN PENDING.

2. Execute a second online C command at least four hours later.

   This time, the command responds *sysoutid* REMOVED. The SYSOUT is set to DISK status.

3. You can now delete the SYSOUT with the online D command or leave it to expire under normal retention criteria.

CLSL

This parameter specifies a list of one to eight SYSOUT classes used to select SYSOUT for archival. When you specify CLSL, also specify, NEWCLSL to prevent a print-archival-print loop. If neither CLSL, DEST, nor FORM is specified, all SYSOUT is archived.

Syntax:

CLSL=xxxxxxxx

The default is ALL CLASSES.

CMAMAX

This parameter specifies the maximum number of lines that can be printed from an online session by using the P print selection code when using CA Spool.

Syntax:

```
CMAMAX
```

The default is 5000.

Valid values are 0-16770000.

The hierarchy of values is:

- Device Definition
- CMAMAX (If Max Lines is left blank in the Device Definition screen) and both CMAMAX and the online value for OUTLIM are set to zero, the number of lines that can be printed on-line is unlimited.

CMASPOOL

This parameter specifies the name of the CA Spool subsystem and corresponds to the CA Spool SUBID configuration parameter located in member ESFPARM. Use CMASPOOL when using CA Spool to print.

Syntax:

CMASPOOL=*subsys*

There is no default.

CODEPAGE

This parameter specifies which translation table (or codepage) to use when sending character strings to IBM-3270 type display terminals. The table is used to map nondisplay characters, or valid display characters needed for a particular language or special character.

Note:

- The table does not determine the actual character displayed by the terminal that is a function of either the hardware or the terminal emulator codepage.
- The table only determines if the value of the hexadecimal character is passed to the display terminal or translated to a period (Hexadecimal character 4B).

  Syntax:

  CODEPAGE=*xxx*

  The default is 037.
- The tables are named EBCCP*xxx* with the *xxx* characters being unique for different tables. The translation tables supplied on the CA View distribution tape are shown after the default value for this parameter.
- The codepage charts are used to determine if the character value is passed to the display terminal or translated to a period. In this table, the lower case 'c' is used to show that the character value is passed, and the period is used to show that the character value is translated.
- The title of each chart contains the codepage number (last three characters of the table name) and the common name associated with the terminal language.

  For example, the first table describes the default codepage table, CODEPAGE=037 which is commonly used and the English language display terminal.

  EBCCP037 - Default, English:

```
  0123456789ABCDEF
 +----------------+
0|................|0
1|................|1
2|................|2
3|................|3
4|c........ccccccc|4
5|c........ccccccc|5
6|cc.......ccccccc|6
7|........ccccccc|7
8|.ccccccccc......|8
9|.ccccccccc......|9
A|.ccccccccc......|A
B|................|B
C|ccccccccccc..c.c.|C
D|ccccccccccc......|D
```

```
E|c.cccccccc..c...|E
F|ccccccccc......|F
 +---------------+
  0123456789ABCDEF
```

EBCCP$01 - Kanji, Euro Country Extended Code Page (ECECP), and Country Extended Code Page (CECP)

```
  0123456789ABCDEF
 +---------------+
0|................|0
1|................|1
2|................|2
3|................|3
4|cccccccccccccccc|4
5|cccccccccccccccc|5
6|cccccccccccccccc|6
7|cccccccccccccccc|7
8|cccccccccccccccc|8
9|cccccccccccccccc|9
A|cccccccccccccccc|A
B|cccccccccccccccc|B
C|cccccccccccccccc|C
D|cccccccccccccccc|D
E|cccccccccccccccc|E
F|ccccccccccccccc.|F
 +---------------+
  0123456789ABCDEF
```

EBCCP$02 - Version 1 Japanese and Europe:

```
  0123456789ABCDEF
 +---------------+
0|................|0
1|................|1
2|................|2
3|................|3
4|cccccccccccccccc|4
5|ccccccc.c.ccccc|5
6|cc........ccccc|6
7|.........ccccccc|7
8|.ccccccccc......|8
9|cccccccccccccccc|9
A|.cccccccccccccc|A
B|..........ccccc|B
C|ccccccccc..c.c.|C
D|ccccccccc......|D
E|c.cccccccc..c...|E
F|ccccccccc......|F
 +---------------+
  0123456789ABCDEF
```

EBCCP$03 - Version 2 Japanese and Europe:

```
  0123456789ABCDEF
 +----------------+
0|................|0
1|................|1
2|................|2
3|................|3
4|cccccccccccccccc|4
5|cccccccccccccccc|5
6|cccccccccccccccc|6
7|cccccccccccccccc|7
8|cccccccccccccccc|8
9|cccccccccccccccc|9
A|cccccccccccccccc|A
B|cccccccccccccccc|B
C|cccccccccccccccc|C
D|cccccccccccccccc|D
E|c.ccccccccccccc|E
F|ccccccccccccccc|F
 +----------------+
  0123456789ABCDEF
```

EBCCP$04 - **SPARE**:

```
  0123456789ABCDEF
 +----------------+
0|................|0
1|................|1
2|................|2
3|................|3
4|c........ccccc|4
5|c........ccccc|5
6|cc.......ccccc|6
7|........ccccccc|7
8|.ccccccccc......|8
9|.ccccccccc......|9
A|.ccccccccc......|A
B|................|B
C|ccccccccc..c.c.|C
D|ccccccccc......|D
E|c.cccccccc..c...|E
F|ccccccccc......|F
 +----------------+
  0123456789ABCDEF
```

DAYS

This parameter specifies a string of seven characters with each character corresponding to one day of the week from Monday through Sunday. Each of the characters is specified as either Y or N.

Syntax:

```
DAYS=xxxxxxx
```

The default is YYYYYYY.

Y

Specifies that the backup cycle can be automatically initiated by CA View on that day of the week.

N

Suppresses the automatic backup cycle on that day of the week.

Note: For more information about this parameter, see the TIME command later in this chapter.

DBMSGFRQ

This parameter specifies the frequency or interval (from 1 to 65535) in number of records at which console messages are produced by either the backup cycle or the SARDBASE utility.

Syntax:

```
DBMSGFRQ=nnnnn
```

The default is 5000.

Following are the console messages produced with the backup cycle and the SARDBASE utility:

```
SARBKT63 STANDARD|INTERIM PHASE n PROCESSING rrrrrr, ARCHIVED ON date AT time
SARDBG05 REORGANIZING jobname, GEN=gen, ARCHIVED ON date AT time
SARDBR03 ATTEMPT TO COPY SYSOUT GROUP FROM OLD DATABASE – ID=id,GEN=gen, SEQ=seq
SARDBR20 SYSOUT GROUP ADDED TO INDEX - ID=id, GEN=gen, SEQ=seq
SARDBV11 INDEX VERIFICATION FOR ID=id, GEN=gen, SEQ=seq
```

DBTHRESH

This parameter specifies the threshold percentages of database index and data extent capacities.

Syntax:

DBTHRESH=*ii,dd*

The default is 80,80.

Valid values are 1-99.

When the threshold of the specific database component is reached (where *ii* specifies the index extent and *dd* specifies the data extent), the following respective messages display:

SARDBI23 ...*db_hlq*...Index files(s) at *nn*% utilization

SARDBI23 ...*db_hlq*...Data files(s) at *nn*% utilization

DEFMODE

This parameter specifies the system default user mode used for new users. This default user mode applies to new users who have not been predefined to the product by the DEF USER command.

Syntax:

DEFMODE=*abcde*

The default is YNNNN.

Each position is specified as follows:

Y

The user can enter a specific online operating mode

N

The user cannot enter a specific online operating mode

D

The default mode for a first-time user

If there are multiple Ds, the first one is used. If there is no D, the first Y is used to indicate the initial mode for a first-time user.

If DEFMODE=NNNNN is specified, no new users are permitted. This table explains the values for *a, b, c, d, e* in the parameter statement:

Reference Letter	Mode	Values
a	ALL	Y|N|D
b	Express operations	Y|N|D
c	Express	Y|N|D
d	SAR operations	Y|N|D
e	SAR	Y|N|D

For example, DEFMODE=YNNNN, the default, means yes for ALL mode and no for the remainder of the modes.

DELETE

This parameter specifies whether SYSOUT groups can be deleted by online users.

Syntax:

DELETE=YES|NO

The default is NO.

DESC

This parameter specifies the descriptor code used for exceptional condition messages (message ID SARSTC99).

Syntax:

DESC=*nn*

The default value is 2.

The default value highlights the messages and prevents them from rolling off a console in roll-delete mode. A value of 7 allows the messages to roll off and be deleted.

Valid values are 0-16. Specify a route code of up to 16 for the WTO that issues the messages. A route code of 0 suppresses the messages.

DEST

This parameter specifies the destination (remote name) used to select SYSOUT for archival.

Syntax:

DEST=*xxxxxxxx*

The default is ALL DESTINATIONS.

When you specify DEST, also specify NEWDEST to prevent a print-archival-print loop. If neither CLSL, DEST, nor FORM is specified, all SYSOUT is archived.

DIRALLOC

This parameter specifies the number of blocks allocated for CA Deliver-direct-to-CA View archival.

Syntax:

```
DIRALLOC=nnn
```

The default is 50.

Valid values are 0-255. If 0 is specified, the default value of 50 is used.

The larger the value, the fewer the number of times large reports archived through CA Deliver direct-to CA View archival need to request additional blocks. The lower the value, the greater the chance you have of archiving into a database that is near capacity.

DRMOD

This parameter controls the disposition of a DR backup tape and DRMOD is ignored if DRTAPE is set to NO or DUPLEX.

Syntax:

```
DRMOD=NEVER|ALWAYS|STD
```

The default is NEVER.

NEVER

Never append data to an existing DR backup tape.

Always create a new DR tape for every standard and/or interim backup cycle.

ALWAYS

Always append data to an existing DR Backup tape for every standard and/or interim backup cycle until the tape is full.

If you issue a MODIFY SARSTC, NEW or INEW, or start the archival task with a NEW or INEW parameter, you cause a new DR Tape to be created.

STD

Append data to an existing DR backup tape for an Interim backup cycle until the tape is full. Start with the first Interim Backup Cycle after a Standard Backup Cycle.

If you issue a MODIFY SARSTC,NEW or INEW, or start the archival task with a NEW or INEW parameter, you cause a new DR Tape to be created.

Note: The setting of the DRMOD parameter only affects the backup cycle. the Tape Consolidation Utility (SARPAC) appends to an existing SARPAC DR tape for a 'calendar day', each day a new SARPAC DR tape is created.

DRTAPE

This parameter controls whether a DR backup tape (DR tape) is created and used at a DR site or if the duplex should be used at the DR site.

Syntax:

DRTAPE=NO|YES|ACTIVE|DUPLEX

The default is NO.

NO

Do not create a DR tape.

YES

Create a DR tape but access reports on tape using the standard primary and/or duplex tapes. The creation of new backup cycle DR tapes is controlled with the DRMOD initialization parameter.

ACTIVE

Create a DR tape and use the DR tapes when accessing reports on tape. If a DR tape is not available for a report, the primary and/or duplex are used.

DUPLEX

Do not create a DR tape and access reports on tape using the duplex tape. If the duplex tape is not available for a report, the primary tape is used.

Note: Setting DRTAPE=DUPLEX is equivalent to the CA View 2.0 parameter EASTDPLX=OLY. It allows EAS to call the duplex tapes before calling the primary tapes.

CA View creates a DR tape if the DRTAPE parameter is set to YES or ACTIVE. This tape is not a mirror image of the primary or duplex tape. The DR tape is written during the current standard or interim backup cycle and can be sent to the DR site.

DRTIDX

This parameter specifies an alternate naming prefix (up to 17 characters) for your DR tapes. If this parameter is changed, tapes previously produced by CA View are still accessible. If omitted, the high-level name of the database is used.

Syntax:

DRTIDX=*name*

DRTSEQ

This parameter specifies the starting tape sequence number for DR tapes established in a new database.

Syntax:

```
DRTSEQ=nnnnn
```

The default is 1.

Valid values are 1-65535.

Important! This parameter is to be modified only at the direction of a CA Technical Support representative.

DRUNITB

This parameter specifies the tape unit name used by the backup cycle when allocating a new DR tape.

Syntax:

```
DRUNITB=unitname
```

The default is TAPE.

DRUNITP

This parameter specifies the tape unit name used by SARPAC when allocating a new DR tape.

Syntax:

```
DRUNITP=unitname
```

The default is the value of DRUNITB.

EASTDPLX

This parameter specifies whether SAREAS attempts to access a duplex volume if the primary volume is not cataloged. EASTDPLX=YES is normally used in a disaster recovery situation, where the primary volumes no longer exist or are inaccessible.

Syntax:

```
EASTDPLX=YES|NO
```

The default is NO.

Note: Clients with the CA View 2.0 parameter EASTDPLX=OLY must use DRTAPE=DUPLEX. It allows EAS to call the duplex tapes before calling the primary tapes.

EASTMAXW

This parameter specifies the length of time to wait (in minutes) before time outs are to occur for online requests to the SAREAS tape server.

Syntax:

```
EASTMAXW=nn
```

The default, EASTMAXW=00, indicates no time-outs are to occur.

Valid values are 0-99.

EASTNAM1 to EASTNAM3

These parameters allow reference to a maximum of three expanded access servers for tape and robotics when accessing report data that resides on tape or tape emulation optical.

Note: For more information about these parameters, see the chapter "Configuring".

The EASTNAM*n* parameters specify the subsystem names of the expanded access servers and related unit names used by the expanded access server. The syntax is as follows:

Syntax:

EASTNAMn=*eas-name/eas-unit1,eas-unit2*

where:

n

Specifies a number (from 1 to 3) used to reference up to three expanded access servers.

eas-name

Specifies the four-character subsystem name of the expanded access server.

eas-unit1

Specifies the optional unit name referenced in a STORGRPn parameter that can be accessed by the expanded access server.

eas-unit2

Specifies the optional second unit name referenced in a STORGRPn parameter that can be accessed by the expanded access server.

- If both *eas-unit1* and *eas-unit2* are omitted in an EASTNAM*n* parameter, all unit names not specifically identified by another EASTNAM*n* parameter can be accessed by this expanded access server subsystem.
- The EASTNAM*n* parameter fields must be specified in full. Individual parameter field updates are not supported.
- You can nullify or remove an EASTNAM*n* parameter by specifying no parameters. For example:
- EASTNAM2=

There is no default expanded access server subsystem.

ENCRYPT Parameter

This parameter specifies whether CA View data is to be encrypted.

Syntax

```
ENCRYPT=NO | ICSF,nnn
```

- NO - Report data is not encrypted.

  This is the default.

- ICSF,nnn - Report data is encrypted using the ICSF AES algorithm. The encryption key is stored in the ICSF CKDS data set and is changed every *nnn* days throughout the year. Valid values are 1-366.

EXPDT

This parameter specifies the expiration date used for allocating a new tape data set.

The EXPDT and RETPD parameters are mutually exclusive. The parameter that was most recently entered (EXPDT or RETPD) takes precedence over the other. Specifying EXPDT causes RETPD to be set to spaces. If EXPDT and RETPD are specified together, EXPDT always takes precedence over RETPD and causes RETPD to be set to spaces.

Syntax:

```
EXPDT=yyddd
EXPDT=yyyyddd
```

Two forms of the expiration date are provided for compatibility with IBM expiration date specifications. Use of the *yyyyddd* form requires a level of the operating system that provides Year 2000 support. A comparable level of your tape management product may also be needed. The current allowable maximum year value for the long form of EXPDT is 2155. This is an IBM restriction.

Some tape management products apply special meaning to certain expiration date specifications. For example, many tape management products use an expiration date of 99000 to indicate catalog retention (retain the tape as long as it is catalogued). We recommend catalog retention, because all backup tapes are catalogued while under the control of CA View.

There is no default expiration date. The suggested value is 99000.

Important! Some tape management systems, such as CA 1 Tape Management (CA 1), have abend dispositions for tapes. Be sure that your tape management system defaults to the catalog on an abend. Failure to do this could result in loss of data. Refer to your tape management system documentation for complete documentation.

EXPOPRV

This parameter specifies whether the user requesting the reprint in Express Operator (EXPO) mode is to be used for reprinting. When EXPOPRV=YES (the default), the Deliver DISTIDs for this report are replaced by the DISTID of the user requesting the reprint. To append the Deliver DISTIDs to the reprint list after the users DSITID, select option 'D' – Distribution Specifications on the CA Deliver Reprint Attributes screen. When EXPOPRV=NO, the DISTIDs in the reprint list are the original DISTIDs only. EXPOPRV works with the PRINT ALL DISTIDS and OUT parameters found on the Distribution Specification panel.

Syntax:

```
EXPOPRV=YES|NO
```

The default is YES.

EXPRESS

This parameter specifies the high-level name of the CA Deliver database. The high-level name is limited to 17 characters.

Syntax:

EXPRESS=*index*

There is no default.

EXTPRTn

This parameter specifies the interface and attributes for printing or routing SYSOUT to an external printing product.

Syntax:

EXTPRT*n*=*printer–id*/JESDS/*class/destination/form/writer*
EXTPRT*n*=*printer–id/PGM/program–name/parameter–data*

There is no default.

The second parameter (JESDS or PGM) determines which interface you use: JES data set or dynamic program.

Note: For more information about this parameter, see External Printing in the chapter "Configuring."

In addition to specifying a one- to three-character identifier for the printing product, each EXTPRT*n* parameter contains attributes for defining the communication mechanism. Attributes are also specified by the online DEFINE DEVICE command.

The EXTPRT*n* parameters are as follows:

n

Either 1, 2, or 3.

printer-id

The one- to three-character identifier for the external print product.

program-name

The eight-character name of the interface program to be called.

class

The one-character SYSOUT class to be used to route the external print record.

destination

The eight-character SYSOUT destination to be used to route the external print record.

form

The four-character SYSOUT forms name to be used to route the external print record.

writer

The eight-character SYSOUT writer name to be used to route the external print record.

parameter-data

Specifies up to 14 characters of parameter data to be passed to the interface program.

JESDS

For the JESDS parameter specification, specify one or more of the EXTPRTn options as an asterisk (*) to indicate that they are to be supplied online by the user when printing a SYSOUT group. These options are:

- class
- dest
- form
- writer

FEATURE

This parameter specifies special features implemented by CA after the general release of the product. The feature codes are specified by number from 1 to 32. One or more features can be specified. If more than one feature code is specified, separate the feature codes with a comma.

Note: If any other features are already activated, and you want to continue to use these features, specify each feature number on the FEATURE statement. For example, to activate features 2 and 3, you must specify FEATURE=2,3.

Syntax:

FEATURE=*n*,*n*

There is no default.

Valid values are 1-32.

The FEATURE description is as follows:

Parameter	Format	Default	Description
FEATURE	FEATURE=	NONE	New features are added to the product between releases. When a new feature is added, it is given a number and activated with this parameter. After the feature is included in the new release, it gets its own parameter. To activate more than one feature, separate the numbers with commas. Do NOT enclose with parentheses.
	FEATURE=1		Used to enable the Security RACROUTE WTO, which provides informational messages used to diagnose security problems. To enable the WTO, add the feature number '1' to the initialization parameters, run SARINIT to change the feature value in the database and recycle the interactive tasks as needed. To disable the WTO, remove the feature number'1', run SARINIT to change the feature value in the database, and recycle interactive tasks as needed. **Note:** This feature can cause excessive WTO traffic; use it only for debugging external security issues.

Parameter	Format	Default	Description
	FEATURE=2		Allows a cross-report index to use 1 MB of storage.
	FEATURE=3		Allows a cross-report index to use 4 MB of storage. **Note:** FEATURE=2,3 uses all the available storage and abends with an S878 when more storage is required.
	FEATURE=4		Allows you to utilize FASTAUTH calls. To implement FASTAUTH: ■ Run SARINIT specifying parameter FEATURE=4. ■ Be sure to list CA View resource class CHA1VIEW. FASTAUTH only works for interfaces that use a non-zero ACEE token address, that is, DRAS and XMS. **Note:** When the ACEE token address=ZERO, AUTH calls are invoked.
	FEATURE=5		Enables the JES3 BNDLMOUT enhancement. This enhancement attempts to group the bundled reports that contain compatible print attributes. To enable JES3 BNDLMOUT enhancement, run a SARINIT specifying FEATURE=5 and the recycle your CA View started task.
	FEATURE=6		Enables an option which can display the CA View (SAR) Re-print Attributes Panel in response to On-Line Re-print (P) or Batch Re-print (J) commands instead of the Deliver (Express) Re-print Attribute Panel.
	FEATURE=7		Enables an option which prevents CA Spool errors that may result when reprinting logical views.
	FEATURE=8		Enables an option that displays CA Deliver (EXP) Re-print Attribute Panel in response to the on-line re-print or batch re-print command. This panel is displayed instead of the CA Deliver (EXPO) Re-print Attribute Panel when in EXPO or ALL mode.

Parameter	Format	Default	Description
	FEATURE=9		Allows the suppression of the leading '8B' records to reprint the AFP reports. Run SARINIT specifying FEATURE=9 to allow suppression.
	FEATURE=12		Enables an option which ignores the use of SAREAS when performing a SARBCH/LOAD of a report from tape. Feature 12 provides the same functionality as usermods MHA1707 in CA View 1.7 and MHA2015 in CA View 2.0. **Note:** Using FEATURE=12 can result in tape contention messages between the submitted job and the SAREAS Tape Server task.
	FEATURE=13		Enables MSGSUPP=YES when invoking RACROUTE REQUEST=AUTH calls to suppress security violation messages generated by RACF/TSS/ACF2.
	FEATURE=14		Enables an option which lists ONLY the originator's distribution ID when reprinting a CA Deliver report in ALL or EXPO Mode.
	FEATURE=15		Activates the display of panels to display job start date/time, end date/time, and system id, when turned on.
	FEATURE=16		Enables an option which generates an extra blank line at the start of each page in a report.

Note: Features are unique to specific functions and depending on the feature number, these tasks may require recycling.

FINDLAST

This parameter specifies whether users can use the LAST operand with the FIND command during an online session.

Syntax:

```
FINDLAST=YES|NO
```

The default is YES.

FINDLIM

This parameter limits the number of records searched before the user is required to reinvoke the online FIND command. A user can use the LIMIT online command to set the user's own FINDLIM, and the online LIMIT overrides the FINDLIM parameter.

Syntax:

FINDLIM=*nnnnnnnnn*,*mmmmmmmmm*

The default is 0, which permits unlimited searches.

Valid values are 0-999999999.

The maximum override allowed by any user is set with the *mmmmmmmmm* value.

For example, you can have a default FINDLIM of 1,000 records and allow users to override this, but not to exceed a FINDLIM of 3,000 by specifying FINDLIM=1000,3000.

FINDPREV

This parameter specifies whether users can use the PREV operand with the FIND command during an online session.

Syntax:

FINDPREV=YES|NO

The default is YES.

FORM

This parameter specifies the one to eight character forms name used to select SYSOUT for archival. When FORM is specified, NEWFORM should also be specified to prevent a print-archival-print loop. If neither CLSL, DEST, nor FORM is specified, all SYSOUT is archived.

Syntax:

FORM=*xxxxxxxx*

The default is ALL SYSOUT FORMS.

FREEPRT

This parameter specifies whether to use FREE=CLOSE during dynamic allocation of the SYSOUT data set for the print function of SARBCH.

Syntax:

FREEPRT=YES|NO

The default is YES.

Values are as follows:

YES

Specifies FREE=CLOSE.

NO

Does not specify FREE=CLOSE.

With FREEPRT=YES, each report is explicitly freed and is immediately available to be printed. With FREEPRT=NO, each report is held until the entire SARBCH job completes.

GEN

This parameter specifies the starting generation number to be established for a new database.

Syntax:

GEN=*nnnnn*

The default is 1.

The minimum value is 1. The maximum value is 32767.

Important! You should modify this parameter only with the direction of a CA Technical Support representative.

GRPUSER

This parameter specifies whether the GCRUSER field is to be used as a parameter when CA View checks for a new SYSOUT group.

Syntax:

GRPUSER=YES|NO

The default is NO.

Values are as follows:

YES

Use the GCRUSER field in addition to all other criteria.

If the GCRUSER field changes within a SYSOUT group, the CA View started task splits it into a new entry in the database.

NO

Do not use the GCRUSER field.

HOLDTEMP

This parameter specifies the number of backup cycles a SYSOUT is held (after a load/restore) before it is deleted from disk. This is a temporary data set hold. Both primary and interim backups are included.

Syntax:

HOLDTEMP=*nnn*

The default is 0.

Valid values are 0-255.

IMMRPT

This parameter tells the system whether to look for IMM/IDM records when doing a record or page skip for reprint from an archive tape.

Syntax:

```
IMMRPT=YES|NO
```

The default is NO.

Note: This parameter is for performance purposes. A scan for IMM/IDM records causes all skipped records to be decompressed. It is effective only for tapes archived on CA View Release 1.6 or prior. This parameter is ignored for all other archive tapes.

INTERVAL

This parameter specifies the time interval in hours and minutes after which the backup cycle is automatically initiated. A value of 0000 is converted to the default of 2400, which is the maximum value for this parameter.

Syntax:

```
INTERVAL=hhmm
```

The default is 2400.

Values are as follows:

hh

The hour, based on a 24-hour clock.

mm

The minutes.

Valid values for *hh* are 00-24. Valid values for *mm* are 00-59.

The maximum value that can be specified is 2400 (the default).

Note: For more information about this parameter, see the TIME command later in this chapter.

JCLASS

This parameter determines the SYSOUT class to appear on the Print Attribute panel when a SYSOUT is printed with the online J selection code.

Syntax:

JCLASS=*

The default is TSOCLS/NEWCLSL.

Do one of the following:

- Specify an asterisk (JCLASS=*) to use the MSGCLASS from the original SYSOUT job
- Leave the field blank to default to the TSOCLS initialization parameter specification.

  If TSOCLS is left blank, the NEWCLSL initialization parameter specification is the default.

JES3ID

This parameter specifies an alternate subsystem ID for JES3. Specify this parameter only when the JES3 subsystem is used and the subsystem ID is not JES3.

Syntax:

JES3ID=*name*

The default is spaces.

LANGUAGE

This parameter specifies a two character code that represents the system default language and panel preference code to be used when displaying online panels and messages.

Syntax:

LANGUAGE=*xx*

The default is R.

Values for language code (First character of the LANGUAGE parameter) are as follows:

R (or blank)

Signifies English.

C

Signifies Canadian French.

D

Signifies Danish.

G

Signifies German.

Values for panel preference code (Second character of the LANGUAGE parameter) are as follows:

(blank)

Signifies Standard selection list display panels.

S

Signifies Selection list display panels with shortened identifier names (for compatibility with Release 2.0 format).

Notes:

- If S is specified for the panel preference code, the language code must be specified.
- The appropriate language panels must be loaded before LANGUAGE can be set to the value for that language.

LGNRETRY

This parameter specifies the number of logon failures that can occur before a user is forced offline.

Syntax:

LGNRETRY=*nnn*

The default is 3.

Valid values are 0-256. If 0 is specified, the default of 3 is used.

LOGO

This parameter specifies whether the initial CA View logo panel is displayed when the user first enters the system.

Syntax:

LOGO=YES|NO

The default is YES.

MASTER

This parameter specifies the user ID of the CA View user who has *master authorit*y. Master authority allows you to issue the DEF USER command, and to define access authority for all users.

Syntax:

MASTER=*userid*|ALL

The default is MASTER=ALL.

MASTER=ALL indicates no restrictions, giving all users master authority. A user with master authority can assign master authority to any other user, with the DEF USER command.

Note: For more information about commands, see the Define User command in the *User Guide*.

MAXLINES

This parameter specifies the maximum number of lines to be archived to the database per SYSOUT group.

Syntax:

`MAXLINES=`*`nnn`*`,BYPASS | BYPASSDS,`*`ddd`*

The default is 0.

Values are as follows:

nnn

Specifies the maximum amount of lines to be archived to the database per SYSOUT group.

Valid values are 1 to 16777216. A value of 0 indicates that there is no limit for the reports.

BYPASS

An optional parameter that specifies that any lines in excess of the number (nnn) in a SYSOUT group are deleted without archival.

If left blank, the lines in excess of nnn are passed to the user exit SARSTCUX for processing.

BYPASSDS

An optional parameter that specifies that any lines in excess of the number (nnn) in a SYSOUT data set are deleted without archival. Subsequent data sets in the sysout group are archived.

ddd

For the direct-to-CA View archival feature of CA Deliver, specifies the maximum number of lines to be archived per report.

Valid values are 1 to 16777216. A value of 0 indicates that there is no limit for the reports. Records in excess of the specified limit are discarded.

If the report is also designated for printing, the entire report is printed.

Omitted values (as in MAXLINES=,,50000) are set to the default values, not to the value set in the previous run.

Important! These options pertain to SYSOUT data that is archived to the database and do not affect SYSOUT data that is archived directly to tape (See the TAPECLSL= initialization parameter). There is no maximum number of lines for tape archival. The SARSTCUX is called:

- When the SYSOUT group is created
- For every line of data

- When the SYSOUT group is completed.

These actions occur regardless of the BYPASS sub-parameter setting.

MOUNT

This parameter specifies whether online tape mounts are allowed.

Syntax:

MOUNT=*YES*|NO

The default is YES.

Values are as follows:

YES

Allows online tape mounts.

For native TSO and SPF/ISPF, when you specify this option, the user attributes (UADS) for the user determines whether online tape mounts are allowed.

When using an external security package (RACF, CA ACF2 Security, CA Top Secret Security, and so on) the user must be granted access to the MOUNT resource under the TSOAUTH class.

Note: For more information about this parameter, see the security program documentation for the exact technique to do this.

NO

Prevents online tape mounts.

MSORT1 to MSORT5

This parameter specifies the name of the first field to be sorted by the microfiche format program.

Syntax:

```
MSORT1=xxxxxxx
MSORT2=xxxxxxx
MSORT3=xxxxxxx
MSORT4=xxxxxxx
MSORT5=xxxxxxx
```

Additional fields to be sorted are specified by MSORT2, MSORT3, MSORT4, and MSORT5. These parameters determine the order in which SYSOUT is output to microfiche. The field is sorted in ascending order.

To have the microfiche program sort the field in descending order, precede the name by a minus sign (for example, MSORT1=-JNAME). The field names you can specify are shown in the following table.

Note: If no sort parameters are specified, the microfiche format program generates output SYSOUT in ascending order by SYSOUT identification, and then descending order by date and time of archival.

Valid field names for *xxxxxxx* are as follows:

ATDTE

Represents Date and time of archival.

CLASS

Represents SYSOUT class.

DEST

Represents SYSOUT destination.

FORMS

Represents SYSOUT forms name.

ID

Represents SYSOUT identification.

JID

Represents Subsystem job identifier.

JNAME

Represents Job name.

WTR

External writer name.

XCODE

Exception code.

Umm:nn

User accounting data supplied by either the SARACTUX or SARSTCUX user exits (up to 20 characters of user data).

The beginning and ending positions in the user data are specified by mm and nn, respectively:

- If mm is omitted, 1 is assumed for the beginning position.
- If nn is omitted, 20 is assumed for the ending position.
- If nn is omitted, the colon can also be omitted.

NAME

This parameter specifies the high-level name of the database.

Syntax:

`NAME=`*`index`*

If omitted, the high-level name specified as the PARM parameter on the EXEC SARINIT JCL statement, if any, is used.

NARCCLSL

This parameter specifies a list of one to eight SYSOUT classes that CA View is not to archive. Any SYSOUT originally output to one of the classes is selected and processed but is not archived. In general, the classes should also be specified for automatic printing, or the SYSOUT is deleted.

Syntax:

`NARCCLSL=`*`xxxxxxxx`*

There is no default.

NBACKUP

This parameter specifies the number of interim backups done during the time specified with the INTERVAL initialization parameter. These backups do not cause the generation number to be incremented. The backups are executed at equal intervals within this time.

Syntax:

NBACKUP=*nnnnn*

The default is 0.

Valid values are 0-32767.

To determine the time spacing between interim backups, add 1 to the NBACKUP number and then divide that number into the INTERVAL number.

NEWCLSL

This parameter specifies a list of one to eight SYSOUT classes used to print archived SYSOUT, both online and in batch.

Syntax:

NEWCLSL=xxxxxxxx

The classes in the list correspond to those specified by the CLSL parameter. The default is the original class. For example, if CLSL=AB and NEWCLSL=CD are specified as parameters, any class A SYSOUT is printed by CA View as class C, and any class B SYSOUT is printed as class D. If no corresponding class is specified by using the NEWCLSL parameter, CA View prints SYSOUT using the original class under which it was created.

Note: The TSOCLS parameter (online printing from TSO) and the JCLASS parameter (batch printing), if specified, override this parameter.

NEWDEST

This parameter specifies the destination used to print archived SYSOUT. If NEWDEST is not specified, CA View prints SYSOUT using the original destination under which it was created.

Syntax:

NEWDEST=*xxxxxxxx*

There is no default.

Note: The TSODEST parameter, if specified, overrides the parameter for online retrieval printing.

NEWFORM

This parameter specifies the one- to eight-character forms name used to print archived SYSOUT. If NEWFORM is not specified, CA View prints SYSOUT using the original forms name under which it was created.

Syntax:

NEWFORM=*xxxxxxxx*

There is no default.

Note: The TSOFORM parameter, if specified, overrides this parameter for online retrieval printing.

NEWPASS

This parameter specifies whether a new password must be entered twice to verify its accuracy.

Syntax:

NEWPASS=VERIFY|NOVERIFY

The default is NOVERIFY.

NGEND

This parameter specifies the number of generations maintained on disk.

Syntax:

NGEND=*nnnnn*

The default is 3.

Valid values are 1-32767. The smallest allowable value is NGEND=1, which keeps only the current archival generation on disk.

NGENI

This parameter specifies the number of master indexes maintained on storage group 0. All storage group 0 tapes containing generations within the last NGENI generations are kept. Other storage group tapes are kept only if they contain reports that are kept.

Syntax:

NGENI=*nnnnn*

The default is the value of NGENT.

Valid values are 1-32767.

NGENT

This parameter specifies the number of total generations to be maintained on tape.

Syntax:

NGENT=*nnnnn*

The default is 90.

Valid values are 1-32767.

OUTLIM

This initialization parameter is used to set the maximum number of lines that can be reprinted in an online or batch environment.

Note: Some VTAM and CA Spool device definitions can have a maximum line specification or have used the VPRTMAXO and/or the CMAMAX initialization parameter to specify a default maximum line limit.

Any non-zero value is used in place of the on-line OUTLIM value. If the device specification value is not specified, the OUTLIM on-line value is used.

Syntax:

`OUTLIM=online,batch`

Zero is the default if not specified.

Online

A number between 0 and 16777000. Online reprints that exceed this number have their output truncated and appended with the message:

SARGET01 ** Maximum lines exceeded specified limits **

Users defined as MASTER users in the online DEF USER screen or with the SARBCH DEFUSER function are permitted to print reports that exceed the OUTLIM value; be aware that these users are not automatically assigned the Y for MASTER in their user profile—the Y must be set with the DEF USER command or the SARBCH/DEFUSER function.

Note: Zero indicates no online reprint line limit.

Batch

An optional parameter that specifies that any lines in excess of the number (nnn) in a SYSOUT group are deleted without archival.

If left blank, the lines in excess of nnn are passed to the user exit SARSTCUX for processing.

PAGEMARK

This parameter specifies whether pages are identified and numbered when archived.

Syntax:

```
PAGEMARK=YES|NO|ONLY
```

The default is YES.

YES

Pages are to be identified and numbered when archived.

NO

Pages are not to be identified and numbered when archived.

ONLY

Pages are to be identified and numbered when archived, but DATASET LIST information is not to be displayed on the SARPAGE line.

PRTALL

This parameter specifies, for the EXPO mode of CA View, an initial default value used in CA Deliver reprints.

PRTALL determines whether the OUT indicator in the distribution identifier used during a reprint.

Syntax:

```
PRTALL=YES|NO
```

The default is YES.

Values are as follows:

YES

The OUT indicator of the distribution identifier is ignored.

NO

The OUT indicator of the distribution identifier is used.

PRTASA

This parameter specifies whether CA View reprints are to be in ASA or machine control characters.

Syntax:

PRTASA=YES|NO

The default is NO.

PRTCLSL

This parameter specifies a list of one to eight SYSOUT classes, so that any SYSOUT originally output to one of the classes is automatically printed by CA View when it is archived.

Note: For more information about this parameter, see CLSL initialization parameter.

Syntax:

PRTCLSL=*xxxxxxxx*

There is no default.

Note: For more information about this parameter, see the section on Printing SYSOUT in the chapter "Batch Processing."

Note: For this initialization parameter to work properly, the JES2 initialization statement STCCLASS must specify OUTPUT=YES.

RCVPRIM

This parameter specifies the primary space allocation for the forward recovery data sets. This is required for forward recovery to be activated.

Syntax:

RCVPRIM=*nnnnn*

The default is 0.

Valid values are 0-65535.

RCVSEC

This parameter specifies the secondary space allocation for the forward recovery data sets. This space is used when the primary space allocation is exhausted or when the forward recovery is activated.

Syntax:

RCVSEC=*nnnnn*

The default is 0.

Valid values are 0-65535.

RCVSPACE

This parameter specifies whether the space allocation for the forward recovery data sets is to be obtained in tracks (TRKS) or cylinders (CYLS).

Syntax:

RCVSPACE=TRKS|CYLS

The default is TRKS.

This parameter is optional.

RCVUNIT

This parameter specifies the unit name or unit type where the forward recovery data sets are to be allocated. This is required for forward recovery to be activated.

Syntax:

RCVUNIT=*unit*

There is no default.

REDISP

This parameter specifies whether the Enter key will invokes the REDISP function, which causes a refresh/update of SYSOUT and report selection lists. Automatic redisplay has been disabled for sorted selection lists because of the overhead created by the online SORT command. This parameter has no effect if the user has sorted the selection list – in this case they must type REDISP to refresh the list.

Syntax:

```
REDISP=YES|NO
```

The default is NO.

RETPD

This parameter specifies the number of days to be maintained on tape when you are allocating a new tape data set.

The RETPD and EXPDT parameters are mutually exclusive. The most recently entered parameter (EXPDT or RETPD) takes precedence over the other. Specifying RETPD causes EXPDT to be set to spaces. If RETPD and EXPDT are specified together, EXPDT always takes precedence over RETPD with RETPD being set to spaces.

Syntax:

RETPD=*nnnn*

There is no default.

Valid values are 1-9999.

Important! Some tape management systems, such as CA 1, have abend dispositions for tapes. Make sure that your tape management system defaults to the catalog on an abend. Failure to do this can result in loss of data. Refer to your tape management system documentation for complete documentation.

ROUT

This parameter specifies the route code to be used for routing exceptional condition messages (message ID SARSTC99). The text for the exceptional condition message is extracted during the exceptional condition checking process or produced by the SARSTCUX user exit.

Syntax:

ROUT=*nn*

The default is 0.

Valid values are 0-16. Specify a route code of up to 16 for the WTO that issues the messages. A route code of 0 suppresses the messages.

ROUTBKP

This parameter specifies a route code for the informational CA View backup messages SARBKT61 through SARBKT63.

Syntax:

ROUTBKP=*nn*

The default is ROUTBKP=1.

Valid values are 1-16. The default value sends the messages to the master console.

SECID

This parameter specifies a one- to eight-character identifier that prefixes the resource name for external security.

Syntax:

SECID=*secid*

The default is VIEW.

SECLIST

This parameter specifies whether selection lists are to be limited to data accessible to the user.

Syntax:

```
SECLIST=NONE|ALL|REPORT,INDEX,DEFINE
```

The default is NONE.

Values are as follows:

NONE

Indicates that all of the selection list data is presented to the user, and accessibility is determined after the user selects the data.

ALL

Indicates that all of the selection lists are to be limited to data accessible by the user.

REPORT, INDEX, DEFINE

Identifies specific selection lists that are to be limited to data accessible to the user.

REPORT

Indicates the Sysout/Report Selection List.

INDEX

Indicates the Index Name and Value Selection Lists.

DEFINE

Indicates the User, Sysout, Distribution, Device, Filter, and View Definition Selection Lists.

You can specify any combination of REPORT, INDEX, or DEFINE.

Important! Specifying a **SECLIST** value other than none greatly increases the number of security calls and may affect overall system performance.

SECURITY

This parameter specifies whether database security is based on the DEFMODE initialization parameter, user definition records, or external security calls.

Syntax:

```
SECURITY=INIT|INTERNAL|EXTERNAL|LOGON
```

The default is INIT.

Values are as follows:

INIT

A new user can access a database as follows:

- If the DEFMODE initialization parameter is not set to NNNNN;
- The user name must be predefined to the database.

INTERNAL

Requirements similar to INIT except that the password for an existing user is verified with the predefined user definition.

EXTERNAL

The user verification is to be performed using an external security product (RACROUTE calls).

LOGON

Only user logon verification is to be performed using an external security product (RACROUTE calls), other security functions are similar to INIT.

Important! Do not set SECURITY=EXTERNAL or LOGON until you have added your security definitions to your security system. Failure to do this could cause problems including S047 abends.

SECTRAN

If you use external security (RACF, CA ACF2 Security CA Top Secret Security) be aware of the following:

If the report id contains characters from the extended special character set, set this parameter to SECTRAN=YES. This setting causes the extended special characters to be automatically translated to '_' underscores before the RACROUTE security call.

Syntax:

```
SECTRAN=YES|NO
```

Default: NO

More information:

Character Translations (see page 554)

SETPAGE

This parameter specifies whether to set PRMODE to PAGE when PAGEDEF, FORMDEF, or both are specified.

Syntax:

```
SETPAGE=YES|NO
```

The default is YES.

Values are as follows:

YES

Sets PRMODE to PAGE when PAGEDEF, FORMDEF, or both are specified.

NO

Leaves PRMODE as is.

SMF

This parameter specifies whether the archival task is to create special type-6 SMF records when it prints a SYSOUT group.

Syntax:

```
SMF=YES|NO
```

The default is NO.

SMFTYPE

This parameter identifies a unique SMF record type to the system management facility. This parameter is used for Metrics.

Note: For more information about Metrics, see the chapter "Metrics."

Syntax:

```
SMFTYPE=nnn
```

where *nnn* is a value from 128 to 255.

The default for the parameter is zero, which bypasses the writing of CA View SMF records.

STACKBU

This parameter specifies whether stacked backup cycles should be processed normally or ignored. Stacked backup cycles occur when the archival task becomes suspended during a backup cycle (before the cycle is completed) due to the initiation of a second backup cycle. This condition is indicated with the SARBKU03 message.

Syntax:

```
STACKBU=YES|NO
```

The default is NO.

Values are as follows:

YES

Processes stacked backup cycles.

NO

Ignores stacked backup cycles.

START

This parameter specifies the name of the microfiche start procedure that is started after the current archival generation is completed and backed up to tape.

Syntax:

START=*xxxxxxxx*

The default is no procedure.

STORGRP0

This parameter specifies the default tape storage group. With ERO (Expanded Retention Option), you can define up to nine additional tape storage groups.

Notes:

- For more information about this parameter, see STORGRP1 to STORGRP9 later in this chapter.
- DR tapes do not use storage groups. These parameters are only used for primary and duplex tapes.

You must run a standard or interim backup cycle to assign reports to tape storage groups specifying appropriate storage group subparameters.

Syntax:

STORGRP0=*storage-group-name/tape-index/*

maxgent-value/unit1-name,unit2-name/tvser1,tvser2

where:

storage-group-name

Not considered for STORGRP0, the default storage group.

If you define any additional storage groups (STORGRP1 to STORGRP9):

- You must assign each one a group-name of up to eight alphanumeric characters.
- The name DEFAULT is reserved for use by the SARPAC tape consolidation program, and therefore cannot be specified.

Reports are assigned to tape storage groups by the ERO table statement STORGRP=storage-group-name.

tape-index

Specifies an alternate naming prefix (up to 17 characters) for your backup tapes.

If this parameter is changed, tapes previously produced by CA View are still accessible. If omitted, the high-level name of the database is used.

There is no default.

maxgent-value

The maximum number of generations that can be written to one tape volume.

The minimum value is 1. The maximum value is 65535.

The default is 10.

unit1-name, unit2-name

unit1 The tape unit name allocated for backup tape archival generations

unit2 Activates tape duplexing, and specifies its tape unit name

When duplexing is activated, two tapes are mounted during the backup cycle. The first tape is for the primary backup tape, and the second tape is for the duplex tape.

The default is TAPE.

When retrieving output from tape, CA View always uses the primary backup tape. Should an error occur on the primary backup tape and a duplex exists, the product automatically attempts to recover from the error by switching to the duplex tape.

tvser1,tvser2

A range of tape volume serial numbers to be used for the backup archival generations.

The default is any scratch tape.

Volume serial numbers must be the same length, end with one or more numeric digits, and have matching beginning alphanumeric characters. Whenever a new tape is required to back up a generation, the next tape in the range is used. When the end of the range is reached, the first tape in the range is used.

Two different tape storage groups can specify the exact same range of tapes, or completely distinct ranges, but no partial overlap is allowed between groups.

STORGRX0

This parameter specifies additional attributes (extensions) for the tape storage groups. If you use tape duplexing, you can specify a volume serial range for the duplex tapes here. If you use tape duplexing, (indicated by the unit2-name in the STORGRP parameter), and the STORGRX parameter is specified without any values for *dtvser*1 and *dtvser*2, a scratch pool is used for the duplex volumes.

If the database is versioned up from a release prior to 1.7, the initial values for *dtvser*1 and *dtvser*2 are the same as for *tvser*1 and *tvser*2 (the primary range).

Syntax:

```
STORGRX0=dtvser1,dtvser2/mxblks
```

where:

dtvser1, dtvser2

A range of tape volume serial numbers used for the duplex backup archival generations.

The default is any scratch tape.

Volume serial numbers must:

- Be the same length
- End with one or more numeric digits
- Have matching beginning alphanumeric characters.

Whenever a new tape is required to back up a generation, the next tape in the range is used. When the end of the range is reached, the first tape in the range is used.

mxblks

The maximum number of storage blocks to which to write the primary and duplex volumes (the primary and duplex volumes are mirror images).

The minimum value is 10. The maximum value is 99,999,999.

The default of 0 means to write to end-of-volume.

Two different tape storage groups can specify the exact same range of tapes, or completely distinct ranges, but no partial overlap is allowed between groups.

TAPECLSL

This parameter specifies a list of one to eight SYSOUT classes, so that any SYSOUT originally output to one of the classes is directly archived to tape, and no archival is done to disk.

Note: For more information about how to control tape drive allocation during direct-to-tape archival, see the UNLOAD initialization parameter.

Syntax:

TAPECLSL=*xxxxxxxx*

There is no default.

Note: This parameter is a secondary criterion—that is, output must first satisfy the primary criteria of CLSL, DEST, and FORM before it is considered for application of this parameter.

TAPEOPT

This parameter specifies the options for tape processing.

Syntax:

```
TAPEOPT=3480|EAST,HARD|NOHARD,SOFT|NOSOFT
```

The default is 3480,HARD,NOSOFT.

Values are as follows:

3480l EAST

Specifies whether archival tapes are written using 3480 (includes 3490 and 3590) data block location processing 3480/3490/3590 tape processing is a requirement for the expanded access server for tape and robotics.

The Expanded Access Server for Tape/Robotics (EAST) is the same as 3480 tape processing; however, the EAST is to be used, whenever possible, to access reports from tape.

HARD|NOHARD

Specifies whether the hardware compaction feature is to be used for compacting data for a tape device enabled for hardware compaction.

HARD specifies that the hardware compaction feature is to be used.

NOHARD specifies that the hardware compaction feature is not to be used.

If you use 3490E/3590 tape drives, you must specify HARD.

SOFT|NOSOFT

Specifies whether CA View is to compress data when creating backup tapes.

SOFT specifies that software compression is to be used.

NOSOFT specifies that software compression is not to be used.

TAPESEQ

This parameter specifies the starting tape sequence number established in a new database.

Syntax:

TAPESEQ=*nnnnn*

The default is 1.

Valid values are 1-65535.

Important! This parameter is to be modified only at the direction of a CA Technical Support representative.

TBACKUP

This parameter specifies backup options.

Syntax:

TBACKUP=YES|NO|IDX

The default is YES.

Values are as follows:

YES

Both the SYSOUT groups archived to the current disk generation and the master index are written to tape as part of the backup cycle.

NO

Neither the SYSOUT groups archived to the current disk generation nor the master index is written to tape as part of the backup cycle.

IDX

Only the master index is written to tape as part of the backup cycle.

Important! Specifying either NO or IDX for the TBACKUP parameter can prevent future recovery of data if there is a media failure or other type of failure.

TIME

This parameter specifies the time at which the first backup cycle is automatically initiated by CA View.

Syntax:

TIME=*hhmm*

The default is 0, which suppresses all automatic backup cycles.

The value is based on a 24-hour clock, where *hh* is the hour, and *mm* is the minute. Subsequent backup cycles are automatically initiated at regular intervals specified with the INTERVAL parameter. Automatic backup cycles are suppressed on those days identified by an N in the DAYS parameter.

Note: Those areas that conform to Daylight Savings Time should consider a backup cycle start time outside the range of 1:00 a.m. through 3:00 a.m. A start time between 1:00 a.m. and 2:00 a.m. may cause two backup cycles to be processed when the time is changed back to standard time. A start time between 2:00 a.m. and 3:00 a.m. can cause a backup cycle to be missed when the time is set forward to Daylight Savings Time. Both of these conditions affect the generation number within the database.

TPO54

This parameter specifies whether message SARTPO54 (TAPE TO BE MOUNTED NEEDS WRITE CAPABILITY) is to be displayed for the remounting of archival tapes.

Syntax:

TPO54=YES|NO

The default is YES.

TSOCLS

This parameter specifies the SYSOUT class to appear on the Print Attribute panel when a SYSOUT is printed with the online P selection code from the TSO online retrieval facility.

Syntax:

TSOCLS=*x*

The default is NEWCLSL/original.

Specify an asterisk (TSOCLS=*) to have the TSO online retrieval session class used as the CLASS. The default is the NEWCLSL initialization parameter, and, if NEWCLSL is not specified, the CLSL from the original SYSOUT job.

TSODEST

This parameter specifies a valid SYSOUT destination used to print SYSOUT with the TSO online retrieval feature. Specify an asterisk to use the system default SYSOUT destination.

Syntax:

TSODEST=*xxxxxxxx*

The default is NEWDEST/original.

TSOFORM

This parameter specifies a one- to eight-character SYSOUT forms name used to print SYSOUT with the online retrieval feature.

Syntax:

TSOFORM=*xxxxxxxx*

The default is the NEWFORM/original forms name.

Specify an asterisk to use the system default forms name for the online session.

TSOSCHED

This parameter schedules background SYSOUT retrieval.

Syntax:

```
TSOSCHED=SUBMIT|INTRDR
```

The default is SUBMIT.

Values are as follows:

SUBMIT

Uses the TSO SUBMIT command processor to schedule background SYSOUT retrieval from a foreground session.

INTRDR

Directly allocates an internal reader to schedule background SYSOUT retrieval from a foreground session.

This parameter is used for the ISPF and TSO online interfaces, *not* the ISPF/cross-memory or TSO/cross-memory interface.

UNITSPEC

This parameter is used if there is the possibility of a conflict of units during dynamic allocation of backup media. CA View uses the MVS catalog device types to allocate backup media. If necessary, use this parameter to specify the esoteric names of up to two backup media units (tape, optical, and so on) that have the same device type as other devices in the system.

Syntax:

```
UNITSPEC=unit1,unit2
```

There is no default.

For example, if you have a pool of 3480-type tape drives, and a pool of 3480-type optical drives, you can specify:

```
UNITSPEC=optname
```

where *optname* is the esoteric name of the optical drives.

UNLOAD

This parameter specifies whether the tape is to be unloaded and the drive freed during direct-to-tape archival.

Syntax:

```
UNLOAD=NO|YES|NOWORK
```

The default is NO.

Values are as follows:

YES

Unloads the tape after the SYSOUT group is archived direct-to-tape.

NO

Leaves the tape mounted after the SYSOUT group is archived direct-to-tape.

NOWORK

Leave the tape mounted until there are no more SYSOUT groups to be direct-to-tape archived, even if the remaining groups are going to disk.

Note: For more information about direct-to-tape archival, see the TAPECLSL initialization parameter.

USERLIB

This parameter specifies whether CA View should reprint reports using the USERLIB output statement parameters stored with the report, when the report was archived.

Syntax:

```
USERLIB=YES|NO
```

YES

Allocates the reprints output statement with all USERLIBs either stored with the reports or added to the Reprint Attribute Output Parameters.

NO

Bypasses all the output statement USERLIB allocations.

USERLVL

This parameter determines whether users get the Beginning or Advanced Primary Selection Menu in the online modes EXP and EXPO. This parameter affects only the Primary Selection Menu.

Syntax:

USERLVL=BEGINNER|ADVANCED

The default is BEGINNER.

VPRTAPPL

This parameter specifies the first four characters of the VTAM APPLIDs to be used by the CA View VTAM Print Option (VPO). These characters are coupled with a number, from 000 to 9999, to form the actual VTAM APPLID.

Syntax:

VPRTAPPL=*cccc*

There is no default.

Note: A value for this number (if provided in the application program definition tables, usually located in SYS1.VTAMLST) is used.

VPRTMAXO

This parameter specifies the maximum number of lines that can be printed from an online session by using the P print selection code and is used by the CA View VTAM Print Option (VPO).

Syntax:

VPRTMAXO=*nnnnn*

The default is 0.

Valid values are 0-65535.

Note: The hierarchy of values is:

- Device Definition
- VPRTMAXO (if a Maximum Line is left blank in the Device Definition)
- OUTLIM

If a Maximum Line is left blank in the Device Definition and both VPRTMAXO and the on-line value for OUTLIM are set to zero, there is no limit to the number of lines that can be printed online.

VPRTONL

This parameter specifies whether users can print from an online session using the P (print) selection code used by the CA View VTAM Print Option (VPO).

Syntax:

VPRTONL=YES|NO

The default is YES.

Note: The user's terminal is locked for the duration of the printing.

VPRTRINT

This parameter specifies the interval in seconds between attempts to establish contact with a printer and is used by the CA View VTAM Print Option (VPO).

Syntax:

VPRTRINT=*nnnnn*

If VPRTAPPL is specified as SARV, and SYS1.VTAMLST contains SARV0000– SARV0009, CA View attempts to contact the designated printer using SARV0001, SARV0002…SARV0009.

The minimum value is 1. The maximum value is 65535.

The default is 60.

VPRTRTRY

This parameter specifies the number of times CA View tries to reestablish contact to a printer and is used by the CA View VTAM Print Option (VPO).

Syntax:

VPRTRTRY=*nnn*

If VPRTAPPL is specified as SARV, and SYS1.VTAMLST contains SARV0001-SARV0009, CA View attempts to contact the designated printer using SARV0001, then SARV0002,…SARV0009. The minimum value is 1. The maximum value is 255.

The default is 10.

WAIT

This parameter specifies whether the archival task is to wait for SYSOUT to archive or terminates when there is no more SYSOUT available from JES.

Syntax:

WAIT=YES|NO

The default is YES.

Most sites use the default value.

WRITER

This parameter specifies whether the WRITER field is to be propagated from DEST=ESF.USER1 with the WRITER being made equal to USER1.

Syntax:

```
WRITER=ASIS|DESTUSER
```

The default is ASIS.

ASIS

The WRITER field is left unchanged.

DESTUSER

The USER1 portion of DEST=ESF.USER1 is propagated to the WRITER field.

XPRINT

This parameter specifies whether CA View automatically prints any SYSOUT in which an exceptional condition occurs. Exceptional conditions are determined during the exceptional condition checking process or are determined by user code in the SARSTCUX user exit.

Syntax:

```
XPRINT=YES|NO
```

The default is YES.

Activate, Modify an Initialization Parameter

The following chart can be used to determine if a task must be re-cycled to activate a new or modified Initialization parameter.

The Expanded Access Server for Tape and Robotics (SAREAS) and System Extensions (SARXTD) are EXEC statement parameter driven, and must be re-cycled whenever a startup parameter is added or changed.

PARAMETER	SARSTC	SARFSS	SARXMS
ACIFCOMP		Y	
ACIFRES			L
AFPSPACE			L

PARAMETER	SARSTC	SARFSS	SARXMS
ANNODFLT			L
ARCHMSG	Y	Y	
ARCHSWAP	Y		
BCHMAXRC			
BNDWDAYS	Y		
CCONDISP			L
CLEAN	N		
CLSL	Y		
CMAMAX			L
CMASPOOL			L
CODEPAGE			L
DAYS	Y		
DBMSGFRQ	Y		
DBTHRESH	Y	Y	
DEFMODE			
DELETE			L
DESC	Y	Y	
DEST	Y		
DIRALLOC			
DRMOD	N		
DRTAPE	N		L
DRTIDX	N		
DRTSEQ	N		
DRUNITB	N		
DRUNITP	N		
EASTDPLX			L
EASTMAXW			L
EASTNAM1			L
EASTNAM2			L
EASTNAM3			L

PARAMETER	SARSTC	SARFSS	SARXMS
ENCRYPT	Y	Y	
EROOPT	Y		
EXPDT	Y		
EXPRESS		Y	
EXPOPRV			L
EXTPRT1			L
EXTPRT2			L
EXTPRT3			L
FEATURE	Note 1	Note 1	Note 1
FINDLAST			L
FINDLIM			L
FINDPREV			L
FORM	Y		
FREEPRT			L
GEN	Note 2	Note 2	Note 2
GRPUSER	Y	Y	
HOLDTEMP	Y		
IMMRPT	Y	Y	
INTERVAL	Y		
JCLASS			L
JES3ID	Y		
LANGUAGE			
LGNRETRY			
LOGO			L
MASTER			L
MAXLINES	Y	Y	
MOUNT			L
MSORT1	Y		
MSORT2	Y		
MSORT3	Y		

PARAMETER	SARSTC	SARFSS	SARXMS
MSORT4	Y		
MSORT5	Y		
NAME	Y	Y	Y
NARCCLSL	Y		
NBACKUP	Y		
NEWCLSL	Y		L
NEWDEST	Y		L
NEWFORM	Y		L
NEWPASS			L
NGEND	N		
NGENI	N		
NGENT	N		
PAGEMARK	Y	Y	
PRTASA			L
PRTALL			L
PRTCLSL	Y		
RCVPRIM	Y		
RCVSEC	Y		
RCVSPACE	Y		
RCVUNIT	Y		
REDISP			L
RETPD	Y		
ROUT	Y	Y	
ROUTBKP	Y		
SECID			L
SECLIST			L
SECTRAN			L
SECURITY			L
SETPAGE	Y	Y	
SMF	Y	Y	L

PARAMETER	SARSTC	SARFSS	SARXMS
SMFTYPE	Y	Y	L
STACKBU	Y		
START	Y		
STORGRP0	N		
STORGRX0	N		
TAPECLSL	Y		
TAPEOPT	Y		
TAPESEQ	Note 2	Note 2	Note 2
TBACKUP	N		
TIME	Y		
TPO54	Y		
TSOCLS			L
TSODEST			L
TSOFORM			L
TSOSCHED			L
UNITSPEC			L
UNLOAD	Y		
USERLIB			L
USERLVL			L
VPRTAPPL			L
VPRTMAXO			L
VPRTONL			L
VPRTRINT			L
VPRTRTRY			L
WAIT	Y		
WRITER			L
XPRINT	Y		

Features are unique to specific functions and depending on the feature number, these tasks may require re-cycling. Where:

- Y The task that must be re-cycled for the parameter to be active
- L User's session must be re-cycled (Logoff/Logon) for the parameter to be active
- N or blank The task does not need to be recycled.

Notes:

- Features are unique to specific functions and depending on the feature number, these tasks can require re-cycling.
- For GEN and TAPESEQ, the parameters specify the starting generation and tape starting sequence numbers to be established for a new database.

Expanded Retention Initialization Parameters

The expanded retention initialization parameter statements follow the same syntax and restrictions as the initialization parameter statements. Several of these initialization parameters work in conjunction with parameters specified in the Expanded Retention table.

Note: For more information about initialization parameters, see the appendix "Data Sets and Environmental Considerations."

The Expanded Retention Option must be installed and operational to use the following parameter statements.

DSK2DAYS

This parameter is used by secondary storage device drivers such as Centera disks. This parameter is documented in the chapter "Using the Optical Disk Interface."

Syntax:

DSK2DAYS=*nnn*

The default is 999.

Valid values are 0-999.

DSK2DRVR

This parameter is used by secondary storage device drivers such as optical disks. This parameter is documented in the chapter "Using the Optical Disk Interface."

Syntax:

DSK2DRVR=*driver*

There is no default.

DSK2INTV

This parameter is used by secondary storage device drivers such as optical disks.

Note: For more information about this parameter, see the chapter "Using the Optical Disk Interface."

Syntax:

DSK2INTV=*hhmm*

where:

hh

Indicates hours from 00-24.

mm

Indicates minutes from 00-59.

The maximum value for this parameter is 2400.

A value of zero is converted to the default of 0015.

DSK2MIGD

This parameter is used by secondary storage device drivers such as optical disks.

Note: For more information about this parameter, see the chapter "Using the Optical Disk Interface."

Syntax:

DSK2MIGD=*xxxxxxx*

The default is BBBBBBB.

DSK2PARM

This parameter is used by secondary storage device drivers such as optical disks.

Note: For more information about this parameter, see the chapter "Using the Optical Disk Interface."

Syntax:

DSK2PARM=*xxxxxxxxxx*

There is no default.

DSK2TIME

This parameter is used by secondary storage device drivers such as optical disks. This parameter is documented in the chapter "Using the Optical Disk Interface."

Syntax:

DSK2TIME=*nnnn-nnnn,nnnn-nnnn,nnnn-nnnn,nnnn-nnnn*

There is no default.

EROOPT

This parameter specifies whether the Expanded Retention Option is being used. Indicate YES to retain expanded retention initialization parameters, or NO to delete reference to all expanded retention initialization parameters.

Syntax:

EROOPT=YES|NO

For an existing database, EROOPT defaults to YES if Expanded Retention Initialization Parameters exist or new expanded retention initialization parameters are being set; otherwise, this parameter defaults to NO.

For a new database, EROOPT defaults to YES if expanded retention initialization parameters are specified; otherwise, this parameter defaults to NO.

EROPRO

The EROPRO parameter directs the processing decisions made by the Expanded Retention Option as they pertain to SYSOUTs not currently under ERO control.

Note: This parameter does not dictate how ERO applies to or maintains retention parameters for SYSOUT already under ERO control.

- Changes to retention parameters that can affect a SYSOUT that is already under ERO control are reflected in all SYSOUTs regardless of the setting of the EROPRO parameter and regardless of when the SYSOUT was created.

  As an example, a change to the retention value in an ERO Table entry for a SYSOUT or group of SYSOUTs are to be retroactively applied to all SYSOUTs regardless of the setting of the EROPRO parameter.

- SYSOUTs that are not under the control of ERO are affected by the setting of the EROPRO parameter.

  As an example, if a catch-all entry is added to the ERO Table (/*....) and the EROPRO parameter is set to NEW, only SYSOUTs in the current generation are to have the new ERO retention applied to them. SYSOUTs created in previous generations are not affected.

  If the EROPRO parameter is set to YES (or ALL), and the catch-all entry is added to the ERO table, then ALL SYSOUTs receive ERO retention regardless of when they were created.

We recommend that EROPRO be set to YES and left that way unless a large percentage of the database is under standard retention; then we recommend a value of NEW.

Reports under ERO control have a location of PERM, DSK, PTAP, PTMP, PDK2, and PRM2. Reports not under ERO control have a location of DISK, TAPE, and TEMP.

Syntax:

```
EROPRO=NEW|YES|ALL
```

The default is NEW.

Values are as follows:

NEW

Only sysouts in the current generation are eligible to switch to ERO retention.

YES

ALL SYSOUTs are considered, and the parameter is not reset to NEW at the end of the backup cycle.

ALL

A one-time request to reconsider the entire database.

This is reset to NEW at the end of the backup cycle.

PCOPIES

This parameter specifies the number of copies of each SYSOUT that are maintained for each unique SYSOUT identifier.

Syntax:

PCOPIES=*nnnnn*

The default is 2.

Valid values are 1-32767.

PMXTAPES

This parameter specifies the maximum number of tapes that can be consolidated in any one execution of the SARPAC tape consolidation program.

Syntax:

PMXTAPES=*nnnnn*

The default is 20.

Valid values are 1-32767.

PMXYEARS

This parameter specifies the maximum number of years that data can reside on a tape and is used by the SARPAC tape consolidation program. When the creation date for the tape exceeds this value, the tape is selected for consolidation.

Syntax:

PMXYEARS=*nnnnn*

The default is 3.

Valid values are 0-32767.

Specifying a maximum number of years is important, because tapes tend to have I/O problems as they age. Value of zero disables this SARPAC feature.

POPT

This parameter specifies how SYSOUT is assigned for expanded retention.

The parameter has two different implementation effects:

- Effect 1: Its assignment as the default for ERO table entries that do not specifically code ALL, LAST, or MARK. An ERO table entry normally contains report identification, report selection, and report retention period:
  - The report identification can be a complete report name or a partial report name with wildcards.
  - The retention specification can define days, generations, or copies for both the disk retention and total database retention.
  - The report selection can identify ALL reports with this name, only the LAST report with this name, or only reports that have been identified with the MARK (K) command on the SYSOUT Selection panel.

  A retention table entry that does not specifically code the report selection operand obtains a default value as defined by the POPT parameter. The operand value of A causes the retention table entry default to be ALL, L is LAST, and M is MARK.
- Effect 2: The effect this parameter has on the implementation of ERO to determine the retention of reports not specifically identified with retention table entries. The PRETAIN and PCOPIES initialization parameters affect this default retention.

Note: For more information about this parameter, see “PRETAIN.”

Syntax:

```
POPT=M|L|A
```

The default is M.

Values are as given following:

M

Only SYSOUTs marked from the online or batch facility are to be given expanded retention.

L

The last (most recent) SYSOUT for each unique SYSOUT identifier in the current generation is given expanded retention. If you specify L, and a SYSOUT identifier is marked online for expanded retention, the marked SYSOUT is given expanded retention instead of the last (most recent) SYSOUTs.

A

All SYSOUTs from the current generation are to be given expanded retention.

PRETAIN

This parameter specifies the expiration parameters of ERO (Expanded Retention Option) reports.

Syntax:

```
PRETAIN=INIT|TABLE
```

The default is INIT.

Retention is as follows:

PRETAIN=TABLE

Specifies that an operand value of TABLE for the PRETAIN initialization parameter directs the system to use ERO only for reports that have a matching retention table entry. Be aware of the following:

- The operand value of the PCOPIES parameter is used as default for all reports not specifically identified by a retention table entry and
- The operand value of POPT is used only as a default for retention table entries that do not specifically code a report selection option.

  If POPT=A, then all non-matching reports should be retained for PCOPIES.

  If POPT=L, then only the last or latest copy of a non-matching report must be retained for PCOPIES. All other non-matching reports can be retained based on the NGEND and NGENT initialization parameters.

  If POPT=M, then only non-matching reports that have been identified with the MARK (K) command on the SYSOUT Selection panel should be retained for PCOPIES. All other non-matching reports are to be retained based on the NGEND and NGENT initialization parameters.

PRETAIN=INIT

Specifies that an operand value of INIT for the PRETAIN initialization parameter directs the system to use POPT and the larger of the values PCOPIES and NGEND or NGENT. This larger value is used as the default for all reports not specifically identified by a retention table entry.

The value of POPT determines if PCOPIES should be applied to ALL, LAST, or MARK reports that do not have a matching table entry.

- If POPT=A, all non-matching reports must be retained for PCOPIES.

  After PCOPIES has been satisfied, the report retention can revert to the values associated with the NGEND and NGENT initialization parameters. The numeric value of NGEND and NGENT can be smaller than PCOPIES and can cause the document to be deleted.
- If POPT=L, the last or latest copy of a non-matching report should be retained for PCOPIES.

After PCOPIES is satisfied, the report retention reverts to the values associated with the NGEND and NGENT initialization parameters. The numeric value of NGEND and NGENT can be small and can cause the document to be deleted. All copies of the report other than the LAST copy are retained based on NGEND and NGENT.

- If POPT=M, only non-matching reports that have been identified with the MARK (K) command on the SYSOUT Selection panel must be retained for PCOPIES.

  After PCOPIES is satisfied, the report reverts to the values associated with the NGEND and NGENT initialization parameters. The numeric value of NGEND and NGENT can be small and can cause the document to be deleted. All copies of any report not specifically MARKed are retained based on NGEND and NGENT.

We recommend that you set PRETAIN=TABLE and include an ERO table entry 'catch-all' (that is a /* entry). This makes the ERO table statements the single point of control for the retention of ERO reports. With PRETAIN=TABLE, when a report has satisfied the ERO table statement that controls is deleted.

Note:

- If PRETAIN=TABLE is specified and no SARPATAB DD statement is provided in the archival task (SARSTC) job stream, message SARPAR09 SARPATAB DD STATEMENT MISSING is issued, and the backup cycle terminates with a U1009 user abend.
- If a SARPATAB DD statement is present but points to an empty file, message SARPAR10 SARPATAB DATA SET EMPTY is issued, and the backup cycle terminates with U1010 user abend.

PTEXT1 to PTEXT5

This parameter specifies unique text used for scanning archival data to locate the SYSOUT identifier used to name the SYSOUT group.

Note: For more information about this parameter, see the chapter "Expanded Retention Option."

Syntax:

```
PTEXT1=xxxxxxxxxx
PTEXT2=xxxxxxxxxx
PTEXT3=xxxxxxxxxx
PTEXT4=xxxxxxxxxx
PTEXT5=xxxxxxxxxx
```

There is no default.

PTHRESH

This parameter specifies the percentage of active SYSOUT groups on a tape as a threshold value and is used by the SARPAC tape consolidation program to determine whether to consolidate a tape. When the percentage of active SYSOUT groups on a tape is less than this threshold value, the tape is selected for consolidation.

Syntax:

PTHRESH=*nnn*

The default is 50.

Valid values are 1-100.

Note: Setting PTHRESH to 100 percent allows SARPAC to consolidate all tapes regardless of the percentage of active reports. It enables SARPAC to be used to convert media or create new tapes.

PXCOND

This parameter specifies whether exceptional conditions are included in the expanded retention process.

Syntax:

PXCOND=YES|NO

The default is YES.

STORGRP1 to STORGRP9

STORGRP1 through STORGRP9 allow you to define up to nine tape storage groups in addition to the default group, STORGRP0.

Note: For more information, see the description of STORGRP0 earlier in this chapter.

Creating STORGRP1 through STORGRP9 in addition to the default, STORGRP0, allows you to do the following options:

- Separate reports into groups by how often they are viewed

  This organization can be used to maximize performance of the Expanded Access Server, which allows you to view from tape without loading to disk.

- Separate reports into groups by their retention requirements

  This organization lessens the need for tape consolidation.

- Use tape duplexing on some reports, not on others
- Use an alternate high-level index for certain tapes
- Use a different number of generations that are written to different tapes
- Use separate ranges of tape volumes that are used for the backup tapes

New storage groups take the default values for the several sub parameters unless explicitly entered. They do not inherit the initial values from STORGRP0.

To delete a storage group, specify it without parameters. For example, the following definition deletes STORGRP3:

```
STORGRP3=
```

The STORGRP=*group-name* ERO table parameter assigns reports to storage groups.

Note: For more information about tape location, see Tape Location (STORGRP) in the chapter "Expanded Retention Option."

If you define tape storage groups, assign the group containing the most reports as STORGRP1 to enhance backup cycle performance.

STORGRX1 to STORGRX9

STORGRX1 through STORGRX9 allow you to define up to nine tape storage group EXTENSIONS.

Note: For more information about this parameter, see the STORGRX0 command earlier in this chapter.

To delete a storage group extension, specify it without parameters. For example, the following definition deletes STORGRX3:

```
ST0RGRX3=
```

Storage group extension STORGRX*n* is valid only if the corresponding STORGRPn parameter is defined.

The STORGRP=group-name ERO table parameter assigns reports to storage groups.

Note: For more information about the ERO table parameter, see Tape Location (STORGRP) in the chapter "Expanded Retention Option."

The following parameters are only valid with the Expanded Retention Option (ERO). Use the following chart to determine if a task must be recycled to activate a new or modified ERO Initialization parameter.

ERO PARMS	SARSTC	SARFSS	SARXMS
EROPRO	N		
DSK2DAYS	Y		
DSK2DRVR	N		
DSK2INTV	N		
DSK2MIGD	N		
DSK2PARM	N		
DSK2TIME	Y		
PCOPIES	Y		
PMXTAPES	Y		
PMXYEARS	Y		
POPT	N		
PRETAIN	N		
PTEXT1	Y	Y	
PTEXT2	Y	Y	

ERO PARMS	SARSTC	SARFSS	SARXMS
PTEXT3	Y	Y	
PTEXT4	Y	Y	
PTEXT5	Y	Y	
PTHRESH			
PXCOND	Y		
STORGRP1	N		
STORGRP2	N		
STORGRP3	N		
STORGRP4	N		
STORGRP5	N		
STORGRP6	N		
STORGRP7	N		
STORGRP8	N		
STORGRP9	N		
STORGRX1	N		
STORGRX2	N		
STORGRX3	N		
STORGRX4	N		
STORGRX5	N		
STORGRX6	N		
STORGRX7	N		
STORGRX8	N		
STORGRX9	N		

Where

Y

The task must be recycled for the parameter to become active.

L

The end-user's session must be recycled (Logoff/Logon) for the parameter to become active.

N or blank

The task need not be recycled.

Initialization Parameter Examples

The following sample jobs process initialization parameters.

Example 1

A new database has its initialization parameters set for an archival and retrieval system with the following characteristics:

- The database has been created with the SARDBASE utility under the name VIEW.SYSTEM1.
- For classes P and Q, all SYSOUT is archived.
- Archival is to disk, and the backup cycle is automatically initiated every day except Sunday.
- The expiration date for tapes is 99000.
- Five generations can be backed up to the same tape.
- All SYSOUT (both classes P and Q) is printed as class A.
- Four generations are maintained on disk.
- 100 generations are maintained on tape.
- Exceptional condition messages are assigned routing code 14.
- The backup cycle is initiated at 5:00 p.m.
- The SYSOUT is automatically printed if an exceptional condition occurs.
- Scratch tapes are used.
- Defaults are used for everything else.

The following job is run to set the initialization parameters:

```
//EXAMPLE1 JOB ACCOUNT,PROGRAMMER
//INIT     EXEC PGM=SARINIT
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
NAME=VIEW.SYSTEM1
CLSL=PQ
DAYS=YYYYYYN
EXPDT=99000
MAXGENT=5
NEWCLSL=AA
NGEND=4
NGENT=100
ROUT=14
TIME=1700
XPRINT=YES
```

```
//
```

Example 2

The current generation of SYSOUT is automatically microfiched by start procedure SARMFP after backup to tape. The SYSOUT groups are sorted as follows:

- Descending order by user accounting data, positions 11 to 20
- Descending order by user accounting data, positions 1 to 10
- Ascending order by job name
- Ascending order by job ID

The following job is run to modify the initialization parameters:

```
//EXAMPLE2 JOB ACCOUNT,PROGRAMMER
//INIT     EXEC PGM=SARINIT
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
NAME=VIEW.SYSTEM1
MSORT1=-U11:20
MSORT2=-U1:10
MSORT3=JNAME
MSORT4=JID
START=SARMFP
//
```

Example 3

Expanded retention parameters are set to retain five copies of all marked SYSOUT and to define special text for determining SYSOUT identifiers:

```
//EXAMPLE3  JOB ACCOUNT,PROGRAMMER
//INIT      EXEC PGM=SARINIT
//STEPLIB   DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT  DD  SYSOUT=*
//SYSIN     DD  *
NAME=VIEW.SYSTEM1
POPT=M
PCOPIES=5
PTEXT1='PROGRAM-ID.'
PTEXT2=-':'.'PROCEDURE'.'MAIN'
PTEXT3='***ID='
PTEXT4='SYSLMOD'.'DSN='.'LIB('
//
```

Example 4

An existing index file has its parameters displayed:

```
//EXAMPLE4 JOB ACCOUNT,PROGRAMMER
//INIT     EXEC PGM=SARINIT
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD  *
NAME=VIEW.SYSTEM1
//
```

Chapter 3: Configuring

This section contains the following topics:

Date Format in Displays and Reports (see page 125)
Expanded Access Server for Tape and Robotics (see page 127)
Job Accounting (see page 136)
Microfiche Processing with SARMFP (see page 143)
External Printing (see page 147)
3800 Printer Attributes (see page 158)
Recovery Data Set (see page 161)
System Extensions (SARXTD) (see page 162)

Date Format in Displays and Reports

All displays and batch reports display the date in the following format:

MMDDYYYY

The date format, date separator character, and time separator character are specified in the SARDFMT load module. The date format is specified in the first byte (hex location 00) of the load module as a hexadecimal value of 00 through 07 as follows:

Date Format	Hexadecimal Value
MM/DD/YYYY (default)	00
DD/MM/YYYY	01
YYYY/MM/DD	02
YYYY/DD/MM	03
MM/DD/YY	04
DD/MM/YY	05
YY/MM/DD	06
YY/DD/MM	07

You can assign a date separator character in the second byte (hex location 01) of the load module. The default data separator is a slash (/).

You can assign a time separator character in the third byte (hex location 03) of the load module. The default time separator is a colon (:).

The date and time separator characters are to be printable characters. Do not confuse these characters with syntactical data, such as a comma or a quotation mark.

Use the SMP USERMOD in the CVDEJCL member BRMSDFMT to set the values in SARDFMT. Change the REP statements in the AMASPZAP input to your required values. For example, if you select MM/DD/YY for your default format, a dash (-) for the date separator, and no change for the time separator, change the AMASPZAP statements in BRMSDFMT as follows:

From:

```
++ZAP(SARDFMT).
NAME SARDFMT SARDFMT
VER 0000 0061,7A00
REP 0000 0061,7A00
$$
```

To:

```
++ZAP(SARDFMT).
NAME SARDFMT SARDFMT
VER 0000 0061,7A00
REP 0000 0460,7A00
$$
```

The first field in the VER and REP statements contains the location in the module that is being changed. In this case, it is 0000. Do not change this value.

The second field contains four hexadecimal values that are separated into groups of two by a comma.

- The VER statement verifies that the values in this statement are the same as the values found at location 0000 in SARDFMT.
- The REP statement gives the values that replaces the data at location 0000 in SARDFMT.

In the previous example:

- The first position in field 2 in the REP statement was changed from 00 to 04 to specify the MM/DD/YY date format as defined in the preceding table.
- The second position was changed from 61 (/) to 60 (-).
- The third position is unchanged because we are not changing the time separator in this example.
- The fourth position is never changed.

Note: To change SARDFMT, reapply this USERMOD.

Expanded Access Server for Tape and Robotics

The expanded access server for tape and robotics lets you browse a report that resides only on tape, without having to load the report back to disk.

Using the server instead of loading back to disk gives you the following benefits:

- You do not need to wait for a LOAD batch job, which has to wait for a tape mount.
- You do not need extra DASD space in the disk database to accommodate reports that are temporarily loaded from tape.

The printing functions, both online (P command) and batch (J command), as well as the LOAD from tape to disk function use the server, and benefit from centralized tape mounts and caching.

No tape drives are dedicated to the tape server. The server is allowed to access as many drives as you specify. Drives are automatically freed after a specified idle time (MAXIDLE).

Requirements

The initialization parameter TAPEOPT must specify EAST as its first parameter.

Only one expanded access server is required to support one or more CA View databases.

Internal Operation

The server receives requests for data blocks on tape to be for printing or browsing. The requested data blocks are handled as follows:

- If the data blocks are cached in memory, the server transfers those blocks using cross memory.
- If the data blocks are not already in memory, the server either reads the already mounted tape or mounts the tape.

If no drive is available to the server, the least recently referenced tape, which has also been mounted for at least a minimum amount of time (MINIDLE parameter) is dismounted.

If a tape has been idle for a maximum amount of time (MAXIDLE parameter), it is dismounted automatically to free the drive for CA View or any other application.

Note: Drives are not dedicated to the server.

Memory Management: Reading Ahead

When the server accesses requested blocks, it also retrieves additional adjacent blocks (NREAD parameter). These data blocks are buffered into memory in case they are needed as a user scrolls forward while browsing a report, or issues a FIND command, and so on.

Reusing Buffers

When the tape server has accessed all allocated buffers and requires reusing a buffer, it performs the following actions:

1. Accesses the least recently accessed buffer.
2. Reads ahead NREAD number of blocks, but adjusted down so that it does not reread an already buffered block.
3. Frees previous blocks when a forward search is detected, to prevent forward search users from taking over all buffers.

Order of Media Access

When a user selects a report for browsing (selection code S in an online report selection list), the following list is the order of media access:

- If the report is on the CA View DASD database (including a TEMP DASD copy that was loaded back to disk), it is accessed from DASD.
- If the report is not on DASD but is on optical disk, it is accessed from optical disk.
- If the report is not on DASD or optical disk, the expanded access server accesses it.
- If the report is not on DASD or optical disk, and the expanded access server is not active, the tape is mounted and the report is loaded to disk, assuming there is mount authority.

  LOAD jobs execute on the system with the primary server; otherwise, all the data is transmitted across systems using XCF or LSERV.

Implementing the Expanded Access Server

The expanded access server is a started task. The following is a sample start procedure. JCL is added as member SAREAS to one of the procedure libraries that are defined to JES (for example, SYS1.PROCLIB).

```
//SAREAS   PROC
//SAREAS   EXEC PGM=SAREAS,TIME=1440,PARM=('parm1','parm2',...)
//STEPLIB  DD     DSN=CAI.CVDELOAD,DISP=SHR
//SYSUDUMP DD     SYSOUT=A
```

Initialization parameters specified in the PARM= field consist of a keyword and value with an equal sign separating them. Omitting the value specifies the default value. Keywords and selectable values can be shortened to any non-ambiguous form so that the parameters can fit within the 100-character length limit of the parameter field.

The parameter field contains the following initialization parameters, with commas separating them:

COMM=LSERV|XCF

The communication mechanism used by the primary and secondary servers.

LSERV specifies the CA Server Utility.

XCF specifies the MVS Cross-System Coupling Facility.

Note: The CA Server Utility has XCF communications capability within it. All servers must use the same communication mechanism. The parameter is meaningless for a TYPE=ONLY server. The default is LSERV.

DFQIDLE=n

The time in seconds to wait for requests for the same optical volume to accumulate before switching to a new optical volume (tape emulation optical only).

This parameter works with exit SAREASU1 to improve performance. Typical values are 1 to 5 seconds.

EASTNAME=xxxx

The subsystem name of the expanded access server for tape and robotics.

For primary and secondary servers, this is also the L-SERV or XCF group name. The default is LEAS. The subsystem name of the expanded access server for tape and robotics.

For primary and secondary servers, this is also the L-SERV or XCF group name. The default is LEAS.

LSERVNAME=xxxx

The subsystem name of the CA Server Utility.

The parameter only has meaning for a primary or secondary server using the CA Server Utility as its communication mechanism. The default is LSRV.

MAXIDLE=n

The maximum time in seconds that a tape (or platter in the case of tape emulation optical) can remain unaccessed before it is unallocated for the primary or TYPE=ONLY server.

The parameter is meaningless for a secondary server. The default is 10 minutes (600).

For the primary or for a TYPE=ONLY server, the maximum idle time is adjusted upwards to a minimum of MINIDLE.

MINIDLE=n

The minimum time in seconds that a tape (or platter in the case of tape emulation optical) must be mounted without being accessed. The tape processing thread can then be used to process another tape volume for the primary or TYPE=ONLY server.

The parameter is meaningless for a secondary server. The default is 15 seconds.

MOUNT=DEFER|REPLY

Specifies whether the tape mounts occur during OPEN, or during dynamic allocation.

MOUNT=REPLY gives operators a mount request they can reply to.

The default is DEFER, which gives operators no opportunity to reply to the mount request, though mounts can occur in parallel.

NBUF=n

The total number of buffers to allocate.

Each buffer requires 32 KB of virtual, 31-bit addressable storage. We recommend that you set NBUF as high as paging and real storage constraints allows. The default is 50.

For the primary or only server, the number of buffers is adjusted upwards to a minimum of (NTHREADS) * (NREAD).

NREAD=n

The number of 32 KB tape blocks to read in at a time, for the primary or only server, in anticipation of their subsequent use.

The parameter is meaningless for a secondary server. The default is 4; the maximum is 16.

NREQ=n

The number of process request entries to preallocate; one process request entry is needed for each tape request that is active within the server.

If more entries are needed at any given time than have been preallocated, additional entries are allocated and freed on demand. When the server is stopped, message SAREA04I is produced to display the "high water mark" for process request entries. The default is 200.

TYPE=PRIMARY| SECONDARY|ONLY

The type of server:

- PRIMARY specifies that this server is to perform the tape mounts and input and that secondary servers make requests from it using L-SERV or XCF.
- SECONDARY specifies that this server does not perform any tape mounts or input; instead, requests for tape blocks are made using L-SERV or XCF to the primary server.
- ONLY specifies that this is the only server; it performs all of its own tape input, and no L-SERV or XCF communications are established.

The default is ONLY.

NTHREADS=n

The number of tape processing threads for the primary or only server. This number can be lowered or raised dynamically, but it can never exceed the value that is specified on this parameter.

The parameter is meaningless for a secondary server. Each tape processing thread can allocate one tape drive; therefore, specify the maximum number of tape drives you like to be available to the server. The default is 4.

TYPE=PRIMARY|
SECONDARY|ONLY

The type of server

- PRIMARY specifies that this server is to perform the tape mounts and input and that secondary servers make requests from it using L-SERV or XCF.
- SECONDARY specifies that this server does not perform any tape mounts or input; instead, requests for tape blocks are made using L-SERV or XCF to the primary server.
- ONLY specifies that this is the only server; it performs all of its own tape input, and no L-SERV or XCF communications are established.

The default is ONLY.

Example

The following example start procedure JCL could be used to start the expanded access server for tape and robotics:

```
//SAREAS       PROC TYPE=ONLY
//SAREAS       EXEC PGM=SAREAS,TIME=1440,
// PARM=('T=&TYPE',   TYPE is ONLY by default, changeable at startup
// 'E=LEAS',          EASTNAME is LEAS
// 'C=XCF',           COMM is XCF
// 'MA=1800',         MAXIDLE is 30 minutes
// 'MI=10',           MINIDLE is 10 seconds
// 'NB=200',          NBUF is 200 buffers
```

```
// 'NREA=5',          NREAD is 5 reads at a time
// 'NREQ=300',        NREQ is 300 process request entries
// 'NT=12'),          NTHREADS is 12 tape threads (drives)
//STEPLIB       DD    DSN=CAI.CVDELOAD,DISP=SHR
//SYSUDUMP      DD    SYSOUT=A
```

Optimizing Performance of the Expanded Access Server

The following parameters should be examined from time to time to optimize performance particular needs of your site:

- MAXIDLE
- MINIDLE
- NBUF
- NREAD
- NREQ
- NTHREADS

Note: For more information about optimize performance, see Server Start-Up Parameters.

Excluding Reports From Expanded Access

You can exclude particular reports and prevent their access by the expanded access server, for performance or security reasons. An ERO parameter, VIEWTAPE, excludes reports from access by the expanded access server.

Note: For more information, see the section Tape Online Access: VIEWTAPE in the chapter "Expanded Retention Option."

Initialization sub parameter *maxgent-value* of the STORGRP0 and STORGRP1–STORGRP9 initialization parameters specifies the maximum number of generations of a report to write to tape. So, the number of reports written to any one tape are limited. You can want to increase *maxgent-value* for tape storage groups that contain reports that are browsed from tape frequently.

Compression and Maximum Generations

More reports on tape means fewer tapes, and fewer necessary tape mounts. You can specify that CA View create backup tapes using hardware and/or software compression.

Note: For more information, see the initialization parameter TAPEOPT in the chapter "Initialization Parameters."

Tape Storage Groups

You can group reports on tape based on how frequently they are browsed from tape. This way, when the server is invoked, it is more often reading a subset of your backup tapes. For reports that are not migrated to optical disk, consider how frequently they are browsed after they expire from the primary disk when you are assigning tape storage groups.

Alternatively, you can group reports based on their retention requirements. One tape storage group could be all the 30-day reports, another 90-day reports, and so on, which reduces the need for tape consolidation.

Note: For more information about tape storage groups, see STORGRP0 and STORGRP1–STORGRP9 in the chapter "Initialization Parameters."

Operating the Expanded Access Server Task

The following operator commands are available for the expanded access server started task. First, install the start procedure for the task. These examples assume the JCL from the preceding example.

- To start the server as a stand-alone-only server, issue the following operator command:

  ```
  S SAREAS
  ```

- To start the server as the primary server, issue the following operator command:

  ```
  S SAREAS,TYPE=PRIMARY
  ```

- To start the server as a secondary server, issue the following operator command:

  ```
  S SAREAS,TYPE=SECONDARY
  ```

  To assign a reusable ASID to the server when it is started, issue the following operator command:

  ```
  S SAREAS,REUSASID=YES
  ```

  Note: The system honors a request for a reusable ASID only if REUSASID(YES) is specified in the parmlib member DIAGxx. Otherwise, the system assigns an ordinary ASID.

  Important! Not all Virtual tape products support REUSASID=YES. If the SAREAS task is accessing virtual tapes, the Virtual tape vendor software must also support REUSASID=YES. Otherwise, S0D3 abends are issued to the SAREAS task.

  To turn off REUSASID support for a SAREAS task started with REUSASID=YES, issue the following commands:

  ```
  P SAREAS
  ```

  Stops tape server task started with REUSASID=YES.

  ```
  S SAREAS
  ```

  Starts tape server with the default REUSASID=NO.

- To stop the server, issue either of the following operator commands:

  ```
  P SAREAS
  F SAREAS,STOP
  ```

- To alter dynamically the number of threads, issue the following operator command:

  ```
  F SAREAS,NTHREADS=nn
  ```

  Immediately reduces or increases the number of threads in use. The value specified cannot exceed the value specified for NTHREADS when the task was started.

- If a communications problem occurs (for example, L-SERV is shut down and restarted) you can reset communications for a primary or secondary server by issuing the following operator command:

  ```
  F SAREAS,COMMRESET
  ```

Note: All requests awaiting a response from the server are canceled.

All tapes that are currently allocated by the server can be immediately unloaded by issuing the following operator command:

```
F SAREAS,UNLOAD
```

Immediate unload can be useful if the CA View backup cycle or the SARPAC tape consolidation program requires a tape that is currently mounted by the server.

Job Accounting

The product maintains information about the use of resources by each archived SYSOUT group. The information includes:

- The number of database blocks written on disk
- The number of lines archived
- The number of pages archived

In addition, the product keeps up to 20 bytes of user accounting data for each SYSOUT group.

Accounting Report Program (SARACT)

An accounting report program, SARACT, is supplied with the product. The program produces a listing of the resources described in the previous section used by the archived SYSOUT groups in order of the account number. Due to the varied accounting requirements of CA View users, the program is supplied in source form.

The program is written in both COBOL, CAI.CVDELOAD member SARACT, and assembler, CAI.CVDELOAD member SARACTA, and is easily modified. The source for the program is in CAI.CVDESRC. Compile and link edit the program before executing it.

The COBOL version of this program requires the use of COBOL for OS/390 compiler from IBM.

Input to the SARACT program is a sequential copy of the master index. Use the IDXOUT function of the SARDBASE program to create the sequential copy of the master index.

Job Control Statements

Sample execution JCL can also be found in member HAEXACT in your CVDEJCL data set.

After SARACT has been compiled and link edited, the following JCL executes the accounting report program:

```
//SARACT   JOB ACCOUNT,PROGRAMMER
//*
//*        EXECUTE SARDBASE TO COPY THE MASTER
//*        INDEX TO &&IDX
//*
//IDXOUT   EXEC PGM=SARDBASE
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SARIOUT  DD  DSN=&&IDX,DISP=(,PASS),
//         UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSIN    DD  *
NAME VIEW.SYSTEM1
IDXOUT
//*
//*        EXECUTE SARACT TO PROCESS FILE &&IDX
//*
//SARACT   EXEC PGM=SARACT
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SARIDX   DD  DSN=&&IDX,DISP=(OLD,DELETE)
//PRINT    DD  SYSOUT=*
//SYSOUT   DD  SYSOUT=*
//SORTWK01 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SORTWK02 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
//SORTWK03 DD  UNIT=SYSDA,SPACE=(CYL,(1,1))
```

- If the load modules are link edited into a library other than one of the link list libraries, change the data set name on the STEPLIB DD statements, if necessary.
- If the load modules are link edited into a link list library, remove the STEPLIB DD statements.
- Change the high-level name on the NAME control statement to the name of your database.
- The SYSOUT DD statement defines the SORT messages and can be dummied out if desired.
- The PRINT DD statement must define a sequential output file to contain the report.

The following is a sample accounting report:

```
                                        CA View ACCOUNTING REPORT                NOVEMBER 10, 2013     PAGE   2
USER ACCOUNT         ID                        JOB NAME JOB ID    ARC DATE  ARC TIME  GEN BLOCKS   LINES   PAGES

41000000             JREDEMO--R01              WILSON01 JOB03090 11/10/2013 15.18.57    1      8    1068      33
41000000             JREDEMO--R01              WILSON01 JOB03128 11/10/2013 15.28.17    1      8    1068      33
41000000             JREDEMO--R02              WILSON01 JOB03090 11/10/2013 15.18.57    1      1     139       6
41000000             JREDEMO--R02              WILSON01 JOB03128 11/10/2013 15.28.18    1      1     139       6
41000000             JREDEMO--R03              WILSON01 JOB03090 11/10/2013 15.18.57    1      1     106       3
41000000             JREDEMO--R03              WILSON01 JOB03128 11/10/2013 15.28.18    1      1     106       3
TOTAL FOR ACCOUNT                                                                       20   2626      84
```

Capture Accounting Data from the JOB Statement

By the time a SYSOUT is queued for output processing and passed to the archival started task, its accounting data is no longer available using the standard subsystem interface. To get around this problem, the accounting data for a job or time-sharing session is written to a CA View accounting file at job initiation time through CA View system extensions. This accounting file is then made available to the archival started task.

If your site requires job accounting data, allocate the accounting file to ddname SARACT in the SARXTD system extensions and SARSTC archival task procedures. Establish CA View system extensions on each processor at your site that executes any job or time-sharing session that produces SYSOUT for archival. In addition, create and format the CA View accounting file.

Note: For more information about the accounting file, see System Extensions (SARXTD) later in this chapter and in the appendix "Data Sets and Environmental Considerations."

JCL Errors and TYPRUN=SCAN

Accounting data is captured after job initiation. So, no accounting data is provided for SYSOUT for a job having a syntax JCL error or for a job for which TYPRUN=SCAN was specified on the JOB statement.

User Exits

A user exit, SARACTUX, is provided to extract accounting data from the type-20 SMF records. The standard user exit supplied with the product extracts the first 10 bytes of the first and the second accounting fields, for a total of 20 bytes. If either field is less than 10 bytes, it is padded on the right with blanks.

Note: For information about modifying the user exit, see the chapter "User Exits" in the *Programming Guide*.

When the direct-to-CA View archival feature of CA Deliver is used, accounting data is extracted and formatted by the CA Deliver RMORRQUX user exit.

SMF Type-6 Records

The product produces special type-6 SMF records for any SYSOUT groups automatically printed by the archival started task when the initialization parameter SMF=YES has been specified. The SARSMF6 macro maps the type-6 SMF record. The format of the type-6 SMF records is as follows:

Offset (dec.)	Name	Length (chars.)	Contents
0	SMF6LEN	2	Record length in binary
2	SMF6SEG	2	Segment descriptor
4	SMF6FLG	1	System indicator for VS2 (X'02')
5	SMF6RTY	1	Record type (X'06')
6	SMF6TME	4	Time in binary, in hundredths of a second, that the record was moved to SMF buffer
10	SMF6DTE	4	Date that the record was moved to SMF buffer, in the form 0*CYYDDDF* where *F* is the sign
14	SMF6SID	4	System identification (taken from the SID parameter)
18	SMF6JBN	8	Job name
26	SMF6RST	4	Time in binary, in hundredths of a second, that the reader recognized the JOB statement for this job
30	SMF6RSD	4	Date that the reader recognized the JOB statement for this job, in the form 0*CYYDDDF* where *F* is the sign
34	SMF6UIF	8	User identification
42	SMF6OWC	1	SYSOUT class
43	SMF6WST	4	Start time in binary, in hundredths of a second, that CA View printed the SYSOUT
47	SMF6WSD	4	Date that CA View printed the SYSOUT, in the form 0*CYYDDDF* where *F* is the sign
51	SMF6NLR	4	Number of lines, in binary, printed for all copies
55	SMF6IOE	1	X'00'

Offset (dec.)	Name	Length (chars.)	Contents
56	SMF6NDS	1	Number of copies printed
57	SMF6FMN	4	Form number
61	SMF6PAD1	1	Section indicator (X'80'-3800 Printing Subsystem section present and X'40'-Common section present)
62	SMF6SBS	2	Subsystem identification (C'ES')
64	SMF6LN1	2	Length of rest of record, including this field, but not including any additional sections indicated by the SMF6PAD1 field
66	SMF6DCI	1	X'0000'
67	SMF6INDC	1	Indicator bits (X'01' – four-digit job number supplied or X'03' – full job number provided in Common section)
68	SMF6JNM	4	Job number
72	SMF6OUT	8	SYSOUT destination
80	SMF6FCB	4	FCB image identification
84	SMF6UCS	4	UCS image identification
88	SMF6PGE	4	Number of pages, in binary, printed for all copies
92	SMF6RTE	2	X'0000'
94	SMF6RID	32	Sysout/Report identifier
126	SMF6ACCT	20	Accounting data

SMF Type–6 Record for 3800 Printers

The format of the type-6 SMF record for the 3800 printer subsystems sections is as follows:

Offset (dec.)	Name	Length (chars.)	Contents
0	SMF6LN2	2	Length of 3800 Printing Subsystem section, including this field

Offset (dec.)	Name	Length (chars.)	Contents
2	SMF6CPS	8	Number of copies printed in each group Each byte represents, in binary, one copy group; the sum of the 8 bytes is the total number of copies printed.
10	SMF6CHR	16	Names of the character arrangement tables that define the characters used in printing Each name is 4 bytes long, with a maximum of 4 names.
26	SMF6MID	4	Name of the copy modification module used to modify the data
30	SMF6FLI	4	Name of the forms overlay printed on the copies
34	SMF6FLC	1	Number of copies, in binary on which the forms overlay is printed
35	SMF6BID	1	Options indicator: X'80' Output is to be burst into sheets by the burster-trimmer-stacker X'40' DCB sub parameter OPTCD=J was specified

SMF Type–6 Record for Common Section

The format of the type-6 SMF record for the common section is as follows:

Offset (dec.)	Name	Length (chars.)	Contents
0	SMF6LN3	2	Length of fixed header extension, including this field
2	SMF6ROUT	4	Output route code (not used)
6	SMF6EFMN	8	Output forms name
14		16	Reserved
30	SMF6JBID	8	Job number
38	SMF6STNM	8	Step name (not used)
46	SMF6PRNM	8	Procedure name (not used)
54	SMF6DDNM	8	DDname (not used)

Offset (dec.)	Name	Length (chars.)	Contents
62	SMF6USID	8	User ID
70	SMF6SECS	8	Security label (not used)
78	SMF6PRMD	8	Processing mode
86	SMF6DSNM	53	Data set resource name (not used)
139		3	Reserved
142	SMF6OTOK	20	Output group token (not used)

Formatting the Accounting File

The SARINACT program formats the CA View accounting file. The accounting file is only required if job accounting is desired as a CA View extension.

The following job control statements are required:

JOB

Initiates the job.

EXEC

Specifies the program name (for example, PGM=SARINACT).

STEPLIB DD

Defines the load library containing SARINACT.

If the program resides in a link list library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) used for listing the statements and messages.

If not a SYSOUT data set, code DCB=BLKSIZE=nnn, where nnn is a multiple of 133.

SARACT DD

Defines the accounting file.

Allocate the data set as one contiguous extent with sufficient disk space to contain 999,999 28-byte accounting records. The default and recommended block size is 6160 (220 accounting records per block).

Example

The following job creates and initializes the CA View accounting file, VIEW.SARACT:

```
//ACTINIT  JOB ACCOUNT,PROGRAMMER
//SARINACT EXEC PGM=SARINACT
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SARACT   DD  DSN=VIEW.SARACT,DISP=(,CATLG),
//             UNIT=SYSDA,VOL=SER=nnnnnn,
//             SPACE=(6160,4546,,CONTIG)
```

This JCL can be found in the CVDEJCL member SARINACT.

Microfiche Processing with SARMFP

The SARMFP program creates a sequential output file in a format suitable for microfiche processing. You can process the output file by a microfiche reformat utility to produce a COM-ready tape or can be microfiched directly by an intelligent microfiche processor.

Only SYSOUT groups archived on disk can be microfiched. The program leaves out SYSOUT groups archived directly to tape or those having cycled off their disk generations.

Initialization parameters MSORT1, MSORT2, and so on, specify the order in which the SYSOUT groups residing in disk archival data sets are sorted for output.

SARMFP sets the return code to 4 when no output has been written to the //OUT data set. One possible reason for this occurring is that user exit SARMFPUX never returned a return code of zero (0) indicating inclusion of a report.

Note: For more information about installing and running this option, see the Add the Microfiche Option step in the *Installation Guide*.

Separator Record

The archived SYSOUT groups are written sequentially to the output file. A special separator record precedes each group. Data from the separator record can be used to:

- Identify the SYSOUT
- Create an index for the fiche
- Produce understandable titles

The special separator record is formatted as follows:

Position	Length	Contents
1	1	Record identifier constant X'73'
2	3	Record identifier constant 'SAR'
5	32	SYSOUT ID
37	8	Job name
45	8	Job ID
53	10	Archival date in standard date format
63	8	Archival time in standard time format
71	8	Lines archived
79	8	Pages archived
87	6	Exceptional condition

User Exit for Formatting Output

A user exit, SARMFPUX, is available for special formatting of the output file.

Started Task or Batch Job

The SARMFP program can run as either a started task or a batch job

If you choose to execute it as a started task, it is executed with the following command:

```
S SARMFP[,OPT='generation']
```

Where

generation is the absolute (unsigned number) or relative (negative number) generation number to be output to microfiche. To output the current generation to microfiche, the OPT parameter can be omitted from the command, or the generation could be specified as -0.

SARMFP Startup Examples

The following examples invoke the microfiche task for different sets of SYSOUT generations.

Example 1

```
S SARMFP,OPT='-1'
```

Specifies that CA View invokes the microfiche facility for SYSOUT in the previous archival generation.

Example 2

```
S SARMFP,OPT='23'
```

Specifies that CA View invokes the microfiche facility for SYSOUT in the archival generation 23.

Example 3

```
S SARMFP
```

Specifies that CA View invokes the microfiche facility for SYSOUT in the current archival generation.

Job Control Statements

Sample execution JCL can be found in the member CBRMSMFP of the CAI.CVDEPROC data set. The following job control statements are required to execute SARMFP except the STEPLIB and SARMFTAB DD statements which are optional:

Job

Initiates the job.

EXEC

Specifies the program name (PGM=SARMFP), the execution parameter has the following format:

PARM='DB,OPT'

Where

DB

Defines the high-level qualifier name of the database.

OPT

It is the generation as an absolute (unsigned number) or relative (negative number) generation number to be output to microfiche. To output the current generation to microfiche, the OPT parameter can be omitted from the command, or the generation could be specified as -0 for the current generation.

Example:

//IEFPROC EXEC PGM=SARMFP,PARM='VIEW.SYSTEM1,-1'

STEPLIB

DD Defines the load library containing SARMFP.
If the program resides in a link list library, omit this statement.

SYSOUT
PRINT
SORTWK01
SORTWK02
SORTWK03

DDs required by the SORT Utility, these can vary.

OUT

DD description of the sequential output file.

SARMFTAB

Optional DD description for Selection Control.

Batch Job Execution of the Microfiche Task

The microfiche task can run as a started task or as a batch job. Releases before r11.0 required that a user modification, HA17SE02 or HA20SE02, be applied to the SARMFP module to enable the task to run as a batch job. Release 11.0 and all subsequent releases do not require this user modification.

External Printing

The external print interface is a direct interface between CA View and any printing product that can be used to reprint a SYSOUT or report. CA View communicates directly with these external printing products through initialization parameters and online specifications.

Printing to External Devices

You identify a SYSOUT group and all of its attributes for printing with an external print record (XPR). You specify these attributes with the EXTPRT*n* initialization parameters. You can identify up to three separate attributes with the EXTPRT1, EXTPRT2, and EXTPRT3 initialization parameters.

Each EXTPRT initialization parameter contains a 1- to 3-character identifier for the printing product, and can contain attributes for defining the communication mechanism.

Interfaces for External Printing

The product can use two interfaces to pass the External Print Record (XPR) to the external printing product. They are:

- The JES data set interface
- The dynamic program call interface

The format of EXTPRT*n* parameters determines which of the two CA View external printing interfaces are invoked.

The currently available external printing interface is to VPS Print, using the JES data set interface. Complete a Demand Analysis Request (DAR) form, available from CA Technical Support, to request interfaces to other products.

The external print interface can require a special maintenance or release level of the vendor printing product. Contact the vendor for details.

Defining an EXTERNAL Device

To simplify specification at reprint time, you can define an EXTERNAL printing device with the online DEFINE DEVICE (DEF DEV) command. Your system administrator can use the online DEF DEV command to assign a printer alias name (such as PRINTR1) to simplify specifying an external printer.

Note: For information on defining output devices with DEF DEV, see the chapter "System Administration" of the *User Guide*.

JES Data Set Interface

With this interface, CA View dynamically creates a single-record JES data set containing an external print control record. The record is written as a fixed-length record without any carriage control. The data set is routed to the external print product based upon a combination of class, destination, forms name, and writer name. You can determine these from the EXTPRT*n* initialization parameter and the destination specified by the user on the print request.

EXTPRTn Parameters

For the JES data set interface, the EXTPRT*n* initialization parameter has the following format:

EXTPRT*n*=*printer–id*/JESDS/*class*/*destination*/*form*/*writer*

Where

n

Specifies either 1, 2, or 3

printer–id

Specifies the 1- to 3-character identifier for the external print product

class

Specifies the 1-character SYSOUT class to route the external print record

destination

Specifies the 8-character SYSOUT destination to route the external print record

form

Specifies the 4-character SYSOUT forms name to route the external print record

writer

Specifies the 8-character SYSOUT writer name to route the external print record

EXTPRTn Parameters and Online Print Specifications

You can specify one or more of the following EXTPRT*n* parameters as an asterisk to indicate that the users supply them online when printing a SYSOUT group:

```
class
destination
form
writer
```

Example

Assume that you want to print to an external device using the JES data set interface. Also assume the following list of conditions:

- The printer ID is VPS
- The class is V
- The destination is LOCAL
- Provide the writer name online when the print request is made

Define the following initialization parameter:

```
EXTPRT1=VPS/JESDS/V/LOCAL//*
```

For the online print request, specify the following destination:

```
DEST ===> >VPS.RMT5
```

CA View dynamically creates a SYSOUT data set to contain the XPR record. The attributes for the data set correspond to the following JCL statement:

```
//ddname DD SYSOUT=(V,RMT5),DEST=LOCAL
```

Notice the use of the asterisk in the EXTPRT parameter in the writer position to indicate that the user supplies the writer name online at the time of the print request.

EXTERNAL Printing–Dynamic Program Call Interface

With the dynamic program call interface, CA View dynamically loads and calls a program to handle the print request. The external print record (XPR) is passed to the program and the parameter data specified in the EXTPRT*n* initialization parameter and in the destination specified by the user on the print request.

EXTPRTn Parameters

For the dynamic program call interface, the EXTPRT*n* initialization parameter has the format:

EXTPRT*n*=*printer–id*/PGM/*program–name*/*parameter–data*

Where

n

Is either 1, 2, or 3

printer–id

Specifies the 1- to 3-character identifier for the external print product

program–name

Specifies the 8-character name of the interface program

parameter–data

Specifies up to 14 characters of parameter data to be passed to the interface program

Example

Assume that you want to print to an external device using the dynamic program call interface. Also assume the following list of conditions:

- The printer ID is ANA.
- Call the program ANAEP.
- Pass the characters NOBANNER to the program.

Define the following initialization parameter:

```
EXTPRT2=ANA/PGM/ANAEP/NOBANNER
```

For the online print request, you would supply the following destination:

```
DEST ===> >ANA.INDEX
```

CA View dynamically loads and calls the program ANAEP. The parameter list to the program contains the addresses and lengths of the following:

- The character string NOBANNER
- The character string INDEX
- The XPR record

Sample Definitions

A sample program is provided in CVDEOPTN, member SARXPDSK. This sample prints a report to a dynamically allocated file.

The following list describes the requirements of the sample.

- Assemble and link the program into an authorized load library which is available to the online and batch tasks (XMS, TSO, and so on).

  Link the module with the following attributes:

  ```
  AC=1,AMODE=31,RMODE=ANY ¶
  ```

- Define an external device to the CA View database.

  From the CA View Primary Menu, enter the define device command:

```
CA View ALL -- Primary Selection for ...db_hlq... ------
Command ===> define device
```

  From the Device Definition Selection List panel, enter a "select" command; *disk* is used as a sample value. This value is used in the DEST reprint attribute. Any eight-character string can be selected:

```
CA View ALL -- Device Definition Selection List --------
Command ===> select disk                Scroll ===> PAGE

     Device

Sel Synonym              Type     Real Device Name
  ****************** Bottom of Data **********************
```

  Create a device with the selected name.

  Define the type of 'external':

```
CA View ALL -- Device Definition Selection List --------
Command ===>                            Scroll ===> PAGE

    Device
Sel Synonym               Type     Real Device Name
    DISK                  external
****************** Bottom of Data **********************
```

Define a three character 'external print initialization' printer ID (the value DSK is used as an example, this value is used in one of three EXTPRT*n* initialization parameters. Use any 3 character value):

```
CA View ALL ---- External Print Device Attribute Panel --
Command ===>

Device Synonym            ---> DISK

External Print Parameter  ===> dsk
(Real Device Name)
```

This completes the external print device definition.

```
CA View ALL ---- Device Definition Selection List ----------
Command ===>                                  Scroll ===> PAGE
    Device
Sel Synonym                  Type        Real Device Name
    DISK                     EXTERNAL    DSK
****************** Bottom of Data **********************
```

- Assign the three character 'printer id' to the sample program using the EXTPRTn Initialization parameter as follows (this assumes EXTPRT1, and a 'printer id' of 'DSK'):

  ```
  EXTPRT1=DSK/PGM/SARXPDSK/WKDISK
  ```

  Note: The fourth positional parameter is passed to the sample program and is used as the default unit esoteric name when allocating DASD datasets. If this parameter is left blank, the sample program uses 'SYSDA' as the default unit esoteric name.

- After these definitions have been completed and all on-line tasks have been recycled (XMS, TSO User, and so on) the print-to-disk' function can be used.

Use of ALL and SARO Modes

Select the report with the P (online reprint) or J (batch reprint) line command. On the Print Attribute Panel, change the DEST to 'disk' (this is the 8-character device name chosen in the 'define device' step):

```
CA View SARO ----- Print Attribute Panel ------------------
Command ===>

 ID     ---> reportid
 Job    ---> job       Jobid  ---> jobid

Print Attributes:
  BANNER ===> DEFAULT  CLASS  ===> A       DEST   ===> disk
```

Press enter. (The sample program eliminates the View banner).

One of the following messages is displayed in the Sysout Selection List:

- For online print

  `CA View SARO - Sysout Selection List - Sysout externally queued`

- For batch reprint

  `CA View SARO - Sysout Selection List - JCL created`

Use of SAR Mode

Select the report with the P (online reprint) or J (batch reprint) line command. On the Print Attribute Pane, change the DEST to 'disk' (this is the 8 character device name chosen in the 'define device' step):

```
CA View SAR -------- Print Attribute Panel --------------------
Command ===>

  ID       ---> reportid
  Job      ---> job        Jobid  ---> jobid

  *----------- Primary ----------*
  |                              |
  | BANNER  ===>                 |    BANNER  ===>
  | CLASS   ===>                 |    CLASS   ===>
  | DEST    ===> disk            |    DEST    ===>
  *------------------------------*
```

Press enter (the sample program eliminates the View banner). The appropriate message is displayed.

Use of EXPO Mode:

Select the report with the P (online reprint) or J (batch reprint) line command. On the Deliver Reprint Attributes Panel, enter D (distribution specifications) command:

```
CA View EXPO ---- CA Deliver Reprint Attributes ----------
Command ===>

  ID     ---> reportid
  Job    ---> job       Jobid  ---> jobid

Attributes:
   BANNER ===> DEFAULT    BURST  ===> N      CLASS  ===> B
   . . .

     D - Distribution specifications.    I - Special instructions
```

Change the DEST on the desired Distribution Specifications to *disk* (this is the 8 character device name chosen in the *Define Device* step):

```
CA View EXPO --- CA Deliver Reprint Attributes --- Row 00001 of
Command ===>                                    Scroll ===> PAGE

  ID     ---> reportid
  Job    ---> job       Jobid  ---> jobid

  Print All Distids ===> Y

Distribution Specifications:
    Sel Grp Distid                          Num Out Dest
            distid                          1    N  disk
```

Press enter, PF3, and enter. If this is an online reprint the *Sysout queued* message is displayed on the reprint results panel:

```
CA View EXPO —---- CA Deliver Reprint Results ------ Row 00001 of
Command ===>                                      Scroll ===> PAGE

  ID     ---> reportid
  Job    ---> job       Jobid  ---> jobid

Distribution Specifications:
         Grp Distid              Message
         distid              Sysout queued for external printing
```

The sample program eliminates the Deliver banner.

Use of EXP Mode:

Select the report with the P (on-line reprint) or J (batch reprint) line command. On the Deliver Reprint Attribute Panel change DEST to *disk* (this is the 8 character device name chosen in the 'Define device' step):

```
CA View EXP ----- CA Deliver Reprint Attributes ------------
Command ===>

  ID     ---> reportid
  Job    ---> job       Jobid  ---> jobid

  *------------- Primary -------------*
  |  BANNER  ===>                     |   BANNER  ===>
  |  CLASS   ===>                     |   CLASS   ===>
  |  DEST    ===> disk                |   DEST    ===>
  |                                   |
  *-----------------------------------*
```

Press enter. The appropriate message is displayed. The sample program eliminates the Deliver banner.

Use of Batch for SAR Reports

Add the DEST=DISK parameter to other /PRINT control statement parameters in the batch job:

```
//         JOB
//STEP1    EXEC PGM=SARBCH
//STEPLIB  DD  DISP=SHR,DSN=.........CVDELOAD
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD *
/DBASE NAME=...db_hlq...
/PRINT ID=..reportid.. DEST=DISK
/*
//
```

SARBCH displays the following message in the SYSPRINT dataset:

```
SARBCP28  Sysout queued for external print
```

The sample program displays the following message in the job log:

```
SARXPD02 Report queued to dataset: ...dataset_name...
```

Use - Batch - EXP Reports:

Add the DISK sub-parameter to DIST= parameter and other /EPRINT control statement parameters in the batch job:

```
//         JOB
//STEP1    EXEC PGM=SARBCH
//STEPLIB  DD  DISP=SHR,DSN=.........CVDELOAD
//SYSPRINT DD  SYSOUT=*
//SYSIN    DD *
/DBASE NAME=...db_hlq...
/EPRINT ID=..reportid.. DIST=((..distid..)/DISK/)
/*
//
```

SARBCH displays the following message in the SYSPRINT dataset:

```
SARSPT86 Sysout queued for external printing, Dist=... at DISK
```

The sample program displays the following message in the job log:

```
SARXPD02 Report queued to dataset: ...dataset_name...
```

Dataset name and file Specifications:

The sample program creates a file with a dataset name as follows:

```
userid.reportid.Dyyyyddd.Thhmmsss
```

Where

userid

is the logged on or batch User Id

Reportid

is 1 to 2 level qualifier equal to a maximum of 16 characters of the report id. Special characters are translated to a dollar sign ($) and any level starting with a numeric character is prefixed with a dollar sign ($).

Examples:

Report ID

ACCOUNT

ACCOUNTNEW

BUDGET2007

2007VACTION

GENLEDGER-A01

Data set name level(s)

ACCOUNT

ACCOUNTN.EW

BUDGET20.$07

$2007VAC.TION

GENLEDGE.R$A01

Dyyyyddd

'D' followed by the four-character year and the three-character Julian day.

Thhmmsss

T' followed by the two-character hour, two character minute, and three-character seconds displayed in hundredths.

The file is Variable Blocked w/Machine Carriage Control Characters (VBM). The Logical Record Length (LRECL) is the same as the archived report. The Block Size (BLKSIZE) is approximately equal to (18452 / LRECL). The SPACE allocation is equal to the Number of Lines in the archived report with the RLSE sub-parameter to release unused space allocations.

3800 Printer Attributes

CA View captures and archives information on the 3800 printer attributes for SYSOUT produced under the JES2 job entry subsystem. However, under the JES3 job entry subsystem, this information is not readily available to CA View and is not archived with the SYSOUT.

/*OUTPUT JES2 Control Statement

CA View does not directly support the /*OUTPUT JES2 control statement because the parameters on the statement are kept on the JES2 spool volume and are not available to CA View. Instead, CA View obtains the print attributes for a report from the internal representation of the DD and OUTPUT JCL statements (that is, from the JFCB, SIOT, and SWB control blocks).

Note: As CA View does not use the /*OUTPUT control statement, JES2 can still apply the statement to a report DD statement that CA View dynamically allocates. Specifically, JES2 applies a /*OUTPUT statement when the DD statement, that CA View dynamically allocates, contains a forms name equal to the code identifier on the /*OUTPUT control statement. When applying the /*OUTPUT statement, parameters are either added or replaced on the DD statement.

//*FORMAT JES3 Control Statement

CA View does not directly support the //*FORMAT JES3 control statement because the parameters on the statement are kept on the JES3 spool volume and are not available to CA View. Instead, CA View obtains the print attributes for a report from the internal representation of the DD and OUTPUT JCL statements (that is, from the JFCB, SIOT, and SWB control blocks).

Note: Although CA View does not use the //*FORMAT control statement, JES3 can still apply the statement to a report DD statement that CA View dynamically allocates. Any nonspecific //*FORMAT statement (for example, the //*FORMAT statement contains DDNAME=) is applied; however, only those parameters not specified by CA View to dynamically allocate the DD statement are used. However, it is unlikely, that any specific //*FORMAT statement (for example, the //*FORMAT statement contains DDNAME=*ddname*) is applied, because the operating system generates the DDNAME of the dynamically allocated DD statement.

//OUTPUT JCL Statement

CA View extracts print attributes from //OUTPUT statements and dynamically creates //OUTPUT statements as necessary to produce reports, following the same rules the operating system uses for overrides.

Note: If a SYSOUT DD statement references more than one //OUTPUT statement, the product only uses the first statement to obtain the print attributes; the other statements are ignored.

Specifically, the product extracts print attributes for the following //OUTPUT parameters:

ADDRESS
BUILDING
BURST
CHARS
CKPTLINE
CKPTPAGE
CKPTSEC
CLASS
COLORMAP
COMPACT
COMSETUP
CONTROL
COPIES
COPYG
DATACK
DDNAME
DEPT
DEST
DPAGELBL
DUPLEX
FCB
FLASH
FORM
FORMDEF
FORMLEN
FSSDATA
GEN
HOLD
ID
INTRAY
LINECT
MODIFY
NAME
NOTIFY
OFFSETXB
OFFSETXF

Recovery Data Set

The CA View recovery data set is used by the archival started task and during the recovery process to maintain and obtain information on the primary tapes used in the backup process. The SARRECV DD statement references the data set in the started task JCL for the archival task and in the batch JCL for the SARDBASE and SARRCOV utilities.

Note: The data set must reside on a direct access volume. Because the data set is used to recover the CA View database, do not place the recovery data set on the same volumes containing data sets for the CA View database.

Do not allocate the data set with DCB attributes. Only one track can be allocated for this data set.

Example

The following job is submitted to create the recovery data set:

```
//CREATE   JOB ACCOUNT,PROGRAMMER
//IEFBR14  EXEC PGM=IEFBR14
//DD1      DD  DSN=VIEW.SARRECV,DISP=(,CATLG),
//         UNIT=SYSDA,VOL=SER=VOL380,SPACE=(TRK,1)
```

System Extensions (SARXTD)

The product has been designed to function without any modifications to operating system code. However, some features are so closely tied to the operating system that they could not be implemented if the policy of no system modifications were strictly adhered to. These features are available through CA View system extensions.

To implement a system extensions feature, CA View "front ends" the appropriate operating system function by dynamically interfacing to the running system (for example, changing an address in the SVC table). Because the change is dynamic, no permanent change is ever made to operating system code. Choosing to implement the features in this manner has two major benefits:

- The features can be activated or deactivated when required.
- CA View does not affect the operating system maintenance.

Currently, only three features require implementation using system extensions:

- Security of CA View data sets
- Automatic report archival
- Capture of job accounting data

If you require any of these features, activate system extensions on each processor at your site.

The system extension task is not a continuously running task and only executes long enough to interface dynamically to the system; then it terminates.

If the data set security feature of system extensions restricts access to the CA View LOAD library, the CA View LOAD library cannot be used in a STEPLIB or JOBLIB DD statement of any executable job.

You cannot use the CHKPT macro or the CHKPT=EOV JCL statement with SARXTD alone. Use them with CA Deliver.

Note: For more information about archival, see Automatic Report Archival in the chapter "Archival."

Activating System Extensions

To activate the system extensions on a processor (or to reactivate those features that have been deactivated), issue the following command:

```
S SARXTD [,PARM='parameters']
```

Where

parameters specify one or more optional parameters used to override those in the start procedure JCL.

Note: For more information about activating system extensions, see System Extensions Parameters.

Note the following information:

- Add the S SARXTD command to member COMMND*xx* of SYS1.PARMLIB to start the system extensions task automatically at each IPL.
- The data set security feature is activated only when its parameter is specified in the parameter field used to start system extensions.
- The automatic report archival feature is activated only when its parameters are specified in the parameter field used to start system extensions.
- The accounting data capture feature is activated only when the SARACT DD statement for the accounting file is included in the JCL procedure used to start system extensions.
- You can use the following dummy DD statements with the SARXTD program:

  ```
  //NOSVC99  DD DUMMY
  ```

  Dynamic deallocation (SVC 99) of SYSOUT data sets is bypassed during subsystem close processing. The result causes the SYSOUT data sets produced by automatic report archival to be unavailable to the CA View started task until job termination. If this DD statement is not present, each report is available when it is closed, potentially causing a separate entry for it in the CA View database.

  ```
  //NOTERM   DD DUMMY
  ```

  The SARXTD started task remains active and responds to MODIFY commands as they are received through the operator console. The started task terminates, regardless of whether this DD statement is present, when all system extensions have been deactivated.

  ```
  //SUBSYSn  DD DUMMY
  ```

  More than one set of system extensions can be implemented concurrently by specifying a unique subsystem identifier (*n*) in this DD statement.

  ```
  //NOCONF   DD DUMMY
  ```

The SARXTD started task does not issue message SARXTD01 to authorize changes to SARXTD.

If you want to use multiple SARXTDs, be aware of the following information:

- If you want to use job accounting in a single CPU environment, accounting is done in only one SARXTD. If more than one SARXTD is used, accounting data is double posted.
- If you want to use job accounting in a multiple-CPU environment, the accounting data set can be shared only across systems within the same multi access spool complex. Furthermore, SARXTD records accounting data only for jobs run on a CPU on which you have requested SARXTD accounting. Therefore, to record accounting data on all CPUs, run SARXTD accounting on all CPUs.
- For automatic report archival, processing is performed based on the alphanumeric order of the subsystem identifier. For example, if SUBSYS2 and SUBSYS6 request automatic archival for the same SYSOUT, only the SUBSYS2 request is honored—even if SUBSYS2 was started after SUBSYS6.

Deactivating System Extensions

Occasionally, you can perform maintenance on a CA View data set (for example, to reformat the accounting file). In this instance, one or more or all of the features of the system extensions can be deactivated on a processor.

Be sure that security is not compromised when the security feature is deactivated on a processor. Also, be aware that when the accounting feature is deactivated on a processor, no accounting data is captured for jobs beginning execution on that processor.

The following commands deactivate CA View system extensions:

S SARXTD,PARM=OFF

Deactivates all features.

S SARXTD,PARM=OFFSEC

Deactivates only the data set security feature.

S SARXTD,PARM=OFFARA

Deactivates only the automatic report archival feature.

S SARXTD,PARM=OFFACT

Deactivates only the job accounting capture feature.

System Extensions Parameters

The parameter field on the EXEC statement in the start procedure JCL (or specified as an override on the start command for starting system extensions) passes parameters for the data set security and automatic report archival features of the system extensions.

The format of the parameter field is:

PARM='*index*,*jobclass/sysclass/archclass/archdest/archform/archmedia*,'

Where

Index

Specifies the high-level index (one or more qualifiers are separated by periods with a maximum length of 17 characters) of the CA View data sets for which data set security is activated

If you do not want to activate the data set security feature, omit the index from the parameter field (note that *index* is positional and its absence must be indicated by coding the comma that follows).

After the data set security feature is activated, any program (other than CA View) that has not been marked in the program properties table to bypass password protection is restricted from accessing any data set whose name begins with the specified high-level index.

Where

jobclass/sysclass/archclass/archdest/archform/archmedia

Specifies a set of specifications used to select and archive reports for the automatic archival feature. You can code up to four sets of specifications in the parameter field (indicated by the ellipses). A set of specifications is comprised of six elements, each of which is separated from the next by a slash "/." The meaning of each element is described as follows:

jobclass

Specifies 1 to 8 job execution classes for which reports are automatically archived

You can specify an asterisk to indicate all job classes.

sysclass

Specifies 1 to 8 SYSOUT classes for which reports are to be automatically archived

You can specify an asterisk to indicate all SYSOUT classes.

archclass

You can use the SYSOUT class to create an additional SYSOUT data set for the report that is spun-off for archival

You can omit the element or can specify an asterisk to indicate that the default SYSOUT class (MSGCLASS for the job) is used to create the spin-off data set.

archdest

Specifies the destination used to create an additional SYSOUT data set for the report that is spun-off for archival

You can omit the element or can specify an asterisk to use the system default destination.

archform

You can use the forms name to create an additional SYSOUT data set for the report that is spun-off for archival

You can omit the element or can specify as an asterisk to use the system default forms name.

archmedia

Specifies the media used to archive the SYSOUT

Specify D to archive the SYSOUT to disk, or T to archive the SYSOUT directly to tape.

If omitted, the SYSOUT is archived to disk.

Notes:

- Specify the same combination of *archclass*, *archdest*, and *archform* on the SARINIT parameter CLSL=, DEST=, and FORM= to implement automatic report archival.
- For more information about the examples of coding the automatic report archival specifications, see Automatic Report Archival in the chapter "Archival."

Chapter 4: Online Interface Administration

Overview

This chapter provides information about the CA View online retrieval including:

- CA View startup under a particular online system
- CA View security and online systems

This section includes information about the operation of the CA View cross-memory task, which controls the following:

- CICS pseudo-conversational option
- VTAM online retrieval
- IMS online retrieval
- ISPF/cross-memory
- TSO/cross-memory
- CA Roscoe Interactive Environment
- CA Roscoe/cross-memory

Online Retrieval Specifications

You can access the online retrieval facility of CA View from many different terminal management systems (such as TSO, ISPF, and CICS) as separate options.

The display screens, input commands, and selection codes that are used by online retrieval are consistent under most online management systems. Exceptions are presented in the sections that follow. In addition, these sections describe the methods for invoking the various online retrieval options and implementation of security.

You can display the CA View logo when entering the CA View system using the LOGO initialization parameter. To access the CA View Primary Selection panel from the logo screen, press Enter.

Native TSO

Invoke the native TSO online retrieval facility using this command:

```
SARTSO high-level-name
```

where:

high-level-name

Specifies the high-level name of the database.

Note: Any references to *the database* in this chapter refer to the CA View database unless otherwise noted.

For example:

```
SARTSO VIEW.SYSTEM1
```

To simplify the invocation, you can create a CLIST containing the SARTSO command.

Note: For more information about implementation of internal and external security, see Logon Security in the chapter "Configuring."

TSO/Cross-Memory Services Interface

Invoke the TSO/cross-memory services online retrieval facility using this command:

```
EC1XMTSO high-level-name
```

where:

high-level-name

Specifies the high-level name of the database.

For example:

```
EC1XMTSO VIEW.SYSTEM1
```

To simplify the invocation, you can create a CLIST containing the EC1XMTSO command.

ISPF

After installing the ISPF online retrieval feature, you can invoke CA View online retrieval by entering a selection code in one of the option panels.

As an alternative, you can invoke the ISPF online retrieval facility from TSO with the following command:

From ISPF:

```
ISPSTART PGM(SARSPF) PARM(high-level-name) NEWAPPL(SAR)
```

where:

high-level-name

Specifies the high-level name of the database.

For example:

```
ISPSTART PGM(SARSPF) PARM(VIEW.SYSTEM1) NEWAPPL(SAR)
```

To simplify the invocation, you can create a CLIST containing the ISPF or ISPSTART command.

Note: If you are in a CA View split-screen mode, the CA View session *must* be in the top half of the split screen and at least four lines *must* be visible.

ISPF/Cross-Memory Services

After installing the ISPF/cross-memory services online retrieval feature, you can invoke CA View online retrieval by entering a selection code in one of the option panels.

As an alternative, you can invoke the ISPF/cross-memory services online retrieval facility from TSO with the following commands:

- From SPF:

  ```
  ISPF PGM(EC1XMSPF) PARM(high-level-name)
  ```

- From ISPF:

  ```
  ISPSTART PGM(EC1XMSPF) PARM(high-level-name) NEWAPPL(SAR)
  ```

  where:

  high-level-name

  Specifies the high-level name of the database.

  For example:

  ```
  ISPSTART PGM(EC1XMSPF) PARM(VIEW.SYSTEM1) NEWAPPL(SAR)
  ```

  To simplify the invocation, you can create a CLIST containing the ISPF or ISPSTART command.

CA Roscoe

Invoke the CA Roscoe online retrieval facility directly from CA Roscoe with this command:

```
CALL SARROS 'high-level-name'
```

where:

high-level-name

Specifies the high-level name of the database.

For example:

```
CALL SARROS 'VIEW.SYSTEM1'
```

To simplify the invocation, you can create an RPF containing the CALL command.

CA Roscoe/Cross-Memory Services

Invoke the CA Roscoe online retrieval facility directly from CA Roscoe with this command:

```
CALL EC1XMROS 'high-level-name'
```

where:

high-level-name

Specifies the high-level name of the database.

For example:

```
CALL EC1XMROS 'VIEW.SYSTEM1'
```

To simplify the invocation, you can create an RPF containing the CALL command.

CICS (Cross-Memory)

Invoke the CICS online retrieval facility from CICS by entering a predefined transaction identifier. The transaction identifier is established as part of the installation instructions.

Alternately, you can invoke CA View from a user-written CICS menu system.

Note: For more information about CICS, see Installing the CICS Pseudo-Conversational Option in the *Installation Guide*.

Native VTAM

In general, you install the native VTAM online retrieval feature so that it requires only a one-word command to log on to CA View online retrieval. The installation instructions explain how to set up this command to VTAM. Alternatively, you can use the standard VTAM LOGON command to invoke CA View online retrieval as follows:

```
LOGON APPLID(applid) DATA(high-level-name)
```

where:

high-level-name

Specifies the high-level name of the database and *applid* specifies the application ID.

For example:

```
LOGON APPLID(SARVTAM) DATA(VIEW.SYSTEM1)
```

With the logon format cross-memory parameter (LGNFMT), you can specify the logon data that you expect.

Note: For more information about the parameter, see the *Installation Guide*.

IMS Online Interface Transaction Specification

Start SARXMS (a cross-memory service task). The IMS/DC transaction program is conversational and starts when you enter the IMS/DC transaction and terminal type.

Use the following table:

Transaction	Terminal Type
M2	3278-224 x 80 Default screen size
M2H	3278-224 x 80 Highlighting
M2X	3279-224 x 80 COLOR Highlighting
M2C	3279-224 x 80 COLOR
M3	3278-332 x 80
M3H	3278-332 x 80 Highlighting
M3X	3279-332 x 80 COLOR Highlighting
M3C	3279-332 x 80 COLOR
M4	3278-443 x 80 Highlighting

Transaction	Terminal Type
M4H	3278-443 x 80 Highlighting
M4X	3279-443 x 80 COLOR Highlighting
M4C	3279-443 x 80 COLOR
M5	3278-527 x 132
M5H	3278-527 x 132 Highlighting
M5X	3279-527 x 132 COLOR Highlighting
M5C	3279-527 x 132 COLOR
M6	329062 x 80
M6H	329062 x 80 Highlighting
M7	329031 x 160
M7H	329031 x 160 Highlighting
M8	329062 x 160
M8	329062 x 160 Highlighting

Note: CA View VTAM print is not valid through IMS Online.

Operating the Cross-Memory Task

The cross-memory task executes as the application for the cross-memory online retrieval option and is used for the following:

- The CICS pseudo-conversational option
- VTAM online retrieval
- IMS online retrieval
- ISPF/cross-memory
- TSO/cross-memory
- CA Roscoe/cross-memory

The standard procedure for the cross-memory task is located in member CBROSDRV in CAI.CVDEPROC.

Starting the Cross-Memory Task (START)

The cross-memory task is started with the following operator command:

```
S SARXMS
```

To assign a reusable ASID to the cross-memory task when it is started, issue the following operator command:

```
S SARXMS,REUSASID=YES
```

Note: The system honors a request for a reusable ASID only if REUSASID(YES) is specified in the parmlib member DIAGxx. Otherwise, the system assigns an ordinary ASID.

The PARM field in the SARXMS PROC specifies an eight-character internal name for the system, the maximum number of users allowed, the transaction timeout limit, and a Cancel Connection field.

Immediate Termination (SHUTDOWN)

The cross-memory task is immediately terminated with the operator command:

```
F SARXMS,SHUTDOWN
```

This command immediately terminates all active user sessions.

Normal Termination (QUIESCE)

A QUIESCE command terminates the cross-memory task when the last user ends his or her session. If no users are in session when the cross-memory online task is quiesced, the task terminates immediately.

The cross-memory task is quiesced with the operator command:

```
F SARXMS,QUIESCE
```

or

```
P SARXMS
```

Canceling Users (CANCEL)

This operator command cancels the users from the cross-memory task:

```
F SARXMS,CANCEL  [ALL]
                 [CONID=]
                 [UID#=]
                 [USERID=]
                 [SARDB=]
                 [RMODB=]
                 [INBDB=]
```

where:

CANCEL ALL

Cancels all users.

CANCEL CONID='connectid1'
,'connectid2',...'
connectidN'<

Cancels a specific user using the 20-character connect-ID.

A user's connect-ID is displayed with the LIST command.

CANCEL UID#=nnn,nnn,nnn

Cancels a specific user using control block number.

A user's control block number is listed with the LIST command.

CANCEL USERID=userid1,
userid2,userid3

Cancels a specific user by CA View user ID.

CANCEL SARDB=database.name

Cancels all users accessing this CA View database.

CANCEL RMODB=database.name

Cancels all users accessing this CA Deliver database.

CANCEL INBDB=lservid

Cancels all users accessing this CA Balancing Report Control (CA Balancing) database.

Suspending Additional Logons (SUSPEND)

Use the operator command to suspend additional user logons from cross-memory tasks :

```
F SARXMS,SUSPEND {ALL|SARVTAM|RMOVTAM|XMS|VTAM|SARDB=RMODB=|INBDB=}
```

You can SUSPEND ALL, SARVTAM, RMOVTAM, XMS, or VTAM (both SARVTAM and RMOVTAM) tasks.

If the VTAMPASS initialization parameter is set to YES, the VTAM interface attempts to pass the user to another task.

You can also stop logons to a particular CA View, CA Deliver, or CA Balancing database with the SARDB=, RMODB=, and INBDB= parameters. If no users are logged on to the database, it is deallocated from the cross-memory region.

Resuming Acceptance of New Logons (RESUME)

This operator command resumes the acceptance of new logons to the cross-memory task:

```
F SARXMS,RESUME {ALL|SARVTAM|RMOVTAM|INBVTAM|XMS|VTAM|SARDB=|RMODB=|INBDB=}
```

You can RESUME ALL, SARVTAM, RMOVTAM, INBVTAM, VTAM (all VTAMs), or XMS tasks.

You can also resume acceptance of logons to a particular CA View, CA Deliver, or CA Balancing database with the SARDB=, RMODB=, and INBDB= parameters.

Closing Cross-Memory Tasks (CLOSE)

The CLOSE command closes the VTAM ACB and users are immediately terminated. Logons are not accepted until an OPEN command is issued, reopening the VTAM ACB. CLOSE overrides the VTAMPASS parameter in that users attempting to sign on are not passed to another cross-memory task. The command is:

```
F SARXMS,CLOSE {ALL|SARVTAM|RMOVTAM|INBVTAM|VTAM}
```

You can CLOSE ALL, SARVTAM, RMOVTAM, INBVTAM, VTAM (all VTAMs), or XMS tasks.

Reopening Cross-Memory Tasks (OPEN)

The OPEN command reopens the ACB for the VTAM interface after a CLOSE command has been issued. The command is:

```
F SARXMS,OPEN {ALL|SARVTAM|RMOVTAM|INBVTAM|VTAM}
```

You can OPEN ALL, SARVTAM, RMOVTAM, INBVTAM, VTAM (all VTAMs), or XMS tasks.

Listing Statistics (LIST)

This operator command obtains a listing of information that relates to the cross-memory sessions:

```
F SARXMS,LIST  [DATABASE]
               [STATUS]
               [USERS]
               [USERID=]
               [UID#=]
               [CONID=]
               [SARDB=]
               [RMODB=]
               [INBDB=]
```

where:

LIST DATABASE{,ALL}

Displays the cross-memory system status and active databases for this task; ALL for all tasks.

LIST STATUS{,ALL}

Displays the cross-memory system status of this task; ALL for all tasks.

LIST USERS{,ALL|,ACTIVE|,INACTIVE}

Displays the status of ALL, ACTIVE, or INACTIVE users.

The default is ACTIVE.

LIST USERID='userid1',
'userid2','userid3'

Displays the status of a specific user; identified by CA View user ID.

LIST UID#=nnn,nnn,nnn

Displays the status of a specific user, identified by control block number.

LIST CONID='connectid1',
'connectid2','connectid3'

Displays the status of a specific user; identified by the 20-character connect-ID.

LIST SARDB=databasename

Displays all user sessions using the specified CA View database.

LIST RMODB=databasename

Displays all user sessions using the specified CA View database.

LIST INBDB=lservid

Displays all user sessions using the specified CA Balancing database.

Changing Cross-Memory Parameters Online (CHANGE)

Use the CHANGE command to modify the following cross-memory initialization parameters online:

CANCEL
LONGWAIT
USERMAX
VTAMPASS

Important! You cannot increase USERMAX above the value it had when SARXMS starts, and cannot set VTAMPASS from NO to YES; the region must be recycled.

To change the USERMAX parameter, enter the following:

```
F SARXMS,CHANGE USERMAX=nnn
```

Defining Multiple VTAM Cross-Memory Regions

The *Installation Guide* contains the steps required to follow to install the cross-memory task. (VTAM online retrieval runs under the cross-memory task.) The following guidelines define multiple VTAM/cross-memory regions.

Regions Grouped by Operating System Subsystem Name

Multiple VTAM regions are grouped under a four-character operating system subsystem name. The SUBSYS= cross-memory parameter specifies the subsystem name at the startup time of the cross-memory region. Unless you specifically want to define separate multiple groups of VTAM regions, use the default SUBSYS parameter.

If you specify SUBSYS=, all VTAM regions grouped under the same SUBSYS *must* be started with the same release and PTF level of the CA View load libraries.

Important! If you change your release of CA View and you specified a value in SUBSYS=, you must change the SUBSYS= cross-memory parameter and IPL to prevent CSA damage. The control block sizes for CA View are release dependent and can cause serious problems if you do not specify the correct release. If you use the default parameter for SUBSYS, this problem does not occur because each release of CA View defaults to the appropriate SUBSYS name.

Regions Separated by REGIONIDs and APPLID

Each separate VTAM region attached to a SUBSYS *must* have a unique REGIONID.

You must specify the REGIONID as the first parameter of the PARM= statement in the start procedure JCL for the cross-memory online retrieval task. A region does not start if another region with the same REGIONID is already running for the same SUBSYS.

Each separate VTAM region attached to a SUBSYS *must* have a unique VTAM APPLID.

The USSTAB (defined in Step 2 of Installing the VTAM Online Retrieval Option in the *Installation Guide)* or your session manager passes all VTAM logon requests to the Primary VTAM APPLID. CA View reroutes requests to other regions if the Primary is full or marked as unavailable. Each VTAM APPLID *must* have AUTH=(ACQ,PASS) and you must specify the cross-memory parameter VTAMPASS=YES for all of the regions.

Checking the Status of Multiple Regions

Enter the LIST STATUS operator command with the ALL parameter to display the status of all regions in the same SUBSYS group. The command is as follows:

```
F SARXMS,LIST STATUS,ALL
```

Specifying the Parameters: SYSIN Statements

Specify as many of the parameters as possible with SYSIN statements to manage multiple regions easily.

The REGION parameter is positional and must be specified in the PARM= statement of the cross-memory task JCL. Specify the following parameters in the PARM= statement:

```
SUBSYS=
SARAPPL=
XMS=
```

You can specify the rest of the parameters with SYSIN DD statements. If you place the SYSIN statements in a PDS member, you can alter the parameters without shutting down the cross-memory region.

Note: The parameters do not take effect until the next time the region is shut down and restarted.

Chapter 5: Archival

This section contains the following topics:

Archival of SYSOUT Using the SARSTC Started Task (see page 181)
Additional FSS/VIEW Archival (see page 193)
AFP Report Archival (see page 193)
PDF Document Archival (see page 199)
Xerox Report (XPPS) Archival (see page 205)
Exceptional Condition Checking (System and User-Specified Conditions) (see page 206)
Operating the Archival Task (see page 215)
Operate the Optical Migration Subtask (see page 220)
Run Multiple Archival Tasks (see page 221)
Automatic Report Archival (SARXTD) (see page 221)
Batch Job Execution of the Archival Task (see page 222)

Archival of SYSOUT Using the SARSTC Started Task

The started task SARSTC performs SYSOUT archival. SARSTC is started at system IPL time and remains active until the operating system is brought down. SARSTC uses the standard subsystem interface (SAPI) to JES2 or JES3 to request SYSOUT for archival. It remains in a wait state during the periods when no SYSOUT is available for archival.

Archival Selection Criteria

The initialization parameters shown in the following table are available for specifying the criteria used for selecting SYSOUT for archival.

CLSL

Specifies a character string made up of one to eight SYSOUT classes.

DEST

Specifies the Destination.

FORM

Specifies the Forms name.

You can specify each parameter. If you specify more than one parameter, the SYSOUT *must* meet all the specifications for it to be archived.

For example, suppose you specify MSGCLASS=P on the JOB statements for all production jobs at your site, and the reports produced by the jobs are output to SYSOUT classes C, D, E, F, and G. To archive the production JCL listings, specify:

```
CLSL=P
```

To archive the production reports, specify:

```
CLSL=CDEFG
```

If you wanted to archive only production reports destined to be printed at remote 10, specify:

```
CLSL=CDEFG
DEST=RMT10
```

CA View receives its SYSOUT from JES similar to that of a printer. If a printer is set with the same attributes as the CA View archival criteria, the printer and CA View compete for SYSOUT from JES. Therefore, ensure that none of your printers is set to the CA View archival criteria; otherwise, some of your SYSOUT is printed directly, rather than passed to CA View for archival.

Record Length

Logical records for reports processed by the product cannot exceed 32752 for fixed-length records or 32756 for variable-length records and also includes the carriage control character.

Viewing AFP Reports

You have several options for viewing AFP reports through the online system. You can:

- View the report as printed, with CA Output Management Document Viewer.
- View the text portions of the report on a 3270 terminal, by selecting the report.

Method of Operation and the Backup Cycle

The CA View archival started task receives SYSOUT from the job entry subsystem using the standard subsystem interface (SAPI).

CA View receives SYSOUT from JES, writes it out as its current disk generation to its database, and records its location and characteristics in a master index that also resides in its database. At specified intervals, it automatically performs a backup cycle while continuing to archive SYSOUT. Two types of backup cycles can be performed:

- The *standard backup cycle* increments the current generation number by one, so that archival of SYSOUT continues to a new generation.
- The *interim backup cycle* does not increment the generation number or start the microfiche task. After an interim backup, archival of SYSOUT continues to the same generation.

Both types of backup cycles are asynchronous, that is, the backup cycle executes concurrently with archival of SYSOUT.

The backup cycle consists of the following list:

- Creating a new current generation (standard backup only)
- Backing up SYSOUT not currently on tape media
- Purging entries for "old" SYSOUT from the master index
- Cleaning up and recovering space for SYSOUT groups that were
  - migrated to tape status
  - loaded temporarily to disk
  - created actively before a system crash or abend
- Backing up the master index to tape
- Updating the CA View recovery file
- Un-catalog tape data sets no longer required
- Starting the microfiche task (standard backup only)

In addition to the automatic initiation of the backup cycle by CA View, you can initiate a backup cycle at any time using the operator commands.

A tape is considered expired, when:

- There are no active reports, that is, all reports have expired
- There are no active Master Index backups, that is, the difference between the Current Generation Number and the Generation Number of the Master Index backups on the tape is greater than the number of index generations to be saved (initialization parameter NGENI=)
- The tape is at least five days old.

The Backup Cycle Report (SARBKLST) lists the fully-qualified tape dataset names and the volume serial number containing the backup data. The volume serial number shown on the report represents the current volume serial number. This number can differ from the original volume serial number if the tape was copied to a new volume with the Tape Copy Utility (SARTCP). The volume serial number can also be shown as "*NOCAT" if the dataset is no longer cataloged.

Reports

The SARBKLST DD statement instructs CA View to automatically create the following report list:

- All reports that were backed up to tape
- All reports that were deleted from the database
- All archival and DR backup tapes that were uncataloged. The SARDRLST DD statement produces a list of all reports backed up to the DR tape.

Note: Archiving the SARBKLST report through CA Deliver using direct archival to the CA View database can cause S138 allocation abends during the CA View backup cycle.

If the SARBKLST report in the CA View started task is defined to CA Deliver, and CA Deliver is coded to archive this report by direct archival to the CA View database, S138 allocation errors can occur during the CA View backup cycle. This result depends on system activity, dispatch priorities, and so on. To avoid this error, do not archive the SARBKLST report direct from CA Deliver to CA View. Define the SARBKLST report to CA Deliver with a new ARCH*x* parameter that sends the archive copy to the JES spool, and then CA View archives the SARBKLST report from the JES spool.

Also, define the SARBKLST report if you are archiving into the same CA View that produced it, so that CA Deliver picks it up post-spool. That is, direct the output to the CA Deliver NETCLSL/NETDEST/NETFORM. Attempting to handle it in pre-spool (JOBCLSL/SYSCLSL) results in SARSTC07 archive failures.

The following is an example of a SARBKLST report:

```
11/10/2013 18:37:46                CA View Output Archival and Viewing (12.1)                          PAGE     1
SARBKLST  VIEW.SYSTEM1                   System Archival Task – Backup List                      Standard Backup of Gen 00026
Seq=00047 Vol=428119 Duplex=*NONE* Storgrp=DEFAULT Dsname=VIEW.SYSTEM1.SARTAPE.0000047
Id                               Jobname  Jobid     Gen  Seq  Arc Date   Arc Time   Loc  Lines Pages   Dasd Blks File     Time
-------------------------------  -------- --------  ---  ---  ---------- --------  ----  ----- -----   --------- ---- --------
REPORT1                          COOCH03B JOB01396   25   12  11/10/2013 17:29:42  DISK  12600   200         265    1 18:37:46
REPORT1                          COOCH03B JOB01395   25   11  11/10/2013 17:29:39  DISK  12600   200         265    2 18:37:48
REPORT1                          COOCH03B JOB01394   25   10  11/10/2013 17:29:35  DISK  12600   200         265    3 18:37:49
REPORT1                          COOCH03B JOB01392   25    9  11/10/2013 17:29:32  DISK  12600   200         265    4 18:37:51
REPORT1                          COOCH03B JOB01391   25    8  11/10/2013 17:29:28  DISK  12600   200         265    5 18:37:52
REPORT1                          COOCH03B JOB01187   25    3  11/10/2013 16:17:45  DISK  12600   200         265    6 18:37:54
Total reports backed up to tape = 6


_____________________________________________________________________________________________________________________________
```

```
11/10/2013 18:37:46              CA View Output Archival and Viewing (12.1)                          PAGE     2
SARBKLST  VIEW.SYSTEM1    Sysout Archival Task - Reports and Resource Groups Deleted         Standard Backup of Gen 00026
Id                               Jobname  Jobid    Gen  Seq   Arc Date   Arc Time   Loc  Lines Pages   Dasd Blks File     Time
-------------------------------  -------- -------- ---- ----  ---------- --------  ----  ----- -----   --------- ---- --------
D68D50AE                         SARFSSCC STC01203 *PPS RSRC* 11/10/2013 17:44:11   DISK   227    70                1 18:37:56
F268B60C                         SARFSSCC STC03326 *PPS RSRC* 11/10/2013 15:57:30   DISK   157    47                2 18:37:56
779AA128                         SARFSSCC STC01181 *PPS RSRC* 11/10/2013 15:58:42   DISK   100    23                1 18:37:56
Total reports and resource groups deleted = 3

_____________________________________________________________________________________________________________________________


11/10/2013 18:37:46              CA View Output Archival and Viewing (12.1)                          PAGE     3
SARBKLST  VIEW.SYSTEM1       Sysout Archival Task – Backup List                   Standard Backup of Gen 00026
Id                               Jobname  Jobid    Gen  Seq   Arc Date   Arc Time   Loc  Lines Pages   Dasd Blks File     Time
-------------------------------  -------- -------- ---- ----  ---------- --------  ----  ----- -----   --------- ---- --------
Seq=00047 Vol=428119 Duplex=*NONE* Storgrp=DEFAULT Dsname=VIEW.SYSTEM1.SARTAPE.0000047
-----------------------------------------------------------------------------------------------------------------------------
Master index backed up at file 7 on Vol 428119

_____________________________________________________________________________________________________________________________


11/10/2013 18:37:46                CA View Output Archival and Viewing (12.1)                          PAGE     4
SARBKLST  VIEW.SYSTEM1                  Sysout Archival Task – Tapes Uncataloged                Standard Backup of Gen 00026

Tape Dataset Name                           Volser
------------------------------------------  ------
VIEW.SYSTEM1.SARTAPE.T0000021               434675
VIEW.SYSTEM1.SARTAPE.T0000022               410838
VIEW.SYSTEM1.SARTAPE.T0000023               434804
VIEW.SYSTEM1.SARTAPE.T0000025               413175
VIEW.SYSTEM1.SARTAPE.T0000026               433066
VIEW.SYSTEM1.SARTAPE.T0000027               425245
VIEW.SYSTEM1.SARTAPE.T0000031               483693
VIEW.SYSTEM1.SARTAPE.T0000032               484218
VIEW.SYSTEM1.SARTAPE.T0000033               482487
VIEW.SYSTEM1.SARTAPE.T0000034               482060
VIEW.SYSTEM1.SARTAPE.T0000039               460308
VIEW.SYSTEM1.SARTAPE.T0000040               478871
```

Backup Status Report

The Backup Status report is produced during a Backup Cycle when a SARBKLST DD Statement is present in the Started Task (SARSTC) JCL.

The following are the four sections of the report:

- Reports backed
- Reports deleted (expired)
- Master Index backup information
- Tapes uncataloged (expired)

Master Index Backup Report Sections

Information pertaining to the Master Index backup is displayed on separate pages. The general format on the page contains:

- Tape sequence number
- Primary tape volume serial number
- Optional duplex tape volume serial number
- Backup generation number
- Primary tape dataset name.

The body of the report contains

- The file sequence number of the Master Index on the primary and optional duplex tapes
- The primary tape volume serial number.

One page is displayed when the Master Index resides on a single tape as shown in the following illustration.

```
11/10/2013 09:23:22                  CA View Output Archival and Viewing (12.1)                                  PAGE     3
SARBKLST  VIEW.SYSTEM1                   Sysout Archival Task – Backup List                    Standard Backup of Gen 000005
Id                              Jobname  Jobid    Gen  Seq   Arc Date   Arc Time   Loc  Lines Pages   Dasd Blks File     Time
------------------------------  -------- -------- ---- ----  ---------- --------  ----  ----- -----   --------- ---- --------
Seq=00009 Vol=264388 Duplex=*264603 Storgrp=DEFAULT Dsname=VIEW.SYSTEM1.SARTAPE.0000009
-------------------------------------------------------------------------------------------------------------------------------
Master index backed up at file 2 on Vol 264388+
```

Multiple pages are displayed when the Master Index resides on more than one tape. Each page header contains:

- Tape sequence number
- Primary tape volume serial number
- Optional duplex tape volume serial number
- Backup generation number
- Primary tape data set name

Archival and Database Space

If CA View runs out of space in its database while archiving SYSOUT, it prompts the operator for a recovery option. The operator can:

- Add additional space to the database while the archival task waits, then request the archival task to retry
- Request the archival task to perform its standard backup cycle and then retry
- Request the archival task to terminate

Archival Generations

The time interval during which CA View logically archives SYSOUT in a group for reference purposes is defined as a generation. A generation can also be defined as the period from one standard backup cycle to the next, because it is the backup cycle that creates a generation. The site has complete control over the beginning and length of time of the generation with the TIME and INTERVAL initialization parameters. For most sites, the interval is 24 hours and comprises the daily production cycle of the site.

Note: You can perform interim backups by specifying the NBACKUP initialization parameter. Automatic interim backups are dependent on the standard backup. If no standard backup is performed, TBACKUP=NO, or DAYS=NNNNNN, no interim backups are performed.

You can suppress a backup cycle for any day of the week with the DAYS initialization parameter. For example, assume that the site is "closed" on Sundays, with no operator on hand to mount tapes for the backup cycle. In this case, the site suppresses the automatic backup cycle on Sundays by setting DAYS=YYYYYYN.

You use the NGEND and NGENT initialization parameters, respectively, to specify the number of generations of SYSOUT maintained on disk and the number maintained on tape. For example, to keep three generations of SYSOUT on disk and 90 generations on tape, specify:

```
NGEND=3
NGENT=90
```

In this example, CA View retains 90 total generations. Immediately after a job runs, three generations of the job are on disk. The most recent generation resides on disk only and the next two generations reside both on disk and tape. The remaining 87 generations reside on tape only. Immediately after a standard backup cycle, only the two most recent generations reside on disk and tape; the remaining 87 generations reside on tape only. The NGENT value includes the NGEND value.

Direct-to-Tape Archival

For large reports, or other SYSOUT for which the site does not require immediate access but for which archival is desired, the site can define from one to eight classes to be archived directly to tape. The initialization parameter used to define direct-to-tape archival classes is TAPECLSL.

For example, if you want to archive all SYSOUT with a form name of VIEW and, of the SYSOUT that is archived, you want any class T or U SYSOUT archived directly to tape with no disk storage being used, specify the following parameters:

```
FORM=VIEW
TAPECLSL=TU
```

Due to the sequential nature of tape, some restrictions exist for SYSOUT archived directly to tape. These restrictions are:

- Exceptional conditions do not cause the automatic printing of the SYSOUT
- The microfiche started task does not process the SYSOUT

For performance reasons, after a SYSOUT data set is selected for archival, a tape drive is allocated. It remains allocated through the next backup cycle or until the archival task is stopped. Alternatively, you can specify the UNLOAD initialization parameter to unload and free the tape drive after each SYSOUT group is archived to tape.

Note: If SYSOUT is being archived to tape when a backup cycle is initiated, archiving is suspended until the backup has been completed.

All direct-to-tape SYSOUT is written to STORGRP0, the default tape storage group. If you specify a group other than STORGRP0 for the SYSOUT, the consolidation program SARPAC honors that group when it processes the tape.

No Archival Option

CA View can process SYSOUT without actually archiving it to any disk or tape file. A site can choose to use this facility for certain classes of SYSOUT to take advantage of the user exits available with the product. For example, a site can create special banner pages for its SYSOUT with CA view, even if there is no archival.

The site can specify from one to eight SYSOUT classes for which no archival is done with the NARCCLSL initialization parameter. The same two restrictions listed for direct-to-tape archival also apply to the no archival option.

Exceptional Condition Processing

During SYSOUT processing, CA View scans for exceptional conditions. The type of conditions that are treated as exceptions are specified in a table of control statements to the archival started task. This table can be updated and refreshed while the product is executing through an operator command. User exit SARSTCUX can also be used to specify exceptional conditions.

The ROUT, DESC, and XPRINT parameters specify the action taken whenever an exceptional condition occurs. A message is issued to the operator identifying the exceptional condition when a nonzero route code is specified. The ROUT and DESC operands specify the route and descriptor codes, respectively.

XPRINT=YES causes the SYSOUT to print automatically whenever an exceptional condition occurs. CA View dynamically allocates a SYSOUT data set.

The default exceptional conditions for which CA View checks are:

- Nonzero condition code
- System or user abend
- JCL error
- Data set cataloging error
- Data set not deleted error
- Operator cancel of allocation request

CA View can also check for a user-specified text string as an exceptional condition in the SYSOUT.

The conditions can be modified using control statements specified earlier in this section.

Printing SYSOUT

You can specify one to eight classes of SYSOUT for automatic printing at time of archival using the PRTCLSL initialization parameter. Any SYSOUT group that is being archived whose class matches one of the classes specified with the PRTCLSL initialization parameter is written back out to SYSOUT by CA View.

When printing SYSOUT, CA View dynamically allocates a SYSOUT data set and writes the archived SYSOUT to it either because its class matches one of the PRTCLSL classes or because XPRINT=YES is specified and an exceptional condition occurs. You can override the original class, destination, and form attributes by using the NEWCLSL, NEWDEST, and NEWFORM parameters, respectively. All other attributes remain the same.

Archival of JCL Listings

The key to archiving JCL listings (including the job log and allocation messages) is in separating the JCL listing SYSOUT from the report SYSOUT produced by a job based on one or more of the following archival selection criteria: class, destination, and forms name. This separation can be accomplished in several ways, including:

- Assigning a different SYSOUT class in the MSGCLASS JOB statement parameter from those classes specified in the SYSOUT DD statements for the jobs
- Assigning a special forms name or destination to the JCL listings for a job with the /*OUTPUT SYS JES2 control statement
- Assigning a special forms name or destination to the JCL listings for a job with the //*FORMAT PR JES3 control statement for ddnames: SYSMSG, JESJCL, and JESMSG
- Assigning a special forms name, destination, or SYSOUT class to the JCL listings for a job with the // *name* OUTPUT JESDS=ALL JCL statement

You can archive some or all of the report SYSOUT for a job and its JCL listing. But, ensure that the SYSOUT attributes of the DD statements you want to archive match the JCL listing attributes.

Archival of Report SYSOUT

This guide refers to any SYSOUT produced for a job using DD statements (both those contained in the JCL and those dynamically allocated) as report SYSOUT.

You can handle Report SYSOUT as follows:

- Directly by CA View as with the JCL listings
- Indirectly by archiving a copy of the report SYSOUT that has been produced by the automatic report archival feature of system extensions.

Whether you choose to archive reports directly with CA View or indirectly using the automatic report archival feature depends primarily if you want to print the reports or track the reports under JES.

Direct archival of reports with CA View is the easiest and most straightforward approach. You specify the archival selection criteria to CA View. The PRTCLSL initialization parameter in CA View reprints. Because CA View automatically reprints the reports, they are identified to JES under the name of the archival started task and not under the name of the creating job. When reports are printed, the CA View produced banner pages identify the creating job.

Alternatively, with the automatic report archival feature, JES directly prints the reports and are identified to it under the name of the creating job. The automatic report archival feature for "spin-off" to CA View produces a copy of the reports.

Do not have a channel skip statement in the last line of any page of a report. If a report has a channel skip statement at the bottom of a page, follow it with a blank line; otherwise, the channel skipping is not honored.

Note: For more information about the automatic report archival feature, see the section Automatic Report Archival later in this chapter.

Archival of SYSLOG Data

You can select SYSLOG data for archival by SYSOUT class. When SYSLOG data is queued for print using the WRITELOG operator command or at IPL time, it can be archived by CA View. Therefore, if you want to archive SYSLOG data, have your SYSLOG data queued for print at regular intervals. The length of the interval determines the age of the most current archival group of SYSLOG data.

You can use the automatic command facility to queue SYSLOG data at regular intervals. For example, to queue SYSLOG data on an hourly basis for archival to CA View, establish the following automatic command as part of your IPL procedure:

```
$TA,I=3600,'$VS''W'''
```

Coordinate the process of implementing archival of SYSLOG data with your systems programming staff.

Additional FSS/VIEW Archival

The SARSTC task must complete archival of a sysout before starting archival of the next sysout. The single threading can lead to a backlog of reports in the JES spool. To improve this situation, additional FSS/VIEW archiver collectors can be defined to JES to allow multiple sysouts to be archived concurrently.

Note: For more information about installing these collectors, see the Installing the FSS Collector section in the *Installation Guide*.

AFP Report Archival

You can archive AFP reports with a CA View ACIF (AFP Conversion and Indexing Facility) archiver.

An ACIF archiver is defined as a functional subsystem application (FSA) that runs under a separate address space called a Functional Subsystem (FSS). A Functional Subsystem Interface (FSI) maintains communication between the FSS and the JES global address space. AFP Conversion and Indexing Facility (ACIF) is a utility that is part of the IBM PSF/MVS product.

For CA Deliver clients, AFP data *cannot* be archived using CA Deliver direct to CA View archival; it must be archived to JES.

Starting and Stopping ACIF Archival

Under JES2, an ACIF archiver FSA can be started in one of the following ways:

- An operator can enter the START DEVICE JES2 command
- When JES2 is brought up, ACIF archival starts automatically if the PRT*nnnn* statement for the printer FSA contains the START parameter

Under JES3, an ACIF archiver FSA can be started in one of the following ways:

- An operator can enter the START WRITER JES3 command
- JES 3 starts the ACIF archival when printing is scheduled for a printer FSA

If you do not want archival to stop after each job, you can define the FSS as a JES3 "hot writer," keeping the address space active.

The ACIF archival FSA differs from normal printers in that it can only be started and stopped. Positioning commands, such as those to interrupt a printer, forward space, or backspace the printer, cannot be used.

Installing the ACIF Archiver

For information about installing a CA View ACIF archiver, see the *Installation Guide*.

Viewing AFP Reports

You have several options for viewing AFP reports through the online system. You can:

- View the report as printed, with CA Output Management Document Viewer.
- View the text portions of the report on a 3270 terminal, by selecting the report.

Indexing AFP Reports

For each SYSOUT data set to be processed by a CA View ACIF archiver, a set of control statements can be used to define indexing criteria and provide other attributes for archival.

These control statements are created as members of the SARINDEX PDS, specified in the CA View ACIF start procedure. The name of the member is coded on the GROUPID parameter of the //OUTPUT JCL statement for the SYSOUT data set. If the GROUPID parameter is not coded, the name of the member defaults to the job name. For reports routed from CA Deliver, the GROUPID field can be defined in the CA Deliver Report Definition Attribute screen. For more information, see the GRPID field in the *CA Deliver Administration Guide*.

Note: For information about installing an ACIF archiver, see Installing the Interface with ACIF in the *Installation Guide*.

IBM ACIF Control Statements

The following IBM ACIF control statements can be coded for a CA View ACIF archiver:

```
CPGID
FIELDn
GROUPNAME
IMAGEOUT (default changed to ASIS)
INDEXn
RESTYPE (default changed to ALL)
TRIGGERn
INDEXOBJ (default changed to ALL)
```

Note: For more information about ACIF control statements, see the IBM manual *AFP Conversion and Indexing Facility: Application Programming Guide.*

ACIF Control Statements

In addition to the IBM ACIF control statements, you can code the following CA View ACIF archival control statements:

DOWNLOAD=

DOWNLOAD specifies up to 256 user IDs to which the archived SYSOUT is queued for downloading to CA Output Management Document Viewer.

REPORTID=

REPORTID specifies a 1- to 32-character name under which the report is to be archived. If omitted, the job name is used, except for CA Deliver, which uses the CA Deliver report identifier.

Note: The report-id is entered exactly as desired after the REPORTID keyword and can contain spaces or any supported special characters. If the report-id has more than 32-characters, it is truncated at 32-characters.

USERDATA=

USERDATA specifies storage of 1 to 20 bytes of user data in the GCRUSER field.

AFP Report Archival Example

The following example describes implementing the CA View ACIF archival interface to archive an AFP report. Detailed installation instructions are provided in the *Installation Guide*.

Suppose you have defined a CA View ACIF archiver to JES2 as device PRT18. JES2 is to select any data set for this archiver with a processing mode of ACIF. The name of the start procedure is SARFSS.

JES2 Control Statements

The following JES2 control statements are coded for this example:

```
FSSDEF(FSSSAR) PROC=SARFSS
PRT18 FSS=FSSSAR,
      MODE=FSS,
      NOSEP,
      NOSEPDS,
      PRMODE=(ACIF),
      WS=(PRM)
```

Start Procedure for SARFSS

The start procedure for SARFSS is as follows:

```
//SARFSS   PROC
//SARFSS   EXEC PGM=SARFSS,TIME=1440,
//         REGION=2M
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//         DD DSN=ACIF.LOAD,DISP=SHR
//SYSUDUMP DD SYSOUT=A
//SARINDEX DD DSN=VIEW.SARINDEX,DISP=SHR
//PRT18    DD DSN=CAI.CVDEOPTN(PRT18),DISP=SHR
//SARLOG   DD SYSOUT=A
```

Device Control Statements for PRT DD Statement

The following are the JES2 device control statements for PRT18 of our example:

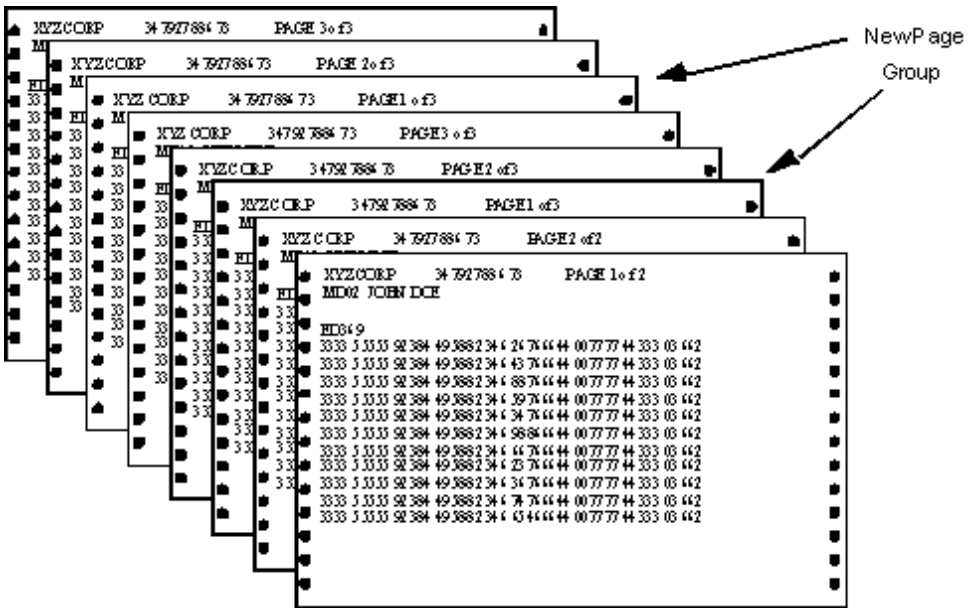
```
TYPE=ACIF
ARCHMSG=YES
CHARS=(GT15,GX15)
FDEFLIB=SYS1.FDEFLIB
FONTLIB=SYS1.FONTLIB,
        SYS1.FONTLIBB,
        GSF.USERFONT
PDEFLIB=SYS1.PDEFLIB
OVLYLIB=SYS1.OVERLIB
PSEGLIB=SYS1.PSEGLIB
FORMDEF=A10110
PAGEDEF=V06683
NEWPRMOD=PAGE
```

Sample Application Job

The following sample application job generates SYSOUT to be indexed by CA View ACIF, and archived:

```
//SAMPJOB JOB ACCOUNT,PROGRAMMER
//01   OUTPUT GROUPID=S10056,PRMODE=ACIF,
//     PAGEDEF=A18D,FORMDEF=A18D1,
//     USERLIB=SAMPLE.USERLIB
//STEP1    EXEC PGM=MYAPPL
//REPORT   DD SYSOUT=A,OUTPUT=*.01,
//         DCB=(RECFM=FA,BLKSIZE=133)
```

The application MYAPPL generates the following report:



ACIF Control Statements

The following ACIF control statements are in member S10056 of the SARINDEX PDS.

Note: For information about coding the ACIF control statements, see the IBM manual *AFP Conversion and Indexing Facility: Application Programming Guide*:

```
TRIGGER1=*,1,'1'          /*SELECT page group by skipping to channel 1
TRIGGER2=0,120,'PAGE 1'   /* and text string 1
FIELD1=2,9,24             /* Data field containing customer name
FIELD2=2,40,8             /* Data field containing account number
FIELD3=0,16,10            /* Data field containing division name
FIELD4='A10-'             /* constant
INDEX1='Customer name',FIELD1
INDEX2='Account Number',FIELD4, FIELD2
INDEX3='Division',FIELD3
REPORTID=PHONEBILLS
DOWNLOAD=JOHNB,
         MARYK,
         JIMT
```

Important! You must index reports appropriately to minimize the size of page groups because you can view AFP reports using CA Output Management Document Viewer. In this example, we used the characters "PAGE 1" as the TRIGGER to signify a new page group, then indexed on the CUSTOMER NAME and ACCOUNT NUMBER.

PDF Document Archival

You can archive PDF documents with the CA View PDF (PDF Indexing Facility) archiver.

A PDF archiver is defined as a Functional Subsystem Application (FSA) that runs under a separate address space called a Functional Subsystem (FSS). A Functional Subsystem Interface (FSI) maintains communication between the FSS and the JES global address space.

The PDF Indexing Facility is used to:

- Create indexes of PDF documents so that they can be retrieved and displayed using the CA Output Management Web Viewer.
- Archive PDF documents that require no indexing.

For CA Deliver clients, PDF data *cannot* be archived using CA Deliver direct to CA View archival; it must be archived to JES.

Starting and Stopping PDF Archival

Under JES2, a PDF archiver FSA can be started as follows:

- An operator can enter the START DEVICE JES2 command
- Automatically, when JES2 is brought up

  The PRT*nnnn* statement for the printer FSA must contain the START parameter
- Under JES3, a PDF archiver FSA can be started as follows:
- An operator can enter the START WRITER JES3 command
- JES3 starts the PDF archival when printing is scheduled for a printer FSA

If you do not want archiving to stop after each job, you can define the FSS as a JES3 "hot writer," keeping the address space active.

Note: The PDF archival FSA differs from normal printers in that it can only be started and stopped. Positioning commands, such as those to interrupt a printer, forward space, or backspace the printer, cannot be used.

Installing a PDF Archiver

For information about installing a CA View PDF archiver, see the *Installation Guide*.

Viewing PDF Documents

The following two methods are available:

- You can view the PDF documents through the CA View system by using CA Output Management Document Viewer.
- You can do the following actions:

  1. Use a CA View batch JCL deck to offload the document to the mainframe.
  2. Use FTP to upload the document to the user's PC.
  3. View the document using Adobe Acrobat reader.

Indexing PDF Documents

For each SYSOUT data set to be processed by a CA View PDF archiver, a set of control statements can be used to define indexing criteria and provide other attributes for archival.

These control statements are created as members of the PDFINDEX PDS, specified in the CA View PDF start procedure.

The name of the member can be coded on the JES FORMS=, Writer=. If neither value is specified, the PDF collector looks for a member name of the JES JOBNAME.

JES FORMS= and WRITER= can be set as a parameter of the //OUTPUT JCL statement for the SYSOUT data set. The selection sequence for these member names is as follows: Writer=, is searched first then FORMS=, and finally JES JOBNAME.

If no member is found, an error message is displayed. The PDF document is held on the JES print queue until a valid member name is created in the PDFINDEX PDS data set. The document is released from the JES print queue to process through the PDF collector again.

Note: For information about installing a PDF archiver, see Installing the Interface with PDF in the *Installation Guide.*

Archiving a PDF that is Not Indexed

If no indexing is required for a PDF document, a default member with no indexing commands lets you capture the PDF document for archiving without any indexing in CA View.

PDF Report Archival Example

The following example describes how to implement the CA View PDF archival interface to archive a PDF document.

If you defined a CA View PDF archiver to JES2 as device PRT18, JES2 is to select any data set for this archiver with a processing mode of PDFC. The name of the start procedure is CBRMSPDF.

JES2 Commands

The following dynamic z/OS JES commands define a JES FSS and JES Printer to test with:

Note: After an IPL, the JES FSS and printer are redefined, though not recommended for production use.

```
$ADD FSSDEF(CBRMSPDF),PROC=CBRMSPDF
$T FSS(CAHAB6PD),AUTOSTOP=YES
$ADD PRT18,MODE=FSS,FSS=CAHAC0PD
$T PRT18,CLASS=J,FORMS=,PRMODE=(PDFC)
$T PRT18,WRITER=,JOBNAME=*
$T PRT18,WS=(Q,PRM/F,W,R,LIM,UCS,FCB)
$S PRT18
```

JES2 Control Statements

The following JES2 control statements are coded for this example:

```
FSSDEF(CBRMSPDF) PROC=CBRMSPDF
PRT18 FSS=CBRMSPDF,
      MODE=FSS,
      NOSEP,
      NOSEPDS,
      PRMODE=(PDFC),
      WS=(Q,PRM/F,W,R)
```

Start Procedure for CBRMSPDF

The start procedure for CBRMSPDF is as follows:

```
//CBRMSPDF PROC
//CBRMSPDF EXEC PGM=SARFSS,TIME=1440,REGION=2M
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSUDUMP DD SYSOUT=X
//PDFINDEX DD DSN=VIEW.PDFINDEX,DISP=SHR
//PRT18 DD DSN=CAI.CVDEOPTN(PRT18),DISP=SHR
//SARLOG   DD SYSOUT=X
//PDFREPRT DD SYSOUT=X <---- DEFAULT PDF REPORT DATASET
//PDFTRACE DD SYSOUT=X <---- DEFAULT PDF TRACE REPORT DATASET
//SARLOG   DD SYSOUT=X <---- DEFAULT SARLOG OUTPUT.
//SYSOUT   DD SYSOUT=X <---- Informationary messages from PDF DEFLATE.
//STDERR   DD SYSOUT=X
//         PEND
//VIEWPDF  EXEC PROC=CBRMSPDF
```

Device Control Statements for PRT DD Statement

The following are the JES2 device control statements for PRT18 of our example:

```
TYPE=PDF
ARCHMSG=LOG
NAME=VIEWDB.HLQ
```

Sample Application Job

The following sample job generates SYSOUT to be indexed by the CA View PDF collector and archived:

```
//TESTJOB1 JOB ......
//PDFOUT   OUTPUT FORMS=DOCIX101,PRMODE=PDFC
//STEP1    EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DUMMY
//SYSUT2   DD SYSOUT=J,COPIES=1,OUTPUT=(*.PDFOUT)
//SYSUT1   DD DSN=TEST.PDF.TEST.CASES(PDFNOTES)
```

The FSS collector for the PDF document generates the following report. The DD name is PDFREPT.

```
JOBNAME=TESTJOB1    JOBID=JOB10150 STEP =         STEP1   SYSUT2 STARTING
**** START  **** PDF Page data               - PDF OBJECT NUMBER IS  00000180 0
PDF POSIITON--------DATA START----+----20---+----30---+----40---+----50---+----6

78 735.0601
78 735.0601
78 671.82           Chapter 4: Upgrade Considerations
78 671.82
78 654.0601
78 654.0601
186 630.66          The extensive changes will require
                    specific actions before you begin the upgrade. This section
                    information about the following:

186 588.66
190.5 588.66         Pre-upgrade Requirements
Index NAME REQUIRE  record above - Index VALUE is Requirements
190.5 588.66
204 570.66          The minimum release requirements
19.24 0              that you
-19.24 -1.333       must be running before you can upgrade
```

PDF Control Statements

The following PDF control statements are in member DOCIX101 of the PDFINDEX PDS. They are indexing report commands for the PDF document.

```
/*********************************************************************
/* PDF PAGE DATA INDEX DEFINITIONS FOR REPORT
/* LINES WITH SLASH ASTERISK IN COLUMN 1 ARE COMMENT LINES
/* NAME PDF LOCATION 15 = MAXIMUM LENGTH OF FIELD
/*********************************************************************
INDEX=(REQUIRE,*,EQ,Requirements) <---Any position look for the word Requirements
MEMORY=9000,     MEMORY IN KB DEFAULT = 96801
MAXOBJCT=1500,   DEFAULT MAXIMUM IS 30000 PDF OBJECTS
/*TRACE=ALL      PDF TRACE COMMAND FOR DOCUMENT
/*TRACEDDN=PDFTRC83 PRINTER PROC DEFAULT DDNAME FOR PDFTRACE DDN
/*REPRTDDN=PDFREP83 PRINTER PROC DEFAULT DDNAME FOR PDFTRACE DDN
XYDUMP=YES       PRINT A PDF REPORT (YES OR NO)
XYPAGES=10       DEFAULT NUMBER OF PDF PAGES TO PRINT; 0=NOPRINT
```

Important Considerations

Create the index members for each report by specifying XYDUMP=YES in the PDFINDEX member. So, when you load the PDF document into the CA View database, you see a PDFREPT data set created for that document which is used to create the index criteria control statements.

These control statements specify the location of each field within the PDF document; use them as the PDF location value and when defining the index.

The Index=(NAME,,,,) in the previous example for member DOCIX101 are defined in the CA View panels to enable cross-report indexing for each field. It also ensures that CA Web Viewer uses the indexes to display the PDF indexed document.

The Define VIEW command is used to define this Index member name (DOCIX101) as the VIEW ID in the panels. It also helps define each named index field with a unique View number.

Note: For more information about examples, see the *Installation Guide.*

Xerox Report (XPPS) Archival

You can archive Xerox reports with a CA View Proprietary Print Stream (PPS) Viewing Option for Xerox archiver (XPPS).

Note: For more information about how to archive and view Xerox reports with the CA View Proprietary Print Stream (PPS) Viewing Option for Xerox, see the *CA View Proprietary Print Stream (PPS) Viewing Option for Xerox Administration Guide*.

An XPPS archiver is defined as a functional subsystem application (FSA) that runs under a separate address space called a Functional Subsystem (FSS). A Functional Subsystem Interface (FSI) maintains communication between the FSS and the JES global address space.

For CA Deliver customers, XPPS data *cannot* be archived using CA Deliver direct-to-CA View archival; it must be archived to JES.

You can only view XPPS reports using CA Output Management Document Viewer.

Starting and Stopping XPPS Archiver

Under JES2, an XPPS archiver FSA can be started in one of the following ways:

- An operator can enter the START DEVICE JES2 command.
- When JES2 is brought up, XPPS archival starts automatically if the PRT*nnnn* statement for the printer FSA contains the START parameter.

Under JES3, an XPPS archiver FSA can be started in one of the following ways:

- An operator can enter the START WRITER JES3 command.
- JES3 starts the XPPS archival when printing is scheduled for a printer FSA.

If you do not want archival to stop after each job, you can define the FSS as a JES3 hot writer, keeping the address space active.

The XPPS archival FSA differs from other printers because it can only be started and stopped. Positioning commands such as commands that interrupt a printer, like forward space or backspace, cannot be used.

Installing an XPPS Archiver

For information about installing a CA View Proprietary Print Stream (PPS) Viewing Option for Xerox archiver, see the *CA View Proprietary Print Stream (PPS) Viewing Option for Xerox Installation and Configuration Guide*.

Exceptional Condition Checking (System and User-Specified Conditions)

When archiving SYSOUT, each record is scanned for exceptional conditions. You can have CA View check for an IEF system code, such as IEF142I, or you can specify any string of text to search as a *user-specified* condition.

You specify the exception conditions with control statements to the archival started task SARSTC. Each control statement applies to one or more jobs by specific or wildcard job names.

For completion codes and abends, the control statement can be further qualified to a specific step, procedure step, or both. A default control statement is provided to override one or all of the system defaults.

To enable editing of the exceptional condition table while the started task is active, the table must be established as a member of a PDS rather than a sequential data set.

System Exceptional Conditions

The following elements are checked to set exceptional conditions:

- Identifier of the associated error message
- Control statement parameters associated with that message ID
- System default parameter

System Conditions

The corresponding exception code is stored in the group control record (GCR) for the SYSOUT group. The following table lists the system conditions CA View checks:

Condition	Message ID	Parameters	System Default	Exception Code
Condition code	IEF142I	CC CC>*nnnn* CC*nnnn* NOCC NOCC*nnnn*	CC	*nnnn* (condition code)
Data set not deleted	IEF283I	NDEL NONDEL	NDEL	NOTDEL
Data set not cataloged	IEF287I	NCAT NONCAT	NCAT	NOTCAT

Condition	Message ID	Parameters	System Default	Exception Code
Data set not recataloged	IEF287I	RCAT NORCAT	RCAT	NTRCAT
Data set not uncataloged	IEF287I	UCAT NOUCAT	UCAT	NTUCAT
JCL error	IEF452I IEFCA452I IEF453I	JCL NOJCL	JCL	JCLERR
Operator cancel	IEF251I	OCNCL NOOCNCL	OCNCL	OCNCL
System abend	IEF472I	SYS SYS*xxx* NOSYS NOSYS*xxx*	SYS	S*xxx* (abend code)
User abend	IEF472I	USER USER*nnnn* NOUSER NOUSER*nnnn*	USER	U*nnnn* (abend code)

FIRST, LAST, and HIGH Specifications

The parameters FIRST, LAST, and HIGH specify whether the exception code for the first, last, or highest exception condition for the SYSOUT group are retained in the group control record.

The FIRST, LAST, and HIGH keywords are mutually exclusive. LAST is the system default.

Note: CA View looks at the various JES data sets for messages. The three JES data sets are archived in the following order: the messages log (JESMSGLG), the JCL (JESJCL), and the system messages (JESYSMSG). The default exception code processing is LAST. The JCL error message (IEF453I) appears in the JESMSGLG. The condition code message (IEF142I) appears in the JESYSMSG, which is the LAST exception code. To see the JCL error, a global entry is in the Exception Code Table (SARXCTAB) as follows:

```
/*            HIGH
```

Control Statements for System Conditions

Control statements are input to the archival started task using the SARXCTAB DD statement and the following general structure:

```
/ID parameters
```

The slash is coded in column 1 and the job name immediately follows. One or more blanks follow the ID and separate it from the parameters. Separate individual parameters by one or more blanks, commas, or both. A statement that exceeds 71 characters is continued on additional statements. When continuing a statement, interrupt the statement *only* between complete parameters.

The ID identifies the job to which the statement applies. The statement is as follows:

jobname(.*stepname*(.*procstepname*))

Where

jobname

Specifies the name of the job to which the statement applies

You can specify a generic job name by appending an asterisk to the generic name. For example, a job name of PROD* specifies that the statement applies to any job having the first four characters of its name being PROD.

stepname

Specifies the name of the job step to which the statement applies

stepname is optional and can only be coded for completion code and/or abend exceptions. If omitted, the statement applies to all job steps.

procstepname

Specifies the name of the procedure step to which the statement applies procstepname is optional and can only be coded for completion code and/or abend exceptions. If omitted, the statement applies to all procedure steps.

Because qualification by job and procedure step names only applies to completion code and abend exceptions, multiple control statements can be required for the same job. One statement specifies only the job name without further qualification.

Parameters in the Control Statements

All parameters applicable to the entire job are coded. Additional statements, qualified to a particular job and procedure steps, are also used. Only the completion code, system parameters, and user abend parameters are coded on these additional statements. You can code the following parameters:

CC

Specifies the following conditions:

- A condition code message for a nonzero condition code is treated as an exceptional condition
- A condition code message for a zero (0) condition code is not treated as an exceptional condition

NOCC

Specifies there are no condition code exception conditions.

CC>nnnn

Specifies a condition code message with a condition code greater than nnnn is treated as an exceptional condition unless:

- A NOCCnnnn parameter is also specified for the condition code. A condition code message with a condition code less than or equal to nnnn is not treated as an exceptional condition
- A CCnnnn parameter is also specified for the condition code

CCnnnn

Specifies the following conditions:

- A condition code message with a condition code equal to nnnn is treated as an exceptional condition
- A condition code message with a condition code not equal to nnnn is not treated as an exceptional condition unless identified as an exceptional condition by another CCnnnn or CC>nnnn parameter

NOCCnnnn

Specifies the following conditions:

- A condition code message with a condition code equal to nnnn is not treated as an exceptional condition
- A condition code message with a condition code not equal to nnnn is treated as an exceptional condition unless identified as not being an exceptional condition by another NOCCnnnn or CC>nnnn parameter

0000 specifies when multiple exceptions occur for a SYSOUT group, the first exception code for the group is retained in the group control record.

000 specifies a JCL error message is treated as an exceptional condition.

NOJCL

Specifies there are no JCL exception conditions.

FIRST

Specifies when multiple exceptions occur for a SYSOUT group, the first exception code for the group is retained in the group control record.

LAST

Specifies when multiple exceptions occur for a SYSOUT group, the last exception code for the group is retained in the group control record.

HIGH

Specifies when multiple exceptions occur for a SYSOUT group, the one with the highest priority is retained in the group control record.

The following list defines the XCODE priorities in highest to lowest order:

1. SYSTEM ABEND
2. USER ABEND
3. JCL ERROR
4. NONZERO CONDITION CODE
5. OPERATOR CANCEL
6. NOT CATALOGED
7. NOT DELETED
8. NOT RECATALOGED

If multiple exceptions occur with the same priority, the one with the highest numerical value is used.

NCAT

Specifies a NOT CATALOGED message is treated as an exceptional condition.

NONCAT

Specifies a NOT CATALOGED message is not treated as an exceptional condition.

NDEL

Specifies a NOT DELETED message is treated as an exceptional condition.

NONDEL

Specifies a NOT DELETED message is not treated as an exceptional condition.

OCNCL

Specifies an OPERATOR CANCEL IN ALLOCATION RECOVERY message is not treated as an exceptional condition.

RCAT

Specifies a NOT RECATALOGED message is treated as an exceptional condition.

NORCAT

Specifies a NOT RECATALOGED message is not treated as an exceptional condition.

SYS

Specifies a system abend code message for any abend code is treated as an exceptional condition.

NOSYS

Specifies a system abend code message for any abend code is not treated as an exceptional condition.

SYSxxx

Specifies a system abend code message for abend code xxx is treated as an exceptional condition. A message for any abend code other than xxx is not treated as an exceptional condition unless identified as an exceptional condition by another SYSxxx parameter.

NOSYSxxx

Specifies a system abend code message for abend code xxx is not treated as an exceptional condition. A message for any abend code other than xxx is treated as an exceptional condition unless identified as not being an exceptional condition by another NOSYSxxx parameter.

UCAT

Specifies a NOT UNCATALOGED message is treated as an exceptional condition.

NOUCAT

Specifies a NOT UNCATALOGED message is not treated as an exceptional condition.

USER

Specifies a user abend code message for any abend code is treated as an exceptional condition.

NOUSER

Specifies a user abend code message for any abend code is not treated as an exceptional condition.

USERnnnn

Specifies a user abend code message for abend code nnnn is treated as an exceptional condition. A message for any abend code other than nnnn is not treated as an exceptional condition unless identified as an exceptional condition by another USERnnnn parameter.

NOUSER
nnnn

Specifies a user abend code message for abend code nnnn is not treated as an exceptional condition. A message for any abend code other than nnnn is treated as an exceptional condition unless identified as not being an exceptional condition by another NOUSERnnnn parameter.

Default Control Statement

You can override one or more of the system default specifications for exception code checking on the default control statement. The default control statement must be the first statement specified and its ID must be DEFAULT.

The following example requires exceptional condition checking:

- Only condition codes greater than 7 are treated as exceptional conditions
- User abend code 2000 and not recataloged messages are ignored (not treated as exceptional conditions)
- Jobs P27XY1, P28A05, and P30R16 normally end with user abend code 1000, so user abend code 1000 is not treated as an exceptional condition for these jobs
- STEP2 of all jobs whose names start with SYS normally terminate with user abend code 16

  This abend is not treated as an exceptional condition.
- All other conditions are exceptions (the system defaults)

Your code control statements as follows:

```
/DEFAULT CC>7 NOUSER2000 NORCAT
/P27XY1   NOUSER1000 NOUSER2000
/P28A05   NOUSER1000 NOUSER2000
/P30R16   NOUSER1000 NOUSER2000
/SYS*.STEP2   NOUSER16
```

User-Specified Conditions

Control statements are input to the archival started task using the SARXCTAB DD statement. For each statement, the percent sign is coded in column 1 and the ID immediately follows. One or more blanks follows the ID and separate it from the parameters. One or more blanks, commas, or both separate individual parameters. A statement that exceeds 71 characters is continued on additional statements. When continuing a statement, interrupt the statement only between complete parameters. The control statements have the following general structure:

Syntax:

```
%ID 'string' COL(bbbbb:eeeee) LINE(bbbbbb:eeeeee)
            XCODE(xxxxxx) STOP EXC(job1,job2,...)
```

Where

%

Specifies the user-specified condition.

- For each statement, the % sign is coded in column 1 and the ID immediately follows.

ID

Specifies the job name of the SYSOUT job containing the user- defined string.

You can specify a generic job name by appending an asterisk to the generic name. For example, a job name of PROD* specifies that the statement applies to any job having the first four characters of its name being PROD. A statement beginning with %* includes all jobs.

'string'

Specifies the string of alphanumeric data to be found in the SYSOUT that signifies the exceptional condition.

- Enclose the string in single quotes.

COL(UMN)

Specifies the column number (bbbbb) or range (bbbbb:eeeee) where the string begins in the SYSOUT record.

- The default is COL(1) where the string begins in column 1. COLUMN includes the assumed carriage control in the column position. Specification of this field is not sensitive to the CCONDISP initialization parameter, which controls the viewing of carriage control characters in online logical viewing. COLUMN can be abbreviated as COL.

LINE

Specifies the beginning line number (bbbbbb) or range of lines (bbbbbb:eeeeee) to include in the search for the string.

The default is LINE(1:999999) that specifies that the entire SYSOUT group is searched. LINE does not include the assumed carriage control and it operates on the printed line, not the actual line.

XCODE

Specifies the 1 to 6 character exception code to be stored in the GCRXCODE field when the string is matched.

The EXCLUDE statement overrides XCODE. The default is CODE() to blank out the XCODE().

STOP

Specifies to the archiving task to freeze the XCODE for the SYSOUT group after a string match.

Exceptional conditions are bypassed for the remainder of the group except for updates to GCRXCODE by a customized SARSTCUX or SARXCTUX exit. This parameter is optional.

EXCLUDE()

Specifies to exclude specific jobs when a generic name (with wildcard, *) is present in the ID field.

Repeat this parameter on additional statements if required. EXCLUDE overrides the XCODE statement, if it is specified. EXCLUDE() can be abbreviated EXC(). The parentheses are required.

The following example describes where exceptional condition checking is required:

- System abends 122 and 222 are not considered exceptions
- For job JOB1, condition codes lower than 8 are ignored
- For job names starting with PAY, except for PAY11 and PAY22, store CANCEL as the XCODE for system message IEF251I and bypass any other exceptions

The control statements are coded as follows:

```
/DEFAULT NOSYS122 NOSYS222
/JOB1 CC>7
%PAY* 'IEF251I' COL(1) XCODE(CANCEL) STOP
       EXC(PAY11 PAY22)
```

SARSTCUX and Exception Specification

You can also identify additional exceptional conditions by customizing the SARSTCUX exit.

Refreshing the Exception Parameters

The exceptional condition-checking parameters are established when the archival task is started. However, they can be changed and the SARXCTAB DD statement reopened to refresh the exceptional conditions parameters at any time, without stopping to restart the archival task.

Note: For more information about this process, see Refreshing Exceptional Condition Checking later in this chapter.

Operating the Archival Task

The following sections describe the commands, parameters, and procedures necessary to operate the archival task.

Starting the Archival Task

Note: The OPT=NEW or OPT=INEW command does not start a new DR tape. A new DR tape is automatically started after a back cycle is completed. You can force a new DR tape by replying NO to the IEF455D mount message.

You start SARSTC with one of the following operator commands:

```
S SARSTC
S SARSTC,OPT=DUMP
S SARSTC,OPT=NEW
S SARSTC,OPT=CLEAN
S SARSTC,OPT=IDUMP
S SARSTC,OPT=INEW
S SARSTC,OPT=STOPBU
```

Where

OPT=NEW

Specifies that the archival task initiates its backup cycle immediately following initialization and before archiving any SYSOUT

The new tape generation resides on a new tape.

OPT=CLEAN

Specifies that the archival task performs a cleanup of its database. The cleanup recovers space for any SYSOUT groups that are created or loaded to disk when a system crash or abend of the archival task occurs

The archival task automatically performs a cleanup operation as part of its backup cycle.

OPT=IDUMP

Specifies that an interim backup cycle is initiated immediately following initialization and before archiving any SYSOUT

This backup resides on the same tape as the previous backup, provided the tape has room, because the archival generation number is not incremented. (Also, an initialization parameter, MAXGENT, specifies the maximum number of generations that are written to one tape.)

OPT=INEW

Specifies that the archival task initiates an interim backup cycle immediately following initialization and before archiving any SYSOUT

The archival generation number is not incremented; however, this backup resides on a new tape.

OPT=STOPBU

Specifies not to restart the backup task. Use this option when the earlier execution of SARSTC was canceled or abended during a backup cycle *and you do not want to restart the backup* automatically. When this option is used, the SARINIT parameter EROPRO is set to ALL so that ERO processing in the next *standard* backup cycle processes all reports from prior generations. If the EROPRO was previously set to YES, it is not changed.

Note: We recommend that you add command S SARSTC to member.

COMMND*xx* of SYS1.PARMLIB to start the archival task automatically at each IPL.

Stop the Archival Task

SARSTC is terminated with the following operator command:

```
P SARSTC
```

Initiate the Backup Cycle

Backup to tape and the creation of a new disk generation are normally performed automatically at a site-defined time and at site-defined intervals thereafter; however, tape backups can be initiated at any time with one of the following operator commands:

```
F SARSTC,DUMP
F SARSTC,NEW
F SARSTC,IDUMP
F SARSTC,INEW
```

Where

DUMP

Specifies that the new tape generation resides on the same tape as the previous generation, provided there is room on the tape and the maximum number of generations per tape (MAXGENT initialization parameter) is not exceeded

NEW

Specifies that the new tape generation resides on a new tape

IDUMP

Specifies that an interim backup cycle is initiated

This backup resides on the same tape as the previous backup, provided there is room on the tape, because the archival generation number is not incremented. (There is also an initialization parameter, MAXGENT, which specifies the maximum number of generations that are written to one tape.)

INEW

Specifies that an interim backup cycle is initiated

The archival generation number is not incremented; however, this backup resides on a new tape.

Unload the Archival Tape

When archiving directly to tape, the archival and DR tapes remain allocated and in use through the next backup cycle. The following operator command causes CA View to unload and unallocate the archival tape immediately:

Syntax:

```
F SARSTC,UNLOAD
```

CA View allocates the tape the next time it is required.

Delete SARSTC99 Messages

When CA View encounters an exceptional condition and a routing code other than zero is specified (as the site initialization parameter ROUT defines), SARSTC99 operator messages are produced for each exceptional condition. You can delete these operator messages from the operator console by entering the following operator command:

Syntax:

```
F SARSTC,DOM
```

Manually Requesting Cleanup

If the CA View archival task terminates abnormally due to a system crash or an abend, the last SYSOUT group that archived can be left in an incomplete condition (OPEN status). The same condition can occur for a SYSOUT group being reloaded to disk from tape by a user (LOAD status). You can request a cleanup of these incomplete SYSOUT groups by the following operator command:

Syntax:

```
F SARSTC,CLEAN
```

A manual request for cleanup is only necessary after system crashes, because the archival started task normally performs a cleanup operation as part of its backup cycle.

To recover the space a SYSOUT group left in OPEN or LOAD status occupies, issue two cleanup commands at least four hours apart.

Note: If CLEAN=NO, manually cleanup with the online C command. The modify clean command does not affect CA Deliver open subfiles, only SYSOUT subfiles left open by SARSTC or a CA View FSS collector. SYSOUT files originating from CA Deliver left in OPEN status can only be cleaned up with the online C command.

If long-running jobs are archiving SYSOUTs direct-to-View such as a started task archiving a log of some type, set CLEAN to NO. Because, two consecutive backup cycles completed four hours apart deletes the SYSOUT and corrupts the database.

Delete an OPEN SYSOUT

Never delete a SYSOUT in OPEN status because CA View cannot determine whether the report was left in OPEN status or whether it is actually being processed. The SYSOUT is marked as in delete status and is hidden in the database.

If the SYSOUT originated in CA View, it is deleted after two consecutive backup cycles complete processing. If the SYSOUT originated in CA Deliver, it is marked for deletion. If CLEAN is set to NO, it is never deleted. It continues to occupy space until CLEAN is set to YES and two consecutive backup cycles complete four hours apart.

Manually Cleaning CA Deliver Open SYSOUTs with CLEAN=NO

The online C command is used to mark a SYSOUT for cleanup. The command responds with CLEAN PENDING. Execute a second online C command at least four hours later. This time, the command responds with sysoutid REMOVED, which sets the SYSOUT to DISK status. The SYSOUT can now be deleted with the online D command or left to expire under normal retention criteria.

Refresh Exceptional Condition Checking

You can change the exceptional condition checking parameters established when the archival task was started, and you can refresh the conditional parameters with the following operator command:

Syntax:

```
F SARSTC,RESET
```

This command clears the currently defined parameters and the SARXCTAB DD statement read again.

The exceptional conditions parameters are refreshed from the indicated control statements.

Note: For more information about exceptional condition checking, see the section Exceptional Condition Checking earlier in this chapter.

Operate the Optical Migration Subtask

To allow flexibility in scheduling optical migration, you can use a separate subtask under the CA View started task to control migration of reports to optical disk.

Note: For more information about optical migration, see Operating the Optical Migration Subtask in the chapter "Using the Optical Disk Interface."

Run Multiple Archival Tasks

Multiple archival tasks can be run at the same time; however, each task must use a different database. The archival task ENQs on the high-level qualifiers of the database name ensure that a different database is used.

Important! For sites that have more than one processor, ensure that multiple archival tasks with the same database do not run at the same time on different processors. Otherwise, you can do permanent damage to the database. CA View prompts the operator for verification if another task with the same database is already executing on another processor.

Meet the following requirements when running multiple archival tasks:

- A different database is defined and used for each task
- A different recovery file, if used, is defined and used for each task

Automatic Report Archival (SARXTD)

The automatic report archival extension allows a site to create a copy of its reports for archival purposes. The original reports continue to print as usual. With this feature, a site can backup all reports or a specified subset of reports. If a report is lost, it can be easily reprinted from CA View.

The word *report* in the previous paragraph applies to any SYSOUT data set for which normal open and close processing is performed.

Specifying one or more sets of specifications in the CA View extension parameter field activates the automatic report archival feature. The sets of specifications identify the reports for automatic archival by job class and SYSOUT class. They also specify the SYSOUT class, destination, and forms name used to create copies of the reports for archiving.

Note: For more information about automatic report archival, see the topic System Extensions (SARXTD) in the chapter "Configuring."

Non-Eligible Output

JES does not perform the normal open and close processing for the job log, JCL listing, and job message data sets. Therefore, the job log, the JCL listing, and the job message data sets are not eligible for automatic archival.

Examples

The following examples illustrate archiving.

Example 1

This example assumes that CA View is set to archive all SYSOUT with a destination of R99 (the master index file is initialized with the parameter DEST=R99). You want to produce and archive to tape a copy of all production reports and those test reports written to SYSOUT classes J and K. Production jobs are defined as those jobs with classes P, Q, R, and S. Test jobs are defined as all jobs with classes T, U, V, and W.

The following parameter field starts the CA View system extensions:

```
PARM=',PQRS/*//R99//T,TUVW/JK//R99//T'
```

Example 2

This example assumes that CA View is set to archive all SYSOUT for class S (the master index file is initialized with the parameter CLSL=S). You want to produce and archive to disk a copy of all reports written to SYSOUT classes A and B, and to produce and archive directly to tape all other reports.

The following parameter field starts the CA View system extensions:

```
PARM=',*/AB/S///D,*/*/S///T'
```

Batch Job Execution of the Archival Task

The archival task can run as a started task or as a batch job. Previous releases required that a user modification, HA17SE01 or HA20SE01, be applied to the SARSTC module to enable the task to run as a batch job. Beginning with r11, this user modification is no longer required.

Note: If you run the archival task as a started task, you can ensure the integrity of the archived data, because, only an operator executes the programs. However, after modification to run as a batch job, the integrity of the archived data is no longer being assured, because any user can execute the program. If batch execution is essential to your operation, you must provide for data integrity in other ways, such as placing the load modules in a password-protected library.

Chapter 6: Expanded Retention Option

This section contains the following topics:

Overview (see page 223)
How to Define and Use Expanded Retention Option (ERO) (see page 224)
EROPRO and Retroactive Retention Processing (see page 236)
The ERO Table (see page 240)
ERO Table Statements (see page 243)
Writing ERO Table Statements (see page 246)
ERO Table Examples (see page 257)
Assign SYSOUT IDs Based on Embedded Text (see page 259)
Tape Consolidation of Reports (SARPAC) (see page 262)
SARPAC Reports (see page 263)
Running SARPAC (see page 268)
Return Codes set by SARPAC messages (see page 275)

Overview

This chapter includes information about Expanded Retention Option (ERO) table statements, assigning SYSOUT IDs based on embedded text, tape consolidation of reports (SARPAC), SARPAC reports, and running SARPAC.

The initialization parameters NGEND and NGENT specify how many generations of each SYSOUT remain on disk and tape.

The ERO allows you to specify particular SYSOUTs as having expanded retention. These SYSOUTs can be given separate retention criteria.

When a SYSOUT has expanded retention, you can specify how long to keep the SYSOUT in the database (the retention period) by the number of generations to be kept, the number of copies to be kept, or the number of days the SYSOUT is to remain on the database. By appropriately setting your NGEND and NGENT parameters, then assigning selected SYSOUT to have expanded retention, you can set up a minimum archival retention period for all SYSOUT, and then selectively archive desired SYSOUT for longer periods.

The ERO gives you the added flexibility of assigning, at archival time, SYSOUT IDs based on text strings found within the SYSOUT (PTEXT*n* parameters).

The SARPAC utility is part of the ERO. SARPAC consolidates backup tapes, copying only current reports to new tapes.

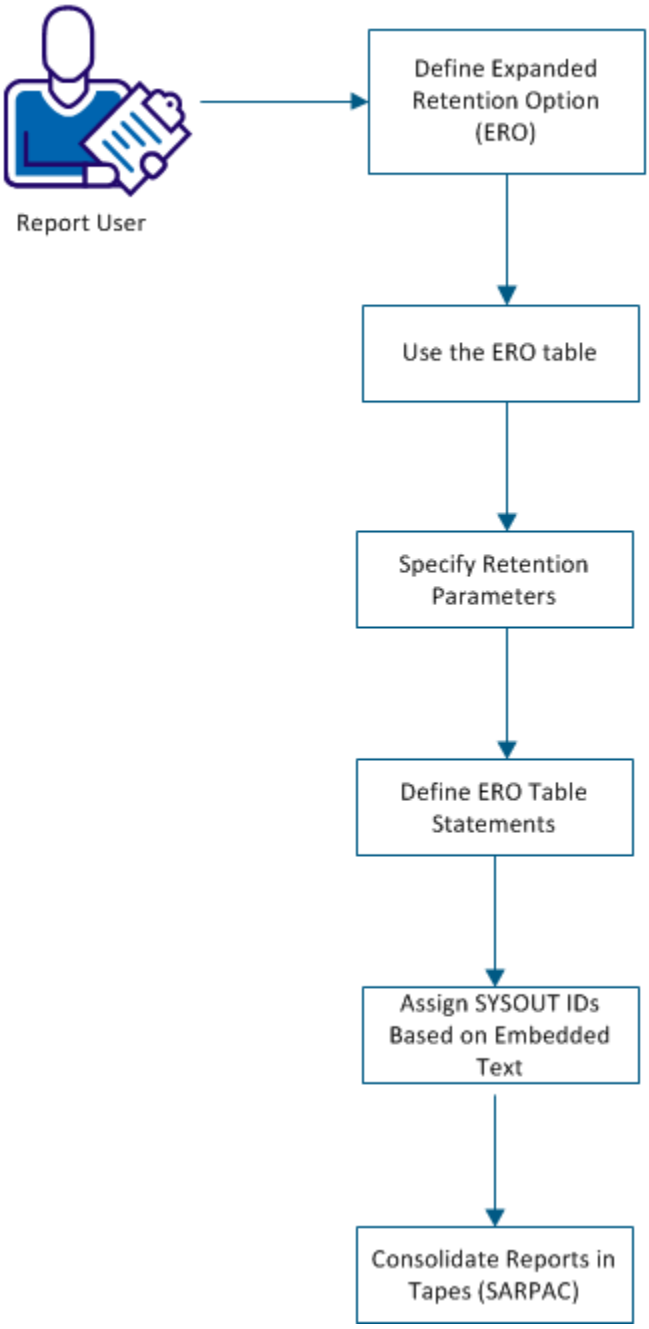
How to Define and Use Expanded Retention Option (ERO)

A report user can use the Expanded Retention Option (ERO) to provide additional retention capabilities for specific reports or groups of reports. Implementing ERO involves the configuration of the ERO initialization parameters and the creation of an ERO table.

ERO provides the flexibility to specify report retention options at the individual report level. This lets you match report retention to your business needs and Records Management policies.

The base CA View product allows retention based on database generations. A report may be retained in the database for a specified number of generations and on a backup tape for specified number of generations. The Expanded Retention Option allows for more flexibility in assigning retentions to individual reports.

How to Define and Use Expanded Retention Option (ERO)



Follow these steps:

1. Define Expanded Retention Option (ERO) (see page 226)
2. Use the ERO table (see page 228)
3. Specify Retention Parameters (see page 229)
4. Define ERO Table Statements (see page 230)
5. Assign SYSOUT IDs Based on Embedded Text (see page 234)
6. Consolidate Reports in Tapes (SARPAC) (see page 234)

Define Expanded Retention Option (ERO)

You can define the retention options using the ERO table and the following SARINIT initialization parameters.

Follow these steps:

Set the following SARINIT parameters.

EROOPT, EROPRO, PRETAIN, POPT, PCOPIES

where

EROOPT=YES

Specifies whether the ERO option is being used.

EROPRO=NEW

NEW

Indicates to CA View that only newly archived reports must be evaluated for Expanded Retention. Reports from older generations which are controlled by standard retention are not considered.

YES

Indicates that all reports controlled by standard retention, either new or old, must be evaluated for Expanded Retention. If the name of the report matches an entry in the ERO table, the retention is switched to ERO control. The parameter is not reset to NEW at the end of the backup cycle.

ALL

Indicates that all reports controlled by standard retention, either new or old, must be evaluated for Expanded Retention. If the name of the report matches an entry in the ERO table, the retention is switched to ERO control. This is reset to NEW at the end of the backup cycle.

Note: We recommend that EROPRO be set to YES and left that way unless a large percentage of the database is under standard retention.

Important! The EROPRO parameter settings do not control when a report is removed from ERO control. Once a report has been defined to ERO, it remains under ERO control until its total ERO retention has expired. If you change a report's retention in the ERO table, the next standard backup cycle applies that retention to all past versions of that report – not just the new versions. If you remove a report entry from the ERO table, the system searches for a more generic match and uses the retention specified in that entry. If a more generic match cannot be found, the system defaults to using PCOPIES. The important thing to remember is that once a report is switched to ERO control it stays under ERO control until its ERO retention has expired.

PRETAIN=TABLE/INIT

Controls what happens to a report after its total ERO retention has expired. It controls whether a report must switch back to standard retention or be deleted.

where:

INIT

INIT indicates that the report is to switch back to standard retention unless the ERO table entry for this report contains the DELETE parameter. When the DELETE parameter is not specified, the report is kept until it exceeds the NGENT/NGEND specification, then it is deleted.

TABLE

Indicates that the report is to be deleted.

We recommend setting PRETAIN=TABLE

PCOPIES=nnnnn

Specifies the number of copies of each SYSOUT that are maintained for each unique SYSOUT identifier.

Valid values: 1-32767

Default: 2

Use the ERO table

You can use the ERO table to perform the following three functions:

- Override the standard report retention specified in NGENT and NGEND.
- Assign reports to a STORGRP so they are backed up with other reports in the same STORGRP.
- Specify when reports are to be migrated to secondary storage (OPTICAL or CENTERA) and assign a retention for the report copies residing on those devices.

SYSOUTs are given expanded retention status with entries in what is referred to as the *expanded retention table*, or ERO table.

Follow these steps:

1. Define expanded retention table entries to CA View using the SARPATAB DD statement in the CA View started task JCL, and in the SARDSK2B batch job for optical migration.
2. Use wildcards in the expanded retention table statements. You can specify wildcards at any location in the SYSOUT ID. ABC* and AB*C*D are valid SYSOUT ID entries in the table.

   All SYSOUT IDs that contain a particular character string are identified.

The terms expanded retention and permanent status are synonymous.

The Expanded Retention Option (ERO) of CA View uses a table to provide additional retention capabilities for specific reports or groups of reports. The base CA View product only allows retention based on database generations. A report can be retained in the database for x generations (NGEND initialization parameter) and on a backup tape for y generations (NGENT initialization parameter). Without ERO, all reports have the same retention.

Specify Retention Parameters

ERO provides additional retention options based on generations, days, and copies.

Specify the following ERO retention parameters:

DAYS (RETPD)

Displays the date the report was archived.

COPIES

Refers to the number of versions that you wish to keep.

GENS

Displays the generation number when the report was created. This is the number that CA View assigns to all reports archived between standard backup cycles. If you specify GENS=2 and you archived the report in GEN 100, it will be scratched after GEN 101 has completed its standard backup.

Note: If no ERO retention parameter is specified (RETPD, COPIES, or GENS), the INIT PARM PCOPIES is used as the default.

Control statements specify the retention parameters in a sequential file that is accessible by the backup task through the SARPATAB DD statement. The control statements specify the reports that receive these retention options. The report name can be all 32 significant characters, or from 0 to 31 characters followed by the wildcard character, the asterisk (*).

Example

If the payroll register must be kept on the database for 30 days and on tape for 3 years, add a control statement to the ERO table as follows:

```
/PAYREG ALL DRETPD=30 RETPD=1095
```

If you have to keep all other payroll reports for only one year, add the following control statement to the ERO table:

```
/PAY* ALL DRETPD=30 RETPD=365
```

The backup cycle searches the ERO table from the top to the bottom using the report name as a search argument. The first entry that matches the most significant characters (and the wildcard character if present) is used to obtain the report's retention options.

Special considerations apply if this table is sorted, the '/PAY*' statement would appear in the file ahead of the '/PAYREG' statement, and the payroll register report would obtain the same retention options as the other payroll reports.

Important! If a '/* ALL ...' default report retention statement was in the sorted file, it sorts as the first statement in the ERO table, and all reports would then obtain retention options from the first entry in the table.

Note: To prevent this type of sequence error from occurring, CA View validates the order of the ERO table before every backup cycle. When you change the ERO table, we recommend you run the SARVERO utility to validate the ERO table and prevent problems during the next CA View backup cycle.

Define ERO Table Statements

ERO table statements are made up of SYSOUT IDs (including wildcards), parameters, and the values you set for those parameters.

Expanded retention table entries are input to the CA View started task using the SARPATAB DD statement.

The following example shows the keywords that can be specified in the ERO table statements:

```
/sysout-id  {ALL|MARK|LAST}
            RETPD=nnnnn  GENS=nnnnn  COPIES=nnnnn
            DRETPD=nnnnn DGENS=nnnnn DCOPIES=nnnnn
            IRETPD=nnnnn LRETPD=nnnnn
            STORGRP=storage-group-name
            DSK2DAYS=nnnnn
            DSK2NOTP
            D2RETPD=nnnnn
            REGDAYS=nnnnn
            VIEWTAPE={YES|NO}
            XCOND={YES|NO}
            EXCLUDE
            DELETE
```

Follow these steps:

1. Specify a selection parameter of ALL, LAST, or MARK, in each statement.

   If the ALL, LAST, or MARK parameter is not specified, the initialization parameter POPT is used as a default. We recommend that you specify MARK, ALL, or LAST in each statement, to understand and verify the effects of the statements in your expanded retention table.

   ALL

   Specifies that all reports for the SYSOUT ID from the current generation are evaluated for ERO processing.

   LAST

   Specifies that the last (most recent) report from the current generation is evaluated for ERO processing.

MARK

Specifies that all reports for the SYSOUT ID for the current generation are evaluated for ERO processing, only if marked manually.

Note: If you use one parameter, do not use the other two parameters. For example, if ALL is specified, MARK and LAST must not be specified.

2. Specify ERO tape or disk retention (COPIES, RETPD, or GENS).

   If no parameter is specified, then the initialization parameter PCOPIES is used as the default.

3. Specify the amount of retention in days with the DRETPD parameter for disk and RETPD parameter for tape.

   The report is retained for *nn* days. Specifying the DRETPD parameter is the most efficient processing method, because CA View can use a simple arithmetic calculation on the archival date.

   We recommend that you use only one tape retention parameter per entry; however, if you use more than one parameter, each parameter must be satisfied before a SYSOUT no longer has expanded retention (PERM) status.

4. Optionally code any of the following parameters to further define your ERO table content:

   IRETPD=nnnnn

   Specifies the number of days (0 to 32767) that any page indexes defined for the reports are retained on disk.

   STORGRP

   Specifies the tape storage group for SYSOUT. These group names can be unique for your location; they are linked to STORGRP1 through STORGRP9.

   DSK2DAYS

   Specifies the number of days (1 to 998) a report remains on the primary disk before it is migrated to the secondary disk is specified.

   DSK2NOTP

   Specifies that the report resides on optical disk and the tape backup is deleted.

   D2RETPD=nnnnn

   Specifies the number of days that a report is retained on optical or secondary disk (valid values are 0 to 32767).

   D2RETPD is intended to be specified with DRETPD to provide separate retention for optical or secondary disk and primary disk.

   If D2RETPD is not specified, DCOPIES, DGENS, and DRETPD governs the optical or secondary disk retention and the report is deleted from primary disk after it is migrated.

REGDAYS=nnnnn

Controls the number of days that a report cannot be deleted in CA View. When the parameter is used in the ERO table, matching reports are flagged as non-deletable until a calculated REGDAYS date has been reached. (Valid values are 0 to 32767).

Note:

The REGDAYS date is calculated by adding REGDAYS to the report ARCHIVE date.

After a REGDAYS date is assigned to a report, it can only be extended and never shortened through changes in the ERO table.

The SARBCH /CHANGE ARCHDATE function fails with a message if the target report is under REGDAYS control.

VIEWTAPE

Specifies that the SYSOUT can be viewed through the Expanded Access Server (SAREAS) if it only resides on tape.

XCOND

Specifies whether CA View is to consider SYSOUTs that had exceptional conditions, for example, JCL errors, ABENDS, and so on, for ERO evaluation is specified.

EXCLUDE

Specifies that ERO does not retain the reports. These reports are retained in the database, based on the NGEND and NGENT initialization parameters.

DELETE

Specifies that when the ERO retention TOTAL criteria expire, the report is deleted (and does not revert to the control of the CA View initialization parameters NGENT).

- The data set referred to in the SARPATAB DD statement in the SARSTC JCL contains the ERO table. This data set can be either a sequential file or a member of a partitioned data set. The data set attributes must be Fixed or Fixed Blocked with a Logical Record Length from 80 to 256 characters in length. Code the slash in column 1 followed immediately by the SYSOUT ID.
- One or more blanks must follow the SYSOUT ID and separate it from the ERO table parameters.
- Parameters are separated by one or more blanks and/or commas, and can be specified in any order.
- A statement that exceeds the Logical Record Length minus 8 characters must be continued on additional statements. The last eight columns of each logical record are reserved for statement numbering. When continuing a statement, interrupt the statement between complete parameters only, and omit the slash on the continuation statement.

- An asterisk in column 1 indicates a comment line.

ERO Table Examples

The following examples show initialization parameters and ERO table entries and the effects on reports within the CA View database.

Example 1

This example shows you how to keep:

- Two generations of all CA View reports on disk, and three on tape.

  Note: If a value for the NGENI parameter is not specified NGENT also governs master index backups.

- Reports beginning with the characters ABC on tape for 90 days; however, you are limited to 30 days on disk.

Set the following initialization parameters:

```
NGEND=2
NGENT=3
```

Specify the following ERO table:

```
/ABC* ALL RETPD=90 DRETPD=30
*
* ALL APPLICATION 'ABC' REPORTS ARE
* ON DISK 30 DAYS, ON TAPE 90 DAYS
```

Example 2

This example shows you how to keep:

- All reports beginning with ABCD on disk for 7 days and on tape for one year.
- Reports beginning with ABC on disk for 7 days and on tape for 90 days.

Set the following initialization parameters:

```
/ABCD* ALL RETPD=366 DRETPD=7
/ABC* ALL RETPD=90 DRETPD=7
*
* ABCD REPORTS ARE REQUIRED ON TAPE
* FOR ONE YEAR FOR LEGAL PURPOSES
*
```

Note: ERO uses the first match that it finds. If these entries were in reverse order, an error message (SARPAR08) is generated at the start of the backup.

Assign SYSOUT IDs Based on Embedded Text

You can have ERO assign SYSOUT IDs based on text within a report. For example, you can give compilation listings of a production program a SYSOUT ID that is the name of the program.

Follow these steps:

1. Specify a text string to be found in the report.

   When the string is found, the preceding or following characters are extracted by ERO and assigned to the report as the SYSOUT ID. The text comprising that string must all be on one line of the report.

2. Define up to five separate text strings, which you specify as initialization parameters PTEXT1 through PTEXT5.

3. Prefix the PTEXT text string with a plus or minus sign to indicate if the SYSOUT ID is to be the characters to the right of the PTEXT (specified with +) or to the left (specified with –). The default is plus.

4. Specify a series of text strings separated by periods, referred to as segmented text strings. If segmented text is specified:

   - Enclose each text segment in single quotation marks.
   - Each PTEXT specification can be 40 characters, including the periods that separate the segmented text strings.
   - Quotation marks that enclose the text string are not included in the 40 characters.

5. Use double quotation marks as the delimiter, to search for a period or a single quotation mark.

Note: CA Deliver reports have a fixed report ID. You cannot use PTEXTn to change the SYSOUT ID for a CA Deliver report.

Consolidate Reports in Tapes (SARPAC)

The SARPAC tape consolidation utility is provided with ERO to consolidate backup tapes. SARPAC copies current reports (retained by CA View) and bypasses expired reports. The first CA View backup cycle (standard or interim) following a SARPAC consolidation uncatalogs the input tapes that are no longer needed.

SARPAC produces three reports:

- The first report lists the status of all tapes in the database, and can help you determine which tapes need to be consolidated.
- The second report lists the copied SYSOUT groups when SARPAC actually performs the consolidation.
- The third report is created only if the SARDRLST DD statement is in the SARPAC JCL.

Note: You can use storage groups to put reports with the same retention on the same tape, thereby minimizing the need for consolidation.

Follow these steps:

1. Specify the ERO initialization parameters PTHRESH, PMXTAPES, and PMXYEARS to control which tapes are consolidated by SARPAC.
2. Use the SYSIN statements to specify which tapes to use for input. Additionally, you can modify the SARPACUX user exit to select input tapes based on user-defined criteria.

   SARPAC mounts its input tapes directly. SARPAC does not use the expanded access server for tape and robotics to mount input tapes.
3. (Optional) Code the keyword REPORT.

   The tape status report is only produced and no actual tape consolidation is performed.

Run SARPAC

You can execute SARPAC by setting initialization parameters, consolidating the tape storage group, and consolidating one tape for a tape storage group.

It is not necessary to stop the SARSTC archival task to run the SARPAC utility. Consolidation can occur concurrently with report archival and the CA View backup cycle.

Follow these steps:

1. Execute SARPAC. Locate the sample execution JCL in member HAEXPAC in your CVDEJCL data set.

   The job control statements, JOB, EXEC, STEPLIB DD, SARDRLST DD, SYSPRINT DD, SYSIN DD, SORTLIB DD, SYSOUT DD, and SORTWKnn DD are required to execute SARPAC.

2. Consolidate Tape Storage Groups.

   If you use tape storage groups, we recommend that you consolidate one tape storage group at a time. Include the following SYSIN control statement to decrease the number of tape mounts:

   STORGRP=storage-group-name

3. Stop SARPAC.

   If you must terminate SARPAC before it has completed processing, you can use an MVS STOP command to cause SARPAC to terminate normally. SARPAC acknowledges the STOP command with the following message:

   SARPAC99 Operator issued STOP command - PROCESSING TERMINATED

4. Cancel SARPAC.

   If you have a tape management system and you cancel SARPAC, it is possible for your tape management system to override the CA View tape retention criteria. We recommend that you always let SARPAC run to completion.

   If you must cancel SARPAC, any output tapes it created must be excluded from a scratch and clean run because CA View still controls those tapes. This exclusion applies to primary, duplex, and DR tapes. You can run the SARTCHK utility to determine if any tapes were un-cataloged that are required by CA View.

Note: You must run a standard or interim backup cycle to assign reports to tape storage groups. Storage groups are only for reports residing on the CA View database since the last backup cycle.

EROPRO and Retroactive Retention Processing

CA View uses two types of report retention – standard and ERO.

- The first type (which is part of the base product) retains reports based on database *generations*. This is known as standard retention. You can easily identify reports that are controlled by standard retention. The online report selection list will show one of the following locations – DISK, TAPE, or TEMP.
- The second type, Expanded Retention Option (ERO), retains reports using database initialization parameters and an ERO Table.

When a report is originally archived; it is always controlled by standard retention. During a standard backup cycle, the EROPRO parameter controls which reports are eligible to switch from standard to ERO retention.

Retention Based on Generations – Standard Retention

A database generation is equivalent to all reports that have been archived between STANDARD backup cycles. Even if a report is created multiple times before or during a standard backup cycle, all copies are in the same generation. This means that every time a standard backup cycle is executed, the database generation is incremented. If three standard backup cycles are run each day then a day is equal to three database generations.

If a report's retention is not controlled by the ERO table, then it defaults to retention controlled by the NGEND/NGENT SARINIT parameters.

NGEND indicates how many generations a report should be retained on disk. For example, if NGEND=1 and we are currently archiving generation 10, all NON-ERO reports from generation 10 and prior will be removed from disk during the next STANDARD backup because this is the start of generation 11.

NGENT indicates how many generations the report should be retained in the system, that is, on tape. Since a report will be written to tape during the first backup cycle after it is archived, it is available in two locations, disk and tape so the value includes NGEND, that is, if NGEND=10 and NGENT=30, the report will remain on disk for 10 generations and a total of 30 generations.

Expanded Retention Option - ERO

The second type of retention, Expanded Retention Option (ERO) is available as an optional feature.

The retention options are defined using the ERO table and the following SARINIT initialization parameters.

```
EROOPT, EROPRO, PRETAIN, POPT, PCOPIES
```

where

`EROOPT=YES`

Specifies whether the ERO option is being used.

`EROPRO=NEW`

- NEW—Indicates to CA View that only newly archived reports should be evaluated for Expanded Retention. Reports from older generations which are controlled by standard retention should not be considered.
- YES and ALL—Indicate that all reports controlled by standard retention, new or old, should be evaluated for Expanded Retention. If the name of the report matches an entry in the ERO table, the retention is switched to ERO control.

Note: We recommend that EROPRO be set to YES and left that way unless a large percentage of the database is under standard retention.

Important! The EROPRO parameter settings do not control when a report is removed from ERO control. Once a report has been defined to ERO, it will remain under ERO control until its total ERO retention has expired. If you change a report's retention in the ERO table, the next standard backup cycle will apply that retention to all past versions of that report – not just the new versions. If you remove a report entry from the ERO table, the system will search for a more generic match and use the retention specified in that entry. If a more generic match cannot be found, the system will default to using PCOPIES. The important thing to remember is that once a report is switched to ERO control; it stays under ERO control until its ERO retention has expired.

Notes:

- Since PCOPIES defaults to a very small value, report(s) may be deleted.
- When you run the SARTDR/TADD utility, reports which have been added back into the database because of some recovery issue fall under a different category and are not considered 'OLD'. They are marked as 'recently TADDed' and will be evaluated regardless of the setting of the EROPRO parameter.

The PRETAIN Parameter and ERO Retention

The PRETAIN parameter controls what happens to a report after its total ERO retention has expired. It controls whether a report should switch back to standard retention or should it be deleted.

```
PRETAIN=TABLE/INIT
```

where:

INIT

INIT indicates that the report is to switch back to standard retention unless the ERO table entry for this report contains the DELETE parameter. When the DELETE parameter is not specified, the report is kept until it exceeds the NGENT/NGEND specification, then it is deleted**.**

TABLE

Indicates that the report is to be deleted.

Note: We recommend setting PRETAIN=TABLE

The ERO Table

The ERO table performs three functions:

1. Overrides the standard report retention specified in NGENT and NGEND.
2. Assigns reports to a STORGRP so they are backed up with other reports in the same STORGRP.
3. Specifies when reports are to be migrated to secondary storage (OPTICAL or CENTERA) and assigns a retention for report copies residing on those devices.

SYSOUTs are given expanded retention status with entries in what is referred to as the *expanded retention table,* or ERO table. Expanded retention table entries are defined to CA View using the SARPATAB DD statement in the CA View started task JCL, and in the SARDSK2B batch job for optical migration.

You can use wildcards in the expanded retention table statements, to identify all SYSOUT IDs that contain a particular character string. You can specify wildcards at any location in the SYSOUT ID. ABC* and AB*C*D are valid SYSOUT ID entries in the table.

The terms expanded retention and permanent status are synonymous.

The Expanded Retention Option (ERO) of CA View uses a table to provide additional retention capabilities for specific reports or groups of reports. The base CA View product only allows retention based on database generations. A report may be retained in the database for *x* generations (NGEND initialization parameter) and on a backup tape for *y* generations (NGENT initialization parameter). Without ERO, all reports will have the same retention. ERO provides additional retention options based on generations, days, and copies.

Retention Parameters

ERO retention is specified in either DAYS, COPIES, and/or GENS.

- DAYS (RETPD) is based on the date the report was archived.
- COPIES refers to the number of versions that you wish to keep.
- GENS is based on the generation number when the report was created. This is the number that CA View assigns to all reports archived between standard backup cycles. If you specify GENS=2 and you archived the report in GEN 100, it will be scratched after GEN 101 has completed its standard backup.

Control statements specify the retention parameters in a sequential file that is accessible by the backup task through the SARPATAB DD statement. The control statements specify the reports that will receive these retention options. The report name may be all 32 significant characters, or from 0 to 31 characters followed by the wildcard character, the asterisk (*). For example, if the payroll register should be kept on the database for 30 days and on tape for 3 years, add a control statement to the ERO table as follows:

```
/PAYREG ALL DRETPD=30 RETPD=1095
```

If all other payroll reports need be kept for only one year, add the following control statement to the ERO table:

```
/PAY* ALL DRETPD=30 RETPD=365
```

The backup cycle searches the ERO table from the top to the bottom using the report name as a search argument. The first entry that matches the most significant characters (and the wildcard character if present) is used to obtain the report's retention options.

Special considerations apply if this table is sorted, the '/PAY*' statement would appear in the file ahead of the '/PAYREG' statement, and the payroll register report would obtain the same retention options as the other payroll reports.

More importantly, if a '/* ALL …' default report retention statement was in the sorted file, it sorts as the first statement in the ERO table, and all reports would then obtain retention options from the first entry in the table.

Note: To prevent this type of sequence error from occurring, CA View validates the order of the ERO table before every backup cycle. When you change the ERO table, we recommend you run the SARVERO utility to validate the ERO table and prevent problems during the next CA View backup cycle.

Expiration of Retention

ERO retention can use any combination of COPIES, RETPD, and GENS. When more than one retention parameter is specified, CA View will keep the report until all retention parameters have been satisfied. Thus, if you use COPIES=2 RETPD=5, CA View will not delete any copies unless they are at least 5 days old. In addition it will always keep the last 2 copies of a report, even if they are older than 5 days. This is referred as the TOTAL retention of a report.

If no ERO retention is specified (COPIES, RETPD, GENS), the INIT PARM PCOPIES is used as the default.

TOTAL retention and tape retention are nearly the same because the backup cycle copies a report to tape according to the interval settings.

You can use the SARBKTUX (user exit) to target specific reports that should *not* be backed up to tape.

ERO Table Statements

Expanded retention table entries are input to the CA View started task using the SARPATAB DD statement. Expanded retention table statements are written as follows:

```
/sysout-id  parameter {value}
```

A sysout-id ID can contain alphanumeric and the following special characters:

- Blank " "
- Less than sign "<"
- Left parentheses "("
- Plus sign "+"
- Bar "|"
- Ampersand "&"
- Right parentheses ")"
- Semicolon ";"
- Not Sign "¬"
- Broken bar "¦"
- Comma ","
- Greater than sign ">"
- Question mark "?"
- Colon ":"
- Single quote "'"
- Equal sign "="
- Double quote '"'

A Report ID cannot start with a Blank.

Note: If the sysout-Id contains spaces, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote will end the ID. For example, if the value were JIM'S REPORT it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

Table Updates (PDS Member)

Maintaining the ERO table as a PDS member allows concurrent updates to take place while the SARSTC archival task is active. Because the ERO table is reprocessed during every standard backup cycle, any updates would automatically take effect for the next standard backup cycle following the update.

When Do the ERO Table Statements Take Effect?

The expanded retention table statements in the SARPATAB DD statement of the CA View started task JCL go into effect after a standard backup of the CA View database. Interim backups, specified via the NBACKUP initialization parameter, do not evaluate SYSOUTs for expanded retention.

Important! Do not specify FREE=CLOSE in the SARPATAB DD statement because the ERO table would be freed during the first backup cycle, and subsequent backups would not access it.

When running SARINIT, always verify that the ERO parameters appear on the OPTIONS IN EFFECT listing.

Note: If PRETAIN=TABLE and no SARPATAB DD statement is provided in the archival task (SARSTC) job stream, message SARPAR10 WARNING - SARPATAB DD STATEMENT MISSING is displayed, and the backup cycle abends with U'1010'. If a SARPATAB DD statement is present but points to an empty file, message SARPAR09 WARNING - ERO TABLE EMPTY is displayed, and the backup cycle abends with U'1009'.

SARVERO - ERO Statement Validation Utility

SARVERO can be run as a batch program which will validate the ERO Table in the same manner as the Backup Cycle and produce the same error messages and return codes. It will also run a Standard Backup *simulation*--no tapes will be mounted and no reports will be deleted. Its purpose is to just give you an estimate of how many reports and tapes will be scratched and/or migrated on the next standard backup.

A return code of zero indicates that no errors are found. The program will terminate with a User Abend U'0001' and error messages in the Job Log if errors are found.

Note: Successful completion of the table syntax-checking will result in the execution of the backup cycle simulation. To prevent the simulated backup, specify a parm of ",TABLE" after the database high level qualifier.

JCL Requirements

Sample JCL for this utility can be found in member HAEXERO in your CVDEJCL data set.

```
//STEP    EXEC PGM=SARVERO,PARM='.....db_hlq......[,TABLE]'
//STEPLIB  DD DISP=SHR,DSN=.........CVDELOAD
//SARBKLST DD SYSOUT=*
//SARPATAB DD DISP=SHR,DSN=.........parm_library(..ero_table..)
```

A report will be written to the file specified by the SARBKLST DD Statement similar to Backup Cycle output in the Archival Task (SARSTC). The report will display all reports and/or resources which will be deleted from the database during the next full standard backup cycle if the specified ERO Table is implemented. It will also list any tapes which would be expired and uncataloged.

where:

db_hlq

High level qualifier of the database.

[,TABLE]

An optional parameter to execute only syntax checking and not backup simulation. The default is to run both entry sequence checking and backup simulation. The simulation can run for 30 minutes or longer.

ero_table

Member name of the ERO table to be validated.

Return Codes:

zero

Normal termination, no errors.

U'0001'

Errors found, see the accompanying messages.

Note: For more information about the messages that can be generated, see the *Message Guide.*

Writing ERO Table Statements

ERO table statements are made up of SYSOUT IDs (including wildcards), parameters, and the values you set for those parameters.

Expanded retention table entries are input to the CA View started task using the SARPATAB DD statement. Expanded retention table statements are written as follows:

```
/sysout-id  {ALL|MARK|LAST}
            RETPD=nnnnn  GENS=nnnnn  COPIES=nnnnn
            DRETPD=nnnnn DGENS=nnnnn DCOPIES=nnnnn
            IRETPD=nnnnn LRETPD=nnnnn
            STORGRP=storage-group-name
            DSK2DAYS=nnnnn
            DSK2NOTP
            D2RETPD=nnnnn
            REGDAYS=nnnnn
            VIEWTAPE={YES|NO}
            XCOND={YES|NO}
            EXCLUDE
            DELETE
```

- The data set can be either a sequential file or a member of a partitioned data set. The data set attributes should be Fixed or Fixed Blocked with a Logical Record Length from 80 to 256 characters in length. Code the slash in column 1 followed immediately by the SYSOUT ID.
- One or more blanks must follow the SYSOUT ID and separate it from the ERO table parameters.
- Parameters are separated by one or more blanks and/or commas, and can be specified in any order.
- A statement that exceeds the Logical Record Length minus 8 characters must be continued on additional statements. The last 8 columns of each logical record are reserved for statement numbering. When continuing a statement, interrupt the statement between complete parameters only, and omit the slash on the continuation statement.
- An asterisk in column 1 indicates a comment line.

Sysout ID Guidelines

The SYSOUT ID is the first parameter in the statement. The wildcard character (*) can be specified at any position in the ID to indicate that any single character can match in that position (for example, AB**D* is a valid SYSOUT ID entry).

You should list SYSOUT IDs from the most specific to the most general because ERO evaluation is triggered from the first matching entry found, searching from the top of the table.

The following is an example of specific-to-general listing statements:

```
/ABCD* SPECIFICATION2
/ABC*  SPECIFICATION1
```

Note: We recommend that you end the table with a "/* ALL …" entry. This entry governs any reports that did not match any previous entry in the table. Use this "catch-all" entry to specify retention for nonmatching reports on this database. A typical statement is:

```
/* ALL DRETPD=5 RETPD=30
```

This statement indicates that if a report is not matched by any other ERO table statement, it will stay on disk for 5 days and on tape for 30.

If a SYSOUT is selected for retention through the online K command or SARBCH /PERM statement), the PCOPIES initialization parameter is used as the default value for tape and disk retention.

Note: If the sysout-Id contains spaces, enclose it in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote will end the ID. For example, if the value were JIM’S REPORT it must be entered as ‘JIM’’S REPORT’ or “JIM’S REPORT”.

Selection Parameters

If the ALL, LAST, or MARK parameter is not specified, the initialization parameter POPT is used as a default. We recommend that you specify MARK, ALL, or LAST in each statement, to understand and verify the effects of the statements in your expanded retention table.

ALL

Specifies that all reports for the SYSOUT ID from the current generation are evaluated for ERO processing.

If you also set the initialization parameter EROPRO=ALL, the entire database is considered for the next backup cycle, not just the current generation. If EXCLUDE is also specified, then all SYSOUT groups are excluded, and are governed by NGEND and NGENT. If ALL is specified, MARK and LAST must not be specified.

If EXCLUDE is also specified, all SYSOUT groups are excluded; the NGEND and NGENT parameter values are used.

If ALL is specified, MARK and LAST must not be specified.

LAST

Specifies that the last (most recent) report from the current generation is evaluated for ERO processing.

LAST is typically used for program compilation listings. If you also set the initialization parameter EROPRO=ALL, the last SYSOUT from every generation is considered, not just the current generation. If LAST is specified, MARK and ALL must not be specified.

MARK

Specifies that all reports for the SYSOUT ID for the current generation are evaluated for ERO processing, only if marked manually.

Manual marking for ERO selection is done with the online K (KEEP) command, and in batch with the PERM statement of the SARBCH utility. If MARK is specified, LAST and ALL must not be specified.

Primary Disk Retention

The following are parameters used to define disk retention; this list provides the following:

- Clarification of ERO processing
- Explanation of how the parameters pertain to Primary/Secondary Disk Retention
- Definition of the default processing that occurs when specific parameters are missing.

COPIES=nnnnn

Specifies the total number of unique copies of a report that are to be retained by CA View (valid values are 0 to 32767). If DCOPIES is specified and COPIES is omitted, COPIES defaults to DCOPIES. If the value of DCOPIES exceeds COPIES, the value in DCOPIES will be used for COPIES.

If COPIES, GENS, and RETPD are not specified, DCOPIES, DGENS, DRETPD, and D2RETPD will define the total retention.

DCOPIES=nnnnn

Specifies the number of copies of the report that are to be retained on primary disk or optical/secondary disk for the SYSOUT ID (valid values are 0 to 32767).

DCOPIES is intended to be specified with COPIES to limit the number retained on disk. If COPIES is specified and DCOPIES is omitted, DCOPIES defaults to COPIES.

If the report is migrated to optical/secondary disk, DCOPIES will govern the optical/secondary disk retention unless D2RETPD is specified.

DGENS=nnnnn

Specifies the number of generations of the report that are to be retained on primary disk or optical/secondary disk (valid values are 0 to 32767). DGENS is intended to be specified with GENS to limit the number retained on disk. If GENS is specified and DGENS is omitted, DGENS defaults to GENS.

If the report is migrated to optical/secondary disk, DGENS will govern the optical/secondary disk retention unless D2RETPD is specified.

DRETPD=nnnnn

Specifies the number of days that a report is to be retained on primary or optical/secondary disk (valid values are 0 to 32767). DRETPD is intended to be specified with RETPD to limit the number retained on disk. If RETPD is specified and DRETPD is omitted, DRETPD defaults to RETPD.

If the report is migrated to optical/secondary disk, DRETPD will govern the optical/secondary disk retention unless D2RETPD is specified.

If DRETPD is omitted and D2RETPD is specified, then DRETPD will default to D2RETPD.

Note: See DRETPD under the Optical/Centera options.

D2RETPD=nnnnn

Specifies the number of days that a report is retained on optical/secondary disk (valid values are 0 to 32767).

D2RETPD is intended to be specified with DRETPD to provide separate retention for optical/secondary disk and primary disk.

If D2RETPD is not specified, DCOPIES, DGENS, and DRETPD will govern the optical/secondary disk retention and the report will be deleted from primary disk after it is migrated.

GENS=nnnnn

Specifies the total number of generations of a report that are to be retained by CA View (valid values are 0 to 32767). If DGENS is specified and GENS is omitted, GENS defaults to DGENS. If the value of DGENS exceeds GENS, the value in DGENS will be used for GENS.

IRETPD=nnnnn

Specifies the number of days (0 to 32767) that any page indexes defined for the reports are retained on disk.

LRETPD=nnnnn

Specifies the number of days (0 to 32767) since the report was last accessed, before it is deleted from primary disk.

The DSK2DAYS parameters (initialization parameter and ERO table parameter) should not be greater than LRETPD, because if a report is deleted from primary disk, it will not be available for migration to optical disk.

LRETPD overrides the HOLDTEMP initialization parameter. HOLDTEMP sets a global default for the number of backup cycles to occur before a temporary disk report (loaded from tape to disk) is deleted.

REGDAYS=nnnnn

REGDAYS controls the number of days that a report will be non-deletable in CA View. When the parameter is used in the ERO table, matching reports will be flagged as non-deletable until a calculated REGDAYS date has been reached. (Valid values are 0 to 32767).

Be aware of the following:

- The REGDAYS date is calculated by adding REGDAYS to the report ARCHIVE date.
- Once a REGDAYS date is assigned to a report, it can only be extended and never shortened via changes in the ERO table.
- The SARBCH /CHANGE ARCHDATE function will fail with a message if the target report is under REGDAYS control.

Example 1:

- If a report was archived on 10/01 with REGDAYS=20, it cannot be deleted before 10/21.
- If on 10/05 the ERO table entry is changed to REGDAYS=5, new reports for that day (10/05) will be non-deletable until 10/10 but the 10/01 copy will be non-deletable until 10/21.

Example 2:

- If on 10/05 the ERO table entry is changed to REGDAYS=25, new reports for that day (10/05) will be non-deletable until 10/30.
- Note that the 10/01 copy will be non-deletable until 10/26 because the new REGDAYS value (25) was greater than its old REGDAYS value (5).

Note: Even if a user is authorized to delete the report, the delete will fail if it is prior to the REGDAYS date.

Centera Considerations:

Any time a report under REGDAYS control is migrated to Centera storage, the Centera retention period will be set to the CA View REGDAYS date.

Centera retention is specified in seconds from the Centera creation date which is based on GMT time. CA View will apply a local time zone adjustment to number of seconds so report is retained until midnight local time.

LRETPD=nnnnn

Specifies the total number of days that a report is to be retained by CA View (valid values are 0 to 32767). If DRETPD is specified and RETPD is omitted, RETPD defaults to DRETPD. If the value of DRETPD exceeds RETPD, the value in DRETPD will be used for RETPD.

Disk Retention Parameter Guidelines

Specifying the amount of retention in days with the DRETPD parameter for disk and RETPD parameter for tape clarifies the effect of the ERO table on a report's retention—it will be kept for *nn* days. Specifying the DRETPD parameter is the most efficient processing method, because CA View can use a simple arithmetic calculation on the archival date.

We recommend that you specify the following disk parameters with the corresponding tape retention:

Disk Retention Parameter	Tape Retention Parameter
DRETPD	RETPD
DCOPIES	COPIES
DGENS	GENS

Note: If you do not specify a disk retention parameter, disk retention is the same as the tape retention. If you specify disk retention, but not tape retention, tape retention will be the same as disk retention. If you specify both tape and disk retention, that is. RETPD=5 DRETPD=10, tape retention will be changed to the larger value, in this case 10.

Tape Retention Parameters

COPIES=nnnnn

Specifies the total number of unique copies of a report (0 to 32767) that are retained on tape for the SYSOUT ID.

RETPD=nnnnn

Specifies the total number of days (0 to 32767) that a report with the SYSOUT ID is retained on tape.

GENS=nnnnn

Specifies the total number of CA View generations (0 to 32767) that a report with the SYSOUT ID is retained on tape.

Tape Retention Parameter Guidelines

We recommend that you use only one tape retention parameter per entry; however, if you use more than one parameter, each parameter must be satisfied before a SYSOUT no longer has expanded retention (PERM) status. For example, suppose you have COPIES=3 and RETPD=30 for a SYSOUT that is created daily. All copies are kept for 30 days. The most recent three copies are kept indefinitely.

When the tape retention criteria are satisfied, the SYSOUT ID is no longer in expanded status, even if the disk retention criteria is not satisfied.

Note: If no ERO tape or disk retention is specified (COPIES, RETPD, GENS), then the initialization parameter PCOPIES is used as the default.

Tape Location (STORGRP)

STORGRP specifies the tape storage group for SYSOUT. These group names can be unique for your location—they are linked to STORGRP1 through STORGRP9.

Note: For more information about tape, see STORGRP1 – STORGRP9 in the chapter "Initialization Parameters."

Syntax:

```
STORGRP=group-name
```

If you use the expanded access server for tape and robotics, you should consider grouping reports based on how frequently they are accessed to minimize tape mounts and improve performance. You can also group reports by their retention requirements, so the distribution of expired reports on tape is less fragmented, reducing the need for tape consolidation.

We recommend that you assign STORGRP1 the group name with the largest number of reports to enhance backup cycle performance. You use the SARINIT initialization parameter STORGRP1 to assign the group, for example:

STORGRP1=largest-group-name/

The ERO Table Statement STORGRP parameter is used to direct these reports to the storage group. For example,

/PAYROLL* ALL DRETPD=30 RETPD=365 STORGRP=YEAR1

Tape Online Access: VIEWTAPE

VIEWTAPE specifies whether the SYSOUT can be viewed if it resides *only* on tape.

Syntax:

```
VIEWTAPE=YES|NO
```

The default is YES.

Optical Disk Migration: DSK2DAYS

DSK2DAYS specifies the number of days (1 to 998) a report remains on primary disk before it is migrated to secondary disk.

Syntax:

DSK2DAYS=*nnn*

Setting the value to 0 specifies that SYSOUT groups be migrated to secondary disk during the next CA View backup, scheduled run of the migration subtask, or migration batch job. Setting the value to 999 specifies that SYSOUT groups will never be migrated to secondary disk.

In addition, a DSK2DAYS initialization parameter sets a global default value.

Optical Disk Retention: DSK2NOTP

Use the DSK2NOTP parameter to specify that if a report resides on optical disk and a tape backup exists, it is to be deleted from the tape backup.

Syntax:

DSK2NOTP

If you do not specify this parameter, tape backups are still maintained. If you specify:

```
DSK2DAYS=0
DSK2NOTP
```

and a report recently archived to the CA View database migrates to DSK2 before the next backup cycle, no tape backup is ever created.

Exceptional Condition Processing

Use the XCOND keyword for reports that contain JCL MSGCLASS data.

Syntax:

```
XCOND={YES|NO}
```

With XCOND you can specify whether CA View is to consider SYSOUTs that had exceptional conditions, for example, JCL errors, ABENDS, and so on, for ERO evaluation.

YES

The report is selected even though an exception is present.

NO

The report is bypassed for ERO processing when an exception is present.

You can set the following parameters:

- ERO initialization parameter PXCOND=NO to bypass JCL reports containing exceptional conditions for the entire database.
- ERO table parameter XCOND=NO for any individual table entry to bypass reports with exceptional conditions governed by that entry.

You can further refine conditional selection for ERO processing by creating user-defined exceptional conditions.

Notes:

- For more information about exceptional condition, see Exceptional Condition Checking in the chapter "Introduction."
- The default for XCOND depends on the setting of PXCOND:
  - The default for PXCOND is YES, which in turn sets the default for XCOND to YES.

    To exclude individual reports from ERO processing, set XCOND to NO when PXCOND is set to or defaulted to YES.
  - To include individual reports in ERO processing, set XCOND to YES when PXCOND is set to NO.

Excluding Reports

Use EXCLUDE to specify that the reports are not to be retained by ERO. These reports are retained in the database based on the NGEND and NGENT initialization parameters.

Syntax:

```
EXCLUDE
```

The Keyword DELETE

Use DELETE to specify that when the ERO retention TOTAL criteria expires, the report is deleted (and does not revert to the control of the CA View initialization parameters NGENT).

Syntax:

```
DELETE
```

If PRETAIN=TABLE, DELETE is not required and reports are deleted when they expire from the table. DELETE does not affect disk retention. (When disk retention criteria expire, the SYSOUT goes to initialization parameter NGENT control, unless PRETAIN=TABLE.)

We recommend that you specify PRETAIN=TABLE to make the ERO table a single point-of-control.

Considerations:

- If you specify MARK (or POPT=M), marked reports are assigned the retention specified in the ERO table entry.

  Unmarked reports are considered expired; therefore, they are deleted during the first standard backup cycle following their archival to CA View.

- If you specify LAST (or POPT=L), the retention specified in the ERO table entry is assigned to the last report in the generations being processed.

  The copies that precede the last copy in the generations being processed are considered expired; therefore, they are deleted during the first standard backup cycle following their archival to CA View.

ERO Table Examples

Example 1

This example shows you how to keep:

- Two generations of all CA View reports on disk, and three on tape.

  Note that if a value for the NGENI parameter is not specified NGENT also governs master index backups.

- Reports beginning with the characters ABC on tape for 90 days; however, you are limited to 30 days on disk.

Set the following initialization parameters:

```
NGEND=2
NGENT=3
```

Specify the following ERO table:

```
/ABC* ALL RETPD=90 DRETPD=30
*
*    ALL APPLICATION 'ABC' REPORTS ARE
*    ON DISK 30 DAYS, ON TAPE 90 DAYS
```

Example 2

This example shows you how to keep:

- All reports beginning with ABCD on disk for 7 days and on tape for one year.
- Reports beginning with ABC on disk for 7 days and on tape for 90 days.

Set the following initialization parameters:

```
/ABCD*  ALL RETPD=366 DRETPD=7
/ABC*   ALL RETPD=90 DRETPD=7
*
*     ABCD REPORTS ARE REQUIRED ON TAPE
*     FOR ONE YEAR FOR LEGAL PURPOSES
*
```

Note: ERO uses the first match it finds. If these entries were in reverse order, an error message (SARPAR08) is generated at the start of the backup.

Example 3

This example shows you how to keep the most recent successful run of report ABCDE which is created multiple times during a production cycle. You want the last report in each generation that ran without an exceptional condition to be kept. At most, 10 copies will be kept on tape, 5 of which are also on disk.

Specify the following ERO table:

```
/ABCDE   LAST COPIES=10 DCOPIES=5 XCOND=NO
```

Example 4

This example shows you how to keep disk use to an absolute minimum.

- All JCL reports beginning with the characters AUDIT, including runs that had exceptional conditions, are kept on tape for 7 years.
- No copies are kept on disk past the current generation.

Set the following initialization parameters:

```
PRETAIN=TABLE
NGEND=1
```

Specify the following ERO table:

```
/AUDIT*  ALL RETPD=2557 DRETPD=0 XCOND=YES
```

Example 5

This example also shows you how to keep disk use to an absolute minimum. Reports beginning with the characters TEST are excluded from ERO processing. A user-defined retention of 3 days is established for all reports that are marked (K online command, SARBCH /PERM statement), even if they run with an exceptional condition.

Set the following initialization parameters:

```
NGEND=1
```

Specify the following ERO table:

```
/TEST*  EXCLUDE
/*      MARK RETPD=3 XCOND=YES
```

Assign SYSOUT IDs Based on Embedded Text

It is possible to have ERO assign SYSOUT IDs based on text within a report itself. For example, you can give compilation listings of a production program a SYSOUT ID that is the name of the program.

It works as follows:

- Specify a text string to be found in the report.
- When the string is found, the preceding or following characters are extracted by ERO and assigned to the report as the SYSOUT ID. The text comprising that string must all be on one line of the report.
- You can define up to five separate text strings, which you specify as initialization parameters PTEXT1 through PTEXT5.

Note: CA Deliver reports have a fixed report ID. You cannot use PTEXT*n* to change the SYSOUT ID for a CA Deliver report.

Text Extraction (+ and –)

Prefix the PTEXT text string with a plus or minus sign to indicate if the SYSOUT ID is to be the characters to the right of the PTEXT (specified with +) or to the left (specified with –). The default is plus.

The characters following or preceding the PTEXT string are searched for the first non-blank valid SYSOUT ID character. Characters are extracted until an invalid character is encountered or 32 characters are obtained.

```
PTEXT1='LOADLIB('
```

The report can be a JCL listing containing the following:

```
//SYSLMOD DD DSN=PROD.LOADLIB(DEVWORK),DISP=SHR
```

The extracted SYSOUT ID is DEVWORK.

Segmented PTEXT Strings

You can specify a series of text strings separated by periods, referred to as *segmented text strings*. If segmented text is specified:

- Enclose each text segment in single quotation marks.
- Each PTEXT specification can be 40 characters, including the periods that separate the segmented text strings.
- Quotation marks that enclose the text string are not included in the 40 characters.

The report is scanned until the first segment of PTEXT text is located, and then it is scanned for the next segment, and so on, until the last segment is found.

For the specification

```
PTEXT1='SYSLMOD'.'LOAD('
```

when the following JCL is scanned:

```
//LKED.SYSLMOD  DD  DSN=PROD.LOAD(PGMA130),DISP=SHR
```

the extracted SYSOUT ID is the member name PGMA130.

Notice that the text segments SYSLMOD and LOAD are enclosed in single quotation marks to show that the period is a segment delimiter.

Special Characters

If you want to search for a period or a single quotation mark, use double quotation marks as the delimiter. For example:

```
PTEXT3="GRP.HTE'TRP'"
```

CA View first checks the PTEXT entry for a single or double quotation mark. Whichever it finds first is taken as the delimiter.

The report is a compile listing containing:

```
-PROGRAM-ID. PROGRM1-
```

The following specification causes PROGRM1 to be the extracted SYSOUT ID:

```
PTEXT1= "PROGRAM-ID."
```

Special Characters Support

PTEXT processing uses a limited character set for valid characters in a report ID. The following characters are valid for report IDs during PTEXT processing:

- Letters (A-Z)
- Numbers (0-9)
- National characters ($,#, @)
- Dash (-)

PTEXT in the SYSOUT ID Hierarchy

The following list shows the hierarchy used by CA View and ERO to determine the SYSOUT ID for a report other than a CA Deliver report:

- If the started task user exit (SARSTCUX) is coded to assign a SYSOUT ID not equal to the job name, that SYSOUT ID is used and it overrides all of the following items in this list.
- If the SYSOUT DD statement has an external writer name not equal to the job name, the writer name is assigned as the SYSOUT ID. If a dollar sign precedes the writer name, the writer name (excluding the dollar sign) is appended to the job name, and the result is assigned as the SYSOUT ID. This overrides all of the following items in this list.
- If the text specified in the PTEXT1 through PTEXT5 ERO initialization parameters is found in the report data, the SYSOUT ID is assigned based on characters extracted from the data.
- If none of the above is found, the job name of the job that creates the report is the SYSOUT ID.

Tape Consolidation of Reports (SARPAC)

With ERO processing, it is possible for CA View backup tapes to contain reports that expire at different times. For any particular tape, there can be one report that has ERO retention criteria of seven years, but other reports on the tape may have expired. The space occupied by these reports should be reused.

The SARPAC tape consolidation utility is provided with ERO to consolidate backup tapes. SARPAC copies current reports (retained by CA View) and bypasses expired reports. The first CA View backup cycle (standard or interim) following a SARPAC consolidation uncatalogs the input tapes that are no longer needed.

You can use SYSIN DD statements to process the following:

- All backup tapes for the database
- A particular backup tape (by CA View tape sequence number)
- A range of tapes
- A particular tape storage group

You can use storage groups to put reports with the same retention on the same tape, thereby minimizing the need for consolidation.

Note: For information about tape storage groups, see STORGRP0 and STORGRP1 to STORGRP9 in the chapter "Initialization Parameters."

Operation

The ERO initialization parameters PTHRESH, PMXTAPES, and PMXYEARS control which tapes are consolidated by SARPAC. This table provides a description of each of these parameters:

PTHRESH

Lets you specify a threshold value.

For example, only consolidate tapes that are 55 percent unused.

PMXTAPES

Lets you limit the SARPAC run by specifying the number of tapes that will be processed.

PMXYEARS

Lets you specify how long a tape can exist before it is automatically consolidated, an important function because tapes tend to have I/O problems as they age.

You can use the SYSIN statements to specify which tapes to use for input. Additionally, you can modify the SARPACUX user exit to select input tapes based on user-defined criteria.

SARPAC mounts its input tapes directly. SARPAC does not use the expanded access server for tape and robotics to mount input tapes.

SARPAC Reports

SARPAC produces three reports:

- The first report lists the status of all tapes in the database, and can help you determine which tapes need to be consolidated.
- The second report lists the copied SYSOUT groups when SARPAC actually performs the consolidation.
- The third report is created only if the SARDRLST DD statement is in the SARPAC JCL.

Creating the Tape Status Report without Running Consolidation

The keyword REPORT can be coded as the second subparameter of the PARM field on the EXEC statement:

```
PARM='VIEW.SYSTEM1,REPORT'
```

This keyword indicates that only the tape status report is produced and that no actual tape consolidation is performed.

SARPAC Tape Status List

The following is a sample of the SARPAC Tape Status List:

```
11/10/2013 14:30:08              CA View Output Archival and Viewing (12.1)                  Page     1
SARPAC                  Expanded Retention Option (ERO) Tape Consolidation - Tape Status List

                                                Used  Per-                        Total   Processed?
 Tseq Data Set Name                  Volser Total Grps  Cent Create     Yrs Dplx   Lines   Yes/No, Remarks
----- ------------------------------------ ----- ---- ----- ---------- --- ----   -----   ----------------------
   24 VIEW.SYSTEM1.SARTAPE.T0000024 461079    22    1     4 10/07/2013   1  YES   11600   Y, BELOW PTHRESH
   28 VIEW.SYSTEM1.SARTAPE.T0000028 486037     4    3    75 10/15/2013   1       151200   Y, BELOW PTHRESH
   29 VIEW.SYSTEM1.SARTAPE.T0000029 486158     1    1   100 10/15/2013   1       126000   Y, CONTINUATION TAPE
   30 VIEW.SYSTEM1.SARTAPE.T0000030 486035     3    2    66 10/15/2013   1  YES   25200   Y, BELOW PTHRESH
   35 VIEW.SYSTEM1.SARTAPE.T0000035 484885     2    2   100 10/15/2013   1  YES  499747   N, ABOVE PTHRESH
   36 VIEW.SYSTEM1.SARTAPE.T0000036 484351     1    1   100 10/16/2013   1  YES  487147   N, CONTINUATION TAPE
   37 VIEW.SYSTEM1.SARTAPE.T0000037 486050     1    1   100 10/16/2013   1  YES  487147   N, CONTINUATION TAPE
   38 VIEW.SYSTEM1.SARTAPE.T0000038 484426     4    3    75 10/16/2013   1  YES  511347   Y, BELOW PTHRESH
   41 VIEW.SYSTEM1.SARTAPE.T0000041 468007     2    0     0 10/28/2013   1            0   N, NO USED GROUPS
   42 VIEW.SYSTEM1.SARTAPE.T0000042 479554     1    0     0 10/28/2013   1            0   N, NO USED GROUPS
   43 VIEW.SYSTEM1.SARTAPE.T0000043 474440     1    0     0 10/28/2013   1            0   N, NO USED GROUPS
   44 VIEW.SYSTEM1.SARTAPE.T0000044 479202     1    0     0 10/28/2013   1            0   N, NO USED GROUPS
   45 VIEW.SYSTEM1.SARTAPE.T0000045 427576     1    0     0 10/28/2013   1            0   N, NO USED GROUPS
   46 VIEW.SYSTEM1.SARTAPE.T0000046 428393     0    0       10/28/2013   1            0   N, NO USED GROUPS
   47 VIEW.SYSTEM1.SARTAPE.T0000047 428119     7    6    85 10/28/2013   1        75600   N, CURRENT BACKUP
```

SARPAC Tape Status List: Fields

The following fields are provided in the report:

- Tape sequence numbers by which CA View references the tapes.

  Note: These numbers may not be the same as the T*nnnnnnn* qualifier of the data set name when the tapes were created by a database which was later merged into this database.

- Data set name
- Volume serial number
- Total SYSOUT groups written to this tape by either one or more backup cycles or previous tape consolidation executions.
- Number of SYSOUT groups that are currently active, that is, not expired or deleted.
- Percentage of the SYSOUT groups that are currently active—this is a simple percentage of:

  (active SYSOUT groups / total SYSOUT groups) * 100

  Note: This number does not represent the percentage of actual tape usage.

- Creation date
- Number of years (rounded up) from the date the tape was created
- Indication that a duplex tape exists
- Total number of lines for all active SYSOUT groups.

  Note: This does not represent the number of lines originally written to the tape.

- Indication that SARPAC processed the tape and the corresponding remarks

Remarks Field of Tape Status List

The following list explains the remarks in the PROCESSED YES/NO, REMARKS field of the Tape Status List:

Y, BELOW PTHRESH %

Indicates the percentage below PTHRESH initialization parameter.

Y, CONTINUATION TAPE

Indicates that the tape is to be mounted only to retrieve the remaining part of a continued report.

Y, EXCEEDS PMXYEARS

Indicates that the value exceeds the PMXYEARS initialization parameter.

Y, EXIT SELECTED

Indicates that the tape is marked for selection by the user exit SARPACUX.

Y, MERGED DATABASE

Indicates that the tape belongs to a merged database.

Y, SYSIN INCLUDED

Indicates that the tape is selected for processing and that the tape sequence number is within the range specified.

N, ABOVE PTHRESH %

Indicates the percentage above PTHRESH initialization parameter.

N, CURRENT BACKUP

Indicates that the current tape is never processed.

N, EXCEEDS PMXTAPES

Indicates that the value exceeds the PMXTAPES initialization parameter.

N, EXIT EXCLUDED

Indicates that the tape is marked for exclusion by exit SARPACUX.

N, NO USED GROUPS

Indicates that there are no reports on the tape to copy.

N, CONTINUATION TAPE

Indicates that the tape only contains a report that is continued from a previous tape, and that the tape is not being processed.

N, INDEX ONLY

Indicates the following:

- There are no reports on the tape to copy.

- The tape has not been deleted because it contains current backup copies of the master index (NGENI=).

N, SYSIN EXCLUDED

Indicates that the tape sequence number is not within the specified range.

SARPAC Copied SYSOUT Groups Report

The second report lists the copied SYSOUT groups. This is a sample of the SARPAC Copied SYSOUT Groups Report.

```
11/10/2013 14:30:11                    CA View Output Archival and Viewing (12.1)                              Page     1
SARPAC                     Expanded Retention Option (ERO) Tape Consolidation - Copied Sysout Groups

Id                               Jobname  Jobid     Gen  Seq Arc Date   Time   Xcode Loc   Lines  Pages  Blocks  Tvser  Duplex  Tseq
-------------------------------- -------- -----     ---  --- ---------- -----  ----- ---- ------  -----   -----  ------  -----  ----
REPORT1                          COOCH03A JOB03282   21   12 10/13/2013 17:03        PTAP  11600    200       8  428029          48
REPORT1                          COOCH03A JOB05650   23    6 10/15/2013 19:25        PTAP  12600    200      33  428029          48
REPORT1                          COOCH03A JOB05651   23    7 10/15/2013 19:30        PTAP  12600    200      33  428029          48
REPORT1                          COOCH03A JOB05649   23    8 10/15/2013 19:30        PTAP 126000   2000     319  428029          48
REPORT1                          COOCH03A JOB05747   23    9 10/15/2013 21:28        PTAP  12600    200      33  428029          48
REPORT1                          COOCH03A JOB05748   23   10 10/15/2013 21:33        PTAP  12600    200      33  427770          49
REPORT1                          COOCH03B JOB05783   23   12 10/15/2013 22:00        PTAP  12600    200      33  427770          49
REPORT1                          COOCH03A JOB03455   23    1 10/13/2013 21:23        PTAP  11600    200       8  427770          49
SARPAC11  0000008 SYSOUT GROUPS COPIED
```

SARPAC Copied SYSOUT Groups Report: Fields

The following fields are provided in the report.

- SYSOUT identifiers
- Name of the job that created the SYSOUT
- JOBID of the job that created the SYSOUT
- Archival generation number
- SYSOUT sequence number for the generation
- Archival date and time
- Last print date and time
- Location of the SYSOUT group
- Number of lines
- Number of pages
- Number of blocks on tape for the report, any indices it may have, and mapping information
- Exception condition
- Volume serial numbers of the output tape, if duplexing is being done
- Tape sequence number by which CA View references the output tape

Running SARPAC

This section explains how to execute SARPAC and provides examples for setting initialization parameters, consolidating the tape storage group, and consolidating one tape for a tape storage group.

Job Control Statements

Locate the sample execution JCL in member HAEXPAC in your CVDEJCL data set.

The following job control statements are required to execute SARPAC:

JOB

Initiates the job.

EXEC

Specifies the following:

- Program name (PGM=SARPAC) and the high-level name of the CA View database.
- Optionally REPORT, to create a report that lists the status of all the tapes in the database, or NEW to force new consolidation (SARPAC) tapes.

STEPLIB DD

Defines the load library containing SARPAC.

Note: If the program resides in a link list library, omit this statement.

SARDRLST DD

Defines the sequential output data set (normally SYSOUT) used for listing the reports consolidated onto DR tapes.

If this is not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded, where nnn is a multiple of 133.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) used for listing the consolidation report.

If there is no SYSOUT data set, DCB=BLKSIZE=nnn must be coded where nnn is a multiple of 133.

SYSIN DD

Optional, specifies input.

Note: For more information, see the section, Input to SARPAC.

SORTLIB DD

Defines the load library that contains the SORT program library.

This DD statement may not be needed if the sort program library is moved to LPA.

SYSOUT DD

Defines a sequential output data set (normally SYSOUT) to which SORT messages are written.

SORTWKnn DD

Defines temporary sort work disk space where nn represents a numeric number. Normally a minimum of three sort work DD statements are specified.

Input to SARPAC

You can specify the following as input to SARPAC:

- A single tape by its CA View tape sequence number where *nnnnn* is a number from 1 to 65,535

  TAPESEQ=*nnnnn*

- A range of tapes by their CA View tape sequence numbers

  TAPESEQ=*nnnnn-nnnnn*

- Multiple tapes or ranges of tapes by their CA View tape sequence numbers where *nnnnn* is a number from 1 to 65,535.

  TAPESEQ=*nnnnn*
  TAPESEQ=*nnnnn*

  or

  TAPESEQ=*nnnnn[-nnnnn]*,...

- A tape storage group by its name

  STORGRP=storage-group-name

  The keyword DEFAULT is the name of the default storage group.

SARPAC considerations:

- When only one storage group is specified, the initialization parameters PTHRESH, PMXTAPES, and PMXYEARS are used.
- When only one tape sequence number (or range) is specified, the tape is processed whether it meets PTHRESH or PMXTAPES requirements.
- When multiple tape sequence numbers (or ranges) are specified, the tape is processed whether it meets PTHRESH or PMXTAPES requirements. Tapes are processed in ascending order by tape sequence number from lowest to highest.
- When both a storage group and tape sequence number (or range) are specified, only reports that belong to the tape storage group, and are within the tape sequence range, are processed.
- Only one STORGRP specification can be supplied on the SYSIN statement.

Concurrent With Archival

It is not necessary to stop the SARSTC archival task to run the SARPAC utility. Consolidation can occur concurrently with report archival and the CA View backup cycle.

Stopping SARPAC

If you need to terminate SARPAC before it has completed processing, you can use an MVS STOP command to cause SARPAC to terminate normally. SARPAC will acknowledge the STOP command with the following message:

SARPAC99 Operator issued STOP command - PROCESSING TERMINATED

Canceling SARPAC

If you have a tape management system and you cancel SARPAC, it is possible for your tape management system to override the CA View tape retention criteria. We recommend that you always let SARPAC to run to completion.

If you must cancel SARPAC, any output tapes it created must be excluded from a scratch and clean run because CA View still controls those tapes. This exclusion applies to primary, duplex, and DR tapes. You can run the SARTCHK utility to determine if any tapes were un-cataloged that are required by CA View.

Consolidating Tape Storage Groups

If you use tape storage groups, we recommend that you consolidate one tape storage group at a time. Include the following SYSIN control statement to decrease the number of tape mounts:

STORGRP=*storage-group-name*

Notes:

- You must run a standard or interim backup cycle to assign reports to tape storage groups. Storage groups are only in effect for reports residing on the CA View database since the last backup cycle.
- For information about tape storage groups, see STORGRP0 and STORGRP1 to STORGRP9 in the chapter "Initialization Parameters."

Example 1: Using Initialization Parameter Settings

All eligible tapes (given the values for PTHRESH, PMXTAPES, and PMXYEARS) are consolidated for database VIEW.SYSTEM1:

```
//EXAMPLE  JOB  ACCOUNT,PROGRAMMER
//SARPAC   EXEC PGM=SARPAC,PARM='VIEW.SYSTEM1',REGION=0M
//STEPLIB  DD   DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//SARDRLST DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SORTLIB  DD   DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//*SYSIN   DD   *
```

Example 2: Consolidating a Tape Storage Group

The SYSIN DD consolidates only the tape storage group PAYROLL for database VIEW.SYSTEM1:

```
//EXAMPLE  JOB  ACCOUNT,PROGRAMMER
//SARPAC   EXEC PGM=SARPAC,PARM='VIEW.SYSTEM1',REGION=0M
//STEPLIB  DD   DSN=CAI.CVDELOAD,DISP=SHR
//SYSUDUMP DD   SYSOUT=*
//SARDRLST DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SORTLIB  DD   DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SYSPRINT DD   SYSOUT=*
//SYSIN    DD   *
STORGRP=PAYROLL
//*
```

Example 3: Consolidating One Tape of a Tape Storage Group

The SYSIN DD consolidates only tape number 1156 for the tape storage group PAYROLL for database VIEW.SYSTEM1:

```
//EXAMPLE  JOB  ACCOUNT,PROGRAMMER
//SARPAC   EXEC PGM=SARPAC,PARM='VIEW.SYSTEM1',REGION=0M
//STEPLIB  DD   DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//SARDRLST DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SORTLIB  DD   DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SYSIN    DD   *
STORGRP=PAYROLL
TAPESEQ=1156
//*
```

Example 4: Consolidating Two Tapes of a Tape Storage Group

The SYSIN DD consolidates tape numbers 1156 and 1157 for the tape storage group PAYROLL for database VIEW.SYSTEM1:

```
//EXAMPLE  JOB  ACCOUNT,PROGRAMMER
//SARPAC   EXEC PGM=SARPAC,PARM='VIEW.SYSTEM1',REGION=0M
//STEPLIB  DD   DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD   SYSOUT=*
//SARDRLST DD   SYSOUT=*
//SYSUDUMP DD   SYSOUT=*
//SYSOUT   DD   SYSOUT=*
//SORTLIB  DD   DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK02 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK03 DD   UNIT=SYSDA,SPACE=(CYL,(50))
//SYSIN    DD   *
STORGRP=PAYROLL
TAPESEQ=1156
TAPESEQ=1157
//*
```

Recovering from Not Cataloged Tape Errors

The *NOCAT error message appears in the SARPAC report for any tapes that are no longer in the MVS Catalog. If the catalog entry is missing and tape is still available, the tape can be cataloged using the IBM utilities. If the tape is truly not available, the only recovery procedure is to remove all database references to that tape.

You must delete the Group Control Record (GCR) for SYSOUT reports that exist only on the tapes that are no longer available. You can use:

- The DELETE function from the Sysout Selection panel
- The CA View utilities is the most convenient method

The Tape List utility SARTSLST can be executed against the tape sequence number for a tape in error.

This utility creates a control statement stream that can be used with the CA View batch utility, SARBCH, to delete all references to that specific tape sequence.

The *NOCAT error message appears in the VOLSER column alongside the tape sequence that is in error as follows:

```
  TSEQ DATA SET NAME                       VOLSER
 ----- --------------------------------- ------
     9 VIEW.SYSTEM1.SARTAPE.T0000009      *NOCAT
```

To remove all references to this tape, execute the SARTSLST utility with the tape sequence number as a parameter along with the high-level database name. Add a DD statement for the creation of the control statement stream as follows:

```
//STEP1   EXEC PGM=SARTSLST,PARM='VIEW.SYSTEM1,9'
//STEPLIB  DD  DISP=SHR,DSN=CAI.CVDELOAD
//CTLCARDS DD  DSN=SAR.CTLCARDS,DISP=(,CATLG),
//             UNIT=SYSDA,SPACE=(TRK,(1,1)),
//             DCB=(,DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSPRINT DD  SYSOUT=*
```

The execution parameter contains the CA View database high-level name followed by a comma and the tape sequence number of the tape in error.

The file indicated by the CTLCARDS DD statement contains one control statement for each SYSOUT report referencing the bad tape. The control statement will be either a /CHANGE or /DELETE statement.

If the SYSOUT report is still on the disk database, a /CHANGE control statement is created. This statement resets the backup indication so the file can be written to a new tape during the next backup cycle.

If the SYSOUT is no longer on the database, a /DELETE control statement is created. This statement removes the reference of this SYSOUT report for the tape.

The following statements are samples of the control statements created by SARTSLST:

```
/DELETE   ID=REPORT1  GEN=27 SEQ=00005
/CHANGE   ID=REPORT2  GEN=27 SEQ=00007 BACKUP=OFF
```

These statements can be used as input to the CA View batch utility SARBCH as follows:

```
//STEP1    EXEC PGM=SARBCH,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DISP=SHR,DSN=CAI.CVDELOAD
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DSN=SAR.CTLCARDS,DISP=OLD
```

This action removes all references to the bad tape, allowing SARPAC to execute correctly.

Return Codes set by SARPAC messages

Return Code	Message
16	SARPAC02 Expanded retention was never initialized
16	SARPAC03 Master index is already in use
8	SARPAC05 Error on input tape
16	SARPAC06 Error on output tape
4	SARPAC10 No Sysout groups require consolidation
0	SARPAC11 xxxxx Sysout groups copied
16	SARPAC15 Data base at incorrect level for this release
16	SARPAC16 SORT failed with RC=XXXX
0	SARPAC20 SYSIN control cards governing this SARPAC
16	SARPAC21 No TAPESEQ= or STORGRP= found
16	SARPAC22 Invalid or extraneous control card found
16	SARPAC23 Storage group not defined in database
16	SARPAC24 Invalid tape sequence number specification or tape sequence number(s) not found in database
16	SARPAC52 ***WARNING*** Run SARPAC to copy tapes following merge of databases
16	SARPAC86 Syntax error in REPORT keyword parameter

Return Code	Message
None	SARPAC97 Invalid command "xxxx"
None	SARPAC98 SARPAC will terminate after the current report is processed
16	SARDBIxx Database I/O Error 16

Chapter 7: Database Utilities

This section contains the following topics:

Overview (see page 278)
Database Maintenance (SARDBASE) (see page 279)
SARDBASE Control Statements (see page 282)
ADDDS (see page 282)
BLOAD (see page 286)
COPY (see page 287)
DELETE (see page 288)
IDXOUT (see page 288)
LOAD (see page 289)
MERGE (see page 290)
NAME (see page 294)
OLOAD (see page 294)
RENAME (see page 295)
REORG (see page 296)
RESTORE (see page 299)
SET (see page 301)
STATUS (see page 302)
UNLOAD (see page 305)
VERIFY (see page 306)
VERSION (see page 306)
SARDBASE Examples (see page 307)
Recovery File Utility Program (SARRCOV) (see page 312)
Database Restore (SARRSP) (see page 315)
Conversion Assistance (SARDBB) (see page 317)
Tape Copy Utility (SARTCP) (see page 317)
Tape Management Scratch and Clean Utility (SARTCHK) (see page 326)
Restore a Complete Disk Archival Generation or Selecting SYSOUT Entries (SARTDR) (see page 327)
SYSOUTs on Tape Utility (SARTSLST) (see page 334)

Overview

This chapter describes, in detail, each of the database utilities summarized in the following section.

Creation and maintenance functions are performed using the SARDBASE, SARRCOV (for recovery), and SARRSP utilities.

- SARDBASE performs database maintenance such as adding space to a database, and creating and deleting a database.
- SARRCOV creates a recovery file that includes data such as tape volume serial number and data set name.
- SARRSP restores panels, messages, and SYSOUTs to a disk database from tape backups.

  Tape maintenance functions are performed using the SARTCP, SARTCHK, SARTDR, and SARTSLST utilities.
- SARTCP maps, copies, or salvages SYSOUTs on backup tapes.
- SARTCHK verifies that every active CA View backup and DR tape is still cataloged, and lists any uncataloged active tapes.
- SARTDR recreates and reloads archival disk generations or selects SYSOUT entries from tape.
- SARTSLST checks the disk database and lists the reports that were on that tape when a tape is lost or damaged.
- Information on SARSAM, which allows user-defined programs to directly retrieve index, SYSOUT, and panel data from the CA View database, is available in the *Programming Guide*.

  Note: Due to the proprietary nature of information on SARSAM, this topic is documented in the *Programming Guide*. The *Programming Guide* is a restricted document and requires CA Support access to view it.

Any references to *the database* in this chapter refers to the CA View database unless otherwise noted.

Database Maintenance (SARDBASE)

The SARDBASE utility defines and maintains the database. This utility performs the following functions:

- Defines a new database
- Adds additional space to a database
- Copies a database
- Renames a database
- Deletes a database
- Provides usage statistics on a database
- Loads the online library to a database
- Produces a sequential copy of a master index
- Recovers a database
- Unloads a database to a sequential data set
- Loads a database from a sequential data set
- Reorganizes the index in a database
- Verifies data in and corrects problems with a database
- Defines a banner page library
- Merges unloaded databases
- Sets the version number of a database

Job Control Statements

Sample execution JCL can be found in member HAEXDBSE in your CVDEJCL data set.

These job control statements are required to execute SARDBASE:

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARDBASE) and, optionally, the high-level name of the database as the PARM parameter (PARM='VIEW.SYSTEM1').

STEPLIB DD

Defines the load library containing SARDBASE.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) used for listing the control statements and messages.

If not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded where nnn is a multiple of 133.

SARIOUT DD

Defines a sequential output data set into which the master index is unloaded.

The attributes of the data set are to be set to RECFM=VB, LRECL=6129, and BLKSIZE=0. The output data set blocksize is to be determined by the output media or can be specified on the JCL DD statement. For tape it will default to 32760 and for 3390 DASD it will default to 27998.

The DD statement is only required for an IDXOUT operation.

SAROLIB DD

Defines the online library containing the panel, message, and skeleton JCL members to be loaded to the database.

The DD statement is only required for an OLOAD operation.

SARBLIB DD

Defines the banner page library containing the model banner page members to be loaded to the database.

The DD statement is only required for a BLOAD operation.

SARRECV DD

Defines the recovery file.

This statement is only used for a RESTORE operation. While this DD statement is optional, it can be included for a more efficient RESTORE operation.

SARTAPE DD

Defines the archival or DR tape containing the backup of the master index.

This statement is only used for a RESTORE operation. For a RESTORE operation, the DD statement is optional and is only used when there is no recovery data set or the SARRECV DD statement is missing. When used, the file sequence number of the LABEL parameter must specify the position number of the master index backup on the tape. The position of the backup can be obtained by mapping the tape with the SARTCP program.

Note: Due to IBM JCL limitations, the LABEL parameter cannot exceed 9999. When the file number of the master index exceeds this value, use the SARRCOV utility to create a recovery file that contains the dataset name of the backup or DR tape and the file number of the master index. Then leave out the SARTAPE DD statement and specify the name of the recovery file on the SARRECV DD statement. For more information about SARRCOV, see the chapter "Database Utilities." Sample JCL for this function can be found in CVDEJCL member HAEXRCOV.

SARLOAD DD

Defines the device containing the unloaded database.

This statement is only used for a LOAD operation.

SARUNLD DD

Defines the device to which the database is unloaded.

This statement is only used for an UNLOAD operation.

SARMERGn DD

Defines the unloaded databases that are to be merged together.

Replace n with a number from 1–9 so that each unloaded database is defined with a unique DD statement. These statements are only used for a MERGE operation.

SYSOUT DD

Defines a sequential output data set (normally SYOUT) to which SORT messages are written.

The SYSOUT DD statement is needed for the CONVERT, COPY, LOAD, MERGE, REORG (standard), RESTORE, and VERSION operations.

SORTWKnn DD

Defines temporary sort work disk space where nn represents a numeric number.

Normally, a minimum of three sort work DD statements are specified.

The SORTWKnn statements are needed for the CONVERT, COPY, LOAD, MERGE, REORG (standard), RESTORE, and VERSION operations.

SYSIN DD

Defines a card image data set containing the control statements to be input.

SARDBASE Control Statements

Control statements have the following general syntax:

Syntax:

operation operands

- The operation can begin in column 1 or may be preceded by one or more blanks.

  Note: A control statement is coded on a single card image between columns 1 and 71.

- One or more blanks separate the operation and the first operand as well as individual operands.
- Comments can be included in the control statements by coding an asterisk in column 1 of the card image containing the comment.

ADDDS

The ADDDS control statement is used to create a new database, to add additional space to an existing database, or to add a new index file data set. Space is added by creating a new data set and formatting it with fixed-length blocks.

Database Extent Considerations

- For data sets that are 4,369 or fewer cylinders, the data sets are to be allocated as an IBM direct access data set.
- For data sets that are more than 4,369 cylinders, the data sets are to be allocated as physical sequential data sets due to IBM restrictions.

Note: The physical sequential data sets are accessible via standard utilities and ISPF. It is recommended that you use the CA View Systems Extension Data Set Security Feature to limit access to these data sets or implement encryption to secure the data.

To minimize contention, we recommend that each database extent be placed on a separate dedicated volume. Where possible, the size of the volume should match the size of the database extent. A matching database extent prevents I/O for multiple extents from queuing on the same device address.

Also, the first extent of the index and the database must be placed on separate dedicated volumes because the RESERVE processing uses the dataset name and volume of the first extent to serialize all accesses.

The high-level name of the database must have previously been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Note: The allocation of a new index and/or data extent might not take effect immediately if archival tasks are active. (These archive tasks are SARSTC, FSS Collectors, or CA Deliver Direct-to-View.) Be aware of the following:

- The archival task does not need to be recycled for either a new index or data extent allocation to take effect.
- The new extent becomes active to an archival task when that processor makes a space allocation request.
- A newly allocated data extent becomes active to an archival task when a new Sysout is archived
- A newly allocated index extent becomes active to an archival task when the index is expanded by an index space allocation (cylinder allocation) request.

Syntax

```
ADDDS   ABOVE
        BLKSIZE=
        CYLINDER=
        DATACLASS=
        INDEX|DATA
        MGMTCLAS=
        STORCLAS=
        UNIT=
        VOLSER=
```

Where:

ABOVE

Indicates that the data set being added to the database can be allocated above the 64K cylinder line on a 3390-A device. Data sets that are allocated above the 64K cylinder line are allocated in increments of 21 cylinders so the final data set allocation is rounded up to the next multiple of 21 cylinders. This parameter is optional.

BLKSIZE=

Specifies the block size to be used in the data sets.

The minimum is 3476; the maximum is 32760. The default block size for the database index file data sets is 8906, and the default block size for the database data file data sets is 3768. The block size for an existing database cannot be changed, so this operand is only valid when you create a new database. After a database has been created, any subsequent use of the block size parameter is ignored.

Note: For more information about determining the block size to use, see Estimating DASD Requirements For a Database later in this chapter.

CYLINDER=

Specifies the number of contiguous cylinders to allocate to the data set. A maximum of 32,760 cylinders can be allocated to one data set.

DATACLASS=

Specifies the data class of an SMS dataset

INDEX|DATA

Specifies whether an index file or a data file data set is to be added to the database. INDEX indicates the addition of an index file data set suffixed with Innnnnnnn. DATA indicates a data file data set suffixed with Dnnnnnnnn. Either INDEX or DATA is required.

MGMTCLAS=

Specifies the management class of an SMS data set

STORCLAS=

Specifies the storage class of an SMS data set

UNIT=

Specifies the unit name to be used to dynamically allocate a new data set

VOLSER=

Specifies the volume serial number on which to allocate the new data set

All of the ADDDS keywords can be abbreviated to the fewest number of characters that makes them unique.

SMS and Non-SMS: Specifying Parameters

The following table summarizes the interdependency of the ADDDS parameters for SMS and non-SMS data sets:

Parameter	Non-SMS Data Set	SMS Data Set
BLKSIZE	Optional	Optional
CYLINDER	Required	Required
DATACLAS	Omit	Optional
MGMTCLAS	Omit	Optional
STORCLAS	Omit	Optional
UNIT	Optional	Omit

Parameter	Non-SMS Data Set	SMS Data Set
VOLSER	Optional	Omit

Estimating DASD Requirements for a Database

There is no way to know the exact amount of space that a database might require.

These formulas can be used to approximate the space needed (for this approximation, a block size of 3768 is used):

- If you are installing a new database, you must allocate 100 cylinders of INDEX for every 45,000 reports, including reports on tape. This allocation gives a 50 percent buffer to do standalone reorganization.
- CA View writes fixed-length blocks to its database. (You can specify a block size from 3476 through 32760.)
- For a block size of 3768, 195 blocks are contained in one cylinder of a 3390, 165 blocks are contained in one cylinder of a 3380, and 130 blocks are contained in one 3350 cylinder.
- Repetitive characters are compressed, giving, on the average, a 60 to 70 percent reduction in space requirements.
- The space required for the master index is minimal compared to the space required for the SYSOUT data; a minimum of one cylinder is required for the master index.

Procedure to Estimate Database Space

Using the previous information, you can use this procedure to approximate the amount of space required for your database.

1. Take the maximum lines archived to disk in one generation (that is, one day).
2. Multiply the number of lines by the average line length.
3. Divide by 3 (for compression).
4. Divide by 3768 to get number of blocks.
5. Divide by 195 (for a 3390) or 165 (for a 3380) or 130 (for a 3350) to get number of cylinders.
6. Multiply the result by the number of generations to be retained on disk.
7. To allow for growth, add 10 percent to the result.

Example

Assume that a site produces 1,000,000 lines of SYSOUT in one day to be archived on disk. The average line length of the SYSOUT is 121 bytes, and three days' worth of SYSOUT is going to be kept on disk.

Using the method described on the previous page, space requirements can be approximated as follows:

- 1,000,000 lines (per generation)
- 1,000,000 lines * 121 bytes/line = 121,000,000 bytes
- 121,000,000 bytes / 3 = 40,333,333 bytes (compressed)
- 40,333,333 bytes / 3768 bytes/block = 10,705 blocks
- A block size of 3768 is assumed for this example. Consult your DASD administrator to choose an optimal block size.
- 10,705 blocks / 195 3390-cylinders = 55 3390-cylinders
- 55 3390-cylinders * 3 generations = 165 3390-cylinders
- 165 3390-cylinders + 17 3390-cylinders (10%) = 182 3390-cylinders

BLOAD

The BLOAD control statement is used to load the banner page library containing the model banner page members into the database. The banner page library is defined with DD statement SARBLIB.

The high-level name of the database must have been previously been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

BLOAD *member*

where

member identifies the member name to be loaded into the database.

The member name can be a specific member name or a generic member name. A generic member name is specified by suffixing a portion of the member name with an asterisk (for example, SARPT*). If omitted, all banner pages are loaded into the database.

COPY

The COPY control statement is used to copy a database. The output database should be a newly created, empty database.

The high-level name of the output database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
COPY from-name reserve-option buffer-option
```

where:

from-name

Specifies the high-level name of the database to be copied

This operand is required.

reserve-option

Specifies either RESERVE to place a reserve on the output database for the duration of the copy operation or NORESERVE to not place a reserve on the output database

Specify NORESERVE only if you can be certain that no one else is updating the output database while the COPY operation is proceeding. If omitted, RESERVE is assumed.

buffer-option

Specifies either BUFFER, to buffer records written to the output database which improves performance and reduces I/O time, or NOBUFFER to eliminate buffering

If omitted, NOBUFFER is assumed.

Important! When using the COPY control statement:

- The CA View archival started task, SARSTC, SARFSS, SARXTD, and CA Deliver-direct-to-CA View must be inactive.
- The destination database must be new and unused.

  When using BUFFER, an unsuccessful completion could corrupt the output database.

DELETE

The DELETE control statement deletes a database, index file data sets, or data file data sets.

You must have defined the high-level name of the database with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
DELETE [INDEX | DATA]
```

where:

INDEX

Indicates to delete index files data set suffixed with Innnnnnnn.

DATA

Indicates to delete data files suffixed with Dnnnnnnnn.

Note: The DELETE control statement, without the DATA, INDEX, parameter, deletes and uncatalogs all data sets for the database.

IDXOUT

The IDXOUT control statement is used to write the master index for the database to a sequential data set. The sequential output data set is defined by DD statement SARIOUT.

The high-level name of the database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
IDXOUT
```

LOAD

The LOAD control statement is used for recovery purposes to load the database from a sequential, previously unloaded file. The input, unloaded copy of the database is defined with the SARLOAD DD statement.

The high-level name of the output database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

The destination database must be a new and unused database.

Syntax:

```
LOAD [BUFFER | NOBUFFER]
```

where

BUFFER

Specifies whether to buffer records written to the output database, which improves performance and reduces I/O time.

NOBUFFER

The default.

WARNING! When using the LOAD control statement, be aware of the following:

The CA View archival started task (SARSTC), SARFSS, SARXTD, CA View Cross Memory Services (SARXMS), and CA Deliver-direct-to-CA View must be inactive.

When using BUFFER, an unsuccessful completion could corrupt the output database.

MERGE

The MERGE control statement is used to merge 1 to 9 existing databases together into one new database. Logic is included to reset generation and tape sequence numbers to eliminate any conflict between the input databases. The output database must be a newly-created, empty database.

Note: The SARPAC tape consolidation utility is required to complete the merge process, therefore, you must have previously installed the Expanded Retention Option (ERO).

The high-level name of the output database must have previously been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
MERGE tape-index driver parameters
```

where:

tape-index

Specifies the high-level naming prefix to be set for the TAPEIDX initialization parameter

If omitted, TAPEIDX is set to the high-level name of the output database.

To prevent conflicts with any existing archival tapes, MERGE requires that this high-level naming prefix for tapes be different from those for any tapes defined in the input databases.

driver

Specifies the name of the secondary disk storage driver and must be the same as the DSK2DRVR initialization parameter

Use *driver* only if you have an optical disk secondary storage driver.

Note: For more information about disk storage, see the chapter "Using the Optical Disk Interface."

parameters

Specifies the identifiers for the secondary disk storage driver as defined by the DSK2PARM initialization parameter

Use parameters only if you have an optical disk secondary storage driver. These parameters vary according to type of optical disk driver.

Note: For more information about the proper identifiers, see the chapter "Using the Optical Disk Interface." Parameters are required when you specify a driver name.

Initialization Parameter

The initialization parameters from the original databases might not be applied to the resultant database.

Parameters that are unique to the various original databases are be set to their default value. For example, if database SARMERG1 has CLSL=A, and database SARMERG2 has CLSL=B, the merged database will have a blank CLSL.

Parameters that are identical among the various original databases will be set to the same value. For example, if database SARMERG1 has EXPRESS=CA.DLVR, and Database SARMERG2 has EXPRESS=CA.DLVR, the merged database will have EXPRESS=CA.DLVR.

Two initialization parameters, GEN= and TAPESEQ= are not set from any original database value. These two parameters are created dynamically. The GEN value is set based on the difference between the number of days of the oldest and newest reports. The TAPESEQ value is set based on the number of tapes in the resultant database.

Note: Under all circumstances, SARINIT must be run on the resultant database, and each initialization parameter value must be reviewed and set appropriately.

Tapes and Reports

The database which results from a MERGE contains every tape control record and every report from each original database. There elements are never considered duplicate and even if three identical databases were merged into one new database, the new database would contain three tape control records for tape and three identical copies of every report.

User Profiles, Logical Views, Filters, Panels and Banners

The database that results from a MERGE always contains one control record or panel from each original database. Duplicate control records and panels are always taken from the last SARMERG File.

If USERA is defined in SARMERG1, and USERB is defined in SARMERG2, the resulting merged database contains user profiles for both USERA, and USERB. If USERA was defined in SARMERG1 with a DISTID of DISTID1 and in SARMERG2 with a DISTID of DISTID2, the resulting merged database contains a user profile for USERA with a DISTID of DISTID2.

This also applies to Logical Views, Filter Definitions, Panels, and Banners. Duplicate definitions, panel, or banner specifications are always taken from the last SARMERG File.

Note: Under all circumstances, these definitions, panels, and banners must be reviewed and corrected as required.

Specifying Database Names

Unloaded copies of the databases that are merged are defined in the JCL with DD statements named SARMERGn, where n specifies a number from 1 to 9. The first unloaded database that is merged is defined with the DD statement SARMERG1, the second with DD statement SARMERG2, and so on. When only one database is merged, the operation functions as a reset operation to reset generation and tape sequence numbers.

Merge Process

When you perform a merge operation, following these steps in order:

1. Terminate all activity against the databases to be merged. Be sure to stop all direct-to-CA View archival activity from the CA Deliver product.
2. Unload the databases using the UNLOAD function of this utility.
3. Define a new database (large enough to hold all the data from the input databases) using the ADDDS function of this utility.
4. Perform the merge function.

   The input unloaded databases are processed twice. The first time, they are scanned to determine how the reset of generation and tape sequence numbers is done; the second time, they are actually loaded to the new, output database.
5. Verify the successful completion of the merge function.
6. Run SARINIT to review, add, or change any initialization parameters in the merged database.
7. Run the SARPAC tape consolidation utility as many times as necessary to copy all the archival tapes to new tapes owned by the merged database.

After you complete Step 6, the newly-created, merged database can be used in production. Step 7 can be run while the database is being used in production.

Common Information Between Databases

The following actions occur with a MERGE:

- For any common definitions in the input database (such as options and panel definitions), only the definition from the last database to be merged is used.
- Multiple Define SYSOUT definitions for the same SYSOUT identifiers are merged.
- Multiple Define DISTRIBUTION definitions for the same SYSOUT identifiers are merged.
- All PC-transmitted queue entries are deleted from the output, merged database.

Why You Must Run SARPAC

Although definitions of the archival tapes from the input databases are copied to the output merged database, ownership of the tapes remains with the input databases. Therefore, SARPAC tape consolidations must be run to copy the tape archival data to new tapes owned by the new, merged database.

After the archival tape data has been copied using the SARPAC utility, references to the original tapes are removed from the merged database at the next backup or clean cycle. Only the references to the tapes are removed from the database; the tapes are not un cataloged since the merged database does not actually own them.

Optical Disk Considerations

Additional consideration must be given when merging databases containing SYSOUT archived to secondary (optical) disk storage.

Note: For more information about disk storage, see the chapter “Using the Optical Disk Interface.”

Generation Numbers

The resulting generation numbers in the output merged database are computed from the archival dates of the SYSOUT groups. The numbers are based upon a 24-hour generation beginning at the time of day specified in the TIME initialization parameter in the last database to be merged. The current generation number in the output merged database is one more than that of the most recently archived SYSOUT group.

Important! When using the MERGE control statement, adhere to the following:

- The CA View archival started task, SARSTC, SARFSS, SARXTD, and CA Deliver direct to CA View must be inactive.
- Do not TADD tapes from the original database until they have been SARPACed.

NAME

The NAME control statement specifies the high-level name of the database. If omitted, the high-level name specified as the PARM parameter on the EXEC JCL statement is used. The NAME control statement applies to all control statements following it until another NAME control statement is encountered or changed by the RENAME control statement.

Syntax:

```
NAME high-level-name
```

where *high-level-name* specifies the high-level name for the database. *high-level-name* is comprised of one or more qualifiers separated by periods. The maximum length of the name is 17 characters. This operand is required.

OLOAD

The OLOAD control statement is used to load the panel, message, and skeleton JCL members in the online library to the database. The online library is defined with DD statement SAROLIB.

The high-level name of the database must have previously been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
OLOAD member
```

where *member* identifies the member name to be loaded into the database. The member name can be a specific member name or a generic member name. A generic member name is specified by suffixing a portion of the member name with an asterisk (for example, SARPT*). If omitted, all members in the partitioned dataset pointed to by the SAROLIB DD Statement (panels, message files, and the SARJCL1) that begin with the character 'S' are load into the database.

RENAME

The RENAME control statement renames a database. The RENAME control statement renames all data sets for the database. The high-level name of the database to be renamed must have previously been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
RENAME new-name
```

where *new-name* specifies the high-level name to which the database is renamed. The maximum length of the name is 17 characters. This operand is required.

After completion of the rename operation, the high-level name of the database that is used by subsequent operations is set to the new name of the database. For example, the following statement:

```
RENAME VIEW.NEWSYS1
```

is identical to the following two statements:

```
RENAME VIEW.NEWSYS1

NAME VIEW.NEWSYS1
```

REORG

The REORG control statement performs maintenance functions on the database; it can be run in asynchronous or non–asynchronous mode.

Note: A standard (stand-alone) SARDBASE/REORG must not be run against the CA View database unless there is a performance problem accessing reports lists. Problems that required a standard (stand-alone) SARDBASE/REORG in previous releases of CA View are effectively eliminated in the current release.

Under normal operating conditions, CA View constantly reorganizes an index block when adding or deleting index entries but there are Master Index records which are used to improve performance; these are not maintained by the backup cycle and might require a periodic asynchronous database reorganization. The conditions which occur are the gradual growth of "Total used blocks," "Total records," and "Percent utilization" without an apparent growth in the number of Sysouts.

Note: The number of index records has increased from previous releases—these records help improve the performance of functions such as the backup cycle.

We recommend that a SARDBASE/REORG ASYNC be run on a scheduled basis—once a month or more based on database activity. If large numbers of blocks are freed during the reorganization, the schedule frequency might need be shortened.

A REORG of a database does the following:

- Defragments the index
- Builds a queue of empty, reusable index blocks
- Incorporates the empty blocks from the queue again
- Rebuilds the alternate index (used for online selection by DATE)

The high-level name of the database to be reorganized must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
REORG option
```

where *option* specifies one of the following:

RESERVE

A stand-alone reorganization of the index file is to be performed with the database reserved for the duration of the reorganization

This is the default.

NORESERVE

A standalone reorganization of the index file is to be performed without placing a reserve on database

Specify NORESERVE only if you can be certain that no one else could be updating the database while the REORG operation is proceeding.

ASYNCH

An asynchronous reorganization of the index file is to be performed

Others can actively use the database during the reorganization; however, the less database activity there is, the faster the REORG runs.

Important! The standalone REORG requires space to hold the newly reorganized index as the old index. Upon successful completion of the standalone REORG, the space used by the old index is freed. The ASYNC REORG does not require any additional space to reorganize the index.

Terminating a REORG

The standard and asynchronous REORG can be prematurely terminated with a stop MVS operator command.

Syntax:

P jobname,STOP

or

F jobname,STOP

The job name on the stop command references the MVS job name executing the SARDBASE utility.

- When the standard REORG is stopped, the full reorganization process is aborted and the database is reset to the pre-reorganization state.
- The asynchronous REORG, however, is stopped in a manner that leaves the previous reorganization activity intact.

Obtaining REORG Status

The SARDBASE REORG facility also supports a status command using the modify MVS operator command:

```
F  jobname,STATUS
```

The status command issues messages to the operator console, describing the state and location of reorganization process.

RESTORE

The RESTORE control statement is used to recover a database or data file data sets that have been destroyed (for example, from a media failure of the disk containing one of the database data sets).

The SARDBASE program performs the following for a database restore operation:

- Copies the backup of the master index from tape to the database
- Loads whatever SYSOUT it can to the new database from the old database

The SYSOUT groups in the old database are located based on the information in the backup of the master index. They are not located based on the actual master index in the old database because the master index in the old database is probably destroyed. It is imperative that the old database (as it was defined at the time of the backup) be used, and not a copy of the old database. The SYSOUT groups in a copy of the old database have been rearranged and would not match the location information in the backup of the master index.

The database into which the restore is done must be a newly created empty database. The high-level name of the new database must have previously been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

To use the database restore operation, a tape backup of the master index must exist. The RESTORE statement rebuilds the index from a backup or DR tape backup copy.

Either the SARRECV or SARTAPE DD statement must be included in the JCL for the RESTORE job. In general, a site that is concerned with recovery is doing regular database backups. In such an environment, the SARRECV DD statement is included and the SARTAPE DD statement is excluded. This action allows SARDBASE to use the information in the recovery data set to dynamically allocate the correct backup tape.

If the recovery file is not present, you must use the SARTAPE DD statement to specify the archival or DR tape that contains the backup of the master index. The file sequence number of the LABEL parameter must specify the position number of the master index backup on the tape. The position of the backup can be obtained by mapping the tape with the SARTCP program.

Note: Due to IBM JCL limitations, the LABEL parameter cannot exceed 9999. When the file number of the master index exceeds this value, use the SARRCOV utility to create a recovery file. This file contains the data set name of the backup or DR tape and the file number of the master index. Then leave out the SARTAPE DD statement and specify the name of the recovery file on the SARRECV DD statement.

Note: For more information about SARRCOV, see the chapter "Database Utilities." Sample JCL for this function can be found in CVDEJCL member HAEXRCOV.

The SARDBASE program performs the following for a data file restore operation:

- Reads and updates the master index from the new database
- Loads whatever SYSOUT it can to the new database from the old database

The data file restore is only used when a data file data set is destroyed. The old data file data sets can be renamed and used in the restore operation. New data file data sets must be created prior to performing the data file restore. The data file restore does not restore the master index from a backup cycle and does not require the SARTAPE or SARRECV DD statements. Instead, the master index is read and updated in place. SYSOUT is recovered from the old database or marked for recovery by the SARRSP utility.

Note: The data file restore must not be interrupted. As the restore operation proceeds through the master index, SYSOUT records are updated to reflect its new location in the new data file data sets. If the restore ends prematurely, some SYSOUT would reference the location in the new data file data sets and others in the old data file data sets. A subsequent data file restore could not differentiate these locations and would incorrectly restore data. As a precaution, back up the database with a DASD management product and restore if data file restore ends prematurely.

Syntax:

```
RESTORE old-name relative-backup [DATA|ASYNCH]
```

where:

old-name

Specifies the high-level name of the old database that is being restored

If the old database has been completely lost, this operand must be omitted; if it is omitted, only the database index is restored. The operand must be specified to specify a relative backup.

Important! Specify the old database if any of it still exists, so that SARDBASE RESTORE can copy whatever SYSOUT data it can access to the new database. (You can alternatively use the SARRSP utility to load SYSOUT data from backup tapes or an UNLOAD tape.) For a database restore, all SYSOUT data archived since the last backup (or UNLOAD) is lost unless forward recovery data sets were in use.

relative-backup

Specifies the signed relative number of the backup to be used

The most recent backup is specified as +0 or -0. The previous backup is specified as -1. If relative-backup is omitted, +0 is assumed. The value is ignored when the JCL contains a DD statement for SARTAPE or when the DATA parameter is specified.

DATA

Indicates to restore the data file data sets.

ASYNCH

Indicates that online and batch retrieval activities can be resumed while reports are being restored to the database

When the master index is restored, reports that reside in the data files are automatically reinstated.

To restore the data physically into the data files:

- Run the SARRSP program.
- After a database RESTORE operation the online panels, messages, and skeleton JCL must be reloaded using OLOAD and the banners must be reloaded with BLOAD.
- JCL for OLOAD and BLOAD can be found in your CVDEJCL library, members HBRMOLOD and HBRMBLOD.

SET

The SET control statement is used to initialize the database for online viewing of database statistics.

Note: For information about online database status viewing, see the *User Guide*.

The high-level name of the database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

SET *option*

where

option

Specifies STATS to initialize the database statistics so that they can be viewed online, using the Database Status panel.

Important! When using the SET control statement, the CA View archival started task (SARSTC), functional sub-system collectors (SARFSS), systems extensions (SARXTD), CA Deliver Direct-to-View archival, batch jobs (SARBCH), and all on-line tasks, TSO, SARXMS, and so on, must be inactive.

STATUS

The STATUS control statement is used to display usage statistics about the database. These usage statistics are as follows:

- Total blocks
- Total blocks used
- Percentage of utilization
- Cylinders, blocks, used blocks, and error blocks for each data set in the database
- Number of empty blocks (without data) in the database index

You can view a partial set of these statistics.

Note: For more information about these usage statistics, see the chapter, "System Administration" in the *User Guide*.

The high-level name of the database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
STATUS display–option reserve–option
```

where:

display-option

Specifies FULL to print complete statistics for the database, master index, and data sets, or INDEX to print statistics for the database and master index only, or USED to print the 'percentage used' for the database.

If the parameter is omitted, statistics for the database and data sets are printed.

reserve-option

Specifies either RESERVE to place a reserve on the database for the duration of the index evaluation process or NORESERVE to not place a reserve on the database.

This option is only applicable when specified with the display–option. Because the master index is updated by many tasks, jobs, or online sessions, the master index data can change during the evaluation process, causing inconsistent statistics. The RESERVE option delays external updates to the database for obtaining consistent statistics. If reserve-option is omitted, NORESERVE is assumed.

To compile index statistics information, the entire master index must be read. Depending on the size of the database, this process can take a long time.

Messages Resulting From STATUS

The STATUS statement causes the SARDBA09 messages to be displayed. The meaning of the index statistics displayed in the SARDBA09 messages are as follows:

Index levels

The number of levels or hierarchies in the master index.

Index records

The total number of records in the master index.

Index allocations

The total number of control areas or segments that comprise the master index.

Index blocks

The total number of database blocks that comprise the master index.

These index blocks can be pointer blocks, data blocks, or free blocks.

Index used blocks

The total number of database blocks currently being used in the master index.

This value includes the index pointer block, the index data blocks, and the index empty blocks.

Index pointer blocks

The total number of higher level hierarchical index blocks that reference lower level index blocks.

Index data blocks

The total number of database blocks that comprise the lowest level of the master index, and that contain the physical index data.

Index empty blocks

The total number of index data blocks that do not contain any index records.

When index records are deleted from the master index, the index data is removed from the index data block. When all index records have been removed from the index data block, the index data block is considered empty but available for subsequent use in the same key range. REORG or UNLOAD/LOAD functions of the SARDBASE utility are recommended for a database with a high percentage of empty blocks.

Index File Statistics

Executing the database utility SARDBASE/STATUS FULL creates a report with detailed statistics for the index space. The following is an example of the report.

```
SARDBA09  Index file statistics:
SARDBA09     Block size:                8906
SARDBA09     Total cylinders:             40
SARDBA09     Total blocks:              3600
SARDBA09     Total used blocks:         1440
SARDBA09     Percent utilization:         40
SARDBA09     Total levels:                 3
SARDBA09     Total records:            20727
SARDBA09     Total allocations:           16
SARDBA09     Total pointer blocks:         7
SARDBA09     Total data blocks:          183
SARDBA09     Total empty blocks:           0
SARDBA09     Total free blocks:         1249
```

where:

Block Size

The default block size of the index extent is 8906.

Cylinders Total Blocks

Total blocks represents the number of blocks that were allocated in the total space (number of cylinders) allocated to the index space.

Used Blocks

The 'percent utilized' is a simple calculation of the 'used/total' but it is not a calculation of the amount of space in all used blocks which contain data.

Unlike a block in the data space, a block in the index space might only contain one or two index pointers or control records, so 80% of the blocks might be in use, but those blocks might be only 20% full. A block might also have been used but is now 'free'.

Levels

The number of levels in the index 'tree'.

Higher level index blocks contain lower level index block pointers and the lowest level contains the Master Index record data. Thus, three 'levels' would represent two index pointer levels and the Master Index record data level.

Records

This is the total number of Master Index records.

Beginning with r11, the number of index records has increased. These records help improve the performance of functions such as the backup cycle.

Pointer Blocks

The number of blocks which contain lower level index pointers.

Data Blocks

The number of blocks that contain Master Index data records.

Empty Blocks

A block can be placed in this block pool under certain rare error conditions; under normal circumstances, expect this field to display zero blocks.

Free Blocks

The number of allocated blocks that were allocated, that is, shown in the number of used blocks, but that are currently empty and available for use when additional blocks are needed.

UNLOAD

The UNLOAD control statement is used to unload the database to a sequential output file for backup purposes. The records in the database are written in ascending key sequence order to the SARUNLD data set as variable-length blocked records.

The high-level name of the database must have been defined with the NAME control statement (or PARM in the EXEC JCL statement).

Syntax:

```
UNLOAD [SECOND|NOSECOND]
```

where

SECOND/NOSECOND

Use this parameter when you have archival data in secondary (optical disk) storage and are planning to use the MERGE function.

Note: Do not use these parameters if you plan to use the LOAD function. The LOAD function copies the index information about the SYSOUT groups on secondary disk storage:

- LOAD only transfers ownership of the secondary disk storage data that is already archived.
- MERGE actually reloads the data to another optical disk data set.

The SECOND/NOSECOND parameter has a default value of NOSECOND. Specifying SECOND can substantially increase the time required to perform the UNLOAD function.

VERIFY

The VERIFY control statement logically verifies the structure and allocations of the data in the database. VERIFY also corrects any problems found in the process.

The high-level name of the database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement).

Syntax:

```
VERIFY
```

Note: The VERIFY process might not be able to recover all records in the database. Inconsistencies can appear in the records created and used by the DEFine SYS and DEFine DIST functions. These inconsistencies can only be corrected by redefining the missing component.

Important! When using the VERIFY control statement, be sure that the CA View archival started task, SARSTC, SARFSS, SARXTD, and CA Deliver-direct-to-CA View are inactive.

VERSION

The VERSION control statement is used to set the database version.

In addition, after the index file data set has been created for an existing database, you can use the VERSION statement to convert the prior release index file. The database conversion converts the old master index file that resided in the data file data sets to the new index file data sets.

The high-level name of the database must have been defined with the NAME control statement (or the PARM parameter of the EXEC JCL statement). In addition, the database must have been created using the ADDDS control statement.

Syntax:

```
VERSION releasenumber
```

where

releasenumber

This value specifies the number of the CA View release to which the database is to be set. If not specified, this parameter defaults to the current release.

Valid values are 11.0, 11.5, 11.6, 11.7, 12.0, and 12.1.

After running SARDBASE VERSION, run SARINIT to set the initialization parameters.

SARDBASE Examples

The following examples demonstrate the facilities available with SARDBASE database maintenance.

Example 1: Creating a Database

In this example, a new database is created with a high-level name of VIEW.SYSTEM1. The number of cylinders allocated are 10 for index and 50 for the data. The index and data portions are allocated on different volumes, SAR001 and SAR002, for improved performance.

```
//EXAMPLE1 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
NAME VIEW.SYSTEM1
ADDDS UNIT=3390 VOL=SAR001 CYL=10 INDEX
ADDDS UNIT=3390 VOL=SAR002 CYL=50 DATA
/*
```

Example 2: Adding Space

In this example, the database defined in the previous example is out of space and an additional 100 cylinders are added to the database on unit 3390 volume SAR002. The STATUS parameter displays statistics about the database after the addition of the space.

```
//EXAMPLE2 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
NAME VIEW.SYSTEM1
ADDDS UNIT=3390 VOL=SAR002 CYL=100 DATA
STATUS
/*
```

Example 3: Changing Online Members

In this example, changes that were made to the online library, pointed to by the SAROLIB DD, are reloaded to the VIEW.SYSTEM1 database.

```
//EXAMPLE3 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SAROLIB  DD DSN=CAI.CVDEPENU,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
OLOAD
/*
```

Example 4: Copying a Database

In this example, database VIEW.SYSTEM1 continually grows in size with the addition of many data sets. For performance reasons, it is copied to a new large database. The old database retains the name of VIEW.OLDSYS1.

```
//EXAMPLE4 JOB ACCOUNT,PROGRAMMER
//STEP1 EXEC PGM=SARDBASE
//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(50))
//SYSIN DD *
NAME VIEW.SYSTEM1
RENAME VIEW.OLDSYS1
NAME VIEW.SYSTEM1
ADDDS UNIT=3380 VOL=SAR001 CYL=50 INDEX
ADDDS UNIT=3380 VOL=SAR002 CYL=600 DATA
COPY VIEW.OLDSYS1
/*
```

Example 5: Deleting a Database

In this example, database VIEW.OLDSYS1 is no longer being used and is deleted.

```
//EXAMPLE5 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
NAME VIEW.OLDSYS1
DELETE
/*
```

Example 6: Sequential Copy of the Index

In this example, a sequential copy of the master index for database VIEW.SYSTEM1 is printed.

```
//EXAMPLE6 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SARIOUT  DD DSN=USER.DATA SET,DISP=(,CATLG),
//            UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
NAME VIEW.SYSTEM1
IDXOUT
/*
```

Example 7: Restore

In this example, the database is restored from the most recent backup, as indicated in the recovery data set maintained by SARSTC. The old database is named VIEW.SYSTEM1 and a new database named VIEW.NEWSYS1 is created. The following job recovers the database:

```
//RESTORE  JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SARRECV  DD  DSN=VIEW.SARRECV,DISP=SHR
//SYSIN    DD  *
NAME VIEW.NEWSYS1
ADDDS UNIT=3390 VOL=SAR001 CYL=85 INDEX
ADDDS UNIT=3390 VOL=SAR001 CYL=600 DATA
RESTORE VIEW.SYSTEM1
/*
```

Example 8a: Tape Map/Restore (Tape Map)

In this example, the database is recovered from the most recent backup and the recovery data set is not available. The old database is named VIEW.SYSTEM1 and a new database named VIEW.NEWSYS1 is created. When the recovery data set is not available to identify the most recent backup, SARTCP must be run. SARTCP maps the current archival tape to locate the position of the master index backup.

The following job maps the archival tape:

```
//TAPEMAP  JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARTCP
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//TAPEIN   DD  DSN=VIEW.SYSTEM1.SARTAPE.T0000156,
//             DISP=OLD
//SYSIN    DD  DUMMY
```

Note: For more information about sample report, see the section SARTCP: Tape Recovery Example later in this chapter.

Example 8b: Tape Map/Restore (Restore)

Assume the map of the archival tape shows master index backups in positions 50 and 1370 of the tape. This means position 1370 contains the most recent backup. You can use the following JCL to restore the most recent backup.

Note: This example does not support a master index that spans two reels. If you have a master index that spans two reels, a RESTORE with SARRECV DD statement is the recommended method.

The following job is executed to restore the database:

```
//RESTORE  JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SARTAPE  DD  DSN=VIEW.SYSTEM1.SARTAPE.T0000156,
//             DISP=OLD,LABEL=1370
//SYSIN    DD  *
NAME VIEW.NEWSYS1
ADDDS UNIT=3390 VOL=SAR001 CYL=85 INDEX
ADDDS UNIT=3390 VOL=SAR001 CYL=600 DATA
RESTORE VIEW.SYSTEM1
/*
```

Example 9: Sequential Copy of the Entire Database

In this example, the database is unloaded for backup purposes. The unloaded backup is a sequential data set on tape.

The following job unloads the database:

```
//UNLOAD   JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARDBASE
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//SARUNLD  DD  DSN=VIEW.UNLOAD,DISP=NEW,
//         UNIT=TAPE,DCB=(RECFM=VB,
//         LRECL=32756,BLKSIZE=32760)
//SYSIN    DD  *
NAME VIEW.SYSTEM1
UNLOAD
/*
```

Example 10: Recover Unloaded Backup

In this example, the database is recovered from a previous, unloaded backup (see the previous example). The STATUS command causes statistics on the database following the load to be displayed.

The following job reloads the database:

```
//LOAD JOB ACCOUNT,PROGRAMMER
//STEP1 EXEC PGM=SARDBASE,PARM='VIEW.SYSTEM1'
//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SARLOAD DD DSN=VIEW.UNLOAD,DISP=OLD,
// UNIT=TAPE,DCB=(RECFM=VB,
// LRECL=32756,BLKSIZE=32760)
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK02 DD UNIT=SYSDA,SPACE=(CYL,(50))
//SORTWK03 DD UNIT=SYSDA,SPACE=(CYL,(50))
//SYSIN DD *
LOAD
STATUS
/*
```

Recovery File Utility Program (SARRCOV)

The Recovery File Utility program (SARRCOV) creates a recovery file with data such as tape volume serial number, data set name, DSN number, DSN count, and file sequence number. This program also allows limited editing of the recovery file and prints a formatted listing of it.

This utility program can be helpful when:

- No recovery file has been created but one is needed.
- An existing recovery file has been damaged and must be recreated.

Job Control Statements

Sample execution JCL can be found in member HAEXRCOV in your CVDEJCL data set.

These job control statements are used to execute SARRCOV:

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARRCOV) and, optionally, the high-level name of the database as the PARM parameter (PARM='VIEW.SYSTEM1').

STEPLIB DD

Defines the load library containing SARRCOV.

If the program resides in a linklist library, omit this statement.

SYSUDUMP DD

Defines the output data set (normally SYSOUT) used for listing the system memory contents at the time of an abend.

SARRECV DD

Defines a user-maintained sequential data set used as the recovery file.

REPORT DD

Defines the sequential output data set (normally SYSOUT) used for listing the control statements and messages.

If not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded where nnn is a multiple of 133.

SYSIN DD

Defines a card image data set containing the control statements that are to be input.

SARRCOV Control Statements

Two control statements, FILESEQ and DATA SET NAME/VOLSER are used with the Recovery File Utility program. They are explained in the next sections.

Note: Be sure to specify DR tape DSNs if you are planning to do a SARDBASE RESTORE using the DR tape.

FILESEQ

The FILESEQ control statement specifies the file sequence of the master index on the backup tape. To determine the file sequence number of the master index backup, use the mapping feature of the SARTCP program. If the backup tape is mapped with bypass label processing (LABEL=(,BLP)), do not include the file containing the standard labels in the counting for the FILESEQ parameter.

Syntax:

FILESEQ=*nnnnnnn*

where

nnnnnnnn

Specifies the file sequence of the master index on the backup tape. This value cannot exceed 99999999.

Note: For more information about an example using FILESEQ, see SARRCOV Initialization.

DATA SET NAME/VOLSER

The DATA SET NAME/VOLSER control statement specifies the data set name and the optional VOLSER of the backup tapes.

Syntax:

data-set-name[,volser]

where:

data-set-name

Specifies the data set name of the backup tape

volser

Optionally, specifies the VOLSER of the backup tape

Recovery Data Set Guidelines

Important! The data set must reside on a direct access volume. Be aware of the following:

- Because the data set is used to recover the database, it must not be placed on the same volumes that contain data sets for the database.
- The data set must not be allocated with DCB attributes.
- Only one track can be allocated for this data set.

SARRCOV Initialization

SARRCOV Example 1

This JCL will update a recovery file and specifies that the most current backup of the master index is on file 99 of tape data set VIEW.SYSTEM1.SARTAPE.T0000009 and continues onto the following two backup tapes.

```
//EXAMPLE1 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARRCOV
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//REPORT   DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SARRECV  DSN=VIEW.SARRECV,DISP=OLD
//SYSIN    DD *
FILESEQ=99
VIEW.SYSTEM1.SARTAPE.T0000009,00100
VIEW.SYSTEM1.SARTAPE.T0000010,00101
VIEW.SYSTEM1.SARTAPE.T0000011,00102
//
```

SARRCOV Example 2

This JCL initializes a recovery file and lists an existing recovery file.

```
//EXAMPLE2 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARRCOV
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//REPORT   DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SARRECV  DD DSN=VIEW.SARRECV,DISP=OLD
//SYSIN    DD DUMMY
//
```

Note: This process does not initialize the recovery data set. If the SYSIN data set is empty (as in this case) SARRCOV will only list the entries in the existing recovery data set.

Database Restore (SARRSP)

Use the SARRSP utility program to restore all panels, messages, or SYSOUT groups that reside in disk status to the database. These entities can be from either SARDBASE UNLOAD tapes or CA View backup tapes. This utility must be executed after the normal restore process provided with the SARDBASE utility (RESTORE control statement).

In certain situations, the restore function provided with the SARDBASE utility cannot fully restore the contents of the database.

It works this way:

- The SARDBASE restoration process attempts to copy panels, messages, and SYSOUT groups from the old database, if specified, to repopulate the database.
- When the old database is severely damaged or does not exist, panels, messages, and SYSOUT groups that are unsuccessfully copied occupy an empty file.

  In this case, the SARTDR utility (tape dump restore utility) is normally used to reload entire tapes or generations back to the database.
- With the ability of the expanded retention option to maintain SYSOUT on disk for long periods of time, the restoration process requires a vast amount of disk space. There must be enough space to hold SYSOUT that didn't previously reside on disk.

The SARRSP utility attempts to restore any panel data, message data, or non-resident SYSOUT group in two ways:

- From a CA View unload tape (if the SARLOAD DD statement is specified)
- Dynamically, from the CA View backup tape

  The backup tapes are dynamically allocated, if needed, by tape sequence number. In cases where the backup tape is damaged or unusable, the respective SYSOUT groups are removed from disk status.

Note: If all panel and message data is not completely restored, after the restore process you must reload the online library (panels and messages) to the database with the SARDBASE utility (OLOAD control statement).

Job Control Statements

Sample execution JCL is in member HAEXRSP in your CVDEJCL data set.

These job control statements are required to execute SARRSP:

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARRSP) and the high-level name of the database as the PARM parameter (PARM='VIEW.SYSTEM1').

STEPLIB DD

Defines the load library containing SARRSP.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines a sequential output data set (normally SYSOUT) used for messages.

If not a SYSOUT data set, data set must be coded with RECFM=FBA, LRECL=133, and a BLKSIZE that is a multiple of 133.

DDSARLOAD DD

Defines a CA View unload tape created by the SARDBASE utility (UNLOAD control statement) from which panels, messages, and SYSOUT groups can be restored.

FREE=CLOSE can be coded on the DD statement to dismount the tape at the end of the SORT input phase as opposed to step termination. The DD statement is optional and must only be specified when a CA View unload tape exists.

SORTLIB DD

Defines the load library that contains the SORT program library.

This DD statement might not be needed if the sort program library is moved to LPA.

SYSOUT DD

Defines a sequential output data set (normally SYSOUT) to which SORT messages are written.

SORTWKnn DD

Defines temporary sort work disk space where nn represents a numeric number.

Normally a minimum of three sort work DD statements are specified.

Example

To restore panels, messages, and SYSOUT to the VIEW.SYSTEM1 database, use the following JCL:

```
//SARRSP   JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARRSP,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SARLOAD  DD DSN=VIEW.SYSTEM1.UNLOAD(0),
//            DISP=SHR,FREE=CLOSE
//SYSPRINT DD SYSOUT=*
//SYSUDUMP DD SYSOUT=*
//SYSOUT   DD SYSOUT=*
//SORTLIB  DD DSN=SYS1.SORTLIB,DISP=SHR
//SORTWK01 DD UNIT=SYSDA,
//         SPACE=(CYL,(10),,CONTIG)
//SORTWK02 DD UNIT=SYSDA,
//         SPACE=(CYL,(10),,CONTIG)
//SORTWK03 DD UNIT=SYSDA,
//         SPACE=(CYL,(10),,CONTIG)
```

Conversion Assistance (SARDBB)

Use the SARDBB utility to assist you when you are moving data from a different report archival product to CA View. A separate LMP key, which is issued by CA Technical Services with an on-site conversion engagement, is required.

Note: Using SARDBB without this separate LMP key results in an abnormal termination of the utility. The SARDBB module is used by CA Technical Support. If you have problems or issues with this program, contact CA Technical Services.

Important! If you use this utility and do not involve CA Technical Support, you could damage a database, corrupt indexes, and so on.

Tape Copy Utility (SARTCP)

Use the tape copy utility SARTCP to map, copy, or salvage SYSOUT on an archival or DR tape.

Control Statements

Two control statements are provided so that you can skip over damaged files. They are NULL and SKIP. The NULL statement inserts a null SYSOUT group to restore correct positioning after a SKIPped group.

Related Utilities

If you use 3480/3490/3590 processing (using the TAPEOPT initialization parameter) and you use SARTCP on a backup tape without using the COPYASIS execution parameter, you must also run SARPAC to update the GCRs (Group Control Records) with 3480/3490/3590 block ID information.

If you do not run SARPAC, the reports accessed will be without the benefit of 3480 block ID processing.

If you have the expanded access server, then you must also run SARPAC on the tape to make it available to the server.

Recovering a Tape: No Duplex Available

The following steps describe the actions you must take to recover a tape when no duplex is available.

1. Map the contents of the backup tape by using the SARTCP program.

   You might have to use bypass label processing (BLP) in the JCL to have SARTCP start at a point in the tape that is read-able.

2. Run SARTCP to copy the backup tape to a new tape.

   Use the SKIP control statements to bypass the unreadable portions of the input tape.

   Each SKIP statement must have a corresponding NULL statement to maintain proper positioning on the output tape.

3. Uncatalog the old (damaged) backup tape, and then catalog the new backup tape.

   To perform this processing, see Example 2, in the JCL.

Recovering a Tape: Duplex Tape Available

Note: The DR tape is not a mirror image of the primary/duplex tape and cannot be used as a substitute for the duplex tape.

Follow these steps to recover a tape when a duplex tape is available.

1. Uncatalog the damaged backup tape, but set it aside, in case the duplex tape cannot be located or is damaged.
2. Use SARTCP with the COPYASIS execution parameter to copy the duplex tape to a new tape with the same data set name as the original backup tape.

   Note: The new tape must be large enough to contain the full contents of the duplex tape. If the new tape is not large enough, a SARTCP11 Output Tape EOV Error, ECB=*xx*, BLOCK=*xxxxxxx*, SENSE=*xxxx* message is displayed.
3. Catalog the new backup tape.

   You can do this in Example 3, in the JCL.

Tape Map Reports

```
mm/dd/yyyy hh:mm:ss               CA View Output Archival and Viewing (12.1)                    PAGE     1
SARTCP                                Tape Copy Utility – Tape Contents
Invol:  vvvvvv Indsn:  ..................
Outvol:        Outdsn: ..................


In Pos   Out Pos  Rec Pos    Id                               Jobname     Jobid     Gen   Seq    Blocks  Cont
-------- -------  --------   -------------------------------- --------    --------  ----  ---   -------  ----
```

SARTCP produces a report listing of the SYSOUT groups and master index backups that are on the archival tape. This is a list of the contents of the archival tape:

Input position

The position of the entry on the input tape.

Output position

The position the entry has on the output tape (if created, with the TAPEOUT DD statement).

Recorded position

The position as indicated in the GCR (Group Control Record) for the SYSOUT group or master index backup.

Jobname

The name of the job that originally created the SYSOUT group.

Job ID

The JES identifier of the job that originally created the SYSOUT group.

Generation number

The archival generation of the SYSOUT group.

Sequence number

The sequence number of the SYSOUT group in the generation.

Blocks

The number of data blocks used for the SYSOUT group.

Continuation Indicator

YES indicator

Shows whether the SYSOUT group or master index is continued to another backup tape or continued from a previous backup tape.

ABN indicator

Shows if the task writing the data terminated abnormally. The task writing the data set a flag in the data's EOF record when it terminated abnormally. This flag means that the data might be incomplete and should be re-created if possible.

If the data is a SYSOUT which is still resident on primary or secondary disk, its BACKUP Flag can be set to OFF using the SARBCH /CHANGE function.

If the data is an Index, another backup cycle can be run to create a new Master index backup.

SYSOUT ID

The ID of the SYSOUT group or one of the following special identifiers:

***** INDX *****

Represents a backup of the master index.

***** UNKN *****

The identity of the SYSOUT group cannot be determined because the first record of the group is not a control record.

For all but the first SYSOUT group on the tape, this identification indicates a problem with the group. For the first SYSOUT group on the tape, this identification is normal when the SYSOUT group is a continuation of the group from the previous tape.

***** NULL *****

The entry represents a null SYSOUT group (that is, two consecutive EOD records).

A null entry is created on an archival tape by the NULL control statement.

***** SKIP *****

The SYSOUT group or master index backup represented by the entry is skipped over as requested by a SKIP control statement.

Job Control Statements

Sample execution JCL can be found in member HAEXTCP in your CVDEJCL data set.

These job control statements are necessary to execute SARTCP:

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARTCP).

To invoke the duplicate function, you must add (PARM='COPYASIS') to the execute statement. When COPYASIS is invoked, the control statements in the SYSIN file are ignored.

To create a new CA View header (SARHDR) record on the output tape, add PARM='ADDHDR' to the execute statement. If the input tape has a CA View Header, the message SARTCP03 is be displayed and the step abends with a U'0003'.

STEPLIB DD

Defines the load library containing SARTCP.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) into which the mapping report is written.

If not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded, where nnn is a multiple of 133.

TAPEIN DD

Defines the input tape.

Generally, the tape must be defined with standard labels. However, if the tape has been damaged, bypass label processing can be used.

TAPEOUT DD

Defines the output tape.

This statement is optional; if omitted, no tape copy is performed.

SYSIN DD

Defines a card image data set containing the control statements.

Note: When COPYASIS is invoked, the control statements in the SYSIN file are ignored.

SARTCP Control Statements

Two control statements, NULL and SKIP, are used with the tape copy utility program.

NULL

The NULL control statement is used to write a null SYSOUT group to the output tape. For example, assume an I/O error exists on an archival tape causing the relative positions of the SYSOUT groups on the tape to be thrown off. The NULL statement can be used to insert a null SYSOUT group to restore correct positioning.

Syntax:

```
NULL position-number[-position-number]
```

where

position-number

Specifies the desired tape file position, from 1 to 99999999, of the null group. The position can be only one position, or it can be a range of positions (for example, NULL 1–2048).

SKIP

The SKIP control statement is used to skip over a SYSOUT group on the input tape. It has the effect of deleting the group or groups from the output.

Syntax:

SKIP *position-number*[*-position-number*]

where

position-number

Specifies the desired tape file position, from 1 to 99999999, of the SYSOUT group to be skipped.

The position number can be one position, represented by a single number, or a range of positions represented by a range of numbers (for example, SKIP 1–2048).

SARTCP Example

For this example, assume that an archival tape is inadvertently mounted as a scratch tape for a job and the beginning of the tape is overwritten.

To recover the remaining SYSOUT archived on the tape, run this job to map the tape.

```
//TAPEMAP  JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARTCP
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=A,DCB=BLKSIZE=133
//TAPEIN   DD  DSN=VIEW.SARTAPE.T0000087,DISP=OLD
//SYSIN    DD  DUMMY
```

This mapping report is produced:

```
11/10/2013 16:52:25               CA View Output Archival and Viewing (12.1)                    PAGE     1
SARTCP                                Tape Copy Utility – Tape Contents
Invol:  003467 Indsn:  VIEW.SARTAPE.T0000087
Outvol:        Outdsn:


In Pos   Out Pos  Rec Pos    Id                               Jobname     Jobid     Gen   Seq    Blocks  Cont
-------- -------  --------   -------------------------------- --------    --------  ----  ---   -------  ----
       1       1             *** UNKN ***                                                          3
       2       2             *** UNKN ***                                                         17
       3       3             *** UNKN ***                                                          3
       4       4             *** NULL ***                                                          0
SARTCP10  Input tape I/O error, ECB=41, BLOCK=0000000001, SENSE=2500
       5       5             *** UNKN ***                                                          6
       6       6        8    A06125ME                         A06125ME    JOB09362  128    12         2
       7       7        9    A06128ME                         A06128ME    JOB09368  128    12         2
       8       8       10    A21100R                          A21100R     JOB09500  128    12         2
       9       9       11    A2211OR                          A2211OR     JOB09701  128    12         2
      10      10       12    *** INDX ***
                             *** EOF  ***

SARTCP16 Processing successfully completed
```

In the preceding report, the first seven SYSOUT groups on the tape were destroyed. The report also shows that the first valid SYSOUT group has a recorded position of 8.

Use one of the following methods:

- Run this job to recover the remaining SYSOUT groups

```
//TAPECOPY JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARTCP
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//TAPEIN   DD  DSN=VIEW.SARTAPE.T0000087,
//         DISP=(OLD,UNCATLG)
//TAPEOUT  DD  DSN=VIEW.SARTAPE.T0000087,
//         DISP=(,CATLG),UNIT=TAPE,LABEL=EXPDT=99000
//SYSIN    DD  *
SKIP 1
SKIP 2
SKIP 3
SKIP 4
SKIP 5
NULL 1
NULL 2
NULL 3
NULL 4
NULL 5
NULL 6
NULL 7
/*
```

- Run this job to recover a primary tape when a duplex tape is available

```
//TAPECOPY JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARTCP,PARM='COPYASIS'
//STEPLIB  DD  DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=*
//TAPEIN   DD  DSN=VIEW.SARDPLX.T0000087,
//         DISP=OLD
//TAPEOUT  DD  DSN=VIEW.SARTAPE.T0000087,
//         DISP=(,CATLG),UNIT=TAPE,LABEL=EXPDT=99000
//SYSIN    DD  DUMMY
```

Tape Management Scratch and Clean Utility (SARTCHK)

SARTCHK verifies that every active tape in the database is still cataloged under MVS. The tape management scratch and clean utility (SARTCHK) must be added at the end of your tape management system's scratch and clean procedure.

If any tapes have been uncataloged, a list of the missing tapes is generated, and a condition code of 16 is set. This code indicates that your tape management system has scratched tapes still required by CA View. The tape librarian can use this report to prevent the tapes from being overwritten, and data being lost.

Code one step for each database to be checked.

Job Control Statements

Sample execution JCL can be found in member HAEXTCHK in your CVDEJCL data set.

These job control statements are necessary to execute SARTCHK.

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARTCHK) and the high-level name of the database as the PARM parameter (PARM='VIEW.SYSTEM1').

STEPLIB DD

Defines the load library containing SARTCHK.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) into which the listing of uncataloged tapes is written.

If the data set is not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded, where nnn is a multiple of 133.

SYSUDUMP

Defines a file for MVS dump output.

Restore a Complete Disk Archival Generation or Selecting SYSOUT Entries (SARTDR)

Use the SARTDR utility to recreate and reload an entire archival disk generation or to select SYSOUT entries from tape. Also, the utility will re-add archival and DR tape information to the master index.

Note: When a primary tape is added back to the database, it does not automatically add the associated duplex and/or DR tape. Be sure to run TADD with each of these tapes.

The utility can be used to recover one or more generations of SYSOUT data or select SYSOUT entries that have been lost because of:

- Accidental deletion of a database data set
- Hardware error resulting in the loss of a database data set
- Accidental or intentional cycling out of a tape or disk generation from within CA View

Note: Error-free archival tapes must exist for the generations.

The SARTDR utility does not require exclusive access to the database; it can run while other database activities such as archiving or backing up are occurring.

Important! Tape consolidation (SARPAC) must be run on a merged database for all original tapes before SARTDR/TADD can be used. Never TADD an original tape to a merged database before you run SARPAC.

Job Control Statements

Sample execution JCL can be found in member HAEXTDR in your CVDEJCL data set.

These job control statements are necessary to execute SARTDR.

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARTDR) and the high-level name of the database as the PARM parameter (PARM='VIEW.SYSTEM1').

STEPLIB DD

Defines the load library containing SARTDR.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) used for listing the statements and messages.

If not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded, where nnn is a multiple of 133.

anyname DD

Defines one archival tape to be re-added to the master index file.

The ddname must match the one that is specified on the TADD control statement.

A DD statement must be included for each archival tape to be re-added. Omit this DD statement if no archival tapes are to be re-added.

SYSIN DD

Defines the card-image data set containing the control statements.

SARTDR Control Statements

Control statements have the following general structure:

/function parameters

- The slash is coded in column 1 and is immediately followed by the name of the function to be performed.
- One or more blanks must follow the function name and separate the function name from the parameters.

  Individual parameters are separated by one or more blanks and/or commas.
- A statement that exceeds 71 characters must be continued on additional statements.

  When you continue a statement, interrupt the statement only between complete parameters or subparameters.
- Comments can be included in the control statements by coding an asterisk in column 1 of the card image containing the comment.

TADD

Use the TADD control statement to specify an archival tape that is to be re-added to the master index. This function can be used to re-add an entire archival tape or to re-add specific reports, generations, or resource groups from an archival tape that has cycled out of CA View.

For example, assume that you expected to keep 100 generations of SYSOUT on tape but you actually only kept 90 (NGENT=90). Any tapes containing SYSOUT data older than 90 generations ago could be re-added to the master index with this function, if the tapes had not been overwritten since they had been cycled out of CA View. Note that it is even possible to re-add an overwritten tape by salvaging it first with the SARTCP utility.

Syntax:

```
/TADD DDNAME=xxxxxxxx
ID=(sysout-id,…)
GEN=(gen,…)
RESOURCE=(name,…).
UNIT=uuuuuuuu
STORGRP=ssssssss
```

where:

DDNAME=*xxxxxxxx*

Specifies the name of the DD statement used to define the archival tape to be added to the master index.

ID=(sysout-id,…)

Optionally specifies a SYSOUT identifier, generic SYSOUT identifier, or a list of SYSOUT identifiers to be re-added to the master index.

A generic SYSOUT identifier is specified by suffixing a portion of the SYSOUT identifier with an asterisk. If the *id* contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote will end the ID. For example, if the value were JIM’S REPORT it must be entered as ‘JIM’’S REPORT’ or “JIM’S REPORT”.

GEN=(gen,…)

Optionally specifies the archival generation number or a list of archival generation numbers for which SYSOUT is to be re-added to the master index.

If SYSOUT and generation numbers are specified, only the SYSOUTs for the specified generations are added to the database.

RESOURCE=(name,…).

Optionally specifies the name of a resource group or a list of resource groups to be re-added to the master index.

UNIT=uuuuuuuu

Specifies an optional one- to eight-character unit name.

STORGRP=ssssssss

Specifies an optional one- to eight-character storage group name.

Note: STORGRP and UNIT must be specified if reports are to be eligible for Expanded Access Server of Tape (SAREAS).

After SARTDR TADD runs, you must run SARPAC on the recovered tape if you have the Expanded Access Server and you recovered the tape with SARTCP SKIP and NULL statements.

Example 1

In this example, VIEW.SYSTEM1.SARTAPE.T0000011 is to be re-added to the master index. The name of the database is VIEW.SYSTEM1.

The following job is run:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//STEP1     EXEC PGM=SARTDR,PARM='VIEW.SYSTEM1'
//STEPLIB   DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT  DD SYSOUT=*
//TAPEIN DD VOL=SER=T00033,UNIT=TAPE,
//          DSN=VIEW.SYSTEM1.SARTAPE.T0000011,
//          DISP=SHR
//SYSIN     DD *
/TADD DDNAME=TAPEIN
```

Example 2

In this example, reports from archival generation 267 are re-added to the master index from tape VIEW.SYSTEM1.SARTAPE.T0000103.

The following job is run:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//STEP1     EXEC PGM=SARTDR,PARM='VIEW.SYSTEM1'
//STEPLIB   DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT  DD SYSOUT=*
//TAPEIN DD VOL=SER=T00326,UNIT=TAPE,
//          DSN=VIEW.SYSTEM1.SARTAPE.T0000103,
//          DISP=SHR
//SYSIN     DD *
/TADD DDNAME=TAPEIN GEN=267
```

TLOAD

Use the TLOAD control statement to reload an entire disk archival generation from tape, specific reports, specific resource groups, or the entire contents of a tape. Sysouts are reloaded regardless of where they were originally archived, that is, Sysout groups originally archived Direct-to-Tape are reloaded to disk during the TLOAD.

Before reloading a disk archival generation with this function, you must verify that:

- All archival tapes required for the generation are known to the product. Any tapes not known to the product can be re-added with the SARTDR TADD control statement.
- All archival tapes required for the generation are available and error free. The SARTCP utility can be used to salvage an archival tape containing errors.

Syntax:

```
/TLOAD ID=(sysout-id,…)
GEN=(gen,…)
RESOURCE=(name,…)
TAPESEQ=sssss
SECOND
```

where:

ID=(sysout-id,…)

Optionally specifies a SYSOUT identifier, generic SYSOUT identifier, or a list of SYSOUT identifiers to be reloaded to primary or secondary disk.

If the *id* contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

A generic SYSOUT identifier is specified by suffixing a portion of the SYSOUT identifier with an asterisk.

GEN=(gen,…)

Optionally specifies the archival generation number or a list of archival generation numbers for which SYSOUT is to be reloaded to primary or secondary disk.

RESOURCE=(name,…)

Optionally specifies a resource group or a list of resource groups to be reloaded to disk.

Note: Resource groups are never loaded to the secondary disk.

TAPESEQ=ssssss

Specifies the tape sequence number of the backup tape for which SYSOUTs are to be reloaded to primary or secondary disk

If the last SYSOUT on the requested tape spans multiple tapes, SARTDR requests additional tape mounts to reload the entire SYSOUT.

SECOND

Specifies the Sysouts that are to be loaded to secondary (Optical, Centera, etc.,) disk rather than primary disk. Resource groups are never loaded to secondary disk. Resource groups on a tape are bypassed. SECOND requires all secondary disk initialization parameters be established before execution of the /TLOAD SECOND function.

If both the generation number *and* the tape sequence number are specified, SYSOUTS for the specified generation that reside on the specified tape are reloaded to primary or secondary disk.

Example 1

In this example, suppose generation 1221 is to be loaded back to primary disk from the archival tapes. The name of the database is VIEW.SYSTEM1.

The following job is run:

```
//EXAMPLE  JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARTDR,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
/TLOAD GEN=1221
/*
```

Example 2

In this example, CA View backup tape VIEW.SYSTEM1.SARTAPE.T0000143 is to be loaded back to secondary disk. The name of the database is VIEW.SYSTEM1.

The following job is run:

```
//EXAMPLE  JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARTDR,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
/TLOAD TAPESEQ=143
/*
```

SYSOUTs on Tape Utility (SARTSLST)

SARTSLST creates a list of SYSOUTs that are still active on a specific tape or a range of tapes. SARTSLST reads the disk database; it does not mount any tapes. SARTSLST lists the active SYSOUTs by the CA View archival or DR tape sequence numbers.

If a tape is unreadable or lost, you can use this utility to determine whether there were any active SYSOUTs on the tape.

Automatic Re-Backup or Delete

You can code the CTLCARDS DD statement with the SARTSLST job to have SARTSLST automatically generate SARBCH input control statements to clean up a lost tape from the database.

Be aware of the following:

- If the SYSOUT still has an active primary disk copy, a SARBCH CHANGE statement is created to mark the SYSOUT as not backed up, and the next backup cycle makes a new backup.
- If the SYSOUT has no active primary disk copy, a SARBCH DELETE statement is created to delete the SYSOUT from the database.

Note: Do not use SARTSLST if you use tape duplexing, and a duplex tape is available and readable. If the duplex tape was created with 3420 processing, you can use the SARTCP utility to recreate a primary copy from the duplex tape, and no database recovery is needed.

Recovering from *NoCat Tape Errors

The Not Cataloged (*NOCAT) error message appears in the SARPAC report for any tapes that are no longer in the MVS Catalog. If the catalog entry is missing and tape is still available, the tape can be cataloged using the IBM utilities. If the tape is truly not available, the only recovery procedure you can use is to remove all database references to that tape.

The Group Control Record (GCR) for SYSOUT reports that exist only on the tapes that are no longer available must be deleted. This can be done from the Sysout Selection panel using the DELETE function, but the most convenient way to delete GCR records is to use the CA View utilities. The Tape List utility SARTSLST can be executed against the tape sequence number for a tape in error.

The utility creates a control statement stream that can be used with the CA View batch utility, SARBCH, to delete all references to that specific tape sequence.

The *NOCAT error message appears in the VOLSER column alongside the tape sequence which is in error as follows:

```
  TSEQ DATA SET NAME                       VOLSER
 ----- --------------------------------- ------
     9 VIEW.SYSTEM1.SARTAPE.T0000009      *NOCAT
```

To remove all references to this tape, execute the SARTSLST utility with the tape sequence number as a parameter along with the high-level database name. Add a DD statement for the creation of the control statement stream as follows:

```
//STEP1   EXEC PGM=SARTSLST,PARM='VIEW.SYSTEM1,9'
//STEPLIB  DD  DISP=SHR,DSN=SAR.CVDELOAD
//CTLCARDS DD  DSN=SAR.CTLCARDS,DISP=(,CATLG),
//             UNIT=SYSDA,SPACE=(TRK,(1,1)),
//             DCB=(,DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSPRINT DD  SYSOUT=*
```

where the execution parameter contains the CA View database high-level name followed by a comma and the tape sequence number of the tape in error.

The file pointed to by the CTLCARDS DD statement contains one control statement for each SYSOUT report referencing the bad tape. The control statement is either a /CHANGE or /DELETE statement.

- If the SYSOUT report is still on the disk database, a /CHANGE control statement is created. This statement resets the backup indication so the file can be written to a new tape during the next backup cycle.
- If the SYSOUT is no longer on the database, a /DELETE control statement is created. This statement removes the reference of this SYSOUT report for the tape.

The following statements are samples of the control statements created by SARTSLST:

```
/DELETE   ID=REPORT1  GEN=27 SEQ=00005
/CHANGE   ID=REPORT2  GEN=27 SEQ=00007 BACKUP=OFF
```

These statements can be used as input to the CA View batch utility SARBCH as follows:

```
//STEP1    EXEC PGM=SARBCH,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DISP=SHR,DSN=SAR.CVDELOAD
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DSN=SAR.CTLCARDS,DISP=OLD
```

This job removes all references to the bad tape, allowing SARPAC to execute correctly.

Job Control Statements

Sample execution JCL can be found in member HAEXTLST in your CVDEJCL data set.

These job control statements are necessary to execute SARTSLST:

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARTSLST).

The PARM parameter specifies the high-level name of the database, and the tape sequence number or a range of tapes to look up.

Examples:

PARM= 'VIEW.SYSTEM1,14'

Lists active reports on archival tape 14.

PARM= 'VIEW.SYSTEM1,5-100'

Lists active reports on archival tapes 5 through 100.

PARM= 'VIEW.SYSTEM1,10-20,DR'

Lists active reports on DR tapes 10 through 20.

STEPLIB DD

Defines the load library containing SARTSLST.

If the program resides in a linklist library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) into which the listing of uncataloged tapes is written.

If not a SYSOUT data set, DCB=BLKSIZE=nnn must be coded, where nnn is a multiple of 133.

SYSUDUMP

Defines a file for MVS dump output.

CTLCARDS

Specifies the creation of SARBCH statements to take action on the SYSOUT: the action is to either back it up again or delete it if there is no disk copy.

Chapter 8: Backing Up and Recovering the Database

This section contains the following topics:

Backup and Recovery (see page 339)
Forward Recovery (see page 342)
Database Recovery Utilities (see page 345)
Recovery Procedures (see page 346)
Using Third-Party Backups (see page 347)
Recovery from Media Problems (see page 348)
Recovery from Integrity Problems (see page 350)
SARDBASE RESTORE Using Forward Recovery Data (see page 352)
SARDBASE RESTORE without Forward Recovery Data (see page 353)
Recovery Using DR Tape (see page 354)

Backup and Recovery

To assist your site with backup and recovery, CA View provides the following features:

- Automatic backup of the current disk archival generation of SYSOUT and the master index during the CA View backup cycle
- Interim backups to minimize the time for which no backup exists on tape
- Restoration of a corrupted database with the SARDBASE RESTORE and SARRSP programs
- Restoration of a complete generation of SYSOUT data from tape to disk with the SARTDR program
- Tape mapping, copying, and salvaging with the SARTCP program
- Forward recovery, which provides recovery of SYSOUTs that were archived after the last backup of the database

During tape backup, the tape is cataloged when the tape is opened.

Backing Up the Database

As part of its backup cycle, CA View optionally backs up to tape the current disk archive generation of SYSOUT, along with the master index. The TBACKUP initialization parameter determines whether backup and DR processing are done.

CA View allows you to produce a duplicate of its backup tapes. A subparameter of the STORGRP*n* parameters (unit2-name) determines whether tape duplexing is done.

CA View can also create a DR tape if the DRTAPE parameter is set to YES or ACTIVE. Be aware of the following conditions:

- This tape is not a mirror image of the primary or duplex tape. The DR tape is written during the current Standard or Interim backup cycle and can be sent to the DR site.
- A new DR backup tape can be created for both the Standard and Interim backup cycles depending on how the DRMOD parameter is set, as follows:
  - NEVER—The backup cycle does not append reports to an existing DR backup tape.
  - ALWAYS—The backup cycle always appends reports to an existing DR backup tape until it becomes full.
  - STD—The backup cycle appends reports to an existing DR backup tape during Interim backup cycles and creates a new DR backup during Standard backup cycles.

If you define tape storage groups with the STORGRP*n* initialization parameters, we recommend that you make STORGRP1 the largest group, to enhance the performance of the backup cycle.

The master index contains the location and attributes of all archived SYSOUT; therefore, we recommend that you let CA View back up the master index automatically. The master index is always backed up to the tape storage group defined by the initialization parameter STORGRP0.

Annotation Backup

All annotations are automatically backed up to tape during the normal backup cycle. Like resources for AFP and Xerox reports, the annotations remain on disk until the report is deleted from the system either manually or due to migration rules.

If a report is deleted from the system, annotations cannot be recovered with the tape utility.

Using Other Backup Products

If you use as backup product from another vendor (such as FDR, DFDSS, and so on) to back up the CA View database, ensure that the database is *not* updated during the backup, and that the entire database is backed up. Any references to *the database* in this chapter refer to the CA View database unless otherwise noted.

If a database spans multiple volumes, perform full volume backups. To restore the database, restore all data sets comprising the database from the same backup. If, for example, a volume containing part of the database crashes, and updates have occurred since the backup, you cannot restore only that volume.

Important! If a tape management system is installed, do not override the CA View tape retention criteria by the tape management system with respect to abnormal termination (ABENDS).

Backup and Recovery Guidelines

The following topics are the backup and recovery guidelines:

Forward Recovery and Interim Backups

If you have not activated forward recovery data set (RDS), all SYSOUT that was archived after the most recent standard or interim backup cannot be recovered. Therefore, if you do not use forward recovery data set, it is important to perform interim backups.

Damaged and Missing Tapes

The SARTCP utility can be used to salvage SYSOUT from a damaged tape. The utility maps the contents of copies, and reconstructs a backup archival tape. SARTSLST can be used to delete references to a missing tape.

Reloading from Tape

The SARTDR utility can be used to recreate and reload an entire disk archival generation from tape. Facilities are also available with the utility to add tape archival information again to the master index.

Recovery and Archival Resumption

The product automatically backs up the master index to tape as part of its backup cycle and maintains information on the backups in the recovery data set. In case of loss or destruction of the master index, the database can be restored from one of the backups using the RESTORE function of the SARDBASE program.

The SARDBASE RESTORE function does the following actions:

- Restores the master index from the appropriate backup tape
- Optionally copies the archived SYSOUT from the old database

SYSOUT archival cannot occur during the SARDBASE RESTORE preliminary phase (master index restore), but archival can be resumed during the data restore phase. The SARDBR17 console message notifies you when the preliminary phase has completed and informs you that you can bring up the CA View started task to resume archival.

Alternatively, you can have SARDBASE RESTORE restore only the master index; then you can use SARRSP to restore SYSOUTs from tape. Archival can resume while SARRSP is running.

Forward Recovery

With forward recovery data set activated, all SYSOUT data archived by the CA View started task is also stored in forward recovery data sets. To restore a database recover the SYSOUT data archived by the CA View started task *after* the last backup. (Forward recovery does not include SYSOUT written to the database by CA Deliver direct-to-CA View archival.)

You activate forward recovery data set with initialization parameters (RCVPRIM, RCVSEC, RCVSPACE, and RCVUNIT). When you specify values for these parameters and run SARINIT, the next CA View backup cycle allocates the forward recovery data sets. Subsequent backups delete old forward recovery data sets and allocate new ones.

To restore the database from backup tapes, the SYSOUTs residing in the forward recovery data sets are automatically written to the restored database.

If you do not have values for the forward recovery data set parameters, forward recovery data set is inactive.

Note: Forward recovery does not work for any reports picked up by the FSS Collectors. Forward recovery works only for reports picked up by the SARSTC.

Forward Recovery Data Set Format

The forward recovery data sets are compressed, manageable by SMS, and have a record format of U (undefined length records), a block size of 32760, and a DSORG of PS (physical sequential). The data set naming convention is:

high-level-prefix.SARFRDS.D*nnnnnnn*

Where

nnnnnnn is a sequentially-incremented number that starts at 1.

Forward Recovery Data Set Operation

The forward recovery data set (RDS) stores the SYSOUT data that is archived during and after a backup cycle (standard or interim). It also stores the master control records (MCR), tape control records (TCR), and group control records (GCR) of the database.

If an RDS becomes full, the CA View archival task automatically creates a new RDS with the next sequential number. The starting and ending RDS numbers are tracked in the database.

When a CA View backup begins, a new RDS with the next sequential number is automatically created. When the backup has successfully completed, the RDSs that contain data from before the current backup are deleted.

When SARDBASE RESTORE runs, it determines if there are any active RDSs. If active RDSs are found, RESTORE copies the SYSOUT data from the RDSs to the database it has restored automatically.

Forward recovery enables successful recovery from an unlimited number of nested failures, including failures which can occur during the recovery process.

Each RDS begins with control information. Because a SYSOUT group can consist of multiple JES data sets, the control information includes a pointer to the end of the last successfully stored JES data set.

If you want to restart the interrupted CA View started task, the forward recovery data set storage process resumes with the JES presented next data set. If the interruption occurred while CA View was processing a JES data set in the middle of a SYSOUT group, JES presents the same "middle" data set to the CA View archival started task. The forward recovery data set storage process correctly appends that data set to the data sets that preceded it.

Forward Recovery Messages

Information messages and error messages about the forward recovery data sets are written using a WTO to the master console (ROUTCDE=1, DESC=7). Information messages identify the creation and deletion of the RDSs, and error messages identify any unusual conditions that arise during access of the RDSs.

Activating Forward Recovery

The space allocation (primary, secondary, and type) and unit name of the forward recovery data sets are defined and enabled with the following initialization parameters:

RCVPRIM=nnnn

Specifies the primary space allocation for the forward recovery data sets.

This parameter activates the forward recovery data set; with the next backup cycle, forward recovery data sets are created.

RCVSEC=nnnn

Specifies the secondary space allocation for the forward recovery data sets.

This optional parameter is used when the primary space allocation is exhausted.

RCVSPACE=
TRKS|CYLS

Specifies whether the space allocation for the forward recovery data sets are to be obtained in tracks (TRKS) or cylinders (CYLS).

The default space allocation is tracks. This parameter is optional.

RCVUNIT=unit

Specifies the unit name or unit type where the forward recovery data sets are to be allocated.

This parameter is required for the forward recovery data set to be activated. Verify that the forward recovery data sets are not allocated on the same volumes on which the database resides.

Backup Cycle Consideration

If a backup cycle was *in progress* when the started task was last executing, and if you restored the database using the forward recovery data set, resuming the started task results in an immediate backup cycle.

If no archival occurred since the last backup cycle, the MCR in the forward recovery data set indicates that a backup cycle was in progress. Resuming the started task results in an immediate backup cycle. If this is a primary backup, the generation number increments.

Database Recovery Utilities

The product provides several database utilities to facilitate the recovery process.

SARDBASE Utility

In the SARDBASE utility:

- The VERIFY control statement verifies and corrects the database (including broken pointer chains).
- The COPY control statement copies a database.
- The UNLOAD control statement unloads a database to tape.
- The LOAD control statement reloads a database from tape.
- The MERGE control statement merges one or more databases. (This requires the Expanded Retention Option.)
- The RESTORE control statement restores the database master index from tape (and optionally copies SYSOUT data from the old database).

SARRCOV Utility

The SARRCOV utility enables you to list or recreate the recovery data set.

The RESTORE control statement uses the recovery data set to process a database master index that spans multiple tape volumes.

SARRSP Utility

The SARRSP utility enables you to repopulate the database from tape.

SARTDR Utility

The SARTDR utility enables you to restore specific generations from tape.

SARTDR can also restore index information from tape.

SARTSLST Utility

The SARTSLST utility enables you to eliminate references to destroyed backup tapes.

Recovery Procedures

You can recover a database in the following situations:

- Recovery from media problems
- Recovery from integrity problems
- Restoring the entire database with SARDBASE RESTORE
- Recovery using forward recovery data set data

Notes:

- For more information about complete descriptions of the utilities used in all of these recovery procedures, see the chapter "Database Utilities."
- If you use CA Deliver direct-to-CA View archival, you can temporarily reroute the reports to the JES spool using the CA Deliver ARCH*nn* parameters. When the CA View archival task is restarted, it archives those reports from JES.

Minimizing Non Archival Time

Certain database recovery processes can take a considerable amount of time, depending on the size of the database. You can minimize non archival time during database recovery by restoring the database in phases. After the first phase (master index restore), you can resume archival.

If a SARDBASE RESTORE is required for a database, you can:

- Initially RESTORE only the master index (substantially less time than restoring all data)
- Use the TLOAD control statement of the SARTDR to restore the number of generations you require for production
- Resume operation of the CA View archival task, archiving to the newly-restored database
- Use SARRSP to restore the rest of the corrupted database to the newly-restored database

  This can be done during archival.

Using Third-Party Backups

If the database was backed up with a third-party product, do the following steps to recover the database:

1. Restore the database from a valid backup.

   A valid backup requires that *all* data sets comprising the database were backed up, and the database was not updated during the backup.

2. Use SARTDR TADD to add CA View backup tapes created since the backup used for Step 1.

3. Use SARTDR TLOAD to load generations needed for production.

4. Restart the CA View archival task and resume operation.

COPY Disk-to-Disk

Perform the following procedure to recover the database from a media problem:

1. Run the SARDBASE utility ADDDS function to create a database on alternate DASD.

2. Run the SARDBASE utility COPY function to copy the data from the old (damaged) database into the new database.

   You can run SARBCH LIST on the old and new databases, to account for any data that were lost in the process.

3. If necessary, you can restore lost data from backup tapes using SARTDR TADD.

   The output from SARBCH LIST shows the tape sequence number for each SYSOUT. The tape sequence number is part of the last qualifier of the tape data set name, used by SARTDR TADD.

   Notes:

   - If many SYSOUTs are missing, you can save time by using SARDBASE RESTORE as an alternative to SARTDR TADD.
   - For more information, see the sections Minimizing Non Archival Time (earlier in this chapter), SARDBASE RESTORE Using Forward Recovery Data (later in this chapter), and SARDBASE RESTORE Without Forward Recovery Data (later in this chapter).

4. Restart the CA View archival task and resume operation.

Recovery from Media Problems

The following error message indicates possible media corruption:

```
SARDBI02 PHYSICAL I/O ERROR - ECB=xxxxxxxx
```

You can resolve this media error without using SARDBASE RESTORE to restore the database. Instead, you can use either SARDBASE COPY or SARDBASE UNLOAD and LOAD. In most cases, these processes involve minimal data loss.

If you determine there is no media problem, continue with the instructions in the section Recovery from Integrity Problems later in this chapter.

UNLOAD to Tape and LOAD Back

If the database encountered a media problem, do the following steps to recover the database:

1. Run the SARDBASE utility UNLOAD function to unload the database to tape.

   You can run SARBCH LIST before the UNLOAD and after the LOAD, to account for any data that were lost in the process.

2. Run the SARDBASE utility ADDDS function to create a new database on alternate DASD.

3. Run the SARDBASE utility LOAD function to reload the data from tape (from the UNLOAD) to the new database.

4. If necessary, you can restore lost data from backup tapes using SARTDR TADD.

   The output from SARBCH LIST shows the tape sequence number for each SYSOUT. The tape sequence number is part of the last qualifier of the tape data set name, used by SARTDR TADD.

   Notes:

   - If many SYSOUTs are missing, you can save time by using SARDBASE RESTORE as an alternative to SARTDR TADD.
   - For more information, see the sections Minimizing Non Archival Time (earlier in this chapter), SARDBASE RESTORE Using Forward Recovery Data (later in this chapter), and SARDBASE RESTORE Without Forward Recovery Data (later in this chapter).

5. Restart the CA View archival task and resume operation.

COPY Disk-to-Disk

If the database encountered a media problem, do the following steps to recover the database:

1. Run the SARDBASE utility ADDDS function to create a new database on alternate DASD.
2. Run the SARDBASE utility COPY function to copy the data from the old (damaged) database into the new database.

   You can run SARBCH LIST on the old and new databases, to account for any data that were lost in the process.
3. If necessary, you can restore lost data from backup tapes using SARTDR TADD.

   The output from SARBCH LIST shows the tape sequence number for each SYSOUT. The tape sequence number is part of the last qualifier of the tape data set name, used by SARTDR TADD.

   Notes:

   - If many SYSOUTs are missing, you can save time by using SARDBASE RESTORE as an alternative to SARTDR TADD.
   - For more information, see the sections Minimizing Non Archival Time (later in this chapter), SARDBASE RESTORE Using Forward Recovery Data (later in this chapter), and SARDBASE RESTORE Without Forward Recovery Data (later in this chapter).
4. After SARTDR TADD has run, run SARDBASE VERIFY to build the alternate index, used for date selection.
5. Restart the CA View archival task and resume operation.

Recovery from Integrity Problems

The following error messages indicate record corruption:

```
SARDBI03 DATASET NUMBER OUT OF RANGE - DCCB=xxxxxxxx
SARDBI09 LOGICAL I/O ERROR
```

These errors can be resolved without using SARDBASE RESTORE to restore the database. These can be solved with either SARDBASE VERIFY, COPY, or UNLOAD and LOAD. In most cases, these processes involve minimal data loss.

The following problems indicate database corruption that require resolution if you use this recovery procedure:

- Date selection problems
- Loop in the SYSOUT Selection List panel
- Loop during the CA View archival task backup cycle
- Loop while executing database utilities
- Difficulty deleting SYSOUT groups

Recovery Steps

If your database encountered the previously mentioned errors or symptoms, do the following steps to recover the database:

1. Run the SARDBASE utility VERIFY function to verify and correct the database.

   You can run SARBCH LIST before and after the VERIFY, to account for any data that were lost in the process.

2. If necessary, you can restore lost data from backup tapes using SARTDR TADD.

   The output from SARBCH LIST shows the tape sequence number for each SYSOUT. The tape sequence number is part of the last qualifier of the tape data set name used by SARTDR TADD.

   Notes:

   - If many SYSOUTs are missing, you can save time by using SARDBASE RESTORE as an alternative to SARTDR TADD.
   - For more information, see the sections Minimizing Non Archival Time (earlier in this chapter), SARDBASE RESTORE Using Forward Recovery Data (later in this chapter), and SARDBASE RESTORE Without Forward Recovery Data (later in this chapter).

3. After SARTDR TADD has run, set the EROPRO initialization parameter to ALL before the standard backup cycle.

4. Restart the CA View archival task and resume operation.

   If additional errors remain after the VERIFY, see Recovery from Media Problems, earlier in this chapter.

SARDBASE RESTORE Using Forward Recovery Data

If you have implemented forward recovery data set, you can add any data written to the forward recovery data sets to your newly restored database.

1. Use SARDBASE RENAME to rename the damaged database to a new name.

   Note: The RDSs do not get renamed, so they can be used in the SARDBASE RESTORE.

2. Use SARDBASE ADDDS to create a new target database with the original name.

   The high-level prefix name of the RDSs must correspond to the high-level prefix name of the target database.

3. Use SARDBASE RESTORE to restore the database index to the new target database (forward recovery data sets only are accessed if the most current backup is used); the following results occur:

   - The MCR, TCR, PCR, ECR, and UCR are restored from the backup tape.
   - The MCR and TCR are restored from the RDS.
   - The MCR is marked so that no backups can occur and a new RDS is created.
   - If you have specified the 'ASYNCH' keyword on the RESTORE statement, message SARDBR17 informs you that the index has been restored. You can now start the CA View archival started task and create the new RDS.

4. Run SARDBASE BLOAD to load the banner pages into the new database.

5. Run SARDBASE OLOAD to load the panel, message, and skeleton JCL online members into the new database. Online viewing can now resume and the following results occur:

   - SYSOUTs which are intact from the damaged database are copied to the new target database and each GCR is restored followed by its SYSOUT data.
   - SYSOUTs are copied from the RDSs to the new target database and each GCR is restored followed by its SYSOUT data. When all RDSs have been processed, the MCR is marked so that normal backups can occur.

6. Use the SARRSP recovery utility program to copy any SYSOUTs still missing from the new target disk database from backup tapes.

SARDBASE RESTORE without Forward Recovery Data

If the database is lost or damaged, and all attempts to recover it have failed, it can be recovered from backup tapes as follows:

1. Run the SARDBASE utility ADDDS function to create a new database.

   In cases where the old database has to be deleted due to insufficient disk requirements for the new database, provide an alternate means of backup for the database, such as FDR or DFDSS.

2. Run the SARDBASE RESTORE function.

   If you have specified the 'ASYNCH' keyword on the RESTORE statement, the SARDBR17 console message notifies you when the preliminary phase has completed. You can now bring up the CA View started task to resume archival. An alternative is to restore only the master index, and then use SARRSP and/or SARTDR TLOAD to restore the SYSOUT data.

   The SARDBASE RESTORE JCL must specify a SARRECV or SARTAPE DD statement for purposes of locating the backup tapes.

   Note: Perform the RESTORE operation against a newly created, empty database. It is not necessary to reinstate any initialization parameters because these parameters are recovered during the restore process.

3. Run SARDBASE BLOAD to load the banner pages into the new database.
4. Run SARDBASE OLOAD to load the panel, message, and skeleton JCL online members into the new database.
5. If the old database was not used in the restore process, run either SARRSP or SARTDR TLOAD to load the SYSOUT data; you can:

   - Use SARTDR TLOAD to load one or two generations of data.
   - Restart the CA View archival task and resume operation.
   - Run SARRSP to restore the remaining data.

Recovery Using DR Tape

If the database is lost or damaged, and all attempts to recover it have failed, it can be recovered using the DR tape as follows:

1. Run the SARDBASE utility ADDDS function to create a new database.

   Note: For more information about SARDBASE, see chapter "Database Utilities." Sample JCL for this function can be found in CVDEJCL member BRMADDS.

2. Run SARTCP to map your latest DR tape.

   Note: For more information about SARTCP, see the chapter "Database Utilities."

   The tape map displays the INDEX file as the last file on the tape. The file number of the INDEX is specified as the file number on the SARTAPE DD in next step. Sample JCL for this function can be found in CVDEJCL member HBRMTCPM.

3. Run the SARDBASE RESTORE function.

   - If the file number of the index file is less than 10000

     The SARDBASE RESTORE JCL must leave out the SARRECV DD statement and use a SARTAPE DD statement to specify the DR tape DSN and INDEX file number. This information was obtained in the previous step. Sample JCL for this function can be found in CVDEJCL member HBRMREST.

   - If the file number of the index file is greater than 9999

     Use the SARRCOV utility to create a recovery file that contains the DSN of the DR tape and the file number of the index. This information was obtained in the previous step.

     Note: For more information about SARRCOV, see the chapter "Database Utilities." Sample JCL for this function can be found in CVDEJCL member HAEXRCOV

     The SARDBASE RESTORE JCL must leave out the SARTAPE DD statement and use a SARRECV DD statement to specify the name of the recovery data set. Sample JCL for this function can be found in CVDEJCL member HBRMREST.

     Note: Perform the RESTORE operation against the newly created, empty database. It is not necessary to reinstate any initialization parameters because these parameters are recovered during the restore process.

4. Run the SARDBASE utility OLOAD function to load all online members to the new database. Sample JCL for this function can be found in CVDEJCL member HBRMOLOD.

5. Run the SARDBASE utility BLOAD function to load all banner members to the new database. Sample JCL for this function can be found in CVDEJCL member HBRMBLOD

6. This step assumes you are at your DR site and Primary or Duplex tapes are not available. Run SARINIT and specify DRTAPE=ACTIVE. It lets CA View to access the tape copy of reports from the DR tape rather than the Primary or Duplex tape. For more information about DRTAPE, see the chapter "Initialization Parameters."
7. Run either SARRSP or SARTDR TLOAD to load the SYSOUT data. For more information, see the chapter "Database Utilities." Samples JCL for these utilities can be found in CVDEJCL members HAEXTDR and HAEXRSP.
   - Use SARTDR TLOAD to load one or two generations of data.
   - Restart the CA View archival task and resume operation.
   - Run SARRSP to restore the remaining data.

Chapter 9: Metrics

This chapter provides an overview of the Metrics process. The metrics option gives you the ability to measure the activity and usage of a CA View database. These measurements provide information that you can use to tailor Expanded Retention Parameters, Expanded Access Server for Tape/Robotic options, and database use.

This section contains the following topics:

What Does the Metrics Process Provide (see page 358)
Record SMF Records Under TSO and ISPF (see page 360)
Recording SMF Records (see page 361)
The Record Subtype Number (see page 362)
SMF Record Header/Self-Defining Section (see page 362)
Report View SMF Record (see page 363)
Report Reprint SMF Record (see page 365)
Report Load SMF Record (see page 366)
Report Delete SMF Record (see page 367)
Report Delete Disk SMF Record (see page 368)
Report Archival Date Change SMF Record (see page 368)
User Profile Add/Change SMF Record (see page 369)
SARSMFUX-SMF Exit (see page 369)
SMF Record Header/Self-Defining Section (see page 371)
User Logon SMF Record (see page 373)
User Logoff SMF Record (see page 375)
Report View SMF Record (see page 376)
Report Reprint SMF Record (see page 380)
Report Load SMF Record (see page 384)
Report Delete SMF Record (see page 387)
Report Delete Disk SMF Record (see page 390)
Report Archival Date Change SMF Record (see page 392)
Report Add/Change User Profile SMF Record (see page 394)
The Metrics Reports (see page 398)
Change Archival Date Activity Report (see page 405)
Generating Metrics Reports (see page 406)

What Does the Metrics Process Provide

CA View provides many facilities for storage, access, and retention of reports based on initialization parameters, option parameter specifications, or program parameter specifications. These parameters provide you with the ability to customize the product to your environment.

Customization of certain parameters, however, can require an intimate knowledge of the reports that are retained and accessed in the CA View database. Because this knowledge might not be known or might vary based on user activity, methods for measuring the use of CA View are needed.

The Metrics option provides measurement information. Because this metric data is generated for unique activity to report data, it also provides audit trail information, related accounting information, and useful statistics.

The metric data is recorded as System Management Facility (SMF) records. These records provide a detailed account of the following activities:

- Users logging on to CA View
- Users logging off CA View
- Users viewing reports
- Users reprinting reports
- Users loading reports
- Users deleting reports
- Users changing a report archival date
- Users adding or changing user profiles

You can generate an optional data set from the Metrics report program that contains the SMF records used to produce the reports. These records can then be used with a report writer allowing you to generate customized reports based on Metrics according to your needs.

How to Use Metrics

To use Metrics, you must set the SMFTYPE Initialization parameter to an unused SMF value from 128 to 255. This identifies a unique SMF record type to the system management facility.

Note: For more information about syntax of the SMFTYPE parameter, see the initialization parameter descriptions in the chapter "Initialization Parameters".

To locate an unused SMF record type, review the contents of SYS1.PARMLIB(SMFPRMxx). This system parameter is expected to contain a list of used SMF records types. In this example, type 129 is not defined and is available for use:

```
SYS(TYPE(128,132,140:144,....),
INTERVAL(SMF,NOSYNC),
NODETAIL,
EXITS(IEFU83))
```

To find the SMFPRMxx member name, review the contents of SYS1.PARMLIB(IEASYS*xx* normally IEASYS00) which contains the SMFPRMxx member qualifier. For example, SMFPRM03:

```
SMF=03
```

Note: Setting the SMFTYPE Initialization parameter to 0(zero) disables CA View SMF Metrics recording.

You can also review IBM's *Initialization and Tuning Reference* operating system guide in the "SMFPRMxx (system management facilities (SMF) parameters)" chapter for this and other methods to determine an unused SMF record type.

Record SMF Records Under TSO and ISPF

To write SMF records using IBM's SMFWTR macro, the issuing program must be in supervisor state key zero.

Since the native TSO and ISPF interfaces are not sufficiently authorized to establish supervisor state, SMF records cannot be written directly under these interfaces. Merely adding these interfaces to the TSO authorization table is not sufficient for the ISPF interface.

ISPF, specifically, does not allow dialog service support from authorized programs. To provide a consistent interface for both the native TSO and ISPF interfaces, a separate program, SARSMFT, is provided. SARSMFT must be added to the TSO authorization table.

The online interfaces can then use the TSO service routine, IKJEFTSI, to execute the SARSMFT program to write the SMF record. Authorized TSO programs are normally defined in the IKJTSOxx member of SYS1.PARMLIB. For simplicity, only the updates to the IKJTSOxx member are discussed.

The AUTHTSF Section

The IKJTSO*xx* member provides four sections to use to define the following:

- Authorized commands
- Authorized program
- Authorized program called from the TSO service facility
- Commands not supported in background.

These sections are AUTHCMD, AUTHPGM, AUTHTSF, and NOTBKGND, respectively.

The SARSMFT must be added to the AUTHTSF section.

Syntax:

The format and syntax of the AUTHTSF section of the IKJTSOxx member are:

```
AUTHTSF NAMES( /* PROGRAMS TO BE AUTHORIZED   */ +
               /* WHEN CALLED THROUGH THE TSO */ +
               /* SERVICE FACILITY.           */ +
        IEBCOPY   /*                           */ +
        IKJEFF76) /*                           */
```

Enclose the names of the authorized programs in parentheses after the NAMES keyword. The program names are separated from other program names in the previous example.

The following example shows the change:

```
   AUTHTSF NAMES( /* PROGRAMS TO BE AUTHORIZED   */ +
                  /* WHEN CALLED THROUGH THE TSO */ +
                  /* SERVICE FACILITY.           */ +
        IEBCOPY   /*                             */ +
        IKJEFF76  /*                             */ +
        SARSMFT)  /* SAR SMF WRITER ROUTINE      */
```

Recording SMF Records

The next topics describe how SMF records are generated. All SMF records for a specific CA View database are generated with the same SMF record type. This SMF record type is based on the specification of the SMFTYPE initialization parameter, which may range from 128 to 255.

Note: For more information about the SMFTYPE parameter, see the chapter "Initialization Parameters."

The Record Subtype Number

The *record subtype* is a uniquely defined number indicating the record that is being recorded. These record subtypes (located in bytes 26–27 of the SMF record) are listed below:

Record Subtype	Type of SMF Record
20	Online user logging onto the online retrieval facility
21	Online user logging off from the online retrieval facility
30	Online user viewing a report
31	Batch or online reprinting of a report
32	Report being loaded into the database
33	Batch or online deletion of a report
34	Batch or online deletion of a report from disk database
35	Batch report archival date change
40	Add/change a user profile record

The SARSMFUX user exit is called before the SMF record is written to allow modification and/or suppression of the SMF record. All SMF records can be suppressed automatically by setting the SMFTYPE initialization parameter to zero.

Note: For more information about SMF record layouts, see SMF record layouts.

SMF Record Header/Self-Defining Section

The SMF Record Header/Self-defining section is a fixed section that prefixes all SMF records generated by CA View.

The SMF Record Header or Self-defining section:

- Identifies the SMF record type, date and time when the SMF record was produced, product name, product release, record subtype, job name, job number, online user, database name, and so on
- Is followed by data pertinent to the record subtypes as indicated in bytes 26–27 of the SMF record
- Is mapped by the SARSMF macro, as all are individual SMF records

User Logon SMF Record

A User Logon SMF record is written when a user initiates an online retrieval session. The User Logon SMF record is identified by a record subtype of 20 (Hex 14) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the time and date when the user logged on, the user's name, the online interface being used, and the database name. The job name, job number, reader start date, and reader start time in the SMF record designate the cross-memory region, TSO user, or CA Roscoe region.

User Logoff SMF Record

A User Logoff SMF record is written when a user ends the online retrieval session. The User Logoff SMF record is identified by a record subtype of 21 (Hex 15) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the time and date when the user logged off, the user name, the online interface being used, and the database name. The job name, job number, reader start date, and reader start time in the SMF record designate the cross-memory region, TSO user, or CA Roscoe region.

Report View SMF Record

A Report View SMF record is written when a user views a report through the online retrieval facility. The Report View SMF record is identified by a record subtype of 30 (Hex 1E) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the time and date the user ended the viewing of the report, the user name, the online interface being used, and database name. The job name, job number, reader start date, and reader start time in the SMF record designate the cross-memory region, TSO user, or CA Roscoe region.

- The Report View SMF record contains two independent sections that reference an access section and an index section.
- The access section identifies the tapes being accessed

The index section identifies the index names and values selected when viewing the report

Note: The offset and length of these sections are provided at the end of the standard SMF Record Header/Self-defining section. The access and index sections might not be supplied if the section does not have any applicable data. If the section is not supplied, the value of the offset and length pair is zero.

Report View SMF Record Access Section

The access section of the Report View SMF record identifies the tapes that are accessed when the report data is accessed from tape. The SV30AOF and SV30ALN fields reference the offset to and length of the access section. If the report is not reprinted from tape, the access section is not supplied, and the value in the SV30AOF and SV30ALN fields is zero.

The SV30TSQ through SV30TDSN fields are repeated for each tape that is accessed.

Report View SMF Record Index Section

The index section of the Report View SMF record identifies the index name and value that was viewed.

The SV30IOF and SV30ILN fields reference the offset to and length of the index section. If the report is not viewed through an index, the index section is not supplied, and the value in the SV30IOF and SV30ILN fields is zero.

For multi-level indexing where up to eight index names can be specified for an index, the index names and values are supplied in pairs. These pairs are presented as first index name, first index value; second index name, second index value; and so on. A length field precedes both the index name and the index value.

The *nl* field in the offset column designates the index name length. The SV30INLN through SV30IVAL fields are repeated for each index level.

Report Reprint SMF Record

A Report Reprint SMF record is written when a user reprints a report from the online retrieval facility or batch facility. The Report Reprint SMF record is identified by a record subtype of 31 (Hex 1F) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the user reprinting the report, the database, and the time and date that the report was reprinted. The job name, job number, reader start date, and reader start time in the SMF record designate the cross-memory region, TSO user, CA Roscoe region, or batch job.

The Report Reprint SMF record contains two independent sections that reference an access section and an index section.

- The access section identifies the tapes being accessed
- The index section identifies the index names and values used to reprint the report.

Note: The offset and length of these sections are provided at the end of the standard SMF Record Header/Self-defining section. The access and index sections might not be supplied if the section does not have any applicable data. If the section is not supplied, the value of the offset and length pair is zero.

Report Reprint SMF Record Access Section

The access section of the Report Reprint SMF record identifies the tapes that were accessed when report data is accessed from tape.

The SV31AOF and SV31ALN fields reference the offset to and length of the access section. If the report is not reprinted from tape, the access section is not supplied, and the SV31AOF and SV31ALN fields are zero.

The SV31TSQ through SV31TDSN fields are repeated for each tape that is accessed.

Report Reprint SMF Record Index Section

The index section of the Report Reprint SMF record identifies the index name and value that was reprinted.

The SV31IOF and SV31ILN fields reference the offset to and length of the index section. If the report is not reprinted through an index, the index section is not supplied, and the SV31IOF and SV31ILN fields are zero.

For multi-level indexing, where up to eight index names can be specified for an index, the index names and values are supplied in pairs. These pairs are presented as first index name, first index value; second index name, second index value; and so on. A length field precedes both the index name and the index value.

The *nl* field in the offset column designates the index name length. The SV31INLN through SV31IVAL fields are repeated for each index level.

Report Load SMF Record

A Report Load SMF record is written when a report is loaded into the database explicitly from the batch facility or implicitly from the online retrieval facility.

The Report Load SMF record is identified by a record subtype of 32 (Hex 20) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the user loading the report, the database, the time and date when the report was loaded. The job name, job number, reader start date, and reader start time in the SMF record designate the cross-memory region, TSO user, CA Roscoe region, or batch job.

The Report Load SMF record contains one independent section that references an access section. The access section identifies the tapes being accessed.

Note: The offset and length of this section is provided at the end of the standard SMF Record Header/Self-defining section. The access section may not be supplied if the section does not have any applicable data; if the section is not supplied, the value of the offset and length pair is zero.

Report Load SMF Record Access Section

The access section of the Report Load SMF record identifies the tapes that are accessed when report data is loaded from tape. The SV32AOF and SV32ALN fields reference the offset to and length of the access section. If the report is not loaded from tape, the access section is not supplied, and the SV32AOF and SV32ALN fields are zero.

The SV32TSQ through SV32TDSN fields are repeated for each tape that is accessed.

Report Delete SMF Record

A Report Delete SMF record is written when a report is deleted from the database through the online retrieval facility, batch facility, or backup cycle. The Report Delete SMF record is identified by a record subtype of 33 (Hex 21) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the user deleting the report, the database, the time and the date the report was deleted. The job name, job number, reader start date, and reader start time in the SMF record designate the following:

- Cross-memory region
- TSO user
- CA Roscoe region
- Batch job, or backup task

The Report Delete SMF record contains one independent section that references an access section. The access section identifies the backup tapes on which the report resided. The offset and length of this section are provided at the end of the standard SMF Record Header/Self-defining section.

Note: The access section may not be supplied if the section does not have any applicable data. If the section is not supplied, the value of the offset and length pair is zero.

Report Delete Disk SMF Record

A Report Delete Disk SMF record is written when a report is deleted from the database disk or optical disk through the online retrieval facility, batch facility, backup cycle, or migration task. The Report Delete Disk SMF record is identified by a record subtype of 34 (Hex 22) in bytes 26–27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the user deleting the report, the database, the time and date when the report was deleted. The job name, job number, reader start date, and reader start time in the SMF record designate the cross-memory region, TSO user, CA Roscoe region, batch job, backup task, or migration task.

Report Archival Date Change SMF Record

Report Archival Date Change SMF records are written when a report's archival date is changed in the database through the batch facility.

The Report Archival Date Change SMF Record is identified by a record subtype of 35 (Hex 23) in bytes 26 & 27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the user changing the archival date of the report, the database, and the time and date the report was changed.

The job name, job number, reader start date, and reader start time in the SMF record designate the batch job.

The Report Archival Date Change SMF record contains the old and new generation and sequence numbers, and the old and new archival dates.

User Profile Add/Change SMF Record

The User Profile Add/Change SMF Record is identified by a record subtype of 40 (Hex 28) in bytes 26 & 27 of the SMF record.

The standard SMF Record Header/Self-defining section identifies the user changing the user profile, the database, and the time and date the user profile was changed.

The job name, job number, reader start date, and reader start time in the SMF record designate the batch job.

The User Profile Add/Change SMF record contains the new user profile information when a user profile is added to the profile information when a user profile is added to the database or the old and new user profile information when an existing user profile is changed in the database.

SARSMFUX-SMF Exit

The SMF records generated by CA View to record user logons, user logoffs, report viewing, report reprinting, report loading, and report deletes are passed to SARSMFUX, the existing CA View SMF user exit, prior to writing the SMF record.

SARSMFUX has the ability to modify, suppress, or both, the SMF record.

The type-6 SMF record previously written by the archival started task when reports were reprinted during archival is no longer written. These SMF records are replaced by the new Report Reprint SMF record as documented in the previous topics Report Reprint SMF Record and Recording of SMF Records under TSO and ISPF.

Standard Exit

The standard exit supplied with CA View returns the same SMF records to be written that it receives. If the user exit is modified, the exit must be link-edited with authorization code 1 and placed in the library containing the CA View load modules.

Register Contents

The contents of the significant general registers on entry to the exit are:

Reg 0

Address of GCR record.

The address of the GCR record passed to user exit for report type SMF records.

Reg 1

Address of SMF record.

The format of the record is mapped by the SARSMF macro.

Reg 13

Address of a standard, 72-byte register save area.

Reg 14

Return address.

Reg 15

Entry point address.

Register Contents

The contents of the significant general registers on return from the exit are:

Reg 1

Address of SMF record to be written.

Reg 2-13

Same as on entry to the exit.

Reg 13

Address of a standard, 72-byte register save area.

Reg 14

Return address.

Reg 15

Return code:

0

The SMF record whose address is in general register 1 is to be written.

4

No SMF record is to be written.

SMF Record Header/Self-Defining Section

This topic contains SMF record layouts produced by the Metrics report program. These layouts are to be used when modifying SARSMFUX or using an OEM Report Writer to process the records written to the //USERSMF DD by the Metrics report program.

Offsets		Name	Length	Format	Description
0	0	SMFVLEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word) for the SMF record.
2	2	SMFVSEG	2	Binary	The segment descriptor (always zero)
4	4	SMFVFLG	1	Binary	The system indicator
5	5	SMFVRTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SMFVTME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SMFVDAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SMFVSID	4	Char	The system identification
18	12	SMFVPRD	4	Char	The product identification (VIEW)
22	16	SMFVPRL	4	Char	The product release as one of the following: 12.1—CA View Release 12.1
26	1A	SMFVPTY	2	Binary	The product record subtype as one of the following: 20—User logon 21—User logoff 30—Report was viewed 31—Report was reprinted 32—Report was loaded to database 33—Report was deleted 34—Report was deleted from disk 35—Report date changed
28	1C	SMFVJBN	8	Char	The job name, started task, or TSO session where this record was written

Offsets		Name	Length	Format	Description
36	24	SMFVJID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SMFVRST	4	Binary	The time since midnight, in hundredths of a second, when the reader recognized the job, started task, or TSO session
48	30	SMFVRSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SMFVUIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SMFVPGM	8	Char	The program name (main program being executed) for example, SARBCH, SARSPF, SARTSO, and so on
68	44	SMFVUSER	8	Char	The online user or user name from JOB statement
76	4C	SMFVTYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task
77	4D	SMFVOTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface 10—DRAS interface This field can only contain a value when SVFVTYP is 0.

Offsets		Name	Length	Format	Description
78	4E	SMFVOMOD	1	Binary	The mode of online user as one of the following: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SMFVTYP is 0.
79	4F	SMFVDBN	17	Char	The CA View database prefix
96	60	SMFVCUST	20	Char	Customizable area for customer use

User Logon SMF Record

Offsets		Name	Length	Format	Description
0	0	SV20LEN	2	Binary	The record length
2	2	SV20SEG	2	Binary	The segment descriptor (always zero)
4	4	SV20FLG	1	Binary	The system indicator
5	5	SV20RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV20TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV20DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV20SID	4	Char	The system identification
18	12	SV20PRD	4	Char	The product identification (VIEW)
22	16	SV20PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV20PTY	2	Binary	The product record subtype: 20—User Logon SMF record
28	1C	SV20JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV20JID	8	Char	The job number, started task, or TSO session where this record was written

Offsets		Name	Length	Format	Description
44	2C	SV20RST	4	Binary	The time since midnight, in hundredths of a second, when reader recognized the job, started task, or TSO session
48	30	SV20RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV20UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV20PGM	8	Char	The program name (online program being executed) for example, SARSPF, SARTSO, SARROS, and so forth
68	44	SV20USER	8	Char	The online user ID
76	4C	SV20TYP	1	Binary	The type of job processing: 0—Online user
77	4D	SV20OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface
78	4E	SV20OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode
79	4F	SV20DBN	17	Char	The CA View database prefix
96	60	SV20CUST	20	Char	Customizable area for customer use
116	74	SV20DIST	32	Char	The distribution identifier for the online user (for EXP and SAR modes)

User Logoff SMF Record

Offsets		Name	Length	Format	Description
0	0	SV21LEN	2	Binary	The record length
2	2	SV21SEG	2	Binary	The segment descriptor (always zero)
4	4	SV21FLG	1	Binary	The system indicator
5	5	SV21RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV21TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV21DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV21SID	4	Char	The system identification
18	12	SV21PRD	4	Char	The product identification (VIEW)
22	16	SV21PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV21PTY	2	Binary	The product record subtype 21—User Logoff SMF record
28	1C	SV21JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV21JID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SV21RST	4	Binary	The time since midnight, in hundredths of a second, when the reader recognized the job, started task, or TSO session
48	30	SV21RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV21UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV21PGM	8	Char	The program name (online program being executed, for example, SARSPF, SARTSO, SARROS, and so forth)
68	44	SV21USER	8	Char	The online user ID
76	4C	SV21TYP	1	Binary	The type of job processing: 0—Online user

Offsets		Name	Length	Format	Description
77	4D	SV21OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface
78	4E	SV21OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode
79	4F	SV21DBN	17	Char	The CA View database prefix
96	60	SV21CUST	20	Char	The customizable area for customer use
116	74	SV21DIST	32	Char	The distribution identifier for the online user (for EXP and SAR online modes)
148	94	SV21STME	4	Binary	The time since midnight, in hundredths of a second, when the user logged on
152	98	SV21SDAT	4	Packed	The date when the user logged on, in the format 0cyydddF
156	9C	SV21SLEN	4	Binary	The length of time, in hundredths of a second, that the user was logged on

Report View SMF Record

Offsets		Name	Length	Format	Description
0	0	SV30LEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word).
2	2	SV30SEG	2	Binary	The segment descriptor (always zero)

Offsets		Name	Length	Format	Description
4	4	SV30FLG	1	Binary	The system indicator
5	5	SV30RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV30TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV30DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV30SID	4	Char	The system identification
18	12	SV30PRD	4	Char	The product identification (VIEW)
22	16	SV30PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV30PTY	2	Binary	The product record type (30)
28	1C	SV30JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV30JID	8	Char	The job number of job, started task, or TSO session where this record was written
44	2C	SV30RST	4	Binary	The time since midnight, in hundredths of a second, when reader recognized the job, started task, or TSO session
48	30	SV30RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV30UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV30PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV30USER	8	Char	The online user or user name from JOB statement
76	4C	SV30TYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task

Offsets		Name	Length	Format	Description
77	4D	SV30OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface This field can only contain a value when SV30TYP is 0.
78	4E	SV30OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SV30TYP is 0.
79	4F	SV30DBN	17	Char	The CA View database prefix
96	60	SV30CUST	20	Char	The customizable area for customer use
116	74	SV30RID	32	Char	The identifier of the report being viewed
148	94	SV30GEN	2	Binary	The generation number of the report being viewed
150	96	SV30SEQ	2	Binary	The generation sequence number of the report being viewed
152	98	SV30AJBN	8	Char	The job name of the report being viewed
160	A0	SV30AJID	8	Char	The job number of the report being viewed
168	A8	SV30ATME	4	Binary	The time since midnight, in hundredths of a second, when the report was archived into CA View
172	AC	SV30ADAT	4	Packed	The date when the report was archived into CA View, in the format 0cyydddF
176	B0	SV30ORG	1	Binary	The origin of the report: 0—Collected from JES Spool 1—CA View System Extensions 2—CA Deliver

Offsets		Name	Length	Format	Description
177	B1	SV30MED	1	Char	The type of media the report was accessed from: D—Database disk E—Tape accessed by EAS (Expanded Access Server) O—Optical disk
178	B2	SV30VID	32	Char	The logical view identifier used to view report
210	D2	SV30VNUM	1	Binary	The logical view number used to view report
211	D3	SV30VTYP	1	Char	The type of view: G—Global logical view P—Public logical view U—Private logical view
212	D4	SV30VSTM	4	Binary	The time since midnight, in hundredths of a second, when the user started viewing the report
216	D8	SV30VSDT	4	Packed	The date when the user started viewing the report, in the format 0cyydddF
220	DC	SV30VLEN	4	Binary	The length of time, in hundredths of a second, that the user was viewing the report
224	E0	SV30AOF	2	Binary	The offset to access section from start of record, including the RDW (Record Descriptor Word)
226	E2	SV30ALN	2	Binary	The length of access section Access section is only provided for EAS (Expanded Access Server) access. If the section is not provided, the length is zero.
228	E4	SV30IOF	2	Binary	The offset to index section from start of record, including the RDW (Record Descriptor Word)
230	E6	SV30ILN	2	Binary	The length of index section The index section is only provided when the report is viewed by selecting an index value If the section is not supplied, the length is zero.

Report View SMF Record Access Section

Offsets		Name	Length	Format	Description
0	0	SV30ENAM	4	Char	The EAS (Expanded Access Server) name

Offsets		Name	Length	Format	Description
4	4	SV30TNO	2	Binary	The number of tapes accessed (the following fields are repeated this number of times)
6	6	SV30TSQ	2	Binary	The tape sequence number
8	8	SV30TDSN	44	Char	The tape data set name

Report View SMF Record Index Section

Offsets		Name	Length	Format	Description
0	0	SV30NIDX	1	Binary	The number of index levels
1	1	SV30INLN	1	Binary	The length of index name Length does not include the length of this field.
2	2	SV30INAM	Varies	Char	The index name Length varies based on SV30INLN field.
2+*nl*	2+*nl*	SV30IVLN	1	Binary	The length of index value Length does not including length of this field.
3+*nl*	3+*nl*	SV30IVAL	Varies	Char	The index value Length varies based on SV30IVLN field.

Report Reprint SMF Record

Offsets		Name	Length	Format	Description
0	0	SV31LEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word).
2	2	SV31SEG	2	Binary	The segment descriptor (always zero)
4	4	SV31FLG	1	Binary	The system indicator
5	5	SV31RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV31TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV31DAT	4	Packed	The date when the record was issued, in the format 0cyydddF

Offsets		Name	Length	Format	Description
14	E	SV31SID	4	Char	The system identification
18	12	SV31PRD	4	Char	The product identification (VIEW)
22	16	SV31PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV31PTY	2	Binary	The product record type (31)
28	1C	SV31JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV31JID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SV31RST	4	Binary	The time since midnight, in hundredths of a second, when the reader recognized the job, started task, or TSO session
48	30	SV31RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV31UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV31PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV31USER	8	Char	The online user or user name from JOB statement
76	4C	SV31TYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task
77	4D	SV31OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface This field can only contain a value when SV31TYP is 0.

Offsets		Name	Length	Format	Description
78	4E	SV31OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SV31TYP is 0.
79	4F	SV31DBN	17	Char	The CA View database prefix
96	60	SV31CUST	20	Char	The customizable area for customer use
116	74	SV31RID	32	Char	The identifier of the report being viewed
148	94	SV31GEN	2	Binary	The generation number of the report being viewed
150	96	SV31SEQ	2	Binary	The generation sequence number of the report being viewed
152	98	SV31AJBN	8	Char	The job name of the report being viewed
160	A0	SV31AJID	8	Char	The job number of the report being viewed
168	A8	SV31ATME	4	Binary	The time since midnight, in hundredths of a second, when the report was archived into CA View
172	AC	SV31ADAT	4	Packed	The date when the report was archived into CA View, in the format 0cyydddF
176	B0	SV31ORG	1	Binary	The origin of the report: 0—Collected from JES Spool 1—CA View System Extensions 2—CA Deliver
177	B1	SV31MED	1	Char	The type of media the report was accessed from: D—Database disk E—Tape accessed by EAS (Expanded Access Server) O—Optical disk T—Backup tape
178	B2	SV31VID	32	Char	The logical view identifier used to view report
210	D2	SV31VNUM	1	Binary	The logical view number used to view report
211	D3	SV31VTYP	1	Char	The type of view: G—Global logical view P—Public logical view U—Private logical view

Offsets		Name	Length	Format	Description
212	D4	SV31OUT	1	Char	The output destination: C—CA Connect J—JES spool P—PC destination S—CA Spool V—VPS printer
213	D5	SV31RSRV	1	Char	Reserved
214	D6	SV31DEST	8	Char	The device destination (define device destination)
222	DE	SV31DIST	32	Char	The distribution identifier (for CA Deliver reprints only)
254	FE	SV31BNDL	32	Char	The bundle identifier (for CA Deliver bundle reprints only)
286	11E	SV31LNES	4	Binary	The lines reprinted
290	122	SV31PAGS	4	Binary	The pages reprinted
294	126	SV31AOF	2	Binary	The offset to access section from start of record, including the RDW (Record Descriptor Word)
296	128	SV31ALN	2	Binary	The length of access section Access section is provided for tape and EAS (Expanded Access Server) access only. If the section is not provided, the length is zero.
298	12A	SV31IOF	2	Binary	The offset to index section from start of record, including the RDW (Record Descriptor Word)
300	12C	SV31ILN	2	Binary	The length of index section Index section is only provided when report is reprinted for a specified an index value. If the section is not supplied, length is zero.

Report Reprint SMF Record Access Section

Offsets		Name	Length	Format	Description
0	0	SV31ENAM	4	Char	The EAS (Expanded Access Server) name
4	4	SV31TNO	2	Binary	The number of tapes accessed (the following fields are repeated this number of times)
6	6	SV31TSQ	2	Binary	The tape sequence number
8	8	SV31TDSN	44	Char	The tape data set name

Report Reprint SMF Record Index Section

Offsets		Name	Length	Format	Description
0	0	SV31NIDX	1	Binary	The number of index levels
1	1	SV31INLN	1	Binary	The length of the index name Length does not include the length of this field.
2	2	SV31INAM	Varies	Char	The index name Length varies based on SV31INLN field.
2+*nl*	2+*nl*	SV31IVLN	1	Binary	The length of the index value Length does not including length of this field.
3+*nl*	3+*nl*	SV31IVAL	Varies	Char	The index value Length varies based on SV31IVLN field.

Report Load SMF Record

Offsets		Name	Length	Format	Description
0	0	SV32LEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word).
2	2	SV32SEG	2	Binary	The segment descriptor (always zero)
4	4	SV32FLG	1	Binary	The system indicator
5	5	SV32RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV32TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV32DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV32SID	4	Char	The system identification
18	12	SV32PRD	4	Char	The product identification (VIEW)
22	16	SV32PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV32PTY	2	Binary	The product record type (32)
28	1C	SV32JBN	8	Char	The job name, started task, or TSO session where this record was written

Offsets		Name	Length	Format	Description
36	24	SV32JID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SV32RST	4	Binary	The time since midnight, in hundredths of a second, when the reader recognized the job, started task, or TSO session
48	30	SV32RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV32UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV32PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV32USER	8	Char	The online user or user name from JOB statement
76	4C	SV32TYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task
77	4D	SV32OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface This field can only contain a value when SV32TYP is 0.
78	4E	SV32OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SV32TYP is 0.
79	4F	SV32DBN	17	Char	The CA View database prefix
96	60	SV32CUST	20	Char	The customizable area for customer use

Offsets		Name	Length	Format	Description
116	74	SV32RID	32	Char	The identifier of the report being viewed
148	94	SV32GEN	2	Binary	The generation number of the report being viewed
150	96	SV32SEQ	2	Binary	The generation sequence number of the report being viewed
152	98	SV32AJBN	8	Char	The job name of the report being viewed
160	A0	SV32AJID	8	Char	The job number of the report being viewed
168	A8	SV32ATME	4	Binary	The time since midnight, in hundredths of a second, when report was archived into CA View
172	AC	SV32ADAT	4	Packed	The date when the report was archived into CA View, in the format 0cyydddF
176	B0	SV32ORG	1	Binary	The origin of the report: 0—Collected from JES Spool 1—CA View System Extensions 2—CA Deliver
177	B1	SV32MED	1	Char	The type of media the report was accessed from: D—Database disk E—Tape accessed by EAS (Expanded Access Server) O—Optical disk T—Backup tape
178	B2	SV32IND	1	Binary	The data that was loaded: 1—Report data 2—Index data 3—Report and index data
179	B3	SV32RSRV	1		Reserved
180	B4	SV32LNES	4	Binary	The lines reloaded
184	B8	SV32PAGS	4	Binary	The pages reloaded
188	BC	SV32BLKS	4	Binary	The number of database block used by report
192	C0	SV32AOF	2	Binary	The offset to access section from start of record, including the RDW (Record Descriptor Word)
194	C2	SV32ALN	2	Binary	The length of access section Access section is only provided for EAS (Expanded Access Server) access. If the section is not provided, the length is zero.

Report Load SMF Record Access Section

Offsets		Name	Length	Format	Description
0	0	SV32ENAM	4	Char	The EAS (Expanded Access Server) name
4	4	SV32TNO	2	Binary	The number of tapes accessed (the following fields are repeated this number of times)
6	6	SV32TSQ	2	Binary	The tape sequence number
8	8	SV32TDSN	44	Char	The tape data set name

Report Delete SMF Record

Offsets		Name	Length	Format	Description
0	0	SV33LEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word).
2	2	SV33SEG	2	Binary	The segment descriptor (always zero)
4	4	SV33FLG	1	Binary	The system indicator
5	5	SV33RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV33TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV33DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV33SID	4	Char	The system identification
18	12	SV33PRD	4	Char	The product identification (VIEW)
22	16	SV33PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV33PTY	2	Binary	The product record type (33)
28	1C	SV33JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV33JID	8	Char	The job number, started task, or TSO session where this record was written

Offsets		Name	Length	Format	Description
44	2C	SV33RST	4	Binary	The time since midnight, in hundredths of a second, when reader recognized the job, started task, or TSO session
48	30	SV33RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV33UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV33PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV33USER	8	Char	The online user or user name from JOB statement
76	4C	SV33TYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task
77	4D	SV33OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface This field can only contain a value when SV33TYP is 0.
78	4E	SV33OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SV33TYP is 0.
79	4F	SV33DBN	17	Char	The CA View database prefix
96	60	SV33CUST	20	Char	The customizable area for customer use
116	74	SV33RID	32	Char	The identifier of the report being viewed

Offsets		Name	Length	Format	Description
148	94	SV33GEN	2	Binary	The generation number of the report being viewed
150	96	SV33SEQ	2	Binary	The generation sequence number of the report being viewed
152	98	SV33AJBN	8	Char	The job name of the report being viewed
160	A0	SV33AJID	8	Char	The job number of the report being viewed
168	A8	SV33ATME	4	Binary	The time since midnight, in hundredths of a second, when report was archived into CA View
172	AC	SV33ADAT	4	Packed	The date when the report was archived into CA View, in the format 0cyydddF
176	B0	SV33ORG	1	Binary	The origin of report: 0—Collected from JES Spool 1—CA View System Extensions 2—CA Deliver
177	B1	SV33MED	1	Binary	The media the report was deleted from: **Bit** **Description** 0 Report deleted from disk 1 Index deleted from disk 2 Report deleted from optical 3 Report deleted from tape
178	B2	SV33RSRV	2		Reserved
180	B4	SV33LNES	4	Binary	The lines deleted
184	B8	SV33PAGS	4	Binary	The pages deleted
188	BC	SV33BLKS	4	Binary	The number of database blocks that were freed (if deleted from disk)
192	C0	SV33TNO	2	Binary	The number of the tape the report was backed up to
194	C2	SV33TSQ	2	Binary	The first tape sequence number the report was backed up to
196	C4	SV33LTM	4	Binary	The file number on the first tape where the report resides (file number starts at 0)

Report Delete Disk SMF Record

Offsets		Name	Length	Format	Description
0	0	SV34LEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word).
2	2	SV34SEG	2	Binary	The segment descriptor (always zero)
4	4	SV34FLG	1	Binary	The system indicator
5	5	SV34RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV34TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV34DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV34SID	4	Char	The system identification
18	12	SV34PRD	4	Char	The product identification (VIEW)
22	16	SV34PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV34PTY	2	Binary	The product record type (34)
28	1C	SV34JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV34JID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SV34RST	4	Binary	The time since midnight, in hundredths of a second, when reader recognized the job, started task, or TSO session
48	30	SV34RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV34UIF	8	Char	The user identification (taken from the common exit parameter area) of the job, started task, or TSO session
60	3C	SV34PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV34USER	8	Char	The online user or user name from JOB statement

Offsets		Name	Length	Format	Description
76	4C	SV34TYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task
77	4D	SV34OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface This field can only contain a value when SV34TYP is 0.
78	4E	SV34OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SV34TYP is 0.
79	4F	SV34DBN	17	Char	The CA View database prefix
96	60	SV34CUST	20	Char	The customizable area for customer use
116	74	SV34RID	32	Char	The identifier of the report being viewed
148	94	SV34GEN	2	Binary	The generation number of the report being viewed
150	96	SV34SEQ	2	Binary	The generation sequence number of the report being viewed
152	98	SV34AJBN	8	Char	The job name of the report being viewed
160	A0	SV34AJID	8	Char	The job number of the report being viewed
160	A8	SV34ATME	4	Binary	The time since midnight, in hundredths of a second, when report was archived into CA View
172	AC	SV34ADAT	4	Packed	The date when the report was archived into CA View, in the format 0cyydddF

Offsets		Name	Length	Format	Description
176	B0	SV34ORG	1	Binary	The origin of the report: 0—Collected from JES Spool 1—CA View System Extensions 2—CA Deliver
177	B1	SV34MED	1	Binary	The media report was deleted from one of the following: **Bit** **Description** 0 Report deleted from disk 1 Index deleted from disk 2 Report deleted from optical
178	B2	SV34RSRV	2		Reserved
180	B4	SV34LNES	4	Binary	The lines deleted
184	B8	SV34PAGS	4	Binary	The pages deleted
188	BC	SV34BLKS	4	Binary	The number of database blocks that were freed (if deleted from disk)

Report Archival Date Change SMF Record

Offsets		Name	Length	Format	Description
0	0	SV35LEN	2	Binary	The record length This field and the next field (total of four bytes) form the RDW (Record Descriptor Word).
2	2	SV35SEG	2	Binary	The segment descriptor (always zero)
4	4	SV35FLG	1	Binary	The system indicator
5	5	SV35RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV35TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV35DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV35SID	4	Char	The system identification
18	12	SV35PRD	4	Char	The product identification (VIEW)
22	16	SV35PRL	4	Char	The product release: 12.1—CA View Release 12.1

Offsets		Name	Length	Format	Description
26	1A	SV35PTY	2	Binary	The product record type (35)
28	1C	SV35JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV35JID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SV35RST	4	Binary	The time since midnight, in hundredths of a second, when reader recognized the job, started task, or TSO session
48	30	SV35RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV35UIF	8	Char	The user identification (taken from the common exit parameter area) of the job, started task, or TSO session
60	3C	SV35PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV35USER	8	Char	The online user or user name from JOB statement
76	4C	SV35TYP	1	Binary	The type of processing: 0—Online user 1—Batch job 2—Archival started task 3—Archival backup task
77	4D	SV35OTYP	1	Binary	The type of online interface: 1—ISPF online interface 2—CA Roscoe online interface 3—TSO online interface 4—VTAM online interface 5—IMS cross-memory online interface 6—CICS cross-memory online interface 7—ISPF cross-memory online interface 8—TSO cross-memory online interface 9—CA Roscoe cross-memory online interface This field can only contain a value when SV35TYP is 0.

Offsets		Name	Length	Format	Description
78	4E	SV35OMOD	1	Binary	The mode of online user: 1—ALL mode 2—EXPO mode 3—EXP mode 4—SARO mode 5—SAR mode This field can only contain a value when SV35TYP is 0.
79	4F	SV35DBN	17	Char	The CA View database prefix
96	60	SV35CUST	20	Char	The customizable area for customer use
116	74	SV35RID	32	Char	The identifier of the report being viewed
148	94	SV35GEN	2	Binary	The generation number of the report being viewed
150	96	SV35SEQ	2	Binary	The generation sequence number of the report being viewed
152	98	SV35AJBN	8	Char	The job name of the report being viewed
160	A0	SV35AJID	8	Char	The job number of the report being viewed
168	A8	SV35ATME	4	Binary	The time since midnight, in hundredths of a second, when report was archived into CA View
172	AC	SV35ADAT	4	Packed	The date when the report was archived into CA View, in the format 0cyydddF
176	B0	SV35NRID	32	Char	The identifier of the report being changed
208	D0	SV35NGEN	2	Binary	The new generation number of the report after it is changed
210	D2	SV35NSEQ	2	Binary	The new generation sequence number of the report after it is changed
212	D4	SV35NTME	4	Binary	The time since midnight in hundredths of a second, of twelve noon (12:00:00)
216	DB	SV35NDAT	4	Packed	The new date of the report

Report Add/Change User Profile SMF Record

Offsets		Name	Length	Format	Description
0	0	SV40LEN	2	Binary	The record length. This field and the next field (total of four bytes) form the RDW (Record Descriptor Word)

Offsets		Name	Length	Format	Description
2	2	SV40SEG	2	Binary	The segment descriptor (always zero)
4	4	SV40FLG	1	Binary	The system indicator
5	5	SV40RTY	1	Binary	The SMF record type (number specified on SMFTYPE initialization parameter)
6	6	SV40TME	4	Binary	The time since midnight, in hundredths of a second, when the record was issued
10	A	SV40DAT	4	Packed	The date when the record was issued, in the format 0cyydddF
14	E	SV40SID	4	Char	The system identification
18	12	SV40PRD	4	Char	The product identification (VIEW)
22	16	SV40PRL	4	Char	The product release: 12.1—CA View Release 12.1
26	1A	SV40PTY	2	Binary	The product record type (40)
28	1C	SV40JBN	8	Char	The job name, started task, or TSO session where this record was written
36	24	SV40JID	8	Char	The job number, started task, or TSO session where this record was written
44	2C	SV40RST	4	Binary	The time since midnight, in hundredths of a second, when the reader recognized the job, started task, or TSO session
48	30	SV40RSD	4	Packed	The date when the reader recognized the job, started task, or TSO session, in the format 0cyydddF
52	34	SV40UIF	8	Char	The user identification (taken from the common exit parameter area) of job, started task, or TSO session
60	3C	SV40PGM	8	Char	The program name (program name on EXEC statement)
68	44	SV40USER	8	Char	The online user or user name from JOB statement
76	4C	SV40TYP	1	Binary	The type of processing: 0 - Online user 1 - Batch job 2 - Archival started task 3 - Archival backup task

Offsets		Name	Length	Format	Description
77	4D	SV40OTYP	1	Binary	The type of online interface: 1 - ISPF online interface 2 - CA Roscoe online interface 3 - TSO online interface 4 - VTAM online interface 5 - IMS cross-memory online interface 6 - CICS cross-memory online interface 7 - ISPF cross-memory online interface 8 - TSO cross-memory online interface 9 - CA Roscoe cross-memory online interface This field can only contain a value when SV40TYP is 0.
78	4E	SV40OMOD	1	Binary	The mode of online user: 1 - ALL mode 2 - EXPO mode 3 - EXP mode 4 - SARO mode 5 - SAR mode This field can only contain a value when SV40TYP is 0.
79	4F	SV40DBN	17	Char	The CA View database prefix
96	60	SV40CUST	20	Char	The customizable area for customer use
116	74	SV40UPID	8	Char	Identifier of the user profile being changed, added, or deleted

Offsets		Name	Length	Format	Description
124	7C	SV40TYPE	1	Char	Transaction type A - Add user profile C - Change user profile D - Delete user profile Notes: ■ When SV40TYPE is equal to an "add" function, the following "old" data fields are initialized with binary zeros and the "new" data fields are populated with the data specified in the add function. ■ When the SV40TYPE is equal to a "delete" function, the "old" data fields are populated with the data contained in the database and the "new" data fields are initialized with binary zeros. ■ When SV40TYPE is equal to a change" function, the "old" data fields are populated with the data contained in the database prior to the change and the "new" data fields are populated with a combination of the original data from the database and the data which was changed.
125	7D	SV40PSWD	1	Char	Password change indicator N - Password was not changed Y - Password was changed
126	7E	SV40ODM	32	Char	Old distid mask
158	9E	SV40OD	32	Char	Old distribution ID
190	BE	SV40OB	8	Char	Old banner page
198	C6	SV40OP	8	Char	Old printer ID
206	CE	SV40OM	4	Char	Old display mode: ALL - ALL mode EXPO - EXPO mode EXP - EXP mode SARO - SARO mode SAR - SAR mode
210	D2	SV40OMA	1	Char	Old master authority flag
211	D3	SV40OALL	1	Char	Old Access to ALL mode
212	D4	SV40OEXO	1	Char	Old Access to EXPO mode
213	D5	SV40OEX	1	Char	Old Access to EXP mode
214	D6	SV40OSRO	1	Char	Old Access to SARO mode

Offsets		Name	Length	Format	Description
215	D7	SV40OSR	1	Char	Old Access to SAR mode
216	D8	SV40OL	2	Char	Old language code
218	DA	SV40NDM	32	Char	New distid mask
250	FA	SV40ND	32	Char	New distribution ID
282	11A	SV40NB	8	Char	New banner page
290	122	SV40NP	8	Char	New printer ID
298	12A	SV40NM	4	Char	New display mode: ALL - ALL mode EXPO - EXPO mode EXP - EXP mode SARO - SARO mode SAR - SAR mode
302	12E	SV40NMA	1	Char	New master authority flag
303	12F	SV40NALL	1	Char	New Access to ALL mode
304	130	SV40NEXO	1	Char	New Access to EXPO mode
305	131	SV40NEX	1	Char	New Access to EXP mode
306	132	SV40NSRO	1	Char	New Access to SARO mode
307	133	SV40NSR	1	Char	New Access to SAR mode
308	134	SV40NL	2	Char	New language code

The Metrics Reports

The following reports are included with Metrics:

- Access Activity report
- Delete Activity report
- User's Activity report
- Load Activity report
- Change Archival Date Activity report

Optionally, you can output a file containing the Metrics SMF records that were used to produce the reports. These records can then be used as input to a third party report writer such as CA Earl or CA Easytrieve Report Generator (CA Easytrieve) to create customized reports. The record layouts in the topic SMF Record Layouts are to be used when defining these records to your report writer.

Access Activity Report

The Access Activity report is based on the report ID of a report being viewed, printed, or loaded. This report contains the following information:

- Report ID of the viewed report
- Report generation number
- Generation sequence number
- Job name
- Job number
- Archive date and time
- User ID of the person viewing the report
- Access date and time
- Activity type
- Media type
- Access type (online IM)
- Database prefix
- View duration (View Accesses only)
- View ID (View Accesses only)
- View number (View Accesses only)
- View type (View Accesses only)

Sample Access Activity Report

```
16:51:06:37 NOVEMBER 10, 2013          CA View METRICS REPORT, ACCESS ACTIVITY, 113310-113314,0000-2359      PAGE:   1
                                       ------------------------------------------------------------

REPORT ID                          GEN #    GSEQ#  USERID      DATE & TIME            ACTV    MED     ACCESS     DB PREFIX
 JOBNAME  JOB NO.  ARCHIVE DATE & TIME    END DATE & TIME        DURATION    VIEW ID                          VNO VTYP
-------------------------------------------------------------------------------------------------------------------------------

ACCOUNTS_PAYABLE_REPORTS           00026    00015  USERO04     11/08/2013 13:44:25:16  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06116 11/07/2013 20:08:35:00 11/08/2013 13:44:33:43 00:00:08:27                                 00
                                                                 11/08/2013 13:44:11:93  LOAD    BKTP    ISPF OLI  OPM.USERO04.VW20

TOTAL ACCESS PER GEN SEQ# 00015              DISK=           1     TAPE=           1      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           1
                                             VIEW=           1    PRINT=           0     LOAD=           1
ACCOUNTS_PAYABLE_REPORTS           00027    00004  USERO04     11/08/2013 13:41:28:54  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06126 11/07/2013 22:04:29:00 11/08/2013 13:41:31:75 00:00:03:21                                 00
TOTAL ACCESS PER GEN SEQ# 00004              DISK=           1     TAPE=           0      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           0

ACCOUNTS_PAYABLE_REPORTS           00027    00005  USERO04     11/08/2013 13:45:18:84  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06159 11/08/2013 09:48:15:00 11/08/2013 13:45:56:29 00:00:37:45                                 00
TOTAL ACCESS PER GEN SEQ# 00005              DISK=           1     TAPE=           0      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           0

ACCOUNTS_PAYABLE_REPORTS           00027    00006  USERO04     11/08/2013 13:45:08:63  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06160 11/08/2013 09:57:39:00 11/08/2013 13:45:10:77 00:00:02:14                                 00
                                                                 11/08/2013 13:46:13:38  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
                                       11/08/2013 13:46:24:05 00:00:10:67                 00
TOTAL ACCESS PER GEN SEQ# 00006              DISK=           2     TAPE=           0      OPT=           0
                                             VIEW=           2    PRINT=           0     LOAD=           0

ACCOUNTS_PAYABLE_REPORTS           00027    00007  USERO04     11/08/2013 13:44:59:45  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06168 11/08/2013 13:17:09:00 11/08/2013 13:45:01:87 00:00:02:42                                 00
TOTAL ACCESS PER GEN SEQ# 00007              DISK=           1     TAPE=           0      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           0

TOTAL ACCESS PER REPT ID. USERO041           DISK=           6     TAPE=           1      OPT=           0
                                             VIEW=           6    PRINT=           0     LOAD=           1

TOTAL ACCESS PER REPORT                      DISK=           6     TAPE=           1      OPT=           0
                                             VIEW=           6    PRINT=           0     LOAD=           1

          6 SUBTYPE '30', X'1E'
          0 SUBTYPE '31', X'1F'
          1 SUBTYPE '32', X'20'
          7 SUBTYPE TOTAL ACCS
```

Delete Activity Report

The Delete Activity report is also based on report ID and contains the following information about reports that have been deleted:

- Report ID of the deleted report
- Report generation number
- Generation sequence number
- Job name
- Job number
- Archive data and time of report
- Access type
- Delete date and time
- Delete type
- Delete user ID
- Tape sequence number
- Database prefix

Sample Delete Activity Report, Page 1

```
16:51:06:37 NOVEMBER 10, 2013          CA View METRICS REPORT, ACCESS ACTIVITY, 113310-113314,0000-2359      PAGE:   1
                                       ------------------------------------------------------------

REPORT ID                          GEN #    GSEQ#  USERID      DATE & TIME             ACTV    MED     ACCESS     DB PREFIX
 JOBNAME  JOB NO.  ARCHIVE DATE & TIME    END DATE & TIME        DURATION    VIEW ID                                VNO VTYP
-------------------------------------------------------------------------------------------------------------------------------

ACCOUNTS_PAYABLE_REPORTS          00026    00015  USERO04     11/08/2013 13:44:25:16  VIEW    DISK    ISPF OLI  OPM.USERO04.VW
 USERO041 JOB06116 11/07/2013 20:08:35:00 11/08/2013 13:44:33:43 00:00:08:27                                      00
                                                               11/08/2013 13:44:11:93  LOAD    BKTP    ISPF OLI  OPM.USERO04.VW20

TOTAL ACCESS PER GEN SEQ# 00015              DISK=           1     TAPE=           1      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           1
                                             VIEW=           1    PRINT=           0     LOAD=           1
ACCOUNTS_PAYABLE_REPORTS          00027    00004  USERO04     11/08/2013 13:41:28:54  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06126 11/07/2013 22:04:29:00 11/08/2013 13:41:31:75 00:00:03:21                                      00
TOTAL ACCESS PER GEN SEQ# 00004              DISK=           1     TAPE=           0      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           0

ACCOUNTS_PAYABLE_REPORTS          00027    00005  USERO04     11/08/2013 13:45:18:84  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06159 11/08/2013 09:48:15:00 11/08/2013 13:45:56:29 00:00:37:45                                      00
TOTAL ACCESS PER GEN SEQ# 00005              DISK=           1     TAPE=           0      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           0

ACCOUNTS_PAYABLE_REPORTS          00027    00006  USERO04     11/08/2013 13:45:08:63  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06160 11/08/2013 09:57:39:00 11/08/2013 13:45:10:77 00:00:02:14                                      00
                                          11/08/2013 13:46:13:38  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
                                                               11/08/2013 13:46:24:05 00:00:10:67               00
TOTAL ACCESS PER GEN SEQ# 00006              DISK=           2     TAPE=           0      OPT=           0
                                             VIEW=           2    PRINT=           0     LOAD=           0

ACCOUNTS_PAYABLE_REPORTS          00027    00007  USERO04     11/08/2013 13:44:59:45  VIEW    DISK    ISPF OLI  OPM.USERO04.VW20
 USERO041 JOB06168 11/08/2013 13:17:09:00 11/08/2013 13:45:01:87 00:00:02:42                                      00
TOTAL ACCESS PER GEN SEQ# 00007              DISK=           1     TAPE=           0      OPT=           0
                                             VIEW=           1    PRINT=           0     LOAD=           0

TOTAL ACCESS PER REPT ID. USERO041           DISK=           6     TAPE=           1      OPT=           0
                                             VIEW=           6    PRINT=           0     LOAD=           1

TOTAL ACCESS PER REPORT                      DISK=           6     TAPE=           1      OPT=           0
                                             VIEW=           6    PRINT=           0     LOAD=           1

          6 SUBTYPE '30', X'1E'
          0 SUBTYPE '31', X'1F'
          1 SUBTYPE '32', X'20'
          7 SUBTYPE TOTAL ACCS
```

Sample Delete Activity Report, Page 2

```
17:05:42:51 NOVEMBER 10, 2013          CA View METRICS REPORT, DELETE ACTIVITY, 113310-113314,0000-2359      PAGE:         2

REPORT ID                       GEN # GSEQ# ACCESS   DELETION DATE & TIME    DEL  USER        TAPE#  DB PREFIX
 JOBNAME  JOB#     ARCHIVE DATE & TIME                   TYPE
-------------------------------------------------------------------------------------------------------------------------------

 USERO044 JOB06068 11/07/2013 15:30:28:00
ACCOUNTS_PAYABLE_REPORTS         00013 00014 BKUPTASK 11/08/2013 14:48:25:43  DBD                    OPM.USERO04.VW20
 USERO044 JOB06074 11/07/2013 16:03:47:00
ACCOUNTS_PAYABLE_REPORTS         00014 00005 BKUPTASK 11/08/2013 14:48:25:37  DBD                    OPM.USERO04.VW20
 USERO044 JOB06086 11/08/2013 12:01:39:00
ACCOUNTS_PAYABLE_REPORTS         00016 00001 BKUPTASK 11/08/2013 14:48:25:30  DBD                    OPM.USERO04.VW20
 USERO044 JOB06102 11/08/2013 13:55:46:00
TOTAL DELETES PER REPT ID. USERO044      TYPE DB=           5  TYPE DBD=           3  TYPE DB/DBD=           8


ACCOUNTS_PAYABLE_REPORTS         00012 00001 BKUPTASK 11/08/2013 14:48:25:63  DB               00001  OPM.USERO04.VW20
 USERO045 JOB06048 11/07/2013 13:39:28:00
ACCOUNTS_PAYABLE_REPORTS         00012 00010 BKUPTASK 11/08/2013 14:48:25:62  DB               00001  OPM.USERO04.VW20
 USERO045 JOB06057 11/07/2013 13:46:17:00
ACCOUNTS_PAYABLE_REPORTS         00013 00005 BKUPTASK 11/08/2013 14:48:25:59  DB               00001  OPM.USERO04.VW20
 USERO045 JOB06063 11/07/2013 15:12:21:00
ACCOUNTS_PAYABLE_REPORTS         00013 00009 BKUPTASK 11/08/2013 14:48:25:58  DB               00001  OPM.USERO04.VW20
 USERO045 JOB06069 11/07/2013 15:30:27:00
ACCOUNTS_PAYABLE_REPORTS         00013 00016 BKUPTASK 11/08/2013 14:48:25:57  DBD                    OPM.USERO04.VW20
 USERO045 JOB06077 11/07/2013 16:49:42:00
ACCOUNTS_PAYABLE_REPORTS         00014 00004 BKUPTASK 11/08/2013 14:48:25:53  DBD                    OPM.USERO04.VW20
 USERO045 JOB06085 11/08/2013 11:57:34:00
TOTAL DELETES PER REPT ID. USERO045      TYPE DB=           4  TYPE DBD=           2  TYPE DB/DBD=           6


TOTAL DELETES PER REPORT                 TYPE DB=          21  TYPE DBD=          11  TYPE DB/DBD=          32


          21 SUBTYPE '33', X'21'
          11 SUBTYPE '34', X'22'
          53 SUBTYPE TOTAL DELE
```

User's Activity Report

The user sign-on and signoff activity is documented in User Activity report. This report contains the following information:

- User name
- Logon date and time
- Logoff date and time
- Duration
- Access type (online interface)
- Mode
- Database prefix

Sample User's Activity Report

```
 11:16:27:31 NOVEMBER 10, 2013     CA View METRICS REPORT, USER'S ACTIVITY, 113310-113314,0000-2359       PAGE:   1

   USER NAME    LOGON DATE & TIME      LOGOFF DATE & TIME      DURATION       ACCESS      MODE     DB PREFIX
-------------------------------------------------------------------------------------------------------------------------------------------

   USER004   11/08/2013 11:39:36:43  LOGOFF TIME NOT AVAILABLE               ISPF OLI    ALL      OPM.USER004.VW20
 **TOTAL SESSIONS PER USER: USER004  SESSIONS=           1

 **TOTAL SESSIONS PER USER: ALL USER SESSIONS=           1


           1 SUBTYPE '20', X'14'
           0 SUBTYPE '21', X'15'
           1 SUBTYPE TOTAL USER
```

Load Activity Report

The Load Activity report documents reports reloaded to disk within a specific time. This report contains the following information:

- Report ID of disk delete and load report
- Report generation number
- Generation sequence number
- Job name
- Job number
- Mode
- Archive date and time of report
- User ID
- Disk delete/load date and time
- Activity type
- Media type
- Access type
- Database prefix

Sample Load Activity Report

```
17:14:51:35 NOVEMBER 10, 2013    CA View METRICS REPORT,   LOAD ACTIVITY, 113310-113314,0000-2359      PAGE:   1

REPORT ID                       GEN#  GSEQ# USERID   DATE & TIME            ACTV  MED   ACCESS  DB PREFIX
 JOBNAME   JOBNO.  ARCHIVE DATE & TIME
-------------------------------------------------------------------------------------------------------------------------------

ACCOUNTS_PAYABLE_REPORTS         0023  00005          11/08/2013 21:06:49:66 DDEL       BKUPTASK OPM.USERO04.VW20
 USERO045 JOBO0033 11/07/2013 14:27:43:00
                                        USERO04  11/08/2013 21:54:53:17 LOAD  BKTP ISPF OLI OPM.USERO04.VW20
TOTAL LOADS PER REPT ID. ACCOUNTS_PAYABLE_REPORTS                                 LOAD=           1



TOTAL LOADS PER  SARMET14                                                         LOAD=           1


          11 SUBTYPE TOTAL LOAD
```

Change Archival Date Activity Report

The Change Archival Date Activity report documents the archival date changes to reports within a specific time. This report contains the following information:

- Report ID of the changed report
- Report generation number
- Generation sequence number
- Job name
- Job number
- User Id
- Date and time of change job
- Archival date and time of the report
- New report generation number
- New report generation sequence number
- New archival date and time of the report

Sample Change Archival Date Report

```
09:46:06:40 November 10, 2013     CA View Metrics Report, Change Archive                                  Page:  1

 Report ID                        Gen   Seq   Jobname  JobNo    UserId   Program  Date & Time            Database Name
                      From/To     Gen   Seq   Archive Date & Time
_____________________________________________________________________________________________________________________
 PRODD123                         00008 00003 PDUSERA  JOB30669 DEARO02  PDUSER   11/07/2013 09:24:16:06 VIEW.SYSTEM1
                                  00008 00003 10/06/2013 09:50:10:00
                                  00001 00024 10/03/2013 12:00:00:00

          11 Total 'CHNG' Records
```

Generating Metrics Reports

The Metrics reports are generated using the JCL member (HBRMMETX) that was installed into CAI.CVDEJCCL from the CA View installation tape. This JCL can be tailored to meet the needs of your data center, but do not modify the ddnames.

Job Control Statements

HBRMMETX contains the following control statements:

SMFIN DD

Specifies the Input file that contains your SMF data.

USERSMF DD

Specifies the File that contains the CA View Metrics SMF records output.

ACCS DD

Specifies Access Activity report.

USER DD

Specifies User Activity report.

DELE DD

Specifies Delete Activity report.

LOAD DD

Specifies Load Activity report.

CHNG DD

Specifies the Change Archival Date Activity report.

SYSPRINT DD

Print file used to log error messages, record counts, and so on resulting from job execution.

SYSIN DD

Specifies input parameters to the report program.

Input Parameters

The input parameters to the report program are:

SMFTYPE=nnn

Specifies the value generated by SARINIT for defining user during initialization.

Where

nnn

Specifies the user SMF record number assigned to the metrics function.

This entry is required.

DATE=cyyddd-cyyddd

Specifies a range of dates used to generate reports.

Where

cyyddd-cyyddd

Specifies the startdate-enddate in the format century code, year, day:

c—The century code:
0 = 20th century
1 = 21st century

yy—The year

ddd—The day in the Julian calendar

The default is to process the entire input file.

This entry is optional.

DATE=TODAY(-n)

Specifies the current date minus a number of days to generate a range of dates that is used to produce the reports.

Where

n

Specifies the number of days from 1–366.

For example, if you enter DATE=TODAY(-18), the following is calculated automatically:

113255 (current date) -18 (days) 113237

The date 113237 is used to produce the reports, and generates a range of days activity from the current date back to the date specified by the -nn value.

This entry is optional.

TIME=hhmm-hhmm

Specifies a range of time used to generate reports.

Where

hhmm-hhmm

Specifies the starttime-endtime in the format hour-minute:

hh—The hour in military time, for example, 00–23

mm—The minutes from 00–59

The default is to process the entire input file.

This entry is optional.

RPT=report name

Implies the name of the report.

Where

report name is one of the following:

FILE—Generates SMF output file

ACCS—Access Activity Report

USER—User Activity Report

DELE—Delete Activity Report

LOAD—Load Activity Report

CHNG—Change Archival Date report

This entry is required.

ELAP=nn

The elapsed time in days from the time of the disk delete to the reload of the report.

Where

nn

Specifies the number of days from 00–99.

This entry must be coded for the RPT=LOAD control statement.

Each report is generated based on the control statement that defines that report. You can run multiple reports in the same run, but you must include a separate control statement for each.

Example #1

To generate an Access Activity report for November 08, a User Activity report for November 07 1:00 p.m. to 3:00 p.m., and to output an SMF file for the entire input, code the following:

```
SMFTYPE=128 RPT=FILE
SMFTYPE=128 DATE=113312-113312 TIME=0000-2359 RPT=ACCS
```

```
SMFTYPE=128 DATE=113311-113311 TIME=1300-1500 RPT=USER
```

Important! If you are generating the SMF output file using RPT=FILE, this control statement must be the first statement in the input file. The reason for this is because CA View reads the SMF input one time and generates the extracted Metrics SMF records, then uses this file as input to the remaining report requests in this execution. This process limits the number of reads of the original SMF input file. A limited number of reads is important because if you extract a time period that does **not** include subsequent report requests, those reports will be incomplete.

Example #2

The following example only produces an Access Activity report for 113310 from 00:00 to 14:00:

```
SMFTYPE=128 DATE=113310-113310 TIME=0000-1400 RPT=FILE
SMFTYPE=128 DATE=113310-113310 TIME=0000-2359 RPT=ACCS
```

Example #3

The following example produces a Load Activity report with an elapsed time of five days from disk deletion to reload:

```
SMFTYPE=128 DATE=113255-113265
TIME=0000-2359 ELAP=05
```

Chapter 10: Batch Processing

This chapter discusses the SARBCH program, which performs batch retrieval functions.

This section contains the following topics:

Batch Retrieval with SARBCH (see page 412)
SARBCH GSS Interface (see page 413)
SARBCH JCL Statements (see page 418)
SARBCH Control Statements (see page 419)
SARBCH Examples (see page 507)

Batch Retrieval with SARBCH

CA View provides batch retrieval facilities with its SARBCH program. SARBCH performs these functions in batch. Each function is explained later in this chapter:

Note: SARBCH does not utilize the online access mode filters defined for users. To prevent a user from accessing a SYSOUT or DISTID not seen with the filter applied, you must define security and prevent user access to the resource or security must limit that user for SARBCH.

BPRINT

Reprints an archived CA Deliver bundle.

CHANGE

Changes the backup, print, and user attributes of an archived SYSOUT.

DBASE

Specifies the CA View database to be used.

DEFDEV

Creates or modifies a DEVICE.

DEFDIST

Creates or modifies the SYSOUT IDs for a DIST ID.

DEFFILT

Creates or modifies a FILTER.

DEFSYS

Creates or modifies the DIST IDs for SYSOUT IDs.

DEFUSER

Adds or modifies user IDs.

DEFVIEW

Adds or modifies LOGICAL VIEWS.

DELETE

Deletes a SYSOUT, a user ID, device, filter, or a logical view.

EPRINT

Prints reports archived directly from CA Deliver.

EXTRACT

Marks a report for data extracted by CA balancing.

INDEX

Produces a page index for an archived SYSOUT.

LIST

Produces a listing of SYSOUTs or user IDs.

LISTDEV

Produces a listing of DEVICEs.

LISTFILT

Produces a listing of FILTERs.

LISTVIEW

Produces a listing of Logical Views.

LOAD

Loads a SYSOUT from tape to disk.

PERM

Sets a SYSOUT group to permanent status, or removes that status.

PRINT

Prints a SYSOUT.

PRINTIDX

Prints index data for a specific logical view of a report.

SARBCH GSS Interface

CA View interfaces to CA GSS (Global Subsystem) products. This interface allows you to code REXX routines to have other CA GSS products invoke SARBCH.

Possible uses of the CA GSS interface for CA View are:

- Each time a new user is defined to the system, the user is automatically defined to the CA View database.
- Each time a user is deleted from the system, the user is automatically deleted from the CA View database.

Installation

GSS must be installed at your site. Information about installing CA GSS and the GREXX commands is contained in the CA GSS documentation.

Note: For information about installing CA View into the CA GSS, see the chapter "Online Interfaces" in the *Installation Guide*.

CA GSS/REXX Interface

SARBCH includes the CA View host command environment for CA GSS. This environment is accessed by the ADDRESS CA View GREXX instruction and it functions as follows:

- The commands processed by the CA View host command environment are the same as those that can be specified on the SYSIN control statements that are processed by SARBCH.
- The report listing and messages issued by the command environment are queued for processing by the GREXX exec.
- The messages issued are the same messages that are issued by SARBCH.
- The report listings produced are the same as the report listings produced by SARBCH, except that report headings and page breaks are not printed or placed on the queue.

GREXX Variables

The following GREXX variables are used:

XPVIEW.DBASE

Specifies the CA View database prefix that would normally be specified on the /DBASE NAME=xxxxxx control statement.

This variable must be specified before any XPVIEW commands are issued. As with SARBCH, the length of this prefix must be less than or equal to 17.

RC

A variable set by the XPVIEW host command environment upon completion of the requested command.

RC contains the return code from the requested command as follows:

-3

Command not found.

-2

Not enough memory to perform command.

-1

Unable to access shared variable pool.

0

OK

4

Warning message issued; message text on stack.

8

Error message issued; message text on stack.

9

XPVIEW.DBASE not set.

10

XPVIEW.DBASE string too long.

12

Severe error message issued; message text on stack.

16

Fatal error message issued; message text on stack.

28

Language processor environment could not be found.

Probable CA GSS installation problem.

32

Internal error.

Other

Internal error.

Example

The following is a sample REXX exec that demonstrates the use of the CA View host command environment. This sample is supplied on the distribution tape, in file CAI.CAICLIB.

```
/* REXX */
/*
   Sample XPVIEW/ISERVE GREXX exec
   This exec will look at the users in the CA View
   database and change the banner to PRODBAN for those users
   whose banner is currently set to TESTBAN.
*/
Address XPVIEW                      /*Set the host command env */
             /*----+----1----5--*/ /*Must be <= 17 characters */
XPView.DBase = 'VIEW.SYSTEM1'       /*Set the XPVIEW database */
'/list user=*'                      /*List the users in dbase  */
If RC <> 0 Then Do                  /*Was there an error?      */
   Say 'List users failed, RC='||RC /*Print an error message   */
   Exit 1                           /*Exit with an error       */
End
Else Do                             /*Process the user records */
   NumRecs = Queued()               /* Get the number of records*/
   UserData.0 = 0                   /* Initialize the User list */
   Do i = 1 to NumRecs              /* Pull each record         */
      Parse Pull Record             /*   off of the queue       */
      If SubStr(Record,2,5) <> 'SARBC' Then Do  /* Skip messages */
        UserData.i.UserId    = SubStr(Record,2,8)
        UserData.i.PassWord  = SubStr(Record,12,8)
        UserData.i.Master    = SubStr(Record,22,1)
        UserData.i.Mask      = SubStr(Record,25,8)
        UserData.i.DistId    = SubStr(Record,35,8)
        UserData.i.Acc       = SubStr(Record,45,5)
        UserData.i.Mode      = SubStr(Record,52,4)
        UserData.i.Banner    = SubStr(Record,58,8)
        UserData.i.Language  = SubStr(Record,70,1)
        UserData.0 = UserData.0 + 1
      End
   End
   /*
      We now have the UserData records parsed out.
      Process them here.
```

```
   */
   Do i = 1 to UserData.0
      If UserData.i.Banner = 'TESTBAN ' Then Do
         '/defuser user='||Userdata.i.UserId||' Banner=PRODBAN '
         Num = Queued()
         Do Num
            Parse Pull Message
            Say Message
         End
      End
   End
End
```

SARBCH JCL Statements

ample execution JCL can be found in member HAEXBCH in your CVDEJCL data set.

The following job control statements are required to execute SARBCH.

JOB

Initiates the job.

EXEC

Specifies the program name (PGM=SARBCH) and, optionally, the high-level name of the product database as the PARM parameter (PARM='VIEW.SYSTEM1').

STEPLIB DD

Defines the load library containing SARBCH.

If the program resides in a link list library, omit this statement.

SYSPRINT DD

Defines the sequential output data set (normally SYSOUT) used for listing the control statements and messages.

If you are not defining a SYSOUT data set, you must code DCB=BLKSIZE=nnn, where nnn is a multiple of 133.

REPORT DD

Defines an output data set (normally SYSOUT) into which SYSOUT listing from the LIST function is written.

This statement can be omitted if no LIST control statements are input to the program. If you are not defining a SYSOUT data set, you must code DCB=BLKSIZE=nnn, where nnn is a multiple of 133.

SARLOAD DD

Defines a user-maintained, sequential data set into which the LOAD function is to load the SYSOUT.

This statement is optional, but, if you omit it, the product temporarily loads the SYSOUT to its database. Multiple SARLOAD DD statements with the FREE=CLOSE parameter can be used to load multiple SYSOUT groups to different user-defined data sets.

SYSIN DD

Defines a card image data set that contains the control statements to be input.

DDNAME DD

Defines a data set to which a SYSOUT group can be written.

Note: For more information about this dataset, see the LOAD and PRINT SARBCH control statements.

CTLCARDS DD

Optional DD, used with the LISTDEV, LISTFILT, and LISTVIEW parameters to create DEFDEV, DEFFILT, and DEFVIEW statements that can later be used to define new or modify existing devices, filters, and logical views. This dataset is to have the following JCL attributes:

RECFM=FB

LRECL=80

SARBCH Control Statements

Control statements have the following general structure:

/function parameters

- Code a slash in column 1, followed immediately by the name of the function to be performed.
- The function name must be followed by one or more blanks and be separated from the parameters.
- Separate individual parameters by one or more blanks and/or commas.
- A statement that exceeds 71 characters must be continued on additional statements. When continuing a statement, the statement can be interrupted only between complete parameters or subparameters.
- Quoted parameters that flow onto additional statements can be continued in column 2 of subsequent statements.
- Include a comment within the control statements by coding an asterisk in column 1 of the card image containing the comment.

The sections that follow explain each of the SARBCH control statements.

BPRINT

The BPRINT control statement reprints a CA Deliver bundle that is archived to the CA View database.

Syntax:

```
/BPRINT  BANNER=(bundle-banner,dist-banner,report-banner)
         BCONT=(dist-id,((report-id,gen,seq),…),…)
         BDIST=dist-id
         BID=bundle-id
```

where:

BANNER=
(bundle-banner,
dist-banner,
report-banner)

Specifies the model banner page names of the bundle, distribution, and report banner pages.

The model banner page name can be omitted. If omitted, the model banner page name defined to the bundle in the CA Deliver database is used. An asterisk suppresses the printing of the model banner page.

This parameter is optional.

BCONT=(dist-id,
((report-id,gen,seq),
…),…)

Specifies the distribution identifiers and archived reports that comprise the bundle.

- The bundle print is produced in the exact sequence as specified in this parameter.
- One or more distribution identifiers can be specified, each followed by a complete list of report identifiers, generation number, and sequence number.
- The generation number and sequence number can be specified as an absolute or a relative number.

If a report in the bundle being reprinted utilizes the ARCHID alternate report name in the CA Deliver definition, specify this name for the report-id field.

- If omitted, the most recently archived report is used.
- This parameter is required.

Note: If report-id or dist-id contains an embedded blank, parentheses, quotes, equal signs, or commas, it must be enclosed in single quotes.

BDIST=x

Specifies the distribution identifier from which the distribution banner-page instructions are to be taken.

If omitted, the bundle distribution identifier defined to the bundle in the CA Deliver database is used. If the bundle distribution identifier in the CA Deliver database is omitted, the first identifier defined in the BCONT parameter is used.

BID=bundle-id

Specifies the name of the bundle to be printed.

This parameter is required.

Note: You can use the CA View OUTLIM initialization parameter to limit the number of printed lines. See the Initialization Parameters chapter for more information.

CHANGE

The CHANGE control statement changes various attributes of a SYSOUT group, including the archival date, that has already been archived to the CA View database.

You can use this statement if a SYSOUT was archived with inappropriate print attributes, or if the tape it was backed up to has been destroyed, and its internal status must be changed to NOT BACKED UP.

You can modify the following attributes with SARBCH CHANGE:

- All PRINT attributes
- BACKUP

  Specifies whether the SYSOUT has been backed up to tape from disk.
- USERDATA

  Contains a 20-byte user data field, typically accounting data.
- USERFLD

  Contains any user comments to be displayed with the SYSOUT in the CA View selection lists.

Syntax:

```
/CHANGE ADDRESS=('text'…)
        ARCHDATE=mm/dd/yyyy
        BACKUP=OFF
        BUILDING='text'
        BURST=Y|N
        CHARS=(xxxx xxxx xxxx xxxx)
        CKPTLINE=nnnnn
```

CKPTPAGE=*nnnnn*
CKPTSEC=*nnnnn*
CLASS=*x*
COLORMAP=*xxxxxxxx*
COMPACT=*xxxxxxxx*
COMSETUP=*xxxxxxxx*
CONTROL=PROGRAM|SINGLE|DOUBLE|TRIPLE
COPIES=*nnn*
COPYG=(*nnn nnn nnn nnn nnn nnn nnn nnn*)
DATACK=BLOCK|UNBLOCK|BLKCHAR|BLKPOS
DEPT='*text*'
DEST=*dest.userid*
DPAGELBL=Y|N
DSK2VID=*nnn*
DUPLEX=NO|NORMAL|TUMBLE
FCB=*xxxx*
FLASH=(*xxxx nnn*)
FORM=*xxxxxxxx*
FORMDEF=*xxxxxx*
FORMLEN=*nn*[.*mmm*]IN|CM
FSSDATA='*data*'
GEN=*nnnnn*
ID=*xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx*
INTRAY=*nnn*
IPDEST=*ipdest*
LINECT=*nnn*
MODIFY=(*xxxx n*)
NAME='*text*'
NOTIFY=(*node.userid …*)
OFFSETXB=*mmm*[.*nnn*]IN|CM|MM|PELS|POINTS
OFFSETXF=*mmm*[.*nnn*]IN|CM|MM|PELS|POINTS
OFFSETYB=*mmm*[.*nnn*]IN|CM|MM|PELS|POINTS
OFFSETYF=*mmm*[.*nnn*]IN|CM|MM|PELS|POINTS
OPTCDJ=Y|N
OUTBIN=*nnnnn*
OUTDISP=(ndisp,adisp)
OVERLAYB=*xxxxxxxx*
OVERLAYF=*xxxxxxxx*
OWNER=*userid*
PAGEDEF=*xxxxxx*
PGMRNAME=*name*
PIMSG=(Y|N,*nnn*)
PORTNO=*nnnnn*
PRMODE=*xxxxxxxx*
PRTERROR=DEFAULT|QUIT|HOLD
PRTOPTNS=*xxxxxxxxxxxxxxxx*
PRTQUEUE='*queue*'
PRTY=*nnn*

RESFMT=P240|P300
RESOURCE=*xxxxxx*
RETAINF=*hhhh:mm:ss*|FOREVER
RETAINS=*hhhh:mm:ss*|FOREVER
RETRYL=*nnn*
RETRYT=*hhhh:mm:ss*
ROOM='*text*'
SEQ=*nnnnn*
SYSAREA=Y|N
TAPECNT=*nnnnn*
THRESHOLD=*nnnnnnnn*
TITLE='*text*'

```
UCS=xxxx
USERDATA=('text' …)
USERFLD='text'
USERINFO='data'
USERLIB=(lib …)
WRITER=xxxxxxxx
```

where:

ADDRESS=('text' …)

Specifies deliver address lines for the SYSOUT You can specify one to four deliver address lines containing up to 60 text characters separated by blanks and/or commas and enclosed in parentheses.

ARCHDATE=

mm/dd/yyyy

Specifies the new archival date of the report.

Notes:

- The report must be on 'disk' before the /CHANGE can be used. The report can be recently archived, retained, or reloaded to disk. The /CHANGE ARCHDATE function sets the report to 'Backup=Off' and the report is backed up during the next backup cycle.
- All other parameters on the /CHANGE control statement are ignored when ARCHDATE is coded.
- The archival time cannot be specified and is always set to twelve noon (12:00:00) to help identify archival date changes.
- The report appears in the correct sequence within a database generation. If daily backup cycles are not run, a database generation can span multiple days. Reports within a database generation are assigned a sequential number beginning with 'one'. If a specific database generation has three daily reports numbered 1, 2, and 3, and a report is back-dated to the same date as sequence 2, but lower than sequence 3, the report appears in the Sysout Selection List behind report sequence 3. This happens because since the existing reports cannot be re-sequenced.
- Annotations and Book Mark are re-sequenced with the report's generation and sequence numbers.
- Review report retention parameters prior to back-dating a report. Because it is possible that the age and generation of the report are beyond the control of the existing ERO or NGEND/NGENT settings, the report can be deleted during the next backup cycle. If using ERO, the parameters for the report are reset as part of the process. Set the EROPRO Initialization Parameter to YES so that back-dated reports are always evaluated for ERO Retention.

A Subtype 35 (Archival Date Change) Metric SMF Record is created if the SMFTYPE Initialization Parameter is set to a valid SMF Record Type which enabled the Metrics Feature. This SMF record can be used as an Audit Trail to determine if report dates have been modified.

BACKUP=OFF

Specifies that the backup indicator for the SYSOUT is to be turned off.

The indicator is turned on when a SYSOUT is backed up. If a SYSOUT is backed up to tape, and that tape is lost or destroyed, you must specify BACKUP=OFF, to cause the CA View backup cycle to back up the SYSOUT again.

BUILDING='text'

Specifies the building identification for the SYSOUT.

You can specify up to 60 text characters for building identification.

BURST=Y|N

Specifies whether the paper is to be burst on the 3800 printer when printed.

CHARS=(xxxx xxxx xxxx xxxx)

Specifies a set of character arrangement table names for the 3800 printer for the SYSOUT.

You can specify a value of one to four names separated by one or more blanks and/or commas and enclosed in parentheses.

CKPTLINE=nnnnn

Specifies the maximum lines in a logical page. You can specify a range of 0 to 32767.

CKPTPAGE=nnnnn

Specifies the number of logical pages before JES checkpoints data. You can specify a range of 1 to 32767.

CKPTSEC=Nnnnn

Specifies the number of sections before JES checkpoints data. You can specify a range of 1 to 32767.

CLASS=x

Specifies a class for the SYSOUT.

COLORMAP=xxxxxxxx

Specifies the color translation resource object.

COMPACT=Xxxxxxxx

Specifies the compaction table for sending SYSOUT to SNA terminal.

COMSETUP=xxxxxxxx

Specifies the microfiche setup resource.

CONTROL=value

Specifies line spacing.

Valid values are:

PROGRAM

Each logical record contains a carriage control character.

SINGLE

Single spacing

DOUBLE

Double spacing

TRIPLE

Triple spacing

COPIES=nnn

Specifies a number of copies to override the one used to print the SYSOUT. A range of 1 to 255 can be specified.

COPYG=(nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies an optional set of copy groups for the 3800 printer to override those used to print the SYSOUT.

You can specify a range of one to eight copy groups separated by one or more blanks and/or commas and enclosed in parentheses. Each copy group value must be in the range of 1 to 255.

DATACK=value

Specifies how printer errors are to be handled.

Valid values are:

BLOCK

Indicates errors are not reported.

UNBLOCK

Indicates errors are reported.

BLKCHAR

Indicates print errors are blocked.

BLKPOS

Indicates data errors are blocked.

DEPT='text'

Indicates department identification for the SYSOUT. You can specify up to 60 text characters for department identification.

DEST=dest.userid

Specifies an optional destination and an optional user ID to override the one used to print the SYSOUT.

You can specify up to eight characters for destination and up to eight characters for the user ID. The destination can be a synonym created using the online DEFine DEVice command.

DPAGELBL=Y|N

Specifies whether a security label is to be output.

DSK2VID=nnn

Specifies the secondary disk version number. A range of 0 to 255 can be specified.

DUPLEX=value

Specifies whether the report is printed on one or both sides of paper.

Valid values are:

NO

Prints on one side only.

NORMAL

Rotates the physical page about the Y axis, which allows for binding the long side of the sheet.

TUMBLE

Rotates the physical page about the X axis, which allows for binding the short side of the sheet.

FCB=xxxx

Specifies an optional forms control image to override the one used to print the SYSOUT.

FLASH=(xxxx nnn)

Specifies an optional forms flash overlay name and flash count for the 3800 printer to override those used to print the SYSOUT.

The forms flash overlay name and copy count are separated by one or more blanks and/or commas and are enclosed in parentheses.

FORM=xxxxxxxx

Specifies an optional forms name to override the one used to print the SYSOUT.

FORMDEF=Xxxxxx

Specifies a library member containing statements to control printing of the SYSOUT data on the 3800 printer

The statements can specify overlay forms, page location for overlays, and page format suppressions that can be activated.

FORMLEN=nn[.mmm]IN|CM

Specifies the length and unit of measurement of the form.

FSSDATA='data'

Specifies Functional Subsystem data. You can specify up to 127 characters for functional subsystem data.

GEN=nnnnn

Specifies the absolute or relative number of the generation for which SYSOUT is affected by the CHANGE statement. If omitted, the most recently archived SYSOUT group for the ID is affected.

ID=id

Specifies the SYSOUT ID of the group to be affected by the CHANGE statement.

You can specify 1 to 32 characters.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

This parameter is required.

INTRAY=nnn

Specifies the printer input tray. A range of 1 to 255 can be specified.

IPDEST=ipdest

Specifies the TCP/IP routing designation. You can specify up to 124 characters of TCP/IP routing information.

LINECT=nnn

Specifies the maximum number of lines to be printed on each output page.

MODIFY=(xxxx n)

Specifies an optional copy modification module name and table reference character for the 3800 printer to override those used to print the SYSOUT.

The copy modification module name and table reference character are separated by one or more blanks and/or commas and are enclosed in parentheses. The table reference character can have a range of 0 to 3.

NAME='text'

Specifies the name to print on output separator pages. You can specify up to 60 text characters for the name.

NOTIFY=(node.userid ...)

Specifies a print notification message destination. You can specify up to four destinations for the print notification message.

OFFSETXB=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies an X offset of logical page origin for the back side of paper.

OFFSETXF=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies an X offset of logical page origin for the front side of paper.

OFFSETYB=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies a Y offset of logical page origin for the back side of paper.

OFFSETYF=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies a Y offset of logical page origin for the front side of paper.

OPTCDJ=Y|N

Specifies an optional override as to whether the SYSOUT records contain table reference characters for the 3800 printer. Valid values are Y or N.

OUTBIN=nnnnn

Specifies output bin ID. You can specify a range of 1 to 65535.

OUTDISP=(ndisp,adisp)

Specifies the normal and abnormal output disposition.

Valid values are:

HOLD

Indicates SYSOUT is not printed until it is released.

KEEP

Indicates SYSOUT is printed but not immediately purged.

LEAVE

Indicates SYSOUT is not printed until it is released and not immediately purged once it is printed.

PURGE

Indicates SYSOUT is deleted without printing.

WRITE

Indicates SYSOUT is printed and purged.

OVERLAYB=xxxxxxxx

Specifies medium overlay for the back side of paper.

OVERLAYF=xxxxxxxx

Specifies medium overlay for the front side of paper.

OWNER=userid

Specifies the user ID that created the report.

PAGEDEF=xxxxxx

Specifies a library member containing statements to control printing of the SYSOUT data on the 3800 printer.

The statements can specify logical page length, width, fonts, and page segments.

PGMRNAME=name

Specifies the programmer name.

PIMSG=(Y|N,nnn)

Specifies whether messages from a functional subsystem are to be printed and the message threshold at which the system is to cancel printing.

PORTNO=nnnnn

Specifies TCP port number at which FSS connects to the printer. A range of 1 to 65535 can be specified.

PRMODE=xxxxxxxx

Specifies the process mode required for printing the SYSOUT group.

PRTERROR=value

Specifies an action for print error.

Valid values are:

DEFAULT

Indicates a standard action is taken when a terminating error occurs during printing

QUIT

Indicates the SYSOUT is released when a terminating error occurs during printing

HOLD

Indicates the SYSOUT is placed in held status when a terminating error occurs during printing

PRTOPTNS=xxxxxxxxxxxxxxxx

Specifies named entity of print options for FSS.

PRTQUEUE='queue'

Specifies a target print queue for FSS. You can specify up to 127 characters for print queue.

RESFMT=P240|P300

Specifies the resolution used to format the print.

Valid values are:

P240

Indicates 240 pels per inch resolution

P300

Indicates 300 pels per inch resolution

RESOURCE=

Specifies the name of an AFP RESOURCE rather than a Report ID.

Do not specify ID= when using the RESOURCE parameter.

This parameter along with the BACKUP=OFF parameter allow an AFP resource to be recreated on tape. This type of control statement is generated through SARTSLST.

RETAINF=hhhh:mm:ss|FOREVER

Specifies the failed transmission retain time.

RETAINS=hhhh:mm:ss|FOREVER

Specifies the successful transmission retain time

RETRYL=nnn

Specifies the maximum number of transmission retries

RETRYT=hhhh:mm:ss

Specifies the length of time to wait between retries

ROOM='text'

Specifies a room identification. You can specify up to 60 text characters for room identification.

SEQ=nnnnn

Specifies the absolute or relative SYSOUT sequence number of the SYSOUT group to be affected by the CHANGE statement

- If omitted, the most recently archived SYSOUT group for the ID and generation specified is affected.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ= 1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

SYSAREA=Y|N

Specifies whether the system is to reserve a system area on each page of output

TAPECNT=nnnn

Specifies the number of tapes that the SYSOUT resides on. A range of 1 to 9999 can be specified.

THRESHLD=nnnnnnnn

Specifies the maximum size of a SYSOUT data set. A range of 1 to 99999999 can be specified.

TITLE='text'

Specifies a title identification. You can specify up to 60 text characters for title identification.

UCS=xxxx

Specifies an optional special character set name to override the one used to print the SYSOUT

USERDATA=('text' ...)

Specifies user data for the SYSOUT

You can specify 1 to 16 user data lines containing up to 60 text characters separated by blanks and/or commas and enclosed in parentheses.

USERFLD='text

Specifies user comments to be displayed with this SYSOUT on the CA View selection lists

To include any spaces within the comment, enclose the entire comment in quotes, as in USERFLD='THIS IS MY COMMENT'.

USERINFO='data'

Specifies up to 20 characters of user information (typically accounting data)

USERLIB=(lib ...)

Specifies up to eight libraries containing APF resources

WRITER=xxxxxxxx

Specifies an external writer name.

Default:

If you specify a parameter without a value, that parameter is set to blanks. For example, if you specify the following, the PAGEDEF field is set to blanks:

```
PAGEDEF=
```

DBASE

The DBASE control statement is used to specify the high-level name of the CA View database. If omitted, the high-level name specified as the PARM parameter on the EXEC JCL statement, if any, is used. The DBASE control statement applies to all control statements that follow it until another DBASE control statement is encountered.

Syntax:

```
/DBASE NAME=xxxxxxxxxxxxxxxxx
```

where *xxxxxxxxxxxxxxxx* specifies the high-level name for the CA View database.

DEFDEV

The DEFDEV control statement creates or modifies a DEVICE. The syntax for DEFDEV is dependent on the type of device being defined.

The following types of devices are supported:

- CA-SPOOL
- JES
- EXTERNAL
- VPO

More information:

DEFDEV TYPE=CA-SPOOL (see page 434)
DEFDEV TYPE=JES (see page 436)
DEFDEV TYPE=EXTERNAL (see page 437)
DEFDEV TYPE=VPO (see page 438)

DEFDEV TYPE=CA-SPOOL

Syntax:

```
/DEFDEV     ID=sname
            TYPE=CA-Spool
            CNODE=nodename
            CSUBID=subid
            CEXIT=exitname
            CAUTODEL=Y|N
            COUTLIM=nnnnnnnn
            CRETAIN=nnnn
            CSYSOUT=Y|N
            CSARCLS=Y|N
            CSARCOPY=Y|N
            CSARFCB=Y|N
            CSARFORM=Y|N
            CSARHOLD=Y|N
            CCLASS=c
            CCOPIES=nnn
            CFCB=cccc
            CFORM=cccc
            CHOLD=Y|N
```

Where:

ID=sname

Specifies the 1-12 character name for this device synonym.

TYPE=CA-Spool

Specifies the type of device being defined. Possible values are CA-SPOOL, JES, EXTERNAL, and VPO.

CNODE=nodename

Specifies the 1-8 characters CA Spool node name.

CSUBID=subid

Specifies the 1-4 characters CA Spool subsystem name.

CEXIT=exitname

Specifies the 1-8 characters user exit name.

CAUTODEL=Y|N

Specifies whether to purge a file if it is empty when closed.

COUTLIM=nnnnnnnn

Optionally, specifies the maximum number of lines which can be printed (1 to 16,777,215). This overrides the CMAMAX SARINIT parameter.

CRETAIN=nnnn

specifies Optionally, the maximum number of hours CA Spool retains the file after printing. (1 to 4095).

CSYSOUT=Y|N

Specifies whether to use the CA View SYSOUT id as the CA Spool filename.

CSARCLS=Y|N

Specifies whether to use the CLASS specified on the CA View Print Attributes Panel.

CSARCOPY=Y|N

Specifies whether to use the COPIES count specified on the CA View Print Attributes Panel.

CSARFCB=Y|N

Specifies whether to use the FCB specified on the CA View Print Attributes Panel.

CSARFORM=Y|N

Specifies whether to use the FORM specified on the CA View Print Attributes Panel.

CSARHOLD=Y|N

Specifies whether to use the HOLD option specified on the CA View Print Attributes Panel.

CCLASS=c

Specifies 1 character output print class.

CCOPIES=nnn

Specifies the number of copies (1 to 255).

CFCB=cccc

Specifies the 1-4 character FCB name.

CFORM=cccc

Specifies the 1-4 character FORM name.

CHOLD=Y|N

Specifies whether to place the file in hold status.

DEFDEV TYPE=JES

Syntax:

```
/DEFDEV     ID=sname
            TYPE=JES
            JDEST=destname
            JBANNER=Y|N
            JCONNECT=Y|N
            JRESONLY=Y|N
            JDATONLY=Y|N
```

Where:

ID=sname

Specifies the 1-12 character name for this device synonym.

TYPE=JES

Specifies the type of device being defined. Possible values are CA-SPOOL, JES, EXTERNAL, and VPO.

JDEST=destname

Specifies the 1-17 characters JES destination name (for example, "CPU2.RMT1").

JBANNER=Y|N

Specifies whether to print the banner pages to this device.

JCONNECT=Y|N

Specifies whether to print the banner pages to this device.

JRESONLY=Y|N

Specifies whether to send only the AFP resources to a CA Connect node for the unattended download. YES inhibits banners (JBANNER=N) and forces the destination to CA Connect (JCONNECT=Y).

(CA Connect is YES).

JDATONLY=Y|N

Specifies whether to send only the AFP data to a CA Connect node for the unattended download. YES inhibits banners (JBANNER=N) and forces the destination to CA Connect (JCONNECT=Y).

DEFDEV TYPE=EXTERNAL

Syntax:

```
/DEFDEV ID=sname
                TYPE=EXTERNAL
                EXTPRT=External Print Parameter
```

Where:

ID=sname

Specifies the 1-12 character name for this device synonym.

TYPE=EXTERNAL

Specifies the type of device being defined. Possible values are CA-SPOOL, JES, EXTERNAL, and VPO.

EXTPRT=External Print Parameter

Information to identify the appropriate EXTPRTn SARINIT initialization parameter along with the replacement attributes for the initialization parameter attributes.

The format of the information is:

>pid.attrs

Where:

- pid is the 3-character printer identifier that is used to identify the EXTPARMn initialization parameter.
- attrs specifies one or more replacement attributes, separated by periods (.)

DEFDEV TYPE=VPO

Syntax:

```
/DEFDEV ID=sname
                TYPE=VPO
                VNODE=nodename
                VEXIT=exitname
                VLOGMODE=logmode
                VOUTLIM=nnnnnnnn
                VAUTONL=Y|N
                VDRIVER=drivername
```

Where:

ID=sname

Specifies the 1-12 character name for this device synonym.

TYPE=VPO

Specifies the type of device being defined. Possible values are CA-SPOOL, JES, EXTERNAL, and VPO.

VNODE=nodename

Specifies the 1-17 characters node name.

VEXIT=exitname

Specifies the 1-8 characters user exit name.

VLOGMODE=logmode

Specifies the 1-8 characters VTAM LOGMODE name.

VOUTLIM=nnnnnnnn

Optionally, specifies the maximum number of lines which can be printed (1 to 16,777,215). This overrides the VPRTMAXO SARINIT parameter.

VAUTONL=Y|N

Specifies whether to add a new-line command at the end of lines which are 132 characters long.

VDRIVER=drivername

Specifies 1-8 character device driver name that is required to print on this synonym.

DEFDIST

The DEFDIST control statement creates or modifies a list of SYSOUT IDs for a DIST ID.

Syntax:

```
/DEFDIST DISTID=distid
         SYSOUT=sysoutid
         SYSDESC=description
         DIDDESC=description
         RVIEW=Y|N
         REPRT=Y|N
         DEL=Y|N
```

where:

DISTID=distid

Specifies the name of the distribution identifier to be processed.

This value can be 1 to 32 characters.

Note: If distid contains embedded blanks, parentheses, quotes, equal signs, or commas, enclose it in quotes (single or double). Any quote within the Dist-ID must be entered as a pair of quotes because a non-paired quote ends the ID; for example, if the value is JIM'S DESK, enter it as 'JIM''S DESK' or "JIM'S DESK".

SYSOUT=sysoutid

Specifies the name of the SYSOUT to be processed.

This value can be 1 to 32 characters. If the SYSOUT does not exist in the CA View database, it is added. If it already exists, it is modified.

SYSDESC=
description

Specifies a description of the SYSOUT.

This value can be 1 to 40 characters.

DIDDESC=
description

Specifies the description of the DIST ID.

This value can be 1 to 40 characters.

RVIEW=Y|N

Specifies whether logical view access for the associated SYSOUT is to be restricted to non-secured logical views.

REPRT=Y|N

Specifies reprint capability; indicates whether the user can reprint SYSOUT.

DEL=Y|N

Specifies the delete capability; indicates whether the DIST ID can delete SYSOUT.

DEFFILT

The DEFFILT control statement creates or modifies a FILTER.

Syntax:

```
/DEFFILT        ID=fname
                DESC='Up to 40 characters'
                FILTERS=(
(bline,eline,bcol,ecol,op,'text',type,show,clr,hlt,loc), ... )
```

Where:

ID=fname

Specifies the 1-8 character name for this Filter.

DESC=

Specifies the 1-40 character Filter description.

FILTERS=

Filter specifications are defined by entries within a table.

The FILTERS parameters are enclosed in parentheses.

In addition, each entry (row) in the table is also enclosed by parentheses.

Note: To update FILTERS= definitions for an existing filter, specify all FILTERS= definitions. All existing table entries are replaced with the new entries.

Table entries have the following format:

(bline,eline,bcol,ecol,op,'text',type,show,clr,hlt,loc)

bline

The beginning line specifies the first line on the unfiltered report page that is to be searched for the data specified in the text column.

Note: If bline or eline is not specified, the entire page is searched. If only bline is specified, only that one line is searched. If both bline and eline are specified, only those lines specified (including all between) are searched.

eline

The ending line specifies the last line on the unfiltered report page that is to be searched for the data specified in the text column. If eline is specified, bline must also be specified.

See the previous note about bline and eline.

bcol

The beginning column specifies the first column on the unfiltered report page that is to be searched for the data specified in the text column.

Note: If bcol or ecol is not specified, the entire line is searched. If only bcol is specified, only that one column is searched. If both bcol and ecol are specified, only those columns specified (including all between) are searched.

ecol

The ending column specifies the last column on the unfiltered report page that is to be searched for the data specified in the text column. If ecol is specified, bcol must also be specified.

See previous note about bcol and ecol.

op

Specifies the type of comparison to be performed:

- EQ - equal to
- NE - not equal to
- LT - less than
- LE - less than or equal to
- GT - greater than
- GE - greater than or equal to text
- Specifies the text data that is being searched for on the unfiltered report page. Enclose the text in single quotes. The text searching is case-sensitive.

type

Specifies the Boolean connectors: AND, OR, NOT

The NOT connector must appear on its own line, and it refers to the line that follows it.

When using AND, all comparisons must have the same line numbers.

show

Specifies whether lines that match the specified filter criteria are displayed. If the comparison is successful, the character "Y" specifies to include the line for display or print, and the character "N" specifies to exclude the line from display or print.

This can be omitted if you only want to emphasize with color or highlighting.

clr

Specifies optional color to be applied when the comparison is successful:

- B - blue
- G - green
- P - pink
- R - red
- T - turquoise

- W - white
- Y - yellow

hlt

Specifies optional highlight to be applied when the comparison is successful:

- B - blink
- R - reverse video
- U – underscore

loc

Specifies optional location to which color, highlight, or both are applied when the comparison is successful:

- A - all occurrences of the specified text string on the report line
- F - the first occurrence of the specified text string on the report line
- L - the entire report line

If omitted when color, highlight, or both have been specified, "A" for all occurrences of the field is automatically inserted.

DEFSYS

The DEFSYS control statement creates or modifies a list of DIST IDs for a SYSOUT ID.

Syntax:

```
/DEFSYS  SYSOUT=sysoutid
         DISTID=distid
         SYSDESC=description
         DIDDESC=description
         RVIEW=Y|N
         REPRT=Y|N
         DEL=Y|N
```

where:

SYSOUT=sysoutid

Specifies the name of the SYSOUT to be processed.

This value can be 1 to 32 characters. If the SYSOUT does not exist in the CA View database, it is added. If it already exists, it is modified.

Note: If the id contains embedded blanks, commas, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

DISTID=distid

Specifies the name of the distribution identifier to be processed.

This value can be 1 to 32 characters.

Note: If distid contains an embedded blank, parenthesis, quote, or a comma, enclose it in quotes (single or double). Any quote within the Dist-ID must be entered as a pair of quotes because a non-paired quote ends the ID; for example, if the value is JIM'S DESK, enter it as 'JIM''S DESK' or "JIM'S DESK".

SYSDESC=
description

Specifies a description of the SYSOUT.

This value can be 1 to 40 characters.

DIDDESC=
description

Specifies the description of the DIST ID.

This value can be 1 to 40 characters.

RVIEW=Y|N

Specifies whether logical view access for the associated SYSOUT is to be restricted to non-secured logical views.

REPRT=Y|N

Specifies reprint capability; indicates whether the user can reprint SYSOUT.

DEL=Y|N

Specifies the delete capability; indicates whether the DIST ID can delete SYSOUT.

DEFUSER

The DEFUSER control statement adds CA View user IDs to the database or modifies existing user IDs.

Syntax:

```
/DEFUSER USER=xxxxxxxx
         USERPSWD=xxxxxxxx
         MASTER=Y|N
         DISTMASK=distmask
         DISTID=distid
         ACC=xxxxx
         MODE=xxxx
         BANNER=xxxxxxxx
         JCL1=xxxxxxxx
         JCL2=xxxxxxxx
         JCL3=xxxxxxxx
         JCL4=xxxxxxxx
         LANGUAGE=x
         PBANNER=xxxxxxxx
         PCLASS=x
         PDEST=x
         PWRITER=xxxxxxxx
         ABANNER=xxxxxxxx
         ACLASS=x
         ADEST=x
         AWRITER=xxxxxxxx
```

where:

USER=
xxxxxxxx

Specifies the name of the user ID to be processed.

If the user ID does not exist in the database, it is added. If it already exists, it is modified. This parameter is required.

USERPSWD=
xxxxxxxx

Specifies the password associated with the user ID for logging on to an online session.

This value can be 1 to 8 characters with national and/or alphanumeric characters. This parameter is optional.

MASTER=Y|N

Specifies whether the USER has master authority.

If omitted, MASTER=N is used.

DISTMASK=
distmask

Specifies the generic distribution ID mask for users in EXP mode or SAR mode.

This value can be 1 to 32 characters with any combination of asterisk, national, and alphanumeric characters.

Note: If distmask contains an embedded blank, parenthesis, quote, or a comma, enclose it in quotes (single or double). Any quote within the distmask must be entered as a pair of quotes because a non-paired quote ends the mask; for example, if the value is JIM'S DESK, enter it as 'JIM''S DESK' or "JIM'S DESK".

If omitted, MASK=userid is used.

DISTID=distid

Specifies the default DIST ID for users in EXP mode or SAR mode.

This value can be 1 to 32 characters.

Note: If distid contains an embedded blank, parenthesis, quote, or a comma, enclose it in quotes (single or double). Any quote within the Dist-ID must be entered as a pair of quotes because a non-paired quote ends the ID; for example, if the value is JIM'S DESK, enter it as 'JIM''S DESK' or "JIM'S DESK".

If omitted, DISTID=userid is used.

ACC=xxxxx

Specifies which of the modes a user can access.

This value is a 5–character string that consists of a combination of Ys and Ns to indicate whether the user can access modes ALL, EXPO, EXP, SARO, and SAR respectively.

If omitted, the SARINIT parameter DEFMODE is used. Since at least one mode must be active, ACC=NNNNN is not valid.

MODE=xxxx

Specifies the mode in which the user automatically enters CA View.

This value can be ALL, EXPO, EXP, SARO, or SAR.

- If omitted, the mode for a new user is determined by the first D in the DEFMODE initialization parameter.
- If there is no D, the mode corresponding to the first Y is used.
- If there is no Y, ALL will be used.
- If existing users change modes during a session, the changed mode is their mode when they start their next session.

BANNER=
xxxxxxxx

Specifies the default BANNER page for user.

This value can be 1 to 8 characters with alphanumeric or national characters.

JCL1=xxxxxxxx through JCL4=xxxxxxxx

The JCL job submit statements used by CA View J selection code printing.

JCL statements that contain blank or special characters must be enclosed in single or double quotes. For example:

JCL1="//AJOB JOB MSGCLASS=*"

LANGUAGE=x

Specifies the system default language to be used when displaying online panels and messages.

Possible values are R (or blank) for English, C for Canadian French, G for German, D for Danish.

PBANNER=xxxxxxxx

Specifies the Primary BANNER to be used in the Print menu for a user in SAR or EXP mode.

PCLASS=x

Specifies the Primary CLASS to be used in the Print menu for a user in SAR or EXP mode.

PDEST=x

Specifies the Primary DEST to be used in the Print menu for a user in SAR or EXP mode.

PWRITER=
xxxxxxxx

Specifies the Primary DEST to be used in the Print menu for a user in SAR or EXP mode.

ABANNER=
xxxxxxxx

Specifies the Alternate BANNER to be used in the Print menu for a user in SAR or EXP mode.

ACLASS=x

Specifies the Alternate CLASS to be used in the Print menu for a user in SAR or EXP mode.

ADEST=x

Specifies the Alternate DEST to be used in the Print menu for a user in SAR or EXP mode.

AWRITER=
xxxxxxxx

Specifies the Alternate WRITER to be used in the Print menu for a user in SAR or EXP mode.

DEFVIEW

The DEFVIEW control statement adds or modifies logical view definitions:

Syntax:

```
/DEFVIEW  VIEW=vname NUM=vnum USER=userid
          FILTER=fname    SECURED=N/Y DESC='Up to 40 characters'
          DEFAULT=N/Y LOCKLEFT=N/Y DISPCC=Y/N
          EXCPAGES=nnn EXCRECS=nnn DISPRECS=nnn
          ACL1=   AHL1=   ACL2=   AHL2=   ALINES=nn
          HSCROLL=N/Y
          HEADING=( (rec,pos,len,clr,hlt), or ('text',clr,hlt), ...    )
          HED1=   HED2=   HED3=   HED4=   HED5=   HED6=
          CLR1=   CLR2=   CLR3=   CLR4=   CLR5=   CLR6=
          HLT1=   HLT2=   HLT3=   HLT4=   HLT5=   HLT6=
          CRINDEX=N/Y
          COLUMN=( (pos,len,clr,hlt,hdg),
          or ('text',clr,hlt,hdg), ...  )

          HDGn=( (rec,clr,hlt) or ('text',clr,hlt) ...) )
          SEARCH=( (bline,eline,bcol,ecol,op,'text',type,symbol), ... )
          INDEX=( (name,line,col,len,extract,leftjust,upper) ... )
```

Where:

VIEW=vname

Specifies a 1-32 character name for this view. Using an ASTERISK as the last character makes this a GBL VIEW.

If the VIEW ID (name + number + userid) does not exist in the database, it is added. If it already exists, it is modified. This parameter is required.

NUM=vnum

Logical view number (1-255).

USER=userid

Specify a 1-8 character userid to make this a private view.

Omit this parameter if this is a public view.

FILTER=fname

Name of a filter which is applied automatically whenever the view is selected. 1-8 characters. Valid filter characters are limited to alphanumeric, national, and limited special characters.

SECURED=N/Y

Specify Y to prevent unsecured DISTIDs from accessing this view in EXP mode. (Secured DISTID access is defined in CA Deliver for each DISTID on the report distribution list)

Default: N

DESC='Up to 40 characters'

Description that is used to identify the logical view. 1-40 characters enclosed in quotes.

DEFAULT=N/Y

This is the default view for this view name. It is used when a user selects a report through the online V command.

Default: N

LOCKLEFT=N/Y

The leftmost column of data (as specified as the first entry under the column definitions) can be locked on the display to prevent it from scrolling off during horizontal scrolling.

Default: N

DISPCC=Y/N

Determines whether carriage controls are included as position one of the online display.

Default: N

EXCPAGES=nnn

Specifies the total number of pages to be excluded at the top of the report (0-999).

Default: 0

EXCRECS=nn

Specifies the total number of records to be excluded at the top of the page. This lets you exclude the title and heading records detail is displayed (0-60). The combined value of EXCRECS and DISPRECS cannot exceed 254.

Default: 0

DISPRECS=nnn

Specifies the number of data records that are contained on a page (0-254). This lets you exclude report footing lines while viewing. Leave blank to display all lines on the page. The combined value of EXCRECS and DISPRECS cannot exceed 254.

ACL1=

ACL2=

Specifies the primary and secondary colors to be used for two alternating groups of report lines. Blank uses default 3270 colors.

B = Blue

R = Red

P = Pink

G = Green

T = Turquoise

Y = Yellow

W = White

ALINES=

Number of lines in each group. (1 to 9).

AHL1 =

AHL2 =

Specifies the primary and secondary highlight to be used for two alternating groups of report lines. Blank uses default 3270 highlight.

B = Bold

R = Reverse Video

U = Underline

CRINDEX=N/Y

Specifies that the index for this view is a cross-report index.

Default: N

HSCROLL=N/Y

Specifies whether the primary heading line is to remain fixed during left/right scrolling.

Default: N

HEADING=

Primary heading specifications are defined by entries within a table. The HEADING specifications are enclosed within parentheses. In addition, each row in the table is also enclosed by parentheses. Table rows have the following format:

(

(rec,pos,len,clr,hlt) or ('text',clr,hlt), Row-2, Row3, …

)

Rec

The number of the record where data is to be extracted.

Pos

position within the record to start extraction.

Len

Length of the data to be extracted.

Clr

Color to be applied to the heading. See ACL1 for values.

Hlt

Highlight to be applied to the heading. See AHL1 for values.

text

Constant text to be included in the heading - This text is to be enclosed in quotes.

HED1=

…

HED6=

Specifies the record number that is used for extracting DEFAULT column headings. (1-99).

CLR1=

…

CLR6=

Specifies the color attribute for the corresponding heading line. See ACL1 for values.

HLT1=

…

HLT6=

Specifies the highlight attribute for the corresponding heading line. See HL1 for values.

COLUMN=

Data column specifications are defined by the entries within a table. The COLUMN parameter is enclosed in parentheses. In addition, each entry in the table is also enclosed by parentheses.

Table entries have two formats:

(

(pos,len,clr,hlt,hdg#) or

('text',clr,hlt,hdg#), …

)

Pos

position within the record extraction the column.

Len

Length of the data column to be extracted.

Clr

Color to be applied to the column.

Hlt

Highlight to be applied to the column.

Text

Constant text to be included in the column - This value must be enclosed in quotes.

HDG#

Indicates whether an explicitly heading has been defined for the data column. Zero (the default) indicates the column headings will be extracted from the records as specified by the DEFAULT column headings (HED1, HED2, ..). Specify a number between 1 and 99 to identify the HDGn parameter that defines the heading.

Note: To update COLUMN or HDGn definitions for an existing view, you must specify both COLUMN and HDGn definitions.

HDG1=

…

HDG99=

An explicit column heading for an entry referenced in the COLUMN table. The HDGn parameter is enclosed in parentheses. In addition, each entry in the table is also enclosed by parentheses. Table entries have two formats:

(

(rec,clr,hlt),

or ('text',clr,hlt), …

)

Rec –

The number of the record where the heading is extracted.

Clr –

Color to be applied to the heading.

Hlt –

Highlight to be applied to the heading.

text –

Constant text to be included in the heading - This value must be enclosed in quotes.

Note:

The DEFVIEW facility is limited to 99 explicit column headings. If more than 99 are needed, they must be added through the online interface.

To update COLUMN or HDGn definitions for an existing view, you must specify both COLUMN and HDGn definitions.

SEARCH=

Specifies the index search specifications.

Index search specifications are defined by entries within a table. The SEARCH specifications are enclosed within parentheses. In addition, each row in the table is also enclosed by parentheses.

Note: To update SEARCH= definitions for an existing view, specify all SEARCH= definitions. All existing table entries are replaced with the new entries.

Table rows have the following format:

((bline,eline,bcol,ecol,op,'text',type,symbol), (row-2), (row-3),

)

bline –

The beginning or only line to be searched for text. The beginning line can be a specific line number from 1 to 255 or a relative line number in the form r+n where r is the reference symbol from an earlier search specification and n is the number of lines from the search specification in the range of 0 to 255.

Note: This is a line number, not a record number. Carriage controls are to be taken into account when specifying a line number.

eline –

The last line to be searched for text. The ending line can be a specific line number from 1 to 255 or a relative line number in the form r+n where r is the reference symbol from an earlier search specification and n is the number of lines from the search specification in the range of 0 to 255. If omitted, the beginning line is the only line searched.

Note: This is a line number, not a record number. Also, the beginning and ending line fields cannot reference a different search specification.

bcol –

The beginning or only column to be searched for text. The beginning column can be a specific column number from 1 to 32760 or a relative column number in the form r+n or r-n where r is the reference symbol from an earlier search specification and n is the number of columns from the search specification in the range of 0 to 32760.

Note: The line and column fields cannot reference a different search specification.

ecol –

the last column to be searched for text. The ending column can be a specific column number from 1 to 32760 or a relative column number in the form r+n or r-n where r is the reference symbol from an earlier search specification and n is the number of columns from the search specification in the range of 0 to 32760. If omitted, the beginning column is the only column searched. The beginning and ending column are to be large enough to op - specifies one of the following values to indicate the type of comparison to be performed:

- "EQ" - search line(s) for data matching the specified text.
- "NE" - search line(s) for data NOT matching the specified text.
- "LK" - search line(s) for data that matches a pattern.

text –

Search text. This is to be enclosed in quotes. The text is maintained as upper case characters but matches lower case page data. For the LK comparison operator, the text can specify a special matching character or any other character to specifically match that character. The special matching characters are:

- = - any character
- ! - alphanumeric character
- ? - any character
- ¬ - non blank character
- # - numeric character
- < - lowercase character
- @ - alphabetic character
- > - uppercase character

type –

Indicates whether multiple occurrences of the text can be found on a report page. This field can be specified as follows:

- " " - indicates that after the text has been located on a report page no other lines in the report page is searched.
- "M" - indicates that multiple occurrences of the text can be found on a report page. Note: Only the first occurrence of the search text is found on an individual line of the report.
- "C" - indicates that multiple occurrences of the text can be found on a report page. This is like a TYPE "M" except entries can span from one page to the next.

symbol –

Defines the reference symbol that is associated with the search specification. The reference symbol can be any non-blank character. This character is to be unique within the search specifications. Define a reference symbol only if a subsequent search or extraction of data is based on the location of the search text.

INDEX

Specify the index field names and locations.

Index field specifications are defined within a table. The INDEX specifications are enclosed within parentheses. In addition, each row in the table is also enclosed by parentheses.

Note: To update INDEX= definitions for an existing view, specify all INDEX= definitions. All existing table entries are replaced with the new entries. To create a page index for an existing SYSOUT, the INDEX control statement must be issued on that SYSOUT before viewing.

Table rows have the following format:

(

(name,line,col,len,extract,leftjust,upper), ...

)

Name

Identifies the index data being extracted. Index names are required for a cross report index. In all cases, the use of index name is recommended because changes to line, column, and length does not affect the selection of old indexes. Each index name is to be unique and cannot be reused within the index. 1-8 Characters.

Line

Specifies the line where indexing data is to be extracted. The line number can be a specific line number from 1 to 255 or a relative line number in the form r+n where r is the reference symbol of a search specification and n is a number of lines from the search specification in the range of 0 to 255.

Note: This is a line number, not a record number. Carriage controls are to be taken into account when specifying a line number.

Col

Specifies the beginning column where indexing data is to be extracted. The column number can be a specific column number from 1 to 32760 or a relative column number in the form r+n or r-n where r is the reference symbol of a search specification and n is a number of columns from the search specification in the range of 0 to 32760.

Note: The first column of data (after the carriage control) is column 1. Also, the line and column fields cannot reference a different search specification.

Len - specifies the length of the field to be extracted and indexed.

Extract

Specifies as ALL (or blank), FIRST, or NBLK to indicate whether index data is to be extracted from all pages, whether index data is to be extracted from the first page of a group of pages (in other words, only extract data when previous index values have changed), or whether new index data is to be extracted when the index data is not blank.

DELETE

The DELETE control statement deletes the following from the database:

- An archived SYSOUT
- The page indexes of a SYSOUT
- A user ID
- A logical view
- A Device
- A Filter

Syntax:

```
/DELETE ID=id
        RESOURCE=xxxxxxxx
        SECOND
        DISK
        GEN=nnnnn
        SEQ=nnnnn
        USER=xxxxxxxx
        VIEW=nnn
        INDEX
        FORCE
        DEV=sname
        FILT=fname
```

Where:

ID=id

Specifies the SYSOUT identifier on the SYSOUT or resource group or view that is to be deleted.

This value can be 1 to 32 characters. If this parameter is specified by itself or with the GEN and/or SEQ parameters, the respective archival SYSOUT group is permanently deleted from the database.

Note: If the id contains embedded blanks, commas, parentheses, equal signs, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

DISK

Specifies that the disk space occupied by the SYSOUT or resource group is to be deleted from the database.

If a report is on primary and secondary disk, the first DELETE DISK deletes the primary disk copy and the next DELETE DISK deletes the secondary disk copy.

If this is a resource group, DISK must be specified.

SECOND

Deletes the space on optical (secondary) disk allocated for a SYSOUT/report.

If a report is on primary and secondary disk, the DELETE SECOND deletes only the secondary disk copy.

GEN=nnnnn

Specifies the absolute or relative number of the generation of the SYSOUT group to be deleted.

If omitted, the most recently archived SYSOUT group for the ID is used. This parameter cannot be specified with the VIEW and USER parameters.

SEQ=nnnnn

Specifies the absolute or relative sequence number of the SYSOUT group to be deleted.

- If omitted, the most recently archived group for the ID and generation specified is deleted. This parameter cannot be specified with the VIEW and USER parameters.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

USER=
xxxxxxxx

Specifies the name of the USERID to be deleted from the database.

This parameter cannot be specified with the GEN and SEQ parameters.

VIEW=nnn

Specifies a number from 1 to 255 of the logical view to be deleted.

Specify an asterisk to delete all logical views for the specified SYSOUT group.

This parameter cannot be specified with the GEN and SEQ parameters.

INDEX

Deletes any created page indexes for the report on the disk database

The CA View online cross report indexing capability uses page indexes on disk. (The page index definitions still exist with the logical views for the report).

FORCE

Deletes a SYSOUT in OPEN status after prompting the user to verify that the job is no longer running.

Note: If the job is still processing the report, issuing FORCE could cause corruption of database data. Be sure that the job is not processing before issuing a DELETE FORCE for an OPEN report.

RESOURCE=

Specifies the name of an AFP RESOURCE rather than a Report ID.

Do not specify ID= when using the RESOURCE parameter.

This parameter allows an AFP resource to be deleted. This type of control statement is generated through SARTSLST.

DEV= sname

Specifies 1-12 character synonym name for device to be deleted. No other DELETE parameters are allowed.

FILT= fname

Specifies 1-8 character name for filter to be deleted. No other DELETE parameters are allowed.

EPRINT

The CA Deliver-to-CA View interface provides a function that is invoked by the EPRINT control statement to print reports archived directly from CA Deliver.

Syntax:

```
/EPRINT  ACIFRES=Y|N
         ADDRESS=('text'…)
         BANNER=xxxxxxxx
         BUILDING='text'
         BURST=Y|N
         CHARS=(xxxx xxxx xxxx xxxx)
         CKPTLINE=nnnnn
         CKPTPAGE=nnnnn
         CKPTSEC=nnnnn
         CLASS=x
         COLORMAP=xxxxxxxx
         COMPACT=xxxxxxxx
         COMSETUP=xxxxxxxx
         CONTROL=PROGRAM|SINGLE|DOUBLE|TRIPLE
         COPIES=x
         COPYG=(nnn nnn nnn nnn nnn nnn nnn nnn)
         DATACK=BLOCK|UNBLOCK|BLKCHAR|BLKPOS
         DEPT='text'
         DEST=dest.userid
         DIST=((distid distid …)/dest/writer (distid distid …)/dest/writer …)
         DPAGELBL=Y|N
         DUPLEX=NO|NORMAL|TUMBLE
         FCB=xxxx
         FLASH=(xxxx nnn)
         FORM=xxxxxxxx
         FORMDEF=xxxxxx
         FORMLEN=nn[.mmm]IN|CM
         FSSDATA='data'
         GEN=nnnnn
         HOLD=Y|N
         ID=id
         INDEX=xxxxxxxx
         INST=('text' 'text'...)
         INTRAY=nnn
         IPDEST=ipdest
         LINECT=nnn
         MODIFY=(xxxx n)
         NAME='text'
         NOTIFY=(node.userid …)
```

OFFSETXB=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OFFSETXF=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OFFSETYB=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OFFSETYF=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OPTCDJ=Y|N
OUTBIN=*nnnnn*
OUTDISP=(*ndisp,adisp*)
OUTPUT=*name*
OVERLAYB=*xxxxxxxx*
OVERLAYF=*xxxxxxxx*
PAGE=(*nnn nnn nnn nnn nnn nnn nnn nnn nnn*)
PAGEDEF=*xxxxxx*
PIMSG=(Y|N,*nnn)*
PORTNO=*nnnnn*
PRMODE=*xxxxxxxx*
PRSET=*xxxxxxx*
PRTERROR=DEFAULT|QUIT|HOLD
PRTOPTNS=*xxxxxxxxxxxxxxxx*
PRTQUEUE='*queue*'
PRTY=*nnn*
RECORD=(*nnn nnn nnn nnn nnn nnn nnn nnn nnn*)
RESFMT=P240|P300
RETAINF=*hhhh:mm:ss*|FOREVER
RETAINS=*hhhh:mm:ss*|FOREVER
RETRYL=*nnn*
RETRYT=*hhhh:mm:ss*
ROOM='*text*'
SELECT=*xxxxxxxx*

```
SEQ=nnnnn
SYSAREA=Y|N
TFILTER=xxxxxxxx
THRESHLD=nnnnnnnn
TITLE='text'
TVIEW=xxxxxxxx
UCS=xxxx
USERDATA=('text' …)
USERLIB=(lib …)
VIEW=(nnn,viewid,userid)
WRITER=xxxxxxxx
```

where:

ACIFRES=Y|N

Specifies whether ACIF AFP resources can be included in the print data stream. This parameter defaults to the value set in SARINIT.

ADDRESS=('text' …)

Specifies deliver address lines for the SYSOUT.

You can specify 1 to 4 deliver address lines that contain up to 60 text characters separated by blanks and/or commas and enclosed in parentheses.

BANNER=xxxxxxxx

Specifies an optional model banner page name to be used to override the one defined for the report in the CA Deliver database.

BUILDING='text

Specifies the building identification for the SYSOUT. You can specify up to 60 text characters for building identification.

BURST=Y|N

Specify Y or N to indicate whether the report destined for the 3800 needs to be burst.

CHARS=(xxxx xxxx xxxx xxxx)

Specifies an optional set of character arrangement table names for the 3800 printer to override the ones used to print the report.

A value of 1 to 4 names separated by one or more blanks and/or commas and enclosed in parentheses can be specified.

CKPTLINE=nnnnn

Specifies the maximum lines in a logical page. A range of 0 to 32767 can be specified.

CKPTPAGE=nnnnn

Specifies the number of logical pages before JES checkpoints data. A range of 1 to 32767 can be specified.

CKPTSEC=nnnnn

Specifies the number of sections before JES checkpoints data. A range of 1 to 32767 can be specified.

CLASS=x

Specifies an optional class to override the one used to print the report.

COLORMAP=xxxxxxxx

Specifies the color translation resource object.

COMPACT=xxxxxxxx

Specifies the compaction table for sending SYSOUT to SNA terminal.

COMSETUP=xxxxxxxx

Specifies the microfiche setup resource.

CONTROL=value

Specifies line spacing. Valid values are:

PROGRAM

Indicates each logical record contains a carriage control character.

SINGLE

Indicates single spacing.

DOUBLE

Indicates double spacing.

TRIPLE

Indicates triple spacing.

COPIES=Y|N

Specify Y or N to indicate whether the copies value is to be used when printing the report for the report recipients.

COPYG=(nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies an optional set of copy groups for the 3800 printer to override the ones used to print the report.

A value of one to eight copy groups separated by one or more blanks and/or commas and enclosed in parentheses can be specified. Each copy group value must be in the range of 1 to 255.

DATACK=value

Specifies how printer errors are to be handled. Valid values are:

BLOCK

Indicates errors are not reported.

UNBLOCK

Indicates errors are reported.

BLKCHAR

Indicates print errors are blocked.

BLKPOS

Indicates data errors are blocked.

DEPT='text'

Indicates department identification for the SYSOUT. You can specify up to 60 text characters for department identification.

DEST=dest.userid

Specifies the SYSOUT destination and optional user ID of the report.

You can specify up to eight characters for destination and up to eight characters for the optional user ID.

DIST=((distid distid)/dest/writer (distid distid/dest/writer)

Specifies an optional, complete definition of distribution specifications to override the one defined for the report in the CA Deliver database.

Specify a list of distribution identifiers or groups of distribution identifiers. A group of distribution identifiers consists of a list of distribution identifiers separated by one or more blanks and/or commas and enclosed in parentheses.

Note: If distid contains an embedded blank, parenthesis, quote, or a comma, enclose it in quotes (single or double). Any quote within the Dist-ID must be entered as a pair of quotes because a non-paired quote ends the ID; for example, if the value is JIM'S DESK, enter it as 'JIM''S DESK' or "JIM'S DESK".

Only one copy of the report is written to spool for a group. The model banner page for the group then references all the distribution identifiers in the group.

An optional remote print destination and writer name can be specified as follows:

- For any single, non-grouped distribution identifier
- Any group of distribution identifiers

Follow the distribution identifier or group with a slash (/), the destination with another slash (/), and the writer name. The destination can be a synonym created using the online DEFine DEVice command.

DPAGELBL=Y|N

Specifies whether a security label is to be output.

DUPLEX=value

Specifies whether the report is printed on one or both sides of the paper. Valid values are:

NO

Prints on one side only.

NORMAL

Rotates the physical page about the Y axis, which allows for binding on the long side of the sheet.

TUMBLE

Rotates the physical page about the X axis, which allows for binding on the short side of the sheet.

FCB=xxxx

Specifies an optional forms control image to override the one used to print the report.

FLASH=(xxxx nnn)

Specifies an optional forms flash overlay name and flash count for the 3800 printer to override those used to print the report.

The forms flash overlay name and flash count are separated by one or more blanks and/or commas and are enclosed in parentheses.

FORM=xxxxxxxx

Specifies an optional forms name to override the one used to print the report.

FORMDEF=xxxxxx

Specifies a library member that contains statements to control printing of the SYSOUT data on the 3800 printer.

The statements can specify overlay forms, page location for overlays, and page format suppressions that can be activated.

FORMLEN=nn[.mmm]IN|CM

Specifies length and unit of measurement of the form.

FSSDATA='data'

Specifies Functional Subsystem data. You can specify up to 127 characters for functional subsystem data.

GEN=nnnnn

Specifies the absolute or relative number of the generation of the report to be printed.

If omitted, the most recently archived report for the report identifier is printed.

HOLD=Y|N

Specifies whether the report is to be placed on the held queue for printing. If omitted, HOLD=N is assumed.

ID=id

Specifies the SYSOUT ID/report identifier of the group to be printed. You can specify 1 to 32 characters for ID.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double).. Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT". This parameter is required.

INDEX=xxxxxxxx

Specifies the index value associated with this print request.

INST=('text' 'text')

Specifies an optional, complete set of special instructions to override the set defined for the report in the CA Deliver database.

Multiple lines of instruction text can be specified as a list of the text lines separated by blanks and/or commas and enclosed in parentheses.

A single line of text must be enclosed within single quotation marks; a single quotation mark within the text itself must be represented by two, contiguous single quotation marks.

INTRAY=nnn

Specifies the printer input tray. A range of 1 to 255 can be specified.

IPDEST=ipdest

Specifies the TCP/IP routing designation. You may specify up to 124 characters of TCP/IP routing information.

LINECT=nnn

Specifies the number of lines to print per page.

MODIFY=(xxxx n)

Specifies an optional copy modification module name and table reference character for the 3800 printer to override those used to print the report.

The copy modification module name and table reference character are separated by one or more blanks and/or commas and are enclosed in parentheses.

The table reference character can have a value of 0 to 3.

NAME='text'

Specifies the name to be printed on output separator pages. You can specify up to 60 text characters for the name.

NOTIFY=(node.userid ...)

Specifies a print notification message destination. You can specify up to four destinations for the print notification message.

OFFSETXB=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies X offset of logical page origin for the back side of the paper.

OFFSETXF=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies X offset of logical page origin for the front side of the paper.

OFFSETYB=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies Y offset of logical page origin for the back side of the paper.

OFFSETYF=mmm[.nnn]IN|CM|MM|PELS|POINTS

Specifies Y offset of logical page origin for the front side of the paper.

OPTCDJ=Y|N

Specify Y or N to indicate whether the report records contain table reference characters for the 3800 printer.

OUTBIN=nnnnn

Specifies the output bin ID. A range of 1 to 65535 can be specified.

OUTDISP=(ndisp,adisp)

Specifies the normal and abnormal output disposition. Valid values are:

HOLD

Indicates SYSOUT is not printed until it is released.

KEEP

Indicates SYSOUT is printed but not immediately purged.

LEAVE

Indicates SYSOUT is not printed until it is released and not immediately purged once printed.

PURGE

Indicates SYSOUT is deleted without printing.

WRITE

Indicates SYSOUT is printed and purged.

OUTPUT=xxxxxxxx

Specifies the name of the output statement to be used for printing the SYSOUT group.

This parameter overrides the specifications of the FORMDEF, LINECT, PAGEDEF, PRMODE, and possibly, FORM parameters. The parameter (xxxxxxxx) data is specified as follows:

name

stepname.name.

stepname.procstepname.name

An asterisk can precede the parameter data to match the JCL specification of the OUTPUT parameter.

OVERLAYB=xxxxxxxx

Specifies medium overlay for back side of paper.

OVERLAYF=xxxxxxxx

Specifies medium overlay for front side of paper.

PAGE=(nnn nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies 1 to 9 page numbers and/or ranges of pages to be printed.

The page numbers and/or ranges of pages are separated by one or more blanks and/or commas and are enclosed in parentheses. A range of pages is specified as two page numbers separated by a colon.

If both PAGE and RECORD are omitted, the entire SYSOUT group is printed.

PAGEDEF=xxxxxx

Specifies a library member containing statements to control the printing of the SYSOUT data on the 3800 printer.

The statements can specify logical page length, width, fonts, and page segments.

PIMSG=(Y|N,nnn)

Specifies whether messages from a functional subsystem are to be printed and the message threshold where the system cancels printing.

PORTNO=nnnnn

Specifies the TCP port number at which FSS connects to the printer. A range of 1 to 65535 can be specified.

PRMODE=xxxxxxxx

Specifies the process mode required for printing the SYSOUT group.

PRSET=xxxxxxx

Specifies the name of the printer setup member used to print this report.

PRTERROR=value

Specifies an action for print error. Valid values are:

DEFAULT

Indicates that a standard action is taken when a terminating error occurs during printing.

QUIT

Indicates that the SYSOUT is released when a terminating error occurs during printing.

HOLD

Indicates that the SYSOUT is placed in held status when a terminating error occurs during printing.

PRTOPTNS=xxxxxxxxxxxxxxxx

Specifies the named entity of print options for FSS.

PRTQUEUE='queue'

Specifies a target print queue for FSS. You can specify up to 127 characters for print queue.

PRTY=nnn

Specifies the priority to assign to this print request.

RECORD=(nnn nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies one to nine record numbers and/or ranges of records to be printed

The record numbers and/or ranges of records are separated by one or more blanks and/or commas and are enclosed in parentheses. A range of records is specified as two record numbers separated by a colon.

If both PAGE and RECORD are omitted, the entire SYSOUT group is printed.

RESFMT=P240|P300

Specifies the resolution used to format the print. Valid values are:

P240

Indicates 240 pels per inch resolution.

P300

Indicates 300 pels per inch resolution.

RETAINF=hhhh:mm:ss|FOREVER

Specifies the failed transmission retain time.

RETAINS=hhhh:mm:ss|FOREVER

Specifies the successful transmission retain time.

RETRYL=nnn

Specifies the maximum number of transmission retries.

RETRYT=hhhh:mm:ss

Specifies the length of time to wait between retries.

ROOM='text'

Specifies a room identification. You can specify up to 60 text characters for room identification.

SELECT=xxxxxxxx

Specifies the page separation index value for selecting pages to print.

If the value contains any of the special characters: blank, comma, or single quote, the index value must be enclosed within single or double quotes.

SEQ=nnnnn

Specifies the absolute or relative SYSOUT sequence number of the report to be printed.

- If omitted, the most recently archived report of the identifier and generation specified is printed.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

SYSAREA=Y|N

Specifies whether the system is to reserve a system area on each page of output.

TFILTER=xxxxxxxx

Specifies the temporary filter name used to print this report where the format is yyydddseq#.

THRESHLD=nnnnnnnn

Specifies the maximum size of a SYSOUT data set. A range of 1 to 99999999 can be specified.

TITLE='text'

Specifies a title identification. You can specify up to 60 text characters for text identification.

TVIEW=xxxxxxxx

Specifies the temporary view name used to print this report where the format is yyydddseq#.

UCS=xxxx

Specifies an optional, special character set name to override the one used to print the report.

USERDATA=('text' …)

Specifies user data for the SYSOUT. You can specify 1 to 16 user data lines containing up to 60 text characters separated by blanks and/or commas and enclosed in parentheses.

USERLIB=(lib …)

Specifies up to eight libraries containing APF resources.

VIEW=(nnn, viewid,userid)

Specifies the view format to use to print the report, where:

nnn

View number (1 to 255).

viewed

Optionally specifies the ID of a public, private, or global view.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

userid

Optionally specifies the user ID for private view.

WRITER=xxxxxxxx

Specifies the external writer name to be used for printing the SYSOUT group.

Notes:

- The number of printed lines can be limited by the CA View OUTLIM initialization parameter.
- For more information about initialization parameter, see the chapter "Initialization Parameters".

EXTRACT

The EXTRACT control statement specifies that a SYSOUT archived to CA View is to have fields extracted from it by CA Balancing.

Syntax:

```
/EXTRACT GEN=nnnnn
         ID=id
         INBSSN=xxxxxxxxxxxxxxxxxxxxxxx
         PAGE=(nnn nnn nnn nnn nnn nnn nnn nnn nnn)
         SEQ=nnnnn
```

Where:

GEN=nnnnn

Specifies the absolute or relative number of the generation of the report to be accessed by CA Balancing.

If omitted, the most recently archived report for the report identifier is used.

ID=id

Specifies the SYSOUT ID/report identifier of the group.

This value can be 1 to 32 characters.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

This parameter is required.

INBSSN=
xxxxxxxxxx

Specifies the CA Balancing LSERV subsystem name.

PAGE=(nnn nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies 1 to 9 page numbers and/or ranges of pages where data fields are to be extracted by CA Balancing.

SEQ=nnnnn

Specifies the absolute or relative sequence number of the SYSOUT group to be accessed by CA Balancing.

If omitted, the most recently archived group for the ID and GEN specified is used. This operand is ignored when GEN is omitted.

INDEX

The INDEX control statement creates a page index for a SYSOUTs, using all page separation criteria defined online. Page separation criteria are defined with the logical views of a SYSOUT.

Note: For more information about page indexing, see the chapter on Logical Viewing in the *User Guide*.

An archived report must reside on the CA View primary disk database to be indexed.

Syntax:

```
/INDEX   GEN=nnnnn
         ID=id
         SEQ=nnnnn
```

where:

GEN=nnnnn

Specifies the absolute or relative number of the generation of the report to be indexed.

If omitted, the most recently archived report for the report identifier is used.

ID=id

Specifies the SYSOUT ID/report identifier of the group

The value can be 1 to 32 characters.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

This parameter is required.

SEQ=nnnnn

Specifies the absolute or relative sequence number of the SYSOUT group to be indexed

- If omitted, the most recently archived group for the ID and GEN specified is used.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

LIST

The LIST control statement produces a listing of archived SYSOUT or user IDs. The report is output to the REPORT DD statement.

SYSOUT Listing

The listing of archived SYSOUT groups can be for an individual SYSOUT group, a complete generation of archived SYSOUT, or all archived SYSOUT. The listing contains the following information:

- SYSOUT ID
- Job name
- Job ID
- Generation number
- SYSOUT sequence number
- Archive date and time
- Location of the SYSOUT (disk, tape, or temporary disk)
- Number of lines archived – shown in thousands (K) if it exceeds 10 million
- Number of pages archived – shown in thousands (K) if it exceeds 10 million
- Number of blocks written to disk
- Exception condition
- Tape sequence number
- DR Tape sequence number

  If FORMAT=FORM is specified, the Exception condition and Tape sequence number are replaced by the form name associated with the SYSOUT ID.

The following is a SYSOUT listing generated by the LIST control statement:

```
11/10/2013 10:20:15                    CA View Output Archival and Viewing (12.1)                          Page     1
SARBCT                                Batch Processing Utility - Sysout Archival Listing

ID                          Jobname  Jobid      Gen   Seq  Arc Date   Arc Time  Loc      Lines    Pages  Blocks  Xcode    Tseq  DRseq
--------------------------- -------- -------- ----- ----- ---------- --------  ----   --------  -------  ------  -------- -----  -----
ASTALLEG                    ASTALLEG JOB05544    26     7 12/18/2010 13:42:01   DISK        24        6       1                 
BSPURRI1                    BSPURRI1 JOB05668    26  1458 01/11/1999 13:37:10   DISK 18712312K 1231587K  12143K     0016           
GTHDEMO--R01                HASGADM1 JOB12795    32     1 12/13/2012 15:17:12   TAPE      1046        1       0              8      8
HASGAINI                    HASGAINI JOB26529    35     1 01/12/2013 15:51:02   PTAP       352        9       0              7      6
```

where:

Lines

If the number of lines exceeds 999,999,999, the number of lines is displayed in thousands, that is nnnnnnnnK.

Pages

If the number of pages exceeds 99,999,999, the number of pages will be display in thousands, that is nnnnnnnK.

DASDBlocks

If the DASD Blocks exceeds 999,999, the number of DASD Blocks is displayed in thousands, that is nnnnnK.

User ID Listing

The listing of user IDs can be for an individual user ID, a group of user IDs, or all user IDs. The listing contains the following information:

- User ID
- User ID password
- Master capability indicator
- Generation number
- Distribution identifier validation mask
- Distribution identifier
- Mode access indicator
- Current mode
- Default banner name

The following is a user ID listing generated by the LIST control statement:

```
11/10/2013 18:26:47                      CA View Output Archival and Viewing (12.1)                          Page     1
SARBCT                                    Batch Processing Utility - Userid Listing

                 --- Last Access ---                                                                    AEESS
Userid   Password   Date        Time    M   Mask                      Distid                   O O    Mode L   Banner    Printer
-------- -------- ----------  --------  -  ------------------------ ------------------------ -----  ----  -- --------  --------
AMARZO             11/09/2013 16:05:58  N  AMARZO                    AMARZO                   YYYYN    ALL     DEFAULT   PRT72
CUST01             11/06/2013 11:29:14  N  CUST01                    CUST01                   YYYYN    ALL     DEFAULT   LOCAL10
```

Syntax:

```
/LIST  EXCP=x
       FORMAT=FORM
       GEN=nnnnn
       ID=id
       USER=xxxxxxxx
```

where:

EXCP=x

Specifies whether EXCEPTIONS are listed.

Y

Lists only those SYSOUT groups with exceptional conditions.

N

Lists those SYSOUT groups without exceptional conditions.

A

Lists all SYSOUT groups.

FORMAT=FORM

Specifies that the alternate format SYSOUT list is to be displayed.

If omitted the standard SYSOUT list is produced.

This parameter cannot be specified with the USER or View parameter.

GEN=nnnnn

Specifies the absolute or relative number of the generation for which SYSOUT is listed.

If omitted, only the most recent generation is listed. To list SYSOUT for all generations, specify an asterisk as the generation number.

This parameter cannot be specified with the USER or View parameter.

ID=id

Specifies the SYSOUT ID of the SYSOUT group to be listed.

The value can be 1 to 32 characters.

A generic ID can be specified by appending an asterisk to the generic ID. If omitted, all SYSOUT IDs are listed.

This parameter cannot be specified with the USER or View parameter.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM’S REPORT, it must be entered as ‘JIM’’S REPORT’ or "JIM’S REPORT".

USER=xxxxxxxx

Specifies the name of the user ID or user IDs to be listed.

A generic ID can be specified by appending an asterisk to the identifier.

If omitted, all user IDs are listed.

This parameter cannot be specified with the EXCP, FORMAT, GEN, and ID parameters.

Note: The number of printed lines can be limited by the CA View OUTLIM initialization parameter. See the Initialization Parameters chapter for more information.

LISTDEV

The LISTDEV control statement produces a listing of Device definitions. The listing is written to the REPORT DD statement.

To produce control cards that can be used to add or modify existing Device definitions on DEFDEV statements, code the CTLCARDS DD statement.

Syntax:

```
/LISTDEV        ID=sname
                USER=
                TYPE=[CA-Spool | JES | EXTERNAL | VPO]
```

Where:

ID=sname

Specifies the 1-12 character synonym name for the device to be listed. A generic device ID can be specified by ending the device ID with an asterisk. If ID is omitted, all devices are listed.

USER=

Specifies 1-8 character name of user who last updated the device definition. A generic user name can be specified by ending the user name with an asterisk. If USER is omitted, all devices matching ID are listed.

TYPE=[CA-Spool | JES | EXTERNAL | VPO]

Specifies 1-8 character device type CA-Spool, JES, EXTERNAL, or VPO to be listed. If TYPE is omitted, all devices matching ID/USER are listed.

ID=sname

Specifies the 1-12 character synonym name for the device to be listed. A generic device ID can be specified by ending the device ID with an asterisk. If ID is omitted, all devices are listed.

USER=

Specifies 1-8 character name of user who last updated the device definition. A generic user name can be specified by ending the user name with an asterisk. If USER is omitted, all devices matching ID are listed.

TYPE=[CA-Spool | JES | EXTERNAL | VPO]

Specifies 1-8 character device type CA-Spool, JES, EXTERNAL, or VPO to be listed. If TYPE is omitted, all devices matching ID/USER are listed.

LISTDYND

The LISTDYND control statement produces a list of the dynamic distribution identifiers for a dynamic report. The report is output to the REPORT DD statement.

Syntax:

```
/LISTDYND ID=id

GEN=nnnnn

SEQ=nnnnn

UNDEF
```

Where:

ID=id

Specifies the SYSOUT identifier on the SYSOUT that a listing of distids is desired. This value can be 1 to 32 characters.

Note: If the id contains embedded blanks, commas, parentheses, equal signs, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''s REPORT' or "JIM''s REPORT".

GEN=nnnnn

Specifies the absolute or relative number of generations of the SYSOUT group to be listed.

SEQ=nnnnn

Specifies the absolute or relative sequence number of the SYSOUT group to be listed.

- If omitted, the most recently archive group for the ID and generation specified is listed.
- If GEN is omitted and SEQ is specified as a negative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

Example: SEQ=-1

The second most recently archive SYSOUT is processed regardless of its generation and sequence number.

Example: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

UNDEF

Indicates that the output of the report is to only contain dynamic distribution identifiers that have not been defined to the Deliver database.

LISTFILT

The LISTFILT control statement produces a listing of FILTER definitions. The listing is written to the REPORT DD statement.

To produce control cards that can be used to add or modify existing FILTER definitions on DEFFILT statements, code the CTLCARDS DD statement.

Syntax:

```
/LISTFILT       ID=fname
                USER=
```

Where:

ID=fname

Specifies 1-8 character name for the filter to be listed. A generic filter ID can be specified by ending the filter ID with an asterisk. If ID is omitted, all filters are listed.

USER=

Specifies 1-8 character name of user last updating filter. A generic user name can be specified by ending the user name with an asterisk. If USER is omitted, all filters matching ID are listed.

LISTVIEW

The LISTVIEW control statement produces a listing of Logical View definitions. The listing is written to the REPORT DD statement.

To produce control cards that can be used to add or modify existing logical views on DEFVIEW statements, code the CTLCARDS DD statement.

Logical View Listing

The listing of logical view definitions can be for an individual logical view, a group of logical views, or all logical views. In addition, if the CTLCARDS DD is present in the JCL, SARBCH DEFVIEW control statements are created for each view listed in the report. This allows you to clone the logical view definition which can be modified or added in batch. See the DEFVIEW statement for an explanation of the output format.

The following Logical View listing is generated by the LIST control statement:

```
11/10/2013 09:57:51                    CA View Output Archival and Viewing (12.1)                    Page     1
SARBCT                                  Batch Processing Utility - Logical view Listing
View Id                           Num Acc Userid   Filter   Description
-------------------------------- --- --- -------- -------- ----------------------------------------
TESTVIEW1                         001 PUB                   LOGICAL VIEW NUMBER 1
TESTVIEW2                         001 PUB          NBLK     LOGICAL VIEW NUMBER 2
TESTVIEW9                         001 PUB                   LOGICAL VIEW NUMBER 9
```

The following DEFVIEW statement is generated by the LISTVIEW control statement:

```
/DEFVIEW VIEW='TESTVIEW1'
NUM=1   USER=
FILTER=         SECURED=N
DESC='LOGICAL VIEW NUMBER 1                  '
DEFAULT=N LOCKLEFT=N DISPCC=Y
EXCPAGES=1   EXCRECS=3   DISPRECS=
ACL1=G AHL1=  ACL2=R AHL2=  ALINES=1
HSCROLL=N
HEADING=(('TEST PRIMARY HEADING',W,B))
HED1=1   HED2=2   HED3=3   HED4=4   HED5=5   HED6=6
CLR1=R   CLR2=P   CLR3=G   CLR4=Y   CLR5=W   CLR6=T
HLT1=    HLT2=B   HLT3=    HLT4=U   HLT5=R   HLT6=
COLUMN=((1  ,10 , , , ),
        (20 ,15 , , , ),
        (50 ,8  , , , ))
CRINDEX=Y
SEARCH=((1    ,     ,25     ,       ,EQ,
         'CHECK NUMBER'                          ,M,!),
        (!+1  ,     ,!+1    ,       ,EQ,
         'REFERENCE'                             ,M,@),
        (@+2  ,     ,@+2    ,       ,EQ,
         'TESTING'                               ,M,#))
INDEX=((CHECK   ,!+0  ,!+13   ,8    ,ALL  ,YES,YES),
       (REF-NO  ,@+0  ,@+11   ,9    ,ALL  ,NO ,YES),
       (TEST    ,#+1  ,#+0    ,5    ,ALL  ,NO ,NO ),
       (PAGE    ,1    ,130    ,3    ,ALL  ,NO ,YES),
       (TRANDATE,2    ,1      ,8    ,ALL  ,NO ,YES),
       (DIVISION,2    ,85     ,3    ,NBLK ,YES,YES))
```

Syntax:

/LISTVIEW VIEW=vname NUM=vnum USER=userid FILTER=filter

VIEW=vname

Specifies the name of the Logical View ID to be listed.

The value can be 1 to 32 characters.

A generic ID can be specified by appending an asterisk to the generic ID. If omitted, all Logical Views are listed.

You cannot specify this parameter with the USER or ID parameter.

Note: If the View id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Enter any quotes in the Report-id as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, enter it as 'JIM''S REPORT' or "JIM'S REPORT".

NUM=vnum

Specifies that only a specific view number is listed. If left blank or omitted, public and private views are listed.

USER=userid

Specifies that only private views for this userid are to be listed. If left blank or omitted, public and private views are listed.

FILTER=filter

Specifies 1 to 8 character filter name. A generic filter name can be specified by ending the filter name with an asterisk. Only logical views with matching filter names are listed.

LOAD

The LOAD control statement loads an archived SYSOUT group from tape to disk. The SYSOUT is either temporarily loaded to the CA View database or loaded to a user-defined data set.

If you use the expanded access server for tape and robotics, and the server becomes inactive when a report is selected online, CA View LOADs the report to disk. The report can then viewed without the server.

We recommend that LOAD jobs execute on the system with the TYPE=PRIMARY server. This method prevents all the data from having to be transmitted across systems using XCF or LSERV.

Note: For more information about the expanded access server, see the section Expanded Access Server for Tape and Robotics in the chapter "Configuring."

The following table indicates the destination of the SYSOUT group:

If the DDname parameter is	And if a SARLOAD DD statement is	Then the Product
Specified	Specified or not specified	Loads the SYSOUT group to the data set named with the ddname.
Not specified	Specified	Loads the SYSOUT group to the SARLOAD data set.
Not specified	Not specified	Temporarily loads the SYSOUT group to the CA View database, and you can view it online. The SYSOUT is automatically be deleted by the backup cycle using the HOLDTEMP initialization parameter.

Syntax:

The syntax of the control statement is:

```
/LOAD  DDNAME=xxxxxxxx
    GEN=nnnnn
    ID=id
    RESOURCE=xxx
    INDEX
    SEQ=nnnnn
    TAPE
```

where:

DDNAME=
xxxxxxxx

Specifies the DD statement name to which the SYSOUT group is loaded.

This parameter overrides the SARLOAD DD statement, if it is specified. If DCB attributes for the DD statement are omitted, the following are used:

- A record format of VBM
- A record size of the SYSOUT group record size plus four
- A block size of 32760

GEN=nnnnn

Specifies the absolute or relative number of the generation for which SYSOUT is loaded to disk.

If omitted, the most recently archived SYSOUT group for the ID loaded to disk.

ID=id

Specifies the SYSOUT identifier on the SYSOUT or the resource group to be loaded.

This value can be 1 to 32 characters. This parameter is required.

The SARTDR utility can also be used to reload an AFP resource to DISK.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

INDEX

Specifies to LOAD any page indexes defined for the report to the disk database.

Page indexes on disk are used by the CA View online cross report indexing capability. (The DDname parameter does not apply to page indexes.)

RESOURCE=

Specifies the name of an AFP RESOURCE rather than a Report ID.

Do not specify ID= when using the RESOURCE parameter.

This parameter allows an AFP resource to be deleted. This type of control statement is generated through SARTSLST.

SEQ=nnnnn

Specifies the absolute or relative sequence number of the SYSOUT group to be loaded to disk.

- If omitted, the most recently archived group for the ID and generation specified is loaded to disk.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

TAPE

Specifies to LOAD only from tape.

This parameter can be used to bypass LOADing from optical disk.

PERM

The PERM control statement sets a SYSOUT group to permanent status (can be used for long term archiving) or removes it from permanent status.

When the SYSOUT group is set to permanent status, its period of retention and its location are dependent on the Expanded Retention Option initialization parameters and table statements. These parameters and statements are processed during the CA View started task backup cycle.

When the SYSOUT group is removed from permanent status, it no longer resides under the control of the Expanded Retention Option.

Note: Setting a SYSOUT to PERM when the ERO Initialization Option (EROOPT) is NO, causes the following:

- All retention values (NGEND and/or NGENT) are ignored
- The report stays permanent on the database

If the SYSOUT was on disk when it was set to PERM, the SYSOUT remains on disk indefinitely. If the SYSOUT was only on tape, it remains on tape indefinitely.

Syntax:

```
/PERM  DELETE
       DISK
       GEN=nnnnn
       ID=id
       SEQ=nnnnn
       TAPE
```

where:

DELETE

Specifies that the SYSOUT group is to be removed from permanent status.

DISK

Specifies that the SYSOUT group is to be set to a permanent "on disk" status.

When this keyword is specified, the SYSOUT group must currently reside in a disk or temporary disk status. This parameter cannot be specified with the DELETE and TAPE keywords. If the DELETE, DISK, and TAPE keywords are omitted, DISK is the default.

GEN=nnnnn

Specifies the absolute or relative number of the generation of the SYSOUT group to be set to permanent status or removed from permanent status.

ID=id

Specifies the SYSOUT ID of the SYSOUT group to be set to permanent status or removed from permanent status.

The value can be 1 to 32 characters.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

SEQ=nnnnn

Specifies the absolute or relative SYSOUT sequence number of the SYSOUT group to be set to permanent status or removed from that status.

- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

TAPE

Specifies that the SYSOUT group is to be set to a permanent on tape status.

This parameter cannot be specified with the DELETE and DISK keywords.

PRINT

The PRINT control statement outputs a SYSOUT group to spool or data set for printing. Overrides to the print attributes can be specified as operands.

Syntax:

```
/PRINT  ACIFRES=Y|N
ADDRESS=('text'...)
        BANNER=name
        BUILDING='text'
        BURST=Y|N
        CHARS=(xxxx xxxx xxxx xxxx)
        CKPTLINE=nnnnn
        CKPTPAGE=nnnnn
        CKPTSEC=nnnnn
        CLASS=x
        COLORMAP=xxxxxxxx
        COMPACT=xxxxxxxx
        COMSETUP=xxxxxxxx
        CONTROL=PROGRAM|SINGLE|DOUBLE|TRIPLE
        COPIES=nnn
        COPYG=(nnn nnn nnn nnn nnn nnn nnn nnn)
        DATACK=BLOCK|UNBLOCK|BLKCHAR|BLKPOS
        DDNAME=xxxxxxxx
        DEPT='text'
        DEST=dest.userid
        DPAGELBL=Y|N
        DSLIST=(ddname,stepname,proc_stepname)
        DUPLEX=NO|NORMAL|TUMBLE
        FCB=xxxx
        FLASH=(xxxx nnn)
        FORM=xxxxxxxx
        FORMDEF=xxxxxx
        FORMLEN=nn[.mmm]IN|CM
        FSSDATA='data'
        GEN=nnnnn
        HOLD=Y|N
        ID=id
        INTRAY=nnn
        IPDEST=ipdest
        LINECT=nnn
        MODIFY=(xxxx n)
```

NAME='*text*'
NOTIFY=(*node.userid …)*
OFFSETXB=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OFFSETXF=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OFFSETYB=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OFFSETYF=*mmm[.nnn]*IN|CM|MM|PELS|POINTS
OPTCDJ=Y|N
OUTBIN=*nnnnn*
OUTDISP=(*ndisp,adisp*)
OUTPUT=*name*
OVERLAYB=*xxxxxxxx*
OVERLAYF=*xxxxxxxx*
PAGE=(*nnn nnn nnn nnn nnn nnn nnn nnn nnn*)
PAGEDEF=*xxxxxx*
PIMSG=(Y|N,*nnn)*
PORTNO=*nnnnn*
PRMODE=*xxxxxxxx*
PRTERROR=DEFAULT|QUIT|HOLD
PRTOPTNS=*xxxxxxxxxxxxxxxx*
PRTQUEUE='*queue*'
PRTY=*nnn*
RECORD=(*nnn nnn nnn nnn nnn nnn nnn nnn nnn*)
RESFMT=P240|P300
RETAINF=*hhhh:mm:ss*|FOREVER
RETAINS=*hhhh:mm:ss*|FOREVER
RETRYL=*nnn*
RETRYT=*hhhh:mm:ss*
ROOM='*text*'
SELECT=*xxxxxxxx*
SEQ=*nnnnn*
SYSAREA=Y|N
THRESHLD=*nnnnnnnn*
TITLE='*text*'

```
UCS=xxxx
USERDATA=('text' …)
USERLIB=(lib …)
VIEW=(nnn,viewid,userid)
WRITER=xxxxxxxx
```

where:

ACIFRES=Y|N

Specifies whether to include ACIF APF resources when reprinting.

If not specified, this parameter defaults to the value set in SARINIT.

ADDRESS=
('text' …)

Specifies deliver address lines for the SYSOUT.

You can specify one to four deliver address lines containing up to 60 text characters separated by blanks and/or commas and enclosed in parentheses.

BANNER=name

Specifies the name of the model banner page to be used for producing beginning and ending banner pages for the report.

If omitted, the user's default banner page is used.

You can specify * for name to bypass printing of banner page data.

BUILDING=
'text'

Specifies the building identification for the SYSOUT.

You can specify up to 60 text characters for building identification.

BURST=Y|N

Specifies an optional burst value for the 3800 printer to override the one used to print the SYSOUT.

Valid values are Y and N.

CHARS=(xxxx xxxx xxxx xxxx)

Specifies an optional set of character arrangement table names for the 3800 printer to override the ones used to print the SYSOUT.

A value of one to four names separated by one or more blanks and/or commas and enclosed in parentheses can be specified.

CKPTLINE=
nnnnn

Specifies the maximum lines in a logical page.

A range of 0 to 32767 can be specified.

CKPTPAGE=
nnnnn

Specifies the number of logical pages before JES checkpoints data.

A range of 1 to 32767 can be specified.

CKPTSEC=
nnnnn

Specifies the number of logical pages before JES checkpoints data.

A range of 1 to 32767 can be specified.

CLASS=x

Specifies an optional class to override the one used to print the SYSOUT.

COLORMAP=
xxxxxxxx

Specifies the color translation resource object.

COMPACT=
xxxxxxxx

Specifies the compaction table for sending SYSOUT to SNA terminal.

COMSETUP=
xxxxxxxx

Specifies the microfiche setup resource.

CONTROL=
value

Specifies line spacing.

Valid values are:

PROGRAM

Indicates each logical record contains a carriage control character.

SINGLE

Indicates single spacing.

DOUBLE

Indicates double spacing.

TRIPLE

Indicates triple spacing.

COPIES=nnn

Specifies an optional number of copies to override the one used to print the SYSOUT.

A range of 1 to 255 can be specified.

COPYG=(nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies an optional set of copy groups for the 3800 printer to override the ones used to print the SYSOUT.

A range of one to eight copy groups separated by one or more blanks and/or commas and enclosed in parentheses can be specified. Each copy group value must be in the range of 1 to 255.

DATACK=value

Specifies how printer errors are to be handled.

Valid values are:

BLOCK

Indicates errors are not reported.

UNBLOCK

Indicates errors are reported.

BLKCHAR

Indicates print errors are blocked.

BLKPOS

Indicates data errors are blocked.

DDNAME=
xxxxxxxx

Specifies the DD statement name to which the SYSOUT group is printed.

If the DCB attributes for the DD statement are omitted, the following values are used:

- A record format of VBM
- A record size of the SYSOUT group record size plus 4 but not less than 137
- A block size of 32760

DEPT='text'

Indicates department identification for the SYSOUT.

You can specify up to 60 text characters for department identification.

DEST=xxxxxx

Indicates department identification for the SYSOUT.

You can specify up to 60 text characters for department identification.

DPAGELBL=
Y|N

Specifies whether security label is to be output.

DSLIST=(ddname,stepname,proc_stepname)

Specifies the qualified data definition name within the SYSOUT group to be printed, where:

ddname

Specifies the DD statement that produced the SYSOUT data.

stepname

Specifies the name of the step that produced the SYSOUT data.

proc_stepname

Specifies the stepname in the procedure that produced the SYSOUT data.

The ddname, stepname, and/or proc_stepname can be specified as a specific or generic name. If a field is omitted, all occurrences of that name are assumed.

Examples:

- DSLIST=JES* prints job log, JCL listing, message data set, and any other DD statements that start with JES
- DSLIST-SYSPRINT prints all SYSPRINT data sets contained in the SYSOUT group
- DSLIST=(SYSPRINT,STEP1) prints the SYSPRINT data set for step STEP1
- DSLIST=(*,STEP1) or DSLIST=(,STEP1) prints all data sets produced by STEP1

FCB=xxxx

Specifies an optional forms control image to override the one used to print the SYSOUT.

FLASH=
(xxxx nnn)

Specifies an optional forms flash overlay name and flash count for the 3800 printer to override those used to print the SYSOUT.

The forms flash overlay name and copy count are separated by one or more blanks and/or commas and are enclosed in parentheses.

FORM=
xxxxxxxx

Specifies an optional forms name to override the one used to print the SYSOUT.

FORMDEF=
xxxxxx

Specifies a library member containing statements to control printing of the SYSOUT data on the 3800 printer.

The statements can specify overlay forms, page location for overlays, and page format suppressions that can be activated.

FORMLEN=nn
[.mmm]IN|CM

Specifies length and unit of measurement of the form.

FSSDATA='data'

Specifies Functional Subsystem data.

You can specify up to 127 characters for functional subsystem data.

GEN=nnnnn

Specifies the absolute or relative number of the generation for which SYSOUT is printed.

If omitted, the most recently archived SYSOUT group for the ID is printed.

HOLD=Y|N

Specifies either Y or N to indicate whether the SYSOUT is to be placed on the hold queue for printing.

If omitted, HOLD=N is assumed.

ID=id

Specifies the SYSOUT ID of the group to be printed.

You can specify 1 to 32 characters for ID. This parameter is required.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

INTRAY=nnn

Specifies the printer input tray.

A range of 1 to 255 can be specified.

IPDEST=ipdest

Specifies the TCP/IP routing designation.

You can specify up to 124 characters of TCP/IP routing information.

LINECT=nnn

Specifies the maximum number of lines to print on each output page.

MODIFY=
(xxxx n)

Specifies an optional copy modification module name and table reference character for the 3800 printer to override those used to print the SYSOUT.

The copy modification module name and table reference character are separated by one or more blanks and/or commas and are enclosed in parentheses.

The table reference character can have a value of 0 to 3.

NAME='text'

Specifies the name to be printed on output separator pages.

You can specify up to 60 text characters for the name.

NOTIFY=
(node.userid …)

Specifies a print notification message destination.

You can specify up to four destinations for the print notification message.

OFFSETXB=
mmm[.nnn]IN|
CM|MM|
PELS|POINTS

Specifies X offset of logical page origin for back side of paper.

OFFSETXF=
mmm[.nnn]IN|
CM|MM|
PELS|POINTS

Specifies X offset of logical page origin for back side of paper.

OFFSETYB=
mmm[.nnn]IN|
CM|MM|
PELS|POINTS

Specifies Y offset of logical page origin for back side of paper.

OFFSETYF=
mmm[.nnn]IN|
CM|MM|
PELS|POINTS

Specifies Y offset of logical page origin for front side of paper.

OPTCDJ=Y|N

Specifies an optional override as to whether the SYSOUT records contain table reference characters for the 3800 printer.

Valid values are Y or N.

OUTBIN=nnnnn

Specifies output bin ID.

A range of 1 to 65535 can be specified.

OUTDISP=
(ndisp,adisp)

Specifies the normal and abnormal output disposition.

Valid values are:

HOLD

Indicates SYSOUT is not printed until it is released.

KEEP

Indicates SYSOUT is printed but not immediately purged.

LEAVE

Indicates SYSOUT is not printed until it is released and not immediately purged once printed.

PURGE

Indicates SYSOUT is deleted without printing.

WRITE

Indicates SYSOUT is printed and purged.

OUTPUT=
xxxxxxxx

Specifies the name of the //OUTPUT statement to be used for printing the SYSOUT group.

This parameter overrides the specifications of the FORMDEF, LINECT, PAGEDEF, PRMODE, and possibly, FORM parameters. The parameter (xxxxxxxx) data is specified as follows:

- name
- stepname.name
- stepname.procstepname.name
- An asterisk can precede the parameter data to match the JCL specification of the OUTPUT parameter.

OVERLAYB=xxxxxxxx

Specifies medium overlay for back side of paper.

OVERLAYF=xxxxxxxx

Specifies medium overlay for front side of paper.

PAGE=(nnn nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies one to nine page numbers and/or ranges of pages to be printed.

The page numbers and/or ranges of pages are separated by one or more blanks and/or commas and are enclosed in parentheses. A range of pages is specified as two page numbers separated by a colon.

If both PAGE and RECORD are omitted, the entire SYSOUT group is printed.

PAGEDEF=xxxxxx

Specifies a library member containing statements to control the printing of the SYSOUT data on the 3800 printer.

The statements can specify logical page length, width, fonts, and page segments.

PIMSG=(Y|N,nnn)

Specifies whether messages from a functional subsystem are to be printed and the message threshold at which the system is to cancel printing.

PORTNO=nnnnn

Specifies TCP port number at which FSS connects to the printer.

A range of 1 to 65535 can be specified.

PRMODE=xxxxxxxx

Specifies the process mode required for printing the SYSOUT group.

PRTERROR=value

Specifies an action for print error.

Valid values are:

DEFAULT

Indicates a standard action is taken when terminating error occurs during printing.

QUIT

Indicates the SYSOUT is released when terminating error occurs during printing.

HOLD

Indicates the SYSOUT is placed in held status when terminating error occurs during printing.

PRTOPTNS=xxxxxxxxxxxxxxxx

Specifies named entity of print options for FSS.

PRTQUEUE='queue'

Specifies a target print queue for FSS.

You can specify up to 127 characters for print queue.

PRTY=nnn

Specifies the priority to assign to this print request.

RECORD=(nnn nnn nnn nnn nnn nnn nnn nnn nnn)

Specifies one to nine record numbers and/or ranges of records to be printed.

The record numbers and/or ranges of records are separated by one or more blanks and/or commas and are enclosed in parentheses. A range of records is specified as two record numbers separated by a colon.

If both PAGE and RECORD are omitted, the entire SYSOUT group is printed.

RESFMT=P240|P300

Specifies the resolution used to format the print.

Valid values are:

P240

Indicates 240 pels per inch resolution.

P300

Indicates 300 pels per inch resolution.

RETAINF=hhhh:mm:ss|FOREVER

Specifies the failed transmission retain time.

RETAINS=hhhh:mm:ss|FOREVER

Specifies the successful transmission retain time.

RETRYL=nnn

Specifies the maximum number of transmission retries.

RETRYT=hhhh:mm:ss

Specifies the length of time to wait between retries.

ROOM='text'

Specifies a room identification.

You can specify up to 60 text characters for room identification.

SELECT=xxxxxxxx

Specifies the page separation index value for selecting pages to print.

If the value contains any of the special characters: blank, comma, or single quote, the index value must be enclosed within single quotes. A single quote must be represented as two single quotes.

SEQ=nnnnn

Specifies the absolute or relative SYSOUT sequence number of the SYSOUT group to be printed.

- If omitted, the most recently archived SYSOUT group for the ID and generation specified is printed.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

SYSAREA=Y|N

Specifies whether the system is to reserve a system area on each page of output.

THRESHLD=
nnnnnnnn

Specifies the maximum size of a SYSOUT data set.

A range of 1 to 99999999 can be specified.

TITLE='text'

Specifies a title identification.

You can specify up to 60 text characters for text identification.

UCS=xxxx

Specifies an optional, special character set name to override the one used to print the SYSOUT.

USERDATA=
('text' …)

Specifies user data for the SYSOUT.

You can specify 1 to 16 user data lines containing up to 60 text characters separated by blanks and/or commas and enclosed in parentheses.

USERLIB=(lib …)

Specifies up to eight libraries containing APF resources.

VIEW=(nnn, viewid,userid)

Specifies a view format in which report is printed,

Where:

Nnn

Views numbers (1 to 255).

Viewed

Specifies (Optionally) the ID of a public, private, or global view.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM’S REPORT, it must be entered as ‘JIM’’S REPORT’ or "JIM’S REPORT".

Userid

Optionally specifies the user ID for private view.

WRITER=
xxxxxxxx

Specifies the external writer name to be used for printing the SYSOUT group.

Note: The number of printed lines can be limited by the CA View OUTLIM initialization parameter. See the Initialization Parameters chapter for more information.

PRINTIDX

The PRINTIDX control statement allows printing of index data for a specific logical view of a report. The report is written to the JES spool or directed to a specific DD statement. For JES spool output, you can designate a SYSOUT class, destination, forms, and other attributes for the SYSOUT data set.

Syntax:

```
/PRINTIDX  BANNER=name
           CHARS=(xxxx xxxx xxxx xxxx)
           CLASS=x
           DDNAME=xxxxxxxx
           DEST=destid.userid
           FORM=xxxxxxxx
           FORMDEF=xxxxxx
           GEN=nnnnn
           ID=id
           INDEX=xxxxxxxx
           PAGEDEF=xxxxxx
           PRMODE=xxxxxxxx
           SELECT=(xxxxxxxx,…)
           SEQ=nnnnn
```

```
VIEW=(nnn,viewid,userid)
WRITER=xxxxxxxx
```

where:

BANNER=name

Specifies the name of the model banner page to be used for producing beginning and ending banner pages for the report.

If omitted, the user's default banner page is used.

You can specify * for name to bypass printing of banner page data.

CHARS=
(xxxx xxxx xxxx xxxx)

Specifies a set of character arrangement table names for the 3800 printer to be used for printing the index data.

A value of one to four names separated by one or more blanks and/or commas and enclosed in parentheses can be specified.

CLASS=x

Specifies the SYSOUT class to which the index data is to be printed.

DDNAME=
xxxxxxxx

Specifies the DD statement name to which the index data is printed

If the DCB attributes for the DD statement are omitted, the following values are used:

- A record format of VBM
- A record size of the SYSOUT group record size plus 4 but not less than 137
- A block size of 32760

DEST=destid.userid

Specifies the destination where the index data is to be printed.

You can specify up to eight characters for the destination and up to eight characters for the optional user ID. The destination can be a synonym created using the online DEFine DEVice command.

FORM=xxxxxxxx

Specifies the forms name to use for printing the index data.

FORMDEF=
xxxxxx

Specifies a library member containing statements to control printing of the index data on the 3800 printer.

The statements can specify overlay forms, page location for overlays, and page format suppressions that can be activated.

GEN=nnnnn

Specifies the absolute or relative number of the generation for which index data is printed.

If omitted, the most recently archived index data for the ID is printed.

ID=id

Specifies the SYSOUT or report ID of the index data to be printed.

You can specify 1 to 32 characters for ID. This parameter is required.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM'S REPORT, it must be entered as 'JIM''S REPORT' or "JIM'S REPORT".

INDEX=
xxxxxxxx

Specifies the index name for an ACIF or XEROX report. If the index name contains blanks or special characters, the index name must be enclosed within quotes.

PAGEDEF=
xxxxxx

Specifies a library member containing statements to control printing of the index data on the 3800 printer.

The statements can specify logical page length and width, fonts, and page segments.

PRMODE=
xxxxxxxx

Specifies the process mode required for printing the index data.

SEQ=nnnnn

Specifies the absolute or relative SYSOUT sequence number of the index data to be printed.

- If omitted, the most recently archived SYSOUT data for the ID and generation specified is processed.
- If GEN is omitted and SEQ is specified as a negative relative number, the SYSOUT relative to the most recently archived SYSOUT is processed.
- If GEN is omitted and SEQ is specified as a positive number, SEQ number is ignored and the most current SYSOUT is processed.

EX: SEQ=-1

The second most recently archived SYSOUT is processed regardless of its generation and sequence number.

EX: SEQ=-2

The third most recently archived SYSOUT is processed regardless of its generation and sequence number.

SELECT=
(xxxxxxxx,…)

Specifies the selection of specific index values to be printed for the report. The values that are specified correspond one to one with the indexes defined in the view definition. Each of these values can identify the full index value or a portion of the index value, which can optionally be suffixed with an asterisk.

VIEW=(nnn, viewid,userid)

Specifies a view format in which report is printed,

Where:

Nnn

Views numbers (1 to 255).

Viewed

Optionally specifies the ID of a public, private, or global view.

Note: If the id contains embedded blanks, commas, equal signs, parentheses, or quotes, it must be enclosed in quotes (single or double). Any quotes in Report-id must be entered as a pair of quotes because a non-paired quote ends the ID. For example, if the value is JIM’S REPORT, it must be entered as ‘JIM’’S REPORT’ or "JIM’S REPORT".

Userid

Optionally specifies the user ID for private view.

WRITER=
xxxxxxxx

Specifies the external writer name to be used for printing the index data.

The printed report prints index values horizontally with the index names left justified above the index values. If the logical view does not have an index name specified, UNNAMED is presented for the index name.

Notes:

- The number of printed lines can be limited by the CA View OUTLIM initialization parameter.
- For more information about initialization parameter, see the chapter "Initialization Parameters".

SARBCH Examples

The following are some SARBCH examples.

Example 1

The two most recent generations of archived SYSOUT are listed.

```
//EXAMPLE1 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARBCH
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//REPORT   DD SYSOUT=*
//SYSIN    DD *
/DBASE NAME=VIEW.SYSTEM1
/LIST
/LIST GEN=-1
/*
```

Example 2

The most recent SYSOUT group for job A0627WE is printed to special forms 2PT.

```
//EXAMPLE2 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARBCH
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
/DBASE NAME=VIEW.SYSTEM1
/PRINT ID=A0627WE FORM=2PT
/*
```

Example 3

The report having a SYSOUT ID of M35AST03R1 created two generations ago is loaded to existing data set USER.M35AST03.R1.

```
//EXAMPLE3 JOB ACCOUNT,PROGRAMMER
//STEP1    EXEC PGM=SARBCH,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//SARLOAD  DD DSN=USER.M35AST03.R1,DISP=OLD
//SYSPRINT DD SYSOUT=*
//SYSIN    DD *
/LOAD ID=A35AST03R1 GEN=-2
/*
```

Chapter 11: Using the Optical Disk Interface

This section contains the following topics:

Overview (see page 509)
Optical Disk Page-Level Access (see page 512)
Configuring the Optical Disk Interface (see page 513)
Operating the Optical Migration Subtask (see page 528)
Submitting the Optical Migration Batch Job (see page 529)
Kodak Optistar Drivers (see page 530)
FileTek Drivers (see page 533)
OAM Drivers (see page 535)
IBM DASD Emulation Optical Drivers (see page 537)
Optical Disk Database Maintenance (see page 538)

Overview

CA View provides optional drivers that enable you to archive SYSOUT data to the following:

- FileTek Optical Disk Storage Machine
- Kodak Optistar Storage System
- IBM 3995 Optical Library Dataserver, models 131, 132, 133, and 153

Using the CA View optical disk driver also enables you to retrieve data from an optical disk to the CA View database to view or print.

After you configure CA View to use an optical disk driver, CA View archives SYSOUT data to three levels of storage:

- Primary disk (the CA View database)
- Secondary disk (optical disk; saved using the driver)
- Tape storage (CA View archival tapes)

What Is Secondary Disk Storage?

Secondary disk storage is a storage alternative to the CA View primary disk database. You can specify an optical disk device as a destination for SYSOUT archiving to create a more portable and permanent backup for reports.

Note: In this document, the terms *secondary storage* and *optical disk storage* are used interchangeably.

When to Use Secondary Disk Storage

Select a destination for SYSOUT group archiving based upon retrieval frequency and retention period.

Use primary disk storage to store:

- SYSOUT groups that you must view frequently because the SYSOUT group is always available for immediate retrieval.
- Any SYSOUT group with a relatively short retention requirement because primary disk space is reusable and the space quickly becomes available again.

Use secondary disk storage (optical disk) to archive:

- Any SYSOUT group with a relatively long retention period
- Any SYSOUT that is frequently required for viewing.

  When an optical disk is used for this kind of storage, it is an extremely reliable and cost effective medium.

Use tape storage to back up SYSOUT groups on primary or secondary disk.

Requirements

The system requirements for the CA View Optical Disk Interface are as follows:

- To use any of the optical disk interfaces you must have CA View r11 (or higher) and the CA View Expanded Retention Option (ERO).
- The Kodak Optistar Storage System page level driver requires the Data/Ware Multi-user Data Retrieval Subsystem (MDRS).
- The FileTek drivers require the FileTek callable interface (module LSMCALL).
- The OAM driver needs OAM to be is running with all CA View transactions occurring on the system that is running OAM. This involves the following:
  - The CA View archival started task must execute on the system with OAM if either the CA View backup cycle or optical migration subtask does the migration to OAM.
  - All online users selecting SYSOUT groups from secondary disk storage must be executing on the system with OAM.
  - Users on another system can load the SYSOUT group from secondary disk to the CA View database in order to access it. The SARBCH job used to load the SYSOUT group must run on the system with OAM.
  - All SARBCH jobs requesting SYSOUT groups from secondary disk storage must execute on the system with OAM.

Report-Level versus Page-Level Access

When you select a SYSOUT group from CA View that has a status of DSK2, PDK2, or PRM2, CA View does one of the following:

- Allows you to view or print the SYSOUT file directly from optical disk (page-level access)
- Loads the entire SYSOUT from the optical disk into the CA View database (report-level access)

Notes:

- DSK2, PDK2, or PRM2 all indicate optical disk secondary storage.
- Most of the information in this document applies to both types of drivers. For more information about page-level access, see Optical Disk Page-Level Access later in this chapter.

Driver Names and Types

CA View currently supports the following optical disk drivers:

- SARD2D00 for IBM DASD Emulation Optical devices (including the ESA/370 and ESA/390 3995 model 153 Optical Library Dataserver) with page-level access
- SARD2D01 for the Kodak Optistar Storage System with report-level access
- SARD2D02 for the FileTek Optical Disk Storage Machine with report-level access
- SARD2D03 for the FileTek Optical Disk Storage Machine with page-level access
- SARD2D04 for the Kodak Optistar Storage System optical disk device with page-level access
- SARD2D05 for IBM Object Access Method (OAM) devices (including the ESA/370 and ESA/390 3995 models 131, 132, and 133 Optical Library Dataserver) with page-level access

Optical Disk Page-Level Access

This section covers the drivers that enable page-level access and explains how page-level access works.

Drivers

Page-level access is currently available with the following drivers:

- SARD2D00 driver for IBM DASD Emulation Optical devices (including the IBM ESA/370 and ESA/390 3995 Optical Library Dataserver, model 153)
- SARD2D03 driver for the FileTek Storage Machine
- SARD2D04 driver for the Kodak Optistar Storage System
- SARD2D05 driver for OAM devices (including the IBM ESA/370 and ESA/390 3995 Optical Library Dataserver, model 132)

Page-Level Access Functionality

This functionality lets you do the following:

- Access archived SYSOUT data directly from optical disk secondary storage

Page-level access is different than report-level access which requires an entire SYSOUT to be loaded into the CA View database for viewing.

This capability helps you reduce the DASD load at your site while minimizing the performance impact of the slightly slower access speed of optical disk. Instead of loading a 100,000-line report back to the CA View database, you can view or print just the data you need.

- Add indexes to your SYSOUT archives at archive time

  The optical disk interface uses the user-defined indexes to reduce optical disk access time. Using indexes minimizes the performance impact of the slightly slower access speed of optical disk.

  The net result is that, depending on your indexing and the number of concurrent access requests to optical disk, the response time can be the same as primary storage.

Operation

With page-level access, you can add indexes to your SYSOUT archives at archive time. The optical disk interface uses these user-defined indexes to reduce optical disk access time, minimizing the performance impact of the slightly slower access speed of optical disk. The net result is that, depending on your indexing and the number of concurrent access requests to optical disk, the response time can be indistinguishable from viewing records from primary storage.

Configuring the Optical Disk Interface

These instructions provide an overview of the steps required to configure CA View to use the optical disk storage drivers. The information in this section applies to all CA View optical disk drivers, unless indicated otherwise by the block label (for example, the DSK2PARM parameter explanation in the following section).

Important! Read the instructions thoroughly before attempting the configuration.

The ERO Parameters that Control Retention on Disk Storage

The following ERO Parameters control the disk and total retention of Sysouts on Primary and Secondary Disk Storage:

- DSK2DAYS
- DRETPD
- D2RETPR

DSK2DAYS

The syntax of the DSK2DAYS control statement parameter is as follows:

Syntax:

DSK2DAYS=*nnn*

The default is 999.

Valid values are 0-999.

- This parameter determines when a Sysout is to be migrated to secondary disk storage. DSK2DAYS can be coded as an Initialization Parameter or as an ERO Table Entry parameter.
- If DSK2DAYS is coded as an Initialization Parameter and set to a value other than 999, it causes all SYSOUTs to be migrated to secondary disk storage.

  You can perform selective migration by coding 999 for the Initialization Parameter, and coding DSK2DAYS on the selected ERO Table entries.
- The DSK2DAYS parameters (initialization parameter and ERO table parameter) must not be greater than DRETPD because if a report is deleted from primary disk, it is not available for migration to secondary disk.

DRETPD

The syntax of the DRETPD parameter is as follows:

Syntax:

DRETPD=*nnnnn*

If RETPD is coded, and DRETPD is not, the default for DRETPD is RETPD. If both are coded, DRETPD must be less than or equal to RETPD.

Valid values are 0-32767

Specifies the number of days (0 to 32767) that a report is retained on primary disk storage. DRETPD is intended to be specified with RETPD and optionally D2RETPD to limit the number retained on disk.

Note: With this enhancement, the primary disk storage copy can be kept on primary disk even though the SYSOUT has been migrated to secondary disk storage.

D2RETPD:

The syntax of the D2RETPD parameter is:

Syntax:

D2RETPD=*nnnnn*

Notes:

- If D2RETPD is omitted, it defaults to the value specified in DRETPD.
- If DRETPD is omitted and D2RETPD is specified, DRETPD defaults to D2RETPD.
- If both DRETPD and D2RETPD are specified, DRETPD must be less than or equal to D2RETPD.
- This parameter does not cause reports to be migrated to secondary disk. Migration is controlled by the DSK2DAYS parameter.

Valid values are 0-32767

This value specifies the number of days (0 to 32767) that a report is to be retained on optical/secondary disk. D2RETPD is intended to be specified with DRETPD to provide separate retention for optical/secondary disk and primary disk.

Note: The DSK2DAYS parameters (initialization parameter and ERO table parameter) must not be greater than DRETPD, because if a report is deleted from primary disk, it will not be available for migration to secondary disk.

If DSK2NOTP is coded on the same ERO Table Entry, no tape backup of the SYSOUT is processed. The SYSOUT is completely deleted from CA View when D2RETPD expires regardless of any other retention parameter.

Overview of Configuration Steps

This section presents an overview of the process you must use to configure CA View to use the optical disk interface. These steps are explained in the sections that follow.

1. Use the DSK2DRVR SARINIT initialization parameter to specify which optical disk driver you are using.
2. Use the DKS2PARM SARINIT initialization parameter to specify the page-level drivers.
3. Set optical migration options in the ERO table (with disk and tape migration options), using the following keywords:

   ```
   DSK2DAYS
   DSK2NOTP
   ```

4. Customize optical migration scheduling with the following initialization parameters:

   ```
   DSK2MIGD
   DSK2TIME
   DSK2INTV
   ```

   Note: By default, the CA View backup cycle performs all optical migration.
5. Run SARINIT to implement your initialization parameter settings to the database.

Step 1: Specify the Optical Disk Storage Driver

Specify the optical disk driver that you are using with the DSK2DRVR SARINIT initialization parameter.

This parameter is required; there is no default value.

Syntax:

DSK2DRVR=SARD2D0*n*

where:

Value	Description
SARD2D00	IBM ESA/370 and ESA/390 3995 Optical Library Dataserver, model 153, page-level access
SARD2D01	Kodak Optistar report-level access
SARD2D02	FileTek report-level access
SARD2D03	FileTek page-level access
SARD2D04	Kodak Optistar page-level access
SARD2D05	IBM ESA/370 and ESA/390 3995 Optical Library Dataserver, models 132 and 133, page-level access

Step 2: Configure the Page-Level Drivers

Specify the appropriate values for the DSK2PARM SARINIT initialization parameter.

The values for each of the drivers are explained in the sections that follow.

DSK2PARM: IBM Page-Level Driver for Models 131, 132, 133

Specify the high-level index prefix for creating the collection and object names for OAM.

Syntax:

DSK2PARM=*index/storclas/mgmtclas/db2id*

Notes:

- The index can be a maximum of 17 characters.

The default value for index is the high-level index of the CA View database.

Specify the SMS storage class as storclas.

Specify the SMS management class as mgmtclas.

Specify the DB2 system identifier as db2id.

This identifier must match the entry specified on the SMS subsystem definition in member IEFSSNxx in SYS1.PARMLIB.

DSK2PARM: IBM Page Level Driver for Model 153

Specify the high-level index prefix for creating the optical disk data sets.

Syntax:

DSK2PARM=*index/unit/blksize*

Notes:

- The index can consist of a maximum of 17 characters.
- If you change the index, older data sets must be renamed with the new index name to be accessible. You can set up a special user's catalog for all of these MVS data sets.
- The default value for index is the high-level index of the CA View database.
- Specify the unit name of the pool of optical disk volumes as unit.
- Specify the block size to be used as blksize. The default is 1/2 track 3390.

DSK2PARM: Kodak Optistar Page Level Driver

Specify the unit name of the optical disk for unit.

Syntax:

`DSK2PARM=`*`unit/volser1/volser2/ssid`*

Notes:

- Specify the lowest volume serial number in the range as volser1 and the highest volume serial number in the range as volser2.

  The serial numbers for the range of emulated tape volumes must be the same length, must end with one or more digits, and must have matching beginning alphabetic characters (if any).
- Whenever a new emulated tape is required for archival, the next tape in the range is used. When the end of the range is reached, the first tape in the range is used.
- The range of emulated tape volumes must already be defined and initialized within the optical disk device.
- Specify the MDRS one-character subsystem identifier for ssid. The default ssid is S.

DSK2PARM: FileTek Drivers

Specify the high-level index prefix for creating file names on the Storage Machine as INDEX. The syntax is as follows:

Syntax:

DSK2PARM=*index/account/password/smid*

Specify the high-level index prefix to use to create file names on the Storage Machine as INDEX. The syntax is:

Syntax:

DSK2PARM=index/account/password/smid

Notes:

- The index can consist of a maximum of 17 characters.

The default value for index is the high-level index of the CA View database.

The value for account specifies the account identification code for the storage machine as account and can be a maximum of 8 characters.

The value for password specifies the account password for the storage machine and can be a maximum of 8 characters.

The value for smid specifies the storage machine identifier and can be a maximum of 6 characters.

Example: FileTek DSK2PARM

To use the default storage machine, omit the SMID parameter. For example:

```
DSK2PARM=SARP.SYSTEM1/VIEW/SARPSWD
```

This example specifies an index prefix of VIEW.SYSTEM1, an account identification code of VIEW, an account password of SARPSWD, and a default *smid*.

DSK2PARM: Kodak Optistar Report Level Driver

Specify the unit name of the optical disk for UNIT. The syntax is as follows:

Syntax:

DSK2PARM=*unit/volser1/volser2*

Notes:

Specify the lowest volume serial number in the range as volser1 and the highest volume serial number in the range as volser2.

The serial numbers for the range of emulated tape volumes must be the same length, must end with one or more digits, and must have matching beginning alphabetic characters (if any).

- Whenever a new emulated tape is required for archival, the next tape in the range is used.

  When the end of the range is reached, the first tape in the range is used.

- The range of emulated tape volumes must already be defined and initialized within the optical disk device.

Adding the MOUNT Attribute: Kodak Optistar Report Level Driver Only

This step is optional. Because the Kodak Optistar optical disk device appears to the system as a tape device, the emulated tape volumes must be mounted before being accessed.

If you are using the report-level driver and you intend to allow TSO users to access SYSOUT groups on optical disk storage, you must assign the mount attribute to those TSO users. Consult your optical disk device documentation for possible alternatives to setting the mount attribute.

Note: The Kodak Optistar page level driver uses the services of MDRS, which performs the mounts automatically for the TSO user. Do not assign the mount attribute for users of the page-level driver.

The TSO ACCOUNT command can be used to assign the mount attribute as follows:

```
ACCOUNT
C (user ID) MOUNT
END
```

Step 3: Set Initialization and ERO Table Parameters

Set optical migration options in the ERO table (with disk and tape migration options) using the following keywords:

DSK2DAYS
DSK2NOTP

The values for these keywords are explained in the following sections.

DSK2DAYS: Initialization Parameter and ERO Table Parameter

The DSK2DAYS ERO table parameter specifies the number of days a SYSOUT group with expanded retention status is to remain on primary disk before it is migrated to secondary disk and deleted from primary disk.

Syntax:

DSK2DAYS=*nnn*

Only SYSOUT groups with permanent retention status are eligible for migration to optical disk.

The DSK2DAYS SARINIT initialization parameter sets a global default for a CA View database.

Setting DSK2DAYS=0 specifies that SYSOUT groups are to be migrated to optical disk with the next scheduled optical migration. The default is 999, which specifies that SYSOUT groups are never to be migrated to optical disk.

Notes:

- For more information, see the section Writing ERO Table Statements in the chapter "Expanded Retention Option."
- For more information about using SARINIT, see Setting and Changing Initialization Parameters in the chapter "Initialization Parameters."

DSK2NOTP: ERO Table Parameter

The DSK2NOTP ERO table parameter specifies that once a report resides on optical disk, the tape backup, if it exists, is deleted. If the parameter is not specified, tape backups are still maintained.

Syntax:

```
DSK2NOTP
```

Example

Use the following statement to indicate that a tape backup is never to be created by the SAR standard backup cycle.

```
DSK2NOTP   DSK2DAYS=0
```

However, if these circumstances occur:

- You specify that the CA View backup cycle is to perform optical migration (B value for DSK2MIGD initialization parameter)
- An INTERIM backup runs before the report migrates to optical

the report will be backed up to tape.

Customization using SARD00UX User Exit

Sites that use the IBM model 3995 153 optical drives can code user exit SARD00UX to customize optical migration completely. SARD00UX has access to all attributes of the report, as contained in the GCR (group control record).

Possible applications are:

- Reports that are under 25 KB do not migrate to optical
- Reports that are over 3 MB do not migrate to optical

Note: For more information about source code, see SARD00UX.

Migration Options

You have many options for how and when reports will be migrated to optical disk. The following table shows all migration options, and how to implement them. Migration to optical means that a report on primary disk is written to optical, and then the report is deleted from primary disk.

Reports with these requirements	Should have these ERO statements
(Report ID: DAILY) ■ Stay on primary disk for 3 days ■ Stay on tape backup for 6 months ■ Never go to optical disk	/DAILY DRETPD=3 RETPD=180 DSK2DAYS=999 ALL
(Report ID: MONTHEND) ■ Stay on primary disk for 30 days ■ Migrate to optical after 30 days, and stay for 7 years ■ Also kept on tape backup for 7 years	/MONTHEND RETPD=2557 DSK2DAYS=30 ALL DRETPD includes both primary (DASD) and secondary (optical) disk retention.
(Report ID: QRTREND) ■ Stay on primary disk and tape backup for 90 days ■ Migrate to optical after 90 days, and stay there for 7 years ■ Deleted from tape backup when migrated to optical	/QRTREND RETPD=2557 DSK2DAYS=90 DSK2NOTP ALL When you use DSK2NOTP, disk retention (DRETPD, DGENS, DCOPIES) and tape retention (RETPD, TGENS, TCOPIES) are to be equal. In this example, even though RETPD=2557, the reports are deleted from tape when they go to optical (90 days).
(Report ID: BIGRPT) ■ Migrate to optical from primary disk at the next opportunity ■ Stay on optical for 7 years ■ Never backed up to tape	/BIGRPT DSK2DAYS=0 RETPD=2557 DSK2NOTP ALL The reports are never backed up to tape, unless an interim backup cycle is run before the report migrates to optical.

Step 4: (Optional) Customize Optical Migration Scheduling

Optionally, you can use the following parameters to customize optical migration scheduling:

```
DSK2MIGD
DSK2TIME
DSK2INTV
```

Notes:

- These parameters work with the DAYS initialization parameter, which defines when the CA View backup cycle (migration to tape) is to occur.

  You can set a separate optical migration schedule for each day of the week.
- For automatic migration by the optical migration subtask, specify ranges of time for migration to occur, and ranges of idle time.
- This step is optional. By default, the CA View backup cycle performs all migration to optical disk.

Scheduling Parameters: DSK2MIGD

The DSK2MIGD specifies the type of optical migration that is to occur on each day of the week beginning with Monday. The syntax is as follows:

Syntax:

DSK2MIGD=*xxxxxxx*

where:

A

Specifies automatic scheduling.

Migration occurs during the time set by DSK2TIME.

Note: The optical migration subtask scans the database intelligently (not a repeat full pass each time), so processing time is minimized.

If a time range that is specified by DSK2TIME goes past midnight (for example, Friday 11 p.m. to 2 a.m. Saturday), only the day that the range begins (Friday) must be specified with an A.

M

Specifies that no automatic scheduling occurs.

Optical migration occurs when it is manually requested, through the operator commands.

B

Specifies that optical migration is performed by the CA View standard backup cycle.

Note: This option only migrates reports created in the current generation. If you reindex or manually mark an OPTICAL report from a previous generation, it remains on disk until you run SARDSK2B.

N

Specifies that no backup migration is to occur.

Backup does not occur even if operator commands to start up the optical migration task are issued .

This option is provided so that you can be certain that no optical migration can occur during a specific time.

The default is BBBBBBB.

Scheduling Parameters: DSK2TIME

The DSK2TIME parameter specifies the time intervals during which optical migration is to automatically occur.

Syntax:

DSK2TIME=*nnnn-nnnn*,…

Automatic migration is activated by an A value for the DSK2MIGD parameter. Up to four ranges can be specified.

The default is 0000 to 2400.

Scheduling Parameters: DSK2INTV

DSK2INTV specifies the amount of time the optical migration task is to wait (idle time) before scanning the database again.

Syntax:

DSK2INTV=*hhmm*

Notes:

- This parameter works with the DSK2MIGD and DSK2TIME parameters to schedule automatic optical migration.
- Automatic migration is activated by an A value for the DSK2MIGD parameter.
- DSK2INTV is also used as the idle time interval whenever the optical migration task is manually started..

The default is 0015.

Valid values for *hh* are 00-24. Valid values for *mm* are 00-59. The maximum value for this parameter is 2400.

Scheduling Optical Migration

You have many options for scheduling optical migration. This table lists the possible scheduling requirements and how to implement them.

Optical migration occurs	When you specify these parameters
Each night by the CA View standard backup cycle	DSK2MIGD=BBBBBBB DAYS=YYYYYYY The DAYS initialization parameter determines what days of the week the CA View backup cycle is run.
Automatically, by the optical migration subtask, Monday through Friday only Every 45 minutes from 9 p.m. to 11 p.m., and every 45 minutes from 1 a.m. to 5 a.m.	DSK2MIGD=AAAAANN DSK2INTV=0045 DSK2TIME=2100-2300,0100-0500
When the system administrator manually invokes the optical migration subtask (no automatic migration)	DSK2MIGD=MMMMMMM

Step 5: Run SARINIT

Run SARINIT to set the initialization parameters you specified in Step 3 for the database.

Note: For more information about setting the initialization parameters for a CA View database by running SARINIT, see the section Setting and Changing Initialization Parameters in the chapter "Initialization Parameters."

Operating the Optical Migration Subtask

Optical migration can be done as follows:

- By the backup cycle (disk to tape)
- By a batch job (SARDSK2B)
- By the optical migration subtask of the CA View started task

The optical migration subtask can be either automatically scheduled or manually invoked. The commands in the following sections are available for operating the subtask.

Starting the Optical Migration Subtask

Issue this operator command to start the optical migration subtask:

```
F SARSTC,DSK2 START
```

Stopping the Optical Migration Subtask

Issue this operator command to terminate the optical migration subtask:

```
F SARSTC,DSK2 STOP
```

Resuming Automatic Optical Migration

After the optical migration subtask has been stopped by the DSK2 STOP parameter, you can resume the automatic migration schedule by issuing the following operation command:

```
F SARSTC,DSK2 RESUME
```

Note: Automatic migration is determined by the DSK2MIGD, DSK2TIME, and DSK2INTV parameters.

Submitting the Optical Migration Batch Job

You can submit this batch job (in member SARDSK2B of CAI.CVDEJCL) to perform a single pass of the CA View disk database, and migrate any reports destined for optical disk.

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//SARDSK2B  EXEC PGM=SARDSK2B,PARM='VIEW.SYSTEM1'
//STEPLIB   DD  DSN=CAI.CVDELOAD,DISP=SHR
//SARD2LST  DD  SYSOUT=X,DCB=BLKSIZE=3990
//SARPATAB  DD  DSN=VIEW.SYSTEM1.SARPATAB(ER0),DISP=SHR
```

In the SARDSK2B statement, specify your CA View database as:

```
PARM='dbase.name'
```

SARD2LST DD Statement: Migration Report

The SARD2LST DD statement is optional. This statement creates the SARD2LST report, which lists any reports that were migrated to optical. Here is an example of the report:

```
11/10/2013 14:30:08                CA View Output Archival and Viewing (12.1)                Page     1
SARD2LST                          Reports Migrated To Secondary Disk - Batch Job

 Id                               Job Name Jobid      Gen   Seq Arc Date   Arc Time     Pages   Lines  Migrated
--------------------------------- -------- -------    ---  ---- ---------- --------     -----   ------ --------
 AAC                              CBROERIA JOB09130    10    52 11/09/2013 19:53:21         1       10  19:58:47
 AAC                              CBROERIA JOB09129    10    45 11/09/2013 19:53:16         1       10  19:58:47
 AAC                              CBROERIA JOB09128    10    38 11/09/2013 19:53:10         1       10  19:58:48
 AAC                              CBROERIA JOB09127    10    31 11/09/2013 19:53:04         1       10  19:58:49
 ACC                              CBROERIA JOB09130    10    54 11/09/2013 19:53:22         1       10  19:58:50
 ACC                              CBROERIA JOB09129    10    47 11/09/2013 19:53:17         1       10  19:58:51
 ACC                              CBROERIA JOB09128    10    40 11/09/2013 19:53:12         1       10  19:58:51
 ACC                              CBROERIA JOB09127    10    33 11/09/2013 19:53:06         1       10  19:58:52
 Total reports migrated to secondary disk = 8
```

SARPATAB DD Statement

The SARPATAB DD statement specifies the name of the data set containing your ERO (Expanded Retention Option) table.

This statement is required if you specify optical retention in your ERO table with the DSK2DAYS parameter. The optical subtask reads the ERO table to determine migration options.

Kodak Optistar Drivers

CA View migrates a SYSOUT group to optical disk when all of the following are true:

- The SYSOUT group is archived on primary disk
- The SYSOUT group has or will have permanent retention status
- The number of days since the SYSOUT group was archived exceeds the DSK2DAYS initialization parameter

Note: After a SYSOUT group is migrated to secondary disk storage, it continues to reside there until it is either deleted or it expires from ERO disk retention. ERO disk retention is specified by the DGENS, DCOPIES, or DRETPD ERO table statements.

Retrieving SYSOUT Data from Optical Disk (Report-Level Driver Only)

- If Your TSO User ID Has MOUNT Authority

  When you select a SYSOUT group that shows a status of DSK2, PDK2, or PRM2 (all of which indicate optical disk secondary storage), CA View reloads the entire SYSOUT from optical disk back into the CA View database.

  Note: DSK2, PDK2, or PRM2 all indicate optical disk secondary storage.

  You can explicitly request that the SYSOUT group be loaded back to the primary disk database. Use the L line command online or the /LOAD function when you are executing in batch using SARBCH.

- If Your TSO User ID Does Not Have MOUNT Authority

  You must use the L line command online or the /LOAD function when executing in batch using SARBCH.

  After the SYSOUT group is retrieved, it continues to reside in the CA View database (as well as on optical disk storage) until the backup cycle specified by the HOLDTEMP initialization parameter occurs.

  You can remove the SYSOUT group from the CA View database before the next backup cycle by:

  - Explicitly requesting its removal using the C line command online
  - Specifying the CLEAN option when starting the CA View started task.

Retrieving SYSOUT Data Is Retrieved from Optical Disk (Page-Level Driver Only)

When you select a SYSOUT group that shows a status of DSK2, PDK2, or PRM2 (all of which indicate optical disk secondary storage), CA View enables you to view or print the SYSOUT group directly. This is the preferred method of operation.

Note: DSK2, PDK2, or PRM2 all indicate optical disk secondary storage.

If necessary, you can explicitly request that the SYSOUT group be loaded back to the primary disk database using:

- The L line command online
- The /LOAD function when executing in batch using SARBCH.

Defining Optical Disk Data Sets

When SYSOUT groups are being migrated to optical disk storage, CA View creates data sets automatically. Only one SYSOUT data set is created for each emulated tape volume.

CA View continues to write SYSOUT groups to the data set on the emulated tape volume until the data set is full. Each SYSOUT group is separated from the next by an EOD record.

When a SYSOUT group is being written to secondary disk and the end of volume is reached, CA View does the following:

- Terminates the data set
- Allocates a new data set on the next emulated tape volume in the volume serial number range
- Continues writing to the new data set

DCB attributes for the data set are:

```
RECFM=VB
LRECL=32756
BLKSIZE=32760
```

Naming Optical Disk Data Sets

CA View assigns the data sets names as follows:

Syntax:

```
index.SARDSK2.Tnnnnnnn
```

where:

index

Specifies the high-level index naming prefix as defined by the DSK2PARM initialization parameter

nnnnnnn

Specifies the sequence number for the emulated tape data set

You specify the unit name and volume serial number range using the DSK2PARM initialization parameter.

Deleting Optical Disk Data Sets

As part of its backup cycle, CA View uncatalogs any emulated tape data set that is no longer needed. This determination is based either on the global settings specified in either the initialization parameters or on the entries in the Expanded Retention Option (ERO) table.

Note: For more information about initialization parameter, see Initialization Parameter Descriptions in the chapters "Initialization Parameters" and "Expanded Retention Option."

FileTek Drivers

CA View migrates a SYSOUT group to optical disk when all of the following are true:

- The SYSOUT group is archived on primary disk
- The SYSOUT group has or will have permanent retention status
- The number of days since the SYSOUT group was archived exceeds the DSK2DAYS initialization parameter

After migrated to secondary disk storage, a SYSOUT group continues to reside there until deleted, or until it expires from ERO disk retention. ERO disk retention is specified by the DGENS, DCOPIES, or DRETPD ERO table statements.

Retrieving SYSOUT Data from Optical Disk (Page-Level Driver Only)

When you select a SYSOUT group that shows a status of DSK2, PDK2, or PRM2 (all of which indicate optical disk secondary storage), CA View enables you to view or print the SYSOUT group directly. This is the preferred method of operation.

Note: DSK2, PDK2, or PRM2 all indicate optical disk secondary storage.

If necessary, you can explicitly request to load the SYSOUT group back to the primary disk database by using:

- The L line command online
- The /LOAD function when you are executing in batch using SARBCH

Defining Optical Disk Data Sets

When migrating SYSOUT groups to optical disk storage, CA View creates a separate file on the storage machine for each SYSOUT group migrated. CA View writes the data in compressed format in blocks of 32760 bytes.

Optical Disk Naming Conventions

The names of the files on the Storage Machine are assigned names as follows:

Syntax:

`index.SARDSK2.Ddddddd.Gggggggg`

where:

index

Specifies the high-level index naming prefix as defined by the DSK2PARM initialization parameter

ddddddd

Specifies the optical sequence number for the SYSOUT group

gggggggg

Specifies the generation number for the SYSOUT group

Deleting Optical Disk Data Sets

As part of its backup cycle, CA View deletes any file from the storage machine that is no longer needed. This determination is based either on the global settings specified in the initialization parameters or on the entries in the Expanded Retention Option (ERO) table.

Note: For more information about initialization parameter, see the section Initialization Parameter Descriptions in the chapters "Initialization Parameters" and "Expanded Retention Option."

OAM Drivers

CA View migrates a SYSOUT group to optical disk when all of the following are true:

- The SYSOUT group is archived on primary disk.
- The SYSOUT group has or will have permanent retention status.
- The number of days since the SYSOUT group was archived exceeds the DSK2DAYS initialization parameter.

After a SYSOUT group is migrated to secondary disk storage, it continues to reside there until it is either deleted or it expires from ERO disk retention. ERO disk retention is specified by the DGENS, DCOPIES, or DRETPD ERO table statements.

Retrieving SYSOUT Data from Optical Disk

When you select a SYSOUT group that shows a status of DSK2, PDK2, or PRM2 (all of which indicate optical disk secondary storage), CA View enables you to view or print the SYSOUT group directly.

If necessary, you can explicitly request to load the SYSOUT group back to the primary disk database using the L line command online or by using the /LOAD function when executing in batch using SARBCH.

How the Product Defines Optical Disk Objects

When migrating SYSOUT groups to optical disk storage (that is, OAM), CA View creates one or more objects for each SYSOUT group migrated. An object is stored in compressed format in a unit of up to 100 logical blocks of 32,760 bytes each; all objects, except for the last, are stored as 100 logical blocks, or 3,276,000 bytes.

Naming Optical Disk Objects

The collection name used for all objects in a single CA View database is as follows:

Syntax:

index.SARCOLL

The object names have the format:

index.D*ddddddd*.G*gggggggg*.O*ooooooo*

where:

index

Specifies the high-level index naming prefix as defined by the DSK2PARM initialization parameter

ddddddd

Specifies the optical sequence number for the SYSOUT group

gggggggg

Specifies the generation number for the SYSOUT group

ooooooo

Specifies a sequential number starting with 1, used to identify each member of a SYSOUT group

Note: User exit SARD05UX can be coded to modify the collection names. For more information about user exit, see the comments in the SARD05UX source code for specifications.

Deleting Optical Disk Objects

As part of its backup cycle, CA View deletes any objects that are no longer needed. This determination is based either on the global settings specified in the initialization parameters or on the entries in the Expanded Retention Option (ERO) table.

Note: For more information about initialization parameter, see the chapters "Initialization Parameters" and "Expanded Retention Option."

IBM DASD Emulation Optical Drivers

CA View migrates a SYSOUT group to optical disk when all of the following are true:

- The SYSOUT group is archived on primary disk
- The SYSOUT group has or will have permanent retention status
- The number of days since the SYSOUT group was archived exceeds the DSK2DAYS initialization parameter

After migrated to secondary disk storage, a SYSOUT group continues to reside there until deleted, or until it expires from ERO disk retention. ERO disk retention is specified by the DGENS, DCOPIES, or DRETPD ERO table statements.

How the Product Retrieves SYSOUT Data from Optical Disk

When you select a SYSOUT group that shows a status of DSK2, PDK2, or PRM2 (all of which indicate optical disk secondary storage), CA View enables you to view or print the SYSOUT group directly.

If necessary, you can explicitly request to load the SYSOUT group back to the primary disk database using the L line command online or by using the /LOAD function when executing in batch using SARBCH. If you are using CA View under VM/CMS, you must use the L command or the /LOAD function; you cannot retrieve data from optical disk by selecting it within CA View.

How the Product Defines Optical Disk Data Sets

When migrating SYSOUT groups to optical disk storage, CA View creates a separate data set for each SYSOUT group migrated. The data sets are allocated using the unit name specified in the DSK2PARM initialization parameter. CA View writes the data in compressed format in blocks, using the block size specified in the DSK2PARM parameter.

Optical Disk Naming Conventions

The data sets are assigned names in the form:

index.SARDSK2.D*ddddddd*.G*gggggggg*

where:

index

Specifies the high-level index naming prefix as defined by the DSK2PARM initialization parameter

ddddddd

Specifies the optical sequence number for the SYSOUT group

gggggggg

Specifies the generation number for the SYSOUT group

Deleting Optical Disk Data Sets

As part of its backup cycle, CA View deletes any data set that is no longer needed. This determination is based either on the global settings specified in the initialization parameters or on the entries in the Expanded Retention Option (ERO) table.

Note: For more information about initialization parameter, see Initialization Parameter Descriptions in the chapters "Initialization Parameters" and "Expanded Retention Option."

Optical Disk Database Maintenance

The UNLOAD and MERGE functions of the CA View database maintenance utility (SARDBASE) contain parameters to support optical disk storage.

Note: For more information about these functions, see Database Maintenance with SARDBASE in the chapter "Database Utilities."

Only MERGE Moves Optical Disk Data

The MERGE function should be used for reloading the actual SYSOUT data from secondary disk storage. The COPY and LOAD functions copy the index information about the SYSOUT groups on secondary disk storage. In other words, COPY and LOAD merely transfer ownership of the secondary disk storage data that is already archived, while the MERGE actually reloads the data to another optical disk data set.

In addition to merging multiple databases together, you can use the merge function to replace one type of secondary disk device with another, to consolidate the archived secondary disk storage, and to replace secondary disk storage with primary disk.

MERGE Statement Prerequisite

When performing a MERGE function with an input database that contains any SYSOUT groups archived to secondary disk storage, the contents of the secondary disk SYSOUT groups must have been unloaded with SECOND specified on the UNLOAD control statement (UNLOAD Control Statement later in this chapter). The MERGE function will then reload the SYSOUT groups based upon the secondary disk operands on the MERGE command.

UNLOAD Control Statement

The UNLOAD control statement allows for unloading the SYSOUT data for SYSOUT groups archived to secondary disk storage.

Syntax:

```
UNLOAD SECOND|NOSECOND
```

where:

SECOND

Does not unload the SYSOUT data for SYSOUT archived to secondary disk storage.

NO SECOND

Does not unload the SYSOUT data for SYSOUT archived to secondary disk storage.

The SECOND/NOSECOND parameter has a default value of NOSECOND. Specifying SECOND can substantially increase the time required to perform the UNLOAD function.

Whether or not you specify SECOND when unloading, the LOAD function never reloads the SYSOUT data for SYSOUT groups archived to secondary disk storage. The LOAD function merely transfers ownership of the secondary disk storage that is already archived.

You must specify SECOND when unloading the databases if you are going to use the MERGE function, because the MERGE function always reloads the SYSOUT data, either to primary or secondary disk.

MERGE Control Statement

The syntax of the MERGE control statement is as follows:

Syntax:

```
MERGE tape-index driver parameters
```

where:

tape-index

Specifies the high-level naming prefix to be set for the TAPEIDX initialization parameter.

If omitted, TAPEIDX is set to the name of the output database.

driver

Specifies the required name of the secondary disk storage driver.

This name must be the same as the one specified by the DSK2DRVR initialization parameter. Specify SARD2D0x for the optical disk driver you have purchased. Replace the x with the driver number described in Driver Names and Types earlier in this chapter.

parameters

Specifies the required unit name and volume serial number range for the secondary disk storage driver as defined by the DSK2PARM initialization parameter.

The parameters are required when you specify a driver name.

- For the Kodak Optistar Report-Level Driver, the format of this operand is: unit/volser1/volser2

Note: For more information about these identifiers, see the section DSK2PARM: Kodak Optistar Report-Level Driver earlier in this chapter.

- For the Kodak Optistar Page-Level Driver, the format of this operand is: unit/volser1/volser2/ssid

Note: For more information about these identifiers, see the section DSK2PARM: IBM Page-Level Driver for Models 131, 132, 133 earlier in this chapter.

- For the IBM DASD Emulation Optical Driver, the format of this operand is: index/unit/blksize

Note: For more information about these identifiers, see the section DSK2PARM: IBM Page Level Driver for Models 131, 132, 133 earlier in this chapter.

MERGE Command Operand Restrictions

Since the operands for the MERGE command are positional, specify an asterisk to indicate the omission of the *tape-index* operand when you code the *driver* and *parameters* operands.

To prevent conflicts with any existing archive tapes, MERGE requires that the high-level naming prefix for tapes be different from those for any other tapes defined in the input databases.

To Reload from Optical Disk to the Database

If you omit the *driver* operand, you must also omit the *parameters* operand. When the *driver* and *parameters* operands are omitted, at MERGE time any SYSOUT groups unloaded from the optical disk are reloaded to the primary disk CA View database.

Chapter 12: Security

This section contains the following topics:

Overview (see page 543)
Internal Security (see page 544)
External Security (see page 547)

Overview

This chapter explains the CA View security features including:

- Internal security
- External security
  - Types of resources protected
  - Levels of security access
  - How to implement external security for CA Top Secret, CA ACF2, and IBM's RACF

CA View requires UPDATE authority to:

- Access the database to save user profile information such as last access date, current access mode
- Retain access information such as the last time the report was browsed

SARXMS users do not need UPDATE access. In this case, the ACID associated with the SARXMS task needs UPDATE authority. After the users gain access, their authority to perform online functions is controlled by the security rules that have been built.

In addition, you can secure CA View database data sets from being accessed by other applications by using the SARXTD system extensions.

By turning on the dataset security option in SARXTD you can secure CA View data sets so that only CA View utilities can have access. All other utilities fail if they try to access a data set with the HLQ specified in the SARXTD parameters.

Note: For more information about securing data sets in CA View using SARXTD, see System Extensions in the chapter "Configuring".

Internal Security

The product provides the following security features:

- Initialization parameters
- Logon user exits
- Security user exit (SARSECUX)
- Password protection

You can select one or more of these features as necessary.

More information:

Initialization Parameters (see page 35)

Initialization Parameters

The SECURITY initialization parameter affects the operation of internal and external security. For internal security, the SECURITY initialization parameter has three settings:

```
SECURITY=INIT|INTERNAL|LOGON
```

The SECURITY initialization parameter indicates whether database security is based on:

- The DEFMODE initialization parameter
- User definition records
- External security calls

If INIT is specified, a new user can access a database if the DEFMODE initialization parameter is not set to *NNNNN*; otherwise, the user name must be predefined to the database.

INTERNAL is similar to INIT except that the password for an existing user is verified with the predefined user definition.

LOGON uses your external security product to verify the USERID/PASSWORD, but no other security checks are performed.

Note: The CA View security exit (SARSECUX) is still invoked. This allows you write your own customized security model.

Logon Security

The SARUS*x*UX user exits control CA View logon security. Internal and external logon security is provided as a standard feature. These user exits can, however, be customized for special security needs.

Interface	Exits Used
Batch facility	SARUSBUX
Native TSO	SARUSTUX
TSO/cross-memory services	EBCTSOUX SARUSXUX
ISPF	SARUSTUX
ISPF/cross-memory services	EBCSPFUX SARUSXUX
CA Roscoe	SARUSRUX
CA Roscoe/cross- memory	EBCROSUX SARUSXUX
CICS	XMSCICUX SARUSXUX
IMS	XMSCIIUX
DRAS	SARUSDUX

Security User Exit: SARSECUX

Use user exit SARSECUX to determine whether a user or job is authorized to access, update, or delete data within the CA View database.

SARSECUX is invoked for each individual entry that is being accessed, updated, or deleted. The Security Parameter List (mapped by the SARCPL macro) is passed to the exit. The list contains information about the authorization request such as the function being performed and the data being accessed.

Based on this information, access to the data can be granted, denied, or the product can be allowed to determine accessibility to the data. If the product is permitted to determine accessibility to the data, internal or external security can be performed based on the setting of the SECURITY initialization parameter.

For online retrieval, SARSECUX is invoked:

- For each entry to be displayed in a selection list
- When an entry in the selection list is selected for processing

For batch retrieval, SARSECUX is invoked:

- For each entry to be listed as a result of the LIST function
- When a SYSOUT group is selected for processing

For CA DRAS, SARSECUX is invoked:

- For each entry to be presented in a list
- When an entry in the list is selected for processing

CA View also provides security at the report level through user modes and private report viewing.

Authorization User Exit: SARATHUX

Use user exit SARATHUX to determine whether a specified job is authorized to perform high-level database functions.

CA View passes the request type and request data that requires authorization to the exit. Based on this information, access to the data can be granted, denied, or the product can be allowed to determine accessibility to the database function. If SARATHUX it lets CA View determine accessibility to the database function, external security requests are issued to validate authorization.

The standard exit that is supplied with CA View authorizes all jobs to perform all database functions. If external security is wanted for database functions, install the SARATHU1 CVDEOPTN source member with CVDEJCL member BRMSATHX.

Password Protection

CA View provides batch and online facilities for defining user IDs and passwords to a database.

If you do not want external security, these user ID and password definitions can be used to verify user access to a database.

For internal user ID and password security, set the SECURITY initialization parameter to INTERNAL.

External Security

The sections that follow demonstrate how to implement external security for the following security managers:

- CA Top Secret Security
- CA ACF2 Security
- IBM's RACF

CA View performs external security authorization based on a resource type and name:

- The resource type represents a predefined name, and the resource name identifies the data being accessed within the CA View database.
- The resource type and name correspond to the class and entity parameters of the RACROUTE macro.

If a user is not authorized to specific data within the CA View database, a violation is recorded.

Note: Since the CA View external security processing verifies the user's authorization for every object requested, you can minimize the impact on performance by using a wildcard character to request only specific data.

Be aware that the implementation procedures presented in this section are examples only. You must determine what the appropriate settings are for your environment.

Important! These examples authorize all users to do everything. We recommend that the CA View Administrator and the Security Administrator work together to do the implementation as a cooperative effort.

More information:

Initialization Parameters (see page 35)

Initialization Parameters

Four initialization parameters affect the operation of external security.

- SECURITY=EXTERNAL

  The SECURITY initialization parameter indicates whether database security is based on external security calls. When the SECURITY initialization parameter is set to EXTERNAL, user and resource verification is performed through an external security product (RACROUTE calls).

- SECTRAN=

  If you use external security (RACF, CA ACF2 Security, CA Top Secret Security) and the report id contains characters from the extended special character set, you must set SECTRAN=YES. This setting causes the extended special characters to be automatically translated to '_' underscores before the RACROUTE security call.

  Note: For more information about this parameter,see Character Translations (see page 554).

- SECID=*secid*

  The SECID initialization parameter specifies a one- to eight-character identifier that prefixes the resource name. The default of the SECID initialization parameter is VIEW.

- SECLIST=NONE|ALL|REPORT,INDEX,DEFINE

  The SECLIST initialization parameter specifies whether selection lists are to be limited to data accessible by the user.

  NONE indicates that all of the selection list data is presented to the user and accessibility is determined after the user selects the data.

  ALL indicates that all of the selection lists are to be limited to data that is accessible by the user.

  REPORT, INDEX, or DEFINE identify specific selection lists that are to be limited to data accessible by the user.

  - REPORT corresponds to the Sysout/Report Selection List
  - INDEX corresponds to the Index Name and Value Selection Lists
  - DEFINE corresponds to the User, Sysout, Distribution, Device, Filter, and View Definition Selection Lists.

  You can specify any combination of REPORT, INDEX, or DEFINE. The default for SECLIST is NONE.

For databases that are versioned from an earlier release, the previous ACF2 and RACF initialization parameters determine the settings of the SECURITY and SECID initialization parameters.

If the ACF2 or RACF initialization parameter is specified, SECID is set to that initialization parameter specification and SECURITY is set to EXTERNAL. Otherwise, SECURITY is set to INIT.

For reference purposes in this section, *secid* is used to identify the security identifier specified on the SECID initialization parameter.

Changes to View 2.0 External Security

The security package in CA View has extensive and complete security calls that are made for every end-user database access.

Beginning with r11, external security uses Resource Names (as compared to CA View 2.0 that used pseudo data set names). Release 11 also introduced 33 new security call functions. Some of these functions were new, such as Print Index and Create Banner. Some functions related to functions that did not require security, such as, Define Device and Create Annotation.

Security calls were added to SARMFP (the Microfiche Processing Utility) and to SARSAM (the SAR Database Access Method).

SARMFP now requires *read* authority (Function Code - CPLFSSL Sysout List) to migrate any Sysout to the microfiche output file. A Sysout cannot be migrated if access authority fails—in that case the Sysout is bypassed.

SARSAM now requires *read* authority for any sub-file based functions, specific to the sub-file type.

- Reading a panel sub-file requires *read* authority (Function Code 56 - CPLFPACC - Access On-line Panel).
- Reading a banner sub-file requires *read* authority (Function Code 52 - CPLFBACC - Access Banner Page).
- Reading a resource or Sysout sub-file requires *read* authority for both the sub-file (Function code 4 - CPLFBRS – Browse Sysout) and *read* authority to all pages (Function code 26 - CPLFAPGS - Access All Pages).

Resources and Authorizations

The product manages security with a single security class (CHA1VIEW) and fourteen resource types. Each resource type corresponds to data within the database or a database function as shown in the following table.

Resource Type	Resources Protected
BANR	Banner page members
DBAS	SARDBASE functions
DEV	Device definition (DEF DEV command)
DIST	Distribution definition (DEF DIST command and user definition distribution identifier)
FILT	Filter definitions (DEF FILTER command)
IDXN	Index name
IDXV	Index value
NOTE	Annotations and bookmarks
PANL	Online panel members
REPT	Sysouts/Reports
RAPS	All pages of a Sysout/Report
SYS	Sysout definition (DEF SYS command)
USER	User IDs (DEF USER command)
VIEW	Logical Views

Internal security is mapped into four levels of access to be compatible with the external security managers. The levels are inclusive, a higher access level implies all lower levels. All lower levels are implied even when using CA ACF2, because of the nature of the product's SAF calls.

RACF	CA Top Secret	CA ACF2	Description
READ	READ	READ	Read access to resource data.
UPDATE	UPDATE	UPDATE	Update access to resource data
CONTROL	CONTROL	DELETE	Special update access
ALTER	ALL	ADD	Delete or rename resource data

For reference purposes, the RACF access levels are used.

The resource name is formatted with information that pertains to the resource type. The following table identifies the structure of the resource name.

Resource Type	Data Type	Resource Name
BANR	Banner page members	*secid.*BANR.*member*
DBAS	Database	DBAS.*dbhlq*
DEV	Device	*secid.*DEV.*devicename*
DIST	Distribution definition (DEF DISTID command) and user definition distribution id	*secid.*DIST.*distid*
FILT	Filter	*secid.*FILT.*filtername*
IDXN	Index name	*secid.*IDXN.*indexname* **Note:** Blanks, asterisks ("*"), and ampersands ("&") within the index name are translated to underscores ("_"), plus signs ("+"), and exclamation points ("!") respectively. This translation allows resource validation with all security products.
IDXV	Index value	*secid.*IDXV.*indexname.indexvalue* **Note:** Blanks, asterisks ("*"), and ampersands ("&") with in the index name and value are translated to underscores ("_"), plus signs ("+"), and exclamation points ("!") respectively. This translation allows resource validation with all security products.
NOTE	Annotation and bookmarks	*secid.*NOTE.*type.access.creator.notename* *type* indicates the type of note "A" for annotation or "B" for bookmark *access* indicates the visibility of the note "U" for private or "P" for public *creator* indicates the user ID that created the annotation or bookmark.

Resource Type	Data Type	Resource Name
PANL	Online panel member	*secid.*PANL*.member*
REPT	Sysout/Report	*secid.*REPT*.reportid*
RAPS	Sysout/Report	*secid.*RAPS*.reportid*
SYS	Sysout definition (DEF SYS command)	*secid.*SYS*.sysoutid* **Note:** An asterisk ("*") that ends a generic sysout identifier is translated to a plus sign ("+"). This translation allows resource validation with all security products.
USER	User ID (DEF USER command)	*secid.*USER*.userid*
VIEW	Logical view	*secid.*VIEW*.num.type.viewid* *num* – three digit numeric logical view number from 000 to 255 *type* – type of logical view. "G" for global view, "P" for public view, or "U" for private view. **Note:** An asterisk ("*") that ends a generic view identifier is translated to a plus sign ("+") to allow resource validation with all security products.

The DBAS resource type is the only resource type that does not contain the security identifier.

Certain SARDBASE utility functions can be performed before the initialization parameters for a database are set; therefore:

- The SARDBASE utility cannot necessarily determine the security identifier for a database.
- The SARDBASE utility omits the security identifier from the resource name.
- Security calls for the DBAS resource class are deactivated in the base product.

To implement DBAS security calls, you must use CVDEJCL member BRMSATHX to install the SARATHU1 exit in the CVDEOPTN library.

There is a special case for resource types BANR, DEV, DIST, FILT, NOTE, PANL, SYS, USER, and VIEW that determines whether the function can be performed.

- To perform a given function at all, the user must at least have READ access to a resource named "*secid*.*resourcetype*." for each function.
- A user, for example, who does not have READ access to "*secid*.VIEW." is not able to issue the DEF VIEW command or issue the VIEW command from browse.

You can define "*secid.VIEW*" as a generic resource works but, of course, gives read access to every resource of that type.

To avoid giving this type of access, grant READ access to a non-generic resource: "*secid*.*resourcetype*." instead of "*secid*.*resourcetype*.*" or "*secid*.*resourcetype*.(G)".

Resource Type	Data Type	Resource Name
BANR	Banner page members	*secid.*BANR.*member*
DBAS	Database	DBAS.*dbhlq*
DEV	Device	*secid.*DEV.*devicename*
DIST	Distribution definition (DEF DISTID command) and user definition distribution id	*secid.*DIST.*distid*

Character Translations

Certain characters that are allowable in report names and other definitions can be treated as 'wildcards' by some security products.

When the following characters appear in a resource name they are translated to the character specified:

- All Resource Names

Character	Translated to
& (ampersand)	! (exclamation)
* (asterisk)	+ (plus)
%(percent)	| (bar)

- Index names and values:

  IDXN--Index name secid.IDXN.indexname

  IDXV--Index value secid.IDXV.indexname.indexvalue

Character	Translated to
' ' (blank)	_ (underscore)
* (asterisk)	+ (plus)
& (ampersand)	!(exclamation)
%(percent)	|(bar)

- Report Id, Sysout Id, Logical View, and distribution id:

REPT	Report definition	secid.REPT.reportid
RAPS	All pages of report	secid.RAPS.reportid
SYS	Sysout definition	secid.SYS.sysoutid
VIEW	Logical view	secid.VIEW.num.type.viewid
DIST	Distribution Id	secid.DIST.distid

Character	Translated to
' ' (blank)	_ (underscore)
& (ampersand)	!(exclamation)
* (asterisk)	+ (plus)
%(percent)	| (bar)

- If **SECTRAN=YES** specified - Report Id, Sysout Id, Logical View, and distribution id:

REPT	Report definition	secid.REPT.reportid
RAPS	All pages of report	secid.RAPS.reportid
SYS	Sysout definition	secid.SYS.sysoutid
VIEW	Logical view	secid.VIEW.num.type.viewid
DIST	Distribution Id	secid.DIST.distid

Character	**Translated to**
& (ampersand)	! (exclamation)
* (asterisk)	+ (plus)
% (percent)	| (bar)
‘ ‘ (blank)	_ (underscore)
¢ (cent sign)	_ (underscore)
! (exclamation point)	_ (underscore)
/ (slash)	_ (underscore)
< (less than)	_ (underscore)
((left parentheses)	_ (underscore)
| (bar)	_ (underscore)
) (right parentheses)	_ (underscore)
; (semicolon)	_ (underscore)
¬ (not sign)	_ (underscore)
¦ (broken bar)	_ (underscore)
, (comma)	_ (underscore)
> (greater than)	_ (underscore)
? (question mark)	_ (underscore)
: (colon)	_ (underscore)
‘ (single quote)	_ (underscore)
= (equal sign)	_ (underscore)
" (double quote)	_ (underscore)

The access level required for the resource type is associated with functions in the SARCPL security block. The SARCPL security block is also passed to the SARSECUX user exit.

This table identifies the access level that is required for each of the resource types for the SARCPL functions.

Resource Type	Access Level	SARCPL Type	Function
BANR	READ	CPLFBSL, CPLFBACC	Access a banner page member
	ALTER	CPLFBDEL	Delete a banner page member
DBAS	READ		SARDBASE IDXOUT function SARDBASE STATUS function
	UPDATE		SARDBASE BLOAD function SARDBASE CONVERT function SARDBASE COPY function SARINIT function SARDBASE LOAD function SARDBASE MERGE function SARDBASE OLOAD function SARDBASE REORG function SARDBASE RESTORE function SARDBASE SET function SARDBASE UNLOAD function SARDBASE VERIFY function SARDBASE VERIFY function SARDBASE VERSION function
	CONTROL		SARDBASE ADDDS function
	ALTER		SARDBASE DELETE function SARDBASE RENAME function
DEV	READ	CPLFCSL, CPLFCACC	Access device definition
	UPDATE	CPLFCMOD	Add or change device definition
	ALTER	CPLFCDEL	Delete device definition
DIST	READ	CPLFDSL, CPLFDACC, CPLFDIST	Access distribution definition

Resource Type	Access Level	SARCPL Type	Function
	UPDATE	CPLFDMOD	Add or change distribution definition
	ALTER	CPLFDDEL	Delete distribution definition
FILT	READ	CPLFFSL, CPLFFACC	Access filter rules
	UPDATE	CPLFFMOD	Add or change filter rules
	ALTER	CPLFFDEL	Delete filter rules
IDXN	READ	CPLFIFL, CPLFIFS	Access index name
IDXV	READ	CPLFISL, CPLFISS	Access index value
NOTE	READ	CPLFNASC	Access annotation or bookmark
	UPDATE	CPLFNCSC	Add or change annotation or bookmark
	ALTER	CPLFNDSC, CPLFNDEL	Delete annotation or bookmark
PANL	READ	CPLFPSL, CPLFPACC	Access an online panel member
	ALTER	CPLFPDEL	Delete an online panel member
REPT	READ	CPLFSSL, CPLFBRS CPLFLD	Sysouts/Reports Load a report from tape
	UPDATE	CPLFCHG, CPLFPRT, CPLFOPRT, CPLFTMNT	Print a report, load a report, or change user field information (online retrieval)
	CONTROL	CPLFCHG, CPLFKEEP, CPLFKTAP, CPLFKDEL, CPLFINDX, CPLFCLN, CPLFMIG CPLFDELD	Keep, re-index, clean, migrate, delete disk, or change (batch retrieval) a report
	ALTER	CPLFDEL	Delete a report

Resource Type	Access Level	SARCPL Type	Function
RAPS	READ	CPLFAPGS	Access to all page of report
SYS	READ	CPLFYSL, CPLFYACC	Access a sysout definition
	UPDATE	CPLFYMOD	Add or update a sysout definition
	ALTER	CPLFYDEL	Delete a sysout definition
USER	READ	CPLFUSL, CPLFUACC	Access user definition
	UPDATE	CPLFUMOD	Add or update a user definition
	ALTER	CPLFUDEL	Delete a user definition
VIEW	READ	CPLFVSL, CPLFVACC	Access a logical view definition
	UPDATE	CPLFVMOD	Add or update a logical view definition
	ALTER	CPLFVDEL	Delete a logical view definition

The following sections list the steps necessary to implement support of external security with the product. There are descriptions and sample jobs for CA Top Secret, CA ACF2, and IBM's RACF. For simplicity, the examples assume that the SECID initialization parameter is set to "VIEW".

Implementing External Security for CA Top Secret

Note: For more information about the commands listed in this section, see the *CA Top Secret Command Functions Guide*. The sample jobs can be found in CVDEOPTN member SARTSS.

Follow these steps:

1. Add the CA View resource types (classes) to the Resource Descriptor Table, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//RDT EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS ADDTO(RDT) RESCLASS(CHA1VIEW) RESCODE(20) +
ATTR(LONG,MASK) DEFACC(NONE) +
ACLST(ALL,CONTROL,UPDATE,READ,NONE) +
/*
```

Note: CA Top Secret does not normally resolve authority in hierarchies. This depends on how a resource class is defined to the Resource Descriptor Table (RDT). The RDT documentation sample given for CA View resource class CHA1VIEW shown in the previous example does not allow hierarchical access.

For hierarchical checking, access level masks in the RDT ACLST should be specified in descending hexadecimal order and defined so that CONTROL access includes UPDATE and READ access and UPDATE access includes READ access.

For example, based on the following ACLST definition:

```
ACLST(ALL(FFFF),CONTROL(6400),UPDATE=(6000),READ=(0400),NONE(0000))
```

The bit pattern for CONTROL access (6400 = 011001..) includes the bits set for UPDATE (011...) which in turn includes the bit set for READ (01...) access.

Note: To support security checking on fully qualified resource names - including characters from the expanded special character set, the CA View resource class has to be defined with the NOMASK and NONGENERIC attributes as follows:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//RDT EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS ADDTO(RDT) RESCLASS(CHA1VIEW) RESCODE(20) +
ATTR(LONG,NOMASK,NONGENERIC) DEFACC(NONE) +
ACLST(ALL,CONTROL,UPDATE,READ,NONE)
/*
```

Altering the CA View resource class to NOMASK from MASK makes existing resources un-administrable. Before making such a change, we recommend that all existing permissions and ownerships be revoked and removed, then re-administered after the attribute change.

2. Create a department to own the resources, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//DEPT EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS CREATE(VIEWDEPT) TYPE(DEPT) NAME('VIEW DEPARTMENT')
/*
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//OWNER EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS ADDTO(VIEWDEPT) CHA1VIEW(VIEW.)
TSS ADDTO(VIEWDEPT) CHA1VIEW(DBAS.)
/*
```

3. Make a profile and permit resource access to it, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//PROFILE EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS CREATE(VIEWPROF) TYPE(PROFILE) NAME('VIEW') DEPT(VIEWDEPT)
/*
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//PERMIT EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS PERMIT(VIEWPROF) CHA1VIEW(VIEW.) ACCESS(ALL) ACTION(FAIL)
TSS PERMIT(VIEWPROF) CHA1VIEW(DBAS.) ACCESS(ALL) ACTION(FAIL)
/*
```

4. Add the profile to a user, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//ADDTO EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
TSS ADDTO(userid) PROFILE(VIEWPROF)
/*
```

Steps for Converting CA View 2.0 CA Top Secret Permissions

Prior to r11, CA View used the DATASET resource class to secure the resources with CA Top Secret.

Starting with CA View r11, a resource class of CHA1VIEW is used. Therefore, the old CA View DATASET permissions are to be converted to the new resource class CHA1VIEW.

Use these guidelines to convert the permissions.

1. This command generates a list of users with permission to access CA View resources that are to be converted:

   ```
   TSS WHOHAS DSN(VIEW)
   ```

   Note: Prior to CA View r11, the RACF= parameter determined the high level qualifier for the resource names. In the above example, RACF= is shown as 'VIEW'. Replace 'VIEW' with the value you specified for RACF= in your previous CA View release.

2. Enter the following command to add the resource class CHA1VIEW to CA Top Secret:

   ```
   TSS ADD(RDT) RESCLASS(CHA1VIEW) ATTR(LONG,MASK,GENERIC)
   ACLST(READ,UPDATE, DELETE=E000,ADD=F000) DEFACC(READ)
   ```

3. Enter the following command to secure all CA View resources:

   ```
   TSS ADD(owningacid) CHA1VIEW(CAVIEW.)
   ```

4. For CA View 2.0, the following command permits the report 'SALESREPORT':

   ```
   TSS PERMIT(acid) DSN(VIEW.SALESREP.$ORT)
   ```

   For the new resource class, the following command permits the report:

   ```
   TSS PERMIT(acid) CHA1VIEW(CAVIEW.REPT.SALESREPORT) ACCESS(READ)
   ```

   Notes:

   - Starting with CA View r11, a parameter called SECID= determines the high-level qualifier for the resource names. In the above example, SECID= is set to 'CAVIEW'. Replace 'CAVIEW' with the value you specified for SECID=.
   - For more information about usage and syntax of the TSS commands, see the *CA Top Secret Command Functions Guide*.

Implementing External Security for CA ACF2

Note: For more information about the commands listed in this section, see the *CA ACF2 Administration Guide*. The sample jobs can be found in CVDEOPTN member SARACF2.

For CA ACF2, a unique resource type is assigned for the CA View resource. The mapping of these resource types is identified in the following table:

Resource Type	CA ACF2 Type
CHA1VIEW	VCL

Follow these steps:

1. Map the CA View resource types to CA ACF2 resource types, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//CLAS EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
ACF
SET CONTROL(GSO)
INS CLASMAP.CHA1VIEW RESOURCE(CHA1VIEW) RSRCTYPE(VCL) ENTITYLN(246)
/*
```

2. Tell CA ACF2 about the SAF calls that CA View is making, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//SAFD EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
ACF
SET CONTROL(GSO)
INS SAFDEF.CHA1VIEW ID(CHA1VIEW) PROGRAM(SAR-) RB(SAR-) –
       NOAPFCHK RACROUTE(REQUEST=AUTH,CLASS=CHA1VIEW,STATUS=ACCESS)
/*
```

3. Make the resource types resident, for example:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//ACF2 EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
ACF
SET CONTROL(GSO)
CHANGE INFODIR TYPES(R-RVCL)
/*
```

4. Enter the modify console commands to cause a refresh, for example:

```
F ACF2,REFRESH(CLASMAP)
F ACF2,REFRESH(SAFDEF)
F ACF2,REFRESH(INFODIR)
```

5. Define CA ACF2 rules, for example:

   Note: The rule definitions used in the following example are contained in a separate member of a PDS, called *RULES.PDS*. For more information, see the topic PDS Members later in this chapter.

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//RULE EXEC PGM=IKJEFT01
//SYSPRINT DD SYSOUT=*
//SYSTSPRT DD SYSOUT=*
```

```
//SYSTSIN DD *
ACF
SET RESOURCE(VCL)
COMPILE 'RULES.PDS(VCL)'
STORE
/*
```

6. Tell CA ACF2 to rebuild the resident rules, for example:

```
F ACF2,REBUILD(VCL)
```

Note: ACF2 cannot be configured to operate in a hierarchical mode. If a non-privileged userid requires UPDATE and READ access to a resource, the ACF2 rule must include UPDATE and READ - UPDATE does not imply READ.

PDS Members

Following is the PDS member.

Member	Contents
VCL	* CHA1VIEW RESOURCES $KEY(VIEW) TYPE(VCL) - UID(*) SERVICE(ADD) ALLOW

Bypassing Password Verification

Once a user is logged onto one of these online interfaces, you can bypass password specification and allow the user to log on to a CA View database:

- CICS pseudo-conversational
- IMS
- ISPF/cross memory
- TSO/cross memory
- ROSCOE/cross memory

To implement this functionality, do the following:

1. Specify LGNSEC=YES for the cross-memory region startup parameter.
2. Specify the appropriate SARDEF records for CA ACF2.

Note:

- For more information about the LGNSEC parameter, see the *Installation Guide.*
- For more information about samples, see the sample SAFDEF records for CA ACF2 (additional modification may be required due to site requirements).

For the ISPF interface:

```
SAFDEF.SAR1 ID(SAR1) MODE(GLOBAL) PROGRAM(SARSPF) RB(SVC019) -
            RACROUTE(REQUEST=AUTH,CLASS=DATASET)
```

For the VTAM/XMEM interface:

```
SAFDEF.SAR3 ID(SAR3) MODE(GLOBAL) PROGRAM(EC1XMDRV) RB(SVC019) -
            RACROUTE(REQUEST=AUTH,CLASS=DATASET)

SAFDEF.SAR4 ID(SAR4) MODE(GLOBAL) PROGRAM(EC1VTDRV) RB(SVC019) -
            RACROUTE(REQUEST=AUTH,CLASS=DATASET)
```

Note: Issue the following ACF2 command to activate the above SAFDEF records:

```
F ACF2,REFRESH(SAFDEF)
```

Steps for Converting the CA ACF2 View Access Rule into CA ACF2 View Resource Rule

Starting with CA View Release 11 SAF calls are used to protect CA View resources through external security. Therefore, the CA ACF2 Data Set Access rules that protected these resources in previous releases must be converted to the CA ACF2 Resource Rule.

Note: For more information about implementing this procedure, see the CA ACF2 security section in this chapter.

Use the following guidelines to convert the CA View data set rule into a CA View resource rule.

1. Issue the following command to decompile the existing CA View access rule into a PDS.

   ```
   READY
   DECOMP view-rule into(rule.pds)
   ```

2. Edit the rule.pds member using any valid utility such as ISPF EDIT to ensure the following rule changes:

   a. Change the record from an access rule to a resource rule.

   b. Convert all access rule lines to include a resource rule SERVICE option and an ALLOW permission and remove the '.$' character string from any rule line.

   c. Add new resource rules for resources that were not a part of previous releases of CA View.

3. Implement the rule changes in Step 2 as follows:

   - Change the $KEY from an access rule to a resource rule by adding the CA View type code to the $KEY statement. The following example shows how to make this change:

     Existing access rule key name shows (by default the VIEW index parameter is set to VIEW):

     ```
     $KEY(VIEW)
     ```

   - Convert this access rule key into a resource key by adding the CA View resource type code to the $KEY statement.

     ```
     $KEY(VIEW) TYPE(VCL)
     ```

     Note: The CA View Security documentation explains how to:

     - Define the type code for CA View
     - Define an alternate high-level index value if you do not want to use 'VIEW'.

   - Change each of the access rules in the member to reflect a resource rule SERVICE option and a valid permission. Remove the '.$' character string from all existing rules. The following example shows how to make this change:

Access rule line shows:

```
REPORTX UID (….) R(A)
PRODJOBR.$275  UID(....) W(A)
```

Change the rules to reflect a SERVICE option with permission of ALLOW and to remove the '.$' character string:

```
REPORTX UID (....) SERVICE (READ) ALLOW
PRODJOBR275 UID (...) SERVICE (UPDATE) ALLOW
```

- Add additional rules for new resources. This chapter documents the new resource names included in this level of CA View. The following example shows how to add these additional resource rules:

  ```
  BANR/access level is read
  PANL/access level is read
  ```

  Rule lines reflecting the above resource and access level:

  ```
  BANR UID(….) SERVICE(READ) ALLOW
  PANL UID(….) SERVICE(READ) ALLOW
  ```

4. After the PDS member is changed, compile and store the new resource rule. Use the following CA ACF2 commands to accomplish this step:

   ```
   READY
   SET RESOURCE(VCL)
   COMPILE 'RULE.PDS'
   ```

5. Test the resulting resource rule using the CA ACF2 resource rule test command.

   Note: For more information about how to test the resource rule, see the *CA ACF2 Administration Guide.*

6. The CA View resource rule should be defined as a resident rule. The CA View Security documentation shows all the commands needed to define the rule as a resident directory.

Implementing External Security for RACF

Note:

- For more information about the RACF Class Descriptor Table and the Routing Table, see SC28-1913 in IBM's *OS/390 Security Server (RACF) System Programmer's Guide*.
- For more information about the commands used in this section, see SC28-1919 in the *OS/390 Security Server (RACF) Command Language Reference*. (At OS/390 V2R10.0, OS/390 Security Server (RACF) has been renamed to OS/390 SecureWay Security Server RACF).
- The sample jobs can be found in CVDEJCL member SARRACF.

To use RACF to manage CA View external security, do the following:

1. Create or add code to the RACF Class Descriptor Table.

   For example, the following job creates a Class Descriptor Table that contains the CA View class name. The table must be assembled and linked as ICHRRCDE. If you have already created one of these tables, you must include it in the link step. Otherwise, remove the INCLUDE SYSLMOD(ICHRRCDE) statement from the link step.

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//CDT EXEC HLASMCL,PARM.C=(OBJECT,NODECK)
//C.SYSLIB DD DSN=SYS1.MODGEN,DISP=SHR
//C.SYSIN DD *
CHA1VIEW ICHERCDE CLASS=CHA1VIEW,ID=128,MAXLNTH=246,FIRST=ALPHA,  +
               OTHER=ANY,POSIT=25,OPER=NO
         ICHERCDE
/*
//L.SYSLMOD DD DSN=SYS1.LINKLIB,
// DISP=SHR
//L.SYSIN DD *
      INCLUDE SYSLMOD(ICHRRCDE) NEEDED IF ADDING TO AN EXISTING TABLE
      ORDER CHA1VIEW
      ORDER ICHRRCDE
      NAME ICHRRCDE(R)
/*
```

2. Add the CA View class names to the RACF Router Table, for example:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//RT EXEC HLASMCL
//C.SYSLIB DD DSN=SYS1.MODGEN,DISP=SHR
//C.SYSIN  DD *
ICHRFR01 CSECT
CHA1VIEW ICHRFRTB CLASS=CHA1VIEW,ACTION=RACF
         ENDTAB ICHRFRTB TYPE=END
         END    ICHRFR01
/*
//L.SYSLMOD DD DSN=SYS1.LINKLIB,
```

```
//             DISP=SHR
//L.SYSIN   DD *
      NAME ICHRFR01(R)
/*
```

3. Activate the new classes, for example:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//CLSA EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN  DD *
SETR CLASSACT(CHA1VIEW)
SETR GENERIC(CHA1VIEW)
/*
```

4. Define a group to own the resources, for example:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//AG       EXEC PGM=IKJEFT01
//SYSTSPRT DD  SYSOUT=*
//SYSTSIN  DD *
AG (VIEWADMN) OWNER(SYS1) SUPGROUP(SYS1)
/*
```

5. To give READ access to all of the functions and ALTER access to all of the resources, run the following job steps:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//RDEF EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
RDEF CHA1VIEW (*) OWNER(VIEWADMN) UACC(ALTER)
RDEF CHA1VIEW (VIEW.*) OWNER(VIEWADMN) UACC(ALTER)
```

6. Connect a user to the group and alter the user definition (so that its default group is the one you just created), for example:

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//CONN EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
CO (userid) GROUP(VIEWADMN)
/*
```

```
//EXAMPLE   JOB ACCOUNT,PROGRAMMER
//ALU  EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSTSIN DD *
ALU (userid) DFLTGRP(VIEWADMN)
/*
```

Bypassing Password Verification

Once a user is logged onto one of these online interfaces, you can bypass password specification and allow the user to log onto a CA View database.

- CICS pseudo-conversational
- IMS
- ISPF/cross memory
- TSO/cross memory
- ROSCOE/cross memory

To implement this functionality, you must do the following:

1. Specify LGNSEC=YES for the cross-memory region startup parameter.
2. Define the SARXMS region to RACF, using the ICHRIN03 table supplied with the operating system.

After setting up the SARXMS region definition and assembling it into the linklist libraries, execute the following RACF commands on TSO/RACF:

```
AG (PROCGRP) OWNER(SYS1) SUPGROUP(SYS1)
AU (SAR60) PASSWORD(PASS) OWNER(PROCGRP) DFLTGRP(PROCGRP)
```

You must IPL to implement these changes.

Note: For information about the LGNSEC parameter, see the *Installation Guide*.

Chapter 13: Model Banner Pages

This section contains the following topics:

Overview (see page 571)
Model Banner Page Library (see page 571)
Types of Model Banner Pages (see page 572)
Using Model Banner Page Members (see page 573)
Using Attribute Characters (see page 575)
Using Control Statements for Model Banner Page Members (see page 576)
Using Carriage Control Characters (see page 579)
Using Symbolic Variables (see page 581)

Overview

This chapter describes the model banner pages that are distributed with the product. You create banner pages for reports and bundles based on the model banner page members you place in the model banner page library.

This chapter includes:

- Definition of a model banner page library
- Definitions and examples of model banner page members
- Definition and description of an attribute character
- Descriptions of control statements
- Descriptions of carriage control characters
- Definitions and descriptions of symbolic variables

Model Banner Page Library

The *model banner page library* is a partitioned data set that contains members that contain fixed, 133-byte records. Use these members as models to define the format, structure, and content of banner pages.

You must load the members of the model banner page library into the database before you can use them. You can then use these members to create new banner page members or modify the model banner page members distributed with the product.

Model banner page members are extracted when CA View creates the output for a SYSOUT data set.

Types of Model Banner Pages

Three model banner page members are distributed with CA View. They are:

DEFAULT

The standard default banner page that is normally used for reprinting a report in ALL, SARO, and SAR modes.

OLDBAN

This banner page is the banner page produced by earlier releases of CA View.

SRPTBAN

The model banner page that the CA View started task uses when SYSOUT is reprinted during archival.

Using Model Banner Page Members

A *model banner page member* is a member stored in the model library data set CAI.CBRMDATA, which is created from the distribution tape during installation. You use model banner page members to define the format, structure, and content of banner pages.

Example 1

The contents of a model banner page member:

```
/BEGSEP
1* START ********************************************************************************************************************** START *
 * START ********************************      AMALGAMATED AMERICAN MANUFACTURING      ********************************** START *
 * START ********************************   TEMPLE STREET FACILITY - LOS ANGELES, CA   ********************************** START *
 * START ********************************************************************************************************************** START *
 *                                                                                                                                *
 *  ¢&RID         &                                                                                                           ¢ *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *  ¢&RID+16      &                                                                                                           ¢ *
 *                                                                                                                                *
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 *                                                                                                                                *
 *                                                                                                                                *
 ********************************************************************************************************************************
 *                                                                                                                                *
 * SYSOUT ID: &RID                          &  JOBNAME:  &JNAME &      PRINT DATE:  &DATE   &          ARCHIVE DATE: &CDATE  &   *
 * GEN:       &GEN&                            JOBID:    &JID   &      PRINT TIME:  &TIME  &          ARCHIVE TIME: &CTIME &    *
 * SEQ:       &SEQ&                            CLASS:    &C&           DATABASE:    &DATABASE        &                            *
 *                                                                                                                                *
 ********************************************************************************************************************************
 *                                                                                                                                *
 * ¢&USERID&                                                                                                                  ¢ *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
 * START ********************************************************************************************************************** START *
 * START ********************************************************************************************************************** START *
 * START ********************************************************************************************************************** START *
```

Example 2

An example of the banner page produced from the model banner page in Example 1:

```
1* START ********************************************************************************************************************** START *
 * START ********************************      AMALGAMATED AMERICAN MANUFACTURING      ******************************** START *
 * START ********************************   TEMPLE STREET FACILITY - LOS ANGELES, CA   ******************************** START *
 * START ********************************************************************************************************************** START *
 *                                                                                                                                *
 *                    EEEEEEE  DDDDDD    IIIII   TTTTTTT  RRRRRR   EEEEEEE  PPPPPP   TTTTTTT   00000      1                    *
 *                    E        D     D     I        T     R     R  E        P     P     T     0     0    11                    *
 *                    E        D     D     I        T     R     R  E        P     P     T     0     0     1                    *
 *                    EEEE     D     D     I        T     RRRRRR   EEEE     PPPPPP      T     0     0     1                    *
 *                    E        D     D     I        T     R   R    E        P           T     0     0     1                    *
 *                    E        D     D     I        T     R    R   E        P           T     0     0     1                    *
 *                    EEEEEEE  DDDDDD    IIIII     T     R     R  EEEEEEE  P           T      00000    11111                *
 *                                                                                                                                *
 *                                                                                                                                *
 *                                                                                                                                *
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 *                                                                                                                                *
 *                                                                                                                                *
 ********************************************************************************************************************************
 *                                                                                                                                *
 * SYSOUT ID: EDITREPT01                    JOBNAME:  TRJOB01        PRINT DATE: 11/10/2013           ARCHIVE DATE: 11/08/2013   *
 * GEN:       563                           JOBID:    JOB01423       PRINT TIME: 18:19:10             ARCHIVE TIME: 14:18:52     *
 * SEQ:       1469                          CLASS:    X              DATABASE:   VIEW.SYSTEM1                                    *
 *                                                                                                                                *
 ********************************************************************************************************************************
 *                                                                                                                                *
 *                                  JJJJJ  PPPPP   IIIII  EEEEEE  RRRRR     CCCC   EEEEEE                                       *
 *                                    J    P    P    I    E       R    R  C     C  E                                             *
 *                                    J    P    P    I    E       R    R  C        E                                             *
 *                                    J    PPPPP     I    EEEEEE  RRRRR   C        EEEEEE                                        *
 *                                    J    P         I    E       R  R    C        E                                             *
 *                                  J   J  P         I    E       R   R   C     C  E                                             *
 *                                   JJ    P       IIIII  EEEEEE  R    R   CCCC   EEEEEE                                       *
 *                                                                                                                                *
 *                                                                                                                                *
 * START ********************************************************************************************************************** START *
 * START ********************************************************************************************************************** START *
 * START ********************************************************************************************************************** START *
```

Specifying a Banner Page

The default model banner page name for reprinting is specified in the user definition. This name can be overridden on the online reprint panels in ALL, SAR, and SARO modes.

Note: The PRINT and PRINTIDX functions of the SARBCH utility can also override the banner page name by specifying the BANNER keyword.

When reprints occur during archival by the CA View started task, a model banner page name of SRPTBAN is used.

Using Attribute Characters

Use attribute characters to define the contents and layout of model banner pages. An *attribute character* is a special character you insert in the body of a model banner page member to:

- Define the beginning and end of symbolic variables

  Symbolic variables are described later in this chapter.

- Specify the location and size of text displayed on a banner page

The default attribute characters are described in the table below.

Note: You can change default attribute characters to characters you prefer to use with the /ATTR model banner page member control statement. This control statement is described later in this chapter.

Attribute Character	Symbol	Description
Ampersand	&	Used to define the start and end point of a symbolic variable you want inserted on a line on a banner page The first ampersand you insert defines the beginning of the symbolic variable. The second ampersand you insert defines the end of the symbolic variable. **Note:** If you do not insert a second ampersand, the end of the line defines the end of the symbolic variable.
Percent symbol	%	Used to center text or a symbolic variable on a line Symbolic variables are inserted before they are centered.
Exclamation point	!	Used to convert text or a symbolic variable to large block letters on a line Large block letters measure 14 characters wide by 12 lines high.
Underscore	_	Used to convert text or a symbolic variable to small block letters on a line Small block letters measure nine characters wide by seven lines high.

Attribute Character	Symbol	Description
Logical Not	¬	Used to convert text or a symbolic variable to large block letters. The text or symbolic variables are then centered on a line. Large block letters measure 14 characters wide by 12 lines high. Symbolic variables are inserted before they are centered.
Cent symbol	¢	Used to convert text or a symbolic variable to small block letters. The text or symbolic variables are then centered on a line. Small block letters measure nine characters wide by seven lines high. Symbolic variables are inserted before they are centered.

Converted Block Letters

On the output banner page, converted block letters are output starting on the line that contains the attribute character and ending on subsequent lines. Be sure to *leave* enough *blank lines* to contain the block letters.

Substituting Text of Varying Lengths

Substitutions for symbolic variables in the model banner page member:

- If the length of text exceeds the length specified, the substituted text is truncated.
- If the length of text is shorter than the length specified, the end of the substituted text is padded with blanks.

Using Control Statements for Model Banner Page Members

Use a set of control statements to define the contents, structure, and layout of model banner page members. Control statements are described in this section.

/BEGSEP Control Statement

The /BEGSEP control statement defines the start of a report banner page and is in effect until *one* of the following is encountered:

- The end of the member
- An /END, /ENDSEP, /BEGSEP statement
- Another /BEGSEP control statement

  You must insert the /BEGSEP control statement in column 1 of a record.

/ENDSEP Control Statement

The /ENDSEP control statement defines the end of a report banner page and is in effect until one of the following is encountered:

- The end of the member
- An /END, /BEGSEP statement
- Another /ENDSEP control statement

  You must insert the /ENDSEP control statement in column 1 of a record.

Use the /END control statement to terminate a banner page. You must insert the /END control statement in column 1 of a record.

/ATTR Control Statement

Use the /ATTR control statement to change the default attribute characters to the attribute characters you prefer to use.

The /ATTR control statement applies only to the banner page in which it is found.

/ATTR remains in effect until the end of the banner page member or until another /ATTR control statement is encountered.

You must insert the /ATTR control statement in column 1 of a record.

Syntax:

/ATTR *123456*

where:

1

Represents the character you want to use instead of ampersand (&).

Use this character to define the start and end points of a symbolic variable on a line.

2

Represents the character you want to use instead of percent symbol (%).

Use this character to center text or a symbolic variable on a line.

3

Represents the character you want to use instead of exclamation point (!).

Use this character to convert text or a symbolic variable to large block letters on a line.

4

Represents the character you want to use instead of underscore (_).

Use this character to convert text or a symbolic variable to small block letters on a line.

5

Represents the character you want to use instead of logical not (¬).

Use this character to convert text or a symbolic variable to large block letters and then center the text or symbolic variable on a line.

6

Represents the character you want to use instead of the cent symbol (¢).

Use this character to convert text or a symbolic variable to small block letters and then center the text or symbolic variable on a line.

/ATTR Control Statement Syntax Rules

The following rules apply when you specify attribute characters with the /ATTR control statement:

- You must specify a character in position 1; you cannot specify a blank in position 1.
- To indicate that you do not want to change an attribute character, either insert a blank in positions 2–6, or insert the default attribute character in that position.
- You must insert a blank between /ATTR and the character in position 1.

Using Carriage Control Characters

The body of a banner page member comprises data lines. You specify carriage control in position 1 of a data line. The carriage control characters you can use in banner page members are discussed in the following sections.

Carriage Control on a Data Line

This is an example of a carriage control character on a data line:

```
1* START ********************************************** START *
```

Where *1,* in position 1 of this data line is a carriage control character.

Types of Carriage Control Characters

The following carriage control characters can be used in a data line:

0

Skips two lines and print the text on the next line.

1

Skips to channel 1 (a new page) and print the text on the line.

2–9

Skips to channel 2, 3, 4, 5, 6, 7, 8, or 9 and print the text on the line.

A, B, C

Skips to channel 10, 11, or 12 and print the text on the line.

+

Remains on the current line and print over the text on the current line.

-

Skip three lines and print the text on the line.

X'07'

Issues the special IBM 3800 printing subsystem "end of transmission" command.

X'17'

Issues the special IBM 3800 printing subsystem "mark form" command.

X'5A'

Issue the special IBM 3800 printing subsystem "control record" command.

Blank or any character not listed in this table

Drops down one line on the output banner page and print the text on the line.

Rules for Carriage Control Characters

You must specify carriage control characters in position 1 of a data line, and text and symbolic variables in positions 2–133.

Using Symbolic Variables

A *symbolic variable* is a software element capable of assuming a set of values. Use symbolic variables in model banner page members to identify the location where text or a value is to be inserted.

Example

This is an example of a symbolic variable for which the SYSOUT destination of a report is inserted:

&DEST

Note: The ampersand indicates the start of a symbolic variable.

Types of Symbolic Variables

The following list describes symbolic variables:

Symbolic Variable	Abbrev.	Char. Length	Usage
ADDRESS*n*	None	60	Inserts the addressing identification line *n* can be from 1 to 4.
BANNER	None	8	Inserts the name of the model banner page member used as the basis for a banner page
BUILDING	None	60	Inserts the building identification
CDATE	None	10	Inserts the date when the report was archived to the database
CLASS	C	1	Inserts the SYSOUT class of the report
COLORMAP	None	8	Inserts the AFP object name for color translation
COMPACT	None	8	Inserts the compaction table name
COMSETUP	None	8	Inserts the microfiche setup resource name
COPIES	None	3	Inserts the number of copies of the report
CTIME	None	8	Inserts the time when the report was archived into the database
DATABASE	None	17	Inserts the high level prefix of the database
DATE	None	10	Inserts the date when the report was printed

Symbolic Variable	Abbrev.	Char. Length	Usage
DEPT	None	60	Inserts the department identification
DEST	None	8	Inserts the SYSOUT destination of a report
FORMDEF	None	6	Inserts the forms definition name
FORMS	FORM	8	Inserts the name of the forms used
FSSDATA	None	127	Inserts the functional subsystem parameter data
GEN	None	5	Inserts the generation number of the report being printed
IPDEST	None	127	Inserts the IP destination information
JOBID	JID	8	Inserts the job number of the job that created the report
JOBNAME	JOB JNAME	8	Inserts the job name of the job that created the report
LINES	None	11	Inserts the number of printed lines 0 is inserted for this variable on start banner pages; the correct number of lines is inserted on end banner pages. The number of lines does not include banner page lines.
NAME	None	60	Inserts the name identification
NOTIFY*n*	None	17	Inserts the print notification names *n* can be from 1 to 4.
OUTNAME	None	8	Inserts the OUTPUT statement name
OWNER	None	8	Inserts the user ID that submitted the job that created the report
PAGEDEF	None	6	Inserts page definition name
PAGES	None	11	Inserts the number of printed pages 0 is inserted for this variable on start banner pages; the correct number of pages is inserted on end banner pages. The number of pages does not include banner page pages.
PRMODE	None	8	Inserts the processing mode
PRTOPTNS	None	16	Inserts the print options data
PRTQUEUE	None	127	Inserts the target print queue

Symbolic Variable	Abbrev.	Char. Length	Usage
RID	None	32	Inserts the name of the report that is being printed
RID+*n*	None	32-*n*	Inserts a portion of the report name being printed *n* can be from 1 to 32.
ROOM	None	60	Inserts the room identification
SEQ	None	5	Inserts the generation sequence number of the report being printed
TIME	None	8	Inserts the time when the report was printed
USER	None	20	Inserts the user accounting data for a report
USERDATA*n*	None	60	Inserts the user data lines *n* can be from 1 to 16.
USERFLD	None	40	Inserts the user information field for a report
USERID	None	8	Inserts the name of the user printing the report
USERLIB*n*	None	44	Inserts the user library names *n* can be from 1 to 8.
VID	None	32	Inserts the name of the logical view being used to print the report
VID+*n*	None	32-*n*	Inserts portion of the logical view name being used to print the report *n* can be from 1 to 32.
VNO	None	3	Inserts the number of the logical view being used to print the report
VUSER	None	8	Inserts the user ID of the private logical view used to print the report
WRITER	None	8	Inserts the external writer name

Chapter 14: EMC Centera Disk Option

This section contains the following topics:

Overview (see page 586)
System Requirements and Implementation Checklist (see page 587)
Configuring the Centera Access Server (see page 590)
Report Migration and Retrieval (see page 598)
Configuring CA View (see page 600)
Secondary Disk Database Maintenance (see page 603)
Trace Centera API functions (see page 607)

Overview

CA View EMC Centera Option enables you to:

- Migrate and retrieve reports from a Centera disk cluster
- Migrate the reports to the CA View database for viewing or printing

The CA View EMC Centera option helps you reduce the DASD load on your site while minimizing the performance impact of the slightly slower access speed of a Centera cluster. Instead of loading a 100,000 line report back to the CA View database, you can view or print the data you need directly from a Centera cluster.

After you configure CA View to use the EMC Centera option, you can select a storage destination for SYSOUT group archiving based on retrieval frequency and retention period.

CA View initially archives reports to Primary disk storage. SYSOUT groups are then backed to tape storage and optionally migrated to Secondary disk storage. CA View can archive SYSOUT data to three levels of storage. The storage options are as follows:

- Primary disk storage option - CA View database

  This option lets you store the data on a CA View primary disk database. Use it for:

  - Primary disk storage for SYSOUT groups that you must view frequently so that the SYSOUT group is always available for immediate retrieval.
  - Any SYSOUT group with a relatively short retention requirement, since primary disk space is reusable and the space quickly becomes available again.

- Secondary disk - Centera disk cluster

  Secondary disk storage is an optional component of CA View. Use it as a storage alternative to the CA View primary disk database.

  Specify a Centera disk cluster or disk as a destination for SYSOUT archiving that lets you create a more portable and permanent backup for reports.

- Tape storage - CA View archival tapes

  CA View archival tape storage is used to back up SYSOUT groups on primary or secondary disk.

  Note: For more information about tape storage, see Report Migration and Retrieval.

System Requirements and Implementation Checklist

This section lists the system requirements for the CA View Centera Disk Interface and provides a checklist to help you keep track of the implementation tasks.

Notes:

- CA View only allows one type of secondary disk storage - Centera or optical drives. Both cannot be used within the same CA View database.
- For more information about the Secondary Optical storage, see the chapter "Using the Optical Disk Interface."

System Requirements

Centera support is a purchasable option to CA View. It requires the following.

- z/OS 1.4 or higher
- CA View Expanded Retention Option (ERO)
- EMC Centera Access application interface (API).

  This software component is distributed separately and must be accessible to CA View application.

  Note: Installation instructions for this component are provided with the component.

System Execution Considerations

Be aware of the following:

- The CA View archival started task must execute on a system with access to the EMC Centera API and TCP/IP. This access is required to migrate reports to the Centera disk cluster.

  Note: Before the SARSTC task is started, the TCP/IP task must be started and the CENTERA IP address must be accessible
- All online users that select SYSOUT groups from Centera storage must be executing on the system running the Centera Access Server (SARCAS).
- All SARBCH jobs that request SYSOUT groups from Centera storage must be executing on the system running the Centera Access Server (SARCAS).

Download the EMC Centera API

The EMC Centera load library is required for the CA View EMC Centera Option. Use the sample JCL provided in the Installation Guide as a model to download the EMC Centera API load library from the CA View Option for EMC Centera Cartridge.

Note: For more information about the sample JCL, see the *Installation Guide*.

Implementation Checklist

This section provides instructions and suggestions for implementing the CA View EMC Centera Option:

Step	Task	Status
1	Obtain a license and install the LMP Key on the system running the Centera Option.	
2	Authorize the Centera Run-time Library. **Note:** The Centera Run-time Library is required in the JCL for the following functions: SARINIT—Adding or changing the Centera IP Address. SARDBASE—Unloading/Second and Merge. SARSTC—Migrating to DSK2. SARCAS—Reading Sysouts from DSK2. SARDSK2B—Migrating to DSK2.	

3	Run SARINIT to define the Centera Option parameters:
	For example:
	//SARINIT EXEC PGM=SARINIT
	//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR
	// DD DSN=CAI.CEN31544.PROGLIB.OPT,DISP=SHR
	//SYSUDUMP DD SYSOUT=*
	//SYSPRINT DD SYSOUT=*
	//SYSIN DD *
	NAME=VIEW.SYSTEM1
	CENTADR=172.172.172.8,172.172.172.9
	CENTPDSN=CENTERA.PEA.DATASET
	CENTNAME=CAS1
	/*	

Step	Task	Status

4	Add the appropriate entries to the ERO Table:
	For example:
	//IEBGENER EXEC PGM=IEBGENER
	//SYSUDUMP DD SYSOUT=*
	//SYSPRINT DD SYSOUT=*
	//SYSIN DD DUMMY
	//SYSUT2 DD DSN=VIEW.SYSTEM1.SARPATAB (ERO), DISP=SHR
	//SYSUT1 DD DATA, DLM='ǒǒ'
	/reportid ALL RETPD=365 DRETPD=1 D2RETPD=90 DSK2DAYS=0
	DELETE
	/* ALL RETPD=120 DRETPD=5
	Note: Any report currently in location DISK, PERM, TEMP, and/or PTMP, that has been identified for migration to secondary storage will be migrated.
	Any report not on primary storage remains in TAPE and/or PTAP status.
	If these reports must be migrated to secondary storage, reload them back to primary storage before the backup cycle is run.	

5	Add the Centera run-time library and the SARD2LST DD to the archival task
	For example:
	//SARSTC PROC OPT=
	//SARSTC EXEC PGM=SARSTC, PARM='VIEW.SYSTEM1, &OPT'
	//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR
	// DD DSN=CAI.CEN31544.PROGLIB.OPT, DISP=SHR
	//SYSUDUMP DD SYSOUT=*
	//SARRECV DD
	//SARPATAB DD DSN=VIEW.SYSTEM1.SARPATAB (ERO), DISP=SHR
	//SARXCTAB DD
	//SARDRLST DD SYSOUT=*
	//SARBKLST DD SYSOUT=*
	//SARD2LST DD SYSOUT=*
	// PEND	

Step	Task	Status

6	Define the Centera Access Server
	For example:
	//SARCAS PROC OPT=
	//SARCAS EXEC PGM=SARCAS, TIME=1440, PARM=
	('CASTNAME=CAS1')
	//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR
	// DD DSN=CAI.CEN31544.PROGLIB.OPT, DISP=SHR
	//SYSUDUMP DD SYSOUT=*
	// PEND	

7	Update the load library in all required JCL if the load library used for the Centera Option is different than the load library used for normal production functions.	
8	Restart the archival task and start the Centera Access Server. For example: p sarstc s sarstc s sarcas The Centera Option is now installed and normal access to all functions can begin.	

Configuring the Centera Access Server

The Centera access server is required for online and batch retrieval for any report data archived to a Centera device. The server lets you browse reports directly from the Centera device without having to reload them to the disk.

Using the server instead of loading back to the disk gives you the following benefits:

- You do not have to wait for a LOAD batch job, and the delay associated with a tape mount.
- You do not need extra DASD space in the disk database to accommodate reports temporarily loaded from tape.

Requirements

The initialization parameter CENTADR defines the IP or DSN address for the Centera device. The DSK2DAYS parameter and the ERO table that define the parameters that control when reports migrate to Centera storage.

Only one Centera access server is required for multiple CA View databases.

Internal Operation

The server receives requests for report data blocks stored on the Centera cluster.

The requested data blocks are handled as follows:

- If the data blocks are cached in memory, the server transfers those blocks using cross memory.
- If the data blocks are not already in memory, the server assigns the request to a thread that reads the requested blocks.
- If a thread is already allocated for this report, the request is processed. If not, an unused thread is allocated.
- If all threads are in use, the least recently-referenced thread is reassigned to this report. This is also the thread that has been allocated for at least a minimum amount of time (MINIDLE parameter).

  If a thread has been idle for a maximum amount of time (MAXIDLE parameter), it will be shut down and placed in unused status.

Memory Management

When the server accesses requests blocks, it also retrieves additional adjacent blocks (NREAD parameter). These data blocks are buffered into memory, and are accessible to the user while browsing a report, or when the user issues a FIND command.

Reusing Buffers

After the Centera server accesses all buffers allocated to it and needs to reuse a buffer, it does the following:

1. Accesses the least recently-accessed buffer.
2. Reads the NREAD number of blocks and adjusts the blocks to make sure it does not re-read an already buffered block.
3. Frees previous blocks when a forward search is detected to prevent forward search users from taking over all buffers.

Order of Media Access

When a user selects a report for browsing (selection code S in an online report selection list), the following is the order of media access:

- If the report is on the CA View DASD database (including a TEMP DASD copy that was loaded back to disk), it is accessed from DASD.
- If the report is not on DASD but is on Centera storage, it is accessed using the Centera server.
- If the report is not on DASD or Centera, and the expanded access server is not active, the backup tape is mounted. The report is then temporarily loaded to disk, assuming there is mount authority.

LOAD jobs should execute on the system with the primary server; otherwise, all the data must be transmitted across the systems using XCF.

Implementing the Centera Access Server

The Centera access server is a started task.

F**oll**ow these steps:

1. Add member SARCAS to one of your JES-defined procedure libraries (for example SYS1.PROCLIB).
2. Model it on the following started task procedure (also see the sample at the end of this section).

```
//SARCAS PROC

//SARCAS EXEC PGM=SARCAS,TIME=1440,PARM=('parm1','parm2',...)

//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR

//        DD DSN=CAI.CEN31544.PROGLIB.OPT,DISP=SHR

//SYSUDUMP DD SYSOUT=A
```

Be aware of the following:

- Initialization parameters specified in the PARM= field consist of a keyword and value separated by an equal sign.

  Omitting the value specifies the default value.
- Keywords and selectable values can be shortened to any non-ambiguous form so the parameters can fit within the 100-character length limit of the parameter field.

The parameter field contains the initialization parameters, separated by commas. These parameters are described in the sections that follow.

COMM=XCF

COMM=XCF specifies the communication mechanism to be used by the primary and secondary servers. XCF specifies the MVS Cross-System Coupling Facility.

Syntax:

```
COMM=XCF
```

The parameter is not required for a TYPE=ONLY server. When using XCF for the communication mechanism, the group name is the value for CASTNAME, and the member name is PRIMARY for the primary server and CPU ID for the secondary server.

CASTNAME=xxxx

CASTNAME=xxxx specifies the subsystem name of the Centera access server. This name must match the CENTNAME parameter in SARINIT.

Syntax:

```
CASTNAME=xxxx
```

This is also the XCF group name for primary and secondary servers.

The default is CENT.

MAXIDLE=n

MAXIDLE=n specifies the maximum time in seconds that a thread can remain unused before the Centera connection is closed. It will be unallocated for the primary or TYPE=ONLY server.

Syntax:

```
MAXIDLE=n
```

MAXIDLE=n is not required for a secondary server.

The default is 10 minutes (600).

Note: For the primary or for a TYPE=ONLY server, the maximum idle time will be adjusted upwards to a minimum of MINI*DLE*.

MINIDLE=n

MINIDLE=n specifies the minimum time in seconds that a thread must be allocated without being accessed before it can be used to process another report for the primary or TYPE=ONLY server.

Syntax:

`MINIDLE=`*n*

MINIDLE=n is not required for a secondary server.

The default is 15 seconds.

NBUF=n

NBUF=n specifies the total number of buffers to allocate. Each buffer requires 32 KB of virtual, 31-bit addressable storage. We recommend that you set NBUF as high as paging and real storage constraints permit.

Syntax:

`NBUF=`*n*

The default is *1000*.

Note: For the primary or only server, the number of buffers will be adjusted upwards to a minimum of (NTHREADS) * (NREAD).

NREAD=n

NREAD=n specifies the number of 32 KB report blocks that are to be read in at one time in anticipation of their subsequent use.

Syntax:

`NREAD=`*n*

NREAD=n is not required for a secondary server.

The default is 32, the maximum is 100.

NREQ=n

NREQ=n specifies the number of process request entries to preallocate. One process request entry is needed for each report block request that is being processed. If more entries are needed at any given time than have been preallocated, additional entries are allocated and freed on demand.

Syntax:

NREQ=*n*

When the server is stopped, message SARCA04I is produced to display the high water mark for process request entries.

The default is 200.

NTHREADS=n

NTHREADS=n specifies the number of report processing threads for the primary or only server.

Be aware of the following:

- This number can be changed dynamically but it can never exceed the initial value specified on this parameter.
- The parameter is not required for a secondary server.
- Each processing thread can allocate one report. Be sure to specify the maximum number of reports you would like to have available before users have to wait for a thread to reach MINIDLE.
- Each active thread will cause a connection to the Centera server.

Note: For performance reasons, this parameter should be set to a number equal to (20 * number of IP Addresses). This value is the number of IP addresses specified in the CENTADR= initialization parameter.

The default is 20.

TYPE=PRIMARY/SECONDARY/ONLY

A Centera server needs to run on every system that accesses reports stored on Centera storage.

PRIMARY

This server is to perform the input. Secondary servers are to make requests from it using XCF.

SECONDARY

This server does not perform input; instead, requests for report blocks are made using XCF to the primary server.

ONLY

This is the one and only server; it will perform all of its own input, and no XCF communications are established.

The default is ONLY.

Note: Primary and Secondary servers are to be used when TCP/IP access is not available on all systems. If primary and secondary servers are not used, ONLY should be used on all systems.

Sample

This example shows the JCL for a started task that initiates the Centera access server:

```
//SARCAS PROC TYPE=ONLY
//SARCAS EXEC PGM=SARCAS,TIME=1440,
// PARM=('TY=&TYPE', TYPE is ONLY by default, changeable at startup
// 'CA=CENT',        CASTNAME is CENT
// 'CO=XCF',         COMM is XCF
// 'MA=600',         MAXIDLE is 10 minutes
// 'MI=1',           MINIDLE is 1 seconds
// 'NB=9000',        NBUF is 9000 buffers
// 'NREA=16',        NREAD is 16 reads at a time
// 'NREQ=200',       NREQ is 300 process request entries
// 'NT=12'),         NTHREADS is 12 threads (active reports)
//STEPLIB DD DSN=CAI.CVDELOAD,DISP=SHR
//        DD DSN=CAI.CEN31544.PROGLIB.OPT,DISP=SHR
//SYSUDUMP DD SYSOUT=A
```

Operating the Centera Access Server Task

The start task procedure must be installed first. These operator commands are available for the Centera access server started task.

Note: These examples are based on the JCL from the preceding example.

- To start the server as a stand-alone-only server, issue the following operator command:

  ```
  S SARCAS
  ```

- To start the server as the primary server, issue the following operator command:

  ```
  S SARCAS,TYPE=PRIMARY
  ```

- To start the server as a secondary server, issue the following operator command:

  ```
  S SARCAS,TYPE=SECONDARY
  ```

- To stop the server, issue either of the following operator commands:

  ```
  P SARCAS
  F SARCAS,STOP
  ```

- To dynamically alter the number of threads, issue the following operator command:

  ```
  F SARCAS,NTHREADS=nn
  ```

  This command immediately reduces or increases the number of threads in use. The value specified cannot exceed the initial value specified for NTHREADS when the task was started.

- If a communications problem occurs (for example, a problem occurs with the XCF connection) you can reset communications for a primary or secondary server by issuing the following operator command:

  ```
  F SARCAS,COMMRESET
  ```

  Note: All the secondary requests awaiting a response from the Primary will be canceled.

SARINIT Parameters

The following new SARINIT parameters are included to support the CA View EMC Centera Option:

- CENTADR=IP addresses or DNS names
- CENTPDSN=dataset name
- CENTNAME=cas-name

Note: For more information about these parameters, see Initialization Parameter Descriptions in the chapter "Initialization Parameters."

Changes to ERO Parameters

The following ERO parameters are enhanced to use CA View EMC Centera Option.

- DRETPD
- DSK2DAYS
- DSK2NOTP

Note: For more information about these parameters, see the following:

- The Expanded Retention Initialization Parameters section in the "Initialization Parameters" chapter.
- The Configuring the Optical Disk Interface in the "Using the Optical Disk Interface" chapter.

Report Migration and Retrieval

This section provides an overview of how to use the EMC Centera option for migration and retrieval.

Purpose

The CA View EMC Centera Option lets you access archived SYSOUT data directly from a Centera cluster. This capability helps you reduce the DASD load on your site while minimizing the performance impact of the slightly slower access speed of a Centera cluster. Instead of loading a 100,000-line report back to the CA View database, you can view or print just the data you need.

Migrating Reports

- CA View initially archives reports to Primary disk storage.
- SYSOUT groups are then backed to tape storage and optionally migrated to Secondary disk storage.

  When the migration task runs, the DSK2DAYS parameter determines which reports to copy from Primary disk storage to Centera storage. If the migrated reports have already been backed up to tape storage, they are removed from Primary disk storage after the ERO DRETPD retention expires.

  Secondary disk retention is based on the D2RETPD parameter specified in the ERO table.

Retrieving Reports

When an online user or batch job accesses a report on Centera storage, a request is sent to the Centera Access Server (SARCAS) through cross memory services. Centera access is performed from the server address space and the report data is then returned to the user address space.

Configuring CA View

This section presents an overview of the steps you must perform to configure CA View to use the CA View EMC Centera Option. Some of these steps are explained in detail in the sections that follow.

1. Use the CENTADDR SARINIT initialization parameter to specify a comma-separated string of IP addresses or DNS names for Centera access nodes.

   The Centera API uses these addresses when it connects to the Centera pool.

   Note: For more information about the Centera initialization parameters, see the chapter Initialization Parameters.

2. Optionally use the CENTPDSN SARINIT initialization parameter to specify the data set name of the Centera Pool Entry Authorization (PEA) data set.

   This data set is only required if the default Centera access profile is being overridden.

   The file is created on the Centera and uploaded to the mainframe.

   Note: For more information about creating and using PEA files, contact EMC Centera technical support.

3. Use the CENTNAME SARINIT initialization parameter to specify the four-character subsystem name of the SARCAS server task.

4. Use the DSK2DAYS SARINIT parameter to specify the default number of days a report is to remain on Primary disk before it is eligible to be migrated to Secondary disk storage.

   Note: The ERO table allows you to override this default at the report level.

5. Customize migration scheduling with the following SARINIT parameters:

   - DSK2MIGD
   - DSK2TIME
   - DSK2INTV

   Note: By default, the CA View backup cycle performs all migration.

6. Run SARINIT to implement your initialization parameter settings to the database.

7. Set DSK2DAYS in the ERO table (with disk and tape migration options) to override the SARINIT DSK2DAYS default. This keyword allows you to customize DSK2DAYS at the report level.

8. Set D2RETPD in the ERO table to specify the Secondary disk retention for this report. Customize the SARCAS server JCL and parameters. Additional information about this procedure is discussed in the sections that follow.

Using Indexes When Archiving

CA View allows you to add indexes to your SYSOUT at archive time. The CA View EMC Centera Option uses these user-defined indexes to reduce access time, thereby minimizing the performance impact of the slightly slower access speed of a Centera cluster. The net result is that the response time required can be indistinguishable from the time it takes to view records from primary storage.

Note: The response time can also be affected by your indexing and the number of concurrent access requests to the Centera cluster.

Customize Migration Scheduling

You can optionally customize migration scheduling with the following parameters:

- DSK2MIGD
- DSK2TIME
- DSK2INTV

Note: For more information about the scheduling parameters, see the chapter "Using the Optical Disk Interface."

These parameters work with the DAYS initialization parameter, which defines when the CA View backup cycle (migration to tape) is to occur. You can set a separate migration schedule for each day of the week.

For automatic migration by the migration subtask, you must specify the time range and the range for idle time.

Note: This step is optional. By default, the CA View backup cycle performs all migration.

Scheduling Secondary Disk Migration

You have many options for scheduling a migration. This list presents possible scheduling needs and the parameters to implement them:

- Each night, by the CA View standard backup cycle

  DSK2MIGD=BBBBBBB

  DAYS=YYYYYYY

  The DAYS initialization parameter determines which days of the week the CA View backup cycle is to run.

- Automatically, by the migration subtask, Monday through Friday only. Every 45 minutes from 9 p.m. to 11 p.m., and every 45 minutes from 1 a.m. to 5 a.m.

  DSK2MIGD=AAAAANN

  DSK2INTV=0045

  DSK2TIME=2100-2300,0100-0500

- When the system administrator manually invokes the migration subtask (no automatic migration)

  DSK2MIGD=MMMMMMM

Operating the Migration Subtask

Migration can be done as follows:

- By the backup cycle (disk to tape)
- By a batch job (SARDSK2B)
- By the migration subtask of the CA View started task

The migration subtask can be either automatically scheduled or manually invoked. The following operator commands are available for operating the subtask.

- To start the migration subtask, issue:

  ```
  F SARSTC,DSK2 START
  ```

- To terminate the migration subtask, issue:

  ```
  F SARSTC,DSK2 STOP
  ```

- To resume automatic migration after the migration subtask has been stopped by the DSK2 STOP parameter, issue:

  ```
  F SARSTC,DSK2 RESUME
  ```

  Note: Automatic migration is determined by the DSK2MIGD, DSK2TIME, and DSK2INTV parameters.

Submitting the Migration Batch Job

You can submit this batch job (member SARDSK2B of CAI.CAIOPTN) to perform a single pass of the CA View disk database, then migrate reports:

```
//EXAMPLE JOB ACCOUNT,PROGRAMMER
//SARDSK2B EXEC PGM=SARDSK2B,PARM='VIEW.SYSTEM1'
//STEPLIB  DD DSN=CAI.CVDELOAD,DISP=SHR
//         DD DSN=CAI.CEN31544.PROGLIB.OPT,DISP=SHR
//SARD2LST DD SYSOUT=X,DCB=BLKSIZE=3990
//SARPATAB DD DSN=VIEW.SYSTEM1.SARPATAB(ERO),DISP=SHR
```

In the SARDSK2B statement, specify your CA View database as:

```
PARM='dbase.name'
```

The SARPATAB DD statement specifies the name of the data set that contains your ERO (Expanded Retention Option) table.

This statement is required if you specify DSK2DAYS retention in your ERO table. The migration subtask then reads the ERO table to determine migration options.

Secondary Disk Database Maintenance

The UNLOAD and MERGE functions of the CA View database maintenance utility (SARDBASE) contain parameters to support secondary disk storage.

Note:

- A code defect in the EMC Centera Run-Time Library causes the following errors to occur when you execute the SARDBASE/UNLOAD and SARDBASE/MERGE Functions:

  ```
  $HASP708 ..jobname.. SYSIN    OPEN FAILED
  RC=03 DATA SET ALREADY OPENED
  DSNAME=...jes_sysin_dataset_name...
  IEC141I 013-C0,IGG0199G,..jobname..,$$$$$$@,SYSIN
  ```

  This is a false error message, and a solution is expected from EMC. The error messages do not affect the execution of SARDBASE and can be ignored. SARDBASE terminates with the correct return code. Return codes from SARDBASE other than zero are SARDBASE errors and must be reviewed.

More information:

Database Utilities (see page 277)

MERGE Control Statement

The MERGE function must be used for reloading the actual SYSOUT data from secondary disk storage.

Note:

- The COPY and LOAD functions copy the index information about the SYSOUT groups on secondary disk storage.
- Be aware that COPY and LOAD merely transfer ownership of the secondary disk storage data that is already archived.

  It is the MERGE that actually reloads the data to another Secondary disk device.
- In addition to merging multiple databases together, you can use the merge control statement to:
  - Replace one type of secondary disk.
  - Consolidate the archived secondary disk storage.
  - Replace secondary disk storage with primary disk storage.

Prerequisites

When you perform a MERGE function with an input database, if the database contains any SYSOUT groups archived to secondary disk storage:

- The contents of the secondary disk SYSOUT groups must have been unloaded with SECOND specified on the UNLOAD control statement.
- The MERGE function then reloads the SYSOUT groups based upon the secondary disk operands on the MERGE command.

MERGE Control Statement:

Syntax:

```
MERGE tape-index driver parameters
```

Where:

tape-index

Specifies the high-level naming prefix to be set for the TAPEIDX initialization parameter. This parameter must be coded when using the 'driver' and 'parameters' parameters.

To prevent conflicts with any existing archival tapes, MERGE requires that this high-level naming prefix for tapes be different from those for any tapes defined in the input databases.

driver

For OPTICAL storage this is the same value specified in the SARINIT DSK2DRVR parameter. Use *driver* only if you have an optical disk secondary storage driver.

For CENTERA storage, set *driver* to a value of CENTERA.

Note: For more information, see the chapter "Using the Optical Disk Interface."

parameters

For OPTICAL storage, this value is the same as the value specified in the SARINIT DSK2PARM parameter.

For CENTERA storage this is:

- The IP address of the first Centera access nodes, followed by
- The value specified in the CENTADR initialization parameter, followed by
- The optional value of the name of the Centera Pool Entry Authorization (PEA) data set (the value of the CENTPDSN initialization parameter)

More information:

UNLOAD Control Statement (see page 606)

UNLOAD Control Statement

The UNLOAD control statement allows you to unload the SYSOUT data for SYSOUT groups archived to secondary disk storage.

Syntax:

```
UNLOAD SECOND|NOSECOND
```

Where:

SECOND

Unload the SYSOUT data for SYSOUT archived to secondary disk storage.

NO SECOND

Do not unload the SYSOUT data for SYSOUT archived to secondary disk storage.

The SECOND/NOSECOND parameter has a default value of NOSECOND. Specifying SECOND can substantially increase the time required to perform the UNLOAD function.

Specifying SECOND when unloading does not make a difference to the process. The LOAD function never reloads the SYSOUT data for SYSOUT groups archived to secondary disk storage. The LOAD function merely transfers ownership of the secondary disk storage that is already archived.

You must specify SECOND when unloading the databases if you are going to use the MERGE function, because the MERGE function always reloads the SYSOUT data, either to primary or secondary disk.

Trace Centera API functions

A trace of the EMC API functions might be needed to diagnose communications and data errors. CA Support might request an EMC Centera API Trace along with other documentation to assist in the resolution of a problem. The trace function is available for both the CA View Centera Access Server (SARCAS) and the CA View Archival Task (SARSTC).

Note: Do not activate EMC API Tracing unless you are requested to do so by CA Support.

Tracing is activated by adding a DD Statement to either the SARCAS or SARSTC JCL with a control card that defines the fully qualified data set name of a preallocated file that contains the trace information. A unique data set is required when tracing both the SARCAS and SARSTC tasks. The following statements can be added to either SARCAS or SARSTC:

```
//FPCONFIG  DD *
FPLIBRARY_LOG_FILE_DEBUG=...trace_dataset_name...
/*
```

Where: trace_dataset_name

The fully qualified data set name of a file with the following attributes:

Organization . . . : PS

Record format . . . : VB

Record length . . . : 32756

Block size . . . . : 32760

Or:

```
//FPCONFIG DD DISP=SHR,DSN=...parm_library(...debug_statement...)
```

Where: The parameter library member contains the FPLIBRARY_LOG_FILE_DEBUG=...trace_dataset_name... statement.

Examples:

```
//SARSTC   PROC OPT=
//SARSTC   EXEC PGM=SARSTC,PARM='VIEW.SYSTEM1,&OPT'
//STEPLIB  DD DISP=SHR,DSN=CAI.CVDELOAD
//         DD DISP=SHR,DSN=CAI.CENnnnnn.PROGLIB.OPT
//SYSUDUMP DD SYSOUT=*
//SARPATAB DD DISP=SHR,DSN=CAI.CVDEOPTN(EROTAB)
//FPCONFIG DD DISP=SHR,DSN=CAI.CVDEOPTN(STCTRACE)
//SARBKLST DD SYSOUT=*
//SARD2LST DD SYSOUT=*
//         PEND

//SARCAS   PROC OPT=
//SARCAS   EXEC PGM=SARCAS,TIME=1440,
//            PARM=('CASTNAME=CAS1',
//            'NTHREADS=1')
//STEPLIB  DD DISP=SHR,DSN=CAI.CVDELOAD
//         DD DISP=SHR,DSN=CAI.CEN31477.PROGLIB.OPT
//FPCONFIG DD DISP=SHR,DSN=CAI.CVDEOPTN(CASTRACE)
//SYSUDUMP DD SYSOUT=*
//         PEND
```

Note: When you are tracing problems in the CA View Centera Access Server (SARCAS) task, only one communications thread can be active, NTHREADS (the maximum number of active threads) must be set to '1'.

Chapter 15: AFP-TO-PDF Transform

The AFP Transform converts print data streams from one format to another. The CA View AFP Transform automatically transforms IBM ACIF print files stored in the CA View database to Adobe PDF (Portable Document Format) files. This allows you to view the PDF files from CA Output Management Web Viewer.

This section contains the following topics:

How Does the AFP-TO-PDF Transform Work? (see page 609)
Known Limitations (see page 610)
Installation Notes (see page 610)

How Does the AFP-TO-PDF Transform Work?

When CA View receives a request to transform an AFP report to PDF, it does the following:

1. Opens the input file and obtains the input file attributes.
2. Reads the transform parameters from DDname A2PDPARM.
3. Establishes an MVS Window Services (DIV) environment for caching the output PDF file.
4. Calls the Xenos Group High Speed Printer Developer Kit to:
   - Read the AFP input file
   - Perform the transformation using inline AFP resources
   - Cache the PDF output file using MVS Window Services (DIV)
5. Closes the AFP file.

   As CA Output Management Web Viewer requests the report data, CA View returns blocks of PDF-format data instead of the original ACIF stream.
6. Closes the Window Services environment, discarding the PDF file after it has been saved to the PC.

Known Limitations

The following AFP features are either not supported, or are only partially supported by AFP-TO-PDF Transform:

Not supported:

- Adobe PDF object embedded in the AFPDS
- Bar Code Object Content Architecture (BCOCA) objects
- FORMDEFs with more than two pages

Partially Supported:

- The Graphics Object Content Architecture (GOCA) objects are limited to 256 colors per object
- The Image Object Content Architecture (IOCA) objects are limited to one color per object

Installation Notes

The AFP-to-PDF Transform Option is activated within the CA DRAS started task and CA Output Management Web Viewer Administration Tool.

Notes:

- For more information about installation and configuration of the AFP-to-PDF Transform option, see the *CA DRAS Operations Guide*.
- For more information about activating this option, see the *CA Output Management Web Viewer Administration Guide.*

Supply the LMP Code

The CA View AFP-To-PDF Transform requires the CA License Management Program (LMP), one of the CA Common Services, to initialize correctly. CA LMP provides a standardized and automated approach to the tracking of licensed software.

Examine the CA LMP Key Certificate you received with your CA View AFP-TO-PDF Transform installation materials or maintenance tape. The component product code for AFP-TO-PDF Transform is 0W.

Chapter 16: CA DRAS and CA Spool Java Transformers

The CA Spool Java Transformers convert print data streams from one format to another. The CA DRAS and CA Spool Java Transformers automatically transform IBM AFP, Xerox, Metacode, and text reports stored in a CA View database to Adobe PDF (Portable Document Format) files. This allows you to view CA View AFP, Metacode, and text reports as PDF files from CA Output Management Web Viewer Version 12.0.

Note: To view PDF files, you must have Adobe Reader installed on your computer.

This section contains the following topics:

How CA Spool Java Transformers Work (see page 611)
Installation Notes (see page 612)

How CA Spool Java Transformers Work

When CA View receives a request to transform an AFP, Metacode, or text report to PDF, it does the following:

- Opens the input report and obtains the input report attributes.
- Obtains the transform configuration parameters from DDname STDENV.
- Copies the input report to the CA Spool Java Transformers input directory.
- Queues the CA Spool Java Transformers request.
- CA Spool performs the print data stream transformation.
- CA View returns the PDF files obtained from the CA Spool Java Transformers output directory to CA Output Management Web Viewer.

Installation Notes

You can install the CA Spool Java Transformer Interface through CA DRAS to convert print data streams from one format to another.

Follow these steps:

1. Add the CA Spool Java Transformer DD statements to the CA DRAS JCL Procedure.
2. Configure the CA Spool Java Transformer environment variables.
3. Update the CA Spool CAIQPARM initialization parameters.
4. Verify the installation.

Add the CA Spool Java Transformer DD Statements to the CA DRAS Procedure

Uncomment the CA Spool Java Transformer DD statements and the CA Spool Load Library if you want to use the CA Spool Java Transformers to convert AFP, Metacode, and text reports to PDF during viewing.

The supplied CBY3OPTN member CAHAX2YP contains the configuration parameters required by the CA Spool Java Transformers.

BYC3JST in CAI.CBY3PROC contains samples of the following statements.

CA Spool Java Transformer DD statements

STEPLIB

Indicates the libraries that contain the CA DRAS server modules, repository agent modules, and the CA Spool Load Library.

STDENV

Specifies the CA Spool Java Transformer configuration parameters. This file contains various parameters that control the CA Spool Java Transformation of AFP, Metacode, and text reports to PDF.

BXYTRACE

Specifies the CA Spool Java Transformer tracing file if tracing is activated.

SYSPRINT

Specifies the CA Spool Java Transformer report file if requested in the CA Spool Java Transformer configuration file.

Configure the CA Spool Java Transformer Environment Variables

The supplied CBY3OPTN member CAHAX2YP in CAI.CBY3OPTN contains the configuration Environment Variable parameters required by the CA Spool Java Transformer Interface.

Edit the CAHAX2YP parameter member as required by your setup.

```
#------------------------------------------------------------------------#
#                                                                        #
#   CA DRAS/View/Spool Java Transformer configuration file.              #
#                                                                        #
#------------------------------------------------------------------------#
X2YY_TRACE=MIN                              Minimum Trace
#X2YY_TRACE=ALL                             Maximum Trace
X2YY_INTYPE=COMM                            List original report type as Comments
#X2YY_INTYPE=DESC                           List original report type as Descrip
X2YY_PAGELIM=9999                           Max number of pages (0-999999999)
X2YY_LINELIM=50000                          Max number of lines (0-999999999)
X2YY_SUBID=ESF                              CA Spool Subsystem ID
X2YY_A2PD=DRASA2PD                          CA Spool AFP-to-PDF transform node
X2YY_M2PD=DRASM2PD                          CA Spool Metacode-to-PDF transform node
X2YY_M2PDPRM=DJDE                           Metacode report PRMODE=
X2YY_T2PD=DRAST2PD                          CA Spool Text-to-PDF wrapper node
X2YY_REPT=E                                 If error write transform report
#X2YY_REPT=Y                                Always write transform report
#X2YY_REPT=N                                Never write transform report
#X2YY_REPT=V                                Write BX2YYTRACE and transform report
X2YY_AFP=LINE                               A2PD transform ACIF, PAGE, PDEF/FDEF file
#X2YY_AFP=ALL                               A2PD transform all AFP files
#X2YY_AFP=PAGE                              A2PD transform ACIF and PAGE files
#X2YY_AFP=ACIF                              A2PD transform ACIF files
#X2YY_TEMPDS=KEEP                           Keep temp files after transform
X2YY_RETAIN=0                               Retain output files minutes (0-9999999)
#X2YY_RETAIN=60                             Retain output files 1 hour
#X2YY_RETAIN=2880                           Retain PDF output files 2 days
#X2YY_RETAIN=525600                         Retain PDF output files 1 year
X2YY_UTILWARN=75                            Output file system utilization threshold%
X2YY_INPUT=/usr/lpp/caspoold2e/xenos/input       Input Directory
X2YY_OUTPUT=/usr/lpp/caspoold2e/xenos/output     Output Directory
X2YY_REPORTS=/usr/lpp/caspoold2e/xenos/reports   Reports Directory
```

Environment Variable Parameters

This section describes the Environment Variable parameters required by the CA Spool Java Transformer Interface.

X2YY_TRACE

Syntax

```
X2YY_TRACE=[MIN | ALL]
```

This parameter specifies whether to write trace messages to JESMSGLG.

MIN

Writes CAHASGX09 transform elapse time messages.

ALL

Writes internal trace messages.

X2YY_INTYPE

Syntax

```
X2YY_INTYPE=[COMM | DESC]
```

This parameter specifies whether to add input file type info to the CA OM Web Viewer Report list.

The input file types are:

'AFP ACIF', 'AFP PAGE', 'AFP LINE', 'METACODE' and 'TEXT'.

COMM

Displays input file type in the Report Comments field.

DESC

Displays input file type in the Report Description field.

If X2YY_INTYPE=DESC/COMM is specified, the recognized file format is added to the CA OM Web Viewer Report list.

X2YY_PAGELIM

Syntax

```
X2YY_PAGELIM=0-999999999
```

This parameter specifies the maximum number of pages allowed for a report to be transformed. If a View report contains more pages than the X2YY_PAGELIM specified limit, it is not transformed.

The default value is 0 which means no page limit.

X2YY_LINELIM

Syntax

```
X2YY_LINELIM=0-999999999
```

This parameter specifies the maximum number of lines allowed for a report to be transformed. If a View report contains more lines than the X2YY_LINELIM specified limit, it is not transformed.

The default value is 0 which means no line limit.

X2YY_SUBID

Syntax

```
X2YY_SUBID=esfx
```

This parameter specifies the Subsystem ID of the CA Spool task that performs the transformation.

Default: ESF

X2YY_A2PD

Syntax

```
X2YY_A2PD=a2pdnode
```

This parameter specifies the name of the CA Spool printer node which is used to drive the AFP-to-PDF transformation. AFP-to-PDF transformation is not performed if the default value for this parameter is not specified.

X2YY_M2PD

Syntax

```
X2YY_M2PD=m2pdnode
```

This parameter specifies the name of the CA Spool printer node which is used to drive the Metacode-to-PDF transformation. Metacode-to-PDF transformation is not performed if the default value for this parameter is not specified.

X2YY_M2PDPRM

Syntax

```
X2YY_M2PDPRM=m2pdprm
```

This parameter specifies the PRMODE of View reports which are going to be Metacode-to-PDF transformed before viewing.

Default: METACODE

A Metacode report's intial JDL and initial JDE parameters can be specified through the FormDef and PageDef JCL parameters or through a unique D2EPROJ=*View-ReportId*.d2eproj file specified by DRAS through OUTPUT ADDRESS parameters.

X2YY_T2PD

Syntax

```
X2YY_T2PD=t2pdnode
```

This parameter specifies the name of the CA Spool printer node which is used to drive the Text-to-PDF wrapping. Text-to-PDF transformation is not performed if the default value for this parameter is not specified.

X2YY_REPT

Syntax

```
X2YY_REPT=[N | E | Y | V]
```

This parameter determines whether the transformation report is written to the SYSPRINT DDname in the job step.

N

(NO) Does not write the transformation report.

E

(ERROR, Default) Writes the transformation report, if the return code is greater than 4.

Y

(YES) Writes the transformation report.

V

(Verbose) Writes the transformation report. Writes internal trace entries to the BXYTRACE DD statement, if present.

Default: E

X2YY_AFP

Syntax

```
X2YY_AFP=[ACIF | PAGE | LINE | ALL]
```

This parameter specifies which type of View AFP report must be AFP-to-PDF transformed before viewing.

ACIF

Defines SARFSS ACIF processed AFP reports.

PAGE

Defines ACIF and PRMODE=PAGE AFP reports.

LINE

Defines PAGE and FORMDEF/PAGEDEF AFP reports.

ALL

Defines LINE and all text reports without FORMDEF/PAGEDEF.

Default: ACIF if X2YY_A2PD specified

If X2YY_A2PD=ALL and X2YY_T2PD are not specified, text files with no PageDef and FormDef values are A2PD transformed.

X2YY_TEMPDS

Syntax

```
X2YY_TEMPDS=KEEP
```

This parameter specifies that USS files created by the transformation process in the USS directories specified by the X2YY_INPUT, X2YY_OUTPUT and X2YY_REPORTS variables must not be removed after the transformation is completed.

The only valid value for X2YY_TEMPDS is KEEP. Specify it only when required for problem determination.

Default is not to keep USS files after transformation.

X2YY_RETAIN

Syntax

```
X2YY_RETAIN=0-9999999
```

This parameter specifies how many minutes to keep PDF output files, after they were last used. By keeping the PDF output files, they can be reused without transformation.

Default is not to keep PDF output files after use.

Examples

X2YY_RETAIN=0

Removes PDF output files after use

X2YY_RETAIN=60

Retains PDF output files for 1 hour

X2YY_RETAIN=2880

Retains PDF output files for 2 days

X2YY_RETAIN=525600

Retain PDF output files for 1 year

X2YY_UTILWARN

Syntax

```
X2YY_UTILWARN=0-100
```

This parameter specifies a utilization threshold percent value for the USS file system containing the output directory. If the file system utilizations exceed the specified threshold, value message ESF4475 is issued.

Example

X2YY_UTILWARN=75

Defines Output file system utilization threshold%

X2YY_INPUT

Syntax

```
X2YY_INPUT=/***/input
```

This parameter specifies the CA Spool Java Transformer USS directory to which the input View report is written before transformation. The CA Spool Java Transformer FSS task must be configured to read input files from the same directory.

Both CA DRAS task and the CA Spool Java Transformer FSS task must have read and write permissions to this directory.

X2YY_OUTPUT

Syntax

```
X2YY_OUTPUT=/***/output
```

This parameter specifies the CA Spool Java Transformer USS directory from which the PDF output file is read after transformation. The CA Spool Java Transformer FSS task must be configured to write output files to the same directory.

Both CA DRAS task and the CA Spool Java Transformer FSS task must have read and write permissions to this directory.

X2YY_REPORTS

Syntax

```
X2YY_REPORTS=/***/reports
```

This parameter specifies the CA Spool Java Transformer USS directory from which the transform report is read after transformation. The CA Spool Java Transformer FSS task must be configured to write transformation reports to the same directory.

Both CA DRAS task and the CA Spool Java Transformer FSS task must have read and write permissions to this directory.

Update the CA Spool CAIQPARM Initialization Parameters

You can update the transformer and printer definitions of the CAIQPARM initialization parameters.

Follow these steps:

1. Add the following transformer definitions to the CAIQPARM initialization parameter deck:

```
X2YY START=YES,MAXFILES=10
X2YYDEF D2EVISIO,PROC=CAIQD2E,MAXTASK=10,DEFAULT=YES
```

2. Add the following printer definitions to the CAIQPARM initialization parameter deck:

```
DEFNODE A2PDF,AFP2PDF,TCPHOST=DUMMY,TCPDRIV=DISK
NODE    DRASA2PD,A2PDF,GROUP=1,X2YY=D2EVISIO,TRANSFRM=A2PDwT
DEFNODE M2PDF,META2PDF,TCPHOST=DUMMY,TCPDRIV=DISK
NODE    DRASM2PD,M2PDF,GROUP=1,X2YY=D2EVISIO,TRANSFRM=M2PDwT
DEFNODE T2PDF,TEXT2PDF,TCPHOST=DUMMY,TCPDRIV=DISK,TRANS=C037T19U
NODE    DRAST2PD,T2PDF,GROUP=1,
TCPDRIV=DISK,TRANSFRM=T2PDTw,
    DRIVPRM1='PATH=/usr/lpp/caspoold2e/xenos/output/&FNO.pdf',
    DRIVPRM2='pathmode=SIRWXU,SIRWXG,SIRWXO',
    DRIVPRM3='FILENAME=*.PDFLB'
```

Note: The user ID assigned to the Java Transformer FSS task and the user ID assigned to the job executing the Batch Transformer utility must have appropriate permissions to read and write files to the directories specified in the X2YY_INPUT, X2YY_OUTPUT and X2YY_REPORTS variables. They must also have update authority for the CA Spool target node and files queued for that node.

The APP directory is searched for a *.d2eproj transformer parameter file:

- Search D2EPROJ=View-ReportId.d2eproj file specified by DRAS through OUTPUT ADDRESS parameters. CA View Report ID non-alphanumeric characters are replaced with dashes.
- Search filename2.d2eproj file where filename2 is the actual CA Spool file name.
- Search filename3.d2eproj file where filename3 is the device type name defined for the target printer node using DEFNODE statement.
- Search x2yy.d2eproj where x2yy is the actual transformer id specified through the node TRANSFRM parameters.

Verify the Installation

You can verify that the CA Spool Java Transformer interface has been successfully installed by viewing a report.

Follow these steps:

1. Restart CA Spool with the updated CAIQPARM data set.
2. Restart CA DRAS with the updated JCL procedure and updated CAHAX2YP parameter member.
3. Log on to CA OM Web Viewer.
4. Display the report list, and click an AFP report for viewing.

   The CA View report is now transformed into PDF and displayed by Adobe Reader in a new browser window.

   For the first time, the PDF is displayed after 10-15 seconds; the time taken to start the CA Spool Java Transformer FSS task.

   If the transformation fails, check the Transformation Report written to the CA DRAS SYSPRINT allocation.

Note: For more information about installation and configuration of the CA Spool Java Transformers, see the following:

- *CA DRAS Operations Guide Release 12.1*
- *CA Spool Java Transformers Administration Guide Release 11.7*
- *CA Spool Customization Guide Release 11.7*
- *CA Spool Release Notes Release 11.7*
- *CA Spool Release 11.7 PDC RI60140*

Chapter 17: PDF Indexing in CA View

Use the PDF document format to:

- Enhance your efforts to be paperless
- Increase cost savings
- Provide document security.

PDF is now being defined as the recommended way to store company documents for later viewing.

With CA View, you can:

- Back up, archive, and index PDF documents
- Quickly retrieve and view the documents using CA View or CA Output Management Web Viewer on the intranet.

CA View can process PDF documents from the JES print queue. CA View can also capture and index PDF documents being sent to the mainframe from any platform in your intranet.

This section contains the following topics:

Overview of the Process (see page 624)
PDF Document Size Considerations (see page 626)
PDF Indexing Definitions and Requirements (see page 627)
Establish the Indexing Definitions (see page 631)
View the PDF indexes Created by your Indexing Process (see page 644)

Overview of the Process

To process your PDF documents through the new CA View PDF indexing functional subsystem, you must get the PDF documents onto the z/OS JES queue. You can use LPR, FTP or CA Spool (which transforms multiple document types into a PDF format).

Follow these steps to set up and use PDF document indexing.

1. Define the JES printer and functional subsystem.
2. Prepare the PDF Collector startup PROC (the FSS PROC).

   Note: For more information about PDF Indexing, see PDF Indexing, Definitions, and Requirements.
3. Create the CA View printer definition (see below).
4. Set up the PDF Indexing member to produce the PDF Report.

   You can include the XYDUMP coordinates, if they are requested, by specifying XYDUMP=YES in the PDF Indexing member.

   Note: For more information about producing the PDF report, see the Establish the Indexing Definitions section.

5. Transfer your PDF document onto the z/OS JES queue.

   a. Use LPR, FTP, or CA Spool to make the transfer.

   b. Start the dummy printer that starts the Collector PROC.

   The report is picked up from the JES queue, archived into the CA View database, and a PDF Report is produced.

6. Do the following to define your PDF document

   a. Review the PDF Report to determine which criteria, (coordinates, text, and so on) is to be used to index the report.

      Use this information to modify the PDF Indexing member for the report.

   b. Send the report to the JES queue to be picked up by the PDF Collector again.

      Review the PDF Report to determine if the correct indexing criteria has been set up.

      If the indexing criteria are not correct, make the necessary adjustments and repeat the process until you are satisfied with the results.

      If you have used index names in your PDF Indexing member for the report, your PDF report detailed document displays a message. For example, the following message shows the index name and values found for this index.

      `Index NAME indexname record above - Index VALUE is index value`

      Note: For more information about PDF reports, see Determine the Final X Y Coordinates.

   c. Once indexing definitions are working as expected, comment out or remove the XYPAGES and XYDUMP parameters from the PDF Indexing member. Removing these parameters suppresses production of the detailed PDF Report document.

      Note: Be sure to delete the versions of the reports from the CA View database that were used for setting up the proper indexing criteria (optional).

7. Log on to CA View on the mainframe and use the CA View DEFINE VIEW to define the index names you created in your PDF Indexing member. This definition allows CA Output Management Web Viewer to index into the PDF reports you are collecting.

8. Log on to CA Output Management Web Viewer to view the indexed PDF document and verify that the proper indexes were built for the report pages.

Note: The CA View PDF indexing process does not index every PDF document. For example, it cannot index:

- Password protected PDF documents
- PDF documents that have been created by using a character mapping system in their own PDF soft fonts in a PDF document.

PDF Document Size Considerations

The maximum size of a PDF document that can be processed by the PDF FSS collector is determined by:

- The region size of the FSS printer task.
- The MEMORY and MAXOBJCT parameter specifications.
  - The MEMORY parameter designates the maximum size in (kilobytes) of a PDF document that can be processed by the PDF FSS collector.

    The default for MEMORY is 96801 which is equivalent to 94.5 megabytes.
  - The MAXOBJCT parameter designates the maximum number of objects that can be contained in the PDF document.

    The default for MAXOBJCT is 30000.

If the PDF document size and number of objects exceed the MEMORY or MAXOBJCT parameter specifications, the following occurs:

- A CAHPDF20E or CAHPDF21E message is issued.
- The sysout data set for the PDF document is requeued to a held status.

Note: The MEMORY and/or MAXOBJCT parameters specifications can be increased in the associated PDFINDEX member to successfully process the PDF document.

The PDF collector allocates buffers based on the MEMORY and MAXOBJCT parameter specifications. This formula indicates the amount of storage that is required based on these parameters.

```
storage = (MEMORY * 1024) + (MAXOBJCT * 684)
```

The FSS printer task must have enough available storage to allocate these buffers. If the required amount of storage is not available:

- A CAHPDF31E message is issued.
- The affected Sysout data set is requeued to a held status.

The region size of the PDF FSS collector task must be increased or the MEMORY or MAXOBJCT parameters or both specifications must be reduced.

If the maximum region size is being used and the MEMORY or MAXOBJCT parameters or both specifications cannot be reduced, the PDF FSS collector cannot process the PDF document.

The MEMORY and MAXOBJCT parameters are discussed later in this chapter.

Note: For more information about the CAHPDF20E, CAHPDF21E, and CAHPDF31E messages, see the chapter "Error Message" in the *CA View Message* Guide.

PDF Indexing Definitions and Requirements

Set up the JES printer definitions that point to the new FSS (Functional Sub System) so that the following can occur:

- PDF documents can be captured into a CA View database.
- Indexes can be created for the targeted pages.

Define JES Commands, the PDF Collector Printer, and the FSS Proc

Follow these steps to set up a JES Printer:

1. Define the dynamic JES commands that allocate the JES Printer and FSS.
2. Create the PDF collector printer definition in JES.
3. Define the Functional Subsystem PROC required by JES.

Example of Dynamic JES Commands to Allocate the JES Printer and FSS

```
$ADD FSSDEF(CBRMSPDF),PROC=PDFCOLCT
$T FSS(CBRMSPDF),AUTOSTOP=YES
$ADD PRT83,MODE=FSS,FSS=CBRMSPDF
$T PRT83,CLASS=J,FORM=,PRMODE=(PDFC)
$T PRT83,WRITER=,JOBNAME=*
$T PRT83,WS=(Q,PRM/F,W,R,LIM,UCS,FCB)
$SPRT83
```

Example of a Defined PDF Collector Printer Definition in JES

The following statements are generated when you issue a $DU JES display command. These results show the attributes of the printer that was defined with the commands in the previous section.

```
$DU,PRT83
$HASP603 PRT83 562
$HASP603 PRT83     UNIT=,STATUS=DRAINED,BURST=NO,CKPTLINE=0,
$HASP603           CKPTMODE=PAGE,CKPTPAGE=100,CKPTSEC=0,
$HASP603           CREATOR=,DEVFCB=,DEVFLASH=****,FCB=6481,
$HASP603           FORMS=(,,,,,,,),FSS=CBRMSPDF,HONORTRC=YES,
$HASP603           JOBNAME=*,LASTFORM=,LIMIT=(0,*),
$HASP603           COPYMARK=DATASET,MARK=NO,MODE=FSS,
$HASP603           NEWPAGE=DEFAULT,NPRO=300,PAUSE=NO,PLIM=(0,*),
$HASP603           PRESELCT=YES,PRMODE=(PDFC),QUEUE=J,RANGE=(J1,
$HASP603           999999),ROUTECDE=(LOCAL),SEP=YES,
$HASP603           SEPCHARS=DEFAULT,SEPDS=NO,SETUP=HALT,SPACE=,
$HASP603           TRACE=NO,TRANS=DEFAULT,TRKCELL=NO,UCS=GT12,
$HASP603           UCSVERFY=NO,VOLUME=(,,,),WRITER=,
$HASP603           WS=(Q,PRM/F,W,R,LIM,UCS,FCB),FSAROLTR=YES
```

Example of a PDF Collector Functional Subsystem (FSS) Proc

This example of the PDF Collector FSS PROC is also contained in member CBRMSPDF in your CAI.CVDEPROC.

```
//CBRMSPDF PROC CAI=CAI                 /* HLQ FOR CA VIEW */
//*********************************************************************
//***                                                               ***
//***  CBRMSPDF - PDF INDEXING PROCEDURE                            ***
//***                                                               ***
//***                                                               ***
//***  CA VIEW PDF PRINTER procedure (PDF Document collector)       ***
//***                                                               ***
//***  TAILOR THE PROC AS REQUIRED BY YOUR SETUP                    ***
//***                                                               ***
//***  Commands below show how to temporarily define a PDF printer  ***
//***  for use by CA VIEW. Change the overrides to your requirements***
//***  We suggest that these printer definitions are created in the ***
//***  respective z/OS system members so when you IPL you will not  ***
//***  need to re-issue the commands below to create a temporary    ***
//***  printer and FSS.                                             ***
//***                                                               ***
//*
//* $ADD FSSDEF(CBRMSPDF),PROC=BRMSPDF
//* $T FSS(CBRMSPDF),AUTOSTOP=YES
//* $ADD PRT83,MODE=FSS,FSS=CAHAC0PD
//* $T PRT83,CLASS=J,FORMS=,PRMODE=(PDFC)
//* $T PRT83,WRITER=,JOBNAME=*
//* $T PRT83,WS=(Q,PRM/F,W,R,LIM,UCS,FCB)
//* $S PRT83
//*
//***                                                               ***
//*********************************************************************
//***                                                               ***
//CBRMSPDF  EXEC PGM=SARFSS,REGION=0M,TIME=NOLIMIT
//***                                                               ***
//STEPLIB   DD DISP=SHR,DSN=&CAI..CVDELOAD   <=== VIEW LOAD LIBRARY
//***                                                               ***
//*********************************************************************
//*** CVDEOPTN WILL CONTAIN THE CUSTOM BUILT PDF INDEXING MEMBERS    ***
//*** USED FOR INDEXING THE PROCESSED PDF DOCUMENT FROM JES.        ***
//*** THERE IS AN EXAMPLE PDF DOCUMENT INDEXING MEMBER CALLED       ***
//*** CAHAPDFD IN THE CVDEOPTN.                                     ***
//*********************************************************************
//***                                                               ***
//PDFINDEX DD DISP=SHR,DSN=&CAI..CVDEOPTN  <=== PDF INDEXING MEMBERS
//***                                                               ***
//*********************************************************************
//*** THE FOLLOWING DD'S ARE SHOWING HOW TO USE THE DEFAULTED DD NAMES*
//*** PDFTRACE AND PDFREPRT. YOU CAN OVERRIDE THESE DEFAULT DD'S IN ***
```

```
//*** THE PRINTER MEMBER SPECIFIED AS SHOWN BELOW IN PRT83 DD.      ***
//*********************************************************************
//***                                                               ***
//PDFTRACE DD SYSOUT=X         <----  DEFAULT TRACE DATA SET
//PDFTRC83 DD SYSOUT=X         <----  SET IN TRACEDDN IN INDEX MEMBER
//PDFREPRT DD SYSOUT=X         <----  DEFAULT PDF REPORT DATA SET
//PDFREP83 DD SYSOUT=X         <----  SET IN REPRTDDN IN INDEX MEMBER
//***                                                               ***
//*********************************************************************
//*** THE FOLLOWING CVDEOPTN MEMBER CONTAINS THE FSS COLLECTOR       ***
//*** INITIALIZATION PARAMETERS. EXAMPLE MEMBER NAME IS CAHAPDFE.    ***
//*********************************************************************
//***                                                               ***
//PRT83    DD DISP=SHR,DSN=&CAI..CVDEOPTN(CAHAPDFE) <- PRINTER MEMBER
//***                                                               ***
//SARLOG   DD SYSOUT=X
//SYSUDUMP DD SYSOUT=X
//SYSPRINT DD SYSOUT=X
//STDERR   DD SYSOUT=X
//SYSOUT   DD SYSOUT=X
//SYSTERM  DD SYSOUT=X
//*
//        PEND
```

Note: The printer name shown is PRT83 and is referred to in the following section.

Create Printer Definition

This DD statement matches the printer name (PRT83) and points to the printer definition in the PDF Collector FSS PROC:

```
//PRT83    DD DISP=SHR,DSN=CAI.CVDEOPTN(CAHAPDFE) * PRINTER MEMBER
```

PRT83 is used and the DD points to member CAHAPDFE in CAI.CVDEOPTN. This sample shows how this member might look:

```
TYPE=PDF
ARCHMSG=LOG
INDEXMEM=DEFAULT
NEWCLASS=N
NEWDEST=XDST
NEWFORM=XFRM
NEWPRMOD=XPRM
NEWWTR=
NAME=VIEW.SYSTEM1
```

Notes:

- INDEXMEM= is a default member name in the PDFINDEX data set. Use this member name if you want to accept PDF documents without any PDF indexing requirements.

  Be aware of the following situations:

  - If the report has no matching member in the PDFINDEX data set and a member name has not been specified for INDEXMEM
  - If the member name specified does not exist

  The report processing uses the PDF Collector default values and no indexing is performed on the report.

- If you want to control indexing requirements for each PDF document, a member that contains no parameters can be defined in the PDF index data set for the PDF document.

  A printer definition sample that you can use and modify is in member CAHAPDFE in the CAI.CVDEOPTN library.

Example of the PDFINDEX Member for the PDF Document

This is an example of a PDFINDEX member named BANKRPT. These members reside in the data set pointed to by the PDFINDEX DD in your PDF Collector FSS PROC. The PDFINDEX members contain options and indexing specifications.

A sample PDFINDEX member can be found in the CAHAPDFD member in CVDEOPTN library.

```
*********************************************************************
* PDF DOCUMENT INDEXING COMMANDS                                    *
*********************************************************************
INDEX=(BANKDEPT,07.9999 572.6606,EQ,TALLY: )   INDEX ON WORD TALLY
INDEX=(BANKDEPT,07.9999 572.6606,L(15),SE)     SE= SPACE END
INDEX=(BANKLOC,09.9999 672.7506,L(25),DSE)     DSE= DOUBLE SPACE END
INDEX=(BANKCOST,19.9999 982.2606,L(200,TSE)    TSE= TRIPPLE SPACE END
```

Note: You can use more than one INDEX for each document at a time. That is, you could have several BANKDEPT index names in different locations on the PDF page. You can use BANKDEPT for several index names; this allows you to build many index references for each page for each index name.

Define the JCL to Create JES Print Queue Output

This example of IEBGENER JCL sends a copy of the report referred to in the SYSUT1 DD to the JES queue referred to in the SYSUT2 DD. Be aware of the following:

- The output goes to JES class J with a PRMODE of PDFC, the workload selection parameters previously defined for PRT83.
- The form name BANKRPT is used.

  The PDF Collector looks for member BANKRPT in the PDFINDEX DD in the PDF Collector FSS PROC to determine the options and indexing specifications.

```
//JOB1   JOB ……..
//*************************************************
//* IEBGENER TO SEND A PDF REPORT TO JES QUEUE
//*************************************************
//PDFOUT   OUTPUT FORMS=BANKRPT,PRMODE=PDFC
//STEP1    EXEC PGM=IEBGENER
//SYSPRINT DD SYSOUT=*
//SYSIN    DD DUMMY
//SYSUT1   DD DSN=PDF.TEST.REPORTS(NOTES),DISP=SHR
//SYSUT2   DD SYSOUT=J,COPIES=1,OUTPUT=(*.PRFOUT)
```

After these steps are complete, and the necessary CA View definitions are specified, you can view these PDF reports using:

- CA Output Management Web Viewer
- The cross-report indexes to see the parts of the report that have been indexed.

Methods for Transferring Documents

We recommend that you use LPR and FTP to transfer PDF documents from any platform to the mainframe.

Note: For more information about how to send PDF documents from CA Spool to the CA View PDF functional subsystem, see the *CA Spool Systems Guide*.

Establish the Indexing Definitions

The procedure for establishing the proper index definition is:

1. Obtain the PDF document XY coordinates.
2. Determine the final X Y coordinates.
3. Create the CA View panel definitions.

Obtain the PDF Document X Y Coordinates and the Required PDF Document Indexing Data

Follow these steps to obtain a map of the PDF coordinates and possible PDF document data that you can use for the PDF indexing specifications.

1. Set the XYDUMP=YES option in the PDFINDEX member to obtain the X and Y coordinates of the PDF data. The X and Y coordinates are written to the PDFREPRT DD statement.

   The PDFINDEX member name that is used is determined according to the following order:

   a. The JES FORMS associated with the sysout

   b. The job name associated with the sysout

   c. The name specified on the INDEXMEM initialization parameter

   Based on this order, the first matching PDFINDEX member name is used. If no matching PDFINDEX member is found, the default settings are used and the PDF document does not get indexed.

2. Load the PDF document into the CA VIEW database to produce a detailed PDF report that contains the PDF document data you need.

   The PDF detailed document is then printed in the PDFREPRT DD in the PDF Collector Functional Subsystem.

3. Review the detailed PDF document.

   Based on the detailed PDF document, add INDEX statements to the PDFINDEX member to define the index names and the location of the index values.

4. To verify your INDEX statements, run a second XYDUMP to produce a list of index values found in the PDF document.

   Review the indexing definitions to be certain that the selected index values are correct. If the index values are not correct, refine the INDEX statements and resend the PDF document to the FSS printer.

5. Use CA Output Management Web Viewer to view the PDF report and indexes.

PDFINDEX Statements and Syntax

This is a description of the syntax of the statements used within the PDFINDEX members.

DEBUG=PRINTPDF

Display PDF inflated page data during execution

INDEX=*(name,position,operator,offset,*L*(length),delimiter,string)*

name

Specifies the name of the index.

If you want to define the index as a cross-report index, you must define the index name under the Extraction Specifications in the CA View Definition Indexing Criteria. Each individual index name must also be defined to a different View Definition.

position

The staring X and Y coordinates from the PDF report. These coordinates specify where data is to be searched or indexed.

An "*" may be specified to search the entire page .

operator

Optionally, specifies the search comparison operator

EQ—Search for data equal to search text

GT—Search for data greater than search text

GE—Search for data greater or equal to search text

LT—Search for data less than search text

LE—Search for data less than or equal to search text

NE—Search for data not equal to search text

If specified, a search string must be provided.

offset

Specifies optionally the offset of the index value from the location starting position or search string.

***+nnn**

where

nnn is the number of characters to skip

This parameter is specified with a length specification and optionally with a search comparison operator and a search string.

length

Specifies optionally the maximum length of the index value.

L(nn)

where

nn is the length of the index value

This parameter can be specified with an offset and a delimiter.

delimiter

Optionally indicates the character that designates the end of index value.

SE—Single space ends the index data

DSE—Double space ends the index data

TSE—Triple space ends the index data

PE—A period "." ends the index data

C'?'—A user definable character that ends the index value

Note: The designated delimiter is not retained as part of the index value.

string

Specifies optionally the character string to search for in the PDF page.

Note: This definition is CASE SENSITIVE so string must exactly match the value specified in the PDF report data.

MAXOBJCT=nnnnn

A PDF document is composed of many objects:

- Each page of data constitutes one object.
- Each font, picture, graphic, and barcode are additional objects in the document.

MAXOBJCT controls the maximum number of objects that the collector can process in a single document. The PDF collector pre-allocates 684 bytes of storage for each object.

Maximum value is 2097151.

The default is 30000.

MEMORY=*nnnnn*

Memory sets the size of the largest PDF to be processed. The amount of memory is specified in kilobytes.

Maximum value is 2097151.

The default is 96801.

REPORTID=*report-id*

REPORTID specifies a 1- to 32-character name under which the report is to be archived. If the REPORTID is omitted, the job name is used unless you are using CA Deliver which uses the CA Deliver report identifier.

Note: The *report-id* is entered exactly as desired after the REPORTID keyword and can contain spaces or any supported special characters. If the report-id is more than 32-characters, it is truncated at 32-characters.

REPRTDDN=*xxxxxxxx*

REPRTDDN is an optional statement used to explicitly specify which DD to write PDF Report information to in the PDF Collector FSS PROC.

If REPRTDDN is not specified, the default DD name of PDFREPRT is used.

TRACE=OFF|ALL|DATA|FLOW|OBJECT|OBJECTTRANSLATE

- OFF—Turn off debug processing
- ALL—Turn on all trace entry points
- DATA—Turn on trace entries for data output
- FLOW—Turn on program flow for PDF process
- OBJECT—Turn on trace entries for objects
- OBJECTTRANSLATE—Translate output to EBCDIC for debugging

TRACEDDN=*xxxxxxxx*

TRACEDDN is an optional statement to explicitly specify which DD to write trace information to in the PDC Collector FSS proc. If TRACEDDN is not specified, the default DD name of PDFTRACE is used.

XYDUMP=NO|YES

XYDUMP determines whether to produce the PDF Report that is used during PDF Indexing setup.

- NO—Do not produce the PDF Report.
- YES—Produce a PDF Report to aid in setting up indexing.

The default is NO.

XYPAGES=*nnnnnn*

XYPAGES specifies the number of pages to print in the PDF Report

Maximum value is 2147483647.

The default is 20.

PDFINDEX Member Examples

This is sample PDFINDEX member includes option overrides and indexing specifications.

```
/*********************************************************************
/*                                                                   *
/* PDF CAPTURE  DEFAULT OVERRIDES BELOW                              *
/*                                                                   *
/*********************************************************************
MEMORY=60000           MEMORY IN Kilobytes DEFAULT = 96801
MAXOBJCT=15000         DEFAULT MAXIMUM IS 30000 PDF OBJECTS
XYDUMP=YES             PRINT A PDF REPORT  (YES OR NO)
XYPAGES=10             DEFAULT NUMBER OF PDF PAGES TO PRINT; 0=NOPRINT
/*********************************************************************
/*                                                                   *
/* PDF DOCUMENT INDEXING COMMANDS BELOW                              *
/*                                                                   *
/*********************************************************************
 INDEX=(BANKTALY,07.9999 572.6606,EQ,TALLY: ) INDEX on word TALLY
 INDEX=(BANKDEPT,07.9999 572.6606,L(15),SE)   SE= SPACE END
 INDEX=(BANKLOC,09.9999 672.7506,L(25),DSE)   DSE= DOUBLE SPACE END
 INDEX=(BANKCOST,19.9999 982.2606,L(20),TSE)  TSE= TRIPPLE SPACE END
/*                                             PE= PERIOD ENDING FIELD
/*                                             C';'= DEFINED CHAR END
/*
 INDEX=(BANKTILN,34.8907 345.3689,*+10,L(9),SE)  *+10 = POST + 9 CHARS
 INDEX=(BANKCOST,*,EQ,*+6,L(20),SE,COST:)  ANYPOSITION = COST: INDEX
 INDEX=(BANKTELL,*,EQ,L(35),DSE,TELLER:)   ANYPOSITION = TELLER – INDEX
 INDEX=(BANKTOTL,*,EQ,L(9),DSE,TOTAL: )    ANYPOSITION = TOTAL AMOUNTS
 INDEX=(BANKCUST,*,EQ,L(35),DSE,CUSTOMER ) ANYPOSITION = CUSTOMER NAME
```

Example 1: Extract Report Data and Populate the Index Value with the Respective INDEX

This example extracts index values that are located after the characters "COST:" on each page of the PDF document. The maximum length of an index value is 20 characters.

```
INDEX=(BANKCOST,*,EQ,*+6,L(20),SE,COST:)
```

The fields on the index statement are as follows:

- BANKCOST—Names the index
- *—Indicates that the entire page is to be searched
- EQ—The search is for a specific string (that is, "COST:")

- *+6—The index value is located 6 characters after the search string "COST:"
- L(20)—The maximum length of the index value --20 characters
- SE—The index value ends at the first blank
- COST:—The string to search for

For example if the report data "COST: $200.56 ", the index value would be $200.56 for the index name BANKCOST.

Example 2: Extract Report Data and Populate the Index Value with the Respective INDEX

This example does the following:

- Extracts index values located 4 characters after the X Y coordinates 204 522.66 from each page in the PDF document
- Extracts 5 characters which is the maximum length of the index value
- Obtains the X and Y coordinates from the PDF Position column of the XYDUMP PDF report.

```
INDEX=(TOTAL,204 522.66,*+4,L(5),C'.')
```

The fields on the index statement are as follows:

- TOTAL—Names the index
- 204 522.66—Specifies the X and Y coordinates of the data in the PDF report
- *+4—The index value is located 4 characters after the starting coordinates of 204 522.66
- L(5)—The maximum length of the index value is 5 characters
- C'.'—The index value ends at the first period

For example, if the report data at coordinates 204 522.66 contains " 100.00", the index value would be "100" and not include ".00".

Example 3: Create a PDF Index Record for Static Index Value

This example defines an index that shows all of the pages that contain the word "ERROR".

```
INDEX=(ERRORSUM,*,EQ,ERROR)
```

The fields on the index statement are as follows:

- ERRORSUM—Names the index
- *—Specifies that the entire page is to be searched

- EQ—Search for a specific search string (that is, "ERROR")
- L(5)—The index value is 5 characters long
- ERROR—The index value and the string to search for

Example of an XYDUMP Report When Indexing Fields are Found

The index name REQUIRE with an index value of "requirements" is shown after the PDF line that contained the indexed data in the PDFREPRT DD output. There is also a second index name entry found on the previous line called PRE with an index value of "Pre".

```
**** START  **** PDF Page data                - PDF OBJECT NUMBER IS 0000
PDF POSITION--------DATA START----+----20---+----30---+----40---+----50—

78 735.0601
78 671.82           Chapter 4: Upgrade Considerations
78.654.0601
186 630.66          The extensive changes in this        software require
                    specific actions before you begin the upgrade. This
                    information about the following:
186 588.66
190.5 588.66         Pre-upgrade Requirements
Index NAME REQUIRE  record above — Index VALUE is Requirements
Index NAME PRE      record above — Index VALUE is Pre
204 570.66          The minimum release requirements of
19.24 0              the software that you
-19.24 -1.333       must be running before you can upgrade to this version
186 540.66
190.5 540.66         Areas of Consideration
```

Using PDF Indexes with Cross-Report Indexing

The Cross-Report Indexing feature supports index selection across multiple instances of reports and the ability to view indexed pages. If you want PDF indexes to be part of cross report index selection, a CA View definition must be created for each report and each unique index name.

The process for defining a cross report index for the PDF indexes is as follows:

1. From the online Primary Selection Menu, enter "DEFINE VIEW" on the command input line and press ENTER.

```
CA View ALL -- Primary Selection for VIEW.SYSTEM1 -------------------------
Command ===> DEFINE VIEW

Sysout ID     ===> *
Select By     ===> R                    (R, I, IL, or IR)
Index Name    ===>              Value ===>
              ===>                    ===>
              ===>                    ===>
              ===>                    ===>

Selection Criteria:
   Generation ===> *                   (*, ALL, specific (n), relative (-n),
                                        range (n:m or -n:m))

   Date       ===>                     (specific (mm/dd/yyyy), relative (-n),
                                        range(mm/dd/yyyy:mm/dd/yyyy or -n:m))

Selection Options:    Only specify to restrict selection
   Exceptions ===>    X exceptions only, NX non exceptions only, AX/(blank) any
   Permanent  ===>    P permanent only,  NP non permanent only,  AP/(blank) any

            Enter END command to terminate this CA View session.
```

   The CA View Selection List panel is displayed. This panel presents a list of predefined logical views.

   Note: If an empty list is displayed, no logical views have been defined.

   It works as follows:

   - View definitions are defined based on the name of the report and a logical view number.
   - During archival, a name is assigned to the report based on the job name, sysout data set external writer name, or REPORTID option.

     This name is used to name the logical view.
   - For each logical view name, up to 255 logical views can be defined.

     These logical views are identified as a number from 1 to 255.
   - If multiple index names were extracted for the report, each individual index name must be defined under a different logical view number.

2. Enter SELECT followed by the report name and logical view number on the command input line and press ENTER to display the View Definition Panel.

   In this example, the report was archived under a name of BANKRPT and logical view 1 is used for the first index.

```
CA View ALL ----------------- View Selection List -------------------------
Command ===> SELECT BANKRPT 1                            Scroll ===> PAGE

Sel View ID                          Num  Acc  Description
 _  A125*                            001  GBL  ACCOUNTING REPORT #123 - VIEW
 _  A125*                            002  GBL  ACCOUNTING REPORT #123 - FILTE
 _  A125*                            003  GBL  ACCOUNTING REPORT #123 - (DIVI
 _  A125*                            004  GBL  ACCOUNTING REPORT #125 - (DEPT
 _  A238CRPT                         001  PUB  ACCOUNTING COST REPORT - FILTE
 _  A238CRPT                         002  PUB  ACCOUNTING COST REPORT - (DIVI
 _  A238CRPT                         003  PUB  ACCOUNTING COST REPORT - (COST
 _  A482CRPT                         001  PUB  ACCOUNTING COST REPORT FILTERE
 _  A432CRPT                         002  PUB  ACCOUNTING COST REPORT - (DIVI
 _  A432CRPT                         003  PUB  ACCOUNTING COST REPORT - (COST
 _  C346PRPT*                        001  GBL  CORPORATE PROFIT REPORT - SECU
 _  C346PRPT*                        002  GBL  CORPORATE PROFIT REPORT - FILT
 _  C346PRPT*                        003  GBL  CORPORATE PROFIT REPORT - VIEW
 _  C346PRPT*                        004  GBL  CORPORATE PROFIT REPORT - (DIV
 _  C346PRPT*                        005  GBL  CORPORATE PROFIT REPORT - (REG
 _  C346PRPT*                        006  GBL  CORPORATE PROFIT REPORT - (SUM
 _  D711PROD*                        001  GBL  DIVISION REPORT - FILTERED
 _  D711PROD*                        002  GBL  DIVISION REPORT - SPECIAL FORM
 _  D711PROD-R1                      003  PUB  DIVISION REPORT #1 - SECURED
 _  D711PROD-R1                      004  PUB  DIVISION REPORT #1 - INDEXED
```

3. Enter **P** on the command input line and press ENTER to display the Indexing Criteria for the View Definition. If desired, a description can be entered for the logical view.

   The View Definition panel is displayed with the name of the report and the specified logical view number.

```
CA View ALL ------------------ View Definition --------------------------------
Command ===> P

View ID          ===> BANKRPT
View Number      ===> 1                  Filter Name ===>
                                         Secured     ===> N  (Y/N)

Description      ===> BANK REPORT DEFINITION BANKRPT

Display Attributes (Y/N):
   Default View       ===> N       Lock Left Column   ===> N
   Carriage Controls  ===> Y

Data Extraction By Page:
   Pages   to Exclude ===>        (Pages are excluded from top of file  )
   Records to Exclude ===>        (Records are excluded from top of page)
   Records to Display ===>        (Leave blank for entire page)

To select the following, enter the 1-character code on the command line:
     H - Define primary heading        P - Define page separation criteria
     C - Define column specifications  L - Define color specifications

            Enter END command to reenter viewing of report.
```

4. Use the View Definition Indexing Criteria panel to define the index name and indicate that it is a cross-report index.

   a. Enter "YES" in the Cross Report Index field

   b. Enter the PDF index name under the Extraction Specifications Index field

   c. Enter "1" for Line, Column, and Length.

      The Line, Column, and Length are not used but must be entered to complete the definition. The actual location and length of the index value is determined by the index specification in the PDFINDEX member.

```
CA View ALL -------- View Definition - Indexing Criteria --- Row 00001 of 00008
Command ===>                                                  Scroll ===> CSR

View ID  ---> BANKRPT
Cross Report Index ===> YES   (Specify YES or NO )

 Search Specifications:
    Begin End   Begin   End
Sel Line  Line  Column  Column  Op Text                                    T R




 Extraction Specifications:              Left    Upper
Sel Index    Line  Column  Length Extract Justify Case
    BANKDEPT 1     1       1      ALL     NO      YES




******************************** Bottom of Data ********************************
```

d. Press END to return to the primary View Definition panel.

5. Enter "SAVE" on the command input line and press ENTER to save the logical view definition.

   You can also press END to save the logical view definition. A confirmation panel is displayed that lets you either save the View definition or cancel the changes.

```
CA View ALL ------------------ View Definition -------------------------------
Command ===> SAVE

View ID          ===> BANKRPT
View Number      ===> 1                 Filter Name ===>
                                        Secured     ===> N  (Y/N)

Description      ===> BANK REPORT DEFINITION BANKRPT

Display Attributes (Y/N):
   Default View       ===> N       Lock Left Column   ===> N
   Carriage Controls  ===> Y

Data Extraction By Page:
   Pages   to Exclude ===>        (Pages are excluded from top of file  )
   Records to Exclude ===>        (Records are excluded from top of page)
   Records to Display ===>        (Leave blank for entire page)

To select the following, enter the 1-character code on the command line:
     H - Define primary heading        P - Define page separation criteria
     C - Define column specifications  L - Define color specifications

            Enter END command to reenter viewing of report.
```

6. If you want to define logical views for additional indexes or reports, you can overtype the View ID, View Number, and Description and repeat steps 3 through 5.

   Be sure to save the logical view after repeating each sequence of steps.

7. When you finish the logical view definitions, press RETURN to return to the Primary Selection panel.

View the PDF indexes Created by your Indexing Process

Use CA Output Management Web Viewer to select and view the PDF indexed document. If a specific index name and value is selected via cross report selection, only the pages specifically associated with the index name and value are displayed.

Chapter 18: Data Encryption

Protecting your data is of utmost importance. The Payment Credit Industry (PCI) has defined standards for protection of credit card information. One of the most important factors in this compliance is the ability to provide optimum security, that is, data at rest must be encrypted through strong encryption.

Strong encryption is based on a published encryption algorithm that uses an encryption key. Some encryption algorithms require a single encryption key for encrypting and decrypting data while and others require a public and private key for encrypting and decrypting data.

A single encryption key is typically used for data at rest and a private/public key for transmission of data. The encryption key is stored externally from the data and can be secured in a database or by a key management product.

The separation of the encryption key and the data is vital to help ensure that the data by itself is unrecognizable to unauthorized individuals.

You can configure CA View can be configured to encrypt the report data and the report index data in the database and on tape. This support provides storage and access of the encryption keys with the IBM Integrated Cryptographic Service Facility (ICSF) product.

CA View uses the Advanced Encryption Standard (AES) algorithm. Depending on the supporting hardware, this algorithm uses either a 128-bit key or a 256-bit key to encrypt data. Use the ENCRYPT initialization parameter to activate this This feature is activated within the product by using the ENCRYPT initialization parameter..

This section contains the following topics:

Use ICSF Services to Create, Access, and Maintain Encryption Keys (see page 646)
Encryption Using New and Existing Database and Tape Data (see page 647)
Changing the Initialization Parameter ENCRYPT Setting (see page 648)
Supported Cryptographic Hardware (see page 649)
IEBGENER Considerations (see page 649)
Encryption and Decryption Software Considerations (see page 649)

Use ICSF Services to Create, Access, and Maintain Encryption Keys

The IBM Integrated Cryptographic Service Facility provides services to create, access, and maintain encryption keys. These services are provided through a Cryptographic Service Facility task that must be started on each system that utilizes the service.

For information about the steps to install, initialize, and customize the startup task and ICSF data sets, see the IBM z/OS Integrated Cryptographic Service Facility System Programmers Guide.

Key Labels

The Advanced Encryption Standard (AES) keys are stored in clear form in the ICSF CKDS data set and assigned a name known as a key label. For the output management products, these key labels begin with CAOMPROD. A special ICSF key label named CAOMCKDS.LABEL is also created for each unique ICSF configuration.

Important! We recommend that you make regular backups of the ICSF CKDS data sets. If information in the ICSF CKDS data set is lost or destroyed, data encrypted with these keys is unusable.

Activating Encryption

To activate ICSF encryption for a CA View database, set the ENCRYPT initialization parameter as follows:

`ENCRYPT=ICSF,`*nnn*

where

nnn

On the ENCRYPT initialization parameter identifies the change interval in days for encryption keys. Every nnn days a new encryption key will be used for archival of new reports. A value of 1 to 366 can be specified for nnn. The default, if omitted, is 365 which indicates a single encryption key for the entire year.

When encryption is enabled, the initialization process helps make certain that keys are created for the entire year. When a new year begins, keys are automatically created for that year when the first report is archived. A SARICF01 message identifies the creation of new keys. After you receive this message, perform a backup of the ICSF CKDS data set to help make certain that you have a backup copy of the new keys.

Different Configurations Residing on Different Systems

Different ICSF configurations can reside on different systems. If you can access a specific CA View database on one of these systems, be aware that you might have to copy encryption keys from one ICSF configuration to another to provide access to reports. In this situation, copy only the keys that start with CAOMPROD from one ICSF configuration to another.

Warning! Do not under any circumstances copy the CAOMCKDS.LABEL key label --as this label is unique for each ICSF configuration. Copying the key label can create duplicated key labels on different ICSF configurations with different encryption keys. Duplicated key labels might and render certain reports unusable.

A similar condition can occur at a disaster recovery site. We recommend that you delete the CAOMCKDS.LABEL at the DR site before you perform output management activities.

Important! If the ICSF CKDS data set is shared among multiple z/OS systems, the ICSF SYSPLEXCKDS(YES,FAIL(xxxx)) parameter must be specified in the ICSF installation options data set.

This parameter allows newly created keys to be shared with other systems running ICSF. Without this parameter, the ICSF in-memory copy of the CKDS will be out of sync between among the systems and the result is in that reports can being encrypted with one key and later incorrectly decrypted with another key. When this decryption occurs, the original keys are replaced with keys from another system. Reports using the original keys can no longer be decrypted.

Encryption Using New and Existing Database and Tape Data

If a new database is created and encryption is enabled, all report and report index data on the CA View database and backup tapes are encrypted.

If you have an existing CA View database and enable encryption, newly archived report and report index data on the CA View database and backup tapes are encrypted. Existing report data is only going to be encrypted when the report is reloaded to database disk or re-backed up to tape.

Follow these steps to fully encrypt existing data:

1. Set the ENCRYPT initialization parameter to the targeted setting.
2. Copy or unload/load the database to a new database with the SARDBASE utility to encrypt all reports in the new database.
3. Encrypt existing backup tapes by consolidating the tapes with the SARPAC utility.

Changing the Initialization Parameter ENCRYPT Setting

You may want to change the initialization parameter setting to:

- Designate a new key management service

  If the ENCRYPT initialization parameter setting is being changed to designate a new key management service, be aware that:

  - Existing report and report index data in the database and on tape will still are going to retain their original key reference.
  - Data that is encrypted with ICSF can coexist in the same database with non-encrypted data.

  These reports are accessible as long as the appropriate tasks are running on the system. If you want to convert all the data over to the new key management scheme, perform the procedures outlined in the "Encrypting Encryption Using New and Existing Database and Tape Data" earlier in this section.

- Stop encrypting data in the database and on tape

  If you no longer want to encrypt data in the database and on tape, the ENCRYPT initialization parameter can be set to NO with the SARINIT program as follows:

  ```
  ENCRYPT=NO
  ```

  Newly archived data and newly created backup tapes are no longer encrypted.

  Note: Existing report and report index data in the database and on tape retain their original key reference and are accessible as long as the appropriate tasks are running on the system.

  To completely remove encrypted data from the database and tape, perform the procedures outlined in "Encryption with New and Existing Database and Tape Data" earlier in this section.

Note: The CA View started task and FSS collections must be recycled to pick up a new ENCRYPT initialization parameter setting. The CA Deliver started task need not be restarted.

Supported Cryptographic Hardware

Two cryptographic hardware choices are available for use on various systems:

- Cryptographic Coprocessor Facility (CCF)

  CCF is a standard component on z900 and a no-cost option for z800. On z800 and z900 systems, ICSF requires CCF.

- CP Assist for Cryptographic Functions (CPACF)

  CPACF is a standard component on z9 and z10 and a no-cost option for z890 and z990.

Other available cryptographic hardware components might do not necessarily improve encryption performance, as described in the following list:

- Peripheral Component Interconnect (PCI)-based co-processors (PCICC, PCIXCC, and Crypto Express2)

  These co-processors, which provide secure key storage, hardware hashing, and SSL support.

- PCI-based accelerators (PCICA, Crypto Express2 configured in accelerator mode)

  These accelerators provide high performance SSL assistance.

Note: CA View does not require the use of the Cryptographic Express2 coprocessor (CEX2C). To run ICSF without a CEX2C co-processor, you need ICSF release FMID HCR7751or higher.

If you are running an older release of ICSF, you must purchase a CEX2C co-processor, because previous releases of ICSF require that hardware to initialize the CKDS data set.

IEBGENER Considerations

IEBGENER cannot be used to print a report from a backup tape because data is now stored in encrypted format.

Encryption and Decryption Software Considerations

If you use z/OS software encryption and decryption, the time the CPU uses to encrypt or decrypt data increases the CPU time consumed by the job or started task.

Our tests have shown that encryption using the Crypto Assist Facility (CPACF) has the least amount of overhead. We experienced an increase of 1/10 of a CPU second for every million lines archived or browsed.

Appendix A: Data Sets and Environmental Considerations

This appendix discusses the data sets used by CA View.

This section contains the following topics:

Data Sets (see page 651)
The Database (see page 652)
Tape Archival Data Set (see page 655)
Tape Duplex Data Set (see page 656)
DR Tape Data Set (see page 657)
Load/Unload Data Sets (see page 658)
Recovery Data Set (see page 659)
Forward Recovery Data Set (see page 659)
Accounting File (see page 660)
Exceptional Condition Table (see page 661)
Expanded Retention Table (see page 661)
Environmental Considerations (see page 662)

Data Sets

The system uses the following data sets:

- CA View database
- Tape archival data set
- Tape duplex data set
- DR tape data set
- Load/unload data sets
- Recovery data set
- Forward recovery data set
- Accounting file
- Exceptional condition table
- Expanded retention table

All these are discussed in the following sections and the section on environmental considerations.

The Database

The CA View database is a set of one or more direct-access data sets containing the master index and the disk-archived SYSOUT. The database is created and maintained with the SARDBASE utility. The master index is initialized and modified with the SARINIT utility.

The database is designed for high performance and quick access. Data is stored in a compressed format to minimize space requirements.

A maximum of 255 index and data file data sets can be defined for the database. For performance considerations, it is preferable to use a few large data sets rather than many small data sets.

Attributes and Naming Convention

The data sets comprising the database have the following attributes:

```
DSORG=DA or PS
RECFM=F
SPACE=(CYL,,,CONTIG)
```

Although the data sets are marked as movable, they can only be moved to a volume of the same device type. Each data set must also occupy one contiguous extent, occupy the same number of cylinders, and be allocated on a cylinder extent boundary.

A unique block size can be assigned for the database index file and data file data sets using the ADDDS statement of the SARDBASE utility. The default block size for the database index file data sets is 8906, and the default block size for the database data file data sets is 3768.

For data sets that are more than 4,369 cylinders, the data sets are allocated as physical sequential data sets (DSORG=PS) due to IBM restrictions.

The data sets are assigned names in the following format:

Syntax

```
index.SARDBASE.tnnnnnnn
```

Where

index

Specifies the high-level name of the database.

The index comprises one or more qualifiers separated by periods. The maximum length of the index is 17 characters.

t

Specifies the type of data set as either I for index file data set or D for data file data set

nnnnnnn

Specifies the relative sequence number of the data set within the database.

Master Index

The master index resides in the index file data sets and contains the following types of records:

- Master control record (MCR)

  The MCR contains the control information for CA View, including the initialization parameters that have been selected. There is only one MCR.

- Tape control record (TCR)

  The TCR identifies the tape archival and tape duplex data sets. Each tape volume has one TCR.

- Group control record (GCR)

  The GCR describes the characteristics of each SYSOUT group that is archived. Each SYSOUT group has one GCR.

- User attribute control record (UCR)

  The UCR describes the attributes for the online users (for example, PF key definitions). Each attribute for each user has one UCR.

- Online member control record (OCR)

  The OCR describes the panels, messages, and skeleton JCL members loaded from the online library. Each panel, message, and skeleton JCL member has one OCR.

- Expanded retention control record (PCR)

  The PCR contains the control information for the Expanded Retention Option (formerly known as the Permanent Archival Option or PAO). The only PCR is present if the Expanded Retention Option is installed.

- View control record (VCR)

  The VCR contains a logical view definition. Each logical view defined has one VCR.

- Alternate index control record (ACR)

  The ACR consists of an index of SYSOUT IDs within a generation number. The CA View database has many ACRs.

Mapping macros for the records (SARMCR, SARTCR, SARGCR, SARUCR, SAROCR, SARVCR, SARPCR and SARACR) and a COBOL copy book defining the records (SARCBREC) are provided in CAI.CVDEMAC.

Tape Archival Data Set

CA View automatically creates and deletes the tape archival data sets (also referred to as backup tape data sets). One data set is created per tape volume. SYSOUT groups and the backup of the master index are written sequentially to the same tape data set and are separated from each other by EOD records. The first record written to the tape for a SYSOUT group is the group's GCR. Using the high-speed block ID positioning, CA View can quickly "spin down" to any SYSOUT group for retrieval.

As much SYSOUT as can fit on a tape is written to that tape. When the end of the tape is sensed or an I/O error occurs, CA View terminates the tape data set. Then, it allocates a new data set on another tape volume, and continues writing to the new volume.

Initialization Parameters and Tape Archival

The unit name used for allocation is specified on the STORGRP*n*(0-9) initialization parameter. The TVSER1 and TVSER2 sub parameters can be specified to assign a range of tapes for CA View to use. The MAXGENT initialization parameter can be used to limit the number of generations of SYSOUT that are written to the same tape volume.

As part of its backup cycle, CA View uncatalogs any tape that is no longer needed.

Note: Tapes created by the backup cycle do not uncatalog until all of the following conditions are true:

- All reports are expired
- The tape is older than five days
- The highest generation on the tape is less than the current generation minus the NGENI initialization parameter value

The EXPDT initialization parameter can be used to determine when a tape is available for scratch.

Copying Tapes

Due to the special format of the CA View tape archival data sets, normal utilities generally cannot be used to copy archival tapes. A special utility, SARTCP, is provided for this purpose. In addition, the utility maps the contents of a tape and can be used to salvage SYSOUT from a damaged tape.

Note: For more information about tapes, see Tape Management Scratch and Clean Utility (SARTCHK) in the chapter "Database Utilities."

Attributes and Naming Convention

DCB attributes for the data sets are:

```
RECFM=VB
LRECL=32756
BLKSIZE=32760
```

The data sets are assigned names in the following format:

Syntax

```
index.SARTAPE.Tnnnnnnn
```

Where

index

Specifies the high-level index used to name the CA View database. This high-level qualifier can be overridden on the STORGRPn(0-9) initialization parameter.

nnnnnnn

Specifies the sequence number of the tape data set.

Tape Duplex Data Set

The tape duplexing feature of CA View allows a site to obtain a duplicate copy of their backup tape data sets. When this feature is activated, an additional tape is mounted during the backup cycle and during direct to tape archival. All I/O to the original backup tape is simultaneously written to the duplex tape data set. This feature is activated by specifying *unit2-name* which is a subparameter of the STORGRP*n*(0-9) initialization parameter. *Unit2-name* is used to allocate the tape duplex data set.

Tape duplex data sets are created and deleted in the same method as tape archival data sets.

DTVSER1 and DTVSER2 can be specified to assign a range of duplex tapes for CA View to use. DTVSER1 and DTVSER2 are sub parameters of the STORGRXn(0-9) initialization parameter.

Attributes and Naming Convention

DCB attributes for the data sets are:

```
RECFM=VB
LRECL=32756
BLKSIZE=32760
```

The data sets are assigned names in the following format:

Syntax

```
index.SARDPLX.Tnnnnnnn
```

Where

index

Specifies the high-level index used to name the CA View database. This high-level qualifier can be overridden on the STORGRPn(0-9) initialization parameter.

nnnnnnn

Specifies the sequence number of the tape data set.

This number is the same as the sequence number from the original backup tape.

DR Tape Data Set

The DR tape feature of CA View allows a site to create a separate backup tape (or tapes) containing all reports that were created since the last backup cycle. This tape can immediately be taken offsite as a DR backup. Unlike the primary or duplex tapes, reports are not appended to the DR tape during the next backup cycle.

When SARPAC is run, new primary, duplex, and DR tapes are created. If multiple SARPAC jobs are run during the same calendar day, the reports are appended to the same DR tape.

To use the DR tape feature, specify DRTAPE=YES in the SARINIT parameters. When the DRTAPE parameter is set to ACTIVE, CA View creates the DR tapes and attempts to access reports on tape using the copy stored on the DR tape. If that copy is not available, the copy stored on the primary or duplex tape is used.

Attributes and Naming Convention

DCB attributes for the data sets are:

```
RECFM=VB
LRECL=32756
BLKSIZE=32760
```

The data sets are assigned names in the following format:

Syntax

```
index.SARDRTP.Tnnnnnnn
```

Where

index

Specifies the high-level index specified in the SARINIT DRTIDX parameter.

nnnnnnn

Specifies the sequence number of the tape data set.

Load/Unload Data Sets

The UNLOAD SARDBASE database function creates a sequential data set for backup purposes. The database records are written in ascending key sequence order to the data set. This data set can be used at a later time to restore the contents of the designated database using the LOAD function.

If the output data set is tape, duplexing is not done.

Attributes and Naming Convention

DCB attributes for the data sets are:

```
RECFM=VB
LRECL=32756
BLKSIZE=32760
```

The output data set is assigned a name as designated by the user.

Recovery Data Set

This data set resides on a direct-access volume and is used by the backup process of the archival task to keep track of the tapes used to back up the database. The recovery data set is allocated as part of the installation procedure.

This data set is referenced by the CA View archival task and other utilities by using the SARRECV DD statement.

Note: For more information about recovery data set, see Recovery Data Set in the chapter "Configuring."

Attributes

DCB attributes for the data set are:

```
RECFM=F
LRECL=12288
BLKSIZE=12288
```

Forward Recovery Data Set

This data set resides on a direct-access volume and is used by the archival task to store SYSOUTs that are archived to the database. The forward recovery data set is allocated as part of the installation procedure.

Note: For more information about forward recovery, see Forward Recovery in the chapter "Backing Up and Recovering the Database."

Attributes and Naming Conventions

DCB attributes for the data set are:

```
RECFM=U
LRECL=0
BLKSIZE=32760
```

The data sets are assigned names in the following format:

index.SARFRDS.D*nnnnnnn*

Where

index

Specifies the high-level index used to name the CA View database.

nnnnnnn

Specifies the sequence number of the disk data set.

Accounting File

The accounting file is a direct-access data set used to maintain accounting data on jobs for use by the archival started task. The data set is defined and initialized as part of the installation procedure.

A logical record in the file contains an 8-byte job name and 20 bytes of accounting data selected from type-20 SMF records by the SARACTUX user exit. The location of the logical record in the file corresponds to the job ID of the job.

The accounting file is only used when job accounting is initiated as a CA View extension.

Attributes

DCB attributes for the file are:

```
RECFM=FB
LRECL=28
BLKSIZE=6160
```

Exceptional Condition Table

The exceptional condition table or exception table is a sequential data set that contains control statements defining specifications for exceptional condition checking. The data set is allocated to the CA View archival started task with the SARXCTAB DD statement.

Note: For more information about exceptional condition, see Exceptional Condition Checking in the chapter "Archival."

Attributes

DCB attributes for the file are:

```
RECFM=F or FB
LRECL=80
BLKSIZE=nnnnn
```

where *nnnnn* is a multiple of 80.

Expanded Retention Table

The expanded retention table is a sequential data set that contains control statements defining specifications for automatic retention of SYSOUT. The data set is allocated to the CA View archival started task with the SARPATAB DD statement.

Note: For more information about ERO, see the chapter "Expanded Retention Option."

Attributes

DCB attributes for the file are:

```
RECFM=F or FB
LRECL=80 to 256
BLKSIZE=nnnnn
```

where *nnnnn* is a multiple of LRECL.

The rightmost nine characters of each record (columns 71-80 for a data set with LRECL=80) are ignored and can contain sequence numbers or comment information. If the parameters for a retention specification do not fit on one line, they can be supplied on subsequent lines.

Environmental Considerations

Consider the following variables when establishing an operating environment for CA View Release 12.1.

CA Spool

CA Spool must be at a currently supported release for CA View to run properly.

CA Deliver

When running CA View with CA Deliver, note the following conditions:

- You must be running at a currently supported release.
- When printing through CA View VTAM print, CA Deliver reports can be printed; however, bundles cannot be printed.

Interfaces and Output Functions

The following table indicates which CA View interface, listed in the leftmost column, works with the CA View output function:

Online Interface/ Function	CA View VTAM Print	CA Spool	Double-Byte Characters
TSO	Yes	Yes	Yes
ISPF	Yes	Yes	Yes
VTAM	Yes	Yes	No
CA Roscoe	Yes	Yes	No
CICS Cross-memory	No	Yes	No
IMS	No	Yes	No
Batch	Yes	Yes	Yes

AFP Reports: Archiving and Viewing

The CA View ACIF interface, which archives AFP reports to the CA View database, requires the following:

- IBM Print Services Facility (PSF) for z/OS
- CA View

Appendix B: CA View Health Checks

This Appendix describes health checks for CA View. The product owner for all CA View health checks is CA_VIEW.

Note: For Health Check messages, see the *Message Guide*.

This section contains the following topics:

VIEW_OPT_CLFMDS (see page 665)
VIEW_OPT_ENCRYPT (see page 667)
VIEW_OPT_MASTER (see page 668)
VIEW_OPT_TBACKUP (see page 669)

VIEW_OPT_CLFMDS

Description

This health check indicates whether default settings are being used for the CA View CLSL, FORM, and DEST parameters. These parameters control which sysouts are being archived from the JES spool by the started task. If at least one of these parameters is not specified, CA View starts to archive every non-held sysout in the spool, it defaults to all classes or forms or destinations. When all three are not set, CA View archives all classes, all forms, and all destinations.

Best Practice

It is a best practice to review the settings of the CLSL, FORM, and DEST parameters to be sure that CA View archives Sysouts according to the needs of your site. Archiving is based on these settings; for a Sysout to be archived, it must meet the selection criteria specified by all three of these parameters.

Parameters Accepted

No

Debug Support

No

Verbose Support

Yes

Severity

High

Interval

Once

Reference

For more information about CA View parameters and running SARINIT, see the CLSL, FORM, and DEST parameters in the Initialization Parameters Description section in the chapter "Initialization Parameters" in this guide.

Messages

The following messages are generated:

- SARH003E
- SARH003I

VIEW_OPT_ENCRYPT

Description

This health check verifies that your processor has the crypto hardware to most efficiently encrypt and decrypt reports.

Best Practice

For optimal encryption performance, use the CPACF hardware in your system. If you do not have CPACF enabled, contact IBM to determine if the no cost CPACF option can be made available on your system. If possible, run the following tasks on a machine that supports hardware encryption:

- SARSTC
- FSS collectors
- SARXMS

CP Assist for Cryptographic Functions (CPACF) is a standard component on z9 and z10 and a no-cost option for z890 and z990 processors.

Parameters Accepted

No

Debug Support

No

Verbose Support

Yes

Severity

High

Interval

Once

Reference

For more information, see the *Release Notes*.

Messages

The following messages are generated:

- SARH005E
- SARH005I

VIEW_OPT_MASTER

Description

This health check checks the CA View MASTER=ALL setting. This setting is used to grant or prevent access to administrative functions that control the following definitions – USERS, PRINTERS, LOGICAL VIEWS, and SYSOUTS that a user can browse in SAR mode. MASTER=ALL indicates no restrictions.

Best Practice

Best practices recommend setting MASTER to a user ID rather than ALL. For a database in a production environment, change the SARINIT MASTER parameter to MASTER=userid. This does not limit MASTER authority to a single user. A user with master authority can assign master authority to any other user through the online DEF USER command.

Parameters Accepted

No

Debug Support

No

Verbose Support

Yes

Severity

Low

Reference

For more information about CA View parameters and running SARINIT, see the MASTER parameter in the Initialization Parameters Description section in the chapter "Initialization Parameters" in this guide. Also see the Define User command in the chapter "System Administration" in the *User Guide*.

Messages

The following messages are generated:

- SARH001E
- SARH001I

VIEW_OPT_TBACKUP

Description

This health check allows you to review and choose the best TBACKUP setting for your needs. CA View database backups occur automatically or can be manually triggered through operator commands. When TBACKUP=NO is set, the backup cycle runs and deletes expired reports. The master index and the new report data are not written to a backup tape. If a hardware or software error occurs, the database cannot be restored using CA View utilities.

Best Practice

Back up the CA View database using the CA View utilities which is the only way to create a valid backup without taking an outage. Full volume backups are only valid if all archiving tasks, FSS collectors and Deliver started tasks are down. If the TBACKUP parameter is set to NO, the CA View started task does not create a backup tape.

Parameters Accepted

No

Debug Support

No

Verbose Support

Yes

Severity

Low

Reference

For more information about CA View parameters and running SARINIT, see the TBACKUP parameter in the Initialization Parameters Description section in the chapter "Initialization Parameters" in this guide.

Messages

The following messages are generated:

- SARH004E
- SARH004I

Appendix C: Troubleshooting and Technical Support

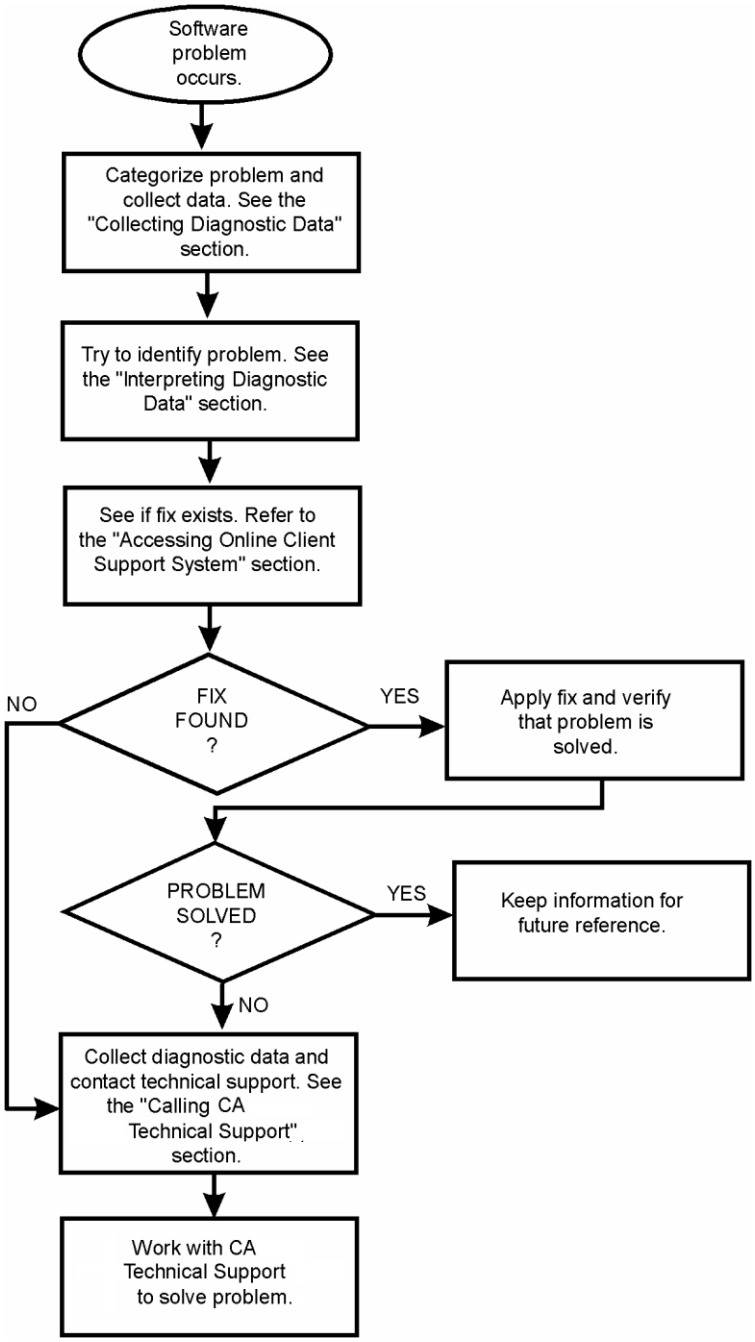
This appendix explains how to troubleshoot problems, obtain customer support, and request product enhancements.

This section contains the following topics:

Diagnostic Procedures (see page 672)
Troubleshooting (see page 673)
Collecting Diagnostic Data (see page 673)
Accessing the Online Customer Support System (see page 676)
CA TLC: Total License Care (see page 677)
Sending Documentation to CA Technical Support (see page 683)
Product Releases and Maintenance (see page 686)
Requesting Product Enhancements (see page 686)

Diagnostic Procedures

The following flowchart summarizes the procedures if you have a problem with a CA software product. Each of these procedures is detailed on the following pages.



Troubleshooting

Attempt to resolve the problem yourself by doing the following steps, before contacting CA Technical Support:

1. Review the troubleshooting flowchart in the previous section for general debugging suggestions.
2. Review the activities you performed when the problem occurred, comparing them to the documented procedures.
3. If you performed all procedures correctly, repeat the activity under conditions that existed when the problem first appeared. (If the results are satisfactory, an inadvertent error could have caused the problem.)
4. If the error recurs when you repeat a given activity, and you can find nothing in the documentation to suggest that your procedure can be flawed, try to get help from others at your site.

Collecting Diagnostic Data

This section identifies some potential problem areas and presents debugging suggestions; it also lists the documentation to have on hand when you call CA Technical Support.

System Crash

If an abend brings down the operating system, try the following options:

1. See the operating system documentation for the various system dump formats that can be produced for diagnostic purposes.
2. Check for operating system messages or return codes and follow the procedures for recovery that are documented in the IBM MVS system and message code documentation.
3. Initiate the restart procedures documented in the IBM MVS system and message code documentation.

Documentation

Have the following information ready when you call CA Technical Support:

- A completed Support Contact Information form

  Note: For more information about support contact, see Support Contact Information Form later.

- Product release and maintenance levels
- System release and maintenance levels
- System and/or application logs
- Recent changes or upgrades
- System and/or application dumps

Application Problems or Errors

If you have a problem with an application program, or it terminates abnormally, do the following:

1. If your system abended, see the appropriate IBM system messages and codes documentation.
2. If you received an inappropriate return code, review the procedure you used, then review the return code description for the recommended action in the IBM MVS system messages and codes documentation.
3. If you have a problem with a system or operator function, collect the dump or screen print, if appropriate.
4. Check all system and application logs for applicable messages.
5. If the current maintenance tape has not been applied, check the information member for an applicable solution or access support.ca.com (see page 4) online.

   Note: For more information about accessing online customer support, see Accessing the Online Customer Support System.

Documentation

Have the following information ready when you call CA Technical Support:

- A completed Support Contact Information form (see the section Support Contact Information Form later in this appendix)
- Error messages
- Return codes
- Product release and maintenance levels

- System release and maintenance levels
- System and/or application logs
- Complete problem description and procedures for recreating the problem
- Recent changes or upgrades
- System and/or application dumps

Performance Problems

If you have a performance problem, indicated by slow online response time or slow batch job processing, try the following options:

1. Try to determine whether the problem is associated with a single job or with an environmental problem.
2. If the current maintenance tape has not been applied, check the information member for an applicable solution or access https://support.ca.com.

   Note: For more information, see Accessing the Online Customer Support System later in this appendix.

Interpreting Diagnostic Data

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

1. What was the sequence of events before the error condition?
2. Can the problem be recreated at will?
3. What circumstances existed when the problem occurred, and what action did you take?
4. Has this situation occurred before? What was different then?
5. Did the problem occur after a particular PTF was applied or after a new release of the software was installed?
6. Have you recently installed a new release of the operating system?
7. Has the hardware configuration (tape drives, disk drives, and so on) changed?

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

If you determine that the problem is the result of an error in a CA software product, go to https://support.ca.com to see if a fix (APAR or PTF) or other solution has been published. If the issue remains unresolved call CA Technical Support.

Accessing the Online Customer Support System

The https://support.ca.com online product support and service system is available on the Internet from CA. The website contains an extensive Knowledge Base that lets you retrieve many types of product-related information with a single search.

The best features of CA's previous online support systems are fully integrated into support.ca.com (see page 4). These include:

- Solution downloads
- Technical Support issue management
- License key downloads
- Virus signature downloads
- Product-specific FAQs
- Product documentation downloads
- Newsgroup open forums
- E-News newsletters

CA Online Support offers everything that the previous online sites (eSupport.ca.com, support.ca.com (see page 4), and webtrack.ca.com) offered, and much more.

Note: For more information about the differences between support.ca.com (see page 4) and Webtrak and eSupport, see the comparison documents that are accessible from the support.ca.com (see page 4) home page.

Requirements for Using SupportConnect

With a current version of a browser and without logging in, you have access to a considerable amount of information on the website. This includes access to FAQs, published solutions (for channel products only), compatibilities, virus signatures, news, CA user group information, and support services, and to perform general Knowledge Base searches.

Log in for full access to all the services related to your licensed products, including published solutions, license keys, newsgroups, Hyper Subscriptions, product and documentation downloads, issue management, and Suggestion Box. These areas require that you are a registered user. You can convert your Webtrack or eSupport login and password to a support.ca.com (see page 4) account; click Convert Existing Account when you first access support.ca.com (see page 4).

Accessing the Technical Support Phone Services Directory

The CA Technical Support Phone Services Directory lists each CA product and the telephone number to call for primary support for that product. To access the Support Phone Services Directory, click on the Support Services link on the https://support.ca.com (see page 4) webpage.

CA TLC: Total License Care

Many CA software solutions use license keys or authorization codes to validate your hardware configuration. If you need assistance obtaining a license key or authorization code, contact the CA TLC: Total License Care group through https://support.ca.com.

When to Call Technical Support

If you have a current maintenance agreement with CA, you can contact CA Technical Support to:

- Open a new issue
- Address an open issue
- Reopen a closed issue

Opening a New Issue

Open an issue when you have identified one or more of the following types of problems but have not been able to resolve them:

- A problem with CA View
- A problem related to the CA View coexistence with other software products
- Site-specific solutions you require
- A problem determining how to use a CA View feature for a site-specific purpose
- A problem with documentation, including errors, omissions, or incomplete explanations or procedures

Addressing an Open Issue

Contact CA Technical Support on a previously opened issue to:

- Provide new information on an open issue
- Inquire about the status of an open issue
- Revise the problem severity rating (see Describing the Problem later in this appendix)
- Inform CA Technical Support that you solved an open issue, and how you solved it

Reopening a Closed Issue

If the original problem recurs, you can reopen a closed issue. Be sure to identify the issue by its original contact number.

Preparing to Call About a New Issue

Before you call, have the following information available:

- A photocopy of the Support Contact Information form (see the section Support Contact Information Form later in this appendix) with all available information logged
- A Support Contact Number Log with the date of the call recorded in the Date Opened field (see the section Support Contact Number Log Form later in this appendix)
- A history of the problem
- All available diagnostic data (see the section Collecting Diagnostic Data earlier in this appendix)

Ensure that the person calling CA Technical Support is familiar with CA View, the current release, the current maintenance level, the details of the problem reported, and the various options and features in use; or the person has immediate access to someone who has this information.

Preparing to Call About an Open Issue

When you call CA Technical Support about an open issue, refer to the issue by contact number, not by the name of the technician with whom you previously spoke. The issue could have been transferred to a different group internally, and a new technician could have assumed responsibility for further action on the issue. All prior history of the contact is retained in the CA Technical Support tracking and reporting system under that contact number, so the technician has immediate access to it.

Before you call, have the following available:

- The Support Contact Information form containing the CA-supplied information:
  - The name of the CA Technical Support technician
  - Contact number
  - Issue number (if there is more than one issue associated with the contact number)
  - Solution number, if provided
  - Your CA site ID

  Note: If you no longer have the Support Contact Information form, look up the contact number recorded on your Support Contact Number Log form.
- A brief description of the nature of this call.

Preparing to Reopen a Closed Issue

If a previous-resolved problem recurs, contact CA Technical Support to have the issue reopened. See the *original* contact number so that all historical information is available for diagnosis.

Before you call, have the following information available:

- The original contact number and solution (if available)
- A history of the problem and resolution
- All available diagnostic data (see the section Collecting Diagnostic Data earlier in this appendix)

Describing the Problem

Do the following steps before calling CA Technical Support:

1. Identify the context in which the problem occurred (for example, a problem with installation or a problem in the production environment).
2. If this is a new installation, product upgrade, pilot project, or problem with a test system, list the steps you followed up to this point.
3. If the problem occurred in a production environment, describe the following information in detail:
   - The attempted activity, with the expected results and actual results
   - The attempts to resolve the problem and their results

   Note: The very act of producing an accurate description of the problem can suggest its cause and perhaps a way to correct it. If not, an accurate description assists the CA Technical Support technician in helping you to resolve it.
4. Prioritize the problem.

   Problem Severity Rating

   CA uses a rating system to expedite resolution of support calls. Use the following guide to establish the severity of your problem:

1

Signifies that the production system down or major business impact.

2

Signifies major component nonfunctional or serious business impact.

3

Signifies minor component nonfunctional or moderate business impact.

4

Signifies general question or a noncritical problem.

1. Photocopy the following forms (located later in this appendix) and complete the applicable sections:

   - Support Contact Information form

     Before making the call, use this form to record all the information required by the CA Technical Support technician. During the call, use this form to record all the information the technician provides. (See the section Support Contact Information Form later in this appendix.)

   - Support Contact Number Log form

     Use this form to keep a permanent record of the contact numbers associated with the issues about which you contact CA Technical Support. If an issue that has been closed reappears due to incomplete resolution, this form can serve as a reference of the original contact number so that the technician can reactivate the appropriate file. (See the section Support Contact Number Log Form later in this appendix.)

Making the Call

When you call CA Technical Support, you are connected directly to a technician for CA View. If no CA View technician is available, a technical administrator records your problem in the CA Technical Support tracking system.

All calls are returned in the order received and by degree of severity. The next available technician returns your call as soon as possible.

1. Provide the CA Technical Support technician with the following information:

   - Your CA site ID and PIN number, if known
   - The severity rating of your problem
   - Your company information (see the section Support Contact Information Form later in this appendix)
   - A brief description of the problem

   Note: When you call about a new issue, *do not* refer to a contact number previously assigned for a different issue; this could impede the resolution of your current problem.

   If you do not know your CA site ID or the problem severity code, the technician provides this information. Record the site ID and severity level on the Support Contact Information form.

2. When the technician enters your issue in the tracking system, record the information provided by the technician on the Support Contact Information form.

   This information includes a contact number and, if you address multiple issues, the issue numbers.

3. The technician can request that you:

   - Provide additional detailed information
   - Forward applicable diagnostic documentation
   - Perform troubleshooting procedures as directed
   - Relate site-specific environmental information

4. If a solution is determined during the initial call, record the solution on the Support Contact Information form. Also, be sure to record the current date under Date Closed on the Support Contact Number Log form.

If the Problem is Not Resolved Immediately

1. You can be asked to run the SSXTINFO utility.

   The SSXTINFO utility is a Rexx routine which displays information regarding Deliver tasks, SARXTD intercepts and XMS regions. When Deliver, SARXTD and XMS tasks are started, their corresponding subsys-id is inserted into the systems SSCT (Subsystem Control Table).

   When SSXTINFO is invoked, the SSCT is scanned for a requested subsys-id. For Deliver and SARXTD, the default subsys-id is 'EBCX'. For XMS regions, the user is prompted for a subsys-id value.

   To execute the SSXTINFO utility type the following command:

   ```
   ex 'cai.view.cvdecls0(ssxtinfo)'.
   ```

   The user is prompted with the following options:

   ```
   Enter DLVR  to display the SSTX chain for Deliver and SARXTD
   Enter XMS   to display a SUBSYS-ID address
   Enter ?     to display REXX exec information
   ```

   If DLVR is entered, information is displayed regarding currently running CA Deliver tasks and active SARXTD intercepts.

   If XMS is entered, the user is prompted for a SUBSYS id value. After you enter the subsys id value, information for the XMS region running under the entered subsys id value is displayed.

2. If the problem cannot be resolved immediately over the phone, the technician can provide a solution number and advise you to expect the solution in the form of a module replacement, ZAP, or source change.

   The solution is supplied to you by one of the following methods:

   - Through telephone, FAX, telex, or mail
   - On a maintenance or product tape
   - Through one of the online client support systems

3. If a solution is not readily available, the technician can require additional documentation and/or that more testing be performed.

   Whenever possible, the technician attempts to reproduce the problem in-house to obtain diagnostic data. If the problem is not reproducible due to environmental factors, you are asked to provide diagnostic information to the technician for analysis. To expedite problem resolution please provide as much detail as possible.

   As soon as a solution is available, it is provided by one of the methods listed in Step 1.

4. If the solution resolves the problem, record the date of resolution under Date Closed on the Support Contact Number Log form. Otherwise, continue the dialog with the technician until the problem is resolved.

Sending Documentation to CA Technical Support

Use the following guidelines when the CA Technical Support technician requests dumps, trace listings, compile lists, or other documentation related to an open issue:

1. Write the contact and issue numbers prominently on each listing.
2. Include a photocopy of the completed Support Contact Information form for this issue.
3. Address the package to the CA View support center. Obtain the address from your CA representative or consult the *CA Product Support Directory*.

Sample Forms

The forms on the following pages are designed to help you keep an accurate record of your contacts with CA Technical Support. Refer to these forms when making calls. For example, use the Support Contact Number Log form to record the issues associated with a contact number. When issues are resolved (closed), enter the date in the last column. If a closed problem recurs, refer to this log for its contact number so that the appropriate file can be reactivated. You can photocopy these forms as needed.

Support Contact Number Log Form

SUPPORT CONTACT NUMBER LOG

Product Name and Release_____

Product Support Assistance

Contact Number	Date	Time	Description	Solved/Closed
_____	_____	_____	_____ _____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____ _____	_____
_____	_____	_____	_____ _____	_____
_____	_____	_____	_____ _____	_____
_____	_____	_____	_____ _____	_____
_____	_____	_____	_____ _____	_____

Support Contact Information Form

SUPPORT CONTACT INFORMATION

General Information:

Support Telephone Number ( ) _____

Date of Call: _____ Problem Severity: _____

CA-Supplied Information:

Support Technician: _____Contact Number:_____

Fax Number: ( ) _____ Issue Number: _____

Your CA Site ID: _____ Your CA PIN Number:_____

Solution Number: _____ for Product: _____Release: _____

Your Company Information:

Company Name: _____
Location:_____

Your Name:_____

Telephone Number: ( ) _____ Extension: _____

Fax Number: ( ) _____

Alternate Contact Person:_____

Alternate Telephone Number: ( ) _____ Extension: _____

Notes:

Page 1 of 2

Support Contact Information Form (Continued)

SUPPORT CONTACT INFORMATION

Product Releases and Maintenance Levels:

Product	Release	Maintenance
CA View	_____	_____
Operating System	_____	_____
CA Common Services	_____	_____
Other	_____	_____
Other	_____	_____
	_____	_____

Additional solutions applied:

Product	Solution Numbers	
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Enclosed Documentation:

1. _____ 2. _____

3. _____	4. _____
5. _____	6. _____
7. _____	8. _____

Page 2 of 2

Product Releases and Maintenance

Customers are requested to operate only under currently supported releases of the product.

Customers with current maintenance agreements also receive ongoing product maintenance. When a new release of the system is available, a notice is sent to all current customers.

Requesting Product Enhancements

We welcome your suggestions for product enhancements. All suggestions are considered and acknowledged. You can use either of two methods to request enhancements:

- Enter your request through https://support.ca.com, the CA web-based, interactive support system.
- Contact your Account Manager who initiates the request for you.

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