

CA MICS® Resource Management

MICF Reference Guide

Release 12.9



This Documentation, which includes embedded help systems and electronically distributed materials, (hereinafter referred to as the "Documentation") is for your informational purposes only and is subject to change or withdrawal by CA at any time. This Documentation is proprietary information of CA and may not be copied, transferred, reproduced, disclosed, modified or duplicated, in whole or in part, without the prior written consent of CA.

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

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

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

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

The manufacturer of this Documentation is CA.

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

Copyright © 2014 CA. All rights reserved. All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

Contact CA Technologies

Contact CA Support

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

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

Providing Feedback About Product Documentation

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

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

Contents

Chapter 1: Introduction 7

Chapter 2: MICF Options 9

2.1 User Profile Parameters	9
2.2 Foreground Execution Parameters.....	24
2.3 Batch Execution Parameters	34
2.4 Printer Format Parameters	44
2.5 Color Graphics Format Parameters	58
2.6 Data Set Allocation Parameters	79
2.7 SAS Libraries for ISPF Applications	84
2.8 Additional Data Set Allocations	85
2.9 ISPF Parameters	86

Chapter 3: Reports and Graphics 89

3.1 Graphics.....	89
3.1.1 Vertical Bar Charts.....	91
3.1.2 Stacked Vertical Bar Charts	92
3.1.3 Stacked Group Vertical Bar Charts	94
3.1.4 Horizontal Bar Charts	95
3.1.5 Stacked Horizontal Bar Charts.....	97
3.1.6 Stacked Group Horizontal Bar Charts.....	98
3.1.7 Pie Charts	99
3.1.8 Block Charts.....	101
3.1.9 Star Charts	102
3.1.10 Plots.....	104
3.1.11 Relationship Plots.....	106
3.1.12 Stacked Plots	107
3.1.13 Overlay Plots	109
3.2 Printed Reports	110
3.2.1 Standard List.....	111
3.2.2 Structured List	112
3.2.3 Ranking Report.....	113
3.2.4 Tabular Report	114
3.2.5 Tabular Ranking Report.....	115
3.3 Statistical Analyses	116
3.3.1 Frequency Distribution.....	117

3.3.2 Crosstabulation Report	118
3.3.3 Three-Way Crosstabulation Report.....	119
3.3.4 N-Way Crosstabulation Report	120
3.3.5 Descriptive Statistics Report	121
3.3.6 Correlation Report	123
3.3.7 Stepwise Regression Report.....	127

Chapter 4: Saved File Catalog 131

Chapter 5: MICF Administration 133

5.1 Tasks Performed During Installation	134
5.1.1 Administrator Facility Parameters	134
5.1.2 Authorization Assignments	148
5.1.3 Shared MICF Options	149
5.1.4 Shared Inquiry Catalog	166
5.1.5 Shared Inquiry Output Catalog.....	169
5.1.6 Production Reporting	170
5.2 Tasks Performed After Installation.....	236

Chapter 1: Introduction

MICF is the CA MICS Information Center Facility. It allows you to access the CA MICS database online.

To access MICF from the CA MICS Workstation Facility (MWF) main menu, select option 2, CA MICS Information Center Facility (MICF). This displays the CA MICS Information Center Facility main menu, from which all the MICF functions can be accessed.

The remaining chapters of this guide cover the following topics:

- 2 - MICF Options
- 3 - Reports and Graphics
- 4 - Saved File Catalog
- 5 - MICF Administration

Information on using MICF for direct inquiry is in the MICF User Guide. Information on accessing the CA MICS documentation online is in the Document Access guide.

These two guides, along with this MICF Reference Guide, replace the Database Retrieval and Reporting Guide.

Chapter 2: MICF Options

To access the MICF Options menu from the CA MICS Information Center Facility main menu, select option 0. This gives you access to the parameters that control information retrieval and reporting under MICF.

MICF is distributed with default parameter values for execution, reporting, and retrieval specifications. Since the CA MICS administrator can customize these values according to data center requirements, the MICF end-user rarely needs to make any changes to them.

This chapter describes the parameters that can be accessed from the MICF Options menu. Within each section, parameters are listed alphabetically and are formatted so that the prompt, as displayed on the Parameter Update panel, is followed by text that explains the prompt and the values supported for the parameter.

There are nine types of MICF parameters. Each type is discussed in detail below.

This section contains the following topics:

- [2.1 User Profile Parameters](#) (see page 9)
- [2.2 Foreground Execution Parameters](#) (see page 24)
- [2.3 Batch Execution Parameters](#) (see page 34)
- [2.4 Printer Format Parameters](#) (see page 44)
- [2.5 Color Graphics Format Parameters](#) (see page 58)
- [2.6 Data Set Allocation Parameters](#) (see page 79)
- [2.7 SAS Libraries for ISPF Applications](#) (see page 84)
- [2.8 Additional Data Set Allocations](#) (see page 85)
- [2.9 ISPF Parameters](#) (see page 86)

2.1 User Profile Parameters

User profile parameters are general parameters that apply to overall MICF operation and include the following:

- o Parameters to control translation of panel input to uppercase for both title/label-type fields and value-type fields.

- o The default database ID and file cycles specification for execution time overrides.
- o An option to allow access to CA MICS test database units.
- o The default inquiry execution mode (foreground or batch).
- o The default job statement for batch jobs submitted through MICF and the default region size for SAS execution in batch mode.
- o Default SYSOUT data set allocation parameters for MICF printed output.
- o Parameters to control display of the inquiry save confirmation panel, the execution mode specification panel, the execution options panel, and the direct inquiry processing specification panel. If these panels are not displayed, default specifications are assumed.
- o The default inquiry function selection display. Inquiry functions can be selected through a hierarchical menu tree or through a scrollable selection menu.

The user profile parameters are as follows:

Batch Execution - Display generated job stream before submitting jobs (YES/NO)?

Specify YES, or Y, to display the generated inquiry job stream in edit mode before submitting this job stream for execution. This gives you the opportunity to alter the generated batch job stream before the inquiry is executed. You can also use the ISPF Edit CREATE/REPLACE commands to save a copy of the generated batch job stream.

Specify NO, or N, to bypass display of the generated job stream.

This parameter applies only to inquiries executed in batch mode.

Browse SAS log after color graphics replay and utility SAS executions (YES/NO)?

Specify YES, or Y, to display the SAS log in browse mode following color graphics replay, copy private color graphics to shared inquiry output catalog, and other SAS utility processing. This gives you the opportunity to review the generated utility SAS statements and examine any error or warning conditions. This option is especially helpful when you are using an unfamiliar color graphics device.

Specify NO, or N, to bypass display of the SAS log.

Caps. - Translate ALL panel entry "title/label" fields to uppercase (YES/NO)?

Specify YES, or Y, to translate specifications in data entry fields for title and label-type information to uppercase characters.

Note: This might be necessary if your data center does not support upper/lowercase printing and does not have automatic JES translation.

Specify NO, or N, to allow upper/lowercase title and label information.

Caps. - Translate ALL panel entry "value" fields to uppercase (YES/NO)?

Specify YES, or Y, to translate specifications entered in value-type data entry fields to uppercase characters. Examples of value-type data entry fields are data entry fields on the Execution-Time Parameters panel, the Value column of the General Data Selection panel, and the Element Derivation field of the Data Element Derivation panel. Most character data elements in the CA MICS database contain only uppercase characters and will not match value fields containing lowercase characters (that is, 'PROD' does not equal 'prod'). Specify YES to prevent these kinds of comparison failures.

Note: You will NOT be able to specify lowercase characters in a value-type data entry field.

Specify NO, or N, to allow upper/lowercase value fields. Remember to specify values in uppercase when referring to CA MICS database element values.

Color Graphics User - Do you normally use a color graphics device (YES/NO)?

Specify YES, or Y, if you normally use a color graphics terminal to review saved MICF inquiry outputs.

Note: MICF will NOT automatically select the color graphics replay option unless you specify YES for this parameter.

Specify NO, or N, if you normally do NOT use a color graphics terminal to review saved MICF inquiry outputs.

Confirm Delete - Require confirmation to delete an inquiry step (YES/NO)?

Specify YES, or Y, to display a confirmation panel whenever an inquiry step is being deleted.

Specify NO, or N, to delete inquiry steps without displaying the confirmation panel. This allows you to delete multiple inquiry steps in a single panel interaction.

Cycle(s) - Specify the default CA MICS file cycle(s) for inquiry execution (cc-cc)

Specify this parameter to ensure that the Execution-Time Parameters panel is always displayed with a default specification for CA MICS file cycles. If no default value is provided by the inquiry, the value specified in this parameter is automatically supplied. You can specify a single cycle or a range of cycles (for example, specify 01 for a default of cycle 01 or specify 07-01 for a default of cycles 07 through 01).

Database ID - Specify the database ID (x) of the default inquiry database.

Specify this parameter to ensure that the Execution-Time Parameters panel is always displayed with a default specification for CA MICS database. If no default value is provided by the inquiry, the value specified in this parameter is automatically supplied. The database ID parameter can be very useful since the distributed MICF inquiries do not specify a default database ID. Specify the one-character ID of the unit database that you use most often when executing MICF inquiries. Then you will not need to specify a database ID on the Execution-Time Parameters panel unless you want to override your default specification.

Note: If you have only one unit database in your CA MICS complex, this parameter is not necessary because MICF will specify the database ID automatically.

Direct Inquiries - Automatically execute direct inquiries on END (YES/NO)?

Specify YES, or Y, to automatically execute direct inquiries when END is pressed on the direct inquiry function's primary panel. This saves one panel interaction if you normally execute a direct inquiry immediately after composing or modifying the inquiry.

Specify NO, or N to display the Direct Inquiry Processing panel when END is pressed on the direct inquiry function's primary panel. This gives you the opportunity to save, cancel, or remodify instead of executing the inquiry.

Direct Inquiries - Provide automatic summarization for list reports (YES/NO)?

Specify YES, or Y, to activate the default summarization feature for Direct Standard List and Direct Structured List inquiries. If you do not specify a subheadings data element (Generate Subheadings by), or if other data elements follow the subheadings data element in the report sequence specification (Generate Report in Sequence by), default file summarization will automatically summarize the selected CA MICS file according to the report sequence specification before printing the report. This is equivalent to specifying these same data elements in the Data Summarization extended option.

Specify NO, or N, to disable the default summarization feature. If you do NOT specify the Data Summarization extended option, the selected CA MICS file will be reported WITHOUT summarization. This option will list the contents of the entire CA MICS file exactly as read from the CA MICS database.

Execution Mode - Default inquiry execution mode (BATCH/FOREGROUND).

Specify BATCH, or B, to default to batch mode inquiry execution. Specify FOREGROUND, or F, to default to foreground mode execution. This value is displayed as the default execution mode on the Database Inquiry Execution panel and the Inquiry Step display (for structured inquiries).

Execution Mode - Display execution mode before executing inquiry (YES/NO)?

Specify YES, or Y, to display the CA MICS Database Inquiry Execution panel before executing a MICF inquiry. This gives you the opportunity to override the default execution mode (Batch vs. Foreground).

Specify NO, or N, to bypass the CA MICS Database Inquiry Execution panel and execute the inquiry using the default execution mode.

Note: If BATCH is specified as the default execution mode, you will NOT have the opportunity to override the default batch JOB statement information.

Execution Options - Display execution options before executing inquiry (YES/NO).

Specify YES, or Y, to display the Execution Options panel when inquiry execution is requested.

Specify NO, or N, to bypass display of the Execution Options panel.

If YES is specified for the display execution mode parameter, this specification appears as the default for the Override Execution Options parameter on the Database Inquiry Execution panel.

File Mgmt. - Keep track of file contents and prime panel entry fields (YES/NO)?

Specify YES, or Y, for this parameter.

Note: If you specify NO, or N, MICF will NOT validate panel specification of CA MICS data elements and will NOT prime data entry specifications. This will reduce MICF processing costs and improve performance, but inquiries will NOT be validated and results are unpredictable.

Function Selection Mode - Specify function selection path (MENU/CATALOG).

Specify MENU, or M, to display the standard inquiry function selection menus when composing a new inquiry or when the Insert line command is coded on the Inquiry Step Display panel.

Specify CATALOG, or C, to display the Inquiry Function Catalog when composing a new inquiry or when the Insert line command is coded on the Inquiry Step Display panel. CATALOG allows you to select inquiry functions from the scrollable catalog display without referencing the inquiry function selection menus.

Hold Inq. Output/Save CSV - Hold batch inquiry outputs for replay (YES/NO)?

Specify YES, or Y, to save inquiry outputs (that is, color graphics, printed reports, and CA MICS/SAS logs) in your private batch staging inquiry output catalog. You can use the MICF Reports and Graphics option to review inquiry outputs after the batch job completes execution. You can replay color graphics, browse printed reports and MICSLOG/SAS logs, and view any CSV file output from your batch staging catalog. You can move inquiry outputs from your batch staging catalog to your private inquiry output catalog. You can also delete batch staging catalog entries.

Specify NO, or N, for standard batch inquiry execution with hardcopy outputs.

This parameter applies only to inquiries executed in batch mode.

Note: If you specify NO, or N, any CSV file output generated by the inquiry will be deleted when the inquiry completes.

Inquiry Name - Specify the default name for new inquiries (1-6 characters).

This is the default inquiry name displayed on the Insert Database Inquiry panel.

Inquiry Title - Specify the default title (or "long name") for new inquiries.

This is the default inquiry title, or long name, displayed on the Insert Database Inquiry panel.

Job Card n - Default Job statement #n for ALL MICF batch processing, where n = 1 to 4.

This is the default JOB statement for MICF batch processing. Four lines of JOB statement information are available. This specification will be displayed on all panels that initiate batch processing.

Local Printer - Default local printer name for printed report routing.

The default value for the local 3270 printer parameter on the Print Inquiry Output panel. Specify a 1-8 character DSPRINT printer ID or leave blank.

Local Printer - Specify DSPRINT command options for printing inquiry outputs.

Default DSPRINT command options your data center requires for DSPRINT processing.

PAD - Amount of space reserved for inquiry table growth (nn% of inquiry size).

This is the amount of space, expressed as a percentage of the size of the inquiry table, reserved for inquiry growth. When sufficient pad space is available in the inquiry table, inquiry changes are processed in place, and library compress requirements are reduced. This is a numeric value greater than 0 that can exceed 100%.

Presentation Menu - Use SAS/GRAPH presentation menu for graphics (YES/NO)?

Specify YES, or Y, to display the SAS/GRAPH presentation menu for color graphics replay. The SAS/GRAPH presentation menu is recommended for normal MICF color graphics processing.

Specify NO, or N, to exercise the full power of SAS/GRAPH GREPLAY with access to template, color map, and graphics copy facilities. This option is intended for advanced graphics users with experience using the full power of SAS/GRAPH. It will display the full-function SAS/GRAPH GREPLAY menu for color graphics replay.

Print Inquiry Output - Print all outputs or limit to report/log (ALL/RPT/LOG)?

This parameter applies to the inquiry output replay Print Inquiry Output option.

Specify ALL to print reports, CA MICS log, and SAS log.

Specify RPT (report) to print just the reports.

Specify LOG to print just the CA MICS and SAS logs.

Production Reporting Hardcopy - Default additional SYSOUT parameters.

JES SYSOUT parameters your data center requires for SYSOUT data set allocations (for example, CHARS, COPIES, FCB, FLASH, HOLD, UCS). Specify these parameters in JCL statement format, separated by commas.

This option provides the default for the MICF production reporting Hardcopy Reports and Logs panel.

Production Reporting Hardcopy - Default SYSOUT class (A-Z or 0-9).

Default JES SYSOUT class for production reporting hardcopy reports and logs. This parameter corresponds to the class subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)).

Production reporting hardcopy SYSOUT class is required.
Specify one character: A-Z or 0-9.

Note: SYSOUT=* is not valid for dynamic allocation and cannot be specified for this parameter.

Production Reporting Hardcopy - Default SYSOUT destination.

Default JES SYSOUT destination, a 1-8 character name or (node,userid), for production reporting hardcopy reports and logs. This parameter corresponds to the DD statement DEST= parameter. Specify LOCAL for a local (non-RJE) printer. Specify the remote name (for example, R15) for a JES RJE printer. Leave this parameter blank to accept the default established for your TSO logon-ID.

You can use the optional (node,userid) format to route output to a VM/CMS user through JES and RSCS facilities. Node and userid are 1-8 character names; node is required for this destination parameter format. If your (node,userid) format destination is longer than 17 characters, leave this parameter blank and specify DEST=(node,userid) in the free-form production reporting hardcopy additional SYSOUT parameters data entry area above.

Production Reporting Hardcopy - Default SYSOUT external writer.

Default JES SYSOUT external writer module for production reporting hardcopy reports and logs. This parameter corresponds to the writer subparameter of the DD statement SYSOUT parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-8 character name to route printed outputs to the JES spool for processing by the specified external writer module. Leave this parameter blank for standard JES processing of printed outputs (that is, no external writer specified).

Production Reporting Hardcopy - Default SYSOUT form code.

Default JES SYSOUT form code for production reporting hardcopy reports and logs. This parameter corresponds to the form subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-4 character form number to route printed outputs to the JES spool for printing on the specified form. Leave this parameter blank for standard JES processing of printed outputs (that is, no form number specified).

Recovery - Provide automatic inquiry recovery during composition (YES/NO)?

Specify YES, or Y, to provide automatic recovery of inquiry composition processing for system, ISPF, or MICF failures. A temporary copy of the inquiry table will be saved as you exit from each inquiry function (for example, each time you return to the Inquiry Step display). This prevents lost work due to system failures.

Specify NO, or N, to bypass inquiry recovery processing. This slightly reduces MICF processing costs.

Region size for batch job execution (for example, enter 4096 for REGION=4096K).

This is the batch job region size (1 to 4 digits) that is used for MICF generated batch jobs. To use either the data center default region or the region size specified on the job card, leave this parameter blank. To override the data center default batch job region size, specify this parameter. This value is automatically designated in K bytes. Do NOT append a K to your specification. For example, specify 4096 to request a 4096K region.

Note: You CANNOT override this parameter when executing a MICF inquiry in batch mode. It is specified only through the MICF Options or Shared MICF Options processes.

Reporting Job Streams? - Default display order: Alphabetical or Execution?

Specify A, or Alphabetical, to view your Production or User Reporting Job Stream output in alphabetical order by inquiry name. If you prefer to see your job stream inquiry output in the order in which they executed, specify E, or Execution. The default is A, Alphabetical .

Reports and Graphics - Automatically select report or graphics option (YES/NO)?

Specify YES, or Y, to automatically replay color graphics or browse printed reports when you select an inquiry output for review. Color graphics replay is NOT selected automatically if you specify NO for the Color Graphics User panel.

Specify NO, or N, to display the inquiry output replay menu when you select an inquiry output for review.

Save Inquiries - Automatically save ALL composed inquiries (YES/NO)?

Specify YES, or Y, to automatically save inquiries when END is pressed on the Inquiry Step Display panel.

Specify NO, or N, to display a confirmation panel when END is pressed on the Inquiry Step Display panel. This gives you the opportunity to cancel inquiry changes in case you inadvertently exit from the Inquiry Step Display.

Saved Files - Save ALL intermediate files generated by MICF inquiries (YES/NO)?

Specify YES, or Y, to save all intermediate files created by MICF inquiries. This requires that each intermediate file be assigned a unique file name. This parameter should normally be set to NO.

Specify NO, or N, to save only those intermediate files that have been explicitly marked as saved files. This is the normal MICF processing mode.

SYSOUT Class - Default SYSOUT class for printed report routing (A-Z or 0-9).

The default JES SYSOUT class for all printed outputs from MICF, both for batch jobs and for interactive processing (direct SYSOUT). This parameter corresponds to the class subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). SYSOUT Class is required. Specify one character: A-Z or 0-9.

Note: SYSOUT=* is not valid for dynamic allocation and cannot be specified for the default SYSOUT class.

SYSOUT Destination - Default SYSOUT destination for printed report routing.

The default JES SYSOUT destination, a 1-8 character name or (node,userid), for all printed outputs from MICF, both for batch jobs and for interactive processing (direct SYSOUT). This parameter corresponds to the DD statement DEST= parameter. Specify LOCAL for a local (non-RJE) printer. Specify the remote name (for example, R15) for a JES RJE printer. Leave this parameter blank to accept the default established for your TSO logon-ID. You can use the optional (node,userid) format to route output to a VM/CMS user through JES and RSCS facilities. Node and userid are 1-8 character names; node is required for this destination parameter format. If your (node,userid) format destination is longer than 17 characters, leave this parameter blank and specify DEST=(node,userid) in the free-form SYSOUT parameters data entry area below.

SYSOUT Form - Default SYSOUT form code for printed report routing.

The default JES SYSOUT form code for all printed outputs from MICF, both for batch jobs and for interactive processing (direct SYSOUT). This parameter corresponds to the form subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-4 character form number to route printed outputs to JES spool for printing on the specified form. Leave this parameter blank for standard JES processing of printed outputs (that is, no form number specified).

SYSOUT Parameters - Additional, JCL format SYSOUT parameters (for example, CHARS=).

Default JES SYSOUT parameters your data center requires for SYSOUT data set allocations (for example, CHARS, COPIES, FCB, FLASH, HOLD, UCS). Specify these parameters in JCL statement format, separated by commas.

SYSOUT Writer - Default SYSOUT external writer for printed report routing.

The default JES SYSOUT external writer module for all printed outputs from MICF, both for batch jobs and for interactive processing (direct SYSOUT). This parameter corresponds to the writer subparameter of the DD statement SYSOUT parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-8 character name to route printed outputs to the JES spool for processing by the specified external writer module. Leave this parameter blank for standard JES processing of printed outputs (that is, no external writer specified).

SAS Syntax Validation - Test panel entries for valid SAS syntax (YES/NO)?

Specify YES, or Y, to validate MICF panel data entry against SAS syntax rules. This is the normal MICF processing mode.

Specify NO, or N, to bypass SAS syntax validation for MICF panel data entry. This might be specified if you are operating against a new version of the SAS system and MICF has not yet been upgraded to accept new parameter values (for example, if new SAS/GRAPH fonts are available).

Test CA MICS - Allow access to test databases & test level libraries (YES/NO)?

Specify YES, or Y, to allow MICF inquiries to access the test databases in your CA MICS complex. This allows you to test CA MICS product changes and access non-production CA MICS components. Generally, the CA MICS Administrator is the only CA MICS user needing this flexibility.

Specify NO, or N, to ignore the test databases in your CA MICS complex (that is, process only the production unit databases). This is the normal MICF processing mode.

Validate panel entries against CA MICS file contents descriptions (YES/NO)?

Specify YES, or Y, to validate panel data entry against the contents of the specified CA MICS file. This applies to data entry fields where a CA MICS file element is normally specified. This is the normal processing mode for MICF.

Specify NO, or N, to bypass validation against the contents of the specified CA MICS file.

Note: This reduces MICF processing costs, but it lets you compose invalid MICF inquiries so it is not recommended.

2.2 Foreground Execution Parameters

Foreground execution parameters control defaults for MICF inquiries that are composed and executed in foreground. There is a parallel set of execution parameters for those inquiries executed in batch mode. These specifications can be overridden when executing an inquiry. Foreground execution parameters include the following:

- o Default SAS parameters such as those controlling printing of generated source statements in the SAS log.
- o Default page width (characters) and length (lines) for printed reports and the width (characters) of color graphics titles.
- o The default color graphics format set to be used for graphics inquiries.
- o Parameters defining the color graphics device for graphics inquiries and whether to display graphics during inquiry execution or just catalog graphics for later replay. These parameters include the color graphics device name and information required to route outputs to or directly allocate the device.

The foreground execution parameters are:

ABEND inquiry execution when SAS detects ANY errors (YES/NO)?

Specify YES, or Y, to terminate inquiry execution with an ABEND whenever SAS detects an error.

Specify NO, or N, to continue execution so that SAS can flag ALL errors in the inquiry. This is the normal MICF processing mode.

Color Graphics - Display color graphics during inquiry execution (YES/NO)?

Specify YES, or Y, to display color graphics on the specified color graphics device while the inquiry is executing. The graphics procedure directly performs display, causing each graph to be displayed sequentially as the inquiry executes. See the following replay option for an alternate method of reviewing graphics during inquiry execution.

Specify NO, or N, to defer color graphics display until

you specifically request color graphics replay from the Inquiry Output Replay panel after the inquiry has executed. This is the normal mode of operation for foreground MICF inquiry execution.

Color Graphics - Replay color graphics after inquiry execution (YES/NO)?

Specify YES, or Y, to replay color graphics on the specified color graphics device before the inquiry terminates. The graphics catalog that was created during inquiry execution is used, permitting random or selective display of the graphs. This is the normal mode of operation for foreground MICF inquiry execution.

Specify NO, or N, to defer color graphics display until you specifically request color graphics replay from the Inquiry Output Replay panel after the inquiry executes.

Color Graphics ADMDEFS File - Allocate GDDM ADMDEFS file (YES/NO)?

Specify YES, or Y, to allocate your data center's GDDM definitions (ADMDEFS) file for color graphics processing.

Specify NO, or N, to bypass ADMDEFS allocation.

Color Graphics Device - Specify the default color graphics device name.

This is the 1-8 character name of the color graphics device on which color graphics outputs are displayed. This must be a valid SAS/GRAPH device (that is, it must be valid for the SAS/GRAPH GOPTIONS DEVICE= parameter).

Note: This parameter is not validated, but execution fails if an invalid device is specified. See the SAS/GRAPH User's Guide for a list of valid color graphics device specifications.

Color Graphics DDNAME - Output DDNAME for graphics stream processing.

The default DDNAME for the color graphics output file.

Specify GSASFILE if GSF Option is GACCESS.

Specify ADMGDF if GSF Option is ADMGDF.

Other specific values (for example, FT14F001) may be required for specific devices. See the SAS/GRAPH Guide to Hardware Interfaces for more information.

Color Graphics DISP - Color graphics output data set disposition (OLD/MOD).

The default color graphics output data set disposition. This parameter is required if you specify the Color Graphics DSNAME parameter.

Specify MOD, or M, to append color graphics outputs to the current contents of color graphics DSNAME (that is, DISP=MOD).

Specify OLD, or O, to replace the current contents of color graphics DSNAME (that is, DISP=OLD).

Color Graphics DSNAME - Color graphics output data set name.

The default color graphics output data set name. Specify this parameter to write the color graphics stream to a cataloged DASD data set. Code this parameter as you would any other data set name. To allocate a member of a partitioned data set, include the member name in this parameter.

Note: If you do not enclose the value in quotes, your TSO user PREFIX is appended to the front before allocating the data set.

If you specify this parameter, the color graphics SYSOUT parameters are ignored.

Color Graphics Format Set - Specify the default color graphics format set name.

This is the default color graphics format set for MICF inquiry execution. It supplies color graphics format parameter specifications for inquiry steps that have not specifically specified these parameters (for example, filled area patterns, colors, and title font). Specify the 1-8 character name of one of the color graphics format sets defined to MICF (either a shared format set or one you have defined in your private options).

Color Graphics Page Width - No. Characters available for centering title text.

This is the width, in characters, of your color graphics

outputs. It is used in centering the title for color graphics reports. Increase this value to spread the titles over more of the page. Reduce this value to condense the title width.

Color Graphics Stream - GSF option
(NONE/GSF/GACCESS/ADMGDF/DISPLAY).

Use this parameter to define the type of color graphics output file (that is, graphics stream file) processing you want MICF to perform for you.

Specify NONE if Color Graphics Device is a TSO terminal (for example, DEVICE=IBM3279) or other device that does not require graphics stream processing (for example, DEVICE=IBM3279). MICF will include GSFMODE=NONE in the color graphics options (GOPTIONS) statement.

Specify GSF for standard graphics stream file processing. MICF will include GSFMODE=REPLACE/APPEND in the generated color graphics options (GOPTIONS) statement. You must also specify color graphics DDNAME and either SYSOUT allocation parameters or color graphics DSNAME for GSF access.

Specify GACCESS for special protocol conversion processing. MICF will include GSFMODE=NONE and GACCESS=GSASFILE/GSASFILA in the generated color graphics options (GOPTIONS) statement. You must also specify GSASFILE for color graphics DDNAME and specify either SYSOUT allocation parameters or color graphics DSNAME for graphics output.

Specify ADMGDF to generate GDDM ADMGDF files. MICF will include ADMGDF, GSFMODE=REPLACE/APPEND, and GSFNAME=GnPn (where Gn is the color graphics catalog name and Pn is the plot number) in the generated color graphics options (GOPTIONS) statement. You must also specify ADMGDF for color graphics DDNAME and specify color graphics DSNAME for ADMGDF output (that is, SYSOUT is not valid for ADMGDF output).

Specify DISPLAY to allocate a graphics output file without any special parameters (for example, for a GDDM ADMIMAGE file or for a linkable driver). MICF will allocate the graphics output file (either color graphics DSNAME or a sysout data set) to the DDNAME you specify in the color graphics DDNAME parameter.

Color Graphics SYSOUT Class - SYSOUT class (A-Z or 0-9) for

graphics output.

Default JES SYSOUT class for the color graphics output data set. This parameter corresponds to the class subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). Specify a one-character JES SYSOUT class (A-Z or 0-9) to route the color graphics stream to the JES spool.

Note: SYSOUT=* is not valid for dynamic allocation and cannot be specified for the default color graphics SYSOUT class.

Color Graphics SYSOUT Destination - SYSOUT destination for graphics output.

The default JES SYSOUT destination, a 1-8 character name or (node,userid), for the color graphics output data set. This parameter corresponds to the DD statement DEST= parameter. Specify the remote name (for example, R15) for a color graphics device accessed as a JES remote RJE printer. Leave this parameter blank if your color graphics device is accessed through JES without a SYSOUT destination. You can use the optional (node,userid) format to route output to a VM/CMS user through JES and RSCS facilities. Node and userid are 1-8 character names; node is required for this destination parameter format. If your (node,userid) format destination is longer than 17 characters, leave this parameter blank and specify DEST=(node,userid) in the free-form SYSOUT parameters data entry area below.

Color Graphics SYSOUT Form Code - SYSOUT form code for graphics output.

The default JES SYSOUT form code for the color graphics output data set. This parameter corresponds to the form subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-4 character form number to route color graphics to JES spool for plotting on the specified form. Leave this parameter blank if your color graphics device is accessed through JES without a SYSOUT form number.

Color Graphics SYSOUT Parms - Additional JCL format SYSOUT parameters.

Default JES SYSOUT parameters your data center requires for color graphics processing via JES SYSOUT data set

allocations (for example, CHARS, COPIES, FCB, FLASH, HOLD, UCS). Specify these parameters in JCL statement format, separated by commas.

Color Graphics SYSOUT Writer - SYSOUT external writer for graphics output.

The default JES SYSOUT external writer module for the color graphics output data set. This parameter corresponds to the writer subparameter of the DD statement SYSOUT parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-8 character name to route color graphics to the JES spool for processing by the specified external writer module. Leave this parameter blank if your color graphics device is accessed through JES without a SYSOUT writer specification.

Color List n - Specify the "color list" for the graphics device, where n is 1 to 3.

This specification appears in the SAS/GRAPH GOPTIONS statement COLORS= parameter. Three lines of color list information are provided. Specify a list of SAS/GRAPH color names separated by blanks.

Note: Do NOT put parentheses around the list.

This is the list of colors supported by the graphics device. For pen plotters, this parameter establishes the correspondence between colors and pen positions (that is, the first color in the color list corresponds to the first pen).

Note: This parameter is not validated, but execution fails if invalid colors are specified.

Leave this parameter blank to accept the default established by your data center. See the SAS/GRAPH User's Guide for more information and default values for each device.

Expand SAS macros in inquiry SAS log (YES/NO)?

Specify YES, or Y, to include the SAS statements generated for the macros used by the inquiry in the SAS log. This can be useful in researching problems in MICF inquiry execution.

Specify NO, or N, to omit the macro expansions from the log. This is the normal status for this parameter.

GOPTIONS Parameters n - Specify GOPTIONS parameters for the graphics device, where n is 1 to 3.

This specification appears in the SAS/GRAPH GOPTIONS statement. Three lines of GOPTIONS parameters are provided. Specify a list of SAS/GRAPH GOPTIONS statement parameters separated by blanks. This is used for special color graphics device parameters that are not supported by MICF data entry panels.

Note: This parameter is not validated, but execution fails if invalid values are specified. See the SAS/GRAPH User's Guide for more information on the GOPTIONS statement.

Maximum number of error messages to be printed for an inquiry (nnn or blank).

This is the maximum number of input file records for which complete error messages are printed. Specify a 1-3 digit number (that is, 1-999). When this value is exceeded, processing continues but messages are not printed for additional errors. Leave this parameter blank to use the default established when SAS was installed.

Maximum Observations - Stop after processing (nn, blank, or MAX) observations.

This limits MICF inquiry execution to the specified number of file observations. Specify a 1-6 digit number (that is, 1 - 999999). MICF stops accepting input file observations after reading the number of observations you specify in this parameter. This parameter can be useful to limit the number of input file records for inquiry testing. Leave this parameter blank to use the default limit established by your data center. Specify MAX, or M, to disable your data center's limit (that is, operate without an observation limit).

MICF Web Publishing - HFS Directory

The directory where reporting job stream output is stored when the MICF Web Publishing feature is activated for a job stream.

Q&R Integration - zFS Root for Q&R Directory

The HFS/zFS directory in which to store MICF reporting job stream inquiry output for access by the Q&R Workstation. It is required only when "Use Q&R Compatible Directory Structure" is set to Y. If left blank, each new reporting job stream definition defaults to the MICF Web Publishing.

Q&R Integration - Q&R Mainframe Server Name (MQRMSN)

Enter the application name of the CA MICS Q&R Workstation Mainframe Server. This is defined in the Q&R Mainframe Server parameter file (sharedprefix.MICS.PARMS member MQRPARMS) as the MQRMSN parameter. The MQRMSN value is used as the first directory level after "Server" when building the Q&R directory structure. It is required if the "Use Q&R Compatible Directory Structure" is Y (Yes). No default.

Q&R Integration - Use Q&R Directory Structure (YES/NO)

Specify Y (Yes) to write the inquiry output to the hfs/zfs in a directory structure compatible with CA MICS Q&R Workstation. Use of this feature facilitates mapping the HFS/zFS as an additional drive to the Q&R Distributed Server MS Windows machine, enabling the CA MICS Q&R Workstation RMWSLOAD utility to read the CSVs directly without the need to move the data files to the distributed server for subsequent publication. The default is N (No).

Overprint error messages in inquiry SAS log (YES/NO)?

Specify YES, or Y, to overprint error messages in the SAS log. This highlights error conditions if the log is printed on a device that supports overprinting (for example, most line printers), but it has no effect on most laser printers.

Specify NO, or N, for simple printing of error messages. This is the normal mode of operation for foreground execution.

Page Length - Specify the number of lines per printed page for inquiry outputs.

This is the number of lines available for each printed report or SAS log page. Specify a number between 20 and

500. Values matching your terminal characteristics are recommended for inquiry outputs that will be browsed online. This avoids having to scroll the display to view the entire page.

Page Width - Specify the number of columns per printed page for inquiry outputs.

This is the number of columns available for each printed report or SAS log page. Specify a number between 64 and 256. Specifying a value larger than the actual device could cause truncation of print lines (that is, could result in lost information). Values matching your terminal characteristics are recommended for inquiry outputs that will be browsed online. This avoids having to scroll the display to view the entire page.

Print SAS "notes" in inquiry SAS log (YES/NO)?

Specify YES, or Y, to include notes in the SAS log that describe inquiry processing. These include reporting the number of records in each intermediate file and the CPU time consumed by the various stages of inquiry execution. This is the normal MICF processing mode.

Specify NO, or N, to omit these notes for the SAS log.

Print SAS source code in inquiry SAS log (YES/NO)?

Specify YES, or Y, to include the SAS statements generated for the inquiry in the SAS log. This is the normal MICF processing mode.

Specify NO, or N, to omit the source statements from the SAS log.

PARMS Allocation - Specify DDNAME for allocating prefix.PARMS concatenation.

Specify a DDNAME if you want MICF to allocate the prefix.MICS.PARMS data set for inquiry execution. If your inquiry references multiple CA MICS unit databases, MICF will concatenate each unit's prefix.MICS.PARMS data set to the DDNAME you specify.

Leave this parameter blank to bypass prefix.MICS.PARMS allocation.

You normally want to leave this parameter blank and bypass prefix.MICS.PARMS allocation.

Sort Work - No. of sort work data sets allocated for inquiry execution (0-6).

Specify 0 (Zero) if you want SAS to allocate sort work data sets dynamically.

Otherwise, specify the number of sort work data sets (1 to 6) you want MICF to allocate for inquiry execution.

SAS Invocation Options - Enter special SAS start-up options (for example, REMOTE=xxx).

Additional SAS options you require for SAS invocations. Use this data entry area for parameters that cannot be specified in an OPTIONS statement (for example, the REMOTE= option). You can override this default specification prior to MICF inquiry execution; but the default SAS invocation options are applied to color graphics replay and other SAS utility processing without your having an opportunity to override the default value.

Uppercase - Translate all inquiry outputs to capital letters (YES/NO)?

Specify YES, or Y, for this parameter to translate all printed reports and SAS log messages to uppercase. This option is useful if your hard-copy printers do not support lowercase characters. This parameter has no effect on color graphics outputs or on SAS statements printed in the SAS log; lowercase text in SAS statements will still print in lowercase.

Specify NO, or N, to allow lowercase text in printed reports and SAS log messages.

2.3 Batch Execution Parameters

Batch execution parameters control parameters for MICF inquiries composed and executed in batch, or background, mode. There is a parallel set of execution parameters for inquiries executed in foreground (or interactive) mode. These specifications can be overridden when executing an inquiry. Batch execution parameters include the following:

- o Default SAS parameters such as those controlling printing of generated source statements in the SAS log.
- o Default page width (characters) and length (lines) for printed reports and the width (characters) of color graphics titles.
- o The default color graphics format set to be used for graphics inquiries.
- o Parameters defining the color graphics device for graphics inquiries and whether to display graphics during inquiry execution or just catalog graphics for later replay. These parameters include the color graphics device name and information required to route outputs to or directly allocate the device.

The batch execution parameters are:

ABEND inquiry execution when SAS detects ANY errors (YES/NO)?

Specify YES, or Y, to terminate inquiry execution with an ABEND whenever SAS detects an error.

Specify NO, or N, to continue execution so that SAS can flag ALL errors in the inquiry. This is the normal MICF processing mode.

Color Graphics - Display color graphics during inquiry execution (YES/NO)?

Specify YES, or Y, to display color graphics on the specified color graphics device while the inquiry is executing. This is the normal mode of operation for batch MICF inquiry execution.

Specify NO, or N, to bypass color graphics display. This can be useful in testing inquiry execution against a subset of the input data. Once execution is verified, the inquiry could be rerun with the full set of input data and a value of YES for this parameter.

Color Graphics ADMDEFS File - Allocate GDDM ADMDEFS file (YES/NO)?

Specify YES, or Y, to allocate your data center's GDDM definitions (ADMDEFS) file for color graphics processing.

Specify NO, or N, to bypass ADMDEFS allocation.

Color Graphics Device - Specify the default color graphics device name.

This is the one- to eight-character name of the color graphics device on which color graphics outputs will be displayed. This must be a valid SAS/GRAPH device (that is, it must be valid for the SAS/GRAPH GOPTIONS DEVICE= parameter).

Note: This parameter is not validated, but execution fails if an invalid device is specified. See the SAS/GRAPH User's Guide for a list of valid color graphics device specifications.

Color Graphics DDNAME - Output DDNAME for graphics stream processing.

The default DDNAME for the color graphics output file.

Specify GSASFILE if GSF Option is GACCESS.

Specify ADMGDF if GSF Option is ADMGDF.

Other specific values (for example, FT14F001) may be required for specific devices. See the SAS/GRAPH Guide to Hardware Interfaces for more information.

Color Graphics DISP - Color graphics output data set disposition (OLD/MOD).

The default color graphics output data set disposition. This parameter is required if you specify the color graphics DSNAME parameter.

Specify MOD, or M, to append color graphics outputs to the current contents of color graphics DSNAME (that is, DISP=MOD).

Specify OLD, or O, to replace the current contents of color graphics DSNAME (that is, DISP=OLD).

Color Graphics DSNAME - Color graphics output data set name.

The default color graphics output data set name. Specify this parameter to write the color graphics stream to a cataloged DASD data set. Code this parameter as you would any other data set name. If you do not enclose the value in quotes, your TSO user PREFIX will be appended to the front before allocating the data set. To allocate a member of a partitioned data set, include the member name in this parameter.

If you specify this parameter, the color graphics SYSOUT parameters are ignored.

Color Graphics Format Set - Specify the default color graphics format set name.

This is the default color graphics format set for MICF inquiry execution. This will supply color graphics format parameter specifications for inquiry steps that have not specifically specified these parameters (for example, filled area patterns, colors, and title font). Specify the one- to eight-character name of one of the color graphics format sets defined to MICF (either a shared format set or one you have defined in your private options).

Color Graphics Page Width - No. Characters available for centering title text.

This is the width, in characters, of your color graphics outputs. It is used in centering the title for color graphics reports. Increase this value to spread the titles over more of the page. Reduce this value to condense the title width.

Color Graphics Stream - GSF option
(NONE/GSF/GACCESS/ADMGDF/DISPLAY).

Use this parameter to define the type of color graphics output file (that is, graphics stream file) processing you want MICF to perform.

Specify NONE if the color graphics device is a TSO terminal (for example, DEVICE=IBM3279) or other device that does not require graphics stream processing (for example, DEVICE=IBM3279). MICF will include GSFMODE=NONE in the color graphics options (GOPTIONS) statement.

Specify GSF for standard graphics stream file processing. MICF will include GSFMODE=REPLACE/APPEND in the generated color graphics options (GOPTIONS) statement. You must also specify color graphics DDNAME and either SYSOUT allocation parameters or color graphics DSNAME for GSF access.

Specify GACCESS for special protocol conversion processing. MICF will include GSFMODE=NONE and GACCESS=GSASFILE/GSASFILA in the generated color graphics options (GOPTIONS) statement. You must also specify GSASFILE for color graphics DDNAME and specify either SYSOUT allocation parameters or color graphics DSNAME for graphics output.

Specify ADMGDF to generate GDDM ADMGDF files. MICF will include ADMGDF, GSFMODE=REPLACE/APPEND, and GSFNAME=GnPn (where Gn is the color graphics catalog name and Pn is the plot number) in the generated color graphics options (GOPTIONS) statement. You must also specify ADMGDF for color graphics DDNAME and specify color graphics DSNAME for ADMGDF output (that is, SYSOUT is not valid for ADMGDF output).

Specify DISPLAY to allocate a graphics output file without any special parameters (for example, for a GDDM ADMIMAGE file or for a linkable driver). MICF will allocate the graphics output file (either color graphics DSNAME or a SYSOUT data set) to the DDNAME you specify in the color graphics DDNAME parameter.

Color Graphics SYSOUT Class - SYSOUT class (A-Z or 0-9) for graphics output.

Default JES SYSOUT class for the color graphics output data set. This parameter corresponds to the class subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-character JES SYSOUT class (A-Z or 0-9) to route the color graphics stream to the JES spool.

Note: SYSOUT=* is not valid for dynamic allocation and cannot be specified for the default color graphics SYSOUT class.

Color Graphics SYSOUT Destination - SYSOUT destination for graphics output.

The default JES SYSOUT destination, a 1-8 character name or (node,userid), for the color graphics output data set. This parameter corresponds to the DD statement DEST= parameter. Specify the remote name (for example, R15) for a color graphics device accessed as a JES remote RJE printer. Leave this parameter blank if your color graphics device is accessed through JES without a SYSOUT destination. You can use the optional (node,userid) format to route output to a VM/CMS user through JES and RSCS facilities. Node and userid are 1-8 character names; node is required for this destination parameter format. If your (node,userid) format destination is longer than 17 characters, leave this parameter blank and specify DEST=(node,userid) in the free-form SYSOUT parameters data entry area below.

Color Graphics SYSOUT Form Code - SYSOUT form code for graphics output.

The default JES SYSOUT form code for the color graphics output data set. This parameter corresponds to the form subparameter of the DD statement SYSOUT= parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-4 character form number to route color graphics to JES spool for plotting on the specified form. Leave this parameter blank if your color graphics device is accessed through JES without a SYSOUT form number.

Color Graphics SYSOUT Parms - Additional JCL format SYSOUT parameters.

Default JES SYSOUT parameters your data center requires for color graphics processing via JES SYSOUT data set allocations (for example, CHARS, COPIES, FCB, FLASH, HOLD, UCS). Specify these parameters in JCL statement format, separated by commas.

Color Graphics SYSOUT Writer - SYSOUT external writer for graphics output.

The default JES SYSOUT external writer module for the color graphics output data set. This parameter corresponds to the writer subparameter of the DD statement SYSOUT parameter (that is, SYSOUT=(class,writer,form)). Specify a 1-8 character name to route color graphics to the JES spool for processing by the specified external writer module. Leave this parameter blank if your color graphics device is accessed through JES without a SYSOUT writer specification.

Color Graphics User DD Stmt. n (only used when GSF option is NONE), where n is 1 to 3.

This parameter is retained for compatibility with prior versions of MICF inquiry execution and color graphics replay facilities. Select the Additional Data Set Allocations option from the MICF Options menu to specify additional data sets you want allocated for inquiry execution and color graphics replay processing.

This defines special, user DD statements that are required for certain SAS/GRAPH color graphics device drivers. Three lines of free-form DD statement information are provided. These lines may define a single, multiline DD statement, or up to three individual DD statements. Each must begin with // followed by a blank or a valid DDNAME. These user-defined DD statements are included in the batch job stream ONLY if you specify NONE for the GSF Option parameter.

Note: This parameter is not supported for foreground inquiry execution and is normally left blank. This parameter is not validated, exposing batch inquiry execution to possible JCL errors if you specify invalid JCL statements.

Note: You CANNOT override this parameter when executing a MICF inquiry in batch mode. It is specified only through the MICF Options or Shared MICF Options processes.

Color List n - Specify the "color list" for the graphics device, where n is 1 to 3.

This specification appears in the SAS/GRAPH GOPTIONS statement COLORS= parameter. Three lines of color list information are provided. Specify a list of SAS/GRAPH color names separated by blanks.

Note: Do NOT put parentheses around the list.

This is the list of colors supported by the graphics device. For pen plotters, this parameter establishes the correspondence between colors and pen positions (that is, the first color in the color list corresponds to the first pen).

Note: This parameter is not validated, but execution fails if invalid colors are specified. Leave this parameter blank to accept the default established by your data center. See the SAS/GRAPH User's Guide for more information and default values for each device.

Expand SAS macros in inquiry SAS log (YES/NO)?

Specify YES, or Y, to include the SAS statements generated for the macros used by the inquiry in the SAS log. This can be useful in researching problems in MICF inquiry execution.

Specify NO, or N, to omit the macro expansions from the log. This is the normal status for this parameter.

GOPTIONS Parameters n - Specify GOPTIONS parameters for the graphics device, where n is 1 to 3.

This specification appears in the SAS/GRAPH GOPTIONS statement. Three lines of GOPTIONS parameters are provided. Specify a list of SAS/GRAPH GOPTIONS statement parameters separated by blanks. This is used for special color graphics device parameters that are not supported by MICF data entry panels.

Note: This parameter is not validated, but execution fails if invalid values are specified. See the SAS/GRAPH User's Guide for more information on the GOPTIONS statement.

Maximum number of error messages to be printed for an inquiry (nnn or blank).

This is the maximum number of input file records for that complete error messages will be printed. Specify a one-to three-digit number (that is, 1-999). When this value is exceeded, processing continues but messages will not be printed for additional errors. Leave this parameter blank to use the default established when SAS was installed.

Maximum Observations - Stop after processing (nn, blank, or MAX) observations.

This limits MICF inquiry execution to the specified number of file observations. Specify a one- to six-digit number (that is, 1 - 999999). MICF will stop accepting input file observations after reading the number of observations you specify in this parameter. This parameter can be useful to limit the number of input file records for inquiry testing. Leave this parameter blank to use the default limit established by your data center. Specify MAX, or M, to disable your data center's limit (that is, operate without an observation limit).

MADMI - Use MADMI (Dialog Manager Interface) for SAS execution (YES/NO)?

MADMI is not supported for batch inquiry execution at this time. Specify NO, or N, for this parameter.

Overprint error messages in inquiry SAS log (YES/NO)?

Specify YES, or Y, to overprint error messages in the SAS log. This will highlight error conditions if the log is printed on a device that supports overprinting (for example, most line printers), but it has no effect on most laser printers. This is the normal mode of operation for batch inquiry execution.

Specify NO, or N, for simple printing of error messages.

Page Width - Specify the number of columns per printed page for inquiry outputs.

This is the number of columns available for each printed report or SAS log page. Specify a number between 64 and 256. Specifying a value larger than the actual device could cause truncation of print lines (that is, could result in lost information).

Page Length - Specify the number of lines per printed page for inquiry outputs.

This is the number of lines available for each printed report or SAS log page. Specify a number between 20 and 500 or MAX.

Print SAS "notes" in inquiry SAS log (YES/NO)?

Specify YES, or Y, to include notes in the SAS log that describe inquiry processing. These include the number of records in each intermediate file and the CPU time consumed by the various stages of inquiry execution. This is the normal MICF processing mode.

Specify NO, or N, to omit these notes for the SAS log.

Print SAS source code in inquiry SAS log (YES/NO)?

Specify YES, or Y, to include the SAS statements generated for the inquiry in the SAS log. This is the normal MICF processing mode.

Specify NO, or N, to omit the source statements from the SAS log.

PARMS Allocation - Specify DDNAME for allocating prefix.PARMS concatenation.

Specify a DDNAME if you want MICF to allocate the prefix.MICS.PARMS data set for inquiry execution. If your inquiry references multiple CA MICS unit databases, MICF will concatenate each unit's prefix.MICS.PARMS data set to the DDNAME you specify.

Leave this parameter blank to bypass prefix.MICS.PARMS allocation.

You will normally want to leave this parameter blank and bypass prefix.MICS.PARMS allocation.

Sort Work - No. of sort work data sets allocated for inquiry execution (0-6).

Specify 0 (Zero) if you want SAS to allocate sort work data sets dynamically.

Otherwise, specify the number of sort work data sets (1 to 6) you want MICF to allocate for inquiry execution.

SAS Invocation Options - Enter special SAS start-up options (for example, REMOTE=xxx).

Additional SAS options you require for SAS invocations. Use this data entry area for parameters that cannot be specified in an OPTIONS statement (for example, the REMOTE= option). You can override this default specification prior to MICF inquiry execution; however, the default SAS invocation options are applied to color graphics replay and other SAS utility processing without your having an opportunity to override the default value.

Uppercase - Translate all inquiry outputs to capital letters (YES/NO)?

Specify YES, or Y, for this parameter to translate all printed reports and SAS log messages to uppercase. This option is useful if your hard-copy printers do not support lowercase characters. This parameter has no effect on color graphics outputs or on SAS statements printed in the SAS log. Lowercase text in SAS statements will still print in lowercase.

Specify NO, or N, to allow lowercase text in printed reports and SAS log messages.

2.4 Printer Format Parameters

Printer format parameters control the appearance of printed reports and printer graphics. Printer format parameters can be specified for each printed report or printer graphics inquiry step by selecting the printer format parameters option from the inquiry step's extended options menu. The default values for parameters relevant to the inquiry step being composed are displayed and can be altered as required. The parameters displayed on the printer format parameters panel for the inquiry step are applied when the inquiry is executed. The Printer Format Parameters process of MICF Options is used to establish these default parameter values displayed on the inquiry step's printer format parameters panel. These values are also the parameter values applied to those inquiry steps composed without overriding printer format parameters (that is, the step's printer format parameters panel is not displayed).

Note: These parameters apply only to printed reports, printer graphics, and the output of statistical analysis processes. Unique parallel parameters are provided for color graphics presentations (see section 2.5).

Printer format parameters include the following:

- o Parameters controlling the titles generated by MICF.
- o Parameters controlling centering printed reports on the page, double spacing printed reports, using the same column alignment on all pages, printing page numbers on reports, and printing the current date on reports.
- o Parameters controlling the appearance of printer graphics, including the character to use for printer graphics, printing chart legends, and the size and characteristics of chart axes.

The printer format parameters are:

Border - Draw a border around standard printed reports (YES/NO)?

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

Specify YES, or Y, to draw a border around the report area using the characters |, -, and + for vertical, horizontal, and intersection lines respectively.

Specify NO, or N, to omit the report border.

Center printed reports on the page (YES/NO)?

Specify YES, or Y, to center title and report lines on the page. This is the normal MICF processing mode.

Specify NO, or N, to left justify ALL title and report lines.

Column Heading Split Character - Character used to split column heading lines.

This is the character used to mark the point where printed report column headings will be split to make multiple line column headings. It can be any character except a blank, semicolon (;), single quote ('), or double quote (").

Date - Print the current date on the first title line of each page (YES/NO)?

Specify YES, or Y, to print the execution date on the right side of the first title line of printed reports.

Specify NO, or N, to omit the execution date from the first title line. This is the normal MICF processing mode.

Note: The execution date can be printed on the right side of the fourth title line. See the Title 4 parameter below.

Double space printed reports (YES/NO)?

Specify YES, or Y, to generate printed reports in double space mode (that is, place a blank line between each report line).

Specify NO, or N, to single space printed reports. This is the normal MICF processing mode.

Double space standard printed report subtotals (YES/NO).

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

Specify YES, or Y, to separate the subtotals from the report body with a blank line (that is, double space before printing subtotals).

Specify NO, or N, to generate subtotals with the same line spacing as used for the report body.

Format Characters - Char. used to form horizontal lines on standard reports.

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

The character used as the horizontal line when framing column headings, subtotals, etc. Specify any character except semicolon (;), single quote ('), or double quote ("). Leave this parameter blank to replace framing horizontal lines with blanks.

Format Characters - Char. used to form intersecting lines on standard reports.

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

The character used where horizontal and vertical lines intersect when framing column headings, subtotals, etc. Specify any character except semicolon (;), single quote ('), or double quote ("). Leave this parameter blank to replace framing intersections with blanks.

Format Characters - Char. used to form vertical lines on standard reports.

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

The character used as the vertical line when framing column headings, subtotals, etc. Specify any character except semicolon (;), single quote ('), or double quote ("). Leave this parameter blank to replace framing vertical lines with blanks.

Format Characters - Crosstabulation report horizontal line character.

The character used to draw horizontal lines on crosstabulation reports (that is, the character used to separate rows of a crosstabulation report grid). Specify any character. Leave this parameter blank to omit the horizontal line between rows (that is, separate rows with a blank line).

Format Characters - Crosstabulation report intersecting line character.

The character printed at the intersection of horizontal and vertical lines on crosstabulation reports (that is, the character used to mark the row/column intersection on a crosstabulation report grid). Specify any character. Leave this parameter blank to print a blank at the row/column intersection.

Format Characters - Crosstabulation report vertical line character.

The character used to draw vertical lines on crosstabulation reports (that is, the character used to separate columns of a crosstabulation report grid). Specify any character. Leave this parameter blank to omit the vertical line between columns (that is, separate columns with a single blank).

Frame - Draw a frame around standard printed report column headings (YES/NO).

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

Specify YES, or Y, to separate the column headings from the report body by drawing a box (frame) around the column headings area using the specified vertical, horizontal, and intersection line characters.

Specify NO, or N, to omit the column headings frame.

This parameter is ignored when you specify the Tabular Report, Tabular Ranking Report, Trend Report, or Condensed Tabular Report Column Headings extended option.

Frame - Draw a frame around standard printed report subtotals (YES/NO).

This parameter applies to the Tabular Report, Tabular Ranking Report, Trend Report, and Condensed Tabular Report structured inquiry composition options.

Specify YES, or Y, to separate the subtotals from the report body by drawing a box (frame) around the subtotal lines using the specified vertical, horizontal, and intersection line characters.

Specify NO, or N, to omit the subtotals frame.

Frame - Draw a frame around Condensed Tabular Report blocks (YES/NO).

This parameter applies to the Condensed Tabular Report structured inquiry composition option.

Specify YES, or Y, to separate the Condensed Tabular Report blocks by drawing a box (frame) around the report blocks using the specified vertical, horizontal, and intersection line characters.

Specify NO, or N, to omit the Condensed Tabular Report block frames.

Frame - Draw a frame around Tabular Ranking Report ranking groups (YES/NO).

This parameter applies to the Tabular Ranking Report structured inquiry composition option.

Specify YES, or Y, to separate the ranking groups (see "Print Rankings for Each Value of" on the Report Control Parameters panel) by drawing a horizontal line between ranking groups using the specified horizontal and intersection line characters.

Specify NO, or N, to omit the Tabular Ranking Report ranking group frames.

Frame - Draw a frame around Trend Report columns (YES/NO).

This parameter applies to the Trend Report structured inquiry composition option.

Specify YES, or Y, to separate Trend Report columns by drawing a box (frame) around the report columns using the specified vertical, horizontal, and intersection line characters.

Specify NO, or N, to omit the Trend Report column frames.

Graphics Legend - Print the symbol legend on printer graphics reports (YES/NO)?

Specify YES, or Y, to print a legend below the axis for charts and plots. This defines the symbols (or characters) used to represent values of the chart/plot variables when multiple symbols are used.

Specify NO, or N, to omit the symbol legend.

Horizontal Axis Length - No. characters on the horizontal axis.

This is the number of characters in the "plotted by", or X, axis on plot reports. Specify a number between 61 and 253. This must be at least three less than the length of the line (that is, the page width). Leave this parameter blank to allow SAS to select an appropriate length for the axis.

Horizontal Axis Tick Mark Spacing - No. char. between horizontal tick marks.

This is the number of spaces, or characters, between each tick mark, or label, on the X axis on plot reports. Specify a number between 1 and 99. Leave this parameter blank to allow SAS to select an appropriate value for axis tick mark spacing.

Horizontal Reference Line Character - Will be used to draw horizontal lines.

This is the character that will be used to draw horizontal reference lines. These lines are drawn at a specified point on the "plot of", or Y, axis of plot reports. Specify any character except blank.

Missing Value Character - Specify the character to be printed for missing value.

This is the character that will be printed when a numeric data element has a missing value. This occurs if the data element has never been assigned a value (that is, this data item does not exist for an observation) or if it results from an undefined operation such as division by zero. Specify any character. Leave this parameter blank to specify blank as the missing value character.

Missing Values - Include missing values in printer graphics reports (YES/NO)?

Specify YES, or Y, to accept a missing value as a valid value for the "charted by" data element. This allows a bar to be drawn for a value of missing value. This situation occurs if the data element has never been assigned a value (that is, this data item does not exist for an observation) or if it results from an undefined operation such as division by zero.

Specify NO, or N, to ignore records, or observations, where the "charted by" data element has a value of missing value.

Missing Values - Include missing values in statistical analysis (YES/NO)?

Specify YES, or Y, to include observations where the "report of" data element has a value of missing value in crosstabulation statistics. This occurs if the data element has never been assigned a valid value (for example, this data item does not exist for an observation) or if it results from an undefined operation such as division by zero.

Specify NO, or N, to ignore records, or observations, where the "report of" data element has a value of missing value.

Missing Values - Print missing values on statistical analysis reports (YES/NO)?

Specify YES, or Y, to accept a missing value as a valid value for the "report of" data element in statistical analysis reports. This situation occurs if the data element has never been assigned a value (that is, this data item does not exist for an observation) or if it results from an undefined operation such as division by zero.

Specify NO, or N, to ignore records, or observations, where the "report of" data element has a value of missing value.

Number of lines to skip at the top of each page of printed reports (0 - 20).

This is the number of lines to skip before printing the first line of each page. Specify a number between 0 and 20. Leave this parameter blank to use the specification established when SAS was installed.

Number of values (or bars) to be charted for each group in printer graphics.

This is the number of bars to be drawn on vertical or horizontal bar charts and the number of blocks to be drawn on block charts. If a "grouped by" data element is specified, then this is the number of bars to be drawn for each value of this "grouped by" data element. Specify a number between 1 and 99. This parameter is ignored for character "charted by" data elements if a discrete X-axis is requested or if the axis scale has been explicitly specified for the "charted by" data element.

Number of Records - Print number of records at the bottom of reports (YES/NO)?

Specify YES, or Y, to print the number of records at each subheading break (for example, OBS=nnn) on printed reports.

Specify NO, or N, to omit the number of records. This is the normal MICF processing mode.

Page Numbers - Print page numbers on first title line of each page (YES/NO)?

Specify YES, or Y, to print page numbers in the upper right hand corner of each report page. This is the normal MICF processing mode.

Specify NO, or N, to omit page numbers from printed reports.

Percentage Graphs - Force each group to add up to 100%
(YES/NO)?

Specify YES, or Y, to force the bars of percentage graphs to sum to 100% for each chart group (that is, for each value of the "grouped by" data element). This causes the bars to represent the percentage of the chart group instead of the percentage of the grand total (all independent or X-axis data element values).

Specify NO, or N, to let each bar reflect the percentage of the grand total (instead of the total for the chart group).

Pie/Star Chart Shape - Number of columns printed per inch on the printer.

This parameter defines the device on which a printer pie or star chart report will be displayed (or printed). This helps the pie/star chart function to draw a better circle. Specify a number between 1 and 99 as the number of characters (or columns) per inch across the page. Leave this parameter blank to accept the default established when SAS was installed.

Pie/Star Chart Shape - Number of lines printed per inch on the printer.

This parameter defines the device on which a printer pie or star chart report will be displayed (or printed). This helps the pie/star chart function to draw a better circle. Specify a number between 1 and 99 as the number of lines (or rows) per inch down the page. Leave this parameter blank to accept the default established when SAS was installed.

Printer Graphics Character - Graphs will be formed using this character.

This is the character that will be used to draw the bars on vertical and horizontal bar charts and to draw the blocks on vertical block charts. Specify any character except blank.

Record Numbers - Print record number on each line of printed reports (YES/NO)?

Specify YES, or Y, to print the record, or observation, number on the left side of each report line. This will be printed under the column heading of "OBS."

Specify NO, or N, to omit the record, or observation, numbers on printed reports. This is the normal MICF processing mode.

Round subtotals on printed reports instead of truncating subtotals (YES/NO)?

Specify YES, or Y, to round fractional subtotal values as required by the specified output format for the data element.

Specify NO, or N, to truncate fractional subtotal values.

Subtotals - Print subtotal when only one detail observation (YES/NO).

This parameter applies to the Tabular Report structured inquiry composition option.

Specify YES, or Y, to print the subtotal line even if there is only one detail report line at that subtotal break (that is, when the subtotal line equals the only detail observation).

Specify NO, or N, to omit the subtotal line when it would duplicate the only detail observation.

Title 1 - Alternate default title line 1 (if not inquiry title).

This value will be used as the default for the first title line of printed reports, printer graphics, and statistical analysis reports if NO is specified for the "Use inquiry title" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 1 - Use inquiry title as the default report title line 1 (YES/NO)?

Specify YES, or Y, to use the inquiry title, or long name, as the default for the first title line on printed reports, printer graphics, and statistical analysis reports.

Specify NO, or N, to use the alternate default title line as the first title line of printed reports, printer graphics, and statistical analysis reports.

Title 2 - Alternate default title line 2 (if not installation name).

This value will be used as the default for the second title line of printed reports, printer graphics, and statistical analysis reports if NO is specified for the "Use installation name" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 2 - Use installation name as the default report title line 2 (YES/NO)?

Specify YES, or Y, to use the data center name as specified by your CA MICS Administrator as the default second title line for printed reports, printer graphics, and statistical analysis reports.

Specify NO, or N, to use the alternate default title line as the second title line for printed reports, printer graphics, and statistical analysis reports.

Title 3 - Alternate default title line 3 (if not time frame specification).

This value will be used as the default for the third title line of printed reports, printer graphics, and statistical analysis reports if NO is specified for the "Use time frame specification" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 3 - Use time frame specification as the default title line 3 (YES/NO)?

Specify YES, or Y, to use the time frame covered by the report (for example, For October, 1986) as the default for the third title line on printed reports, printer graphics, and statistical analysis reports. If the inquiry does not include time frame selection, the third title line will be blank.

Specify NO, or N, to use the alternate default title line as the third title line of printed reports, printer graphics, and statistical analysis reports.

Title 4 - Alternate default title line 4 (if not inquiry name and/or run date).

This value will be used as the default for the fourth title line of printed reports, printer graphics, and statistical analysis reports if NONE is specified for the "Use inquiry name and/or run date" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 4 - Use inquiry name and/or run date as title line 4 (BOTH/INQ/DATE/NONE)

Specify BOTH, or B, to define a default fourth title line for printed reports, printer graphics, and statistical analysis reports containing the inquiry name (six characters) on the left side of the line and the execution date on the right side of the line.

Specify INQ, or I, to define a default fourth title line for printed reports, printer graphics, and statistical analysis reports containing the inquiry name (six characters) on the left side of the line.

Specify DATE, or D, to define a default fourth title line for printed reports, printer graphics, and statistical analysis reports containing the execution date on the right side of the line.

Specify NONE, or N, to use the alternate default title line as the fourth title line of printed reports, printer graphics, and statistical analysis reports.

Use the same column alignment on all printed report pages (YES/NO)?

Specify YES, or Y, to use the same alignment (or width) of report columns on all pages. This will normally generate the best appearance for printed reports.

Specify NO, or N, to vary the alignment (or width) of report columns based on the amount of space required to print the values that appear on a specific page.

Vertical Axis Length - No. lines on the vertical axis of printer graphics.

This is the number of characters in the "plot of", or Y, axis on plot reports. Specify a number between 14 and 492. This must be at least eight less than the page length. Leave this parameter blank to allow SAS to select an appropriate length for the axis.

Vertical Axis Tick Mark Spacing - No. lines between vertical axis tick marks.

This is the number of spaces, or characters, between each tick mark, or label, on the "plot of", or Y, axis on plot reports. Specify a number between 1 and 99. Leave this parameter blank to allow SAS to select an appropriate value for axis tick mark spacing.

Vertical Reference Line Character - Will be used to draw vertical lines.

This is the character that will be used to draw vertical reference lines. These lines are drawn at a specified point on the "plotted by", or X, axis of plot reports. Specify any character except blank.

Zero Values - Include zero values in printer graphics reports (YES/NO).

Specify YES, or Y, to accept zero as a valid value for a numeric "charted by" data element. This allows a bar to be drawn for a value of zero.

Specify NO, or N, to ignore records, or observations, where the "charted by" data element has a value of zero.

2.5 Color Graphics Format Parameters

Color graphics format parameters control the appearance of color graphics, including color specifications, filled area pattern definitions, connecting line types (for example, straight or smooth curve), and specifications for the formats of lines drawn on color graphics reports (for example, dotted or solid). Color graphics format parameters can be specified for each color graphics inquiry step by selecting the color graphics format parameters option from the inquiry step's extended options menu. The default values for parameters relevant to the inquiry step being composed are displayed and can be altered as required. The parameters displayed on the color graphics format parameters panel for the inquiry step will be applied when the inquiry is executed. The Color Graphics Format Parameters process of MICF Options is used to establish these default parameter values displayed on the inquiry step's color graphics format parameters panel. These values are also the parameter values applied to those inquiry steps composed without overriding color graphics format parameters (for example, the step's color graphics format parameters panel is not displayed).

MICF includes the capability to retain multiple versions of the color graphics format parameters. Each version, called a color graphics format set, contains all the parameters necessary to control graphics appearance. This facility allows MICF inquiries to be composed for display on multiple, unique color graphics devices, including devices with incompatible characteristics. Four default color graphics format sets are distributed with MICF. These format sets are designed for displaying graphics on terminal devices (TERMINAL color graphics format set), pen plotters (PENPLOT), ink jet printers (INKJET), and simple color printers (PRINTER). The CA MICS Administrator can define additional format sets to meet data center requirements, and each individual user can customize the defined format sets or add new format sets as required.

The color graphics format set to be used is selected before color graphics format parameters are specified for an inquiry step. The parameters from this format set provide the initial defaults on the color graphics format parameters panel for the inquiry step being composed. When color graphics format parameters are not specified during inquiry composition (for example, default format parameters are accepted), the default color graphics format set specified for the mode of execution (for example, batch or foreground) is used.

The Color Graphics Format Parameters process of MICF Options is used to define color graphics format sets. When this option is selected, a scrollable display of all defined color graphics format sets is displayed. You can select a format set to modify or you can insert a new color graphics format set.

Color Graphics Format Sets for the following are distributed with CA MICS:

- o INKJET - Ink Jet Color Printer Graphics
(for example, DEVICE=TEK4510A)
- o PENPLOT - Pen Plotter Color Graphics
(for example, an 8 pen plotter)
- o PRINTER - Color Printer Graphics
(for example, DEVICE=IBM3287F)
- o TERMINAL - Online (terminal based) Graphics
(for example, DEVICE=IBM3279)

The color graphics format parameters for each format set are:

Axis - Draw the chart/plot axis on color graphics outputs (YES/NO)?

Specify YES, or Y, to draw the X and Y axes on color graphics charts and plots.

Specify NO, or N, to draw color graphics charts and plots without the X and Y axes.

Axis Frame - Outline the chart/plot axis area using the axis color (YES/NO)?

Specify YES, or Y, to frame the axis area in the color of the axis. This essentially extends the X and Y axes to form a box around the axis area.

Specify NO, or N, to leave the right side and top of color graphics open (that is, do NOT extend the axes to form a box).

Border - Draw a border around color graphics outputs
(YES/NO)?

Specify YES, or Y, to draw a line around the entire color graphics chart or plot. This frames the graphic and can be useful when trimming hard copy graphics (that is, trimming off the excess paper from around a pen plotter output).

Specify NO, or N, to omit the border around color graphics.

Color for chart/plot pattern number n (or blank for default color), where n is 1 to 9.

This is the color used to draw the filled area or pattern on color charts and plots. Color is specified for up to nine unique filled areas on the chart/plot. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color for plot line number n (or blank for SAS default), where n is 1 to 9.

This is the color used to draw the data lines on color plots. Color is specified for up to nine unique lines on the plot. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color will cause execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of chart/plot axis (or blank to use SAS default).

This is the color for the X, Y, and Z axes of color graphics charts and plots. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of chart/plot horizontal reference lines (or blank to use axis color).

This defines the color used to draw horizontal reference lines. These lines are drawn at a specified point on the "plot of", or Y, axis of plot reports. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of chart/plot primary title line (or blank to use SAS default).

This is the color used to draw the first or primary color graphics title line. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of chart/plot subtitle lines (or blank to use SAS default).

This is the color used to draw the two subtitle lines, the subheading line, and the color graphics footnote. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of chart/plot vertical reference lines (or blank to use axis color).

This defines the color used to draw vertical reference lines. These lines are drawn at a specified point on the "plotted by", or X, axis of plot reports. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of ALL graphics text (axis labels, legend, element names, etc.).

This is the color used to draw all text (that is, words) on the chart or plot except for the titles, subheading, and footnote. This includes axis labels, symbol legend, etc. Specify an eight-character color name. Leave this parameter blank to use the SAS/GRAPH default.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color of ALL pie chart slices (or blank to use a unique color for each slice).

This is the color used to draw ALL pie and star chart slices, or segments. Specify an eight-character color name. Leave this parameter blank to use a unique color for each pie/star chart segment as specified by the color for filled area 1-9 parameters.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color used for the chart/plot background (or blank for no background color).

This is the color used for the background of charts and plots. Specify an eight-character color name. Leave this parameter blank to draw the chart/plot without a colored background.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color used to fill the chart/plot axis area (or blank for no axis area color).

This is the color used to fill the area inside the axis. It provides a colored background for the area inside the axis, without affecting the remainder of the chart or plot. Specify an eight-character color name. Leave this parameter blank to draw the chart/plot without filling the axis area.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color used to outline chart columns, bars, or blocks (or blank for no outline).

This is the color used to outline bar chart bars and pie/star chart segments to provide added emphasis to the edges. Specify an eight-character color name. Leave this parameter blank to draw the chart without this extra outline for bars and segments.

Note: This parameter is not validated; specifying an invalid color causes execution to fail. Refer to the SAS/GRAPH User's Guide for valid colors for each graphics device.

Color For Pie Slice Text - Use same color as pie slice (YES/NO)?

Specify YES, or Y, to draw the pie slice label using the same color as was used to draw the pie slice.

Specify NO, or N, to draw the pie slice label using the color specified for chart/plot text.

Filled Plots - Fill the area under plot lines (YES/NO)?

Specify YES, or Y, to fill the area below one or more plot lines with a color and pattern to emphasize the area defined by the line.

Specify NO, or N, to generate the plot without filled areas.

Filled Plots - Number of areas under plot lines to be filled (1 - 9 or blank).

This defines the number of areas to be filled. For example, if a plot has three lines and this parameter is two, then the area below the first line and the area between the first and second lines will be filled. The area between the second and third lines will NOT be filled. This parameter must be blank if NO is specified for the "Fill the area under plot lines" parameter above. It must be a number between 1 and 9 if YES is specified for the "Fill the area under plot lines" parameter above.

Font used for chart/plot primary title line (or blank to use the SAS default).

This is the character format, or font, used to draw the first title line on color graphics. It must be a valid SAS/GRAPH character font name. Character font names are 1-9 characters. Leave this parameter blank to use the SAS/GRAPH default. See the SAS/GRAPH User's Guide for a list of valid character fonts.

Font used for chart/plot subtitle lines (or blank to use the SAS default).

This is the character format, or font, used to draw the two subtitle lines, the subheading line, and the footnote for color graphics. It must be a valid SAS/GRAPH character font name. Character font names are 1-9 characters. Leave this parameter blank to use the SAS/GRAPH default. See the SAS/GRAPH User's Guide for a list of valid character fonts.

Heading - Draw the Pie/Block Chart heading on color graphics outputs (YES/NO)?

Specify YES, or Y, to include the standard SAS/GRAPH header for pie, star, and block charts.

Specify NO, or N, to omit the standard pie, star, and block chart header.

Height of chart/plot subtitle lines (or blank to use the SAS default).

This is the height of the characters used to draw the two subtitle lines, the subheading line, and the footnote for color graphics. Specify 0 to drop the subtitle, subheading, and footnote from the graph. Specify a number between 1 and 9 to specify character height. Leave this parameter blank to use the SAS/GRAPH default.

Horizontal Axis Tick Mark Spacing - No. tick marks between horizontal axis values.

This is the number of minor (unlabeled) axis tick marks to be drawn between each horizontal axis label (or major tick mark). Specify a number between 1 and 99. Leave this parameter blank to allow SAS to define an appropriate number of minor tick marks.

Horizontal reference line format (SOLID/DASHED/DOTTED or blank to use default).

This defines the format, or type, of line used to draw horizontal reference lines. These lines are drawn at a specified point on the "plot of", or Y, axis of plot reports.

Specify SOLID, or S0, to draw a solid line (for example, _____).

Specify DOTTED, or D0, to draw a dotted line (for example,).

Specify DASHED, or DA, to draw a dashed line (for example, - - - -).

Leave this parameter blank to use the SAS/GRAPH default value. See the SAS/GRAPH User's guide for additional valid line format specifications.

Legend - Draw the symbol legend on color graphics outputs (YES/NO)?

Specify YES, or Y, to draw a legend below the axis for charts and plots. This defines the symbols, or characters, and colors used to represent values of the chart/plot variables when multiple symbols are used.

Specify NO, or N, to omit the symbol legend.

Line Format for plot line number n (SOLID/DASHED/DOTTED/...), where n is 1 to 9.

This defines the format, or type, of line used to draw the data lines on color plots. Line format is specified for up to nine unique lines on the plot.

Specify SOLID, or S0, to draw a solid line (for example, _____).

Specify DOTTED, or D0, to draw a dotted line (for example,).

Specify DASHED, or DA, to draw a dashed line (for example, - - - -).

Leave this parameter blank to use the SAS/GRAPH default value. See the SAS/GRAPH User's guide for additional valid line format specifications.

Line Type for plot line number n (NONE/STRAIGHT/SMOOTH/STEP/NEEDLE/...), where n is 1 to 9.

This defines the type of connecting line to be drawn between points on color plots. Line type is specified for up to nine unique lines on the plot.

Specify NONE to omit the connecting line. This creates a scatter plot of unconnected data points. If filled areas have been defined, this specification causes only the filled areas to be drawn (that is, there will be no line on the filled area border).

Specify STRAIGHT to draw a straight line between each point on the plot. This generally produces a jagged line and is a good choice for plots of information by month.

Specify SMOOTH to draw a smooth curve through the points of the plot. Use this only when a large number of points are available (for example, for measurements over the day plotted in 5 minute intervals).

Specify STEP to simulate a vertical bar graph with each point on the plot marking the center of a bar. This often looks like a series of stair steps.

Specify NEEDLE to draw a line between the X-axis and each point on the plot. This has a similar appearance to a filled area plot when a large number of points are plotted. With a small number of points, this specification can highlight variation in Y-axis values.

See the SAS/GRAPH User's guide for additional valid line type specifications.

Missing Values - Include missing values in color graphics outputs (YES/NO)?

Specify YES, or Y, to accept a missing value as a valid value for the "charted by" data element. This allows a bar to be drawn for a value of missing value. This situation occurs if the data element has never been assigned a value (that is, this data item does not exist for an observation) or if it results from an undefined operation such as division by zero.

Specify NO, or N, to ignore records, or observations, where the "charted by" data element has a value of missing value.

Missing Values - Leave a gap in connecting lines at missing values (YES/NO)?

Specify YES, or Y, to leave a gap in the connecting line (if there is one) when the "plot of" data element has a value of missing value. This situation occurs if the data element has never been assigned a value (that is, this data item does not exist for an observation) or if it results from an undefined operation such as division by zero.

Specify NO, or N, to ignore records, or observations, where the "plot of" data element has a value of missing value and draw a continuous connecting line between the points of the plot.

Number of spaces between groups on column/bar charts (or blank for default).

This is the number of extra spaces to leave between vertical and horizontal bar chart groups. Specify a number between 0 and 999. Leave this parameter blank to use value spacing (see below) for group spacing.

Number of spaces between values on column/bar charts (or blank for default).

This is the number of spaces to leave between chart bars (vertical or horizontal). Specify a value between 1 and 999. Specify 0 to draw adjacent, or touching, bars. Leave this parameter blank to allow SAS to select an appropriate bar spacing. Specifying a non-zero value for this parameter increases the possibility that a vertical bar chart cannot be drawn (that is, there may not be enough room on the page to draw a vertical bar chart).

Number of values (or bars) to be charted for each group in column/bar charts.

This is the number of bars to be drawn on vertical or horizontal bar charts and the number of blocks to be drawn on block charts. If a "grouped by" data element is specified, then this is the number of bars to be drawn for each value of this "grouped by" data element. Specify a number between 1 and 99. This parameter is ignored for character "charted by" data elements if a discrete X-axis is requested or if the axis scale has been explicitly specified for the "charted by" data element.

Pattern - Change column/bar/block chart pattern for each (GROUP/SEGMENT/VALUE).

This defines the parameters for changing the pattern used for drawing the bars of vertical and horizontal bar charts.

Specify GROUP, or G, to use a different graphics pattern for each value of the "grouped by" data element. This causes all bars of a group to be drawn in the same color.

Specify SEGMENT, or S, to use a different graphics pattern for each segment of a stacked bar (either vertical or horizontal). This causes corresponding segments of each bar to be drawn in the same color. This specification would be ignored for a simple chart (that is, one with no "stacked by" data element).

Specify VALUE, or V, to use a different graphics pattern for each bar.

Pattern for chart/plot filled area number n (SOLID/HASHED/HOLLOW/LEFTHASH/...), where n is 1 to 9.

This is the graphics pattern used to draw the "filled areas" on color charts and plots. This includes the bars of vertical and horizontal bar charts, the segments of pie charts, and the area below the lines of plots. Pattern is specified for up to nine unique filled areas on the chart/plot.

Specify SOLID to fill the area completely with the corresponding color. This specification is best for online graphics. It is acceptable for standard color printers and ink jet printers.

Specify HASHED to fill the area with lines in a crosshatched pattern. This specification is best for pen plotter devices. RIGHTHASH and LEFTHASH are each half of the hashed pattern.

Specify HOLLOW to simply outline the area in the corresponding color.

See the SAS/GRAPH User's guide for additional valid filled area pattern specifications.

Pattern used to fill ALL pie chart slices
(SOLID/HASHED/HOLLOW).

This is the color graphics pattern used to draw ALL pie and star chart slices. Leave this parameter blank to use a unique pattern for each pie/star chart segment as specified by the pattern for filled area 1-9 parameters.

Specify SOLID, or S0, to fill the segments completely with the corresponding color. This specification is best for online graphics. It is acceptable for standard color printers and ink jet printers.

Specify HASHED, or HA, to fill the segments with lines in a crosshatched pattern. This specification is best for pen plotter devices.

Specify HOLLOW, or H0, to simply outline the area in the corresponding color.

Percentage Graphs - Force each group to add up to 100%
(YES/NO)?

Specify YES, or Y, to force the bars of percentage graphs to sum to 100% for each chart group (that is, for each value of the "grouped by" data element). This causes the bars to represent the percentage of the chart group instead of the percentage of the grand total (all independent or X-axis data element values).

Specify NO, or N, to let each bar reflect the percentage of the grand total.

Pie Chart - No. pie charts to be drawn across the page (or blank for default).

When a "grouped by" data element is specified for pie and star charts, multiple related pie/star charts are generated (one for each value of the "grouped by" data element). Each chart will normally occupy a page, but multiple charts can be drawn on a single page using this parameter. It specifies the number of charts to be drawn across the page. It must be a number between 1 and 9. Leave this parameter blank to draw one chart across the page.

Pie Chart - No. pie charts to be drawn down the page (or blank to use default).

When a "grouped by" data element is specified for pie and star charts, multiple related pie/star charts are generated (one for each value of the "grouped by" data element). Each chart will normally occupy a page, but multiple charts can be drawn on a single page using this parameter. It specifies the number of charts to be drawn down the page. It must be a number between 1 and 9. Leave this parameter blank to draw one chart down the page.

Pie Slice Labeling Specification -
Label = (ARROW/INSIDE/OUTSIDE/NONE).

Each pie chart slice or star chart arm can be labeled with the "charted by" data element value represented by that segment. This parameter controls the placement of this label.

Specify ARROW to print the label outside the pie/star segment and draw an arrow from the label to the corresponding segment.

Specify INSIDE to print the label inside the pie/star segment.

Specify OUTSIDE to print the label outside the pie/star segment without a connecting arrow.

Specify NONE to omit the pie/star segment label.

Pie Slice Labeling Specification -

Percentage = (ARROW/INSIDE/OUTSIDE/NONE).

Each pie chart slice or star chart arm can be labeled with the percentage of the total pie/star represented by that segment. This parameter controls the placement of this label.

Specify ARROW to print the percentage outside the pie/star segment and draw an arrow from the label to the corresponding segment.

Specify INSIDE to print the percentage inside the pie/star segment.

Specify OUTSIDE to print the percentage outside the pie/star segment without a connecting arrow.

Specify NONE to omit the pie/star segment percentage.

Pie Slice Labeling Specification -

Value = (ARROW/INSIDE/OUTSIDE/NONE).

Each pie chart slice or star chart arm can be labeled with the actual "chart of" data element value represented by that segment. This parameter controls the placement of this label.

Specify ARROW to print the value outside the pie/star segment and draw an arrow from the label to the corresponding segment.

Specify INSIDE to print the value inside the pie/star segment.

Specify OUTSIDE to print the value outside the pie/star segment without a connecting arrow.

Specify NONE to omit the pie/star segment value.

Regression Line - Confidence limits for line number n
(90/95/99/NONE), where n is 1 to 9.

This is the regression confidence limit to be drawn for a regression line on a relationship plot. The confidence limit is represented by a dotted line above and below the regression line. This indicates the width or probability of the relationship. For example, a 95% confidence limit indicates a 95% probability that a random point will fall between the upper and lower confidence limits.

Confidence limits are specified for up to nine unique regression lines.

Specify 90, 95, or 99 for 90%, 95%, or 99% confidence limits respectively.

Specify NONE, or N, to draw the plot without confidence limits.

This parameter must be blank if the corresponding regression type parameter is blank.

Regression Line - Force regression line number n through zero
(YES/NO), where n is 1 to 9.

This parameter controls the regression line derived for a relationship plot. It is specified for up to nine unique regression lines.

Specify YES, or Y, to force the regression line to pass through 0 on both axis (that is, the point (0,0) is on the line).

Specify NO, or N, to derive the regression line without this restriction (that is, the point (0,0) is not necessarily on the line). Always specify NO unless you are certain that (0,0) is a point in the relationship. Always specify NO when plotting response time on the Y-axis (for example, for concurrent TSO users vs. response time) because response time is never zero, even at zero users.

This parameter must be blank if the corresponding regression type parameter is blank.

Regression Type for relationship plot line number n
(LINEAR/QUAD/CUBIC), where n is 1 to 9.

This is the type of regression line to be derived for the relationship being plotted. Regression type is specified for up to nine unique regression lines.

Specify LINEAR, or L, to derive a straight line to describe the relationship between the plot variables. A linear relationship often exists between two workload measures such as TSO command rate and TSO CPU utilization.

Specify QUAD, or Q, to derive a quadratic line (that is, a parabola) to describe the relationship between the plot variables. A quadratic relationship generally exists between workload and service measures (for example, concurrent TSO users and TSO response time) and between workload and throughput measures (for example, concurrent TSO users and TSO command rate).

Specify CUBIC, or C, to derive a cubic line to describe the relationship between the plot variables. For some situations, a cubic relationship can be derived in place of the quadratic relationship.

Symbol for plot line number n
(NONE/PLUS/STAR/TRIANGLE/DIAMOND/HASH/...), where n is 1 to 9.

This is the symbol to be drawn for each point on color plots. Symbol is specified for up to nine unique lines.

Specify NONE to omit the symbol for each point. This causes the plot to be drawn with only the connecting line and/or filled areas.

Symbol can be any single character A-Z or 0-9. Key words are provided for special symbols such as PLUS, STAR, TRIANGLE, DIAMOND, HASH, etc. See the SAS/GRAPH User's Guide for additional valid graphics symbols.

Title 1 - Alternate default title line 1 (if not inquiry title).

This value will be used as the default for the first title line for color graphics if NO is specified for the "Use inquiry title" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 1 - Use inquiry title as the default report title line 1 (YES/NO)?

Specify YES, or Y, to use the inquiry title as the default for the first title line on color graphics.

Specify NO, or N, to use the alternate default title line as the first title line for color graphics.

Title 2 - Alternate default title line 2 (if not installation name).

This value will be used as the default for the second title line for color graphics if NO is specified for the "Use installation name" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 2 - Use installation name as the default report title line 2 (YES/NO)?

Specify YES, or Y, to use the data center name as specified by your CA MICS Administrator as the default second title line for color graphics.

Specify NO, or N, to use the alternate default title line as the second title line for color graphics.

Title 3 - Alternate default title line 3 (if not time frame specification).

This value will be used as the default for the third title line on color graphics if NO is specified for the "Use time frame specification" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank title.

Title 3 - Use time frame specification as the default title line 3 (YES/NO)?

Specify YES, or Y, to use the time frame covered by the report (for example, For October, 1986) as the default for the third title line on color graphics. If the inquiry does not include time frame selection, the third title line will be blank.

Specify NO, or N, to use the alternate default title line as the third title line for color graphics.

Title 4 - Alternate default title line 4 (if not inquiry name and/or run date).

This value is used as the default for the color graphics footnote (the third subtitle line) if NONE is specified for the "Use inquiry name and/or run date" parameter below. This is 1-60 characters; single or double quotes (' or ") are not allowed. Leave this parameter blank to print a blank footnote.

Title 4 - Use inquiry name and/or run date as title line 4 (BOTH/INQ/DATE/NONE)

Specify BOTH, or B, to define a default color graphics footnote containing the inquiry name (six characters) on the left side of the line and the execution date on the right side of the line.

Specify INQ, or I, to define a default color graphics footnote containing the inquiry name (six characters) on the left side of the line.

Specify DATE, or D, to define a default color graphics footnote containing the execution date on the right side of the line.

Specify NONE, or N, to use the alternate default color graphics footnote.

Vertical reference line format (SOLID/DASHED/DOTTED or blank to use default).

This defines the format of the line used to draw vertical reference lines. These lines are drawn at a specified point on the "plotted by", or X, axis of plot reports.

Specify SOLID, or S0, to draw a solid line (for example, _____).

Specify DOTTED, or D0, to draw a dotted line (for example,).

Specify DASHED, or DA, to draw a dashed line (for example, - - - -).

Leave this parameter blank to use the SAS/GRAPH default value. See the SAS/GRAPH User's guide for additional valid line format specifications.

Vertical Axis Tick Mark Spacing - No. tick marks between vertical axis values.

This is the number of minor axis tick marks to be drawn between each vertical axis label (or major tick mark). Specify a number between 1 and 99. Leave this parameter blank to allow SAS to define an appropriate number of minor tick marks.

Z-Axis Tick Mark Spacing - No. Tick marks between Z-Axis values.

This is the number of minor axis tick marks to be drawn between each Z-axis label (or major tick mark). Specify a number between 1 and 99. Leave this parameter blank to allow SAS to define an appropriate number of minor tick marks.

Zero Values - Include zero values in color graphics outputs (YES/NO)?

Specify YES, or Y, to accept zero as a valid value for a numeric "charted by" data element. This allows a bar to be drawn for a value of zero.

Specify NO, or N, to ignore records, or observations, where the "charted by" data element has a value of zero.

2.6 Data Set Allocation Parameters

Data set allocation parameters control the allocation and cataloging of data sets created by MICF. These parameters include the amount of disk space allocated for the data set and the unit/volume specification for data set allocation. You can also change the data set name assigned to selected MICF data sets.

When you select the Data Set Allocation Parameters option, a scrollable list of MICF-related data sets is displayed. The most commonly modified data set allocation parameters are displayed on this panel. If you need to change additional parameters, you can select a row from this scrollable display to access a fixed panel containing all of the data set allocation parameters.

Below are data set allocation parameters for the following MICF data sets:

- o BDTFOUT - Batch inquiry output staging CSV file output
- o BICFUSER - Batch inquiry output staging catalog color graphics outputs
- o BLOG - Batch inquiry output staging catalog SAS log
- o BMICSLOG - Batch inquiry output staging catalog CA MICS log
- o BREPORT - Batch inquiry output staging catalog printed reports
- o CAPACITY - Capacity planning database files
- o CAPPDS - Capacity planning control members
- o DTFINDEX - Index to cataloged inquiry CSV file outputs
- o DTFOUT - Cataloged inquiry CSV file outputs
- o LOG - Current inquiry SAS log
- o MAFCNTL - MAF batch job control data set
- o MICSLOG - Current inquiry MICSLOG
- o OUTPUT - Cataloged inquiry outputs (reports, MICSLOG, and SAS log)
- o PCATALOG - Production catalog table data set
- o PDTFINDX - Index to production inquiry output catalog CSV file outputs
- o PIXFOUT - Production inquiry output catalog CSV file outputs
- o PMICSLOG - MICF production reporting temporary MICSLOG data set
- o PMWFPDS - Production inquiry output catalog printed reports

- o PMWFSAS - Production inquiry output catalog color graphics outputs
- o PREPORT - MICF production reporting temporary printed report data set
- o PRINT - Print inquiry output with batch job staging file
- o REPORT - Current inquiry reports
- o SASPROF - SAS user profile data set
- o SORTWK - Sort work files
- o TEMPFILE - Temporary data sets (for example, FT15F00x)
- o TEMPSAS - Temporary SAS data sets such as the temporary MCOLIB and pMUOLIB data sets
- o UCATALOG - User reporting catalog table data set
- o UDTFINDX - Index to user reporting inquiry output catalog CSV file outputs
- o UIXFOUT - User reporting inquiry output catalog CSV file outputs
- o UMICSLOG - MICF user reporting temporary MICSLOG data set
- o UMWFPDS - User reporting inquiry output catalog printed reports
- o UMWFSAS - User reporting inquiry output catalog color graphics outputs
- o UREPORT - MICF user reporting temporary printed report data set
- o USER - SAS file - cataloged graphics and saved files
- o UTILLOG - SAS log for color graphics replay and other SAS utility processing
- o UTILMLOG - MICSLOG for color graphics replay and other SAS utility processing
- o WORK - SAS work file

Any changes to the default values for the CAPACITY, CAPPDS, DTFOUT, DTFINDEX, OUTPUT, and USER data sets must be made before the data sets are allocated:

- o CAPACITY is allocated the first time you update a capacity planning database file or the first time you save a forecast.
- o CAPPDS is allocated the first time it is needed in the Capacity Planner application.
- o DTFOUT is allocated the first time you execute an inquiry in foreground that creates CSV outputs or move a batch CSV inquiry output to your private inquiry output catalog.

- o DTFINDEX is allocated the first time you catalog an inquiry output that contains CSV files or move a batch inquiry CSV file output to your private inquiry output catalog.
- o OUTPUT is allocated the first time you catalog an inquiry output.
- o USER is allocated the first time you execute a MICF inquiry.

Changes to BICFUSER, BLOG, BMICSLOG, BREPORT, PCATALOG, PDTFINDX, PIXFOOT, PMWFPDS, PMWFSAS, PMICSLOG, PREPORT UCATALOG, UDTFINDX, UIXFOOT, UMWFPDS, UMWFSAS, UMICSLOG, or UREPORT entries take effect for the next allocation of an associated batch staging, production, or user reporting data set. The other data sets are reallocated for each MICF session, so revised specifications should be effective on your next MICF session.

The data set allocation parameters for each data set are:

DSN suffix

Required for permanent MICF user data sets. Must be blank for temporary data sets and for MICF production and user reporting data sets (xCATALOG, xDTFINDX, xIXFOOT, xMWFPDS, xMWFSAS, xMICSLOG, xREPORT). The user data set prefix specified for your data center is appended to this parameter in order to generate the data set name. Some entries apply to a generic set of data sets (for example, PRINT applies to the print inquiry output staging data sets) and are allocated with data set names containing a logical version or cycle number. Include one or more asterisks (*) in the data set name suffix for these data sets to indicate where the logical version number should appear.

The results of changing this parameter for the CAPACITY, DTFOUT, OUTPUT, or USER data sets after the data set has been allocated are unpredictable.

Space units

The type of space allocation for this data set. Specify BLK, CYL, or TRK (may be abbreviated as B, C, or T respectively).

Primary quantity

The initial amount of space to be allocated (that is, the number of cylinders, tracks, or blocks). Specify a number between 1 and 99999.

Secondary quantity

The amount of space to be allocated when the space specified in primary quantity has been used. Specify a number between 1 and 99999 for the secondary allocation. Leave this parameter blank (or specify 0) to limit the data set to the primary quantity.

Directory blocks

The number of partitioned data set directory blocks to be allocated. Specify a number between 1 and 999 if data set organization is PO or POU. Leave this parameter blank if data set organization is PS, PSU, DA, or DAU.

Round block alloc.

Specify YES, or Y, to round block allocation up or down to the cylinder boundary.

Specify NO, or N, for block allocation without rounding. You must specify NO when space units are CYL or TRK.

Block size

The size of the physical blocks of records for this data set. Specify a number between 1 and 32760.

- o If record format is F, block size must equal record length.
- o If record format is FB or FS, block size must be divisible by record length.
- o If record format is V, block size must be equal to record length plus four.
- o If record format is VB, block size minus four must be greater than or equal to record length.

Record length

The length of the records for this data set. If record format is V, this is the maximum record length. Record length cannot be changed.

Volume serial

Specify a 1-6 character volume serial number to allocate this data set on a specific DASD volume. The volume serial number may be optional or defaulted at your site, or in some cases it may be implicitly assigned based on the specification of the unit name.

Data set org.

The type of data set being allocated (for example, PO, PS, DA). Data set org cannot be changed.

Expiration date

Data set expiration date in yyddd or yyyy/ddd format (note that yyyy/ddd format is supported with MVS/XA and above). Specify this parameter if your data center requires expiration dates for DASD data set allocations.

Record format

The format of records in this data set. Record format cannot be changed.

Retention period

The number of days (1-99999) the data set should be kept before it is deleted by your data center's DASD management routines. Retention period must be blank when expiration date is specified.

Generic unit

The 1-8 character DASD unit name specification for data set allocation. This parameter should match the unit specification you normally use when allocating data sets. It may be optional at your site, but when specified will usually have a value such as SYSDA. See your data center standards for valid values.

Storage Class

The 1-8 character name specification for storage class (STORCLAS) to be used for data set allocation. Refer to your data center standards for valid values.

Data Class

The 1-8 character name specification for data class (DATACLAS) to be used for data set allocation. Refer to your data center standards for valid values.

Management Class

The 1-8 character name specification for management class (MGMTCLAS) to be used for data set allocation. Refer to your data center standards for valid values.

Additional allocation parameters

Additional parameters your data center requires to allocate new DASD data sets. Specify these parameters in JCL statement format, separated by commas. Two data entry fields are provided:

- o DCB parameters - DCB subparameters, for example, OPTCD=W)
- o Other parameters - SMS parameters and other data set allocation constructs, for example, VOL=REF=dsname

2.7 SAS Libraries for ISPF Applications

Use the SAS Libraries for ISPF Applications option to specify additional user or installation SAS-related data sets you want allocated for MICF inquiry execution. The data sets you specify will be concatenated before the optional installation SAS-related data sets specified by the CA MICS Administrator. The data sets you specify will also be concatenated before the SAS system libraries and the distributed CA MICS libraries.

You can specify up to two data set names for each type of allocation: load library, auto-call macros, SAS objects, and SAS source modules. The installation data sets are also listed for your information.

The SAS Libraries for ISPF Applications parameters are 1-44 character fully-qualified data set names enclosed in quotes.

- o Use the Private (user-level) entries to specify the optional SAS-related library data set names. You can specify up to two data sets for each type of allocation.
- o The Shared (complex-level) entries display the optional installation SAS-related data sets your CA MICS administrator specified. Your data sets will be concatenated ahead of the shared (complex-level) data sets.

The private (user-level) library options are:

- o Load Module Libraries. Use this parameter to make your SAS version 5 and other SAS-related load modules available to your MICF inquiries.
- o Auto-call Macro Libraries. Use this parameter to make your SAS macros available to your MICF inquiries.
- o SAS Object (format) Libraries. Use this parameter to make your user-defined SAS formats, compiled SAS macros, and other SAS objects available to your MICF inquiries.
- o Source Libraries. Use this parameter to make your SAS source members available to your MICF inquiries.

2.8 Additional Data Set Allocations

Use the Additional Data Set Allocations option to specify user or data center data sets you want allocated for MICF inquiry execution. You can associate a data set allocation with color graphics processing, or you can specify that the data set should be allocated for all inquiry executions. For example, you might use this option to allocate your data center's GDDM profile data set to DDNAME ADMDEFS.

When you select this option, a scrollable list of the user and data center data sets you want MICF to allocate for inquiry execution and color graphics processing is displayed. Each row of the display describes one data set. A single blank entry is provided when you first select this option.

The Additional Data Set Allocations parameters are:

DDNAME

A 1-8 character DDNAME for data set allocation. DDNAME must be unique and must not conflict with any standard CA MICS/MICF DDNAMEs. MICF will allocate the specified data set name to this DDNAME.

DISP

The data set disposition for data set allocation. Specify SHR, OLD, or MOD.

Data Set Name

The data set you want allocated. Code this parameter as you would any other data set name. If you do not enclose the value in quotes, your TSO user PREFIX will be appended to the front before allocating the data set. To allocate a member of a partitioned data set, include the member name in this parameter.

Graph

Specify YES, or Y, to associate this data set with color graphics processing. The data set will be allocated for MICF color graphics inquiry execution and for color graphics replay. The data set will NOT be allocated for inquiries that do not generate color graphics outputs.

Specify NO, or N, to allocate this data set for ALL MICF inquiry executions. The data set will NOT be allocated for color graphics replay.

2.9 ISPF Parameters

Select option 0 to update the standard ISPF parameters that control panel operation. These are the same parameters normally accessed under option 0 on your data center's ISPF primary options menu.

ISPF maintains an independent set of these parameters for each application operating under ISPF, so you can select this option if you want to update these parameters to meet your specific requirements.

Chapter 3: Reports and Graphics

To access the Reports and Graphics panel from the CA MICS Information Center Facility main menu, select option 1.

Several types of reports are available using MICF:

- o Graphics
- o Printed reports
- o Statistical analyses

Graphics are suitable for presentations and help you recognize trends and exceptions. Color graphics require the use of a color terminal, pen plotter, or color printer. Printer graphics produce black and white graphs using standard printers.

Printed reports list the data you select in tables that are suitable for reference purposes or further analyses.

Statistical analyses offer a wide range of analytical tools that display your data and summarize its statistical characteristics.

Each type of report is described in detail below.

This section contains the following topics:

[3.1 Graphics](#) (see page 89)

[3.2 Printed Reports](#) (see page 110)

[3.3 Statistical Analyses](#) (see page 116)

3.1 Graphics

MICF offers you a broad set of graphics reports in either color or black and white.

Note: The SAS/GRAPH software product is required for generating color graphics reports.

The following graphics reports are available:

- o Vertical Bar Charts
- o Stacked Vertical Bar Charts
- o Stacked Group Vertical Bar Charts
- o Horizontal Bar Charts
- o Stacked Horizontal Bar Charts
- o Stacked Group Horizontal Bar Charts
- o Pie Charts
- o Block Charts
- o Star Charts
- o Plots
- o Relationship Plots (available in color only)
- o Stacked Plots (available in color only)
- o Overlay Plots

The sample graphics in this section are based on the black and white printer graphics facilities available under MICF. They illustrate the basic format of the corresponding color graphics, but the color versions are more attractive. Circles are round, axes are more accurate, and the resolution of lines and bars is higher.

To create a simple vertical bar chart, select the Vertical Bar Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.2 Stacked Vertical Bar Charts

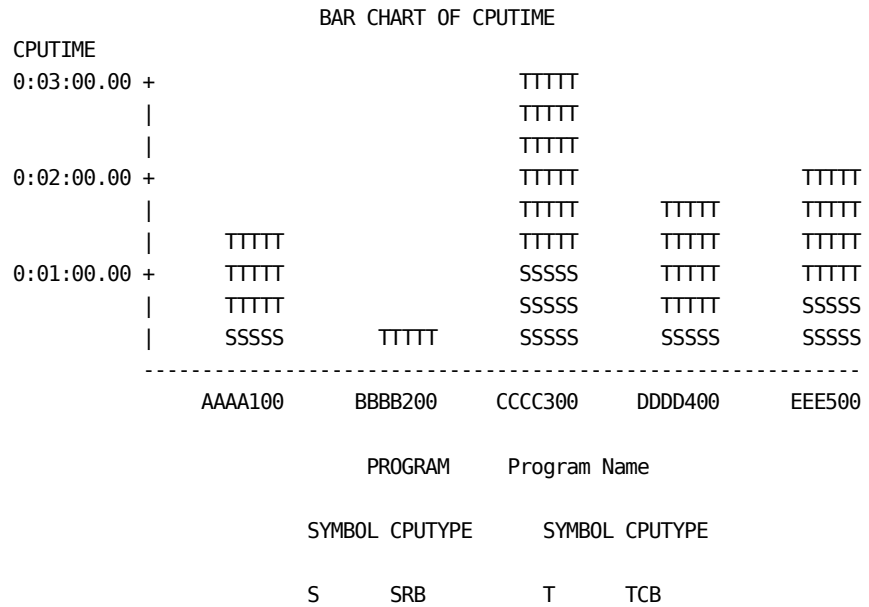


Figure 3-2. Sample Stacked Vertical Bar Chart

A stacked vertical bar chart consists of bars that are composed of individual segments stacked together to form the total bar height. This type of chart is often used to present basic measurements over time, where each measurement value is accumulated from distinct parts.

For example, the number of batch job executions by month might be charted with the bars segmented by job class (that is, each bar is composed of a segment for each job class). The relative sizes of the bar segments illustrates the percentage of jobs executed by class. Thus this chart could illustrate workload growth (jobs/month), the type of jobs contributing to this growth (class x jobs/month), and changes in the composition of the workload (relative contribution from each job class). The chart bars can represent actual values, percentages of the total value, or cumulative percentages. Parameters are provided to control the chart axis scale, data element labels, printed value formats, the color and pattern used to fill the bars, and the color of chart text.

Figure 3-2 is a sample stacked vertical bar chart showing TCB CPU time and SRB CPU time by program. The program names are on the X-axis and CPU usage is on the Y-axis. The total bar height represents total CPU usage for a program (TCB CPU time plus SRB CPU time).

To create a stacked vertical bar chart, select the Stacked Vertical Bar Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.3 Stacked Group Vertical Bar Charts

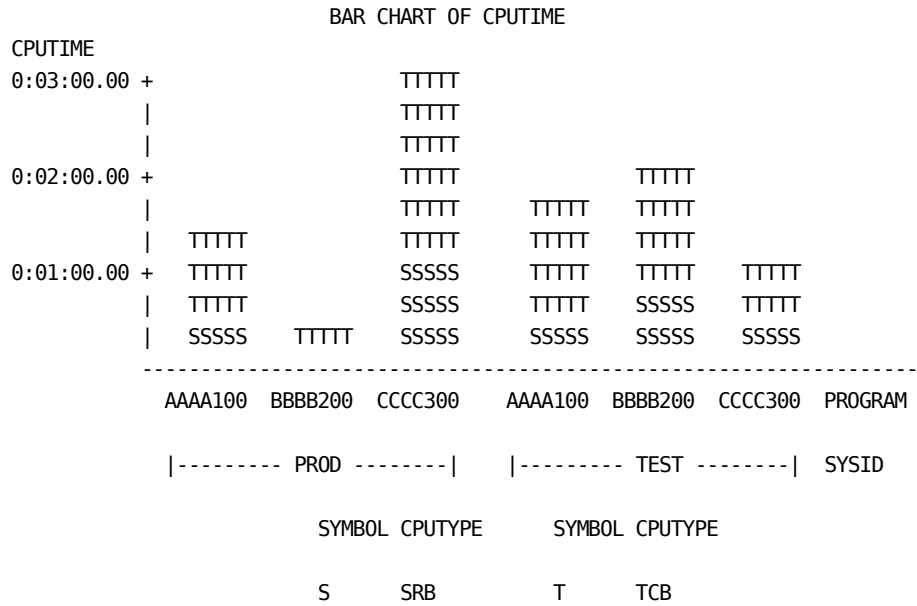


Figure 3-3. Sample Stacked Group Vertical Bar Chart

A stacked group vertical bar chart is a vertical bar chart with groups of stacked vertical bars. This type of chart is a combination of a simple vertical bar chart and a stacked vertical bar chart. This is a fairly complex graphic, presenting a significant amount of information on a single chart, so it should be used sparingly.

Figure 3-3 is a sample stacked group vertical bar chart showing TCB CPU time and SRB CPU time by program and system (SYSID). The program names on the X-axis are repeated for each system. CPU usage is on the Y-axis, with the total bar height representing total CPU usage for a program (TCB CPU time plus SRB CPU time).

To create a stacked group vertical bar chart, select the Stacked Group Vertical Bar Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.4 Horizontal Bar Charts

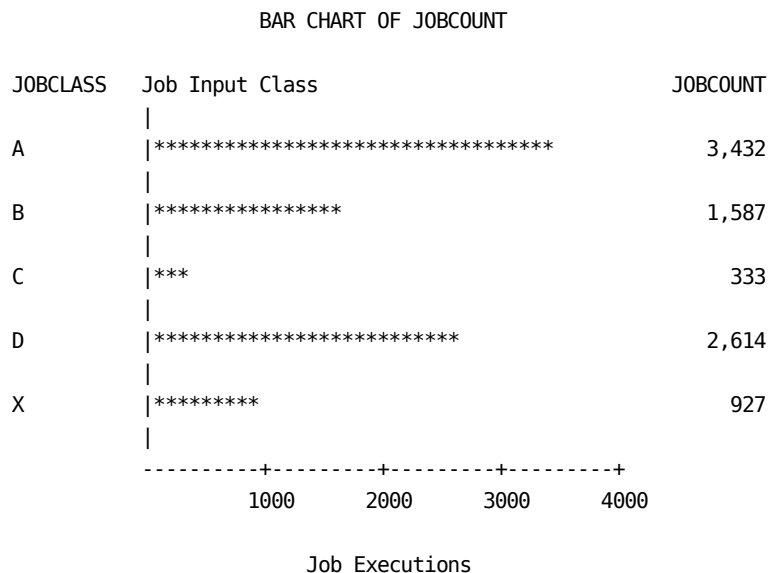


Figure 3-4. Sample Horizontal Bar Chart

Horizontal bar charts, sometimes called histograms, are most often used for showing item comparisons and are especially helpful in emphasizing differences between items (for example, revenue versus expenses by processing shift). They should NOT be used to display information over time (use a vertical bar chart for this purpose).

MICF allows you to generate simple horizontal bar charts and more complex presentations with related groups of horizontal bars and stacked bars that illustrate the composition of a value (for example, revenue by cost center). The more complex horizontal bar charts are discussed in the next two sections.

When you generate a simple horizontal bar chart, you can use optional parameters to create logical groups of horizontal bars. For example, you could create a chart of revenue by cost center over invoice category as a group of revenue-by-cost-center bars for each invoice category.

The chart bars can represent actual values, percentages of the total value, or cumulative percentages. Parameters are provided to control the chart axis scale, data element labels, printed value formats, the color and pattern used to fill the bars, and the color of chart text.

Figure 3-4 is a sample horizontal bar chart of the number of job executions by job class. The exact number of executions is provided to the right of each bar for each job class.

To create a horizontal bar chart, select the Horizontal Bar Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.5 Stacked Horizontal Bar Charts

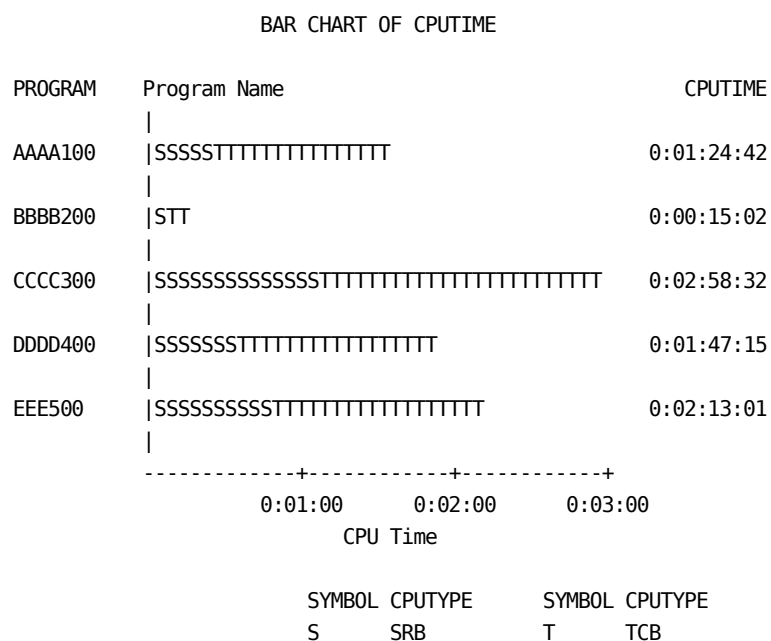


Figure 3-5. Sample Stacked Horizontal Bar Chart

A stacked horizontal bar chart is a horizontal bar chart whose bars are composed of individual segments stacked together to form the total bar length. This type of chart is most often used for showing item comparisons, where each item value is accumulated from distinct parts.

For example, data center revenue by cost center might be charted with the bars segmented by invoice category (that is, each bar is composed of a segment for each invoice category). The chart bars can represent actual values, percentages of the total value, or cumulative percentages. Parameters are provided to control the chart axis scale, data element labels, printed value formats, the color and pattern used to fill the bars, and the color of chart text.

Figure 3-5 is a sample stacked horizontal bar chart of TCB CPU time and SRB CPU time by program, where each bar is composed of the CPU times. The total CPU time is provided to the right of each bar for each program and corresponds to the total length of the bar.

To create a stacked horizontal bar chart, select the Stacked Horizontal Bar Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.6 Stacked Group Horizontal Bar Charts

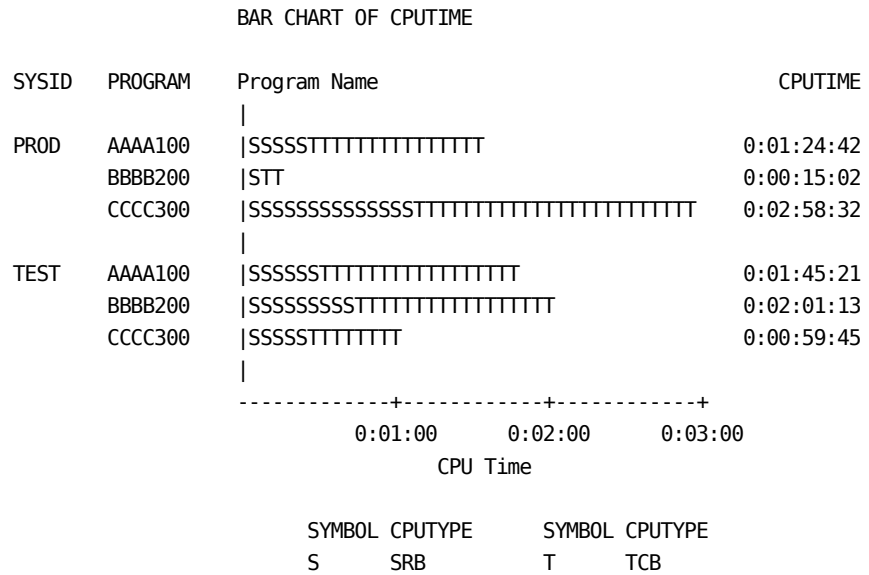


Figure 3-6. Sample Stacked Group Horizontal Bar Chart

A stacked group horizontal bar chart is a chart with groups of stacked horizontal bars. This type of chart is a combination of a horizontal bar chart and a stacked horizontal bar chart. This is a fairly complex graphic, presenting a significant amount of information on a single chart so it should be used sparingly.

Figure 3-6 is a sample stacked group horizontal bar chart. Each group represents the TCB CPU time and SRB CPU time by program and system (SYSID), where each bar is composed of the CPU times. The total CPU time is provided to the right of each bar and corresponds to the total length of the bar.

To create a stacked group horizontal bar chart, select the Stacked Group Horizontal Bar Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.7 Pie Charts

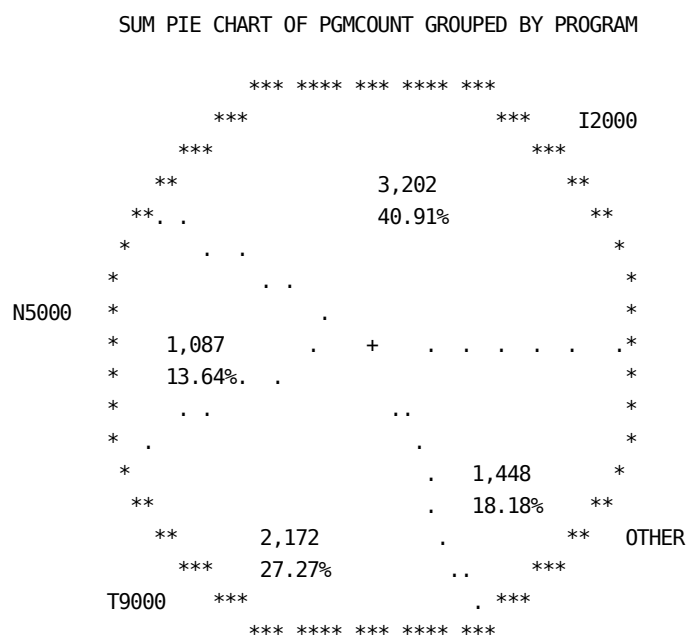


Figure 3-7. Sample Pie Chart

A pie, or circle, chart is a circle composed of wedges, each representing a different item. Pie charts are most useful in illustrating the relative sizes of the components of the whole (for example, total revenue by cost center). Parameters are provided to control the definition of chart labels and data element formats for both color and printer graphics.

For color graphics, parameters are provided to control the pattern and color used to fill pie slices; the color of chart text; the definition of pie slices; the ability to emphasize selected slices by separating them from the rest of the pie (often called exploded pie slices); and the ability to generate groups of related pie charts on a single page.

For printer graphics, parameters are provided to control the definition of pie slices, chart labels, and data element formats.

Figure 3-7 is a sample pie chart representing the total number of program executions by program name. Each wedge shows the number of executions and the percent of the total for a program. Programs contributing a small percentage of the total are shown summarized in a single group named "OTHER."

To create a pie chart, select the Pie Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.8 Block Charts

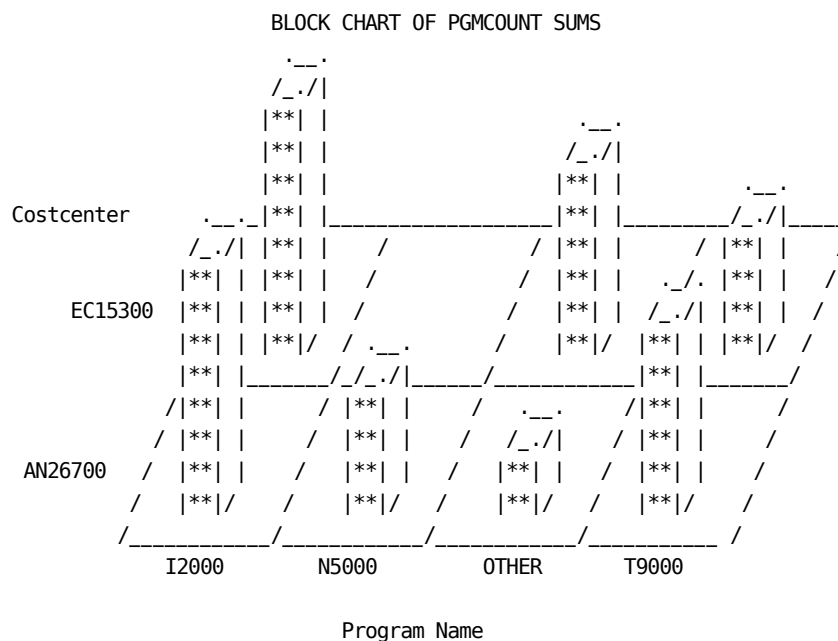


Figure 3-8. Sample Block Chart

A block chart is a three-dimensional bar chart that resembles buildings laid out on a square city grid. The height of each building represents the relative value of a variable (the Z-axis) at the intersection of two other variables (the X and Y-axes). These charts can be used to illustrate the relationships between three variables. Optional parameters allow the block to be segmented to represent the individual pieces that compose the whole, control chart labels, and control data element formats.

For color graphics, additional parameters control the color and pattern used to fill the bars and the color of chart text.

Figure 3-8 is a sample block chart. The height of each block represents the number of program executions by program and business cost center.

To create a block chart, select the Block Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.9 Star Charts

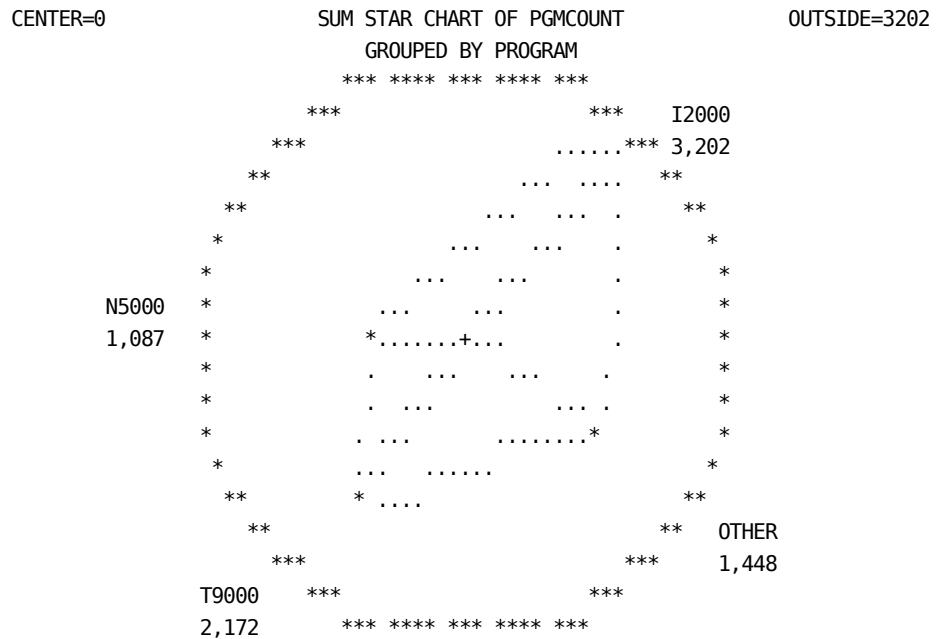


Figure 3-9. Sample Star Chart

Star, or Kiviat, charts represent multivariate data and are not commonly used due to their complexity. Each arm of the star represents a unique value of the chart variable, while the length of each arm represents the volume associated with that variable. For example, a star chart of average CPU time per job class would have an arm for each unique job class and the length of each arm would represent the average CPU time per job for that job class.

You can set parameters to control chart labels and data formats.

For color graphics, you can also control the color and pattern used to fill the star segments, as well as the color of chart text. You can generate groups of related star charts on a single page.

Figure 3-9 is a sample star chart of program counts. Each segment represents a program; the width of each segment represents the percent of program total executions, and the length of each arm represents the number of program executions.

To create a star chart, select the Star Chart option from any of the following menus:

- o Direct Inquiry Color Graphics Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Menu
- o Structured Inquiry Printer Graphics Menu

3.1.10 Plots

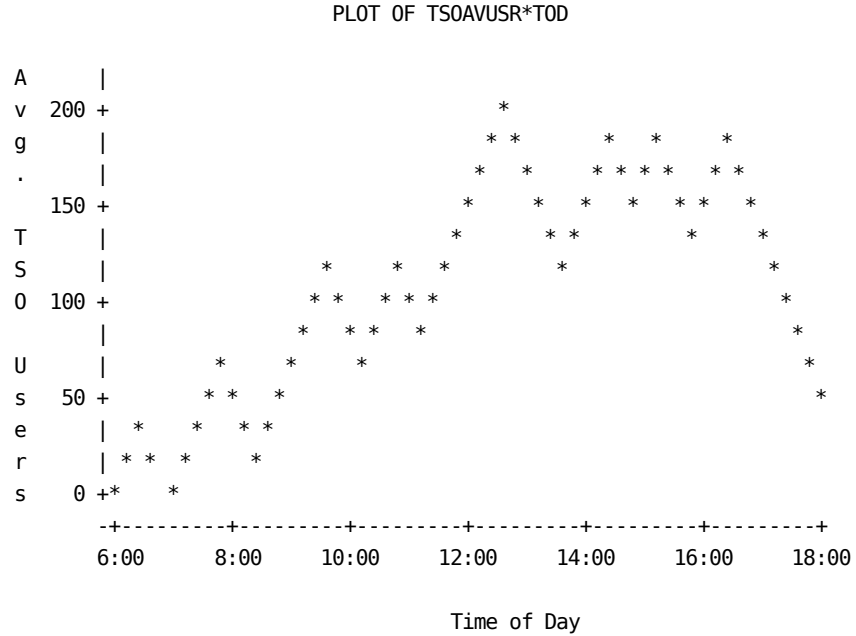


Figure 3-10. Sample x Against y Plot

Color plots and printer plots are used to illustrate the relationship between variables (for example, plot x against y).

For example, a plot might be used to present average TSO response time over the day by plotting time on the X-axis (for example, each 5 minute interval from the TSO file in the DETAIL timespan) with average response time on the Y-axis.

Optional parameters allow you to plot multiple related "lines" on a single axis and scale (for example, average response time by SYSID) and to control the chart axis scale, data element labels, and printed value formats.

When you use printer graphics, only the points of the graph will be plotted; the points will NOT be connected by lines.

With color graphics, you can leave the points unconnected or you can connect the points with straight lines, a smooth curve, or a step function. You can specify the format of these lines (for example, dotted, solid, etc.), the symbol used to plot each point, and the color of any item presented on the plot. You can choose to plot the connecting line or to fill the area under the lines or the area between the lines with a pattern, a color, or both.

Figure 3-10 is a sample plot whose points represent the average number of concurrent TSO users by time of day.

To create a plot, select the Plot option from any of the following menus:

- o Direct Inquiry Color Graphics Color Plot Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Color Plot Menu
- o Structured Inquiry Printer Graphics Menu

3.1.11 Relationship Plots

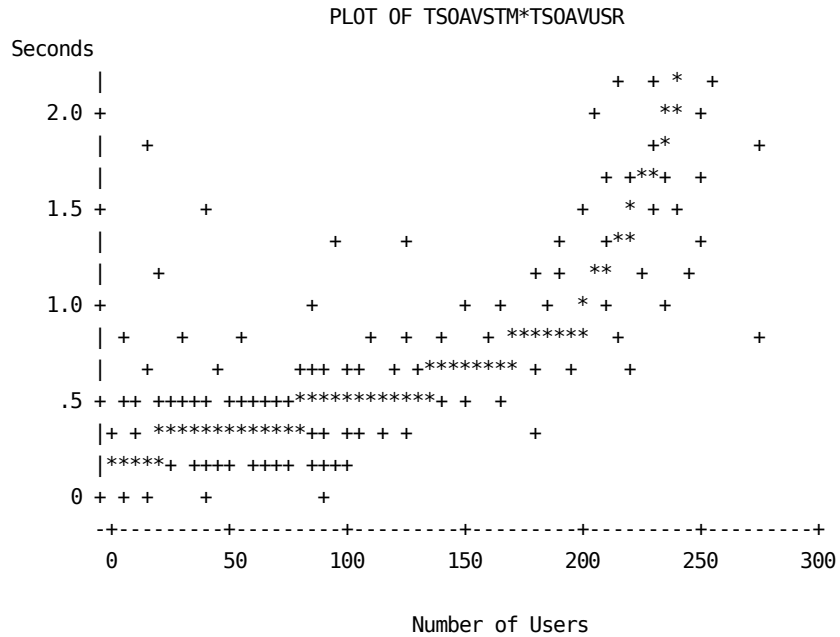


Figure 3-11. Sample Relationship Plot

A relationship plot is a scatter plot (that is, values are plotted without a connecting line) of x against y with a linear, quadratic, or cubic regression line drawn to describe the predicted relationship between the two elements. Use relationship plots to evaluate the relationship between two measurements such as the number of concurrent TSO users and response time. They are especially useful in performance analysis and capacity planning.

Optional parameters allow you to plot multiple relationships on a single axis and scale. For example, you could plot the number of concurrent users against response time with a separate line for each SYSID. You can also control the color and content of the chart axis scale, data element labels, and printed value formats.

Figure 3-11 plots average short TSO response time against average concurrent TSO users. It shows the number of concurrent users the configuration can support for a given response time. As illustrated, if the response time objective is 1.0 seconds, the maximum number of users that can be supported is 200.

To create a relationship plot, select the Relationship Plot option from either of the following menus:

- o Direct Inquiry Color Graphics Color Plot Menu
- o Structured Inquiry Color Graphics Color Plot Menu

Note that relationship plots are only available in color. This sample report simulates the basic format of a color relationship plot.

3.1.12 Stacked Plots

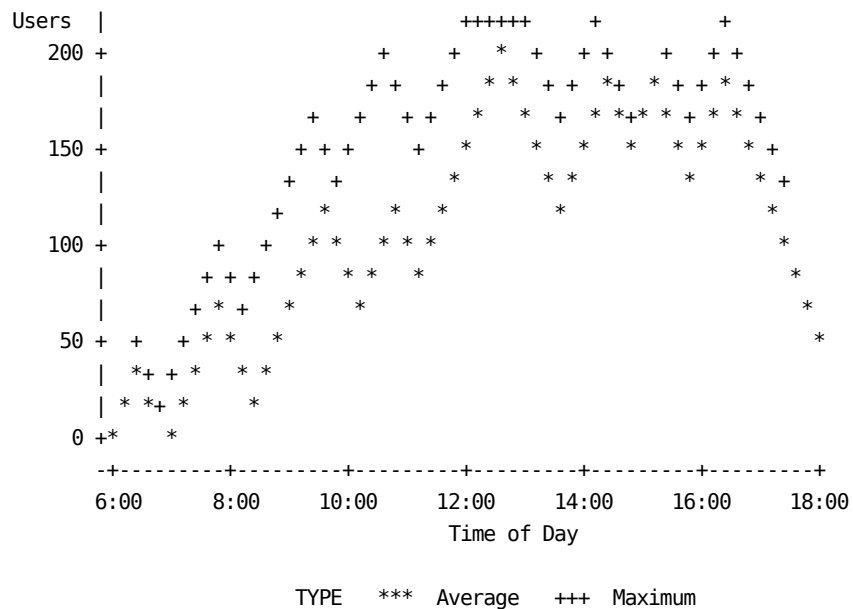


Figure 3-12. Sample Stacked Plot

Stacked plots are multiple plots (for example, y against x and z against x) on a single axis and scale. Up to four variables can be plotted against a fifth variable. Stacked plots also generate a legend for the Y-axis variables. Use stacked plots to illustrate the relationships among multiple variables that are influenced by a single independent measure, such as the relationship between average concurrent TSO users and maximum concurrent TSO users by hour. You can also stack values. For example, you might stack messages received over messages sent to show both total message traffic and its component parts.

You can control the color and content of the chart axis scale, data element labels, and printed value formats. You can leave the points unconnected or you can connect the points with straight lines, a smooth curve, or a step function. You can specify the format of these lines (for example, dotted, solid, etc.), the symbol used to plot each point, and the color of any item presented on the plot. You can choose to plot only the connecting line and/or to fill the area under the lines or the area between the lines with a pattern, a color, or both.

Figure 3-12 is a sample stacked plot showing the average and maximum number of concurrent TSO users by time of day.

To create a stacked plot, select the Stacked Plot option from either of the following menus:

- o Direct Inquiry Color Graphics Color Plot Menu
- o Structured Inquiry Color Graphics Color Plot Menu

Note that stacked plots are only available in color. This sample report simulates the basic format of a color stacked plot.

3.1.13 Overlay Plots

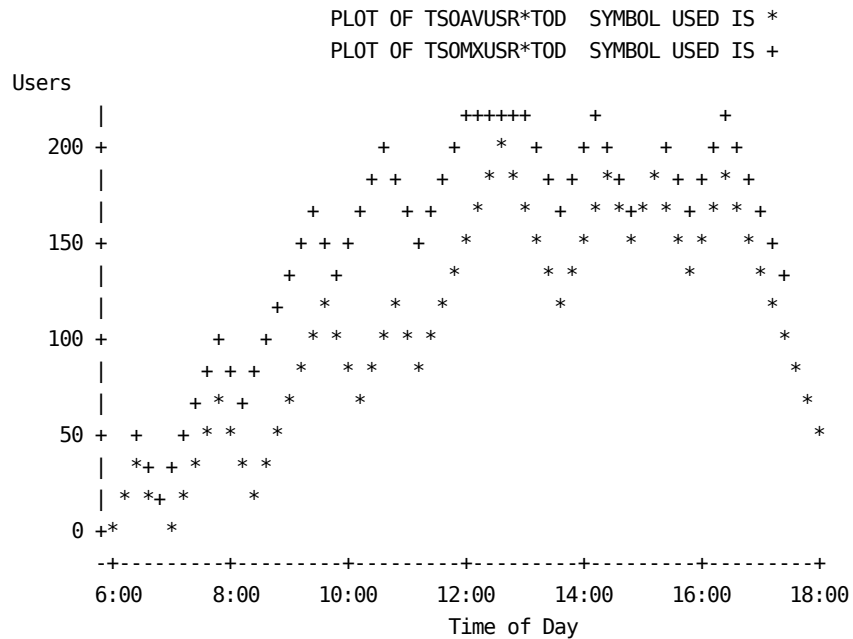


Figure 3-13. Sample Overlay Plot

Overlay plots are multiple plots (for example, y against x and z against x) on a single axis and scale. Up to four variables can be plotted against a fifth variable. Use overlay plots to illustrate the relationships among multiple variables that are influenced by a single independent measure.

You can control the chart axis scale, data element labels, and printed value formats.

With printer graphics, only the points of the graph are plotted; they are NOT connected by lines.

With color graphics, you can leave the points unconnected or you can connect the points with straight lines, a smooth curve, or a step function. You can specify the format of these lines (for example, dotted, solid, etc.), the symbol used to plot each point, and the color of any item presented on the plot. You can choose to plot only the connecting line and/or to fill the area under the lines or the area between the lines with a pattern, a color, or both.

Figure 3-13 is a sample overlay plot showing the average and maximum number of concurrent TSO users by time of day.

To create an overlay plot, select the Overlay plot option from any of the following menus:

- o Direct Inquiry Color Graphics Color Plot Menu
- o Direct Inquiry Printer Graphics Menu
- o Structured Inquiry Color Graphics Color Plot Menu
- o Structured Inquiry Printer Graphics Menu

3.2 Printed Reports

MICF printed reports let you list the data elements you select in a variety of convenient formats. The printed reports options are:

- o Standard List
- o Structured List
- o Ranking Report
- o Tabular Report
- o Tabular Ranking Report

Each of the printed reports options is described in detail below.

3.2.1 Standard List

```

----- SYSTEM =TS07 HOUR =6 -----

```

PROGRAM NAME	CPU TIME	TOTAL EXCPS
I2000	0:01:58	38,803
N5000	0:00:32	15
T9000	0:02:07	229,218
-----	-----	-----
HOUR	0:03:37	268,036

```

----- SYSTEM =TS07 HOUR =7 -----

```

PROGRAM NAME	CPU TIME	TOTAL EXCPS
I2000	0:02:57	31,873
N5000	0:00:01	204
.	.	.
.	.	.
.	.	.

Figure 3-14. Sample Standard List

The Standard List option produces a list of input file records arranged according to parameters you define. A standard list is most often used for on-demand data analysis.

Optional parameters control the format and appearance of your standard list. These include the report title, the sequence of report lines, column headings, and data element formats. You can also define report subheadings, page breaks, and subtotals.

Figure 3-14 is a portion of a standard list showing CPU time and EXCP count by program with subheadings and subtotals by SYSID and hour.

To create a standard list, select the Standard List option from either of the following menus:

- o Direct Inquiry Printed Reports Menu
- o Structured Inquiry Printed Reports Menu

3.2.2 Structured List

SYSTEM	HOUR	PROGRAM NAME	CPU TIME	TOTAL EXCPS
TS07	6	I2000	0:01:58	38,803
		N5000	0:00:32	15
		T9000	0:02:07	229,218
----	--		-----	-----
TS07	6		0:03:37	268,036
TS07	7	I2000	0:02:57	31,873
		N5000	0:00:01	204
		.	.	.
		.	.	.
		.	.	.

Figure 3-15. Sample Structured List

A structured list is a listing of input file records with indented format subheadings in the body of the report. A structured list is often used for regular production reporting because it looks more formal than a standard list.

Optional parameters control the format and appearance of your Structured List. These include the report title, the sequence of report lines, column headings, and data element format. You can also define report subheadings, page breaks, and subtotals.

Figure 3-15 is a portion of a structured list showing CPU time and EXCP count by program with subheadings and subtotals by SYSID and hour.

To create a structured list, select the Structured List option from either of the following menus:

- o Direct Inquiry Printed Reports Menu
- o Structured Inquiry Printed Reports Menu

3.2.3 Ranking Report

```

----- SYSTEM =TS07 -----

      CPU      PROGRAM      TOTAL
      TIME     NAME         EXCPS

1:63:17  A4600      1,032,851
1:02:12  Z1789        691,001
0:54:35  D5000        575,341
0:45:22  M2000        598,012
0:37:56  N8900        417,875
0:20:21  T3400        954,010
0:15:46  S0000        397,981
0:02:07  T9000        229,218
0:01:58  I2000        38,803
0:00:32  N5000         15

```

Figure 3-16. Sample Ranking Report

A ranking report lists the top or bottom n observations of an input file based on a specified ranking element. The report includes selected data elements from each file observation and is useful in identifying areas for further study (for example, list the top 10 jobs based on job cost to determine where job tuning efforts should be concentrated).

Optional parameters allow the ranking analysis to be performed separately for each value of a user-specified sequence key (for example, list the top 10 jobs based on job cost for each cost center). Subtotals can be generated for numeric data elements, and optional parameters allow you to specify a report title, column headings, and data element formats.

Figure 3-16 is a portion of a ranking report showing the ten programs using the greatest amount of CPU time on each system (SYSID). The number of EXCPs is also reported for each program.

To create a ranking report, select the Ranking Report option from either of the following menus:

- o Direct Inquiry Printed Reports Menu
- o Structured Inquiry Printed Reports Menu

3.2.4 Tabular Report

```

+-----+
|                                     |
|                               Prime Shift TSO Activity Summary                |
|                                     |
|                               Development TSO System,  November 29, 1988      |
|-----+-----+-----+-----+-----+-----+-----+-----+-----+
|      Time      |      | Average Resp. | Pct. Short | Pct. Long |      |      |      |      |      |
|    Period     | Max  | Time (sec.)   |   Within   |   Within   | Command |      |      |      |      |
|               | Users| Total Short  | 0.50 0.80 | 0.80 1.00 | Count   |      |      |      |      |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 8:00- 9:00   | 120  | 1.23  0.35   | 95.2 99.3  | 94.6 98.2  | 8,742  |      |      |      |      |
| 9:00-10:00   | 135  | 1.18  0.36   | 95.7 99.1  | 92.9 96.1  | 10,085 |      |      |      |      |
| 10:00-11:00  | 182  | 1.37  0.42   | 93.5 98.4  | 89.4 94.5  | 15,287 |      |      |      |      |
| 11:00-12:00  | 228  | 2.11  0.85   | 75.1 82.6  | 63.7 75.2  | 18,167 |      |      |      |      |
| 12:00-13:00  | 43   | .85  0.21    | 99.0 99.9  | 97.6 99.6  | 3,850  |      |      |      |      |
| 13:00-14:00  | 174  | 1.42  0.38   | 88.7 92.3  | 88.3 92.9  | 14,920 |      |      |      |      |
| 14:00-15:00  | 235  | 2.02  0.79   | 73.4 85.9  | 75.8 84.7  | 18,562 |      |      |      |      |
| 15:00-16:00  | 229  | 2.14  0.88   | 72.8 84.6  | 59.7 69.3  | 18,024 |      |      |      |      |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Summary      | 235  | 1.73  0.57   | 88.6 92.1  | 77.3 84.9  | 107,637 |      |      |      |      |
+-----+-----+-----+-----+-----+-----+-----+-----+

```

Figure 3-17. Sample Tabular Report

Use the Tabular Report option to generate formal printed reports with columns of data values (for example, response time, cost, etc.) over rows of data observations or time periods (for example, hours of the day). You specify report sequence, data elements to report, page break and subtotal controls, and report subheadings. You can request both subtotals and grand totals, with subtotal options including sum (accumulate), maximum/minimum value, percent of total, and percent/amount of change from the first observation. A subtotal derivation extended option is available to define your own derived subtotal values (for example, average response time).

Optional parameters allow you to generate multiple report lines for each input file observation and to control the specific column in which each item is printed. Column headings are specified for each data value or overridden with free-form, multiple line column headings. You can even include footnotes on the report.

Figure 3-17 is a sample tabular report providing a prime shift TSO activity summary.

To create a tabular report, select the Tabular Report option from the Structured Inquiry Printed Reports Menu.

3.2.5 Tabular Ranking Report

```

+-----+
|           Prime Shift TSO User Ranking - Top 4 Users By Command Count           |
|                                                                                   |
|                   Development TSO System,  November 29, 1988                   |
+-----+
| Time | Average Resp. | Pct. Short | Pct. Long | Command |
| Period | USERID | Time (sec.) | Within | Within | Count |
|-----+-----+-----+-----+-----+
| 14:00-15:00 | APPL035 | 1.34  0.41 | 95.2  99.3 | 94.6  98.2 | 542 |
|              | SYSUSR9 | 1.78  0.50 | 85.7  99.1 | 92.9  96.1 | 489 |
| 235 Users | APPL286 | 1.21  0.35 | 93.5  99.4 | 89.4  94.5 | 342 |
| In Interval | APPL876 | 2.45  0.80 | 85.1  94.6 | 63.7  75.2 | 167 |
+-----+-----+-----+-----+-----+
| 15:00-16:00 | APPL286 | 1.43  0.33 | 88.7  92.3 | 88.3  92.9 | 620 |
|              | APPL035 | 1.40  0.57 | 88.6  92.1 | 77.3  84.9 | 437 |
| 229 Users | APPL134 | 2.21  0.79 | 73.4  85.9 | 75.8  84.7 | 162 |
| In Interval | SYSUSR2 | 2.04  0.67 | 72.8  84.6 | 59.7  69.3 | 142 |
+-----+-----+-----+-----+-----+

```

Figure 3-18. Sample Tabular Ranking Report

Use the Tabular Ranking Report option to list the top or bottom n observations of the input file based on the specified ranking element. The ranking is presented in Tabular Report format with columns of data values (for example, response time, cost, etc.) over rows of ranked observations (for example, userids). The listing includes selected data elements from each file observation and is useful in identifying areas for further study. You can optionally input detail observations, base the ranking on a user-specified summarization of these detail observations, and print the detail observations comprising the ranked summary observations. Summarization options include sum (accumulate), maximum/minimum value, percent of total, and percent/amount of change from the first observation. A subtotal derivation extended option is available to define your own derived subtotal values (for example, average response time).

Optional parameters allow you to generate multiple report lines for each input file observation and to control the specific column in which each item is printed. Column headings are specified for each data value or overridden with free-form, multiple line column headings. You can even include footnotes on the report.

Figure 3-18 is a sample tabular ranking report providing a ranking of TSO user activity by command count.

To create a tabular ranking report, select the Tabular Ranking Report option from the Structured Inquiry Printed Reports Menu.

3.3 Statistical Analyses

MICF allows you to do most common descriptive and inferential statistical analyses on data from the CA MICS database. These analyses are useful in numerous performance, capacity planning, and data center accounting studies. The following statistical analysis are supported by MICF:

- o Frequency Distribution
- o Crosstabulation Report
- o Three-Way Crosstabulation Report
- o N-Way Crosstabulation Report
- o Descriptive Statistics Report
- o Correlation Report
- o Stepwise Regression Report

Each of these options is described in detail below.

3.3.1 Frequency Distribution

CICS SYSTEM		
CICSID	FREQUENCY	PERCENT
OIL1	52491	29.6
PRD2	35004	19.7
OIL2	30475	17.2
PRD1	26732	15.1
PRD3	19325	10.9
ACCT	12435	7.0
TEST	903	0.5
SYSP	232	0.1

Figure 3-19. Sample Frequency Distribution

The Frequency Distribution option generates a frequency distribution for a single variable. You can have frequency count, percentage, and cumulative count/percentage for each value of the variable included on the report as well. The frequency distribution report helps you determine what types of values will be encountered during initial data analysis (for example, report ABEND code frequencies).

Figure 3-19 is a sample frequency distribution showing the number of transactions by CICS system (CICSID). The report is generated by weighting each occurrence of CICSID by the number of transactions (CSYTRANS) that occurred on the system.

To create a frequency distribution, select the Frequency Distribution option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

3.3.2 Crosstabulation Report

TABLE OF CICSID BY SYSID

CICSID(CICS SYSTEM)		SYSID(MVS SYSTEM)		
FREQUENCY				
ROW PCT	MVS1	MVS2	MVS3	TOTAL
ACCT	10391	0	2044	12435
	83.56	0.00	16.44	
OIL1	0	35892	16599	52491
	0.00	68.38	31.62	
OIL2	729	19808	9938	30475
	2.39	65.00	32.61	
TOTAL	11120	55700	28581	95401

Figure 3-20. Sample Crosstabulation Report

The Crosstabulation Report is a combined frequency distribution analysis of two variables. Crosstabulation reports are useful in on demand analysis to identify areas needing further study (for example, ABEND code frequencies by cost center). Support is included to report frequency count, percentage, and cumulative count/percentage for each combination of values of the two variables. Results are presented in a two-dimensional table or array.

For example, a table for the variables SYSID and COMMAND would create a table with a separate column for each SYSID and a separate row for each TSO command contained in the data. The cells of the table would show the frequency with which each command was used on each system. In addition, cells can optionally contain the percentage of the observation represented by this cell, the percentage of the column total represented by the cell, and the percentage of the row total represented by the cell.

Figure 3-20 is a sample crosstabulation report. The report shows the number of CICS transactions by CICS system (CICSID) and SYSID. Observations are weighted by the number of transactions (CSYTRANS).

To create a crosstabulation report, select the Crosstabulation Report option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

3.3.3 Three-Way Crosstabulation Report

TABLE 1 OF CICSID BY SYSID
CONTROLLING FOR CICSVER=17

CICSID(CICS SYSTEM)		SYSID(MVS SYSTEM)			
FREQUENCY					
ROW	PCT	MVS1	MVS2	MVS3	TOTAL
ACCT		10391	0	2044	12435
		83.56	0.00	16.44	
OIL1		0	35892	16599	52491
		0.00	68.38	31.62	
OIL2		729	19808	9938	30475
		2.39	65.00	32.61	
TOTAL		11120	55700	28581	95401

(CONTINUED)

Figure 3-21. Sample Three-Way Crosstabulation Report

The Three-Way Crosstabulation Report is an extension of the crosstabulation report to three variables. It shows the first two variables for each value of the third variable.

For example, you might have created a variable USERGRP that groups your systems users into a small number of categories. You might then create a three-way crosstabulation showing SYSID by COMMAND for each of value of USERGRP. Such an analysis could be useful in determining who is in need of training or who is making the greatest use of specific resources.

Figure 3-21 is a partial sample of a three-way crosstabulation report and shows, by the version of CICS being used (CICSVER), the number of CICS transactions by CICS system (CICSID) and SYSID. Observations are weighted by the number of transactions (CSYTRANS). A separate report is produced for each CICS version.

To create a three-way crosstabulation report, select the Three-Way Crosstabulation Report option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

3.3.4 N-Way Crosstabulation Report

TABLE 1 OF CICSID BY SYSID
CONTROLLING FOR CICSVER=17 ZONE=2

CICSID(CICS SYSTEM)		SYSID(MVS SYSTEM)			
FREQUENCY					
ROW	PCT	MVS1	MVS2	MVS3	TOTAL
ACCT		10391	0	2044	12435
		83.56	0.00	16.44	
OIL1		0	35892	16599	52491
		0.00	68.38	31.62	
OIL2		729	19808	9938	30475
		2.39	65.00	32.61	
TOTAL		11120	55700	28581	95401

(CONTINUED)

Figure 3-22. Sample N-Way Crosstabulation Report

The N-Way Crosstabulation Report extends the crosstabulation report to six variables, allowing you to show combined frequency distributions for up to six variables. The option generates a crosstabulation report of the first two variables for each combination of the values of the third through Nth variables.

Figure 3-22 is a partial sample of a four-way crosstabulation report and shows, for each combination of CICS version (CICSVER) and ZONE, the number of CICS transactions by CICS system (CICSID) and SYSID. Observations are weighted by the number of transactions (CSYTRANS). A two-way crosstabulation table is produced for each combination of CICSVER and ZONE variables.

To create an N-way crosstabulation report, select the N-Way Crosstabulation Report option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

3.3.5 Descriptive Statistics Report

The Descriptive Statistics Report shows basic descriptive statistics for numeric variables and some statistics on missing values. The descriptive statistics listed below are available on the report. It is often used in initial analysis of workload parameters.

For example, a study of IMS transaction sizes might be initiated by requesting a descriptive statistics report on transaction CPU time. This would provide an overview of the distribution of transaction sizes and might indicate the presence of logical groups of similar transactions.

Descriptive statistics included on this report are:

- o Name of the variable
- o Number of observations
- o Sum of the weights of the observations
- o Sum of the observations
- o Mean
- o Standard deviation
- o Variance
- o Skewness
- o Kurtosis
- o Uncorrected sum of squares
- o Corrected sum of squares
- o Coefficient of variation
- o Standard error of the mean
- o Student's t value
- o Probability of a greater absolute value for student's t

- o Approximation of the probability of a greater absolute value for student's t if the population mean is 0
- o Number of nonzero observations
- o Largest value
- o Smallest value
- o Range
- o Difference between the upper and lower quartile
- o Mode
- o Quartiles
- o First, 5th, 10th, 90th, 95th, and 99th percentiles
- o Five lowest and highest observations

Figure 3-23 is a sample descriptive statistics report on average CPU time per CICS transaction.

To create a descriptive statistics report, select the Descriptive Statistics Report option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

```

UNIVARIATE
VARIABLE=CSYAVCPU      AVG. CPU TIME/TRANSACTION

MOMENTS
N          3638  SUM WGTS      3638
MEAN      0.0976531  SUM          355.262
STD DEV   0.227644  VARIANCE     0.0518219
SKEWNESS  13.0746  KURTOSIS     236.044
USS       223.169  CSS          188.476
CV        233.115  STD MEAN     0.0037742
T:MEAN=0  25.8738  PROB>|T|     0.0001
SGN RANK  3309671  PROB>|S|     0.0001
NUM .= 0   3638
D:NORMAL  0.34808  PROB>D       <.01

QUANTILES (DEF=4)
100% MAX   5.4784   99%   0.496393
75% Q3    0.0868462  95%   0.496393
50% MED   0.0457787  90%   0.214068
25% Q1    0.0317973  10%   0.0149672
0% MIN    0.00875575  5%    0.00875575
          1%    0.00875575

EXTREMES
LOWEST    HIGHEST
0.00875575  0.335454
0.0126819  0.496393
0.0149672  1.93864
0.019176   4.18481
0.0238682  5.4784

RANGE     5.46964
Q3-Q1     0.055049
MODE      0.0317973

```

Figure 3-23. Sample Descriptive Statistics Report

3.3.6 Correlation Report

Correlation measures the closeness of a linear relationship between two variables. The Correlation Report helps you identify relationships between measurement items by showing the correlation coefficients among a group of selected variables. It is useful in initial data analysis.

The report can be extended to up to five variables correlated against five different variables. Statistics that you can request include the following:

- o Pearson correlations
- o Spearman coefficients
- o Kendall tau-b coefficient
- o Hoeffding's D statistic
- o Descriptive statistics
- o Significance probabilities
- o Sums of squares cross product matrices
- o Covariance matrix

You can specify one of four variance calculations, whether or not to accept missing values, and whether you want a standard correlation matrix or a ranked (best N fits) correlation matrix.

For example, you might perform a correlation analysis against transaction rate and response time for multiple CICS regions to identify regions whose transaction volume impacts response time in other regions.

Correlation reports can help you determine what, if any, relationship exists between work measures and response times. In a tuning study, a correlation report can help you determine where to concentrate efforts to improve response times. For example, Figure 3-19 shows two sample correlation reports. Both correlate the following:

- o Average concurrent CICS users (CSYAVUSR)
- o Average CPU time per CICS transaction (CSYAVCPU)
- o Percent CPU usage by CICS (CSYPCCPU)
- o Average short CICS response time (CSYAVSTM)
- o Percent short CICS responses less than or equal to response threshold 1 (CSYPCSR1)
- o Average total CICS response time (CSYAVTTM)
- o Percent total CICS responses less than or equal to response threshold 3 (CSYPCTR3)

Observations are weighted by the number of CICS transactions (CSYTRANS). The response time thresholds are user-defined. For example, response threshold 1 might be 1 second and response threshold 3 might be 5 seconds.

The first sample in Figure 3-24 shows a standard correlation report. The second sample illustrates the same analysis using the rank option to show only the best three correlations for each independent variable.

To create a correlation report, select the Correlation Report option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

PEARSON CORRELATION COEFFICIENTS
 / PROB > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS / FREQ VAR=CSYTRANS

	CSYAVSTM	CSYPCSR1	CSYAVTTM	CSYPCTR3
CSYAVUSR	-0.04225	-0.51245	0.02830	-0.34808
AVG. CICS USERS	0.0108	0.0001	0.0878	0.0001
	65732	65732	65732	65732
CSYAVCPU	0.27517	-0.35798	0.26270	-0.13491
AVG. CPU TIME/TRANSACTION	0.0001	0.0001	0.0001	0.0001
	65732	65732	65732	65732
CSYPCCPU	-0.02321	-0.04564	-0.04694	-0.01163
PCT CPU USAGE	0.1617	0.0059	0.0046	0.4832
	65732	65732	65732	65732

Sample Standard Correlation Report

PEARSON CORRELATION COEFFICIENTS
 / PROB > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS / FREQ VAR=CSYTRANS

CSYAVUSR	AVG. CICS USERS		
CSYPCSR1	CSYPCTR3	CSYAVSTM	
-0.51245	-0.34808	-0.04225	
0.0001	0.0001	0.0108	
65732	65732	65732	
CSYAVCPU	AVG. CPU TIME/TRANSACTION		
CSYPCSR1	CSYAVSTM	CSYAVTTM	
-0.35798	0.27517	0.26270	
0.0001	0.0001	0.0001	
65732	65732	65732	

Sample Ranked Correlation Report

Figure 3-24. Sample Correlation Reports

3.3.7 Stepwise Regression Report

The Stepwise Regression Report provides insight into the relationships between one measurement item and one or more other measurement items. The report produces a model, or formula, for deriving values of a measurement item from values of one or more other measurement items (for example, $Z=aX+bY+c$). The option that produces the report provides five methods for stepwise regression analysis.

Parameters are provided for regression technique, computational parameters, and report format. The parameters allow you to do the following:

- o Choose forward or backward regression
- o Specify the minimum and maximum R-square values for inclusion (or exclusion)
- o Define entry significance levels and stay levels for use in model building
- o Force selected entries to be used in the model
- o Specify the minimum and maximum number of variables to be used in the model
- o Show model building statistics

An analysis of variance report is produced for each step in the procedure.

Figures 3-25 and 3-26 show the first, third, and last pages of a sample stepwise regression report. The regression produced a model for CICS CPU time (CSYCPUTM) based on the number of I/O access method calls (CSYSIOCT), the number of CICS output messages (CSYOMSGS), and the number of CICS transactions processed (CSYTRANS).

To create a stepwise regression report, select the Stepwise Regression Report option from either of the following menus:

- o Direct Inquiry Statistical Analysis Menu
- o Structured Inquiry Statistical Analysis Menu

(First page)

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE CSYCPUTM

STEP 1 VARIABLE CSYSIOCT ENTERED R SQUARE = 0.34202814
C(P) = 22.10532991

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	1	3808.14253047	3808.14253047	24.95	0.0001
ERROR	48	7325.86111002	152.62210646		
TOTAL	49	11134.00364049			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	4.32510779				
CSYSIOCT	0.00778661	0.00155884	3808.14253047	24.95	0.0001

(Third page)

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE CSYCPUTM

STEP 3 VARIABLE CSYTRANS ENTERED R SQUARE = 0.56032271
C(P) = 3.51010231

	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB>F
REGRESSION	3	6238.63511260	2079.54503753	19.54	0.0001
ERROR	46	4895.36852789	106.42105495		
TOTAL	49	11134.00364049			

	B VALUE	STD ERROR	TYPE II SS	F	PROB>F
INTERCEPT	7.88105857				
CSYTRANS	-0.27525872	0.06954592	1667.11809796	15.67	0.0003
CSYSIOCT	0.01014079	0.00156759	4453.53773981	41.85	0.0001
CSYOMSGS	0.32783844	0.07301867	2145.25753545	20.16	0.0001

Figure 3-25. Sample Stepwise Regression Report (Part 1)

(Last page)

STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE CSYCPUTM

NO OTHER VARIABLES MET THE 0.1500 SIGNIFICANCE LEVEL FOR ENTRY INTO THE MODEL.

SUMMARY OF STEPWISE REGRESSION PROCEDURE FOR DEPENDENT VARIABLE CSYCPUTM

STEP	VARIABLE		NUMBER IN	PARTIAL R**2	MODEL R**2	C(P)
	ENTERED	REMOVED				
1	CSYSIOCT		1	0.3420	0.3420	22.1053
2	CSYOMSGS		2	0.0686	0.4106	17.0086
3	CSYTRANS		3	0.1497	0.5603	3.5101

STEP	VARIABLE		F	PROB>F	LABEL
	ENTERED	REMOVED			
1	CSYSIOCT		24.9514	0.0001	ACCESS METHOD CALLS
2	CSYOMSGS		5.4672	0.0237	OUTPUT MESSAGES
3	CSYTRANS		15.6653	0.0003	TRANSACTIONS PROCESSED

Figure 3-26. Sample Stepwise Regression Report (Part 2)

Chapter 4: Saved File Catalog

To access the MICF Saved File Catalog, from the CA MICS Information Center Facility main menu, select option 3.

The Saved File Catalog utility provides access to the list of files created and saved through execution of database inquiries. These saved files may be used as input to new database inquiries or processed directly using SAS system facilities. This utility may also be used to delete saved files that are no longer required.

Chapter 5: MICF Administration

To access the MICF Administration menu from the CA MICS Information Center Facility main menu, select option 4.

Administration of the CA MICS Information Center Facility (MICF) is part of the administration of CA MICS performed by the CA MICS System Administrator. Some of the MICF administration tasks affect only MICF and some are general CA MICS administration tasks that impact other CA MICS facilities as well. This chapter documents those tasks that are unique to MICF and discusses the considerations for MICF of the relevant general CA MICS administration tasks. The details of the general CA MICS administration tasks are discussed in the CA MICS Planning, Implementation, Operation, and Maintenance Guide and in the online tutorials distributed with the CA MICS Administrator Facility (MAF).

The MICF administration tasks consist of the following:

- o Maintaining the CA MICS Administrator Facility (MAF) Parameters. This is a general CA MICS administration task that impacts MICF.
- o Authorizing user access to CA MICS facilities. This is a general CA MICS administration task that impacts MICF.
- o Maintaining the shared MICF options.
- o Maintaining the shared inquiry catalog.
- o Maintaining the shared inquiry output catalog.
- o Maintaining MICF inquiry production reporting.

Each of these tasks is performed during the initial installation of CA MICS and, with varying frequencies, during the day-to-day operation of MICF. For this reason, the following discussion of MICF administration is divided into two sections.

This section contains the following topics:

[5.1 Tasks Performed During Installation](#) (see page 134)

[5.2 Tasks Performed After Installation](#) (see page 236)

5.1 Tasks Performed During Installation

The CA MICS administrator installs and maintains the CA MICS system. This includes establishing and supporting the environment under which the CA MICS ISPF applications operate, including MICF.

The CA MICS Administrator Facility (MAF), Option 5 on the CA MICS Workstation Facility primary menu, provides access to tools used to perform these administrative tasks. Two options on the CA MICS Administrator Facility (MAF) menu are particularly important to the operation of MICF:

- o Administrator Facility Parameters
- o Authorization Assignments

The remaining tools used by the system administrator to administer MICF are reached through option 4, MICF Administration, on the primary MICF menu. The tasks that can be completed from this panel are maintaining:

- o Shared MICF options
- o Shared inquiry output catalog
- o Shared inquiry catalog
- o Production reporting

Each of these tasks is discussed in detail below.

5.1.1 Administrator Facility Parameters

To access the CA MICS Administrator Facility Parameters, choose option 5 on the CA MICS Workstation Facility (MWF) primary menu. Then choose option 0 on the CA MICS Administrator Facility (MAF) menu.

The CA MICS Administrator Facility Parameters option provides access to the specifications that control the operation and appearance of the CA MICS Workstation Facility (MWF) and the interactive CA MICS applications available under MWF (including MICF). These parameters are shared by all CA MICS users (that is, they are specified only once and apply globally) and cannot be overridden by the individual user.

The following types of CA MICS parameters have a direct impact on MICF:

- o CA MICS Data Sets for ISPF Applications
- o CA MICS Global Parameters for ISPF Applications
- o SAS Global Parameters for ISPF Applications
- o Data Set Allocation Parameters

Each type of CA MICS parameter is discussed in detail below.

5.1.1.1 CA MICS Data Sets for ISPF Applications

The following CA MICS data sets for ISPF applications parameters are of particular importance to users of MICF:

- o High-level qualifier for user data set names. Specify this parameter if your data center conventions require a high-level data set name qualifier other than the TSO user's logon-id. For example,

```
DSN=xxxxxxx.userid.MICS.USER.TABLES
```

WARNING! If you change this parameter after any users have accessed the CA MICS Workstation Facility, those users will not be able to use the data sets with the old high-level qualifier. This means that MICF users will lose any inquiries and inquiry output that they have created prior to this change.

- o Include "MICS." in data set names. This parameter determines whether "MICS." will be included in the initial shared default MICF data set names. Changes to this parameter will NOT have any effect on MICF after MICF is initially activated. To change the shared default data set names, select the Data Set Allocation parameters option on the CA MICS System Administrator Facility (MAF) Options menu.

5.1.1.2 CA MICS Global Parameters for ISPF Applications

The following CA MICS global parameters for ISPF applications are of particular importance to users of MICF:

- o Installation name. The installation name specified in the CA MICS Administrator Parameters is the default that MICF supplies for the second title line of inquiry output. This name is copied by MICF from the entry after the prompt, "CA MICS complex name: Title (or name) for reports."
- o DSPRINT services. If your installation uses DSPRINT facilities and your MICF users will be using the Print Output to Local 3270 Printer option of the Print Inquiry Output panels, you must specify the TSO command that is used to invoke DSPRINT services at your data center (for example, DSPRINT or ADMPRINT). Specify this command following the prompt, "DSPRINT services parameters: DSPRINT command name."
- o DSPRINT device. If your data center uses DSPRINT services, the initial MICF shared default DSPRINT device will be the same as the device specified after the prompt, "DSPRINT device." Changes to the DSPRINT device parameter will NOT have any effect on MICF after MICF is initially activated. To change the shared default DSPRINT device for MICF, select the User Profile Parameters option on the Shared MICF Options menu.
- o Data entry pad character. The data entry pad character is the character used to fill blank data entry fields on panels. In the examples in the MICF tutorials, the pad character is an underscore. Specify the pad character after the prompt, "Fill blank fields with the following character."
- o Skip ON or OFF. This parameter determines whether the cursor will automatically skip to the next data entry field when it leaves the current data entry field. To cause automatic skips specify YES after the prompt, "Automatically move cursor to next field." Otherwise specify NO.

5.1.1.3 SAS Global Parameters for ISPF Applications

The SAS Global Parameters for ISPF Applications option specifies the SAS libraries and parameters to be used to invoke SAS for MICF foreground, SAS/DMS, and batch inquiry execution. The following SAS global parameters are especially important to MICF users:

- o Foreground interface. This parameter defines how MICF will invoke SAS for online execution. You must specify SASCP if you want to be able to execute MICF inquiries in SAS/DMS mode or if you want to be able to use the SAS with CA MICS Libraries (MSAS) option on the MWF Primary Options menu.
- o SAS libraries. The SAS library data sets specified in MAF Options are used for foreground, SAS/DMS, and batch inquiry execution, and are normally the same data set names that are used in sharedprefix.MICS.PARMS(JCLDEFC).

You can use the optional configuration file parameter to point MICF to your installation's SAS parameter defaults so that MICF inquiries will use the same defaults as your other SAS applications. MICF will override your installation default SAS parameters as required.

- o Optional installation SAS related data sets. You can use the installation data set parameters to add your installation's load modules, SAS formats, SAS macros, and SAS source modules to MICF inquiry execution. You can also override CA MICS modules by concatenating replacement modules in front of the distributed CA MICS modules. Two installation data sets are supported for each type of allocation.
 - Use the augmenting library parameter to make installation modules available to your MICF inquiries.
 - Use the override library parameter ONLY to replace CA MICS modules, for example, to implement user modifications to CA MICS.

Remember that the data sets you define in MAF options are used for MICF production reporting and by ALL MICF users. Individual MICF users can define additional SAS-related data sets that will be allocated for that specific user's MICF inquiries.

5.1.1.4 Data Set Allocation Parameters

Data set allocation parameters control the allocation and cataloging of data sets created by CA MICS. These parameters include the amount of disk space allocated for the data set and the unit/volume specification for data set allocation. You can also change the data set name assigned to selected CA MICS data sets.

When you select the Data Set Allocation Parameters option, a scrollable list of CA MICS-related data sets is displayed. The most commonly modified data set allocation parameters are displayed on this panel. If you must change additional parameters, you can select a row from this scrollable display to access a fixed panel containing all of the data set allocation parameters.

Data set allocation parameters for the following data sets are of particular importance to MICF users. MICF users cannot override your specifications for these data sets.

- o TABLES - Private (user-level) ISPF Tables Data Set

The data set allocation parameters you specify for the TABLES data set become the default values that appear on the "Welcome New User" panel whenever someone invokes the CA MICS Workstation Facility for the first time.

You should specify default allocation parameters that provide adequate space for your users, as most users will accept your defaults. The private ISPF tables data set contains the user's private inquiry catalog. The distributed defaults should provide room for 10 to 15 average inquiries. If you expect your users to define a large number of inquiries, you must allow them additional space.

- o ISPCTLX - ISPF Temporary Control Data Sets

The ISPCTLX data sets are used in part to build the inquiry program from the panel specifications. If insufficient space is allocated, users will not be able to execute large inquiries. When they attempt to do so, they will receive messages indicating a failure in the file tailoring service. Use the distributed default values as a starting point and raise the space parameters if this type of failure occurs.

You can tailor the MICF data set allocation parameters to meet your data center standards.

- o You may want to alter the data set names per data center standards. Any changes to the data set name should be made before the first MICF user executes an inquiry. If the data set name parameter is altered after a user has executed an inquiry in foreground mode, the user will lose access to saved inquiry outputs and saved intermediate files.
- o You may want to specify a specific unit type for MICF data sets, or even a specific volume for MICF users.
- o You may want to alter the space allocations for the type of DASD devices at your data center.

Remember to make your changes for all MICF data sets. Allocation parameters are specified for the following:

**BDTFOUT - Batch Inquiry Output Staging CSV File
Outputs**

This data set contains CSV file outputs from MICF inquiries executed in batch mode when you tell MICF to hold inquiry output for later online review. One data set is allocated for each CSV inquiry execution. The asterisks (*) in the DSN suffix are replaced with a number to generate a unique data set name. The number of asterisks (*) in the DSN suffix limits the number of entries that can be kept in the batch staging inquiry output catalog. CSV file staging data sets are deleted when you delete a batch staging catalog entry or move an entry to your private inquiry output catalog. If this data set is too small, inquiries that generate large CSV files (or numerous CSV files) could fail with a system ABEND.

BICFUSER - Batch Inquiry Output Staging Color Graphics

This data set contains color graphics outputs from MICF inquiries executed in batch mode when you tell MICF to hold inquiry output for later online review. One data set is allocated for each color graphics inquiry execution. The asterisks (*) in the DSN suffix are replaced with a number to generate a unique data set name. The number of asterisks (*) in the DSN suffix limits the number of entries that can be kept in the batch staging inquiry output catalog. Color graphics staging data sets are deleted when you delete a batch staging catalog entry or move an entry to your private inquiry output catalog. Free space is released when execution completes. If this data set is too small, large color graphics inquiry executions could fail with a system ABEND.

BLOG - Batch Inquiry Output Staging SAS Log

This data set contains the SAS log from MICF inquiries executed in batch mode when you tell MICF to hold inquiry output for later online review. One data set is allocated for each inquiry execution. The asterisks (*) in the DSN suffix are replaced with a number to generate a unique data set name. The number of asterisks (*) in the DSN suffix limits the number of entries that can be kept in the batch staging inquiry output catalog. SAS log staging data sets are deleted when you delete a batch staging catalog entry or move an entry to your private inquiry output catalog. Free space is released when execution completes. If this data set is too small, large inquiry executions could fail with a system ABEND.

BMICSLOG - Batch Inquiry Output Staging MICSLOG

This data set contains the MICSLOG from MICF inquiries executed in batch mode when you tell MICF to hold inquiry output for later online review. One data set is allocated for each inquiry execution. The asterisks (*) in the DSN suffix are replaced with a number to generate a unique data set name. The number of asterisks (*) in the DSN suffix limits the number of entries that can be kept in the batch staging inquiry output catalog. MICSLOG staging data sets are deleted when you delete a batch staging catalog entry or move an entry to your private inquiry output catalog. Free space is released when execution completes. If this data set is too small, large inquiry executions could fail with a system ABEND.

BREPORT - Batch Inquiry Output Staging Printed Reports

This data set contains printed reports from MICF inquiries executed in batch mode when you tell MICF to hold inquiry output for later online review. One data set is allocated for each printed report inquiry execution. The asterisks (*) in the DSN suffix are replaced with a number to generate a unique data set name. The number of asterisks (*) in the DSN suffix limits the number of entries that can be kept in the batch staging inquiry output catalog. Printed report staging data sets are deleted when you delete a batch staging catalog entry or move an entry to your private inquiry output catalog. Free space is released when execution completes. If this data set is too small, large printed report inquiry executions could fail with a system ABEND.

CAPACITY - Capacity Planning Database Files

This data set contains the capacity planning database files defined and loaded by the Capacity Planner online facility. If you expect that your users will use Capacity Planner facilities heavily, you may want to increase the default allocation for this data set.

CAPPDS - Capacity Planning Control Members

This data set contains the capacity planning control members defined and loaded by the Capacity Planner online facility. If you expect that your users will use Capacity Planner facilities heavily, you may want to increase the default allocation for this data set.

DTFINDEX - Index to cataloged CSV file inquiry outputs

This data set is part of the inquiry output catalog and contains a directory of all CSV files that have been saved by the user. The default allocation for this data set should be sufficient in most cases since this data set is only the directory and does not contain the actual CSV files. Also, since the data set is only allocated when a user actually runs and then saves CSV output, there is no data set overhead for those who do not create CSV files.

DTFOUT - Cataloged inquiry output CSV files

This data set is part of the inquiry output catalog and contains the actual CSV file outputs that have been saved by the user. Inquiries can create zero, one, or more members in the CSV file catalog data set. The names of inquiries that create CSV files and the CSV file member names are tracked in the DTFINDEX data set. DASD space requirements vary depending upon the number and size of the CSV file members. If you expect that your users will save a large number of inquiry CSV files, you may want to increase the default allocation for this data set. Since this data set is only allocated when a user actually runs and then saves CSV output, there is no data set overhead for those who do not create CSV files.

LOG - Current Inquiry SAS Log

This data set is allocated for each MICF session and contains the SAS log for foreground inquiry execution. If this data set is too small, large inquiry executions could fail with a system ABEND.

MICSLOG - Current Inquiry MICSLOG

This data set is allocated for each MICF session and contains the MICSLOG for foreground inquiry execution. If this data set is too small, large inquiry executions could fail with a system ABEND.

OUTPUT - Cataloged Inquiry Outputs (reports/log)

This data set is part of the inquiry output catalog and contains printed reports that have been saved by the user. If you expect that your users will save a large number of inquiry outputs, you may want to increase the default allocation for this data set.

MAFCNTL - MAF Batch Job Control Data Set

This data set is used to communicate between batch and online CA MICS Administrator Facility (MAF) processing. The asterisks (*) in the DSN suffix are replaced with a unique number in order to allocate a unique data set for each situation where communication between MAF batch and online processing is required. The data set is deleted after use. The number of asterisks (*) in the DSN suffix limits the number of concurrent processes MAF can control. The default space allocation should be sufficient for MAF processing.

PCATALOG - Production Catalog Table Data Set

This data set is the primary anchor for MICF production inquiry output catalogs (or production reporting job stream definitions) and the MICF inquiry production interface. A production catalog table data set is allocated for each production catalog. It contains the production inquiry output catalog ISPF table and the production reporting job stream ISPF table. Data set name is specified when the production reporting job stream is defined. DASD space requirements will vary depending upon the number of inquiries in the production reporting job stream and the number of output cycles (or job stream executions) retained.

PDTFINDX - Index to Production Inquiry Output Catalog CSV file outputs

This data set is part of the production reporting inquiry output catalog and contains a directory of all CSV files that have been created by all inquiries associated with all executions of the production reporting job stream. The data set is created during the execution of any production reporting job stream capable of creating CSV outputs. The default allocation for this data set should be sufficient in most cases since this data set is only the directory and does not contain the actual CSV data files. Also, since the data set is only allocated when the production reporting job stream creates CSV output, there is no data set overhead for job streams that do not create CSV output.

PIXFOUR - Production Inquiry Output Catalog CSV Files

Production reporting CSV files are saved in the CSV catalog data set. If a production reporting job stream is capable of creating CSV outputs, a separate data set is allocated for each production reporting job stream execution. Inquiries run under the production reporting job stream can create zero, one, or more members in the CSV catalog data set. The names of inquiries that create CSV output and the CSV output member names are tracked in the PDTFINDX data set. DASD space requirements vary depending upon the number and size of the CSV members. You will need one directory block for each 18 CSV members created by the production reporting job stream.

PMICSLOG - MICF Production Reporting Temporary MICSLOG Data Set

The MICSLOG is written to the temporary MICSLOG data set during MICF inquiry production report processing (set-up, allocation, execution, and post-execution processing). The MICSLOG is copied to the printed report catalog data set after processing completes. A separate data set is allocated for each production reporting job stream execution and deleted after execution processing completes. DASD space sufficient for 500 records (about 50 Kbytes) is generally required.

PMWFPDS - Production Inquiry Output Catalog Printed Reports

Production reporting printed reports, MICCSLOG, and SAS log are saved in the printed reports catalog data set. A separate data set is allocated for each production reporting job stream execution. Each production reporting inquiry adds three members to the printed reports catalog data set: printed report (Rn), MICCSLOG (Mn), and SAS log (Ln). Member name suffix (n) is the logical inquiry number (that is, the first inquiry generates members R1, M1, L1; the second R2, M2, and L2; and so on). DASD space requirements vary depending upon the number of inquiries, the size of printed reports (number and length of lines), and the length of the MICCSLOG and the SAS log. You will need one directory block for each six inquiries in the production reporting job stream.

PMWFSAS - Production Inquiry Output Catalog Color Graphics Outputs

Production reporting color graphics outputs are saved in the color graphics catalog data set. A separate data set is allocated for each production reporting job stream execution. Each production reporting inquiry adds a SAS/GRAPH GREPLAY catalog to the color graphics catalog data set. The SAS/GRAPH GREPLAY catalogs are named Gn, where the member name suffix (n) is the logical inquiry number (that is, the first color graphics inquiry generates catalog G1, the second G2, and so on). DASD space requirements vary depending upon the number of inquiries, the number of graphs in each inquiry, and the complexity of color graphics outputs.

PREPORT - MICF Production Reporting Temporary Report Data Set

Printed reports are written to the temporary report staging data set during MICF inquiry production report inquiry execution. After execution completes, the printed report is copied to the printed report catalog data set. A separate data set is allocated for each production reporting job stream execution and deleted after execution processing completes. The printed report staging data set must be large enough to hold the largest printed report in the production reporting job stream.

PRINT - Print Inquiry Output Staging Data Set

This data set is allocated each time you select the Print Inquiry Output with Batch Job option from the Print Inquiry Output menu. The asterisks (*) in the DSN suffix are replaced with a unique number in order to allocate a unique data set for each print request. The staging data set is deleted when the batch job completes. The number of asterisks (*) in the DSN suffix limits the number of print requests the user can issue before the generated batch jobs complete. Also, if this data set is too small, your users will be unable to print large inquiry outputs.

REPORT - Current Inquiry Reports

This data set is allocated for each MICF session and contains printed reports for foreground inquiry execution. If this data set is too small, large inquiry executions could fail with a system ABEND.

SASPROF - SAS User Profile Data Set

This data set is allocated for MICF inquiry execution and is used by SAS to save user profile information such as tailored PF key definitions.

SORTWK - Sort WORK files

This data set is allocated for each MICF session and is used for sort work space for foreground inquiry execution. This also defines the temporary space allocation for batch inquiry execution. If this data set is too small, large inquiry executions could fail with a system ABEND.

TEMPFILE - Temporary Data Sets (for example, FT15F00x)

This entry provides data set allocation parameters for temporary work data sets required for inquiry processing. If this data set is too small, complex executions could fail.

TEMPSAS - Temporary SAS Data Sets

This entry provides data set allocation parameters for temporary SAS data sets required for inquiry processing. For example, the TEMPSAS entry is used to allocate the temporary MCOLIB and pMUOLIB data sets that hold the CA MICS user-defined SAS formats copied from sharedprefix.MICS.MCOLIB and prefix.MICS.MUOLIB for inquiry execution. If this data set is too small, all inquiry executions will fail.

USER - SAS File - Cataloged Graphics and Saved Files

This data set is part of the inquiry output catalog and contains color graphics that have been saved by the user. Saved intermediate files are also stored in this data set. If you expect that your users will save a large number of inquiry outputs or use a large number of saved files, you may want to increase the default allocation for this data set.

UTILLOG - SAS Log for Color Graphics Replay, etc.

This data set is allocated for each MICF session and contains the SAS log for color graphics replay and other utility SAS invocations.

UTILMLOG - MICSLOG for Color Graphics Replay, etc.

This data set is allocated for each MICF session and contains the MICSLOG for color graphics replay and other utility SAS invocations.

WORK - SAS WORK File

This data set is allocated for each MICF session and is used for intermediate files and SAS work space for foreground inquiry execution. This also defines the temporary space allocation for batch inquiry execution. If this data set is too small, large inquiry executions could fail with a system ABEND.

5.1.2 Authorization Assignments

To access Authorization Assignment, choose option 5 on the CA MICS Workstation Facility (MWF) primary menu. Then choose option 3 on the CA MICS Administrator Facility (MAF) menu.

CA MICS authorization assignment is the application security facility provided by the CA MICS Workstation Facility (MWF). Use it to limit access to the MWF applications (for example, the CA MICS Administrator Facility) or to limit the use of facilities within the MWF applications. You can select Authorization Assignment from the System Administrator Functions menu of the CA MICS Workstation Facility menu.

If you are using the authorization facility, you must authorize new users (or groups of users) in order for them to have access to MICF. You also have the option of allowing selected users (or groups of users) to perform the following MICF administration tasks:

- o Maintain the shared inquiry catalog.
- o Maintain the shared inquiry output catalog.
- o Maintain the shared MICF options.
- o Maintain MICF inquiry production reporting.

For example, you may authorize all users to use MICF, but only the CA MICS administrator to have access to the CA MICS administrator facility. Since the operations staff is running your daily jobs, you may authorize them to add output to the shared inquiry output catalog. You may also authorize the help desk staff to add inquiries to the shared inquiry catalog in order to facilitate their assistance to users. Finally, you might authorize selected user groups to access the MICF production reporting administration option so that user groups can maintain their own MICF inquiry production reporting.

You can also use MWF authorization to mark selected users (for example, managers) for special treatment by the CA MICS online facilities. You can cause these "reports-only" users to skip directly to the MICF Reports and Graphics option for online review of production reports and other inquiry outputs. Using this option, managers can review current production reports with a single panel interaction (that is, they can select CA MICS and be immediately viewing reports). In addition, "reports-only" users are presented with reduced function inquiry output replay menus that list only color graphics replay and printed report browse options (that is, MICSLOG and the SAS log are masked).

5.1.3 Shared MICF Options

```
----- MICF Administration -----  
Option ==>  
  
    0 - Shared MICF Options  
        Review/modify shared MICF parameters and default options.  
    1 - Shared Inquiry Output Catalog Administration  
        Add or delete entries in the shared inquiry output catalog.  
    2 - Shared Inquiry Catalog Administration  
        Add or delete entries in the shared inquiry catalog.  
    3 - Production Reporting Administration  
        Add, modify, execute, or delete MICF inquiry production jobs  
    X - Exit  
  
-----
```

Figure 5-1. MICF Administration Panel

The shared MICF options are the parameters that control information retrieval and reporting under MICF and the default values for execution, reporting, and retrieval. MICF is distributed with an operational set of default parameter values. As the CA MICS Administrator, you should tailor these defaults according to your data center's requirements.

To update the shared MICF options, select option 4, MICF Administration Facility, from the primary MICF panel. You will see the MICF Administration Panel, which is shown in Figure 5-1.

Next select option 0, Shared MICF Options, from the MICF Administration menu. You will then see the Shared MICF Options panel (Figure 5-2).

```
----- Shared MICF Options -----  
Option ==>  
  
0 - MICF System Parameters  
    Specify system wide MICF parameters.  
1 - User Profile Parameters  
    Specify defaults for general MICF parameters.  
2 - Foreground Execution Parameters  
    Specify defaults for foreground MICF inquiry execution.  
3 - Batch Execution Parameters  
    Specify defaults for batch MICF inquiry execution.  
4 - Printer Format Parameters  
    Specify defaults for printed report and printer graphics formats.  
5 - Color Graphics Format Parameters  
    Specify defaults for color graphic outputs.  
6 - Data Set Allocation Parameters  
    Shared data set allocation parameters are updated via the CA MICS  
    Administrator Facility Options menu  
  
-----
```

Figure 5-2. Shared MICF Options Panel

The parameters available from this menu are, with four exceptions, the same parameters that are available to other users of MICF and they are updated in the same manner. Once these parameters have been updated on the Shared MICF Options panel, they become the defaults for all MICF users who have not overridden them from their own MICF options menus.

The one option that is available from this menu that is not available to other users is the MICF System Parameters. These are parameters that apply to all MICF users and cannot be overridden by individual users. There are four MICF System Parameters.

The shared data set allocation parameters are updated through the CA MICS Administrator Facility Options menu and cannot be accessed via the Shared MICF Options menu. The SAS Libraries for ISPF Applications and Additional Data Set Allocations options available on the MICF Options menu apply only at the user level and do NOT have shared (or common) counterparts. Therefore, these two options are not available on the Shared MICF Options menu.

When installing MICF, review the distributed defaults and tailor them to your data center's requirements. The remainder of this section discusses parameters that are especially important for local tailoring. Each of the following categories of parameters is discussed below:

- o MICF System Parameters
- o User Profile Parameters
- o Foreground Execution Parameters and Batch Execution Parameters
- o Printer Format Parameters
- o Color Graphics Format Parameters
- o Data Set Allocation Parameters

See Chapter 2 for details relating to these parameters and valid values (except for the MICF System Parameters that are fully described below).

MICF SYSTEM PARAMETERS

ADMDEFS DDNAME - GDDM ADMDEFS file allocation DDNAME (defaults to ADMDEFS).

Specify DDNAME for allocating your data center's GDDM definitions (ADMDEFS) file. The default, ADMDEFS, is valid for most data centers. If your data center does NOT use IBM's GDDM facility, then specify the default value (ADMDEFS).

ADMDEFS DSNAME - GDDM ADMDEFS file DSNAME (fully qualified DSNAME in quotes).

Specify the fully-qualified data set name, in quotes, for your data center's GDDM definitions (ADMDEFS) file. MICF allocates the ADMDEFS file for color graphics processing, when requested by the user (see the ADMDEFS parameter in Foreground/Batch Execution Parameters below.)

If your data center does not use IBM's GDDM facility, then leave this parameter blank.

Batch Allocation/Execution User Exit - Specify ISPF skeleton name.

LEAVE THIS PARAMETER BLANK UNLESS YOU HAVE EXCEPTIONAL DATA SET ALLOCATION REQUIREMENTS FOR MICF INQUIRY EXECUTION AND/OR COLOR GRAPHICS REPLAY.

PLEASE DISCUSS YOUR REQUIREMENTS WITH CA TECHNICAL SUPPORT BEFORE ATTEMPTING TO USE THIS EXIT FACILITY.

Specify the name of an ISPF skeleton member to activate the batch allocation/execution user exit. You can use this exit to insert additional JCL statements at the end of the generated MICF inquiry job stream.

Foreground Allocation/Execution User Exit - ISPF SELECT service operand.

LEAVE THIS PARAMETER BLANK UNLESS YOU HAVE EXCEPTIONAL DATA SET ALLOCATION REQUIREMENTS FOR MICF INQUIRY EXECUTION AND/OR COLOR GRAPHICS REPLAY.

PLEASE DISCUSS YOUR REQUIREMENTS WITH CA TECHNICAL SUPPORT BEFORE ATTEMPTING TO USE THIS EXIT FACILITY.

Specify an ISPF SELECT service operand to activate the foreground allocation/execution user exit. For example, specify CMD(%USEREXIT) to invoke the CLIST named USEREXIT from a data set in the current SYSPROC concatenation. Do NOT specify the SELECT service statement. MICF will issue the SELECT service with the specified value. You can use this exit for special data set allocation requirements not supported by standard MICF facilities. Remember that the CA MICS online facility has NO control over your SYSPROC concatenation and it is YOUR responsibility to ensure that the user exit CLIST is available to ALL CA MICS users.

Number of minutes (total) batch processing will wait for unavailable data sets.

When MICF Production Reporting or other related batch processing is unable to allocate a data set because the data set is allocated to another batch job or TSO user, processing will wait until the data set is available. If the data set does not become available within the maximum time limit you specify, processing will terminate due to the data set allocation error.

Specify the maximum number of minutes (1 - 999) you want batch processing to wait for data sets that are allocated to another batch job or TSO user.

Specify 0 if you do NOT want batch processing to wait for data sets.

Number of seconds between batch allocation retries for unavailable data sets.

When MICF Production Reporting or other related batch processing is unable to allocate a data set because the data set is allocated to another batch job or TSO user, processing will wait the number of seconds you specify and then retry the failing data set allocation. If the data set is still not available, then the wait/retry cycle will be repeated until the allocation is successful or the maximum wait time limit you specify is exceeded.

Specify the number of seconds (1 - 9999) you want batch processing to wait before retrying failed data set allocations.

USER PROFILE PARAMETERS

Color Graphics User - Do you normally use a color graphics device (YES/NO)?

Specify YES if ALL users normally access MICF via a color graphics terminal. Otherwise, specify NO.

Database ID - Specify the database ID (x) of the default inquiry database.

Specify the ID of the unit database your users are most likely to be using.

Execution Mode - Default inquiry execution mode (BATCH/BACKGROUND).

Specify the execution mode you want your users to use most of the time.

Execution Mode - Display execution mode before executing inquiry (YES/NO)?

Specify NO if you do NOT want your users to alter the execution mode you specified. This saves users one panel interaction when executing inquiries.

File Mgmt. - Keep track of file contents and prime panel entry fields (YES/NO)?

Specify YES for this parameter.

Function Selection Mode - Specify function selection path (MENU/CATALOG).

Specify MENU. This provides the most help to your users.

Hold Inq. Output Save/CSV - Hold batch inquiry output for replay (YES/NO).

Specify YES if ALL users should default to saving output from batch inquiry execution for online review.

Job Card n - Default Job statement #n for ALL MICF batch processing.

where n = 1 to 4.

Tailor this default JOB statement to agree with your data center standards.

Local Printer - Default local printer name for printed report routing.

If you use DSPRINT services and your users are likely to use the Print Output to Local 3270 Printer option of the Print Inquiry Output panel, specify the local 3270 printer used by the majority of your users.

Print Inquiry Output - Print all output or limit to report/log (ALL/RPT/LOG)?

This parameter applies to the inquiry output replay Print Inquiry Output option. Specify RPT to default to printing just reports. Specify ALL to default to printing both reports and CA MICS/SAS logs.

Production Reporting Hardcopy - Default additional SYSOUT parameters.

This option provides the default for the MICF production reporting Hardcopy Reports and Logs panel.

Specify this parameter if you normally specify additional JES SYSOUT parameters such as CHARS, COPIES, FCB, FLASH, HOLD, or UCS on SYSOUT DD statements for production reporting.

Production Reporting Hardcopy - Default SYSOUT class (A-Z or 0-9).

This option provides the default for the MICF production reporting Hardcopy Reports and Logs panel.

Specify the SYSOUT class used most often for production reporting.

Production Reporting Hardcopy - Default SYSOUT destination.

This option provides the default for the MICF production reporting Hardcopy Reports and Logs panel.

Specify this parameter if you normally specify a DEST= parameter on SYSOUT DD statements for production reporting. Specify the destination used most often for production reporting.

Production Reporting Hardcopy - Default SYSOUT external writer.

This option provides the default for the MICF production reporting Hardcopy Reports and Logs panel.

Specify this parameter if you normally specify a writer on SYSOUT DD statements for production reporting. Specify the writer used most often for production reporting.

Production Reporting Hardcopy - Default SYSOUT form code.

This option provides the default for the MICF production reporting Hardcopy Reports and Logs panel.

Specify this parameter if you normally specify a form number on SYSOUT DD statements for production reporting. Specify the form number used most often for production reporting.

Recovery - Provide automatic inquiry recovery during composition (YES/NO)?

Specify YES. This protects your users from losing work due to system failures.

Region size for batch job execution (for example, enter 4096 for REGION=4096K).

Specify this parameter to override your data center default batch job region size. Leave this parameter blank to use the data center default OR the region size that is specified on the JOB statement.

Reports and Graphics - Automatically select report or graphics option (YES/NO)?

Specify YES if you want MICF to automatically replay color graphics or browse printed reports when your users select an inquiry output for review. Color Graphics replay is NOT selected automatically if you specify NO for the Color Graphics User parameter.

Saved Files - Save ALL intermediate files generated by MICF inquiries (YES/NO)?

Specify NO. Very few, if any, users will want to save ALL intermediate files.

SAS Syntax Validation - Test panel entries for valid SAS syntax (YES/NO)?

Specify YES for this parameter.

SYSOUT Class - Default SYSOUT class for printed report routing (A-Z or 0-9).

Specify the SYSOUT class used by most users at your data center.

SYSOUT Destination - Default SYSOUT destination for printed report routing.

Specify this parameter if your users normally specify a DEST= parameter on SYSOUT DD statements. Specify the destination used by most of your users.

SYSOUT Form - Default SYSOUT form code for printed report routing.

Specify this parameter if your users normally specify a form number on SYSOUT DD statements. Specify the form number used by most of your users.

SYSOUT Parameters - Additional, JCL format SYSOUT parameters (for example, CHARS=).

Specify this parameter if your users normally specify additional JES SYSOUT parameters such as CHARS, COPIES, FCB, FLASH, HOLD, or UCS on SYSOUT DD statements.

SYSOUT Writer - Default SYSOUT external writer for printed report routing.

Specify this parameter if your users normally specify a writer on SYSOUT DD statements. Specify the writer used by most of your users.

Test MICS - Allow access to test databases & test level libraries (YES/NO)?

Specify NO for this parameter. Most of your users should not access your test database. This also reduces the number of unit databases from which they must select. Keeping the number of choices small makes it easier for your users to use MICF.

Validate panel entries against CA MICS file contents descriptions (YES/NO)?

Specify YES for this parameter.

FOREGROUND EXECUTION PARAMETERS & BATCH EXECUTION PARAMETERS

The most important factors to consider for foreground and batch execution are the default values for the parameters required to use your color graphics devices. You would normally specify parameters for your most common terminal type color graphics device for the Foreground Execution Parameters and your most common hardcopy color graphics device (pen plotter or color printer) for the Batch Execution Parameters. The specific parameters depend on the specific device you are using. Refer to the SAS/GRAPH documentation for more information.

Basically, MICF must know the same things that you would specify to use the color graphics device with a stand-alone SAS program. If you have never used a device with SAS, the parameters used to access the device with other graphics facilities can provide a starting point for using the SAS documentation. The following color graphics parameters are available.

Color Graphics - Display color graphics during inquiry execution (YES/NO)?

Specify NO for foreground and YES for batch.

When your users execute inquiries in batch mode with color graphics saved for later online review, they will probably want to override the default and specify NO.

Color Graphics - Replay color graphics during inquiry execution (YES/NO)?

Specify YES for foreground. This parameter does not apply to batch execution.

Color Graphics ADMDEFS File - Allocate GDDM ADMDEFS file (YES/NO)?

Specify YES if you use IBM's GDDM facility and you specified ADMDEFS DSNNAME in CA MICS System Parameters.

Color Graphics Device - Specify the default color graphics device name.

This parameter is required. It must be one of the color graphics device drivers listed in the SAS/GRAPH documentation.

Color Graphics DDNAME - Output DDNAME for graphics stream processing.

This parameter is required.

Specify GSASFILE if GSF Option is GACCESS.

Specify ADMGDF if GSF Option is ADMGDF.

Other specific values (for example, FT14F001) may be required for specific devices. See the SAS/GRAPH Guide to Hardware Interfaces for more information.

Otherwise, specify the default, ICFGRAPH.

Color Graphics DISP - Color graphics output data set disposition (OLD/MOD).

Specify color graphics data set disposition if you specify color graphics DSNNAME below.

Color Graphics DSNAME - Color graphics output data set name.

Specify this parameter to write the color graphics output to a cataloged DASD data set.

Color Graphics Format Set - Specify the default color graphics format set name.

This parameter is required. Specify the color graphics format set that corresponds to the type of device (for example, specify PENPLOT for a pen plotter).

Color Graphics Stream - GSF option
(NONE/GSF/GACCESS/ADMGDF/DISPLAY).

Use this parameter to define the type of color graphics output file (that is, graphics stream file) processing you want MICF to perform for you.

Specify NONE if Color Graphics Device is a TSO terminal (for example, DEVICE=IBM3279) or other device that does not require graphics stream processing (for example, DEVICE=IBM3279). MICF will include GSFMODE=NONE in the color graphics options (GOPTIONS) statement.

Specify GSF for standard graphics stream file processing. MICF will include GSFMODE=REPLACE/APPEND in the generated color graphics options (GOPTIONS) statement. You must also specify color graphics DDNAME and either SYSOUT allocation parameters or color graphics DSNAME for GSF access.

Specify GACCESS for special protocol conversion processing. MICF will include GSFMODE=NONE and GACCESS=GSASFILE/GSASFILA in the generated color graphics options (GOPTIONS) statement. You must also specify GSASFILE for color graphics DDNAME and specify either SYSOUT allocation parameters or color graphics DSNAME for graphics output.

Specify ADMGDF to generate GDDM ADMGDF files. MICF will include ADMGDF, GSFMODE=REPLACE/APPEND, and GSFNAME=GnPn (where Gn is the color graphics catalog name and Pn is the plot number) in the generated color graphics options (GOPTIONS) statement. You must also specify ADMGDF for color graphics DDNAME and specify color graphics DSNAME for ADMGDF output (for example, SYSOUT is not valid for ADMGDF output).

Specify DISPLAY to allocate a graphics output file without any special parameters (for example, for a GDDM ADMIMAGE file or for a linkable driver). MICF will allocate the graphics file (either color graphics DSNAMES or a sysout data set) to the DDNAME you specify in the color graphics DDNAME parameter.

Color Graphics SYSOUT Class - SYSOUT class (A-Z or 0-9) for graphics output.

Specify this parameter to write the color graphics output to JES spool.

Color Graphics SYSOUT Destination - SYSOUT destination for graphics output.

Specify this parameter to write the color graphics output to JES spool with a DEST= SYSOUT allocation parameter.

Color Graphics SYSOUT Form Code - SYSOUT form code for graphics output.

Specify this parameter to write the color graphics output to JES spool for processing with a specific form code.

Color Graphics SYSOUT Params. - Additional, JCL format SYSOUT parameters.

Specify this parameter if you need additional JES SYSOUT allocation parameters such as CHARS, COPIES, FCB, FLASH, HOLD, or UCS to process the color graphics output.

Color Graphics SYSOUT Writer - SYSOUT external writer for graphics output.

Specify this parameter to write the color graphics output to JES spool for processing by a SYSOUT external writer.

Color Graphics User DD Stmt. n (only used when GSF Option is NONE).

where n is 1 to 3.

Specify this parameter if the SAS/GRAPH device driver being used requires additional user-specified DD statements. This parameter applies only to batch inquiry execution.

Color List n - Specify the "color list" for the graphics device.

where n is 1 to 3.

The SAS system provides a default color list for each device driver. The SAS list is usually valid. Only specify the color list parameter if you must override the SAS default.

GOPTIONS Parameters n - Specify GOPTIONS parameters for the graphics device.

where n is 1 to 3.

This parameter is required for most color graphics devices. The values specified depend on the device and how you have installed the device at your data center. See the SAS/GRAPH documentation for details.

PRINTER FORMAT PARAMETERS

The primary changes you may want to make to the printer format parameters relate to tailoring the default report title. The distributed defaults are:

- o The first title line is the inquiry title (or long name).
- o The second title line is the data center name.
- o The third title line is the report time frame, if the inquiry includes time frame selection. It is blank if time frame selection is not used.
- o The fourth title line is the six-character inquiry name and the execution date.
- o Page numbers are included on reports.

The following parameters are available and can be used to establish an alternative default title structure.

Date - Print the current date on the first title line of each page (YES/NO)?

Specify NO unless you do not include the execution date on the fourth title line.

Page Numbers - Print page numbers on first title line of each page (YES/NO)?

Title 1 - Alternate default title line 1 (if not inquiry title).

Title 1 - Use inquiry title as the default report title line 1 (YES/NO)?

Title 2 - Alternate default title line 2 (if not data center name).

Title 2 - Use data center name as the default report title line 2 (YES/NO)?

Title 3 - Alternate default title line 3 (if not time frame specification).

Title 3 - Use time frame specification as the default title line 3 (YES/NO)?

Title 4 - Alternate default title line 4 (if not inquiry name and/or run date).

Title 4 - Use inquiry name and/or run date as title line 4 (BOTH/INQ/DATE/NONE)

COLOR GRAPHICS FORMAT PARAMETERS

The primary changes you may want to make to the color graphics format parameters relate to tailoring the default color graphics title. The distributed defaults are:

- o The first title line is the inquiry title (or long name).
- o The second title line is the data center name.

- o The third title line is the report time frame, if the inquiry includes time frame selection. It is blank if time frame selection is not used.
- o The color graphics footnote is the six-character inquiry name and the execution date.

The following parameters are available and can be used to establish an alternative default title structure. If you alter these parameters, remember to alter each of the distributed color graphics format sets. Each color graphics format set is independent and could define a unique default title structure if you so desire.

Title 1 - Alternate default title line 1 (if not inquiry title).

Title 1 - Use inquiry title as the default report title line 1 (YES/NO)?

Title 2 - Alternate default title line 2 (if not data center name).

Title 2 - Use data center name as the default report title line 2 (YES/NO)?

Title 3 - Alternate default title line 3 (if not time frame specification).

Title 3 - Use time frame specification as the default title line 3 (YES/NO)?

Title 4 - Alternate default title line 4 (if not inquiry name and/or run date).

Title 4 - Use inquiry name and/or run date as title line 4 (BOTH/INQ/DATE/NONE)

Beyond altering the title, you may want to tailor the color graphics format sets for your specific color graphics devices. The following are examples of potential tailoring situations:

- o The TERMINAL color graphics format set is based on the IBM 3279. If you have a color graphics terminal that supports more colors, you can alter the pattern and line color specifications to use more of the available colors.
- o The PENPLOT color graphics format set is based on an eight-pen plotter. If your pen plotter has only four pens, then you would want to alter the specifications to use only four colors.

You might also want to change the colors used for titles, text, and axes according to data center preferences.

DATA SET ALLOCATION PARAMETERS

You can tailor the data set allocation parameters to meet your data center standards.

- o You may want to alter the data set names per data center standards. Any changes to the data set name should be made before the first MICF user executes an inquiry. If the data set name parameter is altered after a user has executed an inquiry in foreground mode, the user will lose access to saved inquiry output and saved intermediate files.
- o You may want to specify a specific unit type for MICF data sets, or even a specific volume for MICF users.
- o You may want to alter the space allocations for the type of DASD devices at your data center.

Select the Data Set Allocations option from the CA MICS Administrator Facility Parameters menu to specify data set allocation parameters for MICF-related data sets. See Section 5.1.1.4 for more information.

5.1.4 Shared Inquiry Catalog

```
----- Shared Inquiry Catalog Administration -----
Command ==>                                     Scroll ==> PAGE

Userid ==> _____ (For insert)  Catalog Group      ==> _____
Prefix ==> _____ (Optional)    Name (subset display) ==> _____

Line Cnds: I Insert  D Delete  S Select

Cmd  Name                Title                Date    Time
-----
_   ACT   Installation Accounting
_   ADMIN CA MICS Administration
_   CIC   CICS Analysis
_   DB2   DB2 Analysis
_   EXC   Exception Analysis
_   IDM   IDMS Analysis
_   IMS   IMS Analysis
_   RMF   Hardware and SCP Analysis (RMF)
_   SMF   SMF Analysis
_   SNT   SNA Network Analysis
_   SRL   System Reliability Analysis
_   TSO   TSO Analysis
_   VCA   DASD Analysis
-----
```

Figure 5-3. Shared Inquiry Catalog Administration Panel

MICF maintains a private inquiry catalog for each MICF user and a single shared inquiry catalog that can be accessed by all users. During the installation of MICF, you may want to tailor some of the distributed inquiries and place them in the shared catalog. In addition, you will probably want to create a set of your own inquiries and place them in the shared inquiry catalog for general use.

To reach the Shared Inquiry Catalog Administration display (Figure 5-3) select option 2, Shared Inquiry Catalog Administration, from the MICF Administration menu (Figure 5-1). The Shared Inquiry Catalog Administration display is used to copy inquiries from any user's private inquiry catalog (including the System Administrator's private inquiry catalog) to the shared inquiry catalog and also to delete shared inquiries that are no longer required. Note that inquiries are only composed (written) in private inquiry catalogs and then copied to the shared inquiry catalog. When an inquiry is copied from a private catalog to the shared catalog, the version in the private catalog remains there and is not altered in any way.

The contents of the Shared Inquiry Catalog Administration display vary depending upon the specifications entered in the data entry fields at the top of the panel. These control the subset of the shared inquiry catalog to be displayed. A catalog structure is provided to simplify inquiry retrieval. cataloged inquiries are stored in "groups" of related inquiries. This panel can display the list of defined catalog groups or the list of inquiries cataloged under a specific catalog group.

There are five data entry locations on this panel:

- o Userid
- o Prefix
- o Catalog Group
- o Name
- o Cmd

The data entry considerations for each of these are discussed in detail below.

USERID

Userid is required to add inquiries to the shared inquiry catalog. It defaults to the last value specified for this parameter. It is a one to seven-character TSO user identification (or logon-id). This identifier is used to locate and read the specified user's private inquiry catalog.

PREFIX

Prefix is optional for adding inquiries to the shared inquiry catalog. It defaults to the optional high-level qualifier for private data sets defined by the CA MICS Administrator. If your data center uses high-level qualifiers for private data sets other than the TSO userid, you should enter the qualifier for the specific user's catalog that you intend to insert inquiries from.

CATALOG GROUP

Catalog Group is optional. It defaults to the last value specified for this parameter. Enter a 1-8 character catalog group name or *. This is the catalog group to be displayed. Leave this parameter blank to display the list of defined catalog groups. Use the S (Select) line command or enter the group name in this field to select a catalog group and display a list of inquiries cataloged under that group. Specify * to list ALL inquiries.

NAME

Name is optional. It defaults to the last value specified for this parameter. It can be 1-8 characters and is used to subset the list of inquiries displayed on the panel. The Shared Inquiry Catalog Administration display will be limited to inquiries with names having the same leading characters as specified in this parameter. For example, specifying TSO will limit the display to inquiries with names beginning with TSO.

CMD

The Cmd column is the Line Command data entry field. When Catalog Group is blank, each line of the display represents a catalog group and lists the name and title for the catalog group. All line commands are valid in this mode. When Catalog Group is not blank, each line of the display represents a database inquiry and lists the name, title, and last change date/time for the inquiry. In this mode, D (Delete) and I (Insert) are the only valid line commands.

To insert an inquiry:

1. Specify the Userid for the private inquiry catalog from which the inquiry will be copied.
2. Specify I in the Cmd column (can be specified on any line).
3. The Private Inquiry Selection panel will be displayed for the specified Userid. Select the desired inquiry. This panel is similar to the Shared Inquiry Catalog Administration panel except that it displays the inquiries for the specified Userid. It has the Group and Name data entry fields. In addition, it includes an option to allow or disallow replacement of an existing inquiry in the shared catalog if an inquiry with the same name is selected. When you select an entry on this panel, you are given the opportunity to change the inquiry name, inquiry title, inquiry author, catalog group and catalog group title.

To delete an inquiry:

1. Select the appropriate catalog group and scroll the display until the desired inquiry appears on the panel.
2. Specify D in the Cmd column for the desired inquiry.
3. The confirm delete panel will be displayed. Press ENTER to confirm.
4. The inquiry has been deleted. It can NOT be recovered.

5.1.5 Shared Inquiry Output Catalog

The shared output catalog is maintained in an analogous manner to the shared inquiry catalog. During installation of MICF you may want to place some examples of the output from a number of MICF inquiries in this catalog as samples to be viewed by other users of MICF. It is particularly useful to include sample output from inquiries that you have placed in the shared inquiry catalog.

To reach the Shared Output Catalog display, select option 3, Shared Inquiry Catalog Administration, from the MICF Administration menu (Figure 5-1).

5.1.6 Production Reporting

The MICF Production Reporting Administration option (MWF;2;4;3) allows you to define and maintain your MICF inquiry production reporting.

- o You can add, modify, execute, and delete MICF production reporting job streams.
- o You can generate and catalog color graphics and printed reports either with regularly scheduled CA MICS production processing or through your data center's own scheduling facilities.
- o You can optionally generate hardcopy printed reports, color graphics, and MICSLOG and SAS log while still saving reports, graphics, and logs for later online review. You can even use your data center's report management facility (for example, CA Bundl) to route, archive, and manage MICF production reporting hardcopy outputs.
- o You can specify execution-time parameter overrides for production execution of MICF inquiries or execute inquiries with predefined default parameter values.
- o You can access the Reports and Graphics option (MWF;2;1) for online review and printing of production reporting color graphics and printed reports, as well as any CSV file output.

You will also use MICF Production Reporting Administration to define and maintain production job streams to create your CSV files. You can add CSV file capability to any standard MICF production reporting job stream. The Q&R Workstation guides document the use of the MICF Production Reporting Administration facilities for CSV file creation.

You will use MICF Production Reporting Administration to define and maintain production job streams for updating your CA MICS Capacity Planner Option shared capacity planning database files. Capacity Planner Option file update job streams are a special type of MICF production reporting job stream. The Capacity Planner Option Guide documents use of MICF Production Reporting Administration facilities for shared Capacity Planner Option file definitions.

Unless specifically noted otherwise, all references to MICF production reporting job streams in the documentation that follows also apply to the Capacity Planner Option file updates. However, you should see the Capacity Planner Option Guide for specific issues relating to Capacity Planner Option files.

Each production reporting job stream allocates unique, user-defined printed report and color graphics catalog data sets. Thus you can use your data center's security facilities to limit access to sensitive reports. For example, your accounting staff may want to share a series of daily financial graphics. You can create a separate job stream to generate and save financial graphics, and protect them using RACF or another security facility.

You also have the option to define "hardcopy only" MICF production reporting. MICF will write printed reports, color graphics, and MICSLOG and SAS log to the JES SYSOUT data set and hardcopy color graphics device you define. After execution completes, MICF will delete the staging data sets used to hold printed reports, color graphics, and MICSLOG and SAS log during execution processing.

Each production reporting job stream defines a list of MICF inquiries to be executed. You can execute with the predefined default execution-time parameter values specified in the inquiry, or you can specify execution-time parameter overrides for production execution. You can create multiple versions of a production report with a single production reporting job stream by executing an inquiry multiple times and specifying different execution-time parameter overrides for each execution.

The Production Reporting Administration panel (Figure 5-4) displays your MICF inquiry production reporting job streams. The display lists job stream name and title, along with the CA MICS production job association you define. A CA MICS job name of DAILY, WEEKLY, or MONTHLY plus a DB ID identifies the specific CA MICS database unit update job associated with the job stream. CA MICS Job is the name of the production CA MICS job that may schedule the production reporting. DB ID is the CA MICS database unit ID where the job runs, as well as the default unit ID for MICF inquiry execution.

Note: MICF production reporting does not actually execute within the production CA MICS DAILY, WEEKLY, or MONTHLY database update jobs. Execution actually occurs in the DAILYRPT, WEEKRPT, and MONTHRPT jobs. These jobs may be submitted by the DAILY, WEEKLY, and MONTHLY database update jobs, or you may schedule the MICF production reporting process through your data center's own scheduling facilities. For more information about production interface and scheduling, see section 5.1.6.4.

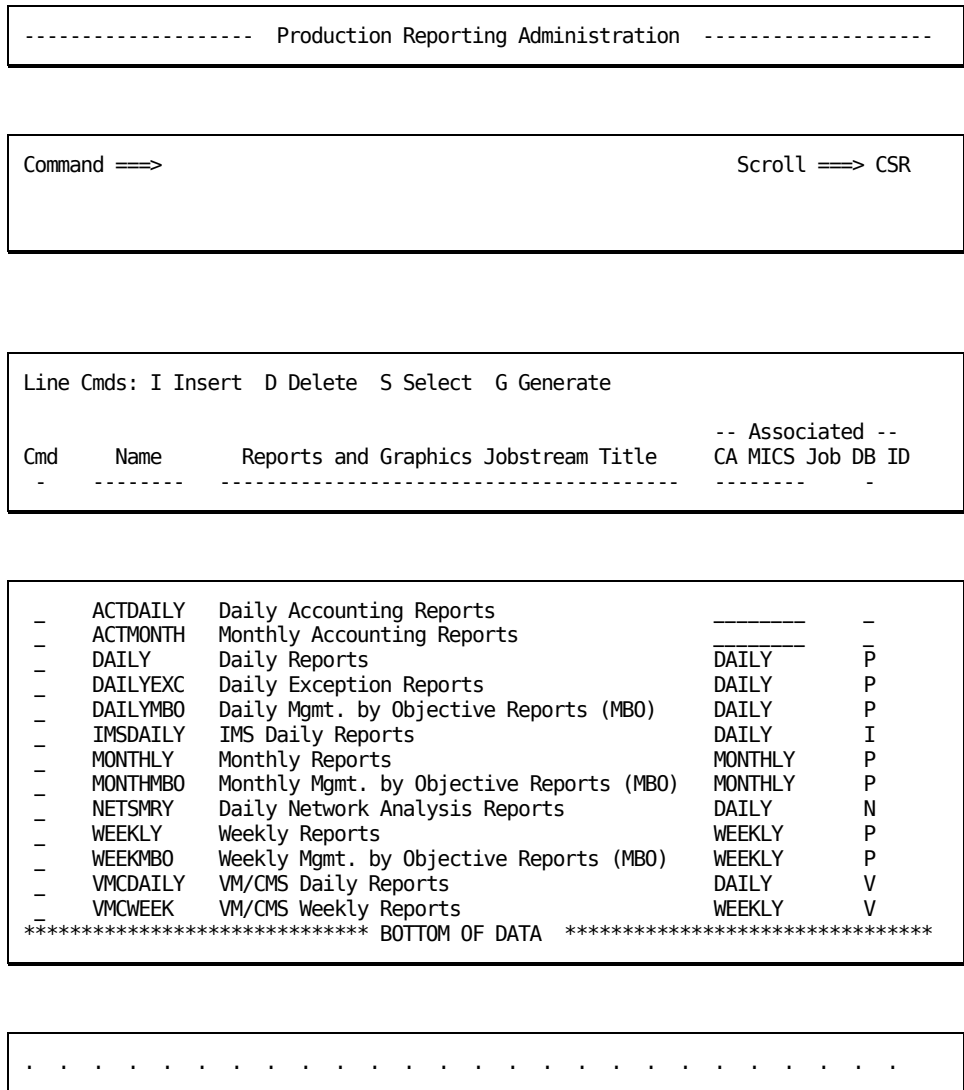


Figure 5-4. Production Reporting Administration

Line commands available on the Production Reporting Administration panel, Figure 5-4, include:

- o I (Insert) defines a new production reporting job stream.
- o D (Delete) deletes individual reports and graphics outputs from the production output catalog, or delete an entire production reporting job stream and ALL saved reports and graphics outputs.

- o S (Select) reviews and modifies an existing job stream.
- o G (Generate) is on demand job stream execution, or generates and saves execution JCL for submission through your data center's batch job scheduling facilities.

MICF Production Reporting Administration is discussed in the following sections:

- 1 - Controlling Access to Reports and Graphics
- 2 - Defining a Production Reporting Job Stream
- 3 - Executing a Production Reporting Job Stream
- 4 - MICF Inquiry Production Interface
- 5 - Deleting Reports and Graphics Outputs
- 6 - CA MICS Standard MBO and Exception Reports

In addition, the remainder of this section is a step-by-step checklist for implementing MICF production reporting. The checklist refers to specific actions described in sections 5.1.6.1 through 5.1.6.6, so you may want to review these sections before trying to use the checklist.

Implementing MICF Production Reporting

- 1. Review your data center's production reporting environment and the specific requirements relative to the production reporting you plan to implement.

Consider the following issues (you will apply your answers later in the checklist).

- o Who are the reports for? Who will need access to the reports? Who should not be allowed to see the reports? Do you need hardcopy reports and graphics? Will you be routing reports and logs to a report management facility (for example, CA Bundl)?
- o What color graphics devices are used for online graphics review? What color graphics devices are used for hardcopy graphics output? Do you use black and white or grey scale graphics, for example on a laser printer?

- o Which shared MICF inquiries do you want to regularly execute so that reports are generated and saved? What execution-time parameter overrides are needed to generate the reports?
 - o How do you schedule production CA MICS reporting? Do you have a production batch job scheduling facility/procedure? Do you let CA MICS jobs submit other jobs (that is, do you use the CA MICS AUTOSUBMIT facility)?
 - o When do you want the reports to execute: daily, weekly, monthly?
 - o What dependencies do the reports have? Do they depend on a single database unit update or do they extract information from multiple CA MICS database units?
 - o How do you plan to monitor production reporting execution? Do you want a hardcopy log of execution errors?
- __ 2. Use the MICF Production Reporting Administration option to define a MICF production reporting job stream that will generate and save the reports. Reference: Section 5.1.6.2
 - __ a. Select option 4, MICF Administration, from the MICF Primary Options menu.
 - __ b. Select option 3, Production Reporting Administration, from the MICF Administration menu.
 - __ c. Use the insert (I) line command to insert a new MICF production reporting job stream.

- __ d. Specify the job stream name, title, and catalog table data set name on the Insert Reporting Jobstream panel.

Select the catalog table data set name carefully. You control access to the reports and the reporting job stream definition by using your data center's security facilities (for example, RACF or other security product) to control access to the catalog table data set and the reports and graphics data sets associated with each job stream.

- o The job that executes the production reporting job stream must have authority to UPDATE the catalog table data set AND must be able to CREATE (that is, allocate new), UPDATE, and DELETE the associated color graphics and printed report output data sets.
- o For CA MICS job streams that generate CSV files, the job that executes the reporting job stream must also have authority to UPDATE the sharedprefix.MICS.DTF.INDEX data set.
- o For Capacity Planner Option file update job streams, the job that executes the reporting job stream must also have authority to UPDATE the sharedprefix.MICS.CAPACITY data set.
- o You or any other user authorized to maintain the production reporting definition must have authority to UPDATE the catalog table data set and be able to DELETE associated color graphics and printed report output data sets.
- o A user ID must have READ access to the catalog table data set and the associated color graphics and printed report output data sets in order to review reports.

- e. Press END to allocate the catalog table data set, insert the production reporting job stream definition, and display the Reports and Graphics Jobstream panel.
 - o Specify a maximum report retention limit.
 - Specify a nonzero value to retain reports, graphics, and logs for later online review.
 - If you plan to generate hardcopy reports and color graphics, you have the option to specify 0.
 - Even if you want hardcopy output, MICF's online retention of reports and graphics provides a valuable reporting "archive" so reports and graphics are available online long after hardcopy outputs have been discarded.
 - o Specify DAILY, WEEKLY, or MONTHLY for Associated CA MICS Job depending on whether you want the reports run daily, weekly, or monthly.
 - o Specify Database ID for the CA MICS database update that will schedule the MICF inquiry production reporting if the reports depend on information from a single CA MICS database unit. Otherwise, leave the DB ID field blank.
 - o Specify default file cycles parameters.
 - o Review the generated printed reports, color graphics, temporary report, and temporary MICSLLOG data set names and make any changes you require. Remember that the data set names MUST be unique and CANNOT overlap data set names used by any other production reporting job stream definition.

- __ f. Select MICF Inquiries for Reporting Jobstream (enter a Y following the prompt and press Enter), and select the shared MICF inquiries you want to execute in this MICF production reporting job stream.
Reference: Section 5.1.6.2.1
 - o You can change the catalog group specification when you select an inquiry. Inquiry outputs are organized in the production catalog according to the catalog group assignments you make when you select inquiries for the reporting job stream.
 - o You can specify execution-time parameter overrides. For example, if you are defining a complex-level reporting job stream, there is no default for the unit Database (DB) ID. You can use the execution-time parameter overrides to specify the P (primary) unit for one inquiry and the I (IMS) unit for another inquiry. You can also execute a single inquiry multiple times. For example, run the IMSCD2 inquiry once for all production IMS regions and a second time for development (or test) regions.

- __ g. Select Data Set Allocation Parameters (enter a Y following the prompt and press Enter) if you want to change defaults for allocating the production report output data sets.
Reference: Section 5.1.6.2.2

- __ h. Select Execution and Hardcopy Output Options (enter a Y following the prompt and press Enter) if you want to change default color graphics device parameters or other execution options, generate hardcopy printed reports, generate hardcopy color graphics, or activate the hardcopy error log.
Reference: Section 5.1.6.2.3

- __ i. Press END on the Reports and Graphics Jobstream panel after you complete the definition.

- __ 3. We suggest that you test the job stream using the G (generate) line command on the Production Reporting Administration panel to generate and submit a batch job to execute your production reporting job stream definition. Examine the MICSLOG output for any error conditions and correct any problems before proceeding with this checklist.
 - __ a. If you run the suggested test, then use the MICF Reports and Graphics option to review the production reports online. Note and correct any problems in catalog groups, color graphics device parameters, execution-time parameter overrides, and SAS execution parameters. Make sure that ALL inquiries execute successfully and generate the desired outputs.
 - __ b. If you are generating hardcopy reports and logs, verify that the outputs are written to the proper SYSOUT class and form. Correct any problems in hardcopy report and log SYSOUT allocation parameters. Make sure your report management facility (for example, CA Bundl) will be able to capture the hardcopy outputs.
 - __ c. If you are generating hardcopy graphics, verify that the outputs are generated on the proper graphics device. Correct any problems in hardcopy color graphics device parameters. Verify that online and hardcopy color graphics device specifications are compatible and that MICF graphics are usable both online and in hardcopy format. This is especially important when routing hardcopy graphics to a laser printer. Ensure that the MICF execution parameters select a color graphics format set using hashed patterns so that the graphics are usable both in color (online) and in black and white (hardcopy).

- __ 4. Add the MICF production reporting job stream to your regularly scheduled production processing.
 - __ a. If you specify YES for the AUTOSUBMIT parameter in prefix.MICS.PARMS(JCLDEF), the next daily, weekly, or monthly production reporting process will include your MICF production reporting job stream.
 - __ b. If you specify NO for the AUTOSUBMIT parameter in prefix.MICS.PARMS(JCLDEF), use your data center's standard production batch job scheduling facility to schedule the CA MICS report job steps for execution after the corresponding daily, weekly, and monthly production database update jobs complete.
Reference: Sections 5.1.6.3 and 5.1.6.4
 - o Construct a batch JCL stream according to your data center standards to execute the production reporting job stream.
 - o Include the ICFDY400, ICFWK400, and ICFMN400 job steps as generated in the DAILYRPT, WEEKRPT, and MONTHRPT reports jobs.
 - o Add the MICF production reporting job stream to your production processing schedule.
 - __ c. If you are using a report management facility (for example, CA Bundl) to capture hardcopy reports and logs, set up the report manager's control definitions for the job name, SYSOUT class, and SYSOUT form to which you directed MICF outputs.

5.1.6.1 Controlling Access to Reports and Graphics

Each production reporting jobstream definition (or production catalog) allocates unique, user-defined printed report and color graphics catalog data sets. You will define three permanent data sets. The production reporting catalog data set contains ISPF tables that define the reporting jobstream (inquiries executed, execution parameters, data set allocation parameters, etc.) and identify the saved outputs. Two separate data sets contain actual printed reports (and MICSLLOG and SAS log) and color graphics outputs.

Production reporting outputs are reviewed through the MICF Reports and Graphics option. This option displays the inquiry output catalogs available at your data center, including the standard MICF shared inquiry output catalog, private foreground and batch inquiry output catalogs, and production reporting output catalogs. You can use your data center's security facilities (for example, RACF) to control access to production catalogs.

Use your data center security facilities to limit read access to the catalog table and associated printed report and color graphics catalog data sets to those users who are authorized to review the reports and graphics. A security exception will occur whenever a user attempts unauthorized reports and graphics access, and MICF will tell the user that access was denied.

Special security considerations may be required for defining, maintaining, and executing production reporting jobstreams. You must have UPDATE access to sharedprefix.MICS.ISPTLIB to add or delete a production reporting jobstream, or to modify jobstream name, title, associated CA MICS job, and DB ID specifications. However, you can specify the MICF inquiries to be executed with the production reporting jobstream, execution options, and data set allocation parameters without UPDATE authority for sharedprefix.MICS.ISPTLIB.

The CA MICS Administrator can allow an application group to control its own production reporting. The CA MICS Administrator would insert a production reporting jobstream and specify the CA MICS production job and DB ID association (if any). The application group could then complete and maintain the production reporting jobstream definition without sharedprefix.MICS.ISPTLIB UPDATE authority. They could even choose to block CA MICS Administrator access to the production catalog.

In establishing your reports and graphics security, remember that the CA MICS reporting jobs must be able to update production catalogs if you are using the production interface option to generate reports and graphics with CA MICS reporting jobs. The CA MICS reporting job must have UPDATE access to ALL data sets associated with the production reporting jobstream (that is, the catalog table, printed reports catalog, color graphics catalog, temporary report staging, and temporary MICSLOG data sets).

5.1.6.2 Defining a Production Reporting Job Stream

```

----- Insert Reporting Jobstream -----

Command ==>

Jobstream Name ==> IMSDAILY
Title ==> IMS Daily Reports
Catalog Table Data Set ==> 'SYSPROD.MICS.IMSDAILY.CATALOG'

Space units ==> TRK (BLK, TRK, or CYL)
Primary quantity ==> 2 (In above units)
Secondary quantity ==> 1 (In above units)
Directory blocks ==> 1 (For partitioned data sets)
Round block alloc. ==> NO (YES/NO)
Block size ==> 9040 (Maximum block size)
Record length : 80
Data set org. : PO
Record format : FB
Generic unit ==> 3380PROD (Generic group name or unit address)
Volume serial ==> _____ (Blank for default volume)
Expiration date ==> _____ (yydd or yyyy/ddd)
Retention period ==> _____ (Number of days)
Additional allocation parameters:
DCB ==> _____
Other ==> _____

. . . . .

```

Figure 5-5. Sample Insert Reporting Jobstream Panel

The Insert Reporting Jobstream panel (Figure 5-5) is displayed when you enter the Insert (I) line command on the Production Reporting Administration panel. Enter job stream name, title, and catalog data set allocation parameters and then press END to initialize the new production reporting

job stream definition.

- o Jobstream Name is required. This 1-8 character "short name" or key is used to save and reference the new production reporting job stream. Jobstream Name must be unique and cannot be SHARED, PRIVATE, or BSTAGE.
- o Title is required. The 1-40 character title is displayed on the Production Reporting Administration and on the Reports and Graphics panels.
- o Catalog Table Data Set is required. Enter a fully qualified data set name (DSN) in quotes. Do not enter a member name. If you do not enclose the DSN in quotes, your TSO user PREFIX and the quotes will be added.

Choose the catalog table DSN carefully. You CANNOT change the DSN after you leave this panel. The production reporting definition and the output catalog are stored in this data set. Enter a DSN appropriate to the level of security you need for the associated reports and graphics. Users will allocate this data set to review production reports. You will reference and update this data set through batch job JCL statements to execute the production reports.

```

----- Reports and Graphics Jobstream -----

Command ==>

Jobstream Name ==> IMSDAILY
Title ==> IMS Daily Reports

Maximum Report Retention ==> 15      (0-999 reporting cycles)
Associated CA MICS Job ==> DAILY
Database ID ==> I      (IMSUNIT)
Default File Cycle(s) ==> 01 - 00  (00-99)

Catalog Table Data Set: 'SYSPROD.MICS.IMSDAILY.CATALOG'
Permanent Data Sets (allocated for each job stream execution)
Printed Reports DSN ==> 'SYSPROD.MICS.IMSDAILY.MMFPDS**,DATA'
Color Graphics DSN ==> 'SYSPROD.MICS.IMSDAILY.MMFSAS**,DATA'

Temporary Work Data Sets (deleted after job stream execution)
Report DSN ==> 'SYSPROD.MICS.IMSDAILY.REPORT'
MICSLOG DSN ==> 'SYSPROD.MICS.IMSDAILY.LOG'
Specify MICF Inquiries for Reporting Jobstream ==> N (Y/N) *** Specified ***
Override Data Set Allocation Parameters ==> N (Y/N)
Specify Execution and Hardcopy Output Options ==> N (Y/N)

. . . . .

```

Figure 5-6. Sample Reports and Graphics Jobstream Panel

- o The remainder of the panel provides data set allocation specifications for the catalog table data set. Default values are taken from the PCATALOG entry in MICF Options, Data Set Allocation Parameters. The catalog table data set contains two ISPF tables. DASD space requirements will vary depending upon the number of inquiries in the production reporting job stream and the number of output cycles (or job stream executions) you retain.

When you press END (or enter the END primary command) on the Insert Reporting Jobstream panel, MICF saves your specifications, allocates the catalog table data set, initializes the job stream definition and production catalog tables, and then displays the Reports and Graphics Jobstream panel (Figure 5-6) so you can complete the production reporting job stream definition.

The Reports and Graphics Jobstream panel (Figure 5-6) is displayed when you enter the Select (S) line command on the Production Reporting Administration panel (Figure 5-4) or when you enter END on the Insert Reporting Jobstream panel (Figure 5-5). Use this panel to complete and/or update the production reporting definition.

You can change the job stream name and title on this panel. Other parameters are discussed below.

- o Maximum Report Retention is required and defaults to 12.
 - This parameter defines the number of output cycles (or job stream executions) retained in the production catalog. The production job stream execution process deletes reporting cycles (beginning with the oldest) when the number of catalog cycles exceeds this value.
 - Note: The printed report and color graphics DSNs must contain one asterisk (*) for each digit in the parameter.
 - If you are generating hardcopy reports and/or color graphics AND if you are not creating CSV files, then you can specify 0 for maximum report retention. After execution completes, MICF will delete the printed report and color graphics data sets used to hold printed reports, color graphics, MICCSLOG, and SAS log during execution processing.
- o Associated CA MICS Job is optional. Enter the name of a production CA MICS job (for example, DAILY, WEEKLY, or MONTHLY) to generate production reports and graphics with production CA MICS processing. Leave this parameter blank to control production report execution with your data center's batch job scheduling facilities. If you have CA MICS Accounting and Chargeback installed, you can enter INVOICE or FINRECAP to associate the production reporting jobstream with the INVOICE or FINRECAP job.

- o Database (DB) ID is optional and provides the default DB ID for MICF inquiry execution and CA MICS production job association. If your inquiries allow execution-time DB ID override and do NOT specify a default value, then you can provide the default here. Remember that inquiry level execution-time parameter overrides will override this default. If you specify DAILY, WEEKLY, or MONTHLY for Associated CA MICS Job, specify the DB ID to which the reporting applies. Leave DB ID blank if you are defining complex-level production reporting.
- o Default File Cycle(s) is optional and provides the default CA MICS file cycle (specify first field) or cycle range (specify both fields) for inquiry execution. If your inquiries allow execution-time cycle override and do NOT specify a default value, then you can provide the default here. Remember that inquiry level execution-time parameter overrides will override this default.

You can specify DB ID and File Cycle(s) uniquely for each inquiry through the execution-time parameter override facility. Select the "Specify MICF Inquiries for Reporting Jobstream" extended option to override execution-time parameters.

Two permanent data sets are allocated for each production job stream execution. Data entry fields are provided for Printed Reports DSN and Color Graphics DSN. Both are required. Specify fully qualified data set names (DSN) in quotes. Do not enter a member name. If you do not enclose a DSN in quotes, your TSO user PREFIX and the quotes will be added.

- o Data entry fields are initialized from Catalog Table DSN, replacing the last DSN qualifier with MWFPDS**.DATA for Printed Reports DSN and MWFSAS**.DATA for Color Graphics DSN. If Catalog Table DSN has only one DSN index, then MWFPDS**.DATA and MWFSAS**.DATA are appended to the end of Catalog Table DSN. The *s (asterisks) in the DSNs indicate where the generation (or logical cycle) number will appear. You must include one asterisk (*) for each digit in the Maximum Report Retention value.
- o If an execution of the production reporting job stream does NOT generate any color graphics, then MICF will delete the color graphics data set after execution completes.

- o Printed Reports DSN and Color Graphics DSN apply only to new data set allocations (that is, new job stream executions). You can change DSNs without impacting reports and graphics saved by previous executions (that is, you do not lose existing cycles when you change DSN).
- o If you specify 0 for Maximum Report Retention, then the printed reports and color graphics data sets are used as staging data sets to hold printed reports, color graphics, MICSLLOG, and SAS log during execution processing. MICF will delete the printed reports and color graphics data sets after execution completes.

Two inquiry output staging data sets are allocated for reporting job stream execution and are deleted when processing terminates normally. Data entry fields are provided for Report DSN and MICSLLOG DSN. Both are required. Specify fully qualified data set names (DSN) in quotes. Do not enter a member name. If you do not enclose a DSN in quotes, your TSO user PREFIX and the quotes will be added. Data entry fields are initialized from Catalog Table DSN, replacing the last DSN index with REPORT for Report DSN and MICSLLOG for MICSLLOG DSN. If Catalog Table DSN has only one DSN index, then REPORT and MICSLLOG are appended to the end of Catalog Table DSN.

Use the remaining data entry fields to access subordinate options. The MICF Inquiries for Reporting Jobstream option is required. All others are optional. Specify Y (Yes) in the data entry field following an option to invoke that option panel. Once you specify an option, a flag will appear on the right side of the panel. If you select multiple options (that is, you enter a Y on more than one line), the options are processed sequentially.

The extended options are discussed in the following sections.

- 1 - MICF Inquiries for Reporting Job Stream
- 2 - Data Set Allocation Parameters
- 3 - Execution and Hardcopy Output Options

5.1.6.2.1 MICF Inquiries for Reporting Job Stream

```
----- Database Inquiries -----
```

```
Command ==>                               Scroll ==> CSR
```

```
Reporting Job Stream:  IMSDAILY - Daily IMS Reports
```

```

Catalog Group ==> *
Inquiry Name  ==> _____

Line Cnds: I Insert  D Delete  S Select  M Move  E Exec-Time  R Reset  Parms
Cmd   Name          Title                               Exec-Time  Catalog
-----
-   IMSCDT   8am 5 pm IMS Service By Type      *Specified*  SHARED
-   IMSCD1   Daily IMS Workload Report          *Specified*  SHARED
-   IMSCD2   Daily IMS Service Reports          *Specified*  SHARED
-   IMSCD2   Daily IMS Service Reports          *Specified*  SHARED
-   IMSCD3   Daily IMS Availability Report       *Specified*  SHARED
***** BOTTOM OF DATA *****

```

Scrolling RIGHT on an inquiry display shows the following:

```

Reporting Job Stream:  IMSDAILY - Daily IMS Reports

Catalog Group ==> *
Inquiry Name  ==> _____

SCROLL LEFT TO RETURN TO INQUIRY INFO

Line Cnds: I Insert  D Delete  S Select  M Move  E Exec-Time  R Reset  Parms

      Inquiry
Cmd  Name  Typ  Prim  2nd  STORCLAS  DATACLAS  MGMTCLAS
-----
-   IMSCDT  CYL  15   5
-   IMSCD1
-   IMSCD2  CYL  25   5
-   IMSCD2  CYL  25   5
-   IMSCD3  TRK  10   5
***** Bottom of data *****

```



Figure 5-7. Sample MICF Inquiries for Reporting Jobstream

Use this option to specify the MICF inquiries to be executed with the production reporting job stream. You can select any inquiry from the MICF shared inquiry catalog. Figure 5-7 (above) shows an example of shared MICF inquiries selected for daily IMS production reporting.

You can execute an inquiry using default execution-time parameter values. If the inquiry does not specify a default value for Database (DB) ID or CA MICS File Cycle(s), then the values you specify on the Reports and Graphics Jobstream panel will be used to execute the inquiry. The inquiries you select MUST have valid default values for all other execution-time parameters.

Alternatively, you can specify execution-time parameter overrides. Enter the E (Exec-Time) line command to display the associated execution-time parameters panel for an inquiry (see sample on next page). The execution-time parameter values you specify are saved with the production reporting job stream definition and are applied to the inquiry when the reporting job stream executes.

MICF marks the inquiries that have execution-time parameter overrides by showing *Specified* in the Exec-Time column of the Database Inquiries panel. As you can see on the sample above, execution-time parameter overrides have been defined for the IMSCDT inquiry and for both copies of IMSCD2.

```

----- Execution-Time Parameters -----

Command ==>                               Scroll ==> CSR

Selecting CA MICS Inquiry: IMSCD2 - Daily IMS Service Reports

-----
Enter one or more Database IDs for the Database(s) you want to process.
I          - _____

Enter range of CA MICS online file cycles or enter ARCHIVE for archive files.

01        - _____
Enter the SYSID(s) to be reported or leave blank to report all systems.
----- - -----

Enter the IMSID(s) to be reported or leave blank to report all regions.
PROD      - _____

***** BOTTOM OF DATA *****

```

.....

Figure 5-8. Execution-Time Parameters

If you want, you can execute a single inquiry against different DB IDs, file cycles, or other execution-time parameter values. Simply select the inquiry multiple times and specify different execution-time parameter overrides.

The sample in figure 5-7 shows that the IMSCD2 inquiry is executed twice. The sample Execution-Time Parameters panel above shows the execution-time parameter overrides that might have been specified for one of the executions of the IMSCD2 inquiry.

- o The inquiry will execute against the I (IMS) unit database and will select the 01 cycle.
- o The inquiry will report on the production IMS regions. That is, the inquiry will subset the available IMS data to observations with IMSID values that begin with the characters PROD (this inquiry is defined to subset based on leading characters).
- o We can assume that the second execution of the IMSCD2 inquiry might be limited to development (or test) IMS regions, or to some other subset of the IMS workload.

You can use this technique of multiple inquiry executions under different execution-time parameters to create unique, tailored reports for different readers.

Once an inquiry has been added to the job stream, you can enter space parameters for individual inquiries. If omitted, they will default to the SAS work data set allocation for the job stream. If the SAS work data set has not yet been defined for the job stream, the SAS work data set space allocation will default to the definition provided by the CA MICS administrator in MWF;5;0;4.

You should also note that the archive (tape) option of the CA MICS file cycle(s) parameter is not valid for production reporting. MICS production reporting uses dynamic allocation to access CA MICS files, and CA MICS does not support dynamic tape drive allocation.

5.1.6.2.2 Data Set Allocation Parameters

```

----- Data Set Allocation Parameters -----
Command ==>                                     Scroll ==> CSR
Reporting Jobstream:  IMSDAILY - Daily IMS Reports
Line Cmds: S Select data set to specify additional DASD allocation parameters

Cmd          Data Set          --DASD Space Parameters--
-----
Printed Reports Catalog Data Set  TRK 10   10   20  9076
Color Graphics Catalog Data Set   TRK 10   10   25 23040
EDM/CSV Member Data Set          TRK 10   10   25 23476
EDM/CSV Index Data Set           TRK 5    5    25  9040
Temporary Production Report Data Set TRK 2    2    25  9076
Temporary Production MICSLOG Data Set TRK 2    2    25  9076
SAS Work File                     CYL 50   45   25 23040
***** BOTTOM OF DATA *****

```

Figure 5-9. Sample Data Set Allocation Parameters

Use this option (see Figure 5-9) to override default DASD data set allocation specifications for the printed report, color graphics, temporary report staging, and temporary MICSLOG data sets. Initial default values are copied from the Data Set Allocation Parameters process of MIF Options. You can override DASD space parameters, logical unit, expiration date, block size, etc.

You can override data set allocation parameters for the four production reporting jobstream data sets described below:

- o Printed Reports Catalog Data Set

Production reporting printed reports, MICSLOG, and SAS logs are saved in the printed reports catalog data set. The printed reports catalog data set is an OS partitioned data set (PDS; DSORG=PO) containing variable length records with printer carriage control characters (RECFM=FBA) and a maximum length of 260 characters (LRECL=260). Each production reporting inquiry adds three members to the printed reports catalog data set for the printed reports, MICSLOG, and SAS log.

DASD space requirements will vary depending upon the number of inquiries, the size of printed reports (number and length of lines), and the length of the MICSLOG and the SAS log. You will need space for the MICSLOG and the SAS log even if the production reporting jobstream does not include printed reports (for example, color graphics only). You will also need one directory block for each six inquiries in the production reporting jobstream.

- o Color Graphics Catalog Data Set

Production reporting color graphics outputs are saved in the color graphics catalog data set. The color graphics catalog data set is a SAS data set (DSORG=PS,RECFM=FS) containing one SAS/GRAPH GREPLAY catalog for each color graphics inquiry in the production reporting jobstream.

DASD space requirements will vary depending upon the number of inquiries, the number of graphs in each inquiry, and the complexity of color graphics outputs. The color graphics catalog data set is always allocated, even if the production reporting jobstream does not include color graphics. If you are not using color graphics, then specify a single DASD track for data set allocation. You can increase the space allocation if you add color graphics later.

- o EDM/CSV Member Data Set

CSV outputs are stored in the production inquiry output catalog CSV data set. The CSV catalog data set is a partitioned data set (DSORG=PO,RECFM=FB) containing one or more members for each inquiry in the production reporting jobstream that produced CSV output.

DASD space requirements will vary depending upon the number of inquiries, and the number and size of the CSVs. The CSV catalog data set is always allocated, even if the production reporting jobstream does not include CSV output. If you are not generating CSV output, specify a single DASD track for data set allocation. You can increase the space allocation if you generate CSV output later.

o EDM/CSV Index Data Set

A sequential data set used as a directory of all comma-separated-value (CSV) extract files available to other applications.

o Temporary Report Staging Data Set

Printed reports are stored in the temporary report staging data set during inquiry execution. The printed report staging data set must be large enough to hold the largest printed report in the production reporting jobstream. The printed report staging data set is always allocated, even if the production reporting jobstream does not include printed reports. If you are not using printed reports, then specify a single DASD track for data set allocation. You can increase the space allocation if you add printed reports later.

o Temporary MICCSLOG Data Set

The MICCSLOG is stored in the temporary MICCSLOG data set during inquiry processing. You should allocate sufficient space for up to 500 records (about 50 KB).

o SAS Work File

Defines the storage space where all the one-level name files are stored by SAS during execution.

5.1.6.2.3 Execution and Hardcopy Output Options

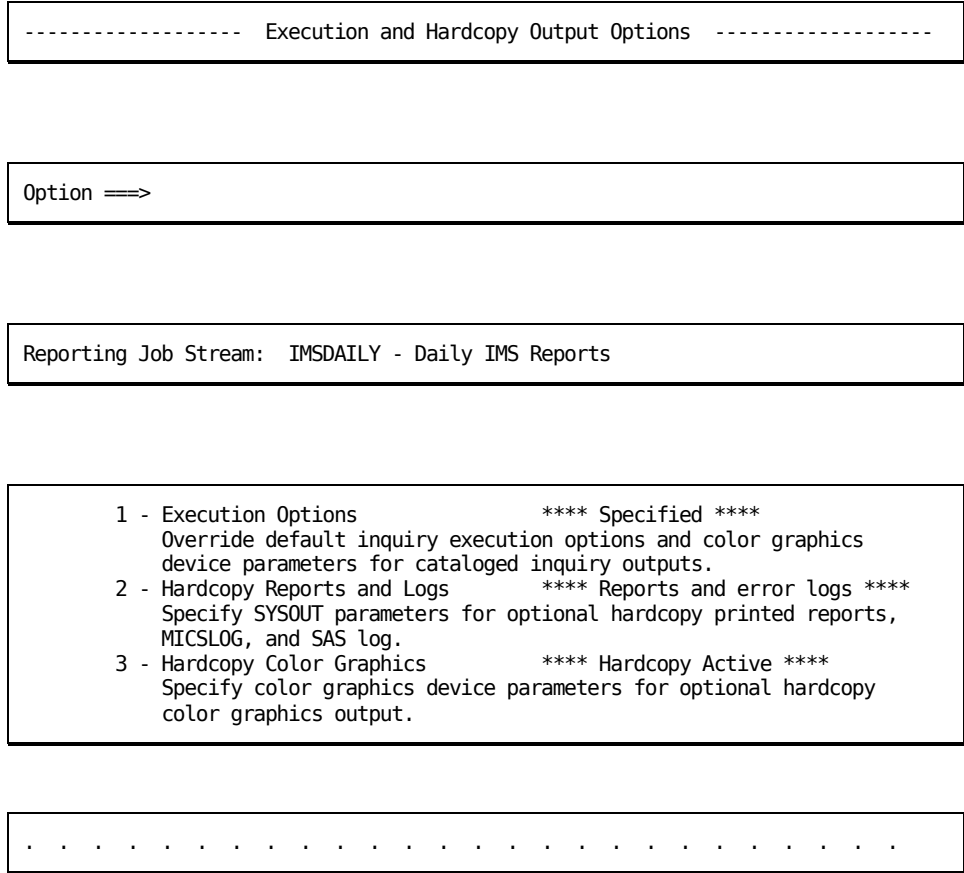


Figure 5-10. Execution and Hardcopy Output Options

Execution and Hardcopy Output Options give you access to three facilities for customizing MICF production reporting. You can override default SAS/CA MICS execution options, including default color graphics device parameters. You can optionally generate hardcopy reports, MICSLOG, and SAS logs, and color graphics while still saving inquiry outputs for later online review. You can also use this option to generate a hardcopy log of inquiry execution errors.

The Execution and Hardcopy Output Options menu displays a textual status flag to the right of each menu option to indicate the option's current status. A blank means the option is NOT active and default parameters are still in effect.

The options provided on the Execution and Hardcopy Output Options menu are described in the following sections and are summarized below.

1 - Execution Options

Use this option to override default execution options. MICF production reporting job stream execution options default to the values you specify in Shared MICF Options, Foreground Execution Parameters.

You may prefer to specify this extended option to "lock" your production job execution options, thereby avoiding the risk of shared options changes impacting your production reporting. You can specify default color graphics format set for color graphics inquiry steps that do not override color graphics format parameters. You can also specify color graphics device parameters and SAS execution parameters.

2 - Hardcopy Reports and Logs

Use this option to generate hardcopy reports and MICSLLOG and SAS log in addition to saving inquiry outputs for later online review. You can direct MICF reports and logs to SYSOUT for capture by your data center's report management facility (for example, CA Bundl).

You can instruct MICF to copy ALL printed reports to JES SYSOUT. ALL printed reports are still available for online review through the MICF Reports and Graphics option.

You can instruct MICF to copy just the MICSLLOG output from ALL inquiries, just the SAS log output from ALL inquiries, or both the MICSLLOG and SAS log for all inquiries to the JES SYSOUT you define. ALL MICSLLOG and SAS log listings are still available for online review through MICF Reports and Graphics.

Or you can generate a hardcopy error log. When an inquiry execution error occurs, MICF will copy the failing inquiry's MICSLLOG and SAS log to JES SYSOUT. The hardcopy error log will be empty when all inquiries execute successfully.

3 - Hardcopy Color Graphics

Use this option to request hardcopy color graphics outputs in addition to saving inquiry outputs for later online review.

This option lets you execute and save MICF inquiry color graphics using color graphics device parameters that are best for online color graphics review. Then you define a unique, hardcopy color graphics device to which MICF will copy ALL color graphics output.

5.1.6.2.3.1 Execution Options

```

----- Execution Options -----
Command ==>

Reporting Job Stream: PBASADM - BAS Testing
Enter RESTORE command to erase parameter overrides and use the defaults.
-----
More: +
***** Top of data *****
Color Graphics Options
-----
Generate Graphics for
MICF Web Publishing: ==> Y (Y/N)
Color Graphics Format Set ==> TERMINAL
Color Graphics Device ==> IBM3279
Override Device Parm. ==> N (Y/N)
Execute Under MADMI ==> Y (Y/N)

SAS Execution Options
-----
Allocate prefix.PARMS to ==> _____
No. Sort Work Data Sets ==> 0 (0-6)
List the SAS Source Code ==> Y (Y/N)
List Expanded Macros ==> Y (Y/N)
Print Notes in Listing ==> Y (Y/N)
Overprint Errors ==> N (Y/N)
Abend for Errors ==> N (Y/N)
Translate Output to CAPS ==> N (Y/N)
Max. No. Error Msgs. ==> _____
Max. No. Observations ==> _____

Page Dimensions: Columns ==> 132 (64 - 256)
                  Lines ==> 60 (20 - 500)

Additional SAS Options ==>

MICF Web Publishing Options
-----
Activate ==> Y (Y/N)
MWP Root Directory
==> /u/MICS/website
Create Web Index ==> Y (Y/N)
Web Index Page Name ==> view
Aging ==> Y (Y/N) Cycles ==> 7
Produce Reports ==> N (Y/N)
Page Options ==> NONE (ALL/NONE/OUTPUT/PAGE/PROC)
Output Template ==> STYLES.DEFAULT
Index Template ==> STYLES.DEFAULT
Translation Table ==> EBCDIC (EBCDIC/ASCII)
Output CSV to MWP Dir ==> N (Y/N)

Q&R Workstation Integration
-----
Q&R Mainframe Svr(MQRMSN) ==> MQRSYS1
Use Q&R Compatible ==> N (Y/N)
Directory Structure ==> N (Y/N)
Q&R Root Directory
==> /u/users/nfs/camics
Initiate RMWSLOAD ==> Y (Y/N)
RMWSLOAD Job Name ==> PBASADM

```

```
***** Bottom of data *****
```

Figure 5-11. Execution Options

MICF production reporting job stream execution options default to the values that you specify in Shared MICF Options, Foreground Execution Parameters.

You may prefer to specify this extended option to "lock" your production reporting job execution options, avoiding the risk of shared options changes impacting your production reporting. You can specify:

- o The default color graphics format set for color graphics inquiry steps that do not override color graphics format parameters.
- o Color graphics device parameters.
- o Report page size. Page size typically defaults to 80 columns by 23 lines for easy online report review.
- o SAS execution parameters such as SAS log content, whether to abend when errors are detected, the number of sort work data sets to allocate, and other SAS execution parameters.
- o MICF Web Publishing options, such as the style template and aging, pagination, and character translation options.
- o Q&R Integration options that control writing the MICF inquiry output to the HFS/zFS directory for use by the Q&R Workstation, which lets you publish the report and the chart output to your corporate intranet.
- o Whether you choose to use the Q&R directory structure or continue to have RMWSLOAD read the corresponding DTF Index, you can have your reporting job stream automatically notify the Q&R mainframe server that the job stream has completed. The mainframe server then notifies the distributed server to begin executing the RMWSLOAD job that corresponds to the name defined in the Execution Options panel for this job stream.

There are two execution options data entry panels. The Execution Options panel is displayed first. Use this panel to specify color graphics device, color graphics format set, SAS execution options, and MICF Web Publishing options.

Note: This is a scrollable panel, and not all options may appear at once. Use the scroll keys to view all options.

Enter a Y following the Override Device Params prompt to display the Color Graphics Device Parameters panel.

MICF color graphics outputs are saved in a device-independent format, so that your replay options are not limited to the color graphics device you specify here. You can obtain the best results if you specify the color graphics device that you use most often for online graphics review.

If you plan to generate hardcopy color graphics output, either during the inquiry execution or by "printing" cataloged output, specify color graphics parameters that are also compatible with your hardcopy graphics device. Specifying these graphics parameters is especially critical if you plan to use either a laser printer or a pen plotter for hardcopy outputs. In this situation, select a color graphics format set similar to the distributed PENPLOT format set. This setting allows the MICF color graphics to be hashed rather than filled patterns so the graphics are usable both online and in hardcopy format on either a pen plotter or a black and white laser printer.

You can reset previously specified execution options by entering the RESTORE command on the Execution Options panel. MICF will clear your execution option overrides and redisplay the Execution and Hardcopy Output Options menu.

5.1.6.2.3.2 Hardcopy Reports and Logs

```
----- Hardcopy Reports and Logs -----  
  
Command ==>  
  
Reporting Job Stream:  IMSDAILY - Daily IMS Reports  
  
----- Hardcopy Printed Reports -----  
Print Reports ==> YES  (YES/NO)  
SYSOUT Class ==> R                               SYSOUT Form ==> ____  
Destination ==> N14R45                           SYSOUT Writer ==> _____  
SYSOUT Parm. ==> COPIES=3  
  
-----Hardcopy MICSLLOGs and SAS Logs-----  
Print Logs ==> ERROR (MICS/SAS/BOTH/ERROR/NO)  
SYSOUT Class ==> A                               SYSOUT Form ==> ____  
Destination ==> _____                       SYSOUT Writer ==> _____  
SYSOUT Parm. ==> _____  
  
Enter the RESTORE command to erase parameter overrides and use the defaults.  
  
.....
```

Figure 5-12. Hardcopy Reports and Logs

The Hardcopy Reports and Logs panel lets you generate hardcopy reports and MICSLLOG and SAS log in addition to saving inquiry outputs for later online review. You can write printed reports to a user-defined SYSOUT data set. You can also write MICSLLOG and SAS log to a separate SYSOUT data set. You can use the Hardcopy Reports and Logs options to route MICS reports and logs to your data center's report management facility (for example, CA Bundl).

The Hardcopy Reports and Logs panel is in two sections. The upper section applies to printed reports while the lower section applies to the MICSLLOG and SAS log. The panel options are described in the paragraphs that follow.

You can instruct MICF to copy ALL printed reports to the JES SYSOUT data set you define in the Hardcopy Printed Reports section of the panel.

- o Enter YES (or Y) following the Print Reports prompt to generate hardcopy printed reports.
- o You can specify SYSOUT class, destination, form number, and other SYSOUT allocation parameters to direct printed reports to the desired location. ALL printed reports from ALL inquiries in the production reporting job stream will be written to this SYSOUT file. ALL printed reports are still available for online review through the MICF Reports and Graphics option.
- o Enter NO (or N) following the Print Reports prompt to just save printed reports for later online review. You can change your hardcopy specification from YES to NO without deleting the SYSOUT allocation parameters. Just enter NO and END from the panel. MICF will turn off hardcopy reports, but still save your SYSOUT allocation parameters for use if you later reactivate hardcopy printed reports.

You can instruct MICF to copy just the MICSLLOG output, just the SAS log output, or both MICSLLOG and SAS log to the JES SYSOUT data set you define in the Hardcopy MICSLLOG and SAS Log section of the panel.

- o Enter CA MICS (or M) following the Print Logs prompt to generate hardcopy MICSLLOG output. ALL MICSLLOG text from ALL inquiries in the production reporting job stream will be written to the SYSOUT data set you define for hardcopy logs. SAS logs will only be retained online.
- o Enter SAS (or S) following the Print Logs prompt to generate hardcopy SAS log output. ALL SAS log text from ALL inquiries in the production reporting job stream will be written to the SYSOUT data set you define for hardcopy logs. MICSLLOG will only be retained online.

- o Enter BOTH (or B) following the Print Logs prompt to write both the MICSLOG and the SAS log for each inquiry to the hardcopy (SYSOUT) file. For each inquiry, the MICSLOG will be written first, followed by the SAS log.
- o You also have the option to generate a hardcopy error log. Enter ERROR (or E) following the Print Logs prompt to activate the hardcopy error log. When an inquiry execution error occurs, MICF will copy the failing inquiry's MICSLOG and SAS log to the JES SYSOUT data set you define. The hardcopy error log will be empty when all inquiries execute successfully.
- o You can specify SYSOUT class, destination, form number, and other SYSOUT allocation parameters to direct logs to the desired location. MICSLOG and SAS log will be written to SYSOUT. ALL MICSLOG and SAS log listings are still available for online review through the MICF Reports and Graphics option.
- o Enter NO (or N) following the Print Logs prompt to only save MICSLOG and SAS log for later online review. You can change your hardcopy specification to NO without deleting the SYSOUT allocation parameters. Just enter NO and END from the panel. MICF will turn off hardcopy logs but still save your SYSOUT allocation parameters for use if you later reactivate hardcopy MICSLOG and SAS log.

The SYSOUT data set allocation parameters on this panel default to values from the Production Reporting Hardcopy options in MICF Options, User Profile Parameters. You can tailor the defaults in MICF Options to match the SYSOUT parameters you use most often for production reporting hardcopy outputs.

You can reset and erase previously specified hardcopy printed report and log options by entering the RESTORE command on the Hardcopy Reports and Logs panel. MICF will clear your hardcopy report and log specifications and redisplay the Execution and Hardcopy Output Options menu.

5.1.6.2.3.3 Hardcopy Color Graphics

```

----- Hardcopy Color Graphics -----
Command ==>

```

```
Reporting Job Stream:  IMSDAILY - Daily IMS Reports
```

```

Hardcopy Graphics   ==> YES      (YES/NO)
Color Graphics Device ==> TCX4510      Background Color ==> _____
Allocate ADMDEFS File ==> NO      (YES/NO)
Graphics Color List (GOPTIONS COLOR= parameter)
==> _____
==> _____
==> _____
Device Parameters (other GOPTIONS parameters)
==> PROMPTCHARS='0000010000400000'X
==> _____
==> _____

GSF Option   ==> GACCESS (NONE/GSF/GACCESS/ADMGDF/DISPLAY)
DDNAME      ==> GSASFILE
SYSOUT Class ==> G              SYSOUT Form ==> _____
Destination ==> REMOTE65       SYSOUT Writer ==> PLOTWTR
SYSOUT Parns ==> _____
or GSF DSNAME ==> _____ DISP ==> ____

. . . . .

```

Figure 5-13. Hardcopy Color Graphics

The Hardcopy Color Graphics panel lets you generate hardcopy color graphics in addition to saving inquiry outputs for later online review. You can write color graphic outputs to a unique, hardcopy color graphics device even if you defined an online color graphics device for inquiry execution.

You can instruct MICF to copy ALL color graphic outputs to the color graphics device you define on this panel. You can execute and save MICF inquiry color graphics using color graphics device parameters that are best for online color graphics review. Then you can define a unique, hardcopy color graphics device to which MICF will copy ALL color graphics output. ALL color graphics are still available for online review through the MICF Reports and Graphics option.

- o Enter YES (or Y) following the Hardcopy Graphics prompt to generate hardcopy color graphics. ALL color graphics output from ALL inquiries in the production reporting job stream will be written to the color graphics device you define on this panel.
- o Enter NO (or N) following the Hardcopy Graphics prompt to only save color graphics for later online review. You can change your hardcopy specification from YES to NO without deleting the color graphics device parameters. Just enter NO and END from the panel. MICF will turn off hardcopy color graphics but still save your color graphics device parameters for use if you later reactivate hardcopy color graphics.

The remainder of the panel defines the target hardcopy color graphics device. The color graphics device parameters default to the values you specify in MICF Options, Batch Execution Parameters. When you press END, MICF will retain the contents of ALL data entry fields on this panel for use the next time you select this option for the production reporting job stream.

Color Graphics Device Parameters include the following:

- o Color list--the SAS/GRAPH GOPTIONS COLORS= parameter.
- o Unique SAS/GRAPH GOPTIONS parameters to access the color graphics device.
- o Graphics stream file (GSF) allocation specifications (for example, SYSOUT allocation parameters) for color graphics devices using the SAS/GRAPH GSF interface (for example, a pen plotter installed as a JES remote printer), IBM's GDDM ADMIMAGE interface, or other color graphics output stream facility.

5.1.6.3 Executing a Production Reporting Job Stream

You can use the G (Generate) line command for on-demand production reporting execution, or to generate execution JCL that you can save for later submission by your data center's production batch scheduling facilities. You can also tie MICF production reporting directly to CA MICS production jobs (see MICF Inquiry Production Interface).

MICF production reporting job stream execution JCL is quite simple. The most basic form (use the G line command for a sample) consists of a job statement, an execute statement for the MICSRPTS cataloged procedure, and a DD statement to allocate the catalog table data set associated with the production job stream. Printed report and color graphics catalog data sets are dynamically allocated.

```
//jobname JOB (.....
//MICF EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,
// DSN=sharedprefix.MICS.SOURCE(ICFJ100)
//ICFRPT1 DD DISP=SHR,
// DSN=sharedprefix.DAILY.MICS.CATALOG
```

You can execute multiple production reporting job streams with a single batch job by including multiple catalog table allocations in the execution JCL. For example, the following batch job generates three sets of independently securable daily reports and graphics:

```
//jobname JOB (.....
//MICF EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,
// DSN=sharedprefix.MICS.SOURCE(ICFJ100)
//ICFRPT1 DD DISP=SHR,
// DSN=sharedprefix.DAILY.MICS.CATALOG
//ICFRPT2 DD DISP=SHR,
// DSN=acctprefix.ACTDAILY.MICS.CATALOG
//ICFRPT3 DD DISP=SHR,
// DSN=techprefix.DAILY.TECH.SUPPORT.MICS.CATALOG
```

Remember that the batch job must have UPDATE authority for all data sets associated with the production reporting job streams. MICF will scan the execution JCL and process any production reporting catalog table data set allocated to an ICFRPTnn DD, where nn is 1-99 (to make the DDNAMEs unique).

Note: MICF inquiry production reporting is a batch terminal monitor program (TMP). That is, to run MICF inquiry production reports, you execute TSO and ISPF in batch mode. This makes the process sensitive to maintenance levels of TSO and ISPF. You can encounter problems if your TSO or ISPF product maintenance is out-of-date.

By default, this job will record the return code from each MICF inquiry execution, as well as any internal processing errors, and post the highest return code as the completion code for the batch job step. If you prefer to have the job end with a U0998 termination code when any errors are encountered, you can override the MAXRC symbolic parameter on the EXEC statement as shown below:

```
//jobname JOB (.....  
//MICF EXEC MICSRPTS,MAXRC='N'
```

5.1.6.4 MICF Inquiry Production Interface

You can generate and catalog color graphics and printed reports with the regularly scheduled CA MICS production jobs (for example, the daily CA MICS update). The MICF inquiry production interface automatically schedules production reporting based on the CA MICS production job association you define. Use the CA MICS Job parameter to specify the production CA MICS job (for example, DAILY, WEEKLY, or MONTHLY) to schedule the production reporting. If CA MICS Job is DAILY, WEEKLY, or MONTHLY, use the DB ID parameter to identify the CA MICS database unit to which the CA MICS Job specification applies. If you do not associate the production reporting jobstream with a CA MICS job, you will need to use your data center's own scheduling facilities to schedule the production reporting jobstream.

Note: The calendars used with CA MICS have been defined by the CA MICS administrator. They control the number of days, weeks, and months in a year, as well as when weeks, months, and years start and end. If you have any questions about the calendars used in your data center, see your CA MICS administrator. For a technical discussion of calendar definitions, see Sections 2.3.1.8 and 2.3.2.4 in the PIOM and 4.7 in the System Modification Guide.

Production interface operation depends upon your specification for the JCLDEF AUTOSUBMIT parameter (see Section 2.3.3.2.1 in the PIOM).

If AUTOSUBMIT is YES, the DAILY, WEEKLY, and MONTHLY CA MICS database update jobs submit independent jobs to generate CA MICS exception and MBO reports (DAILYRPT, WEEKRPT, and MONTHRPT). The first step of each reporting job executes MICF inquiry production interface processing. The production interface looks for production reporting jobstream definitions associated with this CA MICS production process (that is, looks for matching associated CA MICS job and DB ID specifications), and then executes the production reporting jobstreams. All MICF inquiry production reporting associated with this CA MICS production job is executed in this single job step. The second step of the DAILYRPT, WEEKRPT, and MONTHRPT batch jobs performs the standard CA MICS exception and MBO report processing.

If AUTOSUBMIT is NO, the CA MICS exception and MBO report processing occur during the production daily, weekly, and monthly CA MICS update jobs (in the DAY400, WEEK400, and MONTH400 steps). MICF inquiry production interface processing is NOT included in the daily, weekly, or monthly database update jobs. This is a key point to remember because CA MICS will NOT automatically schedule the MICF inquiry production reporting when AUTOSUBMIT is NO.

When AUTOSUBMIT is NO, the DAILYRPT, WEEKRPT, and MONTHRPT batch jobs are still generated and are available for execution through your standard batch scheduling facilities. The first step of the DAILYRPT, WEEKRPT, and MONTHRPT jobs still provides both the MICF inquiry production interface AND production reporting jobstream execution. Just like the AUTOSUBMIT mode, the production interface looks for production reporting jobstream definitions associated with this CA MICS production process, and then executes the production reporting jobstreams. The key difference is that YOU must schedule the daily, weekly, and monthly report jobs with your data center's standard batch job scheduling facilities.

If AUTOSUBMIT is NO and your CA MICS exception and MBO report processing normally occurs during the production daily, weekly, and monthly CA MICS update jobs, you may want to schedule the individual job steps shown below rather than the entire DAILYRPT, WEEKRPT, and MONTHRPT jobs.

The example JCL shown below is taken directly from the first step of the DAILYRPT, WEEKRPT, and MONTHRPT jobs, respectively.

DAILY PROCESSING - MICF INQUIRY PRODUCTION INTERFACE

```
//ICFDY400 EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,DSN=sharedprefix.MICS.SOURCE(ICFJD400)
//ICFPARMS DD DISP=SHR,DSN=prefix.MICS.PARMS(DBCONFIG)
```

WEEKLY PROCESSING - MICF INQUIRY PRODUCTION INTERFACE

```
//ICFWK400 EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,DSN=sharedprefix.MICS.SOURCE(ICFJW400)
//ICFPARMS DD DISP=SHR,DSN=prefix.MICS.PARMS(DBCONFIG)
```

MONTHLY PROCESSING - MICF INQUIRY PRODUCTION INTERFACE

```
//ICFMN400 EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,DSN=sharedprefix.MICS.SOURCE(ICFJM400)
//ICFPARMS DD DISP=SHR,DSN=prefix.MICS.PARMS(DBCONFIG)
```

AVAILABILITY OF CATALOG TABLE DATA SET

You should be aware that production reporting will fail if the catalog table data set for a production reporting jobstream is not available (that is, if it is held DISP=OLD by another job or user). Catalog table data sets are normally held DISP=OLD only when you are updating the production reporting definition or deleting production catalog outputs (that is, when you enter the S, select, or D, delete, line commands on the Production Reporting Administration panel). Since production reporting normally occurs overnight, the exposure should be minimal. In addition, there is no conflict between executing a production reporting jobstream (that is, updating reports) while one or more users review prior reports online. In other words, you do NOT have to tell your manager to quit looking at online reports so you can run the daily report job.

However, if you find that production reporting jobs ABEND due to contention for one or more production reporting catalog table data sets, you can use your data center's standard batch scheduling facilities to submit and control MICF inquiry production reporting instead of letting the CA MICS daily, weekly, and monthly production processing schedule MICF inquiry production reporting. To do this, simply blank out the associated CA MICS job field for each production reporting jobstream definition (see the Reports and Graphics Jobstream panel, Figure 5-6) and set up production jobs to execute specific MICF inquiry production reporting jobstreams. See Executing a Production Reporting Jobstream in Section 5.1.6.3 for more information.

If you specify YES for the AUTOSUBMIT parameter in prefix.MICS.PARMS(JCLDEF), you can instruct the DAILYRPT, WEEKRPT, and MONTHRPT jobs to submit an additional batch job to process the production reporting jobstreams. This generated batch job uses the JOB statement and EXEC statement specifications from the DAILYRPT/WEEKRPT/MONTHRPT job (for example, has the same job name) and includes a DD statement to allocate each associated production reporting jobstream catalog table data set. Since JES will handle data set enqueue conflicts, you will not be bothered by ABENDs due to an unavailable catalog table data set. To implement this approach, add or change

MICFRPTS SUBMIT

to prefix.MICS.PARMS(JCLDEF) and submit the batch job in prefix.MICS.CNTL(JCLGEND) for each unit.

WHY MICF INQUIRY PRODUCTION REPORTING DOES NOT OCCUR DURING UPDATE JOBS

MICF inquiry production interface processing does not occur during the CA MICS production daily, weekly, and monthly update jobs for the following reasons:

- o Running reports during the database update job elongates database update processing and delays database availability. By doing reporting outside the database update (that is, after the database update completes), you do not have to wait until all the reports complete before you can make on demand inquiries into the database.

- o If you use your data center's production batch job scheduling facilities to submit a separate batch job for each MICF inquiry production reporting jobstream, MICF reporting can execute in parallel so that reports are available earlier in the morning.
- o Running reports during the database update means that any problem that causes the reporting process to ABEND (for example, an enqueue conflict for a MICF inquiry production reporting jobstream catalog table data set) will terminate the database update, thereby delaying all processing until the reporting problem is corrected.
- o The MICF inquiry production reporting process requires a batch TMP (that is, executes TSO and ISPF in batch mode). Using a batch TMP in a production database update job adds the additional exposure that ISPF or TSO changes could cause the database update job to fail.
- o And finally, a security/change control consideration: MICF inquiry production reporting facilities are designed so that you can change your production reporting without CA MICS generation processing. And since you can distribute production reporting administration duties (for example, you can let the Accounting staff control their own accounting daily/weekly/monthly reports), your production database update processing stream could change outside of your data center's normal change control procedures. By keeping MICF inquiry production reporting external to production database update processing, you avoid this exposure.

COMPLEX LEVEL REPORTING

The prior discussion deals with MICF inquiry production interface processing relative to the CA MICS production daily, weekly, and monthly database updates. However, the MICF inquiry production interface facilities can be applied to other production situations. For example, if your data center's production batch job scheduling facility submits a daily reporting job after ALL CA MICS database unit update jobs complete (that is, your scheduler submits the reporting job after the primary, CICS, IMS, and SNA Network database updates complete), you can use the MICF inquiry production interface to schedule MICF inquiry production reporting with this "complex-level" reporting process.

Use the following JCL statements to add MICF inquiry production interface processing to a CA MICS related job in order to automatically generate associated reports and graphics. Use a blank value in the CA MICS DB ID parameter field that associates reporting with the production job. Then code one of the following three JCL sets (for daily, weekly, or monthly) to schedule all MICF production reporting jobstreams that use a blank value for associated CA MICS DB ID (see the Reports and Graphics Jobstream panel, Figure 5-6).

Daily:

```
// EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,DSN=sharedprefix.MICS.SOURCE(ICFJD400)
```

Weekly:

```
// EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,DSN=sharedprefix.MICS.SOURCE(ICFJW400)
```

Monthly:

```
// EXEC MICSRPTS
//SYSTSIN DD DISP=SHR,DSN=sharedprefix.MICS.SOURCE(ICFJM400)
```

Include an ICFPARMS allocation if you are executing a CA MICS database unit-related process. MICF scans ICFPARMS to determine DB ID.

```
//ICFPARMS DD DISP=SHR,DSN=prefix.MICS.PARMS(DBCONFIG)
```

If you want the production interface to submit a separate job for reports and graphics processing, add the following JCL statements.

```
//ICFEXRDR DD SYSOUT=(A,INTRDR),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=80)
//ICFJCNL DD DISP=SHR,DSN=micf.reporting.jcl.model
```

MICF copies job, execute, and SYSTSIN DD statements from ICFJCNL and adds an ICFRPTnn DD statement for each associated reporting jobstream. You can use prefix.MICS.CNLT(DAILYRPT) or prepare your own ICFJCNL model, the data set shown above as micf.reporting.jcl.model, as follows:

```
//jobname JOB (.....  
//MICF EXEC MICSRPTS  
//SYSTSIN DD DISP=SHR,  
// DSN=sharedprefix.MICS.SOURCE(ICFJ100)
```

5.1.6.5 Deleting Reports and Graphics Outputs

You will not normally need to delete production reports and graphics outputs. Expired cycles (as defined by the Maximum Report Retention parameter on the Reports and Graphics Jobstream panel) are deleted when you execute the reporting jobstream. However, you may occasionally encounter rerun situations that leave an invalid or partial reporting cycle in the catalog.

You can use the D (Delete) line command to delete an entire reporting cycle, individual reports and graphics outputs, or the production reporting jobstream definition and ALL saved reports and graphics outputs. The D (Delete) line command displays the delete confirmation menu.

- Choose option 1 (Delete User Reporting Jobstream) to delete the user reporting jobstream definition.

Note: Do NOT use this option unless you want to delete ALL saved outputs AND the user reporting jobstream definition.

- Choose option 2 (Delete Saved Outputs) to delete a reporting cycle or individual reports and graphics outputs.
- Choose option 3 (Delete Saved Outputs and MWP Cycles) to delete an entire reporting cycle and the associated MICF Web Publishing output for that cycle.

Note that both option 1 and option 3 attempt to remove MICF Web Publishing output.

- o If the output is successfully removed, the remaining output available from MICF Reports and Graphics will also be deleted.

- o If the output is not successfully removed, the log file created during the delete operation will be displayed, and you will have to identify and correct the problem. Processing will not continue.

After correcting any problems, you can use option 1 or 3 again, or select option 2 to skip removal of the MICF Web Publishing output and only remove the output available to MICF Reports and Graphics.

5.1.6.6 CA MICS Standard MBO and Exception Reports

```
----- Reports and Graphics Jobstream -----  
  
Command ==>  
  
Jobstream Name ==> DAILYEXC  
Title ==> Daily Exception Reports  
Maximum Report Retention ==> 12      (0-999 reporting cycles)  
Associated CA MICS Job ==> DAILY  
  Database ID ==> P      (PRIMARY)  
Default File Cycle(s) ==> __ - __  (00-99)  
  
Catalog Table Data Set: 'SYSPROD.MICS.DAILYEXC.CATALOG'  
Permanent Data Sets (allocated for each job stream execution)  
  Printed Reports DSN ==> 'SYSPROD.MICS.DAILYEXC.MWFPDS**.DATA'  
  
Color Graphics DSN ==> 'SYSPROD.MICS.DAILYEXC.MWFSAS**.DATA'  
  
Temporary Work Data Sets (deleted after job stream execution)  
  Report DSN ==> 'SYSPROD.MICS.DAILYEXC.REPORT'  
  MICSLLOG DSN ==> 'SYSPROD.MICS.DAILYEXC.MICSLLOG'  
Specify MICF Inquiries for Reporting Jobstream ==> N (Y/N) *** Specified ***  
Override Data Set Allocation Parameters ==> N (Y/N) *** Specified ***  
Specify Execution and Hardcopy Output Options ==> N (Y/N) *** Specified ***  
  
.
```

Figure 5-14. Sample Daily Exception Reports Job Stream

You can define MICF production reporting job streams for the CA MICS standard MBO and exception reports so that standard reports are generated automatically by the production CA MICS DAILY, WEEKLY, and MONTHLY report jobs and are available for online review and printing through the MICF Reports and Graphics option. To do this, define the following four MICF inquiry production reporting job streams for each database unit:

- o Daily CA MICS Exception Reports
- o Daily CA MICS MBO Reports
- o Weekly CA MICS MBO Reports
- o Monthly CA MICS MBO Reports

Specify DAILY, WEEKLY, or MONTHLY for the Associated CA MICS Job parameter and specify the database unit ID for the Database ID parameter. The regularly scheduled CA MICS DAILY, WEEKLY, and MONTHLY report jobs execute the selected inquiries and save printed reports for online review.

Figure 5-14 is an example MICF inquiry production reporting job stream definition for daily CA MICS exception reports. Figures 5-15 and 5-16 show the inquiry selection display for exception and standard CA MICS MBO report inquiries.

Remember that MICF inquiry production reports are NOT generated in the actual DAILY, WEEKLY, and MONTHLY database update jobs, but in the separate DAILYRPT, WEEKRPT, and MONTHRPT jobs. If you specify NO for the AUTOSUBMIT parameter in prefix.MICS.PARMS(JCLDEF), CA MICS will not automatically schedule MICF inquiry production reporting and you MUST use your data center's standard batch job scheduling facilities for MICF inquiry production reporting.

```
----- Inquiry Selection -----
Command ==>                               Scroll ==> CSR
Reporting Job Stream: DAILYEXC - Daily Exception Reports
Catalog ==> SHARED - Shared Inquiry Catalog   Catalog Group ==> EXCEPT
                                                Inquiry Name ==> BASLD
Line Cnds: S Select

Cmd   Name                Title                                Date    Time
-   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -   -
S   BASLD1   Daily Exception Management Overview   00/06/15  14:33
S   BASLD2   Daily Severity Level Exception Summary 00/12/25  03:00
S   BASLD3   Daily Management Area Exception Summary 00/12/25  03:00
S   BASLD4   Daily Short Exception Detail Report    00/12/25  03:00
S   BASLD5   Daily Full Exception Detail Report     00/12/25  03:00
_   BASLD6   Daily Exception Ranking Report         00/12/25  03:00
***** BOTTOM OF DATA *****
```

Figure 5-15. Sample Daily Exception Report Inquiry Selection

```

----- Inquiry Selection -----
Command ==>                               Scroll ==> CSR
Reporting Job Stream: DAILYMBO - Daily Mgmt. by Objective Reports (MBO)
Catalog ==> SHARED - Shared Inquiry Catalog   Catalog Group ==> MBO
                                           Inquiry Name ==> _____

Line Cnds: S Select

Cmd   Name                               Title                               Date   Time
-----
S     CICMDO   Daily CICS Mgmt. by Obj. (MBO) Rpt.   01/06/15  14:33
-     CICMWO   Monthly CICS Mgmt. by Obj. (MBO) Rpt. 01/06/15  14:33
-     CICMWO   Weekly CICS Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:33
S     DB2MDO   Daily DB2 Mgmt. by Obj. (MBO) Rpt.    01/06/15  14:33
-     DB2MWO   Monthly DB2 Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:33
-     DB2MWO   Weekly DB2 Mgmt. by Obj. (MBO) Rpt.   01/06/15  14:33
S     IMSMDO   Daily IMS Mgmt. by Obj. (MBO) Rpt.    01/06/15  14:34
-     IMSMWO   Monthly IMS Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:34
-     IMSMWO   Weekly IMS Mgmt. by Obj. (MBO) Rpt.   01/06/15  14:34
S     PWRMDO   Daily VSE/POWER Mgmt. by Obj. (MBO) Rpt 01/06/15  14:34
-     PWRMWO   Monthly VSE/POWER Mgmt by Obj (MBO) Rpt 01/06/15  14:34
-     PWRMWO   Weekly VSE/POWER Mgmt. by Obj (MBO) Rpt 01/06/15  14:34
S     RMFMDO   Daily RMF Mgmt. by Obj. (MBO) Rpt.    01/06/15  14:34
-     RMFMWO   Monthly RMF Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:34
-     RMFMWO   Weekly RMF Mgmt. by Obj. (MBO) Rpt.   01/06/15  14:34
S     SMFMDO   Daily SMF Mgmt. by Obj. (MBO) Rpt.    01/06/15  14:35
-     SMFMWO   Monthly SMF Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:35
-     SMFMWO   Weekly SMF Mgmt. by Obj. (MBO) Rpt.   01/06/15  14:35
S     TSOMDO   Daily TSO Mgmt. by Obj. (MBO) Rpt.    01/06/15  14:35
-     TSOMWO   Monthly TSO Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:35
-     TSOMMS   Monthly TSO Summary Report             01/06/15  14:35
-     TSOMWO   Weekly TSO Mgmt. by Obj. (MBO) Rpt.   01/06/15  14:35
S     VMCMDO   Daily VM/CMS Mgmt. by Obj. (MBO) Rpt.  01/06/15  14:36
-     VMCMWO   Monthly VM/CMS Mgmt. by Obj. (MBO) Rpt. 01/06/15  14:36
-     VMCMWO   Weekly VM/CMS Mgmt. by Obj. (MBO) Rpt. 01/06/15  14:36
***** BOTTOM OF DATA *****

```

Figure 5-16. Sample Daily MBO Report Inquiry Selection

5.1.6.7 MICF Web Publishing

The MICF Web Publishing (MWP) feature takes the output from MICF inquiries executed using MICF Production Reporting or the User Reporting Jobstream feature and converts it to HTML for presentation using a standard web browser. Using MWP, new and existing MICF reports can be made available to end users, giving them unprecedented access to reports needed to manage I/T resources.

Please review this whole section before proceeding.

- 1 - Prerequisites
- 2 - Setup
- 3 - Style Usage
- 4 - Directory Structure
- 5 - Usage Notes

5.1.6.7.1 Prerequisites

MICF Web Publishing has the following requirements:

- o Available space in a Hierarchical File System (HFS) directory.
- o A Web browser that supports frames and Javascript. This includes Netscape V5 or higher and Microsoft Internet Explorer V5 or higher.

5.1.6.7.2 Setup

The following checklist is to be used to create and initialize the MICF Web Publishing root Directory before use.

- ___ 1. Ensure that the CA MICS root directory has been created and initialized.

Refer to PIOM Section 5.7 for further information regarding the activation of CA MICS USS and HFS support.

___ 2. Create the MICF Web Publishing root directory.

You can use the UNIX `mkdir` command to create the CA MICS Web Publishing root directory in your HFS.

For example:

```
mkdir -p /u/users/MICS/MWP_root
```

___ 3. Edit the job in `sharedprefix.MICS.CNTL(MWPDIRIN)`.

This job is used to copy image files to the MICF Web Publishing root directory. If this job is not run, then the resulting HTML documents may not display properly.

Change the `MWPROOT=` parameter on the `MWPCOPY EXEC` statement to specify the name of the MWP root directory.

Submit the job and ensure it completes with a return code of zero.

5.1.6.7.3 Style Usage

MICF Web Publishing exploits the SAS Output Delivery System (ODS).

One of the most powerful features of SAS ODS is its ability to allow the user to control the appearance of HTML document elements using a style definition.

Common modifications that can be made using styles are:

- o Provide a customized background color or image
- o Control the font style, color, enhancement and size for numerous items in the document
- o Provide an image and/or text at the top and/or bottom of a page, like a corporate logo.

In addition to the SAS provided style definitions, user created style definition can be used with MICF Web Publishing. User style definitions can either be stored in the `SASHELP.TMPLMST` or the `MCOLIB.TEMPLATE` item store. Note that `MCOLIB` refers to `sharedprefix.MICS.MCOLIB`.

Further information regarding the use of styles can be found either on the SAS Technical Support Web site or in the SAS documentation.

MWP allows different style definitions to be assigned to the master index, and the inquiry output display. These options can be sent from the Execution Options panel. See Section 5.1.6.2.3.1.

5.1.6.7.4 Directory Structure

MICF Web Publishing (MWP) stores all its information in an HFS directory and should not be used by other applications. MWP builds a specific directory to store its presentation information.

```

MWP_root--+
  |
  pindex.dat
  |
  body.html
  contents.html
  view.html
  |
  images/
  |
  stream_name/-----+
    |
    run_date1/
    run_date2/ ----+
      |
      qindex.dat
      |
      body.html
      contentx.html
      view.html
      |
      query_name/ ----+
        |
        |
        body_n.html
        graph_n.html
        MICSLOG.TXT
        SASLIST.TXT
        SASLOG.TXT
        csv title.CSV

```

Figure 5-17. HFS Directory Structure for MICF Web Publishing

MWP_root is the name of a directory where MWP stores all reports and graphics. Note that the MWP_root does not have the same name as the CA MICS root directory. If you want to store MICF Web Publishing output in the CA MICS root directory, it is strongly recommended that MWP output be stored in a subdirectory within the CA MICS root directory.

For example, if the CA MICS root directory is /u/MICS, the MWP root directory could be specified as /u/MICS/MWP_Output.

The MWP root directory must be created before executing MICF Web Publishing. It contains:

- o pindex.dat -- index of production streams contained within this root directory.
- o body.html, contents.html, view.html -- HTML page for the master index of this reporting stream.
- o images/ -- directory for image files used for html presentation.
- o stream_name -- directory containing information for a given reporting stream.

Each stream_name directory contains one directory for each reporting stream execution using the format dddmmmyThhmm, where dmmmy is the run date and hhmm is the time.

Each stream_name directory contains:

- o qindex.dat -- directory of queries executed in this run.
- o body.html, contentx.html, view.html -- HTML used to display query output.
- o query_name/ -- one directory for each MICF query executed in the reporting stream. The directory name has the format cccccc.n, where cccccc is the query name and n is a unique number. This allows the same query to be specified more than once in a reporting stream.

Note: The inquiry name must NOT include the '#' character. The '#' character is interpreted by the UNIX environment as a command, which causes an error during the Web publishing process.

Each query name directory holds the body and graph files generated during execution.

5.1.6.7.5 Usage Notes

- o While existing MICF Production Reporting streams do not need a special conversion process to use MWP, a feature is available to set default MWP options.

This feature allows you to specify the MWP options in one stream, and have these options become the default when you edit other streams.

This procedure will only work if both of these are true:

- The report streams were created prior to PSP maintenance BAS7180.
- The report stream had previously specified execution options.

- ___ 1. Select a reporting stream and set the default MWP options.

End out of the stream, making sure to save the stream definition.

- ___ 2. Select another stream, and go to the Execution Options and view MICF Web Publishing options. You can modify these options as necessary.

- ___ 3. Repeat step 2 for other MICF Production Reporting streams.

Note that the MWP option defaults will reset upon exit.

- o When using the IBM HTTP Server, a virtual directory can be created to point the MWP Root Directory by adding a Pass directive in the configuration file.

For example, by adding the following line to the configuration file for the IBM HTTP Server:

Pass `/MICS_MWP/*` `/u/users/MICS/MWP_Root/*`

users can access the directory `/u/users/MICS/MWP_Root` by the virtual name, `MICS_MWP`.

This accomplishes two goals. First, the MWP Root Directory does not have to physically exist in the home directory of the HTTP server. Second, the user will only need to remember the URL of the virtual directory, allowing the name to be changed without their knowledge.

Virtual directories are supported by most web servers, including the IBM HTTP Server.

- o The page `MWP_root/view.html` is considered to be the home page for all reporting streams in the MWP Root Directory.
- o MICF Web Publishing allows the use of multiple MWP Root Directories. However, there is currently no index of root directories.
- o The directory `MWP_root/stream_name/MWP_current/` always points to the most recent execution of a given reporting stream.
- o The page `MWP_root/stream_name/DyymmddThmm/view.html` contains the html to view the output for a reporting stream for a specific execution.

Note: The page name defaults to "view" but can be changed from the Execution Options panel of the Production Reporting Jobstream.

- o If a reporting stream has MICF inquiries that generate graphics using SAS/Graph, the Display Color Graphics options on the Execution Options panel must be set to Y. Otherwise, the graphs will not be shown.
- o If you are providing a custom background image, it can be placed in the `images/directory`.

5.1.6.8 Q&R Integration

The Q&R Integration feature writes MICF inquiry output generated from a production or user reporting job stream to a HFS/zFS directory structure compatible with the CA MICS Q&R Workstation.

This feature utilizes IBM's NFS (Network File System) and Microsoft Windows' CIFS (Common Internet File System) to share UNIX files between the two operating systems. These remote z/OS UNIX files are mounted from the mainframe to appear as local directories or files on the client system.

The NFS uses the communication services provided by TCP/IP, a suite of protocols that includes the remote procedure call (RPC) and External Data Representation (XDR) protocols. RPC allows a program on one machine to start a procedure on another machine, as if the procedure is local. XDR resolves the differences in data representation of different machines. The NFS, then, can be used for file sharing between platforms and file serving (as a data repository).

The Q&R directory structure, coupled with the ability to map the Q&R HFS/zFS directory as an additional drive to the Q&R distributed server, allows the RMWSLOAD utility to read directly from the HFS/zFS directory without moving the data to the distributed server for publication of chart and report output.

For more information on RMWSLOAD, see the Q&R Workstation Administration Guide.

Additional benefits include direct viewing of the directory from Q&R Output Retrieval (see the next section for more information on Output Retrieval.) You do not have to run RMWSLOAD to access job stream output unless you are ready to publish to your web server. This lets you generate View Definition Files to perfect the look of the chart prior to publication.

Finally, sharing the HFS/zFS directory between your z/OS UNIX (USS) environment and Microsoft Windows lets you publish all your CA MICS output (either MWP or Q&R) to one web server, Microsoft Internet Information Services (IIS).

Below is a general overview of the job stream processing.


```

      |
+-----+
| Write all output |
| to Q&R directory |
| structure        |
+-----+
      |
/-----\      +-----+
< hh-mm directory > no | Create dir, |
< already exists? >----->| write output |
\-----/          | files         |
                    +-----+
                    |
                    yes
                    |
+-----+
| Create new      |
| hh-mm dir with |
| execution order |
| appended to time|
| dir: hh-mm(n)  |
+-----+
      |
/-----\      no  +-----+
< More inquiries? >----->| Return max CC, |
\-----/          | end job      |
                    +-----+
                    |
                    yes
                    |
+-----+      /-----\ no
| Execute next inquiry| <Initiate RMWSLOAD?>----->+-----+
+-----+      \-----/          | Done |
                    +-----+
                    |
                    yes
                    |
                    +-----+
                    | Execute MQRNOTIF |
                    | program as last step|
                    +-----+

```

The MQRNOTIF program notifies the Q&R mainframe server that the job stream has completed. The mainframe server notifies the distributed server to begin executing the corresponding RMWSLOAD job.

- o If you are using the Q&R directory structure, RMWSLOAD is scheduled and publishes the output to your web server.
- o If you are using the DTF index as the interface to RMWSLOAD, RMWSLOAD downloads your reporting job stream

output and then publishes the output to your web server.

Review all of these topics before using this feature.

- 1 - Prerequisites
- 2 - Setup
- 3 - Directory Structure
- 4 - Usage Notes
- 5 - Q&R RMWSLOAD

5.1.6.8.1 Prerequisites

Q&R Integration has the following requirements:

- o Available space in a Hierarchical File System (HFS/zFS) directory on a hardware device that can be accessed by a Microsoft Windows distributed server machine. This UNIX directory must be mapped to a drive on the Q&R distributed server for direct access by the distributed server. This facilitates execution of RMWSLOAD to directly read the files in the HFS/zFS directory for subsequent publication.

Sharing files between z/OS USS and a Windows client (Q&R Workstation) requires the use of IBM z/OS NFS (Network File System).

The NFS server enables the client user, remote access to z/OS UNIX file files from a client workstation.

- o Ability to start the distributed server with USS credentials that have the authority to access the HFS/zFS directory in order to read the reporting job stream output. This is only necessary to access the MICF generated output directly from Q&R Query Output Retrieval.

Note: Without the ability to share the drive with a Windows machine, you cannot take advantage of any integration features.

- o The ability to export the HFS/zFS USS directory and map it to the Windows machine running the Q&R distributed server every time the machine is restarted (persistent connection).
- o The installation of the Q&R Workstation feature of CA MICS Release 12.7.

5.1.6.8.2 Setup

The following checklist is used to enable the connection from MICF Reporting Job Stream output to Q&R Workstation.

- ___ 1. The root directory must be located on a hardware device that supports sharing between your mainframe UNIX environment and a Windows environment, such as a NAS (Network Attached Storage) device.
- ___ 2. Create a USS File System to store the MICF generated output to be processed by the Q&R Workstation.

NOTE: The FILESYSTYPE should be TYPE(NFS).

With the z/OS NFS server, the client has remote access to z/OS UNIX files from a client workstation. Using the Network File System, the client can mount all or part of the file system and make it appear as part of its local files system.

See the IBM Unix System Services guide for documentation on creating and mounting a shared file system and the IBM NFS (Network File System) Guide and Reference for information on using, customizing, operating, tuning, and diagnosing the z/OS Network File System (z/OS NFS).

- ___ 3. Map this device to your Q&R distributed server machine. It can be mapped using Windows Explorer, Map Network Drive or by using the NET USE command. Either way, the drive must be allocated so it is available whenever the server machine is restarted.
- ___ 4. To view output created by a MICF Reporting Job Stream directory from Q&R Query Output Retrieval, you must start the Q&R distributed server using credentials authorized in the mainframe UNIX (USS) environment to access the files in the HFS/zFS directory. This is not necessary for RMWSLOAD only access.
- ___ 5. Review the Shared MICF Options, Foreground Execution Parameters definitions to assign defaults to be used for defining reporting job streams and the MICF Web Publishing and Q&R Integration options.
- ___ 6. Review any existing reporting job streams and modify the MWP (MICF Web Publishing) and Q&R Integration execution options as needed.

For example, you might want to have the Q&R Mainframe Server automatically notify the Q&R Distributed Server to schedule RMWSLOAD when the MICF Reporting Job Stream completes.

- ___ 7. Define the Q&R root directory to be used by the Q&R Integration feature. This can be the same directory used by MICF Web Publishing.

Refer to the PIOM Section 5.7 for further information on the activation of USS and HFS/zFS support.

You can use this UNIX mkdir command to create the Q&R Integration root directory in your HFS/zFS:

```
mkdir -p /u/users/CAMICS
```

5.1.6.8.3 Directory Structure

Q&R Integration stores all its information in an HFS/zFS directory and should not be used by other applications. This interface builds a specific directory structure required by the Q&R distributed server.

Note: The inquiry name must NOT include the '#' character. The '#' character is interpreted by the UNIX environment as a command, which causes an error.

```

/Q&R root/+
|
"Server"/+
|
MF server name/+
|
long catalog name/+
|
jobstream_name/+
|
query name - query title/+
|
run date/+ (yyy-mm-dd)
|
run time/+ (hh-mm)
MICSLOG.TXT
SASLIST.TXT
SASLOG.TXT
csv title.CSV

```

Figure 2-75. HFS/zFS Q&R Integration Directory Structure

Q&R root is the name of a directory where the Q&R Integration feature stores MICF inquiry output for access by the Q&R Workstation. The Q&R root can be the same as the MICF Web Publishing root directory as they write different directory structures. Typically you would not activate both MWP and Q&R Integration unless you are migrating from the use of MWP to Q&R to take advantage of the Q&R charting capabilities.

The Q&R root directory must be created before activating this feature and executing your reporting job stream.

Each "query name - query title" directory contains a subdirectory of run date and run time, using the format yyyy-dd-mm/hh-mm.

Each time directory (hh-mm) contains the inquiry output generated during execution. HH-MM is the time of the job stream execution and may not represent the actual time the inquiry itself executed.

- . MICSLOG.txt
- . SASLIST.txt (if no report was generated, it will be empty)
- . SASLOG.txt
- . csv title.CSV

Multiple CSVs can be created in the same MICF inquiry, but must have different titles.

Note: If a job stream contains multiple instances of the same inquiry, for example an inquiry executed multiple times for different units, the nth execution is stored under the hh-mm time with the execution order appended to the directory name. This allows you to differentiate one inquiry output from another by the order in which they executed. For example:

```
. . . ./RMFED1 - MVS CPU and ASID Activity (.csv)
      /2011-09-01
      /10-19
      MICSLOG.txt
      SASLIST.txt
      SASLOG.txt
      Daily - MVS ASID Activity by System.csv
      Daily Percent CPU busy by System.csv
      /10-19 (4)
      MICSLOG.txt
      SASLIST.txt
      SASLOG.txt
      Daily - MVS ASID Activity by System.csv
      Daily - Percent CPU busy by System.csv
```

5.1.6.8.4 Usage Notes

- o The intent of creating the Q&R compatible directory structure is to facilitate access by the Q&R Workstation. It is assumed that this directory is accessible from your Microsoft Windows Q&R distributed server machine.

Important! Although you can delete reports on-demand using the Reporting Jobstream Administration option on the MICF menu, no automatic aging or deletion exists on the mainframe side. It is expected that the Q&R utility RMWSPARE will be used as needed to remove output from the Q&R directory structure written to the HFS/zFS. If you are unable to map this HFS/zFS directory to a Windows machine, do not deploy this feature.

- o As mentioned above, MICF supports deleting output in this directory structure in addition to the MWP directory structure that previously existed. However, since the job stream name is not the highest level within the Q&R directory structure, it is possible that, after executing a delete request, some directories might remain. The delete program can only delete non-empty directories. You should use the Q&R RMWSPARE utility to remove unwanted output.

5.1.6.8.5 Q&R RMWSLOAD

Regardless of whether you choose to write the reporting job stream output as zFS files (Q&R compatible directory structure) or use the DTF Index method to make the output available to the Q&R RMWSLOAD utility, you can automate notification to Q&R when the output is available.

From your reporting job stream Execution Options panel, modify the following options to enable automatic notification from the Q&R Mainframe Server to the Q&R Distributed Server that the job stream has completed and the output is ready to be published.

Q&R Mainframe Svr (MQRMSN)====> _____

Optional. The application name of the CA MICS Q&R Mainframe Server. This is defined in the Q&R Mainframe Server parameter file (sharedprefix.MICS.PARMS member MQRPARMS) as the MQRMSN parameter. If "Use Q&R Compatible Directory Structure" is Y, the MQRMSN value is used as the first directory level after "Server" when building the Q&R directory structure.

If "Initiate RMWSLOAD" is Y, this is the Q&R Mainframe Server that will be notified when the job stream completes. It does not have to be executing on the same system as the job stream.

Required only when "Initiate RMWSLOAD" is Y, or "Use Q&R Compatible Directory Structure" is Y.

Initiate RMWSLOAD ==> N (Y/N)

Required. Specify Y (Yes) to notify the Q&R Mainframe Server when the job stream has completed in order to execute the related RMWSLOAD job. Defaults to N. You do not have to use the Q&R directory structure to use this feature.

RMWSLOAD Job Name ==>

Optional. The job name defined in Q&R Workstation that corresponds to the job stream output you wish to publish. See the Q&R Workstation Administration Guide for more information on the RMWSLOAD utility. Required only when "Initiate RMWSLOAD" is set to Y. Defaults to the name of this job stream.

5.2 Tasks Performed After Installation

The tasks you perform and the tools that you use during the ongoing administration of MICF are the same tasks and tools that you used when initially installing MICF:

- o Administrator Facility Parameters
- o Authorization Assignment
- o Maintaining the shared MICF options
- o Maintaining the shared inquiry catalog
- o Maintaining the shared output catalog
- o Maintaining MICF inquiry production reporting

The applicability of each of these tasks during the ongoing administration of MICF is discussed separately below.

ADMINISTRATOR FACILITY PARAMETERS

You should rarely need to change any of the CA MICS Administrator Facility parameters after you have initially installed MICF. If you do, you reach these parameters in the same way that you did for the initial installation.

Note, however, that changes to the DSPRINT device parameter will not affect MICF after your initial installation. To change this parameter, select the User Profile Parameter option on the Shared MICF Options menu.

You must revisit the CA MICS Administrator Facility parameters if users who attempt to execute large inquiries receive messages indicating failures in the file tailoring service. This can occur if the space allocations for work files are too small. To raise these allocations, use the Data Set Allocation Parameters option on the CA MICS Administrator Facility panel.

AUTHORIZATION ASSIGNMENT

Authorization will be an ongoing task. You must update your authorization tables whenever new users begin using MICF and when existing users' access requirements change. Authorization assignments and reassignments are performed in the same manner as they were during the initial installation of CA MICS.

MAINTAINING THE SHARED MICF OPTIONS

You should rarely need to change any of the shared MICF options after you have initially installed MICF. If you do, you reach these parameters in the same way that you did for the initial installation.

For example, if a new color pen plotter is installed, you might change the shared batch execution parameters to reflect this new device. Changes will be effective for users who have not overridden the shared defaults by selecting the Batch Execution Parameters option from the MICF options menu. Those users who have altered the batch execution parameters will not see your changes.

You should note that MICF parameters are copied from the shared defaults to the user's private defaults in groups. The option groups are:

- o User Profile Parameters
- o Foreground Execution Parameters
- o Batch Execution Parameters

- o Printer Format Parameters
- o Color Graphics Format Parameters. There is a separate option group for each color graphics format set. The number of format sets is unlimited.
- o Data Set Allocation Parameters. There is a separate option group for each of the following MICF data sets: BDTFOUT, BICFUSER, BLOG, BMICSLOG, BREPORT, CAPACITY, DTFINDEX, DTFOUT, LIBRARY, LOG, MICSLOG, OUTPUT, PCATALOG, PDTFINDX, PIXFOUT, PMICSLOG, PMWFPDS, PMWFSAS, PREPORT, PRINT REPORT, SORTWK, TEMPFILE, USER, UTILLOG, UTILMLOG, and WORK. Note also that data set allocation parameters are updated through the CA MICS Administrator Facility Parameters option and not through the Shared MICF Options menu.

The shared defaults apply to those option groups that have not been overridden by the user. For example, most users will alter the User Profile Parameters to specify their own default job cards. Therefore, changes to the shared User Profile Parameters will not be seen by these users. However, your users may not have altered the Data Set Allocation parameters for the SORTWK data set and, therefore, your changes will take effect for these users.

If a user issues the RESTORE command for an option group, his or her options will be reset to the current shared default values. These will differ from the original default values if you have made any changes since the user first tailored these options.

MAINTAINING THE SHARED INQUIRY CATALOG

Maintaining the shared inquiry catalog will be an ongoing task. You may want to delegate the authority to add inquiries to the catalog to other people in your data center. To do so, use the Authorization Assignment facility on the CA MICS Administrator Facility menu.

The tasks of adding and deleting inquiries to the shared inquiry catalog are performed in the same manner as they were during the installation of MICF.

MAINTAINING THE SHARED INQUIRY OUTPUT CATALOG

Maintaining the shared inquiry output catalog will be an ongoing task. You may want to delegate the authority to add inquiry output to the catalog to other people in your data center. To do so, use the Authorization Assignment facility on the CA MICS Administrator Facility menu.

The tasks of adding and deleting inquiry output to the shared inquiry output catalog are performed in the same manner as they were during the installation of MICF.

MAINTAINING MICF INQUIRY PRODUCTION REPORTING

Maintaining MICF inquiry production reporting will be an ongoing task. You may want to delegate the authority to maintain MICF inquiry production reporting jobstreams to other people in your data center. To do so, use the Authorization Assignment facility on the CA MICS Administrator Facility menu.

You can allow other people to access the Production Reporting Administration option and then use your data center's security facilities to limit changes they can implement. For example, you must have UPDATE access to `sharedprefix.MICS.ISPTLIB` to add or delete a production reporting jobstream, or to modify jobstream name, title, associated CA MICS job, and DB ID specifications. However, you can specify the MICF inquiries to be executed with the production reporting jobstream, execution options, and data set allocation parameters without UPDATE authority for `sharedprefix.MICS.ISPTLIB`. Thus, you can allow an application group to control its own production reporting.

The tasks of adding, modifying, and deleting MICF inquiry production reporting jobstreams are performed in the same manner as they were during the installation of MICF.