

Getting Started with MAINVIEW[®] for CICS

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Customer Support

You can obtain technical support by using Response Online™ (comprehensive information from the Web) or Response On Demand™. To expedite your inquiry, please see “Before Contacting BMC Software,” below.

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Before Contacting BMC Software

Before you contact BMC Software, have the following information available so that a technical support analyst can begin working on your problem immediately:

- product information
 - product name
 - product version (release number)
 - license number and password (trial or permanent)
- operating-system and environment information
 - machine type
 - operating system type, version, and service pack or other maintenance level such as PUT or PTF
 - system hardware configuration
 - serial numbers
 - related software (database, application, and communication) including type, version, and service pack or maintenance level
- sequence of events leading to the problem
- commands and options that you used
- messages received (and the time and date that you received them)
 - product error messages
 - messages from the operating system, such as `file system full`
 - messages from related software

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About This Book

This book contains detailed information about MAINVIEW[®] for CICS and is intended for CICS help desk personnel and system programmers who are new to the product. This book contains a series of short exercises designed to teach the fundamental skills needed to start using MAINVIEW for CICS.

To use this book, you should be familiar with the following items:

- Customer Information Control System (CICS) concepts and operations
- Multiple Virtual Storage (MVS) concepts and the Interactive System Productivity Facility (ISPF)
- MAINVIEW windows and full-screen mode

How This Book Is Organized

This book, which introduces MAINVIEW for CICS through a series of short exercises, is organized as follows. In addition, a glossary of terms and an index appear at the end of the book.

Chapter/Appendix	Description
Chapter 1, "Introducing MAINVIEW for CICS"	Provides an overview of MAINVIEW for CICS and its operating environment.
Chapter 2, "Signing On to MAINVIEW for CICS"	Describes how to start a MAINVIEW for CICS session.
Chapter 3, "Navigating in MAINVIEW for CICS"	Shows you how to use the MAINVIEW for CICS window and full-screen interfaces.
Chapter 4, "Accessing Other Systems and Products"	Shows you how to access other CICS systems and other MAINVIEW products while running MAINVIEW for CICS on your local system.
Chapter 5, "Monitoring Service Levels"	Presents exercises for monitoring service levels and setting thresholds.
Chapter 6, "Monitoring Workload Performance"	Shows you how to create a CICS workload and monitor its performance.
Chapter 7, "Tracing Workload Transactions"	Introduces the MAINVIEW for CICS trace facility and shows you how to trace workload transactions.
Chapter 8, "Isolating CICS Performance Problems"	Steps you through a problem-solving scenario using MAINVIEW for CICS.
Chapter 9, "Creating Graphs"	Presents several procedures for graphing CICS performance measures.
Chapter 10, "What Next?"	Highlights additional MAINVIEW for CICS services and tells you where you can find more information on using the product.

Related Documentation

BMC Software products are supported by several types of documentation:

- online and printed books
- online Help
- release notes and other notices

In addition to this book and the online Help, you can find useful information in the publications listed in the following table. As "Online and Printed Books" on page xi explains, these publications are available on request from BMC Software.

Category	Document	Description
Installation documents	<i>OS/390 and z/OS Installer Guide</i>	Provides installation steps and describes auto-customization procedures.
	<i>MAINVIEW Installation Requirements Guide</i>	Describes the product's software and storage requirements.
	<i>Implementing Security for MAINVIEW</i>	Provides procedures to create SAF resource definitions for the services and commands in MAINVIEW for CICS.
	<i>MAINVIEW Common Customization Guide</i>	Describes how to set up the operating environment for MAINVIEW products to your site's requirements.
	<i>MAINVIEW Administration Guide</i>	Describes how to manage and maintain the operating environment for MAINVIEW products at your site.
	<i>MAINVIEW for CICS Customization Guide</i>	Describes how to customize MAINVIEW for CICS for use at your site.
User documents	<i>Using MAINVIEW</i>	Describes how to use the common MAINVIEW interface.
	<i>MAINVIEW for CICS Online Services Reference Manual</i>	Describes the MAINVIEW for CICS online services, including full-screen displays and windows-based views.
	<i>MAINVIEW for CICS PERFORMANCE REPORTER User Guide</i>	Describes how to produce a variety of batch reports, including <ul style="list-style-type: none"> • standard CICS performance and resource reports • custom reports written with the Performance Reporting Language (PRL)
	<i>MAINVIEW for CICS Monitors Guide</i>	Describes how to use the MAINVIEW for CICS data collection monitors.
Release documents	<i>MAINVIEW for CICS Release Notes</i>	Describes the product enhancements and fixes that are included in the current version of MAINVIEW for CICS.

Online and Printed Books

The books that accompany BMC Software products are available in online format and printed format. You can view online books with Acrobat Reader from Adobe Systems. The reader is provided at no cost, as explained in “To Access Online Books.” You can also obtain additional printed books from BMC Software, as explained in “To Request Additional Printed Books.”

To Access Online Books

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In some cases, installation of Acrobat Reader and downloading the online books is an optional part of the product-installation process. For information about downloading the free reader from the Web, go to the Adobe Systems site at <http://www.adobe.com>.

To view any online book that BMC Software offers, visit the support page of the BMC Software Web site at <http://www.bmc.com/support.html>. Log on and select a product to access the related documentation. (To log on, first-time users can request a user name and password by registering at the support page or by contacting a BMC Software sales representative.)

To Request Additional Printed Books

BMC Software provides printed books with your product order. To request additional books, go to <http://www.bmc.com/support.html>.

Online Help

The MAINVIEW for CICS product includes online Help. In the MAINVIEW for CICS ISPF interface, you can access Help by

- pressing **F1**
- issuing the **HELP** command

from any ISPF panel or MAINVIEW window.

Release Notes and Other Notices

Printed release notes accompany each BMC Software product. Release notes provide current information such as

- updates to the installation instructions
- last-minute product information

In addition, BMC Software sometimes provides updated product information between releases (in the form of a flash or a technical bulletin, for example). The latest versions of the release notes and other notices are available on the Web at <http://www.bmc.com/support.html>.

Conventions

This section provides examples of the conventions used in this book and explains how to read ISPF panel-flow diagrams and syntax statements.

General Conventions

This book uses the following general conventions:

Item	Example
information that you are instructed to type	Type SEARCH DB in the designated field.
specific (standard) keyboard key names	Press Enter .
field names, text on a panel	Type the appropriate entry in the Command field.
directories, file names, Web addresses	The BMC Software home page is at www.bmc.com .
nonspecific key names, option names	Use the HELP function key.
MVS calls, commands, control statements, keywords, parameters, reserved words	Use the SEARCH command to find a particular object.
code examples, syntax statements, system messages, screen text	The table <code>table_name</code> is not available.
emphasized words, new terms, variables	The instructions that you give to the software are called <i>commands</i> . In this message, the variable <code>file_name</code> represents the file that caused the error.

This book uses the following types of special text:

Note: Notes contain important information that you should consider.

Tip: Tips contain useful information that may improve product performance or that may make procedures easier to follow.

Chapter 1 Introducing MAINVIEW for CICS

This chapter provides an overview of MAINVIEW for CICS and its operating environment. Knowing beforehand how the various parts of MAINVIEW for CICS work together will help your understanding as you complete the exercises in this book. You also need to understand how MAINVIEW for CICS is integrated with the BBI subsystem.

This chapter begins with a very brief description of how MAINVIEW for CICS fits into the MAINVIEW family of products. Next comes a discussion of the major components of MAINVIEW for CICS. After reading this chapter, you will understand what each component does and how data moves between components. Later chapters give you more details about individual services in MAINVIEW for CICS.

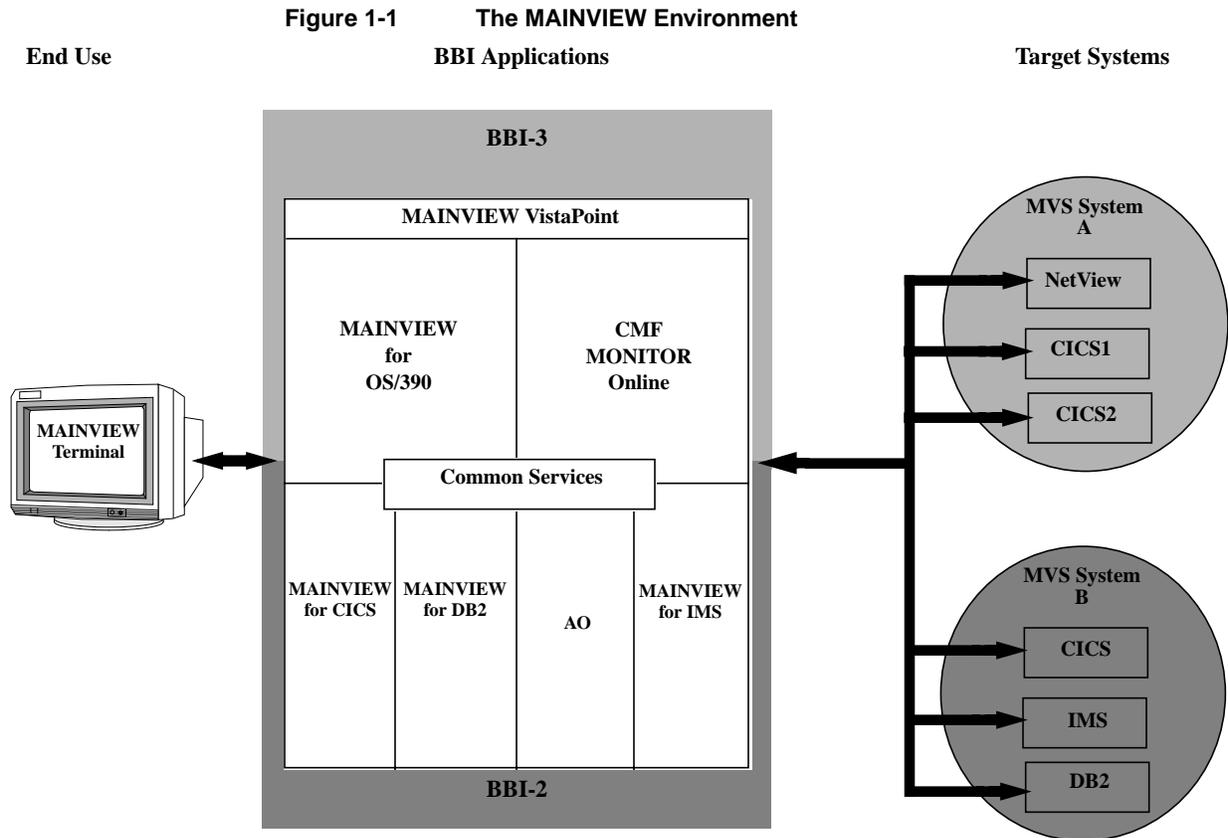
MAINVIEW for CICS and the MAINVIEW Family

MAINVIEW for CICS is one of several MAINVIEW products. Each MAINVIEW product has an assortment of specialized tools and services that are designed to manage or monitor particular target applications. You can use simple line commands to switch between the MAINVIEW products installed at your site. Often hyperlinks between products are provided to further simplify switching.

All MAINVIEW products share a group of common services and similar characteristics that ease the integration of different MAINVIEW products into your installation.

Chapter 4, “Accessing Other Systems and Products,” contains exercises that show you how to move between MAINVIEW for CICS and other MAINVIEW products within a single session.

Figure 1-1 is a representation of the MAINVIEW environment.

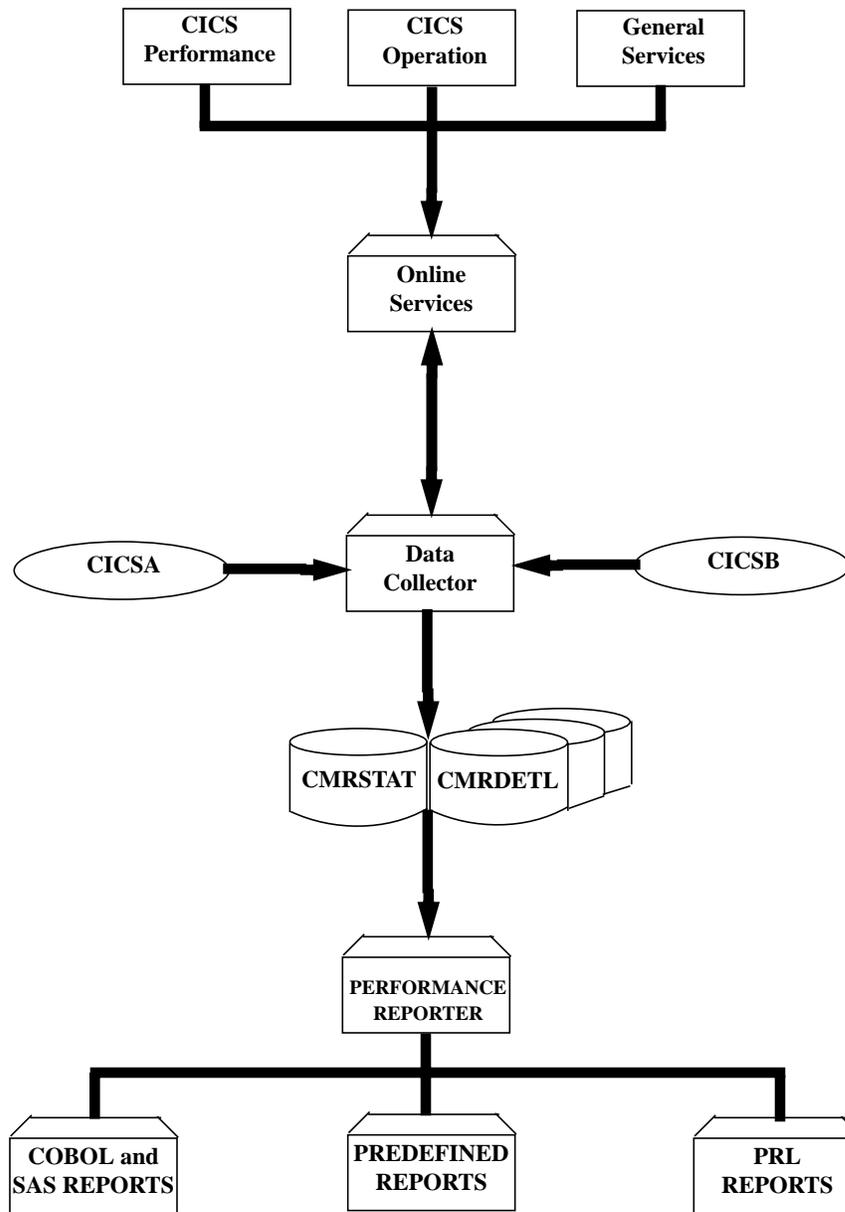


How MAINVIEW for CICS Fits Together

MAINVIEW for CICS is organized into separate online, offline, and data collection components. You use the online services when you want to examine the status and performance of your CICS regions interactively. You use the offline component, called PERFORMANCE REPORTER, to create printed reports from the historical data saved in MAINVIEW for CICS data sets. The data collection component gathers and retains the performance information that is used by both the online and offline components. Most of the online services perform real-time data collection to report on the condition of a CICS region in the short-term.

Figure 1-2 on page 1-3 shows how information is processed by MAINVIEW for CICS. Notice that both the online component and PERFORMANCE REPORTER use the data held in the CMRDETL and CMRSTAT data sets. CMRDETL holds CICS transaction data and CMRSTAT holds CICS system statistics. Both databases are updated periodically by data collectors.

Figure 1-2 Overview of MAINVIEW for CICS



Managing and Monitoring CICS Regions in Real Time

The online services help you manage the performance and operation of your CICS regions. They provide a set of integrated services that track CICS activity in an OS/390 environment.

With the online services you can

- manage CICS resources

- monitor CICS resource utilization
- manage CICS performance at the workload and transaction level
- monitor TCP/IP resources
- define performance thresholds and workloads
- monitor Java virtual machine pools
- receive warnings about conditions exceeding performance thresholds
- control the detailed tracing of CICS transactions
- review resource utilization from an historical perspective

Complete descriptions of the online services are provided in the *MAINVIEW for CICS Online Services Reference Manual*.

Creating CICS Performance Reports

The MAINVIEW for CICS offline component is a batch report facility. PERFORMANCE REPORTER uses selected data from the CMRDETL and CMRSTAT data sets as input to produce a variety of printed reports.

You can produce default, predefined reports or create custom reports. The MAINVIEW for CICS BBSAMP data set contains JCL examples that you can copy and edit to run the programs that create these reports. PERFORMANCE REPORTER also has interfaces that allow COBOL and SAS programs to access the data stored on the CMRDETL and CMRSTAT data sets. This allows users to create their own COBOL and SAS reports with data generated by MAINVIEW for CICS.

You can also create customized reports from the MAINVIEW for CICS data by coding a batch program with the Performance Reporting Language (PRL) control statements. PRL is a high-level, English-like language that uses control statements as verbs, operators, substrings, and variables.

Figure 1-2 on page 1-3 uses the example of paired CMRDETL data sets. Paired CMRDETL data sets can be specified for each CICS region to allow data recording to switch from one data set to another when one becomes full. This gives you the ability to archive a full data set and continue monitoring the CICS region without losing any transaction data.

For complete information about PERFORMANCE REPORTER, refer to the *MAINVIEW for CICS PERFORMANCE REPORTER User Guide*.

MAINVIEW for CICS Data Collection

MAINVIEW for CICS collects both CICS statistical data and transaction performance data based upon parameters that you set when the product initializes. The data collected is determined by the monitors you start and their characteristics. MAINVIEW for CICS has a large number of monitors to check on the status and performance of all types of CICS resources. MAINVIEW for CICS can also collect and save detailed trace information about individual transaction performance.

For complete information about the data collection monitors, refer to the *MAINVIEW for CICS Monitors Guide*.

Before You Begin the Exercises

Now that you understand how MAINVIEW for CICS components fit together, you are ready to get started with the exercises in this book. Before you begin, you should

- Make sure a MAINVIEW coordinating address space (CAS) and a BBI-SS product address space (PAS) are active. Ask your system administrator to start them if they are stopped.
- Verify that you have one or more active CICS regions at your site. Remember the system names of the active regions.
- Confirm that CICS performance data is being stored in MAINVIEW for CICS CMRSTAT and CMRDETL data sets.
- Verify that you have authority through your site security system to access MAINVIEW for CICS displays and execute action services.
- Find out which other MAINVIEW products are installed and active at your site.

Start with Chapter 2, “Signing On to MAINVIEW for CICS.” Next, you can review some navigation techniques in Chapter 3, “Navigating in MAINVIEW for CICS.” After that, the exercises focus on particular MAINVIEW for CICS services and go into more detail about using the product.

Chapter 2 Signing On to MAINVIEW for CICS

Step 1 If your ISPF main menu contains an option for MAINVIEW products, select that option.¹

Alternatively, on the **COMMAND** line of any ISPF panel, type **TSO MAINVIEW**. (MAINVIEW is a CLIST that you or your product administrator created during MAINVIEW for CICS AutoCustomization.)

The MAINVIEW Selection Menu is displayed, as shown in Figure 2-1 on page 2-2.

1. If you are using MAINVIEW Alternate Access, see the *MAINVIEW Alternate Access Implementation and User's Guide* for information about accessing the MAINVIEW Selection Menu.

Figure 2-1 MAINVIEW Selection Menu

```
----- MainView Selection Menu -----
OPTION  ===>                                DATE   -- 01/03/01
                                           TIME   -- 11:34:12
0 Parameters      Specify MainView options   USERID -- BCVTXH1
1 PLEXMGR         MainView Plex administration  MODE   -- ISPF 4.8
2 FOCAL POINT    Subsystem monitoring and alerts
3 AutoOPERATOR   Automation and resource control
A MVALARM        MainView Alarm management
T InTune         Program analysis and tuning
V VistaPoint     Comprehensive view of applications and resources

MainView for
4 CICS           CICS performance and control
5 DB2            DB2 performance and control
6 IMS            IMS performance and control
7 MVS            OS/390 (MVS) performance and control
8 MQSeries       MQSeries performance and control
9 USS            UNIX System Services performance and control
10 VTAM          VTAM Network performance and optimization
11 TCP/IP        TCP/IP performance
12 WEBSPPHERE    WEBSPPHERE performance
X EXIT          Terminate MainView

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```

Step 2 You can enter any installed MAINVIEW product from this menu. To access MAINVIEW for CICS, select option **4, CICS**.

The Parameter Confirmation panel appears, as shown in Figure 2-2.

Figure 2-2 MAINVIEW for CICS Parameter Confirmation Panel

```
BMC Software ----- Parameter Confirmation -----MainView for CICS
Command  ===>

Confirm parameters for this session of MainView for CICS:

Context  ===> ALL           Default context
Screen   ===> MVCICS       Initial screen
Mode     ===> WINDOW       Window/FullScreen (Initial Mode)
Confirm  ===> YES          Yes/No (Show this panel at next session startup)

Press Enter to continue or press HELP for additional information.
```

This panel prompts you to confirm the parameters for your MAINVIEW for CICS session. The first time you sign on, the default parameters are

- a context of all active CICS regions
- an initial screen of MVCICS, which displays an Easy Menu called EZCFSSI
- a primary display mode of MAINVIEW windows mode

You can change the parameters for a session by changing the values on this confirmation panel. You can also change the default parameters for future sessions of MAINVIEW for CICS by using option 0.1, Parameters–Windows Mode, of the MAINVIEW Selection Menu.

Step 3 Press **Enter** to accept the default session parameters.

The EZCFSSI view appears, as shown in Figure 2-3 on page 2-4.

Note: Depending on your MAINVIEW settings, you may see the Session Control Parameters panel first. This panel prompts you to specify (or confirm) the CAS subsystem ID to be used for this session. If you are not sure what CAS ID to use, check with your system administrator.

Figure 2-3 EZCFSSI View

```

19MAR2001 08:51:54 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ====>                                SCROLL ====> PAGE
CURR WIN ====> 1          ALT WIN ====>
W1 =EZCFSSI===== (BCVDVPC==*=====) 19MAR2001==08:51:54===MVCICS===D===1
                                CICS SSI Menu

      Region Views                                Other Menus
. Region Analysis                                +-----+ > CICS SSI Menu
. Region Overview                                | Place cursor on |
. Region Summary by MVS                          | menu item and   | > Task Menu
. Region Problems                                | press ENTER     | > Monitor Menu
. Region Settings                                +-----+ > Workload Menu
. Initialization Parmns                          > Resource Menu
. 2 Hour Region Analysis                        Resource Views > Operations Menu
. Transactions
. Programs
Task Views
. User Tasks
. All Tasks
. Lock Analysis
. DSA Utilization
. File Utilization
. Transaction Classes
. TCPIP Services

Monitor Views
. All Monitors
. By Target
. By Type
. By Area

Operation Views
. Temp Storage Queues
. Cplng. Fac. TS Queues
. Auto. Init. Descs.
. Intv. Ctrl. Elements
. JAVA Virt. Mach. Pool

Tools & Utilities
> Access Target Menu
> Fullscreen Menu
> Select View
> Set SSI Context
> Set Target Context
> Set Product Context
> CICS Automation (*)
> MAINVIEW VistaPoint (*)

Workload Views
. Response Time Overview
. Response Time Flow
. Objective Review
. Return ...

(*) Requires associated
MAINVIEW product

```

Some MAINVIEW for CICS online services operate in windows mode, while others operate in full-screen mode. The EZCFSSI view is a good starting point for working in windows mode. It provides direct access to context-oriented services for groups of CICS regions.

However, if you expect to make more use of the full-screen services for a single CICS target, you should specify **FULLSCREEN** in the **Mode** field of the Parameter Confirmation panel. In that case, the MAINVIEW for CICS Primary Option Menu, shown in Figure 2-4, is displayed when you sign on, rather than the EZCFSSI view.

Figure 2-4 MAINVIEW for CICS Primary Option Menu

```
BMC Software ----- PRIMARY OPTION MENU ----- MAINVIEW for CICS
OPTION ===>                                     DATE -- 00/04/14
                                                TIME -- 08:37:33
                                                USERID -- JSMITH2
                                                MODE -- ISPF 4.8

Managing CICS Performance:
P PERFORMANCE - Examine Performance Indicators
G GRAPHICS - View Graphic Displays
H HISTORY - Review Transaction History
S SERVICE - Service Menu
V PLEX MONITORS - Multiple System Performance Monitoring

Managing CICS Operation:
1 STATUS - Display/Modify Status of a CICS System
2 NETWORK - Display/Modify Network Components
3 FILES - Display/Modify File Status
4 PROGRAMS - Display/Modify Programs and Transactions
5 STORAGE - Display/Modify Storage Information

General Services:
C CYCLE SETUP - Service Refresh Cycle Setup
L LOG DISPLAY - Display Logs
M MESSAGES - Display Messages and Codes
K KEYS - Current PF Key Assignments
T TUTORIALS - Tutorials

PF1/13: HELP
PF3/15: EXIT

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```

The next chapter gives you an opportunity to work with the MAINVIEW interface.

Chapter 3 Navigating in MAINVIEW for CICS

This chapter explains how to move around in an online MAINVIEW for CICS session. MAINVIEW for CICS provides its services through the MAINVIEW interface. Some of the data is presented in windows mode and some is presented in full-screen mode. The exercises in this chapter will help you become familiar with both aspects of the interface.

For complete information about working in both modes, see *Using MAINVIEW*.

Navigating in MAINVIEW Windows Mode

When you operate in windows mode, MAINVIEW for CICS data can be displayed in one or more windows (up to a maximum of 20) on your screen. This section presents a simple scenario for using the capabilities of MAINVIEW windows mode.

Step 1 Display the EZCFSSI view, as shown in Figure 3-1.

Figure 3-1 EZCFSSI View

```

19MAR2001 08:51:54 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ===>                                SCROLL ===> PAGE
CURR WIN ===> 1          ALT WIN ===>
W1 =EZCFSSI===== (BCVDVPC==*=====)19MAR2001==08:51:54===MVCICS===D===1
                                CICS SSI Menu

      Region Views                                Other Menus
. Region Analysis                                +-----+ > CICS SSI Menu
. Region Overview                                | Place cursor on |
. Region Summary by MVS                          | menu item and   | > Task Menu
. Region Problems                                | press ENTER     | > Monitor Menu
. Region Settings                                +-----+ > Workload Menu
. Initialization Parmns                          > Resource Menu
. 2 Hour Region Analysis                        Resource Views > Operations Menu
. Transactions
. Programs
Task Views
. User Tasks
. All Tasks
. Lock Analysis
. DSA Utilization
. File Utilization
. Transaction Classes
. TCPIP Services

Monitor Views
. All Monitors
. By Target
. By Type
. By Area

Operation Views
. Temp Storage Queues
. Cplng. Fac. TS Queues
. Auto. Init. Descs.
. Intv. Ctrl. Elements
. JAVA Virt. Mach. Pool

Tools & Utilities
> Access Target Menu
> Fullscreen Menu
> Select View
> Set SSI Context
> Set Target Context
> Set Product Context
> CICS Automation (*)
> MAINVIEW VistaPoint (*)

. Return ...

(*) Requires associated
MAINVIEW product
    
```

EZCFSSI is one of the primary Easy Menus for MAINVIEW for CICS. This menu is most useful when you want a single-system image (SSI) view of the CICS regions in your CICSplex. Notice that the Context field on the window information line says ALL. Many of the options on this menu take you directly to displays of data for the group of CICS regions named as the context (in this case, all active regions).

The options on EZCFSSI can take you to

- windows-based MAINVIEW for CICS views
- other Easy Menus
- other MAINVIEW products

Each option on this menu is a hyperlink. You can simply position your cursor on an option and press **Enter** to move to the next view or menu.

Step 2 Tab to **Region Analysis** and press **Enter**.

The CREGION view is displayed, as shown in Figure 3-2.

Figure 3-2 CREGION View

```

09MAR2001 10:45:51 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ==>                                SCROLL ==> PAGE
CURR WIN ==> 1          ALT WIN ==>
>W1 =CREGION===== (BCVDVPC==*=====) 09MAR2001==10:45:51===MVCICS===D===5
CMD Target  Intvl SMF      Total      Total  EXCP  Real  Page  Disp  %Max  Tran
--- Name    Time- ID        CPU  %CPU  Excp  Rate   Stg  Rate  Prty  Task  Rate
BCVCD410 10:45 SJSC -----
BCVCD520 10:45 SJSC -----
BCVCD510 10:45 SJSC -----
BCVCD610 10:45 SJSC 12.37  0.1  3620  0.00  571  0.00  FD   10.0  0.00
BCVCD530 10:45 SJSC  7.06  0.0  3771  0.00  545  0.00  FD    5.0  0.00
    
```

If you want to see more detailed information about one of these CICS regions, you can keep the CREGION view in one window and display a detail view in another.

Blank fields indicate inactive regions monitored by MAINVIEW for CICS.

Step 3 Open a second window.

- 3.A** On the **COMMAND** line, type **HS** for a horizontal split of the screen. (To split the screen vertically, type **VS**.)
- 3.B** Position the cursor where you want the new window to begin.
- 3.C** Press **Enter**.

You should now see an open window below the CREGION view. Notice the window status value, T2, which means it is window number 2 and it is in a temporary state (that is, it is open with no data displayed).

Step 4 In the **ALT WIN** field, type **2**. (You do not need to press **Enter**.)

The **ALT WIN** field tells MAINVIEW for CICS where to display the output of a hyperlink. In this case, we want to hyperlink from a field in window 1 and have the output appear in window 2.

Note: If the **ALT WIN** field is left blank, the output appears in the same window as the view that launched the hyperlink. The new view replaces the original view.

Step 5 In the CREGION view, position the cursor in the **Total CPU** field for a CICS region and press **Enter**.

The CREGDET6 view now appears in window 2 and CREGION is still displayed in window 1, as shown in Figure 3-3.

Figure 3-3 CREGION and CREGDET6 Views

```

09MAR2001 10:53:46 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 2          ALT WIN ==>>
>W1 -CREGION----- (BCVDVPC--*-----)09MAR2001--10:45:51---MVCICS---D---5
CMD Target  Intvl SMF      Total      Total  EXCP  Real  Page  Disp  %Max  Tran
--- Name    Time- ID        CPU  %CPU  Excp  Rate  Stg  Rate  Prty  Task  Rate
BCVCD410 10:45 SJSC -----
BCVCD520 10:45 SJSC -----
BCVCD510 10:45 SJSC -----
BCVCD610 10:45 SJSC 12.37 0.1 3620 0.00 571 0.00 FD 10.0 0.00
BCVCD530 10:45 SJSC 7.06 0.0 3771 0.00 545 0.00 FD 5.0 0.00
W2 =CREGDET6===== (BCVDVPC==BCVCD610)09MAR2001==10:53:46===MVCICS===D===1
Target Name... BCVCD610 Realtime Stats... MVS Overview..
CICS Applid... BCVCD610 % MaxTask..... 10.0 Addr Space ID A3
System Id.... D610 Average Response 0.00 Real Storage. 615
Release..... 610 Tran Rate..... 0.01 Dispatch Prty FD
SMF Id..... SJSC Tran Count..... 1
Status..... ACTIVE % Using CPU.... 0.07 DSA ID..... %InUse
EXCP Rate..... 0 CDSA..... 64.0
Subsystem Ids. Paging Rate.... 0.00 UDSA..... 0.0
DB2 ssid.... DB2H SDSA..... 4.6
DB2 Threads.. Interval Stats... RDSA..... 66.4
DBCTL ssid... Average Response 0.00 ECDSA..... 76.3
DBCTL Threads Tran Rate..... 0.02 EUDSA..... 0.0
Tran Count..... 8 ESDSA..... 1.1
Temp Storage.. % Using CPU.... 0.07 ERDSA..... 92.5
String Waits. 0 EXCP Rate..... 0
Buffer Waits. 0 Paging Rate.... 0.00 Problem Type.. Count
Information.. 0
Transient Data Session Stats... Warning..... 0
String Waits. 0 Average Response 0.01 Severe..... 0
Buffer Waits. 0 Tran Rate..... 0.02 Total..... 0
Tran Count..... 255
Loader Stats.. Total CPU..... 12.70
Pgm Fetches.. 0 EXCP Count..... 3620
Fetch Time... 00:00:00 Paging Rate.... 0.00
    
```

Notice that the CURR WIN field shows a value of 2, which means any commands you type on the COMMAND line affect window 2. You can close the second window now.

Step 6 On the COMMAND line, type **CLOSE** and press **Enter**.

Window 2 closes and window 1 remains open. With the CREGION view still displayed, take a moment to explore the MAINVIEW for CICS windows mode online help.

Step 7 On the window information line, position the cursor on the view name, CREGION, and press the Help key (**PF1**).

Help for the CREGION view appears in a pop-up window, as shown in Figure 3-4 on page 3-5.

Figure 3-4 CREGION View with Help Displayed

```

09MAR2001 10:56:06 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 1          ALT WIN ==>>
>W1 =CREGION===== (BCVDVPC==*=====)09MAR2001==10:45:51====MVCICS===D====5
CMD Target  Intvl SMF    Total      Total  EXCP  Real  Page Disp  %Max  Tran
--- Name    Time- ID      CPU  %CPU  Excp  Rate  Stg  Rate Prty  Task  Rate
BCVCD410 10:
BCVCD520 10:  Help                      CREGION                      Help  -----
BCVCD510 10:  Command ==>>                                Scroll ==>> PAGE  -----
BCVCD610 10:  -----
BCVCD530 10:                                     0.00
                                                0.00

CREGION provides a performance analysis of each
CICS region within the current context. Several
key indicators are displayed that represent the
status of the CICS region.

For more information on this view, place the
cursor on one of the following topics and press
ENTER.

    o Actions available from this view

    o Elements in this view

    o Positional parameters

    o Keyword parameters

    o Forms that are valid for this view

    o Sort information

CREGION is a TABULAR view.

```

Note: In some older versions of ISPF, the help panel occupies the entire screen.

View help presents a description of the view and a list of hyperlinked topics that offer more specific information, such as the actions you can perform, the fields that are included, and any parameters that apply.

You can display help for a particular field on a view by placing the cursor in the field (on the column head or within the data) and pressing the Help key.

Step 8 Press the End key (**PF3**) to return to CREGION.

CREGION is just one of many MAINVIEW for CICS views that you can display in windows mode. In addition to accessing views from Easy Menus or by hyperlinking from one view to another, you can type the view name directly on the COMMAND line. To do this, you need to know what views are available.

Step 9 On the **COMMAND** line, type **VIEWS** and press **Enter** to display the VIEWS view.

VIEWS is a complete list of the MAINVIEW for CICS views that can be displayed in windows mode, including

- Easy Menus (such as EZCFSSI and EZCICS)
- monitor views (such as CMON and CSERV)
- monitor graph views (such as C@ELAP)
- workload views (such as COBJ and CFLOW)
- operation views (such as CAIDS and TSQUEUE)
- region views (such as CREGION and CREVIEW)
- resource views (such as CCONN and CFILE)
- task views (such as TASK)

By default, VIEWS is sorted by view name. If you are not sure of a view name, but you know what type of data it contains, you can sort the list to make finding the view easier.

Step 10 Sort the contents of the view.

10.A On the **COMMAND** line, type **Sort**.

10.B Place the cursor in the **Area** field.

10.C Press **Enter**.

VIEWS reappears with the views sorted according to the type of data they contain, as shown in Figure 3-5.

Figure 3-5 VIEWS View Sorted by Area

```

14APR2000 08:56:32 ----- INFORMATION DISPLAY -----
COMMAND ===>                                SCROLL ===> PAGE
CURR WIN ===> 1          ALT WIN ===>
>W1 =VIEWS=====CICSA510==*=====14APR2000==08:56:32===MVCICS===D==288
C View Name Product Area Description
-----
CWKLDDEF MVCICS ADMIN Workload Definition List
DSLIST MVCICS ADMIN List Historical data sets
SECURITY MVCICS ADMIN Security Views
CAIDSD MVCICS Detail AIDS Entry Detail
CCONND MVCICS Detail Connection Detail
CCONND1 MVCICS Detail Connection Count Detail
CFILED MVCICS Detail File Detail
CFILED1 MVCICS Detail File I/O Detail
CFILED2 MVCICS Detail File VSAM Detail
CICESD MVCICS Detail ICES Entry Detail
CPROGD MVCICS Detail Program Detail
CREGDET0 MVCICS Detail Region Details - CICS Inactive
CREGDET4 MVCICS Detail Region Details - CICS 410
CREGDET5 MVCICS Detail Region Details - CICS 510
CREGDET6 MVCICS Detail Region Details - CICS 520
    
```

In this exercise, you learned how to

- use MAINVIEW for CICS Easy Menus
- hyperlink from one view to another
- open and close windows
- display online help information

You also learned to display a view in different ways, by either performing a hyperlink or typing a command.

Navigating in MAINVIEW Full-Screen Mode

When you operate in full-screen mode, MAINVIEW for CICS services are shown on your entire screen in a traditional ISPF-like interface. This section illustrates the different navigational methods you can use with MAINVIEW for CICS full-screen displays. The exercises in the following sections show you how to

- use the MAINVIEW for CICS Primary Option Menu
- move directly to another MAINVIEW for CICS full-screen service with a fast path command
- use the EXPAND services offered by MAINVIEW for CICS to move through a series of related displays

- navigate to the common MAINVIEW services and standard MAINVIEW for CICS panels using navigational commands

Using the Primary Option Menu

The MAINVIEW for CICS Primary Option Menu is the starting point for working in full-screen mode. This exercise shows you how to use this menu to access MAINVIEW for CICS displays.

- Step 1** On the MAINVIEW Selection Menu, select **Option 4, CICS**.
- Step 2** When the Parameter Confirmation panel appears, type **fullscreen** in the **Mode** field and press **Enter**.

Note: You can leave the other parameters as they are. The Context and Screen values are ignored when you specify full-screen mode.

The Primary Option Menu is displayed.

- Step 3** In the **OPTION** field, type **4** and press **Enter** to select the **PROGRAMS** option.

The Program Management Menu appears, as shown in Figure 3-6.

Figure 3-6 Program Management Menu

```

BMC Software ----- PROGRAM MANAGEMENT MENU ----- TIME: 08:37:55
COMMAND ==>>> CICS ==>> BCVCD610

1 PROGRAM - CICS Program Status
3 SUFFIX - Current CICS Suffixes
4 TRAN - Transaction Status
5 NUCLEUS - CICS Nucleus Programs
6 EXITS - Task Related and Global User Exits
7 REMOTES - Remote CICS Program Status
8 LPA - MVS Link Pack Areas (LPA)
9 TCB - MVS Task Control Blocks (TCB)
10 TCLASS - Transaction classes display
    
```

This menu provides access to a variety of program-related data displays.

- Step 4** On the **COMMAND** line, type **6** and press **Enter** to select the **EXITS** option.

The EXITS Display appears, as shown in Figure 3-7.

Figure 3-7 EXITS Display

```

BMC SOFTWARE ----- EXITS DISPLAY ----- TIME: 12:31:44
COMMAND ==>> CICS ==>> CICSPROD
EXIT      LOAD      EXIT      ENTRY     EXIT     GLOBAL   GLOBAL   TASK  CICS
NAME      MODULE     PROGRAM   ADDRESS   START   ADDRESS  SIZE     SIZE  LOAD  RPL
TASKSTART CMRTRUE3   CMRTRUE3  000F5E40  YES
XKCREQ    CMRKCPX3   CMRKCPX3  83ADBCC8  YES
XFCREQ    CMRKCPX3   CMRKCPX3  83ADBCC8  YES
XMNOUT    CMRCMPX3   CMRCMPX3  83ADA320  YES
XICREQ    CMRKCPX3   CMRKCPX3  83ADBCC8  YES
XDLIPRE   CMRKCPX3   CMRKCPX3  83ADBCC8  YES
XDLIPOST  CMRKCPX3   CMRKCPX3  83ADBCC8  YES
    
```

This is an example of the type of data display that MAINVIEW for CICS provides in full-screen mode.

- Step 5** Press the End key (PF3) to redisplay the Program Management Menu.
- Step 6** Press the End key again to return to the Primary Option Menu.

Moving between MAINVIEW for CICS Services

This exercise shows you how to move between MAINVIEW for CICS services without having to select options from intervening menus. Fast path commands provide a way to move directly from one service to another.

- Step 1** Display the MAINVIEW for CICS Primary Option Menu.
- Step 2** On the COMMAND line, type 3.4 and press Enter.

The JOURNAL Display appears. Notice that you moved directly to the JOURNAL service from the Primary Option Menu without going through the intervening FILES option menu. You moved directly to this display by stacking your menu options together.

You can move directly to any MAINVIEW for CICS service from the Primary Option Menu by typing the necessary menu options consecutively, separated by periods. You can use a similar form of fast path navigation from any MAINVIEW for CICS display panel.

- Step 3** On the COMMAND line of the JOURNAL Display, type =1.10 and press Enter.

The DSA Display appears. You moved directly to the DSA service from the JOURNAL service without going through either the Primary Option Menu or the STATUS option menu. Typing a fast path command preceded by an equal sign (=) from any service display takes you directly to the requested display.

Step 4 On the **COMMAND** line of the DSA Display, type **EX region** and press **Enter**.

The REGION Display appears. You can move directly to any MAINVIEW for CICS display by invoking the appropriate service with the EXEC command. In this case, the region parameter by itself invokes the REGION service with its default parameters.

Step 5 On the **COMMAND** line of the REGION Display, type **EX journal dfhj01* o**.

The first parameter specifies the journal names to display with the JOURNAL service. All of the listed journals should have names that begin with DFHJ01. The second parameter further filters the displayed journals to those with an open status.

Figure 3-8 on page 3-10 shows the JOURNAL Display that appears when you press **Enter**.

Figure 3-8 JOURNAL Display with Filtered Data

```

BMC SOFTWARE ----- JOURNAL  DISPLAY ----- TIME: 13:12:58
COMMAND ==> CICS ==> CICSPROD
  JOURNAL DEV  CREATE  ---JOURNAL--- RECORDS  BLOCK --BUFFER--  AVG  ARCHJCL
   ID.  CUU  DATE  TYPE  DCB  MODE  WRITTEN  COUNT FULL  SIZE  SIZE MEMBER
DFHJ01A D30 1999:041 DISK2 OPE SIO      2110     703   2 6000   756 DFH$ARCH
DFHJ01B D31 1999:041 DISK2 OPE SIO       123      13   0 6000   342 USR$J02
DFHJ01X D33 1999:041 DISK2 OPE SIO     41221    1733   0 6000  5460 USR$J03
***** END OF DATA *****
    
```

Using parameters to filter out unwanted data with the EXEC command is a particularly effective way to navigate. You can specify what data you want the service to display when you navigate to it. The *MAINVIEW for CICS Online Services Reference Manual* describes each service and lists its executable name.

Expanding a Display Field

A useful feature of MAINVIEW for CICS is the ability to move directly to another service to get more details about an entry shown on the current service display. In full-screen mode, this is referred to as *expanding* a field or line of a service.

Step 1 On the **COMMAND** line of any full-screen display, type the fast path command =1.9 and press **Enter**.

The DB2TASK Display shows the status of current DB2 tasks.

Step 2 Move the cursor to a specific DB2 task.

Step 3 Press **Enter** or the Expand key (**PF5**).

Figure 3-9 shows the DB2TXPND Display that presents expanded information about the DB2 task you selected from the DB2TASK Display.

Figure 3-9 DB2TXPND Display

```

BMC SOFTWARE ----- DB2TXPND DISPLAY ----- TIME: 14:27:42
COMMAND ==>> CICS ==> CICSPROD

EXPANSION OF TASK # __230, TRANSACTION: CIC1, PROGRAM: CIC1MAIN
TASK CURRENT STATUS: DB2 - WAIT FOR DB2 REQUEST COMPLETION
PLAN NAME CI2102P DATABASE REQUEST MODULE CIC1MAIN
AUTHORIZATION ID CICS2102 STATEMENT NUMBER 3188
CORRELATION ID GT00CIC1 CURRENT SQL REQUEST FETCH
TERMINAL IDENT. SC45

- - - - - S Q L A C T I V I T Y W A I T S - - - - -

COUNT ELAPSED COUNT ELAPSED
SELECT 22 134 ms OPEN 1 84 ms
INSERT 45 4 s CLOSE
UPDATE 12 2 s FETCH 738 3 s
DELETE OTHERS
COMMIT 2 2 s TOTAL 820 11 s
    
```

Step 4 On the **COMMAND** line of the DB2TXPND Display, type **ex ppst** and press **Enter**.

The PPST Display is displayed with information about active DL/I transactions, including storage addresses.

Step 5 Move the cursor to a storage address listed in the **I/O-AREA ADDRESS** field and press **Enter** or the Expand key (**PF5**).

The Dump Display appears, showing the contents of storage, beginning with the address you expanded from the I/O-AREA ADDRESS field. The DUMP service allows you to display and modify CICS storage. Standard search commands such as FIND and LOCATE can be used to find specific data within the Dump Display.

Tip: All storage addresses shown on any MAINVIEW for CICS service display can be expanded with the DUMP Display service.

Step 6 Press the End key (**PF3**).

Just as you can expand information, you can back out of the expanded displays to return to a previous service with a more global presentation of the same data. Moving up and down a defined sequence of expand services gives you the ability to select the level of detail you need when examining CICS performance data.

Step 7 Keep pressing End (**PF3**) until you return to the Primary Option Menu.

You are returned back through every service that you entered in this exercise in reverse order.

Navigating to the Common Services

You can use navigational commands to access the common services shared by MAINVIEW for CICS and other MAINVIEW full-screen products. This exercise presents the commands you can use to start these services without having to select them from the Primary Option Menu. In addition, this exercise shows how to use several commands that return you directly to your designated primary MAINVIEW panel.

Step 1 On the **COMMAND** line of any full-screen display panel, type **keys** and press **Enter**.

The Program Function keys panel that you see allows you to modify the current commands assigned to PF keys. By entering a command name associated with a PF key and saving the definition to your profile, you can create keystroke combinations that are useful for specific services or applications.

The General Services listed at the bottom of the MAINVIEW for CICS Primary Option Menu are accessible with commands from anywhere within an online session.

Tip: The following commands invoke full-screen General Services:

KEYS	Program Function Keys
LOG or JOURNAL	System Log Display
MSG	Messages and Codes List
CYCLE or REFRESH	Service Refresh Cycle

Step 2 On the **COMMAND** line, type **return** and press **Enter**.

The RETURN command returns you to the MAINVIEW for CICS Primary Option Menu. Rather than backing out to the Primary Option Menu by repeatedly pressing the End key, use the RETURN command to go to it directly.

Step 3 Type **2.4** as a fast path command and press **Enter** to go directly to the VTAM Display.

Step 4 Type **init** and press **Enter**.

The INIT command returns you to the panel that is specified as your initial MAINVIEW panel. The INIT command is useful if you are stacked deeply in MAINVIEW for CICS displays and want to return to your main panel quickly.

Your site may have the MAINVIEW for CICS Primary Option Menu specified as the initial MAINVIEW panel if it is the only full-screen product installed. In this case, you return to the MAINVIEW for CICS Primary Option Menu.

You could return to the MAINVIEW Selection Menu if you have other full-screen products installed. You return to one of these panels with the INIT command depending upon which one was specified as your site's initial panel when MAINVIEW for CICS was customized.

Step 5 On the **COMMAND** line of your initial MAINVIEW panel, type **x** and press **Enter**.

The X command terminates the BBI Terminal Session (BBI-TS) and returns you to the environment where you normally begin your BBI-TS session. You can enter the equivalent command from within a MAINVIEW for CICS service panel by prefixing an equal sign before the X command (=x) to exit from your BBI-TS session.

Displaying Online Help

The exercises in this section explain how to display online help from various points in the MAINVIEW for CICS full-screen interface.

Getting Help for a Display

MAINVIEW for CICS provides an extensive help system that describes every full-screen display and every field on a display. This exercise shows how to get more information about the TEMPSTRG display.

- Step 1** On the **COMMAND** line of the Primary Option Menu, type **3.6** and press **Enter** to see the TEMPSTRG display.
- Step 2** On the **COMMAND** line, type **help** and press **Enter**. Alternatively, you can press the Help key (**PF1**).

The help panel for the TEMPSTRG display appears, as shown in Figure 3-10.

Figure 3-10 Help Panel for the TEMPSTRG Display

```

BMC Software ----- TEMPSTRG DISPLAY ----- TIME: 06:43:03
COMMAND ==>>> CICS ==>> CICSPRD2

COMMAND NAME  TEMPSTRG          ABBREVIATION  TEMP

Displays statistics on Temporary Storage (TS) definition and usage.
This display provides the information needed to properly install and
maintain this facility.

The EXPAND function will display a map of Temporary Storage Auxiliary.

FORMAT      EXEC TEMPSTRG

The entries in temporary storage are shown on the TSUT display.

For further field information, place the cursor on any field in the
TEMPSTRG screen and press the HELP PF key.
    
```

The help panel for a display provides general information about the display, the command that generates it, and any related displays.

- Step 3** Press the End key (**PF3**) to exit the help panel and return to the TEMPSTRG display.
- Step 4** Position the cursor on the **Number of Control Intervals** field and press the Help key (**PF1**).

Figure 3-11 on page 3-15 shows the help panel that appears.

Figure 3-11 Help Panel for a TEMPSTRG Field

```

BMC Software ----- TEMPSTRG DISPLAY ----- TIME: 06:45:21
COMMAND ==>>> CICS ==>> CICSPRD2

TOTAL NUMBER OF CONTROL INTERVALS

This is the number of Control Intervals (CI) assigned to the
data set for Temporary Storage (TS) auxiliary storage.

Insufficient CIs can cause CICS to suspend user tasks that
issue put requests. Make the data set large enough to hold
all the records needed.

CICS will extend the data set when secondary extents exist.
The individual CIs will be added to the available pool only as
they are required. Once all CIs in the new extent are
exhausted, another extent will be obtained. This will
continue until all extents are exhausted.
    
```

Each field in a MAINVIEW for CICS full-screen display has an accompanying help panel. You can move to the field help directly by placing your cursor over the field and pressing the Help key. You can also see all of the other help panels for a display by scrolling through them with the designated PF scroll keys.

- Step 5** Press the End key (**PF3**) to exit the field help panel and return to the TEMPSTRG Display.

Getting Help for a Message

Occasionally, you may receive an information or warning message when you are using a MAINVIEW for CICS online service. The message may indicate that you forgot to complete a required field in a menu or entered the wrong type of information. This exercise shows how to get more information about the message that appears when you request the TEMPSTRG display without a defined CICS target.

- Step 1** Move your cursor to the **CICS** field in the upper right corner of the TEMPSTRG display. Delete the target name from the field and press **Enter**.

MAINVIEW for CICS must have a defined target before it can display any data. Because the CICS field is blank, a MAINVIEW for CICS error message should appear beneath the COMMAND line of the TEMPSTRG Display.

Figure 3-12 on page 3-16 shows that the data portion of a display is left blank when an error occurs before the display is initially invoked.

Figure 3-12 Error Message on a Full-Screen Display

```

BMC Software ----- TEMPSTRG DISPLAY ----- TIME: 11:02:59
COMMAND ==>                                     CICS ==>
FT439E  REQUEST DID NOT COMPLETE JOB NOT IN BBIJNT00
                TEMPORARY STORAGE
    
```

Step 2 Type **help** and press **Enter** or press the Help key (**PF1**).

MAINVIEW for CICS takes you to a message help panel rather than the display help when a message appears on the screen.

Figure 3-13 Message Help Panel

```

BMC Software ----- MESSAGES AND CODES ----- TIME: 11:16:02
COMMAND ==>                                     CICS ==>
(MESSAGE ID or ABEND CODE)      FT439
-----
FT439  REQUEST DID NOT COMPLETE - REASON CODE

REASON  The request could not be completed.  A short description of
        the reason is shown.

SYSTEM  Any data available from the request is presented.
ACTION

USER    A detailed description for the reason code can be found in the
ACTION  messages application.  Reason codes are listed alphabetically
        at the beginning of the messages.

ORIGIN  ISYFACT
        ISYGRAF
    
```

Figure 3-13 shows the characteristic format of message help panels. Descriptions and recommendations for the specific message appear in the help panel fields.

Step 3 Press the End key (**PF3**) to return to the TEMPSTRG Display.

Step 4 On the **COMMAND** line, type **msg** to go directly to the MAINVIEW for CICS Messages & Codes List shown in Figure 3-14 on page 3-17.

Figure 3-14 Messages & Codes List

```

BMC Software ----- Messages & Codes ----- Row 1 of 2254
COMMAND ==>>>                                SCROLL ==>>> PAGE

Primary commands: S string - selects a message, L string - locates a message
Line commands: S - Select

LC Msg ID      Message Text
-----
__ $MF0010     'XXXXXXXX' FOUND
__ $MF0020     'XXXXXXXX' NOT FND
__ $MF0030     'XXXXXXXX' NOT FOUND
__ $MF0040     AREA TOO SMALL
__ $MF0060     ATTACH FAILURE
__ $MF0062     BBI-SS UNAVAILABLE
__ $MF0064     BBISPRNT OPEN FAILED
__ $MF0070     BLK REQUEST ISSUED
__ $MF0080     BLOCK NOT FOUND
__ $MF0100     COMMAND ISSUED
__ $MF0120     COMMAND NOT ISSUED
__ $MF0150     COMMAND(S) ISSUED
__ $MF0170     DENIED BY USER EXIT
__ $MF0175     DUPLICATE USER ID
__ $MF0180     END OF AREAS
__ $MF0200     END OF DEDBS
__ $MF0210     END OF ISC LINKS
    
```

Messages are listed alphabetically and you can scroll through them with standard ISPF navigational commands or PF keys. To see more information about any message that appears in the list of messages and codes, type **s** in the line command field (**LC**) to the left of the message ID.

Step 5 Use the ISPF LOCATE command **l ft439** to locate the FT439 message in the list.

The help panel for that message is displayed, as shown in Figure 3-13 on page 3-16.

Chapter 4 Accessing Other Systems and Products

This chapter explains how to access other MAINVIEW products or other CICS systems in windows mode, while simultaneously displaying your own local system.

Note: For information about accessing other products in full-screen mode, see *Using MAINVIEW*.

Accessing Another Product

In this exercise you will display two MAINVIEW products—MAINVIEW for CICS and Plex Manager—in adjacent windows simultaneously.

Plex Manager is shipped as part of the MAINVIEW architecture. It helps you manage the connections between systems and MAINVIEW products.

Step 1 In windows mode, on the **COMMAND** line, type **RESet** and press **Enter** to clear the screen.

There are two ways to access another system or product: the SET dialog and the CONtext command. Try the SET dialog first.

Step 2 On the **COMMAND** line, type **set** and press **Enter**.

Your screen will look like Figure 4-1 on page 4-2.

Figure 4-1 SET Dialog

```

----- SET WINDOW CONTEXT, PRODUCT, SERVER, SCOPE AND VIEW -----
COMMAND  ==>

Window Parameters:

Context   ==> *
Product   ==> PLEXMGR
Server    ==> *
Scope     ==> *
View      ==> *

Type END to set window parameters
         CANcel to quit without setting
    
```

Step 3 In the **View** field, type **plex** and press the End key (**PF3**).

Your screen will look like Figure 4-2.

Figure 4-2 PLEX View

```

14SEP1998 10:29:40 ----- INFORMATION DISPLAY -----
COMMAND  ==>                                SCROLL ==> PAGE
CURR WIN ==> 1          ALT WIN ==>
>W1 =PLEX=====SYSB=====*=====14SEP1998==10:29:40====PLEXMGR==D====7
C Product  Context  System  Description                               Status
-----
MVCICS    CICSA510  SYSB   MainView for CICS                         Active
MVCICS    CICST410  SYSB   MainView for CICS                         Active
MVCICS    CICST510  SYSB   MainView for CICS                         Active
MVDB2     TESTDB21  SYSB   MainView for DB2 (Test)                   Active
MVIMS     TESTIMS1  SYSB   MainView for IMS (Test)                   Defined
MVVP      BCVCJ413  SYSB   MainView VistaPoint                       Active
PLEXMGR   SYSB     SYSB   Target Manager                            Active
    
```

You are now looking at the PLEX view, which belongs to the MAINVIEW Plex Manager product.

Tip: Another way to access the PLEX view is by issuing this command:

```
CONtext * PLEXMGR; PLEX
```

In general, it is a good idea to check the PLEX view before you try to display another product or system, so you can verify that the product or system you want is available.

Look at the window information line: the first field, which is the view name field, reads PLEX. Further along, you see a field that reads PLEXMGR. PLEXMGR is the Plex Manager *product identifier*. Each product has its own product identifier, so you always know which product you are looking at.

The PLEX view is the most frequently used Plex Manager view. PLEX lists all the systems and products you can access and tells you if they are currently available. Notice that all systems always have an active version of Plex Manager.

You can access any available system or product directly from PLEX. Before you do, open another window so you can see two products at the same time.

- Step 4** Open a second window using the HS command to split window 1 horizontally. You will see an open window below the PLEX view, as shown in Figure 4-3.

Figure 4-3 PLEX View and an Open Window

```

14SEP1998 10:37:35 ----- INFORMATION DISPLAY -----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 2          ALT WIN ==>>
>W1 =PLEX=====SYSB=====*=====14SEP1998==10:35:40====PLEXMGR==D====7
C Product  Context  System  Description                               Status
-----
MVCICS    CICSA510  SYSB   MainView for CICS                        Active
MVCICS    CICST410  SYSB   MainView for CICS                        Active
MVCICS    CICST510  SYSB   MainView for CICS                        Active
T2 =====

```

Find the line that pertains to MAINVIEW for CICS for the context you are interested in. In this exercise, use CICSA510, which is an application owning region (AOR) running CICS Release 5.1.

- Step 5** In the ALT WIN field, type 2, but *do not* press **Enter** yet.
- Step 6** Position the cursor in the **Product** field next to a context and press **Enter**.

The MAINVIEW for CICS EZCICS view is now displayed in window 2, as shown in Figure 4-4 on page 4-4.

Figure 4-4 PLEX View and EZCICS View

```

03MAR1998 10:41:03 ----- INFORMATION DISPLAY -----
COMMAND ====>                                SCROLL ====> PAGE
CURR WIN ====> 2          ALT WIN ====>
>W1 =PLEX=====SYSB=====*=====14SEP1998==10:35:40===PLEXMGR ===D===7
C Product Context System Description Status
-----
MVCICS CICSA510 SYSB MainView for CICS Active
MVCICS CICST410 SYSB MainView for CICS Active
MVCICS CICST510 SYSB MainView for CICS Active
W2 =EZCICS=====CICSA510=*=====03MAR1998==10:41:03===MVCICS=====D===1
      CICS Region Menu
      Timeframe - Interval
Target CICS region -> BCVCP51C
Target CICS Views +-----+ Tools and Menu
. User Tasks | Place cursor on | > Advanced Region Menu
. Transactions | menu item and | > Task Menu
. Programs | press Enter | . Application Trace
. Files +-----+ . Transaction History
. DSA Overview > Utilities
. Terminals Related Views
. Connections > MainView VistaPoint (*)
. Sessions . Region Detail > CICS Automation (*)
. . Regions on same MVS > MVS Analysis (*)
. Monitor Analysis . 2 Hour Region Analysis
. Workload Objectives . Return ...
    
```

When you access MAINVIEW for CICS or any other MAINVIEW product from the PLEX view, that product’s primary Easy Menu is always displayed. From the EZCICS view, you can hyperlink to views that provide detailed information on the performance and resource usage of a specific CICS system.

Now that window 1 is set to PLEXMGR and window 2 is set to MVCICS (the MAINVIEW for CICS product identifier), you can use views in both products simultaneously.

Note: Just make sure the CURR WIN field is set properly; if you try to display a MAINVIEW for CICS view in window 1, or a Plex Manager view in window 2, you will get an error message.

Accessing Other CICS Systems

The MAINVIEW Single System Image (SSI) function allows you to retrieve data from multiple CICS systems in a single view, using a predefined SSI context. Then, from the SSI context, you can display data for different CICS systems in different windows.

To begin exploring SSI contexts, you need to determine if your product administrator has established any such contexts for your site.

- Step 1** On the **COMMAND** line, type **RESet** and press **Enter** to clear the screen.
- Step 2** Type **CONtext = plexmgr; conact** and press **Enter** to display the Plex Manager **CONACT** view.

Your screen should look similar to Figure 4-5.

Figure 4-5 CONACT View

```

14SEP1998 10:50:03 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =CONACT=====SYSB=====*=====14SEP1998==10:50:03====PLEXMGR====D====8
CMD SSI      Product  Target  Status  Description
--- Context- ----- Context- of_Target--- -----
ALL          MVCICS   CICSA510 ACTIVE  MainView for CICS
ALL          MVCICS   CICST410 ACTIVE  MainView for CICS
ALL          MVCICS   CICST510 ACTIVE  MainView for CICS
ALL          MVDB2    TESTDB21 ACTIVE  MainView for DB2
ALL          MVVP     BCVCB413 ACTIVE  MainView VistaPoint
ALL          PLEXMGR  SYSB     ACTIVE  Target Manager
PASALL       MVCICS   CICSA510 ACTIVE  MainView for CICS
PASALL       MVCICS   CICST510 ACTIVE  MainView for CICS

```

CONACT lists all the SSI contexts defined for your enterprise and indicates the status (active or inactive) of each.

The SSI Context field contains the names of the SSI contexts. The SSI context ALL is predefined to include all active targets at your installation. However, you can customize the context ALL using the CONDEF view. See the *MAINVIEW Administration Guide* for more information.

Now you can display the CREGION view for all active CICS systems.

- Step 3** Display the PLEXOVER view.
- Step 4** Hyperlink to an active CICS.
- You will see the EZCICS view.
- Step 5** On the **COMMAND** line, type **cregion** and press **Enter**.
- Step 6** Type **CONtext all** and press **Enter**.

Your screen now looks similar to Figure 4-6.

Figure 4-6 CREGION View for the ALL Context

```

09MAR2001 11:35:11 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ====>                                SCROLL ====> PAGE
CURR WIN ====> 1          ALT WIN ====>
>W1 =CREGION===== (ALL=====*)=====)09MAR2001==11:35:11===MVCICS===D===14
CMD Target  Intvl SMF      Total          Total  EXCP  Real  Page Disp  %Max  Tran
--- Name    Time- ID        CPU  %CPU  Excp  Rate   Stg  Rate Prty  Task  Rate
BCVCP52C 11:35 SJSC    14.34  0.1  4494  0.00 1539  0.00 F1   15.0  0.02
BCVCD410 11:35 SJSC     2.27  0.1  3294  0.00 2250  0.00 EF    5.0  0.02
BCVCD520 11:35 SJSC     2.70  0.0  3924  0.00 3325  0.00 F9    5.0  0.02
BCVCD510 11:35 SJSC     2.82  0.0  3527  0.00 3285  0.00 F1    5.0  0.02
BCVCD530 11:35 SJSC     8.10  0.0  3771  0.00 1112  0.00 EF    5.0  0.02
BCVCJH53 11:35 SJSC     5.33  0.0  3989  0.00 1537  0.00 F9    5.0  0.02
    
```

The display has changed slightly:

- The system field on the window information line now says ALL, the name of the SSI context.
- The product field stays the same; it still says MVCICS. MAINVIEW assumes that you want to stay in the same product if you do not specify a product identifier. That is, if you had typed CONtext ALL DB2, instead of just CONtext ALL, you would have been given access to MAINVIEW for DB2.
- Notice how many lines there are in the display—one for each active CICS system. You now have an overview of the performance of all CICS systems known to MAINVIEW for CICS.

If you want to see more detailed information about one of the CICS systems, you can

- display the detail view in window 1, thereby replacing CREGION
- open a second window to display the detail view and leave CREGION in window 1

Keep CREGION for now.

Step 7 Use the HS command to open a second window.

Step 8 In the ALT WIN field, type 2. Then position the cursor in the **Total CPU** field for the CICS system you want to examine, and press **Enter**.

If you choose a terminal owning region (TOR), your screen now displays CREGION in window 1 and CREGDET5 in window 2, as shown in Figure 4-7.

Note: There is a CREGDET n view for each supported release of CICS. The view that appears depends upon the release of the CICS system you choose.

Figure 4-7 CREGION and CREGDET5 Views

```

09MAR2001 11:38:41 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ==>
CURR WIN ==> 2          ALT WIN ==>
>W1 -CREGION----- (ALL-----*-----)09MAR2001--11:35:11---MVCICS---D---14
CMD Target  Intvl SMF      Total      Total  EXCP  Real  Page Disp  %Max  Tran
--- Name    Time- ID        CPU  %CPU  Excp  Rate  Stg  Rate Prty  Task  Rate
BCVCP41C 11:35 SJSC    3.24  0.2  3604  3.17 1088  0.00 EF   10.0  0.04
BCVCD610 11:35 SJSC   14.56  0.1  3620  0.00  629  0.00 F9   10.0  0.02
BCVCP52C 11:35 SJSC   14.34  0.1  4494  0.00 1539  0.00 F1   15.0  0.02
BCVCD410 11:35 SJSC    2.27  0.1  3294  0.00 2250  0.00 EF    5.0  0.02
BCVCD520 11:35 SJSC    2.70  0.0  3924  0.00 3325  0.00 F9    5.0  0.02
BCVCD510 11:35 SJSC    2.82  0.0  3527  0.00 3285  0.00 F1    5.0  0.02
BCVCD530 11:35 SJSC    8.10  0.0  3771  0.00 1112  0.00 EF    5.0  0.02
BCVCJH53 11:35 SJSC    5.33  0.0  3989  0.00 1537  0.00 F9    5.0  0.02
W2 =CREGDET6===== (ALL=====BCVCD610)09MAR2001==11:38:41====MVCICS====D====1
Target Name... BCVCD610 Realtime Stats... MVS Overview..
CICS Applid... BCVCD610 % MaxTask..... 10.0 Addr Space ID      A3
System Id..... D610 Average Response 0.00 Real Storage.    593
Release..... 610 Tran Rate..... 0.02 Dispatch Prty      EF
SMF Id..... SJSC Tran Count..... 1
Status..... ACTIVE % Using CPU..... 0.06 DSA ID..... %InUse
EXCP Rate..... 0 CDSA..... 64.0
Subsystem Ids. Paging Rate.... 0.00 UDSA..... 0.0
DB2 ssid..... DB2H SDSA..... 4.6
DB2 Threads.. Interval Stats... RDSA..... 66.4
DBCTL ssid... Average Response 0.00 ECDSA..... 77.0
DBCTL Threads Tran Rate..... 0.02 EUDSA..... 0.0
Tran Count..... 8 ESDSA..... 1.1
Temp Storage.. % Using CPU..... 0.07 ERDSA..... 92.5
String Waits. 0 EXCP Rate..... 0
Buffer Waits. 0 Paging Rate.... 0.00 Problem Type.. Count
Information.. 0
Transient Data Session Stats... Warning..... 0
String Waits. 0 Average Response 0.01 Severe..... 0
Buffer Waits. 0 Tran Rate..... 0.02 Total..... 0

```

Notice how the scope field in window 2 has changed—it now shows the name of the CICS region instead of an asterisk (*). MAINVIEW automatically narrowed down the context to the system you selected by issuing the SCOpe command. The SSI context ALL still appears in the context field on the window information line.

Note: In an SSI context, you must use the SCOpe command to identify a target system within the context.

Now you can display detailed information about another CICS system side-by-side with the first.

Step 9 In the CREGION view, position the cursor in the **Total CPU** field for another CICS system, and press **Enter**.

Your screen now looks like Figure 4-8 on page 4-8.

Figure 4-8 CREGDET5 Views for CICS A510 and CICS T510

```

09MAR2001 11:40:19 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ==>                                     SCROLL ==> PAGE
CURR WIN ==> 1          ALT WIN ==>
W1 =CREGION==CREGDET6(ALL=====BCVCD530)09MAR2001==11:35:11====MVCICS====D====1
Target Name...  BCVCD530 Realtime Stats...      MVS Overview..
CICS Applid...  BCVCD530 % MaxTask.....      5.0 Addr Space ID      A1
System Id.....  D530 Average Response      0.00 Real Storage.    1112
Release.....    530 Tran Rate.....          0.03 Dispatch Prty    EF
SMF Id.....    SJSC Tran Count.....         1
Status.....     ACTIVE % Using CPU.....      0.03 DSA ID.....       %InUse
                                   EXCP Rate.....      0 CDSA.....          42.2
Subsystem Ids.  Paging Rate.....          0.00 UDSA.....          0.0
DB2 ssid.....   DB2H SDSA.....            4.6
DB2 Threads..   Interval Stats...      RDSA.....            65.6
DBCTL ssid...   Average Response      0.00 ECDSA.....       76.0
DBCTL Threads   Tran Rate.....          0.02 EUDSA.....       0.0
                                   Tran Count.....      5 ESDSA.....          0.7
Temp Storage..  % Using CPU.....        0.03 ERDSA.....       84.2
String Waits..  0 EXCP Rate.....         0
Buffer Waits..  0 Paging Rate.....       0.00 Problem Type..    Count
W2 -CREGDET6----- (ALL-----BCVCD610)09MAR2001--11:38:41----MVCICS---D-----1
Target Name...  BCVCD610 Realtime Stats...      MVS Overview..
CICS Applid...  BCVCD610 % MaxTask.....      10.0 Addr Space ID     A3
System Id.....  D610 Average Response      0.00 Real Storage.    593
Release.....    610 Tran Rate.....          0.02 Dispatch Prty    EF
SMF Id.....    SJSC Tran Count.....         1
Status.....     ACTIVE % Using CPU.....      0.06 DSA ID.....       %InUse
                                   EXCP Rate.....      0 CDSA.....          64.0
Subsystem Ids.  Paging Rate.....          0.00 UDSA.....          0.0
DB2 ssid.....   DB2H SDSA.....            4.6
DB2 Threads..   Interval Stats...      RDSA.....            66.4
DBCTL ssid...   Average Response      0.00 ECDSA.....       77.0
DBCTL Threads   Tran Rate.....          0.02 EUDSA.....       0.0
                                   Tran Count.....      8 ESDSA.....          1.1
Temp Storage..  % Using CPU.....        0.07 ERDSA.....       92.5
String Waits..  0 EXCP Rate.....         0
Buffer Waits..  0 Paging Rate.....       0.00 Problem Type..    Count
    
```

Because you did not enter a window number in the ALT WIN field, the hyperlink from CREGION was displayed in the same window.

With details on these two systems (one AOR and one TOR) displayed in adjacent windows, you can compare their performance and begin to isolate the cause of any problems.

Using an Easy Menu to Change Contexts

While in windows mode, MAINVIEW for CICS also gives you the ability to change the target, SSI context, or product you are monitoring quickly and easily from a CICS Easy Menu.

Step 1 Display the EZCSSI view.

Step 2 Tab to the **Change Context** field and press **Enter**.

Three choices are displayed: Set Target Context, Set SSI Context, and Set Product Context.

Each of these options hyperlinks to a Plex Manager view that lists valid targets, contexts, and products.

Step 3 Tab to the desired option and press **Enter**.

Step 4 Position your cursor on the target, context, or product that you want to monitor and press **Enter**.

You are returned to another Easy Menu (or MAIN if you chose Plex Manager). Notice that the window information line has changed to reflect your choice. All options selected from this view or menu will display data from the new product or context.

Chapter 5 Monitoring Service Levels

MAINVIEW for CICS data-collection monitors periodically collect and display information about the resource usage of your CICS regions and key workload performance indicators. You can display current and near-term data collected by these monitors with plots or bar graphs through several online services.

Monitors are essential to maintaining the performance of your CICS regions. If you specify threshold values, the collected data is compared to those thresholds. Then warnings are generated when performance begins to deteriorate. By setting thresholds, logging, and warning conditions when you start your monitors, you can adjust their sensitivity to the performance you expect from your CICS regions.

Two short exercises in this chapter explain how to start and display MAINVIEW for CICS data collection monitors. The first exercise explains how to start a monitor and set warning thresholds. The second exercise explains how to display plot views derived from monitor data.

Starting a Monitor

This exercise illustrates how to start a MAINVIEW for CICS monitor to collect and display performance measures from your CICS regions.

- Step 1** In full-screen mode, display the MAINVIEW for CICS Primary Option Menu.
- Step 2** Select option S, **SERVICE**.

The Service Menu is displayed, as shown in Figure 5-1 on page 5-2.

Figure 5-1 Service Menu

```

BMC Software ----- SERVICE MENU ----- CICS Management
OPTION ===>                                     DATE -- 98/09/14

Viewing Timer Driven Requests
  1 MONITORS      - Active Timer Monitor Requests
  2 BBI INFO      - BBI Subsystem Information

Application Tracing
  3 TRACES        - Current Application Traces
  4 HISTORY TRACES - Historical Trace Data Sets

```

Step 3 From the Service Menu, select option 2, **BBI INFO**.

The Display Statistics and Defaults display shown in Figure 5-2 gives the active status of timer-driven services, which include monitors.

Figure 5-2 Display Statistics and Defaults Display

```

BMC SOFTWARE ----- DISPLAY STATISTICS AND DEFAULTS ----- PERFORMANCE MGMT
COMMAND ===>                                     TGT ===> CICSPROD
                                                TIME -- 13:51:44

BBI-SSID: RN34   BBI RELEASE LEVEL -- 2.6.0       SS STARTED: 13:13:43 13-SEP-98
                                                SS ELAPSED: 00:38:00

REQUESTS:          100 TOTAL REQUEST BLOCKS       93 UNUSED BLOCKS
ACTIVITY:          453 SERVICE CALLS              0 WARNINGS WRITTEN

PARAMETERS:  ---- GENERAL ----                  - TRACE BUFFERS -
INTERVAL=00:01:00                                STORAGE=100K
ROUT=NONE                                           TRBUFF=10
DESC=NONE                                           TRSIZE=44K
                                                TRLIM=8000K

----- DEFINED REQUESTS BY TARGET -----
LC TARGET  TYPE    ACTIVE  INIT  COMPLETE  HELD  INVALID  LOCKED  QIS  RST
-TOTAL-  --ALL--
CICSPROD MONITOR      7
DB2L      BK-GRND      8
***** END OF REQUESTS *****

```

Step 4 Check to see if your CICS region has any monitors running. Look near the bottom of the display in the area titled **DEFINED REQUESTS BY TARGET**. You should see the number of active monitors in the **ACTIVE** field.

Step 5 In the line command (LC) field, type **s** next to the CICS region for which you want to display monitored activity.

Selecting the target listed as **TOTAL** shows all the active monitors for the BBI-SS PAS.

Step 6 Press **Enter** to expand the line.

Figure 5-3 shows the Active Timer Requests display that lists the active monitors for the region you selected.

Figure 5-3 Active Timer Requests Display

```

BMC SOFTWARE ----- ACTIVE TIMER REQUESTS ----- PERFORMANCE MGMT
COMMAND ==>>                                     TGT ==>>> CICSPROD
                                           INPUT   INTVL ==> 3       TIME -- 13:55:21
COMMANDS: SM (START MONITORS), SORT, AREA, X ON3OFF, DM (DMON), DW (DWARN)
LC CMDS:  S (SELECT), W (SHOW),           M (MODIFY),
          P (PURGE), R (REPLICATE), H (HELP), Z (STOP),                >>>
LC  SERV  PARM      TITLE                CURRENT  WVAL  -8-6-4-2-0+2+4+6+8+
@MONI      # CICS MONITOR EXCEPTION        0    10 3
@PRB1      # CICS SYSTEM PROBLEMS          3    10 3
@PRB2      # CICS TASK PROBLEMS            0    10 3
@PRB3      # CICS RESOURCE PROBLEMS        0    10 3
@PRB4      # CICS GLOBAL PROBLEMS          0    10 3
@RESP      AVG RESPONSE TIME               0.23  0.403>>>>>
#PROC      TRANS PROCESSED                 124   4003
@RESP ACCNTNG  AVG RESPONSE TIME           0.18  0.023>>>>>>>>>>W >>>>>>
DSUT       CICS DSA UTILIZATION            19    153 >>>>>>>>W>>>>
***** END OF REQUESTS *****

```

The Active Timer Requests display gives you a snapshot of the latest activity of your monitors. The warning threshold marker (WVAL) gives you an idea of how close your monitored activity is coming to predefined warning limits.

A plot of the most current values is shown at the right of the display. Color monitors show the plot bars with different colors. By default:

- Red bars indicate a threshold has been exceeded.
- Yellow bars indicate a value is approaching a threshold.
- Blue bars show a value that is less than the threshold and considered to be safely within operating requirements.

Step 7 Use the ISPF RIGHT command or the designated PF key to shift the display to the right.

Notice the fields titled *STAT* and *AREA*. The status of the monitor is shown in the *STAT* field. Your monitors should be active (*ACTV*). The *AREA* field tells you what category of data the monitor is collecting.

MAINVIEW for CICS monitors collect and display four broad categories of CICS data:

- general CICS problems
- workload performance
- task analysis
- storage usage

Each area has one or more designated monitors that collect related data. The monitors report a single performance measure at each sampling interval. You can restrict the monitors that appear on your Active Timer Requests display by area.

Step 8 On the **COMMAND** line, type **area genl** and press **Enter**.

If you do not have any active general monitors, select an area from the workload (*WKLD*), storage (*STOR*), or task (*TASK*) areas.

Your Active Timer Requests display shows only the active monitors from the area you selected. This is a quick way to focus on the data from one of the four areas when your site has many active monitors.

Step 9 Type **area** and press **Enter** to restore the display of all your active monitors.

Step 10 Use the ISPF **LEFT** command (or **PF** key) to shift the display to the left again.

Step 11 Type **x on** and press **Enter**.

Your Active Timer Requests display should display only monitors reporting data that exceeds a warning threshold. If all your monitors are reporting activity within limits, no monitors should be displayed on the display.

Step 12 Type **x off** and press **Enter** to restore the display of all your monitors on the Active Timer Requests display.

Step 13 Type **sm** and press **Enter** to start a monitor.

Figure 5-4 on page 5-5 shows the Data Collection Monitors display that appears after you press **Enter**. This display is a scrollable list of all the data collection monitor services you are authorized to view.

The Data Collection Monitors display shows how many monitors are active and provides access to input panels so you can enter the options used by your monitor when it is started.

Figure 5-4 Data Collection Monitors Display

```

BMC SOFTWARE ----- DATA COLLECTION MONITORS ----- PERFORMANCE MGMT
COMMAND ==>>> TGT ==>> CICSPROD

COMMANDS: SORT,AREA
LC CMDS: S(SET UP), D(DISPLAY ACTIVE), H(HELP)
LC  SERV  # ACTIVE  TITLE                                PARM TYPE  SEC  AREA  STAT
   DSUT      1    CICS DSA UTILIZATION          (DSA)      A   STOR
   @SVCT      CICS STORAGE VIOLATIONS          A   STOR
   MXTC      CICS MAXIMUM TASK PCT            A   TASK
   AMXT      CICS MAX ACTIVE TASK %           A   TASK
   @PICT      CICS PROGRAM INTERRUPTS        A   TASK
   SDCT      CICS STORAGE DUMPS              A   TASK
   @RESP      2    AVG RESPONSE TIME          (IDENTIFIER) A   WKLD
   @ELAP      AVG ELAPSED TIME                (IDENTIFIER) A   WKLD
   @INPQ      AVG INPUT Q TIME                (IDENTIFIER) A   WKLD
   #PROC      1    TRANS PROCESSED            (IDENTIFIER) A   WKLD
   @PRB1      1    # CICS SYSTEM PROBLEMS      A   GENL
   @PRB2      1    # CICS TASK PROBLEMS        A   GENL
   @PRB3      1    # CICS RESOURCE PROBLEMS   A   GENL
   @PRB4      1    # CICS GLOBAL PROBLEMS     A   GENL
   @MONI      1    # CICS MONITOR EXCEPTION   A   GENL
   ATRAC      1    CICS APPLICATION TRACE    (IDENTIFIER) A   WKLD

```

Notice that some monitor names are prefixed with an ampersand (@) or a number sign (#). An ampersand prefix indicates a monitor that reports an average for a performance measure. A number sign prefix indicates that the monitor reports a count.

Step 14 Type **sort area** and press **Enter** to sort the monitors by area.

The AREA column toward the right of the display shows the area for each monitor. You should see the monitors listed together by area from top to bottom.

Step 15 In the line command (LC) field, type **h** next to the monitor service you want to start and press **Enter**.

Each monitor shown on the Data Collection Monitors display has an individual help panel. The help panels describe the parameters that are used to start the monitor. Read the help panels if you are unsure of what values you should enter to start a monitor.

Step 16 Press the **End** key to return to the Data Collection Monitors display.

Step 17 In the line command (LC) field, type **s** next to DSUT and press **Enter**.

This procedure shows how to start a DSUT monitor. (You can select another if you prefer.)

Most monitors have very similar input panels that have many of the same fields. Workload monitors are the exception. They have parameters in their input panels that qualify workload monitor data collection by

- transaction ID
- program name
- terminal ID
- user ID
- transaction class (0-10)

Read the help panel associated with a workload monitor if you decide to start one.

Figure 5-5 shows the Start Resource Monitor Request panel that appears after you select the monitor you want to start.

Figure 5-5 Start Resource Monitor Request Panel

```

BMC Software  -----  START RESOURCE MONITOR REQUEST  -----  PERFORMANCE MGMT
COMMAND ==>>>                                                    TGT ==>>>  CICSPROD

                                DSUT  -  CICS DSA UTILIZATION

PARM      ==>  ecdsa                                (RESOURCE SELECTION PARAMETER)

INTERVAL  ==>  00:01:00  START ==>                STOP ==>                QIS ==>  YES

WVAL      ==>  14          WMSG ==>                WLIM ==>  10  WIF ==>  1    WIN ==>  1

RST       ==>  HOT                                (RESTART OPTION: HOT,COLD,PUR,QIS)

TITLE     ==>  ecdsa utlilization                (TITLE)

PLOTMAX   ==>                (MAXIMUM PLOT X-AXIS VALUE)

RANGES    ==>  60 70 80 90                        (1-4 RANGE DISTR. UPPER LIMITS)

LOG       ==>                (NO,ATSTOP,ATPD,ATINTVL,ATWARN)

```

Step 18 Complete the fields in the panel as shown in Figure 5-5.

In Figure 5-5, fields with values in uppercase letters indicate the defaults. Be sure these values appear on your Start Resource Monitor Request panel now. Fields with values in lowercase letters are those for which you may want to enter values appropriate to your situation.

The display shows that ECDSA storage is selected for monitoring at one minute intervals with a warning threshold set for 14%.

Step 19 Press **Enter** to initiate your start monitor request.

Step 20 Type `=s.1` and press **Enter** to return to the Active Timer Requests display.

You should see the DSUT monitor you started at the bottom of the scrollable list. Notice the CURRENT field. If you return to the Active Timer Requests display before a minute has elapsed, you should see that the status of your monitor is INIT. The request to start the monitor has been accepted, although data collection has not yet started.

Step 21 If you want to purge the monitor you started, in the line command field next to the monitor name, type `p` and press **Enter**.

A panel appears confirming your purge request. Continue with the purge by pressing **Enter**, or press the **End** key to cancel the request.

Displaying Monitor Data

This exercise illustrates how to display the performance data collected by MAINVIEW for CICS monitors. If you find that your site does not have any monitors currently active, first perform the exercise in “Starting a Monitor” on page 5-1. Then return to this exercise to check the status of the monitor you started.

Displays of monitor data are available in either full-screen or windows mode. This exercise illustrates the monitor views that you can display in windows mode. Remember that views can provide an SSI perspective on monitor data that full-screen displays cannot.

Step 1 In either full-screen or windows mode, on the **COMMAND** line, type `ezcssi` and press **Enter**.

The EZCSSI Easy Menu is displayed.

Step 2 Position the cursor on the **Monitor Overview** field and press **Enter**.

The CMON view is displayed, as shown in Figure 5-6.

Figure 5-6 CMON View

```

22MAR2001 12:00:24 ----- INFORMATION DISPLAY -----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 1          ALT WIN ==>>
W1 =CMON===== (ALL=====*)=====)22MAR2001==11:59:13===MVCICS===D===15
CMD Target  Actv      Number in Warn      Avg % Warning  Maximum
---  -----  Mnttrs      0.....10....20      0.....50...100 % Warning
BCVCD410      5  0
BCVCD510      5  0
BCVCD520      5  0
BCVCD530      9  0                1.5                5.0
BCVCD610      9  0                2.7                10.0
BCVCJH53      2  0                2.8                5.0
BCVCP41C      5  0
BCVCP41D      5  0
BCVCP51C      5  0
BCVCP52C      3  0
BCVCP52D      5  0
BCVCP52E      5  0
BCVCP53C     19  0                0.5                3.2
BCVCP53E      5  0
BCVCP61C     16  0
    
```

CMON provides an overview of the status and operation of active monitors.

Step 3 In the **Actv Mnttrs** field, position the cursor on a CICS region and press **Enter**.

The CSERV view is displayed, as shown in Figure 5-7.

Figure 5-7 CSERV View

```

22MAR2001 12:08:02 ----- INFORMATION DISPLAY -----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 1          ALT WIN ==>>
W1 =CMON====CSERV==== (ALL=====*)=====)22MAR2001==12:07:35===MVCICS===D===10
CMD Serv  Intvl Parm      % Warning  Curr      Warn      Area Target
---  -----  Time- -----  0.....50...100 Value-- Value-- -----
MXTC 12:07 CREGION 10.0                10.00  100.00 TASK BCVCD610
@RSTM 12:07 TRANWKLD 4.3                0.04   1.00 WKLD BCVCD610
@RSTM 12:07 ACCTREV 4.3                0.04   1.00 WKLD BCVCD610
@RESP 12:07 CREGION 2.1                0.04   2.00 WKLD BCVCD610
@PRB2 12:07                                0.00   GENL BCVCD610
@PRB4 12:07                                0.00   GENL BCVCD610
@PRB3 12:07                                0.00   GENL BCVCD610
@PRB1 12:07                                0.00   GENL BCVCD610
DSUT 12:07 EDDSA    0.00   14.00 STOR BCVCD610
@MONI 12:07                                0.00   GENL BCVCD610
    
```

This view presents a list of the monitors that are collecting data for the selected region. From here you can display a plot view of data collected by the monitor you just started, DSUT.

Step 4 In the **Serv** field, position the cursor on DSUT and press **Enter**.

Figure 5-8 on page 5-9 shows a monitor plot view for the DSUT storage monitor.

Figure 5-8 CDSUT Monitor Plot View

```

22MAR2001 12:10:25 ----- INFORMATION DISPLAY -----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 1          ALT WIN ==>>
>W1 =CMON====CDSUT==(ALL====BCVCD610)22MAR2001==12:07:35====MVCICS====D====1
>>DSAS  |.....|.....| % In Use Parm.... ECDSA
12:07:00          77.00 Warning.. 14.00
12:06:00          0.00 Max/Min.. Maximum
12:05:00          0.00 Value... 77.00
12:04:00          0.00 Time... 12:07:00
12:03:00          0.00 Graph Max 77.00
12:02:00          0.00 Target... BCVCD610
12:01:00          0.00 Descript. ECDSA UTILIZATION
12:00:00          0.00
11:59:00          0.00 Samples.. 1
11:58:00          0.00 Period... 00:10:00
          |.....|.....| % In Use Samp Int. 00:01:00
Total          77.00 Start.... 12:07:00
Prev Pd          0.00 Elapsed.. 00:00:35
Curr Pd          0.00
    
```

A monitor plot view is a 10-line graph showing performance monitored over the previous 10 data collection periods. The fields in the left column show the percentage of ECDSA storage being used by the associated region. Each line represents the usage that occurred in each one-minute data collection interval.

Chapter 6 Monitoring Workload Performance

This chapter describes how to create a workload definition for a group of CICS regions and then monitor the performance of that workload.

Creating a Workload Definition

This exercise explains how you can use the CWKLDDEF view to define workload monitors for the transactions you want to monitor. You will define a workload for the CICS production regions involved in the Accounts Receivable application.

- Step 1** In windows mode, type **CWKLDDEF** on the **COMMAND** line of any **MAINVIEW** for CICS display and press **Enter**.

The CWKLDDEF view is displayed, as shown in Figure 6-1 on page 6-2.

Figure 6-1 CWKLDDEF View

```

14SEP1998 14:22:29 ----- INFORMATION DISPLAY -----
COMMAND  ===>
CURR WIN ===> 1          ALT WIN ===>
>W1 =CWKLDDEF=====BCVCD610==*======(00 BROWSE          )====MVCICS=====5
CMD Workload Composite Target System Description Sta Resp %Tr
--- Name---- Name-----
ACCTING ACCTP* CICS* * All Accounting Act 0.30 90
HOTTRAN * * * * Region 4 - hot trans Ina 1.00 95
PAYROLL CICS* * * * 8-5 Payroll Act 1.00 95
PAYROLLC PAYROLL * * * Payroll application Act 0.10 100
TESTRG03 TESTR03 * * * Region 3 - test Ina 0.10 100
    
```

The CWKLDDEF view lists current CICS workloads. If there are no workloads currently defined, the following message appears:

```
BBMXV325I There is no data that satisfies your request.
```

At this point, you are browsing the member of your BBIPARM data set that contains CICS workload definitions. You cannot actually make any changes to the member or the workload definitions that it contains until you enter edit mode.

Step 2 On the **COMMAND** line, type **edit** and press **Enter** to start a workload edit session. You now are able to create, change, or delete MAINVIEW for CICS workloads.

Note: The context must point to a specific region before the edit command can be used.

Step 3 Type **add** and press **Enter** to create a new workload.

Figure 6-2 shows the Add CICS Workload Definition panel that appears after you issue the ADD command.

Figure 6-2 Add CICS Workload Definition Panel

```

----- ADD CICS WORKLOAD DEFINITION -----
COMMAND ==>

Workload   ==>
For Target ==> *
Description ==>

Tran Id   ==>
Program   ==>
Terminal  ==>
Userid    ==>
Class     ==>

Response time of ==> 1.0      seconds
                for ==> 100    percent of transactions
                Between ==> 00:00 (Start time hh:mm)
                and ==> 24:00 (End time hh:mm)
Include Queuing ==> Y        (Y,N)

Press End to change the definition. Enter CANCEL to leave without changing.

```

Step 4 Complete the fields of your panel like the ones shown in Figure 6-3.

Figure 6-3 Sample Data Added to the Add CICS Workload Definition Panel

```

----- ADD CICS WORKLOAD DEFINITION -----
COMMAND ==>

Workload   ==> ACCTRECV      Composite ==> FINANCE
For Target ==> bcycd*        For System ==> *
Description ==> CICS FINANCE

Tran Id   ==> *
Program   ==>
Terminal  ==>
Userid    ==>
Class     ==>

Response time of ==> 1.0      seconds
                for ==> 95    percent transactions
                Between ==> 08:00 (Start time hh:mm)
                and ==> 17:00 (End time hh:mm)
Include Queuing ==> Y        (Y,N)

Press End to change the definition. Enter CANCEL to leave without changing.

```

Workloads with the same composite name are grouped together by MAINVIEW for CICS and analyzed as an application. In this example, FINANCE has been selected as the composite that the ACCTRECV workload belongs to. Workload names must be unique for each MAINVIEW product, although different products can use the same names.

You can use wildcard characters in your workload definitions to select more than one value for each field. An asterisk (*) selects all values that apply to a particular field. In this example, the use of the asterisk wildcard in the Tran ID and For System fields includes all transactions across all MVS systems with currently monitored targets.

The use of an asterisk with the BCVCD prefix in the Target field restricts the targets included in the definition to the CICS production regions with names that begin with BCVCD.

Tip: MAINVIEW products use three wildcard characters to specify multiple values for variables:

* Accepts all characters to the right of the asterisk.

? or + Accepts a single character in the same position as the wildcard character.

In the example shown in Figure 6-3 on page 6-3, transactions are monitored between 8:00 A.M. and 5:00 P.M. For the ACCTRECV workload to meet its service level objective, 95% of CICS production transactions must complete in 1 second or less.

You can decide whether to include queuing time in your workload's transactions by entering a **Y** or **N** in the **Include Queuing** field shown near the bottom of Figure 6-3 on page 6-3. Queuing is considered to be the initial time spent waiting until a transaction is dispatched.

Step 5 Press the **End** key to add the new workload definition and return to the CWKLDDEF view.

Figure 6-4 shows the new ACCTRECV workload listed in the CWKLDDEF view.

Figure 6-4 CWKLDDEF View Updated with a New Workload

```

09MAR2001 14:12:14 ----- INFORMATION DISPLAY -----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 1          ALT WIN ==>>
>W1 =CWKLDDEF=====BCVCD610=*===== (00 EDIT  MOD   )====MVCICS===D====3
CMD Workload Composite Target  System  Description          Sta Resp %Tr
--- Name----- Name-----
ACCTREV FINANCE  BCVCD*  *      CICS Finance          Mod 1.00 95
TEST1   TOMTEST CICS5*  *      Test1                  Act 1.00 95
TRANWKLD TESTWKLD *      *      Transaction Response   Act 1.00 95

```

Notice that the window information line shows you are still in an edit session (EDIT). The MOD indicator tells you that modifications have been made to the workload definition list. The modifications to the workload definition data set are not yet saved. You can still enter the CANCEL command to remove any changes you made in the current edit session.

Step 6 On the **COMMAND** line, type **save** and press **Enter** to add the ACCTRECV workload definition to the list of current definitions.

The MOD indicator disappears from the window information line. All your pending workload changes are saved.

Although your workload definition is saved, it is not yet active.

Step 7 In the line command (LC) field next to ACCTRECV, type **ins** and press **Enter**.

The INSTall command activates your workload definition. The **Sta** field changes from **Ina** to **Act** to indicate the status of the workload is now active. Transaction data collection begins immediately if you are currently within the monitoring time range you specified in your workload definition.

Step 8 To review the newly active workload definition, place the cursor on ACCTRECV in the **Name** field and press **Enter**. The CWKLDDET view appears, as shown in Figure 6-5.

Figure 6-5 CWKLDDET View for ACCTRECV

```

09MAR2001 14:15:44 ----- INFORMATION DISPLAY -----
COMMAND ==>                                     SCROLL ==> PAGE
CURR WIN ==> 1           ALT WIN ==>
>W1 =CWKLDDEF=CWKLDDET=BCVCD610=*===== (00 EDIT  MOD  )====MVCICS===D====1
Workload. ACCTREV Description. CICS Finance
Composite FINANCE Transaction.
Target... BCVCD* Program.....
System... * Terminal....
Response. 1.00 Userid.....
%Trans... 95 Class.....
Start.... 08:00 Program Type
End..... 17:00
IncQueue. Y
Deleted.. N
Status... Modified
    
```

The current values of the ACCTRECV workload definition are shown in the CWKLDDET view.

Displaying Workload Data

This exercise explains how to use other MAINVIEW for CICS workload views to monitor the performance of the ACCTRECV workload.

Step 1 On the **COMMAND** line of the CWKLDDDET view, type **COBJ** and press **Enter**.

The COBJ view appears, as shown in Figure 6-6.

Figure 6-6 COBJ View

```

09MAR2001 14:21:11 ----- INFORMATION DISPLAY -----
COMMAND ==>>
CURR WIN ==>> 1 ALT WIN ==>>
>W1 =COBJ=====BCVCD610=*=====09MAR2001==14:21:11====MVCICS====D====2
CMD Workload Intvl % <= Resp Goal Resp Goal Avg Tran Composite Targ
--- Name---- Time- 0.....50...100 Goal- % Resp--- Count Workload- ----
ACCTREV 14:21 100.0 1.00 95 0.014 6 FINANCE BCVC
TRANWKLD 14:21 100.0 1.00 95 0.014 6 TESTWKLD BCVC
    
```

The COBJ view presents the response or elapsed time performance of transactions within a workload. The data shown is for the current monitoring interval. You can also review a workload’s transaction performance for

- the real-time period (COBJR view)
- the session (COBJS view)

Assume you want to further investigate the performance of the ACCTRECV workload.

Step 2 Type **CFLOW** and press **Enter** to display the CFLOW view, as shown in Figure 6-7 on page 6-8.

Figure 6-7 CFLOW View

```

09MAR2001 14:20:39 ----- INFORMATION DISPLAY -----
COMMAND ==>> SCROLL ==>> PAGE
CURR WIN ==>> 1 ALT WIN ==>>
>W1 =CFLOW=====BCVCD610=*=====09MAR2001==14:20:39===MVCICS===D===2
CMD Workload Intvl Number Avg Delay % Primary CI
--- ----- Time- Trans-- Resp--- 0.....50...100 Delay----- Ta
ACCTREV 14:20 5 0.016 90.2 WAIT FOR CPU BC
TRANWKLD 14:20 5 0.016 90.2 WAIT FOR CPU BC
    
```

The CFLOW view shows the percentage of average response time that workload transactions spent in some form of delay. In this example, the transactions in the ACCTRECV workload spent 15% of their time waiting for the CPU.

Note: This data is for the current monitoring interval. To see the percentage of response time delay for the session, use the CFLOWS view.

Now you can review the various delays that contributed to the average response time for ACCTRECV.

Step 3 Type **CWOVER** and press **Enter**. The CWOVER view appears, as shown in Figure 6-8.

Figure 6-8 CWOVER View

```

09MAR2001 14:19:52 ----- INFORMATION DISPLAY -----
COMMAND ==>> SCROLL ==>> PAGE
CURR WIN ==>> 1 ALT WIN ==>>
>W1 =CWOVER=====BCVCD610=*=====09MAR2001==14:19:52===MVCICS===D===2
CMD Workload Intvl Number Avg % % % % % % % % % % % %
--- ----- Time- Trans- Resp- Dsq Cpu Cpw TC TD TS FC DB IRC JC PC
ACCTREV 14:19 4 0.019 9 92
TRANWKLD 14:19 4 0.019 9 92
    
```

Chapter 7 Tracing Workload Transactions

Occasionally, you may need to troubleshoot CICS applications that are performing poorly. For example, transaction response times are lengthening, causing bottlenecks for other applications as they contend for system resources, or you need to find out exactly what is happening during an application's transactions that are causing delays.

The MAINVIEW for CICS full-screen TRACE service gives you the ability to focus on specific applications and examine all the events that occur during the lifesaving of a transaction. More importantly, the TRACE service gives you the ability to examine the history of a transaction at different levels of detail.

This chapter explains the basic steps for tracing an application with the TRACE service. The first exercise describes how to start a trace. The second exercise describes how to display current and historical traces with different levels of detail.

MAINVIEW for CICS trace data is collected transparently at the intervals you select when a trace is started. Up to 20 active traces can run concurrently for each CICS region. The type of trace records collected depends upon whether you have selected a summary or detail trace. Summary records are transiently stored in the online display buffer. Detail records are first stored in a set of data collection buffers in extended CSA to separate them by trace request before moving to the online trace display buffer.

The current records for both summary and detail traces can be viewed in the online display buffer. Historical trace records are stored in external VSAM data sets. This gives you the ability to archive trace data and view it later at your convenience.

Starting a Detail Trace

This exercise describes how to start a detail trace. Although starting a summary trace is not discussed, most of the steps that you complete are the same as those for starting a detail trace.

- Step 1** In full-screen mode, display the MAINVIEW for CICS Primary Option Menu.
- Step 2** Select option **S.3, TRACES**.

The Current Traces display appears, as shown in Figure 7-1. This display lists application traces that are either active or complete.

Note: If a target region has not been specified, the Active Timer Requests panel is displayed instead.

Figure 7-1 Current Traces Display

```

BMC SOFTWARE ----- CURRENT TRACES ----- PERFORMANCE MGMT
COMMAND ==>                                     TGT ==> CICSPROD
                                           INPUT  INTVL ==> 3      TIME -- 15:25:31
COMMANDS: ST (START APPLICATION TRACE), HT (HISTORY TRACES)
LC CMDS:  S (SELECT), W (SHOW),           M (MODIFY), I (SWITCH), Z (STOP)
          P (PURGE), R (REPLICATE), H (HELP), Q (QUIESCE LOGGING) <<<
LC  PARM  TITLE                                USER ID  TARGET  SEC AREA  STAT LOG
          CICS APPLICATION TRACE             USR1     CICSPROD A  WKLD  ACTV
***** END OF REQUESTS *****

```

- Step 3** On the **COMMAND** line, type **st** and press **Enter** to start a trace.

Figure 7-2 on page 7-3 shows the Start CICS Trace Request panel that appears after the command is issued. This panel has default and optional parameters that you can set for your trace.

Figure 7-2 Start CICS Trace Request Panel

```

BMC SOFTWARE ----- START CICS TRACE REQUEST ----- PERFORMANCE MGMT
COMMAND ==>                                                    TGT ==> CICSPROD
                                                                TIME -- 15:25:53
PARM   ==> trace01 (Trace Identifier)      START ==>                (hh:mm:ss)
TYPE   ==> d      (S-Summary,D-Detail)    STOP  ==>                (hh:mm:ss/#min)
STORAGE ==> 1000K (Display buffer size)  WRAP  ==> YES (Y/N Wrap buffer)
LOGTRAC ==> y      (Y/N log trace)       RST   ==> HOT (HOT,PUR,QIS)
TITLE  ==> demonstration CICS trace

Specify Selection Criteria:
TRAN   ==> t*
PROG   ==>
USERID ==>
TERMINAL ==>

Specify additional trace options:      (*=processed)
Exception filters                      ==> y (Y/N)
Detail Trace Options                   ==> y (Y/N)
Trace Log Data Set Options             ==> y (Y/N)

Press ENTER to process; END to cancel

```

Step 4 Complete the fields of the Start CICS Trace Request panel as shown in Figure 7-2.

The lowercase entries you see in the fields near the top left of the display show the parameters you need to enter for this step.

- In the **PARM** field, specify a name for your trace.
- In the **TYPE** field, type **d** for detailed tracing.
- In the **STORAGE** field, specify the size of the trace display buffer.
- In the **LOGTRAC** field, type **y** to create a trace log.
- In the **TITLE** field, specify a short description for your trace.

The uppercase entries shown in the fields near the top right of the display (for **WRAP** and **RST**) are the default entries for a particular parameter.

The Selection Criteria parameters shown toward the middle of the display qualify your workload trace by transaction ID, program name, user ID, and terminal ID. A wildcard character (*) is permitted in your workload qualifiers.

The three fields beneath the area titled Specify Additional Trace Options allow you to override default trace settings. By typing a Y in these fields, you invoke additional menus that specify additional exception filters, detail trace options, or trace log data sets to your original request to start a trace.

Step 5 Press **Enter** to process the parameters you set for your trace request.

You may need to use optional filters to limit the number of entries that appear in your online trace buffer or trace log data sets. By carefully selecting your exception criteria, you can restrict your trace events to those caused by unusual conditions. This is a very useful troubleshooting technique to quickly identify workloads that are causing performance problems.

Figure 7-3 shows the CICS Trace Exception Filters panel for setting optional trace filters.

Figure 7-3 CICS Trace Exception Filters Panel

```

BMC SOFTWARE ----- CICS TRACE EXCEPTION FILTERS ----- PERFORMANCE MGMT
COMMAND ==>>>                                           TGT  --  CICSPROD
                                                         TIME  --  15:26:56

Specify Exception Filters:
RESPONSE    => .5           CPU TIME    =>           SUSPEND TIME =>
FC CALLS    =>             IRC WT CNT  =>           DSA STG HWM =>
FC I/O CNT  =>             IRC WT TIME =>           DSA STG OCC =>
FC I/O TIME =>             DB I/O CNT  =>           EDSA STG HWM =>
EXCPTN CNT  =>             DB I/O TIME =>           EDSA STG OCC =>
EXCPTN TIME =>             ABENDS ONLY =>

Specify Exception Resource Names
FILE        =>
4th GL     =>
PLAN       =>
PSB        =>

```

Step 6 In the **RESPONSE** field, type **.5**.

In this exercise, any transaction with a response time equal to or greater than 500 milliseconds is recorded to your online trace buffer and log data sets. All other transactions are discarded.

Trace data are compared to the exception parameters you set on the CICS Trace Exception Filters panel. By default, a trace is recorded in the online buffer or log data set if its performance measures are greater than or equal to the value specified for an exception filter parameter. optionally, you can set a less than or equal to threshold for a parameter by placing a less than (<) character in front of the filter value.

Trace performance measures are logically ORed with all the parameters that you set with the CICS Trace Exception Filters panel. Trace records are kept if they meet one or more selection criteria set by a filter. Trace records are discarded if they do not meet at least one selection criterion.

Step 7 When you finish specifying the parameters for your trace exception filters, press **Enter**.

Figure 7-4 shows the Detail Trace Options panel. This panel enables you to restrict the detail trace entries to certain events caused by the transaction. It also provides options for you to control the amount of storage and number of buffers that hold your trace data.

Figure 7-4 Detail Trace Options Panel

```

BMC SOFTWARE ----- DETAIL TRACE OPTIONS ----- PERFORMANCE MGMT
COMMAND ==>                                         TGT -- CICSPROD
                                                    TIME -- 15:27:37

Specify trace entries to include:
  File / Database   ==> Y      Temp Storage       ==> Y
  Storage Control  ==> Y      Terminal / APPC   ==> Y
  Program Control  ==> Y      Task Control      ==> Y
  Interval Control ==> Y      Transient Data    ==> Y
  Journal / Sync   ==> Y      Error Handling     ==> Y

Specify event compression:
  Group EIP        ==> N      (Y/N)

Specify data collection buffer options:
  TRSIZE           ==> 400K   (Trace buffer size)
  TRBUFF           ==> 20    (# of trace buffers)

```

In Figure 7-4, the default values for the detail trace options are shown in uppercase letters (Y or N). The numeric values shown in the fields for the size and number of trace buffers are also the defaults.

Step 8 Press **Enter** to accept all of the defaults on the Detail Trace Options panel.

Figure 7-5 on page 7-6 shows the Trace Log Data Set Options panel. This panel allows you to specify the operating conditions for your trace log data sets.

Figure 7-5 Trace Log Data Set Options Panel

```

BMC SOFTWARE ----- TRACE LOG DATA SET OPTIONS ----- PERFORMANCE MGMT
COMMAND ==>                                                    TGT  --  CICSPROD
                                                                TIME  --  15:28:36

Number of Logs   ==> 2
First Log DSN    ==>
                  Low level qualifier of DSN must be V01
                  Blank for default: USER.CICSPROD.TRAC01.MMMDD.THHMM.V01
                  Names without quotes will be prefixed with USER

Overwrite logs   ==> N      (Y/N) (Action when all logs used)
Archive PROC     ==> cmrbarc (Blank for none/PROCLIB member name)
Log switch time  ==>        (HH:MM that a log switch is requested)

Disposition      ==> NEW    (OLD/NEW) If NEW, specify options below

Volumes          ==> (ABC123)
Primary CYLS     ==> 3      SMS Storage Class   ==>
Data DSN Suffix ==> DSUT    SMS Data Class    ==>
                                   SMS Management Class ==>

```

By allocating more than one data set, you can swap between them when one is full and needs to be archived. This allows you to trace continuously without losing any data.

Step 9 Complete the fields of the Trace Log Data Set Options panel as shown in Figure 7-5.

Leave the **First Log DSN** field blank. MAINVIEW for CICS generates data set names automatically from your user ID, CICS target name, date, and time. The default data set names for your site should be highlighted beneath the First Log DSN field.

Make sure the **Volumes**, **Primary CYLS**, and **Data DSN Suffix** fields are complete so that new log data sets can be allocated.

Step 10 Press **Enter** to return to the Start CICS Trace Request panel.

Notice the asterisks (*) in the three fields of the additional trace options area of Figure 7-6 on page 7-7. The asterisks mean that the trace options have been processed.

Figure 7-6 Start CICS Trace Request Panel with Options Processed

```

BMC SOFTWARE ----- START CICS TRACE REQUEST ----- PERFORMANCE MGMT
COMMAND ==>                                                    TGT ==> CICSPROD
                                                    TIME -- 15:29:26
PARM   ==> TRAC01   (Trace Identifier)      START ==>
                                                    (hh:mm:ss)
TYPE   ==> D       (S-Summary,D-Detail)    STOP  ==>
                                                    (hh:mm:ss/#min)
STORAGE ==> 1000K  (Display buffer size)  WRAP  ==> YES (Y/N Wrap buffer)
LOGTRAC ==> Y      (Y/N log trace)        RST   ==> HOT (HOT,PUR,QIS)
TITLE  ==> DEMONSTRATION CICS TRACE

Specify Selection Criteria:
TRAN   ==> T*
PROG   ==>
USERID ==>
TERMINAL ==>

Specify additional trace options:      (*=processed)
Exception filters                     ==> * (Y/N)
Detail Trace Options                  ==> * (Y/N)
Trace Log Data Set Options            ==> * (Y/N)

Press ENTER to process; END to cancel

```

Step 11 Verify that the fields of the Start CICS Trace Request panel are complete and press **Enter**.

A message in the upper right corner of the display notifies you that a request has been issued.

Step 12 On the **COMMAND** line, type **log** and press **Enter** to display the system messages issued in response to your request to process the tracing options.

Messages in the log will confirm that your trace log data sets have been allocated.

Step 13 Press the **End** key to return to the Start CICS Trace Request panel.

Another message in the upper right corner notifies you that the allocation is complete.

Step 14 Press the **End** key again to return to the Current Traces display.

Step 15 Press **Enter** to start your workload tracing.

The Current Traces display shown in Figure 7-7 on page 7-8 shows that the example trace started in this exercise is active with logging.

Figure 7-7 Current Traces Display Showing Active Traces

```

BMC SOFTWARE ----- CURRENT TRACES ----- COMMAND(S) ISSUED
COMMAND ==>                                     TGT ==> CICSPROD
                                           INPUT  INTVL ==> 3    TIME -- 15:31:02
COMMANDS: ST (START APPLICATION TRACE), HT (HISTORY TRACES)
LC CMDS:  S (SELECT), W (SHOW),           M (MODIFY), I (SWITCH), Z (STOP)
          P (PURGE), R (REPLICATE), H (HELP), Q (QUIESCE LOGGING) <<<
LC  PARM  TITLE                                USER ID  TARGET  SEC AREA  STAT LOG
    PAYROLL CICS APPLICATION TRACE           USR1     CICSPROD A  WKLD  COMP
    TRACE01 CICS DEMONSTRATION TRACE         USR1     CICSPROD A  WKLD  ACTV ACT
          ***** END OF REQUESTS *****
    
```

This exercise illustrated how to start a detail workload trace. The next exercise illustrates how to display MAINVIEW for CICS traces.

Displaying Trace Data

This exercise explains how to view summary and detail displays of current and historical traces.

- Step 1** In the line command (LC) field of the Current Traces display, type **s** next to the name of the trace entry you want to select and press **Enter**.

The LTRAC service shown in Figure 7-8 on page 7-9 displays a scrollable list of trace entries in the trace buffer. Each entry corresponds to a completed task.

Figure 7-8 CICS Trace Entries Display

```

BMC SOFTWARE----- CICS TRACE ENTRIES -----PERFORMANCE MGMT
SERV ==> LTRAC          INPUT  02:07:34  INTVL=> 3  LOG=> N  TGT=> CICSPROD
PARM ==> TRAC04          ROW 1 OF 60  SCROLL=> CSR
EXPAND: MON(WKLD), HISTORY,          ENTRIES IN BUFFER 1 - 60
          LINESEL(STRAC)

13SEP98          CICS APPLICATION TRACE
END TIME      TRAN ID  PROGRAM  USERID  RESPONSE  CPU    WAITS  # STMTS
-----
03:59:23.67  TSUM     TCHKSUM  USR1     0.611    0.583  0.000   9
03:59:23.85  TDRA     TDRVASM  USR1     0.504    0.493  0.000   4
03:59:24.01  TSM1     TCHKSM1  USR1     0.604    0.587  0.000   8
03:59:24.27  TSM2     TCHKSM2  USR1     0.604    0.592  0.000   7
03:59:24.35  TSUM     TCHKSUM  USR1     0.707    0.687  0.000   9
03:59:24.51  TDRA     TDRVASM  USR1     0.519    0.504  0.000   4
03:59:24.70  TDRA     TDRVASM  USR1     0.515    0.511  0.000   4
03:59:25.07  TDRA     TDRVASM  USR1     0.505    0.498  0.000   4
03:59:25.19  TSM1     TCHSUM1  USR1     0.704    0.588  0.000   6
03:59:25.40  TDRA     TDRVASM  USR1     0.523    0.690  0.000   8
03:59:25.54  TDRA     TDRVASM  USR1     0.505    0.515  0.000   4
03:59:26.38  TDRA     TDRVASM  USR1     0.504    0.489  0.000   4
***** END OF TRACE ENTRIES *****

```

The LTRAC display presents a list you can scroll up and down to find a trace entry. Active entries are copied to a separate storage area in the BBI-SS extended private area when LTRAC is invoked.

To refresh the LTRAC display and add any new trace entries stored in the trace display buffer since the service was started, press **Enter**.

You can move to three different areas from the LTRAC display. The EXPAND field near the top left corner of the display is the selection point to see history traces or active workload monitors. Moving the cursor to the MON(WKLD) or HISTORY fields and pressing **Enter** takes you to these services.

The third navigational path is to move the cursor to a line entry and get a summary display of the trace with the STRAC service. The next few steps of this exercise show you how to take this path.

Step 2 Position the cursor on the trace entry you want to view and press **Enter**.

Figure 7-9 on page 7-10 shows the Summary Trace Entry display. The three groups of display columns give you a high-level overview of the trace. The left column describes the environment at the time the trace occurred. The middle column presents a summary of the trace event, including response time. The right column gives a detailed description of response time by breaking it out into individual components.

Figure 7-9 Summary Trace Entry Display

```

BMC SOFTWARE----- SUMMARY TRACE ENTRY -----PERFORMANCE MGMT
SERV ==> STRAC          INPUT 03:47:36 INTVL=> 3 LOG=> N TGT==> CICSPROD
PARM ==> TRAC04,SEQ=9          ROW 1 OF 18 SCROLL=> CSR
EXPAND: MON(WKLD), DETAIL, HISTORY

TRAN ID      TDRA      START TIME 12:45:39.55 -- RESPONSE TIME ANALYSIS ---
PROGRAM ID   TDRVASM   STOP TIME 12:45:39.60 DISPATCHED          3 0.041
TASK NUMBER  243      RESPONSE 0.041  DISPATCH QUEUE     1 0.000
TERM ID      T003      CPU TIME 0.022  FC I/O WAIT        0 0.000
USER ID      USR1      FC CALLS 10    FC EXCEPTION        0 0.000
NETWORK ID   T014T003 DL/I CALLS 0    DL/I IO WAIT       0 0.000
              OTHER DB TYPE OTHER DB REQ        0 0.000
USER STORAGE 106,560  EXCPN TYPE SUSPEND           0 0.000
PGRM STORAGE 32,880  TERMINAL CNTL      0 0.000
              BMS MAPSET  TDRVA00 INTERREGION        0 0.000
DL/I PSBNAME MESSAGES IN 1    TEMP STORAGE       0 0.000
DB2 PLAN ID  MESSAGES OUT 1    TS EXCEPTION        0 0.000
DB2 CORR ID  THINK TIME 0.000 JOURNAL CNTL       0 0.000
DB2 AUTH ID  TRANSIENT DATA 0 0.000
              PROGRAM LOADER 0 0.000
ORIGIN ID    USBOOL01.T014T003 USER ECB WAITS     2 0.000
UNIT OF WORK D1C2E22E129B0002 OTHER WAIT          0 0.000
***** END OF DATA *****

```

Step 3 In the **EXPAND** field, position the cursor on the word **DETAIL** and press **Enter**.

Figure 7-10 on page 7-11 shows the Detail Trace Entry display. It displays all the traced events for the trace buffer entry you selected.

Figure 7-10 Level 2 Detail Trace Entry Display

```

BMC SOFTWARE -----  DETAIL TRACE ENTRY  -----PERFORMANCE MGMT
SERV ==> DTRAC          INPUT    04:30:28  INTVL=> 3  LOG=> N  TGT==> CICSPROD
PARM ==> TRAC04,SEQ=9,LEVEL=2          ROW 1 OF 9  SCROLL=> CSR
EXPAND: LINESEL(DETAIL),HISTORY
START: 04:09:24  TRAN:  TSUM  PROG:  TCHKSUM  TERM:  T003  USER:  USR1
=====
EVENT                AT  ELAPSED      CPU  STG  DETAIL
-----
START-PROGRAM TCHKSUM      0.000   374us          4K
HANDLE-CONDITION  11B4  0.001   378us          21K  MAPFAIL
RESP              0.001   157us          21K  OK
RECEIVE-MAP      11F8  0.001     6us          TDRVPC,MS=TDRVA00
RESP              0.001   480us          32K  MAPFAIL
SEND-MAP         1184  0.001     6us          TDRUPC,MS=TDRVA00
RESP              0.002   415us          OK
RETURN           3444  0.002     6us          TRANID=TDRA,CALEN=4
END-PROGRAM TDRVASM      0.019   6us 3,136us  32K  OK

```

Step 4 Scroll left and right and watch the **SEQ=** value in the **PARM** field.

The trace display changes and the number in the SEQ= field either increases or decreases. If you scroll right, the SEQ= number increases as you display the trace entry from the display buffer that follows the entry for your original trace. Likewise, scrolling left takes you to the previous trace entry in the buffer and the SEQ= number decreases.

Using RIGHT and LEFT commands, you can shift between detail trace entries without having to back out and select them from the CICS Trace Entries display. You can shift between trace entries with the RIGHT and LEFT commands for all current trace displays.

Step 5 In the **PARM** field, change the **LEVEL=** value from **2** to **1** and press **Enter**.

Figure 7-11 on page 7-12 shows a more succinct detail display of the trace you selected. Many of the trace events are merged together in the Event column at the left of the display. The level of detail you see in your detail trace displays depends on the options that you set when you started the trace.

Figure 7-11 Level 1 Detail Trace Entry Display

```

BMC SOFTWARE -----  DETAIL TRACE ENTRY  -----PERFORMANCE MGMT
SERV ==> DTRAC          INPUT    04:36:04  INTVL=> 3  LOG=> N  TGT==> CICSPROD
PARM ==> TRAC04,SEQ=6,LEVEL=1          ROW 1 OF 3  SCROLL=> CSR
EXPAND: LINESEL(DETAIL), HISTORY
START: 04:09:24  TRAN: TSUM  PROG: TCHKSUM  TERM: T003  USER: USR1
=====
EVENT              AT  ELAPSED      CPU  STG  DETAIL
-----
START-PROGRAM TDRVASM    0.000   583us           4K
RETURN              3444  0.002 1,451us     33K  TRANID=TSUM,CALEN=4
END-PROGRAM TDRVASM    0.019   17ms 3,136us    32K
    
```

Level 1 detail trace entry displays are useful for troubleshooting. They restrict the amount of information you see in a detail trace. If you have narrowed the cause of a performance problem to several types of events, a Level 1 detail trace eliminates scrolling through unnecessary information. You can restrict trace entries to only the suspect events.

- Step 6** Press the **End** key to step back through the trace displays and return to the Current Traces display.
- Step 7** On the **COMMAND** line, type **ht** and press **Enter** to see history traces stored in the trace log data sets.

Figure 7-12 on page 7-13 shows the History Traces display. It lists the historical trace logs and any active traces for DB2 and CICS regions managed by a BBI-SS. Each line entry represents a trace log data set.

This History Traces display (showing information held in the display buffer from previous traces) is equivalent to the CICS Trace Entries Display. You can select a trace entry from this display to see summary or detail displays.

Figure 7-12 History Traces Display

```

BMC SOFTWARE ----- HISTORY TRACES ----- PERFORMANCE MGMT
COMMAND ===>
TGT ===> CICSPROD
TIME-- 16:19:09 SCROLL ===> CSR

COMMANDS: SORT, LOCATE, NEW, STOP, START
LC CMDS:  S (SELECT), W (SHOW),          D (DELETE), E (RESET)
          V (VERIFY), N (NEW),  A (ARCHIVE), F (FREE)

DIRECTORY: USR1.RN34.TRACEDIR
ENTRIES USED: 23          FREE: 8169

LC  DATE-----TIME TRACEID  TITLE                USERID  TARGET  STAT ACT
98-09-10 13.07 TRACE06  CICS APPLICATION TRACE  USR1    CICSPROD  UPD  WRI
98-09-10 12.44 TRAC04  PAYROLL CICSTEST TRACE  USR2    CICSPROD  USD
98-09-10 12.34 FINANCE  CICS330 PAYROLL TRACE  USR1    CICSPROD  USD
98-09-07 08.49 TRACE02  CICS APPLICATION TRACE  USR3    CICSPROD  NOC
98-09-02 14.28 TRACE01  DEMONSTRATION CICS TRACE  USR3    CICSPROD  NOC
98-08-14 08.48 PLANNG  CICS DETAIL TRACE       USR5    CICSPROD  USD
98-08-14 08.37 TRACE02  CICS APPLICATION TRACE  USR2    CICSPROD  USD
98-07-14 12.26 DETL02  CICS APPLICATION TRACE  USR4    CICSPROD  NOC
98-07-14 12.25 DETL02  CICS APPLICATION TRACE  USR2    CICSPROD  NOC
98-07-14 11.43 DETL01  CICS APPLICATION TRACE  USR3    CICSPROD  NOC
98-07-14 11.42 DETL01  CICS APPLICATION TRACE  USR1    CICSPROD  NOC
98-07-01 14.12 DETL01  CICS APPLICATION TRACE  USR8    CICSPROD  NOC
***** END OF DISPLAY *****

```

Step 8 Position the cursor in the line command (LC) field next to the log data set for the trace you want to display.

Step 9 Type **s** and press **Enter** to select the data set.

The CICS Trace Entries display appears after you select a data set. It lists the trace entries recorded in the data set.

As in the case of the LTRAC service available to list current traces, you have three navigational options from the CICS Trace Entries display. You can select either of two navigational options from the EXPAND field near the top left corner of the display and go to the MONITOR service or return to the Current Traces menu. You can move the cursor to the trace listed on the display to gain access to summary and detail displays of the trace.

For the remainder of this exercise, only the steps to navigate to the different history trace displays are described. History displays are similar to the current trace displays shown earlier in this exercise. If you want to see a representative example of a history trace display, refer to the equivalent current trace display.

Step 10 Position the cursor in the line command (LC) field next to a trace and press **Enter**.

The Summary Trace Entry display appears, giving you information similar to that on the display described earlier for current traces.

Step 11 In the **PARM** field, position the cursor on the word **DETAIL** and press **Enter**.

The Level 2 detail trace appears. You can also invoke this trace by moving the cursor to any part of the data fields on the Summary Trace Entry display and pressing **Enter**.

Step 12 Change the **LEVEL=** value from **2** to **1** and press **Enter**.

As in the earlier example of current traces, the Level 1 Detail Trace Entry display summarizes details of the trace events. The display does not show details of every event as does the Level 2 display.

Chapter 8 Isolating CICS Performance Problems

This chapter illustrates how you can use MAINVIEW for CICS to isolate common CICS performance problems.

Investigating a Problem Transaction

In this exercise, you will identify the cause of a CICS transaction's response-time problem.

- Step 1** Display the EZCSSI view.
- Step 2** Position the cursor on **Region Analysis** and press **Enter** to display the CREGION view.
- Step 3** When the CREGION view appears, scan the **% Max Task** field.

This field displays the average response time for all transactions within the CICS region for the current interval. You can scroll through the Avg Resp field to see if any of the regions have high response times. To make things easier though, you can sort the column of data so that the region with the highest average appears first.

- Step 4** On the **COMMAND** line, type **SOrt D**.
- Step 5** Position the cursor in the **% Max Task** field and press **Enter**.

The CREGION view is redisplayed with the % Max Task field sorted in descending order, as shown in Figure 8-1 on page 8-2.

Figure 8-1 CREGION View Sorted by Average Response Time

```

15MAR2001 08:45:26 ----- INFORMATION DISPLAY MVCICS-----
COMMAND ====>                                SCROLL ====> PAGE
CURR WIN ====> 1          ALT WIN ====>
>W1 =CREGION===== (BCVDVPC==*=====) 15MAR2001==08:41:01===MVCICS===D===6
CMD Target      Intvl SMF      Total      Total  EXCP  Real  Page Disp  %Max Tran
--- Name        Time- ID        CPU  %CPU  Excp  Rate  Stg  Rate Prty  Task  Rate
CICSA610 08:41 SJSC      9.81  1.2 17255  2.40 3334  0.00 F1   25.0  0.04
BCVCD610 08:41 SJSC      9.73  0.0 14243  0.00 1334  0.00 F1   10.0  0.02
BCVCD520 08:41 SJSC      4.50  0.1  4075  0.00 1314  0.00 F1    5.0  0.02
BCVCD510 08:41 SJSC      4.32  0.0  3610  0.00 1311  0.00 F1    5.0  0.02
BCVCD530 08:41 SJSC      4.96  0.0  3766  0.00 1081  0.00 F1    5.0  0.02
BCVCD410 08:41 SJSC -----

```

Step 6 Find the region with the highest response time.

In this example, region CICSA610 has the highest response time. You should examine the tasks within that region.

Step 7 Position the cursor in the **% Max Task** field for region with the highest response time and press **Enter**.

The TASK view is displayed, as shown in Figure 8-2.

Figure 8-2 TASK View

```

15MAR2001 12:56:40 ----- INFORMATION DISPLAY -----
COMMAND ====>                                SCROLL ====> PAGE
CURR WIN ====> 1          ALT WIN ====>
>W1 =TASK=====BCVCJSYS==*=====14SEP1998==12:56:40===MVCICS===D===6
CMD Task  Target  Tran  St Elapsed  CPU  Suspend Suspend      File  DSA  T
--- ID      ID      ID    Time  Time  Type  Time      Waits  Size R
    18 BCVCJ510 CONL  T 01:43:35  0.08          00:29:32.04  0 22432 N
    21 BCVCJ510 JNL2  T 01:43:30  0.02 EKCWAIT 00:00:03.21  0  4400 N
    26 BCVCJ510 COIO  T 01:43:25  0.12          00:29:32.35  0 21344 N
    28 BCVCJ510 COIE  T 01:43:25  0.01          00:00:00.08  0  33120 N
   128 BCVCJ510 ET03  S 00:43:25  0.29 ZCIOWAIT 00:42:00.24  0 14150 N
   134 BCVCJ510 ET04  S 00:23:19  0.18 ENQUEUEE 00:22:58.15  0 14000 N

```

Here is a case where transaction ET04 (task 134) is waiting for an ENQUEUE. ENQUEUEs that are held for long periods of time can cause degraded response time for other transactions that require the resource.

Step 8 To investigate the suspended task, position the cursor in the **Suspend Type** column and press **Enter**.

The TASKLCK view is displayed, as shown in Figure 8-3 on page 8-3.

Figure 8-3 TASKLCK View

```

14SEP1998 12:59:22 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =TASKLCK=====BCVCJSYS====*=====14SEP1998==12:59:22====MVCICS=====D==2
CMD Task  Target  Tran S Lock   H HoldWait Short Lock   Suspend Suspend  El
--- ID      ID  T Type    W Time    Name                Type    Time    T
    128 CICSA510 ET03 S ENQUEUE H 00:43:24 SERRSRC            EKCPWAIT 00:43:26 00
    134 CICSA510 ET04 S ENQUEUE W 00:22:58 SERRSRC            ENQUEUE  00:22:58 00

```

The TASKLCK view can be used to analyze contention for CICS ENQUEUE resources. In this case, task 128 is holding resource SERRSRC and task 134 is waiting for the same resource. The **HoldWait Time** field for an enqueue holder shows the amount of time elapsed since the initial ENQ request was made. For a waiting task, **HoldWait Time** shows the amount of time elapsed since the task became suspended on the enqueue.

If a task is suspended, the **Suspend Time** field shows the amount of time the task has been suspended. The **HoldWait Time** and **Suspend Time** values for task 134 are the same, which is to be expected. Notice, however, that task 128 is also suspended. In fact, as we saw in the previous view (and could see here if we scrolled to the right), task 128 is suspended on resource DFHZARQ1, which means it is suspended for terminal IO wait.

The TASKLCK view can also highlight a deadlock situation, as shown in Figure 8-4 on page 8-4.

Figure 8-4 TASKLCK View Showing Deadlock Situation

```

14SEP1998 01:06:40 ----- INFORMATION DISPLAY -----
COMMAND ===>                                SCROLL ===> PAGE
CURR WIN ===> 1          ALT WIN ===>
>W1 =TASKLCK=====CICSASYS====*=====14SEP1998==01:06:40===MVCICS===D===4
CMD Task  Target  Tran S Lock   H HoldWait Short Lock   Suspend Suspend  El
--- ID      Target  ID T Type    W Time   Name           Type    Time    T
    128 CICSA510 ET03 S ENQUEUE H 00:00:01 SERRSRC1      ENQUEUE 00:00:05 00
    134 CICSA510 ET04 S ENQUEUE W 00:00:03 SERRSRC1      ENQUEUE 00:00:06 00
    134 CICSA510 ET04 S ENQUEUE H 00:00:02 SERRSRC2      ENQUEUE 00:00:06 00
    128 CICSA510 ET03 S ENQUEUE W 00:00:04 SERRSRC2      ENQUEUE 00:00:05 00

```

In this case, transaction ET03 obtained resource SERRSRC1 and tried to obtain resource SERRSRC2. Just prior to its attempt, transaction ET04 successfully obtained SERRSRC2 and then attempted to obtain SERRSRC1; hence, the deadlock.

This exercise started out as an investigation of a high response time average, but quickly highlighted an application problem. The resolution of the application problem is beyond the scope of MAINVIEW for CICS. However, a short term solution might be to cancel one of the tasks experiencing resource contention. You can do this by using the CANcel line command from the TASK or TASKLCK view, as you will see in the next exercise.

Analyzing CPU Usage

In this exercise, you will investigate the cause of a CICS system's high CPU usage.

Step 1 On the **COMMAND** line, type **CREGION** and press **Enter**.

The CREGION view is displayed.

Step 2 On the **COMMAND** line, type **Sort D**.

Step 3 Position the cursor in the **%CPU** field and press **Enter**.

The CREGION view is redisplayed with the **%CPU** field sorted in descending order, as shown in Figure 8-5.

Figure 8-5 CREGION View Sorted by CPU Percent

```

14SEP1998 12:53:09 ----- INFORMATION DISPLAY -----
COMMAND ==>>                                SCROLL ==>> PAGE
CURR WIN ==>> 1          ALT WIN ==>>
>W1 =CREGION=====CICSASYS==*=====14SEP1998==12:53:09====MVCICS=====D==5
CMD Target  SMF  Total      Total  EXCP  Real  Page  Disp  %Max  Tran  Avg
--- Name   ID   CPU    %CPU  Excp  Rate  Stg  Rate  Prty  Task  Rate  Resp
CICSA510  SYSB  50.68   2.4  4498  2.40  3115  0.00  FD    25.0  0.04  1.548
CICSA410  SYSB  60.26   1.3  4004  0.02   621  0.00  FD     3.0  0.02  0.028
CICSA511  SYSB  48.55   0.8  4251  0.00  1148  0.00  FD    20.0  0.02  0.053
CICSA521  SYSB  40.16   0.6  4400  0.00  2550  0.00  FD    20.0  0.02  0.049
CICSA520  SYSB  41.01   0.4  4430  0.00  2369  0.00  FD    20.0  0.02  0.038

```

This view shows that region CICSA510 is using the largest percent of the CPU's time.

Step 4 Position the cursor in the **%Max Task** field for CICSA510 and press **Enter**.

The TASK view is displayed.

Step 5 Use the **Sort D** command and the **CPU Time** field to sort the TASK view.

The TASK view is redisplayed with the CPU Time field sorted in descending order, as shown in Figure 8-6 on page 8-6.

Figure 8-6 TASK View Sorted by CPU Time

```

14SEP1998 12:56:40 ----- INFORMATION DISPLAY -----
COMMAND ==>                                SCROLL ==> PAGE
CURR WIN ==> 1          ALT WIN ==>
>W1 =TASK=====BCVCJSYS====*=====14SEP1998==12:56:40====MVCICS=====6
CMD Task  Target  Tran  St Elapsed  CPU   Suspend Suspend      File  DSA  T
---  ID      ID      Time  Time   Type   Time      Waits  Size  R
    128 CICSA510 ET03  S 00:43:25 0.29 ZCIOWAIT 00:42:00.24 0 14150 N
    134 CICSA510 ET04  S 00:23:19 0.18 ENQUEUE 00:22:58.15 0 14000 N
    26 CICSA510 COIO  T 01:43:25 0.12          00:29:32.35 0 21344 N
    18 CICSA510 CONL  T 01:43:35 0.08          00:29:32.04 0 22432 N
    21 CICSA510 JNL2  T 01:43:30 0.02 EKCWAIT 00:00:03.21 0 4400 N
    28 CICSA510 COIE  T 01:43:25 0.01          00:00:00.08 0 33120 N

```

Task 128 is using the largest amount of CPU time on system CICSA510.

Step 6 In the line command (CMD) field next to task 128, type **can** and press **Enter**.

The **CAN**cel command attempts to cancel the task using the CICS-supplied transaction **CEMT**.

Note: If the task cannot be canceled with the **CAN**cel command, you can try:

```

PURge  Purges the task normally using CEMT.
KILL   Kills the task without a dump.

```

Step 7 Transfer to the full-screen **TRACE** service.

7.A On the **COMMAND** line, type **tran cicsa510 cics** and press **Enter**.

7.B From the **MAINVIEW** for CICS Primary Option Menu, select option **S.3, TRACES**.

The Current Traces display appears.

Step 8 Start a detail trace for the transaction that you cancelled, **ET03**.

8.A On the **COMMAND** line, type **st** and press **Enter**.

8.B Complete the Start CICS Trace Request panel as shown in Figure 8-7 on page 8-7.

Figure 8-7 Start CICS Trace Request Panel

```

BMC SOFTWARE ----- START CICS TRACE REQUEST ----- PERFORMANCE MGMT
COMMAND ==>
                                                    TGT ==> CICSPROD
                                                    TIME -- 15:25:53
PARM    ==> trace01 (Trace Identifier)      START ==>
                                                    (hh:mm:ss)
TYPE    ==> d      (S-Summary,D-Detail)    STOP  ==>
                                                    (hh:mm:ss/#min)
STORAGE ==> 1000K (Display buffer size) WRAP ==> YES (Y/N Wrap buffer)
LOGTRAC ==> n      (Y/N log trace)        RST   ==> HOT (HOT,PUR,QIS)
TITLE   ==> CPU Usage Trace

Specify Selection Criteria:
TRAN    ==> ET03
PROG    ==>
USERID  ==>
TERMINAL ==>

Specify additional trace options:      (*=processed)
Exception filters                      ==> n (Y/N)
Detail Trace Options                    ==> n (Y/N)
Trace Log Data Set Options              ==> n (Y/N)

                                                    Press ENTER to process; END to cancel

```

8.C Press **Enter** to process your trace request.

8.D Press the **End** key to return to the Current Traces display.

Step 9 From CICS, restart transaction ET03.

Step 10 To redisplay the TASK view, on the **COMMAND** line of the Current Traces display, type

```
transfer cicsa510 mvcics;task
```

The TR field shows a value of D for transaction ET03, which means MAINVIEW for CICS detail tracing is active.

Step 11 Position the cursor in the **TR** field for transaction ET03 and press **Enter**.

The TASKTRD view is displayed, as shown in Figure 8-8 on page 8-8.

Figure 8-8 TASKTRD View

```

18SEP1998 12:06:40 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 =TASKTRD===== (ALL=====*)=====)18SEP1998==12:06:40===MVCICS=====1
CMD Task  Target  Tran Event      Code   At      Elapsed  CPU
--- ID    Name    ID              Ofst   Time    Time
    128  CICSA510 ET03 RESP        00A8  00:02:16.3 0.000276
    128  CICSA510 ET03 GETMAIN    02FC  00:02:16.3 0.000010
    128  CICSA510 ET03 RESP        00A8  00:02:16.3 0.001253
    128  CICSA510 ET03 FREEMAIN 02FC  00:02:16.3 0.000019
    128  CICSA510 ET03 RESP        00A8  00:02:16.3 0.075390
    128  CICSA510 ET03 DELAY   0288  00:02:15.2 0.000008 0.08
    128  CICSA510 ET03 RESP        0053  00:02:15.2 0.000282
    128  CICSA510 ET03 INQUIRE-TRANSACTION 0262  00:02:15.2 0.000008

```

Step 12 Press **Enter** to refresh the display.

Each time you press **Enter**, additional trace entries are displayed for the transaction. By reviewing these trace entries during the life of the transaction, you may be able to detect a loop or some other CPU-related problem.

Chapter 9 Creating Graphs

MAINVIEW for CICS monitors nearly 400 performance parameters from your CICS system. This chapter presents the fundamentals needed to display most of these parameters as graphs using the MAINVIEW for CICS full-screen GRAPH service.

Up to six graphs can be shown in a display. The size and characteristics of each graph depend upon the parameters you select and the type of terminal you are using.

Figure 9-1 on page 9-2 shows a typical MAINVIEW for CICS single resource graph. This type of graph shows the measured values of a single resource over a sampling interval. A graph line has the time that the interval concluded, the measured value of the resource, and a horizontal bar that represents the magnitude of measurement relative to the scale of the graph. The most current data is the top line of the graph.

Figure 9-1 Example of a Single Resource Graph

```

BMC SOFTWARE ----- GRAPH GLBL SYSTEM ----- TIME: 07:38:13
COMMAND ==>> CICS ==>> CICSPROD

SYSTEM          AVG RESPONSE          TOT RESPONSE
                3....3....3....3....3....3
CURRENT 0.463 *****          0.515 *****
07:30:00 0.358 *****          0.433 *****
07:15:00 0.716 *****          0.866 *****
07:00:00 1.232 *****+          1.555 *****+
06:45:00 0.479 *****          0.577 *****
06:30:00 0.084 **             0.144 **
06:15:00 0.399 *****          0.501 *****
06:00:00 0.476 *****          0.546 *****

```

Later in this chapter you will see an example of a multiple resource graph. The format of a multiple resource graph is different from a single resource graph. It shows the performance values of multiple resources over a single measurement interval. Each graph line represents the measured value of an individual resource over a single interval.

Looking at MAINVIEW for CICS Predefined Graphs

This exercise explains how to select the predefined graphs in MAINVIEW for CICS. The exercise also demonstrates several different ways to navigate in single resource and multiple resource graphs.

- Step 1** In full-screen mode, display the MAINVIEW for CICS Primary Option Menu.
- Step 2** Select option **G, GRAPHICS**.

Figure 9-2 on page 9-3 shows the Graph Master Menu that appears. You can select from two groups of options on this menu to see predefined graphs or select option **U, USER GRAPHS**, to create customized graphs.

Figure 9-2 MAINVIEW for CICS Graph Master Menu

```
BMC SOFTWARE ----- GRAPH MASTER MENU ----- TIME: 12:15:34
COMMAND ==>>>                                     CICS ==>> CICSPROD

User Definable Graphs
  U  USER GRAPHS  - User Definable Graphs

Global Level Graphs
  1  CICS          - Global CICS System Analysis
  2  SYSTEM        - Global CICS Transaction Summary
  3  SERVICE       - Service Level Analysis
  4  STORAGE       - CICS Storage Utilization

Resource Level Graphs
  5  TRANSACTION   - Graphs by Transaction ID
  6  TERMINAL     - Graphs by Terminal ID
  7  4th GLs      - Graphs by 4th GL Program ID
  8  B.M.S.       - Graphs by BMS Map Set Name
  9  PSBS         - Graphs by DL/1 PSB Name
 10  FILES        - Graphs by File or Database ID
```

Step 3 Select option **2, SYSTEM**, to see global transaction summary graphs.

Figure 9-3 on page 9-4 shows the default graphs of the **SYSTEM** option. These graphs report summary performance measures of CICS transactions.

Figure 9-3 Predefined Transaction Summary Graph

```

BMC SOFTWARE ----- GRAPH GLBL SYSTEM ----- TIME: 12:22:18
COMMAND ==> CICS ==> CICSPROD

SYSTEM          USE COUNT          AVG CPU REAL          AVG SUSPND TIME
|...|...|...|          |...|...|...|          |...|...|...|
CURRENT        23 ***          0.249 ***          0.185
12:20:00       33 *****          0.298 *****          0.198
12:05:00       34 *****          0.313 *****          0.205
11:50:00       30 *****          0.287 *****          0.185
                32 *****          0.307 *****          0.197
                33 *****          0.312 *****          0.169
                34 *****          0.310 *****          0.212
                21 ***          0.233 ***          0.185

SYSTEM          AVG RESPONSE          AVG CPU TIME          AVG # DISPATCHS
|...|...|...|          |...|...|...|          |...|...|...|
CURRENT        0.703 *****          0.251 ***          8 *****
12:20:00       0.689 *****          0.321 *****          6 *****
12:05:00       0.729 *****          0.329 *****          9 *****
11:50:00       0.754 *****          0.299 *****          2 **
                0.533 *****          0.308 *****          5 *****
                0.684 *****          0.331 *****          6 *****
                0.707 *****          0.323 *****          7 *****
                0.739 *****          0.247 ***          5 *****

```

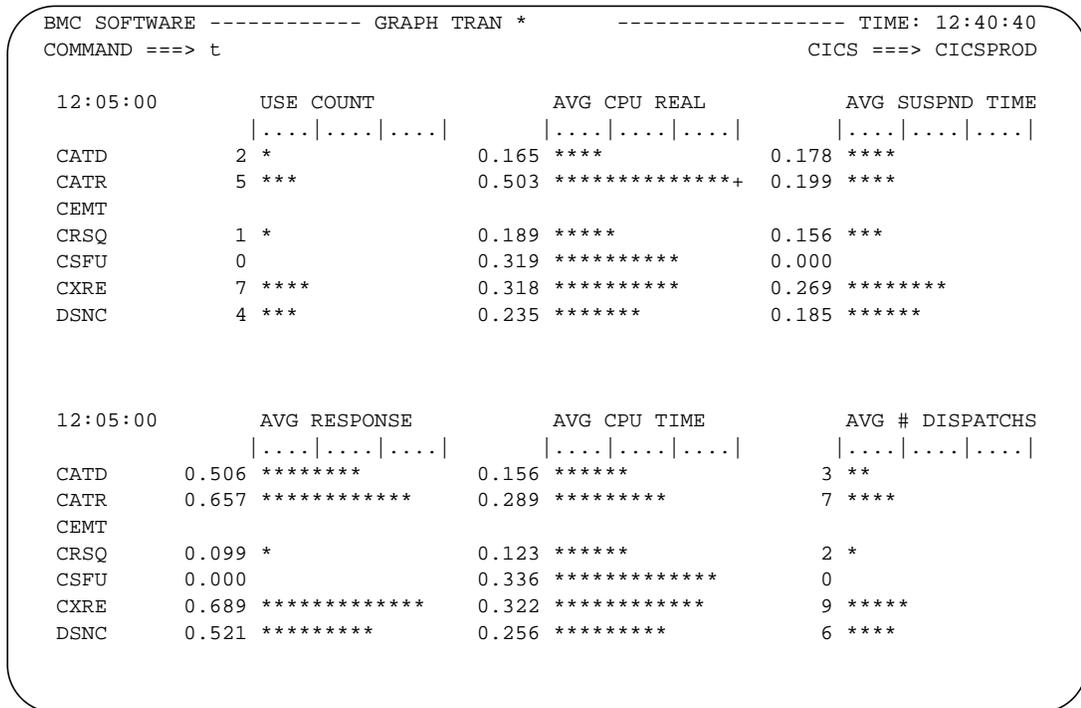
Step 4 Use the ISPF RIGHT command to see other transaction graphs beyond the boundaries of the current display.

Use the LEFT command to return to the original graph display. You can also scroll forward or backward in single resource graphs to see any other graphs that may be specified.

Step 5 On the COMMAND line, type =g,5 and press Enter to move directly to predefined transaction summary graphs.

Notice the difference between the graphs shown in Figure 9-4 on page 9-5 and those shown in Figure 9-3. A predefined transaction summary is a multiple resource graph. Each graph shows a specific performance measure for more than one resource in a single time interval.

Figure 9-4 Multiple Resource Transaction Graph



Step 6 On the **COMMAND** line, type **t** and press the scroll backward key.

The graphs show the previous time interval. You can scroll forward or backward through the time intervals by typing **T** on the **COMMAND** line and pressing the scroll keys.

Forward and backward scrolling displays any additional graphs that are specified with your predefined selection.

Printing Graphs

Occasionally, you may want to print copies of MAINVIEW for CICS graphs to include in your reports. You can use the PRINT command or a PF key (defaults are **PF4** or **PF16**) to copy the current graph display to the BBISPRNT data set allocated to the BBI-TS. This procedure works for all MAINVIEW for CICS online services and is not limited to just printing graphs.

Step 1 Select a graph display you want to print.

Step 2 On the **COMMAND** line, type **print**, or press the print screen key.

The current screen is copied to your BBISPRNT data set allocated to your user ID (*userid.BBISPRNT*). A message appears in the upper right corner of the graph screen notifying you that the screen buffer has been copied.

Step 3 Print the data set according to your site's procedures.

Figure 9-5 shows an example of a printed MAINVIEW for CICS graph.

Figure 9-5 Sample Screen Capture in the BBISPRNT Data Set

```

BMC SOFTWARE ----- GRAPH TRAN * ----- TIME: 10:42:27
COMMAND ==> CICS ==> CICSPROD

09:44:00      -USE-COUNT-----      -AVG-CPU-REAL---      -AVG-SUSPND-TIME
              |...|...|...|      |...|...|...|      |...|...|...|
CATA          1 --                0.034 ---          0.039 ---
CATR          1 --                0.006                0.001
CEMT
CQRY          2 ---                0.004                0.001
CRSQ          1 --                0.004                0.179 -----
CSFU          1 --                0.004                0.173 -----
CSGM          1 --                0.005                0.001
CXRE          1 --                0.007                0.001

09:44:00      -AVG-RESPONSE---      -AVG-CPU-TIME---      -AVG-#-DISPATCHS
              |...|...|...|      |...|...|...|      |...|...|...|
CATA          0.216 -----          0.112 -----          7 -----
CATR          0.030 --                0.006                3 ----
CEMT
CQRY          0.037 ---                0.026 --                2 ---
CRSQ          0.189 -----          0.003                3 ----
CSFU          0.191 -----          0.003                3 ----
CSGM          0.020 --                0.004                3 ----
CXRE          0.011                0.005                8 -----
    
```

Creating Your Own Graphs

You create your own graphs by selecting the number and type of performance measures you want to view from a single display. This exercise describes the steps to create custom graphs from MAINVIEW for CICS transaction data.

- Step 1** On the **COMMAND** line, type **=g.u** and press **Enter** to move directly to the User Defined Graph Selection menu.

Figure 9-6 shows the User Defined Graph Selection menu. This menu lists 10 groups of performance measures. The performance measures groups are options that create either global-level or resource-level graphs.

Each option presents a secondary menu of related performance measures collected by MAINVIEW for CICS. You begin building your user-defined graphs by first selecting the option that contains the performance measures that you want to graph.

Figure 9-6 User Defined Graph Selection Menu

```

BMC SOFTWARE ----- USER DEFINED GRAPH SELECTION ----- TIME: 12:57:57
COMMAND ==> CICS ==> CICSPROD

Select one of the following

Global Level Graphs
 1 Field list for Global CICS System Analysis
 2 Field list for Global Transaction Summary
 3 Field list for Service Level Analysis
 4 Field list for CICS Storage Utilization

Resource Level Graphs
 5 Field list for Graphs by Transaction ID
 6 Field list for Graphs by Terminal ID
 7 Field list for Graphs by 4th GL Program ID
 8 Field list for Graphs by BMS Map Set Name
 9 Field list for Graphs by DL/1 PSB Name
10 Field list for Graphs by File or Database ID

```

- Step 2** Select option 2, **Field list for Global Transaction Summary**.

The Global System Selection menu appears, as shown in Figure 9-7 on page 9-8. You can select up to six different performance measures in your user-defined graphs.

Step 3 Type the numbers **1** through **6** in the fields of the Global System Selection menu as shown in Figure 9-7.

Figure 9-7 Global System Performance Measures Menu

```

BMC SOFTWARE ----- GLOBAL SYSTEM SELECTION ----- TIME: 13:03:07
COMMAND ==>>>                                         CICS ==>> CICSPROD

Select up to 6 fields from the list below

1  USE COUNT          _  CNT LT SERVICE LEVEL  _  PCT LT SERVICE LEVEL
2  AVG RESPONSE TIME  3  TOTAL RESPONSE TIME  _  PCT FC OF REQUESTS
4  AVG REAL CPU TIME  5  TOTAL REAL CPU TIME  _  PCT KC OF REQUESTS
6  AVG DISPATCH TIME  _  TOTAL DISPATCH TIME  _  PCT DISPATCH TIME
_  AVG USER ECB WAIT  _  TOTAL USER ECB WAIT  _  PCT USER ECB WAIT
_  AVG FC I/O WAIT    _  TOTAL FC I/O WAIT    _  PCT FC I/O WAIT
_  AVG FC-OTHER WAIT  _  TOTAL FC-OTHER WAIT  _  PCT FC-OTHER WAIT
_  AVG JC I/O WAIT    _  TOTAL JC I/O WAIT    _  PCT JC I/O WAIT
_  AVG PC I/O WAIT    _  TOTAL PC I/O WAIT    _  PCT PC I/O WAIT
_  AVG SUSPEND TIME   _  TOTAL SUSPEND TIME   _  PCT SUSPEND TIME
_  AVG TC I/O WAIT    _  TOTAL TC I/O WAIT    _  PCT TC I/O WAIT
_  AVG TD I/O WAIT    _  TOTAL TD I/O WAIT    _  PCT TD I/O WAIT
_  AVG TS I/O WAIT    _  TOTAL TS I/O WAIT    _  PCT TS I/O WAIT
_  AVG TS STRING WAIT _  TOTAL TS STRING WAIT _  PCT TS STRING WAIT
_  AVG DATABASE WAIT  _  TOTAL DATABASE WAIT  _  PCT DATABASE WAIT
    
```

You can select the performance measures you want to graph by entering any character or a number from 1 to 6 in the fields to the left of the descriptions. When you select an item with a character, the resulting graphs are presented in the same order as the fields appear in the selection list. When you use numbers to select performance measures, the graphs appear in numeric order. You cannot select performance measures by entering both numbers and characters together in a single menu.

Step 4 Press **Enter** to display the graphs created from the performance measures that you selected.

Figure 9-8 on page 9-9 shows user-defined graphs created from the performance parameters that you selected on the Global System Selection menu. Notice the graphs are arranged left to right and top to bottom in the numeric order that you selected them.

Figure 9-8 User-Defined Graphs of Global Performance Measures

```

BMC SOFTWARE ----- GRAPH TRAN * ----- TIME: 13:32:23
COMMAND ==> CICS ==> CICSPROD

11:03:00      USE COUNT      AVG RESPONSE      TOT RESPONSE
|...|...|...| |...|...|...| |...|...|...|
CATD          0              0.000            0.000
CATR          0              0.000            0.000
CEMT          0              0.000            0.000
CRSQ          0              0.000            0.000
CSFU          0              0.000            0.000
CXRE          0              0.000            0.000
DSNC          0              0.000            0.000

11:03:00      AVG CPU REAL      TOT CPU REAL      AVG CPU TIME
|...|...|...| |...|...|...| |...|...|...|
CATD          0.000          0.000            0.000
CATR          0.000          0.000            0.000
CEMT          0.000          0.000            0.000
CRSQ          0.000          0.000            0.000
CSFU          0.000          0.000            0.000
CXRE          0.000          0.000            0.000
DSNC          0.000          0.000            0.000

```

Step 5 On the **COMMAND** line, type **recall** and press **Enter**.

Notice the command that appears when you issue the **RECALL** command. It should look like this:

```
EX GRAPH GLBL SYSTEM 001 005 226 002 223 034
```

This is the extended graph command that created your graph. Make a note of this command. Later, in “Using Extended Graph Commands” on page 9-14, you will create your own graph directly with an extended command.

Saving Your Graph Definition

After you have created your own user-defined graphs, you may want to display them again without having to go through the process of reselecting the same performance data. The following exercise shows how to save your definitions in a member that can be selected when you want to display graphs.

Step 1 Press the **End** key to return to the Global System Selection menu.

The menu should appear with the performance measures that you previously selected.

Step 2 On the **COMMAND** line, type **save user** and press **Enter** to save the performance measures that you selected in a member named **USER**.

A message appears beneath the command line notifying you that member **USER** has been created.

If you save your graph definition with a name that is three characters or less, it is appended as a suffix of a **CMRGS** member. The save confirmation message indicates that member **CMRGSABC** has been saved, where **ABC** is the name that you selected with the **SAVE** command.

If you save your graph definition with a name that is greater than three characters, the save confirmation message indicates that member **ABCD** has been created, where **ABCD** is the name that you selected with the **SAVE** command.

Step 3 Type **review** and press **Enter** to see a list of current graph definition members.

Figure 9-9 on page 9-11 shows the review list. It is an online scratch pad that lists the current saved graph definitions that you can use.

Figure 9-9 Graph Definition Review List

```

BMC SOFTWARE ----- GRAPH SET REVIEW UPDATE ----- TIME: 13:44:36
COMMAND ==>>> CICS ==>> CICSPROD

--NAME-- -----DESCRIPTION-----
ACCNTING GLOBAL PERFORMANCE AVERAGE GRAPH FOR ACCOUNTING TRANSACTIONS
CMRGSABC  TERMINAL-ATTACHED TRANSACTIONS FOR CICSPROD

```

The NAME field shows the name of the members that have graph definitions. The DESCRIPTION field annotates the type of graphs created by the definition member.

- Step 4** Type **update** and press **Enter** to edit the review list.
- Step 5** In the **NAME** field, type **user** or the name that you selected for your definition member.
- Step 6** Tab to the **DESCRIPTION** field and type a brief description of the graphs created by the definitions in this member.
- Step 7** On the **COMMAND** line, type **save** and press **Enter** to add your member name and description to the review list.
- Step 8** Press the **End** key to return to the Global System Selection menu.
- Step 9** Type **reset** and press **Enter** to clear all of the selections from the menu that you made previously.

The menu should be blank, without any selected fields.

- Step 10** Type **select user** to select your graph definition member.

The selections that you previously saved reappear on the Global System Selection menu. You are now using the selections saved in your graph definition member.

- Step 11** Press **Enter** to see the graphs you have defined.

The graphs are the same as those that appear in Figure 9-8 on page 9-9.

In this exercise, you created a member to hold your graph definitions. In the future, you can save time by invoking your definition member with the **SELECT** command. This saves you the time you would spend reselecting the same performance measures every time you want to display your graphs.

Updating Graph Displays with the Cycle Service

Now that you have saved the performance measures that you want to display as user-defined graphs, this exercise explains how to continuously update these graphs with performance measures collected in the most recent sampling interval.

CYCLE is a general service available to the MAINVIEW products. MAINVIEW for CICS graphs and service displays can be updated periodically with the most current data at an interval you set with the CYCLE service.

- Step 1** On the **COMMAND** line of any MAINVIEW for CICS display, type **cycle** and press **Enter**.

The Service Refresh Cycle panel appears, as shown in Figure 9-10.

Figure 9-10 Service Refresh Cycle Panel

```

BMC SOFTWARE ----- SERVICE REFRESH CYCLE ----- GENERAL SERVICES
COMMAND ==>>>                                     TGT ==>>> CICSPROD
                                                    PAGE      1 OF 1

                TARGET  TYPE   DTIME LOG  DESCRIPTION
SERVICE ==>>  graph   cicsprod cics    1
PARMS ==>>>

```

- Step 2** Complete the fields of the Service Refresh Cycle panel as shown in Figure 9-10 and press **Enter**. In the **TARGET** field, type the name of your active CICS region.

If you do not complete the **TARGET**, **TYPE**, **DTIME**, or **LOG** fields, their defaults are displayed when you press **Enter**.

- Step 3** On the **COMMAND** line, type **go** and press **Enter** to start the refresh cycle.

You should see a graph display that is continuously executing with a cycle message in the **COMMAND** line, as shown in Figure 9-11 on page 9-13. The graphs are updated at every cycle interval.

Figure 9-11 CYCLE Interval Message

```

BMC SOFTWARE ----- GRAPH GLBL SYSTEM ----- TIME: 13:46:30
COMMAND ==> RUNNING, INTERVAL=01                      CICS ==> CICSPROD

```

The display is refreshed continuously until either a RESET/PA1 sequence is entered for BISYNCH terminals or the Attention key is pressed on SNA terminals.

- Step 4** Press the appropriate key sequence for your terminal to stop the cyclic refresh.

The cycle message should disappear and your graph display should no longer be executing a command.

- Step 5** Press the **End** key to return to the CYCLE service.

The fields of the Service Refresh Cycle menu should still have the same values you entered before starting cyclic refresh with the GO command.

Saving Your Update Definition

Refresh cycles that are used frequently can be saved as members in the BBIPROF data set. As in the case with your user-defined graph performance measures, you can save your cycle parameters in a member and select it when you want to refresh a MAINVIEW for CICS graph or performance service that you display frequently.

- Step 1** On the **COMMAND** line, type **save user1** and press **Enter** to store the parameters you set with the CYCLE service in a BBIPROF member named USER1.

A message in the upper right corner of the screen indicates that the member is saved.

Cycle member names vary. If the member name you specified with the SAVE command is two characters or less, the name is appended as a suffix to a member with a prefix CYC. The member name is then CYCAB. Names that are between three and eight characters long are saved as the specified member name.

- Step 2** Type **select user1** and press **Enter** to invoke the saved member.

A message appears in the upper right corner notifying you that setup is complete.

Step 3 Type **go** and press **Enter**.

Another cyclic refresh of your graph displays is started with the parameters you saved in your **CYCLE** service member.

Step 4 Press the appropriate key sequence for your terminal to stop the cyclic refresh.

Using Extended Graph Commands

This exercise describes how to invoke graphs directly, without making any selections from menus. As you become more experienced with MAINVIEW for CICS, you will find that specifying your graphs directly with the EXEC command is much quicker than using menus.

You will need your *MAINVIEW for CICS Online Services Reference Manual*. Look at the appendix titled “Cross-References for Graph Fields” in the book. Notice the column titled Field No. in the appendix table. These field numbers can be specified in a command to display the performance measures that appear in the column titled Field Name at the far left of the appendix table. This exercise explains how to create a MAINVIEW for CICS graph using the Field number of the performance measures that you want to display.

Step 1 On the **COMMAND** line of your graph display, type **recall** and press **Enter**.

The command line displays the extended graph command that produced the active graph display. The EXEC GRAPH command looks like the one shown in Figure 9-12 on page 9-15.

Figure 9-12 Extended GRAPH Command

```

BMC SOFTWARE ----- GRAPH TRAN * ----- TIME: 13:59:36
COMMAND ==> EX GRAPH TRAN *          001 002 003 005 034 035 CICS ==> CICSPROD

13:59:20          USE COUNT                AVG CPU REAL                AVG SUSPND TIME
                3....3....3....3          3....3....3....3          3....3....3....3
CATA             0                        0.000                      0.000
CATR             0                        0.000                      0.000
CEMT
CQRY             0                        0.000                      0.000
CRSQ             0                        0.000                      0.000
CRSR             0                        0.000                      0.000
CSFU             0                        0.000                      0.000
CSGM             0                        0.000                      0.000

```

The EXEC command is used to directly invoke a MAINVIEW for CICS service. The GRAPH service is invoked to create the graphs shown in Figure 9-12. In addition, the transaction (TRAN) group of related performance measures is specified in the command.

The six field numbers at the far right are command parameters. The performance measures associated with these field numbers are the values that actually appear in MAINVIEW for CICS graphs. The leading zeros of the field numbers must always be included as part of the EXEC command.

Step 2 On the **COMMAND** line, type **return** and press **Enter** to return to the MAINVIEW for CICS Primary Option Menu.

Step 3 Type the following command:

EXec GRAPH TRAN * 001 002 003

You will see the top three graphs that you saw earlier in Figure 9-12.

When you have some time, experiment with some of the field numbers shown in the *MAINVIEW for CICS Online Services Reference Manual* to develop your own unique extended graph commands. Remember, you must select field numbers from the same graph group to view them from a single extended command display.

This step explained the basics for creating graphs with MAINVIEW for CICS. You can get more information about online graphics by reading the chapter titled “MAINVIEW for CICS Graphs” in your *MAINVIEW for CICS Online Services Reference Manual*. The *MAINVIEW for CICS PERFORMANCE REPORTER User Guide* describes how to create printed reports and graphs.

Chapter 10 What Next?

Congratulations! You have now mastered the basic skills needed to use MAINVIEW for CICS effectively. You are ready to start using the product to manage your own CICS systems. What should you do now?

Well, you might want to consult these other MAINVIEW for CICS books:

MAINVIEW for CICS Online Services Reference Manual

This book provides complete information about all of the MAINVIEW for CICS online facilities, including full-screen, target-oriented services and windows-based, context-oriented views for the CICSplex environment. If you are interested in a particular area of CICS operation or performance, this book will describe the MAINVIEW for CICS service that you can use to investigate it.

MAINVIEW for CICS PERFORMANCE REPORTER User Guide

This book describes the predefined CICS performance and usage reports supplied with MAINVIEW for CICS and explains the batch jobs you can use to produce them. It also explains how to use the Performance Reporting Language (PRL) to create your own customized batch reports.

MAINVIEW for CICS Monitors Guide

This book describes the data collection monitors supplied with MAINVIEW for CICS and explains how to use them.

Or you may just want to start experimenting—with easy menus, hyperlinks, expand fields—whatever seems interesting to you. Remember, whenever you are working with MAINVIEW for CICS, online help is readily available.

Whatever you decide, you should feel confident about your abilities to navigate through MAINVIEW for CICS and to use its data to monitor CICS systems and their resources.

Glossary

This glossary defines BMC Software terminology. Other dictionaries and glossaries can be used in conjunction with this glossary.

Since this glossary pertains to BMC Software-related products, some of the terms defined might not appear in this book.

To help you find the information you need, this glossary uses the following cross-references:

Contrast with indicates a term that has a contrary or contradictory meaning.

See indicates an entry that is a synonym or contains expanded information.

See also indicates an entry that contains related information.

action	Defined operation, such as modifying a MAINVIEW window, that is performed in response to a command. <i>See</i> object.
active window	Any MAINVIEW window in which data can be refreshed. <i>See</i> alternate window, current window, window.
administrative view	Display from which a product's management tasks are performed, such as the DSLIST view for managing historical data sets. <i>See</i> view.
ALT WIN field	Input field that allows you to specify the window identifier for an alternate window where the results of a hyperlink are displayed. <i>See</i> alternate window.
Alternate Access	<i>See</i> MAINVIEW Alternate Access.
alternate form	View requested through the FORM command that changes the format of a previously displayed view to show related information. <i>See also</i> form, query.

alternate window	(1) Window that is specifically selected to display the results of a hyperlink. (2) Window whose identifier is defined to the ALT WIN field. <i>Contrast with</i> current window. <i>See</i> active window, window, ALT WIN field.
analyzer	(1) Online display that presents a snapshot of status and activity data and indicates problem areas. (2) Component of CMF MONITOR. <i>See</i> CMF MONITOR Analyzer.
application	(1) Program that performs a specific set of tasks within a MAINVIEW product. (2) In MAINVIEW VistaPoint, combination of workloads to enable display of their transaction performance data in a single view.
application trace	<i>See</i> trace.
ASCH workload	Workload comprising Advanced Program-to-Program Communication (APPC) address spaces.
AutoCustomization	Online facility for customizing the installation of products. AutoCustomization provides an ISPF panel interface that both presents customization steps in sequence and provides current status information about the progress of the installation.
automatic screen update	Usage mode wherein the currently displayed screen is refreshed automatically with new data at an interval you specify. Invoked by the ASU command.
batch workload	Workload consisting of address spaces running batch jobs.
BBI	Basic architecture that distributes work between workstations and multiple OS/390 targets for BMC Software MAINVIEW products.
BBI-SS PAS	<i>See</i> BBI subsystem product address space.
BBI subsystem product address space (BBI-SS PAS)	OS/390 subsystem address space that manages communication between local and remote systems and that contains one or more of the following products: <ul style="list-style-type: none"> • MAINVIEW AutoOPERATOR • MAINVIEW for CICS • MAINVIEW for DB2 • MAINVIEW for DBCTL • MAINVIEW for IMS Online • MAINVIEW for MQSeries (formerly Command MQ for S/390) • MAINVIEW SRM • MAINVIEW VistaPoint (for CICS, DB2, DBCTL, and IMS workloads)
BBPARM	<i>See</i> parameter library.

BBPROC	<i>See</i> procedure library.
BBPROF	<i>See</i> profile library.
BBSAMP	<i>See</i> sample library.
BBV	<i>See</i> MAINVIEW Alternate Access.
BBXS	BMC Software Subsystem Services. Common set of service routines loaded into common storage and used by several BMC Software MAINVIEW products.
border	Visual indication of the boundaries of a window.
bottleneck analysis	Process of determining which resources have insufficient capacity to provide acceptable service levels and that therefore can cause performance problems.
CA-Disk	Data management system by Computer Associates that replaced the DMS product.
CAS	Coordinating address space. One of the address spaces used by the MAINVIEW windows environment architecture. The CAS supplies common services and enables communication between linked systems. Each OS/390 or z/OS image requires a separate CAS. Cross-system communication is established through the CAS using VTAM and XCF communication links.
CFMON	<i>See</i> coupling facility monitoring.
chart	Display format for graphical data. <i>See also</i> graph.
CICSplex	User-defined set of one or more CICS systems that are controlled and managed as a single functional entity.
CMF MONITOR	Comprehensive Management Facility MONITOR. Product that measures and reports on all critical system resources, such as CPU, channel, and device usage; memory, paging, and swapping activity; and workload performance.
CMF MONITOR Analyzer	Batch component of CMF MONITOR that reads the SMF user and 70 series records created by the CMF MONITOR Extractor and/or the RMF Extractor and formats them into printed system performance reports.
CMF MONITOR Extractor	Component of CMF that collects performance statistics for CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390, and RMF postprocessor. <i>See</i> CMF MONITOR Analyzer, CMF MONITOR Online, MAINVIEW for OS/390.

CMF MONITOR Online

Component of CMF that uses the MAINVIEW window interface to present data on all address spaces, their use of various system resources, and the delays that each address space incurs while waiting for access to these resources. *See* CMF MONITOR, MAINVIEW for OS/390.

CMF Type 79 API

Application programming interface, provided by CMF, that provides access to MAINVIEW SMF-type 79 records.

CMFMON

Component of CMF MONITOR that simplifies online retrieval of information about system hardware and application performance and creates MAINVIEW SMF-type 79 records.

The CMFMON *online facility* can be used to view data in one or more formatted screens.

The CMFMON *write facility* can be used to write collected data as MAINVIEW SMF-type 79 records to an SMF or sequential data set.

CMRDETL

MAINVIEW for CICS data set that stores detail transaction records (type 6E) and abend records (type 6D). Detail records are logged for each successful transaction. Abend records are written when an abend occurs. Both records have the same format when stored on CMRDETL.

CMRSTATS

MAINVIEW for CICS data set that stores both CICS operational statistic records, at five-minute intervals, and other records, at intervals defined by parameters specified during customization (using CMRSOPT).

column

Vertical component of a view or display, typically containing fields of the same type of information, that varies by the objects associated in each row.

collection interval

Length of time data is collected. *See also* delta mode, total mode.

command delimiter

Special character, usually a ; (semicolon), used to stack commands typed concurrently on the COMMAND line for sequential execution.

COMMAND line

Line in the control area of the display screen where primary commands can be typed. *Contrast with* line command column.

Command MQ Automation D/S

Command MQ agents, which provide local proactive monitoring for both MQSeries and MSMQ (Microsoft message queue manager). The Command MQ agents operate at the local node level where they continue to perform functions regardless of the availability of the MQM (message queue manager) network. Functionality includes automatic monitoring and restarts of channels, queue managers, queues and command servers. In cases where automated recovery is not possible, the agents transport critical alert information to a central console.

Command MQ Automation S/390

Command MQ component, which monitors the MQM (message queue manager) networks and intercedes to perform corrective actions when problems arise. Solutions include:

- Dead-Letter Queue management
- System Queue Archival
- Service Interval Performance solutions
- Channel Availability

These solutions help ensure immediate relief to some of the most pressing MQM operations and performance problems.

Command MQ for D/S

Command MQ for D/S utilizes a true client/server architecture and employs resident agents to provide configuration, administration, performance monitoring and operations management for the MQM (message queue manager) network.

Command MQ for S/390

See MAINVIEW for MQSeries.

COMMON STORAGE MONITOR

Component of MAINVIEW for OS/390 that monitors usage and reconfigures OS/390 or z/OS common storage blocks.

composite workload

Workload made up of a WLM workload or other workloads, which are called *constituent workloads*.

constituent workload

Member of a composite workload. Constituent workloads in a composite usually belong to a single workload class, but sometimes are mixed.

contention

Occurs when there are more requests for service than there are servers available.

context

In a Plex Manager view, field that contains the name of a target or group of targets specified with the CONTEXT command. *See* scope, service point, SSI context, target context.

CONTEXT command

Specifies either a MAINVIEW product and a specific target for that product (*see* target context) or a MAINVIEW product and a name representing one or more targets (*see* SSI context) for that product.

control statement (1) Statement that interrupts a sequence of instructions and transfers control to another part of the program. (2) Statement that names samplers and other parameters that configure the MAINVIEW components to perform specified functions. (3) In CMF MONITOR, statement in a parameter library member used to identify a sampler in the extractor or a report in the analyzer, or to describe either component's processing requirements to the operating system.

coupling facility monitoring (CFMON)

Coupling facility views that monitor the activity of your system's coupling facilities.

current data Data that reflects the system in its current state. The two types of current data are real-time data and interval data. *Contrast with* historical data. *See also* interval data, real-time data.

current window In the MAINVIEW window environment, window where the main dialog with the application takes place. The current window is used as the default window destination for commands issued on the COMMAND line when no window number is specified. *Contrast with* alternate window. *See* active window, window.

DASD (Direct Access Storage Device) (1) A device with rotating recording surfaces that provides immediate access to stored data. (2) Any device that responds to a DASD program.

DASD ADVISOR An interactive software tool that diagnoses DASD performance problems and makes recommendations to reduce overall service time. This tool measures and reports on the operational performance of IBM and IBM-compatible devices.

data collector Program that belongs to a MAINVIEW product and that collects data from various sources and stores the data in records used by views. For example, MAINVIEW for OS/390 data collectors obtain data from OS/390 or z/OS services, OS/390 or z/OS control blocks, CMF MONITOR Extractor control blocks, and other sources. *Contrast with* extractor.

delta mode (1) In MAINVIEW for DB2 analyzer displays, difference between the value sampled at the start of the current statistics interval and the value sampled by the current analyzer request. *See also* statistics interval. (2) In CMFMON, usage mode wherein certain columns of data reflect the difference in values between one sample cycle and the next. Invoked by the DELta ON command. *See also* collection interval, sample cycle, total mode.

DFSMS (Data Facility Storage Management System) Data management, backup, and HSM software from IBM for OS/390 or z/OS mainframes.

DMR *See* MAINVIEW for DB2.

DMS	(Data Management System) <i>See</i> CA-Disk.
DMS2HSM	<i>See</i> MAINVIEW SRM DMS2HSM.
DSO	(Data Set Optimizer) CMF MONITOR Extractor component that uses CMF MONITOR Extractor data to produce reports specifying the optimal ordering of data sets on moveable head devices.
EasyHSM	<i>See</i> MAINVIEW SRM EasyHSM.
EasyPOOL	<i>See</i> MAINVIEW SRM EasyPOOL.
EasySMS	<i>See</i> MAINVIEW SRM EasySMS.
element	(1) Data component of a data collector record, shown in a view as a field. (2) Internal value of a field in a view, used in product functions.
element help	Online help for a field in a view. The preferred term is <i>field help</i> .
Enterprise Storage Automation	<i>See</i> MAINVIEW SRM Enterprise Storage Automation.
event	A message issued by Enterprise Storage Automation. User-defined storage occurrences generate events in the form of messages. These events provide an early warning system for storage problems and are routed to user-specified destinations for central viewing and management.
Event Collector	Component for MAINVIEW for IMS Online, MAINVIEW for IMS Offline, and MAINVIEW for DBCTL that collects data about events in the IMS environment. This data is required for Workload Monitor and optional for Workload Analyzer (except for the workload trace service). This data also is recorded as transaction records (X'FA') and program records (X'F9') on the IMS system log for later use by the MAINVIEW for IMS Offline components: Performance Reporter and Transaction Accountant.
expand	Predefined link from one display to a related display. <i>See also</i> hyperlink.
extractor	Program that collects data from various sources and keeps the data control blocks to be written as records. Extractors obtain data from services, control blocks, and other sources. <i>Contrast with</i> data collector.
extractor interval	<i>See</i> collection interval.
fast path	Predefined link between one screen and another. To use the fast path, place the cursor on a single value in a field and press Enter . The resulting screen displays more detailed information about the selected value. <i>See also</i> hyperlink.

field	Group of character positions within a screen or report used to type or display specific information.
field help	Online help describing the purpose or contents of a field on a screen. To display field help, place the cursor anywhere in a field and press PF1 (HELP). In some products, field help is accessible from the screen help that is displayed when you press PF1 .
filter	Selection criteria used to limit the number of rows displayed in a view. Data that does not meet the selection criteria is not displayed. A filter is composed of an element, an operator, and an operand (a number or character string). Filters can be implemented in view customization, through the PARM/QPARM commands, or through the Where/QWhere commands. Filters are established against elements of data.
fire	The term used to indicate that an event has triggered an action. In MAINVIEW AutoOPERATOR, when a rule selection criteria matches an incoming event and <i>fires</i> , the user-specified automation actions are performed. This process is also called <i>handling</i> the event.
fixed field	Field that remains stationary at the left margin of a screen that is scrolled either right or left.
FOCAL POINT	MAINVIEW product that displays a summary of key performance indicators across systems, sites, and applications from a single terminal.
form	One of two constituent parts of a view; the other is query. A form defines how the data is presented; a query identifies the data required for the view. <i>See also</i> query, view.
full-screen mode	Display of a MAINVIEW product application or service on the entire screen. There is no window information line. <i>Contrast with</i> windows mode.
global command	Any MAINVIEW window interface command that can affect all windows in the window area of a MAINVIEW display.
graph	Graphical display of data that you select from a MAINVIEW window environment view. <i>See also</i> chart.
hilevel	For MAINVIEW products, high-level data set qualifier required by a site's naming conventions.
historical data	(1) Data that reflects the system as it existed at the end of a past recording interval or the duration of several intervals. (2) Any data stored in the historical database and retrieved using the TIME command. <i>Contrast with</i> current data, interval data and real-time data.

historical database	Collection of performance data written at the end of each installation-defined recording interval and containing up to 100 VSAM clusters. Data is extracted from the historical database with the TIME command. <i>See</i> historical data.
historical data set	In MAINVIEW products that display historical data, VSAM cluster file in which data is recorded at regular intervals.
HSM	(Hierarchical Storage Management) Automatic movement of files from hard disk to slower, less-expensive storage media. The typical hierarchy is from magnetic disk to optical disk to tape.
hyperlink	<p>(1) Preset field in a view or an EXPAND line on a display that permits you to</p> <ul style="list-style-type: none"> • access cursor-sensitive help • issue commands • link to another view or display <p>The transfer can be either within a single product or to a related display/view in a different BMC Software product. Generally, hyperlinked fields are highlighted. (2) Cursor-activated short path from a topic or term in online help to related information. <i>See also</i> fast path.</p>
Image log	<p>Collection of screen-display records. Image logs can be created for both the BBI-SS PAS and the BBI terminal session (TS).</p> <p>The BBI-SS PAS Image log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Image log stops when both data sets are filled and the first data set is not processed by the archive program.</p> <p>The TS Image log is a single data set that wraps around when full.</p>
IMSplex System Manager (IPSM)	MVIMS Online and MVDBC service that provides Single System Image views of resources and bottlenecks for applications across one or more IMS regions and systems.
interval data	<p>Cumulative data collected during a collection interval. Intervals usually last from 15 to 30 minutes depending on how the recording interval is specified during product customization. <i>Contrast with</i> historical data.</p> <p>Note: If change is made to the workloads, a new interval will be started.</p> <p><i>See also</i> current data and real-time data.</p>
InTune	Product for improving application program performance. It monitors the program and provides information used to reduce bottlenecks and delays.

IRUF	IMS Resource Utilization File (IRUF). IRUFs can be either detail (one event, one record) or summarized (more than one event, one record). A detail IRUF is created by processing the IMS system log through a program called IMFLEEDIT. A summarized IRUF is created by processing one or more detail IRUFs, one or more summarized IRUFs, or a combination of both, through a sort program and the TASCOSTR program.
job activity view	Report about address space consumption of resources. <i>See</i> view.
journal	Special-purpose data set that stores the chronological records of operator and system actions.
Journal log	Collection of messages. Journal logs are created for both the BBI-SS PAS and the BBI terminal session (TS). The BBI-SS PAS Journal log consists of two data sets that are used alternately: as one fills up, the other is used. Logging to the BBI-SS PAS Journal log stops when both data sets are filled and the first data set is not being processed by the archive program. The TS Journal log is a single data set that wraps around when full.
line command	Command that you type in the line command column in a view or display. Line commands initiate actions that apply to the data displayed in that particular row.
line command column	Command input column on the left side of a view or display. <i>Contrast with</i> COMMAND line.
Log Edit	In the MAINVIEW for IMS Offline program named IMFLEEDIT, function that extracts transaction (X'FA') and program (X'F9') records from the IMS system log. IMFLEEDIT also extracts certain records that were recorded on the system log by IMS. IMFLEEDIT then formats the records into a file called the IMS Resource Utilization File (IRUF).
MAINVIEW	BMC Software integrated systems management architecture.
MAINVIEW Alarm Manager (MV ALARM)	In conjunction with other MAINVIEW products, notifies you when an exception occurs. MAINVIEW Alarm Manager is capable of monitoring multiple systems simultaneously, which means that MAINVIEW Alarm Manager installed on one system keeps track of your entire sysplex. You can then display a single view that shows exceptions for all MAINVIEW performance monitors within your OS/390 or z/OS enterprise.

MAINVIEW Alternate Access

Enables MAINVIEW products to be used without TSO by providing access through EXCP and VTAM interfaces.

MAINVIEW Application Program Interface (MVAPI)

A CLIST- or REXX-based, callable interface that allows MAINVIEW AutoOPERATOR EXECs to access MAINVIEW monitor product view data.

MAINVIEW AutoOPERATOR

Product that uses tools, techniques, and facilities to automate routine operator tasks and provide online performance monitoring, and that achieves high availability through error minimization, improved productivity, and problem prediction and prevention.

MAINVIEW control area

In the MAINVIEW window environment, first three lines at the top of the view containing the window information line and the COMMAND, SCROLL, CURR WIN, and ALT WIN lines. The control area cannot be customized and is part of the information display. *Contrast with* MAINVIEW display area, MAINVIEW window area.

MAINVIEW Desktop Version of the MAINVIEW window interface designed to run on OS/2 and Windows workstations.

MAINVIEW display area

See MAINVIEW window area.

MAINVIEW Explorer Product that provides access to MAINVIEW products from a Web browser running under Windows. MAINVIEW Explorer replaces MAINVIEW Desktop.

MAINVIEW for CICS Product (formerly MV MANAGER for CICS) that provides real-time application performance analysis and monitoring for CICS system management.

MAINVIEW for DB2 Product (formerly MV MANAGER for DB2) that provides real-time and historical application performance analysis and monitoring for DB2 subsystem management.

MAINVIEW for DBCTL (MVDBC)

Product that provides real-time application performance analysis and monitoring for DBCTL management.

MAINVIEW for IMS (MVIMS) Offline

Product with a Performance Reporter component that organizes data and prints reports used to analyze IMS performance and a Transaction Accountant component that produces cost accounting and user charge-back records and reports.

MAINVIEW for IMS (MVIMS) Online

Product that provides real-time application performance analysis and monitoring for IMS management.

MAINVIEW for IP

Product that monitors OS/390 and z/OS mission-critical application performance as it relates to IP stack usage. Collected data includes: connections, response time statistics, application availability, application throughput, and IP configuration.

MAINVIEW for Linux–Servers

Product that allows you to monitor the performance of your Linux systems from the MAINVIEW windows interface.

MAINVIEW for MQSeries (formerly known as Command MQ for S/390)

Delivers comprehensive capabilities for configuration, administration, performance monitoring and operations management for an entire MQM (message queue manager) network.

MAINVIEW for OS/390

System management application (known as MAINVIEW for MVS prior to version 2.5). Built upon the MAINVIEW window environment architecture, it uses the window interface to provide access to system performance data and other functions necessary in the overall management of an enterprise.

MAINVIEW for UNIX System Services

System management application that allows you to monitor the performance of the Unix System Services from a MAINVIEW window interface.

MAINVIEW for VTAM

Product that displays application performance data by application, transaction ID, and LU name. This collected data includes connections, response time statistics, application availability, and application throughput.

MAINVIEW for WebSphere

Product that provides Web monitoring and management for applications integrated with IBM WebSphere Application Server for OS/390 or z/OS.

MAINVIEW Selection Menu

ISPF selection panel that provides access to all MAINVIEW windows-mode and full-screen mode products.

MAINVIEW SRM

See MAINVIEW Storage Resource Manager (SRM).

MAINVIEW SRM DMS2HSM

Product that facilitates the conversion of CA-Disk, formerly known as DMS, to HSM.

MAINVIEW SRM EasyHSM

Product that provides online monitoring and reporting to help storage managers use DFHSM efficiently.

MAINVIEW SRM EasyPOOL

Product that provides control over data set allocation and enforcement of allocation and naming standards. EasyPOOL functions operate at the operating system level to intercept normal job processing, thus providing services without any JCL changes.

MAINVIEW SRM EasySMS

Product that provides tools that aid in the conversion to DFSMS and provides enhancement to the DFSMS environment after implementation. EasySMS consists of the EasyACS functions, the SMSACSTE function, and the Monitoring and Positioning Facility.

MAINVIEW SRM Enterprise Storage Automation

Product that delivers powerful event generation and storage automation technology across the storage enterprise. Used in conjunction with MAINVIEW AutoOPERATOR, automated solutions to perform pool, volume, application, or data set-level manipulation can be created and used in response to any condition or invoked to perform ad hoc requests.

MAINVIEW SRM SG-Auto

Product that provides early warning notification of storage anomalies and automated responses to those anomalies based on conditions in the storage subsystem.

MAINVIEW SRM SG-Control

Product that provides real-time monitoring, budgeting, and control of DASD space utilization.

MAINVIEW SRM StopX37/II

Product that provides enhancements to OS/390 or z/OS space management, reducing the incidence of space-related processing problems. The StopX37/II functions operate at the system level to intercept abend conditions or standards violations, thus providing services without any JCL changes.

MAINVIEW SRM StorageGUARD

Product that monitors and reports on DASD consumption and provides historical views to help control current and future DASD usage.

MAINVIEW Storage Resource Manager (SRM)

Suite of products that assist in all phases of OS/390 or z/OS storage management. MAINVIEW SRM consists of products that perform automation, reporting, trend analysis, and error correction for storage management.

MAINVIEW SYSPROG Services

See SYSPROG services.

MAINVIEW VistaPoint

Product that provides enterprise-wide views of performance. Application and workload views are available for CICS, DB2, DBCTL, IMS, OS/390, or z/OS. Data is summarized at the level of detail needed; for example, views can be for a single target, an OS/390 or z/OS image, or an entire enterprise.

MAINVIEW window area

Portion of the information display that is not the control area and in which views are displayed and windows opened. It includes all but the first three lines of the information display. *Contrast with* MAINVIEW control area.

monitor

Online service that measures resources or workloads at user-defined intervals and issues warnings when user-defined thresholds are exceeded.

Multi-Level Automation (MLA)

The user-defined, multiple step process in Enterprise Storage Automation that implements solutions in a tiered approach, where solutions are invoked one after another until the condition is resolved.

MVALARM

See MAINVIEW Alarm Manager.

MVAPI

See MAINVIEW Application Program Interface.

MVCICS

See MAINVIEW for CICS.

MVDB2

See MAINVIEW for DB2.

MVDBC

See MAINVIEW for DBCTL.

MVIMS

See MAINVIEW for IMS.

MVIP

See MAINVIEW for IP.

MVLNX

See MAINVIEW for Linux–Servers.

MVMQ

See MAINVIEW for MQSeries.

MVMVS

See MAINVIEW for OS/390.

MVScope

MAINVIEW for OS/390 application that traces both CPU usage down to the CSECT level and I/O usage down to the channel program level.

MVSRM

See MAINVIEW Storage Resource Manager (SRM).

MVSRMHSM

See MAINVIEW SRM EasyHSM.

MVSRMSGC	<i>See</i> MAINVIEW SRM SG-Control.
MVSRMSGD	<i>See</i> MAINVIEW SRM StorageGUARD.
MVSRMSGP	<i>See</i> MAINVIEW SRM StorageGUARD.
MVUSS	<i>See</i> MAINVIEW for UNIX System Services.
MVVP	<i>See</i> MAINVIEW VistaPoint.
MVVTAM	<i>See</i> MAINVIEW for VTAM.
MVWEB	<i>See</i> MAINVIEW for WebSphere.
nested help	Multiple layers of help pop-up windows. Each successive layer is accessed by clicking a hyperlink from the previous layer.
object	<p>Anything you can manipulate as a single unit. MAINVIEW objects can be any of the following: product, secondary window, view, row, column, or field.</p> <p>You can issue an action against an object by issuing a line command in the line command column to the left of the object. <i>See</i> action.</p>
OMVS workload	Workload consisting of OS/390 OpenEdition address spaces.
online help	Help information that is accessible online.
OS/390 and z/OS Installer	BMC Software common installation system for mainframe products.
OS/390 product address space (PAS)	Address space containing OS/390 or z/OS data collectors, including the CMF MONITOR Extractor. Used by MAINVIEW for OS/390, MAINVIEW for UNIX System Services, and CMF MONITOR products. <i>See</i> PAS.
parameter library	<p>Data set consisting of members that contain parameters for specific MAINVIEW products or a support component There can be several versions:</p> <ul style="list-style-type: none"> • the distributed parameter library, called BBPARM • a site-specific parameter library or libraries <p>These can be</p> <ul style="list-style-type: none"> • a library created by AutoCustomization, called UBBPARM • a library created manually, with a unique name

PAS	Product address space. Used by the MAINVIEW products. Contains data collectors and other product functions. <i>See also</i> OS/390 product address space (PAS) <i>and</i> BBI subsystem product address space (BBI-SS PAS).
performance group workload	Collection of address spaces defined to OS/390 or z/OS. If you are running OS/390 or z/OS with WLM in compatibility mode, MAINVIEW for OS/390 creates a performance group workload instead of a service class.
PERFORMANCE MANAGER	MAINVIEW for CICS online service for monitoring and managing current performance of CICS regions.
Performance Reporter (MVIMS)	MVIMS Offline component that organizes data and prints reports that can be used to analyze IMS performance.
Performance Reporter	Product component that generates offline batch reports. The following products can generate these reports: <ul style="list-style-type: none"> • MAINVIEW for DB2 • MAINVIEW for CICS
Plex Manager	Product through which cross-system communication, MAINVIEW security, and an SSI context are established and controlled. Plex Manager is shipped with MAINVIEW window environment products as part of the coordinating address space (CAS) and is accessible as a menu option from the MAINVIEW Selection Menu.
pop-up display	Full-screen panel that displays additional information about a selected event in a detail trace.
pop-up window	Window containing help information that, when active, overlays part of the window area. A pop-up window is displayed when you issue the HELP command while working in windows-mode.
PRGP workload	In MVS/SP 5.0 or earlier, or in compatibility mode in MVS/SP 5.1 or later, composite of service classes. MAINVIEW for OS/390 creates a performance group workload for each performance group defined in the current IEAIPS.xx member.

procedure library Data set consisting of members that contain executable procedures used by MAINVIEW AutoOPERATOR. These procedures are execute command lists (EXECs) that automate site functions. There can be several versions:

- the distributed parameter library, called BBPROC
- a site-specific parameter library or libraries

These can be

- a library created by AutoCustomization, called UBBPROC
- a library created manually, with a unique name

The site-created EXECs can be either user-written or customized MAINVIEW AutoOPERATOR-supplied EXECs from BBPROC.

product address space

See PAS.

profile library

Data set consisting of members that contain profile information and cycle refresh definitions for a terminal session connected to a BBI-SS PAS. Other members are dynamically created by MAINVIEW applications. There can be several versions:

- the distributed profile library, called BBPROF
- a site-specific profile library or libraries

These can be

- a library created by AutoCustomization, called SBBPROF
- a library created manually, with a unique name

The site library is a common profile shared by all site users. The terminal session CLIST creates a user profile automatically if one does not exist; it is called `userid.BBPROF`, where `userid` is your logon ID. User profile libraries allow each user to specify unique PF keys, CYCLE commands, target system defaults, a Primary Option Menu, and a unique set of application profiles.

query

One of two constituent parts of a view; the other is form. A query defines the data for a view; a form defines the display format. *See also* form, view.

real-time data

Performance data as it exists at the moment of inquiry. Real-time data is recorded during the smallest unit of time for data collection. *Contrast with* historical data. *See also* current data and interval data.

Resource Analyzer

Online real-time displays used to analyze IMS resources and determine which are affected by specific workload problems.

Resource Monitor	Online data collection services used to monitor IMS resources and issue warnings when defined utilization thresholds are exceeded.
row	(1) Horizontal component of a view or display comprising all the fields pertaining to a single device, address space, user, and so on. (2) Horizontal component of a DB2 table consisting of a sequence of values, one for each column of the table.
RxD2	Product that provides access to DB2 from REXX. It provides tools to query the DB2 catalog, issue dynamic SQL, test DB2 applications, analyze EXPLAIN data, generate DDL or DB2 utility JCL, edit DB2 table spaces, perform security administration, and much more.
sample cycle	Time between data samples. For the CMF MONITOR Extractor, this is the time specified in the extractor control statements (usually 1 to 5 seconds). For real-time data, the cycle is not fixed. Data is sampled each time you press Enter .
sample library	Data set consisting of members each of which contains one of the following items: <ul style="list-style-type: none"> • sample JCL that can be edited to perform specific functions • macro that is referenced in the assembly of user-written services • sample user exit routine <p>There can be several versions:</p> <ul style="list-style-type: none"> • the distributed sample library, called BBSAMP • a site-specific sample library or libraries <p>These can be</p> <ul style="list-style-type: none"> • a library created by AutoCustomization, called UBBSAMP • a library created manually, with a unique name
sampler	Program that monitors a specific aspect of system performance. Includes utilization thresholds used by the Exception Monitor. The CMF MONITOR Extractor contains samplers.
SBBPROF	<i>See</i> profile library.
scope	Subset of an SSI context. The scope could be all the data for the context or a subset of data within the context. It is user- or site-defined. <i>See</i> SSI context, target.

screen definition	Configuration of one or more views that have been stored with the SAVEScr command and assigned a unique name. A screen includes the layout of the windows and the view, context, system, and product active in each window.
selection view	In MAINVIEW products, view displaying a list of available views.
service class workload	<p>Collection of address spaces defined to OS/390 or z/OS. If you are running Workload Manager (WLM) in goal mode, MAINVIEW for OS/390 creates a service class workload for each service class that you define through WLM definition dialogs.</p> <p>If you are running MVS 4.3 or earlier, or MVS/SP 5.1 or later with WLM in compatibility mode, OS/390 creates a performance group workload instead of a service class. <i>See</i> performance group workload.</p>
service objective	Workload performance goal, specified in terms of response time for TSO workloads or turnaround time for batch workloads. Performance group workloads can be measured by either objective. Composite workload service objectives consist of user-defined weighting factors assigned to each constituent workload. For compatibility mode, neither OS/390 nor z/OS provides any way to measure service.
service point	<p>Specification, to MAINVIEW, of the services required to enable a specific product. Services can be actions, selectors, or views. Each target (for example, CICS, DB2, or IMS) has its own service point.</p> <p>The PLEX view lists all the defined service points known to the CAS to which the terminal session is connected.</p>
service request block (SRB)	Control block that represents a routine to be dispatched. SRB mode routines generally perform work for the operating system at a high priority. An SRB is similar to a task control block (TCB) in that it identifies a unit of work to the system. <i>See also</i> task control block.
service select code	Code entered to invoke analyzers, monitors, and general services. This code is also the name of the individual service.
session	Total period of time an address space has been active. A session begins when monitoring can be performed. If the product address space (PAS) starts after the job, the session starts with the PAS.
SG-Auto	<i>See</i> MAINVIEW SRM SG-Auto.
SG-Control	<i>See</i> MAINVIEW SRM SG-Control.

single system image (SSI)

Feature of the MAINVIEW window environment architecture where you can view and perform actions on multiple OS/390 or z/OS systems as though they were a single system. The rows of a single tabular view can contain rows from different OS/390 or z/OS images.

Skeleton Tailoring Facility

A facility in MAINVIEW AutoOPERATOR that allows skeleton JCL to be used during job submission. Skeleton JCL can contain variables within the JCL statements to be substituted with data values at job submission time. Directive statements can be used in the skeleton JCL to cause the repetition of a set of skeleton statements. This facility functions similar to the TSO skeleton tailoring facility.

SRB *See* service request block.

SSI *See* single system image.

SSI context Name created to represent one or more targets for a given product. *See* context, target.

started task workload

Address spaces running jobs that were initiated programmatically.

statistics interval For MAINVIEW for DB2, cumulative count within a predefined interval (30-minute default set by the DB2STATS parameter in the distributed BBPARM member BBIISP00) for an analyzer service DELTA or RATE display. Specifying the DELTA parameter displays the current value as the difference between the value sampled by the current analyzer request and the value sampled at the start of the current interval. Specifying the RATE parameter displays the current value by minute (DELTA divided by the number of elapsed minutes).

stem variables A REXX facility, supported in MAINVIEW AutoOPERATOR REXX EXECs and the Skeleton Tailoring Facility, where variable names end with a period followed by a number, such as &POOL.1. This configuration allows each variable to actually represent a table or array of data, with the zero variable containing the number of entries in the array. For example, &POOL.0 = 5 would indicate variables &POOL.1 through &POOL.5 exist.

StopX37/II *See* MAINVIEW SRM StopX37/II.

StorageGUARD *See* MAINVIEW SRM StorageGUARD.

summary view View created from a tabular view using the Summarize option in view customization. A summary view compresses several rows of data into a single row based on the summarize criteria.

SYSPROG services	Component of MAINVIEW for OS/390. Over 100 services that detect, diagnose, and correct OS/390 or z/OS system problems as they occur. Accessible from the OS/390 Performance and Control Main Menu. Note that this component is also available as a stand-alone product MAINVIEW SYSPROG Services.
system resource	<i>See</i> object.
target	Entity monitored by one or more MAINVIEW products, such as an OS/390 or z/OS image, an IMS or DB2 subsystem, a CICS region, or related workloads across systems. <i>See</i> context, scope, SSI context.
target context	Single target/product combination. <i>See</i> context.
TASCOSTR	MAINVIEW for IMS Offline program that summarizes detail and summary IMS Resource Utilization Files (IRUFs) to be used as input to the offline components.
task control block (TCB)	Address space-specific control block that represents a unit of work that is dispatched in the address space in which it was created. <i>See also</i> service request block.
TCB	<i>See</i> task control block.
terminal session (TS)	Single point of control for MAINVIEW products, allowing data manipulation and data display and providing other terminal user services for MAINVIEW products. The terminal session runs in a user address space (either a TSO address space or a stand-alone address space for EXCP/VTAM access).
TDIR	<i>See</i> trace log directory.
threshold	Specified value used to determine whether the data in a field meets specific criteria.
TLDS	<i>See</i> trace log data set.
total mode	Usage mode in CMFMON wherein certain columns of data reflect the cumulative value between collection intervals. Invoked by the DELta OFF command. <i>See also</i> collection interval, delta mode.
trace	(1) Record of a series of events chronologically listed as they occur. (2) Online data collection and display services that track transaction activity through DB2, IMS, or CICS.

trace log data set (TLDS)

Single or multiple external VSAM data sets containing summary or detail trace data for later viewing or printing. The trace log(s) can be defined as needed or dynamically allocated by the BBI-SS PAS. Each trace request is assigned its own trace log data set(s).

trace log directory (TDIR)

VSAM linear data set containing one entry for each trace log data set. Each entry indicates the date and time of data set creation, the current status of the data set, the trace target, and other related information.

transaction

Specific set of input data that initiates a predefined process or job.

Transaction Accountant

MVIMS Offline component that produces cost accounting and user charge-back records and reports.

TS

See terminal session.

TSO workload

Workload that consists of address spaces running TSO sessions.

UAS

See user address space.

UBBPARAM

See parameter library.

UBBPROC

See procedure library.

UBBSAMP

See sample library.

user address space

Runs a MAINVIEW terminal session (TS) in TSO, VTAM, or EXCP mode.

User BBPROF

See profile library.

view

Formatted data within a MAINVIEW window, acquired from a product as a result of a view command or action. A view consists of two parts: query and form. *See also* form, job activity view, query.

view definition

Meaning of data that appears online, including source of data, selection criteria for data field inclusion and placement, data format, summarization, context, product, view name, hyperlink fields, and threshold conditions.

view command

Name of a view that you type on the COMMAND line to display that view.

view command stack

Internal stack of up to 10 queries. For each command, the stack contains the filter parameters, sort order, context, product, and time frame that accompany the view.

view help	Online help describing the purpose of a view. To display view help, place the cursor on the view name on the window information line and press PF1 (HELP).
window	Area of the MAINVIEW screen in which views and resources are presented. A window has visible boundaries and can be smaller than or equal in size to the MAINVIEW window area. <i>See</i> active window, alternate window, current window, MAINVIEW window area.
window information line	Top border of a window. Shows the window identifier, the name of the view displayed in the window, the system, the scope, the product reflected by the window, and the tomfooleries for which the data in the window is relevant. <i>See also</i> window status field.
window number	Sequential number assigned by MAINVIEW to each window when it is opened. The window number is the second character in the window status field. <i>See also</i> window status field.
window status	One-character letter in the window status field that indicates when a window is ready to receive commands, is busy processing commands, is not to be updated, or contains no data. It also indicates when an error has occurred in a window. The window status is the first character in the window status field. <i>See also</i> window information line, window status field.
window status field	Field on the window information line that shows the current status and assigned number of the window. <i>See also</i> window number, window status.
windows mode	Display of one or more MAINVIEW product views on a screen that can be divided into a maximum of 20 windows. A window information line defines the top border of each window. <i>Contrast with</i> full-screen mode.
WLM workload	In goal mode in MVS/SP 5.1 and later, a composite of service classes. MAINVIEW for OS/390 creates a workload for each WLM workload defined in the active service policy.
workflow	Measure of system activity that indicates how efficiently system resources are serving the jobs in a workload.
workload	(1) Systematic grouping of units of work (for example, address spaces, CICS transactions, IMS transactions) according to classification criteria established by a system administrator. (2) In OS/390 or z/OS, a group of service classes within a service definition.
workload activity view	Tracks workload activity as the workload accesses system resources. A workload activity view measures workload activity in terms of resource consumption and how well the workload activity meets its service objectives.

Workload Analyzer Online data collection and display services used to analyze IMS workloads and determine problem causes.

workload definition Workload created through the WKLIST view. Contains a unique name, a description, an initial status, a current status, and selection criteria by which address spaces are selected for inclusion in the workload. *See* Workload Definition Facility.

Workload Definition Facility

In MAINVIEW for OS/390, WKLIST view and its associated dialogs through which workloads are defined and service objectives set.

workload delay view

Tracks workload performance as the workload accesses system resources. A workload delay view measures any delay a workload experiences as it contends for those resources.

Workload Monitor Online data collection services used to monitor IMS workloads and issue warnings when defined thresholds are exceeded.

workload objectives

Performance goals for a workload, defined in WKLIST. Objectives can include measures of performance such as response times and batch turnaround times.

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STOP!

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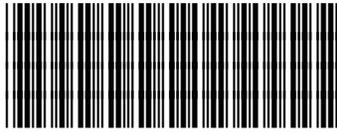
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