

# **CMF<sup>®</sup> MONITOR Online**

## **Getting Started**

**Version 5.5**

**June 30, 2003**



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USA

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## Customer Support

You can obtain technical support by using the Support page on the BMC Software Web site or by contacting Customer Support by telephone or e-mail. To expedite your inquiry, please see “Before Contacting BMC Software,” below.

### Support Web Site

You can obtain technical support from BMC Software 24 hours a day, seven days a week by accessing the technical support Web site at <http://www.bmc.com/support.html>. From this site, you can

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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 program temporary fix (PTF)
  - system hardware configuration
  - serial numbers
  - related software (database, application, and communication) including type, version, and service pack or PTF
- 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

The purpose of this book is to guide you through the BMC Software MAINVIEW window interface, an easy-to-use extension of the standard ISPF interface also used by BMC Software MAINVIEW® for OS/390 and MAINVIEW VistaPoint™ products. Upon completing the exercises in this book, you will be able to effectively use the Online component of CMF MONITOR.

This workbook contains two sets of exercises:

- Beginning Exercises, Steps 1 and 2, which teach you everything you need to know to use CMF MONITOR Online productively.
- Advanced Exercises, Steps 3 through 9, which teach you some advanced topics that will help you get even more out of CMF MONITOR Online.

It should take roughly half an hour to work through the first set of exercises. At the end of that time, you will know how to use the essential features of CMF MONITOR Online—not *every* feature, only the most important ones. The second set of exercises should take about 90 minutes to complete.

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## Who Should Read This Book

This book is intended for anyone who has never used CMF MONITOR Online before, or for those who were familiar with the last version of the product and are interested in learning the new features.

**Note:** If you are a product administrator, be sure you have completed the tasks in the *MAINVIEW Common Customization Guide* and the *CMF MONITOR Customization Guide* before beginning this workbook.

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## How This Book Is Organized

This book contains two sets of exercises, one for beginners and one for advanced users.

### Beginning Exercises

[Table 1](#) lists beginning tasks you will be completing.

Table 1. Tasks in Beginning Exercises

Task	Described in...
Accessing CMF MONITOR Online from the MAINVIEW Selection Menu	<a href="#">Step 1, “Logging On to CMF MONITOR Online” on page 2</a>
Understanding CMF MONITOR Online views, what they contain, and how to use them to find and solve problems on your system	<a href="#">Step 2, “Understanding CMF MONITOR Online Views” on page 5</a>

## Advanced Exercises

Table 2 lists advanced tasks you will be completing.

Table 2. Tasks in Advanced Exercises

Task	Described in...
Displaying data from the past	<a href="#">Step 3, “Displaying Historical Data” on page 29</a>
Displaying other systems and MAINVIEW products on the same screen	<a href="#">Step 4, “Accessing Other Systems and Products” on page 43</a>
Saving a collection of views and windows so you can redisplay them later	<a href="#">Step 5, “Using Screen Definitions” on page 53</a>
Customizing views to your preferences	<a href="#">Step 6, “Customizing Views” on page 61</a>
Summarizing several rows of data into a single row	<a href="#">Step 7, “Using Summarized Views” on page 83</a>
Redisplaying a view without updating the data	<a href="#">Step 8, “Redisplaying Data without Updating” on page 87</a>
Filtering the data in a view	<a href="#">Step 9, “Filtering Data” on page 93</a>

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## Required Reading

As you work through the exercises in this book, you may find that you need more information to complete a given task. If you do, you are most likely to find what you need in the *CMF MONITOR Online User Guide*.

Another source of information is the *MAINVIEW Quick Reference*, which lists all the MAINVIEW window interface commands and tells you how to display online help for them.

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## Related Reading

The following manuals provide information about other CMF MONITOR components:

- *CMF MONITOR Batch Reference Guide*
- *CMF MONITOR Batch User Guide*
- *CMF MONITOR CMFMON User Guide*

The following manuals provide information that may be needed by the system administrator:

- *OS/390 and z/OS Installer Guide*
- *CMF MONITOR Customization Guide*
- *MAINVIEW Common Customization Guide*
- *MAINVIEW Installation Requirements Guide*
- *MAINVIEW Administration Guide*
- *Implementing Security for MAINVIEW Products*
- *MAINVIEW Alternate Access Implementation and User Guide*
- *MAINVIEW Alarm Manager User Guide*

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## Before You Begin

Before you start working through this tutorial, there are a few things you should consider:

- If you use MAINVIEW for OS/390, see the *MAINVIEW for OS/390 Getting Started*.
- Check with your CMF MONITOR Online administrator to make sure that the *coordinating address space* (CAS) and *product address space* (PAS) have been started. These address spaces, along with your own user address space, are required by CMF MONITOR Online for successful operation.
- In this workbook, CMF MONITOR Online command names appear in mixed case, like this:

COMMand

The uppercase letters represent the short form of the command. The rest of the command, in lowercase, is optional.

For example, REST is the short form for the RESTore command; that means you can enter either the whole command, RESTORE, or just the short form, REST. Both achieve the same result.

- Words and phrases that appear in *italics* are terms that are especially important to understanding CMF MONITOR Online.
- As you work through this tutorial, pay close attention to the concepts that appear in these boxes:

**Key Point**

The concepts in these boxes are fundamental to understanding how to use CMF MONITOR Online. If you understand them, you will be well on your way to maximizing your productivity with CMF MONITOR Online.

- **Bold** face type indicates commands you should type or instructions you should follow.
- The exercises in this book assume your CMF MONITOR Extractor recording interval is set to 15 minutes.



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# Introduction to CMF MONITOR

BMC Software Comprehensive Management Facility (CMF) is a tool for collecting and reporting system performance information. Built upon MAINVIEW architecture, CMF MONITOR incorporates a complete system of components that manage and evaluate the demands on computer center resources.

CMF MONITOR comprises three components to help you collect the information you need:

- The Batch component provides printed reports about your system's performance. The data for these reports is collected by the CMF MONITOR Extractor and written to SMF or CMF data sets. The CMF MONITOR Analyzer reads these records and produces reports according to conditions you can specify. For more information about CMF MONITOR Batch reports, see the *CMF MONITOR Batch User Guide*.
- The CMFMON component provides realtime views of data and allows you to record that data to data sets. For more information about CMFMON, see the *CMF MONITOR CMFMON User Guide*.
- The Online component allows you to view current and historical data using the MAINVIEW window interface. For more information about CMF MONITOR Online views, see the *CMF MONITOR Online User Guide*.

---

## MAINVIEW Window Interface

The BMC Software MAINVIEW family of products relies on a common communications framework that operates across multiple machines in multiple locations. This framework is called the MAINVIEW Window Interface, a robust, easy-to-use extension of the standard ISPF interface. With the MAINVIEW window interface, you can use multiple products to control and monitor resources on multiple systems—all on just one screen.

---

## OS/390 Easy Menus

CMF MONITOR Online offers a quick, convenient interface to use the product with little introduction and without having to remember view names. This interface consists of a set of views with two primary menus: the *OS/390 Easy Menu* (EZM390), and the *OS/390 Fast Menu* (EZMFAST).

EZM390 is the primary starting point for using CMF MONITOR Online. This view is basically a menu of high-level choices with succinct, descriptive names, allowing you to choose from its views and menus quickly (the choices are all displayed on one panel).

EZMFAST allows deeper access into CMF MONITOR Online than EZM390, but still presents simple, descriptive choices, all on one panel and organized by view type. This menu is presented as an option on the EZM390 Menu.

---

## Step 1. Logging On to CMF MONITOR Online

To log on to CMF MONITOR Online:

1. If your ISPF main menu contains an option for MAINVIEW products, select that option<sup>1</sup>.

Alternatively, you can type TSO MAINVIEW from any ISPF panel. (MAINVIEW is a CLIST that you or your product administrator created during AutoCustomization.)

The MAINVIEW Selection Menu is displayed. (See [Figure 1](#).)

```
----- MAINVIEW Selection Menu -----
OPTION  ==>                                DATE  -- YY/MM/DD
                                           TIME  -- 14:20:55
                                           USERID -- BCVAXT1
                                           MODE  -- ISPF 4.8

      0  Parameters and Options
      E  Alerts and Alarms
      P  PLEX Management (PLEXMGR)
      U  Utilities, Tools, and Messages

Solutions for:
      A  Automated Operations
      C  CICS
      D  DB2
      I  IMS
      L  Linux
      N  Network Management
      S  Storage Management
      T  Application Management and Performance Tuning
      W  WebSphere and MQSeries
      Z  OS/390, z/OS, and USS

      Enter X to Terminate

F1=HELP      F2=SPLIT      F3=END      F4=PRINT      F5=LOG      F6=GO
F7=UP        F8=DOWN       F9=SWAP     F10=LEFT     F11=RIGHT   F12=RETRIEVE
```

Figure 1. MAINVIEW Selection Menu

**Note:** You can change the format of the date displayed on views by selecting Option 0 on the MAINVIEW Selection Menu, selecting Option 1 on the Terminal Session Parameter Select Menu, and then selecting Option 4 on the MAINVIEW Parameter Editors Menu.

You can also set some user session parameters with Option 0. Issue the HELP command and use the online help if you need assistance.

2. Type z in the **Option** field to select OS/390, z/OS, and USS.
3. The OS/390, z/OS, and USS Solutions Menu is displayed. (See [Figure 2](#))

---

<sup>1</sup> If you are using MAINVIEW Alternate Access, see the *MAINVIEW Alternate Access Implementation and User Guide* for information on how to access CMF MONITOR Online.

```

----- OS/390, z/OS, and USS Solutions -----
OPTION  ==>
                                         DATE  -- YY/MM/DD
                                         TIME  -- 14:22
                                         USERID -- BCVAXT1
                                         MODE  -- ISPF 4.8

Performance
  1 MV390      MAINVIEW for OS/390
  2 MVUSS      MAINVIEW for Unix System Services
  3 CMF         CMF MONITOR
  4 SYSPROG    MAINVIEW SYSPROG Services

Operations
  5 CSMON      Common Storage Monitor
  6 CMFMON     CMFMON realtime analysis
  7 CMFUTIL    CMF Extractor Online Utilities
  8 ANALYZER   Generate CMF Analyzer batch reports
  E ALERTS     Alert Management

General Services
  M MESSAGES   Messages and Codes
  P PARS       Parameters and Options

```

Figure 2. OS/390, z/OS, and USS Solutions Menu

4. Type 3 in the **Option** field to select CMF MONITOR.

You will see one of the following screens displayed:

- The ISPF Session Control Parameters panel, as shown in [Figure 3](#).
- The EZM390 Menu, as shown in [Figure 4 on page 4](#).
- A screen definition created by your product administrator. For more information about this type of screen, see “[Screen Definition Created by Your Product Administrator](#)” on page 4.

## ISPF Session Control Parameters Panel

The ISPF Session Control Parameters panel looks like this:

```

----- SESSION CONTROL PARAMETERS -----
COMMAND ==>

Subsystem ID ==> CASB   (Coordinating Address Space subsystem ID)
XDM mode     ==> NO    (Execute session in diagnostic mode, Yes/No)

Press Enter to confirm use of session parameters entered above.

```

Figure 3. ISPF Session Control Parameters Panel

If this panel is displayed, make sure the Subsystem ID field contains the coordinating address space (CAS) identifier, and then press Enter. If you do not know the name of this identifier or if you get an error message after pressing Enter, see your CMF MONITOR Online product administrator.

When you see the message `Connecting...` in the upper right corner of your screen, that means you are in the process of accessing CMF MONITOR Online. Go to [Step 2 on page 5](#).

## EZM390 Menu

The EZM390 Menu looks like this:

```
10JUN2003 14:32:22 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =EZM390=====CXTSTJ==*=====10JUN2003==14:29:50====CMF=====1

                          OS/390 Easy Menu
Activity                   Time frame - Interval          Utilities
> System Overview         +-----+ > SYSPROG Services
> Jobs                    | Place cursor on | | . Program and I/O Trace
> Devices                 | menu item and   | | > Data Compression
> Data Set Usage         | press ENTER    | | > Alarm Management
> Storage                 +-----+ > OS/390 Fast Menu
> XCF Monitoring          > RMF-like Menus
> Coupling Facility       > Environment Settings
> WLM Workloads           . Return...
> Non-WLM Workloads
```

Figure 4. OS/390 Easy Menu (EZM390)

**Note:** If you have both MAINVIEW for OS/390 and CMF MONITOR Online, the MVMVS-specific options will be available to you, and the MVMVS Only note will not appear on your menu.

If the EZM390 Menu is displayed, go to [Step 2 on page 5](#), where you will learn what the EZM390 Menu contains and how to use it.

## Screen Definition Created by Your Product Administrator

A screen definition created by your product administrator divides the screen into several different windows. You will learn more about CMF MONITOR Online and screen definitions later.

If your screen does not look like any of the displays shown so far, you are looking at a screen definition created by your product administrator.

Go to [Step 2 on page 5](#).

---

## Step 2. Understanding CMF MONITOR Online Views

To use CMF MONITOR Online to its fullest potential, you must know how to use *views*.

A *view* is a collection of data gathered and formatted by CMF MONITOR Online. Using CMF MONITOR Online is simply a matter of moving between views to display the information you need.

In most cases, CMF MONITOR Online has made it easy for you to display views by establishing *hyperlinks* between them. All you have to do is position the cursor and press Enter to move from one view to the next—CMF MONITOR Online has already anticipated the view you need. (You can also set your own hyperlinks to establish your own path between views. You will learn how to do this in a later step; see [Step 5 on page 23](#).)

CMF MONITOR Online further simplifies displaying the data you need through the OS/390 Easy Menu, also referred to as EZM390, a cursor-sensitive view that divides CMF MONITOR Online views into a series of views and menus.

### Key Point

You can display a view by choosing a menu item from an Easy Menu, by using a hyperlink, or by entering its name in the **COMMAND** field.

---

### Step 2a: Understanding Basic View Concepts

In this step, you will examine four categories of CMF MONITOR Online views: Administrative, Device, Resource, and Workload Delay.

To begin:

1. In the **COMMAND** field, type `RESEt`, and then press Enter.

This completely clears the screen.

2. In the **COMMAND** field, type `EZM390`, and then press Enter.

### Key Point

The OS/390 Easy Menu is the primary launch pad for using CMF MONITOR Online. Options on this menu are divided into two categories: *Activity*, and *Tools and Menus*.

Activity options display views containing system data. Options selected from the Tools and Menus category display either pop-up menus or other menu views from which you can access a broad variety of information. Those menu options preceded by an \* (asterisk) are exclusive to MAINVIEW for OS/390.

If you lose your way in CMF MONITOR Online, type `RESEt`, and then display EZM390 to regain your direction.

3. Move the cursor to the **Devices** option, and then press Enter to display the DEV view.

Displaying a view by positioning the cursor and pressing Enter is called *hyperlinking*. You will use hyperlinks frequently as you work through this tutorial.

**Key Point**

You can hyperlink from any column with a highlighted (or high-intensity) header by placing your cursor on a data element within that column, and pressing Enter.

Your screen should now look like [Figure 5](#).

```

10JUN2003 15:28:09 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND  ==>                               SCROLL ==> PAGE
CURR WIN ==> 1          ALT WIN ==>
WL =EZMDEVSE=====SJSB=====10JUN2003==15:28:08====MVMVS====D====1
                Devices Activity Menu
    Devices      Time frame - Interval      Utilities
. Device Utilization  +-----+ . MVScope I/O Tracing
. Cache Overview      | Place cursor on |
. Channel Utilization | menu item and |
. Device Delays        | press ENTER   |
. LCU Overview         +-----+
. SMS Overview
. Tape Activity
. Return...

```

Figure 5. DEV View

DEV is a *device data view* and is designed to give you information about the utilization of devices in your system.

If you are interested in a particular device that is not currently visible on DEV, you can move this device to the top of the window by using the Locate command.

**Key Point**

You can move any value to the top of the window by typing `L value` in the **COMMAND** field, placing the cursor on the appropriate column header, and pressing Enter. If the value you are looking for is in the first column, you do not have to use the cursor at all; just type `L string` in the **COMMAND** field.

Try this now with one of your own devices.

4. In the **COMMAND** field, type `L device`, where `device` is a volser number on your system.
5. Position your cursor anywhere in the **Dev Num** field, and then press Enter.

The device you specified now appears at the top of the view.

Notice that the headings for the **Volser** column and the **Dev Num** column appear highlighted. This indicates hyperlinks are available for these columns. If you are not sure which (if either) hyperlink you want, you might want to retain the DEV view so that you can experiment with both hyperlinks.

You can display two views at once by splitting your screen.

6. Open a second window. To open a window:
  - a. Type `HS` in the **COMMAND** field. HS stands for Horizontal Split. (To split the screen vertically, in the **COMMAND** field, type `VS`.)

- b. Position the cursor where you want the new window to begin, and press Enter. The cursor is usually about halfway down the screen, but because you used the Locate command to move your desired device to the top of the screen, you should position the cursor just several lines below the device. This will give you more room to display data about the device.

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

**Note:** The **ALT WIN** field is located one line down from the **COMMAND** field, next to the **CURR WIN** field. You can move from the **COMMAND** field to the **ALT WIN** field by pressing the Tab key three times.

The **ALT WIN** field—*not* the **CURR WIN** field—tells CMF MONITOR Online where to display the output of a hyperlink. The ampersand (&) retains the **ALT WIN** setting between actions so you do not have to keep retyping the number.

8. Place your cursor on your device in the **Dev Num** field and press Enter. Now the DEVINFO view is displayed for the device you specified.

Your screen should look similar to [Figure 6](#).

```

10JUN2003 15:32:52 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>>
CURR WIN ==>> 2          ALT WIN ==>> &2          SCROLL ==>> PAGE
W1 -DEV-----CXTSTJ---*-----10JUN2003--15:31:11---CMF-----165
C Volser Dev  LCU Actv Resp IOSQ CUB  DPB  DB   Pend Disc Conn %Dev %D
- ----- Num  --- Rate Time Time Dely Dely Dely Time Time Time Util Rv
SPLA20 0220 028 0.1 1.3                                0.4 0.1 0.9 0.0
W2 =DEVINFO=====CXTSTJ====*=====10JUN2003==15:32:51====CMF=====1
Volser..... SPLA20 % Allocated.... 100.00 Avg Serv Time.. 1.30
Device Number.. 0220 % Utilized..... 0.00 Avg IOSQ Time..
Type..... 3380 % Active..... 0.00 Avg Act Time... 1.30
LCU Number..... 028 % Connected.... 0.00 Avg Conn Time.. 0.87
Status..... RDY % Disconn..... 0.00 Avg Dsc Time... 0.06
Mount Status... PRV % Pending..... 0.00 Avg Pnd Time... 0.36
% Mount Pend... % Req Queued... Avg DPB Delay..
SSCH/Sec..... 0.04 % Dev Queued... Avg CUB Delay..
SSCH/Sec...(R) % Q+CPU Wait... Avg DvB Delay..
Total SSCH.... 6 % Efficiency... 100.00 % Reserved.....
% In Use..... Avg Q Depth.... % Resv Shr.....
% Delaying.... Max Q Depth.... % Error Rec....
Curr DS open...
Avg DS open...

```

Figure 6. Using the Hyperlink between DEV and DEVINFO Views

Like all views that end in INFO, DEVINFO displays detailed information on a single entity—in the case of DEVINFO, a single device. Notice that the DEV view is still displayed in window 1. When you hyperlink to an alternate window, the view in the original window remains the same.

9. Press Enter and note how the values on these two views change.

**Key Point**

Every time you press Enter without issuing a command, all views are refreshed with the most recent data for that time frame. (The time rames—interval and real-time—are explained in “[Step 2d: Examining Workload Delay Views](#)” on page 20.)

You may have noticed when you pressed Enter that the Time field changed as the data was updated. The Time field, along with all the other fields on the *window information line*, helps you keep track of what is occurring in that window. The window 1 window information line looks similar to this:

```
W1 -DEV-----SYSD-----*-----06/10/2003---09:19:33---CMF-----105
```

Every window information line contains the same fields, so you may want to study the following table carefully.

Table 3. Window Information Line Fields

Field	Contents
>	Although the first field is blank in this example, sometimes you will see a > in this position, indicating that there is more data to see by scrolling to the right. Data to the left is indicated by <. If there is data both to the left and the right, a plus sign (+) appears in this field.
W1	Indicates the status and number of the window. The example shows that window 1 is currently in Wait status, which means it is waiting for another command. To see the other possible status levels, place the cursor on the W1 and press PF1 (HELP).
DEV	Name of the view.
<i>form name</i>	Although there is nothing in this field in the example, there is a field next to the view name field that appears when you use the FORM command to display the data in a different format. You will learn more about forms in <a href="#">Step 8 on page 87</a> .
SYSD	Current context. For CMF MONITOR Online and MAINVIEW for OS/390, the context is simply the name of the system the view reflects or the name of the <i>SSI context</i> . You will learn about context in <a href="#">“Step 4c: Accessing Several Systems Simultaneously” on page 49</a> .
*	Current scope.  The scope helps narrow down a particular system within an SSI context. If you are not using an SSI context, this field is represented by an asterisk.
06/10/2003	Date data in the window was last updated.
09:19:33	Time data in the window was last updated.
<i>duration</i>	This field is blank until you use the duration parameter on the TIME command. The <i>duration</i> field shows you how many minutes of historical data you have displayed. You will learn more in <a href="#">“Step 3a: Determining Data Availability” on page 29</a> .
CMF	Product identifier.
105	Number of rows available in the display.  <b>Note:</b> For detail views (views that end in INFO, like JINFO, DEVINFO, and so on), this number is always 1.

Now you can check the hyperlink of the other highlighted field in the DEV view.

10. Position your cursor on a value in the **Volser** field of the DEV view, and press Enter.

The EZMDEV view is displayed, as shown in [Figure 7](#).

```

10JUN2003 15:37:45 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 2          ALT WIN ==> &2
W1 -DEV-----CXTSTJ---*-----10JUN2003--15:31:11---CMF-----165
C Volser Dev  LCU Actv Resp IOSQ CUB  DPB  DB   Pend Disc Conn %Dev %D
- ----- Num  --- Rate Time Time Dely Dely Dely Time Time Time Util Rv
  SPLA20 0220 028  0.1  1.3                               0.4 0.1 0.9 0.0
>W2 =EZMDEV=====CXTSTJ===*=====10JUN2003==15:37:44===CMF=====1
                                Device Activity Menu

                                Current Device -> 0220
                                Volser -> SPLA20

This Device                      +-----+ All Devices
. Cache Statistics                | Place cursor on | . Cache Overview
. Data Sets Allocated            | menu item and  | . Channel Utilization
. Data Sets Open                 | press ENTER   | . LCU Overview
. Detailed Info                  +-----+ . SMS Overview
. Jobs Delayed by Volume         |               | . Tape Activity
. Jobs Using Volume
. Data Set Usage and Delay
. Overview

SYSPROG Services
> I/O Subsystem
> MVScope I/O Tracing
> Utilities                      . Return

```

Figure 7. Using the Hyperlink between DEV and EZMDEV View

EZMDEV is a menu view from which you can access specific information about a particular device (notice that the number of the device you selected is displayed near the center of your screen).

The Device Activity Menu displays options grouped into three categories:

- This Device
- All Devices
- SYSPROG Services

You can hyperlink on an option to display more information about device activity. To select an item from the Device Activity Menu (EZMDEV), move the cursor to that item and press Enter.

Take a few minutes to experiment with EZMDEV options. When you have finished experimenting, close window 2.

11. In the **COMMAND** field, type **CLOSe**, and press Enter.

Because window 2 is still current, the **CLOSe** command is directed to window 2. Your screen should now contain just one view, **DEV**.

Now you can use the **CMF MONITOR** Online view help to find out what information is displayed in the **DEV** view.

12. Position the cursor on the name DEV on the window 1 window information line, and press PF1 to display online help.

**Key Point**

You can display help for any view by placing the cursor on the view name (as it appears on the window information line) and pressing PF1.

Your screen should now look similar to [Figure 8](#).

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

```

10JUN2003 15:39:58 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 1 ALT WIN ==>
W1 =DEV=====CXTSTJ===*=====10JUN2003==15:31:11====CMF=====165
C Volser Dev LCU Actv Resp IOSQ CUB DPB DB Pend Disc Conn %Dev %D
- ----- Num --- Rate Time Time Dely Dely Dely Time Time Time Util Rv
SPLA20 0220 02 |-----|
PAGA21 0221 02 | Help Device Activity Help |
SPLB22 0222 02 | Command ==> Scroll ==> PAGE |
PAGB23 0223 02 |-----|
SPLC24 0224 02 |-----|
PAGE25 0225 02 | Use DEV to monitor utilization and performance of
SPLD26 0226 02 | direct access and tape devices in the I/O
PAGD27 0227 02 | configuration. DEV helps you to identify portions
SPLE28 0228 02 | of the I/O configuration that are either
TSG301 0229 02 | over-utilized or are causing delays.
BAB410 022A 02 |-----|
TSG302 022B 02 | For more information on this view, place the
SMFB2C 022C 02 | cursor on one of the following topics and press
SMFC2D 022D 02 | ENTER.
SMFD2E 022E 02 |-----|
SP520D 022F 02 | o Actions available from this view
OS11GC 0230 02 |-----|
PAGC31 0231 028 1.1 23.8 0.4 21.8 1.5 2.6

```

Figure 8. CMF MONITOR Online Help for DEV View

The first paragraph explains a little about the data DEV provides. The remaining help text lists hyperlinked topics you can use to find out specific information on DEV: what filters are in effect, which fields have hyperlinks and to where, and so on. This information is created dynamically, so regardless of the changes you make to DEV, the help is always accurate.

Scroll down to browse the remainder of the help text. If you like, take a moment now to hyperlink to one or two of the available topics.

13. When you are finished, press PF3 to return to DEV.

**Note:** You also can exit from a help panel by typing Q in the **COMMAND** field of that panel and pressing Enter. This method is especially useful if you hyperlink to additional help topics, since it eliminates the need to press PF3 repeatedly.

Now that you have looked at the CMF MONITOR Online help, you can take a look at some online *field help*.

14. Put the cursor in any **DEV** field and press PF1. The related field help information is displayed.

Peruse the text, and then press PF3 when you are finished. CMF MONITOR Online provides online help for every field on every view, so you never have to wonder what a field contains.

15. When all help windows are closed, press PF3 to return to EZM390, the view from which you originally started.

In this brief survey of device data views, you learned several essential CMF MONITOR Online concepts:

- How to use hyperlinks
- How to open and close windows
- How to read the window information line
- How to move a particular workload, job, or resource to the top of the display
- How to display online help for a view
- How to display online help for a field

You also learned about the device views while learning these concepts. Now you can turn your attention to some additional features of CMF MONITOR Online.

---

## Step 2b: Using Positional Parameters

When you type the name of a view in the **COMMAND** field, you see all the data available for that view. If you want to limit the data you see in a particular view, you can do so by using *positional parameters*. *Positional* parameters mean that each position *before* the specified value must be accounted for with an asterisk. That is, if you specify the second parameter, the first position must be accounted for with an asterisk; if you specify the third parameter, you must use two asterisks for the first and second positions.

For example, when you type **DCSTAT** in the **COMMAND** field, you see a list of all data collectors, both active and inactive. But if you wanted to see only those collectors that are inactive, you can use a positional parameter to filter out the data you do not want. To do this:

1. In the **COMMAND** field, type **DCSTAT**, and press Enter.

Your screen now looks similar to [Figure 9](#).

```
10JUN2003 15:42:52 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =DCSTAT=====CXTSTJ====*=====10JUN2003==15:42:52====CMF=====37
C Collector Description                               Status
-----
ADDRSPCE Address Space Event Collector Active
ADDRSPCT Address Space Timed Collector Active
AOC      AutoOperator Control Collector Inactive
CACH     Cache Collector Active
CFAC     Coupling Facility Collector Active
CHANPATH Channel Path Data Collector Active
CPU      CPU Data Collector Active
CPUDELAY CPU Delay Data Collector Active
CSRE     CSA Data Collector Active
DEVICE   Device Data Collector Active
DOMAIN   SRM Domain Collector Active
ENQUEUE  Enqueue Data Collector Inactive
HSM      Hierarchical Storage Manager Active
IOQDELAY I/O Queuing Delay Collector Active
JESD     JES Delay Collector Active
JOBSTEP  Job Step Timed Collector Active
LCU      Logical Control Unit Collector Active
LPAR     Logical Partition Collector Active
```

Figure 9. DCSTAT View

First, check to see what positional parameters are in effect for the DCSTAT view. You can do this by displaying the DCSTAT view help.

2. Place the cursor on the word DCSTAT, and press PF1.
3. Move the cursor down to the Positional Parameters topic, and press Enter.

Your screen should look similar to [Figure 10](#).

```

10JUN2003 15:32:37 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                                     SCROLL ==> 0026
CURR WIN ==> 1           ALT WIN ==>
W1 =DCSTAT=====CXTSTJ===*=====10JUN2003==15:32:36====CMF=====37
C Collector Description                               Status
-----
ADDRSPCE Addr
ADDRSPCT Addr Help          Data Collector Status      Help
AOC      Auto  Command ==>                               Scroll ==> 0026
CACH     Cach
CFAC     Coup
CHANPATH Chan  DCSTAT displays the current status of the OS/390
CPU      CPU   PAS data collectors and allows you to enable or
CPUDELAY CPU   disable any collector.
CSRE     CSA
DEVICE   Devi  For more information on this view, place the
DOMAIN   SRM   cursor on one of the following topics and press
ENQUEUE  Enqu   ENTER.
HSM      Hier
IOQDELAY I/O    o Extended Information
JESD     JES
JOBSTEP  Job    o Actions available from this view
LCU      Logi
LPAR     Logical Partition Collector  Active

```

Figure 10. Positional Parameters for DCSTAT

DCSTAT has two parameters: X and Status. You want to filter the information that shows up on the DCSTAT view through the second parameter, Status, so you use one asterisk to represent the first parameter.

4. Press PF3 twice to close the help windows.
5. In the **COMMAND** field, type DCSTAT \* INACTIVE, and press Enter.

You are now looking at the DCSTAT view through a filter that displays only collectors with an Inactive status, as shown in [Figure 11](#).

```

10JUN2003 15:37:24 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                                     SCROLL ==> 0026
CURR WIN ==> 1           ALT WIN ==>
W1 =DCSTAT=====CXTSTJ===*=====10JUN2003==15:37:23====CMF=====1
C Collector Description                               Status
-----
AOC      AutoOperator Control Collector Inactive

```

Figure 11. DCSTAT View with a Filter

**Note:** Your screen probably will not look exactly like the screen in [Figure 11](#), since it will display only the inactive collectors in your system. If all the collectors in your system are active, a message appears stating that there is no data that satisfies your request. If this happens, press PF3 to redisplay the unfiltered DCSTAT view.

You can use positional parameters to filter information in any CMF MONITOR Online view. If you want to learn more about how to use positional parameters, in any **COMMAND** field, type `HELP POSITIONAL`.

Now that you are becoming more familiar with some of the features that CMF MONITOR Online has to offer, you can examine another view category: *Data set usage views*.

## Step 2c: Examining Data Set Usage Views

Six data set usage views help you examine specific details of your data set information, as shown in [Table 4](#) below.

Table 4. Data Set Usage Views

View	Description
DSVOL	Tabular data set usage and delay by volume.
DSJOB	Tabular data set usage and delay by jobname.
DSDSN	Tabular data set usage and delay by data set name.
DSVOLZ	Summarized data set usage and delay by volume.
DSJOBZ	Summarized data set usage and delay by jobname.
DSDSNZ	Summarized data set usage and delay by data set name.

### Selecting Data Set Usage Views

To help you use data set usage views, the following scenario is provided.

1. After starting CMF MONITOR, go to the OS/390 Easy Menu (EZM390) screen. (See [Figure 12](#).)
2. Place the cursor on Data Set Usage (see center-left side of the screen in [Figure 12](#)), and press Enter.

```

10JUN2003 14:29:51 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND  ===>                                SCROLL  ===> 0026
CURR WIN  ===> 1          ALT WIN  ===>
W1 =EZM390=====CXTSTJ==*=====10JUN2003==14:29:50====CMF=====1

          OS/390 Easy Menu
Activity      Time frame - Interval      Utilities
> System Overview  +-----+ > SYSPROG Services
> Jobs             | Place cursor on | . Program and I/O Trace
> Devices          | menu item and   | > Data Compression
> Data Set Usage   | press ENTER    | > Alarm Management
> Storage          +-----+ > OS/390 Fast Menu
> XCF Monitoring   > RMF-like Menus
> Coupling Facility > Environment Settings
> WLM Workloads    . Return...
> Non-WLM Workloads

```

Figure 12. OS/390 Easy Menu (EZM390) Screen

3. The Data Set Usage Menu (EZMDS) screen appears. (See [Figure 13 on page 15](#).)

To select a data set usage view, you can place the cursor on the desired view name on the Data Set Usage Menu (EZMDS) screen, and press Enter.

To better understand the views and their functions, look at each view, starting at the EZMDS screen and use the instructions provided below.

**Viewing Usage  
by Volume  
Details**

To view usage details:

1. On the EZMDS screen under the Detail Views heading, move the cursor to Usage by Volume and press Enter (see [Figure 13](#)).

```

10JUN2003 14:20:05 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>>                               SCROLL ==>> 0026
CURR WIN ==>> 1           ALT WIN ==>>
W1 =EZM390====EZMDS====CXTSTJ====*=====10JUN2003==14:20:05====CMF=====1

                Data Set Usage Menu
Detail Views   Time frame - Interval   Summary Views
. Usage by Volume      +-----+ . Usage by Volume
. Usage by Jobname     | Place cursor on | . Usage by Jobname
. Usage by Data Set Name | menu item and   | . Usage by Data Set Name
                        | press ENTER       |
                        +-----+
  
```

Figure 13. Data Set Usage Menu (EZMDS) View

The DSVOL view appears (see [Figure 14](#)). The DSVOL view shows usage by volume information listed in columns, based first on the volser.

```

10JUN2003 12:56:28 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>>                               SCROLL ==>> 0026
CURR WIN ==>> 1           ALT WIN ==>>
>W1 =DSVOL=====CXTSTJ====*=====10JUN2003==12:56:27====CMF=====72
C Volser Dev# Data Set Name                               Jobname ASID Using%
-----
BAB310 0301 BBI.OLTW.HISTDS02.DATA                       OLTW      209  0.24
BAB310 0301 DSN510.DB2H.LOGCOPY1.DS02.DATA                DB2HMSTR  134  0.24
BAB310 0301 SYS1.VTOCIX.VBAB310                          BCVCB41C  128  0.74
BAB311 0302 BBI26.ENG.LINKLIB                             AAODD5A   132 12.50
BAB311 0302 BBI26.ENG.LINKLIB                             BCVSS53B  146  0.43
BAB311 0302 Unknown**                                    BCVCB41C  128  1.47
BAB311 0302 Unknown**                                    BCVSS53B  146  0.43
BAB312 0303 Unknown**                                    *MASTER*    1  0.24
BAB313 0304 SYS1.VTOC.VBAB313                            BCVSS53B  146  0.43
BAB315 0259 AAO41.AOENG.BBPROC                           AAODM4A   157  0.24
  
```

Figure 14. Usage by Volume (DSVOL) View

2. To return to the EZMDS screen, press PF3.

**Viewing Usage  
by Jobname  
Details**

To view jobname details:

1. On the EZMDS screen under the Detail Views heading, move the cursor to the Usage by Jobname entry and press Enter.

The DSJOB view appears (see [Figure 15](#)). The DSJOB view shows usage by jobname information listed in columns, based first on the jobname

```

10JUN2003 13:08:11 ----- MAINVIEW WINDOW INTERFACE (RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> 0026
CURR WIN ==> 1           ALT WIN ==>
>W1 =DSJOB=====CXTSTJ====*=====10JUN2003==13:08:10====CMF=====128
C Jobname  ASID Data Set Name                               Volser Dev# Using%
-----
*MASTER*   1 Unknown**                                     BAB311 0302 0.38
*MASTER*   1 Unknown**                                     BAB317 0308 0.38
*MASTER*   1 Unknown**                                     PAGC31 0231 6.49
*MASTER*   1 Unknown**                                     SYSP14 0240 0.38
*MASTER*   1 Unknown**                                     SYSP15 0241 0.38
*MASTER*   1 Unknown**                                     TSG318 7D02 0.76
*MASTER*   1 Unknown**                                     TSG320 8D08 0.38
AAODM4A    157 Unknown**                                     BAB321 030C 0.38
BCVJPH4    376 Unknown**                                     BAB325 0314 0.00
BCVJPH4    376 Unknown**                                     BAB333 02AE 2.63
BCVJPH4    376 Unknown**                                     TSG312 02A1 7.89
BCVJPH4    376 Unknown**                                     TSG320 8D08 5.26
BCVPSW3    168 Unknown**                                     BAB325 0314 0.38
BCVSS53B   130 BBI26.ENG.LINKLIB                               BAB311 0302 0.50
BCVSS53B   130 CMR53.BASE.LINKLIB                             BAB332 025B 0.50
BCVSS53B   130 SYS1.VTOC.VBAB311                             BAB311 0302 0.50
BCVSS53B   130 SYS1.VTOCIX.VBAB316                           BAB316 02B3 0.50
BCVSS53B   130 SYS1.VTOCIX.VBAB325                           BAB325 0314 0.50

```

Figure 15. Usage by Jobname (DSJOB) View

2. To return to the EZMDS screen, press PF3

**Viewing Usage  
by Data Set  
Name Details**

To view data set name usage details:

1. On the EZMDS screen under the Detail Views heading, move the cursor to the Data Set Name entry and press Enter.

The DSDSN view appears (see [Figure 16](#)). The DSDSN view shows usage by data set name information listed in columns, based first on the data set name.

```

10JUN2003 13:09:37 ----- MAINVIEW WINDOW INTERFACE (RV.R.MM)CMF -----
COMMAND ==>>                                SCROLL ==>> 0026
CURR WIN ==>> 1          ALT WIN ==>>
>W1 =DSDSN=====CXTSTJ====*=====10JUN2003==13:09:36====CMF=====147
C Data Set Name                               Volser Dev# Jobname  ASID Using%
-----
BBI26.ENG.LINKLIB                             BAB311 0302 BCVSS53B  130  0.39
BBI26.SSBASE.BBPROF                           BAB316 02B3 BCVWSB3  112  0.32
BBM33.ENG.LINKLIB                             BAB317 0308 BCVWSB3  112  0.32
BBM33.ENG.LINKLIB                             BAB317 0308 BOLSMR2  174  1.01
CMR53.BASE.LINKLIB                           BAB332 025B BCVSS53B  130  0.39
DMR51.BOLSMR.BBIPARM2                       BAB313 0304 BOLSMR2  174  1.01
DMR51.ENG.LINKLIB                             BAB309 0300 BOLSMR2  174  1.01
DSN510.DB1H.LOGCOPY1.DS03.DATA               BAB332 025B DB1HMSTR  204  0.68
DSN510.DB2H.LOGCOPY1.DS02.DATA               BAB310 0301 DB2HMSTR  134  0.63
DSN510.SDSNLOAD.PUT9810                      BAB332 025B DB1HDBM1  172  6.15
DSN510.SDSNLOAD.PUT9810                      BAB332 025B DB1HDIST  158  1.74
DSN510.SDSNLOAD.PUT9810                      BAB332 025B DB1HMSTR  204  1.37
DSN510.SDSNLOAD.PUT9810                      BAB332 025B DB1HSPAS  177  1.12
HSM.MCDS.INDEX                               HSM301 5D00 DC$HSMC   70  0.95
ICFUCAT.VSYSP14                              SYSP14 0240 CATALOG   30  0.63
ICFUCAT.VSYSP14.CATINDEX                     SYSP14 0240 CATALOG   30  0.32
ICFUCAT.VSYSP15                              SYSP15 0241 CATALOG   30  0.32
ICFUCAT.VSYSP15.CATINDEX                     SYSP15 0241 CATALOG   30  0.63

```

Figure 16. Usage by Data Set Name (DSDSN) View

2. To return to the EZMDS screen, press PF3.

**Viewing  
Summarized  
Usage by  
Volume Details**

To view summarized usage details:

1. On the EZMDS screen under the Summary Views heading, move the cursor to the Usage by Volume entry and press Enter.

The DSVOLZ view appears (see [Figure 17](#)). The DSVOLZ view shows usage by volume information listed in columns, based first on the volser name.

```

10JUN2003 13:10:48 ----- MAINVIEW WINDOW INTERFACE (RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>          SCROLL ==> 0026
W1 =DSVOLZ=====CXTSTJ====*=====10JUN2003==13:10:47====CMF=====68
C Volser Dev# #Data Using% Delay% Use  Delay
- - - - - Sets - - - - - Count Count
BAB309 0300 3 1.67 0.69 3 1
BAB310 0301 3 1.17 0.00 4
BAB311 0302 6 2.12 0.28 5 1
BAB312 0303 2 0.81 0.00 2
BAB313 0304 4 2.86 0.00 4
BAB315 0259 2 5.84 0.00 2
BAB316 02B3 5 2.67 0.00 6
BAB317 0308 8 2.95 0.00 8
BAB319 030A 1 0.28 0.00 1
BAB320 030B 1 0.69 0.00 1
BAB321 030C 2 0.83 0.00 3
BAB322 0317 1 0.28 0.00 1
BAB323 030D 2 1.07 0.00 2
BAB324 030F 2 1.03 0.00 2
BAB325 0314 7 2.11 0.74 7 1
BAB326 8D04 3 0.83 0.00 3
BAB327 8D03 3 1.56 0.00 5
BAB329 8D0F 1 0.28 0.00 1

```

Figure 17. Summarized Usage by Volume (DSVOLZ) View

2. To return to the EZMDS screen, press PF3.

**Viewing  
Summarized  
Usage by  
Jobname  
Details**

To view summarized usage of jobname details:

1. On the EZMDS screen under the Summary Views heading, move the cursor to the Usage by Jobname entry and press Enter.

The DSJOBZ view appears (see [Figure 18](#)). The DSJOBZ view shows usage by jobname information listed in columns. .

```

10JUN2003 13:11:55 ----- MAINVIEW WINDOW INTERFACE (RV.R.MM)CMF -----
COMMAND ==>>                               SCROLL ==>> 0026
CURR WIN ==>> 1           ALT WIN ==>>
W1 =DSJOBZ=====CXTSTJ====*=====10JUN2003==13:11:54====CMF=====38
C Jobname  ASID #Data Using% Delay% Use  Delay
- - - - -  - - -  - - - - -  - - - - -  - - - - -  - - - - -
      Sets ----- Count Count
*MASTER*    1      7  8.52  0.00   35
AAODM4A    157     1  0.24  0.00    1
BCVDCASC   170     1  0.24  0.00    1
BCVJPH4    376    12 10.16  0.53   19    1
BCVPSW3    168     1  0.24  0.00    1
BCVSS53B   130    15  5.41  0.00   19
BCVSS53W   200     1  0.00  0.24    1
BCVWSB3    112    11  3.16  0.00   13
BCVWSB4    119     2  0.49  0.00    2
BMVBAR3    201     1  0.31  0.00    1
BMVBAR4    146     6  2.56  0.00    9
BOLSMR2    174    10  5.13  0.51   10    1
BOLSMR3    132     9  3.90  0.26   15    1
BOLSMR4    169     6  1.51  0.25    6    1
BOLVAT2    374     5 13.04  0.00    9
CATALOG     30     9  3.16  0.24   13    1
CMRSSTA    160     1  0.24  0.00    1
CNMPROCC   89     1  0.24  0.00    1

```

Figure 18. Summarized Usage by Jobname (DSJOBZ) View

2. To return to the EZMDS screen, press PF3

**Viewing  
Summarized  
Usage by Data  
Set Name  
Details**

To view summarized usage of data set name details:

1. On the EZMDS screen under the Summary Views heading, move the cursor to the Usage by Data Set Name entry and press Enter.

The DSDSNZ view appears (see Figure 19). The DSDSNZ view shows usage by data set name information listed in columns.

```

10JUN2003 13:13:03 ----- MAINVIEW WINDOW INTERFACE (RV.R.MM)CMF -----
COMMAND ==>                                     SCROLL ==> 0026
CURR WIN ==> 1           ALT WIN ==>
>W1 =DSDSNZ=====CXTSTJ====*=====10JUN2003==13:13:02===CMF=====91
C Data Set Name                               Volser Dev# #Jobs Using% Delay%
-----
BBI26.ENG.LINKLIB                             BAB311 0302      1  0.26  0.00
BBI26.SSBASE.BBPROF                           BAB316 02B3      1  0.22  0.00
BBM33.ENG.LINKLIB                             BAB317 0308      2  0.66  0.00
BCVJPH.BCVJPH4.ISPF.PROFILE                   PROF01 02AC      1  0.45  0.00
CMR53.BASE.LINKLIB                           BAB332 025B      1  0.26  0.00
DMR51.BOLSMR.BBIPARM2                        BAB313 0304      1  0.43  0.00
DMR51.ENG.LINKLIB                             BAB309 0300      1  0.43  0.00
DSN510.DB1H.LOGCOPY1.DS01.DATA                BAB332 025B      1  0.36  0.00
DSN510.DB1H.LOGCOPY1.DS03.DATA                BAB332 025B      1  0.36  0.00
DSN510.DB2H.LOGCOPY1.DS02.DATA                BAB310 0301      1  0.45  0.00
DSN510.SDSNLOAD.PUT9810                       BAB332 025B      4  5.04  0.00
HSM.MCDS.INDEX                               HSM301 5D00      1  0.67  0.00
ICFUCAT.VSYSP14                              SYSP14 0240      1  0.45  0.00
ICFUCAT.VSYSP14.CATINDEX                     SYSP14 0240      1  0.45  0.22
ICFUCAT.VSYSP15                              SYSP15 0241      1  0.22  0.00
ICFUCAT.VSYSP15.CATINDEX                     SYSP15 0241      1  0.45  0.00
ISF.HASPINDX.SYSC                             TSG322 02AD      1  0.78  0.00
ISP.SISPMENU                                  026G11 0319      2  0.45  0.00

```

Figure 19. Summarized Usage by Data Set Name (DSDSNZ) View

2. To return to the EZMDS screen, press PF3.

You have now worked through the data set usage views. The next section discusses workload delay views.

---

## Step 2d: Examining Workload Delay Views

Workload delay views display information on the *delays* experienced both by workloads and jobs.

To examine workload delay views:

1. In the **COMMAND** field, type **WORKDEL** and press Enter.

Your screen now looks like [Figure 20](#).

```
10JUN2003 14:14:14 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =WORKDEL=====CXTSTJ====*=====10JUN2003==14:14:14====CMF=====35
C View Name  Description
-----
DDJOB       Devices delaying jobs
DUJOB       Devices used by jobs
JDDEV       Jobs delayed by devices
JDELAY      Interval job delays
JDELAYR     Realtime job delays
JDELAYZ     Summarized job delays
JDENQ       Jobs delayed by enqueues
JFLOW      Interval job workflow and dela
JFLOWR     Realtime job workflow
JFLOWZ     Summarized job workflow
JHSM       HSM related delays
JHSMSTAT   HSM related delays, details
JINFO      Detailed job delay information
JINFOR     Detailed Realtime job info
JJESD      JES related delays
JMSGD      WTOR related delays
```

Figure 20. WORKDEL View

WORKDEL lists the views that inform you how well workloads and jobs are moving through the system, and where delays are occurring and why.

Many of the WORKDEL view names show the same type of information in two different timeframes:

- The first member of the pair shows *interval* data, which reflects the system over the last 2-60 minutes, or whatever was specified on the INTERVAL keyword on the CMF MONITOR Extractor REPORT statement. In this workbook, an interval of 15 minutes is assumed.
- Another time frame, *realtime*, shows data as it exists at this moment. ARD and ASD are examples of real-time views.

You can become familiar with the WORKDEL view by looking at some sample views.

2. In the **COMMAND** field, type `WFLOW` and press Enter, or hyperlink to WFLOW from WORKDEL.

Your screen now looks like [Figure 21 on page 22](#).

```

10JUN2003 10:55:53 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 1           ALT WIN ==>
W1 =WFLOW=====SYSD=====*=====10JUN2003===10:55:53===CMF=====32
C Workload Typ #AS      Workflow %      Delay %      Delay Reason
-----
PGRP0330 PGR   3  10.6      75.0      Wait for CPU
PGRP0011 PGR   1  14.3      31.8      Wait for CPU
PGRP0010 PGR  17  16.7       9.8      Wait for CPU
PGRP0320 PGR   3  17.9       9.5      Staging
ALLBAT   BAT   7  23.1       8.8      Wait for CPU
PGRP0006 PGR  12  49.4       6.2      Wait for CPU
PGRP0310 PGR   1  91.0       6.0      TAPE Mount
ALLSTC   STC 102  48.6       3.6      Wait for CPU
PGRP0030 PGR  28  65.8       2.9      TAPE Mount
MMRCOMP  CMP 287  44.1       2.6      Wait for CPU
ALLWKLDS CMP 288  44.2       2.6      Wait for CPU
PGRP0041 PGR   1  66.7       1.0      Wait for CPU
ALLASCH  ASC   1  66.7       1.0      Wait for CPU
PGRP0002 PGR 162  58.0       0.9      Wait for CPU
TSO#TST  TSO 162  58.0       0.9      Wait for CPU
SHTEST1  CMP 352  59.4       0.8      Wait for CPU
ALLTSO   TSO 178  59.4       0.8      Wait for CPU
PGRP0270 PGR  12  80.0       0.4      Wait for CPU

```

Figure 21. WFLOW View

WFLOW shows you how efficiently workloads are being served by system resources. If a workload has been delayed, the Delay Reason column shows you why.

The workloads on WFLOW are ordered by delay—from the most severely delayed workload to the least. In addition, severely delayed workloads exceeding a defined threshold appear in a different color, so you can quickly spot workloads in trouble.

3. Find the workload experiencing the greatest delay (that is, the first workload listed).

**Note:** Check the #AS column to make sure that the workload contains more than one address space (or *job*). If it does not, move down the column until you find one that does.

4. Execute the hyperlink for this workload from the Delay % column.

Your screen should now look similar to [Figure 22](#).

```

10JUN2003 10:56:11 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 1           ALT WIN ==>
>W1=JDELAY=====SYSD=====*=====10JUN2003===10:56:11=CMF=====3
C Jobname T SrvClass      Total Delay %      %Dly %Dly %Dly %Dly %Dly %Dly
-----
SALES1   B PGRP0330  95.46      56.80
SALESREP B PGRP0330  80.61      74.86  0.32
SALESTAT B PGRP0330  52.72      52.72

```

Figure 22. JDELAY View

JDELAY shows you which jobs are contributing the most to the overall workload delay and why.

For example, the Total Delay % field in [Figure 22 on page 22](#) shows you that the most severely delayed job, SALES1, was delayed more than 95% of the last interval. Looking at the fields to the right of this field, you can see that the CPU accounts for the majority of this delay (56.8%).

Your own workload may be delayed by other causes, such as contention for I/O devices, storage, ENQ, SRM (System Resource Manager), or HSM (Hierarchical Storage Manager).

- To find out more information about the delay, hyperlink from the column on your screen containing the highest percentage.

<b>This column hyperlink</b>	<b>Displays this view</b>
% Dly CPU	JUSE, which shows you about each job's CPU utilization.
% Dly Dev	DDJOB, which shows you which devices are delaying jobs.
% Dly Stor	JSTORD, which shows you about job delays related to storage.
% Dly ENQ	JDENQ, which shows you which jobs are delayed by ENQ.
% Dly SRM	JSRMD, which shows you about job delays related to SRM constants.
% Dly Subs	JSUBD, which shows you about subsystem delays.

Take a few minutes now and continue hyperlinking from view to view.

**Key Point**

To return to a view from which you hyperlinked, press PF3.

As you experiment, keep these facts in mind:

<b>If you want to see</b>	<b>Use the view</b>
an overview of workload delays	WDELAY
an overview of job delays	JDELAY
how well jobs are being served by all resources	JFLOW
how well workloads are being served by all resources	WFLOW
which I/O devices are delaying jobs	DDJOB
which jobs are being delayed by I/O devices	JDDEV
which I/O devices are being used by which jobs	JUDEV

When you are finished experimenting, proceed to [“Step 2e: Examining Resource Views” on page 23](#).

---

## Step 2e: Examining Resource Views

The RMF-like Menus option on EZM390 allows you to access a combination of system resource views that are similar to RMF displays.

To look at this option more closely:

1. From the EZM390 view, move the cursor to RMF-like Menus and press Enter.

Your screen should look like [Figure 23](#).

```

10JUN2003 10:49:32 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 1           ALT WIN ==>
W1 =EZM390===EZMCMF===SYSD=====*=====10JUN2003===10:49:31===CMF=====1
                                RMF-like Menus

  Menu                               +-----+           Return
. Monitor II Menu                    | Place cursor on |           . Return
. Monitor III Menu                   | menu item and  |
                                      | press ENTER    |
                                      +-----+

```

Figure 23. EZMCMF Menu

The Monitor II menu consists of a series of CMF MONITOR Online data views; each item on this menu corresponds to an item on the RMF Monitor II Menu.

The Monitor III menu consists of a series of menus from which you can focus on exactly the data you are looking for; each item on this menu corresponds to an item on the RMF Monitor III Menu.

2. Move the cursor to the Monitor II Menu option and press Enter.

The EZMON2 menu is displayed, as shown in [Figure 24](#).

```

10JUN2003 11:22:39 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 1           ALT WIN ==>
W1 =EZM390===EZMON2===SJSB=====*=====10JUN2003===11:22:39===MVMVS===D===1
                                CMF II Menu

  Report      Description                CMF View
. ARD         Address Space Resource Data  ARD
. ASD         Address Space State Data     ASD
. ASRM        Address Space SRM Data       ASRM
. CHANNEL     Channel Path Display         CHANNEL
. DDMN        System Domain Display        DDMN
. DEV         System Device Data           DEV
. PGSP        System Paging Space Data     PGSP
. SENQ        System Enqueue Contention    SENQ
. SENQR       System Reserves              SENQR
. SPAG        Paging Data                  SPAG
. SRCS        Central Stor/CPU/SRM Data    SRCS
. TRX         Transaction Activity          TRX

```

Figure 24. EZMON2 Menu

Look at the EZMON2 Description column. As you can see, EZMON2 covers a wide range of system resources—from channel paths (CHANNEL) to system paging space (PGSPP).

Now you can look at one of the EZMON2 views.

3. Hyperlink to **ARD**, which looks similar to the view in [Figure 25](#).

```

10JUN2003 12:37:08 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND  ===>                               SCROLL  ===> PAGE
CURR WIN ===> 1           ALT WIN  ===>
W1 =ARD=====SYSD=====*=====10JUN2003===12:37:07===CMF=====91
Jobname Dev   FF Priv LSQA  LSQA X  SRM  TCB  CPU EXCP Swap LPA CSA NVI V&H
----- Conn Bel   FF CSF   ESF M  Abs Time Time Rate Rate Rt  Rt  Rt  Rt
*MASTER* 62.61          10 64   24 151.6 85 342 0.5
PCAUTH           2 24   3 X  0.0      0
RASP              X  0.4      1
TRACE            3 76   2 X  0.0      0
DUMPSRV 44.74          2 40   10 78.6  9 27 0.1      0.1
XCFAS 533.5          230 214 255 X 128.6 76 91
GRS 280.6 17 38 33 7 X 415.5 124 537
SMXC           2 18 11 8.1 19 25
SYSBMAS        7 15 17 0.5 1 2
CONSOLE 3.041        14 47 7 X 61.7 68 74 0.0      0.0
WLM           6 32 19 X 135.7 237 276
ANTMAIN        2 23 15 X 0.0      0
ALLOCAS        2 20 3 X 0.0      0
IOSAS          6 27 15 9.6 23 24
SMF 29.73          2 36 14 X 2.8 0 9
JESXCF         3 32 15 X 1.4 4 5
VLF           2 19 32 16 X 6.4 3 5
JES2 41.94 20 28 56 25 97.0 64 74 0.8

```

Figure 25. ARD View

ARD shows an overview of resource utilization by jobs in real-time mode.

4. Scan the **Dev Conn** column to find a job with a high device connection time.
5. Execute the hyperlink from that job's **Jobname** column.

The JINFO view is displayed, as shown in [Figure 26](#).

```

10JUN2003 12:42:49 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND  ===>                               SCROLL  ===> PAGE
CURR WIN ===> 1           ALT WIN  ===>
W1 =JINFO=====SYSD=====*=====10JUN2003===12:42:49===CMF=====1
Timeframe... Interval                                0....50..
Jobname..... XCFAS Avg Frames..          904 Workflow.... 51.52
Step/Proc... XCFAS Avg Cframes..         643 Using Proc..   2.10
JES Number.. XCFAS Avg Eframes..         261 Using Dev...  0.87
Terminal ID. SAA1T011 Cframes held       659 Total Dly...  3.17
ASID.....    6 Eframes held              251 Processor..   5.70
Dmn.....    N/A Fixed frames             488 Device.....  0.00
SC or PG #.. 30 Fixed <16M..              0 Storage....  0.00
SrvClass.... SYSTEM Dmd Page/Sec          0 Enqueue....  0.00
Workload.... TSO Swp Page/Sec              0 SRM.....     0.00
%Connected.. 1.3 Avg UIC.....             253 Subs.....  0.00
Disp. Prty.. 253 Avg Wkg Set.              0 Unknown..... 15.03
SSCH/Sec.... 0.0 SU/Sec.....             1652 Status..... Active
Owner.....   XCFAS Job Elpd Tm. 00:04:33 Last..... Active
JES Queue Tm 00:00:00

```

Figure 26. JINFO View

Like all views that end in INFO, JINFO displays detailed information on a single entity (in the case of JINFO, a single job). In this example, JINFO reports on the job named XCFAS, the job with highest device connection time shown in [Figure 25 on page 25](#).

## Step 2f: Analyzing System Trends

The System Trends option on EZM390 is an excellent place to start analyzing the health of your system because it can help you pinpoint trends that may be developing.

1. Press PF3 until the EZM390 menu is redisplayed.
2. Enter the view name SYSOVER.

Your screen should look similar to [Figure 27](#).

```

06/10/03 12:08:57 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 1           ALT WIN ==>
W1 =SYSOVER=====SYSD=====*=====06/10/03===12:08:57===CMF=====74
In Date      Time      CPU Chan Dasd Page PgDs LCU AvIn Dm Pg Swp Job  AFC Dsd
Nm ----- %Bsy %Bsy %Bsy /Sec %Use Qln  Q %S %S /Mn /Mn  Qln
74 06/10/03 12:08:40 99.8 21.9 34.2 54.3 71.7 0.1 107. 24 42 107 3 136 0.0
73 06/10/03 12:00:11 99.9 16.2 18.5 33.8 70.1 0.1 108. 28 49 118 1 113 0.0
72 06/10/03 11:45:12 100. 17.3 15.5 32.9 69.3 0.0 108. 27 45 107 2 113 0.0
71 06/10/03 11:30:11 100. 19.4 19.6 34.6 67.7 0.1 109. 30 47 117 2 124 0.0
70 06/10/03 11:15:05 99.7 23.2 35.9 131. 66.7 0.1 104. 27 42 129 2 108 0.1
69 06/10/03 11:00:02 96.6 24.1 36.2 106. 63.3 0.1 107. 31 41 111 2 140 0.0
68 06/10/03 10:45:04 100. 22.8 19.3 61.6 58.2 0.3 109. 29 48 131 2 105 0.0
67 06/10/03 10:30:08 97.8 22.9 32.2 72.2 55.3 0.1 108. 30 45 157 2 116 0.0
66 06/10/03 10:15:04 79.8 38.0 58.1 57.7 52.2 0.1 102. 22 44 121 2 148 0.0
65 06/10/03 10:00:14 91.9 25.0 23.8 22.4 48.4 0.4 93.5 25 36 85 2 164 0.0
64 06/10/03 09:45:02 79.6 24.4 17.7 15.5 45.9 0.1 91.2 24 46 87 2 162 0.0
63 06/10/03 09:30:01 75.8 23.4 18.6 12.1 41.6 0.1 85.8 22 44 81 2 168 0.0
62 06/10/03 09:15:02 85.6 20.7 16.5 12.0 38.2 1.0 87.9 26 52 76 3 136 0.0
61 06/10/03 09:00:02 94.3 21.2 22.6 11.4 38.1 0.0 89.9 27 37 91 4 188 0.0
60 06/10/03 08:45:03 63.9 18.3 22.1 6.3 38.1 0.1 83.7 25 40 77 1 210 0.0
59 06/10/03 08:30:01 69.2 16.6 18.7 7.8 38.1 0.0 82.1 30 32 63 1 219 0.0
58 06/10/03 08:15:02 88.4 24.7 18.0 10.0 38.1 0.0 81.0 48 48 30 3 162 0.0

```

Figure 27. SYSOVER View

The power of SYSOVER is in its ability to display data from the past. Up to 74 past intervals are listed in SYSOVER Date and Time columns, beginning with the current interval. These intervals are numbered in the In Nm column. The other columns summarize a particular statistic averaged over that interval—workflow percentage, CPU utilization, and so on.

3. Open a second window using the HS command.  
You are going to use this window to hyperlink to other views.
4. In the **ALT WIN** field, type &2.
5. Choose an interval, say 70, and then hyperlink from the interval's CPU %Bsy column.

In this example, interval 70—which ended at 11:15 am—is displayed by the view shown in [Figure 28](#).

```

06/10/03 12:14:52 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==> &2          SCROLL ==> PAGE
W1 -SYSOVER-----SYSD-----*-----06/10/03---12:14:52---CMF-----74
In Date      Time      CPU Chan Dasd Page PgDs LCU AvIn Dm Pg Swp Job  AFC Dsd
Nm ----- %Bsy %Bsy %Bsy /Sec %Use Qln  Q %S %S /Mn /Mn  Qln
74 06/10/03 12:11:40 99.9 19.6 33.3 50.1 71.3 0.1 111. 22 38 87  2 132 0.0
73 06/10/03 12:00:11 99.9 16.2 18.5 33.8 70.1 0.1 108. 28 49 118 1 113 0.0
72 06/10/03 11:45:12 100. 17.3 15.5 32.9 69.3 0.0 108. 27 45 107 2 113 0.0
71 06/10/03 11:30:11 100. 19.4 19.6 34.6 67.7 0.1 109. 30 47 117 2 124 0.0
70 06/10/03 11:15:05 99.7 23.2 35.9 131. 66.7 0.1 104. 27 42 129 2 108 0.0
69 06/10/03 11:00:02 96.6 24.1 36.2 106. 63.3 0.1 107. 31 41 111 2 140 0.0
68 06/10/03 10:45:04 100. 22.8 19.3 61.6 58.2 0.3 109. 29 48 131 2 105 0.0
67 06/10/03 10:30:08 97.8 22.9 32.2 72.2 55.3 0.1 108. 30 45 157 2 116 0.0
66 06/10/03 10:15:04 79.8 38.0 58.1 57.7 52.2 0.1 102. 22 44 121 2 148 0.0
65 06/10/03 10:00:14 91.9 25.0 23.8 22.4 48.4 0.4 93.5 25 36 85  2 164 0.0
64 06/10/03 09:45:02 79.6 24.4 17.7 15.5 45.9 0.1 91.2 24 46 87  2 162 0.0
63 06/10/03 09:30:01 75.8 23.4 18.6 12.1 41.6 0.1 85.8 22 44 81  2 168 0.0
62 06/10/03 09:15:02 85.6 20.7 16.5 12.0 38.2 1.0 87.9 26 52 76  3 136 0.0
61 06/10/03 09:00:02 94.3 21.2 22.6 11.4 38.1 0.0 89.9 27 37 91  4 188 0.0
H2=WUSE=====SYSD=====10JUN2003===12:14:52-CMF=====32
C Workload Typ #AS      % CPU Util.    %TCB   CPU      Avg  SSCH   Dmd  Swp
- - - - - 0.....50...100 - - - - - Sec  Frame /Sec  Page Page
  ALLWKLDS CMP 394 57.70 ***** 91.58 1547   220 244.6 35.6 244.2
  PGRP0410 STC  6  0.46          82.51  12    373  0.0  0.0  0.0

```

Figure 28. SYSOVER and WUSE Views

Look at the Time and Date field on the WUSE window information line. Sure enough, the values in these fields reflect the system as it existed during the interval you chose. And the beginning of the window information line contains an H, thus confirming the fact that window 2 contains historical data.

**Note:** If there is a discrepancy between seemingly similar values on different views, a possible explanation is that the data may be collected from different sources.

All SYSOVER hyperlinks display snapshots of the system as it existed at a particular date and time.

SYSOVER was built this way to help you trace the development of certain conditions over a longer period than an interval. After you use one of the SYSOVER hyperlinks, all other views you enter in that window reflect the system as it existed at that time, on that date. In this way, CMF MONITOR Online helps you reconstruct a problem that may have occurred when you were not there to stop it.

**Note:** You can display older historical data using any CMF MONITOR Online view (not just SYSOVER) with the TIME command. In fact, SYSOVER established historical mode for window 2 simply by issuing the TIME command for you. You will learn how to use TIME in [Step 3 on page 29](#).

Now that you have completed Step 3, you have a basic understanding of how to move around within CMF MONITOR Online. You may want to experiment more with what you have just learned, or you may prefer to learn some slightly more advanced concepts.

- If you want to spend more time experimenting, a good place to start is the MVS Fast Menu, as shown in [Figure 29](#).

To display this menu, move the cursor to the **MVS Fast Menu** option on EZM390 and press Enter.

```

10JUN2003 14:40:58 ----- MAINVIEW WINDOW INTERFACE (RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==> 1          ALT WIN ==>
W1 =EZM390====EZMFAST==SYSD=====10JUN2003===14:40:58====CMF=====1

                                OS/390 Fast Menu
Jobs                               Time frame - Interval          Workloads
. Overview                         +-----+                          . Overview
. Workflow                         | Place cursor on |          . Workflow
. Delay Reasons                    | menu item and   |          . Delay Reasons
. Batch Overview                   | press ENTER     |          > Response Time
. TSO Overview                     +-----+                          . Service Objectives
. Job Step Overview                > WLM Workloads

System                               Utilities
. Overview                         > SYSPROG Services
. Configuration                    Devices                          . Common Storage
. Trending                          . Cache Overview                > Data Compression
> SRM Activity                      . Channel Utilization           > Alarm Management
> Storage Activity                  . DASD Utilization              . Exception Monitor
. LPAR Utilization                  > Data Set Usage                 . Console
> Coupling Facility                . Device Delays                  > Environment Settings
. Enqueue Conflicts                . HSM Activity                   . Other Views
                                    . LCU Overview                    . Return...
                                    . SMS Overview
                                    . Tape Activity

```

Figure 29. MVS Fast Menu

The Fast Menu allows deeper access into CMF MONITOR Online than EZM390, but still presents simple, descriptive choices, all on one panel and organized by view type.

- If you would like to leave CMF MONITOR Online, in the **COMMAND** field, type `Quit` and press Enter. This command will bring you back to the OS/390, z/OS, and USS Solutions menu, as shown in [Figure 2 on page 3](#). Once you see this menu, press PF3 until you see the ISPF Primary Option Menu.
- If you would like to continue this tutorial, turn to [Step 3 on page 29](#).

---

## Step 3. Displaying Historical Data

So far you have seen two different timeframes provided by CMF MONITOR Online views: real-time and interval. CMF MONITOR Online also offers another version of MVS data, called *historical data*. Historical data allows you look at the system as it existed yesterday, last week, or last month.

Historical data is data from the most recent interval specified and its preceding intervals. Using the TIME command, you can specify intervals from any time frame for which data exists on your system.

You also can use the Intvl Time, Interval Date, and Hr (Hour) fields to see when data was collected and to hyperlink to a particular time frame. These fields are discussed in “[Step 3f: Viewing Historical Data](#)” on page 40.

You saw an example of historical data when you used the hyperlink on the SYSOVER view in [Figure 27 on page 26](#). Each field contained a hyperlink to the TIME command. In this step, you will examine the TIME command.

---

### Step 3a: Determining Data Availability

When you decide that you need data from the past, you must make sure the data is available in one of the currently allocated *historical data sets*.

1. To clear the screen, type RESEt.
2. In the **COMMAND** field, type EZMVS.
3. Move the cursor to **Environmental Settings** under the **Utilities** option and press Enter.
4. Move the cursor to **Historical Data Sets** under the **Miscellaneous** option and press Enter.

The DSLIST view is displayed, as shown in [Figure 30](#).

DSLIST lists the historical data sets currently available.

```
06/10/03 14:38:16----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>>
CURR WIN ==>> 1          ALT WIN ==>>
>W1=DSLISL=====SYSB=====*=====06/10/03===14:38:17=====CMF=====4
C DDNAME  From Date  Time  To Date  Time  Rec Status Pending  Data set name
-----
HISTDS00 06/06/03  18:00 06/07/03  08:00 Yes Closed  ***** BBM20.LGS1.H
HISTDS01 06/07/03  08:00 06/08/03  18:00 Yes Closed  ***** BBM20.LGS1.H
HISTDS02 06/08/03  18:30 06/09/03  08:00 Yes Closed  ***** BBM20.LGS1.H
HISTDS03 06/09/03  08:00 06/10/03  14:30 Yes Active  ***** BBM20.LGS1.H
```

Figure 30. DSLIST View

In [Figure 30](#), four data sets are available, spanning the dates between June 6, 2003 and June 10, 2003. In fact, even today’s data is being recorded at the end of every interval in the data set HISTDS03.

You should check DSLIST before using the TIME command because if you specify the TIME command for an unavailable date and time, you will get an error message.

Data from recording intervals between From Date and To Date may not be available for any of the following reasons:

- Data was not collected.
- Data was overwritten by new data.
- The data set has been quiesced by a user.
- The data set has an error.

If you do not see the date or time you want on the DSLIST view, that may mean the data set you need has been archived either on tape or in an offline data set. It also may mean the data has been purged. To find out, see your product administrator or see the *MAINVIEW Administration Guide*.)

**Note:** Previously you used a hyperlink on the SYSOVER view to automatically retrieve historical data. All SYSOVER does is issue a TIME command; if the associated data is not available on DSLIST or if the data set is in error or quiesce status, an error message is displayed when you try to use the hyperlink.

---

## Step 3b: Using the TIME Command

Historical data is displayed using the TIME command. The syntax for the TIME command is

```
TIME [date time [duration|NEXT|PREV]]
```

where `date` and `time` specify the date and the time of the data you want to see. (The other parameters are explained later on in this section.)

An alternate way to use the TIME command is by typing TIME in the **COMMAND** field, and pressing Enter. This command takes you to a dialog box, SET TIME FRAME, as shown in [Figure 31](#).

```
+-----+
: ----- SET TIME FRAME -----
: COMMAND ==>
:
: Requested Time Frame:
: End Date ==> * (*, =, or ddmmmyyyy)
: End Time ==> * (*, =, or hh:mm)
: Duration ==> 1H (*, =, NEXT, PREV, TODAY, MONTH,
: nnnnI, nnnnM, nnnnH, nnnD, or nnW)
: DOW Mask ==> EVERYDAY (EVERYDAY, WEEKDAYS, WEEKENDS)
: TOD Mask ==> ALLDAY (ALLDAY, PRIMESHIFT, SWINGSHIFT
: GRAVEYARDSHIFT)
:
: Data in the Requested Time Frame:
: Interval ==> 15M (Length, in minutes, of one interval)
: End Date ==> 06/10/03 (End date of data)
: End Time ==> 06:13 (End time of data)
: Duration ==> 15M (Minutes spanned by data)
: DOW Mask ==> EVERYDAY (Day-of-week mask)
: TOD Mask ==> ALLDAY (Time-of-day mask)
:
: Type END to set the window's requested time frame
: CANcel to quit without setting
+-----+
```

Figure 31. SET TIME FRAME Dialog Box

You can use symbols, such as TODAY and YESTERDAY, for the end date parameter on the TIME command instead of a specific date, and extend the duration parameter to include longer periods of time.

Additional specifications for the end date parameter are as follows

<b>Specifications</b>	<b>Explanation</b>
TODAY or TDAY	Today's date (equivalent to specifying "**")
YESTERDAY or YDAY	Yesterday's date
LASTSUNDAY or LSUN	Last Sunday's date
LASTMONDAY or LMON	Last Monday's date
LASTTUESDAY or LTUE	Last Tuesday's date
LASTWEDNESDAY or LWED	Last Wednesday's date
LASTTHURSDAY or LTHU	Last Thursday's date
LASTFRIDAY or LFRI	Last Friday's date
LASTSATURDAY or LSAT	Last Saturday's date
ENDOFMONTH or EOM	Last day of the previous month
ENDOFYEAR or EOY	Last day of the previous year
LASTWEEKDAY or LWKD	Most recent weekday prior to today
LASTWEEKENDDAY or LWKED	Most recent weekend day prior to today
FIRSTOFMONTH or FOM	First day of the current month
FIRSTOFWEEK or FOW	First day of the current week (Monday)
FIRSTOFYEAR or FOY	First day of the current year
FIRSTWEEKDAY or FWKD	First day of the current week (equivalent to FIRSTOFWEEK)
FIRSTWEEKENDDAY or FWKED	First day of the most recent weekend (Saturday)
*- <i>nnn</i>	<i>nnn</i> days prior to today (up to 365 days)

Permissible specifications for the duration parameter are as follows

<b>Specifications</b>	<b>Explanation</b>
*	Current time
PREV	Previous interval
NEXT	Next interval
9999I	Up to 9,999 intervals
9999M	Up to 9,999 minutes
9999H	Up to 9,999 hours

The following additional specifications for the duration parameter are:

Specifications	Explanation
999D	Up to 416 days
99W	Up to 59 weeks
TODAY or TDAY	Intervals beginning at midnight (today's intervals)
MONTH	One month back from the end date

The defaults are set to today's date, the current time, and a duration of one recording interval, which is the way you look at views in non-historical mode. To look at historical data, overtype the current settings on the End Date, End Time, and Duration fields, and then press PF3 to return to the view.

You can try using the SET TIME FRAME dialog box to look at yesterday's SYSOVER data. These concurrent views may be useful if your current CPU utilization is excessively high, and you recall that the same phenomenon occurred yesterday at the same time. You need a way to compare yesterday's and today's system performance at the same moment.

1. Display the EZMVS Menu.
2. Type SYSOVER in the **COMMAND** field and press Enter.

The SYSOVER view (SYSSUM if MAINVIEW for OS/390 is installed) is displayed in window 1.

3. Open a second window, as described in "[Step 2a: Understanding Basic View Concepts](#)" on [page 5](#).

Your screen should now look like this:

```

06/10/03  14:35:57 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND  ==>
CURR WIN ==> 2          ALT WIN ==>
>W1 -SYSOVER-----SYSB-----*-----06/10/03---14:35:57---CMF-----11
In Date      Time      CPU Chan Dasd Page PgDs LCU AvIn Dm Pg Swp Job  AFC Dsd
Nm -----      %Bsy %Bsy %Bsy /Sec %Use Qln  Q %S %S /Mn /Mn  /Mn  Qln
74 06/10/03    12:08:40 99.8 21.9 34.2 54.3 71.7 0.1 107. 24 42 107  3 136 0.0
73 06/10/03    12:00:11 99.9 16.2 18.5 33.8 70.1 0.1 108. 28 49 118  1 113 0.0
72 06/10/03    11:45:12 100. 17.3 15.5 32.9 69.3 0.0 108. 27 45 107  2 113 0.0
71 06/10/03    11:30:11 100. 19.4 19.6 34.6 67.7 0.1 109. 30 47 117  2 124 0.0
70 06/10/03    11:15:05 99.7 14.2 35.9 131. 66.7 0.1 104. 27 42 129  2 108 0.0
69 06/10/03    11:00:02 96.6 24.1 36.2 106. 63.3 0.1 107. 31 41 111  2 140 0.0
68 06/10/03    10:45:04 100. 22.8 19.3 61.6 58.2 0.3 109. 29 48 131  2 105 0.0
67 06/10/03    10:30:08 97.8 22.9 32.2 72.2 55.3 0.1 108. 30 45 157  2 116 0.0
66 06/10/03    10:15:04 79.8 38.0 58.1 57.7 52.2 0.1 102. 22 44 121  2 148 0.0
T2 =====

```

Figure 32. SYSOVER on SYSB and an Open Window

As you can see from the window information line, the current time is 2:35 pm.

4. In the **COMMAND** field, type DSLIST.

Make sure that yesterday's date and time are contained in one of the currently allocated historical data sets.

5. Set the time frame for window 2 by typing TIME in the **COMMAND** field.

6. When the SET TIME FRAME dialog box is displayed, type yesterday's date in the **End Date** field.

Be sure to specify it in the same format as the date in the upper left corner of your screen.

7. Press PF3 to return to the prior view.

For example, if today is 06/10/03, and your screen looks like this:

```

06/10/03 14:35:57 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 2 ALT WIN ==>
>W1 -SYSOVER-----SYSB-----*-----06/10/03---14:35:57---CMF-----11
In Date      Time      CPU Chan Dasd Page PgDs LCU AvIn Dm Pg Swp Job  AFC Dsd
Nm ----- %Bsy %Bsy %Bsy /Sec %Use Qln Q %S %S /Mn /Mn Qln
74 06/10/03 14:35:40 99.8 21.9 34.2 54.3 71.7 0.1 107. 24 42 107 3 136 0.0
73 06/10/03 14:30:11 99.9 16.2 18.5 33.8 70.1 0.1 108. 28 49 118 1 113 0.0
72 06/10/03 14:15:12 100. 17.3 15.5 32.9 69.3 0.0 108. 27 45 107 2 113 0.0
71 06/10/03 14:00:11 100. 19.4 19.6 34.6 67.7 0.1 109. 30 47 117 2 124 0.0
70 06/10/03 13:45:05 99.7 14.2 35.9 131. 66.7 0.1 104. 27 42 129 2 108 0.1
69 06/10/03 13:30:02 96.6 24.1 36.2 106. 63.3 0.1 107. 31 41 111 2 140 0.0
68 06/10/03 13:15:04 100. 22.8 19.3 61.6 58.2 0.3 109. 29 48 131 2 105 0.0
67 06/10/03 13:00:08 97.8 22.9 32.2 72.2 55.3 0.1 108. 30 45 157 2 116 0.0
66 06/10/03 12:45:04 79.8 38.0 58.1 57.7 52.2 0.1 102. 22 44 121 2 148 0.0
>W2 =DSLST=====SYSB=====06/10/03===14:35:57===CMF=====4
C DDNAME From Date Time Too Date Time Rec Status Pending Data set name
-----
HISTDS00 06/06/03 18:00:00 06/07/03 08:00:00 Yes Closed ***** BBM20.LGS1
HISTDS02 06/07/03 08:00:00 06/08/03 18:00:00 Yes Closed ***** BBM20.LGS1
HISTDS01 06/08/03 18:00:00 06/09/03 08:00:00 Yes Closed ***** BBM20.LGS1
HISTDS03 06/09/03 08:00:00 06/10/03 14:30:00 Yes Active ***** BBM20.LGS1

```

Figure 33. SYSOVER and DSLIST on SYSB

you would type **TIME** in the **COMMAND** field to display the dialog box, and then overtype today's date of 06/10/03 with yesterday's date of 06/09/03.

```

+-----+
: ----- SET TIME FRAME -----
: COMMAND ==>
:
: Requested Time Frame:
: End Date ==> 06/09/03 (*, =, or ddmmyyyy)
: End Time ==> 14:35 (*, =, or hh:mm)
: Duration ==> 1I (*, =, NEXT, PREV, TODAY, MONTH,
: nnnnI, nnnnM, nnnnH, nnnD, or nnW)
: DOW Mask ==> EVERYDAY (EVERYDAY, WEEKDAYS, WEEKENDS)
: TOD Mask ==> ALLDAY (ALLDAY, PRIMESHIFT, SWINGSHIFT
: GRAVEYARDSHIFT)
:
: Data in the Requested Time Frame:
: Interval ==> 15M (Length, in minutes, of one interval)
: End Date ==> 06/10/03 (End date of data)
: End Time ==> 14:35 (End time of data)
: Duration ==> 15M (Minutes spanned by data)
: DOW Mask ==> EVERYDAY (Day-of-week mask)
: TOD Mask ==> ALLDAY (Time-of-day mask)
:
: Type END to set the window's requested time frame
: CANCEL to quit without setting
+-----+

```

Figure 34. SET TIME FRAME Dialog Box

The date field matches the format shown in the upper left corner: month, day, and the last two digits of the year.

8. Press PF3 to exit the dialog box, which has now set window 2 for yesterday at 14:35.

Now you see what happens when you display a view in this window.

9. Display the SYSOVER view in window 2.

Because CURR WIN was automatically set to window 2 when you opened a second window, SYSOVER is displayed there.

Your screen now looks similar to [Figure 35](#):

```

06/10/03  14:35:57 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
>W1 -SYSOVER-----SYSB-----*-----06/10/03--14:35:57-----CMF-----74
In Date      Time      CPU Chan Dasd Page PgDs LCU AvIn Dm Pg Swp Job  AFC Dsd
Nm -----      %Bsy %Bsy %Bsy /Sec %Use Qln  Q %S %S /Mn /Mn  Qln
74 06/10/03    12:08:40 99.8 21.9 34.2 54.3 71.7 0.1 107. 24 42 107 3 136 0.0
73 06/10/03    12:00:11 99.9 16.2 18.5 33.8 70.1 0.1 108. 28 49 118 1 113 0.0
72 06/10/03    11:45:12 100. 17.3 15.5 32.9 69.3 0.0 108. 27 45 107 2 113 0.0
71 06/10/03    11:30:11 100. 19.4 19.6 34.6 67.7 0.1 109. 30 47 117 2 124 0.0
70 06/10/03    11:15:05 99.7 14.2 35.9 131. 66.7 0.1 104. 27 42 129 2 108 0.0
69 06/10/03    11:00:02 96.6 24.1 36.2 106. 63.3 0.1 107. 31 41 111 2 140 0.0
68 06/10/03    10:45:04 100. 22.8 19.3 61.6 58.2 0.3 109. 29 48 131 2 105 0.0
67 06/10/03    10:30:08 97.8 22.9 32.2 72.2 55.3 0.1 108. 30 45 157 2 116 0.0
66 06/10/03    10:15:04 79.8 38.0 58.1 57.7 52.2 0.1 102. 22 44 121 2 148 0.0
H2 =SYSOVER=====SYSB=====*=====06/09/03==14:45:00=====CMF=====74
In Date      Time      CPU Chan Dasd Page PgDs LCU AvIn Dm Pg Swp Job  AFC Dsd
Nm -----      %Bsy %Bsy %Bsy /Sec %Use Qln  Q %S %S /Mn /Mn  Qln
74 06/09/03    12:08:40 99.8 21.9 34.2 54.3 71.7 0.1 107. 15 42 107 3 136 0.0
73 06/09/03    12:00:11 99.9 16.2 18.5 33.8 70.1 0.1 108. 28 49 118 1 113 0.0
72 06/09/03    11:45:12 100. 17.3 15.5 32.9 69.3 0.0 108. 27 45 107 2 113 0.0
71 06/09/03    11:30:11 100. 19.4 19.6 34.6 67.7 0.1 109. 30 47 117 2 115 0.0
70 06/09/03    11:15:05 99.7 23.2 35.9 131. 66.7 0.1 104. 27 42 129 2 108 0.0
69 06/09/03    11:00:02 96.6 15.1 36.2 106. 63.3 0.1 107. 31 41 111 2 140 0.0
68 06/09/03    10:45:04 100. 22.8 19.3 61.6 58.2 0.3 109. 29 48 131 2 105 0.0
67 06/09/03    10:30:08 97.8 22.9 32.2 72.2 55.3 0.1 108. 30 45 157 2 116 0.0
66 06/09/03    10:15:04 79.8 38.0 58.1 57.7 52.2 0.1 102. 22 44 121 2 148 0.0

```

Figure 35. SYSOVER in Two Time Intervals

You are now looking at two versions of SYSOVER: one as the system exists at this moment (on the top half of the panel), and one as it existed yesterday at the same time (on the lower half of the panel). With the two timeframes displayed on the same panel, it is easy to compare the two to see if the problem is chronic or just a temporary abnormality.

Notice that the window status indicator for window 2 changed from T2 to H2. The H stands for historical data.

In addition, notice that the window 2 window information line says 14:45, not 14:35 because historical data is displayed as it existed at the *end* of the interval containing the specified time. In this case, you specified 14:35 on the TIME command, but 14:45 is the end of the interval containing the time 14:35.

10. Press Enter.

Notice that although the data in window 1 is updated, the data in window 2 is not. If you think about it, this makes sense: historical data can never be updated because it represents the system at a fixed point in time.

**Key Point**

Once you have used the TIME command for a window, all the views sent to that window reflect the system as it existed at the date and time you specify. This fact remains true until you issue another TIME command or until the window is closed.

## Step 3c: Displaying Data from Multiple Intervals

You have seen how the **TIME** command lets you look at data as it existed at the end of an interval. But if you wanted to see data spanning a greater period of time—for example, 30 minutes, or 4 recording intervals, or even over a 15-hour period, you could overwrite the Duration field of the **SET TIME FRAME** dialog box.

Suppose you get a phone call complaining that the page data sets were overused between the hours of 11:00 am and 12:00 am today. This is not a peak activity period for your site, so something obviously went wrong.

To begin your analysis, compare today's page data set activity from 11:00 am - 12:00 am, to yesterday's page data set activity during the same time frame to see if the problem existed then. Perhaps something occurs regularly during this period that would explain the change.

1. In the **COMMAND** field, type **RESet** to clear the screen.

To see what the system was doing this morning between 11:00 am and 12:00 am, set the time frame for window 1:

2. In the **COMMAND** field, type **TIME**.
3. Overtyping the asterisk in the **End Time** field with **12:00**, which is the ending time of the period at which you want to look.
4. In the **Duration** field, overtype the **1I** with **1H** (for a duration of one hour).
5. To return to the view, press **PF3**.

### Key Point

You can use an asterisk (\*) or an equal sign (=) in place of the time, date, or duration parameters. An asterisk means you want to return to the default value (the current date and time, or one Extractor interval). An equal sign means you want to keep whatever was previously specified.

Now you have the correct time frame set.

6. Display the **PGSPP** view in window 1.
7. In the **COMMAND** field, type **INCLUDE TIME**.

The screen now shows the **Intvl Time** field as shown in [Figure 36](#):

```

06/10/03 16:32:52 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>
CURR WIN ==> 2          ALT WIN ==>
>W1 =PGSPP=====SYSB=====*=06/10/03==12:00:00=60M====CMF=====8=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:30 COMM BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 46.8 6.86 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 99.2 6.86 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 12:00 PLPA MVS800 0800 OK 46.8 8.32 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 12:00 COMM BAB086 030D OK 99.2 8.32 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON

```

Figure 36. PGSPP View with a Duration of One Hour

There are several important things to note about this screen:

- One row of data is returned for each entity (in this case, each page data set) and each interval you requested (in this case, you requested 1 hour, which is the same as 4 intervals of 15 minutes).
- The Intvl Time field has been added so you can see what time the data in each row reflects.

If you want to include this field automatically in every view, you can add it by doing the following steps:

- 1) Select option 0, **Parameters**, from the MAINVIEW Selection Menu.
- 2) Select option 1, **Session Parameters**, from the Terminal Session Parameter Select menu.
- 3) Select option 2, **Display**, from the MAINVIEW Parameters Editors menu.
- 4) Move the cursor to the **Show Time** field and type `Y`.
- 5) Press End to save your updates.

To hide the field from views when you do not want it displayed, in the **COMMAND** field, type `EXclude TIME` ; type `INclude TIME` to redisplay it.

**Note:** If you want to see the date the data was gathered, use the `INclude DATE` command to reveal the Date field. This command is primarily useful if your time frame spans more than a 24-hour period.

- The Time field on the window information line contains the time the last interval in the time frame ended; in this case, 12:00.
- The Duration field, next to the Time field, automatically converts the duration you express on the TIME command into minutes. In this case, you specified 1 hour, which is the same as 60 minutes.

To see what the PGSP view shows for yesterday between 11:00 am and 12:00 am:

8. Open a second window using the HS command.  
Be sure to check that yesterday's date and time are contained in one of the currently allocated historical data sets.
9. Set the time frame for window 2 by issuing the TIME command in the **COMMAND** field, and then press Enter.
10. Overtyping the asterisk in the **End Date** field with yesterday's date, overtype the asterisk in the **End Time** field with 12:00, overtype the 1I in the **Duration** field with 1H, and then press PF3.
11. Now display the PGSP view in window 2.
12. In the **COMMAND** field, type `INCLUDE TIME`.

Your screen now looks similar to [Figure 37](#):

```

06/10/03 16:32:52 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==> TIME 06/09/03 12:00 SCROLL==> PAGE
CURR WIN ==> 2 ALT WIN ==>
>W1 =PGSPP=====SYSB=====*=====06/10/03===12:00:00=60M===CMF=====8=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:30 COMN BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 46.8 6.86 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 99.2 6.86 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
>H2=PGSPP=====SYSB=====*=====06/09/03===12:00:00=60M===CMF=====8=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:30 COMN BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 46.8 6.86 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 99.2 6.86 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON

```

Figure 37. PGSPP in Two Timeframes

As you can see in this example, data set PAGE.VPAGD27.COMMON did experience a great deal of activity between the hours of 11:00 am and 12:00 am, both today and yesterday. Continue with [“Step 3d: Moving Quickly between Time Periods”](#).

---

## Step 3d: Moving Quickly between Time Periods

To answer questions about how long the surge of activity lasted, use the NEXT and PREV parameters of the TIME command.

Both NEXT and PREV use the duration that was last specified to move the time frame either forward (NEXT) or backward (PREV) by the same amount.

1. In the **COMMAND** field, type `TIME = = NEXT`.

The screen now looks like [Figure 38](#):

```

06/10/03 16:32:52 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==> TIME = = NEXT SCROLL==> PAGE
CURR WIN ==> 2 ALT WIN ==>
>H1=PGSPP=====SYSB=====*=====06/10/03===12:00:00=60M===CMF=====8=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 46.8 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:30 COMN BAB086 030D OK 99.2 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 46.8 6.86 0.02 0.91 N 58.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 99.2 6.86 0.05 2.12 Y 98.2 PAGE.VPAGD27.COMMON
>H2=PGSPP=====SYSB=====*=====06/09/03===13:00:00=60M===CMF=====8=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 26.8 0.01 0.91 N 28.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 29.2 0.02 2.12 Y 28.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 36.8 0.01 0.91 N 18.2 PAGE.VPAGD27.PLPA
1 11:30 COMN BAB086 030D OK 39.2 0.02 2.12 Y 18.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 26.8 6.86 0.01 0.91 N 28.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 29.2 6.86 0.02 2.12 Y 28.2 PAGE.VPAGD27.COMMON

```

Figure 38. Using TIME NEXT to Cycle Through Timeframes

The current window was set to 2, so check the window 2 window information line. Now it says 13:00 in the window information line instead of 12:00.

Do the same thing now for window 1:

2. In the **COMMAND** field, type `w1.TIME == NEXT` and press Enter.

W1, followed by a period, directs the command to window 1.

```

06/10/03 14:32:29 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==> W1.TIME == NEXT                                SCROLL ==> PAGE
CURR WIN ==> 2      ALT WIN ==>
>H1=PGSPP=====SYSB=====*=====06/10/03===13:00:00 60M===CMF=====4=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 16.8          0.02 0.91 N 28.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 19.2          0.05 2.12 Y 28.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 26.8          0.02 0.91 N 38.2 PAGE.VPAGD27.PLPA
1 11:30 COMN BAB086 030D OK 29.2          0.05 2.12 Y 38.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 16.8    6.86    0.02 0.91 N 28.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 19.2    6.86    0.05 2.12 Y 28.2 PAGE.VPAGD27.COMMON
>H2=PGSPP=====SYSB=====*=====06/09/03===13:00:00 60M===CMF=====4=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
0 11:15 PLPA MVS800 0800 OK 26.8          0.01 0.91 N 28.2 PAGE.VPAGD27.PLPA
1 11:15 COMM BAB086 030D OK 29.2          0.02 2.12 Y 28.2 PAGE.VPAGD27.COMMON
0 11:30 PLPA MVS800 0800 OK 36.8          0.01 0.91 N 18.2 PAGE.VPAGD27.PLPA
1 11:30 COMN BAB086 030D OK 39.2          0.02 2.12 Y 18.2 PAGE.VPAGD27.COMMON
0 11:45 PLPA MVS800 0800 OK 26.8    6.86    0.01 0.91 N 28.2 PAGE.VPAGD27.PLPA
1 11:45 COMM BAB086 0227 OK 29.2    6.86    0.02 2.12 Y 28.2 PAGE.VPAGD27.COMMON

```

Figure 39. TIME NEXT for Window 1

As you can see, page data set usage was normal from 12:00 am - 1:00 pm. You can now use `TIME == PREV` to check the hour from 10:00 am - 11:00 am (you will have to use it twice; the first time displays the interval from 11:00 am - 12:00 pm).

**Key Point**

You might want to define a PF key for `TIME == PREV` or `TIME == NEXT`. That way, you can move through subsequent intervals in historical mode just by pressing a single key.

---

## Step 3e: Understanding the Time and Duration Fields

You may find that the Time and Duration fields on the window information line do not always contain the data you expect. That is because these fields reflect the *actual data displayed*, which may or may not be the same as what you requested with the TIME command.

For example, if it is 9:00 am and you want to look at SYSOVER to review system activity between 5:00 am and 8:00 am this morning, you display SYSOVER, and then change the SET TIME FRAME dialog box to

Requested Time Frame:

```
End Date    ==> 06/10/03  (*, =, or mm/dd/yy)
End Time    ==> 08:00    (*, =, or hh:mm)
Duration    ==> 3H      (*, =, nnnnI, nnnnM, nnnnH, NEXT, or PREV)
```

After doing so, you expect the window information line to look like this:

```
H1=SYSOVER=====SYSB=====*****06/10/03==8:00:00=180M==CMF=====2
```

since 8:00 am is the last interval in the duration you requested and the three-hour period you want is equivalent to 12 intervals.

However, the window information line actually looks like this:

```
H1=SYSOVER=====SYSB=====*****06/10/03==7:15:00=120M==CMF=====2
```

Notice that the Time field displays 7:15 instead of 8:00, and there are only 8 intervals worth of data (120 minutes), rather than 12 intervals (180 minutes).

Here is what is happening: Data is not always available for the intervals you request. Sometimes the PAS is shut down in the middle of a recording interval, or the recording mode is changed from CPM to IPM, or something else happens to create gaps in the data recorded to the historical data set. What appears on the window information line represents the data that is *actually displayed*.

In the above example, 7:15 was the last interval within the time frame for which data was recorded. There simply was not any data recorded at 7:30, 7:45, and 8:00, and that was why the window displays 7:15 instead of 8:00.

Even though there was not data for three of the intervals, there is only 8 intervals worth of data (120 minutes), rather than 9 intervals (135 minutes), because MAINVIEW uses the time between the *first and last* available interval. In this case, there must have been one interval worth of data missing between 5:00 and 5:15, and as a result, the interval count is reduced by an additional interval (or another 15 minutes).

Although there may have been some other gaps in the record between 5:15 and 7:15, they are not particularly relevant; MAINVIEW tries to normalize things so that you get an accurate picture of the data actually displayed in the view.

**Key Point**

The Time field always contains the end of the last interval for which data was available, and the number of intervals for which data was actually available (normalized over the time frame you requested).

### Step 3f: Viewing Historical Data

When viewing summary data (views ending with the letter Z) or most kinds of tabular data<sup>2</sup>, you can easily determine when the data was collected. The Intvl Time, Interval Date, and Hr (Hour) fields contain this information. They are excluded by default.

To display these fields:

1. Display the JUSE view.
2. On the **COMMAND** line, type CUST.
3. Type E (show excluded fields). The View Customization - JUSE view is displayed.

```

----- VIEW CUSTOMIZATION - JUSE -----
OPTION ==> E                                SCROLL ==> PAGE
Options: (that require column selection)      Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat      X - Exclude      P - Parameters E - Hide excluded
L - Filter      T - Threshold H - Hyperlink      Z - Summarize  K - Show template
-----< Show excluded columns >-----
The view is now displaying all the excluded (or hidden) columns.  Excluded
columns are marked with highlighted column letters.  You can customize an
excluded column (for instance, place a filter on it).  You may also make the
column permanently displayable by using the Include option.
If you select E - Hide excluded, the excluded columns will again be hidden.
-----
  A      B      C      D E F      G      H      I      J      K      L
C Jobname Interval Intvl Hr T SrvClass Dmn SC# ASID Total %CPU Util.
- - - - - Date- - - - - Time- - - - - /Pg - - - - - Del % 0....10....20
MMDPMSP 06/09/03 14:07 14 S STCPAS 0 21 61 3.18 3.0
EASYCMF 06/09/03 14:07 14 S STCNRM 0 20 94 11.32 2.4
XTSTFPAS 06/09/03 14:07 14 S STCPAS 0 21 75 2.72 2.0
BITYKCP 06/09/03 14:07 14 S STCNRM 0 20 80 10.85 2.0
BITPCC2 06/09/03 14:07 14 T TSONRM 0 27 92 30.71 1.9
CATALOG 06/09/03 14:07 14 S SYSTEM 0 30 23 1.36 1.5

```

Figure 40. JUSE View with Time, Date, and Hr Fields

Columns B, C, and D display these fields. For more information about them, place your cursor on the desired column and press the Help key.

Intvl Time and Interval Date are *dynamic fields* (automatically displayed under certain circumstances). For more information about dynamic fields, see the *CMF MONITOR Online User Guide*.

<sup>2</sup> Historical data is available for any tabular view whose data is written to historical data sets. For more details, see the *CMF MONITOR Online User Guide*.

## A Note about Summarization

The screen can easily become crowded when you use the duration parameter, especially when you use it for a view that contains many entities. PGSP had only two page data sets, but with JFLOW and its 100 jobs, if you issue the TIME command with a duration of 5i (5 intervals), suddenly JFLOW contains **500 lines**—5 lines for each job.

To make it easier to manage situations like this, you will probably want to use the SUM command to *summarize* the data. Although you will not learn how to summarize until [Step 7 on page 83](#), understand that summarization allows you to compress several lines of data into a single row, based on criteria you specify. Using the example in [Step 7](#), if you summarized by the DS column, your screen would look like [Figure 41](#):

```

06/10/03 14:32:29 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==>                               ALT WIN ==>
>H1=PGSP====SYSB====*=====06/10/03===14:32:29===60M=CMF=====2=====
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
  0 12:00 PLPA MVS800 0800 OK 26.8      0.01 0.91 N 28.2 PAGE.VPAGD27.PLPA
  1 12:00 COMN BAB086 030D OK 29.2      0.02      N 28.2 PAGE.VPAGD27.COMMON

```

Figure 41. Summarizing by Page Data Set

Now there are only two rows on the PGSP view, one for each page data set. When you summarize, the Time field contains the end time of the last interval in the duration. The other columns—%Slt Used, I/O Rate, and so on—contain data for each page data set summarized over the four-interval period.

Instead of one line per page data set, you can also see one line per interval.

If you summarized by the Time field, the screen would look like [Figure 42](#):

```

06/10/03 14:32:29 ----- MAINVIEW WINDOW INTERFACE(RV.R.MM)CMF -----
COMMAND ==>                               SCROLL ==> PAGE
CURR WIN ==>                               ALT WIN ==>
>H1=PGSP====SYSB====*=====06/10/03===14:32:29===60M=CMF=====4
C DS Intvl PGDS Volume Dev Sts %Slt Page I/O Rq AvgPg V %Busy Data Set Name
- -- Time- Type- Serial Num --- Used XfrTm Rate / I/O - -----
  * 11:15 **** ***** OK 26.8      0.01 0.91 N 28.2 *****
  * 11:30 **** ***** OK 29.2      0.02      N 28.2 *****
  * 11:45 **** ***** OK 26.8      0.01 0.91 N 28.2 *****
  * 12:00 **** ***** OK 29.2      0.02      N 28.2 *****

```

Figure 42. Summarizing by Time (Interval)

Now that you have one row per interval, you can see that the data in the DS, Volume Serial, and Dev Num columns is meaningless; each interval now represents the activity for **both** page data sets. Thus, at 11:30 am, the two data sets together experienced an average I/O rate of 0.02.

**Note:** Since some of the fields are not meaningful in this context, you will probably want to exclude them using the X - Exclude option in view customization.

### Key Point

Summarization is an extremely effective tool for managing data from multiple intervals.



---

## Step 4. Accessing Other Systems and Products

The following steps show you how to access another MAINVIEW product or another system while simultaneously displaying your own local system.

---

### Step 4a: Accessing Another Product

In this step, you will display two MAINVIEW products, CMF MONITOR Online and PLEX MANAGER, simultaneously.

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

1. Issue the RESet command to clear the screen.

There are two ways to access another system or product: the CONtext command and the SET dialog box. In this example, use the CONtext command first.

2. In the **COMMAND** field, type `CONtext * PLEXMGR; PLEX.`

Your screen should look like this:

```
10JUN2003 15:28:37 ----- INFORMATION DISPLAY -----
COMMAND ====>                                     SCROLL ====> 0026
CURR WIN ====> 1           ALT WIN ====>
>W1 =PLEX=====CXTSTJ====*=====10JUN2003==15:27:25====PLEXMGR=====96
C Product  Context  System  Description                                     Status
-----
CMF        CXTSTJ   CXTSTJ   CMF MONITOR Online (5.5.0)                     Active
CMF        DXTSTJ   DXTSTJ   CMF MONITOR Online (5.5.0)                     LostConta
MVALARM    DXTSTJ   DXTSTJ   MAINVIEW Alarm Manager (1.1.0)                 LostConta
MVALARM    CXTSTJ   CXTSTJ   MAINVIEW Alarm Manager (1.1.0)                 Active
MVCICS     BCVCP51C BCVC     MV MANAGER for CICS                             Defined
MVCICS     BCVCP33C BCVC     MV MANAGER for CICS                             Defined
MVCICS     BCVCP21C BCVC     MV MANAGER for CICS                             Defined
MVCICS     BCVCK21C BCVC     MAINVIEW for CICS                               InActive
MVMVS      DXTSTJ   DXTSTJ   MAINVIEW for OS/390 (2.7.0)                     LostConta
MVMVS      CXTSTJ   CXTSTJ   MAINVIEW for OS/390 (2.7.0)                     Active
```

Figure 43. PLEX View

You are now looking at the PLEX view, which belongs to the PLEX MANAGER product.

You can verify this by looking at the window information line. The first field (the view name field) displays PLEX, and the last field displays PLEXMGR. PLEXMGR is the PLEX MANAGER *product identifier*. Each product has its own product identifier, so you always know at which product you are looking.

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.

For example, in [Figure 43](#), MAINVIEW for OS/390, CMF MONITOR Online, and PLEX MANAGER are running on SYSC, while SYSB contains MAINVIEW for OS/390 and PLEX MANAGER. However, by looking at the Status column, you can see that the local system, SYSB, has lost contact with MAINVIEW for OS/390 on SYSC. That means you will not be able to access that product until contact is re-established.

Notice that all systems always have an active version of PLEX MANAGER.

**Key Point**

In general, you should 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.

You can access any available system or product right from PLEX. First, though, you should open another window so you can see two products at the same time.

3. Open another window using the HS command.

```
06/10/03 14:43:57----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 2          ALT06/10/03 WIN ==>
>W1=PLEX=====SYSB=====*=====06/10/03===14:43:57=====PLEXMGR=====6
C Product  Context  System  Description                               Status
-----
CMF        SYSB      CMF     CMF MONITOR Online (5.5.0)                Active
CMF        SYSC      CMF     CMF MONITOR Online (5.5.0)                Active
MVMVS     SYSB      MVMVS   MAINVIEW for OS/390 (2.7.0)              Active
PLEXMGR   SYSB      PLEXMGR Target Manager                            Active
PLEXMGR   SYSC      PLEXMGR Target Manager                            Active
MVMVS     SYSC      MVMVS   MAINVIEW for OS/390 (2.7.0)              Lost Con
T2 =====
```

Figure 44. PLEX View and an Open Window

Find the line that pertains to CMF MONITOR Online on the *current system*—in this case, SYSB.

4. In the ALT WIN field, type &2. (Do not press Enter yet.)

5. Position the cursor on that line (see Step 3, above) in the **Product** column and press Enter.

A view appears similar to [Figure 45 on page 45](#).

The CMF MONITOR Online OS/390 Easy Menu view is now displayed in window 2 (W2).

```

06/10/03 14:44:08----- INFORMATION DISPLAY -----
COMMAND ==>>
CURR WIN ==>> 2          ALT WIN ==>> 2          SCROLL ==>> PAGE
>W1-PLEX-----SYSB-----*-----06/10/03---14:44:08-----PLEXMGR-----6
C Product Context System Description Status
-----
CMF SYSB CMF MONITOR Online (5.5.0) Active
CMF SYSC CMF MONITOR Online (5.5.0) Active
MVMVS SYSB MAINVIEW For OS/390 (2.7.0) Active
PLEXMGR SYSB Target Manager Active
PLEXMGR SYSC Target Manager Active
MVMVS SYSC MAINVIEW for OS/390 (2.7.0) Lost Con
W2=EZM390=====SYSB=====*****06/10/03===14:44:12=====CMF=====10

MVS Easy Menu
Activity Timeframe - Interval Tools and Menu
. Jobs +-----+ > Utilities
. Workloads | Place cursor on | * Console
* System Overview | menu item and | > MAIN View
. System Trends | press ENTER | > WLM Monitoring Menu
* Storage +-----+ > MVS Fast Menu
. Devices > RMF-like Menus
> Coupling Facility * - MVMVS Only . Return...

```

Figure 45. PLEX View and CMF MONITOR Online EZM390 View

When you access CMF MONITOR Online or any other MAINVIEW product from the PLEX view, the EZM390 view is always displayed.

Now that window 1 is set to PLEXMGR and window 2 is set to CMF MONITOR Online, you can use views in both products simultaneously. Just make sure the **CURR WIN** field is set properly; if you try to display a CMF MONITOR Online view in window 1, or a PLEX MANAGER view in window 2, you will get an error message.

---

## Step 4b: Accessing Another System

The MAINVIEW Single System Image (SSI) function allows you to retrieve data from multiple systems in a single view. If SSI contexts are set, see [“Step 4c: Accessing Several Systems Simultaneously”](#) on page 49.

If SSI contexts are established, or if you simply want to look at another system or MAINVIEW product without using SSI, this section contains the information you need.

Even if your installation is not using SSI, you can use CMF MONITOR Online to monitor different systems in multiple windows.

In this step, you will look at the SDEV view on two systems to simultaneously compare the performance of each system I/O configuration.

Although this step uses SYSB and SYSC as examples, you should use your own system IDs.

**Note:** You must have cross-system communication established between two or more MAINVIEW for OS/390 images to complete this step. If you do not, go on to Step 6, [“Using Screen Definitions”](#) on page 53.

1. Display the SDEV view in window 2.

Your screen should now look similar to [Figure 46](#):

```

06/10/03 14:44:47----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 1 ALT WIN ==>
>W1-PLEX-----SYSB-----*-----06/10/03---14:44:49-----PLEXMGR-----6
C Product Context System Description Status
-----
CMF SYSB CMF MONITOR Online (5.5.0) Active
CMF SYSC CMF MONITOR Online (5.5.0) Active
MVMVS SYSB MAINVIEW for OS/390 (2.7.0) Active
PLEXMGR SYSB Target Manager Active
W2 =SDEV=====SYSB=====*=====06/10/03===14:44:49=====CMF=====45
C Dev St LCU Cls Response Tm I/O %Dly IOSQ Con Dsc Pnd %Dev %Rsv Opn
- Num Nm --- --- 0...50..100 /Sec --- Time Time Time Time Util DS
4B0 4B 038 TAP 3231 + 0.1 100. 3.0 1430 1797 17.7
4B1 4B 038 TAP 2534 + 0.1 44.4 3.6 869. 1662 9.0
480 48 032 TAP 60.2 0.1 2.6 55.7 1.8 0.6
482 48 032 TAP 51.7 0.2 13.3 1.1 44.6 6.0 0.7
202 20 024 DSK 45.3 0.1 44.5 0.0 0.8 0.3 309
B13 B1 043 DSK 24.4 5.1 2.1 6.4 2.1 15.5 0.4 9.0 13
B22 B2 044 DSK 23.5 0.0 5.7 16.2 1.6 0.0 6
B16 B1 043 DSK 23.3 8.0 0.8 6.4 2.1 14.4 0.4 13.2 11

```

Figure 46. PLEX and SDEV Views

You want to display SDEV on two different systems, but window 1 still displays the PLEX MANAGER product, and SDEV is a CMF MONITOR Online view, which means you have to change both the product *and* the system.

You can use the SET or CONText command to change both the product and the system. Both commands do exactly the same thing, but SET is sometimes easier to remember.

2. In the **COMMAND** field, type w1 to make window 1 current.

3. In the **COMMAND** field, type SET.

Your screen should now look like [Figure 47](#):

```

+-----+
: ----- SET WINDOW CONTEXT, PRODUCT, SCOPE AND VIEW ----- :
: COMMAND ==> :
: :
: :
: Please confirm default parameters: :
: :
: Context ==> SYSB :
: Product ==> PLEXMGR :
: Server ==> * :
: Scope ==> * :
: View ==> PLEX :
: :
: Type END to set window parameters :
: CANCEL to quit without setting :
: :
: :
: :
+-----+

```

Figure 47. SET Dialog Box

4. To access CMF MONITOR Online on another system (for example, SYSC) in window 1, fill in the SET dialog box as shown in Figure 48:

```

+-----+
: ----- SET WINDOW CONTEXT, PRODUCT, SCOPE AND VIEW ----- :
: COMMAND  ==> :
: : :
: : :
:   Please confirm default parameters: :
: : :
:   Context   ==> SYSC :
:   Product   ==> CMF :
:   Server    ==> * :
:   Scope     ==> * :
:   View      ==> SDEV :
: : :
:   Type END to set window parameters :
:   CANCEL to quit without setting :
: : :
+-----+

```

Figure 48. Accessing Another System through SET Dialog Box

Before you press PF3, verify what you specified in the SET dialog box.

- The Context field contains the name of the system you want to access.

In this exercise, you want to access SYSC, so type SYSC in this field.

- The Product field contains the *product identifier* of the product you want to access. Since you want to access CMF MONITOR Online, you typed CMF in this field.

**Key point**

The product identifiers for MAINVIEW products are as follows:

Product	Identifier
CMF MONITOR Online	CMF
MAINVIEW® for OS/390	MV390
Plex Manager	PLEXMGR
MAINVIEW VistaPoint™	MVVP

- The Server field is reserved for future MAINVIEW product use; this field must contain an asterisk (\*).
- The Scope field narrows the context to a particular system within an SSI context. (You will learn about SSI contexts in Step 5c.) If you are not using SSI contexts, this field is represented by an asterisk.
- The View field contains the name of the view you want to display in the new product. It is a required field. You want to display SDEV on SYSC, so type SDEV in this field.

5. Press PF3 (END).

Your screen should look like [Figure 49](#):

```

06/10/03 14:45:20 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =SDEV=====SYSC=====*=====06/10/03==14:49:20=CMF=====117
C Dev St LCU Cls      Response Tm  I/O %Dly IOSQ  Con  Dsc  Pnd %Dev %Rsv Opn
- Num Nm --- ---    0...50..100 /Sec ---- Time Time Time Time Util  DS
  4B0 4B 038 TAP 3231      + 0.1 100.      3.0 1430 1797 16.7
  4B1 4B 038 TAP 2534      + 0.1 38.1      3.6 869. 1662 8.5
  480 48 032 TAP 60.2      0.1          2.6 55.7 1.8 0.6
  482 48 032 TAP 51.2      0.1 100.      1.1 44.1 6.0 0.7
  202 20 024 DSK 45.7      0.1          45.0 0.0 0.7 0.4      308
  B13 B1 043 DSK 24.3      4.9 2.0 6.3 2.1 15.5 0.4 8.6      13
W2 -SDEV-----SYSB-----*-----06/10/03---14:49:20=CMF-----117
C Dev St LCU Cls      Response Tm  I/O %Dly IOSQ  Con  Dsc  Pnd %Dev %Rsv Opn
- Num Nm --- ---    0...50..100 /Sec ---- Time Time Time Time Util  DS
  4B0 4B 038 TAP 3231      + 0.1 100.      3.0 1430 1797 16.7
  4B1 4B 038 TAP 2534      + 0.1 38.6      3.6 869. 1662 8.5
  480 48 032 TAP 60.2      0.1          2.6 55.7 1.8 0.6
  482 48 032 TAP 51.2      0.1 100.      1.1 44.1 6.0 0.7
  202 20 024 DSK 45.7      0.1          45.0 0.0 0.7 0.4      308
  B13 B1 043 DSK 24.3      4.9 2.0 6.3 2.1 15.5 0.4 8.6      13
  489 48 032 TAP 24.2      0.0          8.5 5.7 10.0 0.0
  B22 B2 044 DSK 23.5      0.0          5.7 16.2 1.6 0.0      6

```

Figure 49. SDEV on SYSC and SYSB

Notice that the window information lines in windows 1 and 2 display SYSC and SYSB, respectively, so you can easily tell which system you are viewing.

You would want to display SYSC and SYSB I/O activity side by side. For example, this applies if you are operating in a shared DASD environment and suspect that problems on one system are causing problems on another; it is much easier to compare systems on a single screen than to jump back and forth between multiple sessions or line up a row of terminals, each dedicated to a different system.

**Note:** If you prefer the CONtext command to the SET dialog box method, type

```
CONtext SYSC CMF; SDEV
```

This command achieves the exact same result.

**Key Point**

The fastest way to access the PLEX view is through this command:

```
CONtext * PLEXMGR; PLEX
```

## Step 4c: Accessing Several Systems Simultaneously

Before concluding this topic, there is one more concept with which you should be familiar: *SSI contexts*. With SSI contexts, you can access several systems in the same window.

To begin exploring SSI contexts, see if your product administrator has established any contexts for your site:

1. Issue the RESet command to clear the screen.
2. In the **COMMAND** field, type `CONtext = PLEXMGR; CONACT` to display the CONACT view.

Your screen should look similar to [Figure 50](#):

```
06/10/03 13:49:29 ----- INFORMATION DISPLAY -----
COMMAND ==>>
CURR WIN ==>> 1      ALT WIN ==>>
>w1 =CONACT=====SYSB=====*=====06/10/03===13:49:29====PLEXMGR=====21
CMD SSI      Product  Target  Status  Description
--- Context- ----- Context- of_Target--- -----
ALL  CMF      SYSB   ACTIVE  CMF MONITOR Online (5.5.0)
ALL  CMF      SYSC   INACTIVE CMF MONITOR Online (5.5.0)
ALL  MVMVS   SYSB   ACTIVE  MAINVIEW for OS/390 (2.7.0)
ALL  MVMVS   SYSC   ACTIVE  MAINVIEW for OS/390 (2.7.0)
ALL  PLEXMGR SYSB   ACTIVE  Target Manager
ALL  PLEXMGR SYSC   INACTIVE Target Manager
MIKETEST CMF      SYSB   ACTIVE  CMF MONITOR Online (5.5.0)
MIKETEST CMF      SYSC   INACTIVE CMF MONITOR Online (5.5.0)
PROD  MVMVS   SYSB   ACTIVE  MAINVIEW for OS/390 (2.7.0)
PROD  PLEXMGR SYSB   ACTIVE  Target Manager
TEST  CMF      SYSC   INACTIVE CMF MONITOR Online (5.5.0)
TEST  PLEXMGR SYSC   INACTIVE Target Manager
```

Figure 50. CONACT View

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

**Note:** If you get a message stating, *There is no data that satisfies your request*, that means there are not any SSI contexts defined for your site. You may want to refer to the *MAINVIEW Common Customization Guide* to learn how to define SSI contexts. Otherwise, you may want to skip the rest of this section and continue with [Step 5 on page 53](#).

The SSI Context field contains the names of the SSI contexts. (SSI stands for *single system image*.) This example shows the default SSI context called ALL, as well as other contexts: one that gives you access to CMF MONITOR Online on all your MVS systems; one that gives you access to MAINVIEW for OS/390 on all your MVS systems; and one that is defined as PLEX MANAGER on all systems.

Suppose you are in CMF MONITOR Online on system SYSB with JFLOW displayed in window 1.

3. Issue the command `CONtext SYSn CMF;JFLOW`, where *n* is a valid system identifier.
4. Issue the command `CONtext ALL`.

Your screen now looks similar to [Figure 51](#):

```

06/10/03 15:28:16 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 1 ALT WIN ==>
>W1=JFLOW===== (ALL=====*)06/10/03=====15:28:48=====CMF=====423
      SSI
C Jobname Target T SrvClass Workflow % Delay % Main R
-----
SMF SYSB S SYSTEM 100.0
IMSIR21 SYSA S STCNRM 100.0
CMF6 SYSE T TSONRM 100.0
WEC1 SYSB T TSONRM 100.0
*MASTER* SYSC S SYSTEM 98.6 0.1 Wait f
CMFCPOPS SYSB S STCPAS 96.8 0.1 Wait f
XTSTNPAS SYSG S STCPAS 96.4 0.2 Wait f
CATALOG SYSC S SYSTEM 95.5 0.1 DASD I
XTSTFPAS SYSA S STCPAS 91.9 0.6 Wait f
BMVLXK1 SYSF T TSONRM 90.9 0.1 Wait f
BMVRAE2 SYSC T TSONRM 85.9 2.6 Wait f
BOLJSC4 SYSB T TSONRM 85.0 0.4 Wait f
DC$HSMD SYSD S STCNRM 83.3 0.1 Wait f
CONSOLE SYSA S SYSTEM 82.4 0.4 Wait f
CMFCPOCS SYSD S STCPAS 78.0 1.1 Wait f
GRS SYSA S SYSTEM 77.0 4.1 Wait f
XCFAS SYSD S SYSTEM 76.9 0.7 Wait f
XTSTNCAS SYSD S STCPAS 75.0 0.6 Wait f
SMXC SYSB S SYSTEM 72.7 0.4 Wait f
CNMNETD SYSD S STCNRM 72.1 1.5 Wait f
IMSDY17H SYSD S STCNRM 71.4 1.8 Wait f
VAM3A SYSE T TSONRM 67.6 1.3 Wait f
SMS SYSE S STCNRM 66.7 0.1 Wait f
BMVLHC2 SYSD T TSONRM 66.7 0.2 Wait f
BMVRAE1 SYSD T TSONRM 65.9 1.7 Wait f
BITPCC3 SYSE T TSONRM 65.2 2.9 Wait f

```

Figure 51. JFLOW in the ALL Context

The display has changed:

- The system field on the window information line now displays ALL, the name of the SSI context, instead of SYSB.
  - The product field stays the same (it still displays CMF MONITOR). 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 MVMVS, instead of just CONTEXT ALL, you would have been given access to MAINVIEW for OS/390.
  - Notice there are now 423 jobs. That is because you now have data for jobs running on several different systems.
5. To help you manage all these jobs and systems, you can display the SSI Target and SSI System fields. On the **COMMAND** line, type **INCLUDE TARGET** or **INCLUDE SYSTEM**. If you want to hide these fields from view, type **EXCLUDE TARGET** or **EXCLUDE SYSTEM**.
- If you look at the job WEC1 in our example, it does not seem to be progressing very well. To find out why, hyperlink from the Jobname column:
6. Hyperlink from the Jobname column to a job on your system.

Your screen now displays EZMJOB.

```

06/10/03 15:29:18 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 1 ALT WIN ==>
>W1 =JFLOW====EZMJOB==(ALL====SYSB====)06/10/03====14:52:32====CMF=====1
Job Menu
Timeframe - Interval

Current Job -> WEC1

Activity +-----+ Resource Usage
* CPU | Place cursor on | * Data Sets Allocated
. Delay Reasons | menu item and | . Data Sets Used
* I/O | press ENTER | . Detail
. Last 10 intervals +-----+ * SRM Service Units
. Overview . Storage Used
* Paging
* Trending
. Workflow

SYSPROG Services
* Actions
* Performance
* Storage * - MVMVS Only . Return...

```

Figure 52. JFLOW EZMJOB Alternate Form

7. Move your cursor to **Detail** under **Resource Usage** and press Enter.

Your screen now displays JINFO for the job you selected.

```

06/10/03 15:29:18 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 1 ALT WIN ==>
>W1 =JFLOW====JINFO==(ALL====SYSE====)06/10/03====15:29:18====MVMVS=====1
Timeframe... Interval 0....50..
Jobname..... WEC1 Avg Frames.. 1553 Workflow.... 0.00
Step/Proc... WEC1 Avg Cframes.. 921 Using Proc.. 27.74
JES Number.. STC02012 Avg Eframes.. 632 Using Dev... 30.15
Terminal ID. Cframes held 1380 Total Dly... 5.26
ASID..... 45 Eframes held 556 Processor.. 5.26
Dmn..... N/A Fixed frames 75 Device..... 0.00
SC or PG #.. 20 Fixed <16M.. 3 Storage.... 0.00
SrvClass... TSONRM Dmd Page/Sec 0 Enqueue.... 0.00
Workload... STC Swp Page/Sec 0 SRM..... 0.00
%Connected.. 20.5 Avg UIC..... 153 Subs..... 0.00
Disp. Prty.. 250 Avg Wkg Set. 53 Unknown.... 35.53
SSCH/Sec.... 68.6 SU/Sec..... 7922 Status..... Active
Owner..... ++++++ Job Elpd Tm. 06:32:59 Last..... Active
JES Queue Tm 00:00:00

```

Figure 53. JINFO for WEC1

This view is JINFO. But notice how the scope field has changed—it now displays SYSE. MAINVIEW automatically narrowed the context to the system where WEC1 is running by issuing the SCOPE command in the background. The SSI context, ALL, still appears in the context field.

When you start working with several systems at once, a lot of data can accumulate quickly in a single window. To help you manage the data, you may want to create some *summary views* to use with SSI contexts.

---

## Using the Easy Menu to Change Systems

In addition to the methods previously explained, CMF MONITOR Online also gives you the ability to change the system, product, or target you are monitoring quickly and easily from the OS/390 Easy Menu. To do so:

1. From the EZMFAST menu, move your cursor under the **Utilities** option and hyperlink on **Environment Settings**.
2. The **Change System** option displays three choices: Select Target, Select SSI Context, and Select Product.

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

3. Move your cursor to the desired option and press Enter.
4. Position your cursor on the product or context you want to monitor and press Enter (hyperlinking on either column will give you the same result).

You are returned to an 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.

---

## Step 5. Using Screen Definitions

This step explains how to open windows, display views in those windows, and save the entire display as a *screen definition*. It also describes how to show a list of the screen definitions and how to display them.

**Important**

Before you begin, create a standard partitioned data set (with a record format of fixed block (FB) and record length of 80) called `userid.BBSDEF` to serve as your own personal screen definition library. If your prefix is different from your user ID, the data set should be named `prefix.userid.BBSDEF`.

If you use the MAINVIEW CLIST to access CMF MONITOR Online, the data set you just created (`userid.BBSDEF`) will be allocated to your user address space because the `BBDEF` attribute in the MAINVIEW CLIST procedure has been set to `YES` by your system administrator. If you use another method, however, you must modify your TSO logon procedure so that it contains this concatenation:

```
//BBSDEF DD DSN=userid.BBSDEF
//          DD DSN=hilevel.SBBSDEF
```

The `hilevel.SBBSDEF` data set is the screen library that contains screen definitions for use by everyone at your site. (Your CMF MONITOR Online product administrator maintains this library; see your administrator if you want to contribute to it.) Your personal screen definition library (`userid.BBSDEF`), by contrast, is available to your user ID only.

This concatenation ensures that your personal screen definition is displayed before a site-wide screen definition by the same name.

---

### Step 5a: Creating Screen Definitions

This step explains how to create a screen definition that summarizes the performance of all the I/O devices in your system.

1. Issue the `RESet` command to clear the screen.
2. Display the `DEV` view in window 1.
3. Open another window using the `HS` command.

Your screen should look similar to [Figure 54](#).

```

06/10/03 07:03:37 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 2 ALT WIN ==>
>W1 -DEV-----SYSB=====06/10/03==07:03:37===CMF=====20
C Volser Dev LCU Actv Resp IOSQ CUB DPB DB Pend Disc Conn %Dev %D
- ----- Num --- Rate Time Time Dely Dely Dely Time Time Time Util Rv
XCF001 200 026
XCF002 201 026
SYSP02 202 026 0.1 44.1 0.1 0.0 44.1 0.6
SYSP03 203 026
SYSP04 204 026
SYSP05 205 026
SYSP06 206 026 0.8 1.1 0.2 0.1 0.9 0.1
SYSP07 207 026 0.3 1.5 0.2 0.0 1.3 0.3 0.5
SYSP08 208 026
SYSP09 209 026
T2 =====

```

Figure 54. DEV View and an Open Window

4. Display the DDJOB view in window 2.

Because the current window is set to 2, DDJOB is automatically displayed in that window.

```

06/10/03 07:07:55 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 2 ALT WIN ==>
>W1 -DEV-----SYSB=====06/10/03--07:07:55---CMF-----20
C Volser Dev LCU Actv Resp IOSQ CUB DPB DB Pend Disc Conn %Dev %D
- ----- Num --- Rate Time Time Dely Dely Dely Time Time Time Util Rv
XCF001 200 026
XCF002 201 026
SYSP02 202 026 0.1 45.6 0.1 0.0 45.5 0.5
SYSP03 203 026 0.0 1.1 0.1 0.1 1.0 0.0
SYSP04 204 026 0.0 1.2 0.3 0.1 0.9 0.0
SYSP05 205 026 0.0 1.0 0.1 0.1 0.9 0.0
SYSP06 206 026 0.7 1.1 0.2 0.0 0.9 0.1
SYSP07 207 026 0.2 1.4 0.1 0.0 1.3 0.5 0.6
SYSP08 208 026 0.0 1.0 0.3 0.1 0.5 0.0
SYSP09 209 026 0.0 0.6 0.1 0.1 0.5 0.0
W2 =DDJOB-----SYSB=====06/10/03==07:07:55===CMF=====5
C Volser Dev LCU Serv IOSQ Con Dsc Pnd %Delay Jobname Delay
- ----- Num Num Time Time Time Time Time to Job ----- Type
480 034 100.00 DBKUP16 MTP
481 034 100.00 DBKUP16 MTP
SYSP10 210 026 4.4 3.7 0.0 0.7 3.70 JES2 RESV
SYSP16 216 026 11.2 1.4 0.0 9.8 1.96 MIM RESV
CVM301 30F 030 4.4 0.3 2.5 1.3 0.3 1.30 CVMDBLD IOQD

```

Figure 55. DEV and DDJOB Views

5. Open another window, this time using the VS command. (Move the cursor to the vertical center point on the screen before pressing Enter.)

6. Display the DUJOB view in window 3.

Your screen should now look similar to [Figure 56](#).

```

06/10/03 07:11:14 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 3 ALT WIN ==>
>W1 -DEV-----SYSB----->W3 =DUJOB=====SYSB=====*=06/10/03
C Volser Dev LCU Actv Resp IOSQ C : C Volser Dev LCU Serv IOSQ Con Dsc
- ----- Num --- Rate Time Time D : - ----- Num Num Time Time Time Time
XCF001 200 026 : SYSP16 216 026 10.9 : 1.4 0.0
XCF002 201 026 : BAB313 304 030 21.2 : 5.4 7.4 8.0
SYSP02 202 026 0.1 61.3 : BAB318 309 030 10.7 : 0.2 5.8 4.4
SYSP03 203 026 0.0 1.2 : SPLB04 B13 089 21.4 : 3.8 2.2 15.1
SYSP04 204 026 0.0 1.3 : BAB317 308 030 4.6 : 0.5 3.5 0.3
SYSP05 205 026 0.0 1.0 : SMFB01 B23 08B 13.8 : 0.1 2.3 11.3
SYSP06 206 026 0.7 1.1 : SPLB00 B15 089 15.8 : 2.2 13.4
SYSP07 207 026 0.2 1.4 : SYS42P 2A4 02B 3.0 : 0.3 2.2 0.2
SYSP08 208 026 0.0 0.9 : PAGEB4 B21 08B 70.8 : 29.4 38.5
SYSP09 209 026 0.0 0.8 : PAGEB2 B14 089 42.5 : 2.0 18.3 21.6
W2 -DDJOB-----SYSB-----*-----06/10/03--07:11:14---CMF-----5
C Volser Dev LCU Serv IOSQ Con Dsc Pnd %Delay Jobname Delay
- ----- Num Num Time Time Time Time Time Time to Job ----- Type
480 034 : 100.00 DBKUP16 MTP
481 034 : 100.00 DBKUP16 MTP
SYSP10 210 026 4.4 : 3.7 0.0 0.6 : 2.91 JES2 RESV
SYSP16 216 026 10.9 : 1.4 0.0 9.4 : 1.99 MIM RESV
SPLB04 B13 089 21.4 3.8 2.2 15.1 0.2 : 1.69 CVMPK IOQD

```

Figure 56. DEV, DDJOB, and DUJOB Views

When displayed on one screen, DEV, DDJOB, and DUJOB give you a complete overview of device-related activity: an overview of each device’s performance in window 1; a list of all jobs being delayed by devices in window 2; and a list of the devices currently being used by jobs in window 3.

This combination of views is useful . Save this screen now for later use.

7. In the **COMMAND** field, type **SAVEScr** and press Enter.

The Save Screen Definition panel appears, as shown in [Figure 57](#).

```

BMC Software ----- SAVE SCREEN DEFINITION -----
COMMAND ==> SCROLL ==> PAGE

Please confirm Screen Definition Parameters:

Name      ==>
Description ==>

Replace   ==> N      (Y/N)

Type End to Save Screen Definition
      CANcel to quit without saving

```

Figure 57. Save Screen Definition Panel

With the Save Screen Definition panel, you can save three windows under a single name. That means you will be able to display DEV, DDJOB, and DUJOB again using just one command instead of five.

8. Choose a name for this screen definition—for example, **DEVPERF** (for device performance).

9. Fill in the Save Screen Definition panel as shown in [Figure 58](#).

```
BMC Software ----- SAVE SCREEN DEFINITION -----
COMMAND  ===>                                     SCROLL ===> PAGE

Please confirm Screen Definition Parameters:

Name      ===> DEVPERF
Description ===> Device performance screen

Replace   ===> N          (Y/N)

Type End to Save Screen Definition
      CANCEL to quit without saving
```

Figure 58. Creating DEVPERF Screen Definition

10. Issue the END command (PF3) to exit this panel.

Notice the message in the upper right corner of the display, SCREEN DEF CREATED. This message confirms that DEVPERF has been successfully stored.

If a screen with the name DEVPERF already existed, you would get the following message:

```
SCREEN DEF NOT REPLACED
```

You may be wondering where DEVPERF is stored. Because you allocated your own private screen library before you began, DEVPERF is stored automatically in the library.

If you did not create your own library, however, DEVPERF is stored in your site-wide library, assuming one was allocated to your user address space. If it was not, you will receive an error message.

## Step 5b: Maximizing Windows

When several windows are open, sometimes it is difficult to see all the data you need within a particular window. This step shows you how to expand one DEVPERF window, using the MAXimize command, so that it fills the entire display and shows you how to return to DEVPERF in its original form, using the RESTore command.

### Key Point

You can use the MAXimize command any time, not just when you are looking at a screen definition. Use the RESTore command to return the window to its original format.

1. In the **COMMAND** field, type `w2.MAX` to expand window 2.

```

06/10/03 07:19:03 ----- INFORMATION DISPLAY (MAX)-----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 2 ALT WIN ==>
W2 =DDJOB====SYSB====*=====06/10/03===07:18:12=CMF=====25
C Volser Dev LCU Serv IOSQ Con Dsc Prd %Delay Jobname Delay
- - - - - Num Num Time Time Time Time to Job ----- Type
480 034 101.6 0.2 0.0 101. 100.00 DBKUP16 MTP
481 034 68.8 0.1 0.0 68.6 100.00 DBKUP16 MTP
SYSP10 210 026 4.3 3.8 0.1 0.5 2.41 JES2 RESV
SYSP16 216 026 10.3 1.4 0.0 8.8 1.34 MIM RESV
SYSP14 214 026 1.5 1.0 0.0 0.4 1.07 CATALOG RESV
PUBBC1 2B1 02B 20.1 2.4 5.1 12.3 0.3 1.07 CVMSM RESV
PUBBC1 2B1 02B 20.1 2.4 5.1 12.3 0.3 0.54 CVMSMEYU IOQD
BAB308 D03 08F 23.7 2.1 8.9 12.5 0.2 0.27 ITSTPAS IOQD
BAB317 308 030 4.1 2.4 1.5 0.3 0.27 ICSR IOQD
BAB304 296 02B 12.4 1.0 7.8 3.2 0.4 0.27 MXW2 IOQD
TSG301 297 02B 4.3 0.3 2.0 1.4 0.7 0.27 SAM1 IOQD
SYSP16 216 026 10.3 1.4 0.0 8.8 0.27 *MASTER* RESV
SYSP15 215 026 1.4 1.0 0.1 0.3 0.27 CATALOG RESV
BAB309 300 030 4.7 2.8 1.6 0.3 0.27 CATALOG RESV
BAB313 304 030 7.3 2.2 4.8 0.3 0.27 ICSR RESV

```

Figure 59. Maximizing Second Window of DEVPERF

Window 2, occupied by DDJOB, now fills the entire screen.

You can also use the NEXt and PREVious commands to scroll through and maximize each window in numerical sequence.

2. In the **COMMAND** field, type `RESTore` to return to the screen definition, DEVPERF.

You can experiment now with maximizing and restoring the other windows in DEVPERF.

## Step 5c: Displaying Screen Definitions

This step shows you how to display DEVPERF after you have cleared the screen.

1. Issue the RESet command to clear the screen.
2. In the **COMMAND** field, type SCREENS.

Your screen should now look similar to [Figure 60](#).

```
06/10/03 07:23:29 ----- INFORMATION DISPLAY -----
COMMAND ==>> SCROLL ==>> PAGE
CURR WIN ==>> 1 ALT WIN ==>>
W1 =SCREENS==SYSB====*=====06/10/03===07:23:29=CMF=====5
C Name Description Userid
-----
CMFOVER Unknown Unknown
CMFDELAY Unknown Unknown
CMFIO Unknown Unknown
CMFSTOR Unknown Unknown
DEVPERF Device performance screen BAB1
```

Figure 60. SCREENS View

The SCREENS view lists all the screen definitions that are in both your personal screen definition library and the site-wide screen definition library.

**Note:** The views with a value of Unknown in the Description and Userid fields are those that are supplied by CMF MONITOR Online. You may want to display these later.

3. To redisplay DEVPERF, type **s** in the **COMMAND** field next to DEVPERF and press Enter, as shown in [Figure 61](#), or put your cursor on the name DEVPERF and press Enter to hyperlink to the DEVPERF screen.

```
06/10/03 07:23:29 ----- INFORMATION DISPLAY -----
COMMAND ==>> SCROLL ==>> PAGE
CURR WIN ==>> 1 ALT WIN ==>>
W1 =SCREENS==SYSB====*=====06/10/03===07:23:29=CMF=====5
C Name Description Userid
-----
CMFOVER Unknown Unknown
CMFDELAY Unknown Unknown
CMFIO Unknown Unknown
CMFSTOR Unknown Unknown
s DEVPERF Device Performance Screen BAB1
```

Figure 61. Selecting DEVPERF

```

06/10/03 07:28:34 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 3 ALT WIN ==>
W1 -DEV-----SYSB-----*-----05 W3=DUJOB====SYSB====*=====06/10/03==07
C Volser Dev LCU Actv Resp IOSQ C : C Volser Dev LCU Serv IOSQ Con Dsc
----- Num --- Rate Time Time D : - ----- Num Num Time Time Time Time
XCF001 200 026 : SYSP16 216 026 10.9 : 1.4 0.0
XCF002 201 026 : BAB313 304 030 21.2 : 5.4 7.4 8.0
SYSP02 202 026 0.1 61.3 : BAB318 309 030 10.7 : 0.2 5.8 4.4
SYSP03 203 026 0.0 1.2 : SPLB04 B13 089 21.4 : 3.8 2.2 15.1
SYSP04 204 026 0.0 1.3 : BAB317 308 030 4.6 : 0.5 3.5 0.3
SYSP05 205 026 0.0 1.0 : SMFB01 B23 08B 13.8 : 0.1 2.3 11.3
SYSP06 206 026 0.7 1.1 : SPLB00 B15 089 15.8 : 2.2 13.4
SYSP07 207 026 0.2 1.4 : SYS42P 2A4 02B 3.0 : 0.3 2.2 0.2
SYSP08 208 026 0.0 0.9 : PAGEB4 B21 08B 70.8 : 29.4 38.5
SYSP09 209 026 0.0 0.8 : PAGEB2 B14 089 42.5 : 2.0 18.3 21.6
W2 -DDJOB---SYSB-----*-----06/10/03---07:28:34-CMF-----5
C Volser Dev LCU Serv IOSQ Con Dsc Pnd %Delay Jobname Delay
----- Num Num Time Time Time Time Time to Job ----- Type
480 034 : 100.00 DBKUP16 MTP
481 034 : 100.00 DBKUP16 MTP
SYSP10 210 026 4.4 : 3.7 0.0 0.6 2.91 JES2 RESV
SYSP16 216 026 10.9 : 1.4 0.0 9.4 1.99 MIM RESV
SPLB04 B13 089 21.4 3.8 2.2 15.1 0.2 1.69 CVMPK IOQD

```

Figure 62. DEVPERF Redisplayed

The DEVPERF screen definition you created and saved in “[Step 4a: Accessing Another Product](#)” on page 43 is displayed. Notice that the views reflect the *current* time, not the time you created the screen definition. When you saved DEVPERF, you did not lock a moment in time—you created a tool you can use again and again.

**Key Point**

Instead of displaying the SCREENS view and selecting DEVPERF from it, you could have typed SCR DEVPERF in the **COMMAND** field.

As you can see, screen definitions allow you to display a complicated collection of panels and views quickly and easily. You will use them often as you become more experienced with CMF MONITOR Online.

In the next step, you will learn how to customize a single view. By using view customization, you can rename a view, change or create hyperlinks, and make many other modifications that help you display data in a way that meets your specific needs.



---

## Step 6. Customizing Views

This step shows you how to use the view customization facility to

- create your own views using CMF MONITOR Online views as a model
- change the appearance and content of CMF MONITOR Online views

### Important

Before you begin, create a standard partitioned data set (with a record format of fixed block (FB) and a record length of 80) called `userid.BBVDEF` to serve as your own personal view library. If your prefix is different from your user ID, the data set should be named `prefix.userid.BBVDEF`.

If you use the MAINVIEW CLIST to access CMF MONITOR Online, the data set you just created (`userid.BBVDEF`) will be allocated to your user address space because the `BBDEF` attribute in the MAINVIEW CLIST procedure has been set to `YES` by your system administrator. If you use another method, however, you must modify your TSO logon procedure so that it contains this concatenation:

```
//BBVDEF DD DSN=userid.BBVDEF
//          DD DSN=hilevel.SBBVDEF
```

The `hilevel.SBBVDEF` library contains customized views for use by everyone at your site. (Your CMF MONITOR Online product administrator maintains this library; see your administrator if you want to contribute to it.) Your personal view library (`userid.BBVDEF`), by contrast, is available only to your user ID.

This concatenation ensures that when you type a view in the **COMMAND** field, CMF MONITOR Online looks for the view first in your personal view library, then in the site-wide library, and finally in the CMF MONITOR Online view distribution library.

**Note:** As you work through these scenarios, please be aware that the screens shown are only examples and may vary somewhat from your displays. In particular, letters assigned to columns may be different in your display.

---

### Step 6a: Creating a New View

This step shows you how to create your own view using the `JDELAY` view as a model. By placing a filter on the `JDELAY` Type column, you can remove batch and started task data in order to see an overview of TSO job activity.

1. In the **COMMAND** field, issue the `RESet` command, and then type `JDELAY`.

Your screen should look similar to [Figure 63](#).

```

06/10/03 10:26:41 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =JDELAY=====SYSB=====06/10/03====10:26:41=CMF=====308
C Jobname  T SrvClass      Total Delay %   %Dly  %Dly  %Dly  %Dly  %Dly  %Dly
- - - - -  - - - - -  0.....50...100 CPU   DEV  Stor  ENQ  SRM  Subs
SMFBDMP2 S PGRP0000  98.00
AAO310DA S PGRP0010  80.77          79.39  1.03          0.34
AAODYM@1 S PGRP0010  77.88          73.91  3.68          0.28
ALIGN    B PGRP0330  76.45          72.80  0.41          2.84  0.41
CMRDASM  B PGRP0320  75.50          69.29  6.21
AAORMB3  S PGRP0010  62.26          62.26
AAOJB31  S PGRP0010  50.00          38.00 10.00          2.00
DEC3     T PGRP0002  46.54          44.39
ARBITER  S PGRP0006  40.25          40.09  0.16
AAOCS41J S PGRP0010  40.00          37.89  2.11
OLCSST5  S PGRP0010  36.01          36.01
OLTC     S PGRP0011  35.22          35.22
MXY1    T PGRP0002  35.22          34.91  0.31
AAOMES@1 S PGRP0010  33.65          33.49  0.16
LGS271  T PGRP0002  30.32          28.53  1.34          0.45
CNMPRB22 S PGRP0006  28.77          28.77
AAOGG31  S PGRP0010  28.77          28.77
AAOGC41B S PGRP0010  21.07          21.07

```

Figure 63. JDELAY View

JDELAY shows you the total delay each job is experiencing during this interval.

Notice that the second column shows you each job type: T (TSO), B (batch), or S (started task). This is the column to which you will add a filter.

2. In the **COMMAND** field, type **CUSTOM** and press Enter.

The **CUSTOM** command invokes the view customization facility, which looks similar to the screen in [Figure 64](#).

```

----- VIEW CUSTOMIZATION - JDELAY -----
OPTION ==>
Options: (that require column selection)      Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat      X - Exclude      P - Parameters E - Show excluded
L - Filter      T - Threshold  H - Hyperlink    Z - Summarize  K - Show template
-----
Some options ask you to select a target column. To do so, either type the
option with the column id on the OPTION line (as in: f e to format column E),
or type just the option, move the cursor to the target column and press ENTER.
Your changes are implemented every time you press ENTER. You may save the
modified view definition with any name you choose. Enter END (PF3) to exit.
-----
A      E F      I      J      K      L      M      N      O      P
C Jobname T SrvClass      Total Delay %   %Dly  %Dly  %Dly  %Dly  %Dly  %Dly
- - - - -  - - - - -  0.....50...100 CPU   DEV  Stor  ENQ  SRM  Subs
RBS1DMP B PGRP0003 100.00
MXY1S  B PGRP0330 100.00          18.33          81.67
ALIGN  B PGRP0330 92.22          77.78          14.44
AAOMES@1 S PGRP0010 89.44          88.33  1.11
AAORMB3 S PGRP0010 87.22          87.22
ESP2APXT B PGRP0331 83.33          83.33
MXY1    T PGRP0002 76.67          76.67
KMZ2    T PGRP0002 73.33          69.50  3.83

```

Figure 64. JDELAY in View Customization

Every time you enter the view customization facility from a view, a working version of the view is displayed at the bottom of the screen, just like JDELAY appears in [Figure 64](#). Each column is assigned a unique letter.

The Type column (labeled **T**) has been assigned to column E. Checking the customization options at the top of the screen, you see that the filter command is L.

3. In the **OPTION** field, type **L E** and press Enter.

**Key Point**

In view customization, the command letter always goes before the column letter.

Your screen should now look like [Figure 65](#).

```

----- VIEW CUSTOMIZATION - JDELAY -----
OPTION ==> L                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Show excluded
L - Filter     T - Threshold H - Hyperlink   Z - Summarize K - Show template
-----< Filter - column: E element: ASREYFLC >-----
Filter condition =>
Parameter position => (optional: 1 to 8; blank means not used positionally)
A condition consists of the column id, an operator, and a value. This value
can be overridden by requesting this view with a keyword parameter (using the
element name as keyword) or a positional parameter (if you assign a position).
-----
  A      E F      I      J      K      L      M      N      O      P
C Jobname T SrvClass      Total Delay % %Dly %Dly %Dly %Dly %Dly %Dly
-----
RBS1DMP B PGRP0003 100.00                100.0
MXY1S   B PGRP0330 100.00                18.33
ALIGN   B PGRP0330 92.22                77.78
AAOMES@1 S PGRP0010 89.44                88.33 1.11
AAORMB3 S PGRP0010 87.22                87.22
ESP2APXT B PGRP0331 83.33                83.33
MXY1    T PGRP0002 76.67                76.67
KMZ2    T PGRP0002 73.33                69.50 3.83

```

Figure 65. Filter Work Area

Before you actually add a filter, take a moment to understand how filters work.

Filters are created by supplying an operator (=, >, <, >=, <=, <>) and a constant (or asterisk) in the Filter field. Together, the operator and the constant are called a *condition*. Thus, > 20, < 10, and = J\* are all examples of conditions.

Using JDELAY as a model, you want to add a filter to the Type column so that only TSO jobs are included.

4. Move the cursor down to the **Filter condition** field and type = TSO.

You want to specify *TSO* instead of just *T*, because the Type field is actually three bytes long. However, using the Format option, the field length for Type has been set to just one byte, so all you see is the *T*. (You will learn how to use the Format option in [“Step 6d: Renaming Fields”](#) on page 71.)

5. Press Enter.

Your screen should look like [Figure 66](#).

```

----- VIEW CUSTOMIZATION - JDELAY -----
OPTION ==> L                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat     X - Exclude     P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink  Z - Summarize  K - Show template
-----< Filter - column: E element: ASREYFLC >-----
Filter condition => E = TSO
Parameter position => (optional: 1 to 8; blank means not used positionally)
A condition consists of the column id, an operator, and a value. This value
can be overridden by requesting this view with a keyword parameter (using the
element name as keyword) or a positional parameter (if you assign a position).
-----
  A      E F      I      J      K      L      M      N      O      P
C Jobname T SrvClass      Total Delay %  %Dly %Dly %Dly %Dly %Dly %Dly
----- - - - - -
MXY1    T PGRP0002  76.67      76.67
KMZ2    T PGRP0002  73.33      69.50  3.83
RYS1    T PGRP0002  25.00      6.25 18.75
JWS4    T PGRP0002  21.67      0.54 21.12
JDB1    T PGRP0002  20.56      20.56
JCV1    T PGRP0002  20.00      20.00
CMR5    T PGRP0002  18.33      18.33
BTSSDC1 T PGRP0002  18.33      0.56 17.78

```

Figure 66. Filtering the Type Column

Notice that the view at the bottom of the screen has been updated so you can see how your view looks so far. The Type field now contains nothing but T's—all batch tasks and started tasks have been filtered out from the view.

6. Press PF3 to exit view customization.

Your screen should look like [Figure 67](#).

```

----- VIEW CUSTOMIZATION - JDELAY ---- FILTERS WERE CHANGED
OPTION ==>                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat     X - Exclude     P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink  Z - Summarize  K - Show template
-----< Exit View Customization >-----
View: JDELAY has been modified. Do you wish to save your changes?

Save changes ==> YES If you reply YES , you will be prompted for a view name.
                    If you reply NO , the view will appear in its original
                    state the next time you request the view by name.
-----
  A      E F      I      J      K      L      M      N      O      P
C Jobname T SrvClass      Total Delay %  %Dly %Dly %Dly %Dly %Dly %Dly
----- - - - - -
MXY1    T PGRP0002  76.67      76.67
KMZ2    T PGRP0002  73.33      69.50  3.83
RYS1    T PGRP0002  25.00      6.25 18.75
JWS4    T PGRP0002  21.67      0.54 21.12
JDB1    T PGRP0002  20.56      20.56
JCV1    T PGRP0002  20.00      20.00
CMR5    T PGRP0002  18.33      18.33
BTSSDC1 T PGRP0002  18.33      0.56 17.78

```

Figure 67. Exiting View Customization









first. If you ever want to display the original version of TDELAY, all you need to do is delete TDELAY from your own private library.

6. Leave **Save Changes** set to YES, and press Enter.
7. Press Enter again to return to the full TDELAY display.

Now you can test the new hyperlink to make sure it works.

8. Put the cursor on any value greater than 2% in the **%Dly Stor** field, and press Enter.

In this example, hyperlink from the job KMZ2 with the value of 66.29 in the %Dly Stor column.

```

06/10/03 14:57:04 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1=JSTORD====SYSB====*=====06/10/03====14:56:59=CMF=====145
C Jobname T SrvClass %Dly %Dly %Dly %Dly %Dly %Dly %Dly %Dly %Dly Avg
- - - - - - - - - - Stor PLPA  Comn Local --VIO SwpPD SwpSD FramS  Frame
KMZ2      S STCMRM   66.29                63.49  2.80
  
```

Figure 75. Testing the Hyperlink

The JSTORD view is displayed, showing the job from which you hyperlinked (in this case, KMZ2).

## Step 6c: Including Excluded Fields

Some CMF MONITOR Online views contain more fields than can possibly fit on one display. This step shows you how to include an *excluded field* in a view.

1. Display the DEV view as shown in [Figure 76](#).

```

06/10/03 09:05:23 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =DEV====SYSB====*=====06/10/03====09:05:23====CMF=====125
C Volser Dev  LCU Actv Resp IOSQ CUB  DPB  DB   Pend Disc Conn %Dev %D
- - - - - Num --- Rate Time Time Dely Dely Dely Time Time Time Util Rv
PAGA21 0221 015
PAGB23 0223 015
PAGC25 0225 015
SPLD26 0226 015 2.2 1.5                0.3 0.2 0.9 0.2
PAGD27 0227 015 0.0 16.3              0.3 14.9 1.1 0.0
PAGE29 0229 015
PAGF2B 022B 015
SMFB2C 022C 015
SMFC2D 022D 015
SMFD2E 022E 015 0.4 1.5                0.3 0.1 1.1 0.0
SYM015 022F 015
SYM016 0230 015
SYM017 0231 015
SMFA32 0232 015
SYM019 0233 015
SYM020 0234 015
SYM021 0235 015 0.0 0.8                0.4 0.1 0.3 0.0
  
```

Figure 76. DEV View

2. Issue the CUSTom command to invoke the view customization facility.
3. To show the fields that have been excluded for DEV, in the **OPTION** field, type E, and press Enter.

Your screen should look similar to [Figure 77](#).

```

----- VIEW CUSTOMIZATION - DEV -----
OPTION ==> E                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Hide excluded
L - Filter     T - Threshold H - Hyperlink  Z - Summarize K - Show template
-----< Show excluded columns >-----
The view is now displaying all the excluded (or hidden) columns. Excluded
columns are marked with highlighted column letters. You can customize an
excluded column (for instance, place a filter on it). You may also make the
column permanently displayable by using the Include option.
If you select E - Hide excluded, the excluded columns will again be hidden.
-----
  A      B      C      D E      F      G      H      I      J      K      L      M      N      O
C Volser Interval  Intvl Hr Dev  LCU Actv Resp IOSQ CUB  DPB  DB  Pend Disc C
- - - - - Date----- Time- -- Num --- Rate Time Time Dely Dely Dely Time Time T
PAGA21 02/24/96    09:08 9 0221 015
PAGB23 02/24/96    09:08 9 0223 015
PAGC25 02/24/96    09:08 9 0225 015
SPLD26 02/24/96    09:08 9 0226 015  1.5  1.5
PAGD27 02/24/96    09:08 9 0227 015  0.0 22.4
PAGE29 02/24/96    09:08 9 0229 015
PAGF2B 02/24/96    09:08 9 022B 015

```

Figure 77. DEV with Excluded Fields

4. Press PF11 (RIGHT) until you can see all the excluded fields.

Notice that the column headers of the excluded fields appear in a different color. In addition, there are so many columns that there are three separate naming schemes: A-Z, AA-ZZ, and AAA-ZZZ.

5. Press PF10 (LEFT) until your screen looks similar to [Figure 78](#).

```

----- VIEW CUSTOMIZATION - DEV -----
OPTION ==> E                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Hide excluded
L - Filter     T - Threshold H - Hyperlink  Z - Summarize K - Show template
-----< Show excluded columns >-----
The view is now displaying all the excluded (or hidden) columns. Excluded
columns are marked with highlighted column letters. You can customize an
excluded column (for instance, place a filter on it). You may also make the
column permanently displayable by using the Include option.
If you select E - Hide excluded, the excluded columns will again be hidden.
-----
  A      T      U      V W      X      Y      Z      AA      BB      CC      DD      EE      F
C Volser Service Time  typ  SG flg sto sgnm  us opd dso ssc  lssr dssc d
- - - - - 0.....50...100 ---- No --- ---- ct --- av-- ct---- ---- ct-- c
PAGA21          3380 ** RDY PRV
PAGB23          3380 ** RDY PRV
PAGC25          3380 ** RDY PRV
SPLD26          3380 ** RDY PRV          2  1  2.6  716  2.5  38
PAGD27          3380 ** RDY PRV          4  4.0  23
PAGE29          3380 ** RDY PRV
PAGF2B          3380 ** RDY PRV

```

Figure 78. DEV Excluded Fields (Continued)

As you can see, the command used for adding excluded fields is I - Include. The typ field is located in column U.

6. In the **OPTION** field, type I U, and press Enter to add the **typ** field to DEV so that device types are displayed as well as device numbers.

Notice how the heading on the typ field has changed color to show that the field has been included. Now you can remove the fields you are not going to include.

7. In the **OPTION** field, type E to hide the excluded fields.

You will continue to modify DEV in “[Step 6d: Renaming Fields](#)” below, so do not press PF3.

---

## Step 6d: Renaming Fields

In this step, you will change the name of the field you just included in the DEV view from typ to Type.

The command to change the appearance of fields is F - Format. The typ field is column U.

1. In the **OPTION** field, type F U and press Enter.

Your screen should look like [Figure 79](#).

```
----- VIEW CUSTOMIZATION - DEV -----
OPTION ==> F                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat     X - Exclude     P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink  Z - Summarize  K - Show template
-----< Format - column: U element: DXGTYPC >-----
Data type: Character      Display Mode => 1 ( 1 as is 2 as graph 3 as hex )
Width => 4                Graph range (for 2): Low => 0      High => 0
Decimals => 0 (for numeric data)  Display zero values => N (Yes/No)
Heading1 => typ           Summarization type => L (A/S/M/X/C/L/P)
Heading2 => -----      Condition (for C) =>
-----
      A      U
C Volser typ
-----
PAGA21 3380
PAGE23 3380
PAGC25 3380
SPLD26 3380
PAGD27 3380
PAGE29 3380
PAGE2B 3380
SMFB2C 3380
```

Figure 79. Changing a DEV Column Name

As you can see, the field’s current name, typ, is displayed in the Heading1 field. In addition, the field width is 4 characters, which means you have room to add a fourth letter.

2. In the **Heading1** field, type Type directly over the current title, like this:

```
-----< Format - column: U element: DXGTYPC >-----
Data type: Character      Display Mode => 1 ( 1 as is 2 as graph 3 as hex )
Width => 4                Graph range (for 2): Low => 0      High => 0
Decimals => 0 (for numeric data)  Display zero values => N (Yes/No)
Heading1 => Type         Summarization type => L (A/S/M/X/C/L/P)
Heading2 => -----      Condition (for C) =>
```

3. Press Enter.

Notice how the typ column at the bottom changes immediately to look like [Figure 80](#).

```

----- VIEW CUSTOMIZATION - DEV -----
OPTION ==> F                                SCROLL ==> PAGE
Options: (that require column selection)   Other options:
F - Format   M - Move       I - Include     G - Graph   S - Save view
O - Order   R - Repeat     X - Exclude  P - Parameters E - Show excluded
L - Filter  T - Threshold  H - Hyperlink Z - Summarize K - Show template
-----< Format - column: U element: DXGTYPC >-----
Data type: Character      Display Mode => 1 ( 1 as is 2 as graph 3 as hex )
Width   => 4              Graph range (for 2): Low => 0   High => 0
Decimals => 0 (for numeric data)  Display zero values => N (Yes/No)
Heading1 => Type          Summarization type => L (A/S/M/X/C/L/P)
Heading2 => -----      Condition (for C) =>
-----
      A      U
C Volser  Type
- -----
      PAGA21 3380
      PAGR23 3380
      PAGC25 3380
      SPLD26 3380
      PAGD27 3380
      PAGE29 3380
      PAGE2B 3380

```

Figure 80. Changing a DEV Column Name (Continued)

Do not press PF3 yet. You still have one more modification to make. Go to Step 7e on page 72.

## Step 6e: Moving Fields

In this step, you will move the new Type field in DEV so that it follows the Volser field. First, show the other included fields:

1. Press PF10 so that your screen looks similar to [Figure 81](#).

```

----- VIEW CUSTOMIZATION - DEV -----
OPTION ==>                                SCROLL ==> PAGE
Options: (that require column selection)   Other options:
F - Format   M - Move       I - Include     G - Graph   S - Save view
O - Order   R - Repeat     X - Exclude  P - Parameters E - Show excluded
L - Filter  T - Threshold  H - Hyperlink Z - Summarize K - Show template
-----< Format - column: U element: DXGTYPC >-----
Data type: Character      Display Mode => 1 ( 1 as is 2 as graph 3 as hex )
Width   => 4              Graph range (for 2): Low => 0   High => 0
Decimals => 0 (for numeric data)  Display zero values => N (Yes/No)
Heading1 => Type          Summarization type => L (A/S/M/X/C/L/P)
Heading2 => -----      Condition (for C) =>
-----
      A      E      F      G      H      I      J      K      L      M      O      P      Q      R      U
C Volser Dev  LCU Actv Resp IOSQ CUB  DPB  DB  Pend Disc Conn %Dev %D  Type
- ----- Num  --- Rate Time Time Dely Dely Dely Time Time Time Util Rv  ----
      181 020
      PAGA21 200 026
      PAGR23 201 026
      PAGC25 202 026  1.5 15.5
      SPLD26 203 026  0.0  1.5
      PAGD27 204 026  0.0  1.1
      PAGE29 205 026  0.0  1.1
      SMFB2C 206 026  1.0  1.3
      0.3 0.0 0.9 0.8 0.8 3380

```

Figure 81. DEV with Included Fields



**Note:** If you are using a 3270 emulator package on a PC, the package may or may not enable all colors.

*Workflow* is a measurement of how well a workload is being served by system resources. A high workflow value means the workload is receiving excellent service; a low value means that the workload is experiencing some delay due to contention for a particular resource.

To set custom values:

1. Display JFLOW.
2. In the **COMMAND** field, type **CUSTOM** and press Enter.

Your screen should look like [Figure 83](#).

```
----- VIEW CUSTOMIZATION - JFLOW -----
OPTION ==>                                SCROLL ==> PAGE
Options: (that require column selection)   Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink Z - Summarize K - Show template
-----
Some options ask you to select a target column. To do so, either type the
option with the column id on the OPTION line (as in: f e to format column E),
or type just the option, move the cursor to the target column and press ENTER.
Your changes are implemented every time you press ENTER. You may save the
modified view definition with any name you choose. Enter END (PF3) to exit.
-----
  A      E F      I      J      K      L      M
C Jobname T SrvClass      Workflow %      Delay %      Main Reason
-----
PZB2Y   B PGRP0330   0.7      95.7      Swap: Unilatera
ALIGN  B PGRP0330   7.6      93.8      Wait for CPU
RBS1DMP B PGRP0003  11.5     84.5      Wait for CPU
WJH1G  B PGRP0003  27.5     72.5      Wait for CPU
AAORMB3 S PGRP0010  34.4     63.1      Wait for CPU
MXY1   T PGRP0002  40.9     56.9      Wait for CPU
MXY1S  B PGRP0330   2.5     53.8      Wait for CPU
RYS1JOB B PGRP0320  50.0     50.0      Wait for CPU
```

Figure 83. JFLOW in View Customization

Now you can concentrate on the numeric values for the Workflow % column, which are in column I. The command for establishing thresholds is T.

3. In the **OPTION** field, type **T I**.

Your screen should now look like [Figure 84](#).

```

----- VIEW CUSTOMIZATION - JFLOW -----
OPTION ==> T                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat     X - Exclude     P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink  Z - Summarize  K - Show template
-----< Threshold - column: I      element: ASGNPG      >-----
Condition:                                Attr: Sub:  Inherit from =>
1st => I >= 0                                => 0 =>                                0: GREEN  5: GREEN
2nd =>                                => =>                                1: BLUE   6: BLUE
3rd =>                                => =>                                2: YELLOW 7: YELLOW
4th =>                                => =>                                3: PINK   8: PINK
                                           4: RED   9: RED
-----
      A      E F      I      J      K      L      M
C Jobname T  SrvClass      Workflow %      Delay %      Main Reason
-----
PZB2Y  B  PGRP0330  0.7      95.7      Swap: Unilatera
ALIGN  B  PGRP0330  7.6      93.8      Wait for CPU
RBS1DMP B  PGRP0003  11.5     84.5     Wait for CPU
WJH1G  B  PGRP0003  27.5     72.5     Wait for CPU

```

Figure 84. Setting a Threshold for Workflow % Column

The numbers 0-9 (on the right) represent the colors you can specify in the Attribute fields (on the left).

Now you can add all three thresholds at once. Remember, you want

- jobs experiencing less than 50% workflow to appear in red
- jobs that are in potential danger—that is, anything with a workflow value below 80%—to appear in a warning color (yellow)
- jobs that are progressing through the system smoothly—between 80-100% workflow value—to appear in green

4. Fill in the threshold panel as shown:

```

Condition:                                Attr: Sub:  Inherit from =>
1st => I >= 80                                => 0 =>                                0: GREEN  5: GREEN
2nd => >= 50                                => 2 =>                                1: BLUE   6: BLUE
3rd => >= 0                                  => 4 =>                                2: YELLOW 7: YELLOW
4th =>                                => =>                                3: PINK   8: PINK
5st =>                                => =>                                4: RED   9: RED
6nd =>                                => =>
7rd =>                                => =>
8th =>                                => =>

```

Two conditions cannot be specified in the same Condition field. Threshold conditions are satisfied in descending order. Moving down the Condition fields, CMF MONITOR Online changes any values equal to 80 or above to green, changes all values equal to 50 or above (but not more than 80) to yellow, and then finally changes values equal to 0 or above (but not more than 50) to red.



Look at the T column (column E). This column contains a letter to designate each type of job: B for batch, S for started task, T for TSO, O for OMVS, and A for APPC. Given the number of rows on JFLOW, you see how it might be useful to compress the display into just four lines—one for each job type. However, you could just as easily decide to summarize by service class (column F) or main reason.

These columns are good candidates for summarization because each of them has rows of data that contain identical values—there are several rows of data for service class PGRP0330, for example, just as there are several rows that specify Wait for CPU as the main reason for delay. Therefore, it makes sense to compress all the service class PGRP0330 rows into a single row so you can monitor activity of the service class at a single glance.

By contrast, you probably would not want to summarize by the Workflow %, Delay %, or Jobname columns. Because of the nature of these fields, there will not be many identical values—and if there are, it is purely coincidental—so summarizing the values into a single line would not provide any meaningful data.

Now you can begin creating your summary view by using option Z - Summarize.

3. In the **OPTION** field, type Z and press Enter.

Your screen now looks like this:

```

----- VIEW CUSTOMIZATION - JFLOW -----
OPTION ==> Z                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat     X - Exclude     P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink  Z - Summarize  K - Show template
-----< Summarize - Specify columns for summarization >-----
If you want to summarize rows of data, specify at least one column to group by:
Group by 1=> To further customize a summarized view:
           2=> Use option X to exclude a column from the summarized view.
           3=> Use option F to modify the type of summarization for a column
           4=> (S sum, A avg, M min, X max, C count, L any, P percent)
-----
  A      E F      I      J      K      L      M
C Jobname T SrvClass      Workflow %      Delay %      Main Reason
-----
SMFBDMP1 S PGRP0000  0.3      99.7      Enqueue
AAORMB3  S PGRP0010  54.7     45.1     Wait for CPU
JWS1     T PGRP0002  1.7     30.6     Staging
DYM3     T PGRP0002  25.0    25.6     DASD I/O
SMFBDMP3 S PGRP0006  80.2    20.7     Wait for CPU
OLTC     S PGRP0011  24.6    18.9     Wait for CPU
DB2NJ31  S PGRP0010  38.8    18.6     Wait for CPU
OLCSST5  S PGRP0010  15.8    17.8     Wait for CPU

```

Figure 86. Using the Summarize Option

You know you want to summarize (or group) the data by the T column.

4. In the **Group by** field, type E, like this:

```

If you want to summarize rows of data, specify at least one column to group by:
Group by 1=> E To further customize a summarized view:
           2=> Use option X to exclude a column from the summarized view.
           3=> Use option F to modify the type of summarization for a column
           4=> (S sum, A avg, M min, X max, C count, L any, P percent)

```

**Note:** If you are familiar with SQL, you may recognize the similarity of this function to the GROUP BY statement.

5. Press Enter.



Your screen should now look like this:

```

----- VIEW CUSTOMIZATION - JFLOW -----
OPTION ==> X                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Show excluded
L - Filter     T - Threshold H - Hyperlink   Z - Summarize K - Show template
-----< Exclude - column: J element: ASIMDLC >-----
The column has been excluded from the display. Use option E - Show excluded
to display all excluded columns (excluded columns are the ones with highlighted
column letters). Use the Include option to bring the column permanently back
into the display.

-----
  A F      I      J      K      L
C T SrvClass      Workflow %      Delay %
- - - - - 0.....50...100      0.....50...100
A PGRP0041 100.0
B PGRP0***  17.2                68.7
S PGRP0***  28.4                2.5
T PGRP0***  25.2                0.5

```

Figure 88. Excluding Fields

Retain the SrvClass field even though its data does not make much sense because, by changing its format, you can turn it into a useful field.

8. In the **OPTION** field, type F and press Enter to invoke the **Format** option for SrvClass.

```

----- VIEW CUSTOMIZATION - JFLOW -----
OPTION ==> F                                SCROLL ==> PAGE
Options: (that require column selection)    Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Show excluded
L - Filter     T - Threshold H - Hyperlink   Z - Summarize K - Show template
-----< Format - column: F element: ASGCNMC >-----
Data type: Character      Display Mode => 1 ( 1 as is 2 as graph 3 as hex )
Width => 8                Graph range (for 2): Low => 0      High => 0
Decimals => 0 (for numeric data)      Display zero values => N (Yes/No)
Heading1 => SrvClass          Summarization type => L (A/S/M/X/C/L/P)
Heading2 => -----          Condition (for C) =>
-----
  A F      I      J      K      L
C T SrvClass      Workflow %      Delay %
- - - - - 0.....50...100      0.....50...100
A PGRP0041 100.0
B PGRP0***  17.2                68.7
S PGRP0***  28.4                2.5
T PGRP0***  25.2                0.5

```

Figure 89. Formatting the SrvClass Field

With Summarization type field (in the lower right corner of the middle box) you specify how the data on a summary view is treated—A for averaging the values, S for a sum of all values, and so on. (For a full list of options, press PF1.)

In this case, turn the service class data into a count of the address spaces in each job type, so you can tell how many address spaces are in each category at a given moment.

9. In the **Summarization type** field, type C and press Enter.

```

----- VIEW CUSTOMIZATION - JFLOW -----
OPTION ==> F                                SCROLL ==> PAGE
Options: (that require column selection)   Other options:
F - Format      M - Move      I - Include      G - Graph      S - Save view
O - Order      R - Repeat    X - Exclude    P - Parameters E - Show excluded
L - Filter     T - Threshold  H - Hyperlink Z - Summarize K - Show template
-----< Format - column: C element: ASGCNMC >-----
Data type: Character      Display Mode => 1 ( 1 as is 2 as graph 3 as hex )
Width => 8                Graph range (for 2): Low => 0      High => 0
Decimals => 0 (for numeric data)      Display zero values => N (Yes/No)
Heading1 => SrvClass          Summarization type => C (A/S/M/X/C/L/P)
Heading2 => -----          Condition (for C) =>
-----
  A F      I      J      K      L
C T SrvClass      Workflow %      Delay %
- - -----      0.....50...100      0.....50...100
A          1 100.0
B          7  17.2                68.7
S         104 28.4                2.5
T         203 25.2                0.5

```

Figure 90. Making SrvClass a Count Field

The meaningless numbers are now meaningful data. The four lines of data in [Figure 90](#) show 1 APPC user, 7 batch jobs, 104 started tasks, and 203 TSO address spaces.

**Key Point**

After summarizing a view, you can use the C summarization type to create a count field that keeps track of the number of address spaces representing each row.

10. To exit, press PF3.

You want to save this view with a new name. In general, it is a good idea to develop a naming convention for views that you customize. Since this view is a summary based on a tabular view, prefix the tabular view name with an S. This naming convention makes it easy to distinguish the tabular view on which the summary view is based.

11. In the **View name** field, type SJFLOW.

**Key Point**

The process for creating a summarized view is as follows:

1. Select a tabular view to use as a base.
2. Choose one or more columns by which to group.
3. Eliminate the fields that no longer make sense on the summarized view **or** change their summarization type (under Format) to reflect more meaningful data.
4. Make sure you have the summarization types you want for each field.
5. Rename any fields as necessary.

---

## Optional Tasks for View Customization

View customization allows you to perform other customization tasks that have not been discussed. For example:

<b>Do this</b>	<b>With this option</b>
Change a column width, change a column header, or move a decimal point.	F
Alter the full-screen graphical display of the view.	G
Sort rows of data by ascending or descending values.	O
Find out which fields have been specified as <i>positional parameters</i> for a view.	P

If you need help in using these or any other options, press PF1 while in view customization.



---

## Step 7. Using Summarized Views

In this step, you will learn ways to use the summary view you created in “[Step 6g: Summarizing Data](#)” on page 76.

---

### Step 7a: Expanding a Summary View

You will find that a summary view is particularly useful if it is tailored specifically to your site and left to run in ASU mode throughout the day. The view regularly updates itself and, as long as you set meaningful thresholds, will immediately indicate when something has gone wrong so you can begin the debugging process.

To help you begin debugging from a summary view, a hyperlink is established automatically for the first field of every summary view.

#### Key Point

The first hyperlink in a summary view expands the selected row into all its constituent rows.

You can see how this works with the SJFLOW view you created in the last step.

1. Display the SJFLOW view.

If the row for batch jobs indicated a delay percentage of 100%, begin your investigation:

2. Place the cursor on the B in the first column labeled T (Type) and press Enter.

Your screen should now look like this:

```
06/10/03 15:25:22----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1=SJFLOW==JFLOW====SYSB====*=====06/10/03===15:25:23===1I=CMF=====108
C Jobname  T SrvClass      Workflow %      Delay %      Main Reason
-----
CVMM2     B PGRP0330      0.....50...100  75.2        Swap: Unilatera
JSC4     B PGRP0003      0.....50...100  74.9        Swap: Unilatera
CVMCJH1   B PGRP0320      44.8          41.9        Wait for CPU
QA1BINC   B PGRP0320      66.6          30.4        Wait for CPU
AAORMB1   B PGRP0320      85.0          15.0        Wait for CPU
MV$PAS    B PGRP0320      22.9          13.8        Wait for CPU
XTSTPAS   B PGRP0320      28.6          12.8        Wait for CPU
CVMCDKC   B PGRP0320      12.2          9.2         Swap: Unilatera
DUMPSRV   B PGRP0320      34.0          8.4         Wait for CPU
CMF16     B PGRP0320      76.7          6.9         PLPA Page In
CVMCPPM   B PGRP0320      21.4          5.6         Wait for CPU
CVMJH2    B PGRP0320      41.9          4.6         Local Page In
JARPASC   B PGRP0320      83.3          4.6         DASD I/O
AAOSSEK8  B PGRP0320      30.0          4.1         Enqueue
CVMCJFC   B PGRP0320      30.0          3.6         Wait for CPU
CMF6      B PGRP0320      86.5          3.6         Swap: Unilatera
```

Figure 91. Expanding SJFLOW to JFLOW

As you can see, this view is JFLOW, from which you created SJFLOW. (Actually, it is the *form* JFLOW, and you will learn about forms in the next step.) The form JFLOW adds all the columns you excluded from SJFLOW, and adds a filter so that only batch jobs (or whatever you selected) are displayed.

Now that you have a complete list of all the batch jobs running in your system, you can pinpoint the job or jobs experiencing significant delay and continue hyperlinking from here.

## Step 7b: Summarizing by Another Column

Suppose you decide you want to group a summary view by a column other than the originally chosen column (not permanently, but only for a few moments). You can temporarily summarize by another column using the SUM command.

There are not any more meaningful columns by which to summarize in SJFLOW, so you cannot use it as an example. Instead, use the summary view JDELAYZ, which was based on the JDELAY (job delay) view. JDELAYZ is grouped by the Jobname field and looks like this:

```

06/10/03 08:21:04 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =JDELAYZ=====SYSB=====*=====06/10/03====08:21:04====CMF=====267
C Jobname  T SrvClass      Total Delay %   %Dly  %Dly  %Dly  %Dly  %Dly  %Dly
- - - - -  - - - - -  0.....50...100 CPU  DEV  Stor  ENQ  SRM  Subs
CMRGPAS   S PGRP0010    16.07                16.07
CNMPRB22  S PGRP0006    15.48                15.48
QA2DOWN   B PGRP0310    14.97                11.38  2.99                0.60
NIS1      T PGRP0002    13.69                12.50  1.19
CIM4      T PGRP0002    13.10                                13.10
XTSTNPAS  S PGRP0030    13.10                8.73  4.37
MXW3      T PGRP0002    10.96                8.22  2.74
XTSTPAS   S PGRP0030     9.58                9.58
CICS4101  S PGRP0400     9.52                9.52
CICS3301  S PGRP0400     8.98                8.98
BBNSMOE   T PGRP0002     8.93                8.93
AAORMB3   S PGRP0010     8.33                8.33
AAOSSMK2  S PGRP0010     8.33                8.33
CONT300M  S PGRP0006     7.78                7.19  0.60
DC$PAS    S PGRP0030     7.74                7.74
DC$MIM    S PGRP0030     7.19                5.99  1.20
BTSHGG1   T PGRP0002     7.14                4.76  2.38
CONTROLD  S PGRP0006     6.59                6.59
EMPSG220  S PGRP0006     6.59                6.04  0.55

```

Figure 92. Another Summary View: JDELAYZ

After studying JDELAYZ for a few minutes, you decide that you would like to see the delay percentage by service class instead of by jobname.

1. In the **COMMAND** field, type SUM.
2. Place the cursor on the **SrvClass** field, and press Enter to regroup the JDELAYZ view by the SrvClass column.





---

## Step 8. Redisplaying Data without Updating

As you know by now, the data in a window is generally updated each time you press the Enter key. Sometimes, though, you do not want the data updated, especially when you want to debug a problem that lasts only for a minute or two. You need a way to use CMF MONITOR Online to debug a problem *without updating the data*. You need *alternate forms*.

---

### Understanding Queries and Forms

Queries and forms are items you have been using all along, although you probably did not realize it. Every view comprises one *query* and one *form*. The query tells CMF MONITOR Online what kinds of data you want to view. The form specifies how the data is summarized and displayed.

Look at a view that should be quite familiar by now:

#### 1. Display JFLOW.

```
06/10/03 15:27:52 ----- INFORMATION DISPLAY -----
COMMAND ==>>
CURR WIN ==>> 1          ALT WIN ==>>
>W1=JFLOW=====SYSB=====*=====06/10/03===15:27:52=====CMF=====109
C Jobname  T SrvClass      Workflow %      Delay %      Main Reason
- - - - -  - - - - -  0.....50...100  0.....50...100  -----
SLAMRUN   T PGRP0002      100.0          100.0        Swap: Unilatera
CVMCJBC   B PGRP0330      15.3           83.3         Wait for CPU
XTSTPAS   S PGRP0030      3.3            68.0         Wait for CPU
MV$PAS    S PGRP0030      5.3            67.8         Wait for CPU
CVMCJFC   B PGRP0030      4.1            53.9         Wait for CPU
CVMCJH2   B PGRP0030      2.5            52.4         Wait for CPU
CVMCDHM   B PGRP0030      2.3            49.1         Wait for CPU
CVMCPPC   B PGRP0030      7.5            47.2         Wait for CPU
JSC2      T PGRP0030      48.5           46.5         Wait for CPU
CVMCJH4   B PGRP0030      10.1           45.7         Wait for CPU
CVMCKRC   B PGRP0030      10.1           44.0         Wait for CPU
CVMBB     T PGRP0030      14.9           43.1         Wait for CPU
MV$CAS    S PGRP0030      1.0            38.1         Wait for CPU
CNMPRC23  S PGRP0030      3.4            32.6         Wait for CPU
CICS4101  S PGRP0030      70.8           30.9         Swap: Recommend
CVMCDKC   B PGRP0030      13.1           29.1         Wait for CPU
CVMCPWM2  B PGRP0030      7.5            21.1         Wait for CPU
JSC4      T PGRP0030      64.5           18.9         Swap: Unilatera
```

Figure 94. JFLOW View

Suppose you see a problem with the SLAMRUN job that you want to investigate immediately using the JINFO view. You could use the hyperlink in the Jobname column to display JINFO, or you could type JINFO SLAMRUN in the **COMMAND** field, but the data on JINFO would not be the same as the data on JFLOW, because the data is updated as soon as you display the new view.

To prevent this update, use the FORM command to change the *form* of the data without retrieving new data.

#### 2. In the **COMMAND** field, type FORM JINFO yourjob, where yourjob is a jobname on JFLOW.



The views you can use as alternate forms are determined by the view—or the query—from which you start. If you started from the DEVSTAT view, for example, it would not make much sense to request JFLOW as an alternate form. But you can determine which views are valid.

To find out which views you could enter as alternate forms for JFLOW:

4. Place the cursor on **JFLOW** and press PF1 to display view help for JFLOW.
5. Scroll down until you see the topic FORMS that are valid for this view.
6. Place the cursor on the topic, and press Enter.

The screen should now look like this:

```

06/10/03 15:28:59 ----- INFORMATION DISPLAY -----
COMMAND ==> SCROLL ==> PAGE
CURR WIN ==> 1 ALT WIN ==>
W1 =JFLOW=====SYSB=====*=====06/10/03===15:28:59=====CMF=====1
C Jobname T Dmn Pg Total Delay % %CPU SSCH DmdP SwpP Avg Server
- - - - - 0...25...50 Util /Sec /Sec /Sec Frame /Sec-----
DC$BBI S 10 +-----+EXMGR
: Help Interval Job Workflow and Delay Help :
: +-----+-----+-----+-----+-----+-----+
: : Help FORMS Help :
: : Command ==> Scroll ==> PAGE :
: : ----- :
: : You can look at the currently displayed data in a :
: : different formay by specifying any of the :
: : following view names on the FORM command. :
: : :
: : o EZMJOB :
: : :
: : o ASD :
: : :
: : o ASRM :
: : :
: : o JSTOR :
: : :
: : o JSUM :
+ : :
: : o JUSE :
+ : :
+-----+

```

Figure 97. Help Topic for Forms

All of the views in this help topic can be used on the FORM command for JFLOW.

**Key Point**

Only certain views can be used on the FORM command for a given view. Use the FORMS help topic to display the possibilities.

You have now displayed three forms: JFLOW, JINFO, and JDELAY. There is a whole host of commands you can use to manipulate this stack of forms and to further filter the data. The following table briefly describes these commands. You may want to try some of the examples now. If you need more information on a command, type `HELP command name` in the **COMMAND** field.

<b>To do this</b>	<b>Use this command</b>	<b>Example</b>
Cycle forward to the next form in the stack.	FNEXt	From the JDELAY form, FNEXt displays JFLOW frozen at the time the FORM command was issued; FNEXt again displays JINFO; FNEXt again displays JDELAY.
Cycle back to the previous form in the stack.	FPREV	From the JDELAY form, FPREV displays JINFO; FPREV again displays JFLOW frozen at the time the FORM command was issued; FPREV again displays JDELAY.
Return to the previous form; if there are no more forms in the stack, return to the last query.	END	From the JDELAY form: <ul style="list-style-type: none"> <li>• If you press PF3, the JINFO form is displayed.</li> <li>• If you press PF3 again, the JFLOW query is displayed. Note that the data remains frozen at the time the first form was requested.</li> </ul>
Delete the current query and all its forms, and return to the previous view.	ENDQuery	From the JDELAY form, typing ENDQuery discards JOVER, JINFO, and JFLOW, and returns to whatever view was displayed before JFLOW.
Change the parameters of a form.	PARm	From the JDELAY form: <pre>PARM * 5</pre> displays only those jobs that are delayed more than 5%.
Change the parameters of a query and update the data.	QPARM	From the JDELAY form: <pre>QPARM * 5</pre> displays only those jobs that are delayed more than 5%. Since new data is gathered, newly active jobs may appear in the display.

<b>To do this</b>	<b>Use this command</b>	<b>Example</b>
Display a list of the filters currently in effect for both the query and the form.	SHOWFILT	Use SHOWFILT to help debug a situation in which you have entered several FORM and FPARM commands but no longer have any data displayed. SHOWFILT helps you determine if you have accidentally filtered out all possible values.
Update the data in one window without updating data in the others.	DATARefresh	<p>If you have more than one window open, type <code>wx.DATAREfresh</code>, where <code>x</code> is the number of the window you want to update. The data in the other windows remains unchanged.</p> <p><b>Note:</b> The data is updated even if you have a form applied to it. Think of DATARefresh as temporarily unfreezing the data, updating it, and then freezing it again.</p>



---

## Step 9. Filtering Data

As explained in “[Step 6a: Creating a New View](#)” on page 61, you can use the L - Filter option in view customization to filter data so that only certain rows are displayed. This technique works well when you want to restrict the display to something very simple, like all jobs beginning with the letter A. But you may want to display all jobs beginning with A that also belong to service class PGRP0003. For sophisticated filter criteria, you need the WHERE command.

You can look at it now.

1. Display the JFLOW view.

Suppose you have received word that performance group 0010 is being excessively delayed. To make it easier to focus on the problem, you want to limit the display to all jobs in a particular service class (PGRP0010 in this example).

2. Select a SrvClass on your system and make a note of it.

Although you could use view customization to get the job done, the fastest, most efficient method is to use the WHERE command. WHERE implements the filter conditions you specify on the view’s *form*. And, as you know from Step 9, a form effectively freezes the data, which means you are not consuming excess CPU resources.

**Note:** If you **do** want the data updated each time you press Enter, use the QWHERE command instead of WHERE. It works the same as WHERE, but re-queries the data.

Before using the WHERE command, you must know the element names of the fields on which you want to place a filter. Find this information through the field help—that is, place the cursor on the field, press PF1 (HELP), and note the element name. The element name to use in this example is ASGCNMC (the element name for the SrvClass field).

Now you are ready to enter the WHERE command.

3. In the **COMMAND** field, type WHERE.

The screen now looks like this:

```
----- SET WHERE FILTER-----
COMMAND  ===>

Where Condition:

Press END to update the form filter
Type  CAnCel to quit without updating
```

Figure 98. SET WHERE FILTER Panel

4. Enter the service class you selected on JFLOW to build a condition for the WHERE command.

In our example, this value is PRGP0010:

```
ASGCNMC=PGRP0010
```

You can use more than one condition for the WHERE command. For example:

```
(ASGCNMC=PGRP0010) AND (ASIDLYP>60)
```

Notice how each clause is enclosed in parentheses. In this example, ASIDLYP is the element name of the Delay % field.

These multiple conditions limit the display of jobs to service class PGRP0010 jobs that have delays over 60%.

5. To return to JFLOW, press PF3 (END).

Our condition example, (ASGCNMC=PGRP0010) AND (ASIDLYP>60) produces a screen that looks similar to [Figure 99](#):

```

06/10/03 17:43:47 ----- INFORMATION DISPLAY -----
COMMAND ==>
CURR WIN ==> 1          ALT WIN ==>
W1 =JFLOW====SYSB====*=====06/10/03==17:43:47=CMF=====7
C Jobname  T SrvClass      Workflow %      Delay %      Main Reason
-----
BLJ1      T PGRP0010          65.0           Swap: Unilatera
PPL2      T PGRP0010          77.0           Swap: Unilatera
EEW3      T PGRP0010          83.0           Swap: Unilatera
ICSR      T PGRP0010          92.0           Swap: Unilatera
ALG11     T PGRP0010          95.0           Swap: Unilatera
MXW3      T PGRP0010         100.0           Swap: Unilatera
CIR1      T PGRP0010         100.0           Swap: Unilatera

```

Figure 99. Jobs in Service Class PGRP0010 Delayed More Than 60%

This screen displays all the jobs in service class PGRP0010 that are being delayed more than 60% of the interval. You can see how the WHERE command is much faster than using view customization.

Saving time is not the only advantage of the WHERE command. You can also specify complex filter conditions that are not possible in view customization. For example, if you want to change the criteria a bit and display all jobs in service class 1 through 20—but you do not want to include service class 5, you would type WHERE in the **COMMAND** field (the WHERE command you entered previously is still there, so you would not have to retype the whole command). You would edit the last set of conditions displayed at the WHERE prompt. For example:

```
(ASGCNMC BETWEEN PGRP0001 and PGRP0020) AND (ASGCNMC <> PGRP0005)
```



beginning with LGS, so that is all that WHERE has to process. If you do not want to be limited to the form's data, use the QWHERE command instead of WHERE.

**Key Point**

You can use these statements with the WHERE command:

- AND
- BETWEEN
- IN
- NOT BETWEEN
- NOT IN
- OR

in conjunction with these operands:

- =
- <> (NOT)
- >
- >=
- <
- <=

Your WHERE equations can include an element and a constant (ASGCNMC=5) or two elements (ASIAVFC < ASIAVEF).

You might want to take a few minutes now to experiment with some of the statements and operands not seen in this step: NOT IN, <, and so on.

For a complete discussion of the rules associated with the WHERE command, and some examples, type `HELP WHERE` in any **MAINVIEW COMMAND** field.

This completes the tasks. You have now mastered the basic skill set for CMF MONITOR Online and are ready to start using it to monitor your own system.

Next, you might want to issue the `SCREENS` command to display a list of default CMF MONITOR Online screen definitions. Or you may just want to start experimenting—with hyperlinks, with online help, or with whatever process seems interesting to you.

Whatever you decide, you should feel confident about your abilities to navigate through CMF MONITOR Online and use its data to monitor system resources.

---

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# Notes

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