MainView for UNIX System Services User Guide and Reference

Supporting

Version 1.7.00 of MainView for UNIX System Services

December 2014
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  - Machine type
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  - System hardware configuration
  - Serial numbers
  - Related software (database, application, and communication) including type, version, and service pack or maintenance level
- **Sequence of events leading to the problem**
- **Commands and options that you used**
- **Messages received (and the time and date that you received them)**
  - Product error messages
  - Messages from the operating system
  - Messages from related software
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About this book

This book contains detailed information about the MainView for UNIX System Services product and is intended for systems analysts, systems programmers, computer operators, or anyone who is responsible for applying system maintenance and ensuring maximum system performance.

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

- IBM Multiple Virtual Storage (MVS) systems
- Job Control Language (JCL)
- Interactive System Productivity Facility (ISPF)

  For example, you should know how to respond to ISPF panels

Like most BMC documentation, this book is available in printed and online formats. To request printed books or to view online books and notices (such as release notes and technical bulletins), see the support website at http://www.bmc.com/support.

The software also offers online Help. To access Help, press F1 within any product or click the Help button in graphical user interfaces (GUIs).
Customizing MainView for UNIX System Services

This section covers information that you must know if you do not use the Installation System to customize the MainView for UNIX System Services product.

Customization steps

BMC recommends that you use the Installation System to customize MainView for UNIX System Services. See the Installation System documentation for more information.

If you decide not to use the Installation System, perform the following steps to customize MainView for UNIX System Services manually:

**To customize MainView for UNIX System Services manually**

1. Complete the steps in the *MainView Customization Reference* that apply to MainView for UNIX System Services.

2. Define a user ID for the product address space (PAS).

3. Copy members BBUTSRP0, BBUTSAS0, USSJPRCS, BBUTSRH0, and UFOHFSJ.

Defining a user ID for the product address space

To access UNIX System Services data, the MainView for UNIX System Services product address space (PAS) must have superuser authority.

The PAS requires that a user ID be defined to the security system (such as IBM RACF) and assigned to the PAS STC by the security system’s facilities.
For RACF, update either the RACF started procedure table (ICHRIN03) or the STARTED class definition. The user ID that is assigned must have an OMVS segment with a home directory of / and UID=0 assigned.

Following is an example of how an OMVS segment might be defined for user MVUSSD:

```
ADDUSER MVUSSD
DFLTGRP(OMVSGRP) OMVS(UID(0) HOME('/')) PROGRAM('/bin/sh') NOPASSWORD
```

The NOPASSWORD option indicates that the user ID is a protected ID that cannot be used to enter the system by using a password or password phrase. The user ID will not be revoked due to invalid logon attempts.

**Note**

If the BPX.DAEMON FACILITY class profile is defined, the user ID needs READ access to security resource BPX.DAEMON, as follows:

```
PERMIT BPX.DAEMON CLASS(FACILITY) ID(MVUSSD) ACCESS(READ)
```

The PAS requires daemon authority to switch user IDs when running UNIX actions.

### Copying members

This step copies the following members:

- **BBPARM member BBUTSRP0**—used to specify processes that are required to be executing.
  
  Use the PESTAT view to monitor and manage processes in BBUTSRP0.

- **BBPARM member BBUTSAS0**—used to change the default action security definitions.
  
  Use the ACTSEC view to manage action security definitions in BBUTSAS0.

- **BBSAMP member USSJPRCS**—contains a sample screen definition that can be used to display the ASOVERZ and PSSTAT views.

- **BBPARM member BBUTSRH0**—used to specify file systems that are required to be mounted or have their data recorded to history.
  
  The $DIR_USSHOME and $DIR_USSVAR entries can be used to modify the default install paths. The default path for $DIR_USSHOME is `/opt/bmc/ufo`. The default path for $DIR_USSVAR is `/var/bmc/ufo`.
  
  Use the FSSTAT, HFSSTAT, ZFSSTAT views to monitor and manage file systems in BBUTSRH0. If the file system have been designated as WATCHED, they are...
recorded to history and you can view then with the FSWATCHZ and FSWATCH views.

- BBSAMP member UFO2HFS--a REXX EXEC that copies BBSAMP and UBBSAMP members to your USSHOME directory, which defaults to /opt/bmc/ufo unless overridden in member BBUTSRH0.

**To run the UFOCOPY job**

1. Copy `hilevel.BBSAMP` member UFOCOPY to your private JCL library, where `hilevel` is the high-level qualifier that is used for MainView for UNIX System Services data sets at your site.

   UFOCOPY contains JCL to execute IEBCOPY.

2. Customize the JCL by following the instructions at the top of the member.

3. Submit the JCL.

4. Review the job output to verify that the IEBCOPY job was successful.

**To run UFOHFSJ job**

1. Copy `hilevel.BBSAMP` member UFOHFSJ to your private JCL library, where `hilevel` is the high-level qualifier that is used for MainView for UNIX System Services data sets at your site.

   UFOHFSJ contains JCL to execute UFO2HFS REXX EXEC.

2. Customize the JCL by following the instructions at the top of the member.

3. Submit the JCL.

4. Review the job output to verify that the UFOHFSJ job was successful.

---

**What's next?**

After you have completed the manual customization for the MainView for UNIX System Services product, BMC recommends that you perform the following tasks:

1. Review the information in the MainView Administration Guide to assist you in setting up your MainView environment.

2. Use the MainView CLIST to access MainView for UNIX System Services.
Overview of MainView for UNIX System Services

MainView for UNIX System Services is a system-management application that provides a wide range of services and functions to help you manage the performance of your UNIX System Services applications.

The MainView for UNIX System Services product uses the MainView window interface to provide easy, intuitive access to all of the system performance data that you need.

You can find additional information about the MainView architecture and interface in the MainView User Guide. This chapter provides background information about MainView for UNIX System Services and includes the following topics:

Product views and commands

The MainView for UNIX System Services product provides a comprehensive set of views and commands that you can use to manage the IBM z/OS UNIX environment.

You can use the product to manage:

- IBM MVS address spaces that have been dubbed as z/OS UNIX address spaces
- Processes/threads that are running in the z/OS UNIX address spaces
- Files that are open for a process
- Information for mounted file systems
- Detailed file information, including size, owner, and file permissions
- HFS global buffer information and file-system statistics
- Address space information, including usage and delays
Users who are logged on or defined to UNIX System Services

System parameters in BPXPRMxx

Real-time IPC activity

In addition, you can:

- Specify required processes so that you can determine when required processes are missing
  MainView alarms can be set if any required processes are missing.

- Specify that certain HFS or zFS files be mounted so that you can determine when required files are not mounted
  MainView alarms can be triggered if important files are not mounted.

- View system BPXPRMxx parameters and dynamically modify them

- View and change the HFS global buffer limits, specifically the virtual storage maximums and fixed storage minimums

- View and dynamically change external HFS file-size allocation

- Perform many zFS administrative tasks

- Use a comprehensive set of file system and z/FS aggregate management functions

- Issue shell commands

You can also use the MainView Explorer interface to access all views and issue almost all of the same commands as from the ISPF interface.

MainView for UNIX System Services product address space (PAS)

A product address space (PAS) provides special services to one or more related products.

MainView for UNIX System Services uses the z/OS PAS, which houses the MainView for UNIX System Services data collectors. The z/OS PAS runs as a Started Task.

MainView for UNIX System Services, MainView for z/OS, and CMF MONITOR can either work as stand-alone products or share the z/OS PAS with either or both
of the other two products. Additional product address spaces might exist to support other MainView products.

For information about the commands used to control the PAS, see “Controlling the product address space (PAS)” on page 17.

---

**Note**

Although MainView for UNIX System Services and MainView for z/OS share the z/OS PAS, MainView for z/OS is not a prerequisite for MainView for UNIX System Services.

---

### Controlling the product address space (PAS)

Use the commands that are listed in the following table to control the PAS and start and stop the data collectors to alter the information.

#### Table 1: PAS modify commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC=START</td>
<td>Starts all of the MainView for UNIX System Services, MainView for z/OS, and CMF MONITOR data collectors at the same time</td>
</tr>
<tr>
<td>DC=STOP</td>
<td>Stops all of the MainView for UNIX System Services, MainView for z/OS, and CMF MONITOR data collectors at the same time</td>
</tr>
<tr>
<td>DC=REFRUID</td>
<td>Refreshes the UID cache to incorporate any changes made to the security database</td>
</tr>
<tr>
<td>DC=REFRGID</td>
<td>Refreshes the GID cache to incorporate any changes made to the security database</td>
</tr>
</tbody>
</table>

---

**Note**

Within the MainView for UNIX System Services product, you can also use the USSDC or DCSTAT view to control data collectors.

For more information see “Controlling data collectors” on page 103.

---

### Monitoring activities with MainView for UNIX System Services

The MainView for UNIX System Services product monitors a wide variety of processes and resources on your UNIX System Services system.

The monitored features include:
MVS address spaces that have been dubbed as MVS-OE address spaces

Processes/threads that are running in the MVS-OE address spaces

Files that are open for a process

Summary information for mounted file systems

IPC real-time activity

Detailed file information, including size, owner, and file permissions

HFS global buffer information and file-system statistics

Address space information, including usage and delays

Users who are logged on to UNIX System Services

System parameters in BPXPRMxx

zFS activity and cache details

latch and file contention information

shared library information

deleted files in use

process zombie count and parent information

file system growth spikes

These activities are categorized into one of the following groups:

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processes</td>
<td>You can use the MainView <em>for UNIX System Services</em> product to monitor the process activities that are associated with your UNIX System Services. Process activity that is monitored includes the current status, any delays, and resource usage. You can obtain information about a single process or access a summary of all active processes.</td>
</tr>
<tr>
<td>Threads</td>
<td>Information about active threads for a given process is also available in the THREADR view. To see the THREADR view, hyperlink from the PSOVER view.</td>
</tr>
</tbody>
</table>
### Group | Description
--- | ---
**File systems and file information** | MainView *for UNIX System Services* provides detailed information about all file systems, including specific data about individual files, which file systems are currently mounted, and the full directory names of the files. 
In addition, MainView *for UNIX System Services* displays information about storage allocation, I/O statistics, and index event data for HFS, zFS, and other file systems.

**System information** | You can track address space usage, delays, and activity through the address space views that are provided by MainView *for UNIX System Services*. 
You can also access MainView *for UNIX System Services* views to obtain information about the UNIX System Services parameter settings (SYS1.PARMLIB member BPXPRMxx).

**User information** | MainView *for UNIX System Services* includes a series of user views where you can determine such things as the length of time that a user has been logged on for a single session and the number of processes that a user has running.

**IPC real-time activity** | MainView *for UNIX System Services* includes a series of views to show real-time interprocess communication activity. 
You can access the views from the EZUSS or EZUFAST menu.

**Threshold alarms** | With MainView Alarm Management, your site can set thresholds for important indicators. 
You can also trigger alarms, based on thresholds, and then MainView Alarm Management sends the alarms to the ALARM view or to MainView AutoOPERATOR or to both. For details, see “MainView Alarm Management” on page 115.

**System-monitored intervals** | Although the MainView *for UNIX System Services* product continually gathers and stores information about processes, file systems, address spaces, parameters, and users, you control when and how often that information is displayed. 
Using MainView *for UNIX System Services*, you can display data in various intervals:

- Interval views display all of the information since the completion of the last full interval.
- Summary views display summarized information over multiple intervals that are requested with the TIME command.

**Historical data** | You can also use MainView *for UNIX System Services* to re-create the operating environment as it existed during a previous time period. This feature, called historical data, stores information about your operating environment at the end of each interval so that you can compare the current performance with a previous performance. By using this comparison, you can determine whether your system is working normally. 
For information about using historical data, see “Controlling UNIX System Services” on page 51 or type HELP TIME on any MainView COMMAND line.
Displaying information

The MainView for UNIX System Services product displays the information that it gathers in a view. Data about a particular topic is presented in tabular form (rows and columns). When you select a view, a query is executed against the data that is collected by MainView for UNIX System Services to retrieve the relevant information. The data is formatted according to a set of instructions associated with the view.

With MainView for UNIX System Services, you can change a view’s display without affecting its underlying query. The information that you have requested is the same, but it is presented in a different format. For information about how to change the form, type HELP FORM on any MainView COMMAND line.

MainView window interface

All MainView products use the MainView window interface or the MainView standard ISPF panel interface (or a combination of both). MainView for UNIX System Services operates primarily in the MainView window environment.

In the MainView window environment, each view is displayed in its own window. The top row of each window, called a window information line, shows the number and status of the window; the name of the view; the system, date, and time that are reflected by the view; and the name of the MainView product that you are currently using. A typical window information line looks like this example:

> W1 =PSOVERZ========SYSE=====*====15MARYYY==16:53:58====MVUSS====D===20

Everything below this line is called the display area. The top three lines of the MainView window interface are called the window control area. The control area consists of the following lines and fields:

- Information Display line (which contains the current date and time)
- COMMAND line
- SCROLL field
- CURR WIN (current window) field
- ALT WIN (alternate window) field

The exact appearance of the window information line with each view depends on many factors and to see information about any of these fields, place the cursor on the field and press PF1 (Help).
## View categories

The following types of views are available in MainView products:

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu</td>
<td>You can use menu views to hyperlink to other views. Some menus hyperlink to views that display information about your system; other menus hyperlink to more specific views or menus that you can use to focus on the information that you need.</td>
</tr>
<tr>
<td>Tabular</td>
<td>Tabular views are rows and columns of data. Each field in a given row addresses the same process, file system, or user ID. Most views are tabular.</td>
</tr>
<tr>
<td>Detail</td>
<td>Detail views provide detailed information about a particular process, file system, or resource. Although detail views might resemble tabular views, the fields in a detail view are actually completely independent from one another. PSINFO, FSINFO, and HFSINFO are all detail views.</td>
</tr>
<tr>
<td>Summary</td>
<td>Summary views compress several rows of data into a single row based on certain criteria. For example, a summary view focusing on process activity within a process group might compress the process records so that each process group is represented by a single row of data. All summary views are created from tabular views, using a View Customization option called GROUP BY. For more information, type <strong>HELP CUSTOM</strong> on the <strong>COMMAND</strong> line, and then select the <strong>GROUP BY</strong> option.</td>
</tr>
<tr>
<td>Detail Summary</td>
<td>Detail summary views provide detailed information for a single resource, similar to detail views. However, the information might be summarized for one or more subresources and, possibly, multiple intervals. For instance, ASINFOZ is a detail summary view that displays summarized process statistics for a single address space. If multiple intervals have been requested (using the TIME command), the statistics are summarized over multiple intervals.</td>
</tr>
</tbody>
</table>

**MainView for UNIX System Services** provides views that are divided into the following categories:

- Process views, which monitor process resource usage and delay
- File-system views, which provide overviews and detailed statistics for HFS, zFS, and other file systems, as well as standard file systems
- System views, which provide information about address-space usage and delays, as well as UNIX System Services parameter settings (SYS1.PARMLIB member BPXPRMxx)
- User views, which organize process activity by the group ID or user ID and display the currently idle users
Customizing views and Help text

One of the primary advantages of the MainView for UNIX System Services window interface is the ability to customize all views and Help text to meet the particular needs of your site.

**Note**

Easy menus, such as EZUSS, cannot be customized.

- **View customization**
  
  With the MainView View Customization facility, you can organize your data in multiple ways. For example, you can:

  - Sort on multiple columns
  - Rearrange columns
  - Graph the data
  - Modify the view so that certain columns are completely hidden, thus displaying only the data that you need

  To enter the View Customization facility, type **CUSTom** on the **COMMAND** line.

- **Help text customization**

  To create your own Help text, see the **MainView Administration Guide**. You can store this Help text in your own private Help text library or make it accessible to all MainView for UNIX System Services users at your site.

Getting Help about views

MainView views are virtually self-documenting, meaning that no matter how you customize a view by using the CUSTom command, the online Help always draws from the most current information and is always accurate.

The different types of available online Help are described in **Table 2 on page 23**.
Table 2: Online Help for MainView products

<table>
<thead>
<tr>
<th>To display this information</th>
<th>Do this action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help for a view</td>
<td>Place the cursor on the view name on the window information line and press PF1.</td>
</tr>
<tr>
<td></td>
<td>Alternatively, on the COMMAND line, type HELP viewName.</td>
</tr>
<tr>
<td></td>
<td>View Help displays other topics that tell you which parameters are currently in effect, which fields are included and excluded within the view, which fields have hyperlinks (and to where), and so on.</td>
</tr>
<tr>
<td>Help about a field that appears in a view</td>
<td>Place the cursor on the field and press PF1.</td>
</tr>
<tr>
<td>Help about a field in the window information line</td>
<td>Place the cursor on the field and press PF1.</td>
</tr>
<tr>
<td>Help with a command or topic pertaining to the MainView window interface itself</td>
<td>On the COMMAND line, type HELP topicId.</td>
</tr>
<tr>
<td></td>
<td>For example, typing HELP ASU gives you Help for the ASU command.</td>
</tr>
<tr>
<td></td>
<td>Alternatively, place the cursor on the COMMAND line and press PF1 to display the MainView Help tutorial. Select either Beginning or Advanced topics, or type INDEX to display all of the available topics.</td>
</tr>
</tbody>
</table>

Navigating in MainView for UNIX System Services

The MainView for UNIX System Services product displays collected information in the form of views — one view for each type of activity, area of interest, and time frame.

The following methods display these views and the rest of the services that are provided by MainView for UNIX System Services:

- Hyperlinks
- Menus
- Commands

Note
Type VIEWS on the COMMAND line to generate a list of most of the MainView for UNIX System Services views; you can hyperlink to all of them.
Using hyperlinks

A hyperlink is a link from a field in a view to another view or a command. When you place your cursor on a field for which a hyperlink exists and press Enter, the underlying command is executed and its output is displayed.

Fields with hyperlink properties appear in a different color on your terminal. On monochrome terminals, hyperlinked fields appear in bold.

In every MainView window interface product you can develop your own hyperlinks, which will save time and steps when going from one view to another view. For instructions about overriding the default hyperlinks and creating your own hyperlinks, type HELP HYPERLINK on the COMMAND line.

The following example describes using a hyperlink for the PSOVERZ view (Figure 1 on page 24).

Figure 1: PSOVERZ view

When you look at PSOVERZ, you see that the total delay percentage (Total Dly%) is exceptionally high for several processes, including the process with BPXOINIT in the Jobname column.

To investigate why the usage is so high for BPXOINIT, you can split the display to show two windows at once

1. On the COMMAND line, type HSplit.

   HSplit indicates that the display will be split horizontally into two windows.

2. Move the cursor down to the position at which you want the next window to begin.

3. Press Enter.
The display is now divided (see Figure 2 on page 25).

**Figure 2: Splitting the display**

The empty space at the bottom of the display will be replaced with the PSDELAYZ view when you hyperlink there.

4 To execute the hyperlink for the Total Dly% field
   a In the ALT WIN field, type 2.
   b Place the cursor on the value in the Total Dly% field for the process with the command name BPXPINPR.
   c Press Enter.

Now the PSOVERZ view is displayed in the top half and the PSDELAYZ view is displayed in the bottom half.

**Figure 3: Using a split display with a hyperlink**

You can continue to hyperlink to other views to gather additional information. You can either open them in new windows or replace the views in windows 1 and 2.
Using easy menus

An easy menu contains hyperlinks that allow you to access data views or other easy menus for a specific option. All easy menus begin with the letters EZ. Use these menus to locate specific information without entering the exact name of the view.

EZUSS (Figure 4 on page 26) is the view name for the primary easy menu for MainView for UNIX System Services.

Figure 4: EZUSS menu

From EZUSS, you can hyperlink to many of MainView for UNIX System Services views and actions.

Using commands

To display a view by using commands, type the view name or command on the COMMAND line.

You can also filter data by specifying parameters with your view commands.

For example, to display the PSOVERZ view with only processes whose command names start with EZB, type PSOVERZ EZB*, using the asterisk (*) wildcard character to represent any characters following EZB.
The output is displayed in Figure 5 on page 27.

Figure 5: PSOVERZ processes with EZB* command names

`DDMHYYYY HH:MM:SS -------- MainView WINDOW INTERFACE (Vv,r.mm) ------------
COMMAND ===> SCROLL ===> CSR
CURR WIN ===> 1 ALT WIN ===> >W1 =PSOVERZ=============SJSE=====*========DDMHYYYY==HH:MM:SS====MVUSS====D====4
C ProcessId Command  Elapsed  Jobname  Stepname Multi- Total Total Total Total
- ---------- Name     ProcTime -------- -------- Thread  Dly%  Run%  Zomb%  Othr%
9 EZBTIMST 05:38:26 DC$TCPIP DC$TCPIP No      0.00  100   0.00  0.00
16777219 EZBTCPIP 05:38:39 DC$TCPIP DC$TCPIP Yes     0.00  100   0.00  0.00
33554436 EZBTMCTL 05:38:30 DC$TCPIP DC$TCPIP No      0.00  100   0.00  0.00
33554437 EZBTSSL 05:38:31 DC$TCPIP DC$TCPIP No      0.00  100   0.00  0.00`

Displaying multiple views simultaneously

While using commands to display views, you can also display multiple views at the same time. This feature is helpful when you are trying to diagnose a problem by comparing two views.

To display multiple views

1. On the COMMAND line, type the name of a view that you want to display, and press Enter.

   To display the PSUSE view, type:

   PSUSE

2. On the COMMAND line, type HSplit.

   **Note**
   Do not press Enter yet.

3. Move the cursor to where you want the top of the second view to appear.

4. Press Enter.

   MainView for UNIX System Services sets the CURRENT WINDOW field to 2.

5. On the COMMAND line, type the name of another view and press Enter

   PSSTAT

   **Example**
   For example, if you type PSUSE and PSSTAT, the view appear simultaneously.
When you issue a command with multiple views open, ensure that the number in the CURRENT WINDOW field reflects the number of the target view for that command.

If you have multiple windows open, you can use a shortcut to enter multiple views and parameters at one time. Use the ISPF delimiter (usually a semicolon) as shown in the next example.

For example, to instruct PSUSE to appear in the top half of the display and PSSTAT to appear in the bottom half of the display, set the CURRENT WINDOW field to 1 after splitting the display in Step 4 on page 27, and type the following command:

```
PSUSE;NEXT;PSSTAT
```

The results can be seen in Figure 6 on page 28.

**Figure 6: Using ISPF delimiter to display two views**

```
DDMMMYYYY HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm)---------- COMMAND  ===> SCROLL ===> PAGE
CURREN WIN ===> 2 ALT WIN ===> >W1 -PSUSE-------------SJSC-----*--------DDMMMYYYY--HH:MM:SS----MVUSS----D---64
C ProcessId Command Elapsed Jobname Running % Sys Call Interval# 0....50...100 Rate Sys Calls
- ---------- Name ProcTime -------- Name ------- ProcTime -------- Name ------- ProcTime -------- Name ------- ProcTime -------- Name ------- ProcTime -------- Name ------- ProcTime -------- Name ------- ProcTime
8 EZBTCPIP 13:31:25 DC$TCPIP 100.0 ************* 0.00000 0
17 EZBTTSSL 13:31:17 DC$TCPIP 100.0 ************* 0.00000 0
18 EZBTMCTL 13:31:17 DC$TCPIP 100.0 ************* 0.00000 0
25 GFSCMAIN 13:31:10 DG$NFS 100.0 ************* 0.00000 0
28 BBM95Z2O 13:31:07 DG$PAS 100.0 ************* 3.76866 2209
29 EZBTMSTM 13:31:04 DG$TCPIP 100.0 ************* 2.66314 1561
46 TCPMOMVS 02:28:29 XTSTIPAS 100.0 ************* 0.99463 583

>W2 =PSSTAT============SJSC=====*========DDMMMYYYY==HH:MM:SS====MVUSS====D===64
C ProcessId Command Elapsed Jobname P Kernel Status MVS Proc Status Stop
- ---------- Name ProcTime -------- S ------------------------ Status  Stop
1 BPXPINPR 13:32:35 BPXOINIT F File System kernel wait SWAPPED No
6 Inetd 13:32:13 INETD4 F File System kernel wait SWAPPED No
8 EZBTCPIP 13:31:55 DC$TCP4 R Not waiting for kernel No
9 GFSCRPCD 13:31:48 DG$NFSC A IPC Message Receive wait No
10 GFSCRPCD 13:31:48 DG$NFSC A IPC Message Receive wait No
11 GFSCRPCD 13:31:48 DG$NFSC A IPC Message Receive wait No
```

**Using view parameters**

Most views have been defined with a set of parameters that can be used to filter the view. Use the view Help information to discover the parameters that are defined to a specific view.

**Determining positional parameters**

When you use positional parameters, you supply values for the parameters in a predetermined order.
To determine positional parameters

1. Display the view’s online Help by placing the cursor on the view name and pressing PF1.

In the example in Figure 7 on page 29, the view name is PSOVER.

**Figure 7: Using the PSOVER view online Help to determine the positional parameters**

<table>
<thead>
<tr>
<th>DDMMYYYY</th>
<th>HH:MM:SS</th>
<th>MainView WINDOW INTERFACE (Vv.r.mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMAND</td>
<td>SCROLL</td>
<td>PAGE</td>
</tr>
<tr>
<td>CURR WIN</td>
<td>ALT WIN</td>
<td>&gt;H1 -PSOVER-------------SJSC-------*-----------DDMMYYYY--HH:MM:SS-----MVUSS-----D----64</td>
</tr>
<tr>
<td>C ProcessId</td>
<td>Command</td>
<td>Elapsed</td>
</tr>
<tr>
<td>Name</td>
<td>ProcTime</td>
<td>--------</td>
</tr>
<tr>
<td>1</td>
<td>BPX</td>
<td>Help</td>
</tr>
<tr>
<td>6</td>
<td>ine</td>
<td>Help</td>
</tr>
<tr>
<td>7</td>
<td>EZA</td>
<td>Scroll</td>
</tr>
<tr>
<td>8</td>
<td>EZA</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>EZB</td>
<td>0</td>
</tr>
<tr>
<td>11</td>
<td>FTP</td>
<td>PSOVER is a tabular view that allows you to</td>
</tr>
<tr>
<td>12</td>
<td>BBM</td>
<td>analyze the performance and utilization of</td>
</tr>
<tr>
<td>16777218</td>
<td>BBM</td>
<td>resources for selected processes. Use PSOVER to</td>
</tr>
<tr>
<td>16777219</td>
<td>ESB</td>
<td>monitor process activity during an interval.</td>
</tr>
<tr>
<td>16777231</td>
<td>OMV</td>
<td>0</td>
</tr>
<tr>
<td>33554436</td>
<td>ESB</td>
<td>For more information on this view, place the</td>
</tr>
<tr>
<td>33554445</td>
<td>BBM</td>
<td>cursor on one of the following topics and press</td>
</tr>
<tr>
<td>o Actions available from this view</td>
<td>ENTER</td>
<td>0</td>
</tr>
<tr>
<td>o Elements in this view</td>
<td>PSOVER is a TABULAR SUMMARY view</td>
<td></td>
</tr>
<tr>
<td>o Positional parameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Keyword parameters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Forms that are valid for this view</td>
<td></td>
<td></td>
</tr>
<tr>
<td>o Sort information</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Place the cursor on the **Positional parameters** field and press Enter.
The positional parameters are displayed; see Figure 8 on page 30.

**Figure 8: PSOVER view positional parameters**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CURR WIN</th>
<th>ALT WIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Interval Process Activity</td>
<td>Help</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Help</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command ==&gt;</td>
<td>Scroll ==&gt; CSR</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Jobname</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Condition:</td>
<td>Column Header:</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Command / Name</td>
<td></td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>Jobname</td>
<td></td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

For more information on using positional parameters, see the positional parameters topic.

**Figure 8 on page 30** shows that the positional parameters are Command / Name and Jobname. You can use this information to modify your views and show only specific data.

3 To return to the main window, press PF3 twice.

4 On the COMMAND line, type PARm * DC*.

This command changes the view to show only the requested information without refreshing the data. Figure 9 on page 30 shows only those processes whose job names start with DC.

**Figure 9: Filtering with positional parameters**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CURR WIN</th>
<th>ALT WIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command ==&gt;</td>
<td>Scroll ==&gt; CSR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobname</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter Condition:</td>
<td>Column Header:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command / Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jobname</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Even though **Jobname** is the fifth column, it is the second parameter.
When you specify a value for any view parameter other than the first parameter, all preceding parameters must be accounted for by the asterisk (*) wildcard character.

In the example in Figure 9 on page 30 you filtered the view by the **Jobname** parameter, so you placed an asterisk in the command to account for the **Command Name** parameter. This wildcard does not affect the output but serves as a placeholder so that you can use the positional parameters correctly.

### Using keyword parameters

A keyword parameter is the element name of a column. An element name is the name by which the MainView for UNIX System Services product refers to a column internally. You can use the keyword parameter to achieve the same result as using the positional parameter.

### To determine the keyword parameters

1. Place the cursor on the view name and press **PF1** to display PSOVER’s online Help (see Figure 10 on page 31).

---

**Figure 10: Using the PSOVER view online Help to determine keyword parameters**

DDMMYYYY HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm) --------
COMMAND ===> SCROLL ===> PAGE
CURR WIN ===> 1 ALT WIN ===>
>HI =POVER-----------SJS--*-------DDMMYYYY=HH:MM:SS=MVUSS=D----64
C ProcessId Command Elapsed Jobname Stepname Multi- Total Total Total Total
-------- Name Proctime -------- Thread Dly% Run% Zomb% Othr%
1 BPX +----------------------------------------------------+ 0 0.00
6 ine Help Interval Process Activity Help 0 100
7 EZA Command ===> $croll ===> CSR 0 0.00
8 EZA
9 EZA
11 FTP PSOVER is a tabular view that allows you to 0 0.00
12 BBM analyze the performance and utilization of 0 100
16777218 BBM resources for selected processes. Use PSOVER to 0 0.00
16777219 EZA monitor process activity during an interval. 0 0.00
16777231 OMV 0 0.00
33554436 EZA For more information on this view, place the 0 0.00
33554437 EZA cursor on one of the following topics and press 0 0.00
33554445 BBM ENTER.
     o Actions available from this view
     o Elements in this view
     o Positional parameters
     o Keyword parameters
     o Forms that are valid for this view
     o Sort information
PSOVER is a TABULAR SUMMARY view.
Place your cursor on the **Keyword parameters** field and press **Enter**.

The **keyword entered** parameters are displayed (see Figure 11 on page 32).

**Figure 11: PSOVER view keyword parameters**

```
DDMMYYYY HH:MM:SS --- MainView WINDOW INTERFACE (Vv.r.mm) ---
COMMAND  ===>  SCROLL ===> PAGE
CURR WIN ====> 1      ALT WIN ===>
>WI =PSOVER----------SJSC----------DDMMYYYY=HH:MM:SS=MVUS=64
C ProcessId Command Elapsed Jobname Stepname Multi Total Total Total Total
- -------- Name     ProcTime -------- -------- Thread Dly% Run% Zomb% Othr%
1 BPX +----------------------------------------------------+ 0 0.00
6 ine | Help        Interval Process Activity         Help | 0 100
7 EZA +----------------------------------------------------+ 0.00
8 EZA | Help         Keyword Parameters               Help | 0.00
9 EZB | Command ==>                        Scroll ==> CSR  | 0.00
11 FTP +----------------------------------------------------+ 0.00
12 BBM 100
16777218 BBM
16777219 EZB
16777231 OMV
22554436 EZB
22554437 EZB
22554445 BBM
The keyword parameters for this view are:

E = ‘*’
P3GCMDN
G = ‘DC*’
PRGJOBN

Any element may be used as a keyword parameter as long as it has a filter. Use the WHERE command or the L - Filter option in view customization to set a filter when necessary.

For more information on using keyword parameters, see the keyword parameters topic.
```

**Figure 11 on page 32** shows that the keyword parameter for Jobname is **PRGJOBN**. In addition to typing **PARm * DC***, you could also type the following text to display the same data:

**PARm PRGJOBN (DC*)**

**Using the PARm command**

Because the view was already displayed, you used the PARm command in place of the view name to supply new parameters. PARm is much faster than using the view names because the PARm command places a filter on the existing data, rather than engaging the data collectors to gather new data.

PARm works for both positional and keyword parameters.
Accessing MainView for UNIX System Services from MainView Explorer

You can select MainView for UNIX System Services from MainView Explorer, a client/server application that lets you access certain MainView products from your desktop by using a web browser.

For more information about using MainView Explorer, refer to the MainView User Guide.

To access MainView for UNIX System Services from MainView Explorer

1. Set a context in the navigation frame, which is displayed in the upper left side of the MainView Explorer window.

2. In the Products tree (lower left side), double-click MainView for UNIX System Services to invoke the services.

With MainView Explorer, you can perform many of the same tasks as from a 3270 console. For some examples, refer to “Accessing the FSMOUNT view from MainView Explorer” on page 78.
Solving performance problems

The MainView for UNIX System Services product is designed to detect performance problems or potential problems of UNIX System Services and take corrective action to resolve the issues. MainView easy menus allow you to easily access any MainView for UNIX System Services view without knowing the view name.

After you access a view, you can obtain more detailed information regarding UNIX System Services. If you notice a potential problem in the data, you can use historical data to compare the current data to previous data to determine whether there is really a problem.

Using MainView easy menus

The MainView for UNIX System Services product provides a set of easy menus that you can use without having to remember all of the view names.

MVUSS Easy Menu

The MVUSS Easy Menu, EZUSS, is an easy menu that you can use to access other high-level easy menus, such as EZUPRCS (Processes Easy Menu) and EZUFSYS (File Systems Easy Menu).

Figure 12: MVUSS Easy Menu (EZUSS)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; System</td>
<td>&gt; Alarm Management</td>
</tr>
<tr>
<td>&gt; Processes</td>
<td>&gt; Environment Settings</td>
</tr>
<tr>
<td>&gt; File Systems</td>
<td>&gt; MVUSS Fast Menu</td>
</tr>
<tr>
<td>&gt; Users</td>
<td>&gt; MVUSS Action Menu</td>
</tr>
<tr>
<td>. IPC Realtime Activity</td>
<td>. USS Data Collectors</td>
</tr>
<tr>
<td>. Shared Library Usage</td>
<td>. z/OS UNIX Commands</td>
</tr>
<tr>
<td>. USS Init Log</td>
<td>. z/OS UNIX Help</td>
</tr>
<tr>
<td>. USS Job Overview</td>
<td>. z/OS UNIX Tests</td>
</tr>
<tr>
<td>. USS Job Delays</td>
<td>. Return...</td>
</tr>
<tr>
<td>. USS Waiters</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place cursor on menu item and press ENTER</th>
<th>Product Hyperlinks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt; TCP/IP Performance</td>
</tr>
<tr>
<td></td>
<td>&gt; WebSphere Performance</td>
</tr>
<tr>
<td></td>
<td>&gt; z/OS Performance</td>
</tr>
</tbody>
</table>
Options on this menu are grouped into the following categories:

- Activity options
  Activity options display submenus that give you an overview of some aspect of your system’s performance. From these overview submenus, you can selectively display information about a particular element by hyperlinking to a menu that is specific to the element.

- Utilities options
  Utilities options display submenus from which you can access a broad variety of information.

**MVUSS Fast Menu**

The MVUSS Fast Menu (EZUFAST) is an easy menu that provides access to many of the most useful functions on one view.

*Figure 13: MVUSS Fast Menu (EZUFAST)*

```
DDMMMMYY 18:54:56 ------ MAINVIEW WINDOW INTERFACE          SCREEN MVUSS
COMMAND ===>  SCROLL ====> CSR
CURR WIN ===> 1          ALT WIN ===>  
W1 =EZUFAST==============SJSCUSSQ=*========DDMMMMYY==18:54:56====MVUSS====D====1

MVUSS Fast Menu

<table>
<thead>
<tr>
<th>System</th>
<th>Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Configuration</td>
<td>Alarm Management</td>
</tr>
<tr>
<td>System Parameters</td>
<td>Environment Settings</td>
</tr>
<tr>
<td>System Overview</td>
<td>MVUSS Easy Menu</td>
</tr>
<tr>
<td>IPC Realtime Activity</td>
<td>MVUSS Action Menu</td>
</tr>
<tr>
<td>Shared Library Usage</td>
<td>USS Data Collectors</td>
</tr>
<tr>
<td>USS Init Log</td>
<td>z/OS UNIX Commands</td>
</tr>
<tr>
<td>USS Job Overview</td>
<td>z/OS UNIX Help</td>
</tr>
<tr>
<td>USS Job Delays</td>
<td>z/OS UNIX Test</td>
</tr>
<tr>
<td>USS Waiters</td>
<td>File Systems</td>
</tr>
<tr>
<td>Processes</td>
<td>Root Directory</td>
</tr>
<tr>
<td>Overview</td>
<td>Root Largest File/Dirs</td>
</tr>
<tr>
<td>Resource Usage</td>
<td>Mounted File Systems</td>
</tr>
<tr>
<td>Delays</td>
<td>Watched File Systems</td>
</tr>
<tr>
<td>Required Processes</td>
<td>Watched File Sys I/O</td>
</tr>
<tr>
<td>CPU Usage by Jobname</td>
<td>Required File Systems</td>
</tr>
<tr>
<td>Individual Limits</td>
<td>File Contention</td>
</tr>
<tr>
<td>Current Threads</td>
<td>Deleted Files in Use</td>
</tr>
<tr>
<td>Zombies</td>
<td>Attached zFS File Sys</td>
</tr>
<tr>
<td>Current Status</td>
<td>zFS Aggregate Overview</td>
</tr>
<tr>
<td>Command Name</td>
<td>zFS File Sys Activity</td>
</tr>
</tbody>
</table>
```

**System overview**

From the EZUEASY menu, select the **System** option to view the EZUSYS menu.
The EZUSYS menu (Figure 14 on page 37) provides options that hyperlink to views regarding key performance areas of your system.

**Figure 14: EZUSYS menu**

```
DDMMYYYY  HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm)  ---------------
COMMAND ====>
CURR WIN ===> 1        ALT WIN ===> W1 -EZUSYS-------------SJSCUSSQ=*--------DDMMYYYY=05:28:15===MVUSS====D====1
System Easy Menu
. System Overview                +----------------------+ . Overview
   . Overview
   . Configuration
   +----------------------+
   Parameters
   . System Parameters
   . IPCS System Parameters
   . BPXPRMs Table
   . USS Address Space
   . Delays
   . CPU Usage by Jobname
   +----------------------+
   Return...
```

From EZUSYS, you can hyperlink to information regarding your system parameters and the MainView for UNIX System Services address space overview information and delays.

**Processes**

Hyperlink from the Processes option of the EZUEASY menu to access the Processes Easy Menu, EZUPRCS.

From EZUPRCS (Figure 15 on page 37), you can hyperlink to views that contain data regarding process activity.

**Figure 15: EZUPRCS menu**

```
DDMMYYYY  HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm)  ---------------
COMMAND ====> SCROLL ===> PAGE
CURR WIN ===> 1        ALT WIN ===> W1 -EZUPRCS-------------SJSC=====*--------DDMMYYYY==HH:MM:SS====MVUSS====D====1
Processes Easy Menu
. Activity                +----------------------+ . Command Name
   . Overview
   . Resource Usage
   +----------------------+
   Required Processes
   . CPU Usage by Jobname
   . Individual Limits
   . Current Threads
   . Zombies
   . Current Status
   . Process Tree
   +----------------------+
   Place cursor on menu item and press ENTER
   Return...
```

EZUPRCS is divided into activity information and general information. The activity options lead you to information about specific process activity, including resource usage and delays. The general options provide more general information about a process, including the current status and command that is associated with that process.
**File systems**

The **Filesystems** option displays the File Systems Easy menu, EZUCFS.

This menu provides access to detailed information about file systems, including HFS and zFS file systems. **Figure 16 on page 38** displays the File Systems Easy menu.

For more information about administering file systems, refer to “Controlling UNIX System Services” on page 51.

**Figure 16: EZUCFS menu**

<table>
<thead>
<tr>
<th>DDMMMYYYY</th>
<th>HH:MM:SS</th>
<th>MainView WINDOW INTERFACE (Vv.r.mm)</th>
<th>SCROLL =&gt; CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMAND</td>
<td>=&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURR WIN</td>
<td>=&gt; 1</td>
<td>ALT WIN =&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;W1 =EZUCFS============SJSCJON5=*========DDMMMXYY==06:57:46====MVUSS======D====1==</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**File Systems Easy Menu**

- **File Systems**
  - Root Directory
  - Root Largest File/Dirs
  - Mounted File Systems
  - Watched File Systems
  - Watched File Sys I/O
  - Required File Systems
  - Deleted Files in Use

- **zFS Filesystems**
  - Attached File Systems
  - Aggregate Overview
  - File System Activity
  - Cache Overview
  - Cache Details
  - Required zFS Files

- **HFS Global Data**
  - Detail
  - Buffer Usage
  - HFS Data Spaces

- **HFS Filesystems**
  - Watched HFS Overview
  - Watched HFS I/O
  - Required HFS Files

**EZUCFS displays hyperlinks that you can use to access information, as follows:**

<table>
<thead>
<tr>
<th>Hyperlinks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>File systems</td>
<td>Data about all mounted file systems includes usage and space utilization, I/O counts and rates, directory listings, status of required file systems, and information about file contention. The Current File Systems hyperlink list all file systems that are currently mounted and contains mostly static information. The Watched File Systems are file systems the user specifies in UBBPARM member BBUTSRH0 as watched file systems. The data collected for these files is recorded to the history file. Gathering this data in a shared DASD environment causes some XCF traffic for each HFS file reported.</td>
</tr>
<tr>
<td>HFS file systems</td>
<td>HFS file-system information includes space utilization, I/O activity, and any required HFS files that are not mounted.</td>
</tr>
<tr>
<td>HFS global buffers</td>
<td>HFS global buffer data shows the global buffer usage. If you have the MainView for z/OS product, you can hyperlink to see the data space view for global buffers.</td>
</tr>
<tr>
<td>zFS file systems</td>
<td>zFS file-system information includes attached aggregates, mount status, and usage.</td>
</tr>
</tbody>
</table>

Using MainView easy menus

MainView for UNIX System Services User Guide and Reference
**Users**

The User Activity Easy Menu, EZUUSRS, contains hyperlinks to detailed information regarding individual users, group activities, and the number of idle users.

*Figure 17 on page 39 displays the User Activity Easy Menu.*

**Figure 17: EZUUSRS menu**

```
DDMMMYYYY HH:MM:SS -------- MAINVIEW WINDOW INTERFACE (Vv.r.mm) ----------
COMMAND ===> SCROLL ===> CSR
CURR WIN ===> 1 ALT WIN ===>
W1 =EZUUSRS=--------SJSCUSSQ=*========DDMMMYYYY==05:32:43====MVUSS====D====1=======
```

- Activity
  - User Summary
  - Group Summary

**Return...**

---

**USS address spaces**

The **USS Address Spaces** option is a hyperlink from EZUSS to ASOVERZ.

ASOVERZ displays process statistics that are summarized by the address space token. *Figure 18 on page 39 displays the USS Address space option.*

Use ASOVERZ to view resource usage for all UNIX System Services address spaces based on the processes that are running in those address spaces.

*Figure 18: ASOVERZ view*

```
DDMMMYYYY HH:MM:SS -------- MAINVIEW WINDOW INTERFACE (Vv.r.mm) --------------
COMMAND ===> SCROLL ===> CSR
CURR WIN ===> 1 ALT WIN ===>
>W1 =ASOVERZ=--------SJSE=====*========DDMMMYYYY==HH:MM:SS====MVUSS====D===12
Jobname  Hex  T Service  Total Total Idle%  %Delay   Prcs Total       PrcsTot
-------- ASID - Class     Dly%  Use%       Unknown AvgMem CPU Time       CPU%
AAAO61    60 S STCNRM    0.00  0.00 100.0    0.00  2.9Mi 00:04:03.46    0.06
AAOTC5B    7A S STCNRM    0.00  0.00 100.0    0.00  1.3Mi 00:00:03.84    0.06
AAOTC6E    7B S STCNRM    0.00  0.00 100.0    0.00  2.4Mi 00:00:00.02    0.04
BCVQ535E  175 S STCNRM    0.00  0.00 100.0    0.00 50.6Mi 00:00:03.25    0.01
BCVQ610E   75 S STCNRM   10.00 90.00  0.00    0.00 51.0Mi 00:17:50.06   24.27
BPXOINIT  173 S SYSTEM    0.00  0.00 100.0    0.00  98304 00:00:02.91    0.00
DB2JDIST   70 S SYSSTC    0.00  0.00 100.0    0.00  8.2Mi 00:00:00.02    0.00
DC$FTSRV  4B S SYSSTC    0.00  0.00 100.0    0.00 15.8Mi 00:00:00.02    0.00
DC$PAS     4A S STCNRM    0.00  0.00 100.0    0.00  3.5Mi 00:00:11.13    0.30
XUSSKPAS   73 S STCNRM    0.00  0.00 100.0    0.00  5.7Mi 00:00:00.02    0.00
```
IPC realtime activity

The **IPC Realtime Activity** option provides a hyperlink to IPCOVER, which contains a detailed view of the IPC message activity, semaphore activity, and shared-memory activity.

**Figure 19 on page 40** displays the **IPC Realtime Activity** option. If any activity exists, you can obtain more information by hyperlinking on:

- **IPC Type . . . . Message Qs**— hyperlinks to IPCMSGR
- **IPC Type . . . . Semaphores**— hyperlinks to IPCSEMR
- **IPC Type . . . . Shared Mem**— hyperlinks to IPCSHMR

**Figure 19: IPCOVER view**

<table>
<thead>
<tr>
<th>IPC Type...... Message Qs</th>
<th>IPC Type...... Semaphores</th>
<th>IPC Type...... Shared Mem</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSQs Allowed.. 20000</td>
<td>SEMs Allowed.. 500</td>
<td>SHMs Allowed.. 500</td>
</tr>
<tr>
<td>MSQs Cur Max.. 6</td>
<td>SEMs Cur Max.. 0</td>
<td>SHMs Cur Max.. 0</td>
</tr>
<tr>
<td>MSQs in use.... 6</td>
<td>SEMs in use... 0</td>
<td>SHMs in use... 0</td>
</tr>
<tr>
<td>MSQs PRIVATE.. 5</td>
<td>SEMs PRIVATE.. 0</td>
<td>SHMs PRIVATE.. 0</td>
</tr>
<tr>
<td>MSQs KEYed.... 1</td>
<td>SEMs KEYed... 0</td>
<td>SHMs KEYed... 0</td>
</tr>
<tr>
<td>MSGET Denied.</td>
<td>SEMGET Denied.</td>
<td>SHMGET Denied.</td>
</tr>
<tr>
<td>MAX Bytes/Que. 262144</td>
<td>MAX SEMs/Set.. 25</td>
<td>MAX Pag/SysLmt 262144</td>
</tr>
<tr>
<td>MAX Msg/Que... 10000</td>
<td>MAX Ops/SEMOP.. 25</td>
<td>MAX Pag/SegLmt 4096</td>
</tr>
<tr>
<td>MSGSNDs ENOMEM</td>
<td>Storage Limit.. 100000000</td>
<td>MAX Pag/PrCLmt 10</td>
</tr>
<tr>
<td></td>
<td>Largest Seg...</td>
<td></td>
</tr>
</tbody>
</table>

**MVUSS Easy Action Menu**

The **EZ Action Menu** option is a hyperlink from the EZUEASY menu to the EZUACTS menu.

**Figure 20 on page 41** displays the MVUSS Easy Action Menu.
You can take several actions from various views to control UNIX System Services. The EZUACTS menu summarizes these actions by indicating which view supplies the action and which line command or hyperlink provides the action.

**Figure 20: Easy Action (EZUACTS) menu**

<table>
<thead>
<tr>
<th>View</th>
<th>Line Command</th>
<th>Description</th>
<th>Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPXPRM</td>
<td>S</td>
<td>Select BPXPRM to change</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>E</td>
<td>Extend a file system</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>L</td>
<td>List largest files in file system</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>M</td>
<td>Mount another file system</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>NH</td>
<td>Create a new HFS file system</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>P</td>
<td>Show processes using the file system</td>
<td>PAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>RM</td>
<td>Stop watching a file system</td>
<td>SUP</td>
</tr>
<tr>
<td>FSMNT</td>
<td>S</td>
<td>Show mount point directory listing</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>U</td>
<td>Unmount the file system</td>
<td>UAS</td>
</tr>
<tr>
<td>FSMNT</td>
<td>W</td>
<td>Watch (monitor) a file system</td>
<td>SUP</td>
</tr>
<tr>
<td>FSPACE</td>
<td>AC</td>
<td>Create an archive using tar</td>
<td>UAS</td>
</tr>
<tr>
<td>FSPACE</td>
<td>AT</td>
<td>List archive table of contents</td>
<td>UAS</td>
</tr>
</tbody>
</table>

**Alarm Management view**

From the EZUEASY menu, hyperlink on the **Alarm Management** option to access the EZALARMS view.

**Figure 21 on page 41** displays the EZUEASY menu.

**Figure 21: EZALARMS menu**

<table>
<thead>
<tr>
<th>View</th>
<th>Line Command</th>
<th>Description</th>
<th>Security</th>
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</thead>
<tbody>
<tr>
<td>Alarm Definition Lists</td>
<td>By Name</td>
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<tr>
<td>Alarm Definition Lists</td>
<td>By Library</td>
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<tr>
<td>Alarm Definition Lists</td>
<td>By Group</td>
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<tr>
<td>Alarm Definition Lists</td>
<td>By Product</td>
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<tr>
<td>Alarm Definition Lists</td>
<td>By Target (Context)</td>
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<tr>
<td>Active Alarms</td>
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<td>Migrated Alarms</td>
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<tr>
<td>Summary by Group</td>
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<tr>
<td>Modification Log</td>
<td>Alarm Modifications</td>
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<td>Alarm Parm Actions</td>
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<td>Alarm Parm Actions</td>
<td>Status and Performance</td>
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<td>Alarm Parm Actions</td>
<td>Alarm Evaluator Status</td>
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</tbody>
</table>
You can hyperlink from EZALARMS to other views to display alarms and view alarm definitions. When you add or edit an alarm definition, you can customize the alarm messages as well as threshold levels, monitoring frequency, and action that is taken when an alarm occurs.

For more information about MainView Alarm Management, refer to “MainView Alarm Management” on page 115.

MainView environment

MainView for UNIX System Services also provides an easy menu for your environmental settings called EZUENV.

**Figure 22: EZUENV menu**

```
DDMMYYYY  12:09:19 ------ MAINVIEW WINDOW INTERFACE (Vv.r.mm) ---------------
COMMAND  ===>                                                 SCROLL ===> CSR
CURR WIN ===> 1        ALT WIN ===>  
W1 =EZUENV================SJSCUSSQ=*========DDMMMYYY==12:09:19====MVUSS====D====1

Environment Settings

<table>
<thead>
<tr>
<th>Change System</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>. Select Target</td>
<td>. USS Action Security</td>
</tr>
<tr>
<td>. Select SSI Context</td>
<td>. USS Data Collectors</td>
</tr>
<tr>
<td>&gt; All Views</td>
<td>. PAS Data Collectors</td>
</tr>
<tr>
<td></td>
<td>. Historical Data Sets</td>
</tr>
</tbody>
</table>
```

With EZUENV, you can change your target, SSI context, and product, as well as view your data collector status, and view historical data sets.

For more information, see “Controlling the collectors” on page 104.

Using MainView for UNIX System Services views

This section provides a list of views and examples of how to use the MainView for UNIX System Services product to monitor your UNIX System Services.

Process and thread activity

MainView for UNIX System Services monitors your UNIX System Services processes and related activities. Use the following views to obtain both summarized and detailed information about every aspect of the processes.
### Table 3: Process views

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PESTAT</td>
<td>Displays the status of processes specified in DD PARMLIB member BBUTSRP0</td>
</tr>
<tr>
<td>PSCMDPRM</td>
<td>Displays up to 1024 bytes of the command that initiated a single process, including all parameters</td>
</tr>
<tr>
<td>PSCMND</td>
<td>Summarizes all the process command information</td>
</tr>
<tr>
<td>PSCTTY</td>
<td>Displays up to 1024 bytes of the name of the terminal device from which the process was initiated</td>
</tr>
<tr>
<td>PSDELAY</td>
<td>Consists of a tabular view that you can use to see how much of the total delay is attributable to each of the major resource categories for selected processes</td>
</tr>
<tr>
<td>PSDELAYZ</td>
<td>Consists of a summarized view that you can use to see how much of the total delay is attributable to each of the major resource categories for selected processes during multiple intervals</td>
</tr>
<tr>
<td>PSEXPATH</td>
<td>Displays up to 1024 bytes of the full path name of the command that initiated the process</td>
</tr>
<tr>
<td>PSFILE</td>
<td>Displays processes and user ID information for those processes that are using the selected file system</td>
</tr>
<tr>
<td>PSFOPEN</td>
<td>Lists the files that are currently open for a process</td>
</tr>
<tr>
<td>PSFSAF</td>
<td>Displays file systems that are open for a given SAF user ID or for all SAF user IDs that are using a given file name</td>
</tr>
<tr>
<td>PSINFO</td>
<td>Consists of a detailed process overview for a single process, including status, resource usage, and delay reason statistics for the interval</td>
</tr>
<tr>
<td>PSLIMIT</td>
<td>Displays the USS system parameters in effect for the processes specified by the LIMITS parameter specified in DD PARMLIB member BBUTSRP0</td>
</tr>
<tr>
<td>PSOVER</td>
<td>Consists of a tabular view that you can use to analyze the performance and utilization of resources for the selected processes</td>
</tr>
<tr>
<td>PSOVERZ</td>
<td>Consists of a summarized view of process activity that you can use to analyze the performance and utilization of resources for the selected processes over multiple intervals</td>
</tr>
<tr>
<td>PSSTAT</td>
<td>Provides the current status for selected processes</td>
</tr>
<tr>
<td>PSTRACE</td>
<td>Displays bpxtrace output for a UNIX command or process</td>
</tr>
<tr>
<td>PSTREE</td>
<td>Helps illustrate the relationship between parent and child processes in the system</td>
</tr>
<tr>
<td>PSUSE</td>
<td>Consists of a tabular view of processor and storage utilization for selected processes during particular intervals</td>
</tr>
<tr>
<td>PSUSEZ</td>
<td>Consists of a summarized view of process utilization, which displays processor and storage utilization for selected processes over multiple intervals</td>
</tr>
<tr>
<td>PSWRKDIR</td>
<td>Displays up to 1024 bytes of the working directory for the process</td>
</tr>
</tbody>
</table>
### View Description

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSZOMBIE</td>
<td>Displays parent processes that have child processes in a zombie state</td>
</tr>
<tr>
<td>THREAD</td>
<td>Provides information about CPU usage and state for threads associated with a given process</td>
</tr>
<tr>
<td>THREADR</td>
<td>Provides real-time information about CPU usage and state for process threads</td>
</tr>
</tbody>
</table>

### HFS, zFS, and other file systems statistics

To help you monitor statistics for your file systems, such as storage allocation and I/O, the MainView for UNIX System Services product offers the views that are listed in the following table.

#### Table 4: HFS, zFS, and other file-system views

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACL</td>
<td>Displays a file's access control list (ACL) entries</td>
</tr>
<tr>
<td>FS</td>
<td>Displays a view of currently mounted file systems</td>
</tr>
<tr>
<td>FSDELINU</td>
<td>Provides real-time information about active users of deleted files that are consuming space</td>
</tr>
<tr>
<td>FSDIRNRM</td>
<td>Displays the full directory name for a file</td>
</tr>
<tr>
<td>FSFILENM</td>
<td>Displays the full name for a file</td>
</tr>
<tr>
<td>FSIO</td>
<td>Provides detailed I/O information for mounted file systems</td>
</tr>
<tr>
<td>FSIOZ</td>
<td>Displays summarized I/O details for mounted file systems</td>
</tr>
<tr>
<td>FSINFO</td>
<td>Provides detailed information for a single file system</td>
</tr>
<tr>
<td>FSMNTPRM</td>
<td>Displays a detailed view for the full mount parms for a file system</td>
</tr>
<tr>
<td>FSMNTPT</td>
<td>Displays a detailed view for the full mount point for a file system</td>
</tr>
<tr>
<td>FSMOUNT</td>
<td>Displays a view of mounted file systems</td>
</tr>
<tr>
<td>FSMOUNTZ</td>
<td>Displays a summary of mounted file systems</td>
</tr>
<tr>
<td>FSPACE</td>
<td>Displays files and directories in directory</td>
</tr>
<tr>
<td>FSWATCH</td>
<td>Displays an overview of watched file systems</td>
</tr>
<tr>
<td>FSWATCHZ</td>
<td>Displays a summary of watched file systems</td>
</tr>
<tr>
<td>FSSTAT</td>
<td>Displays the status of required file systems specified in DD PARMLIB member BBUTSRH0</td>
</tr>
<tr>
<td>HFSFILE</td>
<td>Displays summary of available HFS file information views</td>
</tr>
<tr>
<td>HFSGBUF</td>
<td>Displays interval HFS global buffer pool statistics</td>
</tr>
</tbody>
</table>
### Address space information and system parameters

The address space views contain activity information about the address spaces, including delays. The data is available in both summarized and tabular form. In addition, the BPXPRM view provides information about system parameter settings.

#### Table 5: Address space views

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASDELAYZ</td>
<td>Summarized view of address space delays over multiple intervals</td>
</tr>
<tr>
<td>ASINFOZ</td>
<td>Summarized information about an address space and the processes running on that address space</td>
</tr>
<tr>
<td>ASOVERZ</td>
<td>Summarized view of address space activity over multiple intervals</td>
</tr>
<tr>
<td>BPXPRM</td>
<td>Interval UNIX System Services parameter settings, average counts, and number of attempts to exceed limits</td>
</tr>
<tr>
<td>IPCBPXP</td>
<td>Interval interprocess communication information, such as shared memory usage and semaphore activity</td>
</tr>
</tbody>
</table>
### User and group views

User and group views provide a series of user views that summarize process data by a user or group.

Table 6 on page 46 lists these views.

#### Table 6: User and group views

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GROUPDB</td>
<td>Displays user group database information</td>
</tr>
<tr>
<td>GRPOVERZ</td>
<td>Summarizes process activity by group ID</td>
</tr>
<tr>
<td>PSFSAF</td>
<td>Displays file systems open for a SAF user</td>
</tr>
<tr>
<td>SUPUSER</td>
<td>Lists user names and IDs and indicates whether the user has super user authority (the UID=0, BPX.SUPERUSER resource or, at a minimum, the SUPERUSER.PROCESS.GETPSEND privilege)</td>
</tr>
<tr>
<td>USERDB</td>
<td>Displays user database information</td>
</tr>
<tr>
<td>USRJOBZ</td>
<td>Summarizes process statistics by job name within session ID and within SAF user ID</td>
</tr>
<tr>
<td>USROVERZ</td>
<td>Summarizes process activity by user ID</td>
</tr>
<tr>
<td>USRSESSZ</td>
<td>Summarizes process statistics by session ID within SAF user ID</td>
</tr>
</tbody>
</table>

### Utility views

The utility views are listed in the following table.

#### Table 7: Utility views

<table>
<thead>
<tr>
<th>View</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>ACTSEC</td>
<td>Displays the status of the action security definitions specified in DD PARMLIB member BBUTSAS0</td>
</tr>
<tr>
<td>DCPERF</td>
<td>Displays CPU utilization for the PAS data collectors</td>
</tr>
<tr>
<td>FSMANL</td>
<td>Displays a list of available z/OS UNIX help topics</td>
</tr>
<tr>
<td>View</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SHRLIB</td>
<td>Displays information about currently loaded shared libraries</td>
</tr>
<tr>
<td>UFOTEST</td>
<td>Runs the <code>/opt/bmc/ufo/ufotest</code> REXX script and captures the output as a list of return codes and messages. You can use the output to set a MainView alarm or a MainView AutoOPERATOR alert. The default <code>/opt/bmc/ufo/ufotest</code> script tests for user-defined error messages in a list of user-defined log files. You can modify the script to run tests in your z/OS UNIX environment, and alert MainView AutoOPERATOR. See the BBSAMP members UFOTEST* for more information and examples.</td>
</tr>
<tr>
<td>USSDC</td>
<td>Displays the MVUSS data collectors</td>
</tr>
<tr>
<td>USSWAIT</td>
<td>Displays information about z/OS UNIX waiters caused by mount latch contention, outstanding sysplex messages, file system latch contention, file latch contention, or other conditions. You can use the information to determine which z/OS UNIX tasks are hung and why they are waiting.</td>
</tr>
</tbody>
</table>

**Displaying CPU usage by jobname**

Several servers create new address spaces for each connection, which can result in a large number of jobs with the same job name. Although each job might consume only a small amount of CPU, the total CPU usage for all of the jobs could be significant.

To get a better idea of how much CPU is being consumed, you can use the JOBCPUUZ view, which summarizes the CPU activity for the specified interval for all jobs with the same name that are using UNIX System Services.

**To display CPU usage by jobname**

1. From the EZUEASY menu, select the **Processes** option to access the EZUPRCS menu.
2 Hyperlink from the **CPU Usage by Jobname** option, which brings up the JOBCPUZ view (Figure 23 on page 48).

**Figure 23: JOBCPUZ view**

<table>
<thead>
<tr>
<th>Jobname</th>
<th>Count</th>
<th>Total CPU Time</th>
<th>CPU%</th>
<th>Intv</th>
<th>Intv</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV42PMVS</td>
<td>5</td>
<td>00:42:03.89</td>
<td>10.29</td>
<td>7.72</td>
<td>2.57</td>
</tr>
<tr>
<td>MV42CAST</td>
<td>1</td>
<td>00:48:02.91</td>
<td>5.25</td>
<td>3.94</td>
<td>1.31</td>
</tr>
<tr>
<td>MVQ69</td>
<td>1</td>
<td>00:12:11.62</td>
<td>2.66</td>
<td>1.99</td>
<td>0.66</td>
</tr>
<tr>
<td>AAOA0DP</td>
<td>1</td>
<td>00:10:00.15</td>
<td>2.59</td>
<td>1.95</td>
<td>0.65</td>
</tr>
<tr>
<td>GCPASC</td>
<td>1</td>
<td>00:00:20.61</td>
<td>2.14</td>
<td>1.60</td>
<td>0.54</td>
</tr>
<tr>
<td>BCVC62C</td>
<td>1</td>
<td>00:00:58.44</td>
<td>2.02</td>
<td>1.52</td>
<td>0.51</td>
</tr>
<tr>
<td>MVQ64</td>
<td>1</td>
<td>00:11:41.96</td>
<td>1.87</td>
<td>1.40</td>
<td>0.47</td>
</tr>
<tr>
<td>XTSTKPAS</td>
<td>1</td>
<td>00:10:14.78</td>
<td>1.61</td>
<td>1.21</td>
<td>0.40</td>
</tr>
</tbody>
</table>

With the JOBCPUZ view, you can easily see the impact of the current applications on the system. It sums up the CPU activity when several ASIDs have the same job name, but it shows only one line when several processes are in the same address space. If a job has executed in multiple address spaces, the **Count** field is greater than 1; in Figure 23 on page 48, the first job listed has a count of 5.

3 Hyperlink on MV42PMVS in the **Jobname** column to access the JOBCPU view, which lists all jobs included in the **CPU%** figure of 10.29 that appeared in Figure 23 on page 48.

The JOBCPU view is illustrated in Figure 24 on page 48.

**Figure 24: JOBCPU view**

<table>
<thead>
<tr>
<th>Jobname</th>
<th>Hex</th>
<th>Total CPU Time</th>
<th>CPU%</th>
<th>Intv</th>
<th>Intv</th>
</tr>
</thead>
<tbody>
<tr>
<td>MV42PMVS</td>
<td>45</td>
<td>00:50:24.56</td>
<td>4.62</td>
<td>2.96</td>
<td>1.66</td>
</tr>
<tr>
<td>MV42PMVS</td>
<td>42</td>
<td>00:45:00.99</td>
<td>2.76</td>
<td>1.32</td>
<td>1.44</td>
</tr>
<tr>
<td>MV42PMVS</td>
<td>EC</td>
<td>00:12:22.70</td>
<td>1.60</td>
<td>1.15</td>
<td>0.45</td>
</tr>
<tr>
<td>MV42PMVS</td>
<td>5E</td>
<td>00:10:44.26</td>
<td>0.93</td>
<td>0.45</td>
<td>0.48</td>
</tr>
<tr>
<td>MV42PMVS</td>
<td>79</td>
<td>00:09:00.32</td>
<td>0.38</td>
<td>0.12</td>
<td>0.26</td>
</tr>
</tbody>
</table>

4 If you hyperlink again on a specific job in the **Jobname** column, you get to the EZMJOB view, where that particular job is displayed in the **Current Job** field.

**Note**

The EZMJOB view displays only if you have MainView for z/OS installed.
Comparing performance to historical data

When you access historical data, the MainView for UNIX System Services product presents data from the most recently specified interval, as well as any preceding intervals for which data exists.

To determine which intervals have available data, type **DSLIST** or **VIEW DLIST** on the **COMMAND** line to display the DLIST view.

The **From Date** and **To Date** fields of the DLIST view indicate that data is available for the specified time frames. Data from periods outside of these categories might not be immediately available for one of the following reasons:

- Data was not collected.
- Data was archived.
- Data was overwritten by new data.

If you need access to data that is not immediately available, see your product administrator. Administrators should refer to the discussion about archiving and retrieving historical data in the *MainView Administration Guide*.

**Note**

Not all views can be used in historical mode, such as FS and FSPACE. They always display current data and their data is not recorded to the history files.
Comparing performance to historical data
Controlling UNIX System Services

Several views have actions that you can use to execute UNIX System Services commands from within the MainView for UNIX System Services product. This chapter describes how to set up your system so that you can use those commands.

Some of the examples in this chapter use examples of displays from the traditional MainView ISPF interface, while others use examples from the browser-based MainView Explorer (MVE) interface. Nearly all MainView for UNIX System Services product function can be performed by using either the ISPF or the MVE interfaces.

Setting system parameters

The following sections describe how to set system parameters.

Setting overall and IPC parameters

You can change the system BPX and IPCS parameters through MainView for UNIX System Services from the MVUSS Primary Menu (EZUSS) and accessing the BPXPRMS view.

The BPXPRMS view (Figure 25 on page 52) shows a real-time display of BPXPRM settings, unlike the BPXPRM and IPCBPXP views, which can be up to one minute old.

These other characteristics also make the BPXPRMS view different from the BPXPRM and IPCBPXP views:

- high-water mark information
- **Exceeds** field, which tracks the number of attempts to exceed the maximum value permitted for the element since the last IPL
- **MOD** field, which can contain the following values:
— IPL for values reported by IBM as having changed since IPL

— CHG for values that are not tracked by IBM but have changed since PAS initialization

— MAXSOCKETS values found on the NETWORK statement in the BPXPRMxx member (see the last two elements, SOC/AF_INET and SOC/AF_UNIX, in the BPXPRMS view in Figure 25 on page 52)

To set overall and IPC parameters

1. From the MVUSS Fast Menu (EZUFAST), select System Parameters.

The BPXPRMS view is displayed (Figure 25 on page 52).

Figure 25: BPXPRMS view

<table>
<thead>
<tr>
<th>Element</th>
<th>MOD</th>
<th>MAXIMUM</th>
<th>CURRENT</th>
<th>CURR %</th>
<th>High Water Exceeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPCMSGNIDS</td>
<td>20000</td>
<td>11</td>
<td>0.1</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>IPCMSGQBYTES</td>
<td>262144</td>
<td>.</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPCSEMNIDS</td>
<td>10000</td>
<td>.</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPCSEMNOPS</td>
<td>32767</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IPCSEMMSEMS</td>
<td>32</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPCSHMMMPAGES</td>
<td>25600</td>
<td>.</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPCSHMNIDS</td>
<td>20000</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>IPCSHMNSEGS</td>
<td>1000</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPCSHMSPAGES</td>
<td>262144</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MAXASSIZE</td>
<td>2147483647</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAXCORESIZE</td>
<td>4194304</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAXCPUTIME</td>
<td>2147483647</td>
<td>.</td>
<td>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAXUIDS</td>
<td>200</td>
<td>5</td>
<td>2.5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>SHRLIBMAXPAGES</td>
<td>4096</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SHRLIBRGNSIZE</td>
<td>64</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SOC/AF_INET</td>
<td>10000</td>
<td>84</td>
<td>0.8</td>
<td>85</td>
<td>0</td>
</tr>
<tr>
<td>SOC/AF_UNIX</td>
<td>1000</td>
<td>7</td>
<td>0.7</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

2. To change the UNIX configuration settings for an element, click a specific name in the BPXPRM Element column and you get an ISPF dialog that allows you to change that element.

Tip
Alternatively, you can place the S line command next to the element that you want to change and get the same ISPF dialog.

Setting global buffer limits

You can change the Virtual Storage Maximum and the Fixed Storage Minimum values of the global buffer limits from the HFSINFO view.
**To set global buffer limits**

1. From the MVUSS view, click the **HFS Global Detail** link under the **File Systems** heading.

The HFSGINFO view (Figure 26 on page 53) is displayed.

**Figure 26: HFSGINFO view**

```
DDMMMYYYY   HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm) ------------
COMMAND ===>                                                 SCROLL ===> CSR
CURR WIN ===> 1        ALT WIN ===>  
>W1 -HFSGINFO----------SJSE-------*--------DDMMMYYYY==HH:MM:SS==MVUSS==D==1
System Name..... SJSE     -Avg Virt Stor--           -Virtual Storage
Sysplex Name.... BBPLEX01  In Pages.......   400.00   In Pages.......      400
# Buffer Pools...        4  In Megabytes...     1.56   In Megabytes...     1.56
Max Virtual Stor.. 377  % of Max.......     0.41   % of Max.......     0.41
Min Fixed Stor..        0 -Avg Fixed Stor-           -Fixed Storage--
In Pages.......     0.00   In Pages.......        0
In Megabytes...     0.00   In Megabytes...     0.00
% of Min.......     0.00   % of Min.......     0.00
--Buffering-----           --Buffering-----
Cache Hit Ratio.   1.0000  Cache Hit Ratio.   0.0000
Total Attempts..       43  Total Attempts..        0
Hit Ratio 1st Pg   0.0000  Hit Ratio 1st Pg   0.0000
Total Attempts..        0  Total Attempts..        0
```

2. Click either the **Max Virtual Stor** field or the **Min Fixed Stor** field.

The Set Global Buffer Limits ISPF panel (Figure 27 on page 53) is displayed. This panel shows the storage limits for the HFS buffers that are currently in effect, specifically the VMAX and FMIN values.

**Figure 27: Set Global Buffer Limits panel**

```
Set Global Buffer Limits
Enter desired values, then press the End key.
VMAX  377 (mb)
FMIN  0 (mb)
F1=Help  F3=End  F12=Cancel
```

3. Change one or both of these values and press the **End** key.

---

**Administering processes**

The following sections describe how you can use MainView for *UNIX System Services* to manage processes.

- "Displaying real-time process or thread status" on page 54
- "Killing a process" on page 55
- "Dumping a process" on page 56
“Displaying real-time process or thread status” on page 54

Several UNIX System Services actions are available from the EZUPRC view

**To display real-time process or thread status**

1. Hyperlink from the Overview link on the MVUSS Primary Menu.

The PSOVERZ view is displayed (Figure 28 on page 54).

**Figure 28: Using the PSOVERZ view to display the status of a process**

<table>
<thead>
<tr>
<th>DDMYYYYYY</th>
<th>HH:MM:SS</th>
<th>MainView WINDOW INTERFACE (Vv.r.mm)</th>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CURR WIN</td>
<td>1</td>
<td>ALT WIN</td>
<td>&gt;W1 =PSOVERZ=---------------------SJSE------------*---------------DDMMYYYY==HH:MM:SS==MVUSS------D====59=---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Line Commands: F - Files Open L - Limits T - Trace D - Dump K - KILL R - D.OMVS PID</td>
<td>C ProcessId Command Elapsed Jobname JobCPU% Prcs Stepname P Multi- Total Total Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Name Proctime ---------------- ------ AvgMem ------ Thread Dly% Run% Zomb%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 BPXPINPR</td>
<td>05:40:28 BPXOINIT</td>
<td>3.72 7.6Mi BPXOINIT R Yes</td>
<td>100 0.00 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 inetd</td>
<td>05:40:11 INETD4</td>
<td>3.72 7.6Mi BPXAS R No</td>
<td>0.00 0.00 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 EZACFALG</td>
<td>05:38:30 DCSTCPIP</td>
<td>3.72 7.6Mi DCSTCPIP R No</td>
<td>100 0.00 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 EZASASUB</td>
<td>05:38:30 DCSTCPIP</td>
<td>3.72 7.6Mi DCSTCPIP R No</td>
<td>100 0.00 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 EZBTTMST</td>
<td>05:38:26 DCSTCPIP</td>
<td>3.72 7.6Mi DCSTCPIP R No</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 FTPD</td>
<td>05:38:14 FTPD1</td>
<td>3.72 7.6Mi BPXAS R No</td>
<td>100 0.00 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 BBM9SZ20</td>
<td>05:38:09 DCPAS</td>
<td>3.72 7.6Mi CAS R No</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>107 BBM9SZ20</td>
<td>05:38:42 DCPAS</td>
<td>3.72 7.6Mi CAS R No</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16777219 EZBTCPIP</td>
<td>05:38:39 DCSTCPIP</td>
<td>3.62 151552 DCSTCPIP R Yes</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16777230 BBM9SZ20</td>
<td>04:32:12 SVSD6FST</td>
<td>3.62 151552 SVSD6FST R No</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33554436 EZBTMCTL</td>
<td>05:38:30 DCSTCPIP</td>
<td>3.62 151552 DCSTCPIP R No</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33554437 EZBTMCTL</td>
<td>05:38:31 DCSTCPIP</td>
<td>2.99 151552 DCSTCPIP R No</td>
<td>0.00 100 0.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. To display detailed information about a process, hyperlink on a value in the ProcessId column.
The EZUPRC view (Figure 29 on page 55) is displayed. The Process ID that is used in this example is 107.

**Figure 29: EZUPRC view**

```
DDMMYYYY HHHHHHSS -------- MainView WINDOW INTERFACE (Vv.r.mm) ---------
COMMAND ===> SCROLL ===> CSR
CURR WIN === 1 ALT WIN ===>
W1 =PSOVERZ==EZUPRC==SJSE==DDMMYYYY==HH:MM:SS==MVUSS==D===>1

Process Easy Menu

| Current Pid -> | 107 |
| Dubbed Time -> | 08:53:20 |
| Dubbed Date -> | 13JULYYYY |

Activity

- **Overview**
- **Resource Usage**
- **Delays**

Actions

- **Process/Thread**
- **Kill Process**
- **Display Files**
- **Process Limits**
- **Dump Process**

3 To display the real-time status of this process and its threads, hyperlink on **Process/Thread**.

The product issues the Operator console command to display the process and its threads; the result is displayed in a scrollable display (Figure 30 on page 55).

**Figure 30: Scrollable display**

```
Console Response (USSM)

<table>
<thead>
<tr>
<th>Command ==&gt;</th>
<th>Scroll ==&gt; CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>D OMVS,PID=107</td>
<td></td>
</tr>
<tr>
<td>BPXO040I 10.27.04 DISPLAY OMVS 809</td>
<td></td>
</tr>
<tr>
<td>OMVS 000E ACTIVE OMVS=(F1)</td>
<td></td>
</tr>
<tr>
<td>USER JOBNAME ASID PID PPID STATE START CT_SECS</td>
<td></td>
</tr>
<tr>
<td>OMVS BPXOINIT 001E 1 0 MFI--- 00.16.28 2.57</td>
<td></td>
</tr>
<tr>
<td>LATCHWAITPID= 0 CMD=BPXPINPR</td>
<td></td>
</tr>
<tr>
<td>SERVER=Init Process AF= 0 MF=00000 TYPE=FILE</td>
<td></td>
</tr>
<tr>
<td>THREAD_ID= TCB@ PRI_JOB USERNAME ACC_TIME SC STATE</td>
<td></td>
</tr>
<tr>
<td>10F26B2000000000 008FB8800 .006 FRK X</td>
<td></td>
</tr>
<tr>
<td>10F27810000000001 008FB5ED OMVS 1.286 WAT W</td>
<td></td>
</tr>
<tr>
<td>10F291F000000000 008F832B .001 VRT Y</td>
<td></td>
</tr>
<tr>
<td>10F299EE000000003 008EC678 OMVS .001 KIN K</td>
<td></td>
</tr>
<tr>
<td>10F2ABD0000000004 008EC3D0 OMVS .002 ACP F</td>
<td></td>
</tr>
</tbody>
</table>

F1=Help F3=End F12=Cancel
```

**Killing a process**

The following procedure kills a process.

**To kill a process**

1 In the EZUPRC view, click the **Kill Process** field.
Several options of the KILL command are presented in a dialog (Figure 31 on page 56).

2  Enter your choice and press **PF3** (End).

**Figure 31: Options of the KILL command**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>Signal (KILL) A Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>You have made a request to signal process id 107.</td>
<td></td>
</tr>
<tr>
<td>Type the signal you wish to send and press the END key.</td>
<td></td>
</tr>
<tr>
<td>Valid signals are described below.</td>
<td></td>
</tr>
<tr>
<td>Enter Choice: 0</td>
<td></td>
</tr>
<tr>
<td>More: +</td>
<td></td>
</tr>
<tr>
<td>0 SIGNULL</td>
<td>The NULL Signal</td>
</tr>
<tr>
<td>1 SIGHUP</td>
<td>Hangup detected on controlling terminal</td>
</tr>
<tr>
<td>2 SIGINT</td>
<td>Interactive attention</td>
</tr>
<tr>
<td>3 SIGQUIT</td>
<td>Terminate with a dump - can be intercepted</td>
</tr>
<tr>
<td>4 SIGILL</td>
<td>Termination</td>
</tr>
<tr>
<td>5 SIGPOLL</td>
<td>Pollable event</td>
</tr>
<tr>
<td>6 SIGABRT</td>
<td>Abnormal termination</td>
</tr>
<tr>
<td>7 SIGSTOP</td>
<td>Stop (cannot be intercepted or ignored)</td>
</tr>
<tr>
<td>8 SIGFPE</td>
<td>Erroneous arithmetic operation</td>
</tr>
<tr>
<td>9 SIGKILL</td>
<td>Termination (cannot be intercepted or ignored)</td>
</tr>
<tr>
<td>10 SIGBUS</td>
<td>Bus error</td>
</tr>
</tbody>
</table>

Dumping a process

To dump a process, click the **Dump Process** field in the EZUPRC view.

The BPXOINIT,DUMP modify command is issued for the process (Figure 32 on page 56).

**Figure 32: Dumping a process**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>Console Response (USSM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F BPXOINIT,DUMP=107</td>
<td></td>
</tr>
<tr>
<td>BPXM027I COMMAND ACCEPTED.</td>
<td></td>
</tr>
<tr>
<td>F1=Help  F3=End  F12=Cancel</td>
<td></td>
</tr>
</tbody>
</table>

Displaying files for a process

To display the open files for a process, hyperlink on the **Display Files** field in the EZUPRC view.

“Displaying real-time process or thread status” on page 54 displays the EZUPRC view.
The PSFOPEN view is displayed, showing the files that are open for the process.

**Figure 33: Displaying open files for a process**

<table>
<thead>
<tr>
<th>ProcessId</th>
<th>Process</th>
<th>Inode</th>
<th>Dir</th>
<th>File Mount Point</th>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>OMVS</td>
<td>1</td>
<td>rd</td>
<td>DIR /</td>
</tr>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>OMVS</td>
<td>1</td>
<td>cd</td>
<td>DIR /</td>
</tr>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>OMVS</td>
<td>0</td>
<td>fd</td>
<td>SOCK N/A</td>
</tr>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>OMVS</td>
<td>47264</td>
<td>vp</td>
<td>NORM /SYSJSD/var/w70/base/sjsd/was/1og2</td>
</tr>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>OMVS</td>
<td>47263</td>
<td>vp</td>
<td>NORM /SYSJSD/var/w70/base/sjsd/was/1og1</td>
</tr>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>OMVS</td>
<td>8990</td>
<td>vp</td>
<td>NORM /ZOSV21 pega</td>
</tr>
</tbody>
</table>

Displaying all processes that are using a file

To display all of the processes that are using a file, use the P line command on a file listed in the the FSPACE view.

The PFUSER view is displayed Figure 34 on page 57.

**Figure 34: Displaying processes that are used by a file**

<table>
<thead>
<tr>
<th>ProcessId</th>
<th>Command</th>
<th>Elapsed</th>
<th>Jobname</th>
<th>Stepname</th>
<th>Multi-</th>
<th>Total</th>
<th>Total</th>
<th>Total</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BPXPINPR</td>
<td>12:51:29</td>
<td>BPXOINIT</td>
<td>BPXOINIT</td>
<td>Yes</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>12</td>
<td>inetd</td>
<td>12:51:26</td>
<td>INETD4</td>
<td>BPXAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>23</td>
<td>BMM9SZ20</td>
<td>12:50:28</td>
<td>XTST2PAS</td>
<td>XTST2PAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>24</td>
<td>BMM9SZ20</td>
<td>12:50:27</td>
<td>XTST2PAS</td>
<td>XTST2PAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>25</td>
<td>BMM9SZ20</td>
<td>12:50:27</td>
<td>XTST2PAS</td>
<td>XTST2PAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>26</td>
<td>BMM9SZ20</td>
<td>12:50:27</td>
<td>XTST2PAS</td>
<td>XTST2PAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>27</td>
<td>BMM9SZ20</td>
<td>12:50:26</td>
<td>XTST2PAS</td>
<td>XTST2PAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>28</td>
<td>BMM9SZ20</td>
<td>12:50:26</td>
<td>XTST2PAS</td>
<td>XTST2PAS</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>30</td>
<td>EZBTCPIP</td>
<td>12:50:23</td>
<td>DC$TCP1P</td>
<td>DC$TCP1P</td>
<td>Yes</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>32</td>
<td>BMM9ZA01</td>
<td>12:50:21</td>
<td>DZSCCAS</td>
<td>DZSCCAS</td>
<td>No</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>34</td>
<td>EZACFALG</td>
<td>12:50:20</td>
<td>DC$TCP1P</td>
<td>DC$TCP1P</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>48</td>
<td>EZASASUB</td>
<td>12:50:14</td>
<td>DC$TCP1C</td>
<td>DC$TCP1C</td>
<td>No</td>
<td>100</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Displaying limits for a process

Use the following procedure to display limits for a process.
To display limits for a process

1. In the PESTAT view, enter the E line command next to a process to display the dialog shown in Figure 35 on page 58.

2. Set the Monitor Limits with PSLIMIT view field to Yes and save your change.

   **Figure 35: Enabling the PSLIMIT view**

<table>
<thead>
<tr>
<th>Required/Limits Process Information</th>
<th>COMMAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Command Name: inetd</td>
<td>SCROLL ===&gt; CSR</td>
</tr>
<tr>
<td>Job Name: INETD4</td>
<td>System Name:</td>
</tr>
<tr>
<td>Start Time: 00:00</td>
<td>End Time: 23:59</td>
</tr>
<tr>
<td>Monitor Limits with PSLIMIT view: Y (Yes or No)</td>
<td></td>
</tr>
<tr>
<td>Command and Parm Filter:</td>
<td></td>
</tr>
<tr>
<td>END to update BBUTSRP0</td>
<td></td>
</tr>
<tr>
<td>CANcel to exit without editing</td>
<td></td>
</tr>
<tr>
<td>HELP to view related help</td>
<td></td>
</tr>
</tbody>
</table>

3. Display the PSLIMIT view.

   **Figure 36: PSLIMIT view**

<table>
<thead>
<tr>
<th>PID</th>
<th>JobName</th>
<th>ASIDx</th>
<th>Process</th>
<th>Current HiWater Process</th>
<th>% of Usage</th>
<th>Usage</th>
<th>Limit</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>IPCSHMNSEG</td>
<td>0</td>
<td>100</td>
<td>0.00</td>
<td>OMVS</td>
<td></td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXCORESIZE</td>
<td>0</td>
<td>0</td>
<td>4194304</td>
<td>0.00</td>
<td>OMVS</td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXFILEPROD</td>
<td>11</td>
<td>2000</td>
<td>0.55</td>
<td>OMVS</td>
<td></td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXFILESIZE</td>
<td>NOLIMIT</td>
<td>NOLIMIT</td>
<td>0.00</td>
<td>OMVS</td>
<td></td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXMEMLIMIT</td>
<td>0</td>
<td>16383P</td>
<td>0.00</td>
<td>OMVS</td>
<td></td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXPROCUSER</td>
<td>692</td>
<td>969</td>
<td>NOLIMIT</td>
<td>0.00</td>
<td>OMVS</td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXQUEUEDSIGS</td>
<td>0</td>
<td>1</td>
<td>1000</td>
<td>0.00</td>
<td>OMVS</td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXTHREADS</td>
<td>0</td>
<td>0</td>
<td>1000</td>
<td>0.00</td>
<td>OMVS</td>
</tr>
<tr>
<td>33554439</td>
<td>INETD4</td>
<td>0035</td>
<td>MAXTHREADTASKS</td>
<td>0</td>
<td>0</td>
<td>1000</td>
<td>0.00</td>
<td>OMVS</td>
</tr>
</tbody>
</table>

**Tip**

You can use the distributed alarm definition BBUBPS02 to trigger an alarm when a process in the PSLIMIT view exceeds a percentage of the maximum allowable open files for a process. You can also create additional alarms definitions with different thresholds for specific processes by using BBUBPS02 as a model. For more information, see “MainView Alarm Management” on page 115, or the MainView Alarm Management Guide.

---

**Changing limits for a process**

Use the following procedure to change limits for a process.
To change limits for a process

1 On the EZUPRC view, hyperlink on the Process Limits field to display a dialog that shows the current limits.

**Figure 37: Changing limits for a process**

```
----------- Change Process Limit Settings ----------
COMMAND   ===> 
SAF User: WEBSRV          PID : 23
Jobname : DC$FTSRV        ASID: 008C
Change one or more of the following limits.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Current</th>
<th>MAX</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAXFILEPROC</td>
<td>7</td>
<td>8</td>
<td>1001</td>
</tr>
<tr>
<td>MAXFILESIZE</td>
<td>---</td>
<td>---</td>
<td>NOLIMIT</td>
</tr>
<tr>
<td>MAXPROCUSER</td>
<td>56</td>
<td>57</td>
<td>NOLIMIT</td>
</tr>
<tr>
<td>MAXQUEUEDSIGS</td>
<td>1</td>
<td>1</td>
<td>1000</td>
</tr>
<tr>
<td>MAXTHREADS</td>
<td>0</td>
<td>0</td>
<td>1001</td>
</tr>
<tr>
<td>MAXTHREADTASKS</td>
<td>0</td>
<td>0</td>
<td>1000</td>
</tr>
<tr>
<td>IPCSHMNSEG</td>
<td>0</td>
<td>0</td>
<td>1000</td>
</tr>
<tr>
<td>MAXCORESIZE</td>
<td>---</td>
<td>---</td>
<td>4194304</td>
</tr>
</tbody>
</table>

Type END to modify any changed values, CANcel to quit without making changes.
```

2 Overtype the limits as needed.

Displaying trace output for a process

The following procedure displays the trace output for a process.

For more information, view the Quick Course "MainView for USS - Trace system calls for a z/OS UNIX process."

To display the trace output for a process

1 In the PSOVER view, type T next to the process for which you want to display trace output.

The TRACE dialog is displayed (Figure 31 on page 56).

**Figure 38: TRACE dialog**

```
------------- TRACE - Run bpxtrace on a Process ---------------
COMMAND   ===> 
More:     +
Process ID 16777839
Process JobName MV61CAST
bpxtrace TIME (1-60 sec): 10
bpxtrace VOLSER:
```

2 Specify TIME and VOLSER values and press PF3 (End) to run the bpxtrace command.
The PSTRACE view is displayed (Figure 33 on page 57).

**Figure 39: Displaying trace output for a process**

<table>
<thead>
<tr>
<th>TraceNum</th>
<th>ProcessId</th>
<th>ASID</th>
<th>TCB</th>
<th>Local Time</th>
<th>System Call</th>
<th>Tra</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:47:580748</td>
<td>Call spawn</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:47:580862</td>
<td>Call StatVfs</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:47:580905</td>
<td>Exit spawn</td>
<td>rv=</td>
</tr>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:47:580962</td>
<td>Call i.kernel_int</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:47:580963</td>
<td>Exit spawn</td>
<td>rv=</td>
</tr>
<tr>
<td></td>
<td>1714</td>
<td>0192</td>
<td>5E5B70</td>
<td>12:00:48:218065</td>
<td>Call sigprocmask</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>1714</td>
<td>0192</td>
<td>5E5B70</td>
<td>12:00:48:218070</td>
<td>Call sigprocmask</td>
<td>rv=</td>
</tr>
<tr>
<td></td>
<td>1714</td>
<td>0192</td>
<td>5E5B70</td>
<td>12:00:48:218074</td>
<td>Call sigprocmask</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>1714</td>
<td>0192</td>
<td>5E5B70</td>
<td>12:00:48:218074</td>
<td>Call sigprocmask</td>
<td>rv=</td>
</tr>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:48:218125</td>
<td>Exit spawn</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>16778921</td>
<td>026F</td>
<td>5E5B70</td>
<td>12:00:48:218146</td>
<td>Call wait</td>
<td>par</td>
</tr>
<tr>
<td></td>
<td>1714</td>
<td>0192</td>
<td>5E5B70</td>
<td>12:00:48:218218</td>
<td>Call l.exec2</td>
<td>par</td>
</tr>
</tbody>
</table>

Administering files

The FSPACE view is the central access point for administration of files.

This section shows the various line commands and how you can manage files from the FSPACE view. The FSPACE view shows the contents of a selected directory and shows the file attributes of each file within the directory.

The following procedures describe how you can complete these tasks:

- “Displaying the FSPACE view” on page 61
- “Mounting and unmounting a file system” on page 62
- “Creating, deleting, and renaming files” on page 64
- “Editing, browsing, and listing files” on page 66
- “Moving and copying files” on page 70
- “Finding text in files” on page 71
- “Changing permissions or ownership of files” on page 72
- “Archiving files” on page 73
- “Unarchiving files” on page 74
- “Viewing an archive table of contents” on page 75
Displaying the FSPACE view

Use the following procedure to display the FSPACE view.

To display the FSPACE view

1. To display the FSPACE view, which shows the contents of the root directory, take one of the following actions:
   - Enter FSPACE on the COMMAND line.
   - Enter FSPACE/pathname/filename on the COMMAND line to display a specific directory or file, for example, FSPACE/home/bmvjoj/rexxdirectory.

The FSPACE view is displayed (Figure 40 on page 61).

Figure 40: FSPACE view
Tip
The line commands are listed at the top of the view and described in the online Help. To display the Help, place the cursor in the C column and press PF1, or enter the primary command SHOWA on the COMMAND line.
To hide or show the line commands at the top of the view, place the cursor on the -/+ toggle in the upper left corner of view and press Enter.

1. Enter the S (Select) line command for any DIR, MTPT, or SYML file type to proceed to the next lower level directory, which produces an FSPACE view of that directory.

2. The S line command for a NORM or EXEC file type shows a listing of the file.

Mounting and unmounting a file system

Use the following procedure mounts and unmounts a file system.

To mount and unmount a file system

1. To mount a file system, place the M line command in the C column of the FSPACE view next to the directory that you want to use as the mount point.
2 Press **Enter** to display the Mount a File System dialog (Figure 41 on page 63).

**Figure 41: Mount a file system from the FSPACE view**

```
DDMMMYYYY  11:27:13 ------------- MainView WINDOW INTERFACE (V6.0.00) -------------
COMMAND ===>>
CURR WIN ===> 1        ALT WIN ===>>
>W1 =FSPACE============SJSCUSSQ=*========DDMMMYYYY==11:27:07====MVUSS====D==226=========:
C File Name         File File Ser Dev      Size   User ID Group ID Permission Prm File
-- ----------------- Type  (inode) Num     Bytes  Of Owner Of Owner String     Oct or S
bmvjjm            DIR     35237    8      8192      3911        2 drwxrwxrwx 777
m  bmvjoj  +------------------------ MOUNT - Mount a File System ----------------------+
bmvjoj1 | COMMAND ===>                                              SCROLL ===> CSR |
bmvjoj2 |                                                                           |
fmvks11 | Mount a File System at Mount Point                                |
fmvks12 | /home/bmvjoj/                                                        |
fmvks13 | Note: file system names are case sensitive, except HFS.             |
fmvks14 | File System Name  BMVJOJ.USER.HFS                                 |
fmvks15 | File System Type  HFS                                             |
fhvmas1 |                                                                           |
fhvmas2 |                                                                           |
fhvpcce  | Mount parameters (optional)                                       |
fhvptr2 |                                                                           |
fhvptr3 |
fhvrtr1 |                                                                           |
fhvstc | Additional mount options (Y/N)                                    |
fhvtat1 | Read Only File System N                                           |
fhvttrk | Bypass File Permission N                                          |
fhvuss1 | Ignore SETUID/SEGTID N                                             |
fhvuss2 |                                                                           |
fhvuss3 | END to mount file system                                           |
fhvuss4 | CANcel to exit without mounting                                    |
fhvwsh1 | HELP to view related help                                         |
fhvwsh2 |                                                                           |
fhvwsh3 |                                                                           |
fhvwsh4 |                                                                           |
 bolster1         DIR       112    8      8192         0        2 drwxrwxrwx 777
bolcar2         DIR       113    8      8192         0        2 drwxrwxrwx 777
```

3 Enter the **U** line command to unmount the file system.
Figure 42 on page 64 shows an example of the Unmount a File System dialog.

**Figure 42: Unmount a file system from the FSPACE view**

File system BMVJOJ.USER.HFS

Unmount type 1
1 = Normal  - Unmount if file system is not busy
2 = Immediate  - Even if busy, but write out buffers
3 = Forced  - Even if busy, and may corrupt data

END to unmount file system
CANCEL to exit without unmounting
HELP to view related help

Creating, deleting, and renaming files

Use the following procedures to create, delete and rename files.

**To create a new file or directory**

1. Place the cursor in the C column of the FSPACE view;
2. Enter the N line command to create a new file or directory.
Figure 43 on page 65 shows an example of the Create a New File or Directory dialog.

**Figure 43: Create a file from the FSPACE view**

The new file is created in the same directory that was being displayed when the line command was issued, unless the file name is entered as an absolute filepath (that is, it begins with a slash).

**To delete a file**

1. Enter the **D** line command next to the file in the **C** column and press **Enter** to display the Delete File or Directory dialog (Figure 44 on page 65).

**Figure 44: Delete a file from the FSPACE view**
To rename a file

1 Enter the **R** line command next to the file in the **C** column and press **Enter** to display the Rename File or Directory dialog (Figure 45 on page 66).

**Figure 45: Rename a file from the FSPACE view**

```
Command ===> SCROLL ===> CSR

Current file name
  j169

In directory
/home/bmvjoj2/

Desired new file name
  j169.txt

END to rename file
CANCEL to exit without renaming
HELP to view related help
```

Editing, browsing, and listing files

The following sections explain how to edit, browse, and list files by using the FSPACE view line commands.

**To edit a file**

1 Place the cursor in the **C** column of the FSPACE view;

2 Enter the **E** line command to edit a file.

The PAS and UAS must be on the same MVS system and your user ID must have (at least) read permission.

**Note**

This function is not available when accessing MainView *for UNIX System Services* from the MainView Explorer interface.
Figure 46 on page 67 shows an example of a file that is opened for editing.

**Figure 46: Edit a file**

```
EDIT /SYSTEM/etc/httpd.conf
Command ===>
****** **************************************************** Top of Data ************
000001 # @(#)53 1.9 src/web/etc/httpd.conf, web, web41J M/DD/YY 10:19:08
000002 #
000003 # COMPONENT_NAME: web httpd.conf
000004 #
000005 # FUNCTIONS:
000006 #
000007 # ORIGINS: 10 26 27
000008 #
000009 # (C) COPYRIGHT International Business Machines Corp. 1995, 1997
000010 # All Rights Reserved
000011 # Licensed Materials - Property of IBM
000012 #
000013 # US Government Users Restricted Rights - Use, duplication or
000014 # disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
000015 #
000016 # ===================================================================== #
000017 #
000018 # Default configuration file for httpd, running as a normal
000019 # HTTP server.
000020 #
000021 # TABLE OF CONTENTS
000022 # ------------------------
000023 # - Basic directives
000024 # - Logging and Reporting directives
```

**To browse a file**

1. Place the cursor in the C column of the FSPACE view.

2. Enter the B line command to browse a file.

   The PAS and UAS must be on the same MVS system and your user ID must have (at least) read permission.

---

**Note**

This function is not available when accessing MainView for UNIX System Services from the MainView Explorer interface. To view a file from the MainView Explorer interface, use the LS line command.
Figure 47 on page 68 shows an example of a file that is opened for browsing.

Figure 47: Browse a file

```
BROWSE -- /SYSTEM/etc/httpd.conf -----------------------------------------------
Command ===>
****************************************************** Top of Data **************
# @(#)53        1.9  src/web/etc/httpd.conf, web, web41J M/DD/YY 10:19:08
#
# COMPONENT_NAME: web httpd.conf
#
# FUNCTIONS:
#
# ORIGINS: 10  26  27
#
# (C) COPYRIGHT International Business Machines Corp. 1995, 1997
# All Rights Reserved
# Licensed Materials - Property of IBM
#
# US Government Users Restricted Rights - Use, duplication or
disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
#
# ===================================================================== #
#
# Default configuration file for httpd, running as a normal
# HTTP server.
#
# TABLE OF CONTENTS
# - Basic directives
# - Logging and Reporting directives
#   * log purge/archive directives
#   * access log filter directives
#   * example report templates
# - Method directives
```

To list a file

1. Place the cursor in the **C** column of the **FSPACE** view.

2. Enter the **LS** line command to list a file.

The LS line command opens a view of the file. This view is accessible from the **MainView Explorer** interface, but you cannot edit a file from the **MainView Explorer** interface.
Figure 48 on page 69 shows an example of a file that is opened with the LS line command.

Figure 48: List (view) a file

To list a file in hexadecimal format

1. Place the cursor in the C column of the FSPACE view.

2. Enter the H line command to list a file in hexadecimal format.
Figure 49 on page 70 shows an example of a file in hexadecimal format that is opened with the H line command.

**Figure 49: List a file in hexadecimal format**

```
DDMMYY 16:52:06 ----- MainView WINDOW INTERFACE (V6.0.00) ----------
COMMAND ===>
CURR WIN ===> 1 ALT WIN ===>
WI =FLISTH=-----------------SJSCUSSQ=*========DDMMMYYYY==11:49:46====MVUSS====D=8120
Offset Hex Data                                Display Data
****** **************************************  ******************
000000 7B407C4D  7B5DF5F3  40404040  40404040  *# @(#)53        *
000010 F14BF940  40A29983  61A68582  6185A383  *1.9 src/web/etc*
000020 6188A3A3  97844B83  9695866B  40A68582  */httpd.conf, web*
000030 6B40A685  B2F4F1D1  40F661F2  F161F9F5  *web45j 6/21/95*
000040 40F1F07A  F1F7AFOF  FB157815  7B40C306  *10:19:08,9# CD*
000050 D07D6D5  C5D5E36D  D5C1D4C5  7A40A685  *MPONENT_NAME: we*
000060 820488A3  A397844B  83969586  15781578  *b httpd.conf,.#*
000070 40C64A4S  C3E3C9D6  D5E27A15  7B157840  *FUNCTIONS: #* *
000080 6D9C9C7  C905E27A  40F1F040  40F2F640  *ORIGINS: 10 26 *
000090 40F2F715  7B157840  4DC3D504  C3D607E8  *27.9,9 (C) COPY*
0000A0 95C9C7C8  E340C995  A8599995  51A3B999  *RIGHT Internatio*
0000B0 95B19340  C2A4A289  9585A2A2  40F48183  *nal Business Mac*
0000C0 98896885  A2403C96  997A84B0  F161F9F5  *lices Corp. 1995*
0000D0 6B40F1F9  F9F7157B  40C19939  40098987  *, 99.9 All Rig*
0000E0 88A3A2A4  D985A2B5  94A58584  15784003  *hts Reserved.# L*
0000F0 89838595  A285B440  D481A385  99898193  *icensed Material*
000100 A2406040  D7999697  9599A388  49068640  *s - Property of *
000110 C9C20415  7B157840  E4240C7  96A58599  *IBM, # US Gover*
000120 95948955  A340E4A2  8599A240  9585A2A4  *mment Users Rest*
000130 989893A3  85884400  898788A3  A2406040  *icted Rights - *
000140 E4A28568  80B4A497  93898381  A3899695  *Use, duplication*
```

**Moving and copying files**

The following sections explain how to move and copy files by using the FSPACE view line commands.

**To move files**

1. Place the cursor in the C column of the FSPACE view.

2. Enter the MV line command to display the dialog shown in Figure 50 on page 70.

**Figure 50: Move a file**

```
mv command - move file
COMMAND ===>                                              SCROLL ===> CSR
Move File: /bcvm
-R (Unix to Unix only) Clones source tree N (Yes or No)
Options:  (Supply options in addition to above)
Destination is MVS data set: N  (Yes or No)
Destination (Specify full path name)
END to move file
CANCel to NOT move file
HELP to view related help
```

**To copy files**

1. Place the cursor in the C column of the FSPACE view.
Enter the CP line command to display the dialog shown in Figure 51 on page 71.

**Figure 51: Copy files**

```
COMMAND ===>                                              SCROLL ===> CSR
Note: log of execution saved in /tmp/MVUSS.CMD.BCVJXF1
Copy File: ./sh_history
-R (Unix to Unix only) Clones source tree N (Yes or No)
Options: (Supply options in addition to above)
Destination is MVS data set: N (Yes or No)
Destination (Specify full path name)
END to copy file
CANcel to exit without creating
HELP to view related help
```

**Finding text in files**

Use the following procedure finds text in files.

**To find text in files**

1. Place the cursor in the C column of the FSPACE view.
2. Enter the F line command next to the file that you want to search.

The Find Text in File or Directory dialog is displayed (Figure 52 on page 71).

**Figure 52: Search for text within a file from the FSPACE view**

```
COMMAND ===>                                              SCROLL ===> CSR
File or Directory to Search
/samples/dc3.l
Text to Search For
root

Search subdirectories? N Y/N (When searching a directory)
Case Sensitive? N Y/N - N=Ignore upper vs. lower case
Type of search text S S=String, R=Reg Exp, E=Ext Reg Exp

END to search for the text
CANcel to exit without searching
HELP to view related help
```

3. In the Text to Search For field, enter the text for which you are searching.
For this example, assume that you are searching for the word `root`, the search includes the subdirectories, and the search is not case sensitive.

The subdirectories are being searched and the search is not case-sensitive. Figure 53 on page 72 shows the search results.

**Figure 53: Search for text within a file from the FSPACE view**

<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>File /tmp/MVUS.SCMD.BMVJ0J2</th>
<th>SCROLL ===&gt;</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Search results</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:69: ServerRoot directive:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:76: Default: server_root</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:77: Syntax: ServerRoot &lt;path&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:78: ServerRoot server_root</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:115: NOTE: If you are not root, you have to use a port above 1024;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:215: Default:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/usr/lpp/internet/server_root/httpd-pid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:218: #idFile /usr/lpp/internet/server_root/httpd-pid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;--&gt; R/O filesys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:255: CacheRoot MUST be defined (by default, no CacheRoot is defined)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:258: # Defaults: AccessLog</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/usr/lpp/internet/server_root/logs/httpd-log</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:259: # AgentLog</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/usr/lpp/internet/server_root/logs/agent-log</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:260: # RefererLog</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/usr/lpp/internet/server_root/logs/referer-log</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/SYSTEM/etc/httpd.conf:261: # ErrorLog</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Changing permissions or ownership of files**

Use the following procedure changes permissions or ownership of files.

**To change permissions or ownership of files**

1. To change permissions for a file, place the cursor in the C column of the FSPACE view next to the file and enter the CM line command.
The Find Text in File or Directory dialog is displayed (Figure 54 on page 73).

**Figure 54: Change file permissions from the FSPACE view**

<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>SCROLL ===&gt;</th>
<th>CSR</th>
</tr>
</thead>
</table>

Change File Permissions For
/home/baojab/

Modify either character permissions OR octal/bit values, but not both.

Character Permissions rwxrwxrwx

Octal Permissions 777 One octal digit each for owner, group, and other
Set UID option bit 0 1 sets effective userid to owner if executed
Set GID option bit 0 1 sets effective groupid to owner's if executed
Sticky option bit 0 1 indicates search of MVS datasets if executed

END to change permissions
CANcel to exit without changing
HELP to view related help

---

baokmz3 DIR 51 8 8192 0 2 drwxrwxrwx
baokmz4 DIR 52 8 8192 0 2 drwxrwxrwx

2 To change ownership for a file, place the cursor in the C column of the FSPACE view next to the file and enter the CO line command.

The Change File Ownership dialog is displayed (Figure 55 on page 73).

**Figure 55: Change file ownership from the FSPACE view**

<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>SCROLL ===&gt;</th>
<th>CSR</th>
</tr>
</thead>
</table>

Change File Ownership For
/home/baoeuk2/

Owner 0 New owner name or numeric uid
Group 2 New owner group or numeric gid

END to change owner
CANcel to exit without changing
HELP to view related help

---

baojxp DIR 16233 8 8192 3911 2 drwxrwxrwx
baokmz1 DIR 49 8 8192 0 2 drwxrwxrwx

Archiving files

To archive a file or directory, place the cursor in the C column of the FSPACE view next to the file or directory; enter the AC line command.
Figure 56 on page 74 shows an example of the Create a tar archive of a directory dialog.

**Figure 56: Archive a file from the FSPACE view**

```
<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>SCROLL ===&gt; CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent directory of file or directory to archive</td>
<td></td>
</tr>
<tr>
<td>/home/</td>
<td></td>
</tr>
<tr>
<td>File or directory to archive</td>
<td></td>
</tr>
<tr>
<td>baodym2</td>
<td></td>
</tr>
<tr>
<td>Directory to store created archive file</td>
<td></td>
</tr>
<tr>
<td>/tmp</td>
<td></td>
</tr>
<tr>
<td>Archive filename</td>
<td></td>
</tr>
<tr>
<td>BAOMXY1.baodym2.tar.z</td>
<td></td>
</tr>
<tr>
<td>END to create archive</td>
<td></td>
</tr>
<tr>
<td>CANcel to exit without creating</td>
<td></td>
</tr>
<tr>
<td>HELP to view related help</td>
<td></td>
</tr>
</tbody>
</table>
```

**Unarchiving files**

To unarchive a file or directory, place the cursor in the C column of the FSPACE view next to a file name or directory; enter the AX line command.
**Figure 57 on page 75** shows an example of the Extract to a directory from a tar archive dialog.

**Figure 57: Unarchiving a file from the FSPACE view**

<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>SCROLL ===&gt; CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory to extract into</td>
<td></td>
</tr>
<tr>
<td>/home/</td>
<td></td>
</tr>
<tr>
<td>Files in archive to extract (blank for all)</td>
<td></td>
</tr>
<tr>
<td>baodym2</td>
<td></td>
</tr>
<tr>
<td>Directory containing archive file</td>
<td></td>
</tr>
<tr>
<td>/tmp</td>
<td></td>
</tr>
<tr>
<td>Archive filename</td>
<td></td>
</tr>
<tr>
<td>BAOMXY1.baodym2.tar.z</td>
<td></td>
</tr>
<tr>
<td>END to extract from archive</td>
<td></td>
</tr>
<tr>
<td>CANcel to exit without extracting</td>
<td></td>
</tr>
<tr>
<td>HELP to view related help</td>
<td></td>
</tr>
</tbody>
</table>

**Viewing an archive table of contents**

To list an archive table of contents, place the cursor in the C column of the FSPACE view next to a file name; enter the AX line command.

**Figure 58 on page 75** shows an example of the Archive Table of Contents for a tar archive directory.

**Figure 58: Listing an Archive Table of Contents from the FSPACE view**

<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>SCROLL ===&gt; CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directory containing archive file</td>
<td></td>
</tr>
<tr>
<td>/home/</td>
<td></td>
</tr>
<tr>
<td>Archive filename</td>
<td></td>
</tr>
<tr>
<td>/home/baodmd1/</td>
<td></td>
</tr>
<tr>
<td>END to list archive contents</td>
<td></td>
</tr>
<tr>
<td>CANcel to exit without listing</td>
<td></td>
</tr>
<tr>
<td>HELP to view related help</td>
<td></td>
</tr>
</tbody>
</table>

**Executing files**

Use the following procedure executes files.
To execute files

1. Place the cursor in the C column of the FSPACE view next to a file name.

2. Enter the X line command.

Figure 59 on page 76 shows an example of the Execute command file dialog.

**Figure 59: Execute from the FSPACE view**

<table>
<thead>
<tr>
<th>COMMAND ===&gt;</th>
<th>Execute Command File</th>
<th>SCROLL ===&gt; CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>File to Execute</td>
<td>baodym6</td>
<td></td>
</tr>
<tr>
<td>Working Directory</td>
<td>/home/</td>
<td></td>
</tr>
<tr>
<td>Command</td>
<td>baodym6</td>
<td></td>
</tr>
<tr>
<td>END to execute command</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANcel to exit without executing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HELP to view related help</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Add any command options to the end of the command text, or add any alternative command file path information to the front of the command text.

**Example**

For example, when displaying directory `/home/me`, if `myrexxpgm` is the file that the execute command is issued against, you can add `option1` to the end and `myrexxpgm option1` is executed.

Or, you can add `ls -l` to the beginning of the file name so that `ls -l myrexxpgm` is executed.

In either case, `/home/me` is the current working directory where the command is executed.

Displaying and modifying a file's access control list (ACL) entries

Use the FACL view to display a file’s ACL entries, and then use the line commands to modify, add, copy, delete, and replace ACL entries.
To display and modify a file’s access control list (ACL) entries

1 On the FSPACE view, enter the `LA` line command next to a file name to display the file's ACL entries in the FACL view.

**Figure 60: List of ACL entries**

```
DDMMMYYYY  10:59:51 ------ MainView WINDOW INTERFACE (V6.0.00) -----------
COMMAND ===>                                                 SCROLL ===> CSR
CURR WIN ===> 1        ALT WIN ===> 
W1 =FACL=---------------------SJSC=----------------DDMMMYYYY=10:59:50=MVUSS=-----D=----3
- Path: /.sh_history
- Access     Access       Access ACL
  - Type       Name        GID/UID Prm
s BASE_USER  TSGSTC            0 rw-
s BASE_GROUP AOPGRP            1 ---
s BASE_OTHER N/A             N/A ---
```

2 Select an ACL entry to modify by entering an `S` line command.

**Figure 61: Add/modify ACL entry**

```
COMMAND ===>                                              SCROLL ===> CSR
setfacl - add/modify ACL entry                           
Add/Modify File ACL Entry from: 
  /.sh_history
ACL Type:        BASE_USER       
ACL Name:        TSGSTC          
ACL Permissions: rw-
New Type:        bu               
New Name:        TSGSTC          
New Permissions: rw-
END to add/modify file ACL entry
CANcel to exit without modifying
HELP to view related help
```

3 Overtype the fields as needed.

For information about the dialog fields and valid values, see the online Help.

## Administering file systems

The FS view displays all the mounted file systems, their mount points and several other attributes and is the central access point for file systems administration. This section shows some of the line commands you can use to manage file systems from the FS view.

This section documents how to manage file systems. With MainView for *UNIX System Services*, you can complete the following tasks:

- “Accessing the FSMOUNT view from MainView Explorer” on page 78
- “Mounting and unmounting file systems” on page 82
- “Displaying all processes that are using a file system” on page 84
- “Creating file systems” on page 85
Accessing the FSMOUNT view from MainView Explorer

The following procedure shows how you can access the FSMOUNT view from the MainView Explorer web client if you have it installed.

For more information about installing and using the MainView Explorer web client, refer to the MainView User Guide.

To access the FSMOUNT view from the MainView Explorer web client

1. Set a context in the navigation frame, which is displayed in the upper left frame of the MainView Explorer window (Figure 62 on page 78).

Figure 62: MainView Explorer navigation frame
In the Products tree in the lower left frame, double-click **MVUSS** (Figure 63 on page 79).

**Figure 63: MainView Explorer Product frame**

![Figure 63: MainView Explorer Product frame](image)

Figure 64 on page 79 shows an example of the options that appear.

**Figure 64: MainView Explorer MVUSS options**

![Figure 64: MainView Explorer MVUSS options](image)

Select EZExplorer=>File Systems=>Current File Systems (FS) (Figure 65 on page 80).

- EZExplorer
- File Systems
- Mounted File Systems (FSMOUNT)

**Figure 65: Expanded MainView Explorer MVUSS options**
Figure 66 on page 81 shows the FSMOUNT view when it is accessed from MainView Explorer.

**Figure 66: FSMOUNT view accessed with MainView Explorer**

4 Display a list of line command actions that you can use from the FSMOUNT view:

- **a** Place the cursor in the *File System Name* column and click the right mouse button.

- **b** Move the cursor over *Line Action* and click the left mouse button.

- **c** To issue one of the line commands, move the cursor over the command and click the left mouse button.
A dialog for the line command appears. Figure 67 on page 82 shows the list of line commands from the FSMOUNT view.

Figure 67: Line commands for the FSMOUNT view from MainView Explorer

Note
Before unmounting a file system, you might first want to determine which processes are currently using it. See “Displaying all processes that are using a file” on page 57.

Mounting and unmounting file systems
To unmount a file system from MainView Explorer, place the cursor on the line of the file that you want to unmount, use the right mouse button to display the line commands, and click **Unmount File System** (Figure 67 on page 82).

**Figure 68 on page 83** shows an example of the Unmount a File System dialog.

**Figure 68: Unmounting a file system from MainView Explorer**

To mount another file system by using MainView Explorer, place the cursor on the File System Name column of any row in the FS View, click the right mouse button to display the line commands, and click **Mount File System** (Figure 67 on page 82).

**Figure 69 on page 83** shows an example of the Mount a File System dialog.

**Figure 69: Mounting a file system from MainView Explorer**
Tip
You can also use the FSPACE or ZFFILSYS views instead of FS to mount or unmount a file system. The FSPACE view is more convenient for mounting a file system because you can navigate to the directory that is the mount point, and use the Mount File System line action to bring up a dialog with that mount point already keyed in. The FS or ZFFILSYS views are more convenient for unmounting a file system by entering the Unmount File System line action on the file system to be unmounted.

Displaying all processes that are using a file system

To unmount a file system, you must first determine which processes are currently using the file system so that you can plan a minimum of disruption to the file system users.

These processes will all be affected by the unmount; you might want to take additional actions to terminate the processes before unmounting the file system.

The PSFILE view displays a list of the processes that are using a specific file system.

To display the PSFILE view

1. From the FS view, place the cursor on the line of the file that you want to review, click the right mouse button to display the line commands, and click Processes.
Using File System for the file system for which you want to view the processes; see Figure 70 on page 85.

Figure 70: Using the P line command on the FS view

<table>
<thead>
<tr>
<th>File System Name</th>
<th>Dev Num</th>
<th>FS Type</th>
<th>Read Only</th>
<th>FS Sts</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIX1 / HFS</td>
<td>7</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
<tr>
<td>IBM/390 HFS</td>
<td>30</td>
<td>HFS</td>
<td>Yes</td>
<td>Act</td>
</tr>
<tr>
<td>IBM/390 VFS</td>
<td>26</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
<tr>
<td>MVS HFS</td>
<td>24</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
<tr>
<td>MVS VFS</td>
<td>22</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
<tr>
<td>MVS VFS</td>
<td>22</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
<tr>
<td>MVS VFS</td>
<td>22</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
<tr>
<td>MVS HFS</td>
<td>22</td>
<td>HFS</td>
<td>No</td>
<td>Act</td>
</tr>
</tbody>
</table>

Review the display PSFILE (Figure 71 on page 85), showing which processes use the selected file system.

Figure 71: PSFILE view

2 Review the display PSFILE, showing which processes use the selected file system.

After reviewing these processes, you are better prepared to make a decision about the consequences of unmounting the file system in question.

Creating file systems

Use the following procedures to create an HFS or z/FS file system.
To create an HFS file system from MainView Explorer

1 From the FS view in MainView Explorer, place the cursor over the New HSF File System line action.

Figure 72 on page 86 shows the dialog for creating a new HSF file system.

Figure 72: Create new HFS File System view from MainView Explorer

When you complete the information in this dialog, the file system can be mounted.

To create a zFS file system from MainView Explorer

1 From the MVUSS Easy Action Menu (EZUACTS), place the cursor on the Create a new zFS file system link and double click (or press Enter).

2 On the ZFFILSYS view, enter the N line command.
Figure 73 on page 87 shows an example of the Create a New zFS Aggregate dialog that is displayed.

**Figure 73: Create a New zFS Aggregate dialog**

![Create a New zFS Aggregate dialog](image)

When you complete the information in this dialog, the new zFS file system can be attached.

3. From EZUACTS, place the cursor on the Attach a zFS file system link and double click (or press Enter).

4. On the ZFFILSYS view, enter the A line command.

Figure 74 on page 87 shows an example of the Attach zFS Aggregate dialog.

**Figure 74: Attach zFS Aggregate**

![Attach zFS Aggregate](image)
Enter the name of the zFS aggregate and click OK.

**Watching file systems**

You can identify file systems that are critical and should be active at certain times.

These watched file systems are continually monitored and data about them is recorded in the history file and then displayed in the FSWATCHZ and FSWATCH views.

Figure 75: FSWATCHZ view

![FSWATCHZ view](image)

Watched file systems are defined in the BBPARM member BBUTSRH0 by using the FSSTAT, HFSSTAT, and ZFSSTAT views, as described in the following sections.

**Note**

The FMNT data collector must be active to collect data about watched file systems. For more information, see “Controlling data collectors” on page 103.

**To watch a file system**

1. Display the FSSTAT (Figure 76 on page 88), HFSSTAT, or ZFSSTAT view, depending on the type of file system you want to watch.

Figure 76: FSSTAT view

![FSSTAT view](image)
2 Enter the **ADD** primary command to display the Required FileSystem Information dialog.

**Figure 77: Required FileSystem Information dialog**

<table>
<thead>
<tr>
<th>COMMAND ==&gt;</th>
<th>Required FileSystem Information</th>
<th>SCROLL ==&gt;</th>
<th>CSR</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS File System:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MVS File Pattern</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start Time (hhmm):</td>
<td>0000</td>
<td>End Time (hhmm):</td>
<td>2359</td>
</tr>
<tr>
<td>System Id</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>File System Type:</td>
<td>FS (FS, HFS, ZFS, TFS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Write To History:</td>
<td>Y (Yes, No, Only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Desired Mount Point (Optional):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>END to update BBUTSRH0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CANcel to exit without update</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HELP to view related help</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 In the **MVS File Pattern** field, type the name of the file system to be watched.

Watched file system names cannot contain masking characters, but they can contain system symbols. For example, USS.&SYSNAME..VAR might resolve to USS.SJSC.VAR.

4 *(optional)* In the **Start Time** and **End Time** fields, enter the time period in which the file should be mounted.

The default time period is 0000-2329.

5 *(optional)* Specify the system ID on which the required file system should be running, and an optional mount point.

6 Save your changes to add the file system name to the BBUTSRH0 member and the FSWATCHZ and FSWATCH views.

---

**Tip**

You can use the distributed alarm BBUFIL03 to trigger an alarm when the FSSTAT view displays an HFS file system that has a status of **Missing**. For more information, see “MainView Alarm Management” on page 115.

---

**To delete a watched file system**

1 On FSSTAT, HFSSTAT, or ZFSSTAT view, use the **D** line command.

The file system is removed from the BBUTSRH0 member and the FSWATCHZ and FSWATCH views.

**To add a watched file system dynamically**

You can dynamically add a file system to the FSWATCHZ and FSWATCH views without updating the BBUTSRH0 member. These file systems are watched only until the PAS is shut down.

1 On the FS view, use the **W** line command or just click on a file system name.
To remove a watched file system dynamically

You can dynamically remove a file system from the FSWATCHZ and FSWATCH views without updating the BBUTSRH0 member.

1. On the FSWATCHZ and FSWATCH view, use the **RM** line command.

## Extending a file system

Use the following procedure to extend a file system.

### To extend a file system

1. Select **Current File Systems** from the MVUSS Primary Menu.

   The FS view is displayed ([Figure 78 on page 90](#)).

   **Figure 78: FS view**

<table>
<thead>
<tr>
<th>File System Name</th>
<th>Dev FS</th>
<th>Read FS</th>
<th>Mount Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA61.HFS</td>
<td>HFS</td>
<td>No</td>
<td>Act /usr/aodev</td>
</tr>
<tr>
<td>BB0.V61M.SBBKHFS</td>
<td>HFS</td>
<td>Yes</td>
<td>Act /var/w51/in</td>
</tr>
<tr>
<td>BCVM.DEV.SJSC.MainView.HFS</td>
<td>HFS</td>
<td>No</td>
<td>Act /bcvm/dev/s</td>
</tr>
<tr>
<td>DMRQA.SJSC.MVALAR.HFS</td>
<td>HFS</td>
<td>No</td>
<td>Act /home/MVALA</td>
</tr>
<tr>
<td>MVQA.SJSC.MainView</td>
<td>HFS</td>
<td>No</td>
<td>Act /MainView</td>
</tr>
<tr>
<td>MVQA.SJSC2.MainView</td>
<td>HFS</td>
<td>Yes</td>
<td>Act /MainView2</td>
</tr>
<tr>
<td>SYSI.IBMOEM.SMS.OS290.SJSC.OVMS.ROOT</td>
<td>HFS</td>
<td>No</td>
<td>Act /SYSTEM/var</td>
</tr>
<tr>
<td>SYSI.IBMOEM.SMS.SYSC.USER.HFS</td>
<td>HFS</td>
<td>No</td>
<td>Act /home</td>
</tr>
<tr>
<td>SYSI.IBMOEM.SMS.USSMON.HFS</td>
<td>HFS</td>
<td>No</td>
<td>Act /ussmon</td>
</tr>
<tr>
<td>USS.CICSTS.MAINT</td>
<td>HFS</td>
<td>No</td>
<td>Act /usr/lpp/ci</td>
</tr>
<tr>
<td>USS.CIC650</td>
<td>HFS</td>
<td>No</td>
<td>Act /usr/lpp/ci</td>
</tr>
<tr>
<td>USS.DB2.PROD</td>
<td>HFS</td>
<td>Yes</td>
<td>Act /usr/lpp/db</td>
</tr>
</tbody>
</table>

2. From the FS view, enter the **E** line command for the file system that you want to expand.
When you select an HFS file system to expand, the Extend HFS File System dialog shows the chosen HFS file and its current size in pages and megabytes (Figure 79 on page 91).

**Figure 79: Extend HFS File System dialog**

| COMMAND || SCROLL || CSR |
|----------|---------|------|
| Extend HFS File System |          |      |
| File System Name AA061.HFS |          |      |
| File System Size 10836 (pages) | 42.33 (MB) |      |
| New Volume N (Y/N) |          |      |
| Extent Unit C (M/T/C) |          |      |
| Extent Amt 1 |          |      |
| END to extend file system |          |      |
| CANcel to exit without extending |          |      |
| HELP to view related help |          |      |

3 If the HFS file has more than one candidate volume, place the extension on a new volume:

a In the **New Volume** field, specify **Y**.

b In the **Extent Unit**, select the unit that you want to use: (M for Megabytes, T for Track, or C for Cylinder).

c In the **Extent Amt**, enter an amount.

d Press **PF3** to execute the command or **PF12** to cancel the request.

### Displaying the largest directories and files in a file system

To repartition a file system that has become full, you need to determine which directories and files are using the most space; then you can decide the most effective way to split the file system.

Use the FLARGE view to display a list of the largest directories and files for a specific file system.
To display the largest directories and files in a file system

1 On the FS view, type the L line command next to the file system that you want to review (Figure 80 on page 92), and press Enter.

Figure 80: Using the L line command on the FS view

2 Review the directories and files and determine the best way to split the file system.

The FLARGE view is displayed, showing the largest directories and files for the selected file system.

Figure 81: FLARGE view

The z/OS Distributed File Service (DFS) zSeries File System (zFS) is a z/OS UNIX file system that can be used in addition to the Hierarchical File System (HFS).

zFS provides significant performance gains in accessing files approaching 8 KB in size that are frequently accessed and updated. For smaller files, the access performance with zFS is equivalent to HFS. zFS provides a reduced exposure to loss...
of updates by writing data blocks asynchronously and not waiting for a sync interval.

zFS is a physical file system (PFS) that is started by UNIX System Services during the IPL. A physical file system is the part of the operating system that manages the actual storage and manipulation of data on a storage medium.

zFS logs metadata updates. If system failure occurs, zFS replays the log when the system is operational again to ensure that the file system is consistent.

This section describes how to manage zFS file systems. With MainView for UNIX System Services, you can complete the following tasks:

- “Displaying all zFS attached aggregates” on page 93
- “Displaying detailed information about a zFS attached aggregate” on page 94
- “Displaying all zFS file systems in one or all attached aggregates” on page 95
- “Displaying detailed information about a zFS file system” on page 95
- “Attaching or detaching an aggregate” on page 96
- “Growing a zFS aggregate” on page 96
- “Deleting file systems” on page 97

Displaying all zFS attached aggregates

You can use the ZFATTACH view to see all zFS attached aggregates, see the following figure.

**Figure 82: ZFATTACH view**

<table>
<thead>
<tr>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CURR WIN</th>
<th>ALT WIN</th>
<th>W1</th>
<th>zFS Aggregate Name</th>
<th>Aggregate File Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDDMMYYY HH:MM:SS -------- MainView WINDOW INTERFACE (VV.v.mm) -----------</td>
<td>CSRRR</td>
<td>1</td>
<td>1</td>
<td>BMVJOJ.COMPAT.AGGR003</td>
<td>100000 13 MULT</td>
<td></td>
</tr>
</tbody>
</table>

After a zFS aggregate is defined and formatted, you can use ZFATTACH to create one or more zSeries File Systems (zFSs) in the aggregate. The ZFATTACH view supports the following line commands:

- a — for attach
- dt — for detach
- g — for grow
Displaying detailed information about a zFS attached aggregate

You can use the ZFADETL view to display detailed information about a zFS attached aggregate.

For example, Figure 83 on page 94 shows you information about the BMVJOJ.COMPAT.AGGR003 aggregate.

**Figure 83: ZFADETL view**

<table>
<thead>
<tr>
<th>DDMY</th>
<th>HH:MM:SS</th>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CURR WIN</th>
<th>ALT WIN</th>
<th>AGG + ATTACH = ZFADETL = USSJSF = *</th>
<th>DDMY</th>
<th>HH:MM:SS</th>
<th>MVUS</th>
<th>D = 1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>BMVJOJ.COMPAT.AGGR003</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aggregate Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Status: (MULT R/W NoMon NoNBS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Aggr ID: 100000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>File Count: 13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Full Threshold: 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Full Increment: 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Block Count: 22320</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Fragment Size: 1024</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Block Size: 8192</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blocks Usable: 20312</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Used Kilobytes: 510</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Used Percentage: 2.51</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Minimum Free KB: 2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To see all of the zFSs in the specified aggregate, click the **File Count** field to get to the ZFFILSYS view.

**Note**

Before unmounting a file system, you might first want to determine which processes are currently using it. See “Displaying all processes that are using a file” on page 57.
Displaying all zFS file systems in one or all attached aggregates

You can use the ZFFILSYS view to see all zFSs in an aggregate see the following figure. File system names are unique across all attached aggregates on a system. You can also create a new zFS file system in an attached aggregate by using this view.

Figure 84: ZFFILSYS view

| a_file_system | RW  R/W 9 9 100000 |
| f1234567.f1234567.f1234567.f1234567.f123 | RW --- 8 9 100000 |
| f1234567.f1234567.f1234567.f123 | BK --- 9 9 100000 |
| f3.renamed | RW --- 9 9 100000 |
| gamma.baker | RW --- 146 146 100000 |
| my.file.test | RW --- 9 9 100000 |
| newsystem | RW --- 9 9 100000 |
| newFile | RW --- 9 9 100000 |
| renamed.filesystem | RW --- 9 9 100000 |
| try1320 | RW --- 9 9 100000 |
| zepher | RW --- 9 9 100000 |
| Fe.BAK | RW --- 9 9 100000 |
| F2 | RW --- 41 41 100000 |

After a zFS is defined and formatted, you can take the following actions by using these line commands:

- **a** — for attach
- **m** — for mount
- **u** — for unmount
- **d** — for delete
- **n** — create a new zFS aggregate

To see details about a specific aggregate, hyperlink on the Aggregate ID value (a number that is associated with each aggregate) to get to the ZFADETL view (“Displaying detailed information about a zFS attached aggregate” on page 94).

To see detailed information about a specific file system, hyperlink on the zFS File System Name value to get to the ZFFDETL view (Figure 84 on page 95).

Displaying detailed information about a zFS file system

You can use the ZFFDETL view to display detailed information about a zFS.
For example, Figure 85 on page 96 shows you information about the *a_file_system* file system.

**Figure 85: ZFDETL view**

<table>
<thead>
<tr>
<th>DDMMMYYYY</th>
<th>HH:MM:SS</th>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CURR WIN</th>
<th>ALT WIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1 =zzfilys=zfdeTL=ussjssf=*</td>
<td>*---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

File System Name... *a_file_system*
High Id........... 16
Allocation Limit... 4.3G
Allocation Usage... 9
Quota Limit...... 400
Quota Usage...... 9
Access Error..... 24854
Access Status.... 10
State Bits....... 10010005
Maximum Node..... 4.3G
Minimum Quota.... 0
Type............. 1
Monitor Threshold 0
Monitor Increment 0
Mount Status...... 01
Owning Aggregate. BMVJOJ.COMPAT.AGGR003
Clone Date........
Clone Time....... 00:00:00
Create Date...... 24APR2002
Create Time...... 11:07:47
Update Date...... 29APR2002
Update Time...... 10:02:26
Access Date...... 29APR2002
Access Time...... 10:02:26

**Attaching or detaching an aggregate**

To attach an aggregate, enter the *A* line command on the ZFATTACH view.

To detach an aggregate, enter the *DT* line command on the ZFATTACH view.

**Figure 86 on page 96 shows an example of the ZFATTACH view.**

**Figure 86: ZFATTACH view**

<table>
<thead>
<tr>
<th>DDMMMYYYY</th>
<th>HH:MM:SS</th>
<th>COMMAND</th>
<th>SCROLL</th>
<th>CURR WIN</th>
<th>ALT WIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>W1 =zfattach=</td>
<td></td>
<td>*---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

C  zFS Aggregate Name
--- ------------------------
BAOSGD.ZFS
BMCDXG.ZFS.FILESYS

**Growing a zFS aggregate**

To grow a zFS aggregate, enter the *G* line command on the ZFATTACH view.
Figure 87 on page 97 shows an example of the Grow zFS Aggregate dialog that appears.

**Figure 87: Grow zFS Aggregate dialog**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>MainView WINDOW INTERFACE (Vv.r.mm)</th>
<th>Command</th>
<th>Current Window</th>
<th>Alt Window</th>
<th>W1 =ZFATTACH=BJSCUSS=**DDMMMYYYY==06:18:38==MVUSS==D==2==</th>
<th>C- zFS Aggregate Name</th>
<th>Aggregate</th>
<th>File Type</th>
<th>System ID</th>
<th>Systems</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDMMMYYYY</td>
<td>06:18:38</td>
<td>06:18:37</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS Aggregate Name: BMVJOJ.MULTI.AGGR001</td>
<td>Aggregate: 100002</td>
<td>File Type: MULT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:18:38</td>
<td>06:18:37</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS Aggregate Name: BMVJOJ.USERZ.ZFS</td>
<td>Aggregate: 100001</td>
<td>File Type: MULT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Deleting file systems**

The figure below shows an example of the ZFFILSYS view where you can enter the D line command to delete a file system.

**Figure 88: Deleting file systems**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>MainView WINDOW INTERFACE (V6.0.00)</th>
<th>Command</th>
<th>Current Window</th>
<th>Alt Window</th>
<th>W1 =ZFFILSYS=BJSC=**DDMMMYYYY==06:26:09==MVUSS==D==21</th>
<th>C- zFS File System Name</th>
<th>FT Mount Alloc Quota Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: USS.SJSC.OPT</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: USS.SJSC.OPT.BMC</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: USS.JAVA.PROD.D0A0308</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: USS.CICSTS.V420I2.ZFS</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: MVSFXB1.MV60.ZFS.FILESYS</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: USS.ROHJAC.SJSC.ZFS</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: USS.BTSSQN.SJSC.ZFS</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: MVSHXS1.TOM.ZFS.FILESYS</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
<tr>
<td>DDMMMYYYY</td>
<td>06:26:09</td>
<td>06:26:09</td>
<td>MVUSS</td>
<td>1</td>
<td>2</td>
<td>zFS File System Name: MVSIXG1.TOM.SJSC.ZFS.FILESYS</td>
<td>FT: RW</td>
<td>RW</td>
</tr>
</tbody>
</table>

**Controlling action security**

Action security enables you to run UNIX and z/OS commands by using the invoking user’s authority instead of the product address space (PAS) superuser authority. This feature provides an additional layer of security that works on top of the standard MainView security.
Each MainView for UNIX System Services action has an action security value associated with it by default, as described in Table 8 on page 98.

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAS</td>
<td>Actions are run using the PAS user ID, which has superuser authority.</td>
</tr>
<tr>
<td>UAS</td>
<td>Actions are running the user address space (UAS) user ID. The majority of MVUSS actions default to the UAS security value.</td>
</tr>
<tr>
<td>SUP</td>
<td>Actions are run only if the UAS user ID has superuser authority. The SUP security value is used mostly for internal actions that don’t invoke a UNIX or z/OS command.</td>
</tr>
</tbody>
</table>

From the MVUSS EZ Action Menu (EZUACTS), you can hyperlink on an action security value to display the ACTSEC view (Figure 89 on page 98). On ACTSEC, you can override the default values by managing the action security definitions in PARMLIB member BBUTSAS0.

Figure 89: ACTSEC view

```
DDMMYYYY 11:44:00 ------- MainView WINDOW INTERFACE (Vv.r.mm) --------------- COMMAND ===> SCROLL ===> CSR
CURR WIN ===> 1 ALT WIN ===> W1=ACTSEC=------------------------SJSC=*---------------DDMMYYYY=11:43:59=1MVUSS=D===38
C Action Security Name Value Default
--------------------------------------- ----- -------
BBXPARM_DISPLAY      UAS   UAS
BBXPARM_SET          UAS   UAS
FILE_BROWSE          UAS   UAS
FILE_CHMOD           UAS   UAS
FILE_CHOWN           UAS   UAS
FILE_COPY            UAS   UAS
FILE_DELETE          UAS   UAS
FILE_EDIT            UAS   UAS
FILE_FIND            UAS   UAS
FILE_GETFAACL        UAS   UAS
FILE_MOVE            UAS   UAS
FILE_NEW             UAS   UAS
FILE_RENAME          UAS   UAS
FILE_SETFAACL        UAS   UAS
FILE_TAR             UAS   UAS
FILESYS_LARGEST      UAS   UAS
FILESYS_LISTDIR      UAS   UAS
FILESYS_MOUNT        UAS   UAS
FILESYS_PROCESSES    PAS   PAS
FILESYS_REQ          SUP   SUP
```
Using z/OS UNIX commands

You can enter z/OS shell commands in the SHELLCMD dialog.

You can hyperlink to and access the SHELLCMD dialog:

- from the EZUSS menu
- from the EZUACTS menu
- by entering the SH command on the COMMAND line of any view

Figure 90 on page 99 shows an example of the SHELLCMD - Run z/OS UNIX Commands dialog.

Figure 90: SHELLCMD - Run z/OS UNIX Command dialog

Table 8 on page 98 describes the fields on the SHELLCMD - Run z/OS UNIX Command dialog.
Table 9: Field descriptions for the SHELLCMD - Run z/OS UNIX Command dialog

<table>
<thead>
<tr>
<th>Field name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>z/OS Unix Shell Command</strong></td>
<td>Specify the shell commands, z/OS UNIX REXX EXECs, program binaries, and/or shell scripts to run, and any options or arguments to pass. The filepath of a non built-in command must be an absolute path specified as a prefix to the command name. The commands will run in the MVUSS PAS, with the PAS user ID and UID=0, which allows you to run system management commands and issue the commands from MainView Explorer and TSO. Some commands do not work properly in a non-TSO environment, such as the ps command with no options, or oedit or obrowse, which need access to a 3270 terminal. (In the MainView ISPF environment, you can use TSO OEDIT and TSO OBROWSE on the MainView command prompt if your UAS is on the target system and you have read permission; they are ISPF commands that run in your TSO session and not the PAS.) Some commands might behave differently than when they are run in an interactive shell such as OMVS and under your own userid. The shell command will time out if it runs for more than 20 seconds. In this case, you should run the command in the background. The current working directory is /, the root directory. The working directory can be changed temporarily with the shell command cd directory. The default PATH environment variable is PATH='/bin:/usr/sbin'. The PATH environment variable can be changed temporarily by using the shell command PATH=dirlist, for example, PATH='/bin/usr/local/usr/sbin'.</td>
</tr>
</tbody>
</table>

| **Run in background?**         | Specifies whether to run command in background. Running the command in background is useful for a long running shell command. N runs the command in foreground and uses pipes to capture and display output. Y adds an ampersand to the end of the command and runs the command in a background subshell by using /bin/sh program. The background command output will be saved to the /var/bmc/ufo/ufocmd.log file if not redirected to another location. |
The output of the `netstat` command, showing active network connections, is shown in Figure 89 on page 98.

**Figure 91: Example of command output for netstat**

```
DDMMYYYY  11:44:00 ------ MainView WINDOW INTERFACE (V6.0.00) ------
COMMAND ===>  SCROLL ===> CSR
CURR WIN ===> 1      ALT WIN ===>  
W1 =FSEXEC-------------------SJSC------------------------04AUG2010==11:43:59==MVUS==D==473
Line Output
------ ---------------------------------------
   $ netstat
   MVS TCP/IP NETSTAT CS V1R9       TCPIP Name: DC$TCPIP        18:43:59
   User Id  Conn     Local Socket           Foreign Socket         State
   -------  ----     ------------           --------------         -----  
   BBMICDCS 000007F2 172.19.164.166..54400  0.0.0.0..0             Listen
   BBMICDCS 00000B20 172.19.164.166..54400  172.19.164.135..24749  Establish
   BBMICDCS 00000B18 172.19.164.166..1215   172.19.164.133..54400  Establish
   BBMICDCS 00000977 172.19.164.166..1207   172.19.164.134..54400  Establish
   BBMICDCS 000009C5 172.19.164.166..1214   172.19.164.130..54400  Establish
   BBMICDCS 00000A12 172.19.164.166..54400  172.19.164.133..24461  Establish
   BBMICDCS 00000B19 172.19.164.166..1216   172.19.164.129..54400  Establish
   BBMICDCS 00000B19 172.19.164.166..1216   172.19.164.129..54400  Establish
   BCVCB660 00014D72 0.0.0.0..24410         0.0.0.0..0             Listen
   BCVCB660 00014D79 0.0.0.0..24660         0.0.0.0..0             Listen
   BCVCB660 00014D75 0.0.0.0..24414         0.0.0.0..0             Listen
```

**Using the MainView for UNIX System Services primary commands**

The following table describes all the primary commands for the MainView for UNIX Services product.

<table>
<thead>
<tr>
<th>Primary Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNMOUNT</td>
<td>Displays the dialog where you enter information to unmount a file system</td>
</tr>
<tr>
<td>MOUNT</td>
<td>Displays the dialog where you enter information to mount a file system</td>
</tr>
<tr>
<td>CHMOD</td>
<td>Displays the dialog where you enter information to change file permissions</td>
</tr>
<tr>
<td>CHOWN</td>
<td>Displays the dialog where you enter information to change file ownership</td>
</tr>
<tr>
<td>THREADHistory</td>
<td>Toggles the thread history collection display on and off</td>
</tr>
<tr>
<td>HFSCntl</td>
<td>Toggles HFS detail statistical data on and off</td>
</tr>
<tr>
<td>ATTachzfs</td>
<td>Displays the dialog to attach a zFS aggregate</td>
</tr>
<tr>
<td>DETachzfs</td>
<td>Displays the dialog to detach a zFS aggregate</td>
</tr>
<tr>
<td>DELETEZfs</td>
<td>Displays the dialog to delete a zFS file system from an aggregate</td>
</tr>
<tr>
<td>Primary Command</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>GROWzfs</td>
<td>Displays the dialog to grow (expand) a zFS file aggregate</td>
</tr>
<tr>
<td>SHEllcmd</td>
<td>Displays the dialog to enter a shell command</td>
</tr>
<tr>
<td>REName</td>
<td>Displays the dialog to rename a file</td>
</tr>
<tr>
<td>NEW</td>
<td>Displays the dialog to create a new file</td>
</tr>
<tr>
<td>NEWZfs</td>
<td>Displays the dialog to create a new zFS aggregate; the ZFS colony address space needs authority to create the specified data set.</td>
</tr>
<tr>
<td>NEWHfs</td>
<td>Displays the dialog to create a new HFS file system; the MVUSS PAS needs authority to create the specified data set.</td>
</tr>
<tr>
<td>DELete</td>
<td>Displays the dialog to delete a file</td>
</tr>
<tr>
<td>TARC</td>
<td>Displays the dialog to create a tar back up file</td>
</tr>
<tr>
<td>TARX</td>
<td>Displays the dialog to extract from a tar back up file</td>
</tr>
<tr>
<td>TART</td>
<td>Displays the dialog to list the table of contents of a tar file</td>
</tr>
<tr>
<td>MAN</td>
<td>Displays the UNIX shell manual table of contents</td>
</tr>
<tr>
<td>MAN command</td>
<td>Displays the man pages for the entered command</td>
</tr>
</tbody>
</table>
Controlling data collectors

The MainView for UNIX System Services data collectors are programs that extract system information from the UNIX System Services control blocks. The information is then stored in interval records and available to display in one or more views. You can activate and deactivate the data collectors to control which information is collected.

**WARNING**

When a data collector is deactivated, no data is available to display in the views that use that data collector. Use caution when deactivating data collectors.

Understanding data collectors

At least one data collector exists for each aspect of system performance.

For example, the PRCS collector collects only data that is associated with processes, while the FMNT collector focuses on data that is related to file systems.

Here is how the data collectors work:

1. At the beginning of every interval, an interval record is created for each category of data to be collected. An interval record is what data collectors use to store the data that is collected during the interval.

   Each category of data has its own uniquely named record (the process collector stores its data in the PRRE record, the file-system collector uses the FMRE record, and so on).

2. As soon as the interval begins, each collector starts collecting its data by using the OE data gatherer.

   From then on, each collector periodically collects data. A preset rate called a sample rate (also called a collector rate) determines how often a collector collects data. Each collector has its own sample rate associated with it.

   A sample rate is simply a multiple of the base cycle, which is preset by the MainView for UNIX System Services product at one second. Therefore, if a collector’s sample rate is 15, the collector gathers its data once every 15 seconds.
3 The data collectors deposit their data in their records. This data is permanent and updated continuously throughout the interval. At the end of the interval, the record is written to the historical database, where it can be referenced by the TIME command.

Steps in requesting a view

When you request a view from the MainView for UNIX System Services product, the following actions occur:

1 MainView for UNIX System Services checks the view’s definition to see what data the view requires. For example, the PSOVERZ view definition tells MainView for UNIX System Services to get data from the PRRE, P1RE, P3RE, and MTRE interval records (which contain data that is gathered by the PRCS and WADR collectors).

2 MainView for UNIX System Services accesses the current interval records (for example, PRRE, P1RE, P3RE, and MTRE).

3 MainView for UNIX System Services formats the data according to the specifications in the view definition. This formatted data is now considered a complete view.

4 The view is displayed on your monitor.

Controlling the collectors

The following table describes how you can control the data collectors.

Table 11: Controlling data collectors

<table>
<thead>
<tr>
<th>Task</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start or stop all of the MainView for UNIX System Services data collectors at once.</td>
<td>Specify the DC=START or DC=STOP parameter in the JCL that is used to initialize the PAS. If the PAS is already active, issue one of the following MVS MODIFY commands against the PAS:</td>
</tr>
<tr>
<td></td>
<td>■ F PASName,DC=START</td>
</tr>
<tr>
<td></td>
<td>■ F PASName,DC=STOP</td>
</tr>
<tr>
<td></td>
<td>Replace PASName with the name of the PAS.</td>
</tr>
<tr>
<td>Task</td>
<td>Procedure</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Start or stop individual MainView for UNIX System Services data collectors.</td>
<td>Use the USSDC view “Using USSDC” on page 105 or Use the DCSTAT view “Using DCSTAT” on page 105</td>
</tr>
</tbody>
</table>

### Using USSDC

The USSDC view displays the current status of each of the four MVUSS collectors.

The status is either Disabled, Active, or Inactive. The user may hyperlink on any column of one of the displayed collectors to change the status from Disabled or Inactive to Active, or from Active to Inactive.

Figure 92 on page 105 shows an example of the USSDC view.

**Figure 92: USSDC view**

```
DDMMYYYY   HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm) ------------
COMMAND    ===> CURR WIN ===> 1        ALT WIN ===> W1 =USSDC=============SJSCJ0N5=*========DDMMYYYY==
Name Data Collector Description     Status
---- ------------------------------ ----------
BPXP USS System Parameters          Active
FMNT Mounted File Systems           Active
HFSG HFS Global                     Active
PRCS Process/Thread Activity        Active
```

If the collector is Disabled because of some problem, it will probably switch back to Disabled again. If the collector is disabled through the UBBPARM member BBDTDCDL, the USSDC view can Activate the collector without starting the Product Address Space (PAS) first.

### Using DCSTAT

Use DCSTAT to display the current status of the MainView for UNIX System Services data collectors and to enable or disable any collector.

#### Display data collectors

To use DCSTAT to display data collectors, use the following syntax:
The variables in the DCSTAT syntax are as follows:

- **Name** — is the name of the data collector to be displayed.
  
  See the Name field in the default view.

- **Status** — is the status of the data collector, either Active or Inactive.
  
  See the Status field in the default view. Wildcard selections can be used.

The DCSTAT view is shown in Figure 93 on page 106.

**Figure 93: DCSTAT view**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>MainView WINDOW INTERFACE (Vv.r.mm)</th>
<th>Command</th>
<th>Scroll</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DDMMMYYYY   HH:MM:SS -------- MainView WINDOW INTERFACE (Vv.r.mm)</td>
<td>COMMAND</td>
<td>SCROLL</td>
<td>PAGE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CURR WIN ===&gt; 1 ALT WIN ===&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>W1 =DCSTAT=========SJSC======*========DDMMMYYYY==HH:MM:SS=======MVUS==D==4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPXP</td>
<td>USS System Parameters</td>
<td>Active</td>
</tr>
<tr>
<td>HFSG</td>
<td>HFS Global</td>
<td>Active</td>
</tr>
<tr>
<td>FMNT</td>
<td>Mounted Filesystems</td>
<td>Active</td>
</tr>
<tr>
<td>PRCS</td>
<td>Process Activity</td>
<td>Active</td>
</tr>
<tr>
<td>WADR</td>
<td>WLM Address Space</td>
<td>Active</td>
</tr>
</tbody>
</table>

The Name and Status fields should reflect the data that you specified in the DCSTAT command. The Data Collector Description field identifies the type of collected data.

If either MainView for z/OS or CMF MONITOR is installed, the DCSTAT view also displays the data collectors for that product.

### Enable and disable collectors

The following table provides the procedures for enabling and disabling collectors through DCSTAT.
Table 12: Enabling and disabling collectors with DCSTAT

<table>
<thead>
<tr>
<th>Task</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activate an inactive collector.</td>
<td>Type <strong>A</strong> next to the collector name, and then press <strong>Enter</strong>. The collector becomes active immediately. Note: Because the collector was not active throughout the current interval, the data for the current interval could be inaccurate.</td>
</tr>
<tr>
<td>Deactivate an active collector.</td>
<td>Type <strong>D</strong> next to the collector name, and then press <strong>Enter</strong>. The collector is deactivated immediately.</td>
</tr>
</tbody>
</table>

**WARNING**

A collector can only be activated if it was turned off through DCSTAT after initialization of the MainView for UNIX System Services PAS. You cannot activate a collector that was not originally activated when the PAS was initialized.

**Enabling thread collection**

Thread collection is not always required and increases CPU usage, so thread collection is disabled by default.

**To enable thread collection**

1. Copy BBDTDCDL from `hilevel.BBPARM` to `hilevel.UBBPARM`.
2. Find the following line in member BBDTDCDL in `hilevel.UBBPARM`:
   
   ```
   *PRCS - - MVUSS Process Collector
   ``
   
   and add `thread=YES` to the right of the comment:
   
   ```
   *PRCS - - MVUSS Process Collector thread=YES
   ```
   
3. Restart the PAS.

**Controlling thread collection dynamically**

As an alternative to modifying BBDTDCDL, you can dynamically control thread history collection from the PSOVER view by entering `THREADH YES` on the `COMMAND` line. If thread history collection is turned off, turn it back on by entering `THREADH YES` on the `COMMAND` line.
Disabling HFS data collection

As with thread collection, detailed HFS data is not always required, and many HFS files can increase CPU usage of the PAS.

To reduce CPU usage by the PAS, disable all HFS data collection

1. Copy BBDTDCDL from hilevel.BBPARM to hilevel.UBBPARM.

2. Find this line in member BBDTDCDL of hilevel.UBBPARM:

   *FMNT - - MVUSS Filesystems Mounted Collector

3. Add hfsc=NO to the right of the comment:

   *FMNT - - MVUSS Filesystems Mounted Collector hfsc=NO

4. Restart the PAS.

When HFS data collection is disabled, the following HFS views display an error message, indicating that HFS data is not being collected:

- HFSINFO
- HFSOVERZ
- HFSOVER
- HFSIOZ
- HFSIO

The error message lists the command that you can use to turn HFS data collection back on.

Controlling HFS data dynamically

As an alternative to modifying BBDTDCDL, you can dynamically control HFS data collection by displaying one of the HFS views and typing these commands on the COMMAND line:

- HFSC No — to stop collection
- HFSC Yes — to start collection
Data collectors and product views

The following table lists the views that are affected by turning off each of the MainView for UNIX System Services data collectors.

When the data collector is turned off, no data is displayed in the corresponding view.
### Table 13: Data collectors and product views

<table>
<thead>
<tr>
<th>Collector</th>
<th>View</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRCS</td>
<td>ASDELAYZ</td>
</tr>
<tr>
<td></td>
<td>ASINFOZ</td>
</tr>
<tr>
<td></td>
<td>ASOVERZ</td>
</tr>
<tr>
<td></td>
<td>EZUPRC</td>
</tr>
<tr>
<td></td>
<td>EZUPRD</td>
</tr>
<tr>
<td></td>
<td>GRPOVERZ</td>
</tr>
<tr>
<td></td>
<td>JOBCPUZ</td>
</tr>
<tr>
<td></td>
<td>PESTAT</td>
</tr>
<tr>
<td></td>
<td>PS</td>
</tr>
<tr>
<td></td>
<td>PSCMDPRM</td>
</tr>
<tr>
<td></td>
<td>PSCMND</td>
</tr>
<tr>
<td></td>
<td>PSCTTY</td>
</tr>
<tr>
<td></td>
<td>PSDELAY</td>
</tr>
<tr>
<td></td>
<td>PSDELAYZ</td>
</tr>
<tr>
<td></td>
<td>PSEXPATH</td>
</tr>
<tr>
<td></td>
<td>PSINFO</td>
</tr>
<tr>
<td></td>
<td>PSOVER</td>
</tr>
<tr>
<td></td>
<td>PSOVERZ</td>
</tr>
<tr>
<td></td>
<td>PSSTAT</td>
</tr>
<tr>
<td></td>
<td>PSTREE</td>
</tr>
<tr>
<td></td>
<td>PSUSE</td>
</tr>
<tr>
<td></td>
<td>PSUSEZ</td>
</tr>
<tr>
<td></td>
<td>PSWRKDIR</td>
</tr>
<tr>
<td></td>
<td>THREAD</td>
</tr>
<tr>
<td></td>
<td>USRJOBZ</td>
</tr>
<tr>
<td></td>
<td>USROVERZ</td>
</tr>
<tr>
<td></td>
<td>USRSESSZ</td>
</tr>
<tr>
<td>Collector</td>
<td>View</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
</tr>
<tr>
<td>FMNT</td>
<td>FSFILENM</td>
</tr>
<tr>
<td></td>
<td>FSINFO</td>
</tr>
<tr>
<td></td>
<td>FSIO</td>
</tr>
<tr>
<td></td>
<td>FSIOZ</td>
</tr>
<tr>
<td></td>
<td>FSMNTPRM</td>
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<tr>
<td></td>
<td>FSMNTPT</td>
</tr>
<tr>
<td></td>
<td>FSMOUNT</td>
</tr>
<tr>
<td></td>
<td>FSMOUNTI</td>
</tr>
<tr>
<td></td>
<td>FSMOUNTZ</td>
</tr>
<tr>
<td></td>
<td>FSWATCH</td>
</tr>
<tr>
<td></td>
<td>FSWATCHZ</td>
</tr>
<tr>
<td></td>
<td>HFSINFO</td>
</tr>
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<td></td>
<td>HFSIO</td>
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<tr>
<td></td>
<td>HFSIOZ</td>
</tr>
<tr>
<td></td>
<td>HFSOVER</td>
</tr>
<tr>
<td></td>
<td>HFSOVERZ</td>
</tr>
<tr>
<td>HFSG</td>
<td>HFSGBUF</td>
</tr>
<tr>
<td></td>
<td>HFSGBUFZ</td>
</tr>
<tr>
<td></td>
<td>HFSGINFO</td>
</tr>
<tr>
<td></td>
<td>SYSOVER</td>
</tr>
</tbody>
</table>
### Displaying data collector activity

Use the DCPERF view to examine the resource utilization for all of the currently active data collectors.

<table>
<thead>
<tr>
<th>Collector</th>
<th>View</th>
</tr>
</thead>
<tbody>
<tr>
<td>WADR</td>
<td>ASDELAYZ, ASINFO, ASINFOZ, ASOVERZ, EZUPRC, EZUPRD, GRPOVERZ, PSCMND, PSDELAY, PSDELAYZ, PSINFO, PSOVER, PSOVERZ, PSSTAT, PSTREE, PSUSE, PSUSEZ, USRJOBZ, USROVERZ, USRSESSZ</td>
</tr>
<tr>
<td>BPXP</td>
<td>BPXPRM, EZUACTS, IPCBPXP, SYSCNFG, SYSOVER</td>
</tr>
</tbody>
</table>
Figure 94: DCPERF view

| Name | Id | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC | DC
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>ASM</td>
<td>02</td>
<td>0.020</td>
<td>9.020</td>
<td>9.040</td>
<td>0.03</td>
<td>11.98</td>
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Displaying data collector activity

Chapter 5 Controlling data collectors 113
MainView Alarm Management

MainView Alarm Management works in conjunction with the MainView for UNIX System Services product, as well as other MainView products, to provide alarms. These alarms display messages that can alert you when system resources are overutilized.

**Note**
The alarm definitions that are distributed with MainView for UNIX System Services are based on MainView Alarm Management version 5.0.xx and later. MainView Alarm Manager 2.1 is no longer supported; you should migrate to MainView Alarm Management as soon as you can reasonably do so. For more information, refer to the chapter “Migrating alarm definitions” in the MainView Alarm Management Guide.

Products that use MainView Alarm Management are:

- CMF MONITOR
- MainView for CICS
- MainView for DB2
- MainView for IMS
- MainView for WebSphere MQ
- MainView for z/OS
- MainView for UNIX System Services
- MainView VistaPoint

MainView Alarm Management is capable of simultaneously monitoring multiple systems, which means that MainView Alarm Management installed on one system keeps track of your entire sysplex.

The MainView for UNIX System Services product is distributed with alarms that you can customize to meet your specific monitoring needs. Table 14 on page 116 lists the available alarms:
### Table 14: MainView for UNIX System Services alarms

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<td>Current number of processes for any one user has exceeded a specified percentage of the maximum allowable concurrent processes for a user</td>
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<td>BBUBPS02</td>
<td>Current number of open files for a process has exceeded a specified percentage of the maximum allowable open files for a process</td>
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<td>BBUBPX01</td>
<td>Current number of processes has exceeded a specified percentage of the maximum allowable concurrent processes on the system</td>
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<td>Current number of user IDs on the system has exceeded a specified percentage of the maximum allowable concurrent user IDs on the system</td>
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<td>One or more files listed in the FSSTAT view have a Match Indicator of N, indicating that the desired file is mounted but is not on the required mount point</td>
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<td>Percent of unprivileged free blocks for a file system falls below a specified value</td>
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<td>BBUTFIL03</td>
<td>One or more HFS files listed in the FSSTAT view have a status of Missing</td>
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<td>Read/write mounted file system utilization has exceeded a specific threshold</td>
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<td>Read/write mounted file system utilization delta has exceeded a specific threshold</td>
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<td>Interval lookup cache hit ratio for an HFS file system falls below a specified value</td>
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<td>Interval page one cache hit ratio for an HFS file system falls below a specified value</td>
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<tr>
<td>BBUSYS01</td>
<td>Process zombie count has exceeded a specific threshold</td>
</tr>
<tr>
<td>BBUXET01</td>
<td>z/OS UNIX Environment Test return code checking</td>
</tr>
</tbody>
</table>

Use the ALRMDIST view to manage the distributed alarms. Use the EZALARMS menu to navigate to other Alarm Management views.
Alarm definitions

Alarm definitions consist of the following parameters:

- threshold and filter criteria
- view, product, and context for which the criteria are established
- message IDs and message text
- monitoring frequency and time intervals
- hyperlinks to views, extended Help, or MainView AutoOPERATOR commands

Alarm definitions are stored in a parameter library member that is read by MainView Alarm Management at MVALARM PAS initialization.

Threshold conditions are defined as one of five priority levels:

- Informational
- Warning
- Minor
- Major
- Critical

For more information about the MainView Alarm Management, refer to the MainView Alarm Management Guide.
Before calling Customer Support

Before calling BMC Customer Support for help with a problem, see if the problem is described in this chapter.

No data in any view

If a view does not contain data, the data collector for that view might be inactive.

Table 13 on page 110 lists the data collectors that are used for each view.

To use the DCSTAT view to determine whether the data collectors are active.

1. On the COMMAND line, type DCSTAT and press Enter.

   The DCSTAT view is displayed.

2. If the Status column indicates that a data collector is Inactive, type A in the line command field (Figure 95 on page 119), and press Enter to activate the data collector.

   **Figure 95: DCSTAT view**

<table>
<thead>
<tr>
<th>DDMMMYYYY</th>
<th>HH:MM:SS</th>
<th>MainView WINDOW INTERFACE (Vv.r.mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMMAND ===&gt;</td>
<td>SCROLL ===&gt;</td>
<td>PAGE</td>
</tr>
<tr>
<td>CURR WIN ===&gt;</td>
<td>1 ALT WIN ===&gt;</td>
<td></td>
</tr>
</tbody>
</table>
   | W1 =DCSTAT=---------SJSC=--------DDMMMYYYY==HH:MM:SS====MVUSS====D====5
<table>
<thead>
<tr>
<th>C Name</th>
<th>Data Collector</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>BPXP USS System Parameters</td>
<td>Inactive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HFSG HFS Global</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FMNT Mounted Filesystems</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PRCS Process Activity</td>
<td>Active</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WADR WLM Address Space</td>
<td>Active</td>
<td></td>
</tr>
</tbody>
</table>

3. If the data collector continues to display a status of Inactive, check the MainView for UNIX System Services PAS job log for messages that indicate a problem with OEDG or data collectors.

4. If you cannot resolve the problem, retain the job log messages and contact BMC Customer Support.
Error messages during z/OS PAS initialization

If the following messages occur during initialization of the z/OS PAS, a user ID has not been properly defined for the PAS:

ICH408I JOB(PASName) STEP(stepName) CL(PROCESS) OMVS SEGMENT NOT DEFINED
BBUGC001E OEDG severe error: OEDG is not running with superuser authority, test 1 failed
BBUGC004I OEDG initialization complete, UXGB=19521E70

To correct the problem, define a user ID with superuser authority, as described in “Defining a user ID for the product address space” on page 11.
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