Program Directory for
IBM Performance Analysis Facility / VM

Release 1, Modification Level 3
Program Number 5684-130

for Use with
VM

Document Date: May 1993
Before using this information and the product it supports, be sure to read the general information under "Notices" on page v.

This program directory, dated May 1993, applies to IBM Performance Analysis Facility / VM (VMPAF) Release 1, Modification Level 3, Program Number 5684-130 for the following:

<table>
<thead>
<tr>
<th>COMPIDs</th>
<th>Feature Numbers</th>
<th>System Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>568413000</td>
<td>5870</td>
<td>VM</td>
</tr>
<tr>
<td></td>
<td>5871</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5872</td>
<td></td>
</tr>
</tbody>
</table>

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Appendix A. VMPAF 1.2 Supplemental Information

A.1 VMPAF 1.3 Changes ............................................. 12
A.2 VMPAF 1.2 changes ............................................. 12
A.3 Mainline Changes ............................................... 12
A.4 VMPAF user's Guide replacement chapters ................. 14
  A.4.1 Creating and Customizing a VMPAF Profile ............. 14
  A.4.2 Changing the Colors that VMPAF Uses .................. 15
  A.4.3 Viewing Data from Different Time Periods ............ 15
A.5 Data Source Processor Changes .................. 16
A.6 VMRTM, RTMSF and RTMESA Consolidation .......... 16
A.7 VMRTM, RTMSF and RTMESA Service ................. 16
A.8 VMRTM, RTMSF and RTMESA Enhancements ............ 16
A.9 VMPRF Enhancements ........................................ 17
A.10 VMPRF Service ............................................... 17
A.11 VMMAP Enhancements ....................................... 17
A.12 VMMAP Service ............................................ 17
A.13 PECOMON Enhancements ................................... 17
A.14 VMPPF Support - new in VMPAF 1.2 ..................... 18
A.15 AIX support - new in VMPAF 1.2 ......................... 18
A.16 Compiling VMPAF EXECs and XEDIT macros. .......... 18
A.17 Currency of VMPAF files. .................................... 19
A.18 VMPAF problems ............................................. 19

Reader's Comments ................................................ 20

Figures

1. Basic Material: Program Tape .................................. 2
2. Program Tape: File Content .................................. 2
4. PSP Upgrade and Subset ID ................................ 4
5. Component IDs ............................................... 4
6. DASD Storage Requirements for Target Minidisks ....... 8
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VM/SP
Virtual Machine / System Product
VM/SP/HPO
Virtual Machine / System Product High Performance Option
VM/XA
Virtual Machine / Extended Architecture System Product
VM/ESA
Virtual Machine / Enterprise System Architecture System Product

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None
1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of VMPAF. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

- **2.0, “Program Materials” on page 2** identifies the basic and optional program materials and documentation for VMPAF.
- **3.0, “Program Support” on page 4** describes the IBM support available for VMPAF.
- **4.0, “Program and Service Level Information” on page 5** lists the APARs (program level) and PTFs (service level) incorporated into VMPAF.
- **5.0, “Installation Requirements and Considerations” on page 6** identifies the resources and considerations for installing and using VMPAF.
- **6.0, “Installation Instructions” on page 10** provides detailed installation instructions for VMPAF. It also describes the procedures for activating the functions of VMPAF.

Before installing VMPAF, read **3.2, “Preventive Service Planning” on page 4**. This section tells you how to find any updates to the information and procedures in this program directory.
2.0 Program Materials

An IBM program is identified by a program number and a feature code. The program number for VMPAF is 5684-130.

The program announcement material describes the features supported by VMPAF. Ask your IBM marketing representative for this information if you have not already received a copy.

The following sections identify:

- The basic and optional program materials available with this program

2.1 Basic Machine-Readable Material

The distribution medium for this program is 9-track magnetic tape (written at either 1600 or 6250 BPI), or 3480 cartridge. The tape or cartridge contains all the programs and data needed for installation. VMPAF is installed using INSTFPP EXEC. See 6.0, “Installation Instructions” on page 10 for more information about how to install the program. Figure 1 describes the tape or cartridge. Figure 2 describes the file content of the program tape or cartridge.

Figure 1. Basic Material: Program Tape

<table>
<thead>
<tr>
<th>Feature Number</th>
<th>Medium</th>
<th>Physical Volume</th>
<th>Tape Content</th>
<th>External Tape Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>5870</td>
<td>1600 tape</td>
<td>1</td>
<td>1 of 1</td>
<td>Basic product 1 of 1</td>
</tr>
<tr>
<td>5871</td>
<td>6250 tape</td>
<td>1</td>
<td>1 of 1</td>
<td>Basic product 1 of 1</td>
</tr>
<tr>
<td>5872</td>
<td>3480 tape cartridge</td>
<td>1</td>
<td>1 of 1</td>
<td>Basic product 1 of 1</td>
</tr>
</tbody>
</table>

Figure 2. Program Tape: File Content

<table>
<thead>
<tr>
<th>Tape File</th>
<th>Content</th>
<th>Number of Files</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Program Identifier and Installation EXEC</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Memo to Users</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>VMPAF product code</td>
<td>248</td>
</tr>
<tr>
<td>4</td>
<td>VMPAF product related users guides</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>VMPAF product related sample data</td>
<td>13</td>
</tr>
</tbody>
</table>

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2.2 Optional Machine-Readable Material

There are no optional machine-readable materials for VMPAF.

2.3 Program Publications

The following sections identify the basic and optional publications for VMPAF.

2.3.1 Basic Program Publications

Figure 3 identifies the basic program publications for VMPAF. One copy of each of these publications is included when you order the basic materials for VMPAF. For additional copies, contact your IBM representative.

Figure 3. Basic Material: Unlicensed Publications

<table>
<thead>
<tr>
<th>Publication Title</th>
<th>Form Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMPAF Licensed Program Specifications</td>
<td>GC23-0568</td>
</tr>
<tr>
<td>VMPAF General Information</td>
<td>GC23-0566</td>
</tr>
<tr>
<td>VMPAF Guide and Reference</td>
<td>SC23-0564</td>
</tr>
<tr>
<td>VMPAF Guide and Reference LAD3MST LIST1403/LIST38PP/</td>
<td></td>
</tr>
<tr>
<td>LIST3820</td>
<td>also on product tape</td>
</tr>
<tr>
<td>VMPAF Guide to VMMAP Support - LAD4MST LIST1403/</td>
<td></td>
</tr>
<tr>
<td>LIST38PP/LIST3820</td>
<td>provided on product tape</td>
</tr>
<tr>
<td>VMPAF Guide to VMPRF Support - LAD5MST LIST1403/</td>
<td></td>
</tr>
<tr>
<td>LIST38PP/LIST3820</td>
<td>provided on product tape</td>
</tr>
<tr>
<td>VMPAF Guide to VMRTM Support - LAD6MST LIST1403/</td>
<td></td>
</tr>
<tr>
<td>LIST38PP/LIST3820</td>
<td>provided on product tape</td>
</tr>
<tr>
<td>VMPAF Guide to RTM/SF and RTM/ VM/ESA Support - LAD7M</td>
<td></td>
</tr>
<tr>
<td>MST LIST1403/LIST38PP/LIST3820</td>
<td>provided on product tape</td>
</tr>
<tr>
<td>VMPAF Guide to PECOMON - LAD8MST LIST1403/LIST38PP/</td>
<td></td>
</tr>
<tr>
<td>LIST3820</td>
<td>provided on product tape</td>
</tr>
</tbody>
</table>

2.3.2 Optional Program Publications

There are no optional publications for VMPAF.

2.4 Microfiche Support

There is no microfiche for VMPAF.
3.0 Program Support

This section describes the IBM support available for VMPAF.

3.1 Service Instructions

Contact your IBM marketing representative or systems engineer (SE) for specific information about available service instructions.

3.2 Preventive Service Planning

Before installing VMPAF, check with your IBM Support Center or use either Information/Access or IBMLink (Service Link) to see whether there is additional Preventive Service Planning (PSP) information that you should know. To obtain this information, specify the following UPGRADE and SUBSET values:

Figure 4. PSP Upgrade and Subset ID

<table>
<thead>
<tr>
<th>Upgrade</th>
<th>Subset</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMPAF1</td>
<td>VMPAF/100</td>
</tr>
<tr>
<td>VMPAF1</td>
<td>VMPAF/110</td>
</tr>
<tr>
<td>VMPAF1</td>
<td>VMPAF/120</td>
</tr>
</tbody>
</table>

If you have received VMPAF only from IBM Software Distribution, then before installing VMPAF, you should also check with your IBM Support Center or use either Information/Access or SoftwareXcel Extended to see if there is additional PSP information that you should know.

3.3 Statement of Support Procedures

Report any difficulties you have using this program to your IBM Support Center. In the U.S.A., if an APAR is required, submit the data to the location identified in the Software Service and Support General Information manual, G229-2228, as being responsible for the failing component.

Figure 5 identifies the component IDs (COMPID), Retain Release and Field Engineering Service Numbers (FESN) for VMPAF.

Figure 5. Component IDs

<table>
<thead>
<tr>
<th>Retain</th>
<th>Component Name</th>
<th>FESN</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPID</td>
<td>Release</td>
<td>Component Name / VM</td>
</tr>
<tr>
<td>568413000</td>
<td>1</td>
<td>IBM Performance Analysis Facility / VM</td>
</tr>
</tbody>
</table>
4.0 Program and Service Level Information

This section identifies the program and any relevant service levels of VMPAF. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated. Information about the cumulative service tape is also provided.

4.1 Program Level Information

No APARs have been incorporated into VMPAF.

4.2 Cumulative Service Tape

There is no cumulative service tape for VMPAF.
5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating VMPAF. In most cases, you can install VMPAF on a running system (target system). However, sometimes two systems may be required. If two systems are required, then the following terminology is used:

1. The system used to install the program (driving system)
2. The system on which the program is installed (target system).

5.1 Driving System Requirements

This section describes the environment of the driving system required to install VMPAF.

5.1.1 Programming Requirements

There are no special programming requirements for the driving system.

5.1.2 DASD Storage Requirements

There are no special DASD requirements for the driving system to install VMPAF.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use VMPAF.

5.2.1 Operating System Requirements

VMPAF operates under the VM operating system.

VMPAF operates in the following VM systems:

- 5664-167 IBM Virtual Machine/System Product (VM/SP), Release 5 or later
- 5664-173 IBM Virtual Machine/System Product High Performance Option (VM/SP HPO), Release 5 or later
- 5664-308 IBM Virtual Machine/Extended Architecture System Product (VM/XA SP), Release 2 or later.
- 5684-112 IBM Virtual Machine/Enterprise System Architecture System Product (VM/ESA), Release 1 or later.

VMPAF will fail at execution time on CMS 7 and CMS 8 unless the following fixes are installed on CMS.

- For CMS 7  VM/ESA (R110)  VM47766/UM18896
For CMS 8 VM/ESA (R111) VM51206/UM21074

An EXEC with the following statements will fail if your level of CMS does not have the appropriate PTF installed.

```c
/* */
a= 0 + 1E72 ;
say a ;
say c2d('02'x) ; /* this is the statement that will fail */
/* with a REXX 20040 return code */
```

5.2.2 Machine Requirements

VMPAF runs on any processor that meets the minimum specifications of the operating systems listed under "Operating System Requirements".

VMPAF runs in a privilege class G virtual machine. The quantity of data being processed by VMPAF determines the virtual and real storage requirements of the program. VMPAF requires 6 to 32 megabytes (MB) of virtual storage. For quantities of data requiring less than 16 MB of virtual storage, VMPAF may run in either a System/370 virtual machine or a 370-XA virtual machine and either the compiled or uncompiled form of VMPAF may be used. For larger quantities of data, VMPAF requires a 370/XA virtual machine, and the compiled form of VMPAF must be used.

In addition, VMPAF requires a color graphics display that is supported by the Graphical Display Data Manager (GDDM*) family of programs.

5.2.3 Programming Requirements

VMPAF requires these programs:

- GDDM/VM Version 2 Release 2 or later, Program Number 5664-200 AND GDDM/REXX, Program Number 5664-336 or
- GDDM/VMXA Version 2 Release 2 or later, Program Number 5664-007 AND GDDM/REXX, Program Number 5664-336 or
- GDDM/VM Version 3, Program Number 5684-168

VMPAF requires data that has been processed by one of these programs:

- Personal Computer Monitor (PECOMON), Program Number 6467-045
- VM Monitor Analysis Program (VMMAP) Release 1.5 or later, Program Number 5664-191.
- VM Performance Reporting Facility (VMPRF), Program Number 5684-073
- VM Realtime Monitor (VM/RTM) Release 1.8 or later, Program Number 5796-PNA.
- VM/XA Realtime Monitor/Systems Facility (VM/XA RTM/SF) Release 4, Program Number 5798-DWD.
- Realtime Monitor VM/ESA (RTM VM/ESA) Release 5, Program Number 5798-DWD.
• OS2 System Performance Monitor
• AIX/ESA, AIXMON command ASCII file
• AIX/ESA, Netstat command output
• AIX/ESA, Nfsstat command output
• AIX Version 3 (for RISC 6000) SAR command ASCII file
• AIX Version 3, Netstat command output
• AIX Version 3, Nfsstat command output

To compile the VMPAF REXX programs, the VM REXX Compiler for CMS, Program Number 5664-390, is required.
• CMS System Product Editor (XEDIT) and Interpreter (REXX).

5.2.4 DASD Storage Requirements

Before installing VMPAF you must provide a minidisk for installation, service, and running. The following table lists the minidisks and the space requirements:

<table>
<thead>
<tr>
<th>Minidisk Description</th>
<th>Default MAINT Address</th>
<th>Storage in Cylinders</th>
<th>Storage in Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMPAF total</td>
<td>537</td>
<td>DASD CYLS</td>
<td>Type Blocks</td>
</tr>
<tr>
<td></td>
<td>9345</td>
<td>100 84</td>
<td>FB512 87960</td>
</tr>
<tr>
<td></td>
<td>3390</td>
<td>100 100</td>
<td>1K 43980</td>
</tr>
<tr>
<td></td>
<td>3380</td>
<td>155 124</td>
<td>2K 21990</td>
</tr>
<tr>
<td></td>
<td>3375</td>
<td>100 155</td>
<td>4K 10995</td>
</tr>
</tbody>
</table>

5.3 Program Considerations

5.3.1 Operating System Requirements

The VM operating system is used to install VMPAF.

5.3.2 Machine Requirements

5.3.3 Programming Considerations

5.3.4 System Considerations
5.3.5 Special Considerations
6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of VMPAF.

6.1 Installing VMPAF

6.1.1 Overview

The following procedure should be followed to install VMPAF on your licensed program minidisk.

VMPAF should be installed on a minidisk that is owned by the ID of the performance data reduction facility that you are using. If you are using more than one data reduction facility, VMPAF may be installed on a minidisk owned by one data reduction facility and then linked to by the other data reduction facility. For example, if your facility is using VMPRF to analyze VM/XA data and VMMAP for VM/SP data, you could install VMPAF on a separate minidisk owned by VMPRF, and link to the correct VMPRF minidisk from the VMMAP userid to access the VMPAF product.

The minidisk that the VMPAF program product is to be installed on must be linked prior to installation as the '537'. The VMPAF installation exec will access the minidisk in the 'E' mode during the installation.

NOTE: Insure that no minidisk is linked as '537' and that no minidisk is accessed in the 'E' mode prior to starting the installation procedure.

6.1.2 Details

1. LOGON ‘MAINT’ userid (userid with capability to write to the licensed program minidisk).

   LOGON MAINT password

2. IPL CMS and access userid ‘MAINT’ s 191 minidisk as the A-disk, in R/W mode. Have the VMPAF product tape mounted and attached to you as your virtual tape 181. Insure that you have the minidisk where the VMPAF program product is to be installed linked as the ‘537’ read-write. It does not need to be accessed at this time. The installation EXEC will access the disk when it is necessary. Insure also that no minidisk is accessed as ‘E’.

   IPL CMS
   ACCESS 191 A
   M OPERATOR Please attach VMPAF tape to me as 181....

3. Execute the INSTFPP EXEC to begin the installation of VMPAF

   INSTFPP
4. Once the INSTFPP EXEC has completed successfully you may review the Memo to Users. You can display the file on your terminal by using the command TYPE I5684130 MEMO, or you may print the file by issuing the commands:

```
SPOOL PRINT CLASS x  
( where 'x' represents the class designation for a printer capable of printing in upper and lower case)
```

```
PRINT I5684130 MEMO
```

6.1.2.1.1 Using the 'SAMPLE.xx files': All of the 'SAMPLE.xx files have been packed using 'COPYFILE ... ( PACK'. You will need to do a 'COPYFILE ... ( UNPACK' before you can use them.

6.1.2.1.2 Printing the VMPAF LISTxxxx files: The VMPAF manuals that are on the VMPAF product tape are in files that have been packed using 'COPYFILE ... ( PACK'. You will need to do a 'COPYFILE ... ( UNPACK' before you can print them.

The 'LIST3820' and 'LIST38PP' forms for each manual require a font containing the IBM logo to print. The '....NLGO LIST3820' form does not require a font containing the IBM logo.

6.1.2.1.3 Compiling the VMPAF Product: If you have the VM REXX Compiler for CMS (5664-390) installed on your system, you will want to compile the VMPAF REXX programs to reduce the CPU utilization incurred during execution.

Insure that you are linked to the REXX Compiler disk. You will also need to have a minimum of an 8meg virtual machine to compile the VMPAF REXX programs.

To compile the VMPAF program product, issue the command:

```
FGACOMPI E  
( where 'E' represents the filemode where the VMPAF product was installed in the previous step)
```

6.2 Activating VMPAF

Detailed steps to get the program into operational status are defined in VMPAF Guide and Reference, SC23-0564.
Appendix A. VMPAF 1.2 Supplemental Information

A.1 VMPAF 1.3 Changes

This is a summary of changes made to VMPAF since VMPAF 1.1.2. More detailed descriptions are in 'Help VMPAF Changes'.

- Added support for VMPRF type 7 Summary and Trend records.
- Added support for GDDM 3.0.
- Added some variables for AIX SAR data.
- Enhanced the interface for 'self defining data'.
- Enhanced the 'fgaver' interface.
- Cleaned up the syntax of some messages.
- Added support for 'model' AN files.
- Added 'FGANPM' as an example of how one might import Network Performance Monitor data into VMPAF.
- Added 2 new 'TimeFormat' options.
- Added support for running 'Replay' in a disconnected virtual machine.
- Fixed various minor bugs.

A.2 VMPAF 1.2 changes

This is a summary of changes made to VMPAF since VMPAF 1.1.1. One of the changes is to provide access to a summary of each of the over 200 individual changes via the VMPAF "help" key.

A.3 Mainline Changes

Following is a list of the major changes to the VMPAF function in this release

- The prerequisite of GDDM-PGF has been removed. VMPAF no longer requires GDDM-PGF.
- The number of colors supported has been extended to up to 255. Patterns have been added also to improve the readability of the charts. (As supported by GDDM.)
- The color choices have been made consistent across all charts, and can be selected using the following statements in your FGASYS PROFILE:

  TEXT_COLORS: to control the colors used to display the annotated names file.
DATA_COLORS: To control the colors of the data lines and areas.
DATA_PATTERNS: To control the patterns used to fill data areas.
CTL_COLORS: To control the colors used in the non-data areas of the charts.
BACKGROUND_COLOR: To control the chart's background color.

These statements are explained more fully in the file FGASYS PROFSAMP.

- New time formats are supported allowing data from multiple days to be processed more easily.
  
  **Full** The full time is shown (the same as before.)
  
  **Comp** Days with no data points are deleted from the display and the remaining days are expanded to fill the space. This makes it easier to compare data from different days.
  
  **Over** Days are overlaid on each other. This makes it easier to compare events that occur at the same time on multiple days.

- There are three methods of selecting the options for the chart displayed:
  
  **PF10 - Chart_Format** This cycles through the different chart formats leaving the time format unchanged.
  
  **PF4 - Time_Format** This cycles through the different time formats leaving the chart format unchanged.
  
  **PF5 - Select** This puts up a pop-up menu allowing you to select any chart and time format directly.

- A new chart format, the **Mixed-Layer** has been created to allow comparison of events shown in a layer chart with the values of the PQM.

- The Coefficient of Variation has been added to the 2-Up charts to aid in PQM selection.

- The time stamps printed on the charts have been corrected to be more suitable for more time ranges.

- The screen is updated on a page by page basis during analyze. This makes it easier to read the values while the analyze is running.

- The ability to interrupt an analyze has been added. Just hit enter, then enter one of the following immediate commands:
  
  **HA** Halt Analyze - This causes the analyze to stop at the current point.
  
  **UL** Update Line - This causes analyze to display each line as updated.
  
  **UP** Update Page - This causes analyze to display updated information only when the screen is full. This is the default.
  
  **UQ** Update Quiet - This causes analyze to display updated information only when the analyze is complete.

- VMPAF will allow you to process an existing annotated names file, even if the “SYSTEM:” line has been removed from the FGASYS PROFILE file.

- Equations and “SET” statements can use fully qualified names. The names have the format:
  
each of the fields can be left out, defaulting to the same value as the defining statement.

- You can combine data from multiple sources in the same *SET* or in the same equation.
- Equations can now refer to values calculated by other *EQU* statements.

## A.4 VMPAF user's Guide replacement chapters

The following chapters are to replace existing chapters with the same headings in the VMPAF user's Guide.

### A.4.1 Creating and Customizing a VMPAF Profile

Before running the VMPAF program for the first time, you must create FGASYS PROFILE, the VMPAF profile. A sample profile is supplied with VMPAF in the file FGASYS PROFSAMP. Your profile will be an extension of this one. Your FGASYS PROFILE need only have the lines that are different from those in FGASYS PROFSAMP.

XEDIT the file FGASYS PROFILE:

```plaintext
XEDIT FGASYS PROFILE
```

You can tailor this file to the needs of your installation. It contains information that tells VMPAF how to process data associated with your systems. It also includes settings for the VMPAF environment, such as the colors and patterns uses when it displays graphs.

In your FGASYS PROFILE add the line

```plaintext
SYSTEM: pvl1 vmmapacum
```

This statement tells VMPAF how to process data from PVL1. It refers to a data source VMMAPACUM, which processes data from VMMAP ACUM files. The SYSTEM: statement defines the system PVL1 and tells VMPAF to use the data source VMMAPACUM to process the data files associated with this system.

File FGASYS PROFILE.

You now have created a profile that allows VMPAF to process VMMAP ACUM files associated with PVL1.

End of Replacement section

14  VMPAF Program Directory
A.4.2 Changing the Colors that VMPAF Uses

The colors used on the annotated names file display and the colors and patterns used on the charts and may be changed to your specifications. For details see the following sections in FGASYS PROFSAMP:

TEXT_COLORS: to control the colors used to display the annotated names file.
DATA_COLORS: To control the colors of the data lines and areas.
DATA_PATTERNS: To control the patterns used to fill data areas.
CTL_COLORS: To control the colors used in the non-data areas of the charts.
BACKGROUND_COLOR: To control the chart's background color.

A.4.3 Viewing Data from Different Time Periods

You can also view data from different time periods. Suppose you want to compare the behavior the system on two days: 2 October 1989 and 9 October 1989. For this example we will assume you are working with data for system VMSYSG and have collected the files VMSYSG 891002AC and VMSYSG 891009AC. They may or may not contain data covering the same time span.

To compare the data copy, the data files together in date order to another file using the append option of the copy command. For example:

COPY VMSYSG 891002AC VMSYSG 2DAYSAC
COPY VMSYSG 891009AC VMSYSG 2DAYSAC(APPEND

Then run VMPAF on the merged file.

VMPAF VMSYSG 2DAYSAC

When you view a picture of the variable you are interested in, you will see a narrow plot on each side of the screen with a lot of space in between.

To make this more readable, depress the PF4 key (Time_Format,) this will eliminate the white space for the intervening days and enlarge the data to fit the space. The data for each day can now be compared using any of the chart types VMPAF supplies.

Depressing the PF4 key (Time_Format) again will cause the data for the two days to be overlaid on top of each other. This may be useful for comparing information on line charts.

Depressing the PF4 key (Time_Format) a third time will bring you back to the original format.
The Time Format setting is remembered between pictures, so each variable you view will be shown using the same time format until you change it.

End of Replacement section

A.5 Data Source Processor Changes

Changes were made to data source processors for performance and usability enhancements.

VMPAF 1.2 replaces FGALST PROCESS and FGALST2 PROCESS with FGALST3/PROCESS3, which is both easier to code and much faster during execution. (Example: A large RTMSF file that took 1 hour to process using FGALST PROCESS logic now runs in 5 minutes.)

- FGAXTRJ EXEC (unique to VMMAP ACUM file data). - Unchanged
- FGAPRF PROCESS (used to generate all the FGAPRFnn EXECs to process VMPRF summary and trend files). - Unchanged
- FGALST2 PROCESS logic (used for VMMP OUTDcuu data) - rewritten in FGALST3/PROCESS3 logic.
- FGALST PROCESS logic (used for all other data sources) - rewritten in FGALST3/PROCESS3 logic.

A.6 VMRTM, RTMSF and RTMESA Consolidation

These 3 variants of RTM were formerly supported by 3 separate EXECs. Support for all 3 has been consolidated into FGARTM3 EXEC, which is generated by FGALST3, using FGARTM3 PROCESS3. Installation entry points are available through FGARTM3 PROLOGUE and FGARTM3 EPILOGUE.

A.7 VMRTM, RTMSF and RTMESA Service

A problem which transposed the “triv” and “alltran” values has been fixed.

A.8 VMRTM, RTMSF and RTMESA Enhancements

New data fields for VM/ESA are supported.

'ULOG' variables are now supported.
A.9 VMPRF Enhancements

New data fields for VM/ESA release 2 are supported. (VMPRF 1.2 with PTF UM21011 is required.)

VMPRF 1.2 changed Shared File System data to be record type “A2” instead of “99.” VMPAF will treat “99”s and “A2”s the same. VMPRF99 and the (new) VMPRFA2 data source processors are synonyms.

A.10 VMPRF Service

A problem processing VMPRF type 41 and 45 records is fixed (incorrect rollup of CPU times).

A problem processing VMPRF type 06 records is fixed.

A problem processing summary/trend files that are not “MR” files has been fixed. Symptom was REXX being spewed out.

A.11 VMMAP Enhancements

Support for OUTDcuu listing (FGAMON EXEC) converted from FGALST PROCESS to FGALST3 PROCESS3.

FGAMON EXEC extended to also support:

- OUTUSER LISTING (User resource utilization part 1)
- OUTUSR2 LISTING (User resource utilization part 2) and
- OUTSAMP LISTING (User state sampling)

You provide 1 data file that contains all 4 of these reports, then select VMMAPlist on the SYSTEM: statement in your FGASYS PROFILE.

A.12 VMMAP Service

A problem in handling VMMAP ACUM files that are “rollups” of daily data has been fixed.

A.13 PECOMON Enhancements

FGAPECO EXEC rewritten using FGALST3 PROCESS3 logic.

User exit to specify first command in script provided.
A.14 VMPPF Support - new in VMPAF 1.2.

VMPPF OUTCOMPR files are now supported. See “VMPPF” in FGASYS PROFSAMP.

This provides a convenient graphical way of looking at VMPPF OUTMEASR or OUTMODEL output that has been saved in an OUTCOMPR file. SAMPLE06 OUTCOMPR is an example of a VMPPF OUTCOMPR file. “System: sample06” in FGASYS PROFSAMP is an example of the system: statement you would need to put into your FGASYS PROFILE if the file name of your OUTCOMPR file is not “sample06.” The file type of your OUTCOMPR can be anything that ends in “PR.” Try a “VMPAF sample06 outcompr” ... it worked for me! Hint - Setting “Period” as the PQM provides an easy way to differentiate between modelling runs.

A.15 AIX support - new in VMPAF 1.2.

SAR data from AIX/370 and AIX for RISC 6000s is now supported by VMPAF.

Data collection. Use SAR -A with short intervals to create a SAR binary file. Then use SAR to create an ASCII file from the binary file. Then use File Transfer Program (or equivalent) to get the ASCII file onto a CMS minidisk. (On RISC 6000s the creation of the ASCII file must be done on the same system that created the data for the “system name” to be correct.)

On your CMS account, create a SYSTEM: statement (similar to those for Sample01 and Sample02 in FGASYS PROFSAMP) in your FGASYS PROFILE. The “name” must match the file name of your ASCII file. The file type of your ASCII file can be anything that ends in one of “A3,” “RS” or “AX.” Try a VMPAF on Sample01 or Sample02.

A.16 Compiling VMPAF EXECs and XEDIT macros.

FGACOMPI (the “compiler” EXEC) now keys off “Generate:” statements in FGASYS PROFSAMP and FGASYS PROFILE. Syntax of command is:

- FGACOMPI d (to compile all VMPAF stuff that is on disk “D”)
- FGACOMPI FGAAIX (to compile FGAAIX EXEC on the “A” disk) or
- FGACOMPI FGAIOT d (to compile FGAIOT XEDIT on the “D” disk)

If you have provided “Generate:” statements for your own EXECs in your FGASYS PROFILE they will be recognized by FGACOMPI.

All EXECs and XEDIT macros supplied with VMPAF are now compilable. Those that were previously uncompileable (due to use of INTERPRET statements) have been changed to be compilable.
A.17 Currency of VMPAF files.

VMPAF 1.2 introduces the “FGA VERSION” file and the “FGAVER EXEC.” “FGA VERSION” lists all the files that VMPAF knows about and their “current level” when they left development. The “current level” will be one of “not shipped with VMPAF,” “Version ... Change ...” or “date ... time ... records” as applicable. (Look at FGA VERSION for precise syntax.) “FGAVER EXEC” uses “FGA VERSION” as a “what should be there” list, and verifies that each file listed in it is at the expected “level” on your system. Mismatches between “expected” and “actual” will be noted via messages to your terminal. Syntax is one of:

- FGAVER
- FGAVER TOOLS

FGAVER without an operand simply pumps messages to your terminal. FGAVER TOOLS will also provide a file named “FGAVGET EXEC.” FGAVGET will be set up to use an IBM internal facility to get each of the VMPAF files that is not at the expected level.

Users with access to that facility may simply exec FGAVGET to get the current level of the files. (You'll want to look at the list to ensure it's consistent with your usage. For example, it doesn't ask for files that you don't keep online.)

Users who do not have access to that facility should

- Check the current VMPAF product tape for “missing” or “downlevel” files.
- Send the FGAVGET EXEC to VMPAF development via
  - Surface mail (hardcopy only)
  - IBMMAIL (USIBM7NH at IBMMAIL) or
  - INTERNET (vanleerp@kgnvmc.inus1.ibm.com)

The relevant VMPAF files will be returned via the same media they they were requested.

A.18 VMPAF problems

Problems using VMPAF can be reported to IBM via

- your local IBM service organization, or
- Mail to VMPAF development, or
- Email to VMPAF development at one of the above addresses.
Reader's Comments

IBM Performance Analysis Facility / VM Release 1, Modification Level 3

You may use this form to comment about this document, its organization, or subject matter with the understanding that IBM may use or distribute whatever information you supply in any way it believes appropriate without incurring any obligation to you.

For each of the topics below please indicate your satisfaction level by circling your choice from the rating scale. If a statement does not apply, please circle N.

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<th>RATING SCALE</th>
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<td>Contents of program directory</td>
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<tr>
<td>Installation Verification Programs</td>
</tr>
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<td>Time to install the product</td>
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<td>Readability and organization of program directory tasks</td>
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<td>Ease of getting the system into production after installation</td>
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Did you order this product as an independent product or as part of a package?

__ Independent
__ Package

If this product was ordered as part of a package, what type of package was ordered?

__ CustomPac
__ FunctionPac
__ SystemPac
__ System Delivery Offering (SDO)
__ Other - Please specify type: ..........................

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Is this the first time your organization has installed this product?

__ Yes
__ No
Were the people who did the installation experienced with the installation of VM products?

___ Yes
___ No

If yes, how many years? __

If you have any comments to make about your ratings above, or any other aspect of the product installation, please list them below:

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Thank you for your participation.

Please send the completed form to (or give to your IBM representative who will forward it to the IBM Performance Analysis Facility / VM Development group):
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