

OS/390



UNIX System Services: APAR OW42811

OS/390



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About This Guide

This document supports APAR OW42811 for OS/390 UNIX System Services (OS/390 UNIX), which is available for OS/390 Version 2 Releases 8 and 9. The information is based on the Release 9 library. This document is available only on the OS/390 UNIX web site at:

<http://www.s390.ibm.com/unix/release/apar.html>

Part 1. APAR OW42811: OS/390 UNIX System Services Library

Chapter 1. APAR OW42811: OS/390 UNIX System Services Planning

Chapter 12. Summary of Interface Changes

This section summarizes the new and changed interface components of OS/390 UNIX.

Operator Commands

Table 1 lists new and changed operator commands that affect OS/390 UNIX. For more information, see *OS/390 MVS System Commands*.

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Table 1. Summary of New and Changed Operator Commands

Operator Command	Release	Description	Related Support
SETOMVS	V2R8	New operand: The RESET operand enables you to dynamically add the FILESYSTYPE, NETWORK, and SUBFILESYSTYPE statements to the BPXPRMxx parmlib member.	File system
	V2R9	New operand: The SYNTAXCHECK operand enables you to check the syntax of a BPXPRMxx parmlib member before doing an IPL.	BPXRMxx
DISPLAY OMVS	V2R9	New operands: The CINET operand displays the network routing information for the Common INET prerouter. The PFS operand displays information about the FILESYSTYPE, SUBFILESYSTYPE, and NETWORK statements.	File system
	V2R10	New operand: The BRL operand, with D OMVS,PID=, displays thread-level information for any thread that is in a byte-range lock wait.	RAS Enhancements

OS/390 UNIX System Services Planning

Part 2. APAR OW42811: OS/390 MVS Library

Chapter 2. APAR OW42811: OS/390 MVS System Commands

Displaying OS/390 UNIX System Services Status

The MVS operator can use the DISPLAY command to obtain:

- OS/390 UNIX System Services status information (for example, active or terminating)
- Hierarchical file system (HFS) information
- OS/390 UNIX System Services process information for address spaces
- The current setting for all OS/390 UNIX System Services parmlib statements
- Information about multiple parmlib members
- Information about each physical file system that is currently part of the OS/390 UNIX System Services configuration
- Routing information from the Common Inet Pre-Router routing tables.
- Thread-level information for any thread that is in a byte-range lock wait.

You can use this command to display address space information for a user who has a process that is hung. You can also use the information returned from this command to determine how many address spaces a given TSO/E user ID is using, whether an address space is using too many resources, and whether a user's process is waiting for an OpenMVS kernel function to complete.

The syntax for the DISPLAY OMVS command is:

```
D OMVS[ { ,SUMMARY|S } ]
      ,{ASID|A}=ALL
      ,{ASID|A}=asid
      ,U=userid
      ,{PID}=processid[,BRL]
      ,{FILE|F[,CAPS|C]}
      ,{VSERVER|V}
      ,{PFS|P}
      ,{CINET|CI}=A11|TPname
      ,{OPTIONS|O}

[,L={a|cc|cca|name|name-a}]
```

SUMMARY or S

Displays status of OpenMVS processes, file systems, and servers (for example, active or terminating) and the BPXPRMxx parmlib member specified during initialization or specified by the SET OMVS= OS/390 UNIX System Services command.

ASID= or A=ALL

Displays process information for all OS/390 UNIX System Services address spaces.

ASID= or A=asid

Displays process information for the specified hexadecimal address space ID (ASID). If the specified ASID is not an OS/390 UNIX System Services address space, an error message is issued.

U=userid

Displays process information for all processes associated with the specified

DISPLAY OMVS Command

TSO/E user ID. Use this operand when a user requests that a hung process be canceled. You can display all processes owned by the user and find the address space ID (ASID) of the process that needs to be canceled. Then use the CANCEL command to cancel the address space.

FILE or F

Displays a list of HFS file systems that OS/390 UNIX System Services is currently using and the status of each HFS.

VSERVER or V

Displays process information for all processes that have been defined as servers that use the virtual file system (VFS) callable services API.

CAPS or C

Displays variable data containing lowercase letters in uppercase.

CINET = or CI = ALL | tpname

Displays the Common Inet routing information for all of the active transport providers in use by the Common Inet Pre-Router. The transport providers were specified with the SUBFILESYSTYPE statements in the BPXPRMxx profile or specified with the SETOMVS command. The network routing information was specified in the appropriate data set for the transport provider. When the name (*tpname*) of an active transport provider is specified, the command displays the Common Inet routing information for that specific transport provider.

OPTIONS or O

Displays the current settings of the options that

(a) were set during initialization in the parmlib member BPXPRMxx or by a SET OMVS or SETOMVS command after initialization, and that

(b) can be altered dynamically via a SET OMVS or SETOMVS command.

PFS or P = Physical File System

Displays information about each physical file system that is currently part of the OS/390 UNIX System Services configuration. The physical file systems were specified in the BPXPRMxx profile, or with the SETOMVS command, or are an internal part of OS/390 Unix System Services.

BRL

Displays thread-level information for any thread that is in a byte-range lock wait. This operand can only be specified with PID=.

Example 1

To display process information for all OS/390 UNIX System Services address spaces, enter:

```
DISPLAY OMVS,A=ALL
```

OS/390 UNIX System Services status information (OMVS ACTIVE) appears before the process information.

```
BPX0040I 14.31.40 DISPLAY OMVS 018
OMVS 000E ACTIVE OMVS=(93)
USER JOBNAME ASID PID PPID STATE START CT_SECS
IBMUSER BPXOINIT 0013 1 0 MKI 11.02.40 .037
LATCHWAITPID= 0 CMD=BPXPINPR
SERVER=Init Process AF= 0 MF=65535 TYPE=FILE
MEGA MEGA 001A 16777218 1 1RI 11.18.17 .634
LATCHWAITPID= 0 CMD=OMVS
MEGA MEGA 001A 16777219 16777218 1CI 11.18.25 .634
LATCHWAITPID= 0 CMD=sh -L
```


Example 2

To display OS/390 UNIX System Services process information on all OS/390 UNIX System Services address spaces owned by user ID MEGA, enter:

```
DISPLAY OMVS,U=MEGA
```

OS/390 UNIX System Services status information (OMVS ACTIVE) appears before the process information.

```
BPX0040I 14.34.15 DISPLAY OMVS 021
OMVS      000E ACTIVE          OMVS=(93)
USER      JOBNAME  ASID      PID      PPID STATE   START   CT_SECS
MEGA      MEGA     001A    16777218      1 1RI   11.18.17   .634
  LATCHWAITPID=          0 CMD=OMVS
MEGA      MEGA     001A    16777219    16777218 1CI   11.18.25   .634
  LATCHWAITPID=          0 CMD=sh -L
```

Example 3

To display OS/390 UNIX System Services process information for the address space with ASID equal to 001A, enter:

```
DISPLAY OMVS,ASID=1A
```

OS/390 UNIX System Services status information (OMVS ACTIVE) appears before the process information.

```
BPX0040I 14.36.04 DISPLAY OMVS 024
OMVS      000E ACTIVE          OMVS=(93)
USER      JOBNAME  ASID      PID      PPID STATE   START   CT_SECS
MEGA      MEGA     001A    16777218      1 1RI   11.18.17   .634
  LATCHWAITPID=          0 CMD=OMVS
MEGA      MEGA     001A    16777219    16777218 1CI   11.18.25   .634
  LATCHWAITPID=          0 CMD=sh -L
```

Example 4

To display detailed file system information on currently mounted files, enter:

```
DISPLAY OMVS,FILE
```

OS/390 UNIX System Services status information (OMVS ACTIVE) appears before the file system information.

```
00 BPX00451 12.28.28 DISPLAY OMVS 011
OMVS      000E ACTIVE          OMVS=(66)
TYPENAME  DEVICE  -----STATUS-----  MODE
HFS        4  ACTIVE                                  READ
  NAME=POSIX.USR.LPP
  PATH=/usr/lpp
  MOUNT PARM=SYNC(60)
  OWNER=SYSTEM2  AUTOMOVE=Y  CLIENT
  QSYSTEM=system1 QJOBNAME=FRED  QPID=34567
HFS        3  ACTIVE                                  READ
  NAME=POSIX.HFS.NLS
  PATH=/usr/ib/nls
  OWNER=SYSTEM2  AUTOMOVE=Y  CLIENT=Y
HFS        2  ACTIVE                                  READ
  NAME=POSIX.HFS.MAN
  PATH=/usr/man
  OWNER=SYSTEM3  AUTOMOVE=Y  CLIENT=Y
HFS        1  ACTIVE                                  RDWR
```

DISPLAY OMVS Command

```
NAME=POSIX.HFS.FS  
PATH=/  
OWNER=          AUTOMOVE=N  CLIENT=N
```

Example 5

To display process information for all processes that have been defined as a server, enter:

```
DISPLAY OMVS,V
```

OS/390 UNIX System Services status information (OMVS ACTIVE) appears before the file system information.

```
BPX0040I 14.38.46 DISPLAY OMVS 030  
OMVS    000E ACTIVE           OMVS=(93)  
USER    JOBNAME  ASID        PID        PPID STATE   START    CT_SECSS  
IBMUSER BPX0INIT 0013         1          0 MKI    11.02.40 .0373  
  LATCHWAITPID=           0 CMD=BPXPINPR  
  SERVER=Init Process      AF=      0 MF=65535 TYPE=FILE
```

Example 6

To display all options set during initialization by the parmlib member BPXPRMxx or with the SET command, enter:

```
DISPLAY OMVS,0
```

Note: The SYSPLEX (YES) option indicates the system is in a sysplex and is using the shared HFS capability. You cannot dynamically change the SYSPLEX parameter through SETOMVS or SET OMVS. For more information, see the chapter on Shared HFS in *OS/390 UNIX System Services Planning*.

Example 7

To display the thread information for the processid 1, enter:

```
DISPLAY OMVS,PID=1  
BPX0040I 11.13.40 DISPLAY OMVS 971  
OMVS    000E ACTIVE           OMVS=(93)  
USER    JOBNAME  ASID        PID        PPID STATE   START    CT_SECS  
IBMUSER BPX0INIT 0013         1          0 MKI    11.02.40 .037  
  LATCHWAITPID=           0 CMD=BPXPINPR  
  SERVER=Init Process      AF=      0 MF=65535 TYPE=FILE  
THREAD ID      TCB@   PRI JOB  USERNAME  ACC_TIME SC  STATE  
04B9267800000000 009DEA70 OMVS      .028 WAT W  
04B92F2000000000 009DE8D8      .003 VRT Y  
04B937C800000000 009DE278 OMVS      .002 KIN K
```

Example 8

To display information about each physical file system that is currently part of the OS/390 UNIX System Services configuration when the physical file systems are specified in the BPXPRMxx profile, enter:

```
D OMVS,P  
  
BPX0046I 14.35.38 DISPLAY OMVS 092  
OMVS    000E ACTIVE           OMVS=(33)  
PFS CONFIGURATION INFORMATION  
PFS TYPE      DESCRIPTION          ENTRY      MAXSOCK  OPNSOCK  HIGHUSED  
TCP           SOCKETS AF_INET              EZBPFINI  50000    244      8146  
UDS           SOCKETS AF_UNIX                BPXTUINT  64       6        10
```

DISPLAY OMVS Command

```
HFS          LOCAL FILE SYSTEM      GFUAINIT
BPXFTCLN     CLEANUP DAEMON          BPXFTCLN
BPXFTSYN     SYNC DAEMON             BPXFTSYN
BPXFPINT     PIPE                    BPXFPINT
BPXFCSIN     CHAR SPECIAL            BPXFCSIN
NFS          REMOTE FILE SYSTEM      GFSCINIT

PFS NAME     DESCRIPTION                ENTRY   STATUS   FLAGS
TCP41        SOCKETS                            EZBPFINI ACT    CD
TCP42        SOCKETS                            EZBPFINI ACT
TCP43        SOCKETS                            EZBPFINI INACT SD
TCP44        SOCKETS                            EZBPFINI INACT

PFS PARM INFORMATION
HFS          SYNCDEFAULT(60) FIXED(50) VIRTUAL(100)
             CURRENT VALUES: FIXED(55) VIRTUAL(100)
NFS          biod(6)
```

The information displayed is:

PFS TYPE

For each FILESYSTYPE statement, the data specified with the TYPE operand is displayed.

PFS DESCRIPTION

A brief description of the physical file system.

ENTRY

The name of the load module specified with the ENTRYPOINT operand on the FILESYSTYPE or SUBFILESYSTYPE statements.

MAXSOCK

This is the MAXSOCKETS operand of a NETWORK statement for a sockets physical file system. It specifies the maximum number of sockets that can be open at one time for the address family.

OPNSOCK

OPEN SOCKETS: The number of sockets that are currently opened for this sockets physical file system.

HIGHUSED

The highest number of sockets that have been in use at one time for each of the configured address families.

PFS NAME

For each SUBFILESYSTYPE statement, the transport provider specified with the NAME operand is displayed.

STATUS

The status of each PFS specified with the SUBFILESYSTYPE statement: ACT = ACTIVE, INACT = INACTIVE.

FLAGS

Additional information for each PFS that was defined with the SUBFILESYSTYPE statement:

CD Current Default transport provider. The system is currently using this PFS as the default transport provider although it wasn't specified as the default with the SUBFILESYSTYPE statement.

SD Specified Default transport provider. This PFS was specified as the default transport provider with the SUBFILESYSTYPE statement. Currently, however, it is not being used as the default.

SC Specified is Current default transport provider. This PFS was specified

DISPLAY OMVS Command

as the default transport provider with the SUBFILESYSTYPE statement and the system is currently using it as the default.

PARAM INFORMATION

Data specified with the PARM operand on the FILESSTYPE or SUBFILESYSTYPE statements is displayed. For the HFS, in addition to the IPL settings specified with PARM, the current settings for the FIXED and VIRTUAL PARMs are displayed.

Notes:

1. Although you may specify up to 1024 bytes of parameter information in the BPXPRMxx profile, only the first 165 bytes of parameter information is displayed.
2. If a dash ('-') should appear as the first character for any PFS name, it means the PFS is dead.

Example 9

To display the Common Inet routing information when there are three active transport providers:

```
DISPLAY OMVS,CINET=ALLBPX00nnI 17:12:37 DISPLAY OMVS nn
OMVS 000E ACTIVE OMVS=(ZD)
HOME INTERFACE INFORMATION
TP NAME HOME ADDRESS FLAGS
TCP41 127.116.117.233 DRS
TCP42 127.116.118.234
TCP43 127.116.119.235

HOST ROUTE INFORMATION
TP NAME HOST DESTINATION
TCP41 127.117.193.234
TCP41 127.117.194.234
TCP42 127.117.195.234

NETWORK ROUTE INFORMATION
TP NAME NET DESTINATION NET MASK METRIC
TCP41 127.111.000.000 255.255.000.000 10
TCP42 127.113.000.000 255.255.000.000 0
TCP41 197.119.119.000 255.255.255.000 F
TCP43 009.000.000.000 255.000.000.000 F
```

The information displayed is:

TP NAME

The name of the transport provider for which the information is being displayed.

HOME ADDRESS

The internet protocol (IP) address of the transport provider.

HOST DESTINATION

When a transport provider is connected to a host, the host IP address is displayed.

NET DESTINATION

When a transport provider supplies network routing information to the Common Inet Pre-Router, the network destination address is the IP address of a network that can be accessed through the transport provider.

NET MASK

A mask that is applied to destination IP addresses to separate the network number from the host number.

METRIC

When selecting a route, if two transport providers can access the same route, the Common Inet Pre-Router selects the route with the best metric. The higher the number, the better the metric. The metric 255 = a direct connection

FLAGS

DRS = Default Routes Supported: When the Common Inet Pre-Router cannot find a specified IP address in its routing tables, it passes the request to a transport provider that supports default routes. If no transport provider supports default routes, the request is rejected with **ENETUNREACH**.

Note: When the cinet is not installed, similar routing information can be obtained by using the **netstat TC tpname gate** command or the **onetstat -p tpname -r** command.

Note: Although IPCMSGQBYTES, IPCMSGQMNUM, and IPCSHMMPAGES are displayed in the output of the D OMVS,L command, these resources are not monitored and no resource messages are issued.

Example 13

To display thread-level information for any thread that is in a byte-range lock wait, enter:

```
D OMVS,PID=16777219,BRL
BPX0040I 13.50.54 DISPLAY OMVS 042
OMVS 000E ACTIVE OMVS=(99)
USER JOBNAME ASID PID PPID STATE START CT_SECS
WELLIE0 WELLIE0 0015 16777219 16777218 1CI 14.11.53 .703
 LATCHWAITPID= 0 CMD=sh -L
THREAD_ID TCB@ PRI_JOB USERNAME ACC_TIME SC STATE
250640E000000002 009C8550 OMVS .124 RED C
BRLWAIT DEV=00000001 INO=0000002E FILE=/u/john/filenam+ PID=12345678
```

The information displayed is:

FILE

Up to 16 characters of the filename of the file that is being locked. If the filename has more than 16 characters, the first 15 are displayed, followed by a plus sign (+).

PID

The process ID of another process that is blocking this process from obtaining the lock. Usually this is the owner (or one of the owners) of a lock on the same range, but sometimes it is another process that is also waiting.

INO

The inode number of the file, as shown by **ls -li**.

DEV

The device number of the file's mounted file system.

DISPLAY OMVS Command

Chapter 3. APAR OW42811: OS/390 MVS System Commands Summary

Display *or* D OMVS

Example: The following DISPLAY command shows information about OS/390 UNIX System Services (OS/390 UNIX):

```
D OMVS[ { ,SUMMARY|S} ]
      ,{ASID|A}=ALL
      ,{ASID|A}=asid
      ,U=userid
      ,{PID}=processid[,BRL]
      ,{FILE|F[,CAPS|C]}
      ,{VSERVER|V}
      ,{PFS|P}
      ,{CINET|CI}=A11|TPname
      ,{OPTIONS|O}

[,L={a|cc|cca|name|name-a}]
```

SETOMVS Command

Purpose: Use the SETOMVS command to change the options dynamically that OS/390 UNIX System Services uses. These options are originally set in the BPXPRMxx member of SYS1.PARMLIB at the time of initially program loading (IPL'ing) the system.

The complete syntax for the SETOMVS command is:

SETOMVS Command

SETOMVS	SETOMVS EXTENSIONS (sysplex exclusive)
<pre> SETOMVS [FORKCOPY=(COPY COW)] [,IPCSEMNIDS=ipcsemnids] [,IPCSEMNOPTS=ipcsemnops] [,IPCSEMNSEMS=ipcsemnsems] [,IPCMSGQBYTES=ipcmsgqbytes] [,IPCMSGNIDS=ipcmsgnids] [,IPCshmPAGES=ipcshmpages] [,IPCshmNIDS=ipcshmnids] [,IPCshmNSEGS=ipcshmnsesgs] [,IPCshmSPAGES=ipcshmspapes] [,IPCMSGQNUM=ipcmsgqnum] [,MAXASSIZE=maxassize] [,MAXCORESIZE=maxcoresize] [,MAXCPUTIME=maxcputime] [,MAXFILEPROC=maxfileproc] [,MAXFILESIZE=(maxfilesize NOLIMIT)] [,MAXMMAPAREA=maxmmaparea] [,MAXPROCSYS=maxprocsys] [,MAXPROCUSER=maxprocuser] [,MAXPTYS=maxptys] [,MAXRTYS=maxrtys] [,MAXSHAREPAGES=maxsharepages] [,MAXTHREADS=maxthreads] [,MAXTHREADTASKS=maxthreadtasks] [,MAXUIDS=maxuids] [,PRIORITYGOAL=(n) NONE] [,PRIORITYPG=(n) NONE] ; [,STEPLIBLIST='stepliblist'] [,SUPERUSER=superuser] [,SYNTAXCHECK='parmlibmember'] [,TTYGROUP=ttygroup] [,USERIDALIASTABLE=useridaliastable] [,VERSION='string'] </pre>	<pre> SETOMVS FILESYS ,FILESYSTEM=filesystem ,AUTOMOVE=YES NO ,SYSNAME=sysname * or SETOMVS FILESYS ,FILESYSTEM=filesystem ,AUTOMOVE=YES NO or SETOMVS FILESYS ,FILESYSTEM=filesystem ,SYSNAME=sysname * or SETOMVS FILESYS ,MOUNTPOINT=mountpoint ,AUTOMOVE=YES NO or SETOMVS FILESYS ,MOUNTPOINT=mountpoint ,SYSNAME=sysname * or SETOMVS FILESYS ,FROMSYS=sysname ,SYSNAME=sysname * </pre> <p>Note: FILESYSTEM, MOUNTPOINT, and FROMSYS are mutually exclusive parameters. When you specify FILESYS, you must supply one of these three parameters.</p>

Part 3. Appendixes

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This book is intended to help the customer plan for, customize, operate, manage, and maintain an OS/390 system with OS/390 UNIX System Services (OS/390 UNIX).

This book primarily documents intended Programming Interfaces that allow the customer to write programs that use OS/390 UNIX.

This book also documents information that is NOT intended to be used as Programming Interfaces of OS/390 UNIX. This information is identified where it occurs, either by an introductory statement to a chapter or section or by the following marking:

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