

# Invoking and Operating SYSBPM

This section describes how to invoke the SYSBPM utility and how to select its functions by using the main menu or the direct commands provided.

In addition, information on maintenance of further buffer pools, the use of SYSBPM in a Sysplex environment and buffer pool type INSTANCE - DCOM support is included.

This section covers the following topics:

- Invoking SYSBPM
  - Direct Commands in SYSBPM
  - Maintenance of Further Buffer Pools
  - SYSBPM in a Sysplex Environment
  - Buffer Pool Type INSTANCES - DCOM Support
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# Invoking SYSBPM

**To invoke the SYSBPM utility**

- Logon to library SYSBPM and start the program MENU.  
The main menu of SYSBPM is displayed:

```

11:39:24          ***** NATURAL SYSBPM UTILITY *****          1999-11-04
BPNAME SAG31                - Main Menu -                Type Global NAT
BPPROP OFF                    Loc DAEF QA31                Preload PLLIST01

Code  Function
A    Buffer Pool Statistics
C    BP Cache Statistics

S    Individual Object Statistics
I    Object Directory Information
O    Display Object Hexadecimally
D    Delete Object from Buffer Pool

B    Blacklist Maintenance
P    Preload List Maintenance

Code .. _  Library ... *_____
           Object .... *_____
           DBID ..... 0_____ FNR .. 0_____

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit  Last      Flip                                Canc
    
```

**To invoke a function in the SYSBPM utility**

- Enter the code character in the Code field or use a direct command. See Direct Commands in SYSMBPT.

You can select the following functions from the SYSBPM main menu:

Function	Explanation
Buffer Pool Statistics	This function invokes the buffer pool statistics submenu. From the submenu, you can start buffer pool related, object independent statistics functions including hash table statistics.
Buffer Pool Cache Statistics	Buffer pool cache required. This function invokes the buffer pool cache statistics submenu. From the submenu, you can start functions for the buffer pool cache.
Individual Object Statistics	This function displays the entries currently loaded in the Natural buffer pool and the cache (if used). Each entry can be accessed individually, and various subfunctions can be performed for each entry.
Object Directory Information	This function displays the full directory information of a specified object currently contained in the Natural buffer pool.
Display Object Hexadecimally	This function displays in hexadecimal format a specified Natural object that is currently in the buffer pool.
Delete Object from Buffer Pool	This function is used to delete one or more Natural objects from the buffer pool.
Blacklist Maintenance	This function is used to maintain a blacklist of Natural objects which are <b>not</b> to be executed.
Preload List Maintenance	This function is used to maintain preload lists. In a preload list, you can specify the names of Natural objects which are to be loaded into the buffer pool when the buffer pool is initialized.

Asterisk notation (\*) is possible in the Library and Object fields wherever a selection of objects can be made.

If you specify a "0" as DBID or FNR, the specified object(s) will be selected regardless of their DBID and FNR. Any value other than "0" represents a valid DBID or FNR specification.

## Direct Commands in SYSBPM

Most SYSBPM functions can also be invoked via direct commands. You enter a direct command in a command line on any SYSBPM screen.

The following direct commands are available in SYSBPM:

Command	Parameters	Function
<u>A</u> DD <u>B</u> LACKLIST	none	Invokes the function Maintain Blacklist.
<u>A</u> DD <u>S</u> ET	<i>library-name set-name</i>	Invokes the function Add Object Set to Blacklist.
<u>B</u> LACKLIST	none	Invokes the Blacklist Maintenance menu.
<u>B</u> OTTOM	none	Scrolls to the end of a list.
<u>C</u> ANCEL	none	Same as EXIT.

Command	Parameters	Function
<u>C</u> HECK <u>H</u> ASH <u>C</u> HECK HT	none	PLUGIN=BP required.  Invokes the function "Check hash table for consistency". This function returns the number of inconsistencies found. If there are any inconsistencies, rebuild the hash table using the REBUILD HASH command.
<u>C</u> LEAR	none	See Functions for the Objects Displayed.
<u>C</u> LEAR <u>B</u> LACKLIST <u>C</u> LEAR BL	none	Clears the Add Mode screen.
<u>C</u> LOSE BPC	none	Buffer pool cache required.  Invokes the function "Close buffer pool cache". The buffer pool runs without cache afterwards. You can restart the buffer pool cache using the INITIALIZE BPC command.
<u>C</u> LOSE <u>H</u> ASH <u>C</u> LOSE HT	none	PLUGIN=BP required.  Invokes the function "Close hash table support". The buffer pool runs without hashing afterwards. To enable the hash support again, use the REBUILD HASH command or initialize the buffer pool.
<u>D</u> ELETE	none	See Functions for the Objects Displayed.
<u>D</u> ELETE	<i>library-name object-name dbid fnr</i>	Invokes the function "Delete Object from Buffer Pool and Buffer Pool Cache".
<u>D</u> ELETE ALL	none	Deletes all objects from the blacklist.
<u>D</u> ELETE <u>B</u> UFFERPOOL <u>D</u> ELETE BP	<i>library-name object-name dbid fnr</i>	Invokes the function "Delete Object from Buffer Pool only".
<u>D</u> ELETE BPC	<i>library-name object-name dbid fnr</i>	Buffer pool cache required.  Invokes the function "Delete Object from Buffer Pool Cache only".  See
<u>D</u> ELETE <u>B</u> LACKLIST	none	Invokes the function Maintain Blacklist from where you can delete blacklist entries.
<u>D</u> ELETE <u>S</u> ET	<i>library-name set-name</i>	Invokes the function "Delete Object Set from Blacklist".
<u>D</u> ISPLAY ALL	none	Same as DISPLAY INDIVIDUAL * *.
<u>D</u> ISPLAY <u>B</u> UFFERPOOL <u>D</u> ISPLAY BP	none	See Display Buffer Pools.
<u>D</u> ISPLAY <u>B</u> LACKLIST	none	Invokes the function Maintain Blacklist.
<u>D</u> ISPLAY <u>C</u> GENERAL	none	Buffer pool cache required.  Invokes the function General BP Cache Statistics.

<b>Command</b>	<b>Parameters</b>	<b>Function</b>
<u>D</u> ISPLAY <u>C</u> HASH	none	Buffer pool cache required. Invokes the function BP Cache Hash Table Statistics.
<u>D</u> ISPLAY <u>C</u> INDIVIDUAL	<i>library-name</i> <i>object-name dbid fnr</i>	Buffer pool cache required. Invokes the function Individual Cache Object Statistics.  In contrast to the command DISPLAY INDIVIDUAL (see below), this command generates a statistics report that displays data about cache objects at the beginning of the list.
<u>D</u> ISPLAY <u>C</u> LOAD	none	Buffer pool cache required. Invokes the function BP Cache Call Statistics.
<u>D</u> ISPLAY <u>C</u> STATISTICS	none	Buffer pool cache required. Displays the BP Cache Statistics Main Menu.
<u>D</u> ISPLAY <u>D</u> IRECTORY	<i>library-name</i> <i>object-name dbid fnr</i>	Invokes the function Object Directory Information.
<u>D</u> ISPLAY <u>F</u> RAGMENTATION	none	Invokes the function Buffer Pool Fragmentation.
<u>D</u> ISPLAY <u>F</u> UNCTION	none	Invokes the function Internal Function Usage.
<u>D</u> ISPLAY <u>G</u> ENERAL	none	Invokes the function General Buffer Pool Statistics.
<u>D</u> ISPLAY <u>H</u> ASH <u>D</u> ISPLAY <u>H</u> T	none	PLUGIN=BP required. Invokes the function Buffer Pool Hash Table Statistics.
<u>D</u> ISPLAY <u>I</u> NDIVIDUAL	<i>library-name</i> <i>object-name dbid fnr</i>	Invokes the function Individual Object Statistics.  In contrast to the command DISPLAY CINDIVIDUAL (see above), this command generates a statistics report that displays data about buffer pool objects at the beginning of the list.
<u>D</u> ISPLAY <u>L</u> OAD	none	Invokes the function Buffer Pool Load/Locate Statistics.
<u>D</u> ISPLAY <u>O</u> BJECT	<i>library-name</i> <i>object-name dbid fnr</i>	Invokes the function Display Object Hexadecimally.
<u>D</u> ISPLAY <u>S</u> TATISTICS	none	Invokes the BP Statistics Main Menu.
<u>E</u> DIT <u>P</u> RELOADLIST	<i>list-name</i>	Invokes the function Edit Preload List.
<u>E</u> DIT <u>S</u> ET	<i>library-name set-name</i>	Invokes the function Edit Object Set.
<u>E</u> XIT	none	Leaves the current function and displays the previous screen.
<u>F</u> DELETE	none	See Functions for the Objects Displayed.
<u>F</u> LIP	none	Switches the PF-key line.
<u>G</u> ENERATE <u>P</u> RELOADLIST	<i>list-name gen-library</i> <i>gen-objects</i>	Invokes the function "Generate Preload List from Buffer Pool".

Command	Parameters	Function
GP	none	See Scrolling in the Displayed Object.
INITIALIZE	none, 1, 2, 4, 8, 12, 16	Re-initializes the buffer pool and the buffer pool cache. If no text record size is specified, the current text record size will be taken.
INITIALIZE BP	none, 1, 2, 4, 8, 12, 16	Re-initializes the buffer pool only. If no text record size is specified, the current text record size will be taken.
INITIALIZE BPC	none	Buffer pool cache required.  Re-initializes the buffer pool cache only. To avoid program abends of other users, it is recommended to close the buffer pool cache before initializing it. The text record size of the buffer pool cache is fixed (4 KB).
INITIALIZE OLD	none, 1, 2, 4	Re-initializes the buffer pool with the old format. If no text record size is specified, the current text record size will be taken. This enables sessions with the parameter setting <code>PLUGIN=NOBP</code> to access this buffer pool (fallback).
KST	none	See Scrolling in the Displayed Object.
LAST	none	Displays the most recently entered SYSBPM direct command.
<u>LEFT</u>	none	See Navigation in Individual Object Statistics.
<u>LIST</u> <u>PRELOADLIST</u>	<i>list-name</i>	Invokes the function List Preload Lists.
<u>LIST</u> <u>SET</u>	<i>library-name set-name</i>	Invokes the function List Object Sets.
MENU	none	Invokes the SYSBPM Main Menu.
MPT	none	See Scrolling in the Displayed Object.
<u>NEXT</u>	none	Displays the next item selected when several objects have been selected at a time (only available within the functions "Object Directory Information" and "Display Object Hexadecimally").
<u>PRELOADLIST</u>	none	Invokes the Preload List Maintenance menu.
QUIT	none	Same as EXIT.
<u>REBUILD</u> <u>HASH</u> <u>REBUILD</u> <u>HT</u>	none	PLUGIN=BP required.  Invokes the function "Rebuild Hash Table". Deletes the hash table and rebuilds it according to current buffer pool content.
<u>REORG</u> <u>HASH</u> <u>REORG</u> <u>HT</u>	none	PLUGIN=BP required.  This function is not yet implemented.
<u>REORGC</u> <u>HASH</u> <u>REORGC</u> <u>HT</u>	none	PLUGIN=BP required.  This function is not yet implemented.

Command	Parameters	Function
<u>RESET BUFFERPOOL</u> <u>RESET BP</u>	none	See Reset Buffer Pool.
<u>RESIDENT</u>	none	See Functions for the Objects Displayed.
<u>RIGHT</u>	none	See Navigation in Individual Object Statistics.
<u>SELECT BUFFERPOOL</u> <u>SELECT BP</u>	none	See Select Buffer Pool.
<u>STOP</u>	none	Leaves the SYSBPM utility.
<u>TOP</u>	none	Scrolls to the beginning of a list.
<u>UPDATE</u> or <u>UPDATE BLACKLIST</u>	none	Corresponds to PF5 in the Maintain Blacklist function.
+	none	Scrolls one page down in a list.
-	none	Scrolls one page up in a list.

## Maintenance of Further Buffer Pools

With the SYSBPM utility, you can also maintain buffer pools other than the current one.

Three functions are provided for this purpose:

- Display Buffer Pools
- Select Buffer Pool
- Reset Buffer Pool

### Display Buffer Pools

When you enter the direct command `DISPLAY BUFFERPOOL`, a window is displayed which contains the following information on your current (global or local) buffer pool and on all further *global* buffer pools currently available within your Natural system: the name of the buffer pool, the kind of buffer pool (Natural, Sort, DL/I, Editor, Monitor, Instance), the current status, the name of the preload list (if applicable) and the storage address.

### Select Buffer Pool

When you enter the direct command `SELECT BUFFERPOOL`, a window is displayed with a list of all buffer pools.

The information displayed is the same as with the function "Display Buffer Pools (see above).

In the window, you can select a buffer pool by marking it with any character. Once you have selected a buffer pool from the window, all SYSBPM functions apply to this buffer pool.

Your Natural session itself, however, will continue to run with the original buffer pool.

With the function "Reset Buffer Pool" (see below), you can switch SYSBPM back to your original buffer pool.

### Reset Buffer Pool

Once you have used the functions of SYSBPM for another buffer pool (see "Select Buffer Pool" above), you switch the applicability of SYSBPM back to the buffer pool used by your current Natural session.

To do so, you enter the direct command RESET BUFFERPOOL.

## **SYSBPM in a Sysplex Environment**

In the top right corner "Loc" entry of the SYSBPM screen, the host ID and the subsystem ID are displayed.

Whenever Natural switches to another host or subsystem, the host ID or subsystem ID changes. Since the Natural buffer pool will not switch to the new host or subsystem, Natural will use a new buffer pool located in the new host or subsystem. Switching can take place after each terminal I/O, that is, after pressing any function key. After switching, browsing and positioning functions will not be executed (top, bottom, +, -, left, right). Instead, the displayed list starts from the top of the new buffer pool. If the BPPROP parameter is set to "PLEX" or to "GPLEX", operations on the buffer pool like "delete", "add" or "resident" are executed and are then propagated to the other available buffer pools.

If a function has been aborted or has been propagated, a corresponding message is issued. There is also a message each time Natural has switched to another host or subsystem and the buffer pool was changed ("Attention: BP switched").

## **Buffer Pool Type INSTANCES - DCOM Support**

SYSBPM also allows you to maintain an instances buffer pool containing objects used for DCOM operations. The instances buffer pool offers the same functions as the other Natural buffer pool types. However, for the DCOM class MODEL, the object name (A40) is a member name with format A8, and for the DCOM classes FACTORY/INSTANCE, the object name is a class name with format A32 and a server/instance ID with format A8.