

# SYSBPM - BP Cache Statistics

This function invokes the BP (Buffer Pool) Cache Statistics Main Menu which is used to obtain statistical information on the BP cache

Note that the BP Cache Statistics function can only be executed if a BP cache has been installed when initializing a global buffer pool (no BP cache support for local buffer pools).

## To invoke BP Cache Statistics

- On the SYSBPM Main Menu, enter Function Code **C**.  
Or, in the command line, enter `DISPLAY CSTATISTICS`.

The BP Cache Statistics Main Menu is displayed.

From the BP Cache Statistics Main Menu, you can select the following functions:

- General BP Cache Statistics
  - BP Cache Call Statistics
  - BP Cache Hash Table Statistics
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## General BP Cache Statistics

This function displays various addresses and statistics regarding the activity of the BP cache.

### To invoke General BP Cache Statistics

- On the BP Cache Statistics Main Menu, enter Function Code **G**.  
Or, in the command line enter `DISPLAY CGENERAL`.

The General BP Cache Statistics screen is displayed.

The statistics displayed on the General BP Cache Statistics screen are snapshots of the buffer pool, which are refreshed each time you choose `ENTER`. The following information is displayed:

<b>Field</b>	<b>Explanation</b>
Dataspace - Name	Shows the name of the dataspace where the BP cache resides.
Dataspace - SToken	The term SToken (for Space Token) identifies a dataspace.
Dataspace - ALET	The term ALET (for Address List Entry Token) identifies an index for accessing the dataspace.
Dataspace - Size (MB)	Shows the size of the BP cache in MB.
Dataspace - Current State	Shows the status of the BP cache:  not initialized  locked for init  closed  free for operation  undefined
Dataspace - Initialization	Shows the date and time when the BP cache was initialized.
Internal Buffer Offsets - Header Buffer	Header of the BP cache, contains general BP cache information.
Internal Buffer Offsets - Hash Buffer	Contains the hash table.
Internal Buffer Offsets - Directory Buffer	Shows the storage address of the BP cache directory section (relative to the beginning of the BP cache). Each object stored in the BP cache requires a directory entry that contains information on this object. The space for these directory entries is acquired from the BP cache itself.
Internal Buffer Offsets - Text Buffer	Shows the storage address of the text buffer (relative to the beginning of the BP cache). After allocating the space for all other buffers, the remaining space is divided into text records with a size of 4 KB. A Natural object can occupy one or more text records, depending on its size.
Tot. Text Records	Shows the total number of text records in the BP cache.  The number of text records depends on the BP cache size. The text record size for the BP cache is 4KB.
Insert Position	Shows the index number of the text record into which the next object will be inserted.  Objects will be inserted into the BP cache when they have to be removed from the buffer pool.
Re-use Cycles	Shows the number of times the BP cache has been completely reused.  Every time the BP cache is full, the BP cache manager reuses the BP cache from the start and overwrites the object(s) from there. The objects will remain in the BP cache until the BP cache is used again.
Objects - Max Loaded	Shows the maximum number of objects loaded in the BP cache.
Objects - Loaded	Shows the number of objects currently loaded in the BP cache.

## BP Cache Call Statistics

This function provides statistical information on the loading (put), retrieving (get) and deleting of objects into/from the BP cache. This information also serves as an indicator of BP cache performance.

### To invoke BP Cache Call Statistics

- On the BP Cache Statistics Main Menu, enter Function Code **L**.  
Or, in the command line enter **DISPLAY CLOAD**.

The BP Cache Call Statistics screen is displayed.

The statistics displayed on the BP Cache Call Statistics screen are snapshots of the buffer pool which are refreshed each time you choose **ENTER**. The following information is displayed:

<b>Field</b>	<b>Explanation</b>
Search Calls (Total)	Shows the total number of search calls issued from the buffer pool to the BP cache.  If an object was found, a search call results in a get call.
Get Calls (from Cache)	Shows the number of get calls the buffer pool issued to load an object from the BP cache into the buffer pool.
Get Calls - Successful	Shows the number of successful get calls issued to the BP cache.  A get call is successful if an object requested by the buffer pool was actually loaded from the BP cache into the buffer pool. A get call may be unsuccessful, for example, if an object has been deleted after it was found by the search call.
Put Calls (to Cache)	Shows the total number of put calls issued from the buffer pool to the BP cache.
Put Calls - Successful	An object was really put from the buffer pool to the BP cache.
Put Calls - Obj. already Cached	Shows the number of objects the buffer pool attempted but failed to put into the BP cache since the relevant objects were already available in the BP cache.
Delete Calls	Shows the number of delete calls the buffer pool issued to the BP cache.
Delete Calls - Successful	Shows the number of successful delete calls the buffer pool issued to the BP cache.  A delete call is unsuccessful if the object to be deleted is not available in the BP cache.
Get/Put Rate	Shows the ratio of get calls to one put call the buffer pool issued to the BP cache.  The value is calculated by dividing the successful get calls by the successful puts calls. The higher the value, the better the BP cache efficiency.
Get/Search Rate	Shows the percentage of successful get calls compared with the total number of search calls the buffer pool issued to the BP cache.  The higher the value, the better the cache efficiency.
Initialization	Shows the date and time the BP cache was initialized.
Last Re-use Cycle	Shows the load date and time of the last object that has been overwritten.  An object is overwritten in the BP cache when its space has to be reused. This means the load time of the object which has been in the BP cache longest corresponds to the Last Re-use Cycle date and time.
Last Access	Shows the date and time the buffer pool last accessed the BP cache.
Last Put (to Cache)	Shows the date and time the buffer pool last issued a put call to the BP cache.
Last Get (from Cache)	Shows the date and time the buffer pool last issued a get call to the BP cache.
Last Delete	Shows the date and time the buffer pool last issued a delete call to the BP cache.

## BP Cache Hash Table Statistics

This function displays statistics about hash table slots and collisions per slot. The statistics determine the efficiency of the hash algorithm used.

### To invoke BP Cache Hash Table Statistics

- On the BP Cache Statistics Main Menu, enter Function Code **H**.  
Or, in the command line enter DISPLAY CHASH.

The Cache Hash Table Collisions screen is displayed.

The statistics displayed on the Cache Hash Table Collisions screen are snapshots of the hash table which are refreshed every time you choose ENTER. The following information is displayed:

<b>Field</b>	<b>Explanation</b>
Total Number of Slots	Shows the total number of hash table slots; that is, the total possible entries that link the object name with the location of the object.  The number of slots, that is, the size of the hash table will be calculated internally depending on the number of text records.
Number of Slots Used	Shows the number of slots that have one or more entries.
Number of Slots Free	Shows the number of slots that have no entry.
Max. Collisions per Slot	Shows the maximum number of collisions of all slots.  The maximum number of collisions is the longest possible search path for an object.
Collisions	The number of possible collisions.  <b>0</b> means no collision or one entry. When there are more than 5 collisions, the number of collisions will be specified in ranges (for example, 6 - 10).
Number of Slots	Shows the number of slots grouped by their number of collisions.  For example, if the number of collisions is 3, the search algorithm must side step a maximum of 3 times to find an object. In addition, the percentage of these slots related to all slots used is displayed.
Totalled Number of Slots	Shows the same values as Number of Slots, but the values are totalled.