

# CACHE\$ - Enable Cache on GX BDAM FD

The CACHE\$ routine is used to enable either a read-cache or a read/write-cache on a GX BDAM FD.

## 1. Invocation

To enable a cache on a GX BDAM FD code:

```
CALL CACHE$ USING fd cc
```

where *fd* is an open GXB DAM FD; and *cc* is a control block of the following format:

```

01  CC
02  CCVERS      PIC 9(4) COMP      * Version number of CC block
                                VALUE 1 * This must be set to 1
02  CCNUMB      PIC 9(4) COMP      * Number of pages to allocate
02  CCSIZE      PIC 9(4) COMP      * Size of each cache buffer (reserved
                                * for future use)
02  CCMODE      PIC 9(2) COMP      * Cache mode:
                                * 0 = Read-only cache
                                * 1 = Read/Write cache
                                * >1 = Reserved for future use
02  FILLER      PIC X              * Reserved for future use
02  CCACTU      PIC 9(4) COMP      * Actual number of pages allocated
02  CCID        PIC x(2)          * Cache-id for multiple FD's

```

## 2. STOP Codes and Exception Conditions

The following STOP codes may be generated by CACHE\$:

STOP code	Description
9850	A write operation has been attempted on an FD that has been enabled for a read-only cache.
9851	An internal error has occurred when searching the cache buffers for a used buffer.
9852	An internal error has occurred when searching the cache buffers for a free buffer.
9853	CACHE\$ has been called on a configuration that is not GSM (Windows).
9854	Unknown version of CC control block (i.e. CCVERS does not contain 1)
9855	Illegal CCMODE value (i.e. CCMODE does not contain 0 or 1).
9856	Illegal CCNUMB value (i.e. CCNUMB must be nonzero).

9899	CACHE\$ has been called by an application that is not running on GX.
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The following exception conditions may be returned by CACHE\$:

EXIT code	\$\$COND	Description
9803	3	It was not possible to allocate a temporary 32-bit page to hold the GX command block.
9804	4	An error occurring when attempting to read from the read/write cache.
9805	5	An error occurring when attempting to write to the read/write cache.
9806	6	An error occurring when attempting to flush the read/write cache.
9807	7	An error occurring when attempting to close the local copy of the GX file.
9808	8	An error occurred when attempting to allocate a read/write cache buffer.
9809	9	An error occurring when attempting to create a local copy of the GX file.
9810	10	An error occurred when attempting to allocate a work-page.
9811	11	An error occurred when attempting to fill a read/write cache with a local copy of the GX file.

### 3. Programming Notes

CACHE\$ is only available when running on GX. Any attempt to use CACHE\$ on a non-GX terminal will result in a STOP code.

CACHE\$ is only available on a GSM (Windows) configuration. Any attempt to use CACHE\$ on a non GSM (Windows) configuration will result in a STOP code.

CACHE\$ must be called immediately after a successful OPEN on the GX BDAM FD; and before any READ, WRITE or CLOSE operations.

The GX BDAM cache operates in one of two modes: Read-only and Read/write. The two modes operate quite differently.

### **3.1 GX BDAM Read/Write Cache**

This mode of operation is configured by setting CCMODE=1. The CCNUMB and CCSIZE fields are ignored. The CCACTU field is not updated. In this mode the server-based caching is achieved by copying the entire file (OPEN OLD only) from the GX PC to the server within the CACHE\$ call. All read and write operations only affect the "server copy" of the file.

The file on the GX PC is only updated by a successful close operation. The final file copy from the server to the GX PC is avoided if no write operations have taken place.

The Read/Write cache option will only operate correctly on GLOBAL.EXE V3.9d, and later.

The GXID field is only required if a cache on two, or more, GX BDAM FD's is allocated by the same application, for a single user, simultaneously. Each concurrent call of CACHE\$ should include a unique GXID value.

### **3.2 GX BDAM Read Only Cache**

This mode of operation is configured by setting CCMODE=0. The CCNUMB field must contain the required size of the cache in terms of "Cache Pages". Each Cache Page contains 8 Cache Buffers (the size of each Cache Buffer is 7192 bytes - a value which ensures optimum GX I/O performance). The CCACTU field updated to reflect the actual number of Cache Pages allocated. The CCSIZE field is ignored.

In this mode a traditional memory-based read-only cache is enabled on the server.

The Read-only cache option will operate on all versions of GLOBAL.EXE.

The GXID field is only required if a cache on two, or more, GX BDAM FD's is allocated by the same application, for a single user, simultaneously. Each concurrent call of CACHE\$ should include a unique GXID value.

## **4. Examples**

[EXAMPLE REQUIRED]

## **5. Copy-Books**

None.

## **6. See Also**

None.