DBX Database Status Routines

1. Introduction

The DBX alpha-test does not include any of the following database status routines:

B$STA
B$ST2
B$ST2N
B$STB
B$FRER

This document describes the existing routines and the proposed DBX equivalent.

2. Existing Routines

This section briefly describes the existing status routines for "traditional" (i.e. non-DBX) databases:

2.1 B$STA

This routine is called as follows:

```
CALL B$STA USING RC S1
CALL B$STA USING RC S1 S2
```

where: RC Record control block identifying the record for which status information is to be returned
S1 Status control block (see section 3.1)
S2 Status control block (see section 3.2)

2.2 B$ST2

This routine is called as follows:

```
CALL B$ST2 USING RC S2X
```

where: RC Record control block identifying the record for which status information is to be returned
S2X Status control block (see section 3.3)

2.3 B$ST2N

This routine is called as follows:

```
CALL B$ST2N USING X7 S2X
```

where: X7 PIC X(7) database name (e.g. "DBDEMON")

S2X Status control block (see section 3.3)

2.3.1 B$ST2N single-parameter call implemented for GSM SP-17

For GSM SP-17 this routine was extended to support a new function to check the amount of free space in each of the records set within a database. The new functionality is invoked by calling B$ST2N with a SINGLE parameter:

```
CALL B$ST2N USING X7
```

where: X7 PIC X(7) database name (e.g. "DBDEMON")

An exception is returned if any record set in the Global format Speedbase database has less than, or equal to, the minimum amount of free space required. Note that the details of the "almost full" record set(s) are **NOT** returned by this routine. However, changes to $32BAGN (also implemented in GSM SP-17) will highlight the "almost full" record sets.

This routine will exit normally (i.e. without an exception) if the database is Btrieve, SQL or C-ISAM format; or if the DB*xxxxx*9 file is not present on the same unit as the DB*xxxxx* Index File.

2.4 B$STB

This routine is called as follows:

```
CALL B$STB USING RC S3
CALL B$STB USING RC S3 S2
```

where: RC Record control block identifying the record for which status information is to be returned
S2 Status control block (see section 3.2)
S3 Status control block (see section 3.4)

2.5 B$FRER

This routine is called as follows:

```
CALL B$FREF USING X7 X2 FREE
```

where: X7 PIC X(7) database name (e.g. "DBDEMON")
X2 PIC X(2) record-id (e.g. "TR")
FREE PIC 9(9) COMP field into which the number of free records is returned

3. Existing Control blocks

This section briefly describes the existing control blocks used by the routines described above:

3.1 S1

This control block is defined as:

```
01    S1                              * PASSED AREA FOR RETURNED INFO
  03  S1NAME      PIC X(6)            * RECORD NAME
  03  S1RLEN      PIC 9(4) COMP       * RECORD LENGTH
  03  S1RRN       PIC 9(6) COMP       * RRN OF LAST IO OPERATION
  03  S1LOCK      PIC 9 COMP          * CURRENT LOCK STATUS (0,1,2)
  03  S1SIZE      PIC 9(6) COMP       * AREA SIZE IN RECORDS
  03  S1FREE      PIC 9(6) COMP       * # OF FREE RECORDS IN THE AREA.
```

3.2 S2

This control block is defined as:

```
01    S2                              * PASSED AREA FOR RETURNED INFO
  03  S2DBID      PIC X(5)            * DATABASE ID
  03  S2DGEN      PIC 9(4) COMP       * DATABASE GENERATION #
  03  S2NRCS      PIC 9(2) COMP       * NO OF REC-TYPES STORED IN THE DB
  03  S2BACY      PIC X               * BACKUP CYCLE ID
  03  S2BASR      PIC 9(2) COMP       * INCREMENTAL BACKUP SERIAL #
  03  S2SIZE      PIC 9(6) COMP       * SIZE OF INDEX BLOCK POOL IN IDBS
  03  S2FREE      PIC 9(6) COMP       * NO OF FREE IDBs REMAINING
```

3.3 S2X

This control block is defined as:

```
01    S2                              * PASSED AREA FOR RETURNED INFO
  03  S2DBID      PIC X(5)            * DATABASE ID
  03  S2DGEN      PIC 9(4) COMP       * DATABASE GENERATION #
  03  S2NRCS      PIC 9(2) COMP       * NO OF REC-TYPES STORED IN THE DB
  03  S2BACY      PIC X               * BACKUP CYCLE ID
  03  S2BASR      PIC 9(2) COMP       * INCREMENTAL BACKUP SERIAL #
  03  S2SIZE      PIC 9(6) COMP       * SIZE OF INDEX BLOCK POOL IN IDBS
  03  S2FREE      PIC 9(6) COMP       * NO OF FREE IDBs REMAINING
  03  S2DBNM      PIC X(5)            * DATABASE NAME (MAIN INDEX FILE)
  03  S2DBUN      PIC X(3)            * DATABASE UNIT (MAIN INDEX FILE)
  03  FILLER      PIC X(9)            * RESERVED. TOTAL LEN = 32 BYTES
```

3.4 S3

This control block is defined as:

```
01    S3                              * AREA 3
  03  S3NAME      PIC X(6)            * RECORD NAME
  03  S3RLEN      PIC 9(4) COMP       * RECORD LENGTH
  03  S3RRN       PIC 9(6) COMP       * RRN OF LAST IO OPERATION
  03  S3LOCK      PIC 9    COMP       * CURRENT LOCK STATUS (0,1,2)
  03  S3SIZE      PIC 9(9) COMP       * AREA SIZE IN RECORDS
  03  S3FREE      PIC 9(9) COMP       * # OF FREE RECORDS IN THE AREA.
  03  S3USED      PIC 9(9) COMP       * # OF USED RECORDS
```

4. Proposed Replacement For BSTA, BST2, B$ST2N & B$STB

For GSM SP-13, and later, all the above status routines have been replaced by:

```
CALL B$ST USING RC S4
```

where: RC Record control block identifying the record for which status information is to be returned
S4 DBX Status control block (see below)

The S4 control block is defined as:

```
01    S4                              * PASSED AREA FOR RETURNED INFO
  03  S4VERS      PIC 9(4) COMP       * BLOCK VERSION NUMBER
                                      * (MUST BE SET TO 1 BY CALLING FRAME)
  03  S4DBID      PIC X(5)            * DATABASE ID
  03  S4DGEN      PIC 9(4) COMP       * DATABASE GENERATION #
  03  S4NRCS      PIC 9(4) COMP       * NO OF REC-TYPES STORED IN THE DB
                                      * (GATEWAY MUST V3.40, OR LATER)
  03  S4DBNM      PIC X(5)            * DATABASE NAME (SCHEMA FILE)
  03  S4DBUN      PIC X(3)            * DATABASE UNIT (SCHEMA FILE)
  03  S4NAME      PIC X(6)            * RECORD NAME
  03  S4RLEN      PIC 9(4) COMP       * RECORD LENGTH
  03  S4RRN       PIC 9(9) COMP       * RRN OF LAST IO OPERATION
  03  S4LOCK      PIC 9    COMP       * CURRENT LOCK STATUS (0,1,2)
  03  S4USED      PIC 9(9) COMP       * # OF USED RECORDS
```

5. Proposed Replacement For B$FRER

For DBX databases there is no need for the B$FRER routine.

6. Gateway, Btrieve, SQL Version Routine

For the combination of GSM SP-13, and later; and Speedbase gateway V3.41, or later, the B$GVER routine is available to return basic version information:

```
CALL B$GVER USING RC GV
```

where: RC Record control block identifying the record for which status information is to be returned
GV Version Control Block defined as follows:

```
01    GV
  02  GVVERS      PIC 9(4) COMP          * BLOCK VERSION
                  VALUE 1                * MUST BE SET TO 1
  02  GVGATE      PIC 9(2,2) COMP        * CATEWAY VERSION
  02  GVTYPE      PIC 9 COMP             * 0 =SQL, 1 =PERVASIVE
  02  GVSQL       PIC 9(4,4) COMP        * SQL/BTRIEVE VERSION
  02  GVREV       PIC 9(4) COMP          * SQL REVISION
                                         * (OR 0 FOR BTRIEVE)
```

Note that the B$GVER is available for **both** DBX and non-DBX databases.