tableBASE

Release Notes

Release 6.1.1

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Preface

These Release Notes provide a high-level view of the latest tableBASE offering, tableBASE Release 6.1.1.

This publication also includes information about DataKinetics' optional products tableBASE VTS, VTS Manager, tablesONLINE/CICS and tablesONLINE/ISPF.

Conventions used in this guide

This guide uses conventions to differentiate code and typed commands, and to display the names of parameters.

Convention	Description
`code examples and commands`	Code examples and commands appear in this type of font: `this is an example of the font.`
MAXNMTAB	Names of parameters appear in upper case simply for ease of reading; actual case used is upper or lower or a mixture.
Version	Following IBM standards, the term *version* refers to a generation of a software product that has significant new code or new functionality. *Version* is a more general term than *release*. For example, *Version 6* includes *Release 6.1* and *Release 6.2,* and is equivalent to *Release 6.x.*
Release	Following IBM standards, the term *release* refers to a program or set of programs which represent a specific revision to the base version of a software product. For example, *Release 6.0* is a term that is used to identify the first release of *Version 6.* Subsequent releases made available under the Version 6 umbrella, such as *Release 6.1*, will provide additional revisions to the base product.

Modification Level	Following IBM standards, the term *modification level* refers to the application of specific program enhancements and error corrections to the release of a software product. For example, *Release 6.0.3* is at *modification level* 3, and *Release 6.1.0* is at *modification level* 0.
MVS	MVS is a generic term which is used when referring to z/OS and other related IBM operating systems.

In addition, we will be using the term "*maintenance level*" in these Notes to refer to a collection of tested fixes and enhancements made available for a specific modification level of tableBASE.

Glossary

The terms defined in the glossary will help you better understand the content of this document.

Data Table	A Data Table is the actual raw data. Each Data Table has a table definition (DT-BLOCK) that is used to generate the Index for the Data Table.
Index	An Index is defined for each Data Table. A Data Table Index is generated dynamically when a table is opened or defined based on the information in the table definition (DT-BLOCK).
Alternate Index	An Alternate Index is an Index that may be defined for a Data Table. The Alternate Index has an Alternate Index definition (ALT-DEFINITION) that defines the key, organization, and search order. Alternate Indexes are optional, and there is no limit to the number of Alternate Indexes a Data Table may have.
Delivered defaults	The defaults that are delivered with the product. Also known as *factory defaults*.
Installation defaults	The defaults set at installation time by an administrator, which may or may not be the same as the delivered defaults. Defined using the TBOPTGEN file. (These defaults may be overridden by an individual application using the TBOPT file.)
TSR	Table Space Region. A data space of up to 2G is used by tableBASE to house tables. The data space is owned by an application in the associated address space. The application uses tableBASE to access data within the tables.
Local TSR	As above.
Shared TSR	A VTS-TSR; see below.
Temporary Table	A temporary table exists only within a TSR, and is created by the DT command (or IA). It is never stored in a library. A temporary table can be distinguished from a library table using the GD command output—if found, a temporary table will show no dataset name.

Linked Table	A linked table (also known as a remote table) is created when a user issues a command to open a table that is already open in a VTS-TSR specified in the LIB-LIST. The table entry in the local TSR is linked to the existing open table in the VTS-TSR. No updates are allowed to a linked table.
Table Expansion	Dynamic allocation of space for tables in the TSR when the initial space allocated becomes insufficient.
Multitasking Batch	An MVS region that implements multitasking by attaching multiple Task Control Blocks (TCBs). This can include a batch job that attaches several subtasks or a transaction processing region like DB2 stored procedures that implements multitasking through multiple TCBs.
View	A tablesONLINE View provides the field, edit and display attributes for a Data Table with its Index. In releases previous to Version 6 (and Version 5) the View was referred to as a Field Definition Table (FDT).
Alternate Index View	A tablesONLINE Alternate Index View is identical to a View but applies to a Data Table when access is through an Alternate Index.
VTS	Virtual Table Share. The term "VTS" may be used to refer to the DataKinetics VTS product, which permits TSRs to be shared among applications. These shared TSRs are called VTS-TSRs.
DataKinetics VTS	The product that provides the shared VTS-TSR capability.
VTS-TSR	A Virtual Table Share (VTS) Table Space Region (TSR) is a shared TSR, and resides in a shared data space. Applications can access tables within a VTS-TSR, and use the information as if it were within their local TSRs.
VTS Agent	The DK1VAGNT program, which initializes VTS-TSRs in tableBASE, and then sits idle until the VTS-TSR is to be terminated. If VTS Manager is installed, VTS-TSRs are managed by VTS Group Managers, and the VTS Agent is not required, but is still available for transition purposes.
VTS Manager	A DataKinetics Ltd. product that extends the functionality of the VTS shared TSR capabilities.
TPM	An internal DataKinetics development term which refers to the VTS Manager top tier component. It will sometimes be found in diagrams which explain the architecture and internal processes of VTS Manager. Also occasionally refers to the VTS Manager itself.

VTS Group Manager	The middle tier of VTS Manager which manages VTS-TSRs.
TPVM	An internal DataKinetics development term which refers to the VTS Group Manager component of the VTS Manager product. It will sometimes be found in diagrams which explain the architecture and internal processes of VTS Manager.
Catalog	A catalog contains definitions of managed items in the next tier down in the hierarchy. Definition information about the VTS Group Manager is contained in the VTS Manager catalog, and VTS-TSR definition information is contained in the VTS Group Manager catalog. The catalog is contained within the LDS associated with the VTS Manager or VTS Group Manager.
Cataloged VTS	A VTS-TSR that is managed by a user-defined VTS Group Manager under VTS Manager, as opposed to the *compat* VTS Group Manager.
LDS	Linear DataSet used for VTS Manager.
Alias name	An alternate name for a VTS-TSR that can be created, assigned, and used in lieu of the name assigned at VTS-TSR definition.
VTS switch	The action of switching an alias name from one VTS-TSR to another. This is a feature of VTS Manager.
***compat* VTS Group Manager**	The *compat* VTS Group Manager is the default VTS Group Manager that runs under VTS Manager.

1 Introduction

The purpose of this document is to describe the enhancements and changes in functionality provided in tableBASE Version 6 as well as the maintenance releases of Version 6. The latest release is Release 6.1.1.

Version 6 offers significant enhancements and improvements, such as multi-tasking capabilities, that also require additional consideration during implementation. tableBASE Version 6 operates with z/OS, and is compatible with CICS TS, IMS TM, DB2 and batch. IBM's VSE operating system is not supported with this version.

A summary of the major enhancements and changes from prior versions is provided in the next chapter. Information on changes for each of the release levels of Version 6, starting with Release 6.0.1, Maintenance Level 1 to Release 6.1.1 is provided in subsequent chapters.

For users already on Version 6, and who are familiar with the changes from prior versions, the information for each release level will provide sufficient information on the changes for that release. Users moving from Version 4 or 5 of tableBASE, or who are new to tableBASE should review all sections of the document to fully understand the changes in all release levels of Version 6.

Note that the information provided for older releases is superseded by the information provided for more recent releases.

2 Release Notes for Version 6, Maintenance Levels 1-4

This chapter summarizes all the major enhancements made in Version 6 as well as the changes in features from the previous version.

Please refer to the following manuals for more details of the individual enhancements changes:

- *tableBASE Concepts and Facilities Guide*
- *tableBASE Installation Guide*
- *tableBASE Administration Guide*
- *tableBASE Programming Guide*
- *tableBASE Batch Utilities Guide*
- *tablesONLINE/CICS User's Guide*
- *tablesONLINE/ISPF User's Guide*.

New Features and Enhancements

Program Call Server (PC Server)

The Program Call Server (PC Server) is new in Version 6 and must always be running. It uses the program call functionality provided by IBM, and allows tableBASE program calls (PCs) to be available for tableBASE regions.

The PC Server provides the functions needed for tableBASE multitasking, accessing a VTS-TSR, support of DB2 stored procedures and CICS TS threadsafe support. It also enables the automation of open table recovery in error situations.

Re-initialization of the PC Server

If the PC Server is brought down for any reason, all CICS regions that have already completed tableBASE initialization will continue to operate. Any regions which attempt to initialize while the PC Server is down will fail. When the PC Server is brought back up, all new regions will initialize at the new PC Server's level.

Unified and Reentrant tableBASE Stub

The Version 6 TBLBASE stub is distinct from the stub of the same name used in Version 5. The TBLBASE stubs for Version 5 were held in physically separate libraries, one for each of the operating environments in batch, CICS, IMS and VTS. With Version 6, there is only one TBLBASE stub for all operating environments.

The Version 6 stub is re-entrant, allowing you to build fully re-entrant applications. It also has a shorter instruction path length. Application programs that use the Version 6 stub can be ported from one environment to another without requiring any relinking, as long as they conform to the requirements of each execution environment.

Applications which have older version stubs statically linked in will continue to work with Version 6, without having to relink, as the Version 6 stub contains entry names for all of the old APIs such as TBASEC, TBCALLI, TBASEV. However, in order to benefit from all of the features of Version 6, these applications should use the Version 6 stub.

Applications that dynamically call tableBASE, without statically linked-in stubs from previous versions, can immediately take advantage of the Version 6 features by running with the Version 6 tableBASE load modules, if the tableBASE libraries are converted to Version 6 format or to Library Bridge format (see "Changes to Library Format and Functions" on page 27).

Note: The Version 6 stub is not compatible with previous tableBASE versions. If the stubs of previous versions are replaced with the Version 6 stub, the application can no longer be used in the previous versions.
However, programs (such as various CICS transactions) with different stubs from Version 4, 5 and/or 6, can be run under Version 6 in a single CICS region

Multitasking Support

Version 6 provides a fully re-entrant engine that extends performance benefits to multitasking applications. With a fully re-entrant engine, multiple tasks can open, read, update, and store tables in all TSRs (local or shared).

Multitasking support in Version 6 includes:

- Batch multitasking where a primary task attaches one or more subtasks.

- CICS multitasking through the use of quasi-re-entrant TCBs (QR-TCB) and CICS/TS OTE threadsafe operations. Support of OTE reduces the number of TCB switches and consequently the CPU usage.
- DB2 stored procedures managed either by DB2 or WLM.

Note: Multitasking applications require the use of the Version 6 stub TBLBASE and the PC Server.

Memory Model Modifications

In Version 6, the memory model has been modified to utilize segmented memory. With segmented memory, space allocated for data rows are no longer contiguous and therefore do not need to be moved to accommodate updates. Instead, an Index is used for each table to point to the rows. When an entire segment becomes empty the space is freed for reuse. This allows for more efficient memory management and use of the local TSR and VTS-TSRs.

This change also means that all tables are now stored internally as Pointer tables. In previous versions, tableBASE allowed Pointer and True tables. True tables did not have an Index and data rows were stored in contiguous memory. In Version 6, the concept of True tables still exists for backwards compatibility, however they are treated internally within tableBASE as Pointer tables.

TSR Dataspaces

tableBASE now uses Dataspaces for the local TSR as well as the VTS-TSR. With the use of Dataspaces, the size of a TSR can be up to 2 GB.

In previous versions, space for the local TSR was allocated from getmained storage from the region's address space. With Version 6, executing regions will have more available above-the-line virtual memory from space not taken up by the local TSR. The use of Dataspaces also means that TSRs are better-protected against accidental overwrites by application programs.

Unlike previous versions, use of Dataspaces for VTS-TSRs in Version 6 does not affect the MAXCAD parameter of the MVS operating system. An MVS IEFUSI system exit may limit dataspace usage.

Determining TSR size

In prior versions of tableBASE the area for tables was acquired from local virtual memory. (Only in VTS-TSR was a dataspace acquired.) If a TBOPT parameter specified TSRSIZE= then the table space was acquired in a single GETMAIN request. If it was not then GETMAIN requests were made for every table as it was opened. If TSR size was specified then a tableBASE rollout library allocated with DDNAME TBTSLIB was also required to provide overflow space for the TSR.

With Version 6 the area for tables is always provided by acquiring a data space. This means a TSRSIZE= is always used, either from the default setup at installation or the TBOPT data set for this job. For more information, see Appendix A in the *tableBASE Installation Guide*.

TBTSLIB Rollout library

The TBTSLIB tableBASE library, used for TSR overflow/rollout in previous versions, is no longer used. The DD can be removed from JCL (and CICS definitions).

TSR Open Table Directory

tableBASE requires some space in a TSR to maintain the open table directory. In previous versions, expansion of this directory was disruptive to response time. In Version 6, the size of the open table directory is set during tableBASE initialization and is dependent on the TSR size. It can be customized by specifying the execution-time parameter, MAXNMTAB. For a VTS-TSR, VTSNMTAB is retained for backwards compatibility.

Read/Write VTS-TSR

Version 6 introduces update capabilities to the VTS-TSR. This allows the complete removal of any tableBASE transaction affinity restrictions.

Tables opened for write in a VTS-TSR can be accessed and modified at the same time by multiple applications running in all tableBASE supported environments, such as batch, CICS, and IMS. The rule that ensures that a table can be opened for write in only one TSR (local or shared) at a time remains unchanged in this version.

In prior versions, VTS commands that attempted to update the VTS-TSR would have received a non-zero error code. With read and write now available in the VTS, these commands will now complete successfully.

Note: Version 6 of the VTS-TSR cannot be accessed by previous versions of tableBASE, nor can tableBASE Version 6 access previous versions of a VTS-TSR.

Library enhancements

Library Directory Caching

Version 6 allows the tableBASE library directory to be cached in memory. This can dramatically reduce the time needed to open a large number of tables when a TSR is initially loaded or if more than one table is being refreshed.

Caching also has significant benefit when a library is accessed heavily by a region and other regions are not frequently updating the library. However, caching can have negative performance consequences if the library directory is being frequently updated by multiple regions.

Caching for a library is controlled by coding OPTCD=C on the DD statement for a library and is enabled only at region initialization. Caching is not supported in a CICS region.

User-selectable Blocksize for Libraries

Version 6 features user-selectable library blocksizes.

In previous versions, library blocksize was fixed at 3120 bytes. With Version 6, library blocksize can vary from 800 bytes to the size of a track or 32,760 bytes, whichever is smaller. This increased flexibility allows you to decrease the time to load large tables from the library to a TSR since fewer I/Os are required.

Improved diagnostics

Better diagnostics are provided with the use of error subcodes in the extended command area. New applications can make use of this value to pinpoint a reason for failure. If a task has the Abend Switch set ON, a message with the error code and any related subcode is written to the JES log for the job. The TBDRIVER utility and the CICS TBDR transaction both display the error subcode. The TBDUMP dataset will contain a diagnostic dump of significant tableBASE control blocks.

Improved Table Lookup Performance

For applications that do not use the same tableBASE command area for successive calls to access the same table, table lookup performance has been significantly improved. This is achieved through a more efficient algorithm which preserves the table's handle (also known as the pivot) in the command area.

Many code paths have also been shortened to provide faster, more efficient access to tables. This is particularly true of access to VTS-TSR tables where the code path is now the same as that for the local TSR.

Improved internal tableBASE locking ensures the fastest speed for table access and reduces contention.

API Commands

Fetch Next by key (FN)

This is a new command that has been added in Version 6 that allows you to search for a row that is greater than or equal to the key if the table is in ascending order, or for a row that is less than or equal to the key if the table is in descending order.

List Directory (LD)

The LD command has an additional DIRTYPE option. Option 'L' returns tablename, ddname, current number of generations, maximum number of generations - one row for each table. It is significantly more efficient than other DIRTYPE options.

Utilities

TBEXEC

There are several enhancements to the TBEXEC utility:

- TBEXEC has a new option for the PRINT command. DETAIL=YES provides additional information on each table.
- A new option for the COPY command, NEWID=NO/YES, provides the capability of copying a library without changing the update history for each table.
- EXPORT was enhanced to provide exporting of a table from a library, instead of exporting the whole library.
- Secure password support for EXPORT/IMPORT was added.
- TBEXEC error messages have also been improved, and comments can now be used within the CNTLCARD input.
- TBEXEC EXPAND is no longer limited to specific ranges of the library size.
- TBEXEC EXPORT has been modified to return an error if a hash table has more rows than specified in the definition. Version 5 will incorrectly export such a table.

TBPRINT (DK1TPTBL)

Elapsed and CPU time usage is significantly reduced in this utility.

CICS enhancements

CICS threadsafe support

The tableBASE CICS interface is delivered with most tableBASE programs defined as CONCURRENCY(THREADSAFE). At this release level of tableBASE, CICS threadsafe applications are restricted to accessing (but not updating or opening) tableBASE tables only in a VTS-TSR.

An update is being developed to fully support CICS threadsafe applications.

Currently, to avoid problems, ensure that all applications that access tableBASE are defined as CONCURRENCY(QUASIRENT). Because the tableBASE API is an MVS call (rather than an EXEC CICS LINK or XCTL), redefining the tableBASE programs as CONCURRENCY(QUASIRENT) is not necessary.

Restarting tableBASE in CICS

Version 6 allows you to shut down tableBASE in a CICS region and subsequently restart it. When it restarts, it automatically forces new copies of the tableBASE modules to be loaded. This allows you to reconfigure or change tableBASE without restarting the CICS region. It also allows you to back out load modules and go back to a previous level of tableBASE Version 6.

Transactions TBST TERM and TBST INIT allow you to shut down and restart tableBASE in a CICS region.

Note: Shutting down and restarting tableBASE results in the old TSR being released and a new, empty one being created. To avoid unpredictable results, use this feature only if all transactions accessing tableBASE have completed or have been purged.

tablesONLINE/CICS enhancements

New features were added to Version 6 to:

- Track which user has created or last modified a row.
  This is accomplished by defining an eight byte field within the table View row to receive the logged-on USER ID. When a table is being edited, any row that is created or modified will have the USER ID placed into this field.
- Enforce unique primary keys with an Alternate View.
  While using Alternate Views, there has always been the risk of having duplicate primary keys created when the Data Table is edited with the Alternate View. Now, the primary keys of the Data Table can be incorporated into the design of the Alternate View and enforced in your Alternate View. Taking these steps prevents duplicate primary keys from being created. The default is still to allow duplicate keys.

- Define the initial value, upper bound, and lower bound of a field.
  Version 6 allows you to set the initial value of a field as well as the upper and lower value. The initial value sets the default input value for the field when the row is edited. The upper and lower values are used together to restrict the input value.
- Control simultaneous updates by multiple users to a single table.
  Version 6 allows you to set options to allow multiple users to work on a View and/or an Alternate View on the same Data Table at the same time. Warnings are provided to indicate to users that multiple user access is in effect.

  Duplicate primary keys are not allowed when multiple users can edit a table. Enforcing unique primary keys in a multiple user environment ensures that all of the data can be properly referenced.

  tablesONLINE tracks all of the users accessing a Data Table simultaneously and prevents users from editing the same row at the same time. If you attempt to access a row that is being edited by another user, a message informs you that the row is already being edited and also identifies the user and the application editing it. Although you won't be able to edit the row while another user is editing it, the row is always accessible to browse.

For more information on the above features, consult the *tablesONLINE/CICS User's Guide*.

Other enhancements

Absolute Generation Number

The absolute generation number of the table being accessed is returned to the extended command area, and can be used to verify that the same generation of the table is being used from transaction to transaction.

Improved C++ and Java Program Support

To simplify calls from C++ and Java applications, Version 6 allows four parameters to be specified on every call to tableBASE. Null pointers are entered for the parameters that are not required for the specified command.

The Version 5 API required the user to specify a variable number of parameters for calls to tableBASE, depending on the command specified.

Functionality and Operational Changes

Changes to Library Format and Functions

Library format changes

Version 6 libraries can be accessed only by tableBASE Version 6. Prior version libraries cannot be accessed by Version 6 without first being converted to Version 6 or Library Bridge format (Library Bridge is an optional product developed to help stage the conversion of libraries to Version 6).

Library Bridge

Library Bridge allows applications written with tableBASE Version 5, to migrate in stages, to the new release. The Library Bridge allows both Version 5 applications and Version 6 applications to share the same tables simultaneously from a single library called the Bridge Library. There is no need to keep release dependent libraries synchronized. By using Bridge libraries the migration to Version 6 can be spread over an extended time frame and the migration is easily scheduled and tested in stages.

Version 5 Libraries
Can be accessed only by tableBASE Version 5.x and Library Bridge

Bridge Libraries
Can be accessed by Library Bridge, and tableBASE Version 6.0.2 (or later), can be converted to Version 6 libraries, and can be converted back to Version 5 libraries

Version 6 Libraries
Provide enhanced features and performance unique to Version 6 libraries. Can only be accessed by tableBASE Version 6, and cannot be converted back to any other type of library.

Table 2-1: Compatibility of library versions with tableBASE code

tableBASE version/release	Libraries it can access
tableBASE 5.x	Version 5
Library Bridge	Version 5, Version 5 Bridge
tableBASE 6.x	Version 5 Bridge, Version 6

For more detailed information on Library Bridge, see *tableBASE Administration Guide* and *tableBASE Library Bridge Manual, Release 5.B*.

Library expansion

Any library may be expanded in Version 6. Previous tableBASE versions had limitations that prevented a library from being expanded beyond certain boundary points, depending on the original size of the library. After expansion in Version 6, libraries cannot be converted to previous releases.

Notes:

1. Library expansion must be done using the corresponding version of TBEXEC. For example if a Version 6 library must be expanded, use the TBEXEC provided with tableBASE 6.0.2.
2. A tableBASE library will never use secondary allocated space because it can never increase in size dynamically. It will only use the initially allocated space. This initial space allocation does not need to be contiguous.

Multiuser (LOCK-LATCH)

The LOCK-LATCH feature has been present in previous releases of tableBASE but it was limited to the TSR opened within a CICS environment. Version 6 expands this feature into a read and write VTS-TSR and batch.

If required, an application may use a LOCK-LATCH to restrict table updates and closes to only those programs that provide the LOCK-LATCH. The scope of this restriction also extends to all Alternate Indexes associated with the locked table.

If Batch applications are moved to a multitasking environment they will require the long COMMAND-AREA to prevent miscellaneous characters from being interpreted as a LOCK-LATCH.

Above-the-line operation

All Version 6 tableBASE modules can run above the 16M line. However, a small amount of below-the-line memory is required for each active task and for each open library. Those modules that are required to support any RMODE(24) applications will continue to run below the line.

Note: Release 4 and 5 stubs operate only in Rmode(24).

Changes to Indexing

Indexes

All tableBASE tables have Indexes in Version 6. The designation of a table as True (Index = T) is only supported for compatibility with previous releases.

All Indexes are dynamically generated when the tables are opened.

Alternate Indexes

There have been two changes of note with respect to Alternate Indexes.

In previous releases, it was possible to create an Alternate Index with the same name as the Data Table (even though accessing such a table resulted in an endless loop). However, in Version 6 you are no longer able to create an Alternate Index with the same name as the Data Table. An attempt to do so now results in error code 19.

Note: If a Version 5 Alternate Index with such a naming problem is imported into Version 6, the library conversion program will delete the problematic Alternate Index and post it on the library conversion report.

If an application opened a Data Table using an Alternate Index in Release 4.x, any attempt to open the Data Table directly or open another Alternate Index resulted in error code 84. In Release 5.x this restriction was lifted but an indicator (MULTOPNX) could be set to N to enforce the restriction for compatibility with Release 4.x. However, in Version 6 this restriction is no longer enforceable. The MULTOPNX option is set to Y and cannot be changed.

DK1TCALL

DK1TCALL, the new API stub, can be used in all interfaces. Its ALIASes include TBLBASE and API stubs from earlier releases. Since DK1TCALL dynamically determines its environment, it replaces the interface-unique TBLBASE modules distributed with previous versions. For compatibility, no relinking of tableBASE programs accessing previous APIs is required.

User Exits

In previous documentation, user exits were referred to as system exits. System exits are reserved for use by DataKinetics and user exits refer to exits created by tableBASE users.

User exits that were available in previous versions of tableBASE have been enhanced and renamed. In addition, a new user exit has been added. This exit gets control after each tableBASE command is processed.

Exits are dynamically loaded at tableBASE start up if the tableBASE execution-time parameter USEREXITS=Y is specified in TBOPT.

Note: The interface to the user exits in tableBASE Version 6 is not compatible with that of prior releases. The interface has been formalized to provide a well-defined interface which should be stable over subsequent releases. To allow for

future enhancements, user exits are required to set R15 to zero before returning to tableBASE.

For detailed information on user exits, please see the *tableBASE Administration Guide*.

Access Register mode

Version 6 has the following MVS restrictions applicable to AR mode (this applies only to applications that have been coded in Assembler):

1. tableBASE must be called in a primary mode. Failure to do this may result in unpredictable results.

2. tableBASE zeroes all access registers (A0-A15) on return to a caller. It is a responsibility of the caller to save and restore its own access registers.

Unique DDNAMEs

Version 6 requires each tableBASE library to be identified by a unique DDNAME. You may not associate more than one DDNAME with the same tableBASE library. The exception is when using the AL and UL commands in an IMS or single-tasking batch environment and the different DDNAMEs are not allocated at the same time. See the *tableBASE Programming Guide*, "Allocate (AL)" and "Un-allocate (UL)" for more information.

API Command Changes

List Directory command (LD)

In Version 5, the LD command returned zero in the COUNT field. In Version 6, the COUNT field contains the total number of directory entries in the table. If the TABLE containing the directory entries is already open and a subsequent LD command has the same format as the prior request, then the new information will be appended to the end of the table and the COUNT field will be updated to reflect the total number of directory entries in the table.

List Open Tables command (LT)

The LT command returns a new field, TABLE-LOCAL-VTS (1 byte), in the TABLE-STATS parameter. This field only has meaning when LT is issued against a local TSR. It indicates whether the table physically resides in the local TSR (L), or is a logical link to a table residing in a VTS-TSR (V).

There have been formatting and data changes to the LT command and the display drivers, such as TBDRIVER. The following are the main differences between the information displayed for Release 5.1, and Version 6:

- I/O has become L/V (local or VTS-TSR). This flag now indicates where the table resides.
- ROLL INS and ROLL OUT have been removed as there is no longer a roll-out library (TSTSLIB).
- ROWS and RWS-BF-EXP have been added. ROWS indicates the current number of data rows in the table. RWS-BF-EXP indicates the total number of data rows that can be added to this table before the data row space or Index space must be expanded.
- BASE TBL has changed to BASE/VTS. If this LT entry represents an Alternate Index the name of the Data Table appears in this field. If the entry represents a linked table, the name of the VTS-TSR appears in this field. For more information on linked tables, please see "Linked tables" on page 34.

Note: When in a VTS-TSR, the display driver shows the VTS name in the top left-hand corner.

If any errors or inconsistencies are found in the inputs to the LT command, -1 is returned in the LIST-BLOCK LIST-TOTAL field in Version 6. Prior releases returned with no indication and no output data.

Get Next Table Name command (NX)

The tableBASE Programming Guide for previous tableBASE releases stated that the LIB-SPACE parameter is ignored unless the COMMAND-AREA table name is blank or contains low values. In fact, tableBASE checked only for low values. Version 6 uses the LIB-SPACE parameter if present, independent of the command-area table name.

Previous tableBASE Programming Guides also stated that if the DDNAME parameter is not provided, the first entry in the LIB-LIST is used. However, if the DDNAME parameter is blanks or is null, then the first LIB-LIST entry is also used. Version 6 also operates in this manner.

Release Table command (RL)

The command that changes a table's status from open for write to open for read (RL) has been changed. In previous releases, if RL was applied to an Alternate Index, the status of the Index and all Alternate Indexes were changed to open for read. An RL command applied to an Alternate Index now demotes the Alternate Index to open for read, but leaves the Data Table as open for write.

In addition, if an RL command was applied to a newly created table using either a Define Table command (DT) or a Change Name command (CN), in previous releases, this would result in a return code of 38. In Version 6, this returns a zero. A subsequent attempt to change the in-memory table back to open for write (OW) will only work in single user batch where exclusive access is assured.

Similarly, if RL was applied to a temporary table in Version 5, this resulted in a return code 38. In Version 6, this is allowed, and returns a zero.

Banner Retrieval command (BN)

The BN command returns the customer information, as before. In Version 6, when the command is called with an optional second data area parameter, BN returns the tableBASE version (16 bytes) 'tableBASE V601'.

Note: The internal level of Release 6.0.2, when displayed by the LISTLVL CLIST is V6010000n, where n is the maintenance level.

Change Table Definition command (CD)

When the CD command specifies an Alternate Index rather than a Data Table, the following restrictions are now enforced:

- The Table Index field cannot be changed. It must be P (Pointer table).
- The row size cannot be changed. The Data Table's definition determines the row size.
- The expansion factor and upper and lower densities cannot be changed.
- The read and write passwords cannot be changed. The Data Table's passwords must be used to open an Alternate Index.

In prior releases, attempts to change these fields with the CD command may have resulted in RC = 0 even though no change was made. Now, these attempts will result in RC = 85 (The command is invalid for an Alternate Index).

Divert Table command (DV)

In prior releases the DV command did not check whether the target DDNAME was allocated. In Version 6, tableBASE checks to see that the target DDNAME is allocated and return an error code 40-1 if it is not.

Open For Write (OW)

In Version 6, a security hole was repaired that was introduced in Version 5. In previous releases, an open for write with a LOCK-LATCH used on an Alternate Index when the Data Table is already open for read, promotes the open table from read to write. This behavior is correct. However, previous releases also allowed you to update the table either directly or through the Alternate Index and then store it without the LOCK-LATCH. In Version 6, the LOCK-LATCH is required to update or store the table.

Close Table (CL)

In Version 5, the CL command returned an error code of zero when the table name was invalid; indicating that the command was successful. In Version 6, this anomaly has been corrected and the CL command issued with an invalid table name returns error 0012.

Virtual Table Share (VTS)

In prior versions, VTS users were allowed only read access (updates were supported only through the refresh process run under the VTS address space). Four methods of access were supported:

1. Specifying the VTS-TSR in the TBPARM data area passed as the first parameter on the call to tableBASE.

2. Using the TBOPT data set VTSNAME= parameter to specify the VTS-TSR and invoking tableBASE with the TBCALLV or TBASEV API.

3. Using the VS command to specify the VTS-TSR and invoking tableBASE with any API.

4. Using the TBOPT data set VTSFIRST= or VTSLAST= parameters to specify a VTSTSR and/or specifying a VTS name in the LIB-LIST of the ML command.

Read/Write access

With Version 6 users are allowed read/write access to VTS-TSRs. Methods 1 through 3 (above) are supported as read/write interfaces—with Method (1) as the recommended update interface. Method 4 is supported as a read-only interface as in prior releases.

Commands which access the VTS-TSR and also access a tableBASE library will locate the library based on the LIB-LIST in effect in the local address space (not the VTSAGENT address space which created the VTS-TSR).

Refresh

The refresh process is no longer run under the VTS address space. The refresh process can be emulated in Version 6 by using the TBDRIVER utility.The Version 6 TBDRIVER supports the VTS initial load and refresh process commands (VTS Server commands) used in Version 5 - OA, AR, VX, RF. The ReFresh (RF) command is now a tableBASE command and can be issued from any application, not just TBDRIVER. Note – the RF command is not supported in CICS.

SS command

The SELECT SUBSYSTEM (SS) command is used to specify the VTS-TSR for subsequent commands. The SS command is a TBDRIVER/TBDRIVC command; it is not a tableBASE command.

Linked tables

A linked table is created when a user issues a command to open a table, and during the LIB-LIST search, the table is found to be already open in a VTS-TSR. Since the table is already open in a VTS-TSR that was part of the LIB-LIST, a link is created to that table. A linked table is also known as a remote table.

Note: The LIB-LIST provides the list and order of libraries to be searched when tables are opened. A VTS-TSR can be added to this list and treated as if it was a library using the ML command or the VTSFIRST/VTSLAST execution-time parameters of TBOPT.

In Version 6, a linked table is always treated as opened for read, even if the table in the VTS-TSR is opened for write. This will ensure backwards compatibility with Release 5.x when the VTS-TSR was read-only.

An attempt to open for write a linked table will fail with an error code 13 subcode 5.

A linked table is identified by the use of an LT or GD command.

By setting the VTSNAME in the TBPARM, you can avoid linking the table and access the table directly.

TBASEV/TBCALLV and CICS storage protection

CICS applications using the previous versions of TBASEV and TBCALLV, which were not reentrant and therefore could not be used with storage protection, can now be relinked with TBLBASE and used with STGPROT=YES. These stubs were not re-entrant and could not be loaded into key-0 memory. They were loaded into key-8 memory, which caused problems for tasks running in UserKey (9) in a STGPROT environment. So any application calling them could not use STGPROT=YES. TBLBASE has aliases TBASEV and TBCALLV. You can re-link existing applications to use this new stub and then the applications can be marked STGPROT=YES. See note in "Unified and Reentrant tableBASE Stub" on page 20.

CICS userkey/CICSkey

Version 6 of tableBASE honours the CICS Userkey/CICSkey conventions. Most of tableBASE executes in the designated EXEC key, thus providing the protection intended by the CICS multi-key feature.

- Support for CICS storage protection keys is enhanced. Almost the entire tableBASE execution path is in the key set by the installation's CICS EXECKEY definitions, affording the protection of this CICS feature.

Waiting CICS tasks

Version 6 of tableBASE uses several strategies to handle CICS tasks that are allowed to wait while opening a table for write that is held exclusively by another region.

In previous releases, a simple delay-and-retry loop was used to handle this type of CICS task. This approach often resulted in degraded performance because the CICS region, running at a higher dispatch priority than batch, looped too fast to allow a batch job to complete its work on a held table so that the table could be released for the CICS users.

If the tableBASE PC Server is installed at the site, a very efficient algorithm is used that lets the CICS task wait for the availability of the held table without impacting the CICS QR (quasi re-entrant) task.

If the tableBASE PC Server is not installed, then a second algorithm is used. This algorithm uses a proxy subtask to wait for the table to be released and the CICS task is suspended—again, with no effect on the QR task—until its proxy subtask notifies it that the table is available.

If a CICS task is put into a wait for a table exclusively held (opened for write) by another region, a CEMT INQUIRE task will show TBLBASE in the Suspend Value field.

For more information on the PC Server see the *tableBASE Administration Guide*.

VTS.LOAD

In previous releases of tableBASE, TBCALLV and TBASEV (along with TBROOTV and TBNUCLV) were MVS-loaded into memory. For this reason, they had to be in a library that could be concatenated to the CICS region's STEPLIB. The special APF-authorized library VTS.LOAD was provided for this purpose.

In Version 6, all tableBASE modules required in a CICS region are CICS-loaded from the RPL concatenation. You no longer need the STEPLIB concatenation.

TBCALLC

The operation of TBCALLC may change for some users.

It is now implemented consistently with TBASEC and TBLBASE. That means all calls to TBCALLC will be considered a single thread.

In prior releases, if the TBCALLC user zeroed the TMA Pointer after the first call (or presented a second TMA-AREA with a zeroed TMA Pointer), tableBASE would create a new thread within the transaction.

In Version 6, only the most recent LIB-LIST will be in effect, even if the TMA was zeroed or a second TMA-AREA was presented. TBCALLC calls are supported through CEDF in Version 6.

CICS Error diagnosis

New functionality is provided for programmers in the area of abnormal terminations and tableBASE internal errors.

- tableBASE will produce a DKL1 CICS transaction dump for any abnormal termination.
- tableBASE will produce a CICS transaction dump with an abend code of LGIC when an internal error is trapped.
- All API stubs are shown in CICS EDF tracing. In previous versions, TBCALLC, TBASEV, TBCALLV were not captured by the EDF trace.

Other CICS changes

- The CICS TBOPT file may now be QSAM (including DD *) or, as it was in previous releases, VSAM.
- The re-entrant API stub allows for re-entrant applications that can be used with the CICS RENTPGM feature.
- CICS transactions that wait for tableBASE table enqueues are supported with less CICS overhead.

tablesONLINE/CICS

Field input range control

Before Version 6, only Action Codes could be used to restrict the range of the field input. This was often difficult and cumbersome if you only wanted to set the upper and lower bound. In Version 6 of tablesONLINE, you can set the initial value of a field as well as an upper and lower value. The initial value sets the default input of the field when the row is edited. The upper and lower values are used together to restrict the field input. For more information, consult "Define Fields in a View" in the *tablesONLINE/CICS User's Guide.*

Exits

In Release 6.0, in order to implement the browse integrity enhancement, the offset of the variable T-LCMD-NO-OF-ITEMS has been changed by 4 bytes. If your exits use this

variable, you will need to recompile. Otherwise, no changes are needed. The change is flagged by F00017 in the margin of the EXITPARM copybook (found in the SRC file.)

Naming Conventions for TSQUEUEs and Temporary Tables

The naming convention for tablesONLINE/CICS system temporary tables and TSQUEUEs are now documented. This information can be used to prevent accidental or programmed deletion of these resources.

Working storage initialization

tablesONLINE/CICS requires that working storage be initialized to binary zeroes. Under LE, this is accomplished by ensuring that the run-time storage option for the CICS region is STORAGE=(00,...). Refer to IBM's LE Customization manual for guidance in creating a CEEUOPT or CEEROPT module.

Installation of data dictionary library

In prior releases the installation of the data dictionary library (*YOUR.PREFIX*.TBASE.TBDICLB) was described as optional in the members DFHFCTOL and TBOL60V in *YOUR.PREFIX*.TBASE.SRC.

This installation instruction was inconsistent with the rest of the product documentation. It is now recommended that it is installed and the option to use the data dictionary rests with the applications development teams.

Other Operational Changes

- Application performance with TBASEV or TBCALLV: To improve the performance of applications using the Version 5 TBASEV or TBCALLV interface, relink the application modules with the Version 6 TBASEV or TBCALLV (now aliases for DK1TCALL).
- The tableBASE Root and Nucleus modules are above the line, as is the tableBASE CICS Resource Manager.
- Additional TBOPT parameters have been added to provide runtime overrides for most of the installation options. More flexibility in specifying TBOPT input, more options, and the ability to list all options have been added. This also applies to the interface defaults (DK1Txx34 modules).
- The TBOPTV functionality has been integrated into TBOPT, allowing for a single source of runtime parameter input. TBOPTV is still maintained for backwards compatibility.
- Version 6 I/O routines now tolerate open failures and I/O errors that may have previously resulted in region failures.

- Individual libraries may be set to Read-Only access.
- The default date-sensitive processing date rolls over at midnight.
- The XX command no longer closes paged tables that have been updated because Version 6 does not use paged tables.
- TBACC and TBINDX programs are still available in Version 6, however they have not been modified. These programs continue to access main memory as they did in previous versions.
- With previous versions of tableBASE, the use of TBCALLV was promoted as a way to access VTS with the shortest path. This is no longer the case with Version 6. Use of TBCALLV offers no advantages in Version 6 and may provide slower performance.
- All ISPF applications and DB2 stored procedures must be linked AMODE(31), and RMODE(ANY).
- All binary searches now cache the first 4 bytes of the key. This greatly improves search performance. With a large table where these 4 bytes may be the same throughout all rows of the tables these benefits may not be realized. Better results can be achieved by using a key that varies within the first 4 bytes.
- In Version 5, attempts to create or open an alternate pointing to itself sometimes returned error code 0. In Version 6, error code 85-1 is returned.
- In Version 5, the GD command returns the time and date of creation only for tables that were stored on a library. In Version 6, they are also returned for a temporary table (created by DT or ALT).
- In Version 5, tableBASE options by programs using the TBCALLV or TBASEV API, specifically switches, are set in the CV113450 module or in TBOPTV for the VTS job. In V6, the tableBASE options are always accessed from the executing job step (DK1Txx34).

Administrative changes

Naming protocol

Version 6 features the new tableBASE naming protocol.

All tableBASE executables begin with DK1 for easy identification, a prefix that has been reserved for exclusive use with IBM.

All aliases of TBCALLx/TBLBASE calling stubs have been retained so that no changes are required to your existing applications.

Other administrative changes

- A common naming structure for all load modules has been implemented for easy identification. It is DK1xxxxx. tablesONLINE, an optional component of tableBASE, does not yet follow this convention.

- Ongoing maintenance is reduced with the introduction of a single load library that contains all Version 6 tableBASE modules.
- The Version 6 install process is simplified. The process is similar for all interfaces (batch, CICS, IMS, and VTS-TSR) and there is a uniform treatment of the install options.
- A library diagnosis utility is provided that allows for detection of errors in tableBASE libraries.

Exceptions to Compatibility with Previous Versions

Version 6 is compatible with Versions 4 and 5 with the following exceptions:

- All tableBASE libraries must be converted to Version 6 or Library Bridge format before use with tableBASE Version 6.
- With the TSR now resident in Data Spaces and up to 2 GB in size, there is no need for paged tables and the roll-in an roll-out of tables using TBTSLIB. The utility program DK1TCNV automatically converts paged tables to memory-resident tables in the library conversion process.
- The TBOPT parameter MULTOPNX=Y refers to the capability to open (OR) multiple alternate indexes. In Version 6, this parameter will only accept the value Y for backwards compatibility. If it is set to N the parameter is ignored.
- The VTS Agent no longer executes commands in the CMD file during initialization.A VTS-TSR can be loaded by a separate DK1TDRV job, or by running user-written applications.
- Fixed Blocked (FB) BDAM libraries are no longer supported in Version 6. Only Fixed (F) BDAM libraries are supported.
- With Version 6, the interface to the user exits, formerly called system exits, has been formalized to provide a well-defined interface to user exit code which should be stable over subsequent releases. However, it is not compatible with that of prior releases.
- The refresh (RF) functionality used with the optional VTS component has been modified and will require changes in the applications that use this functionality. However, with the upgrade of VTS to read/write functionality, the refresh functionality may no longer be needed.
- In Version 6, it is possible to release a table (RL) that has just been defined (DT) or renamed in the TSR (CN). In Version 5, the sequence DT, RL generated error code 38.
- In Version 6, all tables are internally maintained as pointer tables.
- Paged tables: Version 6 loads the table into the Data Space and allows the operating system to handle paging, rather than having tableBASE paging individual blocks to and from a tableBASE library. The library conversion process converts existing paged tables to non-paged tables as it converts the libraries to Version 6 format.

- In Version 6, the DL command parameter LIB-SPACE is optional. In Version 5, it was not.
- The last parameter in a call to tableBASE must have the high-order bit set on. This is automatic in COBOL, but must be done explicitly in Assembler with the VL parameter on the MVS CALL macro. It may also need to be explicitly set in C and other languages.
- In Version 6, an insert by count command (IC) is successful only if the specified row is empty. In Version 5, a row was added to the end of the table. In either case, the integrity of the hash table is undermined. Results are unpredictable and the hash table may not be usable after the command completes.

  Note: Use of the IC command with hash tables is NOT RECOMMENDED.

- In Version 6, invalid linkage conventions in calls to tableBASE from AMODE 24/ RMODE 24 applications will cause abends. In Version 5, this was not always true.
- In Version 6, error code 85-2 is returned for all attempts to use DV or DW commands against an alternate table. In Version 5, error code 0 was returned in some cases, even though the command was not successful.
- In previous releases, it was possible to create an Alternate Index with the same name as the Data Table (even though this table was consequently not usable). In Version 6 you are no longer able to create an Alternate Index with the same name as the Data Table. An attempt to do so now results in error code 19.

  This problem may occur in Version 6, if a Version 5 table with such a loop is imported into Release 6.0.1. Ensure that tableBASE libraries in Version 5 format that are to be converted to Version 6, do not contain Alternate Indexes that have the same name as the Data Table.

Maintenance methodology

Version 6 is no longer maintained by ZAPs.

All levels of Version 6 track maintenance by load module level. A LISTLVL CLIST and job are provided that allow you to list the maintenance level of every tableBASE load module in your library. This information allows DKL support staff to determine whether specific fixes are included in your tableBASE software.

For example, the internal level of Release 6.0.3, when displayed by the LISTLVL CLIST is V603.00008.

Known issues

The following issues are known to exist in Maintenance Level 4:

1. We strongly recommend that all users run the Version 6 tableBASE PC Server in every MVS Image in which tableBASE is used. If it is not, tableBASE module DK1TROTB will be updated at run-time with the address of a step termination routine. Since DK1TROTB is distributed as reentrant, it will be loaded in key 0 memory if it is loaded from LPA or an authorized load library and thus cannot be updated. This can be circumvented by relinking it as serially reusable.

2. If any reentrant applications do not use a TBPARM when calling tableBASE, there can be performance problems when DK1TROTB and/or DK1TCALL are loaded from LPA or an authorized load library. As above, they will be in loaded in key 0 memory. Without a TBPARM, our fast path pointer is not available so an MVS LOAD of DK1TVROT must be issued on every call to locate DK1TROTB. Then an MVS LOAD of DK1TNUCL must be issued. The LOAD of DK1TNUCL can be circumvented by relinking DK1TROTB as serially reusable. If the application module issuing the call to our API (TBLBASE or some alias) is reentrant or a dynamic call is used, DK1TCALL must be relinked as serially reusable. Then the addresses of the modules can be cached and the LOADs bypassed.

3 Release Notes for Release 6.0.2-05, Maintenance Level 5

These notes cover the changes to tableBASE Version 6 between maintenance level 4 and maintenance level 5.

New Features and Enhancements

TBEXEC

TBEXEC has been updated to display tableBASE error codes and subcodes on all tableBASE errors detected.

DK1TCNV

The library conversion utility DK1TCNV has been updated to support RECFM=FB as well as RECFM=F for BDAM table libraries.

Functionality and Operational Changes

Implicit open

Implicit open of a table is now compatible with V5 in setting of the count field to zero.

OA command

TBDRIVER utility OA command issues additional informational messages when no tableBASE library is accessed.

Enhancements and Fixes by Interface

Enhancements and Fixes Affecting all Interfaces

ID	Description
2246	Prevent memory leak when opening Alternate for which data table does not exist
2273	Reset count field on implicit open of table
2276	Extraneous table ENQ when table not opened
2282	Prevent G301 abend attempting to access table that has been deleted from library
2290	Correct S0C4 when storing hash table with very high density in a bridge library.

Batch Interface Enhancements and Fixes

ID	Description
2042	Prevent abend 337 in Expand process when actual library and internal definition size do not match.
2278	Prevent S878 abend when running DK1TCNV to convert a large library
2281	Add messages for TBDRIVER AR command when no library accessed
2284	Enhance TBEXEC to add error code and sub-code displays for tableBASE errors
2287	Correct abend 301 in TBCOMP when tables being compared are on same library
2295	Enhance to allow RECFM=FB in source and target libraries for conversion job DK1TCNV

CICS Interface Fixes

ID	Description
2277	Prevent G300 abend when tableBASE Library file is ‘Disabled’

tablesONLINE/CICS Fixes

ID	Description
2274	Prevent G001 when working with Version 5 exits in TBOL/CICS
2277	Revise messages in TBASEMSG, TBOLMSGS and BKUPMSGS for new subcodes

VTS Fixes

ID	Description
2286	Correct AUTHLIBV sysin card.

Known Issues

With this level an enhancement to the CL command is being staged. This enhancement uses a parameter with the CL command. If existing applications use a parameter on the CL command, they will receive error code 2-98 and possibly abend.

Multi-tasking applications which access tableBASE from multiple TCBs within a region may experience problems with I/O to tableBASE libraries. This can be circumvented if all library accesses are from the same TCB.

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Release Notes for Release 6.0.2-06, Maintenance Level 6

These notes cover the changes to tableBASE Version 6 between Maintenance Level 5 and Maintenance Level 6. The major components of this release were:

- Command & jobstream consistency
- New LV command
- New tableBASE option parameters

New Features and Enhancements

LV command

A new command, LV, has been added. It returns current VTS name settings for the region. See the "Programming Guide: tableBASE Commands" for additional information.

User exits

Two new user exits for thread start and thread end have been added. In CICS they are invoked at transaction start and end. See the "Administration Guide: tableBASE User Exits" for additional information.

Library directory caching

Library directory caching has been extended to Bridge Libraries. See "Enhancements and Fixes by Interface" on page 51 for limitations on all directory caching. See "Administration Guide: Best Practices" for additional information.

TBEXEC new parameter

TBEXEC supports a new parameter on the COPY command, NEWID=NO, which copies tables to another library without changing the user-id and last-changed date. See the 'Batch Utilities Guide: TBEXEC Commands" for additional information.

New tableBASE option parameters

tableBASE option parameters LOCKTIMEWTO and LOCKTIMERC have been added. With these parameters an application that issues a tableBASE command that waits an excessive amount of time for a table in a TSR to be available will generate message "DK100227W JOB jjjjjjj IN vvvvvvvv WAITING FOR nnnn SECONDS FOR TABLE tttttttt" and/or receive error code 71. See the "Installation Guide: Appendix: Parameters" for details.

Functionality and Operational Changes

CL command

An extra parameter in CLose command is better tolerated than in prior levels. In the Version 5 Close command, processing ignored parameters following the command area. In Version 6, staging for future enhancements introduced support for an additional parameter. This created problems for applications which had erroneously coded a parameter. With this fix level, the parameter is scanned for an eye-catcher before being processed.

Command consistency

The LT command is now consistent with Version 5 in the return of base table name for index tables.

The IK, RK, IC, RC commands are now consistent with Version 5 in the use of override length value.

The FC, IC, RC, DC, DU commands are now consistent with Version 5 in the setting of the count field after an implicit open.

The DU command is now consistent with Version 5 in the TBACC-DEF-Block contents and the format of the returned rows.

Jobstream control statement consistency

The sample CNVBDIAG jobstream control statements are now consistent with the DDNAME statements

TBDRIVER

TBDRIVER utility OA, AR commands are now consistent with the Version 5 operation of these commands. Messages for these commands have been updated to be more accurate. Performance of both commands has been improved, particularly if multiple wild-carded commands are issued to the same library in succession.

TBDRIVER CLIST

TBDRIVER CLIST specifies a secondary allocation for the output dataset.

Table designation terminology standardization

Table designation terminology has been standardized:

Data table:	contains rows of user data (previously this was sometimes called a “base” table)
Index table:	contains an alternate index to a Data table (created by CA or IA command)
View table:	contains a description of the columns of a data table (created and used in TBOL)

Exceptions to Compatibility with Previous Releases

Starting from Release 6.0.2, Level 6, the Count field in the Command Area (TB-COUNT) is zeroed for implicit opens, except for FC, IC, RC, DC, and DU commands. This is the same behavior as in Version 5. Behavior prior to this is described below.

- Release 6.0.2, Level 4 - 5: Count was zeroed for all opens, whether implicit or explicit.
- Release 6.0.1, Level 1 - 3: Count was left unchanged for all implicit opens.

Enhancements and Fixes by Interface

Enhancements and Fixes Affecting all Interfaces

ID	Description
2271	Implement new LV command to display VTS name accessed
2283	Implement new CICS transaction and Batch thread start and end exits
2294, 2467	Correct U301 on CL or RL after opening table from library with DISP=SHR and diverting it to library with DISP=OLD
1814	Correct missing table NQ when library DISP=OLD
2382	Prevent NQ Deadly Embrace on multiple updates to the same library
2482	Prevent potential library corruption problems due to library NQ synchronization errors
2492	Correct NQ order for RN, XT commands to prevent deadly embrace
2502	Correct NQ order for all library update commands
2507, 2518	Prevent potential tableBASE library corruption due to NQ/DQ logic with caching
2297	Enhance TBEXEC COPY to preserve update history for a table
2300, 2335,	
2339	Correct DU command processing
2301	Implement internal trace for NQ and DQ
2314	Implement new error code and WTO for stalled pre-empt
2315	Prevent S053 in IMS MPR after soft abends
2316	Correct clearing of pre-empt field after termination processing
2422	Disallow pre-empt for TCE LIST and SPACEMAP locks
2320	Correct S0C4 in Multitasking Batch accessing BDAM library
2324	Enhance space request calculation algorithm for RF using algorithm from OR/OW
2328	Correct FC processing with implicit open on
2329	Prevent U300 ABEND for ALESERV macro, error 12/C
2331	Prevent U301 while opening 'true' hash table with row size > 3120
2343	Enhance CL/RF commands to tolerate extra parameter
2356	Prevent memory leak during library access
2379	Enhancement to allow caching of Bridge Libraries for performance improvements
2412	Prevent S0C4 in CICS task termination after CL error 74
2417	Prevent CA, ST & DG ABENDS with MULTITASKING=Y
2418	Prevent U301 in DL on Undefined DD with MULTITASKING=Y
2426	Correct problem with missing tables on cached libraries on LD and NX commands
2434	Set User Exit ABEND indicator
2435	Prevent S0CA in strobe reporting when page number exceeds 999

ID	Description
2447	Correct LT command to always return BASE table name
2475	Disallow batch updates to table opened for read in a VTS-TSR
2478	Correct IK to be compatible with V5 when override length < key length or negative
2480	Correct RK to be compatible with V5 when override length < actual or negative
2483	Implement debug trace to capture library allocations
2485	Correct IC and RC to be consistent with IK and RK when override length negative
2495	Update messages table, TBASEMSG, to contain latest error codes and subcodes
2498	Prevent S878 batch ABENDS at termination
2508	Correct TSR space estimation too large for V6 tables converted from V5 table

Batch Interface Enhancements and Fixes

ID	Description
2325	Correct sample distribution JCL for CNVBDIAG
2182	Prevent 1072 abends when connecting to a recycled VTS-TSR after IMS transactions stopped and restarted
2304	Correct conversion problem when middle generation of source table is paged
2307	Correct conversion problem when source library is full
2515	Correct conversion program to remove error for spurious FSDNEXT value
2281	Correct AR and OA problem of not returning any error messages with blank ML list
2391	Correct OA and AR behavior to be compatible with V5
2330	Enhance batch driver to display error sub-code for OA and AR functions
2427	Enhance OA and AR functions for performance and concurrent usage by multiple users
2318	Correct batch driver misleading message with wildcard function when TSR is full or almost full
2303	Correct TBEXEC UNLOAD function to initialize output record
2323	Correct misleading TBEXEC IMPORT error message carried over from previous failure
2359	Correct TBEXEC to remove erroneous line, 'XXXXXX', in banner
2410	Correct U333 in TBEXEC when NOWAIT is on
2458, 2460	Correct TBEXEC error handling to return non-zero return code and write error messages to TBMSG
2464	Correct TBEXEC LOAD to not create an empty generation of the table when input file does not exist
2381	Correct multi-tasking batch to handle more than 20 tasks

tablesONLINE/CICS Fixes

ID	Description
2309	Correct error G012 trying to update TBOLCNST table
2322	Update TBOLMSGS to contain latest error codes and subcodes

tablesONLINE/ISPF Fixes

ID	Description
2416	Correct sample TBDRIVER CLIST to allow secondary allocation for output DSN
2431	Revise table designation terminology in ISPF Panels (BASE vs DATA)

Known Issues

Thread-safe CICS transactions

Thread-safe CICS transactions are not supported. They will be in a future maintenance level.

Empty directory blocks

Some earlier versions of the tableBASE library conversion process did not clear all empty directory blocks. The Library Directory Caching Feature does not tolerate empty directory blocks. To correct this problem, run the DK1TLCHK utility DIAGNOSE function against the library. If it indicates there are empty directory blocks, run the TBEXEC utility COPY LIB function to recreate the library. This process will remove empty directory blocks.

tableBASE abend

If tableBASE is accessed from a batch or IMS region that also accesses CICS with EXCI, tableBASE may abend. This can be circumvented by calling TBLBASE with a TBPARM before invoking EXCI and using the TBPARM on all subsequent calls to tableBASE.

5 Release Notes for Release 6.0.2-07, Maintenance Level 7

This section covers Release 6.0.2, Maintenance Level 7. The major components of this release were:

- CICS Threadsafe
- PC Server changes
- CICS module DK1TCIN changes

New Features and Enhancements

CICS Threadsafe

CICS Threadsafe applications that access tableBASE are now supported. Several changes to operation are involved - see the installation instructions in this document.

TBST transaction

The TBST transaction is supported for stopping and restarting tableBASE within a CICS region with restrictions. Stopping tableBASE results in the TSR being released. Restarting tableBASE results in a new, empty TSR being created. This transaction is only supported if all transactions accessing tableBASE have completed or have been purged. If any transactions are still accessing tableBASE when this transaction executes, unpredictable results, including abends and blocked transactions, can result. Recovery could entail recycling CICS and any affected VTS-TSRs.

LD command

The LD command has an additional DIRTYPE option. Option "L" returns only the library DDNAMEs and table names, one row for each table. It is significantly more efficient than other DIRTYPE options.

Sample CICS DFHSRTTB table

A sample CICS DFHSRTTB table is supplied to avoid S067 abends when a VTS-TSR is not available.

TBPRINT

Elapsed and CPU time usage by TBPRINT (DK1TPTBL) is significantly reduced.

Functionality and Operational Changes

PC Server

The PC Server must now be running for a CICS region to initialize tableBASE. It must also be running for the correct operation of CICS Threadsafe support. If it is not running, table BASE will issue the message "DK100567I The tableBASE PC Server must be running for tableBASE to initialize" and will not initialize. The PC Server shipped with this level is required for tableBASE to initialize correctly in a CICS region. If the PC Server is stopped while CICS is running, calls to tableBASE may abend.

CICS module DK1TCIN

CICS module DK1TCIN must now be defined as CONCURRENCY(QUASIRENT). If it is not, tableBASE will issue message "DK100568I Program DK1TCIN must be defined as CONCURRENCY(QUASIRENT)" and it will not initialize. It must also be defined as EXECKEY(CICS).

tableBASE under CICS

Under CICS, tableBASE is now initialized when DK1TCIN is invoked (either through the PLT or transaction TBST). In earlier releases, it was initialized by the first application call to tableBASE.

CICS Threadsafe

With the introduction of CICS Threadsafe support in this release, customers will be able to run Threadsafe applications with tableBASE without experiencing performance

degradation due to TCB-switching. Since the definition of Threadsafe CICS commands is not static, we recommend that customers contact us before migrating to a new release of CICS beyond CICS/TS 3.1. L9 OTE TCBs and OPENAPI applications have not been tested for any CICS release.

TBLBASE

A new version of DK1TCALL(TBLBASE) is being supplied. It allows access to tableBASE to coexist in applications that access CICS through EXCI. If the linkedit characteristics of your installed version are different from the new version, relink this load module with the same characteristics as your current version.

TBDRIVER CL,*

The TBDRIVER CL,* has been updated to work correctly when invoked with the TBTEST alias. Note that it will create and delete tables TBALIST and TBBLIST even if user tables exist with these names.

EXITISPF correction

The supplied sample TBOL/ISPF exit data-area EXITISPF has been corrected. The previous version documented extended command areas for TABLE-COMMAND-AREA and FIELD-COMMAND-AREA. TBONLINE actually passes short (28-byte) command areas. The Programming Guide, Chapter 12 (tablesONLINE/ISPF Exit Programming), will be updated to include the corrected copy of EXITISPF under “Structure of an Exit Program”.

Enhancements and Fixes by Interface

Enhancements and Fixes affecting all Interfaces

ID	Description
1880	Improve module tracking for diagnostics
1899	Improve PC Server startup
2415	Add DIRTYPE L option for LD command
2462	Prevent empty Library block after abend
2547	Add internal tracing options
2556	Fix DK1TCALL abend S0C1 when using EXCI in batch/IMS
2568	Fix abend resulting from implicit open timing error
2569	Change abend in DT command with estimated rows < 0 to error code 43
2573	Improve TBPRINT (DK1TPTBL) performance
2586	Upgrade System level diagnostic Exits
2612	Refresh library directory cache refresh after incomplete update

Batch Interface Enhancements and Fixes

ID	Description
2041	Prevent Abend in TBTEST entry point to TBDRIVER on CL,*

CICS interface Enhancements and Fixes

ID	Description
2003	Provide sample DFHSRTTB table
2443	Implement CICS Threadsafe application support
2537	Process ABCODE=binzeroes the same as spaces
2557	Remove dangling enqueue if CICS transaction cancelled while waiting for enqueue
2591	Ensure tableBASE is initialized when DK1TCIN is invoked
2592	Add Threadsafe support for Enqueue Wait queue
2601	Ensure PC Server level is appropriate for Threadsafe support

tablesONLINE/CICS Fixes

ID	Description
2558	Fixes storage violation if TBOL is exited abnormally and TSQUEUE is deleted
2584	Document procedure for removing User-developed TBOL Application

tablesONLINE/ISPF Fixes

ID	Description
2525	Remove all references to Page tables
2581	Correct command area layout in EXITISPF
2653	Allow pointer tables to be defined

Known Issues

Empty directory block removal

Some earlier versions of the tableBASE library conversion process did not remove all empty directory blocks. The Library Directory Caching Feature does not tolerate empty directory blocks. To correct this problem, run the DK1TLCHK utility DIAGNOSE function against the library. If it indicates there are empty directory blocks, run the TBEXEC utility COPY LIB function to recreate the library. This process will remove empty directory blocks.

Invalid table name notification

In Version 5, use of an invalid table name (e.g., spaces or lowvalues) on the Close command returned errcode 2 (table not found). Version 6 returns errcode 12 (invalid table name).

6
Release Notes for Release 6.0.3-08, Maintenance Level 8

Release 6.0.3-08 offers significant enhancements and improvements, which may require additional consideration during implementation.

This section covers the most recent release, Release 6.0.3-08 (Maintenance Level 8)— the changes to tableBASE Version 6 between Maintenance Level 7 and Maintenance Level 8. The major components of this release are:

- new PC server and other operational improvements
- changes to tablesONLINE, including tablesONLINE/ISPF exit programming
- TBEXEC enhancements
- TBOPT: new parameters and changes
- changes and enhancements to ML, LV, LT, >S, GD, VE commands
- new error diagnosis capabilities
- also included are fixes of known issues from Release 6.0.2-07.

Note: Release 6.0.3-08 libraries are not compatible with Version 4 and Version 5 libraries. We do not recommend updating from v5 or earlier directly to Release 6.0.3-08. If this is your situation, please contact DataKinetics.

New Features and Enhancements

tableBASE run-time options: new parameters and changes

There are new parameters and changed tableBASE run-time option parameters (handled by TBOPT and TBOPTGEN), including:

- **HASH_HI_DEN_LIM** and **HASH_LOW_DEN_LIM** are new parameters which limit the density of the index for a hash table opened in Version 6. These values are designed to prevent performance problems which can occur when inappropriately high values are used when defining hash tables (which can result in numerous new indexes being created). Other problems occur if the difference between low and high density values is too small. A ratio of 2/3 is now enforced: Low density may not be greater than 2/3 of high density. HASH_HI_DEN_LIM=nnn must be between 100 and 900 (10% and 90%); the default is 900. HASH_LOW_DEN_LIM=nnn must be between 10 and 600; the default is 600.
- **LDS** is a new parameter. If LDS=Y is used, the Local TSR or VTS-TSR will be mapped to an LDS (Linear Data Set), when the TSR is brought down. If this option is used, a corresponding LDSTSR DD statement, with the LDS Dataset Name, must be included in the job.

  If LDS=Y is used in conjunction with TSRACCESS=RW, the DISP of the LDS should be set to OLD i.e., //LDSTSR DD DISP=OLD,DSN=**`*your.LDS.DSName*`**

  If LDS=Y is used in conjunction with TSRACCESS=RO, then the DISP of the LDS can be set to SHR i.e., //LDSTSR DD DISP=SHR,DSN=**`*your.LDS.DSName*`**

  If LDS=N is used, no mapping of TSRs will occur during TSR shutdown.
- **LISTOPTIONS**=X is a special setting for TBOPTGEN (DK1T1134). It is the equivalent of LISTOPTIONS=N if the TBOPT DD was not present in the jobstream, and the equivalent of LISTOPTIONS=Y if the TBOPT DD is present. ListOptions=X applies to TBOPTGEN only; it does not apply to TBOPT.
- **LOCKTIMERC** and **LOCKTIMEWTO** are new parameters.

  LOCKTIMERC=nnnnnn specifies the number of seconds (default 0) that tableBASE should wait for a lock. When the LOCKTIMERC interval has passed, RC=71 is returned. A value of LOCKTIMERC=0 specifies that the process will never time out.

  LOCKTIMEWTO=nnnnnn specifies the number of seconds (default 30) to wait before issuing a message (DK100227W) that the process is waiting for a lock. A value of LOCKTIMEWTO=0 specifies that no warning message will be issued. They are used internally by tableBASE to maintain table integrity in the TSR. It is unrelated to the table ENQUEUE that occurs when a table is opened for write (OW).
- **MTRETAIN** is a new parameter. MTRETAIN=Y|N controls whether an MT command will retain the empty space for data rows for a table or reduce it to the

original estimated size. This can affect the performance of a subsequent population of the table. The default is "N", which is current processing—not retained.

- The maximum **STROBE** value has been increased to 2G – 1 (2,147,483,647), up from 10,000,000 in previous releases.
- **TABLEWAITWTO** and **TABLEWAITRC** are new parameters which have been introduced to enable detection of excessive wait time to open a table for update access (OW).
  - TABLEWAITWTO=nnn specifies the number of seconds that a user will wait to obtain the MVS enqueue to open a table for read or write before timeout. If the enqueue is not obtained before the timeout, tableBASE will return code 72, or will abend, if the Abend on Errors switch is set to Y. The delivered default is 0 (wait forever).
  - TABLEWAITRC=nnn indicates the elapsed time in seconds before a message will be generated to report that the enqueue has not yet been received. The Wait for Enqueued Table switch must be set to Y for these parameters to have any effect.
- **TPVM** is a new parameter. It specifies the TPVM (VTS Manager) that manages the VTS-TSRs that are to be accessed during the life of a region. The TPVM name can be up to eight characters long. This parameter is for future use with VTS Manager.
- **TSR_ALGORITHM** is a new parameter. TSR_Algorithm=P|D allows the process of creating the TSR to specify whether the Performance or Default operation is desired. This parameter allows for flexibility for the address space manager:
  - P (Performance) indicates that the TSR will be optimized for performance. Space will be assigned to tables within the TSR so as to minimize CPU usage, which may result in a less than optimum use of space.
  - D (Default) indicates that there will be no optimization, and there will be no messages regarding optimization. However, messages will be provided regarding current TSR capacity percentage.
- **TSR_WARNING_PCT** and **TSR_WARNING_FREQ** are new parameters which control messages that indicate TSR usage. Use TSR_WARNING_PCT=nn to indicate the percentage of TSR allocation allowed before warning message DK100310W will be generated. TSR_WARNING_FREQ=nnn controls the minimum time to delay before repeating message DK100310W if usage is still over the TSR_WARNING_PCT value.
- **TSRACCESS** is a new parameter. The two values that can be used are 'RW' or 'RO'. If not specified, the default TSRACCESS is RW. If TSRACCESS=RW is used, applications accessing the Local TSR or VTS-TSR under which this option is specified will be allowed Read-Write access to the TSR. If TSRACCESS=RO is used, applications accessing the VTS-TSR under which this option is specified will be allowed Read-Only access to the TSR. This parameter applies only if you have licensed the optional VTS Manager. TSRACCESS=RO is for future use with VTS Manager.
- **VTSFIRST**, **VTSLAST**: These two parameters, which specify the VTS-TSR names to be searched prior to or after the ML search list, can now be up to eight characters long.

- The **VTSNAME** parameter, used only when the VTS Agent initiates a VTS-TSR, can now be up to eight characters long.

  Note: All VTS names must be eight characters long. A smaller name must be blank filled to eight characters.

- **VTSPREFIX** is a new parameter. You can use it to specify the VTS prefix that is to be used with the ML command. The default VTS prefix is "VTS:". The VTSPREFIX specified must end with a colon (":" - no quotes) and can be 1-4 characters long, including the colon.
- **ZEROROWS** is a new parameter. Related to the MTRETAIN parameter, and applies only when MTRETAIN = N. It determines whether the data rows area should be zeroed when a TSR is deallocated. Note that the index area is never zeroed, except for hash indexes.

API command enhancements

ML command

The VTS-TSR name in an ML search list can now be up to 7 characters long.

In order to include a VTS-TSR which has a name greater than 4 characters in the search list, first change VTSPREFIX in TBOPT to the desired length, then use the new prefix in the ML command.

For example, if VTSPREFIX=V:, then the ML command would look like ML V:xxxxxx where xxxxxx is the VTS-TSR name of up to 6 characters.

LV command

The LV command displays the VTS prefix. Also, it is now supported in both TBDRIVER and CICS TBDR (DK1TDRV and DK1TDRVC).

LT command

The LT command has been enhanced to provide longer countfields and additional information. There are several new fields for the LIST-BLOCK parameter, and for the TABLE-STATS optional parameter. This information is displayed in the TBDRIVER utility and the CICS TBDR transaction. There are new LIST-BLOCK parameter fields and new TABLE-STATS parameter fields.

New LIST-BLOCK parameter fields

The LT command will now return an additional 44 bytes of information in the LIST-BLOCK parameter if it is called with a FUNCTION-ID of 16 in the COMMAND-AREA. This parameter now consists of 21 fields of which the first three are input to the LT command and next 18 are output from the command. The inputs specify the portion of the open tables statistics to be placed in the companion TABLE-STATS parameter. The output fields describe usage statistics about the TSR.

If the LIST-BLOCK parameter is used in an LT command with no function-id in the command-area, only the first eleven fields will be used; i.e., after the first 3 input

fields, only the next 8 fields will be returned. If the LIST-BLOCK parameter is used in an LT command with a function-id of 16 in the command-area, then all 21 fields will be used.

New fields are in **bold**:

```
01 LIST-BLOCK.
   05 LIST-FROM                    PIC S9(8) COMP VALUE +1.
   05 LIST-REQD                    PIC S9(8) COMP VALUE +96.
   05 LIST-SIZE                    PIC S9(8) COMP VALUE +36.
   05 LIST-TOTAL                   PIC S9(8) COMP.
   05 LIST-RETURNED                PIC S9(8) COMP.
   05 LIST-TSR-HW                  PIC S9(8) COMP.
   05 LIST-OPEN-HW                 PIC S9(8) COMP.
   05 LIST-OPEN-NOW                PIC S9(8) COMP.
   05 LIST-TSR-NOW                 PIC S9(8) COMP.
   05 LIST-TSR-SZ                  PIC S9(8) COMP.
   05 LIST-STROBE                  PIC S9(8) COMP.
   05 LIST-TOTAL-HWM               PIC S9(9)  COMP.
   05 LIST-TOTAL-CALL              PIC S9(18) COMP.
   05 LIST-MAX-TBLS                PIC S9(9)  COMP.
   05 LIST-SIZE-SPCMAP             PIC S9(9)  COMP.
   05 LIST-SIZE-HASHINDX           PIC S9(9)  COMP.
   05 LIST-SIZE-INDX               PIC S9(9)  COMP.
   05 LIST-SIZE-DEFNS              PIC S9(9)  COMP.
   05 LIST-TSR-AVAIL               PIC S9(9)  COMP.
   05 LIST-SPCMGR-STATUS           PIC X.
   05 LIST-RESERVED                PIC X(7).
```

For a description of the pre-existing fields, see the *tableBASE Programming Guide*.

New field descriptions:

a. **LIST-TOTAL-HWM** (fullword binary)
The High Water Mark for the number of open tables.

b. **LIST-TOTAL-CALL** (doubleword binary)
The total call count for all tables in the TSR.

c. **LIST-MAX-TBLS** (fullword binary)
The maximum number of tables in the TSR.

d. **LIST-SIZE-SPCMAP** (fullword binary)
Size of Spacemap + CME size in TSR

e. **LIST-SIZE-HASHINDX** (fullword binary)
Size of Hashed Index to the table directory in the TSR

f. **LIST-SIZE-INDX** (fullword binary)
Size of the Index to the table directory in the TSR

g. **LIST-SIZE-DEFNS** (fullword binary)
Size of the table directory in the TSR

h. **LIST-TSR-AVAIL** (fullword binary)
Number of blocks available in TSR

i. **LIST-SPCMGR-STATUS** (1 byte)
TSR Space Manager Status

j. **LIST-RESERVED** (7 bytes)
FILLER.

New TABLE-STATS parameter fields

The LT command can now also return up to 80 bytes of table statistics in the TABLE-STATS parameter. As in Release 6.0.2, this is done by specifying the length of information to be returned in the LIST-SIZE field under the LIST-BLOCK parameter.

New fields are in **bold**:

```
01 TABLE-STATS.
   05 LIST-TABLE-ENTRY                    OCCURS 36 TIMES.
          10 TABLE-NAME                   PIC X(8).
            10 TABLE-OPEN-STATUS          PIC X.
            10 TABLE-LOCAL-VTS            PIC X.
            10 TABLE-ALT-INVOKED          PIC X.
            10 FILLER                     PIC X.
            10 TABLE-CALLS-TRUNC          PIC S9(9) COMP.
            10 TABLE-SIZE                 PIC S9(9) COMP.
            10 TABLE-ROWS                 PIC S9(9) COMP.
            10 TABLE-RWS-BF-EXP           PIC S9(9) COMP.
            10 TABLE-DATATBL-VTSNAME      PIC X(8).
            10 TABLE-UPDATE-CALLS-TRUNC   PIC S9(9) COMP.
            10 TABLE-DATE-TIME            PIC 9(12).
            10 FILLER                     PIC S9(4) COMP.
            10 TABLE-CALLS                PIC S9(18) COMP.
            10 TABLE-UPDATE-CALLS         PIC S9(18) COMP.
            10 TABLE-VTSNAME              PIC X(8).
```

For a description of the pre-existing fields, see the *tableBASE Programming Guide*.

New field descriptions:

a. **TABLE-CALLS-TRUNC** (fullword binary)
Only a name change was TABLE-CALLS, now TABLE-CALLS-TRUNC.
The total number of calls made against the table since it was last opened (truncated to a fullword).

b. **TABLE-UPDATE-CALLS-TRUNC** (fullword binary)
Number of updates to this table (truncated to a fullword).

c. **TABLE-DATE-TIME** (12 bytes)
The date and time that the table was last stored to a library.

d. **FILLER** (4 bytes)
Filler.

e. **TABLE-CALLS** (doubleword binary)
The total number of calls made to this table since it was last opened.

f. **TABLE-UPDATE-CALLS** (doubleword binary)
The total number of updates to the table since it was last opened.

g. **TABLE-VTSNAME** (8 bytes)
The name of the VTS-TSR if this entry describes a Linked table.

TBEXEC enhancements

TBEXEC error messages have been improved. In addition, there are new options for

- PRINT command: DETAIL=YES provides additional information on each table.
- LOAD command: DUP=N will prevent duplicate keys from being loaded (duplicate keys are not supported on hash tables).

>S command (CICS TBDR)

A new command, >S, is added to CICS TBDR (DK1TDRVC). It provides a mechanism to transfer a table name containing hex characters from the LT command output to the table name field so another command can be invoked against it.

VE command (TBDRIVER)

The "VE" command has been added to TBDRIVER, CICS transaction TBDR and tablesONLINE/ISPF. It returns the tableBASE Version level of the component.

Batch and CICS LT command displays

The LT commands in TBDRIVER and CICS transaction TBDR return additional information for tables:

- **UPDATES** - new in Release 6.0.3-08
  The number of updates made to the table in the TSR.
- **DATE-TIME** - new in Release 6.0.3-08
  The date and time the table was last stored to the library.
- **BASE/VTS**
  If the table is a linked table from a VTS-TSR, this field will now take the format of VTS:xxxxxxxx, where xxxxxxxx can now be up to 8 characters for the VTS name.

  Note: All VTS names must eight characters long. A smaller name must be blank filled to eight characters.

tablesONLINE/CICS

Naming Conventions

The naming conventions for tablesONLINE/CICS temporary tables and TSQUEUEs are now documented. This information can be used to prevent accidental or programmed deletion of these resources.

Application Control Table change

The tablesONLINE/CICS Application Control Table has a new field, Enable directory list. This field controls whether F1 (Help) produces a list of library tables, or just the standard help panel display. This indicator may be set to either Y or N. If this indicator is set to N, the help panel will be displayed; if set to Y, all tables in the library will be listed.

tablesONLINE

Batch utility program DK1TCSTR is delivered with this level. It is designed to create C language type structures from TBOL views.

Batch Interface: RW Local TSR with LDS (VTS Manager future use)

With Release 6.0.3-08, batch jobs accessing tableBASE can now be associated with an LDS (Linear Data Set). Specifying an LDS in the batch job will allow the Local TSR to be mapped onto the LDS when the TSR is brought down at the end of the job.

This feature can be used to create the data for the LDS of a Read-Only VTS-TSR.

In order to use an LDS with your batch job, the following TBOPT parameters are required:

```
TSRACCESS=RW;
LDS=Y;
```

and the following LDSTSR DD statement is required:

```
//LDSTSR DD DISP=OLD,DSN='Your.LDS.DSName'
```

This feature is for future use with VTS Manager.

STROBE report

A tableBASE Strobe report will be produced at end of job in batch and IMS if the TBTSRPT dataset is allocated even if the setting is STROBE=0. This is compatible with Version 5.

Error diagnosis

New functionality is provided for programmers in the area of abnormal terminations and tableBASE internal errors.

Abnormal terminations

Under CICS, tableBASE will produce a DKL1 CICS transaction dump for any abnormal termination.

tableBASE internal errors

Under CICS, tableBASE will produce a CICS transaction dump with an abend code of LGIC when an internal error is trapped.

Functionality and Operational Changes

Updated display information

1. This maintenance level displays as "V603" in utility output, console messages, and the tableBASE "BN" command.

2. Two messages will be displayed on the MVS console as tableBASE starts in any step:

- `DK100202I  tableBASE V603 is initializing for **your customer name**`
- `DK100205I - Executing in JOB Step=xxxxxxxx  PROC Step=xxxxxxxx`

3. Message DK100210E

   The existing message:
   `DK100210E Unable to locate tableBASE GCA`
   has its message number changed to DK100605E in tableBASE Release 6.0.3-08.

PC Server

The PC Server must be running for tableBASE to be used in any environment, including batch. The new PC Server supplied with this level can be introduced without reIPLing the LPAR. If CICS regions are not recycled they will continue to use the prior level PCs.

PC Server notes

All interfaces now require that the PC Server be started and running before tableBASE can be initialized in a region.

The PC Server in Release 6.0.3-08 can be introduced without the need of an IPL on the LPAR. CICS regions that are not recycled when the new PC Server is started will continue to use the prior level PC Server.

tablesONLINE, tableBASE libraries

tablesONLINE/ISPF, tablesONLINE/CICS, and all tableBASE libraries are unchanged from tableBASE Release 6.0.2.

Note: Release 6.0.3-08 is based on Release 6.0.2; some optional products, utilities and tableBASE libraries are unchanged. For this reason, you may see V601 or V602

version indications in various reports and messages. This should not be a cause for concern.

COMMAND-AREA COUNT field

In tableBASE Release 6.0.3-08, tableBASE will zero the COMMAND-AREA COUNT field when it returns 17 in the COMMAND-AREA TB-ERROR field. Version 5 (tableBASE V510) left the count untouched in this case.

API Command Changes

GD command

The TBDRIVER/DK1TDRV GD command display of the DDNAME field is increased from eight bytes to 12 bytes. This allows display of VTS:xxxxxxxx for tables accessed by a linked VTS-TSR.

Note: This may affect applications which post-process the output from TBDRIVER steps.

The tableBASE GD command now shows the time and data of creation for a temporary table (created by DT or ALT). Previous releases showed these values only for tables that were stored on a library.

F command

As of Release 6.0.3-08, the F command can no longer be used to stop VTS-TSRs.

DD command

If applications use the obsolete DD command is used to return a table definition, there will be differences between Version 5 operation and Version 6 operation. If a table has a read password, Version 5 DD returns code 30 (invalid password), and nothing in the definition block, while Version 6 DD returns code 0 and a complete definition block. Also, in Version 6, DD will return blanks for a table name, and low values for a VTS name.

DV command

In prior releases, the DV command did not check whether the target DDNAME was allocated. tableBASE put the target DDNAME in the table definition even if the target DDNAME was not allocated. Subsequent Store commands also failed with return code 40. In Version 6, tableBASE checks to see that the target DDNAME is allocated and returns an error code 40-1 if it is not. The table is then treated like a defined (DT) table.

CS command

The CS command must supply an 8 byte status switch field with each byte having a value of Y, N or space. If the status switch field supplied is shorter than 8 bytes or if

any of the bytes supplied is not a Y, N or space, an error code of 10 will be returned. The Status-Switches were always defined/documented as a field of 8 bytes. However, this was not enforced in previous Version 6 releases.

OR/OW of temporary table

tableBASE Return Code 38 is obsolete in tableBASE Version 6. The conditions that cause the return code apply to Version 5 only.

From Release 6.0.3-08 onward:
if a table cannot be found on any library on the ML list, ERROR 9-1 is returned
if a different generation of a table is already open, ERROR 33 is returned.

In Release 6.0.2-07, if a table with a different DSN was already open, ERROR 3-8 was returned. In Release 6.0.3-08 onward, this is ERROR 33.

ML,VTS:, VTSFIRST or VTSLAST

Use of ML,VTS:, VTSFIRST or VTSLAST to access tables is unsupported when using a Local TSR with an LDS. This is applicable for future use with VTS Manager.

tableBASE run-time option updates

Any updates to the tableBASE default options (DK1T1134, DK1T1334, DK1T1434, DK1T2734, DK1V1134) must be reapplied to the new version of the source modules, reassembled, and relinked into DK1BBASE, DK1IBASE, DK1DBASE, DK1CBASE and DK1VBASE respectively.

:

DK1T1134 changes to:	DK1BBASE
DK1T1334 changes to:	DK1IBASE
DK1T1434 changes to:	DK1DBASE
DK1T2734 changes to:	DK1CBASE
DK1V1134 changes to:	DK1VBASE

STATUS-SWITCHES parameter

The STATUS-SWITCHES parameter has always been defined and documented as an 8-byte field containing 5 bytes for switches followed by 3 reserved bytes, but in previous releases of tableBASE this was not enforced and it has been possible for applications to treat STATUS-SWITCHES as a field containing fewer than 8 bytes.

With this tableBASE Release, this will no longer be possible. If the status switch field supplied is shorter than 8 bytes or if any of the bytes supplied is not a Y, N or space, an error code of 10 will be returned.

tablesONLINE/ISPF

Exit programming

The tablesONLINE/ISPF interface has changed; if you're using tablesONLINE/ISPF exits, you'll have to change them.

In previous releases, the supplied sample TBOL/ISPF exit data-area EXITISPF was inconsistent with the data passed to the exit. The documentation indicated extended (72 byte) command areas for TABLE-COMMAND-AREA and FIELD-COMMAND-AREA, but up until Maintenance Level 8, tablesONLINE actually passed short (28-byte) command areas. This has been corrected.

The following shows the data areas that are passed between tablesONLINE and the user exit program. This information is also in the copybook, EXITISPF, in the distribution source library.

```
*-------------------------------------------------------------*
* THIS IS A COBOL COPY BOOK FOR USE IN TABLESONLINE/ISPF EXIT
* PROGRAMMING. IT MAPS THE LINKAGE SECTION FOR THESE EXITS
*-------------------------------------------------------------*
 01  HOOK-PARAMETER-AREA-1.
     05  HOOK-FIELD                 PIC  X(50).
     05  HOOK-FLD-DEFS              PIC  X(100).
     05  TABLE-COMMAND-AREA.
         10  TB-COMMAND             PIC  X(02).
         10  TB-TABLE               PIC  X(08).
         10  TB-FOUND               PIC  X.
         10  TB-INDIRECT            PIC  X.
         10  FILLER                 PIC  X.
         10  TB-ABEND-OVERRIDE      PIC  X.
         10  TB-ERROR               PIC S9(04) COMP.
         10  TB-COUNT               PIC S9(08) COMP.
         10  TB-LOCKLATCH           PIC  X(08).
         10  TB-ROW-OVERRIDE-LENGTH PIC S9(08) COMP.
         10  TB-ROW-ACTUAL-LENGTH   PIC S9(08) COMP.
         10  TB-FG-KEY-LENGTH       PIC S9(04) COMP.
         10  TB-FUNCTION-ID         PIC S9(04) COMP.
         10  TB-FUNCTION-AREA       PIC  X(08).
         10  TB-DATE-AREA   REDEFINES  TB-FUNCTION-AREA.
             15  TB-DATE            PIC  X(08).
         10  FILLER                 PIC  X(20).
         05  TB-RETURNED-ABS-GEN-NO PIC S9(04) COMP.
         05  TB-ERROR-SUBCODE       PIC S9(04) COMP.
     05  I-ZUSER                    PIC  X(08).
     05  TABLE-OPEN-SW              PIC  X(01).
     05  ACTION-BYPASS-IND          PIC  X(01).
     05  FIELD-COMMAND-AREA.
         10  FT-COMMAND             PIC  X(02).
         10  FT-TABLE.
             15  FILLER             PIC  X(07).
             15  FT-TABLE-SUFFIX    PIC  X.
         10  FT-FOUND               PIC  X.
         10  FT-INDIRECT            PIC  X.
         10  FILLER                 PIC  X.
         10  FT-ABEND-OVERRIDE      PIC  X.
         10  FT-ERROR               PIC S9(04) COMP.
         10  FT-COUNT               PIC S9(08) COMP.
         10  FT-LOCKLATCH           PIC  X(08).
         10  FT-ROW-OVERRIDE-LENGTH PIC S9(08) COMP.
         10  FT-ROW-ACTUAL-LENGTH   PIC S9(08) COMP.
         10  FT-FG-KEY-LENGTH       PIC S9(04) COMP.
         10  FT-FUNCTION-ID         PIC S9(04) COMP.
         10  FT-FUNCTION-AREA       PIC  X(08).
         10  FT-DATE-AREA   REDEFINES  FT-FUNCTION-AREA.
             15  FT-DATE            PIC  X(08).
         10  FILLER                 PIC  X(20).
         05  FT-RETURNED-ABS-GEN-NO PIC S9(04) COMP.
```



```
               05  FT-ERROR-SUBCODE       PIC S9(04) COMP.
           05  HOOK-FILLER                 PIC  X(171).
           05  I-TYPECHG                   PIC  X(01).
           05  HOOK-POINTER                PIC S9(04) COMP SYNC.
           05  DATA-ARRAY-NEW.
               10  DATA-ENTRY-NEW          OCCURS 1000
                                           PIC  X(50).
01     HOOK-PARAMETER-AREA-2.
           05  WS-EDIT-ERR                 PIC S9(04) COMP SYNC.
           05  HOOK-USER-MESSAGE           PIC  X(60).
```

CLISTs

Three CLISTS have been removed, as they are no longer used by tablesONLINE. They are:

- TBDEFCNV
- TBFREE
- TBREORG

Exceptions to Compatibility with Previous Releases

VTS Agent and PC Server

In previous Version 6 releases, it was possible to define and run VTS-TSRs using the same name, as long as they were running on different versions of the PC Server. In Release 6.0.3-08 (Maintenance Level 8), this is not possible.

You cannot define and run VTS-TSRs using the same name on a given LPAR, when upgrading from Release 6.0.2-07 (Maintenance Level 7). VTS-TSRs with the same name must be on different LPARs.

Enhancements and Fixes by Interface

Enhancements and Fixes Affecting all Interfaces

ID	Description
1942	Reduce allocation time for large tables
2197	Prevent an alternate index from pointing to a base table
2336	Zero count in CMDAREA after IA command
2338	Preserve count in CMDAREA after CD command
2453	Return consistent error codes for Open of Alternate
2463	Define data vs. views consistently in LD command
2471	Ensure correct DSN returned in GD command
2473	Ensure LD command compatible with V5
2491	Correct DD command anomalies
2500	Prevent abends in DT command with invalid estimated rows value
2505	Set count in CMDAREA correctly for non-zero error code
2509	Set defaults for DT and CD as in V5
2519	Treat DVed table as temporary if specified library is invalid
2523	Correct version on STROBE reports
2527	Increase maximum STROBE value
2534	Ensure VTS-TSR integrity when > 70% full
2543	Correct subcodes for tableBASE error 95
2546	Add parameter to List only options overridden by TBOPT
2563	Supply JCL to relink DK1TCALL as 31/ANY
2588	Prevent S0C4 on ML command with different Storage key
2624	OR,CL of alt can leave DTed base table OR

ID	Description
2627	Improve locking order for alt indexes and implicit opens
2631	Issue Msg DK100244I whenever MAXNMTAB is reset
2646	Update table access counts for linked VTS tables
2686	Prevent TSR corruption when creating table index
2689	CN for a linked VTS table should always return error 13-05
2690	IA on linked VTS table should return error 80-02
2691	LT display of linked VTS table should show DATE-TIME
2693	Update command against linked VTS table opens table
2732	Various abends due to overlay of TSR Space header
2742	XT errors when deleting last table in library
2768	24/24 appl may S0C4 abend in DK1TROTB
2785	G014 abend during date sensitive processing
2786	Additional information displayed at tableBASE region initialization
2798	Improve handling invalid call to tableBASE
2802	Performance access Sequential table with Queued processing
2808	Handle out-of-space condition in TSR when opening alternate
2809	Correct TSR space allocation for alternate index
2810	Update date sensitive processing for compatibility with V5
2815	Prevent access to base table during open of alternate
2836	RF for linked table must return error 13-05
2837	S0C4 on FK for SQPR table using date sensitive processing
2839	Correct LT space usage display for alternate index tables
2842	Number of generations corrected for GD of IA'ed alternate
2845	MT cmd - severe performance problem
2848	WTO TSR usage msgs - usage re-evaluation
2849	Hash tables - Insert
2857	Add step name to TableBASE Initialization Messages
2858	Enhancement to licensing messages
2859	LV command enhancements
2862	S0C4 on Insert after MT of expanded alternate
2865	Sorting with Duplicate Keys
2867	Successive CDs between hash and non-hash increase space usage
2868	Errors on hash tables with very high low density
2873	Limit effect of VS command to TBCALLV and TBASEV interfaces
2902	STROBE=0 does not suppress strobe report
2903	IA on linked table causes hang with message DK100227W

ID	Description
2913	V6 inits LL returns zeros vs. V5 returns spaces
2916	CICS ASRB S438 on OW, WAIT=N
2920	U301 on OW of alternate with temporary base
2934	Prevent DV/DW of alternate tables
2939	RF of empty hash alternate index abends U301
2961	Correct U301 for CD row-size and key-location of hash table
2968	Performance improvements for ZEROROWS=N option
3037	8 byte Status Switches now enforced

Batch Interface Enhancements and Fixes

ID	Description
2202	Prevent DK1TEXEC from running in a Multitasking environment
2421	LT in Batch & CICS Drivers Do Not Display Total TSR Access Count
2437	Produce strobe report at step termination
2454	Prevent TBDRIVER abend on CL,*
2494	Prevent unpredictable abends in utilities due to invalid DDNAME
2499	Add table display options to TBEXEC (DK1TEXEC)
2521	Improve message for TBEXEC EXPORT function
2648	Allow shared PDS output from TBEXEC UNLOAD, EXPORT
2717	Fix Multitasking Batch abend processing XX command
2725	Correct headers for LT display in TBDR transaction
2758	Improve error messages for TBEXEC LOAD failure
2790	TBDRIVER GD of linked VTS table shows wrong GEN #
2792	Add options to specify limits to WAITs for library and table ENQueues
2793	Enhance TBEXEC COPY LIB REPLACE=Y
2796	Add VE command, to display Version level of TBDRIVER
2803	Abend S378 in DK1TCNV
2819	TBEXEC U333 abend with multiple COPY LIB commands
2829	Incorrect error returned on TBEXEC LOAD
2834	Enhancement to TBEXEC PRINT LIB
2847	DK1TCNV error 31 on page table with password
2866	Support for LV command added to TBDRIVER
2891	Add DUP=N|Y support to TBEXEC LOAD

ID	Description
2952	Reduce frequency of tableBASE licensing message DK100203I
2964	Improve performance for TBCALL interface

CICS Interface Fixes

ID	Description
2299	Document RF not supported under TBDR transaction
2302	S01D - U95/09
2421	LT in Batch & CICS Drivers Do Not Display Total TSR Access Count
2436	Correct and document TBDR display of row-actual-size vs override length
2470	Ensure CICS TBDUMP taken
2576	If CICS dump fails, dump data to TBDUMP
2589	Document DKL1 abends in V6
2694	Update command against linked VTS table opens table in local TSR
2725	Correct headers for LT display in TBDR transaction
2772	TBDR fails to clean screen before redisplay
2782	Table locked in VTS-TSR after CICS termination
2796	Add VE command, to display Version level of TBDR transaction
2801	Prevent abends in CICS tableBASE termination logic
2804	TBDR transaction access to tables with undisplayable names
2820	Limit CICS DKL1 transaction dumps
2830	Prevent abend in tableBASE after catastrophic CICS abend
2866	Support for LV command added to TBDR transaction
2872	Allow access to read tableBASE library after failed attempt to upgrade to update access
2932	TBDR txn definition in CICS
2952	Reduce frequency of tableBASE licensing message DK100203I

IMS/TM Interface Fixes

ID	Description
2520	Exaggerated time value in message DK10027W
2861	IMS Preload List updated

DB2 SPAS Interface Fixes

ID	Description
1989	Enforce STROBE = 0
2912	User exits in DB2 SPAS abend

tablesONLINE/CICS Fixes

ID	Description
2559	Reduce overhead of HELP display of list of tables
2566	Cleanup TSQUEUEs for failed TBOL/CICS transaction
2688	Fix multiple user support in TBOL/CICS
2750	using VTS in TBOL/CICS
2774	Support for Read Only TSRs (V610 only)
2796	Add VE command, to display Version level of TBONLINE
2813	Correct TBOLJCL tables in TBAPPLB
2816	Invalid display when TBOLACT missing
2826	Allow out-of-range dates in TBOL/CICS date format fields
2850	documentation of temporary tables
2869	Correct support for options p,m,v in utility TBPRINT
2875	Unpredictable results (abends, overlays, AICA) using invalid view table
2907	Display mask in TBOL/CICS cause S0C4 abend
2911	Prevent use of Stored TBSYSTMP table
2954	Allow users to edit xxxxLIBR table to add data library name
2965	Access all 7 libraries identified in TBOLACT

tablesONLINE/ISPF Fixes

ID	Description
2598	Allow larger space allocations for TBEXEC invocations
2599	Improve consistency of TBOL/ISPF panels and CLISTs
2661	Upgrade TBOL/ISPF and its exit interface
2788	Allow Browse of very large tables
2869	Correct support for options p,m,v in utility TBPRINT

VTS Fixes

ID	Description
2474	Allow use of VTS prefixes besides than VTS:
2683	Reuse stale entries in GCE VTS name list
2692	Prevent update of VTS-TSR from linked tabled in batch interface
2782	Table locked in VTS-TSR after CICS termination
2873	Limit effect of VS command to TBCALLV and TBASEV interfaces

Known issues in Release 6.0.3-08.

- The XX command was erroneously documented as tableBASE termination. It actually only closes table libraries.
- tableBASE errors 9-02, 13-05 and 13-06 apply to any TSR, not just VTS-TSRs.
- TBACC-DEF area has been incorrectly and inconsistently described in previous documentation. The actual layout of the area and its use has not changed from prior releases.
- In Version 6, the VS command was incorrectly documented as taking only a single 4-byte VTSname. The documentation should have matched Version 5, which specified a 4-byte VTSname followed by 16 bytes of spaces.
- The PC Server modules DK1PCSRV and DK1TPCRM must be in LPA or a STEPLIB or SYSLIB for the JOB step. They cannot be executed from LINKLIST load libraries.
- Under CICS, the TBOPT input file can be VSAM or QSAM; if a VSAM definition is provided, the DD must be present in the CICS region JCL.
- VSAM tableBASE libraries must be defined with SHAREOPTIONS(3). If defined with SHAREOPTIONS(2) multiple regions will be unable to access the library concurrently.
- When using tableBASE strobe reporting, there may be discrepancies between the values of total information and the detail information by tables. This is because strobe is run as a subtask for performance reasons and the TSR status can change while it is collecting data. The maximum count value displayed correctly is 2G.
- If the PC Server is taken down and/or restarted, jobs already running will continue to have access to the PCs established when these jobs initialized tableBASE.
- Users of linked VTS tables (those accessed through VTSFIRST, VTSLAST or VTS-name in the ML list) are not notified of changes to the actual table open in the VTS-TSR. This includes not only updates to the rows, but also changes of the table's characteristics, for example, by the CD command.
- The Library conversion process does not diagnose corrupted page tables in all cases.
- Tables with duplicate keys will not necessarily have the order of the rows containing the duplicate keys preserved after commands that reload the data, insert new rows, or change the table's definition.
- The RF command is not supported in CICS. It is still displayed on the TBDR help screen.
- PT3004 Incorrect output when accessing very large hash tables after an MT.
- PT3014 Incorrect master password calculation after SET CLOCK for daylight savings
- PT3024 Abend U300 after soft abend in IMS MPR
- RACF error accessing tableBASE libraries in non-CICS environments can cause U301 abends.

- PT2079 tablesONLINE TBDRIVER/ISPF abend when using both sides of a split screen session.
- Version 5 conversion abend:
  Certain structural errors in Paged tables on Version 5 tableBASE libraries may cause the Library conversion process to fail with abend S209. This same error can occur when running DK1TLCHK.

7 Release Notes for Release 6.1.0

This section covers the most recent release, Release 6.1.0— the changes to tableBASE Version 6 between Maintenance Level 8 and Release 6.1.0. If you are upgrading from an earlier release of Version 6, please also review all intermediate release notes.

The major components of this release are:

- VTS Manager compatibility upgrades
- Improved user exits.

New Features and Enhancements

Compatibility with VTS Manager

tableBASE Release 6.1.0 is compatible with (and can be delivered with) the VTS Manager product.

Improved user exits

The User Exit facility has been enhanced to allow additional data to be returned to the exit. For more details, refer to the *tableBASE Administration Guide*.

Functionality and Operational Changes

Updated display information

This release displays as "V610" in utility output, console messages and the tableBASE "BN" command. tablesONLINE/CICS and tablesONLINE/ISPF displays are unchanged.

Two messages will be displayed on the MVS console as tableBASE starts in any step:

a. `DK100202I  tableBASE V610 is initializing for **your customer name**`

b. `DK100204I - Executing in  Step=xxxxxxxx`

   or

   `DK100205I - Executing in JOB Step=xxxxxxxx  PROC Step=xxxxxxxx`

tableBASE run-time option updates

Any updates to the tableBASE default options (DK1T1134, DK1T1334, DK1T1434, DK1T2734, DK1V1134) must be reapplied to the new version of the source modules, reassembled, and re-linked into DK1BBASE, DK1IBASE, DK1DBASE, DK1CBASE and DK1VBASE respectively.

User exits

If tableBASE User Exits are implemented (Runtime option USEREXITS=Y), module DK1TX072 must be reassembled and re-linked using the supplied jobstream. If the return code from a User Exit is not zero the message:
"`DK100101W Unexpected non-zero return code from user exit`" is displayed.
See the *tableBASE Administration Guide* for further details.

Exceptions to Compatibility with Previous Releases

VTS Agent and PC Server

You can define and run VTS-TSRs using the same name, as long as they are running on different versions of the PC Server. Different versions of the PC Server can run simultaneously.

However, if new VTS-TSRs are created using the Release 6.1.0 PC Server, they will not be accessible to applications using the PC Servers from previous releases. To allow access, you will have to convert these applications which are using older versions of the PC Server to use the current PC Server.

Enhancements and Fixes Affecting all Interfaces

ID	Description
2298	Passing additional fields back to User Exits
2448	Renaming User Exit parameter names for ease of use
2980	Allow before call User Exit to bypass command execution
3004	Bad data in Hash table after MT
3014	IPL time causes incorrect master password calculation
3152	Loop in TBDUMP if TB2963 missing

Batch Interface Enhancements and Fixes

ID	Description
2517	TBCOMP RC=9 does not specify library name
3075	AL - error 75/2. Works in Version 5 not in Version 6

CICS Interface Fixes

ID	Description
3048	AFDK abends with CICS/TS4.1 TRANSISO and VSAM

IMS/TM Interface Fixes

ID	Description
-	-

DB2 SPAS Interface Fixes

ID	Description
3070	DB2 SPAS ESTAE deletion and memory leak

tablesONLINE/CICS Fixes

ID	Description
-	-

tablesONLINE/ISPF Fixes

ID	Description
3064	tBOL/ISPF - Error in SORT while printing table view

VTS Fixes

ID	Description
-	-

Known issues in Release 6.1.0.

1. The XX command was erroneously documented as tableBASE termination. It actually only closes table libraries.

2. tableBASE errors 9-02, 13-05 and 13-06 apply to any TSR, not just VTS-TSRs.

3. TBACC-DEF area has been incorrectly and inconsistently described in previous documentation. The actual layout of the area and its use has not changed from prior releases.

4. In Version 6, the VS command was incorrectly documented as taking only a single 4-byte VTS name. The documentation should have matched Version 5, which specified a 4-byte VTS name followed by 16 bytes of spaces.

5. The PC Server module DK1TPCRM must be in LPA or a STEPLIB or SYSLIB for the JOB step. It cannot be executed from LINKLIST load libraries.

6. VSAM tableBASE libraries must be defined with SHAREOPTIONS(3) or (4). If defined with SHAREOPTIONS(2) multiple regions will be unable to access the library concurrently.

7. When using tableBASE strobe reporting, there may be discrepancies between the values of totals and the detailed information by tables. This is because strobe is run as a subtask for performance reasons and the TSR status can change while it is collecting data. The maximum count value displayed correctly is 2GB.

8. If the PC Server is taken down and/or restarted, jobs already running will continue to have access to the PCs established when these jobs initialized tableBASE.

9. Users of linked VTS tables (those accessed through VTSFIRST, VTSLAST or VTS-name in the ML list) are not notified of changes to the actual table open in the VTS-TSR. This includes not only updates to the rows, but also changes to the characteristics of the table, for example, by the CD command.

10. The library conversion process does not diagnose corrupted paged tables in all cases.

11. Tables with duplicate keys will not necessarily have the order of the rows containing the duplicate keys preserved after commands that reload the data, insert new rows or change the table's definition.

12. The RF command is not supported in CICS. It is still displayed on the TBDR help screen.

13. A U300 abend can occur after a soft abend in an IMS MPR (issue number – TB-3024).

14. RACF error accessing tableBASE libraries in non-CICS environments can cause U301 abends.

15. When tableBASE is used in a DB2 Stored Procedure Address Space a problem can occur if the TCB on which the first stored procedure to access tableBASE subsequently abends. This will cause unpredictable results and abends in stored procedures running on other TCBs which access tableBASE in this address space. It may require the address space to be terminated.

8
Release Notes for Release 6.1.1

This section covers the most recent release, Release 6.1.1— the changes to tableBASE Version 6 between Release 6.1.0 and Release 6.1.1. The major components of this release are:

- improved tableBASE library diagnostics
- new CICS run-time option to suppress dumps
- new run-time option to allow or prevent tableBASE library access
- new parameters for TBEXEC COPY library option to exclude tables
- improved tableBASE/CICS region termination process
- improved messages for TSR allocation percentages
- improved messages on internal locks held on tables and libraries
- updated information for support on VSAM tableBASE libraries and LSR pools
- fix for DB2 Stored Procedure first TCB abend
- improved displays and condition codes for batch utilities
- fixes of other known issues from previous releases

New Features and Enhancements

tableBASE Library Diagnostics

With this release, information on the most recent updates to a tableBASE library will be captured on Block 0 of the library to assist with the diagnosis of library corruption problems.

Each time an update is made to a library, two command update segments are written to Block 0 of the library. The first segment is written at the start of the command and the second segment is written on successful completion of the command.

CICS run-time option to suppress messages and dumps

A new run-time option, applicable only to the CICS environment, SUPPRESS_DUMPS, has been added. This option will allow tableBASE messages and dumps (TBDUMP and tableBASE CICS dumps) to be suppressed if an abend occurs outside tableBASE code.

Messages and dumps will not be suppressed for any abends occurring within tableBASE code. Additionally, messages and dumps will not be suppressed if the tableBASE status switch or the command area abend switch is set to abend for tableBASE errors 1-99 and a tableBASE error is encountered.

The delivered default is not to suppress messages and dumps.

TBEXEC COPY command

Release 6.1.1 provides a way to exclude tables from the TBEXEC COPY library command. Two new parameters are introduced, EXCLUDE and EXCLFILE. EXCLUDE allows for the exclusion of a specified table, and EXCLFILE allows for exclusion of a list of tables as specified in a file.

For more details on the new parameters, refer to the COPY library command in the *tableBASE Batch Utilities Guide*.

Functionality and Operational Changes

RACF protected libraries

In previous releases, an attempt to update a RACF-protected BDAM or VSAM tableBASE library may result in a S913-38 or U301 abend. In Release 6.1.1, this has been fixed for the Batch and IMS Interfaces and any attempts to update a RACF protected tableBASE library will cause error code 61-12 to be returned.

No changes have been made for the CICS Interface, as these abends can be prevented by changing the BDAM or VSAM resource definition in CICS to only allow read access to RACF protected libraries.

A change in behavior as a result of this fix is that the following message will be displayed, even if the access to a RACF protected library is only for read, as tableBASE always opens a library for update. This message should be treated as informational only if the accesses are read-only.

```
ICH408I USER(userid   ) GROUP(groupname  ) NAME(username)
  datasetname CL(DATASET ) VOL(volume)
  INSUFFICIENT ACCESS AUTHORITY
  FROM group.* (G)
  ACCESS INTENT(UPDATE )  ACCESS ALLOWED(READ   )
```

VSAM tableBASE Libraries and LSR pools

If a tableBASE VSAM library is allocated with DISP=OLD there are no restrictions on the usage of SHAREOPTIONS, buffering, strings and buffer pools. However if it is allocated as DISP=SHR, our standard recommendation has been to use SHAREOPTIONS(3,3) in all environments to ensure the integrity of the library is maintained by tableBASE.

Prior to Release 6.1.0, if datasets for VSAM tableBASE libraries are added to buffer pools (LSRPOOLS), to ensure library integrity, tableBASE will reset any LSRPOOLID value to zero, effectively making them NSR (Non-Shared Resources).

With CICS/TS 4.1, IBM is enforcing the restriction that CICS Transaction Isolation is not supported for NSR VSAM files. An AFDK abend will be issued when the library is opened. To accommodate this restriction (which does not apply to BDAM tableBASE libraries or VSAM libraries allocated with DISP=OLD), tableBASE Release 6.1.0 was modified for the CICS environment to ensure library integrity for VSAM libraries allocated with SHAREOPTIONS(4,4) and added to LSRPOOLS.

Access by non-CICS environments to VSAM tableBASE libraries defined with SHAREOPTIONS(4,4) and used as LSR, is not supported and will fail with error 60-01. Access of VSAM tableBASE libraries defined with SHAREOPTIONS(4,4) without LSR pooling will work in all environments.

Based on IBM documentation, we recommend that the buffer pool used with SHAREOPTIONS(4,4) be set to a minimum size and not be shared with other users. The buffers will not benefit tableBASE and could interfere with other applications sharing the buffer pool. The library directory caching feature of Version 6 should provide equivalent or better results than LSR pooling.

MT command

Abend after large number of inserts and deletes

Under certain conditions, an abend could occur after doing a large number of inserts and deletes for a table and then issuing the MT command. This has been corrected in Release 6.1.1.

Abend on alternate converted from Version 5

When issuing the MT command on an alternate index from a library that has been converted from Version 5 format to Version 6 format, a U301 abend could occur in some cases. This has been corrected in Release 6.1.1.

VTS-TSR cancelled before end of task

In previous releases, if a VTS-TSR that was being accessed by a task was cancelled before the task terminated, a U300 abend could occur at task termination. This has been fixed in Release 6.1.1.

Deadlock on VTS linked table

Under heavy usage conditions, a VTS linked table can end up in a deadlock situation if it is being opened by one job and accessed or updated by another set of jobs. This has been fixed in Release 6.1.1.

TBDRHELP table

The TBDRHELP table used by the batch TBDRIVER has been updated to show missing OA and AR commands.

Improved Message Content

TSR allocation percentage displays

Message DK100310 has been expanded into messages DK100310 and DK100311 for displaying the allocation percentages of the local TSR and VTS-TSR respectively. The jobname of the job displaying the message has been added.

tableBASE internal lock displays

Message DK100227 has been expanded into messages DK100225, DK100227 and DK100229 for displaying the different types of internal tableBASE locks that are being held. New information has been added to these messages including the user id and task id holding the lock as well as the job name, user id, TSR name, table name and command that is waiting for the lock to be released. Where applicable, the library DDNAME and DSNAME are also displayed.

DB2/WLM Stored Procedures

First TCB in DB2 SPAS abend

In previous releases, when the first DB2 SPAS (Stored Procedure Address Space) to access and initialize tableBASE abends, other SPAS that are accessing tableBASE may also abend. This problem has been fixed in Release 6.1.1.

To benefit from this change, Stored Procedures need to be run with the Release 6.1.1 version of DK1TCALL. If DK1TCALL is statically linked into any existing Stored Procedures, then these Stored Procedures will have to be re-linked with the new DK1TCALL.

Library Access

The configuration for existing releases is to allow DB2 Stored Procedures to access tableBASE libraries. This is not recommended as it could cause tableBASE to abend if more than one task in a DB2/WLM region were to access a tableBASE library at the same time. The normal configuration for a Stored Procedure is to use a shared VTS-TSR that would be pre-loaded via a batch TBDRIVER job.

To prevent this problem from occurring, a new tableBASE run-time option, ALLOW_TB_LIB_IO, has been added to allow or deny access to a tableBASE library. The default for this option in the DB2 interface has been set to not allow library access. The defaults for the Batch, IMS and CICS interfaces have been set to allow library access.

IMS MPR with LOCKMAX setting

In previous releases, an IMS MPR which had the LOCKMAX parameter set on (to non-nulls) could experience recursive tableBASE abends. In Release 6.1.1, this problem has been fixed.

CICS region termination

In previous releases, an abend could occur if a CICS region is shutdown and tableBASE region termination proceeded before all transactions have had the chance to complete and terminate.

With this release, tableBASE termination within a CICS region can now be handled by the new program DK1TSHUT, via the PLTSD. This program will only handle terminations initiated via normal CICS region shutdowns and not emergency shutdowns. Terminations handled by DK1TSHUT will ensure that all transactions are completed before proceeding with tableBASE termination for the region.

CICS Applications with mixed addressing modes

When a CICS application starts out in 24 or 31-bit addressing mode when calling tableBASE and then swtiches to a different addressing mode for subsequent calls, an abend will occur. This has been fixed in Release 6.1.1.

CICS Applications with Version 4 or 5 stubs

When a CICS application has a Version 4 or Version 5 tableBASE API stub statically linked in, a S0C4 can occur when run with tableBASE Release 6.0.3, 6.1.0 or 6.1.1. This problem was introduced in Release 6.0.3 and has been fixed in Release 6.1.1.

tablesONLINE/CICS upgrade jobs

Upgrade jobs UPDTDESC, UPDTMENU, UPDTMSGS and UPDTHELP have been updated to handle the new condition code (16) from TBCOMP, which indicates non-matching table definitions, and to stop processing when this condition code is encountered.

TBEXEC and TBCOMP changes

TBEXEC LOAD and UNLOAD displays

After issuing either a LOAD or UNLOAD command, the number of rows loaded/unloaded is now displayed.

Abend S878-10 or S80A-10 for too many commands

In previous releases, an abend S878-10 or S80A-10 could result from a large number of UNLOAD, LOAD, EXPORT, IMPORT and UPDATE statements in TBEXEC and COMPARE statements in TBCOMP that were directed to the same or multiple output sequential datasets. This has been corrected in Release 6.1.1.

New TBCOMP condition code

When upgrading the tablesONLINE/CICS product, the program TBCOMP compares your versions of the xxxxDESC, xxxxMENU, xxxxMSGS and xxxxHELP tables with the originally released TBOLMENU. A new condition code, 16, is possible, and it indicates that there were non-matching table definitions.

New and changed messages

The following section describes some of the new messages as well as the major changes in messages. For a detailed description of each message, see the Appendix in the *tableBASE Programming Guide*.

DK100225W

```
JOB:<jobname>,ID:<userid>, TSR:<TSRname>, CMD:HH,TBL:<tablename>,
- WAITING nnnn SECS FOR MAPLOCK HELD BY <jobname2> <task-id>
```

This is a new message expanded from message DK100227 from the previous release.

It identifies information on what is waiting for the internal tableBASE lock, MAPLOCK, as well as the job and task that is holding the lock.

DK100227W

```
JOB:<jobname>,ID:<userid>,TSR:<TSRname>, CMD:HH,TBL:<tablename>,
- WAIT nnnn SECS FOR GLOBAL TCELOCK HELD BY <jobname2> <task-id>
```

This message has been updated from message DK100227 from the previous release.

It identifies information on what is waiting for the internal tableBASE lock, GLOBAL TCELOCK, as well as the job and task that is holding the lock.

DK100227W

```
JOB:<jobname>,ID:<userid>,TSR:<TSRname>, CMD:HH,TBL:<tablename>,
- WAIT nnnn SECS FOR TCELOCK HELD BY <jobname2> <task-id>
```

This message has been updated from message DK100227 from the previous release.

It identifies information on what is waiting for the internal tableBASE lock, TCELOCK, as well as the job and task that is holding the lock.

DK100229W

```
JOB:<jobname>,ID:<userid>,TSR:<TSRname>, CMD:HH,TBL:<tablename>,
- WAITING nnnn SECS FOR TLBLOCK, HELD BY <jobname2> <task-id>
- LIB DD:<DDname>, DSN:<DSNname>
```

This is a new message expanded from message DK100227 from the previous release.

It identifies information on what is waiting for the internal tableBASE lock, TLBLOCK, as well as the job and task that is holding the lock. The library DDNAME and DSNAME are also identified.

DK100303I

```
CLOS-VTS <VTS-TSRname> Failed. Return Code = nnnn
```

This is a new message and indicates that tableBASE internal processing to end its access to a VTS-TSR failed because the VTS-TSR was cancelled before the task terminated. This message is informational only.

DK100310W

```
tableBASE TSR nn% Allocated. TSR is local TSR. Owned by Job XXXXXXXX
```

This message has been revised for displaying the status of the local TSR. The jobname of the job displaying the message is new.

DK100311W

```
tableBASE TSR nn% Allocated. VTS-TSR name is XXXXXXXX Owned by Job XXXXXXXX
```

This message has been revised for displaying the status of the VTS-TSR. The jobname of the job displaying the message is new.

DK100578I

```
tableBASE 6 - Shutdown Completed.
```

This is a new message and indicates that tableBASE has been shutdown normally using the new DK1TSHUT termination program via the PLTSD.

Modules that can reside in the Link Pack Area (LPA)

The following tableBASE modules are eligible and recommended to be in LPA for the Batch, DB2 and IMS interfaces:

DK1TCALL, DK1TNAME, DK1TNUCL, DK1TROTB

If using systems or user exits, the following modules are recommended to be in LPA:

DK1TX071 and DK1TX072.

Note: When running CICS applications, tableBASE modules **cannot** reside in LPA.

Enhancements and Fixes by Interface

Enhancements and Fixes Affecting all Interfaces

ID	Description
TB-2618, TB-2840, TB-3041	Fix U301 and S913 abends for attempts to update RACF protected library.
TB-2940, TB-2981, TB-3163	New run-time option to allow or deny library access.
TB-2979	Add job name information for TSR allocation displays.
TB-2984	Capture update information on Block 0 of library for diagnostics.
TB-3008	Fix abend on alternate index converted from Version 5.
TB-3010	Verify VSAM Library with SHR(4,4) and LSR pool not supported in all except CICS environment.
TB-3036	Fix abend on MT after large number of inserts and deletes.
TB-3038	Fix U300 Abend when VTS cancelled before task termination.
TB-3045	Changes to error message numbers.
TB-3060	Improved messages to help resolve tableBASE internal lock contentions.
TB-3184	Ensure DK1TPCRM reloaded on restarting PC Server.
TB-3237	Check Open-in-progress flag before invoking read-lock

Batch Interface Enhancements and Fixes

ID	Description
TB-2999	TBDRHELP table updates for OA and AR commands.
TB-3001	New parameters for TBEXEC COPY library to exclude tables.
TB-3009	TBEXEC enhancement to display number of rows loaded or unloaded.
TB-3178	Fix abend S878-10, S80A-10 for too many commands issued in TBEXEC and TBCOMP.

CICS Interface Fixes

ID	Description
TB-2959, TB-3145	Improve tableBASE/CICS region termination process.
TB-3010	Verify VSAM Library with SHR(4,4) and LSR pool not supported in all except CICS environment.
TB-3141	New run-time option to suppress tableBASE messages and dumps for non-tableBASE related abends.
TB-3238	Abend in mixed 24/31 bit addressing modes
TB-3245	Abend S0C4 when running with Version 4 or Version 5 tableBASE stubs statically linked in

IMS/TM Interface Fixes

ID	Description
TB-3039	Fix IMS Region abends due to setting of LOCKMAX parameter.

DB2 SPAS Interface Fixes

ID	Description
TB-2940, TB-2981, TB-3163	Fix first DB2 SPAS to initialize tableBASE abend causing other SPAS to abend; new run-time option to allow or deny library access.

tablesONLINE/CICS Fixes

ID	Description
TB-2969	Fix UPDTxxxx jobs to stop processing when non-matching table definitions found in TBCOMP.
TB-2983	Fix tBOL/CICS V072 abend with invalid VTS name.

Known issues in Release 6.1.1.

1. The XX command was erroneously documented as tableBASE termination. It actually only closes table libraries.

2. tableBASE errors 9-02, 13-05 and 13-06 apply to any TSR, not just VTS-TSRs.

3. TBACC-DEF area has been incorrectly and inconsistently described in previous documentation. The actual layout of the area and its use has not changed from prior releases.

4. In Version 6, the VS command was incorrectly documented as taking only a single 4-byte VTS name. The documentation should have matched Version 5, which specified a 4-byte VTS name followed by 16 bytes of spaces.

5. The PC Server module DK1TPCRM must be in LPA or a STEPLIB or SYSLIB for the JOB step. It cannot be executed from LINKLIST load libraries.

6. When using tableBASE strobe reporting, there may be discrepancies between the values of totals and the detailed information by tables. This is because strobe is run as a subtask for performance reasons and the TSR status can change while it is collecting data. The maximum count value displayed correctly is 2GB.

7. Users of linked VTS tables (those accessed through VTSFIRST, VTSLAST or VTSname in the ML list) are not notified of changes to the actual table open in the VTS-TSR. This includes not only updates to the rows, but also changes to the characteristics of the table, for example, by the CD command.

8. The library conversion process does not diagnose corrupted paged tables in all cases.

9. Tables with duplicate keys will not necessarily have the order of the rows containing the duplicate keys preserved after commands that reload the data, insert new rows or change the table's definition.

10. The RF command is not supported in CICS. It is still displayed on the TBDR help screen.

11. A U300 abend can occur after a soft abend in an IMS MPR (Issue – TB-3024).

12. If a job that accesses tableBASE is cancelled or abnormally terminates during tableBASE processing, a table may remain locked in the TSR. The subsequent attempts to access the table may result in loops. Recycle the TSR (local region for a local TSR or the VTSAGENT for a VTS-TSR).

Appendix A

Upgrading to Release 6.1.1

This section is designed for customers who have already installed Version 6 and do not wish to completely reinstall tableBASE to apply the latest release. These instructions are based on upgrading from a particular release to the latest generally available release. Each section (see the list below) contains the complete set of updates required in order to migrate to the latest release.

General Notes

After completing the upgrades specified for your release, perform the following.

1. Start the PC Server for this release using the updated authorized library.

   Notes:

   a. The PC Server for this release can be run concurrently with the PC Server for previous releases.

   b. This step must be run before other application regions or VTS-TSRs can be started up for this release.

2. Start new application regions for CICS, IMS, DB2 or recycle old regions to run on the updated load libraries.

3. Start new VTS-TSRs or recycle old VTS-TSRs using the updated authorized library.

Notes:

a. VTS-TSRs with the same name can be run concurrently as long as they are running on different versions of the PC Server.

b. VTS-TSRs started up with the Release 6.1.1 loads can only be accessed by applications running on the same release.

Upgrade from Release 6.0.2-04 (Maintenance Level 4) to Release 6.1.1

Installation information

With this level the following datasets have changed:

1. LOADs: load modules in your.prefix.LOAD.
2. SRC: source modules in your.prefix.SRC
3. CNTL: jobs in your.prefix.CNTL
4. Library: tableBASE libraries, your.prefix.TBSYSLB, your.prefix.TBAPPLB.
5. CLIST, PANELS and MESSAGES: members in these PDSs are for tablesONLINE/ ISPF only

For all Interfaces:

1. LOADs:
   a. Modules are a complete replacement for existing modules of the same name. There are some new load modules.
   All jobs and region JCL (CICS, IMS, DB2) should be updated to point to the Release 6.1.1 load modules to take advantage of fixes and enhancements in this release.
   b. Modules specified in the CNTL member, AUTHLIB, and AUTHLIBV must be recopied to an authorized library. AUTHLIBV is only required if you are licensed for the VTS interface.
   c. When the authorized libraries have been updated, start the Release 6.1.1 PC Server. After the PC Server has been started up, all other regions (CICS, IMS, DB2) can be recycled.

   Note: The load library for this release is distributed in PDSE (LIBRARY) format rather PDS format. If you wish to continue to use PDS format, exclude module DK1TCSTR; it is a utility module that is not necessary for tableBASE operation. See the *tableBASE Batch Utilities Guide* for more information.

2. SRC:
   a. Replace all source members or alternatively only replace/add changed or new members.
   b. There are changes to the DK1Txx34 modules which implement the default settings.

      If you have made changes to these modules in your current release, please ensure that your current settings are transferred over to the new DK1Txx34 modules, and their respective assembly and link jobs (ALT1134, ALT1334, ALT1432,

ALT2734) are run to create the updated DK1xBASE modules. If no setting changes were ever made, this step can be bypassed.

3. CNTL:

   Replace all members or alternatively only replace changed members.

4. Library:

   Replace your current TBSYSLB with the Release 6.1.1 TBSYSLB.

CICS:

1. SRC:
   a. TBASE60 changes:

      A new CICS definition for the tableBASE program, DK1TSHUT has been added for Release 6.1.1. This program will be executed in conjunction with the new PLTSD definition, DFHPLT6S.

      Program DK1TCALL was removed and replaced by TBLBASE with its RESIDENT option set to YES in Release 6.0.3-08.

      Program definition for DK1TCIN was changed to have concurrency of 'quasi-reentrant' in Release 6.0.2-06.

   b. DFHPLT6S is new with Release 6.1.1 and contains the sample PLTSD definition for DK1TSHUT.

2. CNTL:

   Member DFHSRTTB was updated in Release 6.0.2-06 and Release 6.0.2-07. If CICS transactions access tableBASE VTS-TSRs, evaluate the sample SRC(DFHSRTTB) file for applicability in your environment.

Notes:

   a. Ensure tableBASE CICS modules are defined with EXECKEY(USER) with the exception of DK1TCIN, DK1TCRM and DK1TSHUT that should be defined with EXECKEY(CICS).
   b. Ensure DK1TCIN and DK1TSHUT is defined with CONCURRENCY(QUASIRENT) in all CICS regions.

DB2:

LOADs:
There is a new DK1TCALL module, which fixes the problem of multiple TCB abends for DB2 SPAS (ref: TB-3163). In order to benefit from this fix, your DB2 Stored

Procedures must use the new DK1TCALL. If your Stored Procedures have DK1TCALL statically linked in, then they need to be re-linked with the new DK1TCALL.

tablesONLINE/CICS:

1. CNTL:

   Replace job TBOL600V (changed in Release 6.0.2-06).
   Replace upgrade jobs UPDTDESC, UPDTHELP, UPDTMENU and UPDTMSGS (changed in Release 6.1.1).

2. Library:

   Table TBOLMSGS in your.prefix.TBAPPLB was updated in Release 6.0.3-08. If you have created your own version of this table, you will have to follow the upgrade process as detailed out in the *tableBASE Installation Guide*.
   Table TBOLDESC and TBOLJCL4 were updated in Release 6.0.2-05.

   To replace these tables, use the sample JCL below:

```
//TBEXEC6 EXEC PGM=DK1TEXEC
//STEPLIB DD DSN=TBASE.V611.LOAD,DISP=SHR
//TBMSG DD SYSOUT=*
//TBDUMP DD SYSOUT=*
//TBRPT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//TBOPT DD *
LISTOPTIONS=Y
/*
//FROMLIB DD DISP=SHR,DSN=***V611.shipped.TBAPPLB
//TOLIB DD DISP=SHR,DSN=***YOUR.current.V6.TBAPPLB
//CNTLCARD DD *
COPY TBL=TBOLDESC LIB=FROMLIB TO=TOLIB REPLACE=YES ;
COPY TBL=TBOLMSGS LIB=FROMLIB TO=TOLIB REPLACE=YES ;
COPY TBL=TBOLJCL4 LIB=FROMLIB TO=TOLIB REPLACE=YES ;
//
```

tablesONLINE/ISPF:

1. SRC:

   Replace sample program EXITISPF (changed in Release 6.0.2-07).

2. CLIST:

   Replace member TBDRIVER (changed in Release 6.0.2-06).
   Delete members TBPAGE and TBUNPAGE; replace member TBALLOCS (changed in Release 6.0.2-07).

Replace members TBDEFPRT, TBBUILD and TBDIRECT (changed in Release 6.0.3-08).

If you have modified any of these members, reapply your changes.

3. PANELS:

   Replace members TBCREALT, TBDEFH, TBDEFINE, TBID1H, TBID2H, TBIDTABH and TBSEARCH (changed in Release 6.0.2-06 and Release 6.0.2-07).
   Add member ERRORPN4, replace member TBPRIM and remove member TBDEFCNV (changed in Release 6.0.3-08).

4. MESSAGES:

   Replace members MSG00, MSG02, MTB02, MTB07, MTB09 (changed in Release 6.0.2-06 and Release 6.0.2-07).
   Replace member MSG10 (changed in Release 6.0.3-08).

   TSO logon PROCs or tablesONLINE/ISPF start-up CLISTs should be updated to allocate the Release 6.1.1 tableBASE load libraries.

Upgrade from Release 6.0.2-05 (Maintenance Level 5) to Release 6.1.1

Installation information

With this level the following datasets have changed:

1. LOADs: load modules in your.prefix.LOAD.
2. SRC: source modules in your.prefix.SRC
3. CNTL: jobs in your.prefix.CNTL
4. Library: tableBASE libraries, your.prefix.TBSYSLB, your.prefix.TBAPPLB.
5. CLIST, PANELS and MESSAGES: members in these PDSs are for tablesONLINE/ ISPF only.

For all Interfaces:

1. LOADS:
   a. Modules are a complete replacement for existing modules of the same name. There are some new load modules.

      All jobs and region JCL (CICS, IMS, DB2) should be updated to point to the Release 6.1.1 load modules to take advantage of fixes and enhancements in this release.

   b. Modules specified in the CNTL member, AUTHLIB, and AUTHLIBV must be recopied to an authorized library. AUTHLIBV is only required if you are licensed for the VTS interface.

   c. When the authorized libraries have been updated, start the Release 6.1.1 PC Server. After the PC Server has been started up, all other regions (CICS, IMS, DB2) can be recycled.

   Note: The load library for this release is distributed in PDSE (LIBRARY) format rather PDS format. If you wish to continue to use PDS format, exclude module DK1TCSTR; it is a utility module that is not necessary for tableBASE operation. See the *tableBASE Batch Utilities Guide* for more information.

2. SRC:
   a. Replace all source members or alternatively only replace/add changed or new members.

   b. There are changes to the DK1Txx34 modules which implement the default settings.

      If you have made changes to these modules in your current release, please ensure that your current settings are transferred over to the new DK1Txx34 modules, and their respective assembly and link jobs (ALT1134, ALT1334, ALT1432,

ALT2734) are run to create the updated DK1xBASE modules. If no setting changes were ever made, this step can be bypassed.

3. CNTL:

   Replace all members or alternatively only replace changed members.

4. Library:

   Replace your current TBSYSLB with the Release 6.1.1 TBSYSLB.

CICS:

1. SRC:

   a. TBASE60 changes:

      A new CICS definition for the tableBASE program, DK1TSHUT has been added for Release 6.1.1. This program will be executed in conjunction with the new PLTSD definition, DFHPLT6S.

      Program DK1TCALL was removed and replaced by TBLBASE with its RESIDENT option set to YES in Release 6.0.3-08.

      Program definition for DK1TCIN was changed to have concurrency of 'quasi-reentrant' in Release 6.0.2-06.

   b. DFHPLT6S is new with Release 6.1.1 and contains the sample PLTSD definition for DK1TSHUT.

2. CNTL:

   Member DFHSRTTB was updated in Release 6.0.2-06 and Release 6.0.2-07. If CICS transactions access tableBASE VTS-TSRs, evaluate the sample SRC(DFHSRTTB) file for applicability in your environment.

Notes:

a. Ensure tableBASE CICS modules are defined with EXECKEY(USER) with the exception of DK1TCIN, DK1TCRM and DK1TSHUT that should be defined with EXECKEY(CICS).

b. Ensure DK1TCIN and DK1TSHUT is defined with CONCURRENCY(QUASIRENT) in all CICS regions.

DB2:

LOADs:
There is a new DK1TCALL module, which fixes the problem of multiple TCB abends

for DB2 SPAS (ref: TB-3163). In order to benefit from this fix, your DB2 Stored Procedures must use the new DK1TCALL. If your Stored Procedures have DK1TCALL statically linked in, then they need to be re-linked with the new DK1TCALL.

tablesONLINE/CICS:

1. CNTL:

   Replace job TBOL600V (changed in Release 6.0.2-06).
   Replace upgrade jobs UPDTDESC, UPDTHELP, UPDTMENU and UPDTMSGS (changed in Release 6.1.1).

2. Library:

   Table TBOLMSGS in your.prefix.TBAPPLB was updated in Release 6.0.3-08. If you have created your own version of this table, you will have to follow the upgrade process as detailed out in the *tableBASE Installation Guide*.

   To replace this table, use the sample JCL below:

```
//TBEXEC6 EXEC PGM=DK1TEXEC
//STEPLIB DD DSN=TBASE.V611.LOAD,DISP=SHR
//TBMSG DD SYSOUT=*
//TBDUMP DD SYSOUT=*
//TBRPT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//TBOPT DD *
LISTOPTIONS=Y
/*
//FROMLIB DD DISP=SHR,DSN=***V611.shipped.TBAPPLB
//TOLIB DD DISP=SHR,DSN=***YOUR.current.V6.TBAPPLB
//CNTLCARD DD *
COPY TBL=TBOLMSGS LIB=FROMLIB TO=TOLIB REPLACE=YES ;
//
```

tablesONLINE/ISPF:

1. SRC:

   Replace sample program EXITISPF (changed in Release 6.0.2-07).

2. CLIST:

   Replace member TBDRIVER (changed in Release 6.0.2-06).
   Delete members TBPAGE and TBUNPAGE; replace member TBALLOCS (changed in Release 6.0.2-07).
   Replace members TBDEFPRT, TBBUILD and TBDIRECT (changed in Release 6.0.3-08).

If you have modified any of these members, reapply your changes.

3. PANELS:

   Replace members TBCREALT, TBDEFH, TBDEFINE, TBID1H, TBID2H, TBIDTABH and TBSEARCH (changed in Release 6.0.2-06 and Release 6.0.2-07).
   Add member ERRORPN4, replace member TBPRIM and remove member TBDEFCNV (changed in Release 6.0.3-08).

4. MESSAGES:

   Replace members MSG00, MSG02, MTB02, MTB07, MTB09 (changed in Release 6.0.2-06 and Release 6.0.2-07).
   Replace member MSG10 (changed in Release 6.0.3-08).

TSO logon PROCs or tablesONLINE/ISPF start-up CLISTs should be updated to allocate the Release 6.1.1 tableBASE load libraries.

Upgrade from Release 6.0.2-06 (Maintenance Level 6) to Release 6.1.1

Installation information

With this level the following datasets have changed:

1. LOADs: load modules in your.prefix.LOAD.
2. SRC: source modules in your.prefix.SRC
3. CNTL: jobs in your.prefix.CNTL
4. Library: tableBASE libraries, your.prefix.TBSYSLB, your.prefix.TBAPPLB.
5. CLIST, PANELS and MESSAGES: members in these PDSs are for tablesONLINE/ ISPF only.

For ALL Interfaces:

1. LOADS:
   a. Modules are a complete replacement for existing modules of the same name. There are some new load modules.

      All jobs and region JCL (CICS, IMS, DB2) should be updated to point to the Release 6.1.1 load modules to take advantage of fixes and enhancements in this release.

   b. Modules specified in the CNTL member, AUTHLIB, and AUTHLIBV must be recopied to an authorized library. AUTHLIBV is only required if you are licensed for the VTS interface.

   c. When the authorized libraries have been updated, start the Release 6.1.1 PC Server. After the PC Server has been started up, all other regions (CICS, IMS, DB2) can be recycled.

   Note: The load library for this release is distributed in PDSE (LIBRARY) format rather PDS format. If you wish to continue to use PDS format, exclude module DK1TCSTR; it is a utility module that is not necessary for tableBASE operation. See the *tableBASE Batch Utilities Guide* for more information.

2. SRC:
   a. Replace all source members or alternatively only replace/add changed or new members.

   b. There are changes to the DK1Txx34 modules which implement the default settings.

      If you have made changes to these modules in your current release, please ensure that your current settings are transferred over to the new DK1Txx34 modules, and their respective assembly and link jobs (ALT1134, ALT1334, ALT1432,

ALT2734) are run to create the updated DK1xBASE modules. If no setting changes were ever made, this step can be bypassed.

3. CNTL:

   Replace all members or alternatively only replace changed members.

4. LIBRARY:

   Replace your current TBSYSLB with the Release 6.1.1 TBSYSLB.

CICS:

1. SRC:

   a. TBASE60 changes:

      A new CICS definition for the tableBASE program, DK1TSHUT has been added for Release 6.1.1. This program will be executed in conjunction with the new PLTSD definition, DFHPLT6S.

      Program DK1TCALL was removed and replaced by TBLBASE with its RESIDENT option set to YES in Release 6.0.3-08.

   b. DFHPLT6S is new with Release 6.1.1 and contains the sample PLTSD definition for DK1TSHUT.

2. CNTL:

   Member DFHSRTTB was updated in Release 6.0.2-07. If CICS transactions access tableBASE VTS-TSRs, evaluate the sample SRC(DFHSRTTB) file for applicability in your environment.

Notes:

a. Ensure tableBASE CICS modules are defined with EXECKEY(USER) with the exception of DK1TCIN, DK1TCRM and DK1TSHUT that should be defined with EXECKEY(CICS).

b. Ensure DK1TCIN and DK1TSHUT is defined with CONCURRENCY(QUASIRENT) in all CICS regions.

DB2:

LOADs:
There is a new DK1TCALL module, which fixes the problem of multiple TCB abends for DB2 SPAS (ref: TB-3163). In order to benefit from this fix, your DB2 Stored Procedures must use the new DK1TCALL. If your Stored Procedures have

DK1TCALL statically linked in, then they need to be re-linked with the new DK1TCALL.

tablesONLINE/CICS:

1. CNTL:

   Replace upgrade jobs UPDTDESC, UPDTHELP, UPDTMENU and UPDTMSGS (changed in Release 6.1.1).

2. Library:

   Table TBOLMSGS in your.prefix.TBAPPLB was updated in Release 6.0.3-08. If you have created your own version of this table, you will have to follow the upgrade process as detailed out in the *tableBASE Installation Guide*.

   To replace this table, use the sample JCL below:

```
//TBEXEC6 EXEC PGM=DK1TEXEC
//STEPLIB DD DSN=TBASE.V611.LOAD,DISP=SHR
//TBMSG DD SYSOUT=*
//TBDUMP DD SYSOUT=*
//TBRPT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//TBOPT DD *
LISTOPTIONS=Y
/*
//FROMLIB DD DISP=SHR,DSN=***V611.shipped.TBAPPLB
//TOLIB DD DISP=SHR,DSN=***YOUR.current.V6.TBAPPLB
//CNTLCARD DD *
COPY TBL=TBOLMSGS LIB=FROMLIB TO=TOLIB REPLACE=YES ;
//
```

tablesONLINE/ISPF:

1. SRC:

   Replace sample program EXITISPF (changed in Release 6.0.2-07).

2. CLIST:

   Delete members TBPAGE and TBUNPAGE; replace member TBALLOCS (changed in Release 6.0.2-07).
   Replace members TBDEFPRT, TBBUILD and TBDIRECT (changed in Release 6.0.3-08).

   If you have modified any of these members, reapply your changes.

3. PANELS:

Replace members TBDEFH, TBDEFINE, TBID1H, TBID2H, TBIDTABH and TBSEARCH (changed in Release 6.0.2-07).

Add member ERRORPN4, replace member TBPRIM and remove member TBDEFCNV (changed in Release 6.0.3-08).

4. MESSAGES:

   Replace members MSG00, MSG02, MTB02 (changed in Release 6.0.2-07).
   Replace member MSG10 (changed in Release 6.0.3-08).

TSO logon PROCs or tablesONLINE/ISPF start-up CLISTs should be updated to allocate the Release 6.1.1 tableBASE load libraries.

Upgrade from Release 6.0.2-07 (Maintenance Level 7) to Release 6.1.1

Installation information

With this level the following datasets have changed:

1. LOADs: load modules in your.prefix.LOAD.
2. SRC: source modules in your.prefix.SRC
3. CNTL: jobs in your.prefix.CNTL
4. Library: tableBASE libraries, your.prefix.TBSYSLB, your.prefix.TBAPPLB.
5. CLIST, PANELS and MESSAGES: members in these PDSs are for tablesONLINE/ ISPF only.

For ALL Interfaces

1. LOADS:
   a. Modules are a complete replacement for existing modules of the same name. There are some new load modules.

      All jobs and region JCL (CICS, IMS, DB2) should be updated to point to the Release 6.1.1 load modules to take advantage of fixes and enhancements in this release.

   b. Modules specified in the CNTL member, AUTHLIB, and AUTHLIBV must be recopied to an authorized library. AUTHLIBV is only required if you are licensed for the VTS interface.

   c. When the authorized libraries have been updated, start the Release 6.1.1 PC Server. After the PC Server has been started up, all other regions (CICS, IMS, DB2) can be recycled.

   Note: The load library for this release is distributed in PDSE (LIBRARY) format rather PDS format. If you wish to continue to use PDS format, exclude module DK1TCSTR; it is a utility module that is not necessary for tableBASE operation. See the *tableBASE Batch Utilities Guide* for more information.

2. SRC:
   a. Replace all source members or alternatively only replace/add changed or new members.

   b. There are changes to the DK1Txx34 modules which implement the default settings.

      If you have made changes to these modules in your current release, please ensure that your current settings are transferred over to the new DK1Txx34 modules, and their respective assembly and link jobs (ALT1134, ALT1334, ALT1432,

ALT2734) are run to create the updated DK1xBASE modules. If no setting changes were ever made, this step can be bypassed.

3. CNTL:

   Replace all members or alternatively only replace changed members.

4. LIBRARY:

   Replace your current TBSYSLB with the Release 6.1.1 TBSYSLB.

CICS:

SRC:

a. TBASE60 changes:

   A new CICS definition for the tableBASE program, DK1TSHUT has been added for Release 6.1.1. This program will be executed in conjunction with the new PLTSD definition, DFHPLT6S.

   Program DK1TCALL was removed and replaced by TBLBASE with its RESIDENT option set to YES in Release 6.0.3-08.

b. DFHPLT6S is new with Release 6.1.1 and contains the sample PLTSD definition for DK1TSHUT.

Notes:

a. Ensure tableBASE CICS modules are defined with EXECKEY(USER) with the exception of DK1TCIN, DK1TCRM and DK1TSHUT that should be defined with EXECKEY(CICS).

b. Ensure DK1TCIN and DK1TSHUT is defined with CONCURRENCY(QUASIRENT) in all CICS regions.

DB2:

LOADs:
There is a new DK1TCALL module, which fixes the problem of multiple TCB abends for DB2 SPAS (ref: TB-3163). In order to benefit from this fix, your DB2 Stored Procedures must use the new DK1TCALL. If your Stored Procedures have DK1TCALL statically linked in, then they need to be re-linked with the new DK1TCALL.

tablesONLINE/CICS:

1. CNTL:

   Replace upgrade jobs UPDTDESC, UPDTHELP, UPDTMENU and UPDTMSGS (changed in Release 6.1.1).

2. Library:

   Table TBOLMSGS in your.prefix.TBAPPLB was updated in Release 6.0.3-08. If you have created your own version of this table, you will have to follow the upgrade process as detailed out in the *tableBASE Installation Guide*.

   To replace this table, use the sample JCL below:

```
//TBEXEC6 EXEC PGM=DK1TEXEC
//STEPLIB DD DSN=TBASE.V611.LOAD,DISP=SHR
//TBMSG DD SYSOUT=*
//TBDUMP DD SYSOUT=*
//TBRPT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//TBOPT DD *
LISTOPTIONS=Y
/*
//FROMLIB DD DISP=SHR,DSN=***V611.shipped.TBAPPLB
//TOLIB DD DISP=SHR,DSN=***YOUR.current.V6.TBAPPLB
//CNTLCARD DD *
COPY TBL=TBOLMSGS LIB=FROMLIB TO=TOLIB REPLACE=YES ;
//
```

tablesONLINE/ISPF:

1. CLIST:

   Replace members TBBUILD, TBDEFPRT and TBDIRECT (changed in Release 6.0.3-08).

   If you have modified any of these members, reapply your changes.

2. PANELS:

   Add member ERRORPN4, replace member TBPRIM and remove member TBDEFCNV (changed in Release 6.0.3-08).

3. MESSAGES:

   Replace member MSG10 (changed in Release 6.0.3-08).

TSO logon PROCs or tablesONLINE/ISPF start-up CLISTs should be updated to allocate the Release 6.1.1 tableBASE load libraries.

Upgrade from Release 6.0.3-08 (Maintenance Level 8) to Release 6.1.1

Installation information

With this level the following datasets have changed:

1. LOADs: load modules in your.prefix.LOAD.
2. SRC: source modules in your.prefix.SRC
3. CNTL: jobs in your.prefix.CNTL
4. Library: tableBASE library, your.prefix.TBSYSLB.

For ALL Interfaces

1. LOADs:
   a. Modules are a complete replacement for existing modules of the same name. There are some new load modules.

      All jobs and region JCL (CICS, IMS, DB2) should be updated to point to the Release 6.1.1 load modules to take advantage of fixes and enhancements in this release.

   b. Modules specified in the CNTL member, AUTHLIB, and AUTHLIBV must be recopied to an authorized library. AUTHLIBV is only required if you are licensed for the VTS interface.

   c. When the authorized libraries have been updated, start the Release 6.1.1 PC Server. After the PC Server has been started up, all other regions (CICS, IMS, DB2) can be recycled.

   Note: The load library for this release is distributed in PDSE (LIBRARY) format rather PDS format. If you wish to continue to use PDS format, exclude module DK1TCSTR; it is a utility module that is not necessary for tableBASE operation. See the *tableBASE Batch Utilities Guide* for more information.

2. SRC:
   a. Replace all source members or alternatively only replace/add changed or new members.

   b. There are changes to the DK1Txx34 modules which implement the default settings.

      If you have made changes to these modules in your current release, please ensure that your current settings are transferred over to the new DK1Txx34 modules, and their respective assembly and link jobs (ALT1134, ALT1334, ALT1432, ALT2734) are run to create the updated DK1xBASE modules. If no setting changes were ever made, this step can be bypassed.

3. CNTL:

   Replace all members or alternatively only replace changed members.

4. LIBRARY:

   Replace your current TBSYSLB with the Release 6.1.1 TBSYSLB.

CICS:

SRC:

a. TBASE60 changes:

   A new CICS definition for the tableBASE program, DK1TSHUT has been added for Release 6.1.1. This program will be executed in conjunction with the new PLTSD definition, DFHPLT6S.

b. DFHPLT6S is new with Release 6.1.1 and contains the sample PLTSD definition for DK1TSHUT.

Notes:

a. Ensure tableBASE CICS modules are defined with EXECKEY(USER) with the exception of DK1TCIN, DK1TCRM and DK1TSHUT that should be defined with EXECKEY(CICS).

b. Ensure DK1TCIN and DK1TSHUT is defined with CONCURRENCY(QUASIRENT) in all CICS regions.

DB2:

LOADs:
There is a new DK1TCALL module, which fixes the problem of multiple TCB abends for DB2 SPAS (ref: TB-3163). In order to benefit from this fix, your DB2 Stored Procedures must use the new DK1TCALL. If your Stored Procedures have DK1TCALL statically linked in, then they need to be re-linked with the new DK1TCALL.

tablesONLINE/CICS:

CNTL:

Replace upgrade jobs UPDTDESC, UPDTHELP, UPDTMENU and UPDTMSGS (changed in Release 6.1.1).

tablesONLINE/ISPF:

There are no changes to tablesONLINE/ISPF load modules, CLISTs, MESSAGES, PANELS, SKELETONs or TABLEs.

TSO logon PROCs or tablesONLINE/ISPF start-up CLISTs should be updated to allocate the Release 6.1.1 tableBASE load libraries.

Upgrade from Release 6.1.0 to Release 6.1.1

Installation information

With this level the following datasets have changed:

1. LOADs: load modules in your.prefix.LOAD.
2. SRC: source modules in your.prefix.SRC
3. CNTL: jobs in your.prefix.CNTL
4. Library: tableBASE library, your.prefix.TBSYSLB.

For ALL Interfaces

1. LOADs:
   a. Modules are a complete replacement for existing modules of the same name. There are some new load modules.

      All jobs and region JCL (CICS, IMS, DB2) should be updated to point to the Release 6.1.1 load modules to take advantage of fixes and enhancements in this release.

   b. Modules specified in the CNTL member, AUTHLIB, and AUTHLIBV must be recopied to an authorized library. AUTHLIBV is only required if you are licensed for the VTS interface.

   c. When the authorized libraries have been updated, start the Release 6.1.1 PC Server. After the PC Server has been started up, all other regions (CICS, IMS, DB2) can be recycled.

   Note: The load library for this release is distributed in PDSE (LIBRARY) format rather PDS format. If you wish to continue to use PDS format, exclude module DK1TCSTR; it is a utility module that is not necessary for tableBASE operation. See the *tableBASE Batch Utilities Guide* for more information.

2. SRC:
   a. Replace all source members or alternatively only replace/add changed or new members.

   b. There are changes to the DK1Txx34 modules which implement the default settings.

      If you have made changes to these modules in your current release, please ensure that your current settings are transferred over to the new DK1Txx34 modules, and their respective assembly and link jobs (ALT1134, ALT1334, ALT1432, ALT2734) are run to create the updated DK1xBASE modules. If no setting changes were ever made, this step can be bypassed.

3. CNTL:

   Replace all members or alternatively replace only changed members.

4. LIBRARY:

   Replace your current TBSYSLB with the Release 6.1.1 TBSYSLB.

CICS:

SRC:

a. TBASE60 changes:

   A new CICS definition for the tableBASE program, DK1TSHUT has been added for Release 6.1.1. This program will be executed in conjunction with the new PLTSD definition, DFHPLT6S.

b. DFHPLT6S is new with Release 6.1.1 and contains the sample PLTSD definition for DK1TSHUT.

Notes:

a. Ensure tableBASE CICS modules are defined with EXECKEY(USER) with the exception of DK1TCIN, DK1TCRM and DK1TSHUT that should be defined with EXECKEY(CICS).

b. Ensure DK1TCIN and DK1TSHUT is defined with CONCURRENCY(QUASIRENT) in all CICS regions.

DB2:

LOADs:
There is a new DK1TCALL module, which fixes the problem of multiple TCB abends for DB2 SPAS (ref: TB-3163). In order to benefit from this fix, your DB2 Stored Procedures must use the new DK1TCALL. If your Stored Procedures have DK1TCALL statically linked in, then they need to be re-linked with the new DK1TCALL.

tablesONLINE/CICS:

CNTL:

Replace upgrade jobs UPDTDESC, UPDTHELP, UPDTMENU and UPDTMSGS (changed in Release 6.1.1).

tablesONLINE/ISPF:

There are no changes to tablesONLINE/ISPF load modules, CLISTs, MESSAGES, PANELS, SKELETONs or TABLEs.

TSO logon PROCs or tablesONLINE/ISPF start-up CLISTs should be updated to allocate the Release 6.1.1 tableBASE load libraries.

