

## Release notes for tcACCESS Version 6.0

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The following document contains an overview about the new functions and features of tcACCESS Version 6.0.

### **1. General**

Ease of use and ultimate flexibility has been the overall goal for Version 6. The start with the new version as well as the migration to the new version should be as simple as

possible. Most of the new functions and features are a direct result of customer requirements.

## 2. Enhancements to the SQL-Engine

Several enhancements have been incorporated into the SQL-Engine to even further improve the flexibility and ease of use.

### 2.1 System table SYSTEM.SYSDUMMY1

Table "SYSTEM.SYSDUMMY1" has been introduced. This table contains only 1 data-row. The table can be used for queries to test SQL-functions that do not require data.

### 2.2 New functions

A number of new mathematical- character-string- and date-functions have been incorporated into the SQL-Engine. These enhancements increase the flexibility of the SQL-Engine for statistical and analytical queries. The following table only displays the function-names. A description of each function can be found in the "Host Server"-manual.

ABS()	ABSVAL()	ACOS()
ASIN()	ATAN()	ATAN2()
ATANH()	CEIL()	CEILING()
CHAR()	COALESCE()	VALUE()
CONCAT()	COS()	COSH()
DAYOFMONTH()	DAYOFWEEK()	DAYOFWEEK_ISO()
DAYOFYEAR()	DEGREES()	DIGITS()
DOUBLE()	DOUBLE_PRECISION()	FLOAT()
EXP()	FLOOR()	HEXCHR()
HOUR()	IFNULL()	INSERT()
INT()	INTEGER()	JULIAN_DAY()
LAST_DAY()	LCASE()	LOWER()
LEFT()	LENGTH()	LN()
LOCATE()	LOG()	LOG10()
LTRIM()	MICROSECOND()	MIDNIGHT_SECONDS()
MINUTE()	MOD()	MONTH()
NEXT_DAY()	NULLIF()	PI()
POSSTR()	POWER()	QUARTER()
RADIANS()	RAND()	REPEAT()
REPLACE()	RIGHT()	ROUND()
ROUND_TIMESTAMP()	RTRIM()	SECOND()
SIGN()	SIN()	SINH()
SPACE()	SQRT()	STRIP()
TAN()	TANH()	TRANSLATE()
TRUNC()	TRUNCATE()	TRUNC_TIMESTAMP()
VARCHAR()	WEEK()	WEEK_ISO()
YEAR()		

### 2.3 Precompiled SQL-statements

The precompilation of SQL-statements allows the compilation and storage of an SQL-statement and the execution of it at a later time.

Depending upon the complexity of the SQL-statement the compilation and preparation of structure- and index-information can be time consuming. Using the precompile feature, this process is only performed once, the compiled statement can be executed any number of times. This will drastically improve the performance of the queries, where the compile time is relatively high compared to the execution time.

At compile time, the compiled statement will be stored on the Virtual Disk (permanent storage), into a TS-Queue (temporary storage) or will be kept in main storage (usage within a transaction).

At execution time the compiled output will be read and execution starts immediately with the parameter supplied.

## 2.4 ODBC data-source becomes SQL-Engine table

Version 6.0 now provides an enhanced interface to enable batch and online host programs to directly access databases on PC- or UNIX-workstations using ODBC.

A service will be installed on the PC- or UNIX-Server that is responsible for different ODBC-data-sources and registers his functions to the host. Using a query for the SQL-Engine the user can

- (a) read data-files using predefined SQL-statements, that are available to the SQL-Engine, or
- (b) freely formulate SQL-statements against ODBC-data-sources of the partnering system, the statements are being processed by the partner system and the result is sent to the mainframe.

This functionality completes the bi-directional data-exchange in real complex heterogeneous environments.

## 3. Dynamic Library-access (VSE)

VSE-users now can dynamically access VSE-Libraries, that are defined with LIBDEF or libraries that not defined with LIBDEF. Members can be processed (retrieved, renamed and deleted).

The „VSE-Library“-tree-view of the host file dialog automatically displays all libraries that are part of the LIBDEF-definition of the CICS startup-job.

In addition VSE libraries can be processed that are not referenced by a LIBDEF-definition. Accessing the VSAM-files based upon the corresponding Master- or User-Catalog provides access to these libraries. All sub-libraries and their member-lists will be displayed. Multiple libraries and their contents can be displayed at the same time.

## 4. New generation parameter

### 4.1 General parameter

ADAOPEN	N	CICS + Monitor System	Defines, whether an explicit OPEN should be performed for every ADABAS file prior to ADABAS accesses.
DIRLIB	Y	VSE CICS	This parameter defines whether the display of a list with all available VSE libraries should be allowed. Y     Yes N     No
DOWSTYL	1	MVS/CICS + Monitor System	Calculation base for the SQL-Engine function DAYOFWEEK(). 1. Europe: Monday is the 1st weekday 2. America: Sunday is the 1st weekday
H2PCNR	10,3	CICS + Monitor System	The 1st value defines the number of tasks that can be registered by PC-Listeners. The 2nd value defines the number of parallel requests per task. If this value is omitted, the default is 3.

INIFILE	TCAGEN	CICS + Monitor System	Name of the INI-file, which contains the changed customization parameter (Overrides). The name can be up to 8 digits. The name will be suffixed by '.INI'. During the first call of tcACCESS the directory defined in the customization parameter 'VDISK' will be searched for this file. The overrides to the customization parameter will then be activated. If 'NO' has been defined, no search for the file will take place.
IPWDENC	N	CICS + Monitor system	Specification of 'Y' means, that all passwords will be saved in an encrypted format to the internal security file. NOTE: If this parameter will be changed, the password must be re-applied for all user ids.
KEYCHCK	N	CICS + Monitor system	If this parameter has been set to 'Y', the SQL-Engine checks whether WHERE-clauses consist in SELECT, UPDATE or DELETE-statements. If these WHERE-clauses only contain non-key fields, the statement will be rejected. This does not apply to SQL-statements that do not contain a WHERE-clause.
OPTSEC	N	CICS + Monitor system	Controls the authority checking for the SQL-Engine options. N No check will be performed. M The setting of SQL-statement options will be verified. V The setting of options in the SQL-statement and referenced views will be verified.  If a checking should be performed, a resource-name of '##SQLOPT' will be used.
SCRIPTS	SCRIPTS/	CICS + Monitor system	Defines the name of the subdirectory on the Virtual Disk specified with VDISK=. This subdirectory will be searched for *.SCR files.
SLIBCHK	N	VSE CICS	This parameter defines, whether the access authorization should be performed, to only display the entries of these files in the VSE library tree, for which the signed on user at least has read authority.
SSLKDB		CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, the filename of the key database or the RACF key-ring must be defined.
SSLKPW		CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, the password of the key database must be specified. When using a stash file or a RACF keyring, this parameter will not be defined.
SSLSTH		CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, the stashfile of the key database must be defined. When using a password or a RACF key-ring this parameter must not be defined.

TCPSSLP	3021	CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, specify the number of the TCP/IP-SSL-Port here.
TCPSSLS	N	CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, specify the number of the TCP/IP-SSL-Port here.
TCPSSLT		CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, the terminal name must be specified, on which the listener task should be started. If no name is specified the listener task will be started in the background.
TCPSSLX	TCAS	CICS/MVS	If the tcACCESS-Listener Task for secured connections via TCP/IP should be started using the PLTPI, the transaction name must be specified, which starts the listener task.
STRTRR		CICS	This parameter defines the transaction name of the new task, if STRTCH has been set to 'Y'. If this parameter is not set, the new task will be started with the name of the communication task.
VSAMOPN	Y	CICS	This parameter defines if it is permitted to explicitly open FCT VSAM files.  Y      Yes E      YES, but only for file state ENABLED N      No

## 4.2 Macro TCACONTB

Macro TCACONTB has been enhanced to also support connections to tcACCESS online-systems using TCP/IP in addition to APPC.

A TCP/IP connection requires new parameter that will be briefly explained. The principle of operation for a 'CONNECT' does not change.

ALLOCSEC    NONE: No userID and password will be used for the signon to the other system.

IDENTIFY: UserID and password will be passed to the other system as 'already-verified'.

VERIFY: UserID and password will be used for the signon to other systems.

CONNECT    Defines the type of connection.

'APPC'      An APPC-connection should be used.

'TCPIP'     A TCPIP-socket-connection should be used.

If the parameter is omitted 'APPC' will be assumed.

CRC        This parameter defines, whether the data-transfer to and from the online-system should have a checksum-checking .

'Y'        Checking active.

'N'        Checking not active.

If omitted, the default is 'Y'.

COMPRESS   This parameter defines, whether the data-transfer to and from the online-system should be compressed .

'Y'        Compression active.

'N'        Compression not active.

If omitted, the default is 'N'.

- IPADDR** TCP/IP address to connect to the tcACCESS online-system. The address can either be a name or a number separated by periods (i.e. computer.corp.net or a.b.c.d). Requirement for using names is that the operating system must be able to resolve the names locally or by using a name-server. If no IP address has been specified, 127.0.0.1 (localhost) will be assumed. This parameter only applies to TCP/IP-socket-connections.
- IPPORT** TCP/IP port-number to connect to the tcACCESS online-system. This parameter only applies to TCP/IP-socket-connections.

## 5. Other enhancements

### 5.1 SSL connectivity for TN3270 and TCP/IP

Both TCP/IP based connectivity types support a secured connection based upon SSL-encryption.

For the client or the JAVA components the usage of a secured connection is only specified in the configuration. To use SSL-connections on the host the following must be considered:

OS/390 and z/OS CICS and tcACCESS VTAM Monitor-System	<p>For OS/390 or z/OS Systems the following requirements must be met:</p> <ul style="list-style-type: none"> <li>• OS/390 as of version 2.7 or z/OS</li> <li>• Language Environment</li> <li>• C-Runtime Libraries</li> <li>• Available server-certificate</li> <li>• Keyring-database and password or</li> <li>• Keyring-database and a Stash-File or</li> <li>• Keyring in RACF.</li> </ul>
VSE CICS	<p>VSE systems only require a SSL-daemon that performs a port mapping. An existing Listener (Telnet or tcACCESS Listener in CICS) will be redirected to another port. The TCP/IP partition is responsible for the SSL-encryption prior to passing the request to the partner system.</p>

In the generation for OS/390 and z/OS systems the port must be defined that should be used for the secured connection. In addition the files for the keyring database that may reside in the HFS or RACF must be defined.

### 5.2 Multiple requests for Listener with the same name

The Version 6.0 Windows- or JAVA-components now support the start of multiple parallel tasks from a partner workstation using the same symbolic name. The risk that a task request is already in use when it is being started from the host-program will be reduced. The client and the host must have Version 6.0 installed to use this feature. Generation parameter H2PCNR has been enhanced.

H2PCNR	10,3	CICS + Monitor System	The 1st value defines the number of tasks that can be registered by PC-Listeners. The 2nd value defines the number of parallel requests per task. If this value is omitted, the default is 3.
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### 5.3 Dynamic overwrite of generation parameter

The host generation parameter „INIFILE“ can specify the name of a file that can contain the override parameter. The file name can be up to 8 characters. The name will be

suffixed by file type'.INI'. During the first call to tcACCESS the main directory of the Virtual Disk defined in the 'VDISK' generation parameter will be searched for this file. All parameter defined in this file will then be used to initialize tcACCESS. The Version 6.0 Generation-Wizard can be used to interactively maintain the parameter in the file.

---

## 5.4 Request Monitor

The tcACCESS Request Monitor is a Snap-In program for the Microsoft Management Console (MMC). The Request Monitor can be used to monitor the tcACCESS communications and data-transfers.

The entries displayed represent all requests from tcACCESS users. The Monitor can cancel long running requests.

The Request Monitor also takes host timeout values for the clients into consideration. If a client times out, the host request will also be terminated and the connection will be freed.

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## 5.5 LE/370 support by the VTAM Monitor-system

Stored Procedures and Record Exits can now be developed with LE/370 and are fully supported by the VTAM Monitor-system.

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## 5.6 DELTSQ for queries on TS-Queues

The FTB introduces a new parameter „DELTSQ“. If this parameter is set to "Y" the TS-Queue can be automatically deleted after the SELECT. Temporarily used TS-Queues (i.e. queues that have been created by t-OUTPUT\_FILE= or a Stored Procedure) will not remain in the system.

---

## 5.7 WAITRU for CA-IDMS queries

An access to CA-IDMS requires a free 'external Request Unit'. If no unit is free, this parameter defines the interval (in seconds) that tcACCESS retries to establish a connection to CA-IDMS. If the time expires and no connection has been established, the request will be terminated.

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## 5.8 Password encryption on the internal security file

Generation parameter „IPWDENC“ specifies, that password stored on the internal security file should be encrypted.

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## 5.9 Query limitation on key fields

The new option „KEYCHK“ controls the key-check function. If the parameter has been set to "Y" in the tcACCESS system-generation, the SQL-Engine checks all SELECT, UPDATE or DELETE-statements for WHERE-conditions. If WHERE conditions exist and only fields are being used that are no key-fields the request will be rejected. SQL-statements without a WHERE-condition are not checked. "KEYCHCK" can also be used as an SQL-Engine optional command. If the command has not been used, the value specified at system-generation will be used.

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## 5.10 Recovery-Mode for downloads and SQL-queries

A special download-mode supports the restart of downloads or SQL-queries that have been cancelled. Expensive queries that have been terminated because of networking problems can easily be restarted and data processing will be resumed at the point where the failure took place.

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## 5.11 TCAS transaction

```
TCAS STOP LISTENER
```

Parameter 'STOP LISTENER' terminates the tcACCESS Listener for TCP/IP or MQ-Series connections.

```
TCAS UCT
```

This command turns on the upper case translate feature for the connected terminal.

```
TCAS NOUCT
```

This command turns off the upper case translate feature for the connected terminal.

```
TCAS GETINI
```

The generation parameter stored in the defined INI-file will be refreshed. Using this command you can change the tcACCESS setting "on-the-fly". The new values can be defined with the tcACCESS Generation-Wizard that is part of the Version 6.0 front-end program.

```
TCAS SET parameter=value
```

Certain generation parameter can be changed dynamically with this command "on-the-fly". (EXAMPLE: TCAS SET KEYCHK=Y).

```
TCAS LISTEN_SSL ...
```









The tcACCESS Listener can be started from a terminal. Keyword "LISTEN\_SSL" indicates, that the Listener should use a SSL-connection.

## 5.12 Common SIGNON using the PC-userID

Using option „Use Windows Logon“ will always send the Windows userID to the host for SIGNON. Password will be „NOPASSWD“. Changing the name is not possible.

## 5.13 Special display of host-data-types

The tcACCESS-front-end program now uses the following symbols for host-data-types:

- .... VSAM SAM
- .... VSAM RRDS
- .... VSAM KSDS
- .... VSAM ESDS
- .... VSAM Disabled
- .... VSAM VRRDS
- .... VSAM Physical Keys
- .... Unknown file-type

.... Library Member-type OBJ / PHASE

Additional information will be displayed for the file-types (i.e. Key-information for VSAM-files, record length and size of library member).

## 5.14 Wizards

### (1) Wizard to dynamically change tcACCESS system generation parameter

This wizard can be used to maintain the file that contains the override parameter for the tcACCESS system generation. The parameter that can be changed will be displayed together with a short description of the parameter. The value can be changed interactively and will be saved to the Virtual Disk.

During the first call of tcACCESS, tcACCESS will scan the main directory of the Virtual Disk defined in the 'VDISK' parameter for the file. The override parameter that are stored in the file will be used to initialize the tcACCESS system.

### (2) APPC Wizard

The APPC Wizard helps creating all the necessary definitions and entries for an APPC connection of a batch region to the online-system. The wizard leads you through a series of questions and offers an easy to use method to create the VTAM- definitions, the definitions used by the online-system and the definitions for the tcACCESS system-generation.

## 5.15 Enhancement to the security for SQL-Engine options

A new security privilege has been introduced. The privilege enables the owner, to override definitions for the SQL-Engine that is part of an SQL-statement or an SQL-Engine view.

The privilege is intended to control the misuse of options that may influence overall system performance (i.e. MAXIO or KEYCHCK).

## 5.16 Enhancements to the tcACCESS command shell

Command „ISDIR“ can be used to check for the existence of a directory.

**Example:**

```
IF (NOT) ISDIR ... GOTO ...
```

The new command "compute" represents an internal calculator with Infix-notation. The following operators are supported: 0x for hexadecimal numbers, with leading 0 for octal numbers, decimal numbers. The following mathematical operations are supported: Brackets (), ~ (complement), \* (multiply), / (divide), % (mod), + (plus), - (minus), L und R (shift left and right), & (bit AND), ^ (bit XOR), | (bit OR). The calculator can be used form integers. By using environment variables, simple operations can be performed in batch processes.

**Example using different slots:**

```
SET SLOTNR=0
... /SL %SLOTNR%
COMPUTE %SLOTNR% + 1
SET SLOTNR=%COMPUTE%
GOTO :BEGINN
```

---

## 5.17 Deletion of target-tables before executing a query

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A special option will enable a structured download or an SQL-query that uses an ODBC-data-source as a target file to delete this target file first.

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## 6. Enhancements to the tcACCESS JAVA component

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### 6.1 Support of JDBC 2.0 or 3.0

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With Version 6.0 of the tcACCESS JAVA components the support of the JDBC standard of version 2.0 or 3.0 will be introduced. Please note, that

- JDBC 2.0 as of JDK 1.2 and
- JDBC 3.0 as of JDK 1.4

Will be possible. If no functions from the new JDK will be used, the program can also be executed with a Microsoft Virtual Machine.

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### 6.2 SSL-Encryption

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The JAVA-components support a secure connection using SSL-encryption. To use this connectivity function a JAVA JDK as of Version 1.4 is required.

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### 6.3 Common SIGNON

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Using the option „Use logon name“ for a connection will always use the system userID for the host signon. „NOPASSWD“ will be used as a password.

---

### 6.4 INI-file for the Listener

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The JAVA Listener can now be started with a control file in the format of \*.INI. All the environment parameter used by the Listener process can be defined in this file. This allows the start of multiple Listeners on the same machine.

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## 7. PC-data-format „XML“

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For the data-transfer from the Mainframe a new target file format (data-type „XML“) can be created. In addition to the creation of XML-data files also XML-schema-files can be created.

XML-data files can be used in any XML-capable application or database.

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## 8. Enhancements to the tcACCESS UNIX component

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### 8.1 ODBC driver for UNIX-systems

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In conjunction with one of the well-known ODBC Managers for UNIX (iODBC or unixODBC) the tcACCESS ODBC driver enables access to host data-files. No installation of the graphical components of the ODBC Managers is required.

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## 9. Notes

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In order to use all of the functions of the new tcACCESS mainframe component you must use the client component of tcACCESS Version 6.0. However, it is still possible to use an older mainframe component with the Version 6.0 clients or an older client with the Version 6.0 mainframe components.