
**Information technology — Database
languages — SQL multimedia and
application packages —**

**Part 7:
History**

*Technologies de l'information — Langages de bases de données —
Multimédia SQL et paquetages d'application —*

Partie 7: Historique



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Contents

Page

Foreword	vi
Introduction.....	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions, concepts, notations and conventions	2
3.1 Terms and definitions	2
3.1.1 Terms and definitions provided in ISO/IEC 9075-1	2
3.1.2 Terms and definitions provided in ISO/IEC 9075-2	2
3.1.3 Terms and definition provided in this Technical Specification	2
3.2 Concepts	3
3.2.1 Concepts taken from ISO/IEC 9075-1	3
3.2.2 Concepts taken from ISO/IEC 9075-2	4
3.2.3 Syntactic elements taken from ISO/IEC 9075-2	4
3.2.4 Other concepts	5
3.2.5 Notations	5
3.2.6 Notations provided in ISO/IEC 13249-1	5
3.2.7 Notations provided in ISO/IEC 13249-7	5
3.3 Conventions	6
4 Concepts	6
4.1 Overview	6
4.1.1 Tracked Table and History Table	6
4.1.2 Concept of Transaction Timestamp	7
4.1.3 Operations on Tracked Table	7
4.1.4 Operations on time periods	8
4.1.5 Concept of Period Normalization	11
4.2 Structure of History Table	13
4.3 Creating History Table and Storing History Row in History Table	14
4.4 Retrieving a History Table	14
4.5 Types representing history rows	14
4.5.1 HS_History type	14
4.5.2 <TableTypeIdIdentifier> type	17
4.6 Complementary SQL-invoked regular functions	17
4.6.1 Constructor method of the HS_History type	18
4.6.2 Methods of the HS_History type for treating a period	18
4.6.3 Methods of the <TableTypeIdIdentifier> type	19
4.7 The History Information Schema	19
5 History Procedures	19
5.1 HS_CreateHistory Procedure and its related Procedures	19
5.1.1 HS_CreateHistory Procedure	19
5.1.2 HS_CreateHistoryErrorCheck Procedure	20
5.1.3 HS_CreateHistoryPrivilegeCheck procedure	23
5.1.4 HS_CreateHistoryTableSequenceNumberGenerator procedure	24
5.1.5 HS_CreateHistoryTableType Procedure	25
5.1.6 HS_CreateHistoryTable Procedure	26
5.1.7 HS_CreateInsertTrigger Procedure	26
5.1.8 HS_CreateUpdateTrigger Procedure	27
5.1.9 HS_CreateDeleteTrigger Procedure	29
5.1.10 HS_CreateHistoryTableMethod Procedure	30
5.1.11 HS_CreatePNormalizeMethod Procedure	31

5.1.12	HS_InitializeHistoryTable Procedure	34
5.2	HS_DropHistory Procedure and its related Procedures.....	35
5.2.1	HS_DropHistory Procedure	35
5.2.2	HS_DropHistoryErrorCheck Procedure.....	35
5.2.3	HS_DropHistoryTableTypeMethod Procedure	36
5.2.4	HS_DropHistoryTrigger Procedure.....	37
5.2.5	HS_DropHistoryTable Procedure.....	38
5.2.6	HS_DropHistoryTableType Procedure	39
5.2.7	HS_DropHistoryTableSequenceNumberGenerator procedure.....	40
5.3	Utility Procedures for History.....	41
5.3.1	Functions for extracting an identifier.....	41
5.3.2	HS_CreateCommaSeparatedTrackedColumnList Procedure	44
5.3.3	HS_CreateCommaSeparatedTrackedColumnAndTypeList Procedure.....	45
5.3.4	Functions for constructing an identifier and <IdentifierLength>	47
5.3.5	HS_GetPrimaryKeys function.....	50
5.3.6	HS_GetTransactionTimestamp function	51
5.3.7	HS_GetHistoryRowSetIdentifierColumns procedure.....	51
5.3.8	HS_CreateCommaSeparatedIdentifierColumnList procedure	54
5.3.9	HS_CreatIdentifierColumnSelfJoinCondition procedure	56
5.3.10	Functions for constructing an identifier literal.....	58
5.3.11	HS_CreateCommaSeparatedTrackedColumnLiteralList procedure.....	60
5.4	<TableNameLength> and <ColumnNameLength>	61
5.5	Schema for <TableTypeIdentifier> Type	61
5.6	<TimestampPrecision>	62
6	History Types	62
6.1	HS_History Type and Routines	62
6.1.1	HS_History Type	62
6.1.2	HS_History Method.....	66
6.1.3	HS_Overlaps Methods.....	67
6.1.4	HS_Meets Methods.....	70
6.1.5	HS_Precedes Methods	71
6.1.6	HS_PrecedesOrMeets Methods.....	72
6.1.7	HS_Succeeds Methods	73
6.1.8	HS_SucceedsOrMeets Methods.....	74
6.1.9	HS_Contains Methods.....	75
6.1.10	HS_Equals Methods	77
6.1.11	HS_MonthInterval Method	78
6.1.12	HS_DayInterval Method.....	79
6.1.13	HS_Intersect Methods	80
6.1.14	HS_Union Methods.....	82
6.1.15	HS_Except Methods	83
6.2	<TableTypeIdentifier> Type and Routines	85
6.2.1	<TableTypeIdentifier> Type	85
6.2.2	HS_HistoryTable Method	86
6.2.3	HS_PNormalize Methods	87
7	SQL/MM History Information Schema	92
7.1	Introduction	92
7.2	HS_TRACKED_TABLES view.....	93
7.3	HS_TRACKED_COLUMNS view	93
8	SQL/MM History Definition Schema.....	93
8.1	Introduction	93
8.2	HS_TRACKED_TABLES base table	93
8.3	HS_TRACKED_COLUMNS base table	94
9	Status Codes	94
10	Conformance.....	96
10.1	Requirements for conformance	96
10.2	Features of ISO/IEC 9075 required in this Technical Specification.....	96

10.3	Claims of conformance	97
Annex A	(informative) Example Application	98
A.1	Introduction	98
A.2	Storing History Rows	98
A.3	Example of Queries to History Table	102
	Bibliography	107

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, the joint technical committee may decide to publish an ISO/IEC Technical Specification (ISO/IEC TS), which represents an agreement between the members of the joint technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/IEC TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/IEC TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 13249-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

ISO/IEC 13249 consists of the following parts, under the general title *Information technology — Database languages — SQL multimedia and application packages*:

- *Part 1: Framework*
- *Part 2: Full-Text*
- *Part 3: Spatial*
- *Part 5: Still image*
- *Part 6: Data mining*
- *Part 7: History* [Technical Specification]

Introduction

The purpose of ISO/IEC 13249 is to define multimedia and application specific types and their associated routines using the user-defined features in ISO/IEC 9075.

ISO/IEC 13249 is based on the content of ISO/IEC International Standard Database Language (SQL).

The organization of this Technical Specification is as follows:

- 1) Clause 1, "Scope", specifies the scope of this Technical Specification.
- 2) Clause 2, "Normative references", identifies additional standards that, through reference in this Technical Specification, constitute provisions of this Technical Specification.
- 3) Clause 3, "Terms, definitions, notations, and conventions", defines the definitions, concepts, notations and conventions used in this Technical Specification.
- 4) Clause 4, "Concepts", presents concepts used in the definition of this Technical Specification.
- 5) Clause 5, "History Procedures", defines the history associated routines.
- 6) Clause 6, "History Types", defines the user-defined types provided for the manipulation of history.
- 7) Clause 7, "SQL/MM History Information Schema" defines the SQL/MM History Information Schema.
- 8) Clause 8, "SQL/MM History Definition Schema" defines the SQL/MM History Definition Schema.
- 9) Clause 9, "Status Codes", defines the SQLSTATE codes used in this Technical Specification.
- 10) Clause 10, "Conformance", defines the criteria for conformance to this Technical Specification.

In the text of this Technical Specification, clauses begin a new page. Any resulting blank space is not significant.

The history user-defined types and routines defined in this Technical Specification adhere to the following:

- a) A history user-defined type and routine are generic to history data handling. History user-defined types and routines provide the means to record changes to the rows of a persistent base table in an SQL database, so that applications using such a persistent base table shall be completely independent of whether there is any recording of changes. This means that, when changes are to be recorded, an application does not need to be modified and its behaviour remains the same.
- b) History user-defined types and routines provide the means to query the recorded changes for such a table.
- c) A history user-defined type does not redefine the database language SQL directly or in combination with another history data type.

The scope of this Technical Specification is limited to support for history when there are no changes to the definition of the tracked columns of a tracked table. The following operations are not supported in this Technical Specification:

- a) DROP COLUMN operation to a tracked column of a tracked table.

b) ALTER COLUMN operation to a tracked column of a tracked table except changes of the default value.

The scope of this Technical Specification is limited to support for history when a tracked table has at least one unique constraint with NOT NULL that is not modified by any ALTER TABLE statements.

If a transaction does not have an isolation level that is SERIALIZABLE, the results in the recorded history are implementation-dependent.

Information technology — Database languages — SQL multimedia and application packages —

Part 7: History

1 Scope

The ISO/IEC 13249 series defines a number of packages of generic data types common to various kinds of data used in multimedia and application areas, to enable that data to be stored and manipulated in an SQL database.

This Technical Specification:

- a) defines concepts specific to this Technical Specification;
- b) defines history user-defined types and their associated routines.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 9075-1:2008, *Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework)*

ISO/IEC 9075-2:2008, *Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation)*

ISO/IEC 9075-4:2008, *Information technology — Database languages — SQL — Part 4: Persistent Stored Modules (SQL/PSM)*

ISO/IEC 9075-11:2008, *Information technology — Database languages — SQL — Part 11: Information and Definition Schemas (SQL/Schemata)*

ISO/IEC 13249-1:2007, *Information technology — Database languages — SQL multimedia and application packages — Part 1: Framework*