
**Information technology —
Database languages SQL —
Part 3:
Call-Level Interface (SQL/CLI)**

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Contents	Page
Foreword.....	ix
Introduction.....	xi
1 Scope.....	1
2 Normative references.....	2
3 Terms and definitions.....	3
4 Concepts.....	4
4.1 Notations and conventions.....	4
4.1.1 Notations.....	4
4.1.2 Specification of routine definitions.....	4
4.2 Introduction to SQL/CLI.....	4
4.3 Return codes.....	8
4.4 Diagnostics areas in SQL/CLI.....	9
4.4.1 Introduction to diagnostics areas in SQL/CLI.....	9
4.4.2 Setting of ROW_NUMBER and COLUMN_NUMBER fields.....	12
4.5 Miscellaneous characteristics.....	12
4.5.1 Handles.....	12
4.5.2 Null-terminated strings.....	12
4.5.3 Null pointers.....	13
4.5.4 Environment attributes.....	13
4.5.5 Connection attributes.....	13
4.5.6 Statement attributes.....	14
4.5.7 CLI descriptor areas.....	14
4.5.8 Obtaining diagnostics during multi-row fetch.....	15
4.6 SQL-invoked routines.....	16
4.6.1 Result sets returned by SQL-invoked procedures.....	16
4.7 Cursors.....	16
4.7.1 General description of cursors.....	16
4.8 Client-server operation.....	16
5 Lexical elements.....	17
5.1 <token> and <separator>.....	17
6 Call-Level Interface specifications.....	18
6.1 <CLI routine>.....	18
6.2 <CLI routine> invocation.....	26
6.3 Implicit set connection.....	29
6.4 Preparing a statement.....	30
6.5 Executing a statement.....	33
6.6 Implicit CLI prepared cursor.....	35
6.7 Implicit CLI procedural result cursor.....	37

6.8	Initial CLI cursor.	38
6.9	Implicit DESCRIBE USING clause.	39
6.10	Implicit EXECUTE USING and OPEN USING clauses.	45
6.11	Implicit CALL USING clause.	51
6.12	Fetching a rowset.	56
6.13	Implicit FETCH USING clause.	60
6.14	Character string retrieval.	66
6.15	Binary string retrieval.	68
6.16	Deferred parameter check.	70
6.17	Description of CLI item descriptor areas.	71
6.18	Other tables associated with CLI.	82
6.19	SQL/CLI data type correspondences.	106
7	SQL/CLI routines.	116
7.1	Introduction to SQL/CLI routines.	116
7.2	AllocConnect().	116
7.3	AllocEnv().	117
7.4	AllocHandle().	118
7.5	AllocStmt().	122
7.6	BindCol().	123
7.7	BindParameter().	125
7.8	Cancel().	129
7.9	CloseCursor().	131
7.10	ColAttribute().	132
7.11	ColumnPrivileges().	134
7.12	Columns().	140
7.13	Connect().	149
7.14	CopyDesc().	153
7.15	DataSources().	154
7.16	DescribeCol().	156
7.17	Disconnect().	158
7.18	EndTran().	160
7.19	Error().	164
7.20	ExecDirect().	166
7.21	Execute().	167
7.22	Fetch().	168
7.23	FetchScroll().	169
7.24	ForeignKeys().	170
7.25	FreeConnect().	182
7.26	FreeEnv().	183
7.27	FreeHandle().	184
7.28	FreeStmt().	187
7.29	GetConnectAttr().	189
7.30	GetCursorName().	191
7.31	GetData().	192
7.32	GetDescField().	198
7.33	GetDescRec().	200
7.34	GetDiagField().	202

7.35	GetDiagRec()	211
7.36	GetEnvAttr()	213
7.37	GetFeatureInfo()	215
7.38	GetFunctions()	218
7.39	GetInfo()	219
7.40	GetLength()	223
7.41	GetParamData()	225
7.42	GetPosition()	231
7.43	GetSessionInfo()	233
7.44	GetStmtAttr()	235
7.45	GetSubString()	238
7.46	GetTypeInfo()	240
7.47	MoreResults()	244
7.48	NextResult()	245
7.49	NumResultCols()	246
7.50	ParamData()	247
7.51	Prepare()	252
7.52	PrimaryKeys()	253
7.53	PutData()	258
7.54	RowCount()	261
7.55	SetConnectAttr()	262
7.56	SetCursorName()	264
7.57	SetDescField()	266
7.58	SetDescRec()	271
7.59	SetEnvAttr()	273
7.60	SetStmtAttr()	275
7.61	SpecialColumns()	279
7.62	StartTran()	286
7.63	TablePrivileges()	288
7.64	Tables()	293
8	Additional data manipulation rules	300
8.1	Effect of opening a cursor	300
9	Dynamic SQL	301
9.1	<preparable dynamic cursor name>	301
10	Status codes	302
10.1	SQLSTATE	302
11	Conformance	305
11.1	Claims of conformance to SQL/CLI	305
11.2	Additional conformance requirements for SQL/CLI	305
11.3	Implied feature relationships of SQL/CLI	305
Annex A	(informative) SQL conformance summary	306
Annex B	(informative) Implementation-defined elements	308
Annex C	(informative) Implementation-dependent elements	329
Annex D	(informative) SQL optional feature taxonomy	334
Annex E	(informative) Deprecated features	335

Annex F (informative) Incompatibilities with ISO/IEC 9075:2016	336
Annex G (informative) Defect Reports not addressed in this edition of this document	337
Annex H (informative) Example header files	338
H.1 C header file sqlcli.h.....	338
H.2 COBOL library item SQLCLI.....	349
Annex I (informative) Example C programs	357
I.1 Introduction to Example C programs.....	357
I.2 Create table, insert, select.....	357
I.3 Interactive Query.....	360
I.4 Providing long dynamic arguments at Execute time.....	363
Index	366

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ISO/IEC 9075-3:2023

<https://standards.iteh.ai/catalog/standards/sist/7487f32d-d226-439e-8627-fe97625e91c5/iso-iec-9075-3-2023>

Tables

Table	Page	
1	Header fields in SQL/CLI diagnostics areas.	10
2	Status record fields in SQL/CLI diagnostics areas.	10
3	Supported calling conventions of SQL/CLI routines by language.	21
4	Abbreviated SQL/CLI generic names.	21
5	Fields in SQL/CLI row and parameter descriptor areas.	76
6	Codes used for implementation data types in SQL/CLI.	78
7	Codes used for application data types in SQL/CLI.	79
8	Codes associated with datetime data types in SQL/CLI.	80
9	Codes associated with <interval qualifier> in SQL/CLI.	80
10	Codes associated with <parameter mode> in SQL/CLI.	81
11	Codes associated with user-defined types in SQL/CLI.	81
12	Codes used for SQL/CLI diagnostic fields.	82
13	Codes used for SQL/CLI handle types.	83
14	Codes used for transaction termination.	84
15	Codes used for environment attributes.	84
16	Codes used for connection attributes.	84
17	Codes used for statement attributes.	84
18	Codes used for FreeStmt options.	85
19	Data types of attributes.	85
20	Codes used for SQL/CLI descriptor fields.	86
21	Ability to set SQL/CLI descriptor fields.	88
22	Ability to retrieve SQL/CLI descriptor fields.	90
23	SQL/CLI descriptor field default values.	93
24	Codes used for fetch orientation.	95
25	Multi-row fetch status codes.	95
26	Miscellaneous codes used in CLI.	95
27	Codes used to identify SQL/CLI routines.	96
28	Codes and data types for implementation information.	99
29	Codes and data types for session implementation information.	101
30	Values for TRANSACTION ISOLATION OPTION with StartTran.	101
31	Values for TRANSACTION ACCESS MODE with StartTran.	101
32	Codes used for concise data types.	101
33	Codes used with concise datetime data types in SQL/CLI.	103
34	Codes used with concise interval data types in SQL/CLI.	104
35	Concise codes used with datetime data types in SQL/CLI.	104
36	Concise codes used with interval data types in SQL/CLI.	104
37	Special parameter values.	105
38	Column types and scopes used with SpecialColumns.	105
39	SQL/CLI data type correspondences for Ada.	106
40	SQL/CLI data type correspondences for C.	107
41	SQL/CLI data type correspondences for COBOL.	108
42	SQL/CLI data type correspondences for Fortran.	110
43	SQL/CLI data type correspondences for M.	111
44	SQL/CLI data type correspondences for Pascal.	112
45	SQL/CLI data type correspondences for PL/I.	114
46	SQLSTATE class and subclass codes.	302
47	Implied feature relationships of SQL/CLI.	305

ISO/IEC 9075-3:2023(E)

A.1 Feature definitions outside of Conformance Rules. 306
D.1 Feature taxonomy for optional features. 334

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ISO/IEC 9075-3:2023

<https://standards.itih.ai/catalog/standards/sist/7487f32d-d226-439e-8627-fe97625e91c5/iso-iec-9075-3-2023>

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC have not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and <https://patents.iec.ch>. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

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

This sixth edition cancels and replaces the fifth edition (ISO/IEC 9075-3:2016), which has been technically revised. It also incorporates the Technical Corrigendum ISO/IEC 9075-3:2016/Cor.1:2022.

The main changes are as follows:

- improve the presentation and accuracy of the summaries of implementation-defined and implementation-dependent aspects of this document;
- introduction of several digital artifacts;
- alignment with updated ISO house style and other guidelines for creating standards.

This sixth edition of ISO/IEC 9075-3 is designed to be used in conjunction with the following editions of other parts of the ISO/IEC 9075 series, all published 2023:

- ISO/IEC 9075-1, sixth edition;
- ISO/IEC 9075-2, sixth edition;
- ISO/IEC 9075-4, seventh edition;

ISO/IEC 9075-3:2023(E)

- ISO/IEC 9075-9, fifth edition;
- ISO/IEC 9075-10, fifth edition;
- ISO/IEC 9075-11, fifth edition;
- ISO/IEC 9075-13, fifth edition;
- ISO/IEC 9075-14, sixth edition;
- ISO/IEC 9075-15, second edition;
- ISO/IEC 9075-16, first edition.

A list of all parts in the ISO/IEC 9075 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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Introduction

The organization of this document is as follows:

- 1) **Clause 1, “Scope”**, specifies the scope of this document.
- 2) **Clause 2, “Normative references”**, identifies additional standards that, through reference in this document, constitute provisions of this document.
- 3) **Clause 3, “Terms and definitions”**, defines the terms and definitions used in this document.
- 4) **Clause 4, “Concepts”**, presents concepts used in the definition of the Call-Level Interface.
- 5) **Clause 5, “Lexical elements”**, defines the lexical elements of the language.
- 6) **Clause 6, “Call-Level Interface specifications”**, defines facilities for using SQL through a Call-Level Interface.
- 7) **Clause 7, “SQL/CLI routines”**, defines each of the routines that comprise the Call-Level Interface.
- 8) **Clause 8, “Additional data manipulation rules”**, defines additional rules for data manipulation.
- 9) **Clause 9, “Dynamic SQL”**, defines the SQL dynamic statements.
- 10) **Clause 10, “Status codes”**, defines values that identify the status of the execution of SQL-statements and the mechanisms by which those values are returned.
- 11) **Clause 11, “Conformance”**, defines the criteria for conformance to this document.
- 12) **Annex A, “SQL conformance summary”**, is an informative Annex. It summarizes the conformance requirements of the SQL language. [ISO/IEC 9075-3:2023](https://standards.iso.org/standard/7487324.html)
- 13) **Annex B, “Implementation-defined elements”**, is an informative Annex. It lists those features for which the body of this document states that the syntax, the meaning, the returned results, the effect on SQL-data and/or schemas, or other aspect is partly or wholly implementation-defined. <https://standards.iso.org/standard/7487324.html>
- 14) **Annex C, “Implementation-dependent elements”**, is an informative Annex. It lists those features for which the body of this document states that the syntax, the meaning, the returned results, the effect on SQL-data and/or schemas, or other aspect is partly or wholly implementation-dependent.
- 15) **Annex D, “SQL optional feature taxonomy”**, is an informative Annex. It identifies the optional features of the SQL language specified in this document by an identifier and a short descriptive name. This taxonomy is used to specify conformance.
- 16) **Annex E, “Deprecated features”**, is an informative Annex. It lists features that the responsible Technical Committee intends not to include in a future edition of this document.
- 17) **Annex F, “Incompatibilities with ISO/IEC 9075:2016”**, is an informative Annex. It lists incompatibilities with the previous edition of this document.
- 18) **Annex G, “Defect Reports not addressed in this edition of this document”**, is an informative Annex. It describes the Defect Reports that were known at the time of publication of this document. Each of these problems is a problem carried forward from the previous edition of document. No new problems have been created in the drafting of this edition of this document.
- 19) **Annex H, “Example header files”**, is an informative Annex. It provides examples of typical definition files for application programs using the SQL Call-Level Interface.
- 20) **Annex I, “Example C programs”**, is an informative Annex. It provides examples of using the SQL Call-Level Interface in the C programming language.

In the text of this document, Clauses and Annexes begin new odd-numbered pages, and in [Clause 6, “Call-Level Interface specifications”](#), through [Clause 11, “Conformance”](#), Subclauses begin new pages. Any resulting blank space is not significant.

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Information technology — Database language SQL —

Part 3:

Call-Level Interface (SQL/CLI)**1 Scope**

This document defines the structures and procedures that can be used to execute statements of the database language SQL from within an application written in a programming language in such a way that procedures used are independent of the SQL statements to be executed.

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2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1539-1:2018, *Information technology — Programming languages — Fortran — Part 1: Base language*
- ISO/IEC 1539-2:2000, *Information technology — Programming languages — Fortran — Part 2: Varying length character strings*
- ISO 1989:2014, *Information technology — Programming languages — COBOL*
- ISO 6160:1979, *Programming languages — PL/I (Endorsement of ANSI X3.53-1976)*
- ISO 7185:1990, *Information technology — Programming languages — Pascal*
- ISO/IEC 8652:2012, *Information technology — Programming languages — Ada*
- ISO/IEC 8652:2012/Cor.1:2016, *Information technology — Programming languages — Ada — Technical Corrigendum 1*
- ISO/IEC 9075-1, *Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework)*
- ISO/IEC 9075-2, *Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation)*
- ISO/IEC 9075-11, *Information technology — Database languages — SQL — Part 11: Information and Definition Schemas (SQL/Schemata)*
- ISO/IEC 9899:2018, *Information technology — Programming languages — C*
- ISO/IEC 10206:1991, *Information technology — Programming languages — Extended Pascal*
- ISO/IEC 11756:1999, *Information technology — Programming languages — M*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 9075-1, ISO/IEC 9075-2 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

data source

SQL-server that is part of the current SQL-connection

3.2

handle

CLI object returned by an SQL/CLI implementation when a CLI resource is allocated and used by an SQL/CLI application to reference that CLI resource

3.3

pseudo-column

column that is part of a table but is not part of the descriptor for that table

Note 1 to entry: An example of such a pseudo-column is an implementation-defined row identifier.

3.4

rowset

one or more rows retrieved in a single invocation of the Fetch and FetchScroll routines

3.5

SQL/CLI application

application that invokes <CLI routine>s specified in this document