

# [MS-TSQLISO03]: SQL Server Transact-SQL ISO/IEC 9075-3 Standards Support Document

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## Revision Summary

Date	Revision History	Revision Class	Comments
06/29/2012	1.0	New	Released new document.
07/16/2012	1.0	No change	No changes to the meaning, language, or formatting of the technical content.
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# 1 Introduction

SQL Server Transact-SQL ISO/IEC 9075-3 Standards Support Document describes the level of support that is provided by Transact-SQL in both Microsoft SQL Server 2008 R2 and Microsoft SQL Server 2012 for Part 3: Call-Level Interface (SQL/CLI) of the 2008 version of the SQL language ISO/IEC 9075 international standard specification.

The **Transact-SQL** language is a procedural extension of the SQL database programming language as implemented by Microsoft [\[MSDN-Transact-SQLRef\]](#). Transact-SQL supports and extends ANSI SQL. The Transact-SQL dialect is based on International Standard ISO/IEC 9075.

At the time of first release of [MS-TSQLISO03], ISO/IEC 9075-3:2008 was the most current version of Part 3.

## 1.1 Glossary

The following terms are specific to this document:

**Transact-SQL:** The Microsoft proprietary version of SQL, the structured query language.

## 1.2 References

### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

[ISO/IEC9075-3:2008] ISO/IEC, "Information technology — Database languages — SQL — Part 3: Call-Level Interface (SQL/CLI)", ISO/IEC 9075-3:2008, July 2008, [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=38641](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=38641)

**Note** There is a charge to download the specification.

### 1.2.2 Informative References

[MSDN-Transact-SQLRef] Microsoft Corporation, "Transact-SQL Reference (Database Engine)", <http://msdn.microsoft.com/en-us/library/bb510741.aspx>

## 1.3 Microsoft Implementations

Microsoft SQL Server 2008 R2

Microsoft SQL Server 2012

Transact-SQL

## 1.4 Standards Support Requirements

An SQL implementation that is fully compliant with the SQL standards implements all mandatory features and optionally implements any optional features. For Part 3 of the standards (International Standard ISO/IEC 9075), the normative variations from mandatory features are listed in [Mandatory](#)

[Features \(section 2.1.1\)](#) and the normative variations from optional features are listed in [Optional Features \(section 2.1.2\)](#).

This document covers Transact-SQL alignment with normative statements in the ISO/IEC standard. This document does not include:

- Clarifications of ambiguity in the target specification.
- Intended points of variability in the target specification, such as the use of MAY, SHOULD, or RECOMMENDED.
- The use of extensibility points, such as optional implementation-specific data.

The following table lists the sections of [\[ISO/IEC9075-3:2008\]](#) that are considered normative and that are considered informative.

Section	Normative/Informative
1 - 3	Informative
4 - 10	Normative
Appendices A - I	Informative

## 1.5 Notation

The following notations are used to identify clarifications in the [Standards Support Statements \(section 2\)](#).

Notation	Explanation
C####	This notation identifies a clarification of ambiguity in the target specification. This includes imprecise statements, omitted information, discrepancies, and errata. This does not include data formatting clarifications.
V####	This notation identifies an intended point of variability in the target specification, such as the use of MAY, SHOULD, or RECOMMENDED. This does not include extensibility points.
E####	Because the use of extensibility points (such as optional implementation-specific data) could impair interoperability, this notation identifies such points in the target specification.

## 2 Standards Support Statements

### 2.1 Normative Variations

The following subsections detail the normative variations in **Transact-SQL** from [\[ISO/IEC9075-3:2008\]](#).

#### 2.1.1 Mandatory Features

##### 2.1.1.1 C011, All facilities defined by this part of ISO/IEC 9075

V0001:

The specification states the following:

Subclause 5.1, "<CLI routine>":

```
<CLI routine> ::=  
  <CLI routine name> <CLI parameter list> [ <CLI returns clause> ]
```

```
<CLI routine name> ::=  
  <CLI name prefix><CLI generic name>
```

```
<CLI name prefix> ::=  
  <CLI by-reference prefix>  
  | <CLI by-value prefix>
```

```
<CLI by-reference prefix> ::=  
  SQLR
```

```
<CLI by-value prefix> ::=  
  SQL
```

```
<CLI generic name> ::=  
  AllocConnect  
  | AllocEnv  
  | AllocHandle  
  | AllocStmt  
  | BindCol  
  | BindParameter  
  | Cancel  
  | CloseCursor  
  | ColAttribute  
  | ColumnPrivileges  
  | Columns  
  | Connect  
  | CopyDesc  
  | DataSources  
  | DescribeCol  
  | Disconnect  
  | EndTran  
  | Error  
  | ExecDirect  
  | Execute  
  | Fetch  
  | FetchScroll
```

```

| ForeignKeys
| FreeConnect
| FreeEnv
| FreeHandle
| FreeStmt
| GetConnectAttr
| GetCursorName
| GetData
| GetDescField
| GetDescRec
| GetDiagField
| GetDiagRec
| GetEnvAttr
| GetFeatureInfo
| GetFunctions
| GetInfo
| GetLength
| GetParamData
| GetPosition
| GetSessionInfo
| GetStmtAttr
| GetSubString
| GetTypeInfo
| MoreResults
| NextResult
| NumResultCols
| ParamData
| Prepare
| PrimaryKeys
| PutData
| RowCount
| SetConnectAttr
| SetCursorName
| SetDescField
| SetDescRec
| SetEnvAttr
| SetStmtAttr
| SpecialColumns
| StartTran
| TablePrivileges
| Tables
| <implementation-defined CLI generic name>

<CLI parameter list> ::=
  <left paren> <CLI parameter declaration>
    [ { <comma> <CLI parameter declaration> }... ] <right paren>

<CLI parameter declaration> ::=
  <CLI parameter name> <CLI parameter mode> <CLI parameter data type>

<CLI parameter name> ::=
  !! See the individual CLI routine definitions

<CLI parameter mode> ::=
  IN
  | OUT
  | DEFIN
  | DEFOUT
  | DEF

```

```
<CLI parameter data type> ::=
    INTEGER
    | SMALLINT
    | ANY
    | CHARACTER <left paren> <length> <right paren>

<CLI returns clause> ::=
    RETURNS SMALLINT

<implementation-defined CLI generic name> ::=
    !! See the Syntax Rules
```

Microsoft SQL Server 2008 R2 and Microsoft SQL Server 2012 vary as follows:

Transact-SQL partially supports this feature. Transact-SQL supports feature C002, "CLI routine invocation in C", but does not support any other feature in the range C001 through C007.

### 2.1.2 Optional Features

The standard [\[ISO/IEC9075-3:2008\]](#) does not specify any optional features.

## 2.2 Clarifications

Unless otherwise specified, the specified product conforms to all SHOULD and RECOMMENDED behavior in [\[ISO/IEC9075-3:2008\]](#).

## 2.3 Error Handling

None.

## 2.4 Security

None.



### 3 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

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