Troubleshooting Overview

As a starting point to troubleshooting a problem in Microsoft® SQL Server™ 2000, you may find the solution in one of the online troubleshooters from SQL Server Product Support Services (PSS). For more information, see Online Troubleshooters from PSS. In addition, review current error logs for information that may pinpoint the problem. Other current information about troubleshooting SQL Server 2000 can be found on the FAQs & Highlights for SQL Server page, available at Microsoft Web site.

Error Logs

The error log in SQL Server 2000 provides complete information about events in SQL Server. You may also want to view the Microsoft Windows® 2000 or Windows NT® 4.0 application log, which provides an overall picture of events that occur on the Windows NT 4.0 and Windows 2000 operating systems, as well as events in SQL Server and SQL Server Agent. Both logs include informational messages (such as startup data), and both record the date and time of all events automatically.

SQL Server events are logged according to the way you start SQL Server.

- When SQL Server is started as a service under the Windows 2000 or Windows NT 4.0 operating system, events are logged to the SQL Server error log, to the Windows 2000 or Windows NT application log, or to both logs.
- When SQL Server is started from the command prompt, events are logged to the SQL Server error log and to standard output (typically the monitor, unless output has been redirected elsewhere).

For information about how to view the logs, see <u>Viewing Error Logs</u>.

Backward Compatibility Issues

If you encounter a problem regarding compatibility between SQL Server 2000 and earlier versions of SQL Server, see <u>SQL Server 2000 and SQL Server</u>

version 7.0 and <u>SQL Server 2000 and SQL Server version 6.5</u>. For information about a detailed list of feature changes between SQL Server 6.5 and SQL Server 2000, see <u>SQL Server Backward Compatibility Details</u>.

Additional Resources

For access to the Microsoft Knowledge Base and other current information, a subscription to Microsoft TechNet or MSDN® can be helpful. For more information, see:

- The Microsoft TechNet page at Microsoft Web site.
- The MSDN page at Microsoft Web site.

Viewing Web-Based Information

Numerous links to Microsoft Product Support Services (PSS) Web pages are provided in the Troubleshooting topics. Links to the new online troubleshooters, as well as pertinent Microsoft Knowledge Base articles and white papers, are also available. Every effort has been made to ensure the Web links are correct and will remain stable over time. However, if a link does not work, go to the MSDN Online Support Web page at Microsoft Web site, and navigate to the correct location.

See Also

Monitoring the Error Logs

Troubleshooting Planning

Troubleshooting Planning

To minimize the effects of a server failure or other troubleshooting situation:

- Develop and test a backup and disaster recovery plan.
- Use the Database Maintenance Plan Wizard to schedule the scripts to run during periods of low activity.
- Verify the security permissions and roles you have planned for your databases.

Disaster Recovery Plan

The importance of disaster recovery assessment cannot be overstated. What is the business risk if you cannot get your data back? What is the cost for each hour's delay in getting your system back up and running? Do not assume that your data is quickly recoverable. Thoroughly understanding the steps for recovery ahead of time will minimize the stress and uncertainty imposed by a future disaster. Some important points to consider are:

- Periodically assess the validity of the current disaster recovery plan.
- Have sufficient hardware and staff to implement recovery procedures.

See Also

Data Integrity Validation

Database Maintenance Plan Wizard

Designing a Backup and Restore Strategy

Disaster Recovery Planning

Managing Permissions

Viewing Error Logs

The Microsoft® SQL Server™ 2000 error log can be viewed using SQL Server Enterprise Manager or any text editor. The most current error log is named Errorlog (with no extension) and is located in the Program Files\Microsoft SQL Server\Mssql\Log directory by default.

To view the SQL Server error log from SQL Server Enterprise Manager

- 1. Expand a server group, and then expand a server.
- 2. Expand **Management**, and then expand **SQL Server Logs**.
- 3. Click the SQL Server Log to view it. Error log information appears in the details pane.

The Microsoft Windows® 2000 or Windows NT® 4.0 application log provides an overall picture of events that occur on the Windows 2000 or Windows NT operating system.

To view the Windows 2000 application log

- 1. On the **Start** menu, point to **Programs**, point to **Administrative Tools**, and then click **Event Viewer**.
- 2. In the left pane, click **Application Log**.
 - Microsoft SQL Server events are identified by the entry MSSQLServer or MSSQL\$<server named instance> in the **Source** column. SQL Server Agent events are identified by the entry SQLServerAgent or SQLAgent\$<server named instance>. Microsoft Search service events are identified by the entry Microsoft Search.
- 3. To view the log of a different computer, in the right pane, right-click **Event Viewer**, and then click **Connect to another computer**.

Note If you are viewing the log of the local computer, skip this step.

- 4. Complete the **Select Computer** dialog box.
- 5. Optionally, to display only SQL Server events, on the **View** menu, select **Filter**, and then in the **Event Source** box, select **MSSQLServer** or **MSSQL\$<server named instance>**.
- 6. To view more information about an event, double-click the event.

To view the Windows NT 4.0 application log

- 1. On the **Start** menu, point to **Programs**, point to **Administrative Tools**, and then click **Event Viewer**.
- 2. If the application log is not displayed, on the **Log** menu, click **Application**.
 - Microsoft SQL Server events are identified by the entry MSSQLServer or MSSQL\$<server named instance> in the **Source** column. SQL Server Agent events are identified by the entry SQLServerAgent or SQLAgent\$<server named instance>. Microsoft Search service events are identified by the entry Microsoft Search.
- 3. To view the log of a different computer, on the **Log** menu, click **Select Computer**, and then complete the **Select Computer** dialog box.
 - **Note** If you are viewing the log of the local computer, skip this step.
- 4. Optionally, to display only SQL Server events, on the **View** menu, click **Filter Events**, and in the **Source** box, select **MSSQLServer**.
- 5. To view only SQL Server Agent events, select **SQLServerAgent** instead.
- 6. To view more information about an event, double-click the event.

See Also

Error Messages

Online Troubleshooters from PSS

Microsoft® Product Support Services (PSS) has implemented online troubleshooters, which are Web-based interactive guides for pinpointing and resolving customer problems.

To use an online troubleshooter, go to the page relating to an issue, and select one of the problems listed, for example "I can't create or administer a linked server" or "I can't establish a trusted connection." Subsequent statements and questions with interactive links help pinpoint and diagnose the trouble. Steps are then recommended to solve the problem as quickly as possible.

See Also

Viewing Online Troubleshooters and Other PSS Web-based Information

Help with Backup and Restore

The online Backup and Restore Troubleshooter is designed to help you resolve problems you may encounter when backing up or restoring databases and transaction logs in Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting backup and restore include:

- Problems with backing up or restoring a database or transaction log that is password protected.
- Problems appending or initializing a backup to an existing backup device.
- Problems when backing up a transaction log or performing a differential file or file group backup while the database is set to the 'SIMPLE' recovery mode.
- Poor performance when performing a backup or restore.
- The database restore completes successfully, but the backup appears to have restored the database to a point in time earlier than expected.
- Problems performing a point-in-time restore of a transaction log.
- System database backups cannot be restored on a different build of SQL Server.
- Error 927 when attempting to use a database after a successful restore.



Help with Connectivity

The online Connectivity Troubleshooter is designed to help you resolve problems that may cause you to receive connectivity errors when you use Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting connectivity include:

- I'm unable to register a new server in SQL Enterprise Manager.
- I'm unable to connect "Specified SQL Server not found," "SQL Server does not exist," or "Access denied."
- I'm unable to connect from an ODBC application.
- I'm unable to establish a trusted connection.
- I'm unable to connect. The message is "Login failed."
- I'm unable to connect through a firewall.
- Encryption not supported on SQL Server ConnectionOpen (PreLoginHandshake()).

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other</u> PSS Web-Based Information.

Help with Data Transformation Services

The online Data Transformation Services Troubleshooter is designed to help you resolve problems you may encounter with Data Transformation Services (DTS) in Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English so that this information can be found on nonlocalized Web sites.

Common starting points for troubleshooting DTS include:

- I'm having a problem using DTS Designer or a wizard to create a DTS package.
- I'm having a problem executing a scheduled package.
- I'm having a problem executing a package that isn't scheduled.
- My DTS package takes a long time to complete.
- My DTS package takes a long time to stop running after it fails or is canceled.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other</u> PSS Web-Based Information.

Help with Distributed Queries

The online Distributed Query Troubleshooter is designed to help you resolve problems you may encounter when using distributed queries in Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English so that this information can be found on nonlocalized Web sites.

Common starting points for troubleshooting distributed queries include:

- I have difficulty with distributed queries to an online analytical processing (OLAP) server.
- I have difficulty with distributed queries to Oracle.
- Distributed query performance is degraded.
- I receive a specific error message from a distributed query, and I want more information about it.
- I can't create, delete, or administer a linked server.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other</u> PSS Web-Based Information.

Help with Full-Text Search

The online Full-Text Search Troubleshooter is designed to help you resolve problems you may encounter when using the Full-Text Search feature in Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting full-text search include:

- I have a problem using CONTAINS or FREETEXT.
- I can't enable databases for full-text search or full-text catalog creation.
- I have a problem with full-text indexing or populating full-text catalogs.
- Full-text indexing or searching performance is poor.
- I have a problem with full-text indexing documents in IMAGE columns.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other PSS Web-Based Information</u>.

Help with Performance

The online SQL Server Performance Troubleshooter is designed to help you resolve problems that may cause slow queries when you use Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting performance include:

- My SQL Server 2000 application is slow.
- I'm experiencing problems with blocking.
- A stored procedure is being recompiled excessively.
- Large batches of small queries are slower than expected.
- An individual query is using a poor query plan.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other</u> PSS Web-Based Information.

Help with SQL Profiler

The online Profiler Troubleshooter is designed to help you resolve problems you may encounter when trying to use the SQL Profiler tool in Microsoft® SQL Server 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting SQL Profiler include:

- I can't connect to a SQL Server I want to profile.
- I have a problem capturing a trace.
- I have a problem loading a previously captured Profiler trace.
- I have a problem replaying a previously captured Profiler trace.
- I have a problem with the tool's graphical user interface (GUI).
- I have some other problem with the tool.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other</u> PSS Web-Based Information.

Help with Replication

The online Replication Troubleshooter is designed to help you resolve replication problems you may encounter when using Microsoft® SQL Server 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting replication include:

- Error message for a Distribution Agent:

 "The process could not connect to Subscriber '<Server_name>'.
- Error message for a Distribution Agent: "Timeout expired."
- Error message for a Distribution Agent:
 "Could not find stored procedure 'sp_MSins_<table_name>'."
- Error message for a Log Reader Agent:
 "The process could not execute 'sp_repldone/sp_replcounters' c
- Error message for a Log Reader Agent: "The process could not connect to server '<Server_name>'. Log
- Error message for a Log Reader Agent:
 "The process could not execute 'sp_replcmds' on '<Server_nam
- Error message for a Snapshot Agent:
 "The process could not read file '< E:\Program Files\Microsoft
- Error message for a Merge Agent:

 "The subscription has been marked inactive and must be reiniti

- Error message for Remote agent:
 "The process could not connect to Subscriber '<Server_name>'.
- Error message "The agent is suspect. No activity reported within the last 10 m

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other PSS Web-Based Information</u>.

Help with Setup

The online Setup Troubleshooter is designed to help you resolve problems you may encounter when installing one of these editions of Microsoft® SQL ServerTM 2000:

- Microsoft SQL Server 2000 Personal Edition
- Microsoft SQL Server 2000 Standard Edition
- Microsoft SQL Server 2000 Enterprise Edition

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting the installation of the Personal Edition include:

- Does Setup stop responding when it tries to connect to the server?
- Do you get an error when setup is trying to configure the server?
- Does setup fail with an error indicating that you are running an evaluation version?
- Does your system meet the minimum software and hardware requirements?
- Do you get an error message that asks you to close all ODBC components?
- Is Family Logon the primary network logon?

- Do you get an error message indicating that setup cannot find SQL Server 2000?
- Do you receive an error message indicating problems with character set and sort order?
- Do you receive an error indicating that setup was unable to create a registry key?
- Do you receive an error indicating that the file mfc42u.dll is read-only?
- Is there a line in your sqlstp.log file indicating that "LoadLibrary failed on sqlsui.dll"?
- Are you experiencing a system File Protection (SFP) issue around the install of MDAC?

Common starting points for troubleshooting the installation of the Standard Edition include:

- Does your system meet the minimum software and hardware requirements?
- Do you get an error message that asks you to close all ODBC components?
- Does setup fail with an error indicating that you are running an evaluation version?
- Do you get an error message indicating that setup cannot find SQL Server 2000?

- Do you receive an error message indicating problems with character set and sort order?
- Do you receive an error indicating that setup was unable to create a registry key?
- Do you get an error when setup is trying to configure the server?
- Do you receive an error indicating that the file mfc42u.dll is read-only?
- Is there a line in your sqlstp.log file indicating that "LoadLibrary failed on sqlsui.dll"?
- Are you experiencing a system File Protection (SFP) issue around the install of MDAC?

Common starting points for troubleshooting the installation of the Enterprise Edition include:

- Does your system meet the minimum software and hardware requirements?
- Are you installing SQL Server on a compatible operating system?
- Do you get an error message that asks you to close all ODBC components?
- Does setup fail with an error indicating that you are running an evaluation version?
- Do you get an error message indicating that setup cannot find SQL

Server 2000?

- Do you receive an error message indicating problems with character set and sort order?
- Do you receive an error indicating that setup was unable to create a registry key?
- Do you get an error when setup is trying to configure the server?
- Do you receive an error indicating that the file mfc42u.dll is read-only?
- Is there a line in your sqlstp.log file indicating that "LoadLibrary failed on sqlsui.dll"?
- Are you experiencing a system File Protection (SFP) issue around the install of MDAC?

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other PSS Web-Based Information</u>.

Help with Startup

The online Startup Troubleshooter is designed to help you resolve problems you may encounter when trying to start Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English and can be found on nonlocalized Web sites.

Common starting points for troubleshooting startup include:

- Error message "The service did not start due to a logon failure"
- The SQL Server error log contains operating system errors indicating that a file couldn't be found or opened.
- Error message "SQL Server could not find the default instance(MSSQLSERVER)."
- Error message "Unable to Locate DLL. The dynamic link library filename could not be found in the specified path."
- Error message "The application or DLL <Path> is not a valid Windows NT image."
- Error message "(The system cannot find the path/file specified) occurred while performing this service operation on the MSSQLServer service"
- SQL Server will not start, but there are no errors.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other PSS Web-Based Information</u>.

Help with SQL Mail

The online SQL Server Mail Troubleshooter is designed to help you resolve problems you may encounter when using the SQL Mail feature in Microsoft® SQL ServerTM 2000.

Note For international users of SQL Server Books Online, the text of the problems as well as the references to Knowledge Base articles appear in English so that this information can be found on nonlocalized Web sites.

Common starting points for troubleshooting SQL Mail include:

- SQL Mail won't start with Microsoft Exchange Server.
- SQL Mail causes exception error 35909.
- SQL Mail won't send or receive messages.
- SQL Mail won't start with a Microsoft Mail post office.
- The **sp_processmail** system stored procedure fails, but I don't receive an error message.

To access troubleshooters online, see <u>Viewing Online Troubleshooters and other</u> PSS Web-Based Information.

Viewing Online Troubleshooters and Other PSS Web-Based Information

Online troubleshooters from Product Support Services (PSS) start with common problems users have, contain up-to-date information, and can help you diagnose what is happening with your installation of Microsoft® SQL ServerTM2000. You can connect to the online troubleshooters from a number of access points.

To access SQL Server troubleshooters directly

• Go to the Troubleshooters page at Microsoft Web site

To view SQL Server troubleshooters

- 1. Go to the following Knowledge Base article that links to the current location of the Microsoft online troubleshooters at Q193088 INF: SQL Troubleshooters Available on the Web.
- 2. In this article, click the link to the SQL Server troubleshooters.
- 3. On the Troubleshooters page, select **SQL Server** in the list of products.

Note Depending on how you navigate to this page, the text below the list box changes. If SQL Server is not in the list, click **List All Microsoft Products That Have a Troubleshooter**, and then scroll down the list to find SQL Server.

- 4. Click **Go** to open the list of SQL Server Troubleshooters.
- 5. Select a SQL Server troubleshooter from the list, and then click **Next** to start the online diagnostic process.

Viewing Troubleshooters and White Papers Using MSDN Online

As an alternative route to the SQL Server troubleshooters, and the best way to

locate the white papers about SQL Server 2000, follow these steps:

- 1. Go to the MSDN® Online Support Web page at Microsoft Web site.
- 2. Click **Support Highlights & FAQs**, specify **SQL Server**, and then click **Go**.

Viewing SQL Server Knowledge Base Articles

Links to Knowledge Base articles within a topic take you directly to the article on the Web. You can also locate articles by title or number using the Microsoft Knowledge Base Search page, accessible from any product support Web page.

See Also

Online Troubleshooters

Frequently Asked Questions

Microsoft® SQL Server Product Support Services (PSS) has compiled a list of questions commonly asked by users of Microsoft SQL Server™ 2000. This list is available on the FAQ & Highlights for SQL Server page at Microsoft Web site.

The questions and answers on this Web page have been included in the Troubleshooting topics as follows:

- SQL Server Books Online FAQ
- SQL Server Enterprise Manager FAQ
- Administration Tools FAQ
- Failover Clustering FAQ
- Multiple Instance FAQ
- <u>Programming FAQ</u>
- Replication FAQ
- Server FAQ
- Setup and Installation FAQ
- Upgrading to SQL Server 2000 FAQ

Expanding Text in the FAQs

The topics in Frequently Asked Questions contain a format that allows the answer text to be hidden and then expanded. When you click near the plus sign (+), the text appears. For example:

How does expanding text work?

Answer:

SQL Server Books Online FAQ

Why are some links in SQL Server Books Online different colors?

Answer:

How do I print a topic and include all of the linked subtopics?

Answer:

SQL Server Enterprise Manager FAQ

How can I get my system databases to appear after they have been hidden from view in SQL Server Enterprise Manager?

Answer:

I'm having difficulty viewing the information in the results pane of SQL Query Analyzer. What can I do?

Answer:

If you are still having difficulty viewing the appropriate data in the results pane, adjust the maximum number of characters per column. On the **Tools** menu, click **Options**, and then click the **Results** tab. In the **Maximum characters per column** box, enter the number of characters to display. To view more characters, set this number to **256**.

Why isn't the SQL Server Service Manager icon removed from the taskbar when the Service Manager window is closed?

Answer:

How can I administer SQL Server through SQL Server Enterprise Manager without using the mouse?

Answer:

Administration Tools FAQ

When I attempt to register an OLAP server running on Microsoft® Windows® 2000 from an OLAP server running on Microsoft Windows NT®, I get the following error:

Errors occurred while connecting to server2000. Cannot connect to the registry on the server computer (server2000). Do you still want to register this server?

How do I resolve this error?

Answer:

Can the ON DELETE CASCADE option be set in the user interface?

Answer:

Using SQL Server Enterprise Manager, how can I set a database to **single user** mode and **dbo use only** mode?

Answer:

Restrict access

- When this option is not selected, normal access to the database is allowed.
- When this option is selected, the following settings are available:
 - Members of db_owner, dbcreator, or sysadmin

When selected, this option restricts access to the database only to members of the **db_owner**, **dbcreator**, or **sysadmin** roles.

• Single user

When selected, this option restricts access to the database to only one user at a time.

Both of these options exist for SQL Server 6.5 and 7.0 databases. However, if you are using SQL Server 2000 tools, you can no longer set these options on the database properties tab in SQL Server Enterprise Manager. Instead, these options can be set only on SQL Server 6.5 and 7.0 databases by running the **sp_dboption** stored procedure.

Can I have both SQL Server 7.0 and SQL Server 2000 client management tools installed on the same computer?

Answer:

Is it possible to define a special template that is copied automatically into the query pane for SQL Query Analyzer when you select New?

Answer:

Is it possible to use SQL Server 7.0 tools to connect to SQL Server 2000?

Answer:

Failover Clustering FAQ

Is the use of software fault-tolerant disk sets for cluster storage supported?

Answer:

http://support.microsoft.com/support/kb/articles/Q171/0/52.asp

Software FT Sets Are Not Supported in Microsoft Cluster Server.

Does SQL Server 2000 clustering provide load balancing?

Answer:

Does SQL Server 2000 full-text search support clustering?

Answer:

How do I upgrade SQL Server 6.5 or SQL Server 7.0 to SQL Server 2000 when SQL Server version 6.5 or SQL Server 7.0 is part of a cluster?

Answer

For specific procedures, see the following topics:

- How to upgrade from a SQL Server 6.5 active/passive failover cluster (SQL Server Setup)
- How to upgrade from a SQL Server 6.5 active/active failover cluster (SQL Server Setup)
- How to upgrade from a SQL Server 7.0 active/active failover cluster (SQL Server Setup)
- How to upgrade from a SQL Server 7.0 active/passive failover cluster (SQL Server Setup)
- How to upgrade from a default instance to a default clustered instance

of SQL Server 2000 (SQL Server Setup)

For more information, see <u>Failover Clustering</u>.

What hardware is required to run SQL Server 2000 in a clustering environment?

Answer:

Microsoft Web site

Note Search by using the word "cluster" because individual components cannot be combined to create a supported system.

In addition, refer to the Microsoft Cluster Server Administrator's Guide for a list of supported hardware configurations and hardware configuration information.

Can SQL Server 6.5 or SQL Server 7.0 be installed on one node and SQL Server 2000 be installed on the other node of a cluster?

Answer:

Where do I place the SQL Server 2000 files to provide failover support?

Answer:

How do I shut down SQL Server from the command line without the Cluster Service interpreting the shutdown as a failure?

Answer:

cluster [cluster name] RESOURCE [resource name] /option

In the preceding command syntax, the **/option** switch controls this functionality.

The specific options to be used are /online and /offline. These options are equivalent to the commands net start mssqlserver (to start SQL Server from the command line) and net stop mssqlserver (to shut down SQL Server from the command line) for a nonvirtualized server, respectively. You can perform this procedure on the SQL Server Fulltext, the SQL Server Agent, and the SQL Server resources.

Following are some examples of how to use this command syntax:

• To take the SQL Server 2000 resource offline if the Cluster Name is "SQLCluster" and the resource is named "SQL Server" (where "SQL Server" is the name of the SQL Server 2000 resource:

cluster "SQLCluster" resource "SQL Server" /offline

• To bring the SQL Server 2000 resource back online:

cluster "SQLCluster" resource "SQL Server" /online

Multiple Instance FAQ

How do I install multiple instances of Analysis Services?

Answer:

When I install multiple instances of SQL Server, where are the tools installed for each instance?

Answer:

Does the port number for an instance have to be configured during setup?

Answer:

When running both SQL Server 7.0 and SQL Server 2000 on the same computer, is there any way to get the two instances to share the same user databases?

Answer:

Programming FAQ

Does SQL Server 2000 come with a new version of DB-Library?

Answer:

Can ODBC 6.5 drivers be used to connect to SQL Server 2000?

Answer:

Where can I find the MDAC redist file with SQL Server 2000?

Answer:

Is it possible to attach properties/variables to the SQL-NS statement?

Answer:

Replication FAQ

How do you view the commands for transactions marked for replication in the transaction log of the publishing database in a readable format?

Answer:

Note sp_replshowcmds should be run only to troubleshoot problems with replication.

When is the MSreplication_subscriptions table created on the Subscriber?

Answer:

What .exe or .dll file is called for each agent?

Answer:

Agent name	File name
Log Reader Agent	Logread.exe
Snapshot Agent	Snapshot.exe
Distribution Agent	Distrib.exe
Queue Reader Agent	Qrdrsvc.exe
Merge Agent	Replmerg.exe

Note The Snapshot Agent, the Distribution Agent, and the Merge Agent can also be invoked through the Sqlinitx.dll, Sqldistx.dll and Sqlmergx.dll Microsoft® ActiveX® interfaces respectively.

When do I need multiple distribution databases?

Answer:

Can all servers in a merge setup have the same priority?

Answer:

Synchronizing on Internet publications fails with the error "Couldn't deliver schema information." Why?

Answer:

I used the Disable Publishing And Distribution Wizard, and the physical files for the distribution database persisted on my hard disk. Is this by design? When I reinstall replication, what will happen?

Answer:

If I create a publication with one table as an article, and then change the schema of the published table (for example, by adding a column to the table), will the new schema ever be applied at the Subscribers?

Answer:

For more information, see <u>Schema Changes on Publication Databases</u>.

What is a good way to see the commands in MSrepl_commands?

Answer:

What if the Snapshot Agent has not completed when the Distribution Agent starts?

Answer:

On Windows 2000 Server, transactional replication is unavailable. Why?

Answer:

Using immediate updating subscriptions, the published table is altered. Why?

Answer:

See Also

Help with Replication

Server FAQ

What is the difference between DBCC INDEXDEFRAG and DBCC REINDEX?

Answer:

When I create a table, I get the following 2714 error message:

Total rowsize for table exceeds the maximum number of bytes per row (8060). Rows that exceed the maximum number of bytes will not be added.

However, the table creation succeeds and data can be inserted without problems. What did this error message mean?

Answer:

Server: Msg 511, Level 16, State 1, Line 5

Cannot create a row of size < rowlength > which is greater than the allowable maximum of 8060.

The statement has been terminated.

A user-defined function returns a table that is schemabound to two tables in my database. According to the documentation, the referenced tables cannot be altered until the schemabound option is removed. However, I am able to add or delete columns from these referenced tables. Shouldn't this give me an error?

Answer:

How can I set the database to single user mode and restrict the access to dbo use only?

Answer:

Can I run multiple instances of SQL Server 2000 at the same time on one computer?

Answer:

Are DB-Library applications supported in SQL Server 2000?

Answer:

Do I need to use the multi-protocol network library to enable encryption?

Answer:

Why does my SQL statement work correctly outside of a user-defined function, but incorrectly inside it?

Answer:

How can I qualify a named instance in a linked server query?

Answer:

SELECT * FROM [myServer\sql80].northwind.dbo.customers

Setup and Installation FAQ

What operating systems support SQL Server 2000?

Answer:

What are the minimum hardware requirements for installing SQL Server 2000?

Answer:

Can I install SQL Server 2000 on a server that already has SQL Server 7.0 installed?

Answer:

How can I install only SQL Server Books Online?

Answer:

How do I install only the client and SQL Profiler?

Answer:

When I run SQL Server Setup, why do I get a message asking me to close all ODBC components?

Answer:

When installing SQL Server 2000 on a computer running Windows 98, Windows NT 4.0, or Windows 2000, do I need to install the Windows 95 Winsock2 update?

Answer:

Can I install the MDAC 2.6 that comes with SQL Server 2000 without actually installing SQL Server 2000?

Answer:

Is it possible to have SQL Server start automatically on computers running

Windows 98?

Answer:

Can I perform a remote installation?

Answer:

Do I need Microsoft Internet Explorer 5.0 to install only the client connectivity tools on my clients?

Answer:

What do I need to do if I have an unsuccessful installation?

Answer:

During the configuration portion of setup, SQL Server Setup runs an application named Cnfgsvr.exe to configure the SQL Server. This application starts SQL Server, connects to it, and runs the initial installation scripts. Any error encountered during this process is written to the Sqlstp.log file. In addition, you should review the SQL Server error log, named Errorlog with no file name extension, located by default in the Program Files\Microsoft SQL Server\Mssql\Log directory. This error log will contain errors that SQL Server encounters when setup attempts to start SQL Server.

If you are unable to determine the cause of the Setup failure, save the files mentioned earlier, and call Microsoft Product Support Services (PSS) to contact a SQL Server Support Professional who will help you to resolve your problem. If the Setup application fails, it rolls back all changes to the file system, including removing any copied files, and removes any changes that were made to the registry.

How do I rebuild the registry?

Answer:

After SQL Server Setup is finished, the registry is rebuilt automatically using Regrebld.exe. This utility creates an image of all the SQL Server registry entries with file names of Mssql*.rbk.

Running Regrebld.exe with the -Restore option places the registry key images

into the registry. If the keys exist, they are replaced. If changes are made to the SQL Server installation after the initial setup, the backup copy of the registry keys is not updated automatically. If changes are made after installation, run Regrebld.exe manually to update the registry key information. If Regrebld.exe is run without any parameters, as is the case when performing a registry rebuild from the **Setup** menu, SQL Server program icons will also be rebuilt.

Why won't SQL Server 2000 install on a computer that has a Cyrix chip installed?

Answer:

Can I install SQL Server 2000 on a server running Windows NT 4.0, Terminal Server Edition?

Answer:

Upgrading to SQL Server 2000 FAQ

Can you detach a SQL Server 7.0 database and attach it to a SQL Server 2000 server?

Answer:

Attaching a SQL Server 7.0 database to SQL Server 2000 automatically upgrades the SQL Server 7.0 database to a SQL Server 2000 database and the database is no longer usable by the SQL Server 7.0 installation.

Can you detach a SQL Server 2000 database and attach it to a SQL Server 7.0 server?

Answer:

Can you restore a SQL Server 7.0 database backup to a SQL Server 2000 server?

Answer:

Can you restore a SQL Server 2000 database backup to a SQL Server 7.0 server?

Answer:

Can you restore or attach a SQL Server 6.5 database to SQL Server 2000?

Answer:

Is a SQL Server 7.0 service pack required to upgrade?

Answer:

Which SQL Server 6.5 service pack is required to upgrade to SQL Server 2000?

Answer:

How long will the upgrade process take to upgrade my SQL Server 6.5 databases?

Answer:

Size of Database	Estimated Time Required to
	Upgrade
400 MB	Less than 20 minutes
1 GB	Less than 1 hour
10 GB	Less than 4 hours
50 GB	Less than 12 hours
100 GB	Less than 24 hours

Can users be connected to the SQL Server 7.0 server while the installation upgrade process runs?

Answer:

Can users be connected to the SQL Server 6.5 server while the upgrade process runs?

Answer:

How should I configure my SQL Server 6.5 server before performing the upgrade?

Answer:

Can I consolidate databases from two or more SQL Server 6.5 servers onto one SQL Server 2000 server?

Answer:

Can I upgrade only one or a few of my databases to SQL Server 2000?

Answer:

When you upgrade SQL Server 6.5, you can upgrade one, some, or all of your SQL Server databases to SQL Server 2000. You can even convert individual databases as a test or as practice before you upgrade all of the databases on the server. Microsoft recommends that you convert all production databases on a server at the same time to minimize potential problems. Even if you only want to convert a subset of your existing SQL Server databases, you should still convert

them all at the same time.

If you are not upgrading all of the SQL Server 6.5 databases at the same time, any objects that rely on the contents of other databases, including views, stored procedures, and triggers, fail to be created if the object or the dependent database does not exist.

If the SQL Server 6.5 **model** database has been modified to include additional objects, it should be converted either at the same time as all of the other SQL Server 6.5 databases, or after all of the other SQL Server 6.5 databases. Any objects that were created in SQL Server 6.5 databases because of non-default objects being added into the SQL Server 6.5 **model** database will be scripted during the upgrade process.

When other SQL Server 6.5 databases are upgraded after the model database has been converted, they contain nondefault objects based on the SQL Server 6.5 **model** database. Because the objects are added to the new SQL Server 2000 databases when they are initially created by the SQL Server 2000 **model** database, the creation script fails to create any objects that already exist in the database. Therefore, by converting the **model** database last, any changes in the database structure are applied only to new SQL Server 2000 databases. All of the nondefault objects in the SQL Server 6.5 converted databases will have been created by scripts during the conversion process of those databases.

Can I run SQL Server 2000 at the same time as SQL Server 7.0 or SQL Server 6.5 on the same computer?

Answer:

IMPORTANT Each instance of the SQL Server database engine has its own set of system and user databases that are not shared between instances.

For more information, see Working with Instances and Versions of SQL Server.

Why am I getting the following error during a SQL Server 6.5 conversion?

@@servername not valid

Answer:

When you upgrade a SQL Server 6.5 server, what causes the following error messages?

Cannot open default database

Error querying @@servername

Answer:

When you upgrade a server running SQL Server 6.5, the upgrade wizard seems to stop responding and fails. Why?

Answer:

Where can I look to see a record of any errors that I may have encountered during the upgrade process?

Answer:

Best Practices

This section describes recommendations and best practices for Microsoft® SQL ServerTM 2000.

- DBCC CHECKDB Recommendations
- <u>Distributed Partitioned View Recommendations</u>
- Full-Text Search Recommendations
- Multiple Instance Recommendations
- Parallel Query Recommendations
- User-Defined Function Recommendations

DBCC CHECKDB Recommendations

In Microsoft® SQL ServerTM 2000, you can run DBCC CHECKDB while users are using the database because of a change in the type of locks that DBCC CHECKDB holds on the database tables as it checks each one.

In SQL Server 7.0 and earlier, DBCC CHECKDB (which in turn runs DBCC CHECKTABLE and CHECKALLOC on each table in the database) used to hold shared locks (S) on the tables, thus blocking all data modification language (DML) statements.

In SQL Server 2000, DBCC CHECKDB holds a schema lock on the table to prevent meta data changes while the table is being checked, thus allowing DML statements but not any data definition language (DDL) statements on the tables being checked. This change provides greater flexibility as to when you can run DBCC CHECKDB because DBCC CHECKDB does not deny system usage completely to the users.

DBCC CHECKDB is a CPU- and disk-intensive operation. Each data page that requires checking must first be read from disk into memory. In addition, DBCC CHECKDB uses **tempdb** to do sorting.

If actively performing transactions while DBCC CHECKDB is running, the transaction log continues to grow because the DBCC command blocks log truncation until it has finished reading the log.

It is recommended that DBCC CHECKDB be run during hours when the load is light on the server. If DBCC CHECKDB is run during heavy peak usage time, expect a performance hit on the transaction throughput as well as DBCC CHECKDB completion time.

Recommendations for Good DBCC Performance

- Run CHECKDB when the system usage is low.
- Be sure that you are not performing other disk I/O operations, such as disk backups.

- Place **tempdb** on a separate disk system or a fast disk subsystem.
- Allow enough room for **tempdb** to expand on the drive. Use DBCC with ESTIMATE ONLY to estimate how much space will be needed for **tempdb**.
- Avoid running CPU-intensive queries or batch jobs.
- Reduce active transactions while a DBCC command is running.
- Use the NO_INFOMSGS option to reduce processing and **tempdb** usage significantly.

Consider using DBCC CHECKDB with the PHYSICAL_ONLY option to check the physical structure of the page and record headers. This operation performs a quick check if hardware-induced errors are suspect.

Distributed Partitioned View Recommendations

With the implementation of distributed partitioned views, Microsoft SQL Server 2000 Enterprise Edition allows for high-end users to scale their servers to meet the requirements of large Web sites and enterprise environments. Before choosing to create a federated server implementation, and consequently partition your tables, you need to decide whether distributed partitioned views are best for your overall environment. The implementation of distributed partitioned views can bring about a lot of complexity to the management and operation of the overall environment. Currently, the percentage of companies that may need to implement this scale-out behavior to improve their environment is very small.

Distributed partitioned views add a scale-out capability to the database backend by transparently partitioning the data across a group of servers. This implementation is designed for high-end OLTP and Web sites with individual SQL statements retrieving minimal data as compared to the decision support, Analysis Services (formerly OLAP Services). The following topics include high-level considerations for any environment that may use distributed partitioned views as part of the database implementation.

Scaling to the Limits of a Single Database Server

Have you already scaled to the limits of a single database server? Scaling refers to the process of adding resources to a tier so that it can handle increased workloads. Scaling can be done in one of these ways:

- Scale up. Increases the processing power of a server by using a more powerful computer.
- Scale out. Increases the processing power of a system designed in a modular fashion, such as becoming a cluster of computers, by adding one or more additional computers (also called nodes) to the system.

While a federation of servers implementing distributed partitioned views allow for a scale-out environment model, scaling up on a single server should be considered first. Distributed partitioned views should be considered a solution only for database systems which have already fully scaled up and at this point are looking to scale out their data services tier. Many perceived problems might well be resolved more efficiently through implementing a scale-up philosophy and adding additional resources for the single database server to use. By scaling up instead of scaling out, the change to the environment should be less intrusive, minimizing such things as application code changes and database design issues, while allowing for efficient memory usage on the single server.

Database and Table Design for a Distributed Environment

Does your database and table design lend itself to a distributed environment?

Consider the current database and table design of your environment. To partition a table successfully, the design must lend itself to this type of an implementation. The goal is to design partitions so that most of the queries are run locally, not remotely. Considerations such as which tables to partition are crucial to the overall performance of the system.

For example, an environment may have **Orders**, **Customers**, and **Items** tables, with **Orders** and **Customers** consistently changing and the **Items** table remaining fairly constant. As a practice, if the **Items** table, for example, has very few INSERT, UPDATE, or DELETE statements executed against it, you may want to clone this data across all partitions to keep the clusters of tables and data retrieved together.

The partitioning for an updatable view is done on a unique primary key constraint (horizontal partitioning). Therefore, consider not only how the table might be divided, but also the layout of your data today and in the future. Consider your partitioning column and the type of queries that will be run against this column.

In designing a partitioning scheme, it must be clear what data belongs to each partition. The partitioning column cannot be updated and identities, and default and **timestamp** columns cannot be implemented as the key. You may want to use a hashed value for your key to get a relatively even distribution of each one of your partitions when new keys are inserted or deleted. If, in the future, tables need to be re-partitioned, an overhead will be incurred in modifying the view and underlying table schema, and possibly in changing the data-routing rules of the business tier.

Consider why you may need to implement a federated database design. If you have an extremely high-hit database, it may not be that database or table that you want to distribute. Rather, if you could minimize the load associated with other table queries on that server by distributing them, this could be an efficient implementation as well. It is recommended that most of the SQL statements be routed directly to the member server with a large percent of the necessary data, therefore minimizing the distributed nature of the design. For more information, see <u>Designing Partitions</u>.

Overall Query Performance

Have you considered overall query performance? Performance should be a large consideration in any database design and implementation. When distributing data across multiple servers, there is a performance hit for querying a remote server. Analysis should be done on the type of queries implemented in the OLTP environment to get a baseline on what data is being touched by specific queries. Because there is a certain degree of overhead in running distributed queries, this overhead may in some cases outweigh the benefits of distributing your tables. It is important to analyze queries and their generated plans to gather information as to how you want to distribute your data, whether you need to distribute your data, and to modify long-running queries. Removing redundant trips to a remote server and being able to cache compiled plans and execution plans can increase overall performance; however, the more remote trips (some are inherent in a distributed environment), the more performance will decrease.

Application and Business-Tier Design

What about your application and business-tier design? Consider that you can gain considerable performance in your federated database tier throughout the environment by connecting to the correct server (the server with the data you need or a server that can most efficiently process the query) the majority of the time. Within a business-tier logic that can route queries to the appropriate servers, the system-wide efficiency can be increased significantly. This routing logic can be implemented in the business tier or even within a table at the data tier, with the advent of data-routing rules. Data-routing rules are a set of rules that can be used to send a query to the server that contains the appropriate data. Implementing data-routing rules can require the initial overhead of making changes to your application or other tiers within your environment. For more

information, see <u>Designing Applications to Use Federated Database Servers</u>.

Backup And Recovery Planning for Multiple Servers

How will you maintain your backup and recovery plan across multiple servers? Overall, manageability of your environment can become more challenging when more servers are added to the enterprise. The backup and restore features that are included with SQL Server 2000 become more complex when working with a distributed environment. Consider the need to backup and restore databases across partitions at the same logical point in time. SQL Server 2000 has made these restores easier with the implementation of marked transactions. For more information, see Backing Up and Restoring Federated Database Servers and Recovering to a Named Transaction.

See Also

Federated SQL Server 2000 Servers

Designing Partitions

Creating a Partitioned View

Designing Applications to Use Federated Database Servers

Partitioning Data

Backing Up and Restoring Federated Database Servers

Recovering to a Named Transaction

Full-Text Search Recommendations

Full-text search allows word- or phrase-based indexing of character data in Microsoft® SQL ServerTM 2000 tables. Full-text search consists of these basic components:

- Full-text indexing enables the creation and population of the full-text catalogs, which are maintained outside of SQL Server and managed by the Microsoft Search service.
- Full-text search uses the new Transact-SQL predicates (CONTAINS, CONTAINSTABLE, FREETEXT, and FREETEXTTABLE) to query these populated full-text catalogs.

Full-Text Indexing

If you are full-text indexing tables that have less than a million rows, very little performance tuning is required. If you full-text index large SQL Server tables that contain millions of rows that create large full-text catalogs, this will sustain heavy read and write activity, so you must configure SQL Server and the full-text catalogs to maximize disk I/O performance by load balancing across multiple hard disk drives. You will also need to consider hardware configurations, Microsoft Windows® 2000 or Windows NT® 4.0 system configurations, and SQL Server 2000 configurations, as well the actual location of the full-text catalogs and database files.

Hardware Considerations

- Multiple CPUs: One to four 500 MHz Xeon III processors.
- Memory: 1 to 4 GB of physical RAM.
- Multiple disk controllers with several channels or a single disk controller with multiple channels.

• Disk I/O sub-systems: RAID0 (disk striping with no fault-tolerance protection), RAID0+1 and RAID5.

Windows 2000 or Windows NT 4.0 System Configuration Considerations

- If you are installing SQL Server on Windows NT Server 4.0, the pagefile.sys file needs to be sized at 1.5 to 2 times the amount of available physical RAM. This consideration can be avoided by installing SQL Server on Windows 2000 Server with larger amounts of RAM.
- Pagefile.sys files need to be placed on their own drives (RAID0 or RAID0+1), preferably on a separate controller or least a separate channel off a shared controller.

SQL Server Configuration Considerations

After a full population of a large table (greater than 1 million rows), consider using the new feature Change Tracking along with Update Index in Background and Update Index versus Incremental Population. For more information about when to use Change Tracking versus Timestamp-based incremental populations, see Maintaining Full-Text Indexes.

Full-Text Indexing and Catalog Considerations

- Full-text indexing or populating the full-text catalogs should be done during periods of low system activity, typically during database maintenance windows.
- Place the full-text catalog files on either its own disk controller or off a separate channel on a single disk controller with multiple channels.
- Place the database files on a separate disk controller from the full-text catalog files or off a separate channel on a single disk controller with multiple channels.

• The full-text indexing of SQL tables with 4 million to 20 millions rows can take many hours or days to complete. Consider options offered in Knowledge Base Article Q240867, "INF: How to Move, Copy and Backup SQL 7.0 Full-Text Catalog Folders and Files."

Full-Text Search

- If you are full-text searching tables that have less than a million rows, there is little performance tuning required. (A million rows is just a general break point.) If you are going to be full-text searching tables that have more than a million rows, consider the appropriate full-text search predicate, CONTAINS versus CONTAINSTABLE or FREETEXT versus FREETEXTTABLE, as well as the average number of rows and query timeout considerations.
- Use CONTAINSTABLE or FREETEXTTABLE with the new top_n_by_rank parameter to restrict the number of rows returned. *Top_n_by_rank* specifies that only the *n*-highest ranked matches, in descending order, be returned. Applies only when an integer value, *n*, is specified. In addition, you should consider using the TOP clause to limit the number of rows returned in the result set with CONTAINTSTABLE or FREETEXTTABLE. Review the Knowledge Base Article Q240833, "FIX: Full-Text Search Performance Improved via Support for TOP" for more details.

If you are attempting to limit the results from a full-text query with additional WHERE clauses, the WHERE clauses are applied *after* the JOIN with the SQL table results, not before. Otherwise, the result set would be incorrect because qualifying rows would be omitted from the result set without any notification to the client. To limit the results from a full-text search query, use the *Top_N_Rank* parameter from the CONTAINSTABLE or FREETEXTTABLE predicates.

 If you are using SQL Server full-text search by means of a Web or Microsoft Internet Information Services (IIS) interface and searching against large tables (greater than 1 million rows), consider increasing the IIS query timeout default of 20 seconds to 30 seconds if you are using the CONTAINS or FREETEXT predicates. If you are using multiple CONTAINS or FREETEXT predicates in your SQL query and are experiencing poor full-text search query performance, reduce the number of CONTAINS or FREETEXT predicates or using "*" to use all full-text indexed columns in your query.

You also may encounter Error 7619, "The query contained only ignored words" when using any of the full-text predicates in a full-text query, such as CONTAINS(pr_info, 'between AND king'). The word "between" is an ignored or noise word and the full-text query parser considers this an error, even with an OR clause. Consider rewriting this query to a phrase-based query, removing the noise word, or options offered in Knowledge Base article Q246800, "INF: Correctly Parsing Quotation Marks in FTS Queries". Also, consider using Windows 2000 Server: there have been some enhancements to the word-breaker files for Indexing Services.

• What is RANK and how is it determined when used with CONTAINSTABLE and FREETEXTTABLE predicates? Full-text RANK values are based on the frequency of rows that contain the unique word. A factor that plays a part in determining the RANK value of the returned row is the frequency of the unique word in the full-text indexed column for that row. Another factor is the total number of unique word occurrences in the table (this serves to normalize the probabilities). The RANK values returned in the result set are relative to each other. Therefore, it is not possible to interpret the RANK value as a percentage or group the RANK values into high/medium/low ranges. Think of RANK as a method to order the results for a specific query and result set.

There are also full-text indexing and searching considerations when determining whether to include multiple SQL tables in one full-text catalog versus one SQL table per full-text catalog. There is a trade-off between performance and maintenance when considering this design question with large SQL tables and you may want to test both options for your environment. If you choose to have multiple SQL tables in one full-text catalog, you incur the overhead of longer-running full-text search queries as well because incremental populations will

force the full-text indexing of all other SQL tables in that full-text catalog. If you choose to have a single SQL table per full-text catalog and have multiple SQL tables full-text indexed, you have the overhead of maintaining separate full-text catalogs with a total limit of 256 full-text catalogs per server.

Multiple Instance Recommendations

Before installing multiple instances of Microsoft® SQL ServerTM 2000 on the computer, you should be aware of the resources each instance will be using. Each instance acts like an individual server and yields resources only to the operating system and not to other instances. For example, if instance1 needs more memory to run a query, it will not ask instance2 to yield but will request a memory grant from the operating system.

If you have multiple instances installed on a single-CPU computer, with both instances actively processing queries, expect a slowdown in the queries because both instances will compete for CPU resources. In that environment, a query that is resource intensive, such as one containing JOIN with GROUP BY or ORDER BY clauses, may take twice as much time to run as the same query on a single instance installed on a single-CPU computer. This information is based on comparing the query execution on a single-CPU computer with one instance to two instances on the same computer, with both instances running the same CPU intensive operation simultaneously.

Installing multiple instances on a computer with low RAM leads to slower query execution. For example, installing three instances on a server with 64MB of RAM will slow your queries significantly. You can expect that about 15 percent more time will be required to run the same query.

Running Multiple Instances

Consider switching to a "Fixed memory size" configuration for server memory. This configuration will prevent one instance from taking all available memory. For example, you might want to assign 80 percent of the RAM to the production server, and 10 percent to the development instance.

Consider assigning CPUs to a specific instance using the **affinity mask** option on an SMP computer. For more information, see <u>Allocating Threads to a CPU</u>.

Some Sample Test Results (Averages)

The following figures are from ad-hoc testing. Your results might be different.

Computer/instance	Query type	Execution time (ms)
Single CPU single instance	Select into	420
Single CPU single instance	Select with Group by and Order by	16683
Single CPU single instance	Union query	13590
Single CPU single instance	Join with Group by	4406
Single CPU two instances	Select into	1153
Single CPU two instances	Select with Group by and Order by	24246
Single CPU two instances	Union query	16623
Single CPU two instances	Join with Group by	5076
Two CPU single instance	Select into	314
Two CPU single instance	Select with Group by and Order by	9342
Two CPU single instance	Union query	9972
Two CPU single instance	Join with Group by	1289
Two CPU two instances	Select into	852
Two CPU two instances	Select with Group by and Order by	18120
Two CPU two instances	Union query	12091
Two CPU two instance	Join with Group by	3121

Parallel Query Recommendations

Microsoft® SQL ServerTM can execute queries in parallel automatically. This optimizes the query execution in multi-processor computers. Rather than using one OS thread to execute one query, work is broken down into multiple threads (subject to the availability of threads and memory), and complex queries are completed faster and more efficiently.

The optimizer generates the plan for the query and decides when a query will be executed in parallel. It considers the following when making the decision:

- Does the computer have multiple processors?
- Is there enough memory available to execute the query in parallel?
- What is the CPU load on the server?
- What type of query is being run?

When allowing SQL Server to run parallel operations like DBCC and index creation in parallel, the server resources become stressed, and you might see warning messages when heavy parallel operations are occurring. If warning messages about insufficient resources appear frequently in the server error log, consider using Performance Monitor to investigate what resources are available, such as memory, CPU usage, and I/O usage.

Do not run heavy queries that are executed in parallel when there are active users on the server.

Try executing maintenance jobs such as DBCC and INDEX creation during offload times. These jobs can be executed in parallel.

Monitor the disk I/O performance. Observe the disk queue length in Performance Monitor to make decisions about upgrading your hard disks or redistributing your databases onto different disks.

Upgrade or add more processors if the CPU usage is very high.

Configuration Settings that Influence Parallel Queries

The following server configurations can affect parallel execution of the queries:

- Cost threshold for parallelism
- Maximum degree of parallelism
- Maximum worker threads
- Query governor cost limit

See Also

<u>Degree of Parallelism</u>

Advanced Query Concepts

cost threshold for parallelism Option

Parallel Query Processing

Query Tuning Recommendations

Query Tuning

Query Tuning (How To)

Parallel Query Example

Execution Plan Caching and Reuse

User-Defined Function Recommendations

This section contains recommendations and tips for working with user-defined functions, including information about scalar and table-valued functions, the effects that changes to the schema can have on functions, and the use of nested functions to simplify complex functions.

Where Scalar Functions Are Useful

Scalar functions are useful in places where you need to do the same mathematical calculations at multiple places in code. For example, if calculating interest based on percent rate, principal, and years is done throughout your application, it can be coded as a callable function, as follows.

```
create function calc_interest ( @principal int , @rate numeric(10,5) , @returns int
as
begin
declare @interest int
set @interest = @principal * @rate * @years / 100
RETURN(@interest)
end
```

Using System Functions as Building Blocks

System functions can be used as building blocks for a user-defined function. For example, if you need to calculate the quadrupled value of a number, use the SQUARE system function to arrive at the value instead of writing the entire function from scratch.

Nesting Functions to Divide and Simplify a Complex Function

Nesting of functions is allowed; therefore, it might be better to break down a complex function into simpler functions and use the simpler functions together to produce the result. The advantage of breaking complex functions into smaller functions is that this code can be reused in more places in the application.

For example, suppose you need to calculate the area of a plot of land and the input can be in either meters or feet, but the area must always be displayed in square feet. Instead of writing one function that does all the work, you can break up the task into two functions:

- cnvt_meters_feet does the conversion from meters to feet
- calc_Area_ft calculates the area in feet

This way, you can use the Cnvt_meters_feet function at other places in the code.

```
USE pubs
GO
CREATE FUNCTION cnvt meters feet (@value numeric(10,3))
RETURNS numeric(10,3)
AS
BEGIN
  DECLARE @ret feet numeric(10,3)
  SET @ret_feet = @value * 3.281 --- 1 Meter=3.281 Feet
  RETURN(@ret_feet)
END
GO
CREATE FUNCTION calc area ft (@length numeric(10,3), @width
RETURNS numeric(10,3)
AS
BEGIN
  DECLARE @area numeric(10,3)
  ---Check for unit, if meters(MT), convert it to feet(FT)
  IF @Unit = 'MT'
  BEGIN
    SET @length = pubs.dbo.cnvt meters feet(@length)
    SET @width = pubs.dbo.cnvt_meters_feet (@width )
  END
```

```
---Calculate Area
SET @area = @length * @width
RETURN ( @area )

END
GO
SELECT pubs.dbo.calc_area_ft ( 100.0, 50.0, 'MT') AS 'Area in Feet'
SELECT pubs.dbo.calc_area_ft ( 100.0, 50.0, 'FT') AS 'Area in Feet'
go
```

Avoiding the Default of Returning All Rows

When using the input parameter of the function as a condition in a WHERE clause, the number of rows returned should be considered for all possible values.

For example, if you are using the condition "WHERE name like '@value%' " as the only condition and you are relying on the user to specify the starting value, but the user does not specify any value, the WHERE condition transforms to "WHERE name like '%' ", which will return ALL the rows in the table. This will be detrimental on a multi-million-row table. To avoid this excessive result set, you can implement a default checking mechanism so that when no input is specified, only a portion of the rows is returned.

Consider Effects of Changes to the Schema

If "SELECT * FROM " is being used in a function, effects of changes to the schema after creation of the function should be considered. If the function is not created with the SCHEMA_BINDING option, changes to the schema are not reflected in the result.

For example, if a new column is added to the table after the function was created and the function is not SCHEMA bound, the new column will not show up in the result set. If a column is removed after creation of the function and the function is NOT SCHEMA bound, a NULL value will show up in the result set for the deleted column.

Using Subsets to Consolidate Stored Procedures and User-Defined Functions

Table-valued functions can be defined to return a wide result set. Different users can then use the subsets of the result to retrieve the data accordingly. This can be used to consolidate multiple stored procedures or user-defined functions.

For example, you can create the functions as follows:

- FunctionA returns Col1, Col2, Col3, ... Col10 from TableA
- FunctionB returns *Col1*, *Col3* from FunctionA.
- FunctionC returns *Col2*, *Col4* from FunctionA.

Now different users can retrieve smaller subsets by using FunctionB or FunctionC. They can also select the subset of the columns returned by FunctionA by using a simple SELECT statement. Example: Select Col10 from FunctionA.

Eliminating Temporary Table Usage

Multi-statement table-valued functions can be used to eliminate temporary table usage for intermediate result processing.

When to Convert Stored Procedures into Table-Valued Functions

Evaluate the reasons for conversion; do not convert stored procedures into tablevalued functions just for uniformity. Even though some improvements are expected, test the conversion thoroughly to confirm the expectations and check for any unwanted side effects.

Reporting Errors to Your Primary Support Provider

If you are unable to resolve a problem, contact your primary support provider for assistance. Anytime you receive a server internal error (for example, assertion or access violation (AV)), contact your primary support provider. If you experience an operating system or I/O error, it is most likely a hardware problem. Correct the hardware problem and restore your database. When reporting an error to your primary support provider, be sure to provide the Blackbox.trc and Sqldiag.txt files.

For more information about resolving a 9002 or 1105 space-related error, see <u>Troubleshooting Recovery</u>, <u>Error 9002</u>, and <u>Error 1105</u>.

Use **sp_trace_create** with the TRACE_PRODUCE_BLACKBOX option to define a trace that appends trace information to a blackbox.trc file in the \Data directory. Once the trace is started, trace information is recorded in the blackbox.trc file until the size of the file reaches 5 megabytes (MB). The trace then creates another trace file, blackbox_01.trc, and trace information is written to the new file. When the size of blackbox_01.trc reaches 5 MB, the trace reverts to blackbox.trc. Thus, up to 5 MB of trace information is always available.

Use the **sqldiag** utility to collect information about server version and configuration, .dll file version, error logs, extended stored procedures, operating system, computer version, configuration data, and additional data, all of which is put into Sqldiag.txt (by default located in \Mssql\Log). Also when sqldiag is executed, the two trace files blackbox.trc and blackbox_01.trc (if it exists) containing trace information including any server exceptions, are copied to the same output directory as sqldiag.txt (by default \mssql\log).

For example, the environment in which the error occurred includes this information:

- Microsoft® SQL Server™ version number (as reported to the error log or returned by SELECT @@VERSION). The first message written to the error log provides the SQL Server version number.
- DB-Library API version number (as reported by the SQL Server Client Network Utility), ODBC driver version (as reported by ODBC Driver

Setup), or OLE DB provider information.

- Application version number (for example, SQL Server Enterprise Manager or **osql.exe**).
- Operating-system version number.
- Hardware platform.
- Production or development environment.

This additional information is also helpful in troubleshooting a problem:

- The message number, message state, and complete error message text.
- Any variables (numbers, database object types, or database object names) included in the error message.
- The context in which the message was generated (what statement was running at the time).
- The number of users who were logged in to SQL Server when the error occurred.
- The frequency with which the error occurs.
- If you are using SQL Query Analyzer and you do not see more than 255 characters in the results pane, click **Tools**, and then click **Options**. Click the **Results** tab, and then increase the value for **Maximum Characters Per Column**.

In addition, review the error logs and, if running Microsoft Windows® 2000 or Microsoft Windows NT® 4.0, review the Windows application log and the

Sqlstp.log file, located in the \WINNT directory. You may also want to use SQL Profiler to monitor events.

To help resolve your problem quickly, you may be asked to send your Sqldiag.txt and error log in e-mail to your primary support provider.

When providing this information, provide the entire error log, including all messages displayed from startup to the very end of the log. Be sure to send all information beginning with the time of startup and ending with the error message in question.

Although most startup messages are identical each time you start SQL Server, additional messages sometimes appear during startup, which can provide clues for solving problems that occur during or after startup. If additional messages appear during startup, write down these error messages to assist your support provider in diagnosing and resolving the problem.

See Also

Monitoring with SQL Profiler

Reproducing Problems

In general, the time it takes for your primary support provider to resolve a problem is reduced if you generate a reproducible test case demonstrating the error. These test cases can range from a single query that is not acting as expected to a relatively complex code fragment that encounters a serious problem. A quick resolution is more likely when the test case is simple.

IMPORTANT Providing a test case improves the chances of a quick resolution to the problem. If a problem cannot be reproduced, it is usually impossible to solve.

Whenever possible, create the test case using the **pubs** or **Northwind** sample databases. In many cases, creating a test case can save you from having to send large amounts of data to your primary support provider.

To reproduce and diagnose problems, SQL Profiler may be used. SQL Profiler captures information about events and, if necessary, replays these events. Capturing and replaying events can be instrumental in reproducing and diagnosing problems.

See Also

Monitoring with SQL Profiler

Northwind Sample Database

pubs Sample Database

Isolating Connection Problems

Note For immediate help in diagnosing your connection problems, see the new online setup troubleshooter on the Product Support Web site. For more information, see <u>Help with Connectivity</u>.

When an application or tool has problems connecting to Microsoft® SQL ServerTM 2000, there might be a problem with SQL Server, with the network, or with both. Regardless of the network you are running on, there are several items that you can check to isolate the problem. Check that:

- For servers running Microsoft Windows NT® 4.0, the local connection to SQL Server over Named Pipes is available. You can test a local Named Pipes connection by using **osql** with no *servername* argument. If you cannot make a local connection using Named Pipes, either you are using an invalid login or there is a problem with SQL Server.
 - For servers running Microsoft Windows® 95 or Microsoft Windows 98, the local connection to SQL Server uses the Shared Memory Net-Library.
- The network components match the requirements specified in Network Protocols.
- The default client Net-Library is appropriate for your network. You can determine and, if necessary, change the default client Net-Library by using SQL Server Client Network Utility in the Microsoft SQL Server program group.
- The network connection information on the server is appropriate for your network (if you are running SQL Server and listening on other interprocess communication (IPC) mechanisms in addition to Named Pipes). You can determine and, if necessary, change the network SQL Server is listening on using SQL Server Server Network Utility in the Microsoft SQL Server program group.

- The network connection between the client workstation and the server is established. If you test the network connection and determine that it is not open, check that:
 - The hardware connection is not disabled due to loose connectors or plugs.
 - The network software is installed and running on both the client workstation and the server.

See Also

Client Network Utility

Net-Libraries and Network Protocols

Server Network Utility

Orphaned Sessions

A client may have its connection abruptly severed from the server such that the client process is unable to tell the network to close the connection properly. This may occur for many reasons, including power failures on the client. Microsoft® SQL Server™ 2000 does not proactively probe the status of a client connection. Instead, it relies on Microsoft Windows NT® to notify it when a connection needs to be terminated or closed. Windows NT monitors connections and continues to report them as active to SQL Server for the duration of the KeepAliveTime for TCP/IP or SessionKeepAlive for NetBios, which affects Named Pipes clients. SQL Server continues to keep locks owned by the client active until they are killed, or until the connection is terminated or closed by Windows NT.

What is an orphaned session?

An orphaned session is a session that remains open on the server side after the client has disconnected.

Do not confuse orphaned sessions with orphaned users. Orphaned users are created when a database is backed up and restored to another system that does not have a corresponding user account configured. For more information about orphaned users, see <u>Troubleshooting Orphaned Users</u>.

When do orphaned sessions occur?

Orphaned sessions occur when the client is unable to free network connections it is holding when it terminates.

If the client terminates cleanly, Windows NT closes the connection and notifies SQL Server. If SQL Server is processing a client command, it will detect the closed connection when it ends the session. Client applications that crash or have their processes terminated (for example, from Task Manager) are cleaned up immediately by Windows NT, rarely resulting in an orphaned session.

One common cause of orphaned sessions arises when a client computer loses power unexpectedly, or is powered off without performing a proper shutdown. Orphaned sessions can also occur due to a hung application that never

completely terminates, resulting in a dead connection. Windows NT does not know that the connection is dead and continues to report the action as active to SQL Server. SQL Server, in turn, keeps the session open and continues to wait for a command from the client.

What problems can orphaned sessions cause?

Open sessions take up one of the SQL Server network connections. The maximum number of connections is limited by the number of server Client Access Licenses (CALs), therefore, orphaned sessions may prevent other clients from connecting.

Typically, a more important issue is that open sessions use server resources, and may have open cursors, temporary tables, or locks. These locks may block other connections from performing useful work, and can sometimes be the result of a major "pile up" of locks. In severe cases, it can appear that SQL Server has stopped working.

How can I tell if an orphaned session exists and what problems it might be causing?

The **sysprocesses** table (or stored procedures, such as **sp_who**) reports information on existing server sessions. Possible orphaned sessions can be identified if the status of a process is awaiting command and the interval of time found by subtracting **last_batch** from GETDATE() is longer than usual for the process. If the session host name is known to be down, it is orphaned.

How do I resolve orphaned sessions?

Windows NT periodically checks inactive sessions to ensure they are active. If a session does not respond, it is closed and SQL Server is notified. The frequency of the checking depends on the network protocol and registry settings. However, by default, Windows NT only performs a check every one or two hours, depending on the protocol used. These configuration settings can be changed in the registry.

To close an orphaned SQL Server session, use the KILL statement. All resources held by the session are then released.

If orphaned sessions become a problem, registry settings can be changed on Windows NT to increase the frequency with which clients are checked to verify they are active. Changing these settings affects other application connections. The following points should be considered before making any changes.

WARNING Do not change these settings on computers running Microsoft Windows® 95 or Microsoft Windows 98.

Consider the effect changing these settings may have on other applications on your system, in particular, applications with Internet connectivity, such as Microsoft Internet Information Services (IIS) or Microsoft Internet Explorer. In addition, consider the affects of using connections that are charged on a perpacket basis.

CAUTION Editing the registry is not recommended; inappropriate or incorrect changes can cause serious configuration problems for your system. Only experienced users should use the Registry Editor. For more information, see your Windows NT documentation.

The registry entries can be altered from HKEY_LOCAL_MACHINE by double-clicking SYSTEM, expanding CurrentControlSet, and then clicking Services.

KeepAliveTime for TCP/IP

Key:	Tcpip\Parameters
Value Type:	REG_DWORD - Time in milliseconds
Valid	1 - 0xFFFFFFF
Range:	
Default:	7,200,000 (two hours)
Description:	The parameter controls how often TCP attempts to verify that
	an idle connection is still intact by sending a keep alive
	packet. If the remote system is still reachable and functioning,
	it will acknowledge the keep alive transmission. Keep alive
	packets are not sent by default; this feature may be enabled
	on a connection by an application.

SessionKeepAlive for Named Pipes

Key:	Netbt\Parameters	
Value Type:	REG_DWORD - Time in milliseconds	
Valid	60,000 - 0xFFFFFFF	
Range:		
Default:	3,600,000 (1 hour)	
Description:	This value determines the time interval between keep alive transmissions on a session. Setting the value to 0xFFFFFFF disables keep alives.	

Do not increase the ping frequency to less than 1 minute, as network I/O and CPU usage for pings may become excessive.

Named Pipes Client Connections

The following procedure describes how to test a network connection when using Named Pipes as the IPC mechanism.

To test a Named Pipes connection

 At the operating-system command prompt on the client workstation, type:

net view \\servername

When using **net view**, *servername* is the name of the server to which you want to connect.

For example, to check the connection between a Named Pipes client and a server named \\SEATTLE1, type the following on the client:

net view \\SEATTLE1

If the connection is open, the output looks something like this:

Shared resources at \\SEATTLE1

SQL Server

Sharename Type Used as Comment

PUBLIC Disk

Public Files

The command completed successfully.

To verify connection to a server's named pipe

• From a command prompt, type:

net use \\servername\IPC\$

When using **net use**, *servername* is the server to which you want to connect.

For example:

net use \\SEATTLE1\IPC\$

The command completed successfully

If the connection between the client workstation and the server is open but you still cannot connect to Microsoft® SQL ServerTM 2000, test the network and local named pipes using the **makepipe** and **readpipe** utilities. These utilities are included with SQL Server to help test the integrity of network named pipes.

The **makepipe** and **readpipe** utilities are installed during installation of both the client and server components. There are different versions of these utilities for the different operating systems on which they run: **makepipe** runs on Microsoft Windows NT®; **readpipe** runs on Windows NT, Microsoft Windows®, and MS-DOS®. Be sure to use the correct version for the operating system that you are testing. (The version that runs on Windows is named **readpipe**. If the SQL Server tools are installed, **readpipe** is located in the \Msqql\Binn directory; no icon is created for it.)

To test the integrity of the network named pipe services

1. At the operating system command prompt on the server, type:

makepipe

The **makepipe** utility returns the following information:

Making PIPE:\pipe\abc read to write delay (seconds):0 Waiting for Client to Connect...

SQL Server is waiting for a client to connect.

2. At the operating system command prompt on the client workstation, type:

readpipe /Sserver_name /Dstring

When using **readpipe**, *server_name* is the network server name of the SQL Server on which **makepipe** was started and *string* is a test character string. If the string contains spaces, it must be enclosed in double quotation marks. There are no spaces between /**S** and the server name, and no spaces between /**D** and the string.

For example, to connect to a SQL Server installation named **myserver**, type one of the following:

readpipe /Smyserver /Dhello

readpipe /Smyserver /D"hello there"

readpipe /Smyserver /D'hello there'

The strings specified in the first two **readpipe** statements are treated identically.

If a network named pipe connection can be established, the client workstation returns the following information to each of the previous commands, respectively:

SvrName:\\myserver

PIPE :\\myserver\pipe\abc

DATA: hello

Data Sent: 1 : hello Data Read: 1 : hello

SvrName:\\myserver

PIPE :\myserver\pipe\abc

DATA :hello there

Data Sent: 1 :hello there Data Read: 1 :hello there

SvrName:\\myserver

PIPE :\\myserver\pipe\abc

DATA: hello

Data Sent: 1 : 'hello Data Read: 1 : 'hello

If a network named pipe connection can be established, the **makepipe** utility returns information similar to this:

Waiting for Client to Connect...

Waiting for client to send... 1 Data Read: hello Waiting for client to send... 2 Pipe closed Waiting for Client to Connect... Waiting for client to send... 1 Data Read: hello there Waiting for client to send... 2 Pipe closed Waiting for Client to Connect... Waiting for client to send... 1 Data Read: 'hello Waiting for client to send... 2 Pipe closed Waiting for Client to Connect... At this point, SQL Server is waiting for a client to connect. The

3. When testing is complete, go to the server on which the **makepipe**

readpipe utility can be run from other workstations.

utility is running and press either CTRL+BREAK or CTRL+C.

If the results are different from those in Step 2, network named pipe services are not available. If you are using Named Pipes as the IPC mechanism, clients cannot connect to SQL Server until a named pipe is available. These utilities attempt to open and use a named pipe; they do not stress the named pipe connection.

See Also

Configuring Client Network Connections

makepipe Utility

readpipe Utility

TCP/IP Sockets Client Connections

The following procedure describes how to test a network connection when using TCP/IP Sockets as the IPC mechanism.

To test a TCP/IP Sockets connection

 At the operating system command prompt on the client workstation, type:

ping {ip_address | server_name}

When using **ping**, *ip_address* is the TCP/IP address of the server to which you want to connect, and *server_name* is the name of the server to which you want to connect.

For example, to check the connection between a TCP/IP Sockets client workstation and a server at the TCP/IP address 11.1.4.70, type the following on the client workstation:

ping 11.1.4.70

If the connection is open, the output looks something like this:

[1] echo received from 11.1.4.70 with roundtrip < 50 sec

This example checks the connection between a TCP/IP Sockets client and a server named **SEATTLE1**:

ping SEATTLE1

If the connection is open, the output looks something like this:

[1] echo received from SEATTLE1 with roundtrip < 50 sec

See Also

Configuring Client Network Connections

Troubleshooting SQL Server Setup

For immediate help in diagnosing your setup problems, see the new online setup troubleshooter on the Product Support Web site. For more information, see <u>Help with Setup</u>.

SQL Server Setup is designed to be as problem-free as possible; however, there may be situations that will interfere with the installation of Microsoft SQL Server 2000. The most common errors are simple to diagnose and resolve. The resolution may involve freeing up disk space, shutting down other applications, or restarting the computer to unlock shared files.

To avoid problems, be sure to review <u>Preparing to Install SQL Server 2000</u>. If you intend to install a SQL Server 2000 failover cluster, review <u>Before Installing Failover Clustering</u> before you run Setup.

If the installation fails, the Setup program might remove all installed components.

Before running the Setup program or installing additional SQL Server components, be sure to:

- Shut down all services.
 - Use Services in Control Panel to shut down the MSSQLServer and SQLServerAgent services. Shut down the MSSearch service if you installed Full-text Search. Shut down the MSDTC service if you installed MS DTC.
- Be sure the SQL Server Service Manager icon in the taskbar is closed.
 Any attempt to run SQL Server Setup with the SQL Server Service
 Manager icon present (or any services still running) may cause Setup to fail.
- Remove the read-only attribute for all ODBC* files. On computers running Microsoft Windows NT® these files are located in the \System32 directory. On computers running Microsoft Windows® 95 or Microsoft Windows 98, these files are located in the system directory.

If you cannot remove the read-only attribute on the ODBC* files, SQL Server provides a dialog box that allows you to retry the updating of the ODBC* files.

• Understand that servers running Windows NT require Named Pipes. Cleaning named pipes during SQL Server installation does not prevent installation of named pipes. Because servers running Windows NT require named pipes, there is no way to uninstall Named Pipes on a server running Windows NT.

See Also

Help with Setup

Setup and Installation FAQ

Setup Troubleshooting: Checklist

Setup Troubleshooting: Checklist

- 1. Read the error message. SQL Server Setup translates most error codes received from the operating system.
- 2. With the error dialog box showing, open Sqlstp.log in the \Windows or \WINNT directory. Check the last few events in the log to see if any problems occurred before the error message was generated.
- 3. If this is a custom installation and the component that failed to install properly is the Full-text Search (MSSearch) service, check the Mssearch.log in the \Temp directory to see if any problems occurred.
- 4. Continue past the error message dialog box. Some error messages are just warnings. The Setup program may still finish successfully.
- 5. If the Setup program fails, and you cannot diagnose and fix the problem yourself, make a copy of Sqlstp.log and Setup.log from the \Windows or \WinNT directory and, if you installed Full-text Search, make a copy of the Mssearch.log from the \Temp directory.

Note SQL Server Setup may encounter problems installing MS DTC on computers with multiple network cards or SPX installed. If SQL Server Setup stops responding, check the Sqlstp.log in the \Windows or \WinNT directory to see if MS DTC is being installed. If this is the problem, uninstall one of the network cards or SPX, and then retry SQL Server Setup.

If you try to install Microsoft® Transaction Server (MTS) from the Microsoft Windows NT® 4.0 Option Pack after installing Microsoft SQL Server™ 2000, you might encounter an error message indicating that MTS could not be installed; however, MTS was installed. You can ignore this error message.

See Also

Help with Setup
Setup and Installation FAQ

Testing an Installation of SQL Server 2000

Before a server installation is complete, SQL Server Setup starts and connects to the server. When the installation is complete, you can test the installation yourself and connect to it locally by running the **osql** utility from the server.

To test an installation of SQL Server 2000 (Command Prompt)

- 1. Start Microsoft® SQL ServerTM by entering from a command prompt: net start mssqlserver
- 2. Connect to SQL Server by entering: osql /Usa /P<administrator password>

If **osql** connects, this **osql** prompt appears:

1>

If **osql** cannot connect, an ODBC error is returned.

3. Enter a simple query, for example SELECT @@SERVERNAME GO

The **osql** utility returns the server name, as shown in this example:

1> SELECT @@SERVERNAME 2 > GO

WOLFHOUND

(1 row affected)

1>

4. Verify that you have checked a SQL Server 2000 server by entering: SELECT @@VERSION GO

The ${\bf osql}$ utility returns the version information.

5. Quit the **osql** utility by entering: exit

Informational Files Created by SQL Server Setup

These informational files are generated to locate any problems during setup.

Sqlstp.log

The Sqlstp.log file, located in your \Windows or \WinNT directory. For example, C:\WinNT\Sqlstp.log.Any errors encountered during the configuration portion of setup are written to this file.

Setup.log

The Setup.log file, located in your \Windows or \WinNT directory. For example, C:\WinNT\Setup.log.

Errorlog

The most recent error log, located in the \Log directory of the target installation directory. For example, the default location for the error log is C:\Program Files\Microsoft SQL Server\Mssql\Log\Errorlog. For a named instance, the error log would be in \Microsoft SQL Server\Mssql\$<instancename>\Log\Errorlog.

Error Codes for an Unattended Installation

When you run an unattended installation of Microsoft® SQL Server™ 2000 Enterprise Edition, SQL Server 2000 Standard Edition, SQL Server 2000 Developer Edition, or SQL Server 2000 Personal Edition, these error codes may be returned.

Error code number	Error code description	
0	Success.	
-1	General error.	
-2	Invalid mode.	
-3	Required data not found in the Setup.iss file.	
-4	Not enough memory available.	
-5	File does not exist.	
-6	Cannot write to the response file.	
-7	Cannot write to the log file.	
-8	Invalid path to the InstallShield Silent response file.	
-9	Not a valid list type (string or number).	
-10	Data type is invalid.	
-11	Unknown error during setup.	
-12	Dialog boxes are out of order. This is a common	
	error, caused when a dialog box appears out of order	
	in the setup initialization file (Setup.iss). This can	
	occur due to a system problem during the creation of	
	Setup.iss.	
-51	Cannot create the specified folder.	
-52	Cannot access the specified file or folder.	
-53	Invalid option selected.	

Troubleshooting the SQL Server Upgrade Wizard

The SQL Server Upgrade Wizard is designed to be as problem-free as possible; however, there are situations that may interfere with upgrading Microsoft® SQL Server™ version 6.5 databases to SQL Server 2000. The most common upgrade error is the failure to create an object in SQL Server 2000. In many cases, the problem is simple, such as running out of disk space. In any case, the SQL Server Upgrade Wizard creates detailed logs specifying the problem.

See Also

Upgrading to SQL Server 2000

Completing the SQL Server Upgrade Wizard

The SQL Server Upgrade Wizard performs a server and data version upgrade using the options you specified. The Microsoft® SQL Server™ version 6.5 are left intact throughout the version upgrade process.

During the SQL Server Upgrade Wizard process:

- User stored procedures are verified against the contents of **syscomments** for inconsistencies.
- All logins, users, and permissions are validated.

If the SQL Server Upgrade Wizard detects any problems, a dialog box appears with this text:

One or more warnings have been logged. Please read the next screen ca

For more information about specific errors, see the \Mssql\Upgrade\ <servername>_<date>_<time> directory for *.err files.

The **Summary of Warnings** dialog box displays inconsistencies found in the user objects of accounts. Users should not continue until these are resolved. This output file is located in the \Mssql\Upgrade\<SQLServer_date_time> directory. The file name is associated with the database name and ID, "check65-<dbid> <dbname>_err.out" (for example, "check65-007mypubs_err.out"). If the user continues without fixing the listed errors, check the relevant files for objects, logins, and invalid permissions.

If stored procedures have been renamed using **sp_rename**, the source stored in **syscomments** must be changed. Drop and re-create the procedure using the new name in the CREATE PROCEDURE syntax.

See Also

<u>Upgrading to SQL Server 2000</u>

<u>Upgrading to SQL Server 2000 FAQ</u>

Upgrade Log Files

Each time you run the SQL Server Upgrade Wizard, a subdirectory is created in the \Mssql\Upgrade directory (default location C:\Program Files\Microsoft SQL Server\MSSQL\Upgrade). The subdirectory name consists of the server name and the current date and time to distinguish multiple runs of the SQL Server Upgrade Wizard (for example, SQLCONV1_092198_151900).

Inside this subdirectory are a number of descriptively named log files describing each of the upgrade steps. Also inside is another subdirectory for each upgraded database, including the **master** database. Inside each database folder are log files indicating the success of the creation of different types of objects in that database. Files that end in .ok indicate that all instances of that type of object were created successfully. Files that end in .err indicate that at least one instance of that type of object was not created successfully. The error files list each failed object creation statement and the reason the object was not created successfully.

Any log files that indicate a problem are listed at the end of the SQL Server Upgrade Wizard for easy access.

The \WinNT directory contains these files.

File	Description
Sqlupgrade.ini	List of .err files to be displayed by the
	Script Interpreter
Upgrade.ini	Template .ini file used to set defaults
	and run pre-task and post-task
	applications

The \Mssql\Upgrade directory contains these files and directories.

Description
Live status of the current set of tasks
being executed by the script interpreter
(useful for remote checking the
upgrade status)
Additional command prompt

	arguments sent to Check65.exe when the finish page is checking SQL Server 6.5 databases
Upgrade.tmp	Upgrade.ini before the Finish button is clicked in SQL Server Upgrade Wizard
Upgrade.ini	Script file for the upgrade
<6.5 server>_ <date>_<time></time></date>	Object directory for each run of the
directories	SQL Server Upgrade Wizard

Object directories contain these files and directories. The SQL Server Upgrade Wizard names some files with either an .out or an .err extension, depending on the success of the task.

File	Description
Layout.ini	Used for communication between the SQL Server Upgrade Wizard and the layout utility, a subcomponent of the wizard
~backup.ini	Used to back up, delete, and restore SQL Server 6.5 data files manually during a tape upgrade
<dbid><db>.ini</db></dbid>	Files used by Layout.exe to cache the user settings for the current upgrade session
Changedbo.sql.out / .err	List of each statement that passed after the Change DBO task has been run
Check65 - <dbid><db>.out / .err</db></dbid>	Output from Check65.exe created while checking the SQL Server 6.5 databases for inconsistencies in the finish page of the SQL Server Upgrade Wizard
Check65 - <dbid><db>_err.out / .err</db></dbid>	Errors from Check65.exe created while checking the SQL Server 6.5 databases for inconsistencies in the

	finish page of the SQL Server Upgrade Wizard
Cleantempdb.bat	Used to delete the SQL Server 2000 tempdb files after a successful upgrade
Cleantempdb.sql.out / .err	Output from deleting the SQL Server 2000 tempdb files after a successful upgrade
Convload1.sql.out / .err	Sets configuration options
Convload2.sql.out / .err	Adds logins, remote logins, local groups, and other objects
Createdb.sql.out / .err	Creates the SQL Server 2000 tempdb and user databases
Creating Databases.out / .err	Output from creating the SQL Server 2000 tempdb and user databases
Dboptions.sql.out / .err	Status of database options that were set and passed
Dropping temporary tempdb files.out / .err	Success of dropping temporary tempdb files
Export and Import via Named Pipe - <dbid><db>.out / .err</db></dbid>	Success of exporting data from SQL Server 6.5 and importing into SQL Server 2000 during a named pipe backup
Export Data - <dbid><db>.out / .err</db></dbid>	Success of exporting data from SQL Server 6.5 in a tape backup
Import Data - <dbid><db>.out / .err</db></dbid>	Success of importing data into SQL Server 2000 from a tape backup
Export Database Objects - <dbid> <db>.out / .err</db></dbid>	Success of exporting objects from SQL Server 6.5
Export Database Owners.out / .err	Success of exporting database owners from SQL Server 6.5
Export Logins - <#>.out / .err	Success of exporting logins from SQL Server 6.5
Export Server Settings from Master.out / .err	Success of exporting server settings from SQL Server6.5

Export SQL Executive Settings.out / .err	Success of exporting SQL Executive settings
Import Database Objects - <dbid> <db>.out / .err</db></dbid>	Success of importing objects into SQL Server 2000
Import Logins - <#>.out / .err	Success of importing logins into SQL Server 2000
Import Server Settings from Master.out / .err	Success of importing server settings into SQL Server 2000
Import SQL Executive Settings - <#>.out / .err	Success of importing SQL Executive settings into SQL Server Agent in SQL Server 2000
Logininfo.sid	Integrated login mapping
Loginmap.txt	Integrated login mapping
Marking database upgrade status - <dbid><db>.out / .err</db></dbid>	Success of marking which databases have been upgraded
Marking database upgrade status - <dbid><db>.sql.out / .err</db></dbid>	Marks database upgrade status
Modifying scripts.out / .err	Success of removing stored procedures that are not to be created in SQL Server 2000
Msdb6in.sql	msdb integrated logins run against SQL Server 2000
Pre60to7.sql	Upgrades msdb from SQL Server 6.5 to SQL Server 2000
Pre65to7.sql	Upgrades msdb from SQL Server 6.5 to SQL Server 2000
Preparing MSDB for Upgrade - <#>.out / .err	Success of preparing msdb for upgrade
Preparing SQL-DMO for upgrade.out / .err	Success of preparing SQL-DMO for upgrade
Replupd.out / .errreplupd_erro.out / .err	Success of updating replication settings
Setting Database Options.out / .err	Success of setting database options in SQL Server 2000
Upgrade Complete.ini	Lists upgrade options and success

	codes for each upgrade task and object type
Upgrade.log	Lists success code, start time, and stop time for each task in the Script Interpreter, created when the Script Interpreter exits or restarts after a failed task
Upgrade.reg	Registry entries for the upgrade DSN used by many of the ODBC applications in the upgrade process
<dbid><db> directories</db></dbid>	Database-specific directories for each upgraded database, including master

Database-specific directories contain these files.

File	Description
<6.5 server>.master.bak (only in the	Backup of stored procedure script
master database directory)	before the Modify Scripts task is run
<6.5 server>. <db>.bnd.out / .err</db>	Table column bindings
<6.5 server>. <db>.def.out / .err</db>	Defaults
<6.5 server>. <db>.dr1.out / .err</db>	DRI to be created before data transfer (clustered keys)
<6.5 server>. <db>.dr2.out / .err</db>	DRI to be created after data transfer (nonclustered keys)
<6.5 server>. <db>.fky.out / .err</db>	FOREIGN KEY constraints
<6.5 server>. <db>.gr1.out / .err</db>	Groups
<6.5 server>. <db>.id1.out / .err</db>	Indexes to be created before data transfer (clustered indexes)
<6.5 server>. <db>.id2.out / .err</db>	Indexes to be created after data transfer (nonclustered indexes)
<6.5 server>. <db>.LGN</db>	Creates logins
<6.5 server>. <db>.prc.out / .err</db>	Stored procedures
<6.5 server>. <db>.prv.out / .err</db>	Permissions
<6.5 server>. <db>.rul.out / .err</db>	Rules

<6.5 server>. <db>.tab.out / .err</db>	Tables
<6.5 server>. <db>.trg.out / .err</db>	Triggers
<6.5 server>. <db>.udt.out / .err</db>	User-defined data types
<6.5 server>. <db>.usr.out / .err</db>	Users
<6.5 server>. <db>.viw.out / .err</db>	Views

See Also

Upgrading to SQL Server 2000

Server and Database Troubleshooting

Servers running Microsoft® SQL Server $^{\text{TM}}$ 2000 databases may have errors specific to the following areas:

rific to the following areas:	
 Databases marked as suspect 	

- Alerts
- Backup and restore
- Locks
- Jobs
- Microsoft Windows NT® services related to SQL Server
- Interaction with the operating system
- Recovery

Resetting the Suspect Status

Microsoft® SQL Server™ 2000 returns error 1105 and sets the **status** column of **sysdatabases** to suspect if SQL Server is unable to complete recovery on a database because the disk drive no longer has any free space. Follow these steps to resolve the problem:

- 1. Execute **sp_resetstatus**.
- 2. Use ALTER DATABASE to add a data file or log file to the database.
- 3. Stop and restart SQL Server.

With the extra space provided by the new data file or log file, SQL Server should be able to complete recovery of the database.

4. Free disk space and rerun recovery.

sp_resetstatus turns off the suspect flag on a database, but leaves all other database options intact.

CAUTION Use **sp_resetstatus** only when directed by your primary support provider or as recommended in Troubleshooting. Otherwise, you might damage your database.

Because this procedure modifies the system tables, the system administrator must enable updates to the system tables before creating this procedure. To enable updates, use this procedure:

USE master
GO
sp_configure 'allow updates', 1
GO
RECONFIGURE WITH OVERRIDE
GO

After the procedure is created, immediately disable updates to the system tables:

```
sp_configure 'allow updates', 0
GO
RECONFIGURE WITH OVERRIDE
GO
```

sp_resetstatus can be executed only by the system administrator. Always shut down SQL Server immediately after executing this procedure.

The syntax is:

sp_resetstatus database_name

This example turns off the suspect flag on the **PRODUCTION** database.

sp_resetstatus PRODUCTION

Here is the result set:

Database 'PRODUCTION' status reset!

WARNING: You must reboot SQL Server prior to accessing this datab

sp_resetstatus Stored Procedure Code

Here is the code of the **sp_resetstatus** stored procedure:

```
IF EXISTS ( SELECT * from sysobjects where name = 'sp_resetstatus' DROP PROCEDURE sp_resetstatus GO
```

```
CREATE PROC sp_resetstatus @dbname varchar(30) AS

DECLARE @msg varchar(80)

IF @@trancount > 0

BEGIN

PRINT 'Can"t run sp_resetstatus from within a transaction.'

RETURN (1)

END

IF suser_id() != 1

BEGIN
```

```
SELECT @msg = 'You must be the System Administrator (SA)'
    SELECT @msg = @msg + ' to execute this procedure.'
    RETURN (1)
   END
IF (SELECT COUNT(*) FROM master..sysdatabases
    WHERE name = @dbname) != 1
   BEGIN
    SELECT @msg = 'Database ' + @dbname + ' does not exist!'
    PRINT @msg
    RETURN (1)
   END
IF (SELECT COUNT(*) FROM master..sysdatabases
    WHERE name = @dbname AND status & 256 = 256) != 1
   BEGIN
    PRINT 'sp_resetstatus can only be run on suspect databases.'
    RETURN (1)
   END
BEGIN TRAN
   UPDATE master..sysdatabases SET status = status ^ 256
    WHERE name = @dbname
   IF @@error != 0 OR @@rowcount != 1
    ROLLBACK TRAN
   ELSE
    BEGIN
      COMMIT TRAN
      SELECT @msg = 'Database ' + @dbname + ' status reset!'
      PRINT @msg
      PRINT"
      PRINT 'WARNING: You must reboot SQL Server prior to '
                  accessing this database!'
      PRINT'
      PRINT"
    END
GO
```

See Also

ALTER DATABASE

BEGIN TRANSACTION

COMMIT TRANSACTION

ROLLBACK TRANSACTION

Starting, Pausing, and Stopping SQL Server

sysdatabases

Transactions

Transactions Architecture

UPDATE

Troubleshooting Alerts

If you are experiencing problems with alerts, read the solutions detailed here.

An alert is not firing.

- Ensure that the SQLServerAgent and EventLog services are running.
- Ensure that the event appears in the Microsoft Windows NT® application log.

Start the Windows NT Event Viewer. If the event is not in the log, check the log settings. On the **Log** menu, click **Log Settings**, and then in the **Change Settings for Log** box, select **Application**. If needed, set these options to the specified values.

Setting	Value
Maximum Log Size	Minimum of 2,048 KB (2 MB)
Event Log Wrapping	Overwrite Events as Needed

Note Also check the SQL Server error log; events written to the Windows 2000 or Windows NT application log are also written to the SQL Server error log. To focus the search on the cause of the problem, compare the dates and times for events between the SQL Server error log, the SQL Server Agent error log, and the Windows 2000 or Windows NT application log.

- Ensure that the alert is enabled.
- Ensure that the history values of the alert (for example, the occurrence count and last occurred values) are changing.
- Ensure that the counter value is at, above, or below the defined threshold value for a minimum of 20 seconds.

SQL Server Agent polls the performance counters at 20-second intervals.

IMPORTANT Using a frequency higher than 20 seconds increases the processing overhead for SQL Server.

If a counter spikes for only a few seconds, which satisfies the performance condition, there is a high likelihood that SQL Server Agent will fail to see the spike; the alert will not fire.

An alert is firing, but the responsible operator is not receiving notification.

- Check the operator and notification information to ensure that you have entered the correct e-mail, pager, and **net send** addresses.
- Test the e-mail, pager, and **net send** addresses.
- Check the operator's on-duty schedule.
- Check the SQL Server Agent error log for any e-mail problems.

An alert is firing, but the notification is not timely.

The probable causes for this include:

- The **Delay between responses** setting for the alert is too high.
- The alert response is complex, requiring many operator notifications.

Note Send notifications to as few operators as possible. For example, send notifications to one group e-mail address rather than notifying several individual operators.

This error appears in the SQLServerAgent error log on Windows 95 or Windows 98 servers: "The common event system is being

restarted after function ProduceEventsFromSS returned error 44, 'Unable To Connect'"

This may indicate incorrect registered server information. Ensure that the registered server information for the local server is correct and that the registered login name is a member of the **sysadmin** fixed server role.

The Windows 2000 or Windows NT application log fills rapidly with the same error.

The CPU usage is high.

The number of alert responses is high.

Because SQL Server Agent both depends on and monitors SQL Server, SQL Server Agent can become caught in an endless loop of firing the same alert. This generally occurs when SQL Server runs out of an essential global resource and an alert has been defined on this event.

When the number of alerts raised exceeds the SQL Server Agent alert processing rate, a backlog is created.

To eliminate an alert processing backlog

- 1. Increase the amount of time in the **Delay between responses** setting.
- 2. Correct the global resource problem to prevent recurring alerts from using all your resources.
- 3. Configure an error so that it does not generate an alert.
 - **IMPORTANT** Configuring an error to not generate an alert can be performed only within the registry. This solution should be used only as a last resort.
- 4. Clear the Windows NT application log if: the backlog is not clearing, you do not want to wait for SQL Server Agent to clear the backlog, or

you want an empty, unpopulated Windows NT application log.

CAUTION Clearing the Windows NT application log using the **Clear All Events** option on the **Log** menu deletes all events from the error log, including events unrelated to SQL Server.

To configure an error to not generate an alert

- 1. Start the Registry Editor.
- 2. Locate the following registry key:

HKEY_LOCAL_MACHINE

\SOFTWARE

\Microsoft

\MSSQLServer

\SQLServerAgent

\NonAlertableErrors

3. Type the error number.

The list of nonalertable errors can be a maximum of 1,024 characters, should not contain spaces, and items must be separated by commas (,). Any error number in the list that appears after the number 0 will generate an alert. For example, assume that the list consists of

1204,0,100

In this example, only error number 1204 does not generate an alert. Because error number 100 follows error number 0 in the list, it will generate an alert.

IMPORTANT Never remove the default nonalert-generating error, error 1204. Error 1204 defines those conditions known to lead to recursive alert generation. Removing this error will hamper attempts to resolve recursive alert generation.

See Also

Defining Alerts

<u>Error 1204</u>

Modifying and Viewing Alerts

Troubleshooting Backing Up and Restoring

Here are some problems you may encounter when backing up and restoring databases and transaction logs:

- A syntax error occurred when using the BACKUP or RESTORE statements, which indicates that the database is in Microsoft® SQL Server™ version 6.5 compatibility mode. The BACKUP and RESTORE keywords are valid only with SQL Server 7.0 or SQL Server 2000 databases.
 - Set the SQL Server compatibility level to 80 before using BACKUP or RESTORE statements. For more information, see <u>Error 156</u>.
- The BACKUP statement cannot be performed at the same time as creating or deleting database files.
 - Reissue the backup operation after the conflicting operation has finished. For more information, see <u>Error 3023</u>.
- A standby database cannot be backed up if it has not yet been recovered.
 Use backups from your primary server until operations have switched to the standby. For more information, see Error 3036.
- The backup being restored is a valid Microsoft Tape Format, but is not a SQL Server backup.
 - To determine the backup contents, use RESTORE HEADERONLY. For more information, see <u>Error 3143</u>.
- The backup set is a backup of a database with the same name as the database to which you are restoring. However, the database being restored to was created by a different CREATE DATABASE statement than the database in the backup set.
 - Either overwrite the existing database or restore the backup set to a different database name. For more information, see Error 3154.
- An attempt was made to use a logical device that is not a defined backup device.

Either create the device or use the TAPE = or DISK = syntax of the BACKUP statement. For more information, see <u>Error 3206</u> or <u>Error 3209</u>.

- The media family spans multiple volumes. The restore operation has already processed the data on the specified volume.
 - Replace the current volume with a volume not yet processed. For more information, see <u>Error 3227</u>.
- The backup device does not contain data in Microsoft Tape Format. For more information, see <u>Error 3242</u>.
- The media family spans multiple volumes. The restore operation expected to process the volume number specified in the error message, but found a different volume number instead.
 - To continue the restore operation, replace the current volume with the volume number specified in the error message. For more information, see Error 3247.
- The media family spans multiple volumes. The backup set to be processed by the restore operation starts on an earlier volume than the one inserted into the named device.
 - Replace the current volume with a volume containing the start of the target backup set. For more information, see <u>Error 3249</u>.
- The restore operation has completely processed the media family on the named device, and is now ready to reuse the device to restore one of the remaining media families.
 - Replace the current volume with the first volume of a media family that has not yet been processed. For more information, see <u>Error 3251</u>.
- The backup operation that created the backup set did not finish successfully.
 - Either restore a different database backup, if restoring a database backup, and apply transaction logs; or apply the next transaction log backup, if restoring a transaction log backup. For more information, see

Error 3256.

- The volume on the named device does not belong to the same media set as the other volumes being processed.
 - Either remove the offending volume and insert the next volume of the media family, for tape media sets; or, for disks, reissue the command, naming only those backup devices part of the same media set. For more information, see Error 3258.
- The tape inserted into the named device is part of the current media set and may not be used as continuation media.
 - Replace the current volume with a fresh tape that can be overwritten. For more information, see Error 3263.
- The server is too busy to perform the backup or restore operation.
 - Retry the operation after reducing the server load. For more information, see <u>Error 3267</u> or <u>Error 3627</u>.
- Some statements are not allowed while the recovery model is SIMPLE. Use BACKUP DATABASE or change the recovery model using ALTER DATABASE.For more information, see Error 4208.
- To restore the database after failure, you must begin either with a full database backup or with a complete set of file backups. A log backup was created before the first database or file backup.
 - Perform a full database backup before backing up the transaction log. For more information, see Error 4214.
- The restore operation found a gap between the last restore and the transaction log that you attempted to apply.
 - Apply the transaction log backups in the order they were created originally. For more information, see <u>Error 4305</u>.
- No further restore operations may be performed after a database has been recovered.
 - Restart the restore sequence and use the NORECOVERY option on all

but the final RESTORE statement. For more information, see <u>Error</u> 4306.

• Could not recover the database to the state that it was in at the time the current log backup was made. At least one file has been modified since this time. Therefore, recovery is not possible because the database would be left in an inconsistent state.

Recover the database either to its most recent state or to a specific point in time. For more information, see Error 4318.

• A backup file could not be used because it was originally formatted with one sector size and is now on a device with a different sector size.

SQL Server uses nonbuffered I/O, which requires sectors to be aligned. You must restore the backup set from a disk with the same sector size, or over a network, which uses buffered I/O. Alternatively, you can specify a WITH BLOCKSIZE clause when you back up the database.

See Also

Backing Up and Restoring Databases

BACKUP

Insufficient Disk Space

Recovery Performance

Reserved Keywords

Server and Database Troubleshooting

Setting Database Options

sp_addumpdevice

sp_dbcmptlevel

Troubleshooting Recovery

Troubleshooting Orphaned Users

When restoring a database backup to another server, you may experience a problem with orphaned users. This scenario displays and resolves the problem:

- 1. Alias the login **janetl** to **dbo** by executing **sp_addlogin**. sp_addlogin 'janetl', 'dbo'
- 2. Back up a database. In this example, back up **Northwind**. BACKUP DATABASE Northwind TO DISK = 'c:\mssql\backup\northwnd'
- 3. Drop the database that was just backed up. DROP DATABASE Northwind
- 4. Drop the login. sp_droplogin 'janetl'
- 5. Restore the backed up database.

RESTORE DATABASE Northwind FROM DISK = 'c:\mssql\backup\northwnd'

The **janetl** login cannot access the **Northwind** database unless the **guest** login is allowed. Even though the **janetl** login has been deleted, it still shows up (as an orphaned row) in the **sysusers** table:

USE Northwind SELECT * FROM sysusers WHERE name = 'janetl'

To resolve orphaned users

1. Add a temporary login using **sp_addlogin**. Specify the security identifier (SID) (from **sysusers**) for the orphaned user. sp_addlogin @loginame = 'nancyd',

@sid = 0x32C864A70427D211B4DD00104B9E8A00

- 2. Drop the temporary alias that belongs to the aliased SID using **sp_dropalias**.
 - sp_dropalias 'nancyd'
- 3. Drop the original user (now orphaned) using **sp_dropuser**. sp_dropuser 'janetl'
- 4. Drop the original login using **sp_droplogin**. sp_droplogin 'nancyd'

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE

sp_addlogin

sp_dropalias

sp_droplogin

sp_dropuser

Troubleshooting Data Transformation Services

Note For immediate help in diagnosing your Data Transformation Services (DTS) problems, see the new online troubleshooter on the Product Support Web site. For more information, see <u>Help with Data Transformation Services</u>.

Following is information about errors that might be generated while using DTS Designer:

• If a connection is created for a database user who does not have permission to access the **model** database, when opening the transformation properties, the user will receive the message "Unspecified error. Server user '<user name>' is not a valid user in database 'model'". This message occurs because the user cannot see the provider type information. However, the error is informational and does not prevent the user from creating the transformations.

If you receive the message "Cannot find the specified file," when attempting to access a DTS package saved to a COM-structured storage file, verify that:

- The directory path is specified correctly.
- Permissions are set correctly.

Note It is possible that the file is corrupt and that the COM structure cannot be detected.

Troubleshooting Locking

Two locking problems that an application may encounter are deadlocking and blocking.

Deadlocking

Deadlocking is a condition that can occur on any system with multiple users, not only on a relational database management system (RDBMS). A deadlock occurs when two users (or sessions) have locks on separate objects and each user wants a lock on the other's object. Each user waits for the other to release their lock. Microsoft® SQL ServerTM detects when two connections have gotten into a deadlock. One of the connections is chosen as a deadlock victim. The connection's transaction is rolled back and the application receives an error.

If deadlocks become a common occurrence and their rollbacks are causing excessive performance degradation, you may need to perform more in-depth investigation. Use trace flag 1204. For example, this command starts SQL Server from the command prompt and enables trace flag 1204:

c:\mssql\binn\sqlservr -T1204

All messages will now appear in the console screen where SQL Server was started and in the error log.

Deadlocking can also occur when using distributed transactions. For more information about resolving deadlocks with distributed transactions, see <u>Transactions Architecture</u>.

Blocking

An unavoidable characteristic of any lock-based concurrent system is that blocking may occur under some conditions. Blocking happens when one connection holds a lock and a second connection wants a conflicting lock type. This forces the second connection to either wait or block on the first.

In this topic, the term connection refers to a single logged-on session of the database. Each connection appears as a system process ID (SPID). Each of these

SPIDs is often referred to as a process, although it is not a separate process context in the usual sense. Rather, each SPID consists of the server resources and data structures necessary to service the requests of a single connection from a given client. A single client application may have one or more connections. From the perspective of SQL Server, there is no difference between multiple connections from a single client application on a single client computer and multiple connections from multiple client applications or multiple client computers. One connection can block another connection, regardless of whether they emanate from the same application or separate applications on two different client computers.

To eliminate deadlocking or blocking problems, contact your system administrator. The system administrator should check the **waittype**, **waittime**, **lastwaittype**, and the **waitresource** columns of **sysprocesses** to see what activities each SPID is performing.

See Also

Deadlocking

Distributed Transactions

Locking

SET DEADLOCK PRIORITY

sp_who

SQL Server: Locks Object

sqlservr Application

syslockinfo

sysprocesses

Trace Flags

Understanding and Avoiding Blocking

Troubleshooting Deadlocks

In a deadlock, various threads cannot proceed because they are waiting on a set of resources held by each other or held by other threads. The deadlock is a cyclic dependency that is best addressed by first identifying the participants in the dependency chain and the resources involved, and then choosing the thread that breaks the deadlock on the resources for the various other threads.

When a deadlock occurs, the user receives the following error.

Transaction (Process ID xxx) was deadlocked on (xxx) resources with a

The error identifies the resource or resources on which the transaction is deadlocked. The resources can be locks, parallelism (or communication buffer), waiting threads, or a combination of them.

To resolve the deadlock, one of the participants in the cycle must be terminated. In picking the deadlock victim, Microsoft® SQL Server™ 2000 looks at all participating threads and how much work each one has done. Generally, SQL Server chooses the participating thread that has done the least amount of work as the deadlock victim.

With SQL Server 2000, you can determine the resources involved in a deadlock and troubleshoot locking by using SQL Profiler or Trace Flag 1204. SQL Profiler is a graphical tool available in SQL Server Enterprise Manager. SQL Profiler provides information for basic deadlock detection. For more information, see Monitoring with SQL Profiler.

This troubleshooting section focuses on the use of Trace Flag 1204, which provides a report that allows for a detailed analysis of deadlock situations.

Using Trace Flag 1204

In a deadlock situation, Trace Flag 1204 graphs the cycle of dependency among waiting threads, the resources on which the threads are waiting, and which threads hold these resources.

Terms in a Trace Flag 1204 Report

Although Trace Flag 1204 returns different information depending on the resources involved, the report typically includes the following terms.

Node:x

Represents the entry number (x) in the deadlock chain.

Lists

The lock owner can be part of these lists: Grant, Convert, and Wait.

Grant List

Enumerates the current owners of the resource.

Convert List

Enumerates the current owners that are trying to convert their locks to a higher level.

Wait List

Enumerates current new lock requests for the resource.

SPID: x ECID: x

Identifies the system process ID thread in cases of parallel processes. The entry SPID x ECID 0 represents the main thread, and SPID x ECID > 0 represents the sub-threads for the same SPID.

Statement Type

Is the SELECT, INSERT, UPDATE, or DELETE statement on which the threads have permissions.

Line#

Lists the line in the current batch of statements that was being executed when the deadlock occurred.

Input Buf

Lists all the statements in the current batch.

Mode

Specifies the type of lock for a particular resource that is requested, granted,

or waited on by a thread. Mode can be IS (Intent shared), S (Shared), U (Update), IX (Intent exclusive), SIX (Shared with intent exclusive), and X (Exclusive). For more information, see <u>Understanding Locking in SQL Server</u>.

RID

Identifies the single row within a table on which a lock is held or requested.

RID is represented in Trace Flag 1204 as RID:

db_id:file_id:page_no:row_no; for example, RID: 1:1:1253:0.

TAB

Identifies the table on which a lock is held or requested.

TAB is represented in Trace Flag 1204 as TAB: *db_id:object_id*; for example, TAB: 2:2009058193.

KEY

Identifies the key range within an index on which a lock is held or requested.

KEY is represented in Trace Flag 1204 as KEY: *db_id:object_id:index_id*; for example, KEY: 2:1977058079:1.

PAG

Identifies the page resource on which a lock is held or requested.

PAG is represented in Trace Flag 1204 as PAG: *db_id:file_id:page_no*; for example, PAG: 7:1:168.

EXT

Identifies the extent structure.

EXT is represented in Trace Flag 1204 as EXT: *db_id:file_id:extent_no*; for example, EXT: 7:1:9.

DB

Identifies the database lock.

DB is represented in Trace Flag 1204 in one of the following ways:

- DB: *db_id*
- DB:*db_id*[*BULK-OP-DB*], which identifies the database lock taken by the backup database.
- DB:*db_id*[*BULK-OP-LOG*], which identifies the lock taken by the backup log for that particular database.

IND

Identifies the lock taken by the index created on index resources.

IND is represented in Trace Flag 1204 in one of the following ways:

- IND: *db_id:object_id:index_id*
- IND: *db_id:object_id:index_id*[INDEX_ID], which indicates that the lock is on the index ID.
- IND: *db_id:object_id:index_id*[INDEX_NAME], which indicates that the lock is on the index name.

APP

Identifies the lock taken by an application resource.

APP is represented in Trace Flag 1204 as APP: *lock_resource*; for example, APP: Formf370f478.

When SQL Server chooses an application resource as the deadlock victim, the application resource owner will not get the error message described earlier. Instead, the application owner will get a "-3" return code when the **sp_getapplock** stored procedure is executed on that application resource. For information, see <u>sp_getapplock</u>.

Victim Resource Owner

Specifies the participating thread that SQL Server chooses as the victim to break the deadlock cycle. The chosen thread (identified by SPID x ECID 0

) and all existing sub-threads (identified by $SPID \ x \ ECID \ge 0)$ will be terminated .

Next Branch

Represents the two or more sub-threads from the same SPID that are involved in the deadlock cycle.

When the deadlock involves parallelism, the various sub-threads could be blocked on communication buffers, and one thread ends up waiting for the other sub-threads. It is a deadlock situation only if all the other threads also are involved in a deadlock. The next branch represents the deadlock chain tracing alternative paths.

For more information about Trace Flag 1204 deadlock reports involving specific resources, see <u>Deadlocks involving locks</u>, <u>Deadlocks involving parallelism</u>, and <u>Deadlocks involving threads</u>

See Also

Deadlocking

KILL

Locks Event Category

Monitoring with SQL Profiler

sp_lock

sp_who

Trace Flags

Deadlocks Involving Locks

When a deadlock involves locks, Trace Flag 1204 reports the resource on which the deadlock is waiting, the lock mode in effect and being requested, and the threads participating in the cycle of dependency.

Examples

A Complete 1204 Report on Deadlock Involving Locks

In this example, SPID 51 is blocked from its request for an exclusive (X) lock on Table 2:2009058193 because SPID 52 already has an exclusive lock on it. In Node 2, SPID 52 is blocked from its request for an exclusive lock on Table 2:1993058136 because SPID 51 has an exclusive lock on it.

SQL Server chose SPID 52 as the deadlock victim to break the deadlock, as indicated by the Victim Resource Owner entry.

Deadlock encountered Printing deadlock information

Wait-for graph

Node:1

TAB: 2:2009058193 [] CleanCnt:1 Mode: X Flags: 0x0

Grant List::

Owner:0x1c3b5260 Mode: X Flg:0x0 Ref:1 Life:02000000 SPII

SPID: 52 ECID: 0 Statement Type: SELECT Line #: 1 Input Buf: Language Event: select * from a (tablockx)

Requested By:

ResType:LockOwner Stype:'OR' Mode: X SPID:51 ECID:0 Ec:(0x1)

Node:2

TAB: 2:1993058136 [] CleanCnt:1 Mode: X Flags: 0x0

Grant List::

Owner:0x1c3b52e0 Mode: X Flg:0x0 Ref:1 Life:02000000 SPII

SPID: 51 ECID: 0 Statement Type: SELECT Line #: 1 Input Buf: Language Event: select * from b (tablockx)

Requested By:

ResType:LockOwner Stype:'OR' Mode: X SPID:52 ECID:0 Ec:(0x10 Victim Resource Owner:

ResType:LockOwner Stype:'OR' Mode: X SPID:52 ECID:0 Ec:(0x1c!

Deadlocks Involving Parallelism

Deadlocks involving parallelism always involve thread or lock resources. Parallelism alone cannot cause a deadlock. The information reported by Trace Flag 1204 allows users to trace the separate parallel workers and find the other resource contention issues that are causing the deadlock. Treat all parallel threads (for example, threads with the same SPID) as a single unit when tracing the deadlock.

Trace Flag 1204 reports on these sets of participants in the cycle: Coordinator, Consumer, and Producer. The Coordinator is the creator and destroyer of the sub-threads. The Producers produce information on which the consumers wait.

To resolve the deadlock involving one nonparallel SPID AA and a parallel SPID BB, follow the same procedure as you would to resolve a deadlock between two nonparallel SPIDs.

Examples

A. Deadlock Involving Parallelism

The following example shows how the Coordinator, Consumer, and Producer are presented in a Trace Flag 1204 report.

Node:2

Port: 0x2b968100 Xid Slot: -1, EC: 0x2bba53b0, SPID:59 ECID: 0 (C

Wait Type :e_etypeClose

Coordinator: EC = 0x2bba53b0, SPID:59 ECID: 0, Not Blocking

Consumer List::

Consumer: Xid Slot: 0, EC = 0x2bbda090, SPID:59 ECID: 2, Blocking

Consumer: Xid Slot: 1, EC = 0x2bbce090, SPID:59 ECID: 4, Blocking

Consumer: Xid Slot: 4, EC = 0x2bb60090, SPID:59 ECID: 1, Blocking

Consumer: Xid Slot: 5, EC = 0x2bbd4090, SPID:59 ECID: 3, Blocking

Producer List::

Producer: Xid Slot: 2, EC = 0x2bb64090, SPID:59 ECID: 6, Blocking

Producer: Xid Slot: 3, EC = 0x2bbbe090, SPID:59 ECID: 8, Blocking

Producer: Xid Slot: 6, EC = 0x2bbca090, SPID:59 ECID: 5, Blocking Producer: Xid Slot: 7, EC = 0x2bbc6090, SPID:59 ECID: 7, Blocking

B. Deadlocks with Branches

Trace Flag 1204 reports deadlock cycles that have branches. For example, the following excerpt shows one branch, Node 6, in which a thread has an exclusive (X) lock on RID 1:1:1253:0, while SPID 55 is waiting for an update (U) lock on it and SPID 60 has just requested another update (U) lock on it.

-- next branch --

Node:6

RID: 1:1:1253:0 CleanCnt:5 Mode: X Flags: 0x2

Wait List:

Owner:0x98b9d7c Mode: U Flg:0x0 Ref:1 Life:02000000 SPIC

Requested By:

ResType:LockOwner Stype:'OR' Mode: U SPID:60

-- next branch --

Node:9

RID: 1:1:1253:0 CleanCnt:5 Mode: X Flags: 0x2

Wait List:

Owner:0x98b9d7c Mode: U Flg:0x0 Ref:1 Life:02000000 SPID

Requested By:

ResType:LockOwner Stype:'OR' Mode: U SPID:59 ECID:0 Ec:(0x9l

-- next branch --

In deadlocks involving parallelism and threads, a thread can wait on multiple threads. Consequently, each instance of "Next Branch" in the Trace Flag 1204 report represents the next wait for a particular thread.

Deadlocks Involving Threads

In deadlocks that involve threads, Trace Flag 1204 provides information on the threads that have been granted statement permissions and threads that are waiting on permissions.

In the following example, several threads (SPID 64, 60, 59, 57, and 55) have UPDATE statement permissions, while SPID 51 is on the Wait list.

Node:1

Granted thread list:

SPID: 64 ECID: 0 Statement Type: UPDATE SPID: 60 ECID: 0 Statement Type: UPDATE SPID: 59 ECID: 0 Statement Type: UPDATE SPID: 57 ECID: 0 Statement Type: UPDATE SPID: 55 ECID: 0 Statement Type: UPDATE

Wait thread list:

SPID: 51 ECID: 0 Statement Type: UNKNOWN TOKEN

UNKNOWN TOKEN means the thread currently is not executing a batch.

Troubleshooting MS DTC Transactions

A distributed transaction is in-doubt when the outcome of the transaction cannot be determined. This occurs when the transaction in Microsoft® SQL ServerTM was prepared by Microsoft Distributed Transaction Coordinator (MS DTC), but one or more of the MS DTC processes involved in the transaction is not reachable from SQL Server.

A SQL Server user can detect this situation when the following message appears in the error log:

<SQL Server detected a DTC in-doubt transaction for UOW <xxx>. Pl

To correct this problem, identify the MS DTC processes involved in the transaction and either start or restore the connection to the processes. Under typical circumstances, this procedure should fix the situation and the transaction should resolve itself. If this step does not resolve the issue, consult the MS DTC user manual for specific information on dealing with in-doubt transactions.

SQL Server can resolve in-doubt transactions; however, this option should be used only in extreme cases – when the MS DTC process required for in-doubt transaction cannot solve the problem.

With the in-doubt transaction's Unit of Work ID (UOW) accessible, users can resolve the transaction in SQL Server by using a specific KILL command syntax, and then performing the steps to recover the database. For information, see Backing Up and Restoring Databases.

Syntax

KILL UOW WITH { COMMIT | ROLLBACK }

Arguments

UOW

Identifies the Unit of Work ID representing the in-doubt MS DTC transaction. *UOW* is a character string and can be obtained from the SQL

Server error log. For more information about monitoring distributed transactions, see the MS DTC user manual.

WITH { COMMIT | ROLLBACK }

Specifies that the Unit of Work ID identified should be either committed or stopped. An MS DTC transaction can be forced to commit or stop only if the transaction is in the prepared state, and thus not resolved, and MS DTC is in recovery. MS DTC is said to be in recovery when it is not accessible or when SQL Server is recovering from a failure.

This KILL syntax can be used only to resolve in-doubt transactions that are in the prepared state. For information about terminating other distributed transactions, see <u>KILL</u>.

IMPORTANT Use the KILL command with the UOW WITH COMMIT or ABORT option only in extreme cases when the MS DTC utilities are not accessible.

See Also

Distributed Transactions

KILL

Troubleshooting MSSQLServer or SQLServerAgent Services User Accounts

If you have difficulty starting either the MSSQLServer or SQLServerAgent service under a particular user account, you can:

- Use Windows NT User Manager to verify that the account has **Log on as a service** rights on the computer. (Both of these must be assigned within the security context of the local computer, not the domain.)
 - If services are started by someone who is not a member of the Windows NT local administrators group, the service account must have these permissions:
 - Full control of the main Microsoft® SQL Server™ directory (by default, \Mssql).
 - Full control of the SQL Server database files, regardless of storage location.
 - The **Log on as a service** right. Ensure that all logon hours are allowed in the **Logon Hours** dialog box.
 - Full control of registry keys at and below HKEY LOCAL MACHINE\SOFTWARE\Microsoft\MSSQLS
 - Selection of the **Password Never Expires** box.
 - Full control of registry keys at and below HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Serv
 - Full control of registry keys at and below HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows

NT\CurrentVersion\Perflib.

If the service does not have the appropriate permissions, certain functionality cannot be accomplished. For example, to write to a mail slot, the service must have a Windows NT domain user account, not just local system, with network write privileges. The service must be a Windows NT account with local administrator privileges to:

- Create SQL Server Agent CmdExec and Microsoft ActiveX® Script jobs not belonging to members of the **sysadmin** fixed server role.
- Use the automatic server restart feature of SQL Server Agent.
- Create SQL Server Agent jobs to be run when the server is idle.
- For the MSSQLServer service, right-click the server, click **Properties**, and then click the **Security** tab. Under **Startup service account**, enter the appropriate account and password. If the password is incorrect or has changed, the service cannot be started until the correct password is entered.

CAUTION For the MSDTC service only, use Services in Control Panel to reenter the user account password. If the password is incorrect or has changed, the service cannot be started until the correct password is entered. If necessary, change the account's password using User Manager, and then enter that password for the service using Services in Control Panel.

- For the SQLServerAgent service, expand the server, and then expand Management. Right-click SQLServerAgent, and then click **Properties**. On the **General** tab (the default) in the **Service startup account** section, enter the account and password.
- Assign the account experiencing the problem to another service. If you still have difficulty starting the MSSQLServer or SQLServerAgent service under a particular user account, assign that account to another

service (for example, the Spooler service) and verify that the service can be started successfully. If not, the account is either not configured properly or cannot be validated by the domain controller (for example, if no domain controller is available).

Troubleshooting Full-Text Search

For immediate help in diagnosing Full-Text Search issues, see the online troubleshooter on the Product Support Web site. For more information, see Helpwith Full-Text Search

Full-Text Catalog Administration

The error "Cannot general SSPI context" may occur during an operation such as rebuilding or populating a Full-Text Catalog. This error occurs when an invalid Service Principal Name (SPN) prevents MSSearch from making an OLE DB connection to SQL Server.

Resolve this error by finding and deleting the invalid SPN using the SetSPN utility from the Windows 2000 Resource Kit. Alternatively, stop and then start the SQL Server service on the local server.

To list the current registered SPNs, type the following from a command prompt:

Setspn -l SQLServerName

To delete the invalid SPN, type the following from a command prompt:

Setspn -d SPN

Note The value for the SQLServerName parameter can be either the server name if it is running under LocalSystem, or the service account name without a domain qualifier.

For more information about the SetSPN utility, see the Windows 2000 Resource Kit documentation.

Troubleshooting the Operating System

When installing Microsoft® SQL ServerTM 2000 on a Microsoft Windows® NTFS partition, make sure that the NTFS file permissions allow read/write access. Otherwise, this error message may appear in the Microsoft Windows NT® application log (for each installation attempt):

Msg 17050: initerrlog: Could not open error log file 'C:\MSSQL\log\ERRORLOG'. Operating system error =5(Access is denied.).

Ensure that all system requirements are met, including service packs. For more information about system requirements, see <u>Hardware and Software</u> <u>Requirements for Installing SQL Server 2000</u>.

See Also

Error 17050

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Appearance of Internet Connection Dialog Box at Startup of Windows 95 or Windows 98

If remote connections are enabled in Microsoft® Windows® 95 or Microsoft Windows 98, the system may initiate an Internet connection at Windows startup or at the start of many applications. This behavior is sometimes called autodial or autoconnect, and can be disabled by setting the registry key EnableRemoteConnect to N.

To do this, create a text file named DisbleAutoConnect.reg with the following three lines:

REGEDIT4

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\OLE] "EnableRemoteConnect"="N"

Changing this setting to disable remote connections should not prevent any of your usual Internet activities. This setting is the default for most systems. However, enabling remote connections is necessary for some features of DCOM For more information, see the Knowledge Base article, HOWTO: Troubleshoot Run-Time Error '429' in DCOM

Applications http://support.microsoft.com/support/kb/articles/Q177/3/94.asp.

If there are instances when you need to have remote connections enabled, create a second REG file, named EnableRemoteConnect.reg, with the following lines:

REGEDIT4

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\OLE] "EnableRemoteConnect"="Y"

Run EnableAutoConnect.reg to make the setting, and then run DisbleAutoConnect.reg to disable it when autoconnect is no longer needed.

Thread Pooling

The Microsoft® SQL Server™ error log may display the message:

The working thread limit of 255 has been reached

This message is an informational message and does not indicate any problem with the system.

SQL Server maintains a pool of operating-system threads for executing batches of SQL statements as they arrive from clients. On Microsoft Windows NT®, if the server **lightweight pooling** configuration option is set to 1, SQL Server maintains a pool of fibers instead of threads; fibers use fewer resources than threads. Using a pool of threads or fibers allows SQL Server to optimize the allocation of processing time when executing multiple SQL statements at the same time. The threads or fibers in this pool are known collectively as the worker threads. For more information, see <u>Thread and Task Architecture</u>.

The number of worker threads is controlled by the **max worker threads** server configuration option. The default is 255 and rarely needs to be changed.

When a batch of Transact-SQL statements is received from a client, if an existing worker thread is free, it is allocated to execute the batch. If no existing worker threads are free and the number of worker threads is less than **max worker threads**, a new worker thread is allocated. If no worker threads are free and **max worker threads** is reached, the new batch waits until an existing worker thread completes its current batch and becomes free. When the number of worker threads reaches **max worker threads**, SQL Server displays this message:

The working thread limit of 255 has been reached

Having all worker threads allocated does not mean that the performance of SQL Server will degrade. Typically, a new batch has only a short wait for a free thread. Allocating more threads may degrade performance because of the increased work required to coordinate resources among the threads. Many SQL Server systems running in production reach this state and run with very high performance levels.

See Also

max worker threads Option

Setting Configuration Options

sp_configure

Insufficient Virtual Memory on the Server

When the applications running on a server request more memory than is available on the server, Microsoft® Windows® opens the **Server Process - Out of Virtual Memory** dialog box with the following text:

Your system is running low on virtual memory. Please close some applications. You can then start the System option in the Control Panel and choose the Virtual Memory button to create an additional paging file or increase the size of your current paging file.

Use Virtual Memory in Control Panel to make sure that the amount of virtual memory at least 1.5 times the amount of physical memory available on the server. Microsoft SQL ServerTM dynamically requests or frees memory as needed on Microsoft Windows NT® systems. SQL Server should not cause this error on Windows NT when running with the default configuration options. For more information, see <u>Configuring Virtual Memory</u>.

If the virtual memory setting seems appropriate, consider the following actions:

- Check that the SQL Server max server memory and min server memory configuration options are not set high enough to use most of the virtual memory. For more information, see <u>Configuration Options</u> (<u>Level 1</u>).
- Check that other applications on the server are not using the available virtual memory.
- Use the **max server memory** and **min server memory** configuration options to control the amount of memory requested by SQL Server.

Insufficient Resource Space

If a Microsoft® SQL Server™ configuration option is set too high for the amount of available resources, SQL Server fails to start. For example, if the **max server memory** setting is too high, other applications may take some time to start.

Reset configuration options to their default values or start SQL Server with minimal configuration by using the **-f** startup option of the **sqlservr** application. For more information about setting default values, see the <u>Setting Configuration</u> Options or <u>sp_configure (T-SQL)</u>.

See Also

Setting Configuration Options

sp_configure

sqlservr Application

Determining When SQL Server Causes a Windows NT Blue Screen

Infrequently, Microsoft Windows NT® may either halt with a STOP screen or hard hang, during which the console is completely frozen and unresponsive. This is commonly called a blue screen. This may sometimes happen on a computer on which Microsoft® SQL ServerTM is running, or may coincide with a particular SQL Server operation such as the **bcp** utility, a long-running query, and so on.

Most of the time, this indicates an operating system, device-driver, or hardware problem and should be pursued as such. The Windows NT user or kernel mode process isolation ensures that a user mode application problem does not cause the operating system to stop responding. This section presents exceptions to this and ways to determine whether to troubleshoot the problem at the system or application layer.

Sometimes the cause of a computer hard hang or blue screen may be a nonmaskable interrupt (NMI) error. This is sometimes visible as an error code stating NMI, parity check, or I/O parity check. NMI errors are almost always hardware. Usually they are caused by a memory failure; however, they can originate in other hardware subsystems such as video boards. Even if the NMI error happens only during certain SQL Server operations, and if the system passes initial hardware diagnostics, it should still be considered a hardware problem and pursued as such. It may be necessary to use a dedicated memory SIMM testing device, which can often find a transient memory error that eludes software-based diagnostics.

Processes exist on Windows NT in either user mode or kernel mode (sometimes called supervisor or privileged mode). In the Intel® x86 architecture, user mode maps to ring 3 and kernel mode to ring 0 of the 4-ring protection system. The x86 architecture has been carried forward with little change in all Intel and compatible processors to date, including the Pentium Pro and Pentium II. Processors such as the Alpha AXP typically have unprivileged and privileged modes as well.

Kernel mode is a privileged processor mode in which a thread has access to system-wide memory (including that of all user-mode processes) and to hardware. By contrast, user mode is a nonprivileged processor mode in which a thread can only access system resources by calling system services.

A user mode process cannot access kernel mode memory, or access memory of another user mode process. This is enforced by processor hardware, in conjunction with kernel mode data structures such as Page Tables.

As a result of this protection system, a user mode application generally cannot stop responding, cause a blue screen, or otherwise cause a failure in the Windows NT operating system. Such problems should be pursued primarily at the system layer as an operating system, device-driver, or hardware issue.

While an application error cannot cause a failure in the operating system, an operating system error can cause an application to stop responding. This is because of the general rule: applications must call inward (to kernel mode), but the operating system can reference outward to user mode freely at any time. A microkernel-influenced architecture such as Windows NT may in turn dispatch certain work to a user-mode system process rather than perform the work in kernel mode. However, the overall principle remains the same: Processor hardware enforces process context isolation, which prevents one process from causing a failure in another, whether one or both are in user mode.

If a user mode application passes an invalid parameter in a Win32® API call, it is the responsibility of the operating system to validate this parameter. In very rare cases, passing an invalid parameter may cause a Windows NT blue screen error. However, this is an operating system issue, and should be debugged and pursued as such.

See Also

bcp Utility

Troubleshooting Recovery

Every time Microsoft® SQL Server™ starts, recovery is performed on all system and user databases. The topics in this section focus on resolving performance and insufficient disk space problems related to recovery.

Recovery Performance

Recovery time is determined by how much work has been done since the last checkpoint, and by how much work has been done by all active transactions at the time of the data loss. Microsoft® SQL Server™ uses a configuration option named **recovery interval** to set the maximum number of minutes per database that SQL Server needs to recover databases. This **recovery interval** setting controls checkpoint frequency. For an online transaction processing (OLTP) system (using short transactions), **recovery interval** is the primary factor determining recovery time.

After installation, SQL Server sets this **recovery interval** setting to a default value of zero (0). As long as the **recovery interval** setting is at the default setting and long-running transactions are not present, recovery for each database should take approximately 1 minute or less. If long-running transactions were active at the time of the data loss, recovery time is controlled by the time it takes to rollback the effects of these transactions.

If recovery routinely takes significantly longer than 1 minute for a database, the **recovery interval** setting has a value of zero (0), and there are no long-running transactions to rollback, consider contacting your primary support provider to resolve the recovery performance problem.

Recovery reports progress (based on the virtual log files for a database). Recovery analyzes and scans the log at the beginning of recovery, since the last checkpoint. Based on the analysis phase, recovery estimates how much log will be read during recovery. The amount of log read is used to report recovery progress.

If the **recovery interval** setting is changed from the default value, database recovery takes that many times longer to complete. For example, if **recovery interval** is changed to 10, recovery would take approximately 10 times longer to complete than if **recovery interval** remained at the default setting of zero (0).

When growing the log, use larger chunks rather than small chunks to ensure a shorter startup time for SQL Server. The smaller the log chunks you have, the longer it takes SQL Server to initialize them.

If a long-running transaction is terminated, let the server finish the rollback

process. If you are concerned about the length of the rollback process, ask your system administrator to confirm that activity is taking place on the server. Terminating the server process during the rollback of a long-running transaction results in long recovery time.

If you have a long-running transaction and a crash occurs during this transaction, SQL Server begins the recovery process. This may take some time. If you are concerned that this recovery process is taking too long and you believe it is halted, contact your system administrator.

See Also

recovery interval Option

Setting Configuration Options

sp_configure

Insufficient Disk Space

During recovery, it is a rare but possible occurrence for the server to require additional log or data space. If additional space is unavailable and either the log or data files cannot grow, the server:

- Reports error message 9002 or 1105 in the Microsoft® SQL Server™ error log.
- Marks the database as suspect.
- Takes the database offline.

To resolve the 9002 error message and bring the database online

- 1. Free disk space on any disk drive containing the log file for the related database. Freeing disk space allows the recovery system to grow the log file automatically.
- 2. Reset the suspect status by executing **sp_resetstatus**.
- 3. Run recovery by executing DBCC DBRECOVER (*database*). -or-
- 1. Free disk space on a different disk drive.
- 2. Move the transaction log files with an insufficient amount of free disk space to the disk drive in Step 1.
- 3. Detach the database by executing **sp_detach_db**.
- 4. Attach the database by executing **sp_attach_db**, pointing to the moved files.

• Add a log file to the suspect database and run recovery on the database by executing **sp_add_log_file_recover_suspect_db**.

To resolve the 1105 error message and bring the database online

- 1. Free disk space on any disk containing a file in the filegroup mentioned in the 1105 error message. Freeing disk space allows the files in the filegroup to grow.
- 2. Reset the suspect status by executing **sp_resetstatus**.
- 3. Run recovery by executing DBCC DBRECOVER (*database*). -or-
- 1. Free disk space on a different disk drive.
- 2. Move the data files in the filegroup with an insufficient amount of free disk space to the disk drive in Step 1.
- 3. Detach the database by executing **sp_detach_db**.
- 4. Attach the database by executing **sp_attach_db**, pointing to the moved files.

-or-

• Add a data file to the suspect database and run recovery on the database by executing **sp_add_data_file_recover_suspect_db**.

See Also

ALTER DATABASE
CREATE DATABASE

DROP DATABASE

Error 1105

Error 9002

recovery interval Option

Resetting the Suspect Status

Server and Database Troubleshooting

Setting Configuration Options

sp add log file recover suspect db

sp_attach_db

sp attach single file db

sp_configure

SQL Server Tools Troubleshooting

This section contains information about troubleshooting problems you may encounter when using these tools with Microsoft® SQL ServerTM 2000.

- Index Tuning Wizard
- SQL Mail with Exchange Server
- SQL Profiler
- SQL Query Analyzer
- Web Assistant Wizard
- Transact-SQL Debugger

Troubleshooting the Index Tuning Wizard

Microsoft® SQL Server™ 2000 uses indexes to optimize searching. Indexes that worked on SQL Server 6.5 or SQL Server 7.0 may not be the best choice for use with SQL Server 2000. Use the Index Tuning Wizard to find the most efficient indexes for the SQL Server 2000 optimizer.

The wizard requires a workload or a table to build a recommendation of the optimal set of indexes that should be in place. For more information about optimal sets of indexes, see <u>Tuning Indexes</u>.

Here are some general problems that you might encounter.

Communication error

The connection to the server is broken or the server is offline. See Connect to SQL Server Dialog Box.

Empty workload

The trace file or script contains no SQL batch or RPC events.

• Canceling index analysis

When processing a large workload, canceling index analysis can take several minutes or more to complete processing.

• Accepting index configuration

After accepting the recommended index configuration for a large workload or database, final processing can take several minutes or more to complete.

• Nonexisting objects

Queries referencing temporary or other nonexisting objects cannot be tuned.

• File error

The Index Tuning Wizard was unable to open a file. Check to see if another user or process locked the workload file, or if the workload file was moved or deleted.

I/O error

The Index Tuning Wizard encountered a problem writing to a work file. Increase the available space on the disk drive on which the system temp directory is located.

• Insufficient memory error

There was insufficient memory to run the Index Tuning Wizard. Run the Index Tuning Wizard on a computer other than the server, or increase the size of the operating-system paging file.

• "Missing index" error

Multiple users concurrently tuning a database may result in "missing index" errors. It is recommended that only one user tune a database at a time.

• Add Indexed Views option is grayed out

Indexed views are available only on Microsoft SQL Server 2000 Enterprise Edition. For more information, see <u>Using Indexes on Views</u> and <u>Creating an Indexed View</u>.

Here are some workload problems that you might encounter.

• Cannot choose a SQL Server trace table

Does not connect

If you receive a connection error, the connection to the server is broken or the server is offline.

• Does not list my tables

You must first create a SQL Profiler trace of server activity and save this to either a file or a table. The trace must be created in advance. For more information, see Monitoring with SQL
Profiler.

• "My workload file" problems

You must first create a SQL Profiler trace of server activity and save this to either a file or a table.

• Workload cannot be parsed

The trace file contains SQL batch or RPC events, but none that reference objects in the selected database.

Troubleshooting SQL Mail with Exchange Server

Typically, errors that occur when starting a SQL Mail session or sending mail from SQL Mail with Microsoft® Exchange Server fall into these categories: permissions problems and Exchange client setup problems. For more information, see <u>SQL Mail</u>.

To troubleshoot problems with SQL Mail, complete these steps:

- 1. Log on to Microsoft Windows NT® 4.0 or Windows® 2000 with the user account that will be used for the MSSQLServer service. This user account must be an administrator of the local computer and a domain account.
- 2. Confirm that the Exchange Server client, Exchange 32.exe, or the Microsoft Outlook™ client, Outlook.exe, can connect to Exchange Server and that e-mail can be sent. If using Outlook, ensure that Outlook has been installed with the **Corporate or Workgroup** option.
- 3. Confirm that the Exchange Server profile used does not have a Personal Message Store (.pst). The Exchange Server profile name should not be longer than 32 characters.
- 4. On the **Services** tab, confirm that the only services available are Microsoft Exchange Server and Personal Address Book, and then click the **Delivery** tab. Confirm that the selection in the **Deliver To** box is the mailbox on Exchange Server, which should have a name similar to "Mailbox <Friendly User Name>" (where <Friendly User Name> is the name of the user who logged on to Windows NT 4.0 or Windows 2000in Step 1).
- 5. To run SQL Mail with Exchange Server, the MSSQLServer service must be run under the same user account that logged on in Step 1. In **Control Panel**, double-click **Services**, select **MSSQLServer** service,

and then click **Startup**.

- 6. Confirm that the SQL Mail profile is correct. In SQL Server Enterprise Manager, expand the server, expand the Support Services folder, select SQL Mail, and then right-click. Click **Properties**, and then on the **General** tab, ensure that the profile name specified in the **Profile name** box is correct. (The profile name must match the profile name used in Step 3.) Click **Test** to verify that the profile was set up correctly.
- 7. If SQL Mail fails to start (for example, gives you an error indicating that the profile was incorrect), check to make sure that Outlook Express is not set as the default e-mail client. In Control Panel, double-click Internet Options. On the **Programs** tab, verify that Outlook Express is not in the e-mail combo box. If you have to change the default e-mail client to a client other than Outlook Express, you may need to stop and restart the MSSQLServer service before verifying that SQL Mail can start with the mail profile.

In some cases, a mail profile may get corrupted and SQL Mail will not be able to use it. To correct the problem, copy the profile to a different name, or re-create the profile.

If the account used to start Microsoft SQL ServerTM does not have access to the Exchange server, you cannot use SQL Mail. Test SQL Server access permissions to Exchange Server by executing **xp_cmdshell**, which executes with the same permissions as SQL Mail. Use the following command to test connectivity to the server, assuming Exchange Server is located on a computer named "MyServer".

xp_cmdshell "NET USE \\MyServer\IPC\$"

If this command fails, Step 3 was not completed correctly.

Troubleshooting SQL Profiler

Here are some problems you may encounter when using SQL Profiler:

- When setting filters, a blank include filter includes all items in the SQL Profiler output. A filter on a data column is not applied to event classes that do not populate that data column.
- Because the SQL Profiler stored procedures save trace queue definitions on the server rather than on the client, SQL Profiler is unable to edit or start a trace created originally with the stored procedures.
- For security reasons, batches containing stored procedures with password arguments are not traced. Instead, an event is produced, which replaces the batch text with a comment.
- In Microsoft® Windows® 95 and Windows 98, SQL Profiler does not accept client configuration changes until the SQL Profiler is closed and restarted.
- SQL Profiler can incur problems accessing files on a remote computer if those files become unavailable.

Here are some common problems you may encounter when replaying a SQL Profiler trace:

- Replay errors may occur when logins and users captured in the trace do not exist in the target database. If the logins and users exist in the database, they must have the same permissions as they did in the source (traced) database.
- Replay errors may occur when the database ID (DBID) of the target database is different from the DBID captured in the trace. To correct this problem, restore a backup of the master database of the source

(traced) server onto the target server. Then, restore the user database or databases. As an alternative, the DBID data column can be removed from the trace and the default database set to the target database for each user captured in the trace.

- Replay errors may occur when attempting to replay a trace against a database if it is in a different state than from the source (traced) database. Updates may fail if data is missing or changed.
- System performance may degrade if replaying a trace that contains more concurrent connections than the replay computer can manage. In this case, the trace may be filtered by **Application Name**, **SQL User Name**, or another filter if one or more of these data columns were captured in the trace.
- Replaying captured events containing the KILL statement may cause unexpected replay results; the SPID that is terminated may not exist or, if it does exist, the SPID may be assigned to a different user or connection than the one traced originally.
- When replaying a trace file as fast as possible, SPIDs may become blocked, halting the progress of the replay. To free the blocked SPID and allow the trace to continue, kill the blocking SPID.

Troubleshooting SQL Query Analyzer

Here is a problem that you may encounter when using SQL Query Analyzer to execute a script:

• Showplan does not return a plan for Transact-SQL statements referencing objects created within the SHOWPLAN statement. If SHOWPLAN is set to ON, the query will not execute and the object will not be created. Any references to the object will fail with an error indicating that the object does not exist. You can trace the TSQL:**SQL:BatchStarting** and Performance:**Execution Plan** events in SQL Profiler while executing the Transact-SQL statements to see the plan.

Here is a problem that you may encounter when using SQL Query Analyzer to tune a database for a query:

- Unable to recommend indexes because the query did not reference any tunable tables. This problem was caused by at least one of the following scenarios.
 - The query did not reference any tunable tables.
 - The query has a syntax error or is invalid.
 - You are working in the wrong database.
 - You are referencing a temporary table.

For more information, see **Index Tuning Wizard**.

Troubleshooting the Web Assistant Wizard

This topic describes how the Web Assistant Wizard handles HTML page generation using the **When the SQL Server data changes** scheduling option.

With the Web Assistant Wizard, you can generate an HTML file whenever the data changes for one or more tables by using the **Schedule the Web Assistant Job** dialog box and selecting **When the SQL Server data changes**. The Web Assistant Wizard will accomplish this by either building new INSERT, UPDATE, and DELETE triggers for each of the tables selected by the user or updating existing ones. Any existing triggers are detected automatically by the Web Assistant Wizard and retained. Additional Transact-SQL statements are appended to the existing trigger code.

The trigger object built by the Web Assistant Wizard will have a name generated according to the following:

```
Web Page Name_1 -> INSERT trigger
Web Page Name_2 -> UPDATE trigger
Web Page Name_4 -> DELETE trigger
```

For example, if the page you create is named "Web Page 1", the three triggers generated by the Web Assistant Wizard will be: Web Page 1_1, Web Page 1_2, and Web Page 1_3 for the INSERT, UPDATE, and DELETE triggers respectively.

sp_depends does not enlist any of the Web Assistant Wizard generated triggers for a given table. You can use **sp_helptrigger** to return trigger information for the specified table for the current database.

Use the following steps to drop any of the triggers generated by the Web Assistant Wizard:

Identify the object name of all triggers to be dropped by executing the sp_helptrigger system stored procedure.
 sp_helptrigger TableName
 GO

2. Execute the DROP TRIGGER statement for each of the triggers you want to drop:

DROP TRIGGER WebTriggerName

Troubleshooting the Transact-SQL Debugger

The goal of this topic is to address any problems you may encounter while trying to start and use the Transact-SQL debugger. Potential sources of error include:

- Incorrect DCOM permission settings
- DCOM on Windows 98
- Missing or unregistered DLLs
- Lack of (or limited) debugger support

This topic describes how to identify and remedy various problems. Before attempting to troubleshoot your debugger configuration, verify the following:

- 1. Make sure you have permission to execute the SP_SDIDEBUG extended procedure.
- 2. Start the SQL Server Service using an account that has Administrator privileges on that computer.
- 3. Check the Event Viewer's Application and System logs for any error messages.

Incorrect DCOM Permission Settings

SQL debugging uses Distributed COM (DCOM) to communicate between your client computer and the database server. You must configure DCOM to allow remote users to attach the debugger to a process on the database server.

By default, the correct DCOM settings are in place when SQL Server is installed. However, because of security considerations for the computer running SQL Server, you may want to restrict debugging access. Use the following as a

general procedure for setting up DCOM on the SQL Server computer.

IMPORTANT If you plan on running the debugger as any user other than the one running SQL Server, DCOM will need to be correctly configured first. Follow these steps to insure you have execution permission.

On the server:

- 1. Run **DCOMCNFG.EXE**.
- 2. In the **Distributed COM Configuration Properties** window, select the **Default Security** tab. Under **Default Access Permissions**, click **Edit Default**.
- 3. If group **Everyone** does not already have permissions, you may add it by clicking **Add**. Select the local machine name from the **List Name From** list. Select **Everyone** and make sure that **Type of Access** is set to **Allow Access**. Then click **OK**.

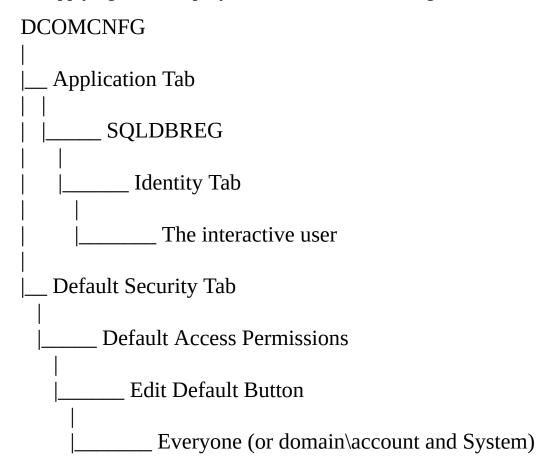
OR

If you prefer to limit debugging to specific users, you can add individual domain user accounts (e.g. domain\account) with administrator privileges. If you choose to add only domain accounts instead of **Everyone**, make sure to add the **SYSTEM** account as well.

- 4. Switch to the **Applications** tab of the **Distributed COM Configuration Properties** dialog.
- 5. Scroll through the **Applications** list and select **SQLDBREG**. Then click **Properties**.
- 6. Select the **Identity** tab and make sure that **The interactive user** is selected as the user to run this application.
- 7. Click **OK** to close the dialog box.

8. Restart the SQL Server service.

After applying those steps, your server's DCOM settings should look like this:



DCOM on Windows 98

DCOM95 on Windows 98 is not as robust as DCOM on Windows NT. In addition, RPCSS.EXE on Windows 98 can cause problems if it is not started either at shell load time or at boot time. To ensure that RPCSS.EXE is started early enough, modify either of the following registry entries:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Currel HKEY LOCAL MACHINE\SOFTWARE\Microsoft\Windows\Currel

Using any name, follow these steps to add a new **String Value** to the registry at either of those locations, and set its value to 'C:\WINDOWS\SYSTEM\RPCSS':

1. Run **REGEDIT.EXE**.

2. Expand

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\ CurrentVersion\Run.

- 3. Right-click and select **New -> String Value**.
- 4. Type in any name (e.g. RPC).
- 5. Double-click on the newly created string.
- 6. Type in the value (e.g. C:\WINDOWS\SYSTEM\RPCSS.EXE).
- 7. Reboot the computer.

Also, make sure that the following registry keys are set to 'y':

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Ole\EnableDCC HKEY LOCAL MACHINE\SOFTWARE\Microsoft\Ole\EnableRem

You must reboot your computer after making any of these changes.

Missing or unregistered DLLs

If the debugger fails to start, and you encounter any of these error messages, then you may need to manually setup the debugging environment:

• Error in output window (indicates mssdi98.dll is missing under ..\mssql\binn folder)

ODBC: Msg 0, Level 16, State 1

[Microsoft][ODBC SQL Server Driver][SQL Server]Cannot load the DLL mssdi98.dll, or one of the DLLs it references.

Reason: 126 (The specified module could not be found.).

• Error in Event Viewer/Application log (indicates sqldbg.dll is not registered or sqldbreg is not registered)

Unable to connect to debugger on <Server Name>

(Error = 0x80004002 No such interface supported).

Ensure that client side components such as SQLDBREG.EXE are installed and registered on <Server Name>. Debugging disabled for connection 54.

• Error Message Dialog Box (indicates sqldbg.dll is not registered or sqldbreg is not registered).

Missing or unregistered sdiclnt.dll

Initialization of the debugger failed!

Possible cause:

'sdicInt.dll' was not installed or registered properly.

Follow these steps to manually install and register missing debugger components when the server and client (i.e. Query Analyzer) are running on the same machine:

1. Copy file sdicInt.dll from the \x86\binn folder of your SQL Server 2000 CD-ROM to c:\program files\microsoft sql server\mssql\80\tools\binn, and then register it by executing the following command: regsvr32 sdicInt.dll

Note On Windows 9x, the regsvr32 utility is located under the \windows\system folder.

- 2. Create folder c:\program files\common files\microsoft shared\SQL Debugging.
- 3. Copy the following files from \x86\other\sdi to c:\program files\common files\microsoft shared\SQL Debugging:

sqldbg.dll sqldbreg.exe

then, register the files:

regsvr32 sqldbg.dll sqldbreg /RegServer

- 4. Copy file mssdi98.dll from \x86\other\sdi to where sqlservr.exe resides (e.g. c:\program files\microsoft sql server\mssql\binn).
- 5. Restart the SQL Server service.

Follow these steps to manually install and register missing debugger components when the server and client are running on different machines:

On the client:

1. Copy file sdicInt.dll from the \x86\binn folder of your SQL Server 2000 CD-ROM to c:\program files\microsoft sql server\mssql\80\tools\binn, then register it: regsvr32 sdicInt.dll

Note On Windows 9x, the regsvr32 utility is located under the \windows\system folder.

- 2. Create folder c:\program files\common files\microsoft shared\SQL Debugging.
- 3. Copy the following files from \x86\other\sdi to c:\program files\common files\microsoft shared\SQL Debugging: sqldbg.dll sqldbreg.exe

then, register the files:

regsvr32 sqldbg.dll

sqldbreg /RegServer

On the server:

- 1. Create folder c:\program files\common files\microsoft shared\SQL Debugging.
- 2. Copy the following file from \x86\other\sdi to c:\program files\common files\microsoft shared\SQL Debugging: sqldbg.dll

then, register the file:

regsvr32 sqldbg.dll

- 3. Copy file mssdi98.dll from \x86\other\sdi to where sqlservr.exe resides (e.g. c:\program files\microsoft sql server\mssql\binn)
- 4. Restart the SQL Server service

Lack of (or limited) debugger support

- Limited support is provided for these data types:
 - table

Variables of this type are not displayed in the local variables window.

• sql_variant, text, ntext, image, and cursor

Variables of these types are displayed within the local variables window, but cannot be modified.

- Procedures of greater than 64K in size are not supported.
- Nesting of greater than 32 stored procedure calls is not supported.

 Passing of more than 1023 arguments to a stored procedure is not supported.

Analysis Services Troubleshooting

These topics provide information about troubleshooting and resolving the most common errors that you may encounter when using Microsoft® SQL ServerTM 2000 Analysis Services.

- Troubleshooting Development
- Troubleshooting Processing
- Troubleshooting Querying and Browsing
- Troubleshooting Security
- Troubleshooting Server

Troubleshooting Development (Analysis Server)

What problem are you having?

Database on server cannot be deleted.

A database on a server (in ADOMD.Catalogs) does not appear in the DSO.Server.MDStores collection and cannot be deleted.

Cause: The repository is corrupted or changed, or the server failed during a transaction.

Solution: To remove the database and free the used disk space, use Decision Support Objects (DSO) to create a database with the same name, and then use the **Remove** method of the **clsServer** object to immediately delete it.

Received the following error message: "License information for this compon

Received the "License information for this component not found" message for Microsoft® Visual Basic® controls.

Cause: Microsoft SQL Server[™] 2000 Analysis Services installs controls with a license for run-time use. Visual Basic was installed after Analysis Services and failed to install these components correctly for use in the design environment.

Solution: On the Internet, go to the Microsoft Product Support Services Web site, http://search.support.microsoft.com/kb/c.asp.

On the search screen:

- 1. Under **My search is about**, select **Visual Basic**.
- 2. Under **I want to search by**, select **Specific article ID number**.
- 3. Under **My question is**, type **Q181854**.
- 4. Click **Find**, and then follow the instructions in the article.

Received the following error message: "The cube schema is already optimize

After selecting the **Optimize Schema** menu command in Cube Editor, received the "The cube schema is already optimized" message. Subsequent saving of the cube results in the following message: "A loop was detected in the schema. Please remove the extra joins".

Cause: Optimizing the schema through the **Optimize Schema** command may not have deleted a join that is not valid between a fact table and a dimension table or between two dimension tables for a snowflake-schema dimension.

Solution: In the schema view of Cube Editor, identify joins that are not valid, and then remove them with the **Remove Join** command. For more information about optimizing cube schemas, see Optimizing Cube Schemas.

Tables are missing from the list when setting drillthrough options.

Cause: A cube with an optimized schema may not display all available tables for use when you specify drillthrough options. For more information, see Optimizing Cube Schemas.

Solution: You can join a table to the schema for drillthrough when you specify drillthrough options. Add the table and define a SQL WHERE clause to establish the join.

Applications behave unexpectedly when referring to Decision Support Objec

After an application obtains a lock with the **LockObject** method on a DSO object, other applications sharing the DSO object behave unexpectedly when referring to certain properties or methods of the object.

Cause: The originating application may have destroyed the original DSO object. If so, all other applications will have references that are not valid to that object, because DSO automatically refreshes updated objects after a lock is obtained.

Solution: Use the **Parent** property of the DSO object to check the validity of the object reference. An object reference that is not valid will have its **Parent** property set to **Nothing**.

Troubleshooting Processing (Analysis Server)

What problem are you having?

After you change the data source provider for a cube, an error occurs while I

Changing a data source provider (for example, moving from an ODBC provider to a Microsoft® SQL ServerTM provider) for an existing cube causes an error the next time the cube is processed.

Cause: Different providers sometimes use incompatible SQL dialects, and a statement that was valid for one provider is not valid for another.

Solution: The error message should identify the syntax that is not valid. Use Decision Support Objects (DSO) or Cube Editor to correct the problem. To avoid such problems, do not change the data source provider for an existing cube.

Received the following error message while processing a dimension: "Maxim

Cause: One or more members of a dimension contains more than the maximum number of children allowed per parent.

Solution: Create member groups to provide intermediate levels that organize the dimension such that no member has more than the maximum allowable children. For more information, see <u>Creating Member Groups</u>.

While processing a cube, the member key was found in the fact table but not

While processing a cube, you received one of the following error messages:

- If the dimension is not parent child dimension: "A member with key *key* was found in the fact table but was not found in the level *level* of the dimension *dimension*."
- If the dimension is a parent child dimension and the
 MembersWithData property of the dimension is set to
 dataforLeafMembersOnly, the message is: "A member with key key
 was found in the fact table but was not found in the set of leaf members."

of dimension dimension."

If the dimension is a parent child dimension and the
 MembersWithData property of the dimension is not set to
 dataforLeafMembersOnly, the message is: "A member with key key
 was found in the fact table but was not found in the dimension
 dimension."

Cause: The dimension table does not contain a member related to a fact in the fact table, or the dimension was not processed after changing the dimension table.

Solution: Verify referential integrity between dimension tables and fact tables. Process a dimension after changing the dimension table and before processing cubes that use the dimension. For more information, see Optimizing Cube Schemas.

To manage a large number of these key errors, you can log the missing members to a file and use Data Transformation Services (DTS) to import the log into a relational database. You can then either remove the records with the keys from the fact table or add them to the dimension table. You select to log dimension key errors to a file in the <u>Cube Processing Settings Dialog Box</u>.

Some fact table rows are not read when a cube or partition is processed or in

Cause: The source data lacks referential integrity. For example, the cube's fact table contains foreign key values that are not present in a joined dimension table's primary key column.

Solution: Correct the referential integrity of the source data so that inner joins between the fact and dimension tables include all rows in the fact table.

User sees old version of a cube or virtual cube.

There are two possible causes.

Cause: The cube or virtual cube was changed but not processed.

Solution: First the administrator must process cube or virtual cube. After the cube is processed, the user must reconnect to the server computer.

Cause: The cube or virtual cube was processed while the user was browsing the cube.

Solution: The user might need to reconnect to the server computer. Reconnection is required for a full update but not for an incremental update.

Analysis Services is processing more records than exist in the fact table.

Cause: There is a many-to-many instead of a one-to-many relationship between the dimension table and the fact table.

Solution: Remove redundant members from the dimension tables.

Troubleshooting Querying and Browsing (Analysis Server)

What problem are you having?

Cannot see data when browsing a cube.

Data is not visible when you attempt to browse a cube with the aggregations stored in one method such as hybrid OLAP (HOLAP), but data is visible when you attempt to browse the cube with the aggregations stored in another mode such as relational OLAP (ROLAP).

Cause: The source data lacks referential integrity. For example, the fact table of the cube contains foreign key values that are not present in the primary key column of a joined dimension table.

Solution: Correct the referential integrity of the source data so that inner joins between the fact and dimension tables include all rows in the fact table.

Query of a calculated member returns text such as "1.#INF or 1.#J" instead

Cause: The formula in the calculated member attempted to divide by zero.

Solution: Change your formulas to check for possible division by zero errors before they occur.

Cubes are missing from the list of cubes in a database.

Cause: Cubes that use features introduced in Microsoft® SQLTM Server 2000 Analysis Services are not available to SQL Server 7.0 OLAP Services client applications, and their presence is hidden from these clients.

Solution: Upgrade the client application to a version that is fully compatible with SQL Server 2000 Analysis Services.

Troubleshooting Security (Analysis Server)

What problem are you having?

A change made to a user's permissions or group membership list does not tal

Cause: The user was logged on to Microsoft® Windows NT® 4.0 when the change was made and has not logged off.

Solution: The user must log off Windows NT 4.0 and then log on again.

Cannot connect to server computer that stores a cube or virtual cube.

Cause: User lacks permissions to the data source containing cube's source data.

Solution: Ensure the user logon provides access to the data source.

See also: Windows NT Server or Windows 2000 Server online documentation (click **Help** on the **Start** menu).

Insufficient disk space for temporary files.

During cube processing or aggregation design, Analysis Manager displayed a message indicating insufficient disk space for temporary files.

Cause: The temporary file folder used by Microsoft SQL Server[™] 2000 Analysis Services is on a disk that has no more space.

Solution: Create additional space on the disk or specify a temporary file folder on another disk with more space.

See also: <u>Properties Dialog Box - General Tab</u>

Attempting to register an Analysis server generates an error message.

When you attempt to register an Analysis server, Analysis Manager displays an error message such as the following: "Connection to server failed. Your permissions on the server computer do not allow you to administer this Analysis server".

Cause: You are not logged on using an account that is a member of the OLAP

Administrators group on the server to be registered.

Solution: On the server to be registered, add your account to the OLAP Administrators group. You may have to log off and then log on again before the group membership becomes effective.

Troubleshooting Server (Analysis Server)

What problem are you having?

Received the following error message: "Cannot open connection to Analysis

When you try to register an Analysis server in Analysis Manager, Analysis Manager displays the following error message: "Cannot open connection to Analysis server *servername*. Network error *servername*".

Cause: MSSQLServerOLAPService is not started on the specified server.

Solution: Start MSSQLServerOLAPService on the server. To do this, use the Services application, which is in Control Panel in Microsoft® Windows NT® 4.0 or the Administrative Tools folder in Control Panel in Windows 2000.

If the service is already started, you may not have permissions on the server computer to administer Microsoft SQL ServerTM 2000 Analysis Services (see <u>Troubleshooting Security (Analysis Server</u>)).

The Analysis Services service, MSSQLServerOLAPService, fails to start.

Cause: The computer name has been changed, the network card has been replaced, or other changes have been made to the computer.

Solution: Reinstall Analysis Services.

Cause: The password has been changed for the logon account used by Analysis Services.

Solution: Change the logon account password for Analysis Services. To do this, use the Services application, which is in Control Panel in Windows NT 4.0 or the Administrative Tools folder in Control Panel in Windows 2000.

Cause: The first word in the name of the root folder for Analysis Services is duplicated among root folder names on the same disk. For example, Analysis Services is installed in the Program Files root folder and another root folder named Program exists.

Solution: Rename the root folder that does not contain Analysis Services.

Characters display incorrectly in some non-English versions of Analysis Serv

Cause: The current display font does not support the full character set for the language in use, specifically characters in the extended ASCII character set. Analysis Services uses the system's Icon font setting for the majority of its user interface display.

Solution: Change the display font to one that supports the extended character set for the language in use:

- 1. Run the Display application in Control Panel, and then click the **Appearance** tab.
- 2. Select **Icon** in the **Item** list and then, under **Font**, select a font that supports the extended ASCII character set, such as Times New Roman or Tahoma.

Received the following error message: "Cannot obtain server's start director

MSSQLServerOLAPService failed to start, and the system displayed the following error message: "Cannot obtain server's start directory from registry".

Cause: If the path of the data directory contains more than 102 characters, Analysis Services cannot start.

Solution: During installation, make sure that the size of the path of the Data directory is limited to 102 characters. You can change the path after installation by using the **Data folder** box in the **Properties** dialog box for the server.

Error Messages

When Microsoft® SQL ServerTM 2000 encounters a problem, it either writes a message from the **sysmessages** system table to the SQL Server error log and the Microsoft Windows® 2000 or Microsoft Windows NT® 4.0 application log, or sends a message to the client, depending on the severity level.

Error messages can be either returned by SQL Server when encountering a problem or produced manually using the RAISERROR statement.

The RAISERROR statement provides centralized error message management. RAISERROR can retrieve an existing entry from **sysmessages**, or it can use a hard-coded (user-defined) message. When RAISERROR returns a user-defined error message, it also sets a system variable to record that an error has occurred. The message can include C PRINTF-style format strings that are filled with arguments specified by RAISERROR at run time. After it is defined, the message is sent back to the client as a server error message.

Whether returned by SQL Server or through the RAISERROR statement, each message contains:

- A message number that uniquely identifies the error message.
- A severity level that provides an indication of the type of problem.
- An error state number that identifies the source from which the error was issued (if the error can be issued from more than one place).
- A message that states the problem and sometimes a possible solution.

For example, if you access a table that does not exist:

SELECT*

FROM bogus

The error message sent to the client looks similar to this:

Server: Msg 208, Level 16, State 1

Invalid object name 'bogus'.

You can view the list of SQL Server error messages by querying the **sysmessages** table in the **master** database. For more information about **sysmessages**, see <u>System Error Messages</u>.

See Also

RAISERROR

Using RAISERROR

Error Message Formats

All of the Microsoft® SQL ServerTM 2000 components can issue informational, warning, or error messages to applications. Most SQL Server messages returned to applications contain these parts:

Error number

A one-to-five-digit number that identifies the message. Error numbers for user-defined messages can contain more digits.

Description

A Unicode string that contains information about the condition that generated the message.

• Severity level

A one- or two-digit number that indicates the severity of the error condition.

State

A one- to three-digit number with a maximum value of 127 that indicates to Microsoft support engineers and developers the location in the SQL Server code that generated the message:

• Line number

A number within the batch or stored procedure that contains the statement that generated the message. Line number can also be within the text of the stored procedure that is being executed.

The error numbers, descriptions, and severity levels for most SQL Server messages are stored in **master.dbo.sysmessages**. The state and line numbers are generated dynamically by the code issuing the message.

Messages raised in the client Net-Libraries, the Microsoft OLE DB Provider for SQL Server, or the SQL Server ODBC driver do not have some of these message parts.

To see an example of an error message, execute this statement:

SELECT * FROM ThisObjectDoesNotExist

This statement raises an error with these parts:

Error number: 208

Severity level: 16

State: 1

Line: 1

Description: Invalid object name 'ThisObjectDoesNotExist'.

All of the data APIs used by applications to access SQL Server return the error number and description. Not all of the APIs return the severity level, state, or line number. The Microsoft OLE DB Provider for SQL Server and the SQL Server ODBC driver return these parts only if an OLE DB or ODBC application has been written to use SQL Server-specific diagnostic features that are exposed by the provider and driver.

Error Message Numbers and Descriptions

A message number uniquely identifies each error message and the error message text describes the problem. The error message text often includes placeholders for information (such as object names) to be inserted in the error message when it is displayed.

In the **description** column of the **sysmessages** table, a percent sign (%) followed by a character serves as a placeholder; the specific data is supplied when the error message is generated. The notation %d is a placeholder for a number; %ls (or %.*ls) is a placeholder for a string. For example, the actual error message displayed for error 105 might be:

Unclosed quote before the character string %.*ls.

When you report an error to your primary support provider, it is important to include error numbers, error states, object types, and object names. Otherwise, it can be difficult and time-consuming for the support provider to render assistance in resolving the error message.

See Also

Reporting Errors to Your Primary Support Provider sysmessages

Error Message Severity Levels

The severity level of an error message provides an indication of the type of problem that Microsoft® SQL ServerTM 2000 has encountered.

Severity level 10 messages are informational and indicate problems caused by mistakes in the information you have entered. Severity levels from 11 through 16 are generated by the user, and can be corrected by the user.

Severity levels from 17 through 25 indicate software or hardware errors. You should inform the system administrator whenever problems that generate errors with severity levels 17 and higher occur. The system administrator must resolve these errors and track their frequency. When a level 17, 18, or 19 error occurs, you can continue working, although you might not be able to execute a particular statement.

The system administrator should monitor all problems that generate severity levels from 17 through 25 and print the error log that contains information to backtrack from the error.

If the problem affects an entire database, you can use DBCC CHECKDB (database) to determine the extent of the damage. DBCC may identify some objects that must be removed and will optionally repair the damage. If damage is extensive, the database might have to be restored.

When specifying user-defined error messages with RAISERROR, use error message numbers greater than 50,000 and severity levels from 0 through 18. Only system administrators can issue RAISERROR with a severity level from 19 through 25.

Severity Levels 0 through 19

Error messages with a severity level of 10 are informational. Error messages with severity levels from 11 through 16 are generated by the user and can be corrected by the user. Severity levels from 17 and 18 are generated by resource or system errors; the user's session is not interrupted.

Using **sp_addmessage**, user-defined messages with severities from 1 through 25 can be added to **sysmessages**. Only the system administrator can add messages

with severities from 19 through 25.

Error messages with severity levels 17 and higher should be reported to the system administrator.

Severity Level 10: Status Information

This is an informational message that indicates a problem caused by mistakes in the information the user has entered. Severity level 0 is not visible in SQL Server.

Severity Levels 11 through 16

These messages indicate errors that can be corrected by the user.

Severity Level 17: Insufficient Resources

These messages indicate that the statement caused SQL Server to run out of resources (such as locks or disk space for the database) or to exceed some limit set by the system administrator.

Severity Level 18: Nonfatal Internal Error Detected

These messages indicate that there is some type of internal software problem, but the statement finishes, and the connection to SQL Server is maintained. For example, a severity level 18 message occurs when the SQL Server query processor detects an internal error during query optimization. The system administrator should be informed every time a severity level 18 message occurs.

Severity Level 19: SQL Server Error in Resource

These messages indicate that some nonconfigurable internal limit has been exceeded and the current batch process is terminated. Severity level 19 errors occur rarely; however, they must be corrected by the system administrator or your primary support provider. The administrator should be informed every time a severity level 19 message occurs.

Severity Levels 20 through 25

Severity levels from 20 through 25 indicate system problems. These are fatal errors, which means that the process (the program code that accomplishes the task specified in your statement) is no longer running. The process freezes

before it stops, records information about what occurred, and then terminates. The client connection to SQL Server closes, and depending on the problem, the client might not be able to reconnect.

Error messages with a severity level of 19 or higher stop the current batch. Errors messages with a severity level of 20 or higher are considered fatal errors and terminate the client connection. Errors messages in this range may affect all of the processes in the database, and may indicate that a database or object is damaged. Error messages with a severity level from 19 through 25 are written to the error log.

Severity Level 20: SQL Server Fatal Error in Current Process

These messages indicate that a statement has encountered a problem. Because the problem has affected only the current process, it is unlikely that the database itself has been damaged.

Severity Level 21: SQL Server Fatal Error in Database (dbid) Processes

These messages indicate that you have encountered a problem that affects all processes in the current database; however, it is unlikely that the database itself has been damaged.

Severity Level 22: SQL Server Fatal Error Table Integrity Suspect

These messages indicate that the table or index specified in the message has been damaged by a software or hardware problem.

Severity level 22 errors occur rarely; however, if you should encounter one, run DBCC CHECKDB to determine if other objects in the database are also damaged. It is possible that the problem is in the cache only and not on the disk itself. If so, restarting SQL Server corrects the problem. To continue working, you must reconnect to SQL Server. Otherwise, use DBCC to repair the problem. In some cases, it may be necessary to restore the database.

If restarting does not help, the problem is on the disk. Sometimes destroying the object specified in the error message can solve the problem. For example, if the message tells you that SQL Server has found a row with a length of 0 in a nonclustered index, delete the index and rebuild it.

Severity Level 23: SQL Server Fatal Error: Database Integrity Suspect

These messages indicate that the integrity of the entire database is in

question because of a hardware or software problem.

Severity level 23 errors occur rarely; however, if you should encounter one, run DBCC CHECKDB to determine the extent of the damage. It is possible that the problem is in the cache only and not on the disk itself. If so, restarting SQL Server corrects the problem. To continue working, you must reconnect to SQL Server. Otherwise, use DBCC to repair the problem. In some cases, it may be necessary to restore the database.

Severity Level 24: Hardware Error

These messages indicate some type of media failure. The system administrator might have to reload the database. It might also be necessary to call your hardware vendor.

See Also

Backing Up and Restoring Databases

DBCC

DBCC CHECKDB

Setting Configuration Options

sp_configure

ADO Error Message Format

The ADO specification defines **Error** objects in an **Errors** collection. Each **Error** object holds a message from the underlying provider. ADO does not provide for provider-specific diagnostic information. ADO and the Microsoft OLE DB Provider for SQL Server map the parts of Microsoft® SQL Server messages into these ADO **Error** object properties:

• Description

Contains the SQL Server message description, usually from the **description** column in **master.dbo.sysmessages**.

• SQLState

Contains the five-character SQLSTATE code generated by the Microsoft OLE DB Provider for SQL Server.

NativeError

Contains the SQL Server error number. For example, if a statement raises a SQL Server error 170 (syntax error), 170 is returned in **NativeError**.

OLE DB Error Message Format

OLE DB applications receive Microsoft® SQL ServerTM messages in these ways:

- Call the OLE DB **ISQLErrorInfo::GetSQLInfo** function.
- Call the provider-specific **ISQLServerErrorInfo**::**GetErrorInfo** function.

ISQLErrorInfo::GetSQLInfo returns the SQL Server error numbers from **master.dbo.sysmessages** as the *plNativeError* parameter and the SQLSTATE value as the *pbstrSQLState* parameter. These SQLSTATE codes are not related to any of the parts of a SQL Server message. The Microsoft OLE DB Provider for SQL Server generates the appropriate SQLSTATE code anytime it returns a message to an application. The SQLSTATE codes generated by the OLE DB Provider for SQL Server are same as the five-character SQLSTATE codes defined in the ODBC specification. For **ISQLErrorInfo::GetSQLInfo**, *pbstrSQLState* may be NULL when the error is not produced by SQL Server.

Both the Microsoft OLE DB Provider for SQL Server and the Microsoft OLE DB Provider for ODBC support the **ISQLErrorInfo** interface.

The provider-specific **ISQLServerErrorInfo** interface returns more detail about a SQL Server error. The **ISQLServerErrorInfo** interface exposes one member function, **GetErrorInfo**. The function returns a pointer to a SSERRORINFO structure and a pointer to a string buffer. The pointer to SSERRORINFO structure is NULL when SQL Server does not produce the error.

The SQL Server message parts map to members of the SSERRORINFO structure:

pwszMessage

Contains the SQL Server error description.

INative

Contains the SQL Server error number.

bState

Contains the SQL Server error state.

bClass

Contains the severity of the SQL Server error condition.

wLineNumber

Contains the line number of the stored procedure on which the error occurred.

See Also

Information in OLE DB Error Interfaces

ODBC Error Message Format

ODBC drivers return messages to applications as diagnostic records. An application can call the **SQLGetDiagRec** and **SQLGetDiagField** functions to retrieve these diagnostic records. The Microsoft® SQL ServerTM ODBC driver maps SQL Server message parts into these standard ODBC diagnostic record fields:

SQLSTATE

The ODBC specification defines a set of five-character codes called SQLSTATE codes that identify the conditions generating the message. These SQLSTATE codes are not related to any of the parts of a SQL Server message. The SQL Server ODBC driver generates the appropriate SQLSTATE code anytime it returns a message to an application.

pfNative

The SQL Server ODBC driver returns the SQL Server error number as the ODBC *pfNative* field. For example, if a statement raises a SQL Server error 170 (syntax error), the ODBC driver returns 170 in *pfNative*.

MessageText

The SQL Server ODBC driver returns the SQL Server error description as the *MessageText* field in an ODBC diagnostic record. The ODBC specification defines a series of headers for the *MessageText* field that indicates the component that issued the message:

- [Microsoft][ODBC Driver Manager]
 These messages are issued by the ODBC Driver Manager.
- [Microsoft][ODBC Cursor Library]
 These messages are issued by the ODBC client cursor library.
- [Microsoft][ODBC SQL Server Driver]

These messages are issued by the SQL Server ODBC driver. If there are no other nodes with the name of either a Net-Library or a SQL Server

installation, the message was issued by the driver.

• [Microsoft][ODBC SQL Server Driver][*Net-Libraryname*]

These messages are issued by the SQL Server Net-Library, where *Net-Libraryname* is the display name of a SQL Server client Net-Library (for example, Named Pipes, Shared Memory, Multiprotocol, TCP/IP Sockets, NWLink IPX/SPX, or Banyan VINES).

• [Microsoft][ODBC SQL Server Driver][SQL Server]

These messages are issued by SQL Server. The remainder of the error message is the description from SQL Server, usually from **master.dbo.sysmessages**.

The ODBC specification allows ODBC drivers to define driver-specific fields in ODBC diagnostic records. The SQL Server ODBC driver maps SQL Server message parts into these SQL Server ODBC driver-specific diagnostic fields:

SQL_DIAG_SS_SEVERITY.

Contains the SQL Server severity level.

SQL_DIAG_SS_MSGSTATE.

Contains the SQL Server state. It is not related to the ODBC SQLSTATE code.

SQL_DIAG_SS_LINE.

Contains the number of the line containing the SQL statement generating the message.

SQL DIAG SS PROCNAME.

Contains the name of the stored procedure generating the message, if appropriate.

SQL_DIAG_SS_SRVNAME.

Contains the name of the server from which the message came.

See Also

Handling Errors and Messages

Embedded SQL for C Error Message Format

The errors and messages are returned to the application in an SQLCA data structure. The Microsoft® SQL ServerTM message parts map to fields in the SQLCA data structure:

sqlerrmc

Contains text of the error message.

sqlerrd[1]

Contains the SQL Server error number.

sqlerrd[2]

Contains the SQL Server severity level.

Sqlstate

Contains the SQLSTATE run-time error codes as defined in Embedded SQL for C. These SQLSTATE codes are not related to any of the parts of a SQL Server message.

DB-Library Error Message Format

DB-Library returns Microsoft® SQL Server™ errors and messages to call-back functions written by the application programmer.

The application programmer uses the **dberrorhandle** function to give DB-Library the address of the call-back function that handles the errors. When DB-Library determines that an error has occurred, it calls the call-back function identified by **dberrorhandle**. DB-Library passes the SQL Server error information into the parameters of the call-back function:

severity

Contains the severity of the error.

dberr

Contains the SQL Server error number.

dberrstr

Contains the description of the SQL Server error.

The application programmer uses the **dbmsghandle** function to give DB-Library the address of the call-back function that handles the messages. When DB-Library receives an informational message from SQL Server, it calls the call-back function identified by **dbmsghandle**.

DB-Library passes the SQL Server message information into the parameters of the call-back function:

msgno

Contains the error number identifying the message.

msgstate

Contains the SQL Server message state.

severity

Contains the severity of the error condition.

msgtext

Contains the description of the SQL Server message.

srvname

Contains the server name that generated the message.

procname

Contains the stored procedure name that generated the message.

line

Contains the line number in the stored procedure or the command batch that generated the message.

DB-Library calls the application error handler and message handler functions asynchronously as packets containing messages and errors are received from the server. This means DB-Library applications may receive errors and messages in a slightly different sequence from applications using either the Microsoft OLE DB Provider for SQL Server or the SQL Server ODBC Driver.

Messages Returned by SQL Server Utilities

All of the Microsoft® SQL ServerTM 2000 utilities use ODBC except for the **isql** command prompt utility. This has effects on the way error messages are displayed by the ODBC-based utilities:

 The error messages may have leading ODBC headers built into the description. These headers identify the component raising the error. The osql command prompt utility returns the ODBC headers. SQL Query Analyzer defaults to removing the ODBC headers, but users can set a connection option so that these are returned.

For example, **isql** returns the error 208 description as:

Invalid object name 'ThisObjectDoesNotExist'.

osql includes the ODBC headers in the description:

[Microsoft][ODBC SQL Server Driver][SQL Server]Invalid object name 'ThisObjectDoesNotExist'.

The presence of the ODBC headers in the message does not necessarily indicate that the problem is in the ODBC components. The SQL Server ODBC driver includes these headers in messages from all components. For more information about how to determine the component raising the error, see ODBC Error Message Format.

Errors raised within the SQL Server ODBC driver have only a
description. They have no error number, state, severity level, or line
number. For example, if the following statement is executed in SQL
Query Analyzer, the SQL Server ODBC driver itself raises a syntax
error:

```
{ CLL sp_who }
```

Because the driver generates the error, the only message part displayed by SQL Query Analyzer is the description:

[Microsoft][SQL Server ODBC Driver]Syntax error or access

violation

See Also

isql Utility

osql Utility

sysmessages

Error Message Descriptions

The following topics contain error message information for Microsoft® SQL ServerTM 2000 system error messages. In addition, details on other types of error messages are listed in this section, including:

- DB-Library Error Messages
- Distributed Queries Error Messages
- Embedded SQL for C Error Messages
- SQL Server Enterprise Manager Error Messages
- ODBC Error Messages
- XML Error Messages

See Also

Resolving System Error Messages

Error Message Formats

System Error Messages

Topics in this section contain the text of Microsoft® SQL Server™ 2000 system error messages, arranged in order by error number. The tables in the topics include the error message number, the severity level, and the description, which is the text of the error message from the **master.sysmessages** table.

Additional topics are available for some of the system error messages, with an explanation of the issue and suggested actions for resolving the error.

The **master.sysmessages** table contains one row for each system error or warning that can be returned by SQL Server. The following table shows the column names in the **sysmessages** table.

Column name	Data type	Description
error	int	Unique error number.
severity	smallint	Severity level of the error.
dlevel	smallint	Reserved. For internal use only.
description	nvarchar(255)	Text of the error message with
		placeholders for parameters and
		variables to be inserted each time the
		error message appears in a specific
		context.
mslangid	smallint	System message group ID.

These symbols may appear in the error message text along with the system error message descriptions. The symbols are placeholders that will be replaced by specific values when the error text is generated in a particular context.

Symbol	Meaning
%d, %ld, or %D	Decimal integer
%x	Hexadecimal number
%ls or %.*ls	Character string
%S_type	SQL Server -defined structure
%с	Single character
%lf	Double floating-point number

Errors 1 - 999

Error	Severity	Description (Message Text)
1	10	Version date of last upgrade: 10/11/90.
21	10	Warning: Fatal error %d occurred at %S_DATE. Note the error and time, and contact your system administrator.
102	15	Incorrect syntax near '%.*ls'.
103	15	The %S_MSG that starts with '%.*ls' is too long. Maximum length is %d.
104	15	ORDER BY items must appear in the select list if the statement contains a UNION operator.
105	15	Unclosed quotation mark before the character string '%.*ls'.
106	16	Too many table names in the query. The maximum allowable is %d.
107	15	The column prefix '%.*ls' does not match with a table name or alias name used in the query.
108	15	The ORDER BY position number %ld is out of range of the number of items in the select list.
109	15	There are more columns in the INSERT statement than values specified in the VALUES clause. The number of values in the VALUES clause must match the number of columns specified in the INSERT statement.
110	15	There are fewer columns in the INSERT statement than values specified in the VALUES clause. The number of values in the VALUES clause must match the number of columns specified in the INSERT statement.
111	15	'%ls' must be the first statement in a query batch.
112	15	Variables are not allowed in the %ls statement.
113	15	Missing end comment mark '*/'.

114	15	Browse mode is invalid for a statement that assigns values to a variable.
116	15	Only one expression can be specified in the select list when the subquery is not introduced with EXISTS.
117	15	The %S_MSG name '%.*ls' contains more than the maximum number of prefixes. The maximum is %d.
118	15	Only members of the sysadmin role can specify the %ls option for the %ls statement.
119	15	Must pass parameter number %d and subsequent parameters as '@name = value'. After the form '@name = value' has been used, all subsequent parameters must be passed in the form '@name = value'.
120	15	The select list for the INSERT statement contains fewer items than the insert list. The number of SELECT values must match the number of INSERT columns.
121	15	The select list for the INSERT statement contains more items than the insert list. The number of SELECT values must match the number of INSERT columns.
122	15	The %ls option is allowed only with %ls syntax.
123	15	Batch/procedure exceeds maximum length of %d characters.
124	15	CREATE PROCEDURE contains no statements.
125	15	Case expressions may only be nested to level %d.
128	15	The name '%.*ls' is not permitted in this context. Only constants, expressions, or variables allowed here. Column names are not permitted.
129	15	Fillfactor %d is not a valid percentage; fillfactor must be between 1 and 100.
130	16	Cannot perform an aggregate function on an expression containing an aggregate or a subquery.

131	15	The size (%d) given to the %S_MSG '%.*ls' exceeds the maximum allowed for any data type (%d).
132	15	The label '%.*ls' has already been declared. Label names must be unique within a query batch or stored procedure.
133	15	A GOTO statement references the label '%.*ls' but the label has not been declared.
134	15	The variable name '%.*ls' has already been declared. Variable names must be unique within a query batch or stored procedure.
135	15	Cannot use a BREAK statement outside the scope of a WHILE statement.
136	15	Cannot use a CONTINUE statement outside the scope of a WHILE statement.
<u>137</u>	15	Must declare the variable '%.*ls'.
138	15	Correlation clause in a subquery not permitted.
139	15	Cannot assign a default value to a local variable.
140	15	Can only use IF UPDATE within a CREATE TRIGGER statement.
141	15	A SELECT statement that assigns a value to a variable must not be combined with data-retrieval operations.
142	15	Incorrect syntax for definition of the '%ls' constraint.
143	15	A COMPUTE BY item was not found in the order by list. All expressions in the compute by list must also be present in the order by list.
144	15	Cannot use an aggregate or a subquery in an expression used for the group by list of a GROUP BY clause.
145	15	ORDER BY items must appear in the select list if SELECT DISTINCT is specified.
146	15	Could not allocate ancillary table for a subquery. Maximum number of tables in a query (%d)

		exceeded.
147	15	An aggregate may not appear in the WHERE clause unless it is in a subquery contained in a HAVING clause or a select list, and the column being aggregated is an outer reference.
148	15	Incorrect time syntax in time string '%.*ls' used with WAITFOR.
149	15	Time value '%.*ls' used with WAITFOR is not a valid value. Check date/time syntax.
150	15	Both terms of an outer join must contain columns.
151	15	'%.*ls' is an invalid money value.
153	15	Invalid usage of the option %.*ls in the %ls statement.
154	15	%S_MSG is not allowed in %S_MSG.
155	15	'%.*ls' is not a recognized %ls option.
<u>156</u>	15	Incorrect syntax near the keyword '%.*ls'.
157	15	An aggregate may not appear in the set list of an UPDATE statement.
159	15	For DROP INDEX, you must give both the table and the index name, in the form tablename.indexname.
160	15	Rule does not contain a variable.
161	15	Rule contains more than one variable.
163	15	The compute by list does not match the order by list.
164	15	GROUP BY expressions must refer to column names that appear in the select list.
165	16	Privilege %ls may not be granted or revoked.
166	15	'%ls' does not allow specifying the database name as a prefix to the object name.
167	16	Cannot create a trigger on a temporary object.
168	15	The %S_MSG '%.*ls' is out of the range of computer representation (%d bytes).
169	15	A column has been specified more than once in the

		order by list. Columns in the order by list must be unique.
<u>170</u>	15	Line %d: Incorrect syntax near '%.*ls'.
171	15	Cannot use SELECT INTO in browse mode.
172	15	Cannot use HOLDLOCK in browse mode.
173	15	The definition for column '%.*ls' must include a data type.
174	15	The %ls function requires %d arguments.
177	15	The IDENTITY function can only be used when the SELECT statement has an INTO clause.
178	15	A RETURN statement with a return value cannot be used in this context.
179	15	Cannot use the OUTPUT option when passing a constant to a stored procedure.
180	15	There are too many parameters in this %ls statement. The maximum number is %d.
181	15	Cannot use the OUTPUT option in a DECLARE statement.
182	15	Table and column names must be supplied for the READTEXT or WRITETEXT utility.
183	15	The scale (%d) for column '%.*ls' must be within the range %d to %d.
185	15	Data stream is invalid for WRITETEXT statement in bulk form.
186	15	Data stream missing from WRITETEXT statement.
188	15	Cannot specify a log device in a CREATE DATABASE statement without also specifying at least one non-log device.
189	15	The %ls function requires %d to %d arguments.
191	15	Some part of your SQL statement is nested too deeply. Rewrite the query or break it up into smaller queries.
192	16	The scale must be less than or equal to the precision.

193	15	The object or column name starting with '%.*ls' is too long. The maximum length is %d characters.
194	15	A SELECT INTO statement cannot contain a SELECT statement that assigns values to a variable.
195	15	'%.*ls' is not a recognized %S_MSG.
196	15	SELECT INTO must be the first query in an SQL statement containing a UNION operator.
197	15	EXECUTE cannot be used as a source when inserting into a table variable.
198	15	Browse mode is invalid for statements containing a UNION operator.
199	15	An INSERT statement cannot contain a SELECT statement that assigns values to a variable.
201	16	Procedure '%.*ls' expects parameter '%.*ls', which was not supplied.
202	16	Invalid type '%s' for WAITFOR. Supported data types are CHAR/VARCHAR, NCHAR/NVARCHAR, and DATETIME. WAITFOR DELAY supports the INT and SMALLINT data types.
203	16	The name '%.*ls' is not a valid identifier.
204	20	Normalization error in node %ls.
205	16	All queries in an SQL statement containing a UNION operator must have an equal number of expressions in their target lists.
206	16	Operand type clash: %ls is incompatible with %ls
207	16	Invalid column name '%.*ls'.
208	16	Invalid object name '%.*ls'.
209	16	Ambiguous column name '%.*ls'.
210	16	Syntax error converting datetime from binary/varbinary string.
212	16	Expression result length exceeds the maximum. %d max, %d found.

213	16	Insert Error: Column name or number of supplied values does not match table definition.
214	16	Procedure expects parameter '%ls' of type '%ls'.
217	16	Maximum stored procedure, function, trigger, or view nesting level exceeded (limit %d).
220	16	Arithmetic overflow error for data type %ls, value = %ld.
221	10	FIPS Warning: Implicit conversion from %ls to %ls.
223	11	Object ID %ld specified as a default for table ID %ld, column ID %d is missing or not of type default.
224	11	Object ID %ld specified as a rule for table ID %ld, column ID %d is missing or not of type default.
226	16	%ls statement not allowed within multi-statement transaction.
229	14	%ls permission denied on object '%.*ls', database '%.*ls', owner '%.*ls'.
230	14	%ls permission denied on column '%.*ls' of object '%.*ls', database '%.*ls', owner '%.*ls'.
231	11	No such default. ID = %ld, database ID = %d.
232	16	Arithmetic overflow error for type %ls, value = %f.
233	16	The column '%.*ls' in table '%.*ls' cannot be null.
234	16	There is insufficient result space to convert a money value to %ls.
235	16	Cannot convert a char value to money. The char value has incorrect syntax.
236	16	The conversion from char data type to money resulted in a money overflow error.
237	16	There is insufficient result space to convert a money value to %ls.
238	16	There is insufficient result space to convert the %ls value (= %d) to the money data type.
241	16	Syntax error converting datetime from character

		string.
242	16	The conversion of a char data type to a datetime data type resulted in an out-of-range datetime value.
243	16	Type %.*ls is not a defined system type.
244	16	The conversion of the %ls value '%.*ls' overflowed an %hs column. Use a larger integer column.
<u>245</u>	16	Syntax error converting the %ls value '%.*ls' to a column of data type %ls.
248	16	The conversion of the %ls value '%.*ls' overflowed an int column. Maximum integer value exceeded.
251	16	Could not allocate ancillary table for query optimization. Maximum number of tables in a query (%d) exceeded.
256	16	The data type %ls is invalid for the %ls function. Allowed types are: char/varchar, nchar/nvarchar, and binary/varbinary.
257	16	Implicit conversion from data type %ls to %ls is not allowed. Use the CONVERT function to run this query.
<u>259</u>	16	Ad hoc updates to system catalogs are not enabled. The system administrator must reconfigure SQL Server to allow this.
260	16	Disallowed implicit conversion from data type %ls to data type %ls, table '%.*ls', column '%.*ls'. Use the CONVERT function to run this query.
261	16	'%.*ls' is not a recognized function.
262	16	%ls permission denied in database '%.*ls'.
263	16	Must specify table to select from.
264	16	Column name '%.*ls' appears more than once in the result column list.
266	16	Transaction count after EXECUTE indicates that a COMMIT or ROLLBACK TRANSACTION statement is missing. Previous count = %ld, current

		count = %ld.
267	16	Object '%.*ls' cannot be found.
268	16	Cannot run SELECT INTO in this database. The database owner must run sp_dboption to enable this option.
270	16	Object '%.*ls' cannot be modified.
271	16	Column '%.*ls' cannot be modified because it is a computed column.
272	16	Cannot update a timestamp column.
273	16	Cannot insert a non-null value into a timestamp column. Use INSERT with a column list or with a default of NULL for the timestamp column.
278	16	The text, ntext, and image data types cannot be used in a GROUP BY clause.
279	16	The text, ntext, and image data types are invalid in this subquery or aggregate expression.
280	16	Only text, ntext, and image columns are valid with the TEXTPTR function.
281	16	%d is not a valid style number when converting from %ls to a character string.
282	10	The '%.*ls' procedure attempted to return a status of NULL, which is not allowed. A status of 0 will be returned instead.
283	16	READTEXT cannot be used on inserted or deleted tables within an INSTEAD OF trigger.
284	16	Rules cannot be bound to text, ntext, or image data types.
285	16	The READTEXT, WRITETEXT, and UPDATETEXT statements cannot be used with views or functions.
286	16	The logical tables INSERTED and DELETED cannot be updated.
287	16	The %ls statement is not allowed within a trigger.
288	16	The PATINDEX function operates on char, nchar, varchar, nvarchar, text, and ntext data types only.

291	16	CAST or CONVERT: invalid attributes specified for type '%.*ls'
292	16	There is insufficient result space to convert a smallmoney value to %ls.
293	16	Cannot convert char value to smallmoney. The char value has incorrect syntax.
294	16	The conversion from char data type to smallmoney data type resulted in a smallmoney overflow error.
295	16	Syntax error converting character string to smalldatetime data type.
296	16	The conversion of char data type to smalldatetime data type resulted in an out-of-range smalldatetime value.
298	16	The conversion from datetime data type to smalldatetime data type resulted in a smalldatetime overflow error.
299	16	The DATEADD function was called with bad type %ls.
301	16	Query contains an outer-join request that is not permitted.
303	16	The table '%.*ls' is an inner member of an outer- join clause. This is not allowed if the table also participates in a regular join clause.
306	16	The text, ntext, and image data types cannot be compared or sorted, except when using IS NULL or LIKE operator.
307	16	Index ID %d on table '%.*ls' (specified in the FROM clause) does not exist.
308	16	Index '%.*ls' on table '%.*ls' (specified in the FROM clause) does not exist.
311	16	Cannot use text, ntext, or image columns in the 'inserted' and 'deleted' tables.
312	16	Cannot reference text, ntext, or image columns in a filter stored procedure.

313	16	An insufficient number of arguments were supplied for the procedure or function %.*ls.
401	16	Unimplemented statement or expression %ls.
403	16	Invalid operator for data type. Operator equals %ls, type equals %ls.
409	16	The %ls operation cannot take a %ls data type as an argument.
410	20	COMPUTE clause #%d 'BY' expression #%d is not in the order by list.
411	20	COMPUTE clause #%d, aggregate expression #%d is not in the select list.
420	16	The text, ntext, and image data types cannot be used in an ORDER BY clause.
425	16	Data type %ls of receiving variable is not equal to the data type %ls of column '%.*ls'.
426	16	The length %d of the receiving variable is less than the length %d of the column '%.*ls'.
427	20	Could not load sysprocedures entries for constraint ID %d in database ID %d.
428	20	Could not find row in sysconstraints for constraint ID %d in database ID %d.
429	20	Could not find new constraint ID %d in sysconstraints, database ID %d, at compile time.
430	20	Could not resolve table name for object ID %d, database ID %d, when compiling foreign key.
431	19	Could not bind foreign key constraint. Too many tables involved in the query.
433	20	Could not find CHECK constraint for '%.*ls', although the table is flagged as having one.
436	20	Could not open referenced table ID %d in database ID %d.
437	20	Could not resolve the referenced column name in table ID %d.
438	20	Could not resolve the referencing column name in table ID %d.

439	20	Could not find FOREIGN KEY constraints for table '%.*ls' in database ID %d although the table is flagged as having them.
441	16	Cannot use the '%ls' function on a remote data source.
443	16	Invalid use of '%s' within a function.
444	16	Select statements included within a function cannot return data to a client.
445	16	COLLATE clause cannot be used on expressions containing a COLLATE clause.
446	16	Cannot resolve collation conflict for %ls operation.
447	16	Expression type %ls is invalid for COLLATE clause.
448	16	Invalid collation '%.*ls'.
449	16	Collation conflict caused by collate clauses with different collation '%.*ls' and '%.*ls'.
450	16	Code page translations are not supported for the text data type. From: %d To: %d.
451	16	Cannot resolve collation conflict for column %d in %ls statement.
452	16	COLLATE clause cannot be used on user-defined data types.
453	16	Collation '%.*ls' is supported on Unicode data types only and cannot be set at the database or server level.
455	16	The last statement included within a function must be a return statement.
456	16	Implicit conversion of %ls value to %ls cannot be performed because the resulting collation is unresolved due to collation conflict.
457	16	Implicit conversion of %ls value to %ls cannot be performed because the collation of the value is unresolved due to a collation conflict.
502	16	The SQL Debugging Interface (SDI) requires that

		SQL Server, when started as a service, must not log on as System Account. Reset to log on as user account using Control Panel.
503	16	Unable to send symbol information to debugger on %ls for connection %d. Debugging disabled.
504	16	Unable to connect to debugger on %ls (Error = 0x%08x). Ensure that client-side components, such as SQLDBREG.EXE, are installed and registered on %.*ls. Debugging disabled for connection %d.
505	16	Current user account was invoked with SETUSER. Changing databases is not allowed.
506	16	Invalid escape character '%.*ls' was specified in a LIKE predicate.
507	16	Invalid argument for SET ROWCOUNT. Must be a non-null non-negative integer.
508	16	Unable to connect to debugger on %ls (Error = 0x%08x). Ensure that client-side components, such as SQLLE.DLL, are installed and registered on %.*ls. Debugging disabled for connection %d.
509	11	User name '%.*ls' not found.
510	16	Cannot create a worktable row larger than allowable maximum. Resubmit your query with the ROBUST PLAN hint.
511	16	Cannot create a row of size %d which is greater than the allowable maximum of %d.
512	16	Subquery returned more than 1 value. This is not permitted when the subquery follows =, !=, <, <= , >, >= or when the subquery is used as an expression.
513	16	A column insert or update conflicts with a rule imposed by a previous CREATE RULE statement. The statement was terminated. The conflict occurred in database '%.*ls', table '%.*ls', column '%.*ls'.
514	16	Unable to communicate with debugger on %ls (Error = $0x\%08x$). Debugging disabled for

		connection %d.
<u>515</u>	16	Cannot insert the value NULL into column '%.*ls', table '%.*ls'; column does not allow nulls. %ls fails.
516	16	Attempt to initialize OLE library failed. Check for correct versions of OLE DLLs on this machine.
517	16	Adding a value to a '%ls' column caused overflow.
518	16	Cannot convert data type %ls to %ls.
520	16	SQL Server no longer supports version %d of the SQL Debugging Interface (SDI).
528	20	System error detected during attempt to use the 'upsleep' system function.
529	16	Explicit conversion from data type %ls to %ls is not allowed.
532	16	The timestamp (changed to %S_TS) shows that the row has been updated by another user.
535	16	Difference of two datetime columns caused overflow at runtime.
536	16	Invalid length parameter passed to the substring function.
538	16	Cannot find '%.*ls'. This language may have been dropped. Contact your system administrator.
542	16	An invalid datetime value was encountered. Value exceeds the year 9999.
<u>544</u>	16	Cannot insert explicit value for identity column in table '%.*ls' when IDENTITY_INSERT is set to OFF.
545	16	Explicit value must be specified for identity column in table '%.*ls' when IDENTITY_INSERT is set to ON.
547	16	%ls statement conflicted with %ls %ls constraint '%.*ls'. The conflict occurred in database '%.*ls', table '%.*ls'%ls%.*ls%ls.
548	16	The identity range managed by replication is full and must be updated by a replication agent. The %ls conflict occurred in database '%.*ls', table

		'%.*ls'%ls%.*ls%ls.
		Sp_adjustpublisheridentityrange can be called to get a new identity range.
550	16	The attempted insert or update failed because the target view either specifies WITH CHECK OPTION or spans a view that specifies WITH CHECK OPTION and one or more rows resulting from the operation did not qualify under the CHECK OPTION constraint.
551	16	The checksum has changed to %d. This shows that the row has been updated by another user.
552	15	CryptoAPI function "%ls" failed. Error 0x%x: %ls
555	16	User-defined functions are not yet enabled.
556	16	INSERT EXEC failed because the stored procedure altered the schema of the target table.
557	16	Only functions and extended stored procedures can be executed from within a function.
558	16	Remote function calls are not allowed within a function.
561	16	Failed to access file '%.*ls'
562	16	Failed to access file '%.*ls'. Files can be accessed only through shares
563	14	The transaction for the INSERT EXEC statement has been rolled back. The INSERT EXEC operation will be terminated.
564	16	Attempted to create a record with a fixed length of '%d'. Maximum allowable fixed length is '%d'.
565	18	The server encountered a stack overflow during compile time.
566	21	Error writing audit trace. SQL Server is shutting down.
567	16	File '%.*ls' either does not exist or is not a recognizable trace file. Or there was an error opening the file.
568	16	Server encountered an error '%.*ls'.

<u>601</u>	12	Could not continue scan with NOLOCK due to data movement.
602	21	Could not find row in sysindexes for database ID %d, object ID %ld, index ID %d. Run DBCC CHECKTABLE on sysindexes.
604	21	Could not find row in sysobjects for object ID %ld in database '%.*ls'. Run DBCC CHECKTABLE on sysobjects.
605	21	Attempt to fetch logical page %S_PGID in database '%.*ls' belongs to object '%.*ls', not to object '%.*ls'.
607	21	Insufficient room was allocated for search arguments in the session descriptor for object '%.*ls'. Only %d search arguments were anticipated.
615	21	Could not find database table ID %d, name '%.*ls'.
617	20	Descriptor for object ID %ld in database ID %d not found in the hash table during attempt to unhash it.
618	21	A varno of %d was passed to the opentable system function. The largest valid value is %d.
622	16	Filegroup '%.*ls' has no files assigned to it. Tables, indexes, and text, ntext, and image columns cannot be populated on this filegroup until a file is added.
623	21	Could not retrieve row from page by RID because logical page %S_PGID is not a data page. %S_RID. %S_PAGE.
624	21	Could not retrieve row from page by RID because the requested RID has a higher number than the last RID on the page. %S_RID.%S_PAGE, DBID %d.
<u>625</u>	21	Cannot retrieve row from page %S_PGID by RID because the slotid (%d) is not valid.
626	16	Cannot use ROLLBACK with a savepoint within a distributed transaction.
627	16	Cannot use SAVE TRANSACTION within a distributed transaction.

628	13	Cannot issue SAVE TRANSACTION when there is no active transaction.
635	20	Process %d tried to remove DES resource lock %S_DES, which it does not hold.
637	20	Index shrink program returned invalid status of 0.
639	21	Could not fetch logical page %S_PGID, database ID %d. The page is not currently allocated.
644	21	Could not find the index entry for RID '%.*hs' in index page %S_PGID, index ID %d, database '%.*ls'.
649	21	Could not find the clustered index entry for page %S_PGID, object ID %ld, status 0x%x. Index page %S_PGID, in database '%.*ls', was searched for this entry.
650	16	You can only specify the READPAST lock in the READ COMMITTED or REPEATABLE READ isolation levels.
651	16	Cannot use %hs granularity hint on table '%.*ls' because locking at the specified granularity is inhibited.
652	16	Index ID %d for table '%.*ls' resides on a read-only filegroup which cannot be modified.
653	20	Two buffers are conflicting for the same keep slot in table '%.*ls'.
654	20	No slots are free to keep buffers for table '%.*ls'.
655	20	Expected to find buffer in keep slot for table '%.*ls'.
666	16	Maximum system-generated unique value for a duplicate group exceeded for table ID %d, index ID %d. Dropping and re-creating the index may fix the problem; otherwise use another clustering key.
667	16	Index %d for table '%.*ls' resides on offline filegroup that cannot be accessed.
<u>701</u>	19	There is insufficient system memory to run this

		query.
708	10	Warning: Due to low virtual memory, special reserved memory used %d times since startup. Increase virtual memory on server.
802	17	No more buffers can be stolen.
804	20	Could not find buffer 0x%lx holding logical page %S_PGID in the SDES 0x%lx kept buffer pool for object '%.*ls'.
809	20	Buffer 0x%lx, allocation page %S_PGID, in database '%.*ls' is not in allocation buffer pool in PSS (process status structure). Contact Technical Support.
813	20	Logical page %S_PGID in database ID %d is already hashed.
816	20	Process ID %d tried to remove a buffer resource lock %S_BUF that it does not hold in SDES %S_SDES. Contact Technical Support.
818	19	There is no room to hold the buffer resource lock %S_BUF in SDES %S_SDES. Contact Technical Support.
821	20	Could not unhash buffer at 0x%lx with a buffer page number of %S_PGID and database ID %d with HASHED status set. The buffer was not found. %S_PAGE.
<u>822</u>	21	Could not start I/O for request %S_BLKIOPTR.
<u>823</u>	24	I/O error %ls detected during %S_MSG at offset %#016I64x in file '%ls'.
834	21	The bufclean system function was called on dirty buffer (page %S_PGID, stat %#x/%#x, objid %#x, sstat%#x).
840	17	Device '%.*ls' (physical name '%.*ls', virtual device number %d) is not available. Contact the system administrator for assistance.
844	10	Time out occurred while waiting for buffer latch type %d, bp %#x, page %S_PGID, stat %#x, object

		ID %d:%d;%d, waittime %d. Continuing to wait.
<u>845</u>	17	Time-out occurred while waiting for buffer latch type %d for page %S_PGID, database ID %d.
901	21	Could not find descriptor for database ID %d, object ID %ld in hash table after hashing it.
902	16	To change the %ls, the database must be in state in which a checkpoint can be executed.
903	22	Could not find row in sysindexes for clustered index on system catalog %ld in database ID %d. This index should exist in all databases. Run DBCC CHECKTABLE on sysindexes in the database.
906	22	Could not locate row in sysobjects for system catalog '%.*ls' in database '%.*ls'. This system catalog should exist in all databases. Run DBCC CHECKTABLE on sysobjects in this database.
911	16	Could not locate entry in sysdatabases for database '%.*ls'. No entry found with that name. Make sure that the name is entered correctly.
913	22	Could not find database ID %d. Database may not be activated yet or may be in transition.
916	14	Server user '%.*ls' is not a valid user in database '%.*ls'.
921	14	Database '%.*ls' has not been recovered yet. Wait and try again.
922	14	Database '%.*ls' is being recovered. Waiting until recovery is finished.
923	14	Database '%.*ls' is in restricted mode. Only the database owner and members of the dbcreator and sysadmin roles can access it.
924	14	Database '%.*ls' is already open and can only have one user at a time.
925	19	Maximum number of databases used for each query has been exceeded. The maximum allowed is %d.
<u>926</u>	14	Database '%.*ls' cannot be opened. It has been marked SUSPECT by recovery. See the SQL Server

		errorlog for more information.
927	14	Database '%.*ls' cannot be opened. It is in the middle of a restore.
929	20	Attempting to close a database that is not already open. Contact Technical Support.
941	14	Cannot open database '%.*ls'. It has not been upgraded to the latest format.
942	14	Database '%.*ls' cannot be opened because it is offline.
943	14	Database '%.*ls' cannot be opened because its version (%d) is later than the current server version (%d).
944	10	Converting database '%.*ls' from version %d to the current version %d.
945	16	Database '%.*ls' cannot be opened due to inaccessible files or insufficient memory or disk space. See the SQL Server errorlog for details.
946	14	Cannot open database '%.*ls' version %d. Upgrade the database to the latest version.
947	16	Error while closing database '%.*ls' cleanly.
948	14	Database '%.*ls' cannot be upgraded. Database is version %d and this server supports version %d.
949	16	tempdb is skipped. You cannot run a query that requires tempdb
950	14	Database '%.*ls' cannot be upgraded - database has a version (%d) earlier than SQL Server 7.0(%d).
951	10	Database '%.*ls' running the upgrade step from version %d to version %d.
952	16	Database '%.*ls' is in transition. Try the statement later.
953	16	Warning: Index '%ls' on '%ls' in database '%ls' may be corrupt because of expression evaluation changes in this release. Drop and re-create the index.

Errors 1000 - 1999

Severity	Description (Message Text)
16	Line %d: Length or precision specification %d is invalid.
16	Line %d: Specified scale %d is invalid.
15	Line %d: %ls clause allowed only for %ls.
16	Invalid column prefix '%.*ls': No table name specified
15	Line %d: Invalid procedure number (%d). Must be between 1 and 32767.
15	CREATE TRIGGER contains no statements.
15	The %S_MSG '%.*ls' is out of the range for numeric representation (maximum precision 38).
15	The SELECT item identified by the ORDER BY number %d contains a variable as part of the expression identifying a column position. Variables are only allowed when ordering by an expression referencing a column name.
15	Invalid escape character '%.*ls'.
15	The correlation name '%.*ls' is specified multiple times in a FROM clause.
15	The correlation name '%.*ls' has the same exposed name as table '%.*ls'.
15	Tables or functions '%.*ls' and '%.*ls' have the same exposed names. Use correlation names to distinguish them.
15	TOP clause contains an invalid value.
15	An aggregate cannot appear in an ON clause unless it is in a subquery contained in a HAVING clause or select list, and the column being aggregated is an outer reference.
	16 16 15 16 15 15 15 15 15 15 15 15 15 15

1016	15	Outer join operators cannot be specified in a query containing joined tables.
1019	15	Invalid column list after object name in GRANT/REVOKE statement.
1020	15	Column list cannot be specified for object-level permissions.
1021	10	FIPS Warning: Line %d has the non-ANSI statement '%ls'.
1022	10	FIPS Warning: Line %d has the non-ANSI clause '%ls'.
1023	15	Invalid parameter %d specified for %ls.
1024	10	FIPS Warning: Line %d has the non-ANSI function '%ls'.
1025	10	FIPS Warning: The length of identifier '%.*ls' exceeds 18.
1027	15	Too many expressions are specified in the GROUP BY clause. The maximum number is %d when either CUBE or ROLLUP is specified.
1028	15	The CUBE and ROLLUP options are not allowed in a GROUP BY ALL clause.
1029	15	Browse mode is invalid for subqueries and derived tables.
1031	15	Percent values must be between 0 and 100.
1032	16	Cannot use the column prefix '%.*ls'. This must match the object in the UPDATE clause '%.*ls'.
1033	16	The ORDER BY clause is invalid in views, inline functions, derived tables, and subqueries, unless TOP is also specified.
1035	15	Incorrect syntax near '%.*ls', expected '%.*ls'.
1036	15	File option %hs is required in this CREATE/ALTER DATABASE statement.
1037	15	The CASCADE, WITH GRANT or AS options cannot be specified with statement permissions.
1038	15	Cannot use empty object or column names. Use a single space if necessary.

1039	16	Option '%.*ls' is specified more than once.
1040	15	Mixing old and new syntax in CREATE/ALTER DATABASE statement is not allowed.
1041	15	Option %.*ls is not allowed for a LOG file.
1042	15	Conflicting %ls optimizer hints specified.
1043	15	'%hs' is not yet implemented.
1044	15	Cannot use an existing function name to specify a stored procedure name.
1045	15	Aggregates are not allowed in this context. Only scalar expressions are allowed.
1046	15	Subqueries are not allowed in this context. Only scalar expressions are allowed.
1047	15	Conflicting locking hints specified.
1048	15	Conflicting cursor options %ls and %ls.
1049	15	Mixing old and new syntax to specify cursor options is not allowed.
1050	15	This syntax is only allowed within the stored procedure sp_executesql.
1051	15	Cursor parameters in a stored procedure must be declared with OUTPUT and VARYING options, and they must be specified in the order CURSOR VARYING OUTPUT.
1052	15	Conflicting %ls options %ls and %ls.
1053	15	For DROP STATISTICS, you must give both the table and the column name in the form 'tablename.column'.
1054	15	Syntax '%ls' is not allowed in schema-bound objects.
1055	15	'%.*ls' is an invalid name because it contains a NULL character.
1056	15	The maximum number of elements in the select list is %d and you have supplied %d.
1057	15	The IDENTITY function cannot be used with a SELECT INTO statement containing a UNION operator.

1058	15	Cannot specify both READ_ONLY and FOR READ ONLY on a cursor declaration.
1059	15	Cannot set or reset the %ls option within a procedure.
1060	15	The number of rows in the TOP clause must be an integer.
1061	16	The text/ntext/image constants are not yet implemented.
1062	16	The TOP N WITH TIES clause is not allowed without a corresponding ORDER BY clause.
1063	16	A filegroup cannot be added using ALTER DATABASE ADD FILE. Use ALTER DATABASE ADD FILEGROUP.
1064	16	A filegroup cannot be used with log files.
1065	15	The NOLOCK, READUNCOMMITTED, and READPAST lock hints are only allowed in a SELECT statement.
1066	10	Warning. Line %d: The option '%ls' is obsolete and has no effect.
1067	15	The SET SHOWPLAN statements must be the only statements in the batch.
1068	16	Only one list of index hints per table is allowed.
1069	16	Index hints are only allowed in a FROM clause.
1070	15	CREATE INDEX option '%.*ls' is no longer supported.
1071	16	Cannot specify a JOIN algorithm with a remote JOIN.
1072	16	A REMOTE hint can only be specified with an INNER JOIN clause.
1073	15	'%.*ls' is not a recognized cursor option for cursor %.*ls.
1074	15	Creation of temporary functions is not allowed.
1075	15	RETURN statements in scalar valued functions must include an argument.

1076	15	Function '%s' requires at least %d argument(s).
1077	15	INSERT into an identity column not allowed on table variables.
1078	15	'%.*ls %.*ls' is not a recognized option.
1079	15	A variable cannot be used to specify a search condition in a fulltext predicate when accessed through a cursor.
1101	17	Could not allocate new page for database '%.*ls'. There are no more pages available in filegroup %.*ls. Space can be created by dropping objects, adding additional files, or allowing file growth.
1102	22	IAM page %S_PGID for object ID %ld is incorrect. The %S_MSG ID on page is %ld; should be %ld. The entry in sysindexes may be incorrect or the IAM page may contain an error.
1103	21	Allocation page %S_PGID in database '%.*ls' has different segment ID than that of the object which is being allocated to. Run DBCC CHECKALLOC.
1105	17	Could not allocate space for object '%.*ls' in database '%.*ls' because the '%.*ls' filegroup is full.
1109	21	Could not read allocation page %S_PGID because either the object ID (%ld) is not correct, or the page ID (%S_PGID) is not correct.
1201	20	The page_lock system function was called with a mode %d that is not permitted.
1203	20	Process ID %d attempting to unlock unowned resource %.*ls.
1204	19	The SQL Server cannot obtain a LOCK resource at this time. Rerun your statement when there are fewer active users or ask the system administrator to check the SQL Server lock and memory configuration.
<u>1205</u>	13	Transaction (Process ID %d) was deadlocked on {%Z} resources with another process and has been chosen as the deadlock victim. Rerun the

		transaction.
1206	18	Transaction manager has canceled the distributed transaction.
1211	13	Process ID %d was chosen as the deadlock victim with P_BACKOUT bit set.
1220	17	No more lock classes available from transaction.
1221	20	Invalid lock class for release call.
1222	13	Lock request time out period exceeded.
1223	16	Attempting to release application lock '%.*ls' that is not currently held.
1501	20	Sort failure.
<u>1505</u>	14	CREATE UNIQUE INDEX terminated because a duplicate key was found for index ID %d. Most significant primary key is '%S_KEY'.
1507	10	Warning: Deleted duplicate row. Primary key is '%S_KEY'.
<u>1508</u>	14	CREATE INDEX terminated because a duplicate row was found. Primary key is '%S_KEY'.
1509	20	Row compare failure.
<u>1510</u>	17	Sort failed. Out of space or locks in database '%.*ls'.
1511	20	Sort cannot be reconciled with transaction log.
1522	20	Sort failure. Prevented overwriting of allocation page in database '%.*ls' by terminating sort.
1523	20	Sort failure. Prevented incorrect extent deallocation by aborting sort.
1528	21	Character data comparison failure. An unrecognized Sort-Map-Element type (%d) was found in the server-wide default sort table at SMEL entry [%d].
1529	21	Character data comparison failure. A list of Sort-Map-Elements from the server-wide default sort table does not end properly. This list begins at SMEL entry [%d].

1530	16	CREATE INDEX with DROP_EXISTING was aborted because a row was out of order. Most significant offending primary key is '%S_KEY'. Explicitly drop and create the index instead.
1531	16	The SORTED_DATA_REORG option cannot be used for a nonclustered index if the keys are not unique within the table. CREATE INDEX was aborted because of duplicate keys. Primary key is '%S_KEY'.
1532	20	New sort run starting on page %S_PGID found extent not marked as shared.
1533	20	Cannot share extent %S_PGID among more than eight sort runs.
1534	20	Extent %S_PGID not found in shared extent directory.
1535	20	Cannot share extent %S_PGID with shared extent directory full.
1536	20	Cannot build a nonclustered index on a memory-only work table.
1537	20	Cannot suspend a sort not in row input phase.
1538	20	Cannot insert into a sort not in row input phase.
1540	16	Cannot sort a row of size %d, which is greater than the allowable maximum of %d.
1619	21	Could not open tempdb. Cannot continue.
1620	21	Cannot start C2 audit trace. SQL Server is shutting down.
1621	10	Server started with '-f'. Auditing will not be started.
1701	16	Creation of table '%.*ls' failed because the row size would be %d, including internal overhead. This exceeds the maximum allowable table row size, %d.
Error 1702	16	CREATE TABLE failed because column '%.*ls' in table '%.*ls' exceeds the maximum of %d columns.
1703	17	Could not allocate disk space for a work table in

		database '%.*ls'. You may be able to free up space by using BACKUP LOG, or you may want to extend the size of the database by using ALTER DATABASE.
1704	16	Only members of the sysadmin role can create the system table '%.*ls'.
1705	16	You must create system table '%.*ls' in the master database.
1706	16	System table '%.*ls' was not created, because ad hoc updates to system catalogs are not enabled.
1708	10	Warning: The table '%.*ls' has been created but its maximum row size (%d) exceeds the maximum number of bytes per row (%d). INSERT or UPDATE of a row in this table will fail if the resulting row length exceeds %d bytes.
1709	16	Cannot use TEXTIMAGE_ON when a table has no text, ntext, or image columns.
1750	10	Could not create constraint. See previous errors.
1752	16	Could not create DEFAULT for column '%.*ls' as it is not a valid column in the table '%.*ls'.
1753	16	Column '%.*ls.%.*ls' is not the same length as referencing column '%.*ls.%.*ls' in foreign key '%.*ls'.
1754	16	Defaults cannot be created on columns with an IDENTITY attribute. Table '%.*ls', column '%.*ls'.
1755	16	Defaults cannot be created on columns of data type timestamp. Table '%.*ls', column '%.*ls'.
1756	10	Skipping FOREIGN KEY constraint '%.*ls' definition for temporary table.
1757	16	Column '%.*ls.%.*ls' is not of same collation as referencing column '%.*ls.%.*ls' in foreign key '%.*ls'.
1759	16	Invalid column '%.*ls' is specified in a constraint or computed-column definition.
1760	16	Constraints of type %ls cannot be created on

		columns of type %ls.
1763	16	Cross-database foreign key references are not supported. Foreign key '%.*ls'.
1766	16	Foreign key references to temporary tables are not supported. Foreign key '%.*ls'.
1767	16	Foreign key '%.*ls' references invalid table '%.*ls'.
1768	16	Foreign key '%.*ls' references object '%.*ls' which is not a user table.
1769	16	Foreign key '%.*ls' references invalid column '%.*ls' in referencing table '%.*ls'.
1770	16	Foreign key '%.*ls' references invalid column '%.*ls' in referenced table '%.*ls'.
1772	16	Foreign key '%.*ls' defines an invalid relationship between a user table and system table.
1773	16	Foreign key '%.*ls' has implicit reference to object '%.*ls' which does not have a primary key defined on it.
1774	16	The number of columns in the referencing column list for foreign key '%.*ls' does not match those of the primary key in the referenced table '%.*ls'.
1776	16	There are no primary or candidate keys in the referenced table '%.*ls' that match the referencing column list in the foreign key '%.*ls'.
1777	14	User does not have correct permissions on referenced table '%.*ls' to create foreign key '%.*ls'.
1778	16	Column '%.*ls.%.*ls' is not the same data type as referencing column '%.*ls.%.*ls' in foreign key '%.*ls'.
1779	16	Table '%.*ls' already has a primary key defined on it.
1780	20	Could not find column ID %d in syscolumns for object ID %d in database ID %d.
1781	16	Column already has a DEFAULT bound to it.

1784	16	Cannot create the foreign key '%.*ls' because the referenced column '%.*ls.%.*ls' is a computed column.
1785	16	Introducing FOREIGN KEY constraint '%.*ls' on table '%.*ls' may cause cycles or multiple cascade paths. Specify ON DELETE NO ACTION or ON UPDATE NO ACTION, or modify other FOREIGN KEY constraints.
1786	16	Either column '%.*ls.%.*ls' or referencing column '%.*ls.%.*ls' in foreign key '%.*ls' is a timestamp column. This data type cannot be used with cascading referential integrity constraints.
1787	16	Cannot define foreign key constraint '%.*ls' with cascaded DELETE or UPDATE on table '%.*ls' because the table has an INSTEAD OF DELETE or UPDATE TRIGGER defined on it.
1788	16	Cascading foreign key '%.*ls' cannot be created where the referencing column '%.*ls.%.*ls' is an identity column.
1801	16	Database '%.*ls' already exists.
1802	11	CREATE DATABASE failed. Some file names listed could not be created. Check previous errors.
1803	17	CREATE DATABASE failed. Could not allocate enough disk space for a new database on the named disks. Total space allocated must be at least %d MB to accommodate a copy of the model database.
1804	10	There is no disk named '%.*ls'. Checking other disk names.
1805	10	The CREATE DATABASE process is allocating %.2f MB on disk '%.*ls'.
1806	16	CREATE DATABASE failed. The default collation of database '%.*ls' cannot be set to '%.*ls'.
1807	17	Could not obtain exclusive lock on database '%.*ls'. Retry the operation later.
1808	21	Default devices are not supported.

1809	10	To achieve optimal performance, update all statistics on the '%.*ls' database by running sp_updatestats.
1811	16	'%.*ls' is the wrong type of device for CREATE DATABASE or ALTER DATABASE. Check sysdevices. The statement is aborted.
1812	16	CREATE DATABASE failed. COLLATE clause cannot be used with the FOR ATTACH option.
1813	16	Could not open new database '%.*ls'. CREATE DATABASE is aborted.
1814	10	Could not create tempdb. If space is low, extend the amount of space and restart.
1901	16	Column '%.*ls'. Cannot create index on a column of bit data type.
1902	16	Cannot create more than one clustered index on table '%.*ls'. Drop the existing clustered index '%.*ls' before creating another.
1903	16	Index keys are too large. The %d bytes needed to represent the keys for index %d exceeds the size limit of %d bytes.
1904	16	Cannot specify more than %d column names for statistics or index key list. %d specified.
1905	21	Could not find 'zero' row for index '%.*ls' the table in sysindexes.
1906	11	Cannot create an index on '%.*ls', because this table does not exist in database '%.*ls'.
1907	16	Cannot re-create index '%.*ls'. The new index definition does not match the constraint being enforced by the existing index.
1909	16	Cannot use duplicate column names in index key list. Column name '%.*ls' listed more than once.
1910	16	Cannot create more than %d nonclustered indices or column statistics on one table.
1911	16	Column name '%.*ls' does not exist in the target table.

1913	16	There is already an index on table '%.*ls' named '%.*ls'.
1914	16	Index cannot be created on object '%.*ls' because the object is not a user table or view.
<u>1916</u>	16	CREATE INDEX options %ls and %ls are mutually exclusive.
1918	10	Index (ID = %d) is being rebuilt.
1919	16	Column '%.*ls'. Cannot create index on a column of text, ntext, or image data type.
1920	10	Skipping rebuild of index ID %d, which is on a read-only filegroup.
1921	16	Invalid filegroup '%.*ls' specified.
1922	16	Filegroup '%.*ls' has no files assigned to it. Tables, indexes, and text, ntext, and image columns cannot be created on this filegroup.
1923	10	The clustered index has been dropped.
1938	16	Index cannot be created on %S_MSG '%.*ls' because the underlying object '%.*ls' has a different owner.
1939	16	Index %S_MSG cannot be created on view '%.*ls' because the view is not schema bound.
1940	16	Cannot create %S_MSG on view '%.*ls'. It does not have a unique clustered index.
1941	16	Nonunique clustered index cannot be created on view '%.*ls' because only unique clustered indexes are allowed.
1942	16	Index cannot be created on view '%.*ls' because the view contains text, ntext or image columns.
1943	16	Index cannot be created on view '%.*ls' because the view has one or more nondeterministic expressions.
1944	16	Index '%.*ls' was not created. This index has a key length of at least %d bytes. The maximum permissible key length is %d bytes.
1945	16	Warning! The maximum key length is %d bytes.

		The index '%.*ls' has maximum length of %d bytes. For some combination of large values, the insert/update operation will fail.
1946	16	Operation failed. The index entry of length %d bytes for the index '%.*ls' exceeds the maximum length of %d bytes.
1947	16	Index cannot be created on view '%.*ls' because the view contains a self-join on '%.*ls'.
1948	16	Duplicate index names '%.*ls' and '%.*ls' detected on table '%.*ls'.
1949	16	Index on view '%.*ls' cannot be created because function '%s' yields nondeterministic results.
1950	16	Index on view '%.*ls' cannot be created because the view contains an imprecise expression in a GROUP BY clause
1951	16	Index on view '%.*ls' cannot be created because the view contains an imprecise expression in the WHERE clause.
1952	16	Index on view '%.*ls' cannot be created because the view contains an imprecise expression in a join.
1953	16	Index on view '%.*ls' cannot be created because some arguments are missing in a built-in function.
1954	16	Index on view '%.*ls' cannot be created because the view uses a column bound to a rule.
1955	16	Index on view '%.*ls' cannot be created because the view contains a nondeterministic computed column.
1956	16	Index on view '%.*ls' cannot be created because the view uses a nondeterministic user-defined function.
1957	16	Index on view '%.*ls' cannot be created because the view requires a conversion involving dates or variants.
1958	16	This edition of SQL Server does not support indexed views.
1959	16	Cannot create index on view or computed column

because this database is not SQL Server
compatible.

Troubleshooting

Errors 2000 - 2999

Error	Severity	Description (Message Text)
2001	10	Cannot use duplicate parameter names. Parameter name '%.*ls' listed more than once.
2004	16	Procedure '%.*ls' has already been created with group number %d. Create procedure with an unused group number.
2007	11	Cannot add rows to sysdepends for the current stored procedure because it depends on the missing object '%.*ls'. The stored procedure will still be created.
2008	16	The object '%.*ls' is not a procedure so you cannot create another procedure under that group name.
2009	10	Procedure '%.*ls' was created despite delayed name resolution warnings (if any).
2010	16	Cannot perform alter on %.*ls because it is an incompatible object type.
2011	16	Index hints cannot be specified within a schemabound object.
2012	16	User-defined variables cannot be declared within a schema-bound object.
2106	11	Cannot create a trigger on table '%.*ls', because this table does not exist in database '%.*ls'.
2108	16	Cannot create a trigger on table '%.*ls' because you can only create a trigger on a table in the current database.
2110	16	Cannot alter trigger '%.*ls' for table '%.*ls' because this trigger does not belong to this table.
2111	16	Cannot %s trigger '%.*ls' for %S_MSG '%.*ls' because an INSTEAD OF %s trigger already exists.
2112	16	Cannot %s trigger '%.*ls' for view '%.*ls' because it is defined with the CHECK OPTION.

2113	16	Cannot %s INSTEAD OF DELETE or UPDATE TRIGGER '%.*ls' on table '%.*ls' because the table has a FOREIGN KEY with cascaded DELETE or UPDATE.
2114	16	Column '%.*ls' cannot be used in an IF UPDATE clause because it is a computed column.
<u>2501</u>	16	Could not find a table or object named '%.*ls'. Check sysobjects.
2502	16	Could not start transaction.
2503	10	Successfully deleted the physical file '%ls'.
2504	16	Could not delete the physical file '%ls'. The DeleteFile system function returned error %ls.
2505	16	The device '%.*ls' does not exist. Use sp_helpdevice to show available devices.
2506	16	Could not find a table or object name '%.*ls' in database '%.*ls'.
<u>2511</u>	16	Table error: Object ID %d, Index ID %d. Keys out of order on page %S_PGID, slots %d and %d.
2512	16	Table error: Object ID %d, Index ID %d. Duplicate keys on page %S_PGID slot %d and page %S_PGID slot %d.
<u>2513</u>	16	Table error: Object ID %ld (object '%.*ls') does not match between '%.*ls' and '%.*ls'.
2514	16	Table error: Data type %ld (type '%.*ls') does not match between '%.*ls' and '%.*ls'.
2515	16	Page %S_PGID, object ID %d, index ID %d has been modified but is not marked modified in the differential backup bitmap.
2516	16	The differential bitmap was invalidated for database %.*ls. A full database backup is required before a differential backup can be performed.
2517	16	The minimally logged operation status has been turned on for database %.*ls. Rerun backup log operations to ensure that all data has been secured.
2519	16	Unable to process table %.*ls because filegroup

		%.*ls is invalid.
2520	16	Could not find database '%.*ls'. Check sysdatabases.
2521	16	Could not find database ID %d. Check sysdatabases.
2522	16	Unable to process index %.*ls of table %.*ls because filegroup %.*ls is invalid.
2523	16	Filegroup %.*ls is invalid.
2524	16	Unable to process table %.*ls because filegroup %.*ls is offline.
2525	16	Database file %.*ls is offline.
2526	16	Incorrect DBCC statement. Check the documentation for the correct DBCC syntax and options.
2527	16	Unable to process index %.*ls of table %.*ls because filegroup %.*ls is offline.
2528	10	DBCC execution completed. If DBCC printed error messages, contact your system administrator.
2529	16	Filegroup %.*ls is offline.
2530	16	Secondary index entries were missing or did not match the data in the table. Use the WITH TABLOCK option and run the command again to display the failing records.
2531	16	Table error: Object ID %d, index ID %d B-tree level mismatch, page %S_PGID. Level %d does not match level %d from previous %S_PGID.
2532	16	DBCC SHRINKFILE could not shrink file %ls. Log files are not supported.
2533	16	Table error: Page %S_PGID allocated to object ID %d, index ID %d was not seen. Page may be invalid or have incorrect object ID information in its header.
2534	16	Table error: Page %S_PGID with object ID %d, index ID %d in its header is allocated by another object.

Error 2535	16	Table error: Page %S_PGID is allocated to object ID %d, index ID %d, not to object ID %d, index ID %d found in page header.
2536	10	DBCC results for '%.*ls'.
2537	16	Table error: Object ID %d, index ID %d, page %S_PGID, row %d. Record check (%hs) failed. Values are %ld and %ld.
2538	10	File %d. Number of extents = %ld, used pages = %ld, reserved pages = %ld.
2539	10	Total number of extents = %ld, used pages = %ld, reserved pages = %ld in this database.
2540	10	The system cannot self repair this error.
2541	10	DBCC UPDATEUSAGE: sysindexes row updated for table '%.*ls' (index ID %ld):
2542	10	DATA pages: Changed from (%ld) to (%ld) pages.
2543	10	USED pages: Changed from (%ld) to (%ld) pages.
2544	10	RSVD pages: Changed from (%ld) to (%ld) pages.
2545	10	ROWS count: Changed from (%I64d) to (%I64d) rows.
2546	10	Index '%.*ls' on table '%.*ls' is marked offline. Rebuild the index to bring it online.
2547	10	Performing second pass of index checks.
2548	10	DBCC: Compaction phase of index '%.*ls' is %d%% complete.
2549	10	DBCC: Defrag phase of index '%.*ls' is %d%% complete.
2557	14	User '%.*ls' does not have permission to run DBCC %ls for object '%.*ls'.
2559	16	The '%ls' and '%ls' options are not allowed on the same statement.
2560	16	Parameter %d is incorrect for this DBCC statement.
2562	16	'%ls' cannot access object '%.*ls' because it is not a

		table.
2566	14	DBCC DBREINDEX cannot be used on system tables.
2567	14	DBCC INDEXDEFRAG cannot be used on system table indexes
2568	16	Page %S_PGID is out of range for this database or is in a log file.
2570	16	Warning: Page %S_PGID, slot %d in Object %d Index %d Column %.*ls value %.*ls is out of range for data type "%.*ls". Update column to a legal value.
2571	14	User '%.*ls' does not have permission to run DBCC %.*ls.
2572	16	DBCC cannot free DLL '%.*ls'. The DLL is in use.
2573	16	Database '%.*ls' is not marked suspect. You cannot drop it with DBCC.
2574	10	Object ID %d, index ID %d: Page %S_PGID is empty. This is not permitted at level %d of the B-tree.
2575	16	IAM page %S_PGID is pointed to by the next pointer of IAM page %S_PGID object ID %d index ID %d but was not detected in the scan.
2576	16	IAM page %S_PGID is pointed to by the previous pointer of IAM page %S_PGID object ID %d index ID %d but was not detected in the scan.
2577	16	Chain sequence numbers are out of order in IAM chain for object ID %d, index ID %d. Page %S_PGID sequence number %d points to page %S_PGID sequence number %d.
2578	16	Minimally logged extents were found in GAM interval starting at page %S_PGID but the minimally logged flag is not set in the database table.
2579	16	Table error: Extent %S_PGID object ID %d, index ID %d is beyond the range of this database.

2580	16	Table '%.*ls' is either a system or temporary table. DBCC CLEANTABLE cannot be applied to a system or temporary table.
2583	16	An incorrect number of parameters was given to the DBCC statement.
2588	16	Page %S_PGID was expected to be the first page of a text, ntext, or image value.
2590	10	User '%.*ls' is modifying bytes %d to %d of page %S_PGID in database '%.*ls'.
2591	16	Could not find row in sysindexes with index ID %d for table '%.*ls'.
2592	10	%ls index successfully restored for object '%.*ls' in database '%.*ls'.
2593	10	There are %I64d rows in %ld pages for object '%.*ls'.
2594	16	Invalid index ID (%d) specified.
2595	16	Database '%.*ls' must be set to single user mode before executing this statement.
2597	16	The database is not open. Execute a 'USE %.*ls' statement and rerun the DBCC statement.
2598	16	Clustered indexes on sysobjects and sysindexes cannot be re-created.
<u>2601</u>	14	Cannot insert duplicate key row in object '%.*ls' with unique index '%.*ls'.
2603	21	No space left on logical page %S_PGID of index ID %d for object '%.*ls' when inserting row on an index page. This situation should have been handled while traversing the index.
2617	20	Buffer holding logical page %S_PGID not found in keep pool in SDES for object '%.*ls'. Contact Technical Support.
2624	21	Could not insert into table %S_DES because row length %d is less than the minimum length %d.
2627	14	Violation of %ls constraint '%.*ls'. Cannot insert duplicate key in object '%.*ls'.

2701	10	Database name '%.*ls' ignored, referencing object in tempdb.
2702	16	Database '%.*ls' does not exist.
2705	16	Column names in each table must be unique. Column name '%.*ls' in table '%.*ls' is specified more than once.
2706	11	Table '%.*ls' does not exist.
2710	16	You are not the owner specified for the object '%.*ls' in this statement (CREATE, ALTER, TRUNCATE, UPDATE STATISTICS or BULK INSERT).
2714	16	There is already an object named '%.*ls' in the database.
2715	16	Column or parameter #%d: Cannot find data type %.*ls.
2716	16	Column or parameter #%d: Cannot specify a column width on data type %.*ls.
2717	15	The size (%d) given to the %S_MSG '%.*ls' exceeds the maximum allowed (%d).
2718	16	Column or parameter #%d: Cannot specify null values on a column of data type bit.
2721	11	Could not find a default segment to create the table on. Ask your system administrator to specify a default segment in syssegments.
2724	10	Parameter '%.*ls' has an invalid data type.
2727	11	Cannot find index '%.*ls'.
2730	11	Cannot create procedure '%.*ls' with a group number of %d because a procedure with the same name and a group number of 1 does not currently exist in the database. Must execute CREATE PROCEDURE '%.*ls';1 first.
Error 2731	16	Column '%.*ls' has invalid width: %d.
2732	16	Error number %ld is invalid. The number must be from %ld through %ld
2734	16	The user name '%.*ls' does not exist in sysusers.

2736	16	Owner name specified is a group name. Objects cannot be owned by groups.
2737	16	Message passed to %hs must be of type char, varchar, nchar, or nvarchar.
2738	16	A table can only have one timestamp column. Because table '%.*ls' already has one, the column '%.*ls' cannot be added.
2739	16	The text, ntext, and image data types are invalid for local variables.
2740	16	SET LANGUAGE failed because '%.*ls' is not an official language name or a language alias on this SQL Server.
2741	16	SET DATEFORMAT date order '%.*ls' is invalid.
2742	16	SET DATEFIRST %d is out of range.
2743	16	%ls statement requires %S_MSG parameter.
2744	16	Multiple identity columns specified for table '%.*ls'. Only one identity column per table is allowed.
2745	10	Process ID %d has raised user error %d, severity %d. SQL Server is terminating this process.
2746	16	Cannot specify user error format string with a length exceeding %d bytes.
2747	16	Too many substitution parameters for RAISERROR. Cannot exceed %d substitution parameters.
2748	16	Cannot specify %ls data type (RAISERROR parameter %d) as a substitution parameter for RAISERROR.
2749	16	Identity column '%.*ls' must be of data type int, bigint, smallint, tinyint, or decimal or numeric with a scale of 0, and constrained to be nonnullable.
<u>2750</u>	16	Column or parameter #%d: Specified column precision %d is greater than the maximum precision of %d.
<u>2751</u>	16	Column or parameter #%d: Specified column scale

		%d is greater than the specified precision of %d.
2752	16	Identity column '%.*ls' contains invalid SEED.
2753	16	Identity column '%.*ls' contains invalid INCREMENT.
2754	16	Error severity levels greater than %d can only be specified by members of the sysadmin role, using the WITH LOG option.
2755	16	SET DEADLOCK_PRIORITY option '%.*ls' is invalid.
2756	16	Invalid value %d for state. Valid range is from %d to %d.
2757	16	RAISERROR failed due to invalid parameter substitution(s) for error %d, severity %d, state %d.
2758	16	%hs could not locate entry for error %d in sysmessages.
2759	0	CREATE SCHEMA failed due to previous errors.
2760	16	Specified owner name '%.*ls' either does not exist or you do not have permission to use it.
2761	16	The ROWGUIDCOL property can only be specified on the unique identifier data type.
2762	16	sp_setapprole was not invoked correctly. Refer to the documentation for more information.
2763	16	Could not find application role '%.*ls'.
2764	16	Incorrect password supplied for application role '%.*ls'.
2765	15	Could not locate statistics for column '%.*ls' in the system catalogs.
2766	16	The definition for user-defined data type '%.*ls' has changed.
2767	15	Could not locate statistics '%.*ls' in the system catalogs.
2768	15	Statistics for %ls '%.*ls'.
2769	15	Column '%.*ls'. Cannot create statistics on a column of data type %ls.

2770	16	The SELECT INTO statement cannot have same source and destination tables.
2771	16	Cannot create statistics on table '%.*ls'. This table is a virtual system table.
2772	16	Cannot access temporary tables from within a function.
2773	16	Sort order ID %d is invalid.
2774	16	Collation ID %d is invalid.
2775	16	Code page %d is not supported by the operating system.
2777	17	Database '%.*ls' contains columns or parameters with the following code page(s) not supported by the operating system: %ls.
2801	16	The definition of object '%.*ls' has changed since it was compiled.
2809	18	The request for %S_MSG '%.*ls' failed because '%.*ls' is a %S_MSG object.
2812	16	Could not find stored procedure '%.*ls'.

Troubleshooting

Errors 3000 - 3999

Error	Severity	Description (Message Text)
3009	16	Could not insert a backup or restore history/detail record in the msdb database. This may indicate a problem with the msdb database. The backup/restore operation was still successful.
3011	16	All backup devices must be of the same general class (for example, DISK and TAPE).
3013	16	%hs is terminating abnormally.
3014	10	%hs successfully processed %d pages in %d.%03d seconds (%d.%03d MB/sec).
3015	10	%hs is not yet implemented.
3016	16	File '%ls' of database '%ls' has been removed or shrunk since this backup or restore operation was interrupted. The operation cannot be restarted.
3017	16	Could not resume interrupted backup or restore operation. See the SQL Server error log for more information.
3018	16	There is no interrupted backup or restore operation to restart. Reissue the statement without the RESTART clause.
3019	16	The checkpoint file was for a different backup or restore operation. Reissue the statement without the RESTART clause.
3020	16	The backup operation cannot be restarted as the log has been truncated. Reissue the statement without the RESTART clause.
3021	16	Cannot perform a backup or restore operation within a transaction.
3023	16	Backup and file manipulation operations (such as ALTER DATABASE ADD FILE) on a database must be serialized. Reissue the statement after the current backup or file manipulation operation is completed.

3024	16	You can only perform a full backup of the master database. Use BACKUP DATABASE to back up the entire master database.
3025	16	Missing database name. Reissue the statement specifying a valid database name.
3026	16	Could not find filegroup ID %d in sysfilegroups for database '%ls'.
3027	16	Could not find filegroup '%.*ls' in sysfilegroups for database '%.*ls'.
3028	16	Operation checkpoint file is invalid. Could not restart operation. Reissue the statement without the RESTART option.
3031	16	Option '%ls' conflicts with option(s) '%ls'. Remove the conflicting option and reissue the statement.
3032	16	One or more of the options (%ls) are not supported for this statement. Review the documentation for supported options.
3033	16	BACKUP DATABASE cannot be used on a database opened in emergency mode.
3034	16	No files were selected to be processed. You may have selected one or more filegroups that have no members.
3035	16	Cannot perform a differential backup for database '%ls', because a current database backup does not exist. Perform a full database backup by reissuing BACKUP DATABASE, omitting the WITH DIFFERENTIAL option.
3036	16	Database '%ls' is in warm-standby state (set by executing RESTORE WITH STANDBY) and cannot be backed up until the entire load sequence is completed.
3037	16	Minimally logged operations have occurred prior to this WITH RESTART command. Reissue the BACKUP statement without WITH RESTART.
3038	16	The filename '%ls' is invalid as a backup device name. Reissue the BACKUP statement with a valid filename.
3039	16	Cannot perform a differential backup for file '%ls' because

		a current file backup does not exist. Reissue BACKUP DATABASE omitting the WITH DIFFERENTIAL option.
3040	10	An error occurred while informing replication of the backup. The backup will continue, but the replication environment should be inspected.
<u>3041</u>	16	BACKUP failed to complete the command %.*ls
3101	16	Exclusive access could not be obtained because the database is in use.
3108	16	RESTORE DATABASE must be used in single user mode when trying to restore the master database.
3110	14	User does not have permission to RESTORE database '%.*ls'.
3112	16	Cannot restore any database other than master when the server is in single user mode.
3113	21	The database owner (DBO) does not have an entry in sysusers in database '%.*ls'.
3114	21	Database '%.*ls' does not have an entry in sysdatabases.
3123	16	Invalid database name '%.*ls' specified for backup or restore operation.
3127	16	Temporary Message: The backup set does not contain pages for file '%ls'.
3128	16	File '%ls' has an unsupported page size (%d).
3129	16	Temporary Message: File '%ls' has changed size from %d to %d bytes.
3132	16	The media set for database '%ls' has %d family members but only %d are provided. All members must be provided.
3133	16	The volume on device '%ls' is not a member of the media family.
3135	16	The backup set in file '%ls' was created by %hs and cannot be used for this restore operation.
3136	16	Cannot apply the backup on device '%ls' to database '%ls'.
3138	16	One or more files in the backup set are no longer part of database '%ls'.
3140	16	Could not adjust the space allocation for file '%ls'.

3141	16	The database to be restored was named '%ls'. Reissue the statement using the WITH REPLACE option to overwrite the '%ls' database.
3142	16	File '%ls' cannot be restored over the existing '%ls'. Reissue the RESTORE statement using WITH REPLACE to overwrite pre-existing files.
3143	16	The data set on device '%ls' is not a SQL Server backup set.
3144	16	File '%.*ls' was not backed up in file %d on device '%ls'. The file cannot be restored from this backup set.
3145	16	The STOPAT option is not supported for RESTORE DATABASE. You can use the STOPAT option with RESTORE LOG.
3146	16	None of the newly-restored files had been modified after the backup was taken, so no further recovery actions are required. The database is now available for use.
3147	16	Backup and restore operations are not allowed on database tempdb.
3148	16	Media recovery for ALTER DATABASE is not yet implemented. The database cannot be rolled forward.
3150	10	The master database has been successfully restored. Shutting down SQL Server.
3151	21	The master database failed to restore. Use the rebuildm utility to rebuild the master database. Shutting down SQL Server.
3234	15	Logical file '%.*ls' is not part of database '%ls'. Use RESTORE FILELISTONLY to list the logical file names.
3241	16	The media family on device '%ls' is incorrectly formed. SQL Server cannot process this media family.
3242	16	The file on device '%ls' is not a valid Microsoft Tape Format backup set.
3243	16	The media family on device '%ls' was created using Microsoft Tape Format version %d.%d. SQL Server supports version %d.%d.
3244	16	Descriptor block size exceeds %d bytes. Use a shorter

		name and/or description string and retry the operation.
3245	16	Could not convert a string to or from Unicode, %ls.
3246	16	The media family on device '%ls' is marked as nonappendable. Reissue the statement using the INIT option to overwrite the media.
3247	16	The volume on device '%ls' has the wrong media sequence number (%d). Remove it and insert volume %d.
3248	25	>>> VOLUME SWITCH <<< (not for output!)
3249	16	The volume on device '%ls' is a continuation volume for the backup set. Remove it and insert the volume holding the start of the backup set.
3250	16	The value '%d' is not within range for the %ls parameter.
3251	10	The media family on device '%ls' is complete. The device is now being reused for one of the remaining families.
3253	16	The block size parameter must supply a value that is a power of 2.
3254	16	The volume on device '%ls' is empty.
3255	16	The data set on device '%ls' is a SQL Server backup set not compatible with this version of SQL Server.
<u>3256</u>	16	The backup set on device '%ls' was terminated while it was being created and is incomplete. RESTORE sequence is terminated abnormally.
3257	16	There is insufficient free space on disk volume '%ls' to create the database. The database requires %I64u additional free bytes, while only %I64u bytes are available.
3258	16	The volume on device '%ls' belongs to a different media set.
3259	16	The volume on device '%ls' is not part of a multiple family media set. BACKUP WITH FORMAT can be used to form a new media set.
3260	16	An internal buffer has become full.
3261	16	SQL Server cannot use the virtual device configuration.
3262	10	The backup set is valid.

3263	16	Cannot use the volume on device '%ls' as a continuation volume. It is sequence number %d of family %d for the current media set. Insert a new volume, or sequence number %d of family %d for the current set.
3264	16	The operation did not proceed far enough to allow RESTART. Reissue the statement without the RESTART qualifier.
3265	16	The login has insufficient authority. Membership of the sysadmin role is required to use VIRTUAL_DEVICE with BACKUP or RESTORE.
3266	10	The backup data in '%ls' is incorrectly formatted. Backups cannot be appended, but existing backup sets may still be usable.
<u>3267</u>	16	Insufficient resources to create UMS scheduler.
3268	16	Cannot use the backup file '%ls' because it was originally formatted with sector size %d and is now on a device with sector size %d.
3269	16	Cannot restore the file '%ls' because it was originally written with sector size %d; '%ls' is now on a device with sector size %d.
3270	16	An internal consistency error occurred. Contact Technical Support for assistance.
3271	16	Nonrecoverable I/O error occurred on file '%ls'.
3272	16	The '%ls' device has a hardware sector size of %d, but the block size parameter specifies an incompatible override value of %d. Reissue the statement using a compatible block size.
3273	16	The BUFFERCOUNT parameter must supply a value that allows at least one buffer per backup device.
3274	16	Incorrect checksum computed for the backup set on device %ls. The backup set cannot be restored.
3275	16	I/O request 0x%08x failed I/O verification. See the error log for a description.
3276	16	WITH SNAPSHOT can be used only if the backup set was created WITH SNAPSHOT.

3277	16	WITH SNAPSHOT must be used with only one virtual device.
3278	16	Failed to encrypt string %ls
3279	16	Access is denied due to a password failure
3280	16	Backups on raw devices are not supported. '%ls' is a raw device.
3281	16	Released and initiated rewind on '%ls'.
3301	21	Invalid log record found in the transaction log (logop %d).
3313	21	Error while redoing logged operation in database '%.*ls'. Error at log record ID %S_LSN.
3314	21	Error while undoing logged operation in database '%.*ls'. Error at log record ID %S_LSN.
3315	10	During rollback, process %d was expected to hold mode %d lock at level %d for row %S_RID in database '%.*ls' under transaction %S_XID.
3405	10	Recovering database '%.*ls'.
3406	10	%d transactions rolled forward in database '%.*ls' (%d).
3407	10	%d transactions rolled back in database '%.*ls' (%d).
3408	10	Recovery complete.
3413	21	Database ID %d. Could not mark database as suspect. Getnext NC scan on sysdatabases.dbid failed.
3414	10	Database '%.*ls' (database ID %d) could not recover. Contact Technical Support.
3415	16	Database '%.*ls' is read-only or has read-only files and must be made writable before it can be upgraded.
3417	21	Cannot recover the master database. Exiting.
3429	10	Warning: The outcome of transaction %S_XID, named '%.*ls' in database '%.*ls' (database ID %d), could not be determined because the coordinating database (database ID %d) could not be opened. The transaction was assumed to be committed.
3430	10	Warning: Could not determine the outcome of transaction %S_XID, named '%.*ls' in database '%.*ls' (with ID %d) because the coordinating database (ID %d) did not contain

		the outcome. The transaction was assumed to be committed.
3431	21	Could not recover database '%.*ls' (database ID %d) due to unresolved transaction outcomes.
3432	16	Warning: syslanguages is missing.
3433	16	Name is truncated to '%.*ls'. The maximum name length is %d.
3434	20	Cannot change sort order or locale. Server shutting down. Restart SQL Server to continue with sort order unchanged.
3435	20	Sort order or locale cannot be changed because user objects or user databases exist.
3436	16	Cannot rebuild index for the '%.*ls' table in the '%.*ls' database.
3437	21	Error recovering database '%.*ls'. Could not connect to MSDTC to check the completion status of transaction %S_XID.
3438	10	Database '%.*ls' (database ID %d) failed to recover because transaction first LSN is not equal to LSN in checkpoint. Contact Technical Support.
3439	10	Database '%.*ls' (database ID %d). The DBCC RECOVERDB statement failed due to previous errors.
3440	21	Database '%.*ls' (database ID %d). The DBCC RECOVERDB statement can only be run after a RESTORE statement that used the WITH NORECOVERY option.
3441	21	Database '%.*ls' (database ID %d). The RESTORE statement could not access file '%ls'. Error was '%ls'.
3442	21	Database '%.*ls' (database ID %d). The size of the undo file is insufficient.
3443	21	Database '%.*ls' (database ID %d) was marked for standby or read-only use, but has been modified. The RESTORE LOG statement cannot be performed.
3445	21	File '%ls' is not a valid undo file for database '%.*ls',

		database ID %d.
3450	10	Recovery of database '%.*ls' (%d) is %d%% complete
		(approximately %d more seconds) (Phase %d of 3).
<u>3604</u>	10	Duplicate key was ignored.
3605	10	Duplicate row was ignored.
3606	10	Arithmetic overflow occurred.
3607	10	Division by zero occurred.
3608	16	Cannot allocate a GUID for the token.
3612	10	%hsSQL Server Execution Times:%hs CPU time = %lu ms, elapsed time = %lu ms.
3613	10	SQL Server parse and compile time: %hs CPU time = %lu ms, elapsed time = %lu ms.
3615	10	Table '%.*ls'. Scan count %d, logical reads %d, physical reads %d, read-ahead reads %d.
3618	10	The transaction has been terminated.
3619	10	Could not write a CHECKPOINT record in database ID %d because the log is out of space.
3620	10	Automatic checkpointing is disabled in database '%.*ls' because the log is out of space. It will continue when the database owner successfully checkpoints the database. Free up some space or extend the database and then run the CHECKPOINT statement.
3621	10	The statement has been terminated.
3622	10	A domain error occurred.
3625	20	'%hs' is not yet implemented.
3627	16	Could not create worker thread.
3628	24	A floating point exception occurred in the user process. Current transaction is canceled.
3629	10	This SQL Server has been optimized for %d concurrent queries. This limit has been exceeded by %d queries and performance may be adversely affected.
3630	10	Concurrency violations since %ls%s 1 2 3 4 5 6 7 8 9 10-100 >100%s%6u%6u%6u%6u%6u%6u%6u%6u%6u%6u%6u%6u%6u%

3631	10	Concurrency violations will be written to the SQL Server error log.
3632	10	Concurrency violations will not be written to the SQL Server error log.
3701	11	Cannot %S_MSG the %S_MSG '%.*ls', because it does not exist in the system catalog.
3702	16	Cannot drop the %S_MSG '%.*ls' because it is currently in use.
3703	16	Cannot detach the %S_MSG '%.*ls' because it is currently in use.
3704	16	User does not have permission to perform this operation on %S_MSG '%.*ls'.
3705	16	Cannot use DROP %ls with '%.*ls' because '%.*ls' is a %S_MSG. Use DROP %ls.
3708	16	Cannot %S_MSG the %S_MSG '%.*ls' because it is a system %S_MSG.
3716	16	The %S_MSG '%.*ls' cannot be dropped because it is bound to one or more %S_MSG.
3718	11	Could not drop index '%.*ls' because the table or clustered index entry cannot be found in the sysindexes system table.
3723	16	An explicit DROP INDEX is not allowed on index '%.*ls'. It is being used for %ls constraint enforcement.
3724	16	Cannot %S_MSG the %S_MSG '%.*ls' because it is being used for replication.
3725	16	The constraint '%.*ls' is being referenced by table '%.*ls', foreign key constraint '%.*ls'.
3726	16	Could not drop object '%.*ls' because it is referenced by a FOREIGN KEY constraint.
3727	10	Could not drop constraint. See previous errors.
3728	16	'%.*ls' is not a constraint.
3729	16	Cannot %ls '%.*ls' because it is being referenced by object '%.*ls'.
3733	16	Constraint '%.*ls' does not belong to table '%.*ls'.

3736	16	Cannot drop the %S_MSG '%.*ls' because it is being used for distribution.
3737	16	Could not delete file '%ls'. See the SQL Server error log for more information.
3738	16	Deleting database file '%ls'.
3739	15	Cannot %ls the index '%.*ls' because it is not a statistics collection.
3902	13	The COMMIT TRANSACTION request has no corresponding BEGIN TRANSACTION.
3903	13	The ROLLBACK TRANSACTION request has no corresponding BEGIN TRANSACTION.
3904	21	Cannot unsplit logical page %S_PGID in object '%.*ls', in database '%.*ls'. Both pages together contain more data than will fit on one page.
3906	16	Could not run BEGIN TRANSACTION in database '%.*ls' because the database is read-only.
3908	16	Could not run BEGIN TRANSACTION in database '%.*ls' because the database is in bypass recovery mode.
3909	16	Session binding token is invalid.
3910	16	Transaction context in use by another session.
3912	16	Cannot bind using an XP token while the server is not in an XP call.
3914	16	The data type '%s' is invalid for transaction names or savepoint names. Allowed data types are char, varchar, nchar, or nvarchar.
3915	16	Cannot use the ROLLBACK statement within an INSERT-EXEC statement.
3916	16	Cannot use the COMMIT statement within an INSERT-EXEC statement unless BEGIN TRANSACTION is used first.
3917	16	Session is bound to a transaction context that is in use. Other statements in the batch were ignored.
3918	16	Statement must be executed in the context of a user transaction.

3919	16	Cannot enlist in the transaction because the transaction has already been committed or rolled back.
3920	10	The WITH MARK option only applies to the first BEGIN TRAN WITH MARK statement. The option is ignored.
3921	16	Cannot get a transaction token if there is no transaction active. Reissue the statement after a transaction has been started
3922	16	Cannot enlist in the transaction because the transaction does not exist.
3923	10	Cannot use transaction marks on database '%.*ls' with bulk-logged operations that have not been backed up. The mark is ignored.
3924	10	The session was enlisted in an active user transaction while trying to bind to a new transaction. The session has defected from the previous user transaction.
3925	16	Invalid transaction mark name. The 'LSN:' prefix is reserved.
3926	10	The transaction active in this session has been committed or aborted by another session.
3927	10	The session had an active transaction when it tried to enlist in a Distributed Transaction Coordinator transaction.
3928	16	The marked transaction '%.*ls' failed. A Deadlock was encountered while attempting to place the mark in the log.

Troubleshooting

Errors 4000 - 4999

Error	Severity	Description (Message Text)
4003	21	ODS error. Server is terminating this connection.
4004	16	Unicode data in a Unicode-only collation or ntext data cannot be sent to clients using DB-Library (such as ISQL) or ODBC version 3.7 or earlier.
4015	16	Language requested in login '%.*ls' is not an official name on this SQL Server. Using server-wide default %.*ls instead.
4016	16	Language requested in 'login %.*ls' is not an official name on this SQL Server. Using user default %.*ls instead.
4017	16	Neither the language requested in 'login %.*ls' nor user default language %.*ls is an official language name on this SQL Server. Using server-wide default %.*ls instead.
4018	16	User default language %.*ls is not an official language name on this SQL Server. Using server-wide default %.*ls instead.
4019	16	Language requested in login '%.*ls' is not an official language name on this SQL Server. Login fails.
4020	16	Default date order '%.*ls' for language %.*ls is invalid. Using mdy instead.
4027	16	Mount tape for %hs of database '%ls'.
4028	16	End of tape has been reached. Remove tape '%ls' and mount next tape for %hs of database '%ls'.
4030	10	The medium on device '%ls' expires on %hs and cannot be overwritten.
4035	10	Processed %d pages for database '%ls', file '%ls' on file %d.
4037	16	User-specified volume ID '%ls' does not match the volume ID '%ls' of the device '%ls'.

4038	16	Cannot find file ID %d on device '%ls'.
4060	11	Cannot open database requested in login '%.*ls'. Login fails.
4061	11	Cannot open either database requested in login (%.*ls) or user default database. Using master database instead.
4062	11	Cannot open user default database. Using master database instead.
4063	11	Cannot open database requested in login (%.*ls). Using user default '%.*ls' instead.
4064	11	Cannot open user default database. Login failed.
4208	16	The statement %hs is not allowed while the recovery model is SIMPLE. Use BACKUP DATABASE or change the recovery model using ALTER DATABASE.
4212	16	Cannot back up the log of the master database. Use BACKUP DATABASE instead.
4214	10	There is no current database backup. This log backup cannot be used to roll forward a preceding database backup.
4215	10	The log was not truncated because records at the beginning of the log are pending replication. Ensure the Log Reader Agent is running or use sp_repldone to mark transactions as distributed.
4216	16	Minimally logged operations cannot be backed up when the database is unavailable.
4217	10	BACKUP LOG cannot modify the database because database is read-only. The backup will continue, although subsequent backups will duplicate the work of this backup.
4301	16	Database in use. The system administrator must have exclusive use of the database to restore the log.
4304	16	A USER ATTENTION signal raised during RESTORE LOG is being ignored until the current restore completes.

<u>4305</u>	16	The log in this backup set begins at LSN %.*ls, which is too late to apply to the database. An earlier log backup that includes LSN %.*ls can be restored.
4306	16	The preceding restore operation did not specify WITH NORECOVERY or WITH STANDBY. Restart the restore sequence, specifying WITH NORECOVERY or WITH STANDBY for all but the final step.
4316	16	Can only RESTORE LOG in the master database if SQL Server is in single user mode.
4318	16	File '%ls' has been rolled forward to LSN %.*ls. This log terminates at LSN %.*ls, which is too early to apply the WITH RECOVERY option. Reissue the RESTORE LOG statement WITH NORECOVERY.
4320	16	File '%ls' was only partially restored by a database or file restore. The entire file must be successfully restored before applying the log.
4322	10	This log file contains records logged before the designated point-in-time. The database is being left in load state so you can apply another log file.
4323	16	The database is marked suspect. Transaction logs cannot be restored. Use RESTORE DATABASE to recover the database.
4324	10	Backup history older than %ls has been deleted.
4325	16	Could not delete entries for backup set ID '%ls'.
4326	16	The log in this backup set terminates at LSN %.*ls, which is too early to apply to the database. A more recent log backup that includes LSN %.*ls can be restored.
4327	16	The log in this backup set contains minimally logged changes. Point-in-time recovery is inhibited. RESTORE will roll forward to end of logs without recovering the database.
4328	16	File '%ls' is missing. Rollforward stops at log sequence number %.*ls. File is created at LSN %.*ls, dropped at LSN %.*ls. Restore transaction log beyond point in time when file was dropped or restore data to

		be consistent with rest of database.
4329	10	This log file contains records logged before the designated mark. The database is being left in load state so you can apply another log file.
4330	16	The log in this backup set cannot be applied because it is on a recovery path inconsistent with the database.
4331	16	The database cannot be recovered because the files have been restored to inconsistent points in time.
4332	16	RESTORE LOG has been halted. To use the database in its current state, run RESTORE DATABASE %ls WITH RECOVERY.
4333	16	The database cannot be recovered because the log was not restored.
4334	16	The named mark does not identify a valid LSN.
4403	16	View or function '%.*ls' is not updatable because it contains aggregates.
4404	16	View or function '%.*ls' is not updatable because the definition contains the DISTINCT clause.
4405	16	View or function '%.*ls' is not updatable because the modification affects multiple base tables.
4406	16	Update or insert of view or function '%.*ls' failed because it contains a derived or constant field.
4408	19	The query and the views or functions in it exceed the limit of %d tables.
4413	16	Could not use view or function '%.*ls' because of binding errors.
4414	16	Could not allocate ancillary table for view or function resolution. The maximum number of tables in a query (%d) was exceeded.
4415	16	View '%.*ls' is not updatable because either it was created WITH CHECK OPTION or it spans a view created WITH CHECK OPTION and the target table is referenced multiple times in the resulting query.
4416	16	UNION ALL view '%.*ls' is not updatable because

		the definition contains a disallowed construct.
4417	16	Derived table '%.*ls' is not updatable because the
		definition contains a UNION operator.
4418	16	Derived table '%.*ls' is not updatable because it
		contains aggregates.
4419	16	Derived table '%.*ls' is not updatable because the
		definition contains the DISTINCT clause.
4420	16	Derived table '%.*ls' is not updatable because the
		modification affects multiple base tables.
4421	16	Derived table '%.*ls' is not updatable because a
		column of the derived table is derived or constant.
4422	16	View '%.*ls' has an INSTEAD OF UPDATE trigger
		and cannot be a target of an UPDATE FROM
		statement.
4423	16	View '%.*ls' has an INSTEAD OF DELETE trigger
		and cannot be a target of a DELETE FROM
		statement.
4424	16	Joined tables cannot be specified in a query
		containing outer join operators. View or function
4.405	1.0	'%.*ls' contains joined tables.
4425	16	Cannot specify outer join operators in a query
		containing joined tables. View or function '%.*ls' contains outer join operators.
4427	16	
4427	10	The view or function '%.*ls' is not updatable because the definition contains the TOP clause.
4428	16	The derived table '%.*ls' is not updatable because the
4420		definition contains the TOP clause.
4429	16	View or function '%.*ls' contains a self-reference.
7723		Views or functions cannot reference themselves
		directly or indirectly.
4430	10	Warning: Index hints supplied for view '%.*ls' will be
		ignored.
4431	16	Partitioned view '%.*ls' is not updatable because table
		'%.*ls' has a timestamp column.
4432	16	Partitioned view '%.*ls' is not updatable because table
		1

		'%.*ls' has a DEFAULT constraint.
4433	16	Cannot INSERT into partitioned view "%.*ls" because table "%.*ls" has an IDENTITY constraint.
4434	16	Partitioned view '%.*ls' is not updatable because table '%.*ls' has an INSTEAD OF trigger.
4435	16	Partitioned view '%.*ls' is not updatable because a value was not specified for partitioning column '%.*ls'.
4436	16	UNION ALL view '%.*ls' is not updatable because a partitioning column was not found.
4437	16	Partitioned view '%.*ls' is not updatable as the target of a bulk operation.
4438	16	Partitioned view '%.*ls' is not updatable because it does not deliver all columns from its member tables.
4439	16	Partitioned view '%.*ls' is not updatable because the source query contains references to partition table '%.*ls'.
4440	16	UNION ALL view '%.*ls' is not updatable because a primary key was not found on table '%.*ls'.
4441	16	Partitioned view '%.*ls' is not updatable because the table '%.*ls' has an index on a computed column.
4442	16	UNION ALL view '%.*ls' is not updatable because base table '%.*ls' is used multiple times.
4443	16	UNION ALL view '%.*ls' is not updatable because column '%.*ls' of base table '%.*ls' is used multiple times.
4444	16	UNION ALL view '%.*ls' is not updatable because the primary key of table '%.*ls' is not included in the union result.
4445	16	UNION ALL view '%.*ls' is not updatable because the primary key of table '%.*ls' is not unioned with primary keys of preceding tables.
4446	16	UNION ALL view '%.*ls' is not updatable because the definiton of column '%.*ls' of view '%.*ls' is used by another view column.

4447	16	View '%.*ls' is not updatable because the definition contains a set operator.
4448	16	Cannot INSERT into partitioned view '%.*ls' because values were not supplied for all columns.
4449	16	Using defaults is not allowed in views that contain a set operator.
4450	16	Cannot update partitioned view '%.*ls' because the definition of the view column '%.*ls' in table '%.*ls' has a IDENTITY constraint.
4451	16	Views referencing tables on multiple servers are not updatable on this SKU of SQL Server.
4501	16	View or function "%.*ls" has more columns defined than column names given.
4502	16	View or function "%.*ls" has more column names specified than columns defined.
4505	16	CREATE VIEW failed because column '%.*ls' in view '%.*ls' exceeds the maximum of %d columns.
4506	10	Column names in each view or function must be unique. Column name '%.*ls' in view or function '%.*ls' is specified more than once.
4508	16	Views or functions are not allowed on temporary tables. Table names that begin with '#' denote temporary tables.
4509	16	Could not perform CREATE VIEW because WITH %ls was specified and the view contains set operators.
4510	16	Could not perform CREATE VIEW because WITH %ls was specified and the view is not updatable.
4511	16	Create View or Function failed because no column name was specified for column %d.
4512	16	Cannot schema bind %S_MSG '%.*ls' because name '%.*ls' is invalid for schema binding. Names must be in two-part format and an object cannot reference itself.
4513	16	Cannot schema bind %S_MSG '%.*ls'. '%.*ls' is not

		schema bound.
4514	16	CREATE FUNCTION failed because a column name is not specified for column %d.
4515	16	CREATE FUNCTION failed because column '%.*ls' in function '%.*ls' exceeds the maximum of %d columns.
4516	16	Cannot schema bind function '%.*ls' because it contains an EXECUTE statement.
4602	14	Only members of the sysadmin role can grant or revoke the CREATE DATABASE permission.
4604	16	There is no such user or group '%.*ls'.
4606	16	Granted or revoked privilege %ls is not compatible with object.
4610	16	You can only grant or revoke permissions on objects in the current database.
4611	16	To revoke grantable privileges, specify the CASCADE option with REVOKE.
4613	16	Grantor does not have GRANT permission.
4615	16	Invalid column name '%.*ls'.
4617	16	Cannot grant, deny or revoke permissions to or from special roles.
4618	16	You do not have permission to use %.*ls in the AS clause.
4619	16	CREATE DATABASE permission can only be granted in the master database.
4701	11	Could not truncate table '%.*ls' because this table does not exist in database '%.*ls'.
4706	17	Could not truncate table '%.*ls' because there is not enough room in the log to record the deallocation of all the index and data pages.
4707	16	Could not truncate object '%.*ls' because it or one of its indexes resides on a READONLY filegroup.
4708	16	Could not truncate object '%.*ls' because it is not a table.

4709	16	You are not allowed to truncate the system table '%.*ls'.
4711	16	Cannot truncate table '%.*ls' because it is published for replication.
4712	16	Cannot truncate table '%.*ls' because it is being referenced by a FOREIGN KEY constraint.
4803	21	Received invalid row length %d from bcp client. Maximum row size is %d.
4804	21	Premature end-of-message while reading current row from host. Host program may have terminated.
4805	17	The front-end tool you are using does not support the feature of bulk insert from host. Use the proper tools for this command.
4807	21	Received invalid row length %d from bcp client. Minimum row size is %d.
4808	16	Bulk copy operations cannot trigger BULK INSERT statements.
4810	16	Expected the TEXT token in data stream for bulk copy of text or image data.
4811	16	Expected the column offset in data stream for bulk copy of text or image data.
4812	16	Expected the row offset in data stream for bulk copy of text or image data.
4813	16	Expected the text length in data stream for bulk copy of text, ntext, or image data.
4815	21	Received invalid column length from bcp client.
4817	16	Could not bulk insert. Invalid sorted column '%.*ls'. Assuming data stream is not sorted.
4818	16	Could not bulk insert. Sorted column '%.*ls' was specified more than once. Assuming data stream is not sorted.
4819	16	Could not bulk insert. Bulk data stream was incorrectly specified as sorted.
4820	16	Could not bulk insert. Unknown version of format file

		'%s'.
4821	16	Could not bulk insert. Error reading the number of columns from format file '%s'.
4822	16	Could not bulk insert. Invalid number of columns in format file '%s'.
4823	16	Could not bulk insert. Invalid column number in format file '%s'.
4824	16	Could not bulk insert. Invalid data type for column number %d in format file '%s'.
4825	16	Could not bulk insert. Invalid prefix for column number %d in format file '%s'.
4826	16	Could not bulk insert. Invalid column length for column number %d in format file '%s'.
4827	16	Could not bulk insert. Invalid column terminator for column number %d in format file '%s'.
4828	16	Could not bulk insert. Invalid destination table column number for source column %d in format file '%s'.
4829	16	Could not bulk insert. Error reading destination table column name for source column %d in format file '%s'.
4830	10	Bulk Insert: DataFileType was incorrectly specified as char. DataFileType will be assumed to be widechar because the data file has a Unicode signature.
4831	10	Bulk Insert: DataFileType was incorrectly specified as widechar. DataFileType will be assumed to be char because the data file does not have a Unicode signature.
4832	16	Bulk Insert: Unexpected end-of-file (EOF) encountered in data file.
4833	16	Bulk Insert: Version mismatch between the provider dynamic link library and the server executable.
4834	16	You do not have permission to use the BULK INSERT statement.
4835	16	Bulk copying into a table with computed columns is

		not supported for downlevel clients.
4837	16	Error: Cannot bulk copy into a table '%s' enabled for immediate-updating subscriptions
4838	16	The bulk data source does not support the SQLNUMERIC or SQLDECIMAL data types.
4839	16	Cannot perform bulk insert. Invalid collation name for source column %d in format file '%s'.
4840	16	The bulk data source provider string has an invalid %ls property value %ls.
4841	16	The data source name is not a simple object name.
4842	16	The required FormatFile property is missing from the provider string of the server.
4843	16	The bulk data source provider string has a syntax error ('%lc') near character position %d.
4844	16	The bulk data source provider string has an unsupported property name (%ls).
4845	16	The bulk data source provider string has a syntax error near character position %d. Expected '%lc', but found '%lc'.
4846	16	The bulk data provider failed to allocate memory.
4847	16	Bulk copying into a table with bigint columns is not supported for versions earlier than SQL Server 2000.
4848	16	Bulk copying into a table with sql_variant columns is not supported for versions earlier than SQL Server 2000.
4849	16	Could not import table '%ls'. Error %d.
4850	10	Data import: Table '%ls' is already locked by another user.
4851	10	Data import: Table '%ls' already has data. Skipping to next table.
4852	10	Data import: Table '%ls' does not exist or it is not a user table.
4853	10	%hs
4854	21	%hs

4860	16	Could not bulk insert. File '%ls' does not exist.
4861	16	Could not bulk insert because file '%ls' could not be opened. Operating system error code %ls.
4862	16	Could not bulk insert because file '%ls' could not be read. Operating system error code %ls.
4863	16	Bulk insert data conversion error (truncation) for row %d, column %d (%ls).
4864	16	Bulk insert data conversion error (type mismatch) for row %d, column %d (%ls).
4865	16	Could not bulk insert because the maximum number of errors (%d) was exceeded.
4866	16	Bulk Insert fails. Column is too long in the data file for row %d, column %d. Make sure the field terminator and row terminator are specified correctly.
4867	16	Bulk insert data conversion error (overflow) for row %d, column %d (%ls).
4868	16	Bulk Insert fails. Codepage '%d' is not installed. Install the codepage and run the command again.
4869	16	Bulk Insert failed. Unexpected NULL value in data file row %d, column %d. Destination column (%ls) is defined NOT NULL.
4880	16	Could not bulk insert. When using the FIRSTROW and LASTROW parameters, the value for FIRSTROW cannot be greater than the value for LASTROW.
4881	10	Note: Bulk Insert through a view may result in base table default values being ignored for NULL columns in the data file.
4882	16	Could not bulk insert. Prefix length, field length, or terminator required for source column %d in format file '%s'.
4901	16	ALTER TABLE only allows columns to be added that can contain nulls or have a DEFAULT definition specified. Column '%.*ls' cannot be added to table '%.*ls' because it does not allow nulls and does not

		specify a DEFAULT definition.
4902	11	Cannot alter table '%.*ls' because this table does not
		exist in database '%.*ls'.
4909	16	Cannot alter '%.*ls' because it is not a table.
4910	16	Only the owner or members of the sysadmin role can alter table '%.*ls'.
4916	16	Could not enable or disable the constraint. See previous errors.
4917	16	Constraint '%.*ls' does not exist.
4920	16	ALTER TABLE failed because trigger '%.*ls' on table '%.*ls' does not exist.
4921	16	ALTER TABLE failed because trigger '%.*ls' does not belong to table '%.*ls'.
4922	16	%ls %.*ls failed because one or more objects access this column.
4923	16	ALTER TABLE DROP COLUMN failed because '%.*ls' is the only data column in table '%.*ls'. A table must have at least one data column.
4924	16	%ls failed because column '%.*ls' does not exist in table '%.*ls'.
4925	16	ALTER TABLE ALTER COLUMN ADD ROWGUIDCOL failed because a column already exists in table '%.*ls' with ROWGUIDCOL property.
4926	16	ALTER TABLE ALTER COLUMN DROP ROWGUIDCOL failed because a column does not exist in table '%.*ls' with ROWGUIDCOL property.
4927	16	Cannot alter column '%.*ls' to be data type %.*ls.
4928	16	Cannot alter column '%.*ls' because it is '%ls'.
4929	16	Cannot alter the %S_MSG '%.*ls' because it is being published for replication.
4930	10	Warning: Columns added to the replicated table %S_MSG '%.*ls' will be ignored by existing articles.
4931	16	Cannot add columns to %S_MSG '%.*ls' because it is being published for merge replication.

4932	16	ALTER TABLE DROP COLUMN failed because
		'%.*ls' is currently replicated.

Troubleshooting

Errors 5000 - 5999

Error	Severity	Description (Message Text)
5001	16	User must be in the master database.
5002	16	Database '%.*ls' does not exist. Check sysdatabases.
5004	16	To use ALTER DATABASE, the database must be in a writable state in which a checkpoint can be executed.
5005	10	Extending database by %.2f MB on disk '%.*ls'.
5006	16	Could not get exclusive use of %S_MSG '%.*ls' to perform the requested operation.
5008	16	This ALTER DATABASE statement is not supported.
5009	16	ALTER DATABASE failed. Some disk names listed in the statement were not found. Check that the names exist and are spelled correctly before rerunning the statement.
5010	16	Log file name cannot be generated from a raw device. The log file name and path must be specified.
5011	14	User does not have permission to alter database '%.*ls'.
5012	16	The name of the primary filegroup cannot be changed.
<u>5013</u>	16	The master and model databases cannot have files added to them. ALTER DATABASE was aborted.
5014	16	The %S_MSG '%.*ls' does not exist in database '%.*ls'.
5015	16	ALTER DATABASE failed. The total size specified must be 1 MB or greater.
5016	16	System databases master, model, and tempdb cannot have their names changed.

5017	16	ALTER DATABASE failed. Database '%.*ls' was not created with 'FOR LOAD' option.
5018	0	File '%.*ls' modified in sysaltfiles. Delete old file after restarting SQL Server.
5019	10	Cannot find entry in sysaltfiles for file '%.*ls'.
5020	16	The primary data or log file cannot be removed from a database.
5021	10	The %S_MSG name '%.*ls' has been set.
5022	16	Log file '%ls' for this database is already active.
5023	16	Database must be put in bypass recovery mode to rebuild the log.
5024	16	No entry found for the primary log file in sysfiles1. Could not rebuild the log.
5025	16	The file '%ls' already exists. It should be renamed or deleted so that a new log file can be created.
5026	16	Could not create a new log file with file '%.*ls'. See previous errors.
5027	16	System databases master, model, and tempdb cannot have their logs rebuilt.
5028	16	The system could not activate enough of the database to rebuild the log.
5029	10	Warning: The log for database '%.*ls' has been rebuilt. Transactional consistency has been lost. DBCC CHECKDB should be run to validate physical consistency. Database options will have to be reset, and extra log files may need to be deleted.
5030	16	The database could not be exclusively locked to perform the operation.
5031	16	Cannot remove the file '%.*ls' because it is the only file in the DEFAULT filegroup.
5032	10	The file cannot be shrunk below page %ud until the log is backed up because it contains bulk logged pages.
5035	16	Filegroup '%.*ls' already exists in this database.
5036	16	MODIFY FILE failed. Specify logical name.

5037	16	MODIFY FILE failed. Do not specify physical name.
5038	16	MODIFY FILE failed for file "%.*ls". At least one property per file must be specified.
5039	16	MODIFY FILE failed. Specified size is less than current size.
5040	16	MODIFY FILE failed. Size is greater than MAXSIZE.
5041	16	MODIFY FILE failed. File '%.*ls' does not exist.
5042	16	The %S_MSG '%.*ls' cannot be removed because it is not empty.
5043	16	The %S_MSG '%.*ls' cannot be found in %ls.
5044	10	The %S_MSG '%.*ls' has been removed.
5045	16	The %S_MSG already has the '%ls' property set.
5046	10	The %S_MSG property '%ls' has been set.
5047	16	Cannot change the READONLY property of the PRIMARY filegroup.
5048	16	Cannot add, remove, or modify files in filegroup '%.*ls'. The filegroup is read-only.
5049	16	Cannot extend file '%ls' using this syntax as it was not created with DISK INIT. Use ALTER DATABASE MODIFY FILE.
5050	16	Cannot change the properties of empty filegroup '%.*ls'. The filegroup must contain at least one file.
5051	16	Cannot have a filegroup with the name 'DEFAULT'.
5053	16	The maximum of %ld filegroups per database has been exceeded.
5054	16	Could not cleanup worktable IAM chains to allow shrink or remove file operation. Please try again when tempdb is idle.
5055	16	Cannot add, remove, or modify file '%.*ls'. The file is read-only.
5056	16	Cannot add, remove, or modify a file in filegroup '%.*ls' because the filegroup is offline.
5057	16	Cannot add, remove, or modify file '%.*ls' because

		it is offline.
5058	16	Option '%.*ls' cannot be set in database '%.*ls'.
5059	16	Database '%.*ls' is in transition. Try the ALTER DATABASE statement later.
5060	10	Nonqualified transactions are being rolled back. Estimated rollback completion: %d%%.
5061	16	ALTER DATABASE failed because a lock could not be placed on database '%.*ls'. Try again later.
5062	16	Option '%.*ls' cannot be set at the same time as another option setting.
5063	16	Database '%.*ls' is in warm standby. A warm-standby database is read-only.
5064	16	Changes to the state or options of database '%.*ls' cannot be made at this time. The database is in single-user mode, and a user is currently connected to it.
5065	16	Database '%.*ls' cannot be opened.
5066	16	Database options single user and dbo use only cannot be set at the same time.
5068	10	Failed to restart the current database. The current database is switched to master.
5069	16	ALTER DATABASE statement failed.
5070	16	Database state cannot be changed while other users are using the database '%.*ls'
5072	16	ALTER DATABASE failed. The default collation of database '%.*ls' cannot be set to %.*ls.
5073	16	Cannot alter collation for database '%ls' because it is READONLY, OFFLINE, or marked SUSPECT.
5074	16	The %S_MSG '%.*ls' is dependent on %S_MSG '%.*ls'.
5075	16	The %S_MSG '%.*ls' is dependent on %S_MSG.
5076	10	Warning: Changing default collation for database '%.*ls', which is used in replication. It is recommend that all replication database have the same default collation.

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5101	15	You must supply parameters for the DISK %hs
		statement. Usage: %hs.
5102	15	No such statement DISK %.*ls.
5103	16	MAXSIZE cannot be less than SIZE for file '%ls'.
5104	16	File '%.*ls' already used.
5105	16	Device activation error. The physical file name '%.*ls' may be incorrect.
5106	15	Parameter '%hs' requires value of data type '%hs'.
5107	15	Value is wrong data type for parameter '%hs' (requires data type '%hs').
5108	10	Log file '%.*ls' does not match the primary file. It may be from a different database or the log may have been rebuilt previously.
5109	16	No such parameter '%.*ls'.
5110	16	File '%.*ls' is on a network device not supported for database files.
5116	14	You do not have permission to run DISK statements.
5117	16	Could not run DISK statement. You must be in the master database to run this statement.
5122	10	Each disk file size must be greater than or equal to 1 MB.
5123	16	CREATE FILE encountered operating system error %ls while attempting to open or create the physical file '%.*ls'.
5126	16	The logical device '%.*ls' does not exist in sysdevices.
5146	16	The %hs of %d is out of range. It must be between %d and %d.
5148	16	Could not set the file size to the desired amount. The operating system file size limit may have been reached.
5149	16	MODIFY FILE encountered operating system error %ls while attempting to expand the physical file.
5150	16	The size of a single log file must not be greater than

		2 TB.
5151	16	The %hs statement is obsolete and no longer
		supported.
5157	16	I/O error encountered in the writelog system
		function during backout.
5158	10	Warning: Media in device '%.*ls' may have been changed.
5159	16	Operating system error %.*ls on device '%.*ls' during %ls.
5160	16	Cannot take '%.*ls' offline because the database is in
		use.
5162	16	Cannot find '%.*ls' in sysdatabases.
5163	16	Cannot open '%.*ls' to take offline.
5164	16	Usage: DBCC
		DBCONTROL(dbname,ONLINE OFFLINE)
5165	16	Cannot explicitly open or close master database.
5167	16	Database '%.*ls' is already offline.
5168	16	File '%.*ls' is on a network drive, which is not allowed.
5169	16	FILEGROWTH cannot be greater than MAXSIZE for file '%.*ls'.
5170	16	Cannot create file '%ls' because it already exists.
5171	16	%.*ls is not a primary database file.
5172	16	The header for file '%ls' is not a valid database file header. The %ls property is incorrect.
5173	16	Cannot associate files with different databases.
5174	10	Each file size must be greater than or equal to 512 KB.
5175	10	The file '%.*ls' has been expanded to prevent recovery from failing. Contact the system administrator for further assistance.
5176	10	The file '%.*ls' has been expanded beyond its maximum size to prevent recovery from failing. Contact the system administrator for further assistance.

5177	16	Encountered an unexpected error while checking the sector size for file '%.*ls'. Check the SQL Server error log for more information.
5178	16	Cannot use file '%.*ls' because it was originally formatted with sector size %d and is now on a device with sector size %d.
5179	16	Cannot use file '%.*ls', which is on a device with sector size %d. SQL Server supports a maximum sector size of 4096 bytes.
5180	22	Could not open FCB for invalid file ID %d in database '%.*ls'.
5181	16	Could not restart database '%.*ls'. Reverting back to old status.
5182	16	New log file '%.*ls' was created.
5183	16	File '%ls' cannot be created. Use WITH MOVE to specify a usable physical file name.
5184	16	Cannot use file '%.*ls' for clustered server. Only formatted files on which the cluster resource of the server has a dependency can be used.
<u>5701</u>	10	Changed database context to '%.*ls'.
5702	10	SQL Server is terminating this process.
5703	10	Changed language setting to %.*ls.
5803	10	Unknown config number (%d) in sysconfigures.
5804	16	Character set, sort order, or collation cannot be changed because at least one database is not writable.
5805	16	Too few locks specified. Minimum %d.
5807	16	Recovery intervals above %d minutes not recommended. Use the RECONFIGURE WITH OVERRIDE statement to force this configuration.
<u>5808</u>	16	Ad hoc updates to system catalogs not recommended. Use the RECONFIGURE WITH OVERRIDE statement to force this configuration.
5809	16	Average time slices above %d milliseconds not

		recommended. Use the RECONFIGURE WITH OVERRIDE statement to force this configuration.
5810	16	Valid values for the fill factor are 0 to 100.
5812	14	You do not have permission to run the RECONFIGURE statement.
5823	16	Cannot reconfigure SQL Server to use sort order ID %d, because the row for that sort order does not exist in syscharsets.
5828	16	User connections are limited to %d.
5829	16	The specified user options value is invalid.
5830	10	The default collation for SQL Server has been reconfigured. Restart SQL Server to rebuild the table indexes on columns of character data types.
5831	16	Minimum server memory value (%d) must be less than or equal to the maximum value (%d).
5904	17	Background checkpoint process suspended until locks are available.

Troubleshooting

Errors 6000 - 6999

Error	Severity	Description (Message Text)
6001	10	SHUTDOWN is waiting for %d process(es) to complete.
6002	10	SHUTDOWN is in progress. Log off.
6004	10	User does not have permission to perform this action.
6005	10	SHUTDOWN is in progress.
6006	10	Server shut down by request.
6007	10	The SHUTDOWN statement cannot be executed within a transaction or by a stored procedure.
6101	16	Process ID %d is not a valid process ID. Choose a number between 1 and %d.
6102	14	User does not have permission to use the KILL statement.
6103	17	Could not do cleanup for the killed process. Received message %d.
6104	16	Cannot use KILL to kill your own process.
6106	16	Process ID %d is not an active process ID.
6107	14	Only user processes can be killed.
6108	16	KILL SPID WITH COMMIT/ABORT is not supported by Microsoft SQL Server 2000. Use Microsoft Distributed Transaction Coordinator to resolve distributed transactions.
6109	10	SPID %d: transaction rollback in progress. Estimated rollback completion: %d%%. Estimated time remaining: %d seconds.
6110	16	The distributed transaction with UOW %s does not exist.
6111	16	Another user has decided a different outcome for the distributed transaction associated with UOW %s.
6112	16	Distributed transaction with UOW %s is in prepared

		state. Only Microsoft Distributed Transaction Coordinator can resolve this transaction. KILL command failed.
6113	16	The distributed transaction associated with UOW %s is in PREPARE state. Use KILL UOW WITH COMMIT/ABORT syntax to kill the transaction instead.
6114	16	Distributed transaction with UOW %s is being used by another user. KILL command failed.
6115	16	KILL command cannot be used inside user transactions.
6116	16	KILL command failed.
6117	16	There is a connection associated with the distributed transaction with UOW %s. First, kill the connection using KILL SPID syntax.
6118	16	The distributed transaction associated with UOW %s is not in PREPARED state. Use KILL UOW to kill the transaction instead.
6119	10	Distributed transaction with UOW %s is rolling back: estimated rollback completion: %d%%, estimated time left %d seconds.
6120	16	Status report cannot be obtained. Rollback operation for Process ID %d is not in progress.
6121	16	Status report cannot be obtained. Rollback operation for UOW %s is not in progress.
6401	16	Cannot roll back %.*ls. No transaction or savepoint of that name was found.
6600	16	XML error: %.*ls
6601	10	XML parser returned the error code %d from line number %d, source '%.*ls'.
6602	16	The error description is '%.*ls'.
6603	16	XML parsing error: %.*ls
6604	25	XML stored procedures are not supported in fibers mode.
6605	16	%.*ls: Failed to obtain an IPersistStream interface on

		the XML text.
6606	17	%.*ls: Failed to save the XML text stream. The server resources may be too low.
6607	16	%.*ls: The value supplied for parameter number %d is invalid.
6608	16	Failed to instantiate class '%ls'. Make sure Msxml2.dll exists in the SQL Server installation.
6609	16	Column '%ls' contains an invalid data type. Valid data types are char, varchar, nchar, nvarchar, text, and ntext.
6610	17	Failed to load Msxml2.dll.
6612	16	Invalid data type for the column indicated by the parameter '%ls'. Valid data types are int, bigint, smallint, and tinyint.
6613	16	Specified value '%ls' already exists.
6614	16	Value specified for column '%ls' is the same for column '%ls'. An element cannot be its own parent.
6615	16	Invalid data type is specified for column '%ls'. Valid data types are int, bigint, smallint, and tinyint.
6616	16	Parameter '%ls' is required when the parent of the element to be added is missing and must be inserted.
6617	16	The specified edge table has an invalid format. Column '%ls' is missing or has an invalid data type.
6618	16	Column '%ls' in the specified edge table has an invalid or null value.
6619	16	XML node of type %d named '%ls' cannot be created .
6620	16	XML attribute or element cannot be created for column '%ls'.
6621	16	XML encoding or decoding error occurred with object name '%.*ls'.
6622	16	Invalid data type for column '%ls'. Data type cannot be text, ntext, image, or binary.
6623	16	Column '%ls' contains an invalid data type. Valid data types are char, varchar, nchar, and nvarchar.
6624	16	XML document could not be created because server

		memory is low. Use sp_xml_removedocument to release XML documents.
6800	16	FOR XML AUTO requires at least one table for generating XML tags. Use FOR XML RAW or add a FROM clause with a table name.
6801	16	FOR XML EXPLICIT requires at least three columns, including the tag column, the parent column, and at least one data column.
6802	16	FOR XML EXPLICIT query contains the invalid column name '%.*ls'. Use the TAGNAME!TAGID!ATTRIBUTENAME[!] format where TAGID is a positive integer.
6803	16	FOR XML EXPLICIT requires the first column to hold positive integers that represent XML tag IDs.
6804	16	FOR XML EXPLICIT requires the second column to hold NULL or nonnegative integers that represent XML parent tag IDs.
6805	16	FOR XML EXPLICIT stack overflow occurred. Circular parent tag relationships are not allowed.
6806	16	Undeclared tag ID %d is used in a FOR XML EXPLICIT query.
6807	16	Undeclared parent tag ID %d is used in a FOR XML EXPLICIT query.
6808	16	XML tag ID %d could not be added. The server memory resources may be low.
6809	16	Unnamed column or table names cannot be used as XML identifiers. Name unnamed columns using AS in the SELECT statement.
6810	16	Column name '%.*ls' is repeated. The same attribute cannot be generated more than once on the same XML tag.
6811	16	FOR XML is incompatible with COMPUTE expressions. Remove the COMPUTE expression.
6812	16	XML tag ID %d that was originally declared as '%.*ls' is being redeclared as '%.*ls'.

6813	16	FOR XML EXPLICIT cannot combine multiple occurrences of ID, IDREF, IDREFS, NMTOKEN, and/or NMTOKENS in column name '%.*ls'.
6814	16	In the FOR XML EXPLICIT clause, ID, IDREF, IDREFS, NMTOKEN, and NMTOKENS require attribute names in '%.*ls'.
6815	16	In the FOR XML EXPLICIT clause, ID, IDREF, IDREFS, NMTOKEN, and NMTOKENS attributes cannot be hidden in '%.*ls'.
6816	16	In the FOR XML EXPLICIT clause, ID, IDREF, IDREFS, NMTOKEN, and NMTOKENS attributes cannot be generated as CDATA, XML, or XMLTEXT in '%.*ls'.
6817	16	FOR XML EXPLICIT cannot combine multiple occurrences of ELEMENT, XML, XMLTEXT, and CDATA in column name '%.*ls'.
6818	16	In the FOR XML EXPLICIT clause, CDATA attributes must be unnamed in '%.*ls'.
6819	16	The FOR XML clause is not allowed in a %ls statement.
6820	16	FOR XML EXPLICIT requires column %d to be named '%ls' instead of '%.*ls'.
6821	16	GROUP BY and aggregate functions are currently not supported with FOR XML AUTO.
6824	16	In the FOR XML EXPLICIT clause, mode '%.*ls' in a column name is invalid.
6825	16	ELEMENTS mode requires FOR XML AUTO.
6826	16	Every IDREFS or NMTOKENS column in a FOR XML EXPLICIT query must appear in a separate SELECT clause, and the instances must be ordered directly after the element to which they belong.
6827	16	FOR XML EXPLICIT queries allow only one XMLTEXT column per tag. Column '%.*ls' declares another XMLTEXT column that is not permitted.
6828	16	XMLTEXT column '%.*ls' must be of a string data

		type.
6829	16	FOR XML EXPLICIT and RAW modes currently do not support addressing binary data as URLs in column '%.*ls'. Remove the column, or use the BINARY BASE64 mode, or create the URL directly using the 'dbobject/TABLE[@PK1="V1"]/@COLUMN' syntax.
6830	16	FOR XML AUTO could not find the table owning the following column '%.*ls' to create a URL address for it. Remove the column, or use the BINARY BASE64 mode, or create the URL directly using the 'dbobject/TABLE[@PK1="V1"]/@COLUMN' syntax.
6831	16	FOR XML AUTO requires primary keys to create references for '%.*ls'. Select primary keys, or use BINARY BASE64 to obtain binary data in encoded form if no primary keys exist.
6832	16	FOR XML AUTO cannot generate a URL address for binary data if a primary key is also binary.
6833	16	Parent tag ID %d is not among the open tags. FOR XML EXPLICIT requires parent tags to be opened first. Check the ordering of the result set.
6834	16	XMLTEXT field '%.*ls' contains an invalid XML document. Check the root tag and its attributes.
6835	16	FOR XML EXPLICIT field '%.*ls' can specify the directive HIDE only once.
6836	16	FOR XML EXPLICIT requires attribute-centric IDREFS or NMTOKENS field '%.*ls' to precede element-centric IDREFS/NMTOKEN fields.
6837	16	The XMLTEXT document attribute that starts with '%.*ls' is too long. Maximum length is %d.
6838	16	Attribute-centric IDREFS or NMTOKENS field not supported on tags having element-centric field '%.*ls' of type TEXT/NTEXT or IMAGE. Either specify ELEMENT on IDREFS/NMTOKENS field or remove the ELEMENT directive.

6839	16	FOR XML EXPLICIT does not support XMLTEXT field on tag '%.*ls' that has IDREFS or NMTOKENS fields.
6840	16	XMLDATA does not support namespace elements or attributes such as '%.*ls'. Run the SELECT FOR XML statement without XMLDATA or remove the namespace prefix declaration.

Troubleshooting

Errors 7000 - 7999

Error	Severity	Description (Message Text)
7000	16	OPENXML document handle parameter must be of data type int.
7001	16	OPENXML flags parameter must be of data type int.
7002	16	OPENXML XPath must be of a string data type, such as nvarchar.
7003	16	Only one OPENXML column can be of type %ls.
7004	16	OPENXML does not support retrieving schema from remote tables, as in '%.*ls'.
7005	16	OPENXML requires a metaproperty namespace to be declared if 'mp' is used for another namespace in sp_xml_preparedocument.
7006	16	OPENXML encountered a problem identifying the metaproperty namespace prefix. Consider removing the namespace parameter from the corresponding sp_xml_preparedocument statement.
7007	16	OPENXML encountered unknown metaproperty '%.*ls'.
7008	16	The OPENXML EDGETABLE is incompatible with the XMLTEXT OVERFLOW flag.
7009	16	OPENXML allows only one metaproperty namespace prefix declaration in sp_xml_preparedocument.
7101	16	You cannot use a text pointer for a table with option 'text in row' set to ON.
7102	20	SQL Server Internal Error. Text manager cannot continue with current statement.
7103	16	You cannot set option 'text in row' for table %s.
7104	16	Offset or size type is invalid. Must be int or smallint data type.
7105	22	Page %S_PGID, slot %d for text, ntext, or image

		node does not exist.
7106	16	You cannot update a blob with a read-only text pointer
7107	16	You can have only 1,024 in-row text pointers in one transaction
7116	16	Offset %d is not in the range of available text, ntext, or image data.
7122	16	Invalid text, ntext, or image pointer type. Must be binary(16).
7123	16	Invalid text, ntext, or image pointer value %hs.
7124	16	The offset and length specified in the READTEXT statement is greater than the actual data length of %ld.
7125	16	The text, ntext, or image pointer value conflicts with the column name specified.
7126	16	The text, ntext, or image pointer value references a data page with an invalid text, ntext, or image status.
7127	16	The text, ntext, or image pointer value references a data page with an invalid timestamp.
7128	16	The text, ntext, or image pointer value references a data page that is no longer allocated.
7130	16	%ls WITH NO LOG is not valid at this time. Use sp_dboption to set the 'select into/bulkcopy' option on for database '%.*ls'.
7133	16	NULL textptr (text, ntext, or image pointer) passed to %ls function.
7135	16	Deletion length %ld is not in the range of available text, ntext, or image data.
7137	16	%s is not allowed because the column is being processed by a concurrent snapshot and is being replicated to a non-SQL Server Subscriber or Published in a publication allowing Data Transformation Services (DTS).
7138	16	The WRITETEXT statement is not allowed because the column is being replicated with Data Transformation Services (DTS).

7139	16	Length of text, ntext, or image data (%ld) to be replicated exceeds configured maximum %ld.
7141	16	Must create orphaned text inside a user transaction.
7142	16	Must drop orphaned text before committing the transaction.
7143	16	Invalid locator de-referenced.
7201	17	Could not execute procedure on remote server '%.*ls' because SQL Server is not configured for remote access. Ask your system administrator to reconfigure SQL Server to allow remote access.
7202	11	Could not find server '%.*ls' in sysservers. Execute sp_addlinkedserver to add the server to sysservers.
7212	16	Could not execute procedure '%.*ls' on remote server '%.*ls'.
7213	20	Could not set up parameter for remote server '%.*ls'.
7214	16	Remote procedure time out of %d seconds exceeded. Remote procedure '%.*ls' is canceled.
7221	16	Could not relay results of procedure '%.*ls' from remote server '%.*ls'.
7300	16	OLE DB error trace [%ls].
7301	16	Could not obtain a required interface from OLE DB provider '%ls'.
7302	16	Could not create an instance of OLE DB provider '%ls'.
7303	16	Could not initialize data source object of OLE DB provider '%ls'. %ls
7304	16	Could not create a new session on OLE DB provider '%ls'.
7305	16	Could not create a statement object using OLE DB provider '%ls'.
7306	16	Could not open table '%ls' from OLE DB provider '%ls'. %ls
7307	16	Could not obtain the data source of a session from OLE DB provider '%ls'. This action must be supported by the provider.

7310	16	Could not obtain the schema options for OLE DB
, 510		provider '%ls'. The provider supports the interface,
		but returns a failure code when it is used.
7311	16	Could not obtain the schema rowset for OLE DB
		provider '%ls'. The provider supports the interface,
		but returns a failure code when it is used.
7312	16	Invalid use of schema and/or catalog for OLE DB
		provider '%ls'. A four-part name was supplied, but the
		provider does not expose the necessary interfaces to
		use a catalog and/or schema.
7313	16	Invalid schema or catalog specified for provider '%ls'.
<u>7314</u>	16	OLE DB provider '%ls' does not contain table '%ls'.
		The table either does not exist or the current user does
		not have permissions on that table.
7315	16	OLE DB provider '%ls' contains multiple tables that
		match the name '%ls'.
7316	16	Could not use qualified table names (schema or
		catalog) with OLE DB provider '%ls' because it does
7217	1.0	not implement required functionality.
7317	16	OLE DB provider '%ls' returned an invalid schema definition.
7318	16	OLE DB provider '%ls' returned an invalid column
/310	10	definition.
7319	16	OLE DB provider '%ls' returned a '%ls' index '%ls'
7515		with incorrect bookmark ordinal %d.
7320	16	Could not execute query against OLE DB provider
/ 5 2 0		'%ls'. %ls
7321	16	An error occurred while preparing a query for
		execution against OLE DB provider '%ls'. %ls
7322	16	A failure occurred while giving parameter information
		to OLE DB provider '%ls'. %ls
7323	16	An error occurred while submitting the query text to
		OLE DB provider '%ls'. %ls
7330	16	Could not fetch a row from OLE DB provider '%ls'.
		%ls

7331	16	Rows from OLE DB provider '%ls' cannot be released. %ls
7332	16	Could not rescan the result set from OLE DB provider '%ls'. %ls
7333	16	Could not fetch a row using a bookmark from OLE DB provider '%ls'. %ls
7340	16	Could not create a column accessor for OLE DB provider '%ls'. %ls
7341	16	Could not get the current row value of column '%ls.%ls' from the OLE DB provider '%ls'. %ls
7342	16	Unexpected NULL value returned for column '%ls.%ls' from the OLE DB provider '%ls'. This column cannot be NULL.
7343	16	OLE DB provider '%ls' could not %ls table '%ls'. %ls
7344	16	OLE DB provider '%ls' could not %ls table '%ls' because of column '%ls'. %ls
7345	16	OLE DB provider '%ls' could not delete from table '%ls'. %ls
7346	16	Could not get the data of the row from the OLE DB provider '%ls'. %ls
7347	16	OLE DB provider '%ls' returned an unexpected data length for the fixed-length column '%ls.%ls'. The expected data length is %ls, while the returned data length is %ls.
7348	16	OLE DB provider '%ls' could not set range for table '%ls'.%ls
7349	16	OLE DB provider '%ls' could not set range for table '%ls' because of column '%ls'.%ls
7350	16	Could not get the column information from the OLE DB provider '%ls'.
7351	16	OLE DB provider '%ls' could not map ordinals for one or more columns of object '%ls'.
7352	16	OLE DB provider '%ls' supplied inconsistent metadata. The object '%ls' was missing expected column '%ls'.

7353	16	OLE DB provider '%ls' supplied inconsistent metadata. An extra column was supplied during execution that was not found at compile time.
7354	16	OLE DB provider '%ls' supplied invalid metadata for column '%ls'. %ls
7355	16	OLE DB provider '%ls' supplied inconsistent metadata for a column. The name was changed at execution time.
<u>7356</u>	16	OLE DB provider '%ls' supplied inconsistent metadata for a column. Metadata information was changed at execution time.
7357	16	Could not process object '%ls'. The OLE DB provider '%ls' indicates that the object has no columns.
7358	16	Could not execute query. The OLE DB provider '%ls' did not provide an appropriate interface to access the text, ntext, or image column '%ls.%ls'.
7359	16	The OLE DB provider '%ls' reported a schema version for table '%ls' that changed between compilation and execution.
7360	16	Could not get the length of a storage object from the OLE DB provider '%ls' for table '%ls', column '%ls'.
7361	16	Could not read a storage object from the OLE DB provider '%ls', for table '%ls', column '%ls'.
7362	16	The OLE DB provider '%ls' reported different meta data at run time for table '%ls' column '%ls'.
7365	16	Could not obtain optional metadata columns of columns rowset from the OLE DB provider '%ls'.
7366	16	Could not obtain columns rowset from OLE DB provider '%ls'. The provider supports the interface, but returns a failure code when used.
7367	16	The OLE DB provider '%ls' supports column-level collation, but failed to provide metadata column '%ls' at run time.
7368	16	The OLE DB provider '%ls' supports column-level collation, but failed to provide collation data for

		column '%ls'.
7369	16	The OLE DB provider '%ls' provided invalid collation. %ls.
7370	16	One or more properties could not be set on the query for OLE DB provider '%ls'. %ls
7371	16	One or more properties could not be set on the table for OLE DB provider '%ls'.
7372	16	Cannot get properties from OLE DB provider '%ls'.
7373	16	Could not set the initialization properties for the OLE DB provider '%ls'.
7374	16	Could not set the session properties for the OLE DB provider '%ls'.
7375	16	Could not open index '%ls' on table '%ls' from OLE DB provider '%ls'. %ls
7376	16	Could not enforce the remote join hint for this query.
7377	16	Cannot specify an index or locking hint for a remote data source.
7378	16	The update/delete operation requires a unique key or a clustered index on the remote table.
7379	16	OLE DB provider '%ls' returned an unexpected '%ls' for the decimal/numeric column '%ls.%ls'. The expected data length is '%ls', while the returned data length is '%ls'.
7390	16	The requested operation could not be performed because the OLE DB provider '%ls' does not support the required transaction interface.
7391	16	The operation could not be performed because the OLE DB provider '%ls' was unable to begin a distributed transaction.
7392	16	Could not start a transaction for OLE DB provider '%ls'.
7393	16	OLE DB provider '%ls' reported an error aborting the current transaction.
7394	16	OLE DB provider '%ls' reported an error committing

		the current transaction.
7395	16	Unable to start a nested transaction for OLE DB provider '%ls'. A nested transaction was required because the XACT_ABORT option was set to OFF.
<u>7399</u>	16	OLE DB provider '%ls' reported an error. %ls
7401	16	Cannot create OLE DB provider enumeration object installed with SQL Server. Verify installation.
<u>7403</u>	16	Could not locate registry entry for OLE DB provider '%ls'.
7404	16	The server could not load DCOM.
7405	16	Heterogeneous queries require the ANSI_NULLS and ANSI_WARNINGS options to be set for the connection. This ensures consistent query semantics. Enable these options and then reissue your query.
7410	16	Remote access not allowed for Windows NT user activated by SETUSER.
7411	16	Server '%.*ls' is not configured for %ls.
7413	16	Could not perform a Windows NT authenticated login because delegation is not available.
7414	16	Invalid number of parameters. Rowset '%ls' expects %d parameter(s).
7415	16	Ad hoc access to OLE DB provider '%ls' has been denied. You must access this provider through a linked server.
7416	16	Access to the remote server is denied because no login-mapping exists.
7417	16	GROUP BY ALL is not supported in queries that access remote tables if there is also a WHERE clause in the query.
7418	16	Text, image, or ntext column was too large to send to the remote data source due to the storage interface used by the provider.
7419	16	Lazy schema validation error. Linked server schema version has changed. Re-run the query.
7601	16	Cannot use a CONTAINS or FREETEXT predicate

		on %S_MSG '%.*ls' because it is not full-text indexed.
7602	16	The Full-Text Service (Microsoft Search) is not available. The system administrator must start this service.
7603	15	Syntax error in search condition, or empty or null search condition '%ls'.
7604	17	Full-text operation failed due to a time out.
7605	17	Full-text catalog '%ls' has been lost. Use sp_fulltext_catalog to rebuild and to repopulate this full-text catalog.
7606	17	Could not find full-text index for database ID %d, table ID %d. Use sp_fulltext_table to deactivate then activate this index.
7607	17	Search on full-text catalog '%ls' for database ID %d, table ID %d with search condition '%ls' failed with unknown result (%x).
7608	17	An unknown full-text failure (%x) occurred in function %hs on full-text catalog '%ls'.
7609	17	Full-Text Search is not installed, or a full-text component cannot be loaded.
7610	16	Access is denied to '%ls', or the path is invalid. Full-text search was not installed properly.
7611	10	Warning: Request to start a population in full-text catalog '%ls' ignored because a population is currently active for this full-text catalog.
7612	16	%d is not a valid value for full-text system resource usage.
7613	16	Cannot drop index '%.*ls' because it enforces the full-text key for table '%.*ls'.
7614	16	Cannot alter or drop column '%.*ls' because it is enabled for Full-Text Search.
7615	16	A CONTAINS or FREETEXT predicate can only operate on one table. Qualify the use of * with a table name.

7616	16	Full-Text Search is not enabled for the current database. Use sp_fulltext_database to enable full-text search for the database.
7617	16	Query does not reference the full-text indexed table.
7618	16	%d is not a valid value for a full-text connection time out.
7620	16	Conversion to data type %ls failed for full-text search key value 0x%ls.
7621	16	Invalid use of full-text predicate in the HAVING clause.
7622	17	Full-text catalog '%ls' lacks sufficient disk space to complete this operation.
7623	17	Full-text query failed because full-text catalog '%ls' is not yet ready for queries.
7624	17	Full-text catalog '%ls' is in an unusable state. Drop and re-create this full-text catalog.
7625	16	Full-text table has more than one LCID among its full-text indexed columns.
7626	15	The top_n_by_rank argument ('%d') must be greater than zero.
7627	16	Full-text catalog in directory '%ls' for clustered server cannot be created. Only directories on a disk in the cluster group of the server can be used.
7628	17	Cannot copy Schema.txt to '%.*ls' because access is denied or the path is invalid. Full-text search was not installed properly.
7629	17	Cannot open or query registry key '%.*ls'.
7630	15	Syntax error occurred near '%.*ls' in search condition '%.*ls'.
7631	15	Syntax error occurred near '%.*ls'. Expected '%.*ls' in search condition '%.*ls'.
7632	15	The value of the Weight argument must be between 0.0 and 1.0.
7633	15	The syntax <content condition="" search=""> OR NOT <content boolean="" term=""> is not allowed.</content></content>

7634	17	Stack overflow occurred in parsing search condition '%.*ls'.
7635	16	The Microsoft Search service cannot be administered under the present user account
7636	10	Warning: Request to start a full-text index population on table '%ls' is ignored because a population is currently active for this table.
7637	16	Value %d is not valid for full-text data time-out.
7638	10	Warning: Request to stop change tracking has deleted all changes tracked on table '%ls'.
7639	16	Cannot use a full-text predicate on %S_MSG '%.*ls' because it is not located on the local server.
7640	10	Warning: Request to stop tracking changes on table '%ls' will not stop population currently in progress on the table.
7641	16	Full-Text catalog '%ls' does not exist.
7642	16	A full-text catalog named '%ls' already exists in this database.
7905	16	The object specified is neither a table nor a constraint
7908	10	The table '%.*ls' was created with the NO_LOG option.
7910	10	Repair: Page %S_PGID has been allocated to object ID %d, index ID %d.
7911	10	Repair: Page %S_PGID has been deallocated from object ID %d, index ID %d.
7912	10	Repair: Extent %S_PGID has been allocated to object ID %d, index ID %d.
7913	10	Repair: Extent %S_PGID has been deallocated from object ID %d, index ID %d.
7914	10	Repair: %ls page at %S_PGID has been rebuilt.
7915	10	Repair: IAM chain for object ID %d, index ID %d, has been truncated before page %S_PGID and will be rebuilt.
7916	10	Repair: Deleted record for object ID %d, index ID

		%d, on page %S_PGID, slot %d. Indexes will be rebuilt.
7917	10	Repair: Converted forwarded record for object ID %d, index ID %d, at page %S_PGID, slot %d to a data row.
7918	10	Repair: Page %S_PGID next and %S_PGID previous pointers have been set to match each other in object ID %d, index ID %d.
7919	16	Repair statement not processed. Database needs to be in single user mode.
7920	10	Processed %ld entries in sysindexes for database ID %d.
7923	10	Table %.*ls Object ID %ld.
7924	16	Index ID %ld. FirstIAM %S_PGID. Root %S_PGID. Dpages %ld.
7925	16	Index ID %d. %ld pages used in %ld dedicated extents.
7927	16	Total number of extents is %ld.
7932	16	The indexes for '%.*ls' are already correct. They will not be rebuilt.
7933	16	One or more indexes contain errors. They will be rebuilt.
7934	16	The table '%.*ls' has no indexes.
7935	16	REINDEX received an exception. Statement terminated.
7937	16	The data in table '%.*ls' is possibly inconsistent. REINDEX terminated. Run DBCC CHECKTABLE and report errors to your system administrator.
7939	16	Cannot detach database '%.*ls' because it does not exist.
7940	16	System databases master, model, msdb, and tempdb cannot be detached.
7941	10	Trace option(s) not enabled for this connection. Use 'DBCC TRACEON()'.
7942	10	DBCC %ls scanning '%.*ls' table

7943	10	Table: '%.*ls' (%d); index ID: %d, database ID: %d
7944	10	%ls level scan performed.
7945	10	- Pages Scanned: %lu
7946	10	- Extents Scanned: %lu
7947	10	- Extent Switches %lu
7948	10	- Avg. Pages per Extent: %3.1f
7949	10	- Scan Density [Best Count:Actual Count]: %4.2f%ls [%lu:%lu]
7950	10	- Logical Scan Fragmentation: %4.2f%ls
7951	10	- Physical Scan Fragmentation: %4.2f%ls
7952	10	- Extent Scan Fragmentation: %4.2f%ls
7953	10	- Avg. Bytes Free per Page: %3.1f
7954	10	- Avg. Page Density (full): %4.2f%ls
7955	10	Invalid SPID %d specified.
7956	10	Permission to execute DBCC %ls denied.
7957	10	Cannot display the specified SPID's buffer; in transition.
7958	10	The specified SPID does not process input/output data streams.
7959	10	The DBCC statement is not supported in this release.
7961	16	Object ID %d, index ID %d, page ID %S_PGID, row ID %d. Column '%.*ls' is a var column with a NULL value and non-zero data length.
7962	16	Upgrade requires SQL Server to be started in single user mode. Restart SQL Server with the -m flag.
7963	16	Upgrade encountered a fatal error. See the SQL Server errorlog for more information.
7965	16	Table error: Could not check object ID %d, index ID %d due to invalid allocation (IAM) page(s).
7966	10	Warning: NO_INDEX option of %ls being used. Checks on non-system indexes will be skipped.
7968	10	Transaction information for database '%.*ls'.
7969	10	No active open transactions.
7970	10	%hsOldest active transaction:

7971	10	SPID (server process ID) : %d
7972	10	UID (user ID) : %d
7974	10	Name : %.*ls
7975	10	LSN : (%d:%d:%d)
7977	10	Start time : %.*ls
7979	10	%hsReplicated Transaction Information:
7980	10	Oldest distributed LSN : (%d:%d:%d)
7982	10	Oldest non-distributed LSN : (%d:%d:%d)
7983	14	User '%.*ls' does not have permission to run DBCC %ls for database '%.*ls'.
7984	16	Invalid object name '%.*ls'.
7985	16	The object name '%.*ls' contains more than the maximum number of prefixes. The maximum is %d.
7986	16	Warning: Pinning tables should be carefully considered. If a pinned table is larger, or grows larger, than the available data cache, the server may need to be restarted and the table unpinned.
7991	16	System table mismatch: Table '%.*ls', object ID %d has index ID 1 in sysindexes but the status in sysobjects does not have the clustered bit set. The table will be checked as a heap.
7992	16	Cannot shrink 'read only' database '%.*ls'.
7993	10	Cannot shrink file '%d' in database '%.*ls' to %d pages as it only contains %d pages.
7994	16	Object ID %d, index ID %d: FirstIAM field in sysindexes is %S_PGID. FirstIAM for statistics only and dummy index entries should be (0:0).
7995	16	Database '%ls' consistency errors in sysobjects, sysindexes, syscolumns, or systypes prevent further %ls processing.
7996	16	Extended stored procedures can only be created in the master database.
7997	16	'%.*ls' does not contain an identity column.
7998	16	Checking identity information: current identity value

		'%.*hs', current column value '%.*hs'.
7999	16	Could not find any index named '%.*ls' for table
		'%.*ls'.

Errors 8000 - 8999

Severity	Description (Message Text)
16	An explicit value for the identity column in table '%.*ls' can only be specified when a column list is used and IDENTITY_INSERT is ON.
16	Cannot update identity column '%.*ls'.
16	Table '%.*ls' does not exist or cannot be opened for SET operation.
16	The current user is not the database or object owner of table '%.*ls'. Cannot perform SET operation.
16	'%.*ls' is not a user table. Cannot perform SET operation.
16	Table '%.*ls' does not have the identity property. Cannot perform SET operation.
16	IDENTITY_INSERT is already ON for table '%.*ls.%.*ls'. Cannot perform SET operation for table '%.*ls'.
16	Cannot add identity column, using the SELECT INTO statement, to table '%.*ls', which already has column '%.*ls' that inherits the identity property.
16	Attempting to add multiple identity columns to table '%.*ls' using the SELECT INTO statement.
16	Cannot add multiple PRIMARY KEY constraints to table '%.*ls'.
16	Cannot define PRIMARY KEY constraint on nullable column in table '%.*ls'.
16	Cannot add more than one clustered index for constraints on table '%.*ls'.
16	Error converting data type %ls to %ls.
16	Arithmetic overflow error converting %ls to data type %ls.
	16 16 16 16 16 16 16 16 16 16 16 16 16 1

8116	16	Argument data type %ls is invalid for argument %d of %ls function.
8117	16	Operand data type %ls is invalid for %ls operator.
8118	16	Column '%.*ls.%.*ls' is invalid in the select list because it is not contained in an aggregate function and there is no GROUP BY clause.
8119	16	Column '%.*ls.%.*ls' is invalid in the HAVING clause because it is not contained in an aggregate function and there is no GROUP BY clause.
8120	16	Column '%.*ls.%.*ls' is invalid in the select list because it is not contained in either an aggregate function or the GROUP BY clause.
8121	16	Column '%.*ls.%.*ls' is invalid in the HAVING clause because it is not contained in either an aggregate function or the GROUP BY clause.
8122	16	Only the first query in a UNION statement can have a SELECT with an assignment.
8123	16	A correlated expression is invalid because it is not in a GROUP BY clause.
8124	16	Multiple columns are specified in an aggregated expression containing an outer reference. If an expression being aggregated contains an outer reference, then that outer reference must be the only column referenced in the expression.
8125	16	An aggregated expression containing an outer reference must be contained in either the select list, or a HAVING clause subquery in the query whose FROM clause contains the table with the column being aggregated.
8126	16	Column name '%.*ls.%.*ls' is invalid in the ORDER BY clause because it is not contained in an aggregate function and there is no GROUP BY clause.
8127	16	Column name '%.*ls.%.*ls' is invalid in the ORDER BY clause because it is not contained in either an aggregate function or the GROUP BY clause.

8128	10	Using '%s' version '%s' to execute extended stored procedure '%s'.
8129	16	The new disk size must be greater than %d. Consider using DBCC SHRINKDB.
8130	16	The device is not a database device. Only database devices can be expanded.
8131	10	Extended stored procedure DLL '%s' does not exportGetXpVersion(). Refer to the topic "Backward Compatibility Details (Level 1) - Open Data Services" in the documentation for more information.
8132	10	Extended stored procedure DLL '%s' reports its version is %d.%d. Server expects version %d.%d.
8133	16	None of the result expressions in a CASE specification can be NULL.
8134	16	Divide by zero error encountered.
8135	16	Table level constraint does not specify column list, table '%.*ls'.
8136	16	Duplicate columns specified in %ls constraint key list, table '%.*ls'.
8138	16	More than 16 columns specified in foreign key column list, table '%.*ls'.
8139	16	Number of referencing columns in foreign key differs from number of referenced columns, table '%.*ls'.
8140	16	More than one key specified in column level %ls constraint, table '%.*ls'.
8141	16	Column %ls constraint for column '%.*ls' references another column, table '%.*ls'.
8142	16	Subqueries are not supported in %ls constraints, table '%.*ls'.
8143	16	Parameter '%.*ls' was supplied multiple times.
8144	16	Procedure or function %.*ls has too many arguments specified.
8145	16	%.*ls is not a parameter for procedure %.*ls.

8146	16	Procedure %.*ls has no parameters and arguments were supplied.
8147	16	Could not create IDENTITY attribute on nullable column '%.*ls', table '%.*ls'.
8148	16	More than one column %ls constraint specified for column '%.*ls', table '%.*ls'.
8149	16	OLE Automation objects are not supported in fiber mode.
8150	16	Multiple NULL constraints were specified for column '%.*ls', table '%.*ls'.
8151	16	Both a PRIMARY KEY and UNIQUE constraint have been defined for column '%.*ls', table '%.*ls'. Only one is allowed.
8152	16	String or binary data would be truncated.
8153	0	Warning: Null value is eliminated by an aggregate or other SET operation.
8154	15	The table '%.*ls' is ambiguous.
<u>8155</u>	15	No column was specified for column %d of '%.*ls'.
8156	15	The column '%.*ls' was specified multiple times for '%.*ls'.
8157	15	All the queries in a query expression containing a UNION operator must have the same number of expressions in their select lists.
8158	15	'%.*ls' has more columns than were specified in the column list.
8159	15	'%.*ls' has fewer columns than were specified in the column list.
8160	15	A grouping function can only be specified when either CUBE or ROLLUP is specified in the GROUP BY clause.
8161	15	A grouping function argument does not match any of the expressions in the GROUP BY clause.
8162	16	Formal parameter '%.*ls' was defined as OUTPUT but the actual parameter not declared OUTPUT.
<u>8163</u>	16	The text, ntext, or image data type cannot be

		selected as DISTINCT.
8164	16	An INSERT EXEC statement cannot be nested.
8165	16	Invalid subcommand value %d. Legal range from %d to %d.
8166	16	Constraint name '%.*ls' not permitted. Constraint names cannot begin with a number sign (#).
8168	16	Cannot create two constraints named '%.*ls'. Duplicate constraint names are not allowed.
8169	16	Syntax error converting from a character string to uniqueidentifier.
8170	16	Insufficient result space to convert uniqueidentifier value to char.
8171	16	Hint '%ls' on object '%.*ls' is invalid.
8175	10	Could not find table %.*ls. Will try to resolve this table name later.
8176	16	Resync procedure expects value of key '%.*ls', which was not supplied.
8177	16	Cannot use a column in the %hs clause unless it is contained in either an aggregate function or the GROUP BY clause.
8178	16	Prepared statement '%.*ls' expects parameter %.*ls, which was not supplied.
8179	16	Could not find prepared statement with handle %d.
8180	16	Statement(s) could not be prepared.
8181	16	Text for '%.*ls' is missing from syscomments. The object must be dropped and re-created before it can be used.
8183	16	Only UNIQUE or PRIMARY KEY constraints are allowed on computed columns.
8184	16	Error expanding '*': all columns incomparable, '*' expanded to zero columns.
8185	16	Error expanding '*': An uncomparable column has been found in an underlying table or view.
8186	16	Function '%.*ls' can be used only on user and

		system tables.
8190	16	Cannot compile replication filter procedure without defining table being filtered.
8191	16	Replication filter procedures can only contain SELECT, GOTO, IF, WHILE, RETURN, and DECLARE statements.
8192	16	Replication filter procedures cannot have parameters.
8193	16	Cannot execute a procedure marked FOR REPLICATION.
8194	16	Cannot execute a USE statement while an application role is active.
8196	16	Duplicate column specified as ROWGUIDCOL.
8197	16	Windows NT user '%.*ls' does not have server access.
8198	16	Could not obtain information about Windows NT group/user '%ls'.
8199	16	In EXECUTE <pre> rocname can only be a literal or variable of type char, varchar, nchar, or nvarchar.</pre>
<u>8501</u>	16	MSDTC on server '%.*ls' is unavailable.
8502	20	Unknown MSDTC token '0x%x' received.
8504	20	Invalid transaction import buffer.
8506	20	Invalid transaction state change requested from %hs to %hs.
8508	20	QueryInterface failed for '%hs': %hs.
8509	20	Import of MSDTC transaction failed: %hs.
8510	20	Enlist of MSDTC transaction failed: %hs.
8511	20	Unknown isolation level %d requested from MSDTC.
8512	20	MSDTC Commit acknowledgement failed: %hs.
8513	20	MSDTC Abort acknowledgement failed: %hs.
8514	20	MSDTC PREPARE acknowledgement failed: %hs.
8515	20	MSDTC Global state is invalid.

8517	20	Failed to get MSDTC PREPARE information: %hs.
8518	20	MSDTC BEGIN TRANSACTION failed: %hs.
8519	16	Current MSDTC transaction must be committed by remote client.
8520	20	Commit of internal MSDTC transaction failed: %hs.
8521	20	Invalid awakening state. Slept in %hs; awoke in %hs.
8522	20	Distributed transaction aborted by MSDTC.
8523	15	PREPARE TRAN statement not allowed on MSDTC transaction.
8524	16	The current transaction could not be exported to the remote provider. It has been rolled back.
8525	16	Distributed transaction completed. Either enlist this session in a new transaction or the NULL transaction.
8601	17	Internal Query Processor Error: The query processor could not obtain access to a required interface.
8602	16	Indexes used in hints must be explicitly included by the index tuning wizard.
8616	10	The index hints for table '%.*ls' were ignored because the table was considered a fact table in the star join.
8617	17	Invalid Query: CUBE and ROLLUP cannot compute distinct aggregates.
8618	17	Warning: The query processor could not produce a query plan from the optimizer because the total length of all the columns in the GROUP BY or ORDER BY clause exceeds 8000 bytes.
8619	17	Warning: The query processor could not produce a query plan from the optimizer because the total length of all the columns in the GROUP BY or ORDER BY clause exceeds 8000 bytes. Resubmit your query without the ROBUST PLAN hint.
8620	17	Internal Query Processor Error: The query processor encountered an internal limit overflow.

8621	16	Internal Query Processor Error: The query processor ran out of stack space during query optimization.
8622	16	Query processor could not produce a query plan because of the hints defined in this query. Resubmit the query without specifying any hints and without using SET FORCEPLAN.
8623	16	Internal Query Processor Error: The query processor could not produce a query plan. Contact your primary support provider for more information.
8624	16	Internal SQL Server error.
8625	16	Warning: The join order has been enforced because a local join hint is used.
8626	16	Only text pointers are allowed in work tables, never text, ntext, or image columns. The query processor produced a query plan that required a text, ntext, or image column in a work table.
8627	16	The query processor could not produce a query plan because of the combination of hints and text, ntext, or image data passing through operators using work tables.
8628	17	A time out occurred while waiting to optimize the query. Rerun the query.
8629	16	The query processor could not produce a query plan from the optimizer because a query cannot update a text, ntext, or image column and a clustering key at the same time.
8630	17	Internal Query Processor Error: The query processor encountered an unexpected error during execution.
8640	17	Internal Query Processor Error: The query processor encountered an unexpected work table error during execution.
8642	17	The query processor could not start the necessary thread resources for parallel query execution.
8644	16	Internal Query Processor Error: The plan selected for execution does not support the invoked given

		execution routine.
<u>8645</u>	17	A time out occurred while waiting for memory
		resources to execute the query. Rerun the query.
8646	21	The index entry for row ID %.*hs was not found in index ID %d, of table %d, in database '%.*ls'.
8647	20	Scan on sysindexes for database ID %d, object ID %ld, returned a duplicate index ID %d. Run DBCC CHECKTABLE on sysindexes.
8648	20	Could not insert a row larger than the page size into a hash table. Resubmit the query with the ROBUST PLAN hint.
8649	17	The query has been canceled because the estimated cost of this query (%d) exceeds the configured threshold of %d. Contact the system administrator.
8650	13	Intra-query parallelism caused your server command (process ID #%d) to deadlock. Rerun the query without intra-query parallelism by using the query hint option (maxdop 1).
8651	17	Could not perform the requested operation because the minimum query memory is not available. Decrease the configured value for the 'min memory per query' server configuration option.
8653	17	Warning: The query processor is unable to produce a plan because the table '%.*ls' is marked OFFLINE.
8654	16	A cursor plan could not be generated for the given statement because it contains textptr (inrow lob).
8660	16	An index cannot be created on the view '%.*ls' because the view definition does not include all the columns in the GROUP BY clause.
8661	16	A clustered index cannot be created on the view '%.*ls' because the index key includes columns which are not in the GROUP BY clause.
8662	16	An index cannot be created on the view '%.*ls' because the view definition includes an unknown value (the sum of a nullable expression).

8663	16	An index cannot be created on the view '%.*ls' because the view definition does not include count_big(*).
8664	16	An index cannot be created on the view '%.*ls' because the view definition includes duplicate column names.
8665	16	An index cannot be created on the view '%.*ls' because no row can satisfy the view definition.
8666	10	Warning: The optimizer cannot use the index because the select list of the view contains a nonaggregate expression.
8667	10	Warning: The optimizer cannot use the index because the group-by list in the view forms a key and is redundant.
8680	17	Internal Query Processor Error: The query processor encountered an unexpected error during the processing of a remote query phase.
8901	13	Deadlock detected during DBCC. Complete the transaction in progress and retry this statement.
8902	17	Memory allocation error during DBCC processing.
8903	16	Extent %S_PGID in database ID %d is allocated in both GAM %S_PGID and SGAM %S_PGID.
8904	16	Extent %S_PGID in database ID %d is allocated by more than one allocation object.
8905	16	Extent %S_PGID in database ID %d is marked allocated in the GAM, but no SGAM or IAM has allocated it.
8906	16	Page %S_PGID in database ID %d is allocated in the SGAM %S_PGID and PFS %S_PGID, but was not allocated in any IAM. PFS flags '%hs'.
8908	16	Table error: Database ID %d, object ID %d, index ID %d. Chain linkage mismatch. %S_PGID->next = %S_PGID, but %S_PGID->prev = %S_PGID.
8909	16	Table error: Object ID %d, index ID %d, page ID %S_PGID. The PageId in the page header =

		%S_PGID.
8910	16	Page %S_PGID in database ID %d is allocated to both object ID %d, index ID %d, and object ID %d, index ID %d.
8911	10	The error has been repaired.
8912	10	%.*ls fixed %d allocation errors and %d consistency errors in database '%ls'.
8913	16	Extent %S_PGID is allocated to '%ls' and at least one other object.
8914	10	Incorrect PFS free space information for page %S_PGID, object ID %d, index ID %d, in database ID %d. Expected value %hs, actual value %hs.
8915	10	File %d (number of mixed extents = %ld, mixed pages = %ld).
8916	10	Object ID %ld, Index ID %ld, data extents %ld, pages %ld, mixed extent pages %ld.
8917	10	Object ID %ld, Index ID %ld, index extents %ld, pages %ld, mixed extent pages %ld.
8918	10	(number of mixed extents = %ld, mixed pages = %ld) in this database.
8919	16	Single page allocation %S_PGID in table %ls, object ID %d, index ID %d is not allocated in PFS page ID %S_PGID.
8920	16	Cannot perform a %ls operation inside a user transaction. Terminate the transaction and reissue the statement.
8921	16	CHECKTABLE terminated. A failure was detected while collecting facts. Possibly tempdb out of space or a system table is inconsistent. Check previous errors.
8922	10	Could not repair this error.
8923	10	The repair level on the DBCC statement caused this repair to be bypassed.
8924	10	Repairing this error requires other errors to be corrected first.

<u>8925</u>	16	Table error: Cross object linkage: Page %S_PGID, slot %d, in object ID %d, index ID %d, refers to page %S_PGID, slot %d, in object ID %d, index ID %d.
8926	16	Table error: Cross object linkage: Parent page %S_PGID, slot %d, in object ID %d, index ID %d, and page %S_PGID, slot %d, in object ID %d, index ID %d, next refer to page %S_PGID but are not in the same object.
8927	16	Object ID %d, index ID %d: The ghosted record count (%d) in the header does not match the number of ghosted records (%d) found on page %S_PGID.
8928	16	Object ID %d, index ID %d: Page %S_PGID could not be processed. See other errors for details.
8929	16	Object ID %d: Errors found in text ID %I64d owned by data record identified by %.*ls.
8930	16	Table error: Object ID %d, index ID %d cross-object chain linkage. Page %S_PGID points to %S_PGID in object ID %d, index ID %d.
8931	16	Table error: Object ID %d, index ID %d B-tree level mismatch, page %S_PGID. Level %d does not match level %d from parent %S_PGID.
8932	16	Table error: Object ID %d, index ID %d, column '%.*ls'. The column ID %d is not valid for this table. The valid range is from 1 to %d.
8933	16	Table error: Object ID %d, index ID %d. The low key value on page %S_PGID (level %d) is not %ls the key value in the parent %S_PGID slot %d.
8934	16	Table error: Object ID %d, index ID %d. The high key value on page %S_PGID (level %d) is not less than the low key value in the parent %S_PGID, slot %d of the next page %S_PGID.
8935	16	Table error: Object ID %d, index ID %d. The previous link %S_PGID on page %S_PGID does not match the previous page %S_PGID that the parent %S_PGID, slot %d expects for this page.

8936	16	Table error: Object ID %d, index ID %d. B-tree
		chain linkage mismatch. %S_PGID->next =
		%S_PGID, but %S_PGID->Prev = %S_PGID.
8937	16	Table error: Object ID %d, index ID %d. B-tree
		page %S_PGID has two parent nodes %S_PGID,
		slot %d and %S_PGID, slot %d.
8938	16	Table error: Page %S_PGID, Object ID %d, index
		ID %d. Unexpected page type %d.
8939	16	Table error: Object ID %d, index ID %d, page
		%S_PGID. Test (%hs) failed. Values are %ld and
		%ld.
8940	16	Table error: Object ID %d, index ID %d, page
		%S_PGID. Test (%hs) failed. Address 0x%x is not
		aligned.
8941	16	Table error: Object ID %d, index ID %d, page
		%S_PGID. Test (%hs) failed. Slot %d, offset 0x%x
		is invalid.
8942	16	Table error: Object ID %d, index ID %d, page
		%S_PGID. Test (%hs) failed. Slot %d, offset 0x%x
		overlaps with the prior row.
8943	16	Table error: Object ID %d, index ID %d, page
		%S_PGID. Test (%hs) failed. Slot %d, row extends
		into free space at 0x%x.
8944	16	Table error: Object ID %d, index ID %d, page
		%S_PGID, row %d. Test (%hs) failed. Values are
		%ld and %ld.
8945	16	Table error: Object ID %d, index ID %d will be
		rebuilt.
8946	16	Table error: Allocation page %S_PGID has invalid
		%ls page header values. Type is %d. Check type,
		object ID and page ID on the page.
8947	16	Table error: Multiple IAM pages for object ID %d,
		index ID %d contain allocations for the same
		interval. IAM pages %S_PGID and %S_PGID.
8948	16	Database error: Page %S_PGID is marked with the

		wrong type in PFS page %S_PGID. PFS status 0x%x expected 0x%x.
8949	10	%.*ls fixed %d allocation errors and %d consistency errors in table '%ls' (object ID %d).
8950	16	%.*ls fixed %d allocation errors and %d consistency errors not associated with any single object.
8951	16	Table error: Table '%ls' (ID %d). Missing or invalid key in index '%ls' (ID %d) for the row:
<u>8952</u>	16	Table error: Database '%ls', index '%ls.%ls' (ID %d) (index ID %d). Extra or invalid key for the keys:
8953	10	Repair: Deleted text column, text ID %I64d, for object ID %d on page %S_PGID, slot %d.
8954	10	%.*ls found %d allocation errors and %d consistency errors not associated with any single object.
8955	16	Data row (%d:%d) identified by (%ls) has index values (%ls).
<u>8956</u>	16	Index row (%d:%d:%d) with values (%ls) points to the data row identified by (%ls).
8957	10	DBCC %ls (%ls%ls%ls) executed by %ls found %d errors and repaired %d errors.
8958	10	%ls is the minimum repair level for the errors found by DBCC %ls (%ls %ls).
8959	16	Table error: IAM page %S_PGID for object ID %d, index ID %d is linked in the IAM chain for object ID %d, index ID %d by page %S_PGID.
8960	23	Table error: Page %S_PGID, slot %d, column %d is not a valid complex column.
8961	23	Table error: Object ID %d. The text, ntext, or image node at page %S_PGID, slot %d, text ID %I64d does not match its reference from page %S_PGID, slot %d.
8962	23	Table error: The text, ntext, or image node at page %S_PGID, slot %d, text ID %I64d has incorrect node type %d.

8963	23	Table error: The text, ntext, or image node at page %S_PGID, slot %d, text ID %I64d has type %d. It cannot be placed on a page of type %d.
8964	23	Table error: Object ID %d. The text, ntext, or image node at page %S_PGID, slot %d, text ID %I64d is not referenced.
8965	23	Table error: Object ID %d. The text, ntext, or image node at page %S_PGID, slot %d, text ID %I64d is referenced by page %S_PGID, slot %d, but was not seen in the scan.
8966	22	Could not read and latch page %S_PGID with latch type %ls. %ls failed.
8967	16	Table error: Invalid value detected in %ls for Object ID %d, index ID %d. Row skipped.
8968	16	Table error: %ls page %S_PGID (object ID %d, index ID %d) is out of the range of this database.
8969	16	Table error: IAM chain linkage error: Object ID %d, index ID %d. The next page for IAM page %S_PGID is %S_PGID, but the previous link for page %S_PGID is %S_PGID.
8970	16	Row error: Object ID %d, index ID %d, page ID %S_PGID, row ID %d. Column '%.*ls' was created NOT NULL, but is NULL in the row.
8971	16	Forwarded row mismatch: Object ID %d, page %S_PGID, slot %d points to forwarded row page %S_PGID, slot %d; the forwarded row points back to page %S_PGID, slot %d.
8972	16	Forwarded row referenced by more than one row. Object ID %d, page %S_PGID, slot %d incorrectly points to forwarded row page %S_PGID, slot %d; the forwarded row correctly refers back to page %S_PGID, slot %d.
8973	16	CHECKTABLE processing of object ID %d, index ID %d encountered page %S_PGID, slot %d twice. Possible internal error or allocation fault.

8974	16	Text node referenced by more than one node. Object ID %d, text, ntext, or image node page %S_PGID, slot %d, text ID %I64d is pointed to by page %S_PGID, slot %d and by page %S_PGID, slot %d.
8975	16	Table error: Object ID %d, index ID %d. The child page pointer %S_PGID on PageId %S_PGID, slot %d is not a valid page for this database.
8976	16	Table error: Object ID %d, index ID %d. Page %S_PGID was not seen in the scan although its parent %S_PGID and previous %S_PGID refer to it. Check any previous errors.
8978	16	Table error: Object ID %d, index ID %d. Page %S_PGID is missing a reference from previous page %S_PGID. Possible chain linkage problem.
8979	16	Table error: Object ID %d, index ID %d. Page %S_PGID is missing references from parent (unknown) and previous (page %S_PGID) nodes. Possible bad root entry in sysindexes.
8980	16	Table error: Object ID %d, index ID %d. Index node page %S_PGID, slot %d refers to child page %S_PGID and previous child %S_PGID, but they were not encountered.
8981	16	Table error: Object ID %d, index ID %d. The next pointer of %S_PGID refers to page %S_PGID. Neither %S_PGID nor its parent were encountered. Possible bad chain linkage.
8982	16	Table error: Cross object linkage. Page %S_PGID->next in object ID %d, index ID %d refers to page %S_PGID in object ID %d, index ID %d but is not in the same index.
8983	10	File %d. Extents %d, used pages %d, reserved pages %d, mixed extents %d, mixed pages %d.
8984	10	Object ID %d, index ID %d. Allocations for %S_PGID. IAM %S_PGID, extents %d, used pages %d, mixed pages %d.

8985	16	Could not locate file '%.*ls' in sysfiles.
8986	16	Too many errors found (%d) for object ID %d. To see all error messages rerun the statement using "WITH ALL_ERRORMSGS".
8987	16	No help available for DBCC statement '%.*ls'.
8988	10	The schema for database '%ls' is changing. May find spurious allocation problems due to schema changes in progress.
8989	10	%.*ls found %d allocation errors and %d consistency errors in database '%ls'.
8990	10	%.*ls found %d allocation errors and %d consistency errors in table '%ls' (object ID %d).
8991	16	0x%.8x + 0x%.8x bytes is not a valid address range.
8992	16	Database ID %d, object '%ls' (ID %d). Loop in data chain detected at %S_PGID.
8993	16	Object ID %d, forwarding row page %S_PGID, slot %d points to page %S_PGID, slot %d. Did not encounter forwarded row. Possible allocation error.
8994	16	Object ID %d, forwarded row page %S_PGID, slot %d should be pointed to by forwarding row page %S_PGID, slot %d. Did not encounter forwarding row. Possible allocation error.
8995	16	System table '%.*ls' (object ID %d, index ID %d) is in filegroup %d. All system tables must be in filegroup %d.
8996	16	IAM page %S_PGID for object ID %d, index ID %d controls pages in filegroup %d, that should be in filegroup %d.
8997	16	Single page allocation %S_PGID for object ID %d, index ID %d is in filegroup %d; it should be in filegroup %d.
8998	16	Page errors on the GAM, SGAM, or PFS pages do not allow CHECKALLOC to verify database ID %d pages from %S_PGID to %S_PGID. See other errors for cause.

8999	10	Database tempdb allocation errors prevent further
		%ls processing.

Errors 9000 - 9999

Error	Severity	Description (Message Text)
9001	10	The log for database '%.*ls' is not available.
9002	19	The log file for database '%.*ls' is full. Back up the transaction log for the database to free up some log space.
9003	20	The LSN %S_LSN passed to log scan in database '%.*ls' is invalid.
9004	21	An error occurred while processing the log for database '%.*ls'.
9005	16	Either start LSN or end LSN specified in OpenRowset(DBLog,) is invalid.
9006	10	Cannot shrink log file %d (%s) because total number of logical log files cannot be fewer than %d.
9007	10	Cannot shrink log file %d (%s) because requested size (%dKB) is larger than the start of the last logical log file.
9008	10	Cannot shrink log file %d (%s) because all logical log files are in use.
9009	10	Cannot shrink log file %d (%s) because of minimum log space required.
9010	14	User does not have permission to query the virtual table, DBLog. Only members of the sysadmin fixed server role and the db_owner fixed database role have this permission

Errors 10000 - 10999

Error	Severity	Description (Message Text)
10000	16	Unknown provider error.
10001	16	The provider reported an unexpected catastrophic
		failure.
10002	16	The provider did not implement the functionality.
10003	16	The provider ran out of memory.
10004	16	One or more arguments were reported invalid by the provider.
10005	16	The provider did not support an interface.
10006	16	The provider indicated an invalid pointer was used.
10007	16	The provider indicated an invalid handle was used.
10008	16	The provider terminated the operation.
10009	16	The provider did not give any information about the error.
10010	16	The data necessary to complete this operation was not yet available to the provider.
10011	16	Access denied.
10021	16	Execution terminated by the provider because a resource limit was reached.
10022	16	The provider called a method from IRowsetNotify in the consumer, and the method has not yet returned.
10023	16	The provider does not support the necessary method.
10024	16	The provider indicates that the user did not have the
		permission to perform the operation.
10025	16	Provider caused a server fault in an external process.
10026	16	No command text was set.
10027	16	Command was not prepared.
10028	16	Authentication failed.
10031	16	An error occurred because one or more properties could not be set.

10032	16	Cannot return multiple result sets (not supported by the provider).
10033	16	The specified index does not exist or the provider does not support an index scan on this data source.
10034	16	The specified table does not exist.
10035	16	No value was given for one or more of the required parameters.
10041	16	Could not set any property values.
10042	16	Cannot set any properties while there is an open rowset.
10051	16	An error occurred while setting the data.
10052	16	The insertion was canceled by the provider during notification.
10053	16	Could not convert the data value due to reasons other than sign mismatch or overflow.
10054	16	The data value for one or more columns overflowed the type used by the provider.
10055	16	The data violated the integrity constraints for one or more columns.
10056	16	The number of rows that have pending changes has exceeded the limit specified by the DBPROP_MAXPENDINGROWS property.
10057	16	Cannot create the row. Would exceed the total number of active rows supported by the rowset.
10058	16	The consumer cannot insert a new row before releasing previously-retrieved row handles.
10061	16	An error occurred while setting data for one or more columns.
10062	16	The change was canceled by the provider during notification.
10063	16	Could not convert the data value due to reasons other than sign mismatch or overflow.
10064	16	The data value for one or more columns overflowed the type used by the provider.
10065	16	The data violated the integrity constraints for one or more columns.

10066	16	The number of rows that have pending changes has exceeded the limit specified by the DBPROP_MAXPENDINGROWS property.
10067	16	The rowset was using optimistic concurrency and the value of a column has been changed after the containing row was last fetched or resynchronized.
10068	16	The consumer could not delete the row. A deletion is pending or has already been transmitted to the data source.
10069	16	The consumer could not delete the row. The insertion has been transmitted to the data source.
10075	16	An error occurred while deleting the row.
10081	16	The rowset uses integrated indexes and there is no current index.
10085	16	RestartPosition on the table was canceled during notification.
10086	16	The table was built over a live data stream and the position cannot be restarted.
10087	16	The provider did not release some of the existing rows.
10088	16	The order of the columns was not specified in the object that created the rowset. The provider had to reexecute the command to reposition the next fetch position to its initial position, and the order of the columns changed.

Errors 11000 - 11999

Error	Severity	Description (Message Text)
11000	16	Unknown status code for this column.
11001	16	Non-NULL value successfully returned.
11002	16	Deferred accessor validation occurred. Invalid binding for this column.
11003	16	Could not convert the data value due to reasons other than sign mismatch or overflow.
11004	16	Successfully returned a NULL value.
11005	16	Successfully returned a truncated value.
11006	16	Could not convert the data type because of a sign mismatch.
11007	16	Conversion failed because the data value overflowed the data type used by the provider.
11008	16	The provider cannot allocate memory or open another storage object on this column.
11009	16	The provider cannot determine the value for this column.
11010	16	The user did not have permission to write to the column.
11011	16	The data value violated the integrity constraints for the column.
11012	16	The data value violated the schema for the column.
11013	16	The column had a bad status.
11014	16	The column used the default value.
11015	16	The column was skipped when setting data.
11031	16	The row was successfully deleted.
11032	16	The table was in immediate-update mode, and deleting a single row caused more than one row to be deleted in the data source.
11033	16	The row was released even though it had a pending change.

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11034	16	Deletion of the row was canceled during notification.
11036	16	The rowset was using optimistic concurrency and the
		value of a column has been changed after the containing
		row was last fetched or resynchronized.
11037	16	The row has a pending delete or the deletion had been
		transmitted to the data source.
11038	16	The row is a pending insert row.
11039	16	DBPROP_CHANGEINSERTEDROWS was
		VARIANT_FALSE and the insertion for the row has
		been transmitted to the data source.
11040	16	Deleting the row violated the integrity constraints for
		the column or table.
11041	16	The row handle was invalid or was a row handle to
		which the current thread does not have access rights.
11042	16	Deleting the row would exceed the limit for pending
		changes specified by the rowset property
		DBPROP_MAXPENDINGROWS.
11043	16	The row has a storage object open.
11044	16	The provider ran out of memory and could not fetch the
		row.
11045	16	User did not have sufficient permission to delete the
		row.
11046	16	The table was in immediate-update mode and the row
		was not deleted due to reaching a limit on the server,
		such as query execution timing out.
11047	16	Updating did not meet the schema requirements.
11048	16	There was a recoverable, provider-specific error, such as
		an RPC failure.
11100	16	The provider indicates that conflicts occurred with other
		properties or requirements.
11101	16	Could not obtain an interface required for text, ntext, or
		image access.
11102	16	The provider could not support a required row lookup
		interface.
11103	16	The provider could not support an interface required for
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		the UPDATE/DELETE/INSERT statements.
11104	16	The provider could not support insertion on this table.
11105	16	The provider could not support updates on this table.
11106	16	The provider could not support deletion on this table.
11107	16	The provider could not support a row lookup position.
11108	16	The provider could not support a required property.
11109	16	The provider does not support an index scan on this data
		source.

Errors 13000 - 13999

Error	Severity	Description (Message Text)
13001	10	data page
13002	10	index page
13003	10	leaf page
13004	10	last
13005	10	root
13006	10	read from
13007	10	send to
13008	10	receive
13009	10	send
13010	10	read
13011	10	wait
13012	10	a USE database statement
13013	10	a procedure or trigger
13014	10	a DISTINCT clause
13015	10	a view
13016	10	an INTO clause
13017	10	an ORDER BY clause
13018	10	a COMPUTE clause
13019	10	a SELECT INTO statement
13020	10	option
13021	10	offset option
13022	10	statistics option
13023	10	parameter option
13024	10	function name
13025	10	varbinary (128) NOT NULL
13026	10	parameter
13027	10	convert specification
13028	10	index

13029	10	table
13030	10	database
13031	10	procedure
13032	10	trigger
13033	10	view
13034	10	default
13035	10	rule
13036	10	system table
13037	10	unknown type
13038	10	SET statement
13039	10	column
13040	10	type
13041	10	character string
13042	10	integer
13043	10	identifier
13044	10	number
13045	10	integer value
13046	10	floating point value
13047	10	object
13048	10	column heading
13076	10	an assignment
13077	10	a cursor declaration
13078	10	replication filter
13079	10	variable assignment
13080	10	statistics
13081	10	file
13082	10	filegroup
13083	10	server
13084	0	write
13085	0	function
13086	10	database collation
13087	10	drop
13088	10	alter

Errors 14000 - 14999

Error	Severity	Description (Message Text).
14002	16	Could not find the 'Sync' subsystem with the task ID %ld.
14003	16	You must supply a publication name.
14004	16	%s must be in the current database.
14005	16	Could not drop publication. A subscription exists to it.
14006	16	Could not drop the publication.
14008	11	There are no publications.
14009	11	There are no articles for publication '%s'.
14010	16	The remote server is not defined as a subscription server.
14012	16	The @status parameter value must be either 'active' or 'inactive'.
14013	16	This database is not enabled for publication.
14014	16	The synchronization method (@sync_method) must be '[bcp] native', '[bcp] character', 'concurrent' or 'concurrent_c'.
14015	16	The replication frequency (@repl_freq) must be either 'continuous' or 'snapshot'.
14016	16	The publication '%s' already exists.
14017	16	Invalid @restricted parameter value. Valid options are 'true' or 'false'.
14018	16	Could not create the publication.
14019	16	The @operation parameter value must be either 'add' or 'drop'.
14020	16	Could not obtain the column ID for the specified column. Schema replication failed.
14021	16	The column was not added correctly to the article.
14022	16	The @property parameter value must be either 'description', 'sync_object', 'type', 'ins_cmd', 'del_cmd', 'upd_cmd', 'filter', 'dest_table', 'dest_object',

		'creation_script', 'pre_creation_cmd', 'status', 'schema_option', or 'destination_owner'.
14023	16	The type must be '[indexed view] logbased', '[indexed view] logbased manualfilter', '[indexed view] logbased manualview', '[indexed view] logbased manualboth', or '(view indexed view proc func) schema only'.
14025	10	Article update successful.
14027	11	%s does not exist in the current database.
14028	16	Only user tables, materialized views, and stored procedures can be published as 'logbased' articles.
14029	16	The vertical partition switch must be either 'true' or 'false'.
14030	16	The article '%s' exists in publication '%s'.
14031	16	User tables and views are the only valid synchronization objects.
14032	16	The value of parameter %s cannot be 'all'. It is reserved by replication stored procedures.
14033	16	Could not change replication frequency because there are active subscriptions on the publication.
14034	16	The publication name (@publication) cannot be the keyword 'all'.
14035	16	The replication option '%s' of database '%s' has already been set to true.
14036	16	Could not enable database for publishing.
14037	16	The replication option '%s' of database '%s' has been set to false.
14038	16	Could not disable database for publishing.
14039	16	Could not construct column clause for article view. Reduce the number of columns or create the view manually.
14040	16	The server '%s' is already a Subscriber.
14042	16	Could not create Subscriber.
14043	16	The parameter %s cannot be NULL.
14046	16	Could not drop article. A subscription exists on it.
14047	16	Could not drop %s.

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14048	16	The server '%s' is not a Subscriber.
14049	16	Stored procedures for replication are the only objects that can be used as a filter.
14050	11	No subscription is on this publication or article.
14051	16	The parameter value must be 'sync_type' or 'dest_db'.
14052	16	The @sync_type parameter value must be 'automatic' or 'none'.
14053	16	The subscription could not be updated at this time.
14054	10	The subscription was updated successfully.
14055	10	The subscription does not exist.
14056	16	The subscription could not be dropped at this time.
14057	16	The subscription could not be created.
14058	16	The subscription already exists.
14059	16	Materialized view articles cannot be created for
		publications with the properties allow_sync_tran,
		allow_queued_tran, or allow_dts.
14061	16	The @pre_creation_cmd parameter value must be 'none', 'drop', 'delete', or 'truncate'.
14062	10	The Subscriber was dropped.
14063	11	The remote server does not exist or has not been designated as a valid Subscriber.
14065	16	The @status parameter value must be 'initiated', 'active', 'inactive', or 'subscribed'.
14066	16	The previous status must be 'active', 'inactive', or 'subscribed'.
14067	16	The status value is the same as the previous status value.
14068	16	Could not update sysobjects. The subscription status could not be changed.
14069	16	Could not update sysarticles. The subscription status could not be changed.
14070	16	Could not update the distribution database subscription table. The subscription status could not be changed.
14071	16	Could not find the Distributor or the distribution database for the local server. The Distributor may not be

		installed, or the local server may not be configured as a Publisher at the Distributor.
14074	16	The server '%s' is already listed as a Publisher.
14075	16	The Publisher could not be created at this time.
14076	16	Could not grant replication login permission to '%s'.
14077	10	The publication was updated successfully.
14078	16	The parameter must be 'description', 'taskid',
		'sync_method', 'status', 'repl_freq', 'restricted', 'retention',
		'immediate_sync', 'enabled_for_internet', 'allow_push',
		'allow_pull', 'allow_anonymous', or 'retention'.
14080	11	The remote server does not exist or has not been
		designated as a valid Publisher.
14085	16	The Subscriber information could not be obtained from
		the Distributor.
14088	16	The table '%s' must have a primary key to be published
1 1000	1.0	using the transaction-based method.
14089	16	The clustered index on materialized view '%s' may not
		contain nullable columns if it is to be published using the transaction-based method.
1 4000	1.0	
14090	16	Error evaluating article synchronization object after
		column drop. The filter clause for article '%s' must not reference the dropped column.
14091	16	The @type parameter passed to sp_helpreplicationdb
14031		must be either 'pub' or 'sub'.
14092	16	Could not change article because there is an existing
		subscription to the article.
14093	16	Cannot grant or revoke access directly on publication
		'%s' because it uses the default publication access list.
14094	16	Could not subscribe to article '%s' because
		heterogeneous Subscriber '%s' does not support the
		@pre_creation_cmd parameter value 'truncate'.
14095	16	Could not subscribe to publication '%s' because
		heterogeneous Subscriber '%s' only supports the
		@sync_method parameter value 'bcp character' .
14096	16	The path and name of the table creation script must be

		specified if the @pre_creation_cmd parameter value is 'drop'.
14097	16	The 'status' value must be 'no column names', 'include column names', 'string literals', 'parameters', 'DTS horizontal partitions' or 'no DTS horizontal partitions'.
14098	16	Cannot drop Distribution Publisher '%s'. The remote Publisher is using '%s' as Distributor.
14099	16	The server '%s' is already defined as a Distributor.
14100	16	Specify all articles when subscribing to a publication using concurrent snapshot processing.
14101	16	The publication '%s' already has a Snapshot Agent defined.
14102	16	Specify all articles when unsubscribing from a publication using concurrent snapshot processing.
14105	10	You have updated the distribution database property '%s' successfully.
14106	10	Distribution retention periods must be greater than 0.
14107	10	The @max_distretention value must be larger than the @min_distretention value.
14108	10	Removed %ld history records from %s.
14109	10	The @security_mode parameter value must be 0 (SQL Server Authentication) or 1 (Windows Authentication).
14110	16	For stored procedure articles, the @property parameter value must be 'description', 'dest_table', 'dest_object', 'creation_script', 'pre_creation_cmd', 'schema_option', or 'destination_owner'.
14111	16	The @pre_creation_cmd parameter value must be 'none' or 'drop'.
14112	16	This procedure can be executed only against table-based articles.
14113	16	Could not execute '%s'. Check '%s' in the install directory.
14114	16	'%s' is not configured as a Distributor.
14115	16	The property parameter value must be %s.
14117	16	'%s' is not configured as a distribution database.

14118	16	A stored procedure can be published only as a 'serializable proc exec' article, a 'proc exec' article, or a 'proc schema only' article.
14119	16	Could not add the distribution database '%s'. This distribution database already exists.
14120	16	Could not drop the distribution database '%s'. This distributor database is associated with a Publisher.
14121	16	Could not drop the Distributor '%s'. This Distributor has associated distribution databases.
14122	16	The @article parameter value must be 'all' for immediate_sync publications.
14123	16	The subscription @sync_type parameter value 'manual' is no longer supported.
14124	16	A publication must have at least one article before a subscription to it can be created.
14126	16	You do not have the required permissions to complete the operation.
14128	16	Invalid @subscription_type parameter value. Valid options are 'push' or 'pull'.
14129	16	The @status parameter value must be NULL for 'automatic' sync_type when you add subscriptions to an immediate_sync publication.
14135	16	There is no subscription on Publisher '%s', publisher database '%s', publication '%s'.
14136	16	The keyword 'all' is reserved by replication stored procedures.
14137	16	The @value parameter value must be either 'true' or 'false'.
14138	16	Invalid option name '%s'.
14139	16	The replication system table '%s' already exists.
14143	16	Cannot drop Distributor Publisher '%s'. There are Subscribers associated with it in the distribution database '%s'.
14144	16	Cannot drop Subscriber '%s'. There are subscriptions

		from it in the publication database '%s'.
14146	16	The article parameter '@schema_option' cannot be NULL.
14147	16	Restricted publications are no longer supported.
14148	16	Invalid '%s' value. Valid values are 'true' or 'false'.
14149	10	Removed %ld replication history records in %s seconds (%ld row/secs).
14150	10	Replication-%s: agent %s succeeded. %s
14151	18	Replication-%s: agent %s failed. %s
14152	10	Replication-%s: agent %s scheduled for retry. %s
14153	10	Replication-%s: agent %s warning. %s
14154	16	The Distributor parameter must be '@heartbeat_interval'.
14155	16	Invalid article ID specified for procedure script generation.
14156	16	The custom stored procedure was not specified in the article definition.
14157	10	The subscription created by Subscriber '%s' to publication '%s' has expired and has been dropped.
14158	10	Replication-%s: agent %s: %s.
14159	16	Could not change property '%s' for article '%s' because there is an existing subscription to the article.
14199	10	The specified job "%s" is not created for maintenance plans.
14200	16	The specified '%s' is invalid.
14201	10	0 (all steps)
14202	10	before or after @active_start_time
14203	10	sp_helplogins [excluding Windows NT groups]
14204	10	0 (non-idle), 1 (executing), 2 (waiting for thread), 3 (between retries), 4 (idle), 5 (suspended), 7 (performing completion actions)
14205	10	(unknown)
14206	10	0n seconds
14207	10	-1 [no maximum], 0n
14208	10	17 [1 = E-mail, 2 = Pager, 4 = NetSend]

14209	10	0127 [1 = Sunday 64 = Saturday]
14210	10	notification
14211	10	server
14212	10	(all jobs)
14213	16	Core Job Details:
14214	16	Job Steps:
14215	16	Job Schedules:
14216	16	Job Target Servers:
14217	16	SQL Server Warning: '%s' has performed a forced defection of TSX server '%s'. Run sp_delete_targetserver at the MSX in order to complete the defection.
14218	10	hour
14219	10	minute
14220	10	second
14221	16	This job has one or more notifications to operators other than '%s'. The job cannot be targeted at remote servers as currently defined.
14222	16	Cannot rename the '%s' operator.
14223	16	Cannot modify or delete operator '%s' while this server is a %s.
14224	0	Warning: The server name given is not the current MSX server ('%s').
14225	16	Warning: Could not determine local machine name. This prevents MSX operations from being posted.
14226	0	%ld history entries purged.
14227	0	Server defected from MSX '%s'. %ld job(s) deleted.
14228	0	Server MSX enlistment changed from '%s' to '%s'.
14229	0	Server enlisted into MSX '%s'.
14230	0	SP_POST_MSX_OPERATION: %ld %s download
		instruction(s) posted.
14231	0	SP_POST_MSX_OPERATION Warning: The specified %s ('%s') is not involved in a multiserver job.
14232	16	Specify either a job_name, job_id, or an originating_server.

14233	16	Specify a valid job_id (or 0x00 for all jobs).
14234	16	The specified '%s' is invalid (valid values are returned by %s).
14235	16	The specified '%s' is invalid (valid values are greater than 0 but excluding %ld).
14236	0	Warning: Non-existent step referenced by %s.
14237	16	When an action of 'REASSIGN' is specified, the New Login parameter must also be supplied.
14238	0	%ld jobs deleted.
14239	0	%ld jobs reassigned to %s.
14240	0	Job applied to %ld new servers.
14241	0	Job removed from %ld servers.
14242	16	Only a system administrator can reassign ownership of a job.
14243	0	Job '%s' started successfully.
14244	16	Only a system administrator can reassign tasks.
14245	16	Specify either the @name, @id, or @loginname of the task(s) to be deleted.
14246	16	Specify either the @currentname or @id of the task to be updated.
14247	16	Only a system administrator can view tasks owned by others.
14248	16	This login is the owner of %ld job(s). You must delete or reassign these jobs before the login can be dropped.
14249	16	Specify either @taskname or @oldloginname when reassigning a task.
14250	16	The specified %s is too long. It must contain no more than %ld characters.
14251	16	Cannot specify '%s' as the operator to be notified.
14252	16	Cannot perform this action on a job you do not own.
14253	0	%ld (of %ld) job(s) stopped successfully.
14254	0	Job '%s' stopped successfully.
14255	16	The owner ('%s') of this job is either an invalid login, or

		is not a valid user of database '%s'.
14256	16	Cannot start job '%s' (ID %s) because it does not have any job server(s) defined.
14257	16	Cannot stop job '%s' (ID %s) because it does not have any job server(s) defined.
14258	16	Cannot perform this operation while SQLServerAgent is starting. Try again later.
14259	16	A schedule (ID %ld, '%s') for this job with this definition already exists.
14260	16	You do not have sufficient permission to run this command.
14261	16	The specified %s ('%s') already exists.
14262	16	The specified %s ('%s') does not exist.
14263	16	Target server '%s' is already a member of group '%s'.
14264	16	Target server '%s' is not a member of group '%s'.
14265	25	The MSSQLServer service terminated unexpectedly.
14266	16	The specified '%s' is invalid (valid values are: %s).
14267	16	Cannot add a job to the '%s' job category.
14268	16	There are no jobs at this server that originated from server '%s'.
14269	16	Job '%s' is already targeted at server '%s'.
14270	16	Job '%s' is not currently targeted at server '%s'.
14271	16	A target server cannot be named '%s'.
14272	16	Object-type and object-name must be supplied as a pair.
14273	16	You must provide either @job_id or @job_name (and, optionally, @schedule_name), or @schedule_id.
14274	16	Cannot add, update, or delete a job (or its steps or schedules) that originated from an MSX server.
14275	16	The originating server must be either '(local)' or '%s'.
14276	16	'%s' is a permanent %s category and cannot be deleted.
14277	16	The command script does not destroy all the objects that it creates. Revise the command script.
14278	16	The schedule for this job is invalid (reason: %s).

14279	16	Supply either @job_name or @originating_server.
14280	16	Supply either a job name (and job aspect), or one or more job filter parameters.
14281	0	Warning: The @new_owner_login_name parameter is not necessary when specifying a 'DELETE' action.
14282	16	Supply either a date (created or last modified) and a data comparator, or no date parameters at all.
14283	16	Supply @target_server_groups or @target_servers, or both.
14284	16	Cannot specify a job ID for a new job. An ID will be assigned by the procedure.
14285	16	Cannot add a local job to a multiserver job category.
14286	16	Cannot add a multiserver job to a local job category.
14287	16	The '%s' supplied has an invalid %s.
14288	16	%s cannot be before %s.
14289	16	%s cannot contain '%s' characters.
14290	16	This job is currently targeted at the local server so cannot also be targeted at a remote server.
14291	16	This job is currently targeted at a remote server so cannot also be targeted at the local server.
14292	16	There are two or more tasks named '%s'. Specify %s instead of %s to uniquely identify the task.
14293	16	There are two or more jobs named '%s'. Specify %s instead of %s to uniquely identify the job.
14294	16	Supply either %s or %s to identify the job.
14295	16	Frequency Type 0x2 (OnDemand) is no longer supported.
14296	16	This server is already enlisted into MSX '%s'.
14297	16	Cannot enlist into the local machine.
14298	16	This server is not currently enlisted into an MSX.
14299	16	Server '%s' is an MSX. Cannot enlist one MSX into another MSX.
14300	16	Circular dependencies exist. Dependency evaluation cannot continue.

14301	16	Logins other than the current user can only be seen by members of the sysadmin role.
14302	16	You must upgrade your client to version 6.5 of SQL-DMO and SQL Server Enterprise Manager to connect to this server. The upgraded versions will administer both SQL Server version 6.5 and 6.0 (if sqlole65.sql is run).
14303	16	Stored procedure '%s' failed to access registry key.
14304	16	Stored procedure '%s' can run only on Windows 2000 servers.
14410	16	You must supply either a plan_name or a plan_id.
14411	16	Cannot delete this plan. The plan contains enlisted databases.
14412	16	The destination database is already part of a log shipping plan.
14413	16	This database is already log shipping.
14414	16	A log shipping monitor is already defined.
14415	16	The user name cannot be null when using SQL Server authentication.
14416	16	This stored procedure must be run in msdb.
14417	16	Cannot delete the monitor server while databases are participating in log shipping.
14418	16	The specified @backup_file_name was not created from database '%s'.
14419	16	The specified @backup_file_name is not a database backup.
14420	16	The log shipping source %s.%s has not backed up for %s minutes.
14421	16	The log shipping destination %s.%s is out of sync by %s minutes.
14422	16	Supply either @plan_id or @plan_name.
14423	16	Other databases are enlisted on this plan and must be removed before the plan can be deleted.
14424	16	The database '%s' is already involved in log shipping.
14425	16	The database '%s' does not seem to be involved in log

		shipping.
14426	16	A log shipping monitor is already defined. Call
		sp_define_log_shipping_monitor with @delete_existing = 1.
14427	16	A user name is necessary for SQL Server security.
14428	16	Could not remove the monitor as there are still databases involved in log shipping.
14429	16	There are still secondary servers attached to this primary.
14430	16	Invalid destination path %s.
14440	16	Could not set single user mode.
14441	16	Role change succeeded.
14442	16	Role change failed.
14450	16	The specified @backup_file_name was not taken from database '%s'.
14451	16	The specified @backup_file_name is not a database backup.
14500	16	Supply either a non-zero message ID, non-zero severity, or non-null performance condition.
14501	16	An alert ('%s') has already been defined on this condition.
14502	16	The @target_name parameter must be supplied when specifying an @enum_type of 'TARGET'.
14503	16	The @target_name parameter should not be supplied when specifying an @enum_type of 'ALL' or 'ACTUAL'.
14504	16	'%s' is the fail-safe operator. You must make another operator the fail-safe operator before '%s' can be dropped.
14505	16	Specify a null %s when supplying a performance condition.
14506	16	Cannot set alerts on message ID %ld.
14507	16	A performance condition must be formatted as:
		'object_name counter_name instance_name comparator(> or < or =) numeric value'.

14539	16	Only a Standard or Enterprise edition of SQL Server can be enlisted into an MSX.
14540	16	Only a SQL Server running on Microsoft Windows NT can be enlisted into an MSX.
14541	16	The version of the MSX (%s) is not recent enough to support this TSX. Version %s or later is required at the MSX.
14542	16	It is invalid for any TSQL step of a multiserver job to have a non-null %s value.
14543	16	Login '%s' owns one or more multiserver jobs. Ownership of these jobs can only be assigned to members of the %s role.
14544	16	This job is owned by '%s'. Only a job owned by a member of the %s role can be a multiserver job.
14545	16	The %s parameter is not valid for a job step of type '%s'.
14546	16	The %s parameter is not supported on Windows 95/98 platforms.
14547	10	Warning: This change will not be downloaded by the target server(s) until an %s for the job is posted using %s.
14548	10	Target server '%s' does not have any jobs assigned to it.
14549	10	(Description not requested.)
14550	10	Command-Line Subsystem
14551	10	Replication Snapshot Subsystem
14552	10	Replication Transaction-Log Reader Subsystem
14553	10	Replication Distribution Subsystem
14554	10	Replication Merge Subsystem
14555	10	Active Scripting Subsystem
14556	10	Transact-SQL Subsystem
14557	10	[Internal]
14558	10	(encrypted command)
14559	10	(append output file)
14560	10	(include results in history)

14561	10	(normal)
14562	10	(quit with success)
14563	10	(quit with failure)
14564	10	(goto next step)
14565	10	(goto step)
14566	10	(idle)
14567	10	(below normal)
14568	10	(above normal)
14569	10	(time critical)
14570	10	(Job outcome)
14571	10	No description available.
14572	10	@freq_interval must be at least 1 for a daily job.
14573	10	<pre>@freq_interval must be a valid day of the week bitmask</pre> [Sunday = 1 Saturday = 64] for a weekly job.
14574	10	@freq_interval must be between 1 and 31 for a monthly job.
14575	10	@freq_relative_interval must be one of 1st (0x1), 2nd (0x2), 3rd [0x4], 4th (0x8) or Last (0x10).
14576	10	@freq_interval must be between 1 and 10 (1 = Sunday7 = Saturday, 8 = Day, 9 = Weekday, 10 = Weekend-day) for a monthly-relative job.
14577	10	@freq_recurrence_factor must be at least 1.
14578	10	Starts whenever the CPU usage has remained below %ld percent for %ld seconds.
14579	10	Automatically starts when SQLServerAgent starts.
14580	10	job
14581	10	Replication Transaction Queue Reader Subsystem
14585	16	Only the owner of DTS Package '%s' or a member of the sysadmin role may reassign its ownership.
14586	16	Only the owner of DTS Package '%s' or a member of the sysadmin role may create new versions of it.
14587	16	Only the owner of DTS Package '%s' or a member of the sysadmin role may drop it or any of its versions.

14588	10	ID.VersionID =
14589	10	[not specified]
14590	16	DTS Package '%s' already exists with a different ID in this category.
14591	16	DTS Category '%s' already exists in the specified parent category.
14592	16	DTS Category '%s' was found in multiple parent categories. You must uniquely specify the category to be dropped.
14593	16	DTS Category '%s' contains packages and/or other categories. You must drop these first, or specify a recursive drop.
14594	10	DTS Package
14595	16	DTS Package '%s' exists in different categories. You must uniquely specify the package.
14596	16	DTS Package '%s' exists in another category.
14597	16	DTS Package ID '%s' already exists with a different name.
14598	16	Cannot drop the Local, Repository, or LocalDefault DTS categories.
14599	10	Name

Troubleshooting

Errors 15000 - 15999

Error	Severity	Description (Message Text)
15001	16	Object '%ls' does not exist or is not a valid object for this operation.
15002	16	The procedure '%s' cannot be executed within a transaction.
15003	16	Only members of the %s role can execute this stored procedure.
15004	16	Name cannot be NULL.
15005	0	Statistics for all tables have been updated.
15006	16	'%s' is not a valid name because it contains invalid characters.
15007	16	The login '%s' does not exist.
15008	16	User '%s' does not exist in the current database.
15009	16	The object '%s' does not exist in database '%s'.
15010	16	The database '%s' does not exist. Use sp_helpdb to show available databases.
15011	16	Database option '%s' does not exist.
15012	16	The device '%s' does not exist. Use sp_helpdevice to show available devices.
15013	0	Table '%s': No columns without statistics found.
15014	16	The role '%s' does not exist in the current database.
15015	16	The server '%s' does not exist. Use sp_helpserver to show available servers.
15016	16	The default '%s' does not exist.
15017	16	The rule '%s' does not exist.
15018	0	Table '%s': Creating statistics for the following columns:
15019	16	The extended stored procedure '%s' does not exist.
15020	0	Statistics have been created for the %d listed columns of the above tables.
15021	16	There are no remote users mapped to any local user

		from remote server '%s'.
15022	16	The specified user name is already aliased.
15023	16	User or role '%s' already exists in the current database.
15024	16	The group '%s' already exists in the current database.
15025	16	The login '%s' already exists.
15026	16	Logical device '%s' already exists.
15027	16	There are no remote users mapped to local user '%s'
		from remote server '%s'.
15028	16	The server '%s' already exists.
15029	16	The data type '%s' already exists in the current database.
15030	16	The read-only bit cannot be turned off because the
		database is in standby mode.
15031	0	'Virtual_device' device added.
15032	16	The database '%s' already exists.
15033	16	'%s' is not a valid official language name.
15034	16	The application role password must not be NULL.
15035	16	'%s' is not a database device.
15036	16	The data type '%s' does not exist.
15037	16	The physical data type '%s' does not allow nulls.
15038	16	User-defined data types based on timestamp are not allowed.
15039	16	The language %s already exists in syslanguages.
15040	16	User-defined error messages must have an ID greater than 50000.
15041	16	User-defined error messages must have a severity level between 1 and 25.
15043	16	You must specify 'REPLACE' to overwrite an existing message.
15044	16	'%s' is an unknown device type. Use 'disk', 'tape', or 'pipe'.
15045	16	The logical name cannot be NULL.
15046	16	The physical name cannot be NULL.
15047	16	The only permitted options for a tape device are 'skip' and 'noskip'.

15048	0	Valid values of database compatibility level are %d, %d, %d, or %d.
15049	11	Cannot unbind from '%s'. Use ALTER TABLE DROP CONSTRAINT.
15050	11	Cannot bind default '%s'. The default must be created using the CREATE DEFAULT statement.
15051	11	Cannot rename the table because it is published for replication.
15052	0	Prior to updating sysdatabases entry for database '%s', mode = %d and status = %d (status suspect_bit = %d).
15053	16	Objects exist which are not owned by the database owner.
15054	0	The current compatibility level is %d.
15055	11	Error. Updating sysdatabases returned @@error <> 0.
15056	0	No row in sysdatabases was updated because mode and status are already correctly reset. No error and no changes made.
15057	16	List of %s name contains spaces, which are not allowed.
15058	16	List of %s has too few names.
15059	16	List of %s has too many names.
15060	16	List of %s names contains name(s) which have '%s' non-alphabetic characters.
15061	16	Add device request denied. A physical device named '%s' already exists.
15062	16	The guest user cannot be mapped to a login name.
15063	16	The login already has an account under a different user name.
15064	11	PRIMARY KEY and UNIQUE KEY constraints do not have space allocated.
15065	16	All user IDs have been assigned.
15066	16	A default-name mapping of a remote login from remote server '%s' already exists.
15067	16	'%s' is not a local user. Remote login denied.
15068	16	A remote user '%s' already exists for remote server '%s'.

15069	16	One or more users are using the database. The requested operation cannot be completed.
15070	0	Object '%s' was successfully marked for recompilation.
15071	16	Usage: sp_addmessage <msgnum>,<severity>, <msgtext> [,<language> [,FALSE TRUE [,REPLACE]]]</language></msgtext></severity></msgnum>
15072	16	Usage: sp_addremotelogin remoteserver [, loginame [,remotename]]
15073	0	For row in sysdatabases for database '%s', the status bit %d was forced off and mode was forced to 0.
15074	0	Warning: You must recover this database prior to access.
15075	16	The data type '%s' is reserved for future use.
15076	16	Default, table, and user data types must be in the current database.
15077	16	Rule, table, and user data type must be in the current database.
15078	16	The table or view must be in the current database.
15079	10	Queries processed: %d.
15081	16	Membership of the public role cannot be changed.
15082	11	NULL is not an acceptable parameter value for this procedure. Use a percent sign instead.
15083	16	Physical data type '%s' does not accept a collation
15084	16	The column or user data type must be in the current database.
15085	16	Usage: sp_addtype name, 'data type' [,'NULL' 'NOT NULL']
15086	16	Invalid precision specified. Precision must be between 1 and 38.
15087	16	Invalid scale specified. Scale must be less than precision and positive.
15088	16	The physical data type is fixed length. You cannot specify the length.
15089	11	Cannot change the '%s' option of a database while another user is in the database.

15090	16	There is already a local server.
15091	16	You must specify a length with this physical data type.
15092	16	Invalid length specified. Length must be between 1 and 8000 bytes.
15093	16	'%s' is not a valid date order.
15094	16	'%s' is not a valid first day.
15095	16	Insert into syslanguages failed. Language not added.
15097	16	The size associated with an extended property cannot be more than 7,500 bytes.
15100	16	Usage: sp_bindefault defaultname, objectname [, 'futureonly']
15101	16	Cannot bind a default to a column of data type timestamp.
15102	16	Cannot bind a default to an identity column.
15103	16	Cannot bind a default to a column created with or altered to have a default value.
15104	16	You do not own a table named '%s' that has a column named '%s'.
15105	16	You do not own a data type with that name.
15106	16	Usage: sp_bindrule rulename, objectname [, 'futureonly']
15107	16	Cannot bind a rule to a column of data type text, ntext, image, or timestamp.
15109	16	Cannot change the owner of the master database.
15110	16	The proposed new database owner is already a user in the database.
15111	16	The proposed new database owner is already aliased in the database.
15112	11	The third parameter for table option 'text in row' is invalid. It should be 'on', 'off', '0', or a number from 24 through 7000.
15123	16	The configuration option '%s' does not exist, or it may be an advanced option.
15124	16	The configuration option '%s' is not unique.

15125	16	Trigger '%s' is not a trigger for '%s'.
15126	16	Trigger '%s' was not found.
15127	16	Cannot set the default language to a language ID not defined in syslanguages.
15129	16	'%d' is not a valid value for configuration option '%s'.
15130	16	Table '%s' already has a '%s' trigger for '%s'.
15131	16	Usage: sp_dbremove <dbname> [,dropdev]</dbname>
15132	16	Cannot change default database belonging to someone else.
15133	16	INSTEAD OF trigger '%s' cannot be associated with an order.
15134	16	No alias exists for the specified user.
15135	16	Object is invalid. Extended properties are not permitted on '%s', or the object does not exist.
15139	16	The device is a RAM disk and cannot be used as a default device.
15140	16	Usage: sp_diskdefault logicalname {defaulton defaultoff}
15142	16	Cannot drop the role '%s'.
15143	16	'%s' is not a valid option for the @updateusage parameter. Enter either 'true' or 'false'.
15144	16	The role has members. It must be empty before it can be dropped.
15174	16	Login '%s' owns one or more database(s). Change the owner of the following database(s) before dropping login:
15175	16	Login '%s' is aliased or mapped to a user in one or more database(s). Drop the user or alias before dropping the login.
15176	16	The only valid @parameter value is 'WITH_LOG'.
15177	16	Usage: sp_dropmessage <msg number=""> [,<language> 'ALL']</language></msg>
15178	16	Cannot drop a message with an ID less than 50000.
15179	16	Message number %u does not exist.

15180	16	Cannot drop. The data type is being used.
15181	16	Cannot drop the database owner.
15182	16	Cannot drop the guest user from master or tempdb.
15183	16	The user owns objects in the database and cannot be dropped.
15184	16	The user owns data types in the database and cannot be dropped.
15185	16	There is no remote user '%s' mapped to local user '%s' from the remote server '%s'.
15190	16	There are still remote logins for the server '%s'.
15191	16	Usage: sp_dropserver server [, droplogins]
15193	16	This procedure can only be used on system tables.
15194	16	Cannot re-create index on this table.
15197	16	There is no text for object '%s'.
15198	16	The name supplied (%s) is not a user, role, or aliased login.
15200	16	There are no remote servers defined.
15201	16	There are no remote logins for the remote server '%s'.
15202	16	There are no remote logins defined.
15203	16	There are no remote logins for '%s'.
15204	16	There are no remote logins for '%s' on remote server '%s'.
15205	16	There are no servers defined.
15206	16	Invalid Remote Server Option: '%s'.
15210	16	Only members of the sysadmin role can use the loginame option. The password was not changed.
15211	16	Old (current) password incorrect for user. The password was not changed.
15216	16	'%s' is not a valid option for the @delfile parameter.
15217	16	Property cannot be updated or deleted. Property '%s' does not exist for '%s'.
15218	16	Object '%s' is not a table.
15220	16	Usage: sp_remoteoption [remoteserver, loginame, remotename, optname, {true false}]

15221	16	Remote login option does not exist or cannot be set by user. Run sp_remoteoption with no parameters to see options.
15222	16	Remote login option '%s' is not unique.
15223	11	Error: The input parameter '%s' is not allowed to be null.
15224	11	Error: The value for the @newname parameter contains invalid characters or violates a basic restriction (%s).
15225	11	No item by the name of '%s' could be found in the current database '%s', given that @itemtype was input as '%s'.
15227	16	The database '%s' cannot be renamed.
15228	16	A member of the sysadmin role must set database '%s' to single user mode with sp_dboption before it can be renamed.
15233	16	Property cannot be added. Property '%s' already exists for '%s'.
15234	16	Object is stored in sysprocedures and has no space allocated directly.
15235	16	Views do not have space allocated.
15236	16	Column '%s' has no default.
15237	16	User data type '%s' has no default.
15238	16	Column '%s' has no rule.
15239	16	User data type '%s' has no rule.
15241	16	Usage: sp_dboption [dbname [,optname [,'true' 'false']]]
15242	16	Database option '%s' is not unique.
15243	16	The option '%s' cannot be changed for the master database.
15244	16	Only members of the sysadmin role or the database owner may set database options.
15245	16	DBCC DBCONTROL error. Database was not placed offline.
15247	16	User does not have permission to perform this action.
15248	11	Error: The parameter @oldname is either ambiguous or

		the claimed @itemtype (%s) was wrong.
15249	11	Error: Explicit @itemtype '%s' is unrecognized (%d).
15250	16	The database name component of the object qualifier must be the name of the current database.
15251	16	Invalid '%s' specified. It must be %s.
15252	16	The primary or foreign key table name must be given.
15253	11	Syntax error parsing SQL identifier '%s'.
15254	16	Users other than the database owner or guest exist in the database. Drop them before removing the database.
15255	11	'%s' is not a valid value for @autofix. The only valid value is 'auto'.
15256	16	Usage: sp_certify_removable <dbname> [,'auto']</dbname>
15257	16	The database that you are attempting to certify cannot be in use at the same time.
15258	16	The database must be owned by a member of the sysadmin role before it can be removed.
15261	16	Usage: sp_create_removable <dbname>,<syslogical>, <sysphysical>,<syssize>,<loglogical>,<logphysical>, <logsize>,<datalogical1>,<dataphysical1>,<datasize1> [,<datalogical2>,<dataphysical2>,<datasize2> <datalogical16>,<datasize16>]</datasize16></datalogical16></datasize2></dataphysical2></datalogical2></datasize1></dataphysical1></datalogical1></logsize></logphysical></loglogical></syssize></sysphysical></syslogical></dbname>
15262	0	Invalid file size entered. All files must be at least 1 MB.
15264	16	Could not create the '%s' portion of the database.
15266	16	Cannot make '%s' database removable.
15269	16	Logical data device '%s' not created.
15270	16	You cannot specify a length for user data types based on sysname.
15271	16	Invalid @with_log parameter value. Valid values are 'true' or 'false'.
15275	16	FOREIGN KEY constraints do not have space allocated.
15277	16	The only valid @parameter_value values are 'true' or 'false'.
15278	16	Login '%s' is already mapped to user '%s' in database '%s'.

15279	16	You must add the us_english version of this message before you can add the '%s' version.
15280	16	All localized versions of this message must be dropped before the us_english version can be dropped.
15283	16	The name '%s' contains too many characters.
15284	16	The user has granted or revoked privileges to the following in the database and cannot be dropped.
15285	16	The special word '%s' cannot be used for a logical device name.
15286	16	Terminating this procedure. The @action '%s' is unrecognized. Try 'REPORT', 'UPDATE_ONE', or 'AUTO_FIX'.
15287	16	Terminating this procedure. '%s' is a forbidden value for the login name parameter in this procedure.
15289	16	Terminating this procedure. Cannot have an open transaction when this is run.
15290	16	Terminating this procedure. The Action '%s' is incompatible with the other parameter values ('%s', '%s').
15291	16	Terminating this procedure. The %s name '%s' is absent or invalid.
15292	0	The row for user '%s' will be fixed by updating its login link to a login already in existence.
15293	0	Barring a conflict, the row for user '%s' will be fixed by updating its link to a new login. Consider changing the new password from null.
15294	0	The number of orphaned users fixed by adding new logins and then updating users was %d.
15295	0	The number of orphaned users fixed by updating users was %d.
15298	0	New login created.
15300	11	No recognized letter is contained in the parameter value for General Permission Type (%s). Valid letters are in this set: %s.

15301	16	Collation '%s' is supported for Unicode data types only and cannot be set at either the database or server level.
15302	11	Database_Name should not be used to qualify owner.object for the parameter into this procedure.
15303	11	The "user options" config value (%d) was rejected because it would set incompatible options.
15304	16	The severity level of the '%s' version of this message must be the same as the severity level (%ld) of the us_english version.
15305	16	The @TriggerType parameter value must be 'insert', 'update', or 'delete'.
15306	16	Cannot change the compatibility level of replicated or distributed databases.
15307	16	Could not change the merge publish option because the server is not set up for replication.
15308	16	You must set database '%s' to single user mode with sp_dboption before fixing indexes on system tables.
15311	16	The file named '%s' does not exist.
15312	16	The file named '%s' is a primary file and cannot be removed.
15318	0	All fragments for database '%s' on device '%s' are now dedicated for log usage only.
15319	17	Error: DBCC DBREPAIR REMAP failed for database '%s' (device '%s').
15321	16	There was some problem removing '%s' from sysaltfiles.
15322	0	File '%s' was removed from tempdb, and will take effect upon server restart.
15323	16	The selected index does not exist on table '%s'.
15324	16	The option %s cannot be changed for the '%s' database.
15325	16	The current database does not contain a %s named '%ls'.
15326	0	No extended stored procedures exist.
15327	0	The database is now offline.
15328	0	The database is offline already.
15330	11	There are no matching rows on which to report.

15331	11	The user "%s" cannot take the action auto_fix due to duplicate SID.
15333	11	Error: The qualified @oldname references a database (%s) other than the current database.
15335	11	Error: The @newname value '%s' is already in use as a %s name and would cause a duplicate that is not permitted.
15336	16	Object '%s' cannot be renamed because the object participates in enforced dependencies.
15337	0	Caution: sysdepends shows that other objects (views, procedures and so on) are referencing this object by its old name. These objects will become invalid, and should be dropped and re-created promptly.
15338	0	The %s was renamed to '%s'.
15339	0	Creating '%s'.
15340	0	Alias user added.
15341	0	Granted database access to '%s'.
15354	0	Usage: sp_detachdb <dbname>, [TRUE FALSE]</dbname>
15358	0	User-defined filegroups should be made read-only.
15363	16	The role '%s' already exists in the current database.
15379	11	The server option value '%s' supplied is unrecognized.
15394	16	Collation '%s' is not supported by the operating system
15387	11	If the qualified object name specifies a database, that database must be the current database.
15388	11	There is no user table matching the input name '%s' in the current database.
15390	11	Input name '%s' does not have a matching user table or indexed view in the current database.
15395	11	The qualified old name could not be found for item type '%s'.
15398	11	Only objects in the master database owned by dbo can have the startup setting changed.
15399	11	Could not change startup option because this option %s. This type of change is restricted to objects that have no parameters or columns.

15401	11	Windows NT user or group '%s' not found. Check the name again.
15402	11	'%s' is not a fixed server role.
15405	11	Cannot use the reserved user or role name '%s'.
15407	11	'%s' is not a valid Windows NT name. Give the
		complete name: <domain\username>.</domain\username>
15409	11	'%s' is not a role.
15410	11	User or role '%s' does not exist in this database.
15412	11	'%s' is not a known fixed role.
15413	11	Cannot make a role a member of itself.
15414	16	Cannot set compatibility level because database has a view or computed column that is indexed. These indexes require a SQL Server compatible database.
15415	11	User is a member of more than one group. sp_changegroup is set up for backward compatibility and expects membership in one group at most.
15416	16	Usage: sp_dbcmptlevel [dbname [, compatibilitylevel]]
15417	16	Cannot change the compatibility level of the '%s' database.
15418	16	Only members of the sysadmin role or the database owner may set the database compatibility level.
15419	16	Supplied parameter @sid should be binary(16).
15420	16	The group '%s' does not exist in this database.
15421	16	The user owns role(s) in the database and cannot be dropped.
15422	16	Application roles can only be activated at the ad hoc level.
15423	0	The password for application role '%s' has been changed.
15424	0	New role added.
15425	0	New application role added.
15426	16	You must specify a provider name with this set of properties.

15427	16	You must specify a provider name for unknown product '%ls'.
15428	16	You cannot specify a provider or any properties for product '%ls'.
15429	16	'%ls' is an invalid product name.
15430	19	Limit exceeded for number of servers.
15431	16	You must specify the @rolename parameter.
15432	16	Stored procedure '%s' can only be executed at the ad hoc level.
15433	16	Supplied parameter @sid is in use.
15434	16	Could not drop login '%s' as the user is currently logged in.
15435	0	Database successfully published.
15436	0	Database successfully enabled for subscriptions.
15437	0	Database successfully published using merge replication.
15438	0	Database is already online.
15439	0	Database is now online.
15440	0	Database is no longer published.
15441	0	Database is no longer enabled for subscriptions.
15442	0	Database is no longer enabled for merge publications.
15443	0	Checkpointing database that was changed.
15444	0	'Disk' device added.
15445	0	'Diskette' device added.
15446	0	'Tape' device added.
15447	0	'Pipe' device added.
15449	0	Type added.
15450	0	New language inserted.
15452	0	No alternate languages are available.
15453	0	us_english is always available, even though it is not in syslanguages.
15454	0	Language deleted.
15456	0	Valid configuration options are:
15457	0	Configuration option '%ls' changed from %ld to %ld.

		Run the RECONFIGURE statement to install.
15458	0	Database removed.
15459	0	In the current database, the specified object references
		the following:
15460	0	In the current database, the specified object is referenced by the following:
15461	0	Object does not reference any object, and no objects reference it.
15462	0	File '%s' closed.
15463	0	Device dropped.
15467	0	Type has been dropped.
15469	0	No constraints have been defined for this object.
15470	0	No foreign keys reference this table.
15471	0	The object comments have been encrypted.
15472	0	The object does not have any indexes.
15473	0	Settable remote login options.
15475	0	The database is renamed and in single user mode.
15476	0	A member of the sysadmin role must reset the database
		to multiuser mode with sp_dboption.
15477	0	Caution: Changing any part of an object name could
		break scripts and stored procedures.
15478	0	Password changed.
15479	0	Login dropped.
15480	0	Could not grant login access to '%s'.
15481	0	Granted login access to '%s'.
15482	0	Could not deny login access to '%s'.
15483	0	Denied login access to '%s'.
15484	0	Could not revoke login access from '%s'.
15485	0	Revoked login access from '%s'.
15486	0	Default database changed.
15487	0	%s's default language is changed to %s.
15488	0	'%s' added to role '%s'.
15489	0	'%s' dropped from role '%s'.

15490	0	The dependent aliases were also dropped.
15491	0	User has been dropped from current database.
15492	0	Alias user dropped.
15493	0	Role dropped.
15494	0	The application role '%s' is now active.
15495	0	Application role dropped.
15496	0	Group changed.
15497	0	Could not add login using sp_addlogin (user = %s). Terminating this procedure.
15498	17	Inside txn_1a_, update failed. Will roll back (1a1).
15499	0	The dependent aliases were mapped to the new database owner.
15500	0	The dependent aliases were dropped.
15501	0	Database owner changed.
15502	0	Setting database owner to SA.
15503	0	Giving ownership of all objects to the database owner.
15504	0	Deleting users except guest and the database owner from sysusers.
15505	16	Cannot change owner of object '%ls' or one of its child objects because the new owner '%ls' already has an object with the same name.
15511	0	Default bound to column.
15512	0	Default bound to data type.
15513	0	The new default has been bound to columns(s) of the specified user data type.
15514	0	Rule bound to table column.
15515	0	Rule bound to data type.
15516	0	The new rule has been bound to column(s) of the specified user data type.
15519	0	Default unbound from table column.
15520	0	Default unbound from data type.
15521	0	Columns of the specified user data type had their defaults unbound.
15522	0	Rule unbound from table column.

15523	0	Rule unbound from data type.
15524	0	Columns of the specified user data type had their rules unbound.
15525	0	sp_checknames is used to search for non 7-bit ASCII characters.
15526	0	in several important columns of system tables. The following
15527	0	columns are searched:
15528	0	In master:
15536	0	In all databases:
15543	0	Looking for non 7-bit ASCII characters in the system tables of database '%s'.
15544	0	Table.column '%s'
15545	0	The following database names contain non 7-bit ASCII characters.
15546	0	If you wish to change these names, use '%s'.
15547	0	The following logins have default database names that contain
15548	0	non 7-bit ASCII characters. If you wish to change these names use
15549	0	sp_defaultdb.
15550	0	The following servers have 'initialization file' names that contain
15551	0	non 7-bit ASCII characters. If you wish to change these names,
15552	0	use UPDATE.
15553	0	Database '%s' has no object, user, and so on
15554	0	names that contain non 7-bit ASCII characters.
15555	0	The database name provided '%s' must be the current database when executing this stored procedure.
15564	0	The following device names contain non 7-bit ASCII characters.
15565	0	The following login names contain non 7-bit ASCII characters.

15566	0	The following remote login names contain non 7-bit
		ASCII characters.
15567	0	The following server names contain non 7-bit ASCII characters.
15568	0	The following column and parameter names contain non 7-bit ASCII characters.
15569	0	The following index names contain non 7-bit ASCII characters.
15570	0	The following object names contain non 7-bit ASCII characters.
15571	0	The following segment names contain non 7-bit ASCII characters.
15572	0	The following data type names contain non 7-bit ASCII characters.
15573	0	The following user or role names contain non 7-bit ASCII characters.
15574	10	This object does not have any statistics.
15575	10	This object does not have any statistics or indexes.
15576	16	You cannot set network name on server '%ls' because it is not a linked SQL Server.
15600	15	An invalid parameter or option was specified for procedure '%s'.
15601	16	Full-Text Search is not enabled for the current database. Use sp_fulltext_database to enable Full-Text Search.
15604	16	Cannot drop full-text catalog '%ls' because it contains a full-text index.
15605	16	A full-text index for table '%ls' has already been created.
15606	16	You must first create a full-text index on table '%ls'.
15607	16	'%ls' is not a valid index to enforce a full-text search key. You must specify a unique, non-nullable, single-column index.
15608	16	Full-text search has already been activated for table '%ls'.
15609	16	Cannot activate full-text search for table '%ls' because

		no columns have been enabled for full-text search.
15610	16	You must deactivate full-text search on table '%ls' before adding columns to or removing columns from the full-text index.
15611	16	Column '%ls' of table '%ls' cannot be used for full-text search because it is not a character-based column.
15612	16	DBCC DBCONTROL error. Database was not made read-only.
15613	0	The database is now read-only.
15614	0	The database already is read-only.
15615	16	DBCC DBCONTROL error. Database was not made single user.
15616	0	The database is now single user.
15617	0	The database already is single user.
15618	0	The database is now read/write.
15619	0	The database already is read/write.
15620	0	The database is now multiuser.
15621	0	The database already is multiuser.
15622	10	No permission to access database '%s'.
15623	10	Enabling %ls option for database '%ls'.
15624	10	Disabling %ls option for database '%ls'.
15625	10	Option '%ls' not recognized for '%ls' parameter.
15626	10	You attempted to acquire a transactional application lock without an active transaction.
15627	10	sp_dboption command failed.
15630	16	Full-text search must be activated on table '%ls' before this operation can be performed.
15631	16	Full-text change tracking is currently enabled for table '%ls'.
15632	16	Full-text change tracking must be started on table '%ls' before full-text auto propagation can begin.
15633	16	Full-text auto propagation is currently enabled for table '%ls'.
15634	16	Full-text change tracking must be started on table '%ls'

		before the changes can be flushed.
15635	16	Cannot execute '%ls' because the database is in read- only access mode.
15636	16	Full-text catalog '%ls' cannot be populated because the database is in single-user access mode.
15637	16	Full-text index for table '%ls' cannot be populated because the database is in single-user access mode.
15638	10	Warning: Full-text index for table '%ls' cannot be populated because the database is in single-user access mode. Change tracking is stopped for this table. Use sp_fulltext_table to start change tracking.
15639	10	Warning: Table '%s' does not have the option 'text in row' enabled and has full-text indexed columns that are of type image, text, or ntext. Full-text change tracking cannot track WRITETEXT or UPDATETEXT operations performed on these columns.
15640	16	sp_fulltext_table 'start_full' must be executed on table '%ls'. Columns affecting the index have been added or dropped since the last index full population.
15642	16	The ongoing population is necessary to ensure an up-to-date index. If needed, stop change tracking, and then deactivate the full-text index population.
15643	10	Warning: This operation did not succeed on one or more tables. A table may be inactive, or a full-text index population may already be active.
15644	16	Full-text index population failed to start on this table. Execute sp_fulltext_table '%ls', '%ls' to update the index.
15645	16	Column '%ls' does not exist.
15646	16	Column '%ls' is not a computed column.
15647	10	No views with schema binding reference this table.

Troubleshooting

Errors 16000 - 16999

Error	Severity	Description (Message Text)
16801	11	sp_dropwebtask requires at least one defined parameter @outputfile or @procname.
16802	11	sp_dropwebtask cannot find the specified task.
16803	11	sp_runwebtask requires at least one defined parameter @outputfile or @procname.
16804	11	SQL Web Assistant: Could not establish a local connection to SQL Server.
16805	11	SQL Web Assistant: Could not execute the SQL statement.
16806	11	SQL Web Assistant: Could not bind the parameter to the SQL statement.
16807	11	SQL Web Assistant: Could not obtain a bind token.
16808	11	SQL Web Assistant: Could not find the existing trigger. This could be due to encryption.
16809	11	SQL Web Assistant failed on the call to SQLGetData.
16810	11	SQL Web Assistant failed on the call to SQLFetch.
16811	11	SQL Web Assistant failed to bind a results column.
16812	11	SQL Web Assistant: The @query parameter must be specified.
16813	11	SQL Web Assistant: Parameters can be passed either by name or position.
16814	11	SQL Web Assistant: Invalid parameter.
16815	11	SQL Web Assistant: @procname is not valid.
16816	11	SQL Web Assistant: @outputfile is not valid.
16817	11	SQL Web Assistant: Could not read the given file.
16820	11	SQL Web Assistant failed because the state of the Web task in msdbMSwebtasks is invalid.
16821	11	SQL Web Assistant: Could not open the output file.
16822	11	SQL Web Assistant: Could not open the template file.

16823	11	SQL Web Assistant: Could not allocate enough memory to satisfy this request.
16824	11	SQL Web Assistant: The template file specified in the Web task has a bad size.
16825	11	SQL Web Assistant: Could not read the template file.
16826	11	SQL Web Assistant: Could not find the specified marker
		for data insertion in the template file.
16827	11	SQL Web Assistant: Could not write to the output file.
16828	11	SQL Web Assistant: @tabborder must be tinyint.
16829	11	SQL Web Assistant: @singlerow must be 0 or 1. Cannot specify this parameter with @nrowsperpage.
16830	11	SQL Web Assistant: The @blobfmt parameter specification is invalid.
16831	11	SQL Web Assistant: The output file name is mandatory for every column specified in the @blobfmt parameter.
16832	11	SQL Web Assistant: Procedure called with too many parameters.
16833	11	SQL Web Assistant: @nrowsperpage must be a positive number and it cannot be used with @singlerow.
16834	11	SQL Web Assistant: Read/write operation on text, ntext, or image column failed.
16838	11	SQL Web Assistant: Could not find the table in the HTML file.
16839	11	SQL Web Assistant: Could not find the matching end table tag in the HTML file.
16841	11	SQL Web Assistant: The @datachg parameter cannot be specified with the given @whentype value.
16842	11	SQL Web Assistant: Could not find and drop the necessary trigger for updating the Web page.
16843	11	SQL Web Assistant: Could not add the necessary trigger for the @datachg parameter. There could be an existing trigger on the table with missing or encrypted text.
16844	11	SQL Web Assistant: Incorrect syntax for the @datachg parameter.

16845	11	SQL Web Assistant: @datachg must be specified for the given @whentype option.
16846	11	SQL Web Assistant: @unittype and/or @numunits must
		be specified for the given @whentype option.
16847	11	SQL Web Assistant: @fixedfont must be 0 or 1.
16848	11	SQL Web Assistant: @bold must be 0 or 1.
16849	11	SQL Web Assistant: @italic must be 0 or 1.
16850	11	SQL Web Assistant: @colheaders must be 0 or 1.
16851	11	SQL Web Assistant: @lastupdated must be 0 or 1.
16852	11	SQL Web Assistant: @HTMLheader must be in the range 1 to 6.
16853	11	SQL Web Assistant: @username is not valid.
16854	11	SQL Web Assistant: @dbname is not valid.
16855	11	SQL Web Assistant: @whentype must be in the range 1 to 9.
16856	11	SQL Web Assistant: @unittype must be in the range 1 to 4.
16857	11	SQL Web Assistant: @targetdate is invalid. It must be a valid date after 1900-01-01.
16858	11	SQL Web Assistant: The @targettime parameter must be between 0 and 240000.
16859	11	SQL Web Assistant: @dayflags must be 1, 2, 4, 8, 16, 32, or 64.
16860	11	SQL Web Assistant: @numunits must be greater than 0.
16861	11	SQL Web Assistant: @targetdate must be specified for the given @whentype option.
16862	11	SQL Web Assistant: @dayflags must be specified for the given @whentype option.
16863	11	SQL Web Assistant: URL specification is invalid.
16864	11	SQL Web Assistant: @blobfmt is invalid. The file must include the full path to the output_file location.
16865	11	SQL Web Assistant: URL hyperlink text column must not be of the image data type.
16866	11	SQL Web Assistant: Could not obtain the number of

		columns in @query.
16867	11	SQL Web Assistant: URL hyperlink text column is
		missing in @query.
16868	11	SQL Web Assistant failed on the call to
		SQLColAttribute.
16869	11	SQL Web Assistant: Columns of data type image cannot
		have a template.
16870	11	SQL Web Assistant: Internal error. Could not read @
		parameters.
16871	11	SQL Web Assistant: Invalid @charset. Execute
		sp_enumcodepages for a list of character sets.
16873	11	SQL Web Assistant: Invalid @codepage. Execute
		sp_enumcodepages for a list of code pages.
16874	11	SQL Web Assistant: Internal error. Cannot translate to
		the specified code page.
16875	11	SQL Web Assistant: Translation to the desired code
		page is unavailable on this system.
16876	11	SQL Web Assistant: Internal error. Could not obtain
		COM interface ID.
16877	11	SQL Web Assistant: Internal error. Could not obtain
		COM language ID.
16878	11	SQL Web Assistant: Internal error. Could not initialize
		COM library.
16879	11	SQL Web Assistant: Internal error. Could not translate
		from Unicode to the specified code page.
16880	11	SQL Web Assistant: Internal error. Could not create
		translation object. Make sure that the file MLang.dll is
		in your system directory.
16881	16	SQL Web Assistant: This version is not supported on
		Win32s of Windows 3.1.
16882	16	SQL Web Assistant: Web task not found. Verify the
		name of the task for possible errors.
16883	16	SQL Web Assistant: Could not list Web task parameters.
		xp_readwebtask requires @procname.
16884	16	SQL Web Assistant: Procedure name is required to

		convert Web tasks.
16885	16	SQL Web Assistant: Could not upgrade the Web task to 8.0. The Web task will remain in 6.5 format and will need to be re-created.
16886	16	SQL Web Assistant: Could not update Web tasks system table. The Web task remains in 6.5 format.
16887	16	SQL Web Assistant: @procname parameter is missing. The parameter is required to upgrade a Web task to 8.0.
16888	16	SQL Web Assistant: Source code page is not supported on the system. Ensure @charset and @codepage language files are installed on your system.
16889	16	SQL Web Assistant: Could not send Web task row to the client.
16890	16	SQL Web Assistant: ODS error occurred. Could not send Web task parameters.
16901	16	%hs: This feature has not been implemented yet.
16902	16	%hs: The value of parameter %hs is invalid.
16903	16	%hs procedure called with incorrect number of parameters.
16904	16	sp_cursor: optype: You can only specify ABSOLUTE in conjunction with DELETE or UPDATE.
16905	16	The cursor is already open.
16907	16	%hs is not allowed in cursor statements.
16909	16	%hs: The cursor identifier value provided (%x) is not valid.
16911	16	%hs: The fetch type %hs cannot be used with forward only cursors.
16914	16	%hs procedure called with too many parameters.
16915	16	A cursor with the name '%.*ls' already exists.
16916	16	A cursor with the name '%.*ls' does not exist.
16917	16	Cursor is not open.
16922	16	Cursor Fetch: Implicit conversion from data type %s to %s is not allowed.
16924	16	Cursorfetch: The number of variables declared in the

		INTO list must match that of selected columns.
16925	16	The fetch type %hs cannot be used with dynamic
		cursors.
16926	16	sp_cursoroption: The column ID (%d) does not
		correspond to a text, ntext, or image column.
16927	16	Cannot fetch into text, ntext, and image variables.
16929	16	The cursor is READ ONLY.
16930	16	The requested row is not in the fetch buffer.
16931	16	There are no rows in the current fetch buffer.
16932	16	The cursor has a FOR UPDATE list and the requested
		column to be updated is not in this list.
16933	16	The cursor does not include the table being modified or
		the table is not updatable through the cursor.
16934	16	Optimistic concurrency check failed. The row was
		modified outside of this cursor.
16935	16	No parameter values were specified for the sp_cursor-
		%hs statement.
16936	16	sp_cursor: One or more values parameters were invalid.
16937	16	A server cursor is not allowed on a remote stored
		procedure or stored procedure with more than one SELECT statement. Use a default result set or client
		cursor.
16938	16	sp_cursoropen/sp_cursorprepare: The statement
10330		parameter can only be a single select or a single stored
		procedure.
16940	16	Cannot specify UPDLOCK or TABLOCKX with READ
		ONLY or INSENSITIVE cursors.
16941	16	Cursor updates are not allowed on tables opened with
		the NOLOCK option.
16942	16	Could not generate asynchronous keyset. The cursor has
		been deallocated.
16943	16	Could not complete cursor operation because the table
		schema changed after the cursor was declared.
16944	16	Cannot specify UPDLOCK or TABLOCKX on a read-
		only table in a cursor.

16945	16	The cursor was not declared.
16946	16	Could not open the cursor because one or more of its
		tables have gone out of scope.
16947	10	No rows were updated or deleted.
16948	16	The variable '%.*ls' is not a cursor variable, but it is
		used in a place where a cursor variable is expected.
16949	16	The variable '%.*ls' is a cursor variable, but it is used in
		a place where a cursor variable is not valid.
16950	10	The variable '%.*ls' does not currently have a cursor
		allocated to it.
16951	16	The variable '%.*ls' cannot be used as a parameter
		because a CURSOR OUTPUT parameter must not have
		a cursor allocated to it before execution of the
16052	1.0	procedure.
16952	16	A cursor variable cannot be used as a parameter to a
16052	10	remote procedure call.
16953	10	Remote tables are not updatable. Updatable keyset- driven cursors on remote tables require a transaction
		with the REPEATABLE_READ or SERIALIZABLE
		isolation level spanning the cursor.
16954	16	Executing SQL directly; no cursor.
16955	16	Could not create an acceptable cursor.
16956	10	Cursor created was not of the requested type.
16957	16	FOR UPDATE cannot be specified on a READ ONLY
10507		cursor.
16958	16	Could not complete cursor operation because the set
		options have changed since the cursor was declared.
16959	16	Unique table computation failed.
16960	16	You have reached the maximum number of cursors
		allowed.
16961	10	One or more FOR UPDATE columns have been
		adjusted to the first instance of their table in the query.
16962	16	The target object type is not updatable through a cursor.
16963	16	You cannot specify scroll locking on a cursor that

		contains a remote table.
16995	16	%hs requires the NO_BROWSETABLE option to be
		set.
16996	16	%hs cannot take output parameters.
16998	20	Internal Cursor Error: A cursor work table operation
		failed.
16999	20	Internal Cursor Error: The cursor is in an invalid state.

Troubleshooting

Errors 17000 - 17999

Error	Severity	Description (Message Text)
17000	10	Usage: sp_autostats <table_name> [, {ON OFF} [,</table_name>
		<index_name>]]</index_name>
17050	10	The '%ls' option is ignored in this edition of SQL Server.
17550	10	DBCC TRACEON %d, server process ID (SPID) %d.
17551	10	DBCC TRACEOFF %d, server process ID (SPID) %d.
17557	16	DBCC DBRECOVER failed for database ID %d.
17558	10	*** Bypassing recovery for database ID %d.
17560	10	DBCC DBREPAIR: '%ls' index restored for '%ls.%ls'.
17561	10	%ls index restored for %ls.%ls.
17569	16	DBCC cannot find the library initialization function
		%ls.
17570	16	DBCC cannot find the function %ls in the library %ls.
17571	20	DBCC function %ls in the library %ls generated an
		access violation. SQL Server is terminating process %d.
17572	16	DBCC cannot free DLL %ls. SQL Server depends on
		this DLL to function properly.
17750	16	Cannot load the DLL %ls, or one of the DLLs it
		references. Reason: %ls.
17751	16	Cannot find the function %ls in the library %ls. Reason:
		%ls.
17752	16	Extended procedure memory allocation failed for '%ls'.
17753	16	%.*ls can only be executed in the master database.

Errors 18000 - 18999

Error	Severity	Description (Message Text)
18002	20	Stored function '%.*ls' in the library '%.*ls' generated an access violation. SQL Server is terminating process %d.
18100	10	Process ID %d killed by hostname %.*ls, host process ID %d.
18450	14	Login failed for user '%ls'. Reason: Not defined as a valid user of a trusted SQL Server connection.
18451	14	Login failed for user '%ls'. Only administrators may connect at this time.
18452	14	Login failed for user '%ls'. Reason: Not associated with a trusted SQL Server connection.
18453	14	Login succeeded for user '%ls'. Connection: Trusted.
18454	14	Login succeeded for user '%ls'. Connection: Non-Trusted.
18455	14	Login succeeded for user '%ls'.
18456	14	Login failed for user '%ls'.
18457	14	Login failed for user '%ls'. Reason: User name contains a mapping character or is longer than 30 characters.
18458	14	Login failed. The maximum simultaneous user count of %d licenses for this server has been exceeded. Additional licenses should be obtained and registered through the Licensing application in the Windows NT Control Panel.
18459	14	Login failed. The maximum workstation licensing limit for SQL Server access has been exceeded.
18460	14	Login failed. The maximum simultaneous user count of %d licenses for this '%ls' server has been exceeded. Additional licenses should be obtained and installed or you should upgrade to a full version.
18461	14	Login failed for user '%ls'. Reason: Server is in single user mode. Only one administrator can connect at this

		time.
18482	16	Could not connect to server '%ls' because '%ls' is not
		defined as a remote server.
18483	16	Could not connect to server '%ls' because '%ls' is not
		defined as a remote login at the server.
18485	16	Could not connect to server '%ls' because it is not
		configured for remote access.
18666	17	Could not free up descriptor in rel_desclosed() system
		function.
18750	16	%ls: The parameter '%ls' is invalid.
18751	16	%ls procedure called with incorrect number of
		parameters.
18752	16	Another log reader is replicating the database.
18754	16	Could not open table %d.
18755	16	Could not allocate memory for replication.
18756	16	Could not get replication information for table %d.
18757	16	The database is not published.
18759	16	Replication failure. File '%ls', line %d.
18760	16	Invalid %ls statement for article %d.
18761	16	Commit record at (%ls) has already been distributed.
		Check DBTABLE.
18762	16	Invalid begin LSN (%ls) for commit record (%ls).
		Check DBTABLE.
18763	16	Commit record (%ls) reports oldest active LSN as
		(0:0:0).
18764	16	Execution of filter stored procedure %d failed. See the
		SQL Server errorlog for more information.
18765	16	Begin LSN specified for replication log scan is invalid.
18766	16	The replbeginlsn field in the DBTABLE is invalid.
18767	16	The specified begin LSN (%ls) for replication log scan
		occurs before replbeginlsn (%ls).
18768	16	The specified LSN (%ls) for repldone log scan occurs
		before the current start of replication in the log (%ls).

18769	16	The specified LSN (%ls) for repldone log scan is not a replicated commit record.
18770	16	The specified LSN (%ls) for repldone log scan is not present in the transaction log.
18771	16	Invalid storage type %d specified writing variant of type %d.
18772	16	Invalid server data type (%d) specified in repl type lookup.
18773	16	Could not locate text information records for column %d during command construction.
18774	16	The stored procedure sp_replsetoriginator must be executed within a transaction.
18775	16	The Log Reader Agent encountered an unexpected log record of type %u encountered while processing DML operation.
18776	16	An error occurred while waiting on the article cache access event.
18777	16	%s: Error initializing MSMQ components
18778	16	%s: Error opening Microsoft Message Queue %s

Errors 19000 - 19999

Microsoft® SQL Server $^{\rm TM}$ 2000 currently has no system error messages in the range 19000 to 19999.

Errors 20000 - 20999

Error	Severity	Description (Message Text)
20001	0	There is no nickname for article '%s' in publication '%s'.
20002	0	The filter '%s' already exists for article '%s' in
		publication '%s'.
20003	0	Could not generate nickname for '%s'.
20007	16	The system tables for merge replication could not be dropped successfully.
20008	16	The system tables for merge replication could not be created successfully.
20009	16	The article '%s' could not be added to the publication '%s'.
20010	16	The Snapshot Agent corresponding to the publication '%s' could not be dropped.
20011	16	Cannot set incompatible publication properties. The 'allow_anonymous' property of a publication depends on the 'immediate_sync' property.
20012	16	The subscription type '%s' is not allowed on publication '%s'.
20013	16	The publication property '%s' cannot be changed when there are subscriptions on it.
20014	16	Invalid @schema_option value.
20015	16	Could not remove directory '%ls'. Check the security context of xp_cmdshell and close other processes that may be accessing the directory.
20016	16	Invalid @subscription_type value. Valid values are 'pull' or 'anonymous'.
20017	16	The subscription on the Subscriber does not exist.
20018	16	The @optional_command_line is too long. Use an agent definition file.
20019	16	Replication database option '%s' cannot be set unless the

		database is a publishing database or a distribution database.
20020	16	The article resolver supplied is either invalid or nonexistent.
20021	16	The subscription could not be found.
20023	16	Invalid @subscriber_type value. Valid options are 'local', 'global', 'anonymous', or 'repub'.
20025	16	The publication name must be unique. The specified publication name '%s' has already been used.
20026	16	The publication '%s' does not exist.
20027	16	The article '%s' does not exist.
20028	16	The Distributor has not been installed correctly. Could not enable database for publishing.
20029	16	The Distributor has not been installed correctly. Could not disable database for publishing.
20030	16	The article '%s' already exists on another publication with a different column tracking option.
20031	16	Could not delete the row because it does not exist.
20032	16	'%s' is not defined as a Subscriber for '%s'.
20033	16	Invalid publication type.
20034	16	Publication '%s' does not support '%s' subscriptions.
20036	16	The Distributor has not been installed correctly.
20037	16	The article '%s' already exists in another publication with a different article resolver.
20038	16	The article filter could not be added to the article '%s' in the publication '%s'.
20039	16	The article filter could not be dropped from the article '%s' in the publication '%s'.
20040	16	Could not drop the article(s) from the publication '%s'.
20041	16	Transaction rolled back. Could not execute trigger. Retry your transaction.
20043	16	Could not change the article '%s' because the publication has already been activated.
20044	16	The priority property is invalid for local subscribers.

20045	16	You must supply an article name.
20046	16	The article does not exist.
20047	16	You are not authorized to perform this operation.
20049	16	The priority value should not be larger than 100.0.
20050	16	The retention period must be greater than or equal to %d.
20051	16	The Subscriber is not registered.
20054	16	Current database is not enabled for publishing.
20055	16	Table '%s' cannot be published for merge replication because it has a timestamp column.
20056	16	Table '%s' cannot be republished.
20057	16	The profile name '%s' already exists for the specified agent type.
20058	16	The @agent_type must be 1 (Snapshot), 2 (Logreader), 3 (Distribution), or 4 (Merge)
20059	16	The @profile_type must be 0 (System) or 1 (Custom)
20060	16	Compatibility level cannot be smaller than 60.
20061	16	The compatibility level of this database must be set to 70 or higher to be enabled for merge publishing.
20062	16	Updating columns with the rowguidcol property is not allowed.
20064	16	Cannot drop profile. Either it is not defined or it is defined as the default profile.
20065	16	Cannot drop profile because it is in use.
20066	16	Profile not defined.
20067	16	The parameter name '%s' already exists for the specified profile.
20068	16	The article cannot be created on table '%s' because it has more than %d columns.
20069	16	Cannot validate a merge article that uses looping join filters.
20070	16	Cannot update subscription row.
20072	16	Cannot update Subscriber information row.
20073	16	Articles can be added or changed only at the Publisher.

20074	16	Only a table object can be published as a "table" article for merge replication.
20075	16	The 'status' parameter value must be either 'active' or 'unsynced'.
20076	16	The @sync_mode parameter value must be 'native' or 'character'.
20077	16	Problem encountered generating replica nickname.
20078	16	The @property parameter value must be 'sync_type', 'priority', or 'description'.
20079	16	Invalid @subscription_type parameter value. Valid options are 'push', 'pull', or 'both'.
20081	16	Publication property '%s' cannot be NULL.
20084	16	Publication '%s' cannot be subscribed to by Subscriber database '%s'.
20086	16	Publication '%s' does not support the nosync type because it contains a table that does not have a rowguidcol column.
20087	16	You cannot push an anonymous subscription.
20088	16	Only assign priorities that are greater than or equal to 0 and less than 100.
20089	16	Could not get license information correctly.
20090	16	Could not get version information correctly.
20091	16	sp_mergesubscription_cleanup is used to clean up push subscriptions. Use sp_dropmergepullsubscription to clean up pull or anonymous subscriptions.
20100	16	Cannot drop Subscriber '%s'. There are existing subscriptions.
20500	16	The updatable Subscriber stored procedure '%s' does not exist in sysobjects.
20501	16	Could not insert into sysarticleupdates using sp_articlecolumn.
20502	16	Invalid '%s' value. Valid values are 'read only', 'sync tran', 'queued tran', or 'failover'.
20503	16	Invalid '%s' value in '%s'. The publication is not enabled for '%s' updatable subscriptions.

20505	16	Could not drop synchronous update stored procedure '%s' in '%s'.
20506	16	Source table '%s' not found in '%s'.
20507	16	Table '%s' not found in '%s'.
20508	16	Updatable Subscriptions: The text/ntext/image values inserted at Subscriber will be NULL.
20509	16	Updatable Subscriptions: The text/ntext/image values cannot be updated at Subscriber.
20510	16	Updatable Subscriptions: Cannot update identity columns.
20511	16	Updatable Subscriptions: Cannot update timestamp columns.
20512	16	Updatable Subscriptions: Rolling back transaction.
20515	16	Updatable Subscriptions: Rows do not match between Publisher and Subscriber. Run the Distribution Agent to refresh rows at the Subscriber.
20516	16	Updatable Subscriptions: Replicated data is not updatable.
20517	16	Updatable Subscriptions: Update of replica's primary key is not allowed unless published table has a timestamp column.
20518	16	Updatable Subscriptions: INSERT and DELETE operations are not supported unless published table has a timestamp column.
20519	16	Updatable Subscriptions: INSERT operations on tables with identity or timestamp columns are not allowed unless a primary key is defined at the Subscriber.
20520	16	Updatable Subscriptions: UPDATE operations on tables with identity or timestamp columns are not allowed unless a primary key is defined at the Subscriber.
20521	16	sp_MSmark_proc_norepl: must be a member of the db_owner or sysadmin roles.
20522	16	sp_MSmark_proc_norepl: invalid object name '%s'.
20523	16	Could not validate the article '%s'. It is not activated.
20524	10	Table '%s' may be out of synchronization. Rowcounts

		(actual: %s, expected: %s). Rowcount method %d used $(0 = \text{Full}, 1 = \text{Fast})$.
20525	10	Table '%s' might be out of synchronization. Rowcounts (actual: %s, expected %s). Checksum values (actual: %s, expected: %s).
20526	10	Table '%s' passed rowcount (%s) validation. Rowcount method %d used ($0 = \text{Full}$, $1 = \text{Fast}$).
20527	10	Table '%s' passed rowcount (%s) and checksum validation. Checksum is not compared for any text or image columns.
20528	10	Log Reader Agent startup message.
20529	10	Starting agent.
20530	10	Run agent.
20531	10	Detect nonlogged agent shutdown.
20532	10	Replication agent schedule.
20533	10	Replication agents checkup
20534	10	Detects replication agents that are not logging history actively.
20535	10	Removes replication agent history from the distribution database.
20536	10	Replication: agent failure
20537	10	Replication: agent retry
20538	10	Replication: expired subscription dropped
20540	10	Replication: agent success
20541	10	Removes replicated transactions from the distribution database.
20542	10	Detects and removes expired subscriptions from published databases.
20543	10	@rowcount_only parameter must be the value 0,1, or 2. 0=7.0 compatible checksum. 1=only check rowcounts. 2=new checksum functionality introduced in version 8.0.
20545	10	Default agent profile
20546	10	Verbose history agent profile.

20547	10	Agent profile for detailed history logging.
20548	10	Slow link agent profile.
20549	10	Agent profile for low bandwidth connections.
20550	10	Windows Synchronization Manager profile
20551	10	Profile used by the Windows Synchronization Manager.
20552	10	Could not clean up the distribution transaction tables.
20553	10	Could not clean up the distribution history tables.
20554	10	The agent is suspect. No response within last %ld minutes.
20555	10	6.x publication.
20556	10	Heartbeats detected for all running replication agents.
20557	10	Agent shutdown. For more information, see the SQL Server Agent job history for job '%s'.
20558	10	Table '%s' passed full rowcount validation after failing the fast check. DBCC UPDATEUSAGE will be initiated automatically.
20559	10	Conditional Fast Rowcount method requested without specifying an expected count. Fast method will be used.
20560	10	An expected checksum value was passed, but checksums will not be compared because rowcount-only checking was requested.
20561	10	Generated expected rowcount value of %s for %s.
20562	10	User delete.
20563	10	No longer belongs in this partial.
20564	10	System delete.
20565	10	Replication: Subscriber has failed data validation
20566	10	Replication: Subscriber has passed data validation
20567	10	Agent history clean up: %s
20568	10	Distribution clean up: %s
20569	10	Expired subscription clean up
20570	10	Reinitialize subscriptions having data validation failures
20571	10	Reinitializes all subscriptions that have data validation failures.

20572	10	Subscriber '%s' subscription to article '%s' in publication '%s' has been reinitialized after a validation failure.
20573	10	Replication: Subscription reinitialized after validation failure
20574	10	Subscriber '%s' subscription to article '%s' in publication '%s' failed data validation.
20575	10	Subscriber '%s' subscription to article '%s' in publication '%s' passed data validation.
20576	10	Subscriber '%s' subscription to article '%s' in publication '%s' has been reinitialized after a synchronization failure.
20577	10	No entries were found in msdbsysreplicationalerts.
20578	10	Replication: agent custom shutdown
20579	10	Generated expected rowcount value of %s and expected checksum value of %s for %s.
20580	10	Heartbeats not detected for some replication agents. The status of these agents have been changed to 'Failed'.
20581	10	Cannot drop server '%s' because it is used as a Distributor in replication.
20582	10	Cannot drop server '%s' because it is used as a Publisher in replication.
20583	10	Cannot drop server '%s' because it is used as a Subscriber in replication.
20584	10	Cannot drop server '%s' because it is used as a Subscriber to remote Publisher '%s' in replication.
20585	16	Validation Failure. Object '%s' does not exist.
20586	16	(default destination)
20587	16	Invalid '%s' value for stored procedure '%s'.
20588	16	The subscription is not initialized. Run the Distribution Agent first.
20589	10	Agent profile for replicated queued transaction reader.
20590	16	The article property 'status' cannot include bit 64, 'DTS horizontal partitions' because the publication does not allow data transformations.
20591	16	Only 'DTS horizontal partitions' and 'no DTS horizontal

		partitions' are valid 'status' values because the publication allows data transformations.
20592	16	'dts horizontal partitions' and 'no dts horizontal partitions' are not valid 'status' values because the publication does not allow data transformations.
20593	16	Cannot modify publication '%s'. The sync_method cannot be changed to 'native', 'concurrent' or 'concurrent_c' because the publication has subscriptions from ODBC or OLE DB Subscribers.
20594	16	A push subscription to the publication exists. Use sp_subscription_cleanup to drop defunct push subscriptions.
20595	16	Skipping error signaled.
20596	16	Only '%s' or members of db_owner can drop the anonymous agent.
20597	10	Dropped %d anonymous subscription(s).
20598	16	The row was not found at the Subscriber when applying the replicated command.
20599	16	Continue on data consistency errors.
20600	10	Agent profile for skipping data consistency errors. It can be used only by SQL Server Subscribers.
20601	10	Invalid value specified for agent parameter 'SkipErrors'.
20602	10	The value specified for agent parameter 'SkipErrors' is too long.
20603	10	The agent profile cannot be used by heterogeneous Subscribers.
20604	10	You do not have permissions to run agents for push subscriptions. Make sure that you specify the agent parameter 'SubscriptionType'.
20605	10	Invalidated the existing snapshot of the publication. Run the Snapshot Agent again to generate a new snapshot.
20606	10	Reinitialized subscription(s).
20607	10	Cannot make the change because a snapshot is already generated. Set @force_invalidate_snapshot to 1 to force

		the change and invalidate the existing snapshot.
20608	10	Cannot make the change because there are active subscriptions. Set @force_reinit_subscription to 1 to force the change and reinitialize the active subscriptions.
20609	16	Cannot attach subscription file '%s'. Make sure that it is a valid subscription copy file.
20610	16	Cannot run '%s' when the Log Reader Agent is replicating the database.
20611	16	Only table or indexed view to table articles are allowed in publications that allow DTS.
20612	16	Checksum validation is not supported because the publication allows DTS. Use row count only validation.
20613	16	Validation is not supported for articles that are set up for DTS horizontal partitions.
20614	16	Validation is not supported for heterogeneous Subscribers.
20616	10	High Volume Server-to-Server Profile
20617	10	Merge agent profile optimized for the high volume server-to-server synchronization scenario.
20618	16	You must have CREATE DATABASE permission to attach a subscription database.
20619	16	Server user '%s' is not a valid user in database '%s'. Add the user account or 'guest' user account into the database first.
20620	11	The security mode specified requires the server '%s' in sysservers. Use sp_addlinkedserver to add the server.
20621	11	Cannot copy a subscription database to an existing database.

Errors 21000 - 21999

Error	Severity	Description (Message Text)
21000	16	Cannot subscribe to an inactive publication.
21001	16	Cannot add a Distribution Agent at the Subscriber for a push subscription.
21002	16	The Distribution Agent for this subscription already exists (%s).
21003	16	Changing publication names is no longer supported.
21004	16	Cannot publish the database object '%s' because it is encrypted.
21005	10	For backward compatibility, sp_addpublisher can be used to add a Publisher for this Distributor. However, sp_adddistpublisher is more flexible.
21006	16	Cannot use sp_addpublisher to add a Publisher. Use sp_adddistpublisher.
21007	16	Cannot add the remote Distributor. Make sure that the local server is configured as a Publisher at the Distributor.
21008	16	Cannot uninstall the Distributor because there are Subscribers defined.
21009	16	The specified filter procedure is already associated with a table.
21010	16	Removed %ld replicated transactions consisting of %ld statements in %ld seconds (%ld rows/sec).
21011	16	Deactivated subscriptions.
21012	16	Cannot change the 'allow_push' property of the publication to "false". There are push subscriptions on the publication.
21013	16	Cannot change the 'allow_pull' property of the publication to "false". There are pull subscriptions on the publication.

21014	16	The @optname parameter value must be 'transactional' or 'merge'.
21015	16	The replication option '%s' has been set to TRUE already.
21016	16	The replication option '%s' has been set to FALSE already.
21017	16	Cannot perform SQL Server 7.0 compatible checksum operation on a merge article that has a vertical or horizontal partition. Rowcount validation and SQL Server 2000 compatible binary checksum operation can be performed on this article.
21018	16	There are too many consecutive snapshot transactions in the distribution database. Run the Log Reader Agent again or clean up the distribution database.
21021	16	Drop the Distributor before you uninstall replication.
21022	16	Cannot set incompatible publication properties. The 'immediate_sync' property of a publication is dependent on the 'independent agent' property of a publication.
21023	16	'%s' is no longer supported.
21024	16	The stored procedure '%s' is already published as an incompatible type.
21025	16	The string being encrypted cannot have null characters.
21026	16	Cannot have an anonymous subscription on a publication that does not have an independent agent.
21027	16	'%s' replication stored procedures are not installed. Use sp_replicationoption to install them.
21028	16	Replication components are not installed on this server. Run SQL Server Setup again and select the option to install replication.
21029	16	Cannot drop a push subscription entry at the Subscriber unless @drop_push is 'true'.
21030	16	Names of SQL Server replication agents cannot be changed.
21031	16	'post_script' is not supported for stored procedure articles.

21032	16	Could not subscribe because non-SQL Server Subscriber '%s' does not support 'sync tran' update mode.
21033	16	Cannot drop server '%s' as Distribution Publisher because there are databases enabled for replication on that server.
21034	16	Rows inserted or updated at the Subscriber cannot be outside the article partition.
21035	16	You have updated the Publisher property '%s' successfully.
21036	16	Another %s agent for the subscription(s) is running.
21037	16	Invalid working directory '%s'.
21038	16	Windows Authentication is not supported by the server.
21039	16	The destination owner name is not supported for publications that can have heterogeneous Subscribers. Use native mode bcp for this functionality.
21040	16	Publication '%s' does not exist.
21041	16	A remote distribution Publisher is not allowed on this server version.
21042	16	The distribution Publisher property, 'distributor_password', has no usage and is not supported for a Distributor running on Windows NT 4.0.
21043	16	The Distributor is not installed.
21044	16	Cannot ignore the remote Distributor (@ignore_remote_distributor cannot be 1) when enabling the database for publishing or merge publishing.
21045	16	Cannot uninstall the Distributor because there are databases enabled for publishing or merge publishing.
21046	16	Cannot change distribution Publisher property 'distribution_db' because the remote Publisher is using the current distribution database.
21047	16	Cannot drop the local distribution Publisher because there are Subscribers defined.
21048	16	Cannot add login '%s' to the publication access list

		because it does not have access to the distribution server '%s'.
21049	16	The login '%s' does not have access permission on publication '%s' because it is not in the publication access list.
21050	16	Only members of the sysadmin or db_owner roles can perform this operation.
21051	16	Could not subscribe because non-SQL Server Subscriber '%s' does not support custom stored procedures.
21052	16	Queued Updating Subscriptions: write to message queue failed.
21053	16	The parameter must be one of the following: 'description', 'status', 'retention', 'sync_mode', 'allow_push', 'allow_pull', 'allow_anonymous', 'enabled_for_internet', 'centralized_conflicts', 'conflict_retention', or 'snapshot_ready'.
21054	16	Updatable Subscribers: RPC to Publisher failed.
21055	15	Invalid parameter %s specified for %s.
21056	16	The subscription to publication '%s' has expired and does not exist.
21057	16	Anonymous Subscribers cannot have updatable subscriptions.
21058	16	An updatable subscription to publication '%s' on Subscriber '%s' already exists.
21059	16	Cannot reinitialize subscriptions of non-immediate_sync publications.
21060	16	Could not subscribe because non-SQL Server Subscriber '%s' does not support parameterized statements.
21061	16	Invalid article status %d specified when adding article '%s'.
21062	16	The row size of table '%s' exceeds the replication limit of 6,000 bytes.
21063	16	Table '%s' cannot participate in updatable subscriptions

		because it is published for merge replication.
21064	16	The subscription is unavailable for immediate updating because it is marked for reinitialization. Try again after the reinitialization completes.
21070	16	This subscription does not support automatic reinitialization (subscribed with the 'no sync' option). To reinitialize this subscription, you must drop and recreate the subscription.
21071	10	Cannot reinitialize article '%s' in subscription '%s:%s' to publication '%s' (subscribed with the 'no sync' option).
21072	16	The subscription has not been synchronized within the maximum retention period or it has been dropped at the Publisher. You must reinitialize the subscription to receive data.
21073	16	The publication specified does not exist.
21074	16	The subscription has been marked inactive and must be reinitialized at the Publisher. Contact the database administrator.
21075	10	The initial snapshot for publication '%s' is not yet available.
21076	10	The initial snapshot for article '%s' is not yet available.
21077	10	Deactivated initial snapshot for anonymous publication(s). New subscriptions must wait for the next scheduled snapshot.
21078	16	Table '%s' does not exist in the Subscriber database.
21079	16	The RPC security information for the Publisher is missing or invalid. Use sp_link_publication to specify it.
21080	16	The 'msrepl_tran_version' column must be in the vertical partition of the article that is enabled for updatable subscriptions; it cannot be dropped.
21081	16	Server setting 'Allow triggers to be fired which fire other triggers (nested triggers)' must exist on updatable Subscribers.
21082	16	Database property 'IsRecursiveTriggersEnabled' has to be false for subscription databases at Subscribers that

		allow updatable subscriptions.
21083	16	Database compatibility level at immediate updating Subscribers cannot be less than 70.
21084	16	Publication '%s' does not allow anonymous subscriptions.
21085	16	The retention period must be less than the retention period for the distribution database.
21086	16	The retention period for the distribution database must be greater than the retention period of any existing non- merge publications.
21087	16	Anonymous Subscribers or Subscribers at this server are not allowed to create merge publications.
21088	10	The initial snapshot for the publication is not yet available.
21107	16	'%ls' is not a table or view.
21108	16	This edition of SQL Server does not support transactional publications.
21109	16	The parameters @xact_seqno_start and @xact_seqno_end must be identical if @command_id is specified.
21110	16	@xact_seqno_start and @publisher_database_id must be specified if @command_id is specified.
21111	16	'%s' is not a valid parameter for the Snapshot Agent.
21112	16	'%s' is not a valid parameter for the Log Reader Agent.
21113	16	'%s' is not a valid parameter for the Distribution Agent.
21114	16	'%s' is not a valid parameter for the Merge Agent.
21115	16	'%s' is not a valid value for the '%s' parameter. The value must be a positive integer.
21116	16	'%s' is not a valid value for the '%s' parameter. The value must be 1, 2, or 3.
21117	16	'%s' is not a valid value for the '%s' parameter. The value must be 0, 1, or 2.
21118	16	'%s' is not a valid value for the '%s' parameter. The value must be greater than or equal to 0 and less than or equal to 10,000.

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21119	16	'%s' is not a valid value for the '%s' parameter. The value must be a non-negative integer.
21120	16	Only members of the sysadmin fixed server role and db_owner fixed database role can drop subscription '%s' to publication '%s'.
21121	16	Only members of the sysadmin fixed server role and '%s' can drop the pull subscription to the publication '%s'.
21122	16	Cannot drop the distribution database '%s' because it is currently in use.
21123	16	The agent profile '%s' could not be found at the Distributor.
21124	16	Cannot find the table name or the table owner corresponding to the alternative table ID(nickname) '%d' in sysmergearticles.
21125	16	A table used in merge replication must have at least one non-computed column.
21126	16	Pull subscriptions cannot be created in the same database as the publication.
21127	16	Only global merge subscriptions can be added to database '%s'.
21128	16	Terminating immediate updating or queued updating INSERT trigger because it is not the first trigger to fire. Use sp_settriggerorder procedure to set the firing order for trigger '%s' to first.
21129	16	Terminating immediate updating or queued updating UPDATE trigger because it is not the first trigger to fire. Use sp_settriggerorder procedure to set the firing order for trigger '%s' to first.
21130	16	Terminating immediate updating or queued updating DELETE trigger because it is not the first trigger to fire. Use sp_settriggerorder procedure to set the firing order for trigger '%s' to first.
21131	16	There are existing subscriptions to heterogeneous publication '%s'. To add new articles, first drop the

		existing subscriptions to the publication.
21132	16	Cannot create transactional subscription to merge publication '%s'. The publication type should be either transactional(0) or snapshot(1) for this operation.
21133	16	Publication '%s' is not enabled to use an independent agent.
21134	16	The specified job ID must identify a Distribution Agent or a Merge Agent job.
21135	16	Detected inconsistencies in the replication agent table. The specified job ID does not correspond to an entry in '%ls'.
21136	16	Detected inconsistencies in the replication agent table. The specified job ID corresponds to multiple entries in '%ls'.
21137	16	This procedure supports only remote execution of push subscription agents.
21138	16	The 'offload_server' property cannot be the same as the Distributor name.
21139	16	Could not determine the Subscriber name for distributed agent execution.
21140	16	Agent execution cannot be distributed to a Subscriber that resides on the same server as the Distributor.
21141	16	The @change_active flag may not be specified for articles with manual filters or views.
21142	16	The SQL Server '%s' could not obtain Windows group membership information for login '%s'. Verify that the Windows account has access to the domain of the login.
21143	16	The custom stored procedure schema option is invalid for a snapshot publication article.
21144	16	Cannot subscribe to publication of sync_type 'dump database' because the Subscriber has subscriptions to other publications.
21145	16	Cannot subscribe to publication %s because the Subscriber has a subscription to a publication of sync_type 'dump database'.

 The '%s' database is not published for merge replication both @subscriber and @subscriberdb must be specified. The '%s' database is not published for transactional or snapshot replication. Unable to determine the snapshot folder for the specified subscription because the specified Subscriber is not known to the Distributor. Pre- and post-snapshot commands are not supported for a publication that may support non-SQL Server Subscribers by using the character-mode bcp as the synchronization method. Cannot create a subscription of sync_type 'none' to a publication using the 'concurrent' or 'concurrent_c' synchronization method. Cannot create article '%s'. All articles that are part of concurrent synchronization publication must use store procedures to apply changes to the Subscriber. Cannot change article '%s'. All articles that are part of concurrent synchronization publication must use store procedures to apply changes to the Subscriber. Cannot change article '%s'. All articles that are part of concurrent synchronization publication must use store procedures to apply changes to the Subscriber. The @status parameter value must be 'initiated' or 'active'. The snapshot compression option can be enabled only for a publication having an alternate snapshot generat folder defined. For a publication to be enabled for the Internet, the 'ftp_address' property must not be null. If a publication is enabled for the Internet, the 'alt_snapshot_folder' property must be non-empty. 	21146	16	@use_ftp cannot be 'true' while @alt_snapshot_folder is neither NULL nor empty.
with non-null values simultaneously, or both must be left unspecified. The '%s' database is not published for transactional or snapshot replication. Unable to determine the snapshot folder for the specified subscription because the specified Subscribe is not known to the Distributor. Pre- and post-snapshot commands are not supported fa publication that may support non-SQL Server Subscribers by using the character-mode bcp as the synchronization method. Cannot create a subscription of sync_type 'none' to a publication using the 'concurrent' or 'concurrent_c' synchronization method. Cannot create article '%s'. All articles that are part of concurrent synchronization publication must use store procedures to apply changes to the Subscriber. Cannot change article '%s'. All articles that are part of concurrent synchronization publication must use store procedures to apply changes to the Subscriber. The @status parameter value must be 'initiated' or 'active'. The snapshot compression option can be enabled only for a publication having an alternate snapshot generat folder defined. The apublication to be enabled for the Internet, the 'ftp_address' property must not be null. If a publication is enabled for the Internet, the 'alt_snapshot_folder' property must be non-empty.	21147	16	The '%s' database is not published for merge replication.
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'alt_snapshot_folder' property must be non-empty.	21158	16	•
21160 16 The Often port parameter cannot be NI II I	21159	16	
The wrip_port parameter cannot be NOLL.	21160	16	The @ftp_port parameter cannot be NULL.

21161	16	Could not change the Publisher because the subscription has been dropped. Use sp_subscription_cleanup to clean up the triggers.
21162	16	It is invalid to exclude the rowguid column for the table from the partition.
21163	16	It is not possible to add column '%s' to article '%s' because the snapshot for publication '%s' has been run.
21164	16	Column '%s' cannot be included in a vertical partition because it is neither nullable nor defined with a default value.
21165	16	Column '%s' cannot be excluded from a vertical partition because it is neither nullable nor defined with a default value.
21166	16	Column '%s' does not exist.
21167	16	The specified job ID does not represent a %s agent job for any push subscription in this database.
21168	16	Only members of the sysadmin fixed server role, members of the db_owner fixed database role, and owners of subscriptions served by the specified replication agent job can modify the agent offload settings.
21169	16	Could not identify the Publisher '%s' at the Distributor '%s'. Make sure that '%s' is registered in the sysservers table at the Distributor.
21170	16	Only a SQL Server 2000 or OLE DB Subscriber can use DTS.
21171	16	Could not find package '%s' in msdb at server '%s'.
21172	16	The publication has to be in 'character' or 'concurrent_c' bcp mode to allow DTS.
21173	16	The publication has to be 'independent_agent type' to allow DTS.
21174	16	You must use default values for @ins_cmd, @upd_cmd, and @del_cmd, and @status can be only 16 or 80 because the publication allows DTS.
21175	16	You cannot change 'ins_cmd','upd_cmd', or 'del_cmd'

		article properties because the publication allows DTS or queued updating option.
21176	16	Only members of the sysadmin fixed server role, db_owner fixed database role, or the creator of the subscription can change the subscription properties.
21177	16	Could not create column list because it is too long. Create the list manually.
21178	16	DTS properties cannot be set because the publication does not allow for data transformation.
21179	16	Invalid @dts_package_location parameter value. Valid options are 'Distributor' or 'Subscriber'.
21180	16	A publication that allows DTS cannot be enabled for updatable subscriptions.
21181	16	@dts_package_name can be set for push subscriptions only.
21182	16	The @agent_type parameter must be one of 'distribution', 'merge', or NULL.
21183	16	Invalid property name '%s'.
21184	16	%s parameter is incorrect: it should be '%s', '%s' or '%s'.
21185	16	The subscription is not initialized or not created for failover mode operations.
21186	16	Subscription for Publisher '%s' does not have a valid queue_id.
21187	16	The current mode is the same as the requested mode.
21188	10	Changed update mode from [%s] to [%s].
21189	16	The queue for this subscription with queue_id = '%s' is not empty. Run the Queue Reader Agent to make sure the queue is empty before setting mode from [queued] to [immediate].
21190	10	Overriding queue check for setting mode from [%s] to [%s].
21191	16	Values for @ins_cmd, @upd_cmd, and @del_cmd can be only [%s], [%s] and [%s] respectively because the publication allows queued transactions.
21192	16	MSrepl_tran_version column is a predefined column

		used for replication and can be only of data type uniqueidentifier
21193	16	@identity_range, @pub_identity_range, or @threshold cannot be NULL when @auto_identity_support is set to TRUE.
21194	16	Cannot support identity_range_control because this table does not have an identity column.
21195	16	A valid identity range is not available. Check the data type of the identity column.
21196	16	Identity automation failed.
21197	16	Failed to allocate new identity range.
21198	16	Schema replication failed.
21199	16	This change cannot take effect until you run the snapshot again.
21200	16	Publication '%s' does not exist.
21201	16	Dropping a column that is being used by a merge filter clause is not allowed.
21202	16	It is not possible to drop column '%s' to article '%s' because the snapshot for publication '%s' has already been run.
21203	10	Duplicate rows found in %s. Unique index not created.
21204	16	The publication '%s' does not allow subscription copy or its subscription has not been synchronized.
21205	16	The subscription cannot be attached because the publication does not allow subscription copies to synchronize changes.
21206	16	Cannot resolve load hint for object %d because the object is not a user table.
21207	16	Cannot find source object ID information for article %d.
21208	16	This step failed because column '%s' exists in the vertical partition.
21209	16	This step failed because column '%s' does not exist in the vertical partition.
21210	16	The publication must be immediate_sync type to allow

		subscription copy.
21211	16	The database is attached from a subscription copy file without using sp_attach_subscription. Drop the database and reattach it using sp_attach_subscription.
21212	16	Cannot copy subscription. Only single file subscription databases are supported for this operation.
21213	16	Non-SQL Server Subscribers cannot subscribe to publications that allow DTS without using a DTS package.
21214	16	Cannot create file '%s' because it already exists.
21215	16	An alternate synchronization partner can be configured only at the Publisher.
21216	16	Publisher '%s', publisher database '%s', and publication '%s' are not valid synchronization partners.
21217	10	Publication of '%s' data from Publisher '%s'.
21218	16	The creation_script property cannot be NULL if a schema option of 0x0000000000000000 is specified for the article.
21219	16	The specified source object must be a stored procedure object if it is published as a 'proc schema only' type article.
21220	16	Unable to add the article '%s' because a snapshot has been generated for the publication '%s'.
21221	16	The specified source object must be a view object if it is going to be as a 'view schema only' type article.
21222	16	The @schema_option parameter for a procedure or function schema article can include only the options 0x00000000000000000000000000000000000
21223	16	The @pre_creation_command parameter for a schema only article must be either 'none' or 'drop'.
21224	16	'%s' is not a valid property for a schema only article.
21225	16	The 'offload_server' property cannot be NULL or empty if the pull subscription agent is to be enabled for remote activation.
21226	16	The database '%s' does not have a pull subscription to

		the specified publication.
21227	16	The 'offload_server' property cannot be the same as the Subscriber server name.
21228	16	The specified source object must be a user-defined function object if it is going to be published as a 'func schema only' type article.
21229	16	The only schema options available for a view schema article are: 0x000000000000001, 0x000000000000000000
21230	16	Do not call this stored procedure for schema change because the current database is not enabled for replication.
21231	16	Automatic identity range support is useful only for publications that allow queued updating.
21232	16	Identity range values must be positive numbers that are greater than 1.
21233	16	Threshold value must be from 1 through 100.
21234	16	Cannot use the INSERT command because the table has an identity column. The insert custom stored procedure must be used to set 'identity_insert' settings at the Subscriber.
21235	16	Article property '%s' can be set only when the article uses automatic identity range management.
21236	16	The subscription(s) to Publisher '%s' does not allow subscription copy or it has not been synchronized.
21237	16	There is a push subscription to Publisher '%s'. Only pull and anonymous subscriptions can be copied.
21238	16	There is a push subscription to publication '%s'. Only pull and anonymous subscriptions can be copied.
21239	16	Cannot copy subscriptions because there is no synchronized subscription found in the database.
21240	16	The table '%s' is already published as another article with a different automatic identity support option.
21241	16	The threshold value should be from 0 through 99.

21242	16	Conflict table for article '%s' could not be created successfully.
21243	16	Publisher '%s', publication database '%s', and publication '%s' could not be added to the list of synchronization partners.
21244	16	Character mode publication does not support vertical filtering when the base table does not support column-level tracking.
21245	16	Table '%s' is not part of publication '%s'.
21246	16	This step failed because table '%s' is not part of any publication.
21247	16	Cannot create file at '%s'. Ensure the file path is valid.
21248	16	Cannot attach subscription file '%s'. Ensure the file path is valid and the file is updatable.
21249	16	OLE DB or ODBC Subscribers cannot subscribe to article '%s' in publication '%s' because the article has a timestamp column and the publication is 'allow_queued_tran' (allows queued updating subscriptions).
21250	16	Primary key column '%s' cannot be excluded from a vertical partition.
21251	16	Publisher '%s', publisher database '%s', publication '%s' could not be removed from the list of synchronization partners.
21252	16	It is invalid to remove the default Publisher '%s', publication database '%s', and publication '%s' from the list of synchronization partners
21253	16	Parameter '@add_to_active_directory' cannot be set to TRUE because Active Directory client package is not installed properly on the machine where SQL Server is running.
21254	16	The Active Directory operation on publication '%s' could not be completed because Active Directory client package is not installed properly on the machine where SQL Server is running.

21255	16	Column '%s' already exists in table '%s'.
21256	16	A column used in filter clause '%s' either does not exist in the table '%s' or cannot be excluded from the current partition.
21257	16	Invalid property '%s' for article '%s'.
21258	16	You must first drop all existing merge publications to add an anonymous or local subscription to database '%s'.
21259	16	Invalid property value '%s'.
21260	16	Schema replication failed because database '%s' on server '%s' is not the original Publisher of table '%s'.
21261	16	The offload server must be specified if the agent for this subscription is to be offloaded for remote execution.
21262	16	Failed to drop column '%s' from the partition because a computed column is accessing it.
21263	16	Parameter '%s' cannot be NULL or an empty string.
21264	16	Column '%s' cannot be dropped from table '%s' because it is a primary key column.
21265	16	Column '%s' cannot be dropped from table '%s' because there is a unique index accessing this column.
21266	16	Cannot publish table '%s' for both a merge publication and a publication with the queued updating option .
21267	10	Invalid value for queue type was specified. Valid values = (%s).
21268	10	Cannot change queue type while there are subscriptions to the publication.
21269	16	Cannot add a computed column or a timestamp column to a vertical partition for a character mode publication.
21270	10	Queued snapshot publication property '%s' cannot have the value '%s'.
21272	16	Cannot clean up the meta data for publication '%s' because other publications are using one or more articles in this publication.
21273	16	You must upgrade the Subscriber to SQL Server 2000 to

		create updatable subscriptions to SQL Server 2000 Publishers.
21274	16	Invalid publication name '%s'.
21275	16	The schema-bound view '%ls' can be published only as 'indexed view schema only' or a log-based indexed view (transactional only) article.
21276	16	The type must be 'table' or '(view indexed view proc func) schema only'.
21277	16	The source object '%ls' must be a schema-bound view to be published as 'indexed view schema only' or a log-based indexed view article.
21278	16	The source object '%ls' must be a schema-bound view with at least a clustered index to be published as a log-based indexed view article.
21279	16	The 'schema_option' property for a merge article cannot be changed after a snapshot is generated for the publication. To change the 'schema_option' property of this article the corresponding merge publication must be dropped and re-created.
21280	16	Publication '%s' cannot be subscribed to by Subscriber database '%s' because it contains one or more articles that have been subscribed to by the same Subscriber database at transaction level.
21281	16	Publication '%s' cannot be subscribed to by Subscriber database '%s' because it contains one or more articles that have been subscribed to by the same Subscriber database at merge level.
21282	16	@identity_range, @pub_identity_range, and @threshold must be NULL when @auto_identity_support is set to FALSE.
21283	16	Column '%s' of table '%s' cannot be excluded from a vertical partition because there is a computed column that depends on it.
21284	16	Failed to drop column '%s' from table '%s'.
21285	16	Failed to add column '%s' to table '%s'.

21286	16	Conflict table '%s' does not exist.
21287	16	The specified @destination_folder is not a valid path of an existing folder.
21288	16	Could not create the snapshot directory structure in the specified @destination_folder.
21289	16	Either the snapshot files have not been generated or they have been cleaned up.
21290	16	Identity range value is too large for the data type of the identity column.
21291	16	The specified automatic identity support parameters conflict with the settings in another article.
21292	16	Object '%s' cannot be published twice in the same publication.
21293	10	Warning: adding updatable subscription for article '%s' may cause data inconsistency as the source table is already subscribed to '%s'
21294	16	Either @publisher (and @publisher_db) or @subscriber (and @subscriber_db) must be specified, but both cannot be specified.
21295	16	Publication '%s' does not contain any article that uses automatic identity range management.
21296	16	Parameter @resync_type must be either 0, 1, 2.
21297	16	Invalid resync type. No validation has been performed for this subscription.
21298	16	Failed to resynchronize this subscription.
21299	16	Invalid Subscriber partition validation expression '%s'.
21300	10	The resolver information was specified without specifying the resolver to be used for article '%s'. The default resolver will be used.
21301	16	The resolver information should be specified while using the '%s' resolver.
21302	16	The resolver information should specify a column with data type, datetime, or smalldatetime while using the '%s' resolver.
21303	16	The article '%s' should enable column tracking to use

		the '%s' resolver. The default resolver will be used to resolve conflicts on this article.
21304	16	The merge triggers could not be created on the table '%s'.
21305	16	The schema change information could not be updated at the subscription database.
21306	16	The copy of the subscription could not be made because the subscription to publication '%s' has expired.
21307	16	The subscription could not be attached because the subscription to publication '%s' has expired.
21308	10	Rowcount validation profile.
21309	10	Profile used by the Merge Agent to perform rowcount validation.
21310	10	Rowcount and checksum validation profile.
21311	10	Profile used by the Merge Agent to perform rowcount and checksum validation.
21312	10	Cannot change this publication property because there are active subscriptions to this publication.
21313	10	Subscriber partition validation expression must be NULL for static publications.
21314	10	There must be one and only one of '%s' and '%s' that is not NULL.
21315	10	Failed to adjust Publisher identity range for table '%s'.
21316	10	Failed to adjust Publisher identity range for publication '%s'.
21317	10	A push subscription to the publication '%s' already exists. Use sp_mergesubscription_cleanup to drop defunct push subscriptions.
21318	10	Table '%s' must have at least one column that is included in the vertical partition.
21319	16	Could not find the Snapshot Agent command line for the specified publication.
21320	16	This version of the Publisher cannot use a SQL Server 7.0 Distributor.

16	The parameter @dynamic_snapshot_location cannot be an empty string.
16	A dynamic snapshot job can be scheduled only for a publication with dynamic filtering enabled.
16	A Snapshot Agent must be added for the specified publication before a dynamic snapshot job can be scheduled.
16	Could not find the Snapshot Agent ID for the specified publication.
16	Could not find the dynamic snapshot job with a '%ls' of '%ls' for the specified publication.
16	'%ls' is not a valid dynamic snapshot job name.
16	The specified dynamic snapshot job name '%ls' is already in use. Try the operation again with a different job name.
16	Only one of the parameters, @dynamic_snapshot_jobid or @dynamic_snapshot_jobname, can be specified with a nondefault value.
16	Failed to create a sub-directory under the replication working directory.(%ls)
16	Failed to copy user script file to the Distributor.(%ls)
16	Failed to retrieve information about the publication : %ls. Check the name again.
16	Protocol error. Message indicates a generation has disappeared.
16	Cannot initialize Message Queuing-based subscription because the platform is not Message Queuing %s compliant
16	Warning: column '%s' already exists in the vertical partition already.
16	Warning: column '%s' does not exist in the vertical partition.
16	Invalid @subscriber_type value. Valid options are 'local' and 'global'.
	16 16 16 16 16 16 16 16 16 16 16 16 16 1

21338	16	Cannot drop article '%s' from publication '%s' because its snapshot has been run and this publication could have active subscriptions.
21339	10	Warning: the publication uses a feature that is only supported only by Ssubscribers running '%s' or higher.
21340	16	On Demand user script cannot be applied to the snapshot publication.
21341	16	@dynamic_snapshot_location cannot be a non-empty string while @alt_snapshot_folder is neither empty nor null.
21342	16	@dynamic_snapshot_location cannot be a non-empty string while @use_ftp is 'true'.
21343	16	Could not find stored procedure '%s'.
21344	16	Invalid value specified for %ls parameter.
21345	16	Excluding the last column in the partition is not allowed.
21346	16	Failed to change the owner of '%s' to '%s'.
21347	16	Column '%s' cannot be excluded from the vertical partitioning because there is a unique index accessing this column.
21348	16	Invalid property name '%s'.
21349	10	Warning: only Subscribers running SQL Server 7.0 Service Pack 2 or later can synchronize with publication '%s' because decentralized conflict logging is designated.
21350	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because a compressed snapshot is used.
21351	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because vertical filters are being used.
21352	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because schema replication is performed.
21353	10	Warning: only Subscribers running SQL Server 7.0

		Service Pack 2 or later can synchronize with publication '%s' because publication wide reinitialization is performed.
21354	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because publication wide reinitialization is performed.
21355	10	Warning: only Subscribers running SQL Server 7.0 Service Pack 2 or later can synchronize with publication '%s' because merge metadata cleanup task is performed.
21356	10	Warning: only Subscribers running SQL Server 7.0 Service Pack 2 or later can synchronize with publication '%s' because publication wide validation task is performed.
21357	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because data types new in SQL Server 2000 exist in one of its articles.
21358	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because at least one timestamp column exists in one of its articles
21359	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because automatic identity ranges are being used.
21360	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because a new article has been added to the publication after its snapshot has been generated.
21361	16	The specified @agent_jobid is not a valid job id for a '%s' agent job.
21362	16	Merge filter '%s' does not exist.
21363	16	Failed to add publication '%s' to Active Directory. %s.
21364	16	Could not add article '%s' because a snapshot is already generated. Set @force_invalidate_snapshot to 1 to force this and invalidate the existing snapshot.
21365	16	Could not add article '%s' because there are active

		subscriptions. Set @force_reinit_subscription to 1 to force this and reintialize the active subscriptions.
21366	16	Could not add filter '%s' because a snapshot is already generated. Set @force_invalidate_snapshot to 1 to force this and invalidate the existing snapshot.
21367	16	Could not add filter '%s' because there are active subscriptions. Set @force_reinit_subscription to 1 to force this and reinitialize the active subscriptions.
21368	16	The specified offload server name contains the invalid character '%s'.
21369	16	Could not remove publication '%s' from Active Directory.
21370	16	The resync date specified '%s' is not a valid date.
21371	10	Could not propagate the change on publication '%s' to Active Directory.
21372	16	Cannot drop filter '%s' from publication '%s' because its snapshot has been run and this publication could have active subscriptions.
21373	11	Could not open database %s. Replication settings and system objects could not be upgraded. If the database is used for replication, run sp_vupgrade_replication in the [master] database when the database is available.
21374	10	Upgrading distribution settings and system objects in database %s.
21375	10	Upgrading publication settings and system objects in database %s.
21376	11	Could not open database %s. Replication settings and system objects could not be upgraded. If the database is used for replication, run sp_vupgrade_replication in the [master] database when the database is available.
21377	10	Upgrading subscription settings and system objects in database %s.
21378	16	Could not open distribution database %s because it is offline or being recovered. Replication settings and

		system objects could not be upgraded. Be sure this database is available and run sp_vupgrade_replication again.
21379	16	Cannot drop article '%s' from publication '%s' because a snapshot is already generated. Set @force_invalidate_snapshot to 1 to force this and invalidate the existing snapshot.
21380	16	Cannot add identity column without forcing reinitialization. Set @force_reinit_subscription to 1 to force reinitialization.
21381	16	Cannot add (drop) column to table '%s' because the table belongs to publication(s) with an active updatable subscription. Set @force_reinit_subscription to 1 to force reinitialization.
21382	16	Cannot drop filter '%s' because a snapshot is already generated. Set @force_invalidate_snapshot to 1 to force this and invalidate the existing snapshot.
21383	16	Cannot enable a merge publication on this server because the working directory of its Distributors is not using a UNC path.
21384	16	The specified subscription does not exist or has not been synchronized yet.
21385	16	Snapshot failed to process publication '%s'. Possibly due to active schema change activity.
21386	16	Schema change failed on publication '%s'. Possibly due to active snapshot or other schema change activity.
21387	16	The expanded dynamic snapshot view definition of one of the articles exceeds the system limit of 3499 characters. Consider using the default mechanism instead of the dynamic snapshot for initializing the specified subscription.
21388	10	The concurrent snapshot for publication '%s' has not been activated by the Log Reader Agent.
21389	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because column-

		level collation is scripted out with the article schema creation script.
21390	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because extended properties are scripted out with the article schema creation script.
21391	10	Warning: only Subscribers running SQL Server 2000 can synchronize with publication '%s' because it contains schema-only articles.
21392	16	Row filter(%s) is invalid for column partition(%s) for article '%s' in publication '%s'.
21393	16	Dropping row filter(%s) for article '%s' in '%s'. Reissue sp_articlefilter and sp_articleview to create a row filter.
21394	16	Invalid schema option specified for Queued updating publication. Need to set the schema option to include DRI constraints.
21395	10	This column cannot be included in a transactional publication because the column ID is greater than 255.
21396	16	The subscription is marked inactive and must be dropped and re-created.
21400	16	Article property must be changed at the original Publisher of article '%s'.
21401	16	Article name cannot be 'all'.
21402	16	Incorrect value for parameter "%s"
21403	10	The 'max_concurrent_dynamic_snapshots' publication property must be greater than or equal to zero.
21404	10	'%s' is not a valid value for the '%s' parameter. The value must be a positive integer greater than 300 or 0.
21405	10	'%s' is not a valid value for the '%s' parameter. The value must be an integer greater than or equal to %d.
21406	10	'%s' is not a valid value for the '%s' parameter. The value must be 0 or 1.
21413	16	Failed to acquire the application lock indicating the front of the queue.

21414	10	Unexpected failure acquiring application lock.
21415	10	Unexpected failure releasing application lock.
21416	10	Property "%s" of article "%s" cannot be changed.
21417	10	Having a queue timeout value of over 12 hours is not allowed.
21418	10	Failed to add column "%s" to table "%s" because of metadata overflow.
21419	10	Filter "%s" of article "%s" cannot be changed.
21420	10	Subscription property "%s" cannot be changed.
21421	10	Article "%s" cannot be dropped because there are other articles using it as a join article.
21500	10	Invalid subscription type is specified. A subscription to publication '%s' already exists in the database with a different subscription type.
21501	10	The supplied resolver information does not specify a valid column name to be used for conflict resolution by '%s'.
21502	10	The publication '%s' does not allow the subscription to synchronize to an alternate synchronization partner.

Resolving System Error Messages

This topic identifies system error messages for which additional information or user action is provided.

Error 103

Severity Level 15

Message Text

The %S_MSG that starts with '%.*ls' is too long. Maximum length is %d.

Explanation

If you enclose a character string that is more than 128 characters in double quotation marks, the application may receive this error. When the QUOTED_IDENTIFIERS option is set ON (SET QUOTED_IDENTIFIERS ON), Microsoft® SQL Server™ expects quoted identifiers to be enclosed in double quotation marks (") and data values to be enclosed in single quotation marks ('). In the case of character parameters of stored procedures, SQL Server accepts data values enclosed in double quotation marks if the character string is less than 128 characters. They should be considered syntax errors by SQL Server and generate an error.

You can also see this in ODBC applications using the SQL Server ODBC driver versions 2.50.0121 and later. These drivers set QUOTED_IDENTIFIERS ON when run against a SQL Server version 6.x or later server so that the ODBC driver's behavior more closely matches the ANSI and ODBC standards. ODBC applications that use double quotation marks for parameter values may see this behavior after you upgrade to SQL Server 6.x or later and the ODBC 2.50.0121 or later driver.

This behavior has been seen when using stored procedures that contain nested stored procedure execution with parameters delimited in double quotation marks (such as **xp_cmdshell**) from ODBC applications such as Microsoft Internet Information Service (IIS).

SQL Server does not always flag stored procedure parameters enclosed in double quotation marks if the SET QUOTED_IDENTIFIER ON option has been issued.

Action

Change the procedure call to enclose the parameter values in single quotation marks:

EXECUTE myproc 1, 'abcdefghijklmn'

ODBC applications can also use bound parameter markers instead of providing the values directly using either proprietary Transact-SQL syntax:

SQLExecDirect(hstmt, "EXECUTE myproc?,?", SQL_NTS);

or, the ODBC standard syntax:

SQLExecDirect(hstmt, "{ call myproc (?,?)}", SQL_NTS);

In these cases, you may be able to work around the problem by placing a SET QUOTED_IDENTIFIER OFF statement at the beginning of the stored procedure. This setting will be in effect only for the scope of the stored procedure and will not affect other statement execution outside of the stored procedure.

See Also

Errors 1 - 999

EXECUTE

SET QUOTED IDENTIFIER

Using Identifiers

Error 107

Severity Level 15

Message Text

The column prefix '%.*ls' does not match with a table name or alias name used in the query.

Explanation

A column prefix was specified that does not correspond to any table name specified in the query. Match the column prefixes against the table names and alias names in the FROM clause.

One common cause of this error is the use of a table name when an alias name for the table is also supplied. When working with a table alias (a correlation name in ANSI terminology), the syntax checking in Microsoft® SQL ServerTM complies with the ANSI specification. ANSI states,

A ... is exposed ... if and only if the does not specify a <correlation name>.

If an alias has been provided for a table name in the FROM clause, you can use the alias only to qualify columns from the table; the table name cannot be used elsewhere in the statement because they are flagged as syntax errors.

As an example of the difference in behavior, assume this script has been executed:

USE Northwind GO SELECT Customers.ContactName FROM Customers cu WHERE ContactName LIKE 'C%' GO
SELECT cu.ContactName
FROM Customers cu
WHERE Customers.ContactName LIKE 'C%'
GO

In both SELECT statements, notice the use of **Customers** to qualify the column **ContactName** even though a table alias of **cu** has been provided to substitute for the table name. Both of these queries return this error message:

Server: Msg 107, Level 16, State 3

The column prefix 'Customers' does not match with a table name or alias name used in the query.

Action

Use the column prefix that corresponds to the exposed name of the table.

Rewrite any queries where column names are qualified with the table name. Use the table alias instead. For example, this SELECT statement is equivalent to the ones above and uses a table alias for column qualification:

USE Northwind
GO
SELECT cu.ContactName
FROM Customers cu
WHERE cu.ContactName LIKE 'C%'
GO

See Also

Errors 1 - 999

Query Fundamentals

SELECT

Using Table Aliases

Error 109

Severity Level 15

Message Text

There are more columns in the INSERT statement than values specified in the VALUES clause. The number of values in the VALUES clause must match the number of columns specified in the INSERT statement.

Explanation

This error occurs when more columns are listed in the INSERT statement than values specified in the VALUES clause. The number of values in the VALUES clause must match the number of columns specified in the INSERT statement.

Do not confuse error 109 with operating-system error 109. Operating-system error 109 means that a named pipe connection has been terminated.

Action

Rewrite the INSERT statement, ensuring that the number of columns specified matches the number of columns in the VALUES clause. For example:

INSERT t1 (col1,col2,col3) VALUES (val1,val2,val3)

See Also

INSERT

Error 137

Severity Level 15

Message Text

Must declare the variable '%.*ls'.

Explanation

This error occurs when a variable is used in a SQL script without first declaring the variable. This example returns error 137:

SET @mycol = 'ContactName' SELECT @mycol GO

One of the more complicated causes of this error includes the use of a variable that was declared outside the EXECUTE statement. For example:

USE Northwind
GO
DECLARE @mycol nvarchar(20)
SET @mycol = 'ContactName'
EXECUTE ('SELECT @mycol FROM Customers')

Action

Verify that any variables used in a SQL script are declared before being used elsewhere in the script.

Rewrite the procedure so that it does not reference variables in the EXECUTE statement that were declared outside of it.

USE Northwind

GO

DECLARE @mycol nvarchar(20)
SET @mycol = 'ContactName'
EXECUTE ('SELECT ' + @mycol + ' FROM Customers')

See Also

DECLARE @local_variable

Errors 1 - 999

EXECUTE

SELECT @local_variable

SET @local_variable

Error 156

Severity Level 15

Message Text

Incorrect syntax near the keyword '%.*ls'.

Explanation

This error indicates that the syntax of a Transact-SQL statement is incorrect and that the syntax error was detected near the keyword specified in the error message. The most frequent causes for syntax errors are misspellings of Transact-SQL keywords or operators, and specifying the syntax of a Transact-SQL statement in the wrong order.

One of the more complicated causes for this error may be a compatibility level mismatch for the current database. If the current database has a compatibility level other than 70, Microsoft® SQL ServerTM will not recognize any of the keywords that a database with a compatibility level of 70 would recognize.

Action

First, check the Transact-SQL statement syntax near the keyword specified in the error message. Because Transact-SQL language syntax can be very complex, SQL Server may incorrectly report the position of the syntax error as later in the Transact-SQL statement than it actually occurred. Second, reexamine the entire Transact-SQL statement that generated the error. Verify the syntax order of the statement.

Ensure that the database does not have a compatibility level of 65 and has a compatibility level of 70.

See Also

Backward Compatibility

Errors 1 - 999

Transact-SQL Overview

Reserved Keywords

sp_dbcmptlevel

Error 170

Severity Level 15

Message Text

Line %d: Incorrect syntax near '%.*ls'.

Explanation

This error indicates that the syntax of a Transact-SQL statement is incorrect and that the syntax error was detected near the Transact-SQL syntax element specified in the error message. The most frequent causes for syntax errors are misspellings of Transact-SQL syntax elements or operators, and specifying the syntax of a Transact-SQL statement in the wrong order.

This example produces error 170:

USE Northwind
GO
SELECT &
FROM Categories
ORDER BY CategoryName ASC

Action

First, check the Transact-SQL statement syntax near the syntax element specified in the error message. Because Transact-SQL language syntax can be very complex, Microsoft® SQL ServerTM may report the syntax error later in the Transact-SQL statement syntax than it actually occurred. Second, reexamine the entire Transact-SQL statement that generated the error. Verify the syntax order of the statement.

In the above example, changing the ampersand (&) to an asterisk (*) corrects the problem:

USE Northwind GO SELECT * FROM Categories ORDER BY CategoryName ASC

See Also

<u>Errors 1 - 999</u>

Transact-SQL Overview

Error 207

Severity Level 16

Message Text

Invalid column name '%.*ls'.

Explanation

This error occurs when a column referenced in a Transact-SQL statement was not found in any table specified in the FROM clause of the query.

Action

Change the column name to a column name present in one of the tables referenced in the query.

This example returns error 207:

USE Northwind GO SELECT CategoryName1 FROM Categories GO

Evaluate the problem by looking at the full command. For the above example, ensure that the SELECT statement contains the name of a valid column name (**CategoryName** rather than **CategoryName1** as specified above) for the specified table.

USE Northwind GO SELECT CategoryName FROM Categories

GO

See Also

<u>Errors 1 - 999</u>

SELECT

Error 208

Severity Level 16

Message Text

Invalid object name '%.*ls'.

Explanation

This error occurs when an object that does not exist is referenced. If the object exists, you might need to include the owner's name in the object name.

If the object is not owned by the user attempting to access it, and it is not owned by the database owner, all references to the object must include the owner's name. For example, if **user1** creates a table called **test**, other users must use the name **user1.test** when they refer to the table.

The Microsoft® SQL Server™ naming convention for database objects is:

[[[server_name.][database_name].][owner_name].]object_name

The default value for <code>server_name</code> is the current server and the default value for <code>database_name</code> is the current database. The default value for <code>owner_name</code> is the current user. Because <code>owner_name</code> is part of the object name, it is possible for two different users to have tables with the same name in the same database (for example, <code>user1.test</code> and <code>user2.test</code>). For more information about naming conventions, see Transact-SQL Syntax Conventions.

This message can also occur when you reference a temporary table that was created with an EXECUTE statement.

Action

The procedure for handling this error depends on what you know about the object indicated in the error message text.

The appropriate permissions must also be set to allow access to an object. If

these permissions are not set, error 229 or 230 occurs.

If you do not know who owns the object

Or

- Execute **sp_help** with no parameters to display the object owner.
- Query the Information Schema Views if the object is a table or view to determine the object owner and type. If the object is not a table or a view, query the **sysobjects** system table to determine the object owner and type.

For example, to determine the owner and type for the object named **table_1**, execute the following:

```
USE master
GO
SELECT TABLE_SCHEMA
FROM INFORMATION_SCHEMA.TABLES
WHERE TABLE_NAME = 'table_1'
GO
```

If no rows are returned from this query, the object either resides in a different database or does not exist.

If you do not own the object in question

 Include the object owner in the object name. For example: SELECT * FROM user1.table_1

Although using fully qualified object names eliminates this problem, remember that including the fully qualified object name in an application might complicate the maintenance of the application. For example, if all references to a table include the database name, changing the database name could become difficult.

Or

Have the database owner create the object. If the owner creates the object, any user can find the object without specifying the owner.
 However, temporary tables reside in **tempdb** and are dropped automatically when the user process or server connection that created them is terminated. Users cannot share temporary tables, even if they are created by the database owner.

If the object does not reside in the database

• Switch context to the correct database using the USE statement. For example:

USE database_1

Or

• Qualify the object name with the database name. For example:

SELECT*

FROM database_1.user1.table_1

If you own the object or if the object is owned by the database owner, the owner name is not needed. For example:

SELECT * FROM database_1..table_1

If a temporary table created with an EXECUTE statement is referenced

• If you must use the EXECUTE statement to create a temporary table, create it as a global temporary table using the syntax **##tablename**.

See Also

CREATE TABLE

Creating and Modifying a Table

Errors 1 - 999

EXECUTE

Information Schema Views

Querying SQL Server System Catalogs

SELECT

sp_help

sysobjects

Transact-SQL Syntax Conventions

<u>USE</u>

Error 220

Severity Level 16

Message Text

Arithmetic overflow error for data type %ls, value = %ld.

Explanation

This error occurs when an attempt is made to convert a **float** or **real** data type value into a data type that cannot store the result. This error prevents the operation from being completed. For example, if you attempt to place the number 32770 into a variable or column of **smallint** data type, Microsoft® SQL ServerTM returns this error because variables or columns of **smallint** data type can address integers from 215 (–32,768) through 215 (32,767).

This example raises the error:

DECLARE @myval smallint SET @myval = 32770 SELECT @myval GO

Action

For numeric operations, use the ROUND, CAST, and CONVERT functions to manipulate the value in question to fit into the column or variable. Change the data type of the column or variable in question. In the example described above, change the column or variable from **smallint** to **int**).

Here is the corrected example:

DECLARE @myval int SET @myval = 32770 SELECT @myval

GO

See Also

CAST and CONVERT

Data Types

Errors 1 - 999

ROUND

Error 229

Severity Level 14

Message Text

%ls permission denied on object '%.*ls', database '%.*ls', owner '%.*ls'.

Explanation

This error occurs when a Microsoft® SQL ServerTM user attempts an action, such as executing a stored procedure, or reading or modifying a table, for which the user does not have the appropriate privileges.

Action

Any user with full-control over the object in question (such as the object owner or system administrator) can grant the necessary privileges to the user requiring access to the object.

See Also

Errors 1 - 999

EXECUTE

GRANT

Managing Permissions

SELECT

UPDATE

Error 245

Severity Level 16

Message Text

Syntax error converting the %ls value '%.*ls' to a column of data type %ls.

Explanation

Microsoft® SQL Server™ returns this message if a character is converted to an integer. For example, these SELECT statements return error 245:

SELECT CONVERT(int, 'A')
-- Or
SELECT CAST('A' AS int)

SQL Server returns this error message because a conversion from a character value to an integer can only be done if it resembles a numeric value. For example, the character 1 (one) can be converted to an integer.

SELECT CONVERT(int, '1')
-- Or
SELECT CAST('1' AS int)

Action

To convert a character to an integer, use the ASCII function, which returns a numerical representation of the character. For example:

SELECT CONVERT(int, ASCII('A'))
-- Or
SELECT CAST(ASCII('A') AS int)

See Also

<u>ASCII</u>

CAST and CONVERT

Data Types

Errors 1 - 999

Error 259

Severity Level 16

Message Text

Ad hoc updates to system catalogs are not enabled. The system administrator must reconfigure SQL Server to allow this.

Explanation

This error occurs when Microsoft® SQL ServerTM detected an attempt to modify the system catalogs directly while the **allow updates** system configuration option of **sp_configure** is set to 0.

The **allow updates** system configuration option allows the system administrator to change the system catalogs directly.

Warning Severe problems can result from the direct manipulation of the system catalogs. Do not modify the system catalogs unless instructed to do so by your primary support provider.

Action

Before modifying any system catalogs, be sure that you have a valid backup of the database.

WARNING Incorrect modification of the system catalogs can result in database corruption or data loss.

If possible, restart SQL Server in single-user mode by using the **-m** flag of the **sqlservr** application so that inadvertent modifications do not occur. For more information, see <u>sqlservr Application</u>.

To modify system catalogs, use the **osql** utility to alter the **allow updates** system configuration setting.

Note Only the system administrator can alter the value for the **allow updates** system configuration setting.

See Also

allow updates Option

Backing Up and Restoring Databases

Errors 1 - 999

osql Utility

RECONFIGURE

Reporting Errors to Your Primary Support Provider

Setting Configuration Options

sp_configure

Using Startup Options

Error 266

Severity Level 16

Message Text

Transaction count after EXECUTE indicates that a COMMIT or ROLLBACK TRANSACTION statement is missing. Previous count = %ld, current count = %ld.

Explanation

If a stored procedure exits with the @@TRANCOUNT value that is not the same as when the stored procedure was entered, Microsoft® SQL ServerTM returns error 266.

Note This error can be ignored because it only sends a message to the client and does not affect execution.

This example reproduces the problem:

CREATE PROCEDURE test

AS

SELECT @@TRANCOUNT

ROLLBACK TRANSACTION

SELECT @@TRANCOUNT

GO

BEGIN TRANSACTION

EXECUTE test

GO

Because @@TRANCOUNT is not the same in both SELECT statements, error 266 is generated on return from the stored procedure.

This is expected behavior, but it does not mean that transactions cannot be

started, completed, or terminated in a stored procedure. Instead, care must be taken so that the @@TRANSACTION function matches on both the entry and exit of the stored procedure. For more information, see ROLLBACKTRANSACTION.

This problem is more likely to occur when writing nested stored procedures.

Action

There is a solution so that the stored procedure works without the error. The following is a list of solutions, with sample code for each:

1. Perform final COMMIT TRANSACTION or ROLLBACK TRANSACTION statements from the same stored procedure nesting level where the transaction began, as shown by the following examples:

-- Example 1.a

CREATE PROCEDURE test1a

AS

SELECT @@TRANCOUNT

GO

BEGIN TRANSACTION

EXECUTE test1a

ROLLBACK TRANSACTION

GO

-- Example 1.b

CREATE PROCEDURE test1c

AS

SELECT @@TRANCOUNT

GO

CREATE PROCEDURE test1b

AS

BEGIN TRANSACTION

EXEC test1c

COMMIT TRANSACTION

GO

EXECUTE test1b GO

2. If nested transactions are used in a stored procedure, perform matching commits.

Note The transaction is not committed until @@TRANCOUNT is equal to 0 (zero).

-- Example 2

CREATE PROCEDURE test2b

AS

SELECT @@TRANCOUNT

BEGIN TRANSACTION

SELECT @@TRANCOUNT

COMMIT TRANSACTION

SELECT @@TRANCOUNT

GO

CREATE PROCEDURE test2a

AS

BEGIN TRANSACTION

EXECUTE test2b

COMMIT TRANSACTION

GO

EXECUTE test2a

GO

- 3. If a rollback is needed and the stored procedure nesting level is different than where the transaction began, use RAISERROR, with a valid user-defined error, and check the @@ERROR function after the EXECUTE statement.
 - -- Example 3

USE master

EXECUTE sp_addmessage 50001, 16, 'Rollback of transactio GO

```
CREATE PROCEDURE test3
  AS
  RAISERROR (50001,16,1)
  BEGIN TRANSACTION
  EXEC test3
    IF @@error <> 50001
       BEGIN
         PRINT 'Commit'
         COMMIT TRANSACTION
      END
    ELSE
      BEGIN
         PRINT 'Rollback'
         ROLLBACK TRANSACTION
      END
  GO
4. The exception to this rule is that if a trigger performs a rollback,
  @@TRANCOUNT need not match its starting value, because the
  batch is terminated. However, a stored procedure called by a trigger
  may cause the problem if it terminated the transaction.
  -- Example 4
  CREATE TABLE x (col1 int)
  GO
  CREATE TRIGGER xins
    ON x
    FOR INSERT AS
      ROLLBACK TRANSACTION
  GO
  CREATE PROCEDURE sp_xinsert
  AS
    SELECT @@TRANCOUNT
```

```
INSERT x (col1) VALUES (1)
 SELECT @@TRANCOUNT
GO
BEGIN TRANSACTION
EXECUTE sp_xinsert
 IF @@error <> 0
   BEGIN
     PRINT 'Commit'
     COMMIT TRANSACTION
   END
 ELSE
   BEGIN
     PRINT 'Rollback'
     ROLLBACK TRANSACTION
   END
GO
SELECT*
FROM x
```

See Also

@@ERROR

@@TRANCOUNT

BEGIN TRANSACTION

COMMIT TRANSACTION

Errors 1 - 999

EXECUTE

ROLLBACK TRANSACTION

Transactions

Error 268

Severity Level 16

Message Text

Cannot run SELECT INTO in this database. The database owner must run sp_dboption to enable this option.

Explanation

This error occurs when an attempt to use the SELECT INTO statement has not been permitted because the **select into/bulkcopy** database option is not enabled for this database. The database owner must turn on the **select into/bulkcopy** database option before the SELECT INTO statement can be completed successfully.

This error can also be triggered by stored procedures.

Caution Enabling the **select into/bulkcopy** database option permits nonlogged operations to take place. Have a specific backup strategy in place to ensure data integrity after nonlogged operations have been performed. A transaction log cannot be backed up after a nonlogged operation. Use the BACKUP DATABASE statement after nonlogged operations have been performed.

Action

The database owner or system administrator must use the **sp_dboption** system stored procedure to enable the **select into/bulkcopy** database option. For example, for the **pubs** database, you would use the **osql** command prompt utility to perform the following steps:

1. Switch to the **master** database and set the database option for the **Northwind** database. Type:

USE master

GO

```
sp_dboption Northwind, 'select into/bulkcopy', true
GO
USE Northwind
GO
CHECKPOINT
GO
```

2. Verify that the change has taken place correctly. Execute the **sp_helpdb** system stored procedure on **Northwind**. The status result column should show the **select into/bulkcopy** database option as enabled. Type:

sp_helpdb Northwind GO

You may want to review information about the **bcp** Utility and SELECT INTO statement. For more information, see the SELECT and <u>bcp Utility</u>. In some cases, **bcp** is a logged operation that can affect your backup strategy and transaction log backup frequency.

See Also

Backing Up and Restoring Databases

BACKUP

Errors 1 - 999

osql Utility

Setting Database Options

sp_dboption

sp_help

sp_helpdb

Error 511

Severity Level 16

Message Text

Cannot create a row of size %d which is greater than the allowable maximum of %d.

Explanation

This error occurs when you attempt to insert a row that is larger than the defined maximum for that table. This error occurs if the row you attempt to insert into a table is too big to fit into a data page.

In Microsoft® SQL Server™, the maximum allowable size of a row in a table is 8060 bytes. A row cannot be split across data pages. A data page is 8 KB in size and consists of the data row and some internal data structures.

Action

Change the data being inserted so it does not exceed the maximum number of bytes (8060) that can be stored in a single row.

See Also

Adding Rows with INSERT

CREATE TABLE

INSERT

Maximum Capacity Specifications

Error 515

Severity Level 16

Message Text

Cannot insert the value NULL into column '%.*ls', table '%.*ls'; column does not allow nulls. %ls fails.

Explanation

This error occurs at run time when an attempt is made to use a null value while inserting or updating a column that does not allow null values.

This message differs from the following message, which indicates that the attempt has been detected at compile time.

error 233: The column '%.*ls' in table '%.*ls' cannot be null.

This error can also occur if the table that is the target of an INSERT or UPDATE statement in a stored procedure or trigger is being dropped and re-created, and one or more of the table column definition(s) have changed from NULL to NOT NULL.

Action

If this error occurs when you are running an UPDATE or INSERT statement, verify that the data inserted or updated matches the column definition for the affected table.

Inserting or updating a column does not allow null values.

Note In a direct UPDATE or INSERT by value, you will get compile error 233 instead of error 515. Usually 515 errors occur in an INSERT/SELECT or an UPDATE statement that uses data in another table.

If this error occurs when a stored procedure or trigger references a table that has

been dropped and re-created with different nullability, drop and re-create the affected stored procedure or trigger.

If you are unable to resolve the problem, contact your primary support provider for assistance.

See Also

ALTER PROCEDURE

ALTER TABLE

ALTER TRIGGER

CREATE PROCEDURE

CREATE TABLE

CREATE TRIGGER

DROP PROCEDURE

DROP TRIGGER

Errors 1 - 999

INSERT

Reporting Errors to Your Primary Support Provider

SELECT

UPDATE

Error 544

Severity Level 16

Message Text

Cannot insert explicit value for identity column in table '%.*ls' when IDENTITY_INSERT is set to OFF.

Explanation

This error occurs when you have attempted to insert a row that contains a specific identity value into a table that contains an identity column. However, SET IDENTITY_INSERT is not enabled for the specified table.

Action

To insert a specific identity row successfully into a table containing an identity column, you must enable SET IDENTITY_INSERT. The following example inserts identity row 2, where **iID** is defined as the identity column.

```
USE pubs
GO
IF EXISTS(SELECT TABLE_NAME FROM INFORMATION_SCHI
    WHERE TABLE_NAME = 'tblTest')
    DROP TABLE tblTest
GO
CREATE TABLE tblTest
( iID int IDENTITY(1, 1),
    strData nvarchar(15)
)
GO
INSERT INTO tblTest (strData) VALUES (N'Leverling')
```

INSERT INTO tblTest (strData) VALUES (N'Davolio')
GO
SET IDENTITY_INSERT tblTest ON
GO

- -- Insert the specified identity row using a column list. INSERT INTO tblTest (iID, strData) VALUES (5, N'Callahan') GO
- -- Display the rows in tblTest to see identity values.

SELECT *
FROM tblTest

-- Disable IDENTITY_INSERT.
SET IDENTITY_INSERT tblTest OFF
GO

See Also

ALTER TABLE

CREATE TABLE

Errors 1 - 999

SET IDENTITY INSERT

Error 601

Severity Level 12

Message Text

Could not continue scan with NOLOCK due to data movement.

Explanation

When scanning with the NOLOCK locking hint or with the transaction isolation level set to READ UNCOMMITTED, it is possible for the page at the current position of the scan to be deleted. When this happens, Microsoft® SQL ServerTM is not able to continue the scan.

Action

This error aborts the query. Either resubmit the query or remove the NOLOCK locking hint.

See Also

Locking Hints

SELECT

SET TRANSACTION ISOLATION LEVEL

Error 602

Severity Level 21

Message Text

Could not find row in sysindexes for database ID %d, object ID %ld, index ID %d. Run DBCC CHECKTABLE on sysindexes.

Explanation

This error occurs when Microsoft® SQL ServerTM cannot find a row in the **sysindexes** table for a needed table or index (for example, when executing a stored procedure that references a table that has been dropped).

Action

If the error occurs because a stored procedure references a dropped table, drop and re-create the stored procedure. This error may also occur in conjunction with other error messages that better point to the root cause of the problem. Execute DBCC CHECKTABLE on **sysindexes**; also execute DBCC CHECKDB.

If the problem persists, contact your primary support provider. Have the output from the DBCC CHECKDB statement available for review.

See Also

ALTER PROCEDURE

CREATE PROCEDURE

DBCC CHECKDB

DBCC CHECKTABLE

DROP PROCEDURE

Errors 1 - 999
Reporting Errors to Your Primary Support Provider
sysindexes

Error 605

Severity Level 21

Message Text

Attempt to fetch logical page %S_PGID in database '%.*ls' belongs to object '%.*ls', not to object '%.*ls'.

Explanation

This error occurs when Microsoft® SQL Server™ detects database corruption. The second object specified in the text *not to object* '%.**ls*' is probably corrupt. Because this error can mask the existence of other errors, execute DBCC CHECKDB to determine the extent of the damage. If DBCC CHECKDB does not report additional errors, the first object mentioned is not corrupt.

SQL Server detects database corruption when it traverses the pages of an object and finds a page in the chain whose object ID does not match that of the object being accessed. There is probably a damaged page chain, a corrupt Index Allocation Map (IAM), or an invalid entry in the **sysobjects** system table for that object. A clustered table has one doubly-linked page chain for the table data as well as one for each index level. A nonclustered index has a page chain for each level of the index. Pages in a heap are not linked. The IAM is used to find the pages of a heap.

Although error 605 usually displays two object names, other variations can occur:

- If instead of an object name the error displays a number greater than 0, it means that an attempt was made to reference an object ID that does not exist in a system table for that object.
- If the error reports the first object ID as 0, an unallocated page was probably encountered. (There is no object ID equal to 0.)

• If the error states that a page belongs to object ALLOCATION, some of the allocation structures used by the database might be corrupted.

Usually this error occurs after the corruption has been written to the database on disk, but it can also occur entirely in the cache without the damage ever being written to the disk. This is known as a transient 605 error and is not associated with data corruption. If error 605 occurs during data access, but subsequent DBCC CHECKDB statements complete without error, the 605 error was probably transient. Transient 605 errors can be caused by the operating system prematurely notifying SQL Server that an I/O operation has completed; the error message is displayed even though no actual data corruption exists.

Nontransient 605 errors are often caused by hardware or disk device driver failure.

Action

Execute DBCC CHECKTABLE on the second object specified in the error message. To determine the full extent of the corruption, execute DBCC CHECKDB as soon as possible. Also check the error log for other errors, which often accompany a 605 error.

If the 605 error is not transient, the problem is severe and you must run DBCC CHECKDB with one of the repair clauses. If the error involves an index page, use the REPAIR_REBUILD clause. If the error involves a data page, it may be necessary to use the REPAIR_ALLOW_DATA_LOSS clause. In the likely event that you cannot allow the loss of data, you will need to restore from a known clean backup. If the problem persists, contact your primary support provider. Have the output from DBCC CHECKDB available for review.

IMPORTANT If running DBCC CHECKDB with one of the repair clauses does not correct the index problem, or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

In addition, run hardware diagnostics and correct any problems. You might find it beneficial to perform a completely new setup on the computer, including reformatting the disk drives and reinstalling the operating system. This eliminates the possibility that a .dll or .exe program is corrupted. You can also examine your operating-system error log to see if the error occurred as the result of hardware failure.

Finally, be sure that your system does not have write caching enabled on the disk controller. If you suspect this to be the problem, contact your hardware vendor.

Additional Information

DBCC CHECKDB offers the REPAIR_REBUILD and REPAIR_ALLOW_DATA_LOSS clauses. The REPAIR_REBUILD clause rebuilds corrupt indexes and the REPAIR_ALLOW_DATA_LOSS clause fixes allocation problems. Sometimes, deleting pages is the only way to fix allocation problems. Typically, these pages contain data that was already deleted, but the pages may contain valid data. Therefore, deleting pages is a more risky option than using DBCC CHECKDB with a repair clause. Using DBCC CHECKDB with a repair clause fixes database corruption when a database backup is not available.

If your database is a data warehouse, you may be able to continue operating without the lost data for some time before reloading the missing data. In these cases, use DBCC CHECKDB with the REPAIR_ALLOW_DATA_LOSS clause to fix the damaged database.

You can prevent problems by following these guidelines:

- 1. Run SQL Server only on hardware and controllers that are certified for your operating system.
- 2. Perform regular backups in conjunction with DBCC CHECKDB statements. DBCC CHECKDB performs all checks that DBCC NEWALLOC and DBCC CHECKALLOC previously did, but DBCC CHECKDB is faster. This is the only way to be confident of the state of the database at the time of the backup.
- 3. If the data is critical, back up the transaction log frequently. This makes it possible to reduce your window of vulnerability, even in the event of a catastrophic hardware problem, to an hour or less.

- 4. In the most critical situations, use a standby server and a continually running batch job to take transaction backups off of the primary computer and continually restore them on the standby computer.
- 5. If you have persistent data corruption problems, try to swap the computer, the controllers, and the disk device drivers for components of a different type. This makes it easier to determine whether the problem is specifically platform-related.

See Also

Backing Up and Restoring Databases

BACKUP

Errors 1 - 999

Managing Space Used by Objects

Reporting Errors to Your Primary Support Provider

Using Standby Servers

Error 624

Severity Level 21

Message Text

Could not retrieve row from page by RID because the requested RID has a higher number than the last RID on the page.

%S RID.%S PAGE, Dbid %d

Explanation

This error occurs when an attempt to retrieve a row from a data page by specifying the row ID (RID) failed because the requested RID was a higher number than the last RID on the page. This can happen during normal processing, if the leaf page of a corrupt nonclustered index points to an incorrect or nonexistent RID on a data page.

If the error occurs on a system table during a read-only operation while other users are updating system tables (executing DDL), it is probably a transient 624 error (rather than a corrupted index). To confirm that there is no corruption, execute DBCC CHECKTABLE without a repair clause.

Action

The recovery procedure depends on when the error occurred. If problems persist, the following procedures might not be sufficient to clean up the index corruption. In this case, contact your primary support provider. Have the output from either DBCC CHECKTABLE (if investigating possible system table corruption) or DBCC CHECKDB available for review.

If the error occurred during normal processing

Execute DBCC CHECKTABLE with the REPAIR_REBUILD clause. If executing DBCC CHECKTABLE with the REPAIR_REBUILD clause does not

correct the problem, drop and re-create the affected index(es).

IMPORTANT If executing DBCC CHECKDB with the REPAIR_REBUILD clause does not correct the index problem or if you are unsure what effect DBCC CHECKDB with the REPAIR_REBUILD clause has on your data, contact your primary support provider.

Index unknown, query known

The fastest way to resolve this problem is to execute DBCC CHECKDB with the REPAIR_REBUILD clause. This fixes any index corruption in the entire database. If the database is so large that you do not want to run DBCC CHECKDB, use these instructions to locate the specific index to drop and recreate.

If you do not know which index is causing the problem but you do know which query encounters the problem, follow the instructions below. If you do not know the index or the query, follow the instructions under the next section, "Index and query both unknown."

1. Determine which index should be dropped by reading the showplan output for the query that encounters the error. If you SET SHOWPLAN_TEXT to ON, SET NOEXEC to ON, and then run the query in question, the output indicates which nonclustered index the query is using to access the table in question.

For example:

USE pubs

GO

SET SHOWPLAN_TEXT ON

GO

SET NOEXEC ON

GO

SELECT title

FROM titles

WHERE title > 'Cooking'

GO

Here is the result set: StmtText SET NOEXEC ON (1 row(s) affected) StmtText SELECT title FROM titles WHERE title > 'Cooking' (1 row(s) affected) StmtText |--Index Seek(pubs..titles.titleind, SEEK:(titles.title > @1) O (1 row(s) affected) 2. SET NOEXEC to OFF and SET SHOWPLAN_TEXT TO OFF again: **SET NOEXEC OFF** GO SET SHOWPLAN_TEXT OFF GO

3. Drop and re-create the index identified in Step 1 (in this example, **titleind**).

Index and query both unknown

If you do not know the index or the query, rebuild all nonclustered indexes on the table as follows:

- 1. Look at the output you created with DBCC CHECKDB when you obtained the table name:
 - If the object ID is less than 100, you cannot drop and re-create the indexes. Do not continue with Steps 2 or 3. You must restore the database from a known clean backup.
 - If the object ID is 100 or greater, continue with Step 2.
- 2. Use **sp_helpindex** to list all indexes on the table, and then rebuild all the nonclustered indexes using one of the following methods:
 - Drop and re-create each nonclustered index on the table.
 - If the table has a clustered index, drop and re-create it. This causes all nonclustered indexes to be rebuilt automatically. If your table is large, you might not have the space to do this. Generally, 1.2 times of the size of the table must be available.
- 3. After the appropriate index has been re-created, run DBCC CHECKTABLE on the table to confirm that the problem has been resolved.

See Also

DBCC CHECKDB

DBCC CHECKTABLE

Errors 1 - 999

Reporting Errors to Your Primary Support Provider

Resetting the Suspect Status

SET NOEXEC

SET SHOWPLAN TEXT

sp_helpindex

Error 625

Severity Level 21

Message Text

Cannot retrieve row from page %S_PGID by RID because the slotid (%d) is not valid.

Explanation

This error occurs when an object to which this row belongs is in error. The problem was detected during the reading of a specific row from that logical page. This error can occur as a result of:

- Hardware problems, especially problems with the hard drive, controller or hardware write caching.
- Other errors in the database.

Action

Execute DBCC CHECKDB to determine the full extent of the error. Also check the error log for other errors such as 25xx messages, which often accompany this error.

If DBCC CHECKDB issues other error messages, resolving those messages first may take care of this error. Execute DBCC CHECKDB with the REPAIR_REBUILD clause to repair the damage.

IMPORTANT If executing DBCC CHECKDB with the REPAIR_REBUILD clause does not correct the index problem or if you are unsure what effect DBCC CHECKDB with the REPAIR_REBUILD clause has on your data, contact your primary support provider.

If executing DBCC CHECKDB with the REPAIR_REBUILD clause does not

resolve all table error problems, determine which table is affected by examining the page in the error message. If the page is associated with an index, you may be able to resolve the problem by dropping and then re-creating the index. If the page is a data page and a clean current backup is available, restore the database from the backup.

If no backup is available, select the table into another table or bulk copy data out of the table, drop the table, re-create it, and then select data back into the table.

If you suspect a hardware problem, run hardware diagnostics and correct any problems. You might find it beneficial to perform a completely new setup, including reformatting the disk drives and reinstalling the operating system. Also examine the Microsoft® Windows NT® application log to see if the error occurred as the result of hardware failure.

Finally, be sure that your system does not have write caching enabled on the disk controller. If you suspect this to be the problem, contact your hardware vendor.

See Also

BACKUP

DBCC CHECKDB

Errors 1 - 999

Error 644

Severity Level 21

Message Text

Could not find the index entry for RID '%.*hs' in index page %S_PGID, index ID %d, database '%.*ls'.

Explanation

This error occurs when the nonclustered index indicated by the index ID is in error. The corruption is detected when a process tries to delete a nonexistent row.

Action

Execute DBCC CHECKDB without a repair clause to determine the extent of the damage. Then, execute DBCC CHECKDB with REPAIR_REBUILD clause to correct the damage. If problems persist, either drop and re-create the index (as shown below) or contact your primary support provider.

IMPORTANT If executing DBCC CHECKDB with the REPAIR_REBUILD clause does not correct the index problem or if you are unsure what effect DBCC CHECKDB with the REPAIR_REBUILD clause has on your data, contact your primary support provider.

To drop and re-create the index:

- 1. Record the value of index page and index ID specified in the error text.
- 2. Identify which table and index correspond to the index page number.
- 3. Note the object ID.

If the object with the error is a system table (the object ID is less than

100), you cannot drop the index. Execute DBCC CHECKDB with the REPAIR_REBUILD clause or restore the database from a known clean backup.

- 4. If the object ID is greater than 100, drop and re-create the index using the table name and index name obtained in Step 1. In most cases, this will clear the error.
- 5. Execute DBCC CHECKDB with the REPAIR_REBUILD clause on the affected database to verify that all problems have been resolved.

If problems persist, this procedure might not be sufficient to clean up the index error. In this case, contact your primary support provider. Have the output from DBCC CHECKDB available for review.

See Also

CREATE INDEX

DBCC CHECKDB

DROP INDEX

Errors 1 - 999

Reporting Errors to Your Primary Support Provider

Error 701

Severity Level 19

Message Text

There is insufficient system memory to run this query.

Explanation

The memory requirements for the set of tasks Microsoft® SQL ServerTM is attempting to perform exceeds the amount of available memory. Either increase the amount of server memory or reduce the server workload.

Action

To decrease the server workload, reduce the number of users currently using SQL Server. To prevent additional users from logging in to SQL Server, pause the server. For more information, see <u>Pausing and Resuming SQL Server</u>.

To increase server memory:

1. Check the settings for both **min server memory** (MB) and **max server memory** (MB).

If **max server memory** (MB) is a value close to the value of **min server memory** (MB), then increase the **max server memory** (MB) value.

- 2. Check the size of the virtual memory paging file.
 - If possible, increase the size of the file.
- 3. Shut down any other applications running, if applicable, on the server.
- 4. View the current memory usage information in Windows NT Performance Monitor.

To view current memory usage information in preparation for tuning memory configuration, use the Total Server Memory (KB) Performance Monitor Counter of the SQLServer:**General Statistics** object.

5. Add additional memory to the server.

See Also

Errors 1 - 999

Programming Stored Procedures

Server Memory Options

SQL Server: General Statistics Object

Error 813

Severity Level 20

Message Text

Logical page %S_PGID in database ID %d is already hashed.

Explanation

This error occurs when Microsoft® SQL Server[™] attempts to hash the logical page %S_PGID of database ID%d and the page is already in the SQL Server hash table.

This error usually occurs as a side effect of other data errors that can usually be detected by executing DBCC CHECKDB without a repair clause.

Action

Review the SQL Server error log, and then execute DBCC CHECKDB with the appropriate repair clause on the database. If the error involves an index page, use the REPAIR_REBUILD clause. If the error involves a data page, it may be necessary to use the REPAIR_ALLOW_DATA_LOSS clause. In the likely event that you cannot allow the loss of data, you will need to restore from a known clean backup. If the problem persists, contact your primary support provider. Have the output from DBCC CHECKDB available for review.

IMPORTANT If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

Verify with your hardware vendor that the disk subsystem being used by SQL Server is at the currently supported and recommended firmware and hardware levels.

If DBCC CHECKDB finds no errors, or if errors are found and corrected so that

subsequent DBCC statements indicate no errors, but this error reoccurs, contact your primary support provider. Have the SQL Server error logs and the output from DBCC CHECKDB and **sp_configure** available for review.

See Also

DBCC CHECKALLOC

DBCC CHECKDB

Errors 1 - 999

Reporting Errors to Your Primary Support Provider

Setting Configuration Options

sp_configure

Error 822

Severity Level 21

Message Text

Could not start I/O for request %S_BLKIOPTR.

Explanation

Microsoft® SQL Server™ encountered an error while attempting to initiate a read or write request. This error can occur for any of the following reasons:

- A database file is off-line.
- A database file has been removed or renamed.
- A database file is inaccessible for another reason (such as insufficient permissions).

The parameter in the error message refers to an internal structure and does not help determine which database file is involved. However, other error messages appearing in the error log just before error 822 usually indicate the file involved.

Action

Examine the availability and condition of the file involved using your standard operating-system procedures, and make sure the file is accessible.

Because error 822 marks the database as suspect, SQL Server cannot recover the database upon restarting. If you know that the database was marked suspect because the file was unavailable, you can reset the status of the database to allow recovery to continue.

CAUTION Do not use these procedures if there are other errors in the error log,

near the error 822 message, that suggest that the database might have been marked suspect for some other reason.

Reset the suspect status by executing **sp_resetstatus**. This is the safest method. After you execute **sp_resetstatus**, restart SQL Server.

Here are two examples of error 822 and the associated messages from the log. Examining the error messages that occurred just before error 822 usually helps determine the type of problem.

Device missing

In this example, the device C:\Mssql7\data\mydb_data.mdf did not exist when SQL Server started, causing access to the device to fail:

kernel udopen: Operating system error 2(The system cannot find the find kernel FCB::Open failed: Could not open device C:\MSSQL7\data\m spid9 Device activation error. The physical file name 'C:\MSSQL7\d

To correct an error like this, be sure that the virtual device appearing in the error message exists, and correct whatever error prevented SQL Server from finding it. For example, it might have been renamed or moved while SQL Server was not running.

If the virtual device no longer exists, you must restore from known clean backups. Merely creating an empty device with the correct name will not solve this problem.

Permission problems

Permission problems can occur if the device is on an NTFS partition.

In this example, the permissions on C:\Mssql7\Data\Mydb_DATA.Mdf were incorrect, so SQL Server could not access it:

kernel udopen: Operating system error 2(The system cannot find the factorial kernel: dopen: open "c:\mssql7\data\mydb_data.mdf", Permission denikernel FCB::Open failed: Could not open device C:\MSSQL7\data\myspid9 Device activation error. The physical file name 'C:\MSSQL7\data\myspid9

To correct an error like this, change the object ownership for the device to Administrator, and be sure that the account under which SQL Server was started has read and write permissions on the object.

See Also

BEGIN TRANSACTION

CHECKPOINT

Errors 1 - 999

RECONFIGURE

Resetting the Suspect Status

Setting Configuration Options

Setting Database Options

SHUTDOWN

sp_configure

sp_dboption

UPDATE

Error 823

Severity Level 24

Message Text

I/O error %ls detected during %S_MSG at offset %#016I64x in file '%ls'.

Explanation

Microsoft® SQL Server™ encountered an I/O error on a read or write request made to a device. This error usually indicates disk problems. However, additional kernel messages in the error log, recorded before error 823, should indicate which device is involved.

Action

Check the accessibility and condition of the device in question.

Run hardware diagnostics and correct problems, if possible.

Restore damaged files from the latest database backup. Restoring from a database backup should always be considered the primary means of fixing a damaged database.

If you don't have a backup or if the errors detected are very isolated, the repair functionality of DBCC CHECKDB may be useful. However, using DBCC CHECKDB can be more time consuming than restoring the damaged files from a backup, and you may not be able to recover all your data .

CAUTION If running DBCC CHECKDB with one of the repair clauses does not correct the problem or if you are unsure how this process may affect your data, contact your primary support provider.

See Also

RESTORE

DBCC CHECKDB

<u>Errors 1 - 999</u>

Error 844

Severity Level 10

Message Text

Time out occurred while waiting for buffer latch type %d, bp %#x, page %S_PGID, stat %#x, object ID %d:%d:%d, waittime %d. Continuing to wait.

Explanation

When under a heavy stress load or high I/O conditions, your system may produce this message.

Action

This message can usually be ignored. However, if you receive repeated messages where the wait time increases, it may indicate an internal server problem, in which case, contact your system administrator. The system administrator should check the **waittype**, **waittime**, **lastwaittype**, and the **waitresource** columns of **sysprocesses** to see what activities each SPID is performing.

See Also

Errors 1 - 999

sysprocesses

Error 845

Severity Level 17

Message Text

Time-out occurred while waiting for buffer latch type %d for page %S_PGID, database ID %d.

Explanation

When under a heavy stress load or high I/O conditions, your system may produce this message.

Action

This message can usually be ignored; however, if you receive repeated messages where the wait time increases, it may indicate an internal server problem. Contact your system administrator. The system administrator should check the waittype, waittime, lastwaittype, and the waitresource columns of sysprocesses to see what activities each SPIDs is performing.

See Also

Errors 1 - 999

sysprocesses

Error 911

Severity Level 16

Message Text

Could not locate entry in sysdatabases for database '%.*ls'. No entry found with that name. Make sure that the name is entered correctly.

Explanation

This error occurs when attempting to change database context (with a USE statement) to a database that does not exist, or when the default database established for a login does not exist. In the latter case, the user login then attempts to access the **master** database.

Action

To obtain a list of databases, execute **sp_helpdb** or issuing this query:

SELECT name FROM master..sysdatabases

The list returned will contain the databases that exist on the Microsoft® SQL ServerTM installation. Either create a missing database or connect to an existing one. To correct login-level errors, it may be necessary to execute **sp_defaultdb**.

See Also

Errors 1 - 999

sp_defaultdb

sp_helpdb

<u>sysdatabases</u>

Error 913

Severity Level 22

Message Text

Could not find database ID %d. Database may not be activated yet or may be in transition.

Explanation

This error can occur if there is a problem with the view resolution process. During execution of various compiled objects in a database that references the database **dbid** (such as stored procedures and views), it is typical to resolve the **dbid** with other structures within the database. When a compiled object is first created, the **dbid** where the object is located is embedded in the compiled code. For example, when a view is accessed or a stored procedure is executed, the rights to access the view or execute the stored procedure are checked.

Action

If the error occurs when a stored procedure or view is accessed, you may be able to correct the problem by simply dropping and re-creating the database object (stored procedure or view).

If this error continues to occur, contact your primary support provider and have the Microsoft® SQL ServerTM error log and any additional information relevant to the circumstances when the error occurred available for review.

See Also

CREATE PROCEDURE

CREATE VIEW

DROP PROCEDURE

DROP VIEW

<u>Errors 1 - 999</u>

Reporting Errors to Your Primary Support Provider

Error 924

Severity Level 14

Message Text

Database '%.*ls' is already open and can only have one user at a time.

Explanation

This error occurs when trying to access a database that is already in use by another user or session. Microsoft® SQL Server™ detected an attempt to access a database that is in single-user mode.

Action

Verify that the database in question is actually in single-user mode by executing this query (substitute your database name for *<database>*).

If the database is truly in single-user mode, the **status** result set column heading will list single user as the access mode.

To see what login is accessing the database, execute **sp_who** and scan the **dbname** result set column heading for the specified database.

If single-user mode privilege is a problem, contact your system administrator and ask to have the single-user mode database option set to multiuser. The system administrator can do so by executing **sp_dboption** from the **master** database, as shown here:

sp_dboption database, 'single user', false

See Also

Errors 1 - 999

Setting Database Options

sp_dboption

sp_helpdb

sp_who

Error 926

Severity Level 14

Message Text

Database '%.*ls' cannot be opened. It has been marked SUSPECT by recovery. See the SQL Server errorlog for more information.

Explanation

The database is marked as suspect because it failed the recovery process that brings a database to a consistent transactional state. This can occur during the following operations:

- Starting up an instance of Microsoft® SQL ServerTM 2000.
- Attaching a database.
- Using the RESTORE database or RESTORE LOG procedures.

Action

Inspect the Microsoft SQL Server error log and determine the cause of the error. If SQL Server has been restarted since the failed recovery, look at previous SQL Server error logs to see the reason why recovery failed.

If the recovery failed because of a persistent I/O error, a torn page, or other possible hardware problem, resolve the underlying hardware problem and restore the database by using a backup. If no backups are available, consider the repair options of DBCC CHECKDB.

If you are unable to resolve this problem, contact your primary support provider. Have the SQL Server error log available for review.

See Also

Backing Up and Restoring Databases

<u>Errors 1 - 999</u>

Reporting Errors to Your Primary Support Provider

Resetting the Suspect Status

RESTORE

sysdatabases

Error 945

Severity Level 16

Message Text

Database '%.*ls' cannot be opened due to inaccessible files or insufficient memory or disk space. See the SQL Server errorlog for details.

Explanation

Error 945 is returned when the database is marked **IsShutdown**. This occurs when a database cannot be recovered due to missing files, or some other resource error that usually can be corrected easily.

Action

First, verify that the database is marked IsShutdown using DATABASEPROPERTY.

Then, determine the cause of the error by consulting the errorlog, and take action as noted below.

If one or more data or log files are missing:

- 1. Make the files available and bring the database OFFLINE using ALTER DATABASE.
- 2. Use ALTER DATABASE to bring the database ONLINE

If insufficient log space:

• Use sp_add_log_file_recover_suspect_db() to add another log file.

The database is recovered and brought online by this procedure.

If insufficient data space:

• Use sp_add_data_file_recover_suspect_db() to add another log file.

The database is recovered and brought online by this procedure.

If insufficient memory:

The insufficient memory error can occur when a number of databases are recovered at the same time. Retrying the operation may fix the problem:

- 1. Retry the operation using ALTER DATABASE to bring the database OFFLINE.
- 2. Use ALTER DATABASE to bring the database ONLINE.

If retrying the operation does not work, consider freeing up memory.

See Also

DATABASEPROPERTY

Error 1002

Severity Level 16

Message Text

Line %d: Specified scale %d is invalid.

Explanation

This error occurs when the scale of a **decimal** or **numeric** column does not fall between the allowable minimum and maximum values based on the precision of the column.

Action

Specify the precision with p, which must be between 1 and the maximum precision, and the scale with s, which must be between 0 and p. If you do not specify the precision, Microsoft® SQL ServerTM uses a default precision of 18. If you do not specify the scale, SQL Server uses a default scale of 0. For more information, see the **decimal** and **numeric** topic and the <u>Precision</u>, <u>Scale</u>, and <u>Length</u>.

Error 1105

Severity Level 17

Message Text

Could not allocate space for object '%.*ls' in database '%.*ls' because the '%.*ls' filegroup is full.

Explanation

The specified filegroup has run out of free space.

Action

To gain more space, you can free disk space on any disk drive containing a file in the full filegroup, allowing files in the group to grow. Or you can gain space using a data file with the specified database.

Freeing disk space

You can free disk space on your local drive or on another disk drive. To free disk space on another drive:

- 1. Move the data files in the filegroup with an insufficient amount of free disk space to a different disk drive.
- 2. Detach the database by executing **sp_detach_db**.
- 3. Attach the database by executing **sp_attach_db**, pointing to the moved files.

Using a data file

Another solution is to add a data file to the specified database using the ADD FILE clause of the ALTER DATABASE statement. Or you can enlarge the data file by using the MODIFY FILE clause of the ALTER DATABASE statement, specifying the SIZE and MAXSIZE syntax.

See Also

ALTER DATABASE

Errors 1000 - 1999

Expanding a Database

Insufficient Disk Space

sp attach db

sp_detach_db

sp add data file recover suspect db

Error 1203

Severity Level 20

Message Text

Process ID %d attempting to unlock unowned resource %.*ls.

Explanation

This error occurs when Microsoft® SQL Server™ is engaged in some activity other than normal post-processing cleanup and it finds that a particular page it is attempting to unlock is already unlocked. The underlying cause for this error may be related to structural problems within the affected database. SQL Server manages the acquisition and release of pages to maintain concurrency control in the multi-user environment. This mechanism is maintained through the use of various internal lock structures that identify the page and the type of lock present. Locks are acquired for processing of affected pages and released when the processing is completed.

Action

Execute DBCC CHECKDB against the database in which the object belongs. If DBCC CHECKDB reports no errors, attempt to reestablish the connection and execute the command.

IMPORTANT If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem, or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

See Also

DBCC CHECKDB

Errors 1000 - 1999

Reporting Errors to Your Primary Support Provider

Error 1204

Severity Level 19

Message Text

The SQL Server cannot obtain a LOCK resource at this time. Rerun your statement when there are fewer active users or ask the system administrator to check the SQL Server lock and memory configuration.

Explanation

This error occurs when there are not enough system locks to complete the current command. SQL Server then attempts to obtain a LOCK block to represent and control the desired lock. When dynamically configured, the lock limit is determined by the available memory. When statically configured, the lock limit is determined by the sp_configure setting.

If you continue to encounter this problem, make sure your statistics are up to date, you have sufficient indexes to run your query efficiently, and that the transaction isolation level for your application is not more restrictive than necessary.

Action

Either execute the command again when activity on the server is low, or have the system administrator increase the number of locks by executing **sp_configure** from the **master** database.

To view the current configuration:

sp_configure locks

This reports the minimum, maximum, current run, and configuration values. To increase the number of locks, run **sp_configure** again, specifying the number of locks to be configured. For example, to configure 10,000 locks:

sp_configure locks, 10000 GO RECONFIGURE WITH OVERRIDE GO

Stop and restart Microsoft® SQL Server™ so the changes can take effect. Locks are allocated at system startup.

If the number of locks cannot be increased at the current time, and the single action requires more locks than the server is currently configured for, you may be able to reduce the number of locks required for the operation. For example, try the following:

• For large UPDATE statements, break the updates into smaller units that will affect only a subset of records at a time. For example, you could use the primary key, changing the single UPDATE statement from:

UPDATE employees
SET salary = salary * 1.05
WHERE employee_id BETWEEN 1000 AND 9999
GO

to several UPDATE statements:

UPDATE employees
SET salary = salary * 1.05
WHERE employee_id BETWEEN 1000 AND 4999
GO
UPDATE employees
SET salary = salary * 1.05
WHERE employee_id BETWEEN 5000 AND 9999
GO

• For a maintenance type of task or for a global update, consider putting

the database into single-user mode (if it is feasible to keep other users out of the database). Single-user mode does not set locks, so you will not run out of locks, and the operation will run somewhat faster (because you save the locking overhead).

• For a large bulk copy operation, the entire operation is treated as a single transaction. When you use the batch parameter (-b), the bcp utility will treat the operation in small transactions with the number of rows specified. At the end of each small transaction, the system resources held by that transaction are freed, so fewer locks are needed.

See Also

Understanding and Avoiding Blocking

bcp Utility

BULK INSERT

Errors 1000 - 1999

Setting Configuration Options

sp_configure

Starting, Pausing, and Stopping SQL Server

UPDATE

Error 1205

Severity Level 13

Message Text

Transaction (Process ID %d) was deadlocked on {%Z} resources with another process and has been chosen as the deadlock victim. Rerun the transaction.

Explanation

This error occurs when Microsoft® SQL Server™ encounters a deadlock. A deadlock occurs when two (or more) processes attempt to access a resource that the other process holds a lock on. Because each process has a request for another resource, neither process can be completed. When a deadlock is detected, SQL Server rolls back the command that has the least processing time and returns error message 1205 to the client application. This error is not fatal and may not cause the batch to be terminated.

Action

In some instances, a deadlock condition will cause a DB-Library function (such as **dbsqlexec**, **dbsqlok**, **dbresults**, or **dbnextrow**) to return FAIL. It is always the responsibility of the program to check the return codes from each DB-Library function. If FAIL is returned by one of these DB-Library functions, the program should cancel the batch and not attempt to continue. In some cases, it is possible to continue execution of subsequent functions in the batch. However, because a deadlock situation occurred and the functions that caused it were rolled back, later functions in the batch will probably fail with a more serious error, such as "object not found".

In other instances, a deadlock condition will not cause a DB-Library function to return FAIL. In these cases, the program must check for error message 1205 in the message handler and use the <u>dbsetuserdata</u> function to communicate this to

the application. The program must then check for the deadlock indicator after every DB-Library call and should cancel the batch if a deadlock is detected.

Although it may seem unnecessary to cancel a batch after receiving a 1205 deadlock message, it is necessary because the server does not always terminate the batch in a deadlock situation. If the batch is not canceled, any attempt to submit a new batch can result in a DB-Library error 10038 "Results Pending".

You can also use the SET DEADLOCK_PRIORITY statement (LOW or NORMAL). SET DEADLOCK_PRIORITY controls how the session reacts when in a deadlock situation. If set to LOW, the process will be the preferred victim of a deadlock situation. If set to NORMAL, the session will use the default deadlock-handling method.

If a deadlock situation continues, it is often useful to use trace flag 1204 to gather more information. Trace flag 1204 prints out the deadlock chains and victim, as shown in this sample output:

*** Deadlock Detected ***

==> Process 7 chosen as deadlock victim

== Deadlock Detected at: 1998-09-10 16:39:29.17

== Session participant information:

SPID: 7 ECID: 0 Statement Type: UPDATE Input Buf: update t1 set c1 = c1 where c1 = 2

SPID: 8 ECID: 0 Statement Type: UPDATE Input Buf: update t1 set c1 = c1 where c1 = 1

== Deadlock Lock participant information:

== Lock: KEY: 2:117575457:1 (010001000000)

Database: tempdb

Table: t1 Index: i1

- Held by: SPID 7 ECID 0 Mode "S"

- Requested by: SPID 8 ECID 0 Mode "X"

== Lock: KEY: 2:117575457:1 (020002000000)

Database: tempdb

Table: t1 Index: i1

- Held by: SPID 8 ECID 0 Mode "S"

- Requested by: SPID 7 ECID 0 Mode "X"

This deadlock information can be interpreted as follows:

• The first section displays the deadlock victim and time of deadlock, along with the sessions involved in the deadlock. For each session, the current SPID, statement type, and a portion of the input buffer are displayed.

- The second section displays details about the locks involved in the deadlock. From the output above, note that the deadlock involves key locks on table t1, index i1. The deadlock output shows which processes own the locks involved in the deadlock and which sessions are waiting for the locks to be granted as well as the associated lock modes.
- The process that has generated the least amount of log volume will, by default, be chosen as the deadlock victim and be rolled back automatically. To influence which session is rolled back, set the DEADLOCK_PRIORITY for a session.

See Also

Deadlocking

Errors 1000 - 1999

SET DEADLOCK PRIORITY

Trace Flags

Error 1505

Severity Level 14

Message Text

CREATE UNIQUE INDEX terminated because a duplicate key was found for index ID %d. Most significant primary key is '%S_KEY'.

Explanation

This error occurs when you attempt to create a unique index and more than one row contains the duplicate value. Microsoft® SQL Server™ has detected a uniqueness violation and cancels the CREATE INDEX operation.

For example, the creation for the index below would be canceled due to the uniqueness violation at row 3. The BUCHANAN STEVEN combination is already located in row 1.

TABLE:	tblTest
IADLL.	(DITESI

Row	strLastName	strFirstName	strCity	strState
1	BUCHANAN	STEVEN	BOISE	ID
2	SUYAMA	MICHAEL	BUTTE	MT
3	BUCHANAN	STEVEN	SEATTLE	WA
4	DAVOLIO	NANCY	SAN FRAN	CISCO CA

CREATE UNIQUE NONCLUSTERED INDEX idxUniqueNames ON tblText(strLastName, strFirstName)

Action

You must review your index objective. If your index does not need to be unique, remove the UNIQUE keyword and reissue the CREATE INDEX statement.

However, if you still want to create a unique index, you must query the table in question and remove the rows in error. For more information about the CREATE INDEX statement, see <u>CREATE INDEX</u>.

To find the duplicate rows, issue a GROUP BY statement:

SELECT * FROM tblTest GROUP BY strLastName, strFirstName

See Also

<u>Errors 1000 - 1999</u>

SELECT

Error 1508

Severity Level 14

Message Text

'CREATE INDEX terminated because a duplicate row was found. Primary key is "%S_KEY".'

Explanation

This error occurs when you attempt to create a clustered index and a duplicate row is encountered in the table.

The following example produces error 1508 when the index creation process reaches row 3, which is an exact duplicate of row 1:

TABLE: tblTest							
Row	strLastName	strFirstName	strCity	strState			
1	BUCHANAN	STEVEN	BOISE	ID			
2	SUYAMA	MICHAEL	BUTTE	MT			
3	BUCHANAN	STEVEN	BOISE	ID			
4	DAVOLIO	NANCY	SAN FRAN	NCISCO CA			

CREATE CLUSTERED INDEX idxClusteredName ON tblText(strLastName)

Action

You must decide whether to allow or prevent duplicate rows in the table. To allow duplicate rows, you should add the ALLOW_DUP_ROW keyword to the CREATE INDEX statement. Be cautious when using IGNORE DUP ROW, because it physically removes duplicate data from the table. Also note that when creating clustered indexes, the amount of space required can be 120 percent to 150 percent of the original table size. For more information, see CREATE INDEX.

The following example creates the clustered index while allowing the duplicate rows to remain in the table:

CREATE CLUSTERED INDEX idxClusteredName ON tblText(strLastName) WITH ALLOW_DUP_ROW

See Also

Errors 1000 - 1999

SELECT

Error 1510

Severity Level 17

Message Text

Sort failed. Out of space or locks in database '%.*ls'.

Explanation

This error occurs when you attempt to create an index and there is not enough space in the database to complete the operation or no more locks are currently available.

Creating indexes can require 1.2 times the original table size when building a clustered index (this amount is in addition to the table size during the time that CREATE INDEX is processing). This space must be available in the indicated database or in the segment on which you were attempting to create the index.

Action

When there is not enough space in the database, you may be able to select a specific filegroup on which to place the index. To locate a specific filegroup and to check the size available on the filegroup, execute **sp_helpfilegroup**:

sp_helpfilegroup 'PRIMARY'

Or use the ALTER DATABASE statement to increase the overall database size. Note that after you increase the size of the database, you may not be allowed to decrease the size. For more information about creating and extending files or filegroups, and altering or moving databases, see <u>ALTER DATABASE</u>.

If your database has no more locks available, execute **sp_configure** to increase the number of locks. This example increases the amount of locks to 10,000:

sp_configure 'locks', 10000

GO RECONFIGURE GO

For the configuration option to take effect, stop and restart the Microsoft® SQL ServerTM service. For user convenience, you may want to pause the service and allow current user activity to gracefully finish before officially stopping the service. For more information about starting, pausing, and stopping the SQL Server service, see <u>Starting</u>, <u>Pausing</u>, and <u>Stopping SQL Server</u>.

See Also

CREATE INDEX

Errors 1000 - 1999

Setting Configuration Options

sp_configure

sp_helpfilegroup

Error 1530

Severity Level 16

Message Text

CREATE INDEX with DROP_EXISTING was aborted because a row was out of order. Most significant offending primary key is '%S_KEY'. Explicitly drop and create the index instead.

Explanation

This error occurs when you try to create an index using the DROP_EXISTING clause of the CREATE INDEX statement on a column or columns containing data that is not in sorted order. When this error occurs, no index is created.

The DROP_EXISTING clause speeds the creation of an index when the data in the table is already in order. The space required to build a clustered index is less when the DROP_EXISTING clause is used.

The DROP_EXISTING clause speeds index creation only for clustered indexes or unique nonclustered indexes. Creating a nonunique, nonclustered index with the DROP_EXISTING clause may succeed, but there is no improvement in performance.

Action

Use either of these strategies:

- Execute CREATE INDEX with the DROP_EXISTING clause.
- Drop and re-create the index without any clauses.

You can also use the SORTED_DATA_REORG clause, which physically reorganizes the data.

See Also

CREATE INDEX

Errors 1000 - 1999

Error 1702

Severity Level 16

Message Text

CREATE TABLE failed because column '%.*ls' in table '%.*ls' exceeds the maximum of %d columns.

Explanation

This error occurs when you try to create a table with more than 1,024 columns. The maximum number of definable columns per table is 1,024.

Column names must follow the rules for identifiers. They must be unique within a given table, but you can use the same column name in different tables in the same database.

Action

Reduce the number of columns in the table to 1,024 or less. For more information about creating tables, see <u>CREATE TABLE</u>.

See Also

Errors 1000 - 1999

Maximum Capacity Specifications

Using Identifiers

Error 1803

Severity Level 17

Message Text

CREATE DATABASE failed. Could not allocate enough disk space for a new database on the named disks. Total space allocated must be at least %d MB to accommodate a copy of the model database.

Explanation

This error occurs when there is not enough space on the device to create the **tempdb** database.

Action

The procedure for handling this error depends on whether the error occurred on a user database or on **tempdb**.

If the error occurred on a user database

• Create the database on a different disk.

Or

• Delete some files to free space on the disk.

If the error occurred on tempdb

If you moved **tempdb** from one device back to any default device and you do not have enough space on the device (2 MB), Microsoft® SQL ServerTM will attempt to create **tempdb** on another device. If you do not have a device with at least 2 MB free, SQL Server will not start. Start SQL Server using the **-f** minimum configuration option.

You can free at least 2 MB on the device, or create a new device with at least 2 MB. If you create a new device, make sure it is specified as a default device, as in this example:

sp_diskdefault new_device_name, defaulton

If no default is specified, SQL Server sends an "out of memory" message (you can ignore this message) and then moves **tempdb** to RAM automatically.

See Also

<u>Errors 1000 - 1999</u>

sqlservr Application

Error 1814

Severity Level 10

Message Text

Could not create tempdb. If space is low, extend the amount of space and restart.

Explanation

This error occurs when there is not enough space on the device to create the **tempdb** database.

Action

You can free at least 2 MB on the device, or create a new device with at least 2 MB. If you create a new device, make sure it is specified as a default device, as in the following example:

sp_diskdefault new_device_name, defaulton

If no default device is specified, Microsoft® SQL ServerTM sends an "out of memory" message (you can ignore this message) and then moves **tempdb** to RAM automatically.

See Also

Errors 1000 - 1999

Error 1902

Severity Level 16

Message Text

Cannot create more than one clustered index on table '%.*ls'. Drop the existing clustered index '%.*ls' before creating another.

Explanation

This error occurs when a table can have only one clustered index, but it can have many nonclustered indexes. Microsoft® SQL ServerTM uses the clustered index to sort rows so that their physical order is the same as their logical (indexed) order. The bottom (leaf level) of a clustered index contains the actual data pages of the table.

In a nonclustered index, the physical order of the rows is not the same as the indexed order. In a nonclustered index, the bottom (leaf level) contains pointers to rows on data pages, which creates an extra level between the index structure and the data itself.

Action

Use the **sp_helpindex** system stored procedure to examine the existing indexes on the table. If a clustered index already exists, you must drop it before creating another clustered index.

See Also

CREATE INDEX

Errors 1000 - 1999

sp_helpindex

Error 1903

Severity Level 16

Message Text

Index keys are too large. The %d bytes needed to represent the keys for index %d exceeds the size limit of %d bytes.

Explanation

This error occurs when the sum of the lengths of the columns that make up the composite index exceeds 900 bytes.

A composite index is an index that uses from 2 to 16 columns. For example, the following shows a composite index using objects from the **Northwind** database:

USE Northwind GO CREATE INDEX CompanyNameCity ON Customers (CompanyName, City) GO

In this example, **CompanyName** is defined as **nvarchar(40)** and **City** as **nvarchar(15)**. Each character requires 2 bytes of storage, so the total length of this composite index is 110 bytes (2* (40 + 15)). Note that when using **varchar** columns, the index will assume the maximum length of the **varchar** column to calculate the length of the composite index.

Action

Examine the lengths of the columns in your composite index and make sure that the total does not exceed 900 bytes. For more information about determining the storage size for different Microsoft® SQL ServerTM data types, see the Data Types topic, and for more information about indexes, see the <u>CREATE INDEX</u>

and Creating an Index.

See Also

Errors 1000 - 1999

Error 1904

Severity Level 16

Message Text

Cannot specify more than %d column names for statistics or index key list. %d specified.

Explanation

This error occurs when more than 16 columns are used to create a composite index. A composite index is an index that uses from 2 to 16 columns.

The following example shows a composite index using objects from the **pubs** database:

USE pubs
GO
CREATE INDEX idxPubNameCity
ON publishers (pub_name, city)

Action

GO

Modify the CREATE INDEX statement to use no more than 16 columns. For more information, see CREATE INDEX.

See Also

Creating an Index

Errors 1000 - 1999

Error 1910

Severity Level 16

Message Text

Cannot create more than %d nonclustered indices or column statistics on one table.

Explanation

This error occurs when either:

• A table already has 250 indexes.

Or

• A table has a large number of indexes and statistics are either being created or updated. Microsoft® SQL ServerTM makes an entry in **sysindexes** for each set of column-level statistics that are either created or updated, if the base column does not already have an index.

The following example produces this error message by updating statistics on a table with 250 indexes:

```
USE pubs
GO
IF EXISTS(SELECT TABLE_NAME FROM INFORMATION_SCHI
    WHERE TABLE_NAME = 'TestCols')
    DROP TABLE TestCols
GO
DECLARE @counter int, @stmt varchar(255)
SET @counter = 1
CREATE TABLE TestCols
(
```

```
c1 int IDENTITY(1, 1),
 c2 char(255)
-- Creating 250 indexes.
WHILE (@counter < 251)
 BEGIN
   IF (@counter = 1)
    CREATE UNIQUE CLUSTERED INDEX Ind1 ON TestCols (c1
   ELSE
   BEGIN
    SELECT @stmt = 'CREATE INDEX t1Ind' + LTRIM(STR(@coi
      'ON TestCols (c1)'
    EXEC (@stmt)
   END
   SET @counter = @counter + 1
 END
-- Updating Statistics. Returns error 1910.
UPDATE STATISTICS TestCols (c2) WITH COLUMNS, FULLSCAN
```

Action

Either:

• Modify the CREATE INDEX statement to use no more than 250 indexes.

Or

• Remove any unused, nonclustered indexes to create or update statistics successfully.

For more information, see **CREATE INDEX**.

See Also

Errors 1000 - 1999

<u>sysindexes</u>

<u>UPDATE STATISTICS</u>

Error 1916

Severity Level 16

Message Text

CREATE INDEX options %ls and %ls are mutually exclusive.

Explanation

This error occurs when you attempt to create an index with two mutually exclusive CREATE INDEX statement clauses. The index is not created when this error occurs.

This table shows when to use the CREATE INDEX clauses:

Index type	Clause
Unique clustered	IGNORE_DUP_KEY
Nonclustered	None
Unique nonclustered	IGNORE_DUP_KEY

Action

Select the correct clauses for the CREATE INDEX statement.

See Also

CREATE INDEX

Creating an Index

Errors 1000 - 1999

Error 2501

Severity Level 16

Message Text

Could not find table named '%.*ls'. Check sysobjects.

Explanation

Usually some form of corruption in the database causes this error. This often happens when a table is being dropped and a serious error occurs that causes the drop to fail.

Action

Executing DBCC CHECKDB and DBCC CHECKCATALOG can indicate other problems in the database. Restore your database from backup or contact your primary support provider for assistance.

You may also be able to use the **bcp** utility to copy out other tables. But because this problem is often caused by other problems in the database, problems can occur when you copy out other tables.

See Also

bcp Utility

BULK INSERT

DBCC CHECKDB

DBCC CHECKCATALOG

Errors 2000 - 2999

Reporting Errors to Your Primary Support Provider

Error 2511

Severity Level 16

Message Text

Table Corrupt: Object ID %d, Index ID %d. Keys out of order on page %S_PGID, slots %d and %d.

Table error: Object ID %d, Index ID %d. Keys out of order on page %S_PGID, slots %d and %d.

Explanation

This error occurs when an index is not ordered correctly. The %S_PGID variable can be a data page (for clustered indexes), an index page, or a leaf page.

Action

The fastest way to resolve this problem is to execute DBCC CHECKDB with the REPAIR_REBUILD clause. This fixes any index corruption in the entire database. If the database is so large that you do not want to run DBCC CHECKDB, use these instructions to locate the specific table that is corrupt. Then, execute DBCC CHECKTABLE with the REPAIR_REBUILD clause for that table.

IMPORTANT If executing DBCC CHECKDB or DBCC CHECKTABLE with the REPAIR_REBUILD clause does not correct the index problem or if you are unsure what effect either of these DBCC statements with the REPAIR_REBUILD clause has on your data, contact your primary support provider.

Follow these steps:

1. Note the object ID.

- 2. If the object with the error is not a system table (its object ID is more than 100), continue with the next step.
- 3. If the object with the error is a system table (its object ID is less than 100), you cannot drop the index. Restore the database from a known clean backup.
- 4. Find the name of the index involved, as follows:

USE master

GO

SELECT name

FROM sysindexes

WHERE indid = index id

AND id = object_id

- 5. Drop and re-create the index.
- 6. Run DBCC CHECKTABLE on the affected table to verify that all problems have been resolved at the table level.

If problems persist, contact your primary support provider. Have the output from either DBCC CHECKDB or DBCC CHECKTABLE available for review.

See Also

DBCC CHECKDB

DBCC CHECKTABLE

Errors 2000-2999

Reporting Errors to Your Primary Support Provider

Error 2513

Severity Level 16

Message Text

Table error: Object ID %ld (object '%.*ls') does not match between '%.*ls' and '%.*ls'.

Explanation

This error occurs when the DBCC CHECKCATALOG statement detects a database object in one system table and the object is not expected in another table. Most often, this occurs when one or more rows in the **syscolumns**, **syscomments**, **sysindexes**, or **sysdepends** tables have no corresponding rows in **sysobjects**. This error can also occur if an operation affecting the system table, such as deletion of a user table, was interrupted.

Action

Although this error seldom interferes with database use, it is a good idea to restore the affected system table.

WARNING Severe problems can result from the direct manipulation of the system catalogs. Do not modify the system catalogs unless instructed to do so by your primary support provider.

Follow these steps to restore the consistency of the system tables:

1. Display the offending rows by executing a query in the problem database against the two tables mentioned in the message. For example, if the message reports one or more mismatches between **syscolumns** and **sysobjects**:

USE master

GO

SELECT * FROM syscolumns

WHERE syscolumns.id NOT IN (SELECT sysobjects.id FROM sysobjects)

1. Enable updates to system tables by enabling the **allow updates** configuration option.

Before modifying any system catalogs, be sure that you have a valid backup of the database. For more information about backup operations, see <u>Backing Up and Restoring Databases</u>.

WARNING Incorrect modification of the system catalogs can result in database corruption or data loss.

- 2. Make sure that the rows displayed in Step 1 correspond to reported 2513 errors, and then delete them from the first table mentioned in the message text.
- 3. If the number of rows affected by the delete does not match the number found in Step 1, roll back the transaction. If the numbers match, commit it.
- 4. To confirm that the mismatches are fixed, re-execute DBCC CHECKCATALOG. Then, disable the **allow updates** configuration option.

See Also

BEGIN TRANSACTION

CHECKPOINT

Errors 2000-2999

Setting Configuration Options

Using Startup Options

Error 2535

Severity Level 16

Message Text

Table error: Page %S_PGID is allocated to object ID %d, index ID %d, not to object ID %d, index ID %d found in page header.

Explanation

The DBCC CHECKALLOC statement detected a mismatch in the object ID between an allocation structure (extent) and **sysindexes**.

Note Occasionally, DBCC CHECKALLOC reports this error when no real error condition exists. Execute DBCC CHECKALLOC in single-user mode if you suspect the 2535 error is incorrect.

Action

Follow these steps:

1. Examine the index ID associated with the page number in the message to determine whether the error occurred on the table data or on an index.

2. Restore the database:

- If the object ID is less than or equal to 100, the error is on a system table. Restore the database from a clean backup.
- If the object ID is greater than 100, the error is on a user table.
- If this error occurs on table data (the index ID = 1), restore the

database from a clean backup.

• If the error occurs on an index, you can usually correct it by dropping and re-creating the index. If dropping and recreating the index is not feasible, or if you cannot drop the index, contact your primary support provider for assistance.

If the problem persists, contact your primary support provider for assistance. Have the output of the appropriate DBCC statements available for review.

See Also

DBCC CHECKALLOC

DBCC CHECKDB

DBCC CHECKTABLE

Errors 2000-2999

Reporting Errors to Your Primary Support Provider

Error 2601

Severity Level 14

Message Text

Cannot insert duplicate key row in object '%.*ls' with unique index '%.*ls'.

Explanation

This error occurs when you attempt to put duplicate index values into a column or columns that have a unique index. Microsoft® SQL ServerTM does not allow two rows to have the same index value (including NULL) in columns that have a unique index. SQL Server checks for duplicate values when the index is created and each time the table is modified using the INSERT or UPDATE statement.

Action

If you need duplicate index values in the indexed column(s), drop the unique index and create a nonunique index.

To use a unique index on data that contains duplicate values, you must change some values to prevent the duplication. You can change the data already in the table by using the SELECT or UPDATE statement, or you can change the data to be inserted.

See Also

CREATE INDEX

Creating an Index

DELETE

Errors 2000-2999

INSERT

SELECT

UPDATE

Error 2731

Severity Level 16

Message Text

Column '%.*ls' has invalid width: %d.

Explanation

This error occurs when a user is attempting to create a view in which a column is empty, or has a length that is less than or equal to 0. This is not allowed in Microsoft® SQL ServerTM 2000.

An example of a query which generates this error follows. Note that the data for CategoryName is 0-length.

CREATE VIEW myview AS

SELECT CategoryName = ", p.ProductName, c.Description

FROM Products p, Categories c

WHERE p.CategoryId = c.CategoryId

AND p.UnitsInStock > 0

GO

Action

You can resolve this error by:

- Not using zero-length columns when creating a view.
- Specifying a default value for column length. For example: create view myview as char(10) "empty column"

Error 2750

Severity Level 16

Message Text

Column or parameter #%d: Specified column precision %d is greater than the maximum precision of %d.

Explanation

This error occurs when the precision of a **float**, **decimal**, or **numeric** column exceeds the maximum value for the specified data type.

For **decimal** and **numeric** data types, Microsoft® SQL Server™ normally supports a maximum precision of 38 digits for compatibility with various front ends, such as Microsoft Visual Basic®. For more information about running the **sqlservr** application, see <u>sqlservr</u> Application.

Action

Define the column to have a precision that falls within the allowable precision range for that data type.

See Also

decimal and numeric

float and real

Precision, Scale, and Length

Error 2751

Severity Level 16

Message Text

Column or parameter #%d: Specified column scale %d is greater than the specified precision of %d.

Explanation

This error occurs when the scale of a **decimal** or **numeric** column exceeds the precision value for that column.

For **decimal** and **numeric** data types, Microsoft® SQL Server™ normally supports a maximum precision of 38 digits for compatibility with various applications. For more information about running the **sqlservr** application, see <u>sqlservr</u> Application.

Action

Specify the precision with *p*, which must be between 1 and the maximum precision, and the scale with *s*, which must be between 0 and *p*. If you do not specify the precision, SQL Server uses a default precision of 18. If you do not specify the scale, SQL Server uses a default scale of 0.

See Also

decimal and numeric

Errors 2000-2999

float and real

Precision, Scale, and Length

Error 2812

Severity Level 16

Message Text

Could not find stored procedure '%.*ls'.

Explanation

An attempt was made to execute a stored procedure that does not exist. If the procedure does exist (it appears when **sp_help** is run with no parameters), the error might have occurred because you did not fully qualify the procedure name. If the procedure is not owned by the user attempting to execute it, and it is not owned by the database owner (**dbo**), all references to it must include the owner name. For example, suppose user1 creates a procedure called **proc1**. Any users must add the owner name before the procedure name, as shown in the following example:

EXECUTE user1.proc1

Naming conventions for database objects are as follows:

[[[server_name.][database_name].][owner_name].]object_name

The default value for *database_name* is the current database; the default value for *owner_name* is the current user. If the current user is not the owner, the current user must specify the owner name when using the procedure. Because the owner name is part of the object name, two different users can have procedures with the same object name in the same database (for example **user1.proc1** and **user2.proc1**). For more information about naming conventions, see <u>Transact-SQL Syntax Conventions</u>.

The only exceptions to this naming convention are system procedures, which can be executed from any database. System procedures reside in the **master** database, are owned by the system administrator, and have names that begin with

sp_. System procedures reference the system tables for the current database.

Action

If you do not know who owns the procedure, use **sp_help** to display the owner. If you run **sp_help** without any parameters, it displays objects owned by other users. To determine which procedures exist in a database and who owns them, use the following:

```
USE master
GO
SELECT name,owner = USER_NAME(uid)
FROM sysobjects
WHERE type = 'P'
GO
```

If the procedure does not appear in the output of this query, the procedure is either in a different database or does not exist.

If you do not own the procedure in question, you can avoid error 2812 by qualifying the procedure name with the owner name, as shown in the following example:

EXECUTE user1.proc1

For procedures used by many users of a database, it is usually easiest if the **dbo** creates the procedure. This allows any user to find the procedure without specifying an owner name.

If the procedure is not in the database where it is executed, you can avoid this error by fully qualifying the procedure name with the database name, as shown in the following example:

```
EXECUTE database_1.user1.proc1
```

The owner name is not needed if you or the **dbo** own the procedure. For example:

EXECUTE database_1..proc1

Execute permission must be provided so that other users can execute this procedure, but no permissions are required to see the text of the procedure.

If this error occurs on system procedures, it might be resolved by running Instmstr.SQL. This reinstalls all system procedures and initializes various other structures.

See Also

Errors 2000-2999

EXECUTE

sp_configure

sp_help

Error 3023

Severity Level 16

Message Text

Backup and file manipulation operations (such as ALTER DATABASE ADD FILE) on a database must be serialized. Reissue the statement after the current backup or file manipulation operation is completed.

Explanation

These operations may not be performed at the same time as a backup operation:

- File management operations such as the ALTER DATABASE statement with either the ADD FILE or REMOVE FILE clauses.
- The file truncation phase of shrink database or shrink file.

If a backup is started when either an add or remove file operation is in progress, the backup will wait for a timeout period, then fail. If a backup is running and one of these operations is attempted, the operation fails immediately.

If a shrink operation tries to truncate a file while a backup is running, the shrink stops without truncating the file, however data pages have been relocated. If a backup is started just as a file is being truncated, backup normally waits long enough for the file truncation to complete.

Action

Reissue the operation after the conflicting operation has completed.

If a shrink operation fails, reissue the shrink command with the TRUNCATE_ONLY option after the backup completes.

See Also

ALTER DATABASE

Backing Up and Restoring Databases

BACKUP

DBCC SHRINKDATABASE

DBCC SHRINKFILE

Setting Database Options

Error 3036

Severity Level 16

Message Text

Database '%ls' is in warm-standby state (set by executing RESTORE WITH STANDBY) and cannot be backed up until the entire load sequence is completed.

Explanation

Your standby database has not been recovered and may not be backed up. Usually, you recover this database only if your primary fails and you switch operations to the standby. Until this occurs, rely on backups taken from the primary server.

See Also

Backing Up and Restoring Databases

BACKUP

Error 3041

Severity Level 16

Message Text

BACKUP failed to complete the command %.*ls

Explanation

This error indicates that Microsoft® SQL Server™ could not complete the BACKUP of the specified database due to a previous error. The BACKUP command that failed is given at the end of the error message. This message also appears in the Microsoft Windows NT® application log.

Action

To determine why the BACKUP failed, examine the Microsoft SQL Server error log for any errors prior to error 3041.

See Also

Viewing the SQL Server Error Log

Error 3101

Severity Level 16

Message Text

Exclusive access could not be obtained because the database is in use.

Explanation

This error occurs when you attempt to load a backup while users are accessing the database. This error can occur with RESTORE DATABASE or RESTORE LOG. You cannot use the RESTORE DATABASE statement while the database is in use by any user, including yourself.

Action

Use the ALTER DATABASE SET SINGLE_USER to remove users from the database.

Or, wait until all users have finished using the database, and then use the RESTORE DATABASE statement. Make sure that you are not using the database being loaded when you issue the RESTORE DATABASE statement. Although not required, it is best to run the RESTORE DATABASE statement from the **master** database.

See Also

Backing Up and Restoring Databases

RESTORE

Error 3143

Severity Level 16

Message Text

The data set on device '%ls' is not a SQL Server backup set.

Explanation

The backup being restored conforms to the Microsoft Tape Format, but is not a Microsoft® SQL ServerTM backup. The backup may have been written by another software product.

Action

To determine the contents of the backup, consider using RESTORE HEADERONLY.

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE HEADERONLY

Error 3154

Severity Level 16

Message Text

The backup set holds a backup of a database other than the existing '%ls' database.

Explanation

The backup set is a backup of a database with the same name as the database to which you are restoring. However, the database being restored was created by a different CREATE DATABASE statement than the database in the backup set. Even though the databases have the same name, they are in fact different databases.

Action

Either overwrite the existing database by reissuing the RESTORE DATABASE command using the WITH REPLACE clause, or restore the backup set to a different database name. If you restore the backup set to a different database name, ensure that the files that will be created do not already exist and are not being used by another database. If you chose the wrong backup set to restore, select a backup of the existing database and restore it.

See Also

Backing Up and Restoring Databases

CREATE DATABASE

RESTORE

Error 3155

Severity Level 16

Message Text

The RESTORE operation cannot proceed because one or more files have been added or dropped from the database since the backup set was created.

Explanation

You must begin the restore sequence by restoring a full database backup created after files were added or removed from the database. You cannot roll forward across file creation or deletion operations.

See Also

Backing Up and Restoring Databases

RESTORE

Error 3206

Severity Level 16

Message Text

No entry in sysdevices for backup device '%.*ls'. Update sysdevices and rerun statement.

Explanation

You have attempted to use a logical device that is not a backup device.

Action

Either define the device using **sp_addumpdevice**, or refer to the physical device directly by specifying the TAPE = or DISK = syntax of the BACKUP statement.

See Also

Backing Up and Restoring Databases

Error 3209

sysdevices

Error 3209

Severity Level 16

Message Text

'%.*ls' is not a backup device. Check sysdevices.

Explanation

You have attempted to use a logical device that is not a backup device.

Action

Either define the device using **sp_addumpdevice**, or refer to the physical device directly by specifying the TAPE = or DISK = syntax of the BACKUP statement.

See Also

Backing Up and Restoring Databases

Error 3206

sp_addumpdevice

sysdevices

Error 3227

Severity Level 16

Message Text

The volume on device '%ls' is a duplicate of stripe set member %d.

Explanation

This message occurs when either:

- Volumes from the same media family are mounted in more than one tape device. All such volumes must be mounted on the same device.
- A volume from a media family that has already been processed has been loaded into the specified device.

Action

Remove the volume from the specified device and insert the correct volume.

See Also

Backing Up and Restoring Databases

RESTORE

Error 3242

Severity Level 16

Message Text

The file on device '%ls' is not a valid Microsoft Tape Format backup set.

Explanation

The backup device does not contain data in Microsoft Tape Format due to one of the following situations:

- The contents of the backup set were not generated by SQL Server version 7.0 or later.
- The contents of the backup set have been damaged.

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE

Error 3247

Severity Level 16

Message Text

The volume on device '%ls' has the wrong media sequence number (%d). Remove it and insert volume %d.

Explanation

The media family spans multiple volumes. The restore operation expected to process the volume specified in the error message, but found a different volume of the same media family instead.

Action

Remove the volume from the specified device and insert the volume with the requested value.

See Also

Backing Up and Restoring Databases

RESTORE

Error 3249

Severity Level 16

Message Text

The volume on device '%ls' is a continuation volume for the backup set. Remove it and insert the volume holding the start of the backup set.

Explanation

The media family spans multiple volumes. The backup set to be processed by the restore operation starts on an earlier volume than the one inserted into the named device.

Action

Remove the volume and insert the volume containing the start of the target backup set. To determine which backup sets are contained on which volumes, use RESTORE HEADERONLY.

See Also

Backing Up and Restoring Databases

RESTORE

RESTORE HEADERONLY

Error 3251

Severity Level 10

Message Text

The media family on device '%ls' is complete. The device is now being reused for one of the remaining families.

Explanation

The restore operation allows a media set to be restored with fewer physical devices than were used to create it. This message means that the restore operation has completely processed the media family on the named device, and is now ready to reuse the device to restore one of the remaining media families in the media set.

Action

Remove the volume from the named device and insert the first volume of a media family that has not yet been processed.

See Also

Backing Up and Restoring Databases

RESTORE

Error 3256

Severity Level 16

Message Text

The backup set on device '%ls' was terminated while it was being created and is incomplete. RESTORE sequence is terminated abnormally.

Explanation

The backup operation that created the backup set did not finish successfully. You can only restore backup sets that were created successfully. For example, the backup may have been terminated with an attention message. The backup set is not complete, and the restore operation must terminate.

Action

If you were restoring a database backup, restore a different database backup, and use log backups to roll forward. If you were restoring a log backup, apply the next log backup, the log backup made following the incomplete backup, instead.

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE

Error 3258

Severity Level 16

Message Text

The volume on device '%ls' belongs to a different media set.

Explanation

The volume on the named device does not belong to the same media set as the other volumes being processed.

Action

For tape media sets, remove the offending volume and insert the next volume of the media family.

For disks, reissue the command. Name only those backup devices that were part of the same media set.

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE

Error 3263

Severity Level 10

Message Text

Cannot use the volume on device '%ls' as a continuation volume. It is sequence number %d of family %d for the current media set. Insert a new volume, or sequence number %d of family %d for the current set.

Explanation

The media set spans multiple volumes. Initializing the volume currently in the named device would destroy the integrity of the media set because the volume has already been used as a member of the media set.

Action

Remove the volume and insert a fresh tape that can be overwritten.

See Also

Backing Up and Restoring Databases

RESTORE

Error 3267

Severity Level 16

Message Text

Insufficient resources to create UMS scheduler.

Explanation

When attempting a backup or restore operation, this error message indicates that the server is too busy to perform the backup or restore operation.

Action

Retry the operation after reducing the server load.

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE

Error 3414

Severity Level 10

Message Text

Database '%.*ls' (database ID %d) could not recover. Contact Technical Support for further instructions.

Explanation

During startup, Microsoft® SQL Server™ could not complete the recovery of the specified database.

Action

To determine why recovery failed, examine the error log for any errors prior to error 3414. It is important to examine errors that occurred before the first occurrence of error 3414 because subsequent attempts to start the server might not give the detailed error information you need to diagnose the problem. If you do not have sufficient information to recover from the previous errors, you can recover from known clean backups, or you can contact your primary support provider for assistance. Note that you cannot use the database until whatever caused the error has been corrected.

See Also

Reporting Errors to Your Primary Support Provider

Error 3604

Severity Level 10

Message Text

Duplicate key was ignored.

Explanation

This error occurs when you attempt to insert a row that has an index value that violates the uniqueness property (UNIQUE with IGNORE_DUP_KEY) on an existing index.

Microsoft® SQL Server™ ignores the statement that caused the error and continues processing the transaction.

Action

No action is necessary unless you want to insert that row into the table. If so, you can drop and re-create the index without the UNIQUE clause, or you can change the data causing the uniqueness violation.

See Also

CREATE INDEX

Creating an Index

Error 3627

Severity Level 16

Message Text

Could not create worker thread.

Explanation

When attempting a backup or restore operation, this error message indicates that the server is too busy to perform the backup or restore operation.

Action

Retry the operation after reducing the server load.

See Also

Backing Up and Restoring Databases

BACKUP

RESTORE

Error 4208

Severity Level 16

Message Text

The statement %hs is not allowed while the recovery model is SIMPLE. Use BACKUP DATABASE or change the recovery model using ALTER DATABASE.

Explanation

When using the Simple Recovery model, the log is truncated when periodic checkpoints occur. Only full database and differential database backups are allowed because the log has been truncated and any log backups made would be unusable.

Action

To maintain your database by performing only full and differential database backups, keep using the Simple Recovery model along with BACKUP DATABASE.

To maintain a full set of transaction log backups to guarantee that no change to the database is lost in the event of a failure, use ALTER DATABASE to change the recovery model to full or bulk-logged. Then use BACKUP DATABASE, and begin taking periodic transaction log backups using BACKUP LOG.

See Also

BACKUP

Setting Database Options

sp_dboption

Error 4214

Severity Level 10

Message Text

There is no current database backup. This log backup cannot be used to roll forward a preceding database backup.

Explanation

To restore the database after failure, you must begin either with a full database backup, or with a partial or complete set of file backups. Either this database has never been backed up, or a BACKUP LOG statement was executed after switching from the Simple Recovery model to Full or Bulk-Logged recovery before a database or file backup was performed. Therefore, the log backup just completed is not useful.

Action

Perform a full database backup before backing up the log.

See Also

BACKUP

Error 4305

Severity Level 16

Message Text

The log in this backup set begins at LSN %.*ls, which is too late to apply to the database. An earlier log backup that includes LSN %.*ls can be restored.

Explanation

The restore operation found a gap between the last restore and the transaction log that you attempted to apply.

Action

Locate the missing, earlier transaction log backups and apply these first. Transaction logs must be restored in the same order in which they were backed up.

See Also

Backing Up and Restoring Databases

RESTORE

Error 4306

Severity Level 16

Message Text

The preceding restore operation did not specify WITH NORECOVERY or WITH STANDBY. Restart the restore sequence, specifying WITH NORECOVERY or WITH STANDBY for all but the final step.

Explanation

After the database has been recovered, no further restore operations may be performed.

Action

To recover a database, start the sequence over and use the NORECOVERY clause on all RESTORE statements except the last. If you are maintaining a standby server and want to bring up the database in read-only mode between restore operations, use the STANDBY clause of RESTORE instead of the NORECOVERY clause.

See Also

Backing Up and Restoring Databases

RESTORE

Error 4318

Severity Level 16

Message Text

File '%ls' has been rolled forward to LSN %.*ls. This log terminates at LSN %.*ls, which is too early to apply the WITH RECOVERY option. Reissue the RESTORE LOG statement WITH NORECOVERY.

Explanation

You have attempted to recover the database to its state at the time the current log backup was made. However, at least one file has been modified since this backup was created. Recovery is not possible because the database would be left in an inconsistent state.

Action

To recover the database to its most recent state, reissue the RESTORE LOG statement with the NORECOVERY clause and continue to apply transaction logs, recovering only when you have rolled far enough forward.

To recover the database to the point-in-time at the end of this log backup, use RESTORE DATABASE to restore the indicated file to an earlier state and roll it forward.

See Also

Backing Up and Restoring Databases

RESTORE

Error 5013

Severity Level 16

Message Text

The master and model databases cannot have files added to them. ALTER DATABASE was aborted.

Explanation

This error occurs when you attempt to extend either the **master** or **model** databases by adding database files.

Action

Extend the **master** or **model** databases only when necessary. The **master** database will grow automatically, if needed. If there is no room on the disk drive where the **master** files reside, either delete other files to make more disk space or replace the disk drive with a larger disk drive. If you need to expand the **model** database, ensure that there is available disk space on the disk drive where the **model** data files currently reside.

See Also

ALTER DATABASE

Rebuilding the master Database (Level 4)

Restoring the master Database from a Current Backup

Error 5701

Severity Level 10

Message Text

Changed database context to '%.*ls'.

Explanation

This is an informational message indicating that the database context has changed. This message is returned anytime a USE *database* statement is executed.

Action

None needed.

See Also

USE

Error 5808

Severity Level 16

Message Text

Ad hoc updates to system catalogs not recommended. Use the RECONFIGURE WITH OVERRIDE statement to force this configuration.

Explanation

This error message occurs in one of these two situations:

- When a user tries to use the **sp_configure** system stored procedure with the **allow updates** option.
- When a user tries to set a configuration parameter to a value that Microsoft® SQL Server™ recognizes as likely to interfere with performance or smooth operation.

When the **allow updates** option is enabled, SQL Server allows direct updates to the system tables, so any user who can log on as the SQL Server system administrator can update the system tables directly with ad hoc queries and can create stored procedures that update the system catalog. Incorrect changes to the system tables can cause unrecoverable database corruption or data loss.

Warning Severe problems can result from the direct manipulation of the system catalogs. Do not modify the system catalogs unless instructed to do so by your primary support provider.

Action

Before modifying any system catalogs, be sure that you have a valid backup of the database. For more information about backup operations, see <u>Backing Up</u>

and Restoring Databases.

WARNING Incorrect modification of the system catalogs can result in database corruption or data loss.

If possible, restart SQL Server in single-user mode by using the **-m** flag of the **sqlservr** application so that inadvertent modifications do not occur. For more information, see <u>sqlservr Application</u>.

To modify system catalogs, use the **osql** utility to alter the **allow updates** system configuration setting.

Note Only the system administrator can alter the value for the **allow updates** system configuration setting.

See Also

allow updates Option

osql Utility

Reporting Errors to Your Primary Support Provider

Setting Configuration Options

sp_configure

Using Startup Options

Error 6103

Severity Level 17

Message Text

Could not do cleanup for the killed process. Received message %d.

Explanation

This error message occurs when another error caused a user connection to terminate abnormally. The message number that caused this error will be printed in the error 6103 message.

Action

Examine and resolve the "received message" reported in this error message.

See Also

How to kill a process (Enterprise Manager)

KILL

Error 6826

Severity Level 16

Message Text

Every IDREFS or NMTOKENS column in a FOR XML EXPLICIT query must appear in a separate SELECT clause, and the instances must be ordered directly after the element to which they belong.

Explanation

The schema may not have sufficient key fields specified.

Action

This can be resolved by adding sql:key-fields annotation.

Error 7130

Severity Level 16

Message Text

%ls WITH NO LOG is not valid at this time. Use sp_dboption to set the 'select into/bulkcopy' option on for database '%.*ls'.

Explanation

This error occurs upon executing either the UPDATETEXT or WRITETEXT statements, or either the **dbupdatetext** or **dbwritetext** routines in a database that does not have the **sp_dboption** system stored procedure's **select into/bulkcopy** option enabled. Because these are nonlogged operations, the option must be enabled.

Often, UPDATETEXT, WRITETEXT, **dbupdatetext**, and **dbwritetext** are run against a temporary table. The **select into/bulkcopy** option must be enabled in **tempdb**, or these will not run successfully.

Action

Enable the **sp_dboption** system stored procedure's **select into/bulkcopy** option for all databases affected by the query that contains a nonlogged operation. To do this, the system administrator and database owners should follow these steps:

1. Enable the option:

USE master

GO

sp_dboption database_name, 'select into/bulkcopy',true

GO

USE database_name

GO

CHECKPOINT

GO

- 2. Verify that the change is active: sp_helpdb database_name GO
- 3. Execute the nonlogged operation.
- 4. When the nonlogged operation is complete, backup the database.

CAUTION After executing a nonlogged operation, do not back up the transaction log. Although the procedure may appear to succeed, you may have been backing up only empty text pages. Whenever you make nonlogged changes to your database, you must use the BACKUP DATABASE statement, because changes made by the nonlogged operation cannot be recovered from transaction logs.

5. Return the database to its original condition by disabling the **select into/bulkcopy** option:

USE master

GO

sp_dboption database_name, 'select into/bulkcopy',false

GO

USE database_name

GO

CHECKPOINT

GO

6. Verify that the change is active: sp_helpdb database_name GO

See Also

CHECKPOINT

dbwritetext

dbupdatetext

Setting Database Options

sp_dboption

sp_helpdb

<u>UPDATETEXT</u>

WRITETEXT

Error 7303

Severity Level 16

Message Text

Could not initialize data source object of OLE DB provider '%ls'. %ls

Explanation

This error message indicates that the OLE DB data source object could not be initialized.

Action

This error message can occur because of one of these problems.

Problem	Resolution
One of the initialization parameters	Verify that these parameters defined
specified in sp_addlinkedserver	for the linked server, specified by
(data_source, location,	executing sp_addlinkedserver , are
provider_string, or catalog) is	correct for the given provider. Check
incorrect for this provider.	the provider's documentation for the
	appropriate values for these
	parameters.
Login and password sent to the	Verify that there is a valid login and
provider is invalid.	password configured for the linked
	server and the current SQL Server
	login through sp_addlinkedsrvlogin .

See Also

Distributed Queries

Errors 7000 - 7999

sp_addlinkedserver

sp_addlinkedsrvlogin

Error 7304

Severity Level 16

Message Text

Could not create a new session on OLE DB provider '%ls'.

Explanation

Unable to create a new session to the OLE DB data source.

Action

Check for error messages returned by the provider and review provider documentation.

See Also

Accessing External Data

<u>sp_addlinkedserver</u>

Error 7306

Severity Level 16

Message Text

Could not open table '%ls' from OLE DB provider '%ls'. %ls

Explanation

This error message is returned if the OLE DB provider does not support the interfaces and OLE DB properties required for the UPDATE, DELETE, and INSERT statements.

Action

In this scenario, a trace on **OLE DB Errors** would output additional information on the specific missing OLE DB support. For example, in the case of Microsoft® SQL ServerTM, the INSERT, UPDATE, and DELETE statements are not supported on the remote table if the table does not have a unique index defined on it. In this case, SQL Profiler would output the following information:

OLE/DB Provider 'SQLOLEDB' IOpenRowset::OpenRowset returned [PROPID=DBPROP_BOOKMARKS VALUE=True STATUS=DBPROVALUE=True STATUS=DBPROPSTATUS_OK], [PROPID=DBPROP_STATUS=DBPROPSTATUS_CONFLICTING], [PROPID=DBPROP_

This error message indicates the status of each OLE DB property that was requested on the rowset opened against the table being updated. This information indicates that all properties required by SQL Server to perform this query, except the DBPROP_IRowsetChange property, were satisfied by the provider.

See Also

Distributed Queries

Errors 7000 - 7999

sp_addlinkedserver

Error 7314

Severity Level 16

Message Text

OLE DB provider '%ls' does not contain table '%ls'. The table either does not exist or the current user does not have permissions on that table.

Explanation

Either the specified table or columns do not exist or the login used to connect to the provider does not have the required permissions on the table or columns.

This message occurs on case-sensitive servers.

Action

Verify that the table or columns specified exist. Verify that the appropriate permissions are granted on the table or columns specified.

If the table was originally created in Oracle without quotation marks, specify the table name in the distributed query using all uppercase letters. If the table was originally created in Oracle with quotation marks, specify the table name in the distributed query using all lowercase letters.

See Also

Distributed Queries

Errors 7000 - 7999

OLE DB Providers Tested with SQL Server

sp_addlinkedserver

Error 7321

Severity Level 16

Message Text

An error occurred while preparing a query for execution against OLE DB provider '%ls'. %ls

Explanation

Indicates a possible syntax error in the pass-through query's query string parameter.

Action

Verify that the query string is free of syntax errors (with respect to the query language supported by the OLE DB provider).

See Also

Distributed Queries

Errors 7000 - 7999

OPENQUERY

Error 7356

Severity Level 16

Message Text

OLE DB provider '%ls' supplied inconsistent metadata for a column. Metadata information was changed at execution time.

Explanation

This error indicates that there was inconsistent metadata reported by the provider on a given table between compilation time and execution time of the query. This typically occurs because the provider returns inconsistent metadata between the OLE DB schema rowset COLUMNS (during compilation) and that metadata reported by the **IColumnsInfo** interface on the table's rowset.

Action

Consult SQL Profiler to determine which table column caused this error.

See Also

Distributed Queries

Errors 7000 - 7999

Monitoring with SQL Profiler

sp_addlinkedserver

Error 7357

Severity Level 16

Message Text

Could not process object '%ls'. The OLE DB provider '%ls' indicates that the object has no columns.

Explanation

Either the specified table or columns do not exist or the login used to connect to the provider does not have the required permissions on the table or columns.

Action

Verify that the table or columns specified exist. Verify that the appropriate permissions are granted on the table or columns specified.

See Also

Distributed Queries

sp_addlinkedserver

Error 7391

Severity Level 16

Message Text

The operation could not be performed because the OLE DB provider '%ls' was unable to begin a distributed transaction.

Explanation

This error can occur while processing an INSERT, UPDATE, or DELETE statement inside an explicit or implicit transaction. This indicates that the OLE DB provider does not support distributed transactions, which is needed for data modification statements inside an explicit or implicit transaction. A data modification statement can be executed against such a provider only in the case where the statement is a transaction by itself.

Action

Verify that the OLE DB provider specified supports distributed transactions. If the provider does not support distributed transactions, rewrite the data modification statement not to use distributed transactions.

See Also

Distributed Queries

Error 7392

Severity Level 16

Message Text

Could not start a transaction for OLE DB provider '%ls'.

Microsoft® SQL Server™ also returns this error message if the provider is a SQL Server-specific provider:

Only one transaction can be active on this session.

Explanation

The OLE DB provider returned error 7392 because only one transaction can be active for this session. This error indicates that a data modification statement is being attempted against an OLE DB provider when the connection is in an explicit or implicit transaction, and the OLE DB provider does not support nested transactions. SQL Server requires this support so that, on certain error conditions, it can terminate the effects of the data modification statement while continuing with the transaction.

Action

SET XACT_ABORT is ON. This causes SQL Server to terminate the surrounding transaction when there is an error while processing the data modification statement. If SET XACT_ABORT is ON, SQL Server does not require nested transaction support from the OLE DB provider.

See Also

Distributed Queries
SET XACT ABORT

Error 7399

Severity Level 16

Message Text

OLE DB provider '%ls' reported an error. %ls

Cannot start your application. The workgroup information file is missing or opened exclusively by another user.

Explanation

This error message returned by the Microsoft OLE DB Provider for Jet indicates one of the following:

- The Microsoft® Access database is not a secured database and the login and password specified was not **Admin** with no password.
- The Access database is secured and the HKEY_LOCAL_MACHINE\Software\Microsoft\Jet\4.0\SystemDB registry key is not pointing to the correct Access workgroup file. Secured Access databases have a corresponding workgroup file, including the full path, which should be indicated by the above registry key.

Action

Verify that there is a login mapping for the current Microsoft SQL Server[™] login to **Admin** with no password.

If the Access database being accessed is secured, make sure that the above registry key points to the full pathname of the Access workgroup file.

See Also

Distributed Queries

sp_addlinkedserver

Error 7403

Severity Level 16

Message Text

Could not locate registry entry for OLE DB provider '%ls'.

Explanation

This error message indicates one of the following:

- The OLE DB provider is not registered properly.
- The name of the provider used in the *provider_name* parameter of **sp_addlinkedserver** (or specified in the OPENROWSET function) is incorrect.

Action

Verify that the provider has been registered correctly and that the *provider_name* parameter uses the PROGID of the provider.

See Also

Distributed Queries

OPENROWSET

sp_addlinkedserver

Error 7413

Severity Level 16

Message Text

Could not perform a Windows NT authenticated login because delegation is not available.

Explanation

This error message indicates that a distributed query is being attempted for a Microsoft® Windows® authenticated login without an explicit login mapping. In an operating-system environment in which security delegation is not supported, Windows NT authenticated logins need an explicit mapping to a remote login and password created using **sp_addlinkedsrvlogin**.

Action

Create explicit mapping to a remote login and password using **sp_addlinkedsrvlogin**.

See Also

Distributed Queries

sp_addlinkedsrvlogin

Error 8101

Severity Level 16

Message Text

An explicit value for the identity column in table '%.*ls' can only be specified when a column list is used and IDENTITY_INSERT is ON.

Explanation

You have attempted to insert a row containing a specific identity value into a table that contains an identity column. However, you did not provide a column list or have SET IDENTITY_INSERT enabled for the specified table.

Action

To insert a specific identity row in a table containing an identity column successfully you must provide a column list and SET IDENTITY_INSERT to ON. The following example inserts identity row 2, where **iID** is defined as the identity column.

Table: tblTestiID strData1 King3 Suyama

-- Enable IDENTITY_INSERT.SET IDENTITY_INSERT tblTest ON GO

-- Insert the specified identity row using a column list. INSERT INTO tblTest (iID, strData) values (2, 'Davolio') GO

-- Disable IDENTITY_INSERT.
SET IDENTITY_INSERT tblTest OFF
GO

See Also

SET IDENTITY_INSERT

Error 8102

Severity Level 16

Message Text

Cannot update identity column '%.*ls'.

Explanation

You have specifically attempted to alter the value of an identity column in the SET portion of the UPDATE statement. You can only use the identity column in the WHERE clause of the UPDATE statement.

Action

Updating of the identity column is not allowed. To update an identity column, you can use the following techniques:

- To reassign all identity values, bulk copy the data out, and then drop and re-create the table with the proper seed and increment values. Then bulk copy the data back into the newly created table. When **bcp** inserts the values it will appropriately increase the values and redistribute the identity values. You can also use the INSERT INTO and **sp_rename** commands to accomplish the same action.
- To reassign a single row, you must delete the row and insert it using the SET IDENTITY_INSERT *tblName* ON clause.

See Also

bcp Utility

INSERT

SET IDENTITY_INSERT

sp_rename

<u>UPDATE</u>

Error 8106

Severity Level 16

Message Text

Table '%.*ls' does not have the identity property. Cannot perform SET operation.

Explanation

You have attempted to use the SET IDENTITY_INSERT property on a table that does not contain an identity column.

Action

Double-check the table in question by using the **sp_help** *tblName* stored procedure to verify the identity column information.

See Also

SET IDENTITY_INSERT

sp_help

Error 8114

Severity Level 16

Message Text

Error converting data type %ls to %ls.

Explanation

If the error text refers to both DBTYPE_DATE and **datetime**, respectively, this error message indicates that a DBTYPE_DATE OLE DB data type column from a remote table could not be converted to a **datetime** value in Microsoft® SQL ServerTM. The DBTYPE_DATE column most likely has a value outside the range supported by the **datetime** data type (**datetime** values must be from January 1, 1753, through December 31, 9999). Because the range of values of the DBTYPE_DATE data type is larger than that of the SQL Server **datetime** data type, such errors can occur if the column contains values outside of the range supported by SQL Server.

Action

Remove the remote table column of DBTYPE_DATE data type from the query select list or predicate list.

See Also

datetime and smalldatetime

Distributed Queries

Errors 7000 - 7999

Error 8155

Severity Level 16

Message Text

No column was specified for column %d of "%.*ls"

Explanation

One or more of the aggregate or computed columns in your select list have not been supplied with an alias.

Action

```
Supply an alias for all aggregate or computed column. For example: select pub_name, "count"=count(*) into #t from publishers p, titles t where p.pub_id = t.pub_id group by pub_name
```

Error 8163

Severity Level 16

Message Text

The text, ntext, or image data type cannot be selected as DISTINCT.

Explanation

When querying, Microsoft® SQL Server[™] does not allow the use of SELECT DISTINCT on a **text**, **ntext**, or **image** column. For example, this query fails, returning error 8163:

USE Northwind SELECT DISTINCT Description FROM Categories

Action

Remove references to any **text**, **ntext**, or **image** columns when using SELECT DISTINCT.

See Also

Eliminating Duplicates with DISTINCT

Query Fundamentals

SELECT

Error 8501

Severity Level 16

Message Text

MS DTC on server '%.*ls' is unavailable.

Explanation

This error can occur while processing an INSERT, UPDATE, or DELETE statement inside an explicit or implicit transaction. This error typically indicates that the MSDTC service is not running on the local server. Data modification statements in an explicit or implicit transaction require the MSDTC service to be running and the provider's support of distributed transactions.

Action

Use SQL Server Service Manager to verify that the MSDTC service has been started on the server. For more information, see the Microsoft Distributed Transaction Coordinator documentation.

See Also

Distributed Queries

Errors 7000 - 7999

Error 8645

Severity Level 17

Message Text

A time out occurred while waiting for memory resources to execute the query. Re-run the query.

Explanation

If the **query wait** configuration option is -1, then Microsoft® SQL ServerTM waited 25 times the estimated query cost for the memory required to run the query. If query time is a nonnegative value, then SQL Server waited this amount of time, in seconds, for the memory required to run the query. The query timed out and it has not been executed.

Action

You can:

- Free memory on the server.
 - Check the size of the virtual memory paging file.
 - If possible, increase the size of the file.
 - Shut down any other applications running, if applicable, on the server.
- Add additional memory to the server.
- Reduce the server workload.

To decrease the server workload, reduce the number of users currently

using SQL Server. To prevent additional users from logging in to SQL Server, pause the server. For more information, see <u>Pausing and Resuming SQL Server</u>.

- Create one or more indexes.
- Increase the **query wait** configuration value.

See Also

Index Tuning Wizard

query wait Option

sp_configure

Error 8621

Severity Level 16

Message Text

Internal Query Processor Error: The query processor ran out of stack space during query optimization.

Explanation

The Query Processor is using a large but limited memory stack when optimizing queries. In some extreme situations the stack size may become a limit for a given very large query--for example, a query containing an inlist with 100,000 constants.

Action

Simplify the query to avoid this problem. For example, in the case of an extremely large inlist use temporary table or table variable to store the constants, and rewrite the query to use this variable or temporary table instead.

Error 8651

Severity Level 17

Message Text

Could not perform the requested operation because the minimum query memory is not available. Decrease the configured value for the 'min memory per query' server configuration option.

Explanation

SQL Server has computed the amount of memory that this query requires to complete. This amount of required memory is not currently available; the **min memory per query** option may be too high.

Action

Resubmit the query. If resubmitting the query does not allow the query to run, you can:

- Add additional memory to the server.
- Create one or more indexes.
- Reduce the value of **min memory per query**.
- Increase the **query wait** configuration option if it is a nonzero value.

See Also

Index Tuning Wizard
min memory per query Option

query wait Option
sp_configure

Error 8906

Severity Level 16

Message Text

Page %S_PGID in database ID %d is allocated in the SGAM %S_PGID and PFS %S_PGID, but was not allocated in any IAM. PFS flags '%hs'.

Explanation

SQL Server has found an allocation error in the specified database.

Action

Either restore from a known clean backup or execute DBCC CHECKDB with the REPAIR_ALLOW_DATA_LOSS clause. For example:

DBCC CHECKDB('pubs', REPAIR_ALLOW_DATA_LOSS)

If the error involves an index page, use the REPAIR_REBUILD clause. If the error involves a data page, it may be necessary to use the REPAIR_ALLOW_DATA_LOSS clause. In the likely event that you cannot allow the loss of data, you will need to restore from a known clean backup. If the problem persists, contact your primary support provider. Have the output from DBCC CHECKDB available for review.

IMPORTANT If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

If DBCC CHECKDB with the REPAIR_ALLOW_DATA_LOSS clause does not resolve the allocation error, contact your primary support provider.

See Also

DBCC CHECKDB

Managing Extent Allocations and Free Space

Error 8908

Severity Level 16

Message Text

Table error: Database ID %d, object ID %d, index ID %d. Chain linkage mismatch. %S_PGID->next = %S_PGID, but %S_PGID->prev = %S_PGID.

Explanation

This error occurs when Microsoft® SQL ServerTM detects an inconsistency in the page linkage of one of the page chains associated with a table, for example, when a page's *next* pointer points to a page whose *previous* pointer points back to a different page. There is one doubly-linked page chain for the table data as well as one for each index level.

IMPORTANT This is a serious error and must be corrected immediately.

If DBCC statements detect this error during run-time processing, error 605 will also occur.

Action

Determine which table is corrupt by examining the *current page* in the error message. Execute DBCC CHECKDB without a repair clause to determine the extent of the corruption. Then, execute DBCC CHECKDB with the appropriate repair clause to repair the corruption. If the page is associated with an index, it is sometimes possible to resolve the problem by dropping the index. In most cases, you must recover the database from a known clean backup.

If the error involves an index page, use the REPAIR_REBUILD clause. If the error involves a data page, it may be necessary to use the REPAIR_ALLOW_DATA_LOSS clause. In the likely event that you cannot allow the loss of data, you will need to restore from a known clean backup. If the

problem persists, contact your primary support provider. Have the output from DBCC CHECKDB available for review.

IMPORTANT If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

You should also examine your operating-system error log file, in addition to the SQL Server error log, to determine if hardware errors might have caused the corruption.

If the problem persists, contact your primary support provider. Have the output from the DBCC CHECKDB statement available for review.

See Also

DBCC CHECKDB

Errors 2000 - 2999

Errors 8000 - 8999

Error 8925

Severity Level 16

Message Text

Table error: Cross object linkage: Page %S_PGID, slot %d, in object ID %d, index ID %d, refers to page %S_PGID, slot %d, in object ID %d, index ID %d.

Explanation

This error occurs when Microsoft® SQL Server™ detects an inconsistency in the page linkage of one of the page chains associated with a table. One of the pages has been found to be linked in more than one page chain when it should be linked in only one chain. There is one doubly-linked page chain for the table data, as well as one for each index level.

IMPORTANT This is a serious error and must be corrected immediately.

If DBCC CHECKDB without a repair clause detects this error during run-time processing, error 605 can also occur.

Action

Follow these steps to resolve the error:

- 1. Examine the index ID associated with the page number indicated in the message to determine whether the error occurred on the table data or on an index.
- 2. Restore the database:
 - If the object ID is less than or equal to 100, the error is on a system table. Restore the database from a clean backup.

- If the object ID is greater than 100, the error is on a user table.
- If this error occurs on table data (the index ID = 0), restore the database from a clean backup.
- If the error occurs on an index, you can usually correct it by dropping and re-creating the index. If dropping and recreating the index is not feasible, or if you cannot drop the index, contact your primary support provider for assistance.

If the problem persists, contact your primary support provider for assistance. Have the output of the appropriate DBCC statements available for review.

See Also

Errors 2000 - 2999

Errors 8000 - 8999

Error 8952

Severity Level 16

Message Text

Table error: Database '%ls', index '%ls.%ls' (ID %d) (index ID %d). Extra or invalid key for the keys:

Explanation

This error message indicates that one or more indexes are damaged and must be repaired or dropped.

Action

Repair indexes by executing DBCC CHECKDB with the REPAIR_ALLOW_DATA_LOSS, REPAIR_FAST, or REPAIR_REBUILD clauses. To determine which repair clause best suits your needs, consult DBCC CHECKDB before executing it.

IMPORTANT If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

See Also

DBCC CHECKDB

Error 8956

Error 8956

Severity Level 16

Message Text

Index row (%d:%d) with values (%ls) points to the data row identified by (%ls).

Explanation

If Microsoft® SQL Server™ returns this error message, it always follows error 8952.

This error message indicates that one or more indexes are damaged and must be repaired or dropped.

Action

Repair indexes by executing DBCC CHECKDB with the REPAIR_ALLOW_DATA_LOSS, REPAIR_FAST, or REPAIR_REBUILD clauses. To determine which repair clause best suits your needs, consult DBCC CHECKDB before executing it.

IMPORTANT If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

See Also

DBCC CHECKDB

Error 8952

Error 8976

Severity Level 16

Message Text

Table error: Object ID %d, index ID %d. Page %S_PGID was not seen in the scan although its parent %S_PGID and previous %S_PGID refer to it. Check any previous errors.

Explanation

This error means that a page is not allocated to an object that references it. When the index is used, Microsoft® SQL Server™ returns either error 605 or error 823.

CAUTION This error is serious. Data corruption is possible.

Pages encountering error 8976 may not be included in a database backup, because database backups are performed by reading allocation pages and not by traversing page chains. Correct this error before backing up the database.

Action

If a known clean backup is available, restore the database from the backup.

If no clean backup is available, use DBCC CHECKDB or DBCC CHECKFILEGROUP to determine the extent of the problem. Then, use DBCC CHECKDB with the appropriate repair clause to repair the damage. If the Object ID is 1 or 2 and the index ID is 1, or the table is **sysfiles1**, then DBCC CHECKDB cannot repair the page.

CAUTION If executing DBCC CHECKDB with one of the repair clauses does not correct the index problem or if you are unsure what effect DBCC CHECKDB with a repair clause has on your data, contact your primary support provider.

For indexes (0 < Index ID < 255)

The problem can be resolved by dropping and re-creating the index in question. After the index is rebuilt, run DBCC CHECKALLOC to verify that the problem no longer exists. If it persists, call your primary support provider.

See Also

DBCC CHECKALLOC

DBCC CHECKDB

DBCC CHECKFILEGROUP

Error 8986

Severity Level 16

Message Text

Too many errors found (%d) for object ID %d. To see all error messages rerun the statement using "WITH ALL_ERRORMSGS".

Explanation

As the text for messages on this object from checkdb is printed, the limit for the maximum number of errors that will be reported on a given object has been exceeded. Currently, that hard-coded limit is 200.

Action

You can specify the additional statement "WITH ALL_ERRORMSGS" to get a complete listing of errors for the object in question.

Error 9002

Severity Level 19

Message Text

The log file for database '%.*ls' is full. Back up the transaction log for the database to free up some log space.

Explanation

The specified transaction log file has run out of free space.

Action

To gain more space, you can free disk space on any disk drive containing the transaction log file for the related database. Freeing disk space allows the recovery system to enlarge the log file automatically. Or you can gain space by adding or enlarging a log file for the specified database.

Freeing disk space

You can free disk space on your local drive or on another disk drive. To free disk space on another drive:

- 1. Move the transaction log files with an insufficient amount of free disk space to a different disk drive.
- 2. Detach the database by executing **sp_detach_db**.
- 3. Attach the database by executing **sp_attach_db**, pointing to the moved files.

Adding a log file

Another solution is to add a log file to the specified database using the ADD FILE clause of the ALTER DATABASE statement. Or you can enlarge the log file using the MODIFY FILE clause of the ALTER DATABASE statement, specifying the SIZE and MAXSIZE syntax. Adding an additional log file allows the existing log to grow.

See Also

ALTER DATABASE

Errors 9000-9999

Expanding a Database

Insufficient Disk Space

sp_attach_db

sp_detach_db

sp_add_log_file_recover_suspect_db

Error 17050

Severity Level 16

Message Text

The '%ls' option is ignored in this edition of SQL Server.

Explanation

When installing Microsoft® SQL ServerTM on an NTFS partition, make sure that the NTFS file permissions allow read/write access. Otherwise, this error message may appear in the Microsoft Windows NT® application log (for each installation attempt).

Action

Ensure that the NTFS file permissions allow read/write access. In addition, the SYSTEM account should have full-control rights to the computer. It is recommended that everyone using the computer have full-control rights, but that the NTFS partition not be shared.

See Also

Errors 17000 - 17999

Troubleshooting the Operating System

Error 18456

Severity Level 14

Message Text

Login failed for user '%ls'.

Explanation

You do not have permission to log in to the server.

Action

Contact a member of the **sysadmin** fixed server role to request login permission.

See Also

Logins

Managing Security

Error 18458

Severity Level 14

Message Text

Login failed. The maximum simultaneous user count of %d licenses for this server has been exceeded. Additional licenses should be obtained and registered through the Licensing application in the Windows NT Control Panel.

Explanation

This error occurs when the server is set for Per Server licensing and the number of attempted client connections exceeds the number of Client Access Licenses for this server.

Action

Obtain additional Client Access Licenses or reduce the number of simultaneous client connection attempts.

See Also

Errors 18000 - 18999

Error 18459

Level 14

Message Text

Login failed. The maximum workstation licensing limit for SQL Server access has been exceeded.

Explanation

This error occurs when the server is set for Per Seat licensing and a connection is attempted from a client computer that does not have a Client Access License.

Action

Obtain a Client Access License for the client computer.

See Also

SQL Server 2000 Databases on the Desktop

SQL Server 2000 Databases on Windows 98

Editions of SQL Server 2000

Read/Write Error

Message Text

%s: operating system error %d (%s) encountered

Explanation

The Read/Write Error is raised when opening or closing a file and Microsoft® SQL ServerTM fails to read from or write to the specified disk location. This failure is usually a result of a physical disk problem like a bad sector on the disk drive or a failure of the disk drive or controller.

Action

Identify the device with the problem database by selecting the row from **sysaltfiles** that has the same disk name indicated in the error message:

USE master GO SELECT name, filename FROM master..sysaltfiles GO

The output from this query should provide the physical name of the damaged disk. Examine the disk as soon as possible and correct any problems.

After the disk drive or controller problem is resolved, restart SQL Server.

If the disk is found to be damaged, restore data from a backup database or consider using DBCC CHECKDB.

See Also

sysaltfiles

Error Log Messages

In reviewing the error log, you may see one or more of these messages.

Message Text

Failed to obtain TransactionDispenserInterface: XACT_E_TMNOTAVAILABLE.

Explanation

This message is an informational error message indicating that the Microsoft Distributed Transaction Coordinator (MS DTC) service either is currently not running on the server or is currently unavailable. For more information about MS DTC, see the Microsoft Distributed Transaction Coordinator documentation.

Message Text

Warning: Server cursor memory usage: %d pages. If this message repeats, see the Error Log Messages topic in Troubleshooting.

Explanation

Too many cursors either have been created and left open or have not been deallocated. It is recommended that a cursor be closed and deallocated as soon as it is no longer needed. For more information, see <u>Cursors</u>.

In time-critical situations, the system administrator may need to terminate those connections that have not been closing or deallocating cursors using the KILL command.

Message Text

Warning: SQL cache memory usage: %d (pages). If this condition persists, see the Error Log Messages topic in Troubleshooting.

Explanation

The Microsoft® SQL Server™ cache consumes memory and holds ad hoc and prepared SQL text. This message occurs if the SQL Server cache exceeds a certain number of pages of server memory. For example, this error occurs if one or more clients are preparing large numbers of SQL statements without performing corresponding unprepare operations. This lack of corresponding unprepare operations can be due to poor application design, an application bug, or repeated creation of prepared SQL text.

This message will be printed again if server memory changes significantly and if the memory consumption of the SQL Server cache remains high.

Either warn the suspected clients that server memory is at a low level or terminate suspected connections using KILL.

MAPI Error Messages

These MAPI error values are used by SQL Mail.

MAPI Constant	Description
MAPI_USER_ABORT	User abort.
MAPI_E_FAILURE	General MAPI failure.
MAPI_E_LOGIN_FAILURE	MAPI login failure.
MAPI_E_DISK_FULL	Disk full.
MAPI_E_INSUFFICIENT_MEMORY	Insufficient memory.
MAPI_E_ACCESS_DENIED	Access denied.
MAPI_E_TOO_MANY_SESSIONS	Too many sessions.
MAPI_E_TOO_MANY_FILES	Too many files were specified.
MAPI_E_TOO_MANY_RECIPIENTS	Too many recipients were specified.
MAPI_E_ATTACHMENT_NOT_FOUND	A specified attachment was not found.
MAPI_E_ATTACHMENT_OPEN_FAILURE	Attachment open failure.
MAPI_E_ATTACHMENT_WRITE_FAILURE	Attachment write failure.
MAPI_E_UNKNOWN_RECIPIENT	Unknown recipient: Parameter '%s', recipient '%s'.
MAPI_E_BAD_RECIPTYPE	Bad recipient type.
MAPI_E_NO_MESSAGES	No messages.
MAPI_E_INVALID_MESSAGE	Invalid message.
MAPI_E_TEXT_TOO_LARGE	Text too large.
MAPI_E_INVALID_SESSION	Invalid session.
MAPI_E_TYPE_NOT_SUPPORTED	Type not supported.
MAPI_E_AMBIGUOUS_RECIPIENT	A recipient was specified ambiguously.
MAPI_E_MESSAGE_IN_USE	Message in use.
MAPI_E_NETWORK_FAILURE	Network failure.

MAPI_E_INVALID_EDITFIELDS	Invalid edit fields.
MAPI_E_INVALID_RECIPS	Invalid recipients.
MAPI_E_NOT_SUPPORTED	Not supported.

See Also

SQL Server and Mail Integration

Help with SQL Mail

DB-Library Error Messages

This topic describes all DB-Library error messages and severity levels. The information in this topic is divided into two tables. The following table lists the errors alphabetically, along with their severities. The table under <u>DB-Library Error Severities</u> summarizes the error severity levels. Number values corresponding to the errors are passed to the currently installed, user-supplied error handler. For information about creating error handlers, see <u>dberrhandle</u>. To access these error definitions, include the Sqlfront.h and Sqldb.h header files in your program.

The following error values are defined in the Sqlfront.h header file. Errors with a severity of EXCOMM also have a network-related error message appended to the *dberrstr* value. In addition, EXCOMM errors have network-specific error information in *oserr* and *oserrstr*.

Error	Error/	
number	Error severity	Description
10000	SQLEMEM	Unable to allocate sufficient memory.
	EXRESOURCE	
10001	SQLENULL	NULL DBPROCESS pointer
	EXPROGRAM	encountered.
10002	SQLENLOG	NULL LOGINREC pointer
	EXCONSISTENCY	encountered.
10003	SQLEPWD	Login incorrect.
	EXUSER	
10004	SQLECONN	Unable to connect: SQL Server is
	EXCOMM	unavailable or does not exist.
10005	SQLEDDNE	DBPROCESS is dead or not enabled.

	EXINFO	
10006	SQLENULLO	Attempt to login with NULL
	EXCONSISTENCY	LOGINREC.
10007	SQLESMSG	General SQL Server error: Check
	EXSERVER	messages from SQL Server.
10008	SQLEBTOK	Bad token from SQL Server:
(<u>DB-</u> Library)	EXCOMM	Datastream processing out of synchronization.
10009	SQLENSPE	General nonspecific DB-Library error.
	EXPROGRAM	
10010	SQLEREAD	Read from SQL Server failed.
	EXCOMM	
10011	SQLECNOR	Column number out of range.
	EXPROGRAM	
10012	SQLETSIT	Attempt to call dbtsput with an invalid
	EXINFO	timestamp.
10013	SQLEPARM	Invalid parameter in DB-Library
	EXCONSISTENCY	function reference.
10014	SQLEAUTN	Attempt to update the timestamp of a
	EXPROGRAM	table with no timestamp column.
10015	SQLECOFL	Data conversion resulted in overflow.
	EXCONVERSION	
10016	SQLERDCN	Requested data conversion does not
	EXCONVERSION	exist.

10017	SQLEICN EXPROGRAM	Invalid value for <i>computeid</i> or invalid compute column number.
10019	SQLENTXT EXPROGRAM	Attempt to get text point/timestamp from a nontext column.
10020	SQLEDNTI EXPROGRAM	Attempt to use dbtxtsput to put a new text timestamp into a column whose data type is neither SQLTEXT nor SQLIMAGE.
10021	SQLETMTD EXPROGRAM	Attempt to send too much TEXT data through dbmoretext .
10022	SQLEASEC EXPROGRAM	Attempt to send an empty command buffer to the SQL Server.
10023	SQLENTLL EXUSER	Name too long for LOGINREC field.
10024 (DB- Library)	SQLETIME EXTIME	SQL Server connection timed out.
10026	SQLEMODE EXCOMM	Network connection not in correct mode – invalid SQL Server connection.
10027	SQLEOOB EXCOMM	Error in sending out-of-band data to SQL Server.
10028	SQLEITIM EXPROGRAM	Illegal timeout value specified.
10029	SQLEDBPS EXRESOURCE	Maximum number of DBPROCESSes already allocated.

10030	SQLEIOPT EXPROGRAM	Attempt to use invalid dboption .
10031	SQLEASNL EXPROGRAM	Attempt to set fields in a null LOGINREC.
10032	SQLEASUL EXPROGRAM	Attempt to set unknown LOGINREC field.
10033	SQLENPRM EXPROGRAM	NULL parameter not allowed for this dboption .
10034	SQLEDBOP EXPROGRAM	Invalid or out of range <i>dbn</i> parameter.
10035	SQLENSIP EXPROGRAM	Negative starting index passed to dbstrcpy .
10036	SQLECNULL EXPROGRAM	NULL destination variable not allowed.
10037	SQLESEOF EXCOMM	Unexpected EOF from SQL Server.
10038	SQLERPND EXPROGRAM	Attempt to initiate a new SQL Server operation with results pending.
10039	SQLECSYN EXCONVERSION	Attempt to convert data stopped by syntax error in source field.
10040	SQLENONET EXCOMM	DB-Library network communications layer not loaded.
10041	SQLEBTYP	Unknown bind type passed to DB-

	EXPROGRAM	Library function.
10042	SQLEABNC	Attempt to bind to a nonexistent column.
	EXPROGRAM	Columni
10043	SQLEABMT	User attempted a dbbind with mismatched column and variable types.
	EXPROGRAM	inismatched column and variable types.
10044	SQLEABNP	Attempt to bind using NULL pointers.
	EXPROGRAM	
10045	SQLEBNCR	Attempt to bind user variable to a nonexistent compute row.
	EXPROGRAM	nonexistent compute row.
10046	SQLEAAMT	User attempted a dbaltbind with mismatched column and variable types.
	EXPROGRAM	inismatched column and variable types.
10047	SQLENXID	The server did not grant us a distributed-transaction ID.
	EXNONFATAL	distributed-transaction 1D.
10048	SQLEIFNB	Illegal field number passed to bcp_control .
	EXPROGRAM	bcp_control.
10049	SQLEKBCO	1000 rows successfully bulk copied to host file.
	EXINFO	nost me.
10050	SQLEBBCI	Batch successfully bulk copied to SQL Server.
	EXINFO	Server.
10051	SQLEKBCI	1000 rows sent to SQL Server.
	EXINFO	
10052	SQLEBCWE	I/O error while writing bcp datafile.

	EXNONFATAL	
10053 (DB- Library)	SQLEBCNN EXUSER	Attempt to bulk copy a null value into a server column that does not accept null values.
10054 (DB- Library)	SQLEBCOR EXCONSISTENCY	Attempt to bulk copy an oversized row to SQL Server.
10055	SQLEBCPI EXPROGRAM	Call bcp_init before any other bcp routines.
10056	SQLEBCPN EXPROGRAM	Use bcp_bind , bcp_collen , and bcp_colptr only after calling bcp_init with the copy direction set to DB_IN.
10057	SQLEBCPB EXPROGRAM	Do not use bcp_bind after bcp_init has been passed a non-null input filename.
10058	SQLEVDPT EXUSER	For bulk copy, all variable-length data must have either a length-prefix or a terminator specified.
10059	SQLEBIVI EXPROGRAM	Use bcp_columns and bcp_colfmt only after bcp_init has been passed a valid input file.
10060	SQLEBCBC EXPROGRAM	Call bcp_columns before bcp_colfmt .
10061	SQLEBCFO EXUSER	Host files must contain at least one column: bcp .
10062	SQLEBCVH EXPROGRAM	Call bcp_exec only after bcp_init has been passed a valid host file.
10063	SQLEBCUO	Unable to open host datafile: bcp .

	EXRESOURCE	
10064	SQLEBUOE	Unable to open error file: bcp .
	EXRESOURCE	
10065	SQLEBWEF	I/O error while writing bcp error file.
	EXNONFATAL	
10066	SQLEBTMT	Attempt to send too much text data with
	EXPROGRAM	bcp_moretext.
10067	SQLEBEOF	Unexpected EOF encountered in bcp
	EXNONFATAL	datafile.
10068	SQLEBCSI	Host-file columns may be skipped only
	EXCONSISTENCY	when copying into the server.
10069	SQLEPNUL	NULL program pointer encountered.
	EXCONSISTENCY	
10070	SQLEBSKERR	Cannot seek in data file.
	EXCONSISTENCY	
10071	SQLEBDIO	Bad bulk-copy direction.
	EXPROGRAM	
10072	SQLEBCNT	Attempt to use bulk copy with a
	EXUSER	nonexistent server table.
10073	SQLEMDBP	Attempt to set maximum number of
	EXPROGRAM	DPPROCESS lower than 1.
10075	SQLCRSINV	Invalid cursor statement.
	EXPROGRAM	

10076	SQLCRSCMD EXPROGRAM	Attempt to call cursor functions when there are commands waiting to be executed.
10077	SQLCRSNOIND EXINFO	One of the tables involved in the cursor statement does not have a unique index.
10078	SQLCRSDIS EXPROGRAM	Cursor statement contains one of the disallowed phrases COMPUTE, UNION, FOR BROWSE, or SELECT INTO.
10079	SQLCRSAGR EXPROGRAM	Aggregate functions are not allowed in a cursor statement.
10080	SQLCRSORD EXPROGRAM	Only fully keyset-driven cursors can have ORDER BY, GROUP BY, or HAVING PHRASES.
10081	SQLCRSMEM EXPROGRAM	Keyset or window scroll size exceeds the memory limitations of this machine.
10082	SQLCRSBSKEY EXPROGRAM	Keyset cannot be scrolled backward in mixed cursors with a previous fetch type.
10083	SQLCRSNORES EXINFO	Cursor statement generated no results.
10084	SQLCRSVIEW EXPROGRAM	A view cannot be joined with another table or a view in a cursor statement.
10085	SQLCRSBUFR EXPROGRAM	Row buffering should not be turned on when using cursor functions.
10086	SQLCRSFROWN EXINFO	Row number to be fetched is outside valid range.

10087	SQLCRSBROL	Backward scrolling cannot be used in a
	EXPROGRAM	forward scrolling cursor.
10088	SQLCRSFRAND	Fetch types RANDOM and RELATIVE
	EXPROGRAM	can only be used within the keyset of keyset-driven cursors.
10089	SQLCRSFLAST	Fetch type LAST requires fully keyset-
	EXPROGRAM	driven cursors.
10090	SQLCRSRO	Data locking or modifications cannot be
	EXPROGRAM	made in a READONLY cursor.
10091	SQLCRSTAB	Table name must be determined in
	EXPROGRAM	operations involving data locking or modifications.
10092	SQLCRSUPDTAB	Update or insert operations using bind
	EXPROGRAM	variables require single table cursors.
10093	SQLCRSUPDNB	Update or insert operations cannot use
	EXPROGRAM	bind variables when binding type is NOBIND.
10094	SQLCRSVIIND	The view used in the cursor statement
	EXPROGRAM	does not include all the unique index columns of the underlying tables.
10095	SQLCRSNOUPD	Update or delete operation did not affect
	EXINFO	any rows.
10096	SQLCRSOS2	Cursors are not supported for this
	EXPROGRAM	server.
10097	SQLEBCSA	The BCP hostfile %s contains only %ld
	EXPROGRAM	rows. Skipping all of these rows is not allowed.
10098	SQLCRSRO	Data locking or modifications cannot be

	EXPROGRAM	made in a READONLY cursor.
10099	SQLEBCNE	The table %s contains only %ld rows.
	EXPROGRAM	Copying up to row <i>%ld</i> is not possible.
10100	SQLEBCSK	The table <i>%s</i> contains only <i>%ld</i> rows.
	EXPROGRAM	Skipping all of these rows is not allowed.
10101	SQLEUVBF	Attempt to read unknown version of
	EXPROGRAM	bcp format file.
10102	SQLEBIHC	Incorrect host-column number found in
	EXPROGRAM	bcp format file.
10103	SQLEBWFF	I/O error while reading bcp format file.
	EXRESOURCE	
10104	SQLNUMVAL	The data stored in the
	EXPROGRAM	DBNUMERIC/DBDECIMAL structure is invalid.
10105	SQLEOLDVR	The SQL Server's TDS is obsolete with
	EXPROGRAM	this version of DB-Library.

DB-Library Error Severities

The following table lists all error severities with their numerical equivalents and an explanation of the type of error. When an error occurs or when a message is sent, these numerical equivalents are passed to the currently installed, user-supplied error handler.

Error severity levels are defined in the Sqlfront.h header file. Your program must include Sqlfront.h if it refers to these severity levels.

	Severity	
Error severity	number	Description
EXINFO	1	Informational, nonerror.
EXUSER	2	User error.
EXNONFATAL	3	Nonfatal error.
EXCONVERSION	4	Error in DB-Library data conversion.
EXSERVER	5	The server has returned an error flag.
EXTIME	6	Timeout period exceeded while waiting for
		a response from the server — the
		DBPROCESS is still alive.
EXPROGRAM	7	Coding error in user program.
EXRESOURCE	8	Running out of resources — the
		DBPROCESS may be dead.
EXCOMM	9	Failure in communication with server —
		the DBPROCESS is dead.
EXFATAL	10	Fatal error — the DBPROCESS is dead.
EXCONSISTENCY	11	Internal software error — notify your
		primary support provider.

See Also

Reporting Errors to Your Primary Support Provider

Error 10008 (DB-Library)

Severity Level 9

Message Text

Bad token from SQL Server: Datastream processing out of synchronization.

Explanation

This error occurs when DB-Library cannot interpret the Tabular Data Stream (TDS) sent from Microsoft® SQL Server™. A DB-Library application communicates with SQL Server over the network using a TDS. The TDS is a specification for the communication of data and other messages between SQL Server and the DB-Library client. The network libraries used by SQL Server and the DB-Library client provide the interface for the transmission of TDS over a particular network protocol. The network protocol used is independent from the TDS as long as there is an appropriate interface network library that supports the network protocol, whether it is a named pipe connection or a socket connection. Each DB-Library application parses this TDS automatically to extract useful information (for example, query result rows) or to generate requests of, or responses to, SQL Server in a format that is mutually understood.

There are two main causes for this error:

- The data sent by SQL Server over the network named pipe or socket has been corrupted. This is usually caused by a network problem involving either network hardware or software.
- The network can generate errors or messages unknown to DB-Library; therefore, this error can be generated.

Action

Inspect the Windows NT Event Viewer system and application logs. These logs may provide information that indicates if the problem is related to the server network protocol, the network card, or the system configuration. Review the SQL Server-specific entries in the application log or the SQL Server error log for relevant network-related errors that correspond in time with the occurrence of the 10008 error seen on the client. If this review does not provide enough information to resolve the problem, special network monitoring tools and a review of the client's configuration may be necessary.

If the problem persists, contact your primary network support provider for assistance.

Programmers using the *SQL Server Programmer's Toolkit* (for DB-Library) can handle error 10008 by adding conditional statements to test for the occurrence of this error. When error 10008 is seen in the DB-Library error handler, additional processing can include closing the current DBPROCESS connection, opening a new connection, and then resending the query.

See Also

Programming DB-Library for C

Reporting Errors to Your Primary Support Provider

Error 10024 (DB-Library)

Severity Level 6

Message Text

SQL Server connection timed out.

Explanation

This error message is returned from DB-Library when the query time-out setting for the application's connection to Microsoft® SQL ServerTM is too low. The query is terminated when it takes longer to complete than the time allocated.

Action

Check the application for configuration settings, and increase the query time-out setting. If this is a custom application, you can adjust the query time-out setting by using the **dbsettime()** function.

See Also

Programming DB-Library for C

Error 10053 (DB-Library)

Severity Level 2

Message Text

Attempt to bulk copy a null value into a server column that does not accept null values.

Explanation

This error occurs when you attempt to bulk copy a null value into a table column that does not accept null values. This usually occurs when the column is changed from NULL to NOT NULL after previous bulk copies.

Action

If the source file being bulk copied is character data, the file can be edited and the column value changed to an appropriate value for the column definition. You can also change the current definition of the table or create a separate table with a column definition that allows null values.

See Also

Programming DB-Library for C

Error 10054 (DB-Library)

Severity Level 11

Message Text

Attempt to bulk copy an oversized row to SQL Server.

Explanation

This error occurs during a bulk copy operation when a row or rows in the source data file do not match the row as defined for the destination database table. It can occur due to a missing end-of-line marker. It can also occur if there are more column delimiters in the source data file than currently exist in the destination database table, or if the source data file is corrupt.

Action

Verify that the source data file matches the column definitions for the database table, or create a new table to match the current data file, bulk copy the data into the database, and then manipulate the data using Transact-SQL statements.

You can either manipulate the source data file or create a format file to facilitate the data transfer. You can manipulate character-based data files by using a text editing tool that accommodates the data file size and will not add special hidden characters during a save operation. The editing tool can then be used to manipulate the source data file by adding or deleting characters as necessary so that the source data file matches the table definition. You can also create a format file. The generated format file can be manipulated by a text editing tool and changed so that character positions/columns in the source data file are ignored. Native format files are more difficult to manipulate.

The alternatives to manipulating the native format source data file and/or a format file are limited due to the storage of data types other than character in a binary type format. It can be difficult to manipulate this file type with any editing tool, and it is more difficult to generate and manipulate a format file. You

can use the **-F** or the **-L** command-line flags to specify the first and last row in the source data file that is to be bulk copied into SQL Server. If the source data file contains a few oversized rows, these flags can be used to bulk copy up to the oversized row followed by a bulk copy operation from the row following the oversized row to the end of the data file.

If you are unable to resolve this error, contact your primary support provider for assistance.

See Also

bcp Utility

Programming DB-Library for C

Reporting Errors to Your Primary Support Provider

Distributed Queries Error Messages

This topic discusses troubleshooting tips and techniques for distributed queries against various OLE DB providers. On an error condition against an OLE DB provider, Microsoft® SQL ServerTM outputs these sets of error messages:

- Provider error messages (indicated by one or more error messages surrounded by square brackets), which are returned by the OLE DB provider.
- SQL Server error messages.

SQL Server uses the OLE DB provider's error object and its interfaces to return the provider's error messages. If the provider does not support the error object and its interfaces for the given error context, provider error messages are not available.

In addition to using these error message topics to resolve problems with distributed queries, use SQL Profiler to trace the **OLE DB Errors** event class. The **OLE DB Errors** event class outputs the OLE DB interface and method for the provider returning an error and the error code returned by the method invocation. The hexadecimal error code can be looked up in the Oledberr.h header file (located in the \DevTools\Include directory of the target SQL Server installation directory, by default, C:\Mssql) to determine the meaning of the error code, by default, the **OLE DB Errors** event class does not show up in SQL Profiler. For more information about seeing the **OLE DB Errors** event class and other advanced errors using SQL Profiler, see <u>Creating and Managing Traces and Templates</u>.

This table lists all distributed queries error messages.

Error	Severity	Description
7303	16	Could not initialize data source object of OLE DB
		provider '%ls'. %ls.
<u>7306</u>	16	Could not open table '%ls' from OLE DB provider '%ls'.
		%ls.

<u>7314</u>	16	OLE DB provider '%ls' does not contain table '%ls'.
7321	16	An error occurred while preparing a query for execution against OLE DB provider '%ls'. %ls.
7356	16	OLE DB provider '%ls' supplied inconsistent metadata for a column. Metadata information was changed at execution time.
7357	16	Could not process object '%ls'. The OLE DB provider '%ls' indicates that the object has no columns.
7391	16	The operation could not be performed because the OLE DB provider '%ls' does not support distributed transactions.
7392	16	Could not start a transaction for OLE DB provider '%ls'.
7399	16	OLE DB provider '%ls' reported an error. %ls.
7403	16	Could not locate registry entry for OLE DB provider '%ls'.
7413	16	Could not perform a Windows authenticated login because delegation is not available.
8114	16	Error converting data type %ls to %ls.
<u>8501</u>	16	MS DTC on server '%.*ls' is unavailable.

Embedded SQL for C Error Messages

When developing and running Embedded SQL for C (ESQL/C) programs, you will see different status and error messages. All message numbers that are returned by ESQL/C are negative numbers.

The messages in the following table are generated by ESQL/C. Because the messages are not generated by Microsoft® SQL ServerTM, they do not appear in the **sysmessages** table.

Message	Run time/	
number	compile time	Description
4998	С	Attempt to connect to the specified database server failed.
19031	C	Unable to open bindfile.
19051	C	Too many sections.
19101	R	Statement too long.
19103	R	Illegal %s value %s.
		Non-numeric %s value %s.
		(Invalid number for the timeout value.)
19104	R/C	Incorrect SQL statement syntax.
19199	С	ESQL keyword(s) detected in PREPARE
		statement.
19306	С	Host variable used but not declared.
19313	R	Too few host variables.
19324	С	Host variable may not be used in this context.
19408	R	Invalid SQL data type for
		SQL_TYP_DECIMAL.
19413	R	Data overflow occurred during decimal data
		conversion.
19422	R	Unknown SQL Server data type.
19423	R	Invalid destination data type.
19501	R	No cursor declared.
19505	С	Duplicate cursor name: %s.

19508	R	Cursor is not positioned on a row.
19514	R	Cursor is not prepared.
19517	R	Cursor open attempted for non-SELECT
		prepared statement.
19521	R	Open cursor failure for section $%d$ of plans.
19523	R	Failure to locate/close cursor. Section <i>%d</i> , plan <i>%s</i> .
19524	R	Table for this cursor not updatable.
19525	R	Attempt to fetch on unopened cursor.
19526	R	No access plan for this cursor.
19527	R	Could not get section for this cursor.
19528	R	Connection for section % <i>d</i> of plan % <i>s</i> has NULL DBPROCESS .
19701	R	NULL connection name.
		Connection %s not found.
19702	R	Connection name not found.
		Attempt to close nonexistent connection.
19703	R	Failed to get DBPROCESS .
		Autoconnect failure.
19706	R	Login failure in section %d.
19707	R	Duplicate connection name.
19822	R	Improperly initialized user SQLDA.
19911	С	The SQL data type specified for a host variable is invalid.
19913	С	The token identifier has already been used.
19917	С	Invalid or incorrect option to sqlainit() .
19946	С	Cursor %s not declared.
19953	С	Invalid call type.
19955	R	Text not found in %s section %u.
19956	R	Access plan section or statement text not found.
19957	R	Access plan or statement text not found.
19994	R	Can't run next BEGIN DECLARE sections. Statement ignored.
19995	R	END DECLARE encountered without preceding

		BEGIN DECLARE statement. Statement ignored.
19999	С	An internal error occurred.

See Also

Programming Embedded SQL for C

SQL Server Enterprise Manager Error Messages

This section contains explanations and corrective actions for many of the error messages related to SQL Server Enterprise Manager.

<0s> is not supported.

Message Text

<0s> is not supported.

Explanation

The syntax you entered is valid but is not supported visually by SQL Server Enterprise Manager.

Action

Be sure to verify your syntax before saving.

See Also

Query Fundamentals

<0s> may not be used in this query type.

Message Text

<0s> may not be used in this query type.

Explanation

The action you are attempting is not permitted with the type of query you have selected.

Action

Verify the syntax in your query or change the query type.

See Also

Query Fundamentals

A relationship cannot contain more than '<0d>' columns.

Message Text

A relationship cannot contain more than '<0d>' columns.

Action

Select fewer than 16 columns when defining the foreign key relationship.

See Also

Creating and Modifying PRIMARY KEY Constraints

Primary Key Constraints

Cannot add this expression to the select list.

Message Text

Cannot add this expression to the select list.

Explanation

There are limitations to what expressions are allowed in the select list. The expression you are trying to add may be invalid.

Action

Verify that the syntax in the expression is correct. It is possible that the type of expression is invalid.

See Also

Expressions

Using Operators in Expressions

Error modifying column properties.

Appears when your constraint expression contains an error.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]The name '[column value]' is illegal in this context. Only constants, constant expressions, or variables allowed here. Column names are illegal.

Explanation

A default value defined for a character column is not enclosed in single quotation marks (').

Action

Enclose the value in single quotation marks in the database column's Default Value cell, and then save the table.

See Also

ALTER TABLE

Columns Property

Creating and Modifying DEFAULT Definitions

Modifying Column Properties

Illegal expression list usage.

Message Text

Illegal expression list usage.

Explanation

There is an error in the syntax of your query. SQL Server Enterprise Manager has attempted to locate the source of the error.

Action

Review your query syntax and correct the error before running your query.

See Also

Expressions

Filtering Rows with WHERE and HAVING

Query Fundamentals

Information models in the specified Meta Data Services repository database must be updated in order to save this DTS package version.

Message Text

Information models in the specified Meta Data Services repository database must be updated in order to save this DTS package version.

Explanation

Upgrading to Microsoft® SQL Server™ 2000 does not install the SQL Server 2000 Meta Data Services information models required by Data Transformation Services (DTS), which results in this error when you save to Meta Data Services. The error occurs after upgrading from SQL Server version 7.0 to SQL Server 2000. It does not occur if you perform a new installation, or if you store DTS packages in SQL Server, as a structured storage file, or as a Microsoft Visual Basic® file.

Action

You must upgrade the Meta Data Services information models to the versions expected by DTS. For more information and instructions for upgrading the information models, see <u>DTS Information Model</u>.

Object <0s> does not exist in the database.

Message Text

Object <0s> does not exist in the database.

Explanation

There is an error in the syntax of your query. SQL Server Enterprise Manager has attempted to locate the source of the error.

Action

Review your query syntax and correct the error before running your query.

See Also

Expressions

Filtering Rows with WHERE and HAVING

Query Fundamentals

Using the Select List

Only one ROWGUIDCOL column is allowed per table.

Message Text

Only one ROWGUIDCOL column is allowed per table.

Explanation

You have attempted to assign more than one ROWGUIDCOL. The ROWGUIDCOL is a special property similar to IDENTITY and only one ROWGUIDCOL is allowed per table.

See Also

Setting Column Properties

Database Designer

SQL Verification.

Message Text

SQL Verification.

Explanation

The SQL verified successfully.

See Also

Expressions

Filtering Rows with WHERE and HAVING

Query Fundamentals

Using the Select List

System errors.

Two system errors can appear in the **Save Incomplete** dialog box when you exceed Microsoft® SQL Server limitations that are not controlled by SQL Server Enterprise Manager.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Can't allocate space for object 'Syslogs' in database 'Guest' because the 'logsegment' segment is full. If you ran out of space in Syslogs, dump the transaction log. Otherwise, use ALTER DATABASE or sp_extendsegment to increase the size of the segment.

Explanation

This error occurs because there is insufficient log space to complete the transaction.

Action

- Follow the recommendation in the message and delete the transaction log. (Typically this action will not entirely solve the problem.)
- Increase the size of the database to accommodate the change. With large databases, changes that require the recreation of tables (for example, changing a column data type or size) may not be possible using SQL Server Enterprise Manager. You may need to use methods of transferring data that don't require transactions, such as bulk copying (bcp utility).

ODBC error text

[Microsoft][ODBC SQL Server Driver]Timeout expired.

Explanation

The timeout can occur when you're updating the database with any Transact-SQL changes.

Action

- Try again later to save the diagram or selected tables.
- Save a change script and apply it to the database at a later time.
- Increase the SQL Query Time-out value and try to save the diagram or selected tables again.

To increase the SQL Query Time-out value

- 1. From the **Tools** menu, choose **Options**.
- 2. In the left pane, click **Data Tools**, and then click **Data View**.
- 3. Type a new value in the SQL query time-out box.

See Also

ALTER DATABASE

Physical Database Files and Filegroups

remote query timeout Option

Saving a Change Script

sp_configure

The current version of the ODBC driver is not valid.

Message Text

The current version of the ODBC driver is not valid.

Explanation

Your ODBC driver is not current.

Action

For best results, use the ODBC driver provided with the Microsoft® SQL ServerTM installation.

For more information, see the ODBC documentation.

The outer join operator (+) cannot be used in QBE.

Message Text

The outer join operator (+) cannot be used in QBE.

Explanation

There is an error in the syntax of your query. SQL Server Enterprise Manager has attempted to locate the source of the error.

Action

Review your query syntax and correct the error before running your query.

See Also

Join Fundamentals

Transact-SQL Joins

The Query Designer supports no more than one data source for this type of query.

Message Text

The Query Designer supports no more than one data source for this type of query.

Explanation

Only one data source can be used with this query type.

See Also

Query Fundamentals

There are not enough columns to match the subquery select list.

Message Text

There are not enough columns to match the subquery select list.

Explanation

The SELECT statement needs to include the same number of columns that the embedded subquery returns.

See Also

Expressions

Query Fundamentals

Subquery Fundamentals

Using the Select List

Unable to add constraint.

Appears when a new constraint has failed on existing data or your constraint expression contains an error. Compare the ODBC error text that appears in the **Save Incomplete** dialog box with the error text shown below to determine the appropriate solution.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Data exists in table '[table name]', database '[database name]', that violates CHECK constraint '[constraint name]' being added. ALTER command has been aborted.

[Microsoft][ODBC SQL Server Driver][SQL Server]Unable to create constraint. See previous errors.

Explanation

Existing data does not match the check constraint.

Action

- Change the data (for example, by using SQL Server Enterprise Manager) to match the constraint.
- Clear the **Check existing data on creation** check box in the **Tables** property page for the check constraint in question.
- Change the constraint expression in the **Tables** property page for the check constraint in question.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Invalid column '[column name]' specified in constraint definition.

[Microsoft][ODBC SQL Server Driver][SQL Server]Unable to create constraint. See previous errors.

Explanation

- The text value in the check constraint expression on the **Tables** property page is not enclosed in single quotation marks (').

Action

Correct the expression and save the table.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Line [line number]: Incorrect syntax near '[operator]'.

Explanation

The expression defined for the check constraint (in the **Tables** property page) or the default constraint (in the **Default Value** cell) is not valid Transact-SQL syntax. For example, the check constraint expression 'city equals Paris' was typed instead of 'city = Paris'.

Action

Correct the expression and save the table.

See Also

Database Designer

Filtering Rows with WHERE and HAVING

Query Fundamentals

Database Objects

Unable to create index.

Appears when a new index has failed on existing data.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Create unique index aborted on duplicate key. Primary key is '[primary key data]' [Microsoft][ODBC SQL Server Driver][SQL Server]Unable to create constraint. See previous errors.

Explanation

A unique index was created in the **Indexes/Keys** property page but duplicate data exists in the database. The value after the phrase "Primary key is" is the first duplicate value that Microsoft® SQL ServerTM found as it created the index.

Action

- Remove duplicate data from the database (for example, by using SQL Server Enterprise Manager).
- Change the option in the **Indexes/Keys** property page to allow duplicate rows in the index.

See Also

Creating SQL Server Indexes

Indexes

UNIQUE Constraints

Unable to create relationship.

Appears when a new constraint has failed on existing data.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Data exists in table '[table name]', database '[database name]', that violates FOREIGN KEY constraint '[constraint name]' being added. ALTER command has been aborted.

[Microsoft][ODBC SQL Server Driver][SQL Server]Unable to create constraint. See previous errors.

Explanation

Existing data fails the foreign key constraint.

Action

- Change the data that fails the foreign key constraint by running a query to show all the foreign key values that do not match primary key values. For example, to find foreign key values in the job_id column of the employee table that do not match primary key values in the jobs table, run a query with this Transact-SQL syntax:
 SELECT employee.emp_id, employee.job_id
 FROM employee LEFT OUTER JOIN jobs ON employee.job_WHERE (jobs.job_id IS NULL)
- Clear the **Check existing data on creation** check box in the **Relationships** property page.

See Also

Constraints

Database Designer

Filtering Rows with WHERE and HAVING

Query Fundamentals

Unable to modify table.

Appears when a new constraint has failed on existing data. Compare the ODBC error text that appears in the **Save Incomplete** dialog box with the two ODBC errors shown below to determine the appropriate solution.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]The column [column name] in table Tmp_ [table name] may not be null.

Explanation

A new database column has been added that doesn't allow null values and doesn't provide a default value. The table name in question appears after "Tmp_".

Action

Change the column properties. Either select the **Allow Nulls** property or type a **Default Value** setting.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Attempt to insert the value NULL into column '[column name]', table '[database name] TMP_ [table name]'; column does not allow nulls. INSERT fails.

[Microsoft][ODBC SQL Server Driver][SQL Server]Command has been aborted.

Explanation

The **Allow Nulls** property on an existing database column has been cleared, but the column has existing null values in it. The table name in question appears after "TMP_".

Action

Go to the column and select the **Allow Nulls** property.

See Also

Modifying Column Properties

Unable to preserve trigger.

Appears when your trigger text references a column that has been renamed, deleted, or assigned a different data type.

ODBC error text

[Microsoft][ODBC SQL Server Driver][SQL Server]Invalid column name '[column name]'.

- Unable to preserve trigger '[trigger name]'.

Explanation

A change to the table required the table to be re-created. When a table is recreated, the triggers attached to that table are automatically re-created as well.

Action

The recommended solution depends on the type of change made to the column referenced by the trigger.

To preserve a trigger that references a renamed column

• Rename the column to its original name and then save the table. This action will allow the table to be re-created. You can now rename the column, save the table again, and then edit the trigger to fix the renamed columns.

To preserve a trigger that references a deleted column

- 1. Expand the table that the trigger is attached to.
- 2. Right-click the trigger you want to change and choose **Open** from the shortcut menu.

- 3. Edit the trigger text and save the trigger.
- 4. Save the table or database diagram.

To preserve a trigger that references a column whose data type changed

- 1. In your database diagram, click the **Save Change Script** button in the Database Diagram toolbar.
- 2. Open the change script.
- 3. In Data View, expand the table that the incorrect trigger is attached to.
- 4. Delete the incorrect trigger.
- 5. Create a new trigger for the table.
- 6. In the change script, select the trigger text. The set of statements that creates the trigger begins with a CREATE TRIGGER statement.
- 7. Copy the selected text into the Trigger window.
- 8. On the toolbar, click the Save button. This action saves the trigger in the database and adds the trigger to the table in the Tables folder.
- 9. Repeat Steps 3 through 8 for each trigger you want to recreate.

See Also

Creating a Trigger
Trigger Object

Triggers

Unnecessary use of CONVERT function.

Message Text

Unneccesary use of CONVERT function.

Explanation

There is an error in the syntax of your query. SQL Server Enterprise Manager has attempted to locate the source of the error.

Action

Review your query syntax and correct the error before running your query.

See Also

Data Type Conversion

Expressions

Filtering Rows with WHERE and HAVING

Using the Select List

Unsupported SQL.

Message Text

Unsupported SQL.

Explanation

There is an error in the syntax of your query. SQL Server Enterprise Manager has attempted to locate the source of the error.

Action

Review your query syntax and correct the error before running your query.

See Also

Expressions

Filtering Rows with WHERE and HAVING

Using the Select List

XML Error Messages

The XML error messages are classified in the following categories:

- Errors in annotated XDR schemas
- Errors in XPath queries
- MSXML errors detected during XPath processing

Errors in Annotated XDR Schemas

The XDR schema errors are classified in the following categories:

- XDR schema errors detected during the schema processing
- XDR schema errors detected by XPath

XDR Schema Errors Detected During the Processing of the Annotated XDR Schema.

"Schema: unable to load schema %1. An error occurred (%2)"

The annotated schema could not be loaded. Check that the schema file indicated is in the expected location and you have permission to access it. Verify that the schema is well-formed and valid XML.

"Schema: duplicate element definition (%1)"

"Schema: duplicate attribute definition (%1) on %2"

"Schema: duplicate attribute reference (%1) on %2"

"Schema: duplicate top-level attribute definition (%1)"

An attribute or element definition or reference appears more than once in the schema. Remove the offending duplicates.

"Schema: missing attribute definition (%1) on %2"

"Schema: missing element definition (%1)"

A required attribute or element is missing from the schema. Add the missing information.

"Schema: missing %1 on %2"

The annotation (%1) is missing from the schema. Add the missing annotation.

(For example, <sql:relationship key-relation="T" foreign-relation="T" /> is missing key and foreign-key.)

"Schema: value expected for %1 on %2"

The value of the annotation (%1) is empty. (E.g., sql:field=""). Add the missing value.

"Schema: invalid value for %1 on %2"

The value of the annotation (%1) is not valid. (For example, sql:key-fields=" "). Correct the value.

"Schema: nested element definition is not allowed"

An ElementType cannot contain an ElementType.

"Schema: content is not allowed in a relationship tag"

The relationship tag can only have attributes (<sql:relationship />).

"Schema: unknown attribute %1 on relationship tag"

The only attributes on relationship are: key, key-relation, foreign-key, and foreign-relation. XML names are case-sensitive.

"Schema: the key/foreign-key pair in a relationship on %1 do not have the same number of columns"

Check the value of the key and foreign-key attributes on the indicated relationship tag.

(For example, <sql:relationship key-relation="T" foreign-relation="T" key="a b" foreign-key="x" /> has two columns in key but only one column in foreign-key.) Column names that have embedded spaces must be wrapped with square brackets ([]). Refer to the topic in SQL Server Books Online that explains the relationship.

"Schema: '0' or '1' expected for %1 on %2"

The attribute indicated is Boolean-valued. Use "0" for false, "1" for true.

"Schema: unknown XDR type %1 on %2"

The indicated type is not a valid XDR type. See the XML Data Reduced specification for the complete list of available types.

"Schema: unknown SQL type %1 on %2"

The indicated data type is not a valid SQL Server data type. SQL Server data type is used to distinguish among the large object binary types, and so must be one of: **binary**, **image**, **ntext**, or **text**

"Schema: invalid name/type, string value expected"

The value of the name or type attribute is invalid.

"Schema: invalid schema URL (%1)"

The URL is not valid.

"Schema: unknown element %1"

The only recognized Schema elements are: group, attribute, element, AttributeType, or ElementType.

"Schema: content other than relationship is not allowed in an element/attribute/AttributeType"

These tags can have attributes or a relationship annotation, but no other content.

"Schema: cannot infer default mapping for %1. Neither it nor any of its ancestors defines a relation"

Refer to the doc sections on relation and default mappings. The relation mapping for an element or attribute could not be determined.

"Schema: reference to %1 not allowed. Schema element/attribute is only allowed inside an ElementType"

The element and attribute tags can be used only inside of an ElementType.

"Schema: the element/attribute name %1 is invalid"

The name is not a valid XML element or attribute name.

"Schema: 'type' attribute expected on element/attribute"

"Schema: 'name' attribute expected on ElementType/AttributeType"

A schema item is missing a type or name attribute. (For example, <ElementType type="Oops" /> will cause this error; the user should have

used name, not type. Similarly for <element name="Oops" />)

"Schema: invalid 'type' on element/attribute"

"Schema: invalid 'name' on ElementType/AttributeType"

The name is not a valid XML element/attribute name.

"Schema: mixed content is not allowed on element %1. Property elements cannot have subelements"

Mixed content on property elements is not supported. Refer to the topic in SQL Server Books Online that defines property elements. [A property element is one that maps to a column in SQL Server. The explicit mapping is given using the field annotation, or the default (implicit) mapping will occur with the content="textOnly" annotation (in which case the column name is the element name).]

"Schema: unresolved namespace prefix (%1)"

The namespace prefix was used but never defined (using xmlns:prefix="uri") in the current context.

"Schema: relationship expected on '%1' when specifying a limit field"

The limit-field annotation is used to qualify a join. It cannot be used except on an attribute or element with a relationship.

"Schema: %1 cannot be used on is-constant element (%2)"

Refer to the topic in SQL Server Books Online that explains the is-constant annotation. Is-constant elements cannot have fields or a relation.

"Schema: relationship expected on %1"

The element or attribute requires a relationship.

"Schema: unexpected relationship on %1"

The element or attribute cannot have a relationship.

"Schema: invalid relationship on %1"

Refer to the topic in SQL Server Books Online that defines the relationship annotation. Relationships can be invalid for any number of reasons. Common reasons include:

- The first key-relation must be the mapped ancestor's table
- The last foreign-relation must be the current node's table
- The table and column names are always case-sensitive

"Schema: map-field is not allowed on %1. This annotation may be used only on attributes and property elements"

The map-field annotation can be used only on nodes that map to columns in SQL Server. These are elements or attributes annotated with field, or elements with textOnly content.

"Schema: a relationship from the same table to itself (self-join) is not supported on attribute %1"

The relationship is not supported in SQL Server 2000. Consider using isconstant or different relations.

"Schema: a base path is required to resolve external schema reference"

The external schema was referenced without a base path.

"Schema: the attribute %1 on an element is not supported"

"Schema: the attribute %1 on an attribute is not supported"

"Schema: the attribute %1 on an ElementType is not supported"

"Schema: the attribute %1 on an AttributeType is not supported"

An unrecognized attribute was used. Refer to the XML Data Reduced specification for the use of element, attribute, ElementType, and AttributeType.

XDR Schema Errors Detected by XPath

"Schema: the url-encode annotation requires one or more keys (specified in join relationships or the key-field annotation) in an ancestor or self"

The url-encode annotation causes a direct object query to be generated.

Direct object queries must select a single column from a single row, so key information is required to select a single row from the table. Keys are described by key-fields and relationships. The url-encoded node or one of its ancestors has no keys.

"Schema: a join relationship is required between %1 and %2"

When an element and its child map to different tables, a relationship is required. Refer to the topic in SQL Server Books Online that explains the use of the relationship annotation.

"Schema: the join relationship between %1 and %2 is invalid"

Refer to the topic in SQL Server Books Online that explains the use of the relationship annotation.

"Schema: the annotations url-encode and use-cdata are mutually exclusive and may not be used with any of the types id/idref/idrefs/nmtoken/nmtokens"

Not all annotations can be used with each other. Remove one of the mutually exclusive annotations.

"Schema: the map-field annotation is not allowed on the root element (%1)"

The top-most element must be mapped, or else is-constant.

"Schema: a relation is expected on the element %1"

Refer to the topic in SQL Server Books Online that explains relation and default mappings. The relation mapping for the element could not be determined.

"Schema: recursive element containment is not supported"

Recursion is not supported in SQL Server 2000.

"Schema: the is-constant element %1 cannot have attributes"

Attributes are not allowed on is-constant elements. Attributes can be used only on elements with relation.

Errors in XPath Queries

These are the XPath errors detected during XPath processing

"XPath: an unexpected internal error occurred"

Not expected during typical processing.

"XPath: unable to instantiate MSXML class factories"

"XPath: the parsed XPath contains an unexpected value (%1). The version of MSXML2.DLL installed may be incompatible with SQLXMLX.DLL"

Not expected during typical processing. If one of these errors occurs, the most likely cause is an installation problem. Check that SQLXMLX.DLL and MSXML2.DLL are the versions that were installed with SQL Server.

"XPath: the %1 axis is not supported"

"XPath: the %1 nodetest is not supported"

"XPath: the %1 function is not supported"

"XPath: the %1 operator is not supported"

Refer to the topic in SQL Server Books Online that explains the functionality supported in SQL Server 2000.

"XPath: direct object access must select a column"

"XPath: only direct object access may select an attribute"

Refer to the topic in SQL Server Books Online that explains direct object access. Selecting an attribute is supported only in direct object access because the attribute's value is returned, and this is not valid XML. Conversely, direct object access must select a single column from a single row.

"XPath: the root selection (/) is not supported"

Refer to the topic in SQL Server Books Online that explains XPath Limitations.

"XPath: the attribute %1 cannot be selected from root. It must be selected from a containing element"

There can be no top-level attributes. Only elements can have attributes.

"XPath: ordinal (numeric) predicates are not supported"

Refer to the topic in SQL Server Books Online that explains XPath Limitations.

"XPath: the parameter %1 is undefined"

The parameter was used, but not defined anywhere.

"XPath: the type of the parameter %1 is not supported. XPath parameters must be of type WSTR"

Only string-valued parameters are supported in XPath queries.

"XPath: unable to find %1 in the schema"

The named element or attribute does not exist in the schema.

"XPath: conversion to type %1 cannot be performed"

Refer to the topic in SQL Server Books Online that explains XPath Data Types.

"XPath: unable to evaluate the text content of element %1"

"XPath: the use of idrefs/nmtokens %1 in the predicate is not supported"

Refer to the topic in SQL Server Books Online that explains XPath Limitations. The named element does not map to a single column in a single row of the database.

"XPath: uncorrelated query in predicate is not supported. Read the documentation for details"

Refer to the topic in SQL Server Books Online that explains XPath Limitations. XPath cross-products are not supported in SQL Server 2000.

MSXML Errors Detected During XPath Processing

"MSXML2: %1 is an invalid or unsupported XPath"

Either the XPath contains an error or it contains constructs that MSXML2 does not support.

ODBC Error Messages

SQLERROR returns SQLSTATE values as defined by the X/Open and SQL Access Group SQL CAE specification (1992). SQLSTATE values are strings that contain five characters. The following table lists SQLSTATE values that a driver can return for SQLError.

The character string value returned for SQLSTATE consists of a two-character class value followed by a three-character subclass value. A class value of 01 indicates a warning and is accompanied by a return code of SQL_SUCCESS_WITH_INFO. Class values other than 01, except for the class IM, indicate an error and are accompanied by a return code of SQL_ERROR. The class IM is specific to warnings and errors that derive from the implementation of ODBC. The subclass value 000 in any class is for implementation defined conditions within the given class. The assignment of class and subclass values is defined by SQL-92.

Note Although successful execution of a function is indicated typically by a return value of SQL_SUCCESS, the SQLSTATE 00000 also indicates success.

SQLSTATE	ODBC API (Driver Manager) error	
00000	Success	
01000	General warning	
01002	Disconnect error	
01004	Data truncated	
01006	Privilege not revoked	
01S00	Invalid connection string attribute	
01S01	Error in row	
01S02	Option value changed	
01S03	No rows updated or deleted	
01S04	More than one row updated or deleted	
01S05	Cancel treated as FreeStmt/Close	
01S06	Attempt to fetch before the result returned the first rowset	
07001	Wrong number of parameters	
07006	Restricted data type attribute violation	

07S01	Invalid use of default paramater	
08001	Unable to connect to data source	
08002	Connection in use	
08003	Connection not open	
08004	Data source rejected establishment of connection	
08007	Connection failure during transaction	
08S01	Communication link failure	
21S01	Insert value list does not match column list	
21S02	Degree of derived table does not match column list	
22001	String data right truncation	
22002	Indicator variable required but not supplied	
22003	Numeric value out of range	
22005	Error in assignment	
22008	Datetime field overflow	
22012	Division by zero	
22026	String data, length mismatch	
23000	Integrity constraint violation	
24000*	Invalid cursor state	
25000	Invalid transaction state	
28000	Invalid authorization specification	
34000	Invalid cursor name	
37000	Syntax error or access violation	
3C000	Duplicate cursor name	
40001	Serialization failure	
42000	Syntax error or access violation	
70100	Operation aborted	
IM001	Driver does not support this function	
IM002	Data source name not found and no default driver specified	
IM003	Specified driver could not be loaded	
IM004	Driver's SQLAllocEnv failed	
IM005	Driver's SQLAllocConnect failed	
IM006	Driver's SQLSetConnectOption failed	
IM007	No data source or driver specified; dialog prohibited	

IM008	Dialog failed	
IM009	Unable to load translation DLL	
IM010	Data source name too long	
IM011	Driver name too long	
IM012	DRIVER keyword syntax error	
IM013	Trace file error	
S0001	Base table or view already exists	
S0002	Base table not found	
S0011	Index already exists	
S0012	Index not found	
S0021	Column already exists	
S0022	Column not found	
S0023	No default for column	
S1000	General error	
S1001	Memory allocation failure	
S1002	Invalid column number	
S1003	Program type out of range	
S1004	SQL data type out of range	
S1008	Operation canceled	
S1009	Invalid argument value	
S1010	Function sequence error	
S1011	Operation invalid at this time	
S1012	Invalid transaction operation code specified	
S1015	No cursor name available	
S1090	Invalid string or buffer length	
S1091	Descriptor type out of range	
S1092	Option type out of range	
S1093	Invalid parameter number	
S1094	Invalid scale value	
S1095	Function type out of range	
S1096	Information type out of range	
S1097	Column type out of range	
S1098	Scope type out of range	

S1099	Nullable type out of range	
S1100	Uniqueness option type out of range	
S1101	Accuracy option type out of range	
S1103	Direction option out of range	
S1104	Invalid precision value	
S1105	Invalid parameter type	
S1106	Fetch type out of range	
S1107	Row value out of range	
S1108	Concurrency option out of range	
S1109	Invalid cursor position	
S1110	Invalid driver completion	
S1111	Invalid bookmark value	
S1C00	Driver not capable	
S1DE0	No data at execution values pending	
S11 TOO Server Er	teipneouties pired may receive the "Invalid cursor state" error message when	

Microsoft® SQL Server™ runs out of resources while attempting to save selected tables or a database diagram. This error is returned because of insufficient space in your database or transaction log to complete the save process. To correct this problem, check to see if the database or the transaction log is full. If so, increase the size of the database to accommodate the change. Check other system resources or contact your system administrator.

In addition to the standard ODBC error messages located in your ODBC programmer's reference documentation, the SQL Server ODBC driver can return error messages for certain SQLSTATE values, as shown in this table.

SQLSTATE	SQL SERVER DRIVER ERROR	Description
01000	%ld rows sent to SQL Server. Total sent: %ld.	A batch size of rows have been sent to SQL Server using the BCP API.
01000	%ld rows successfully bulk-copied to hostfile. Total received: %ld.	A batch size of rows have been written to the host file using the BCP API.
01000	Access to database configured in the DSN has been denied.	Either the database does not exist or the user does not have permission to access the database. The default

	Default used.	database configured for the login ID was used.
01000	An error has occurred during an attempt to access the log file, logging disabled.	The log file for driver statistics or long-running queries could not be used. The logging of driver statistics or long-running queries has been disabled.
01000	Connected to backup server.	The SQL Server primary server was not available, so the connection was made to the fallback server.
01000	Language configured in the DSN is not supported. Default used.	Either the language name is invalid or the language is not installed on the server. The default language configured for the login ID was used.
01000	Null bit data forced to zero.	A bit field containing a NULL is being loaded to a server that does not support NULL bit data. The field was set to zero.
01000	Procedure executed with 'EXEC'. No output parameters returned.	The procedure could not be executed as an RPC and output parameters were specified. Because the procedure had to be executed with EXEC, no output parameters will be stored.
01000	SQL Debugging disabled.	SQL Debugging could not be enabled, probably because the SQL Server is not configured for SQL debugging.
01000	The ODBC catalog stored procedures installed on server %s are version %s; version %02d.%4.4d or later is required to ensure proper operation. Please contact your system	Install the ODBC catalog stored procedures by executing \Msqql\Install\Instcat.sql.

	administrator.	
01000	Zero length data forced to length 1.	A zero-length binary or character field is being loaded, but zero-length data is not supported. The field was forced to a 1 byte blank or binary zero.
01S02	Cursor concurrency changed.	The application requested a concurrency that could not be honored because of the type of request or query. A different concurrency was used instead.
01S02	Cursor type changed.	The application requested a cursor type that could not be honored because of the type of request or query. A different cursor type was used instead.
01S02	Packet size change not honored by server, server size used.	The application requested a nondefault packet size that could not be supported by SQL Server. The server default size was used instead.
01S02	Packet size changed.	The application requested a nondefault packet size that was outside of the limits of allowable size. Either the smallest or largest packet size was used instead, depending if the requested size was too small or too large.
01S02	Login timeout changed.	The application requested a login time-out that was too large. The maximum login time out was used instead.
07006	Conversions not allowed using bcp_moretext.	The application using bcp_moretext must have the same field type as it does the column type.
08004	Server rejected the connection; Access to selected database has been denied.	Either the database does not exist or the user does not have permission to access the database.

08004	Server rejected the	Either the language name is invalid or
00004	connection; Language specified is not supported.	the language is not installed on SQL Server.
HY024	Database is invalid or cannot be accessed.	Either the database does not exist or the user does not have permission to access the database.
IM006	Packet size change not supported by server, default used.	The application requested a nondefault packet size that SQL Server does not support. The client default size was used.
HY000	All bound columns are read-only.	There must be an updatable column to use SQLSetPos or SQLBulkOperations to change or insert a row.
HY000	An old netlib (%s) has been detected. Please delete it and restart the application.	The netlib that was being loaded was out of date. The driver requires a newer netlib. The problem could be a netlib in the current directory of the application, which is being loaded instead of the one in the system directory, or it could be that the netlib was not installed properly or is corrupted. If the netlib specified in the error text exists elsewhere than in the Windows system directory, delete it. If the netlib exists only in the system directory, install the client utilities on the client and restart the application.
HY000	Attempt to bulk-copy a NULL value into a Server column which does not accept NULL values.	The field contains a NULL value, but the column does not allow NULL values.

HY000	Attempt to bulk-copy an oversized column to the SQL Server.	The length supplied for a column is larger than the column definition in the table.
HY000	Attempt to read unknown version of BCP format file.	The header line in the bcp format file was not a recognized version.
HY000	Bad bulk-copy direction. Must be either IN or OUT.	The bcp_init call did not specify a valid direction for the eDirection parameter.
HY000	Bad terminator.	The terminator string supplied in bcp_bind is invalid.
HY000	Bcp host-files must contain at least one column.	No columns were selected to be loaded.
HY000	Cannot generate SSPI context.	The driver could not obtain an SSPI context required for integrated security. The native error will contain the Win32 error code.
HY000	Cannot initialize SSPI package.	The driver could not obtain an SSPI context required for integrated security. The native error will contain the Win32 error code.
HY000	Communication module is not valid. Driver has not been correctly installed.	The network library .dll is corrupted. Install the client utilities on the client and restart the application.
HY000	Connection is busy with results for another hstmt.	The SQL Server ODBC driver allows only one active hstmt. For more information, see <u>Using Default Result Sets</u> .
HY000	Connection is not enabled for BCP.	The application using the BCP API must set the SQLSetConnectAttr or SQL_SS_COPT_BCP attribute before connecting.
HY000	Failure during closing of connection.	The ConnectionClose function in the network library failed. This problem is

		typically caused by a network or SQL Server problem.
HY000	length data must have either a length-prefix	bcp_bind was called with SQL_VARYLEN_DATA, but neither a prefix length nor a terminator was specified.
HY000	be skipped only when copying into the server.	A bcp out format file specified that a column should be skipped. This is not allowed. Either create a view containing only the desired columns and bcp out from that view, or use the -Q flag to provide a SELECT statement selecting only the desired columns.
HY000		The format file contains a column number greater than the number of columns in the table.
HY000	I/O error while reading bcp data-file.	
HY000	I/O error while reading BCP format file.	
HY000	I/O error while writing bcp data-file.	
HY000	I/O error while writing bcp error-file.	
HY000	Invalid option.	The eOption parameter to bcp_control was not valid.
HY000	not allowed after default parameter.	Parameters to a stored procedure cannot have a non-default value after any preceding parameter has been specified with the default value.
HY000		For a bcp out , not all columns of the table were bound. Either create a view which contains only the desired columns and bcp out from that view

		or, use the -Q flag to provide a SELECT statement selecting only the desired columns.
HY000	ODBC BCP/Driver version mismatch.	The Sqlsrv32.dll and Odbcbcp.dll .dlls do not have identical versions. Install the client utilities on the client and restart the application.
HY000	Protocol error in TDS stream.	The TDS stream from the server is invalid. This problem is typically caused by a SQL Server problem. Check the SQL Server error log.
HY000	Table contains less rows than first row count.	A starting row number was supplied, but the table on the server did not contain that number of rows. No rows were copied to the host-file.
HY000	Table contains less rows than last row count.	An ending row number was supplied, but the table on the server did not contain that number of rows.
HY000	Table has no text/image columns.	bcp_moretext was called, but the table does not contain any text or image columns.
HY000	TDS buffer length too large.	The TDS stream from the server is invalid. This problem is typically caused by a SQL Server problem. Check the SQL Server error log.
HY000	Text column data incomplete.	The summation of the lengths supplied by bcp_moretext did not match the length supplied in bcp_bind or bcp_collen.
HY000	The BCP host-file contains less rows than first row count.	A starting row number was supplied, but the host-file did not contain that number of rows. No rows were loaded.
HY000	The row length exceeds SQL Server's maximum allowable size.	The summation of the data lengths for a row is larger than the maximum row size.

HY000	The stored procedure required to complete this operation could not be found on the server (they were supplied with SQL Server). Please contact your system administrator.	Install the ODBC catalog stored procedures by executing \Msqql\Install\Instcat.sql.
HY000	Unable to load communication module. Driver has not been correctly installed.	The network library .dll specified for the connection does not exist on this client. Install the client utilities on the client and restart the application.
HY000	Unable to open BCP host data-file.	The file name specified in the bcp_init call does not exist or is opened by another application.
HY000	Unable to open BCP error-file.	The error file name specified in the bcp_init call does not exist or is opened by another application.
HY000	Unable to read driver version.	The driver was unable to read the version block in its .DLL. Install the client utilities on the client and restart the application.
HY000	Unexpected EOF encountered in BCP data-file.	During a bcp in operation, end-of-file was detected on the data file while in the middle of processing the last row. This is typically caused by having a different number of columns, types, nullability, or sizes between the original table and the table being loaded.
HY000	Unicode conversion failed.	An error occurred during conversion to or from a Unicode string. The native error will contain the Win32

		error code.
HY000	Unicode conversion	The server code page must exist on the
	failed. The code page	client for proper operation. Either
	of the SQL server	clear the Auto Translate check box
	must be installed on	for the DSN or install the code page of
	the client system.	the server on the client. The server
		code page can be determined by
		running EXEC sp_server_info 18.
HY000	Unknown token	The TDS stream from the server is
	received from SQL	invalid. This error is typically caused
	Server.	by a problem on the server. Check the
		SQL Server error log.
HY000	Warning: Partial	A failure during insertion or update of
	insert/update. The	a text , image , or ntext column
	insert/update of a text	occurred. That column will not contain
	or image column(s)	the proper data. Roll back the
	did not succeed.	transaction, if possible.

Finding Supplemental Error Message Information

Over time, more information about Microsoft® SQL ServerTM error messages, either documented or not documented in this section, may become available.

Adding User-Defined Error Messages

User-defined error messages can be added to the **sysmessages** table using the system stored procedure **sp_addmessage**. At a minimum, you can specify the message number, the severity level, and the message text using **sp_addmessage**.

Similar to specifying user-defined error messages with RAISERROR, use error message numbers greater than 50000 and severity levels from 0 through 18. Only system administrators can issue RAISERROR with a severity level from 19 through 25.

See Also

sp_addmessage