Building MySQL from Source

Abstract

This is the Building MySQL from Source extract from the MySQL 5.6 Reference Manual.

For help with using MySQL, please visit the MySQL Forums, where you can discuss your issues with other MySQL users.

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Table of Contents

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Chapter 1 Installing MySQL from Source

Building MySQL from the source code enables you to customize build parameters, compiler optimizations, and installation location. For a list of systems on which MySQL is known to run, see https://www.mysql.com/support/supportedplatforms/database.html.

Before you proceed with an installation from source, check whether Oracle produces a precompiled binary distribution for your platform and whether it works for you. We put a great deal of effort into ensuring that our binaries are built with the best possible options for optimal performance. Instructions for installing binary distributions are available in Installing MySQL on Unix/Linux Using Generic Binaries.

If you are interested in building MySQL from a source distribution using build options the same as or similar to those use by Oracle to produce binary distributions on your platform, obtain a binary distribution, unpack it, and look in the `docs/INFO_BIN` file, which contains information about how that MySQL distribution was configured and compiled.

> **Warning**
>
> Building MySQL with nonstandard options may lead to reduced functionality, performance, or security.

Chapter 2 Installing MySQL Using a Standard Source Distribution

To install MySQL from a standard source distribution:

1. Verify that your system satisfies the tool requirements listed at Source Installation Prerequisites.
2. Obtain a distribution file using the instructions in How to Get MySQL.
3. Configure, build, and install the distribution using the instructions in this section.
4. Perform postinstallation procedures using the instructions in Postinstallation Setup and Testing.

MySQL uses `CMake` as the build framework on all platforms. The instructions given here should enable you to produce a working installation. For additional information on using `CMake` to build MySQL, see How to Build MySQL Server with CMake.

If you start from a source RPM, use the following command to make a binary RPM that you can install. If you do not have `rpmbuild`, use `rpm` instead.

```
$> rpmbuild --rebuild --clean MySQL-VERSION.src.rpm
```

The result is one or more binary RPM packages that you install as indicated in Installing MySQL on Linux Using RPM Packages from Oracle.

The sequence for installation from a compressed `tar` file or Zip archive source distribution is similar to the process for installing from a generic binary distribution (see Installing MySQL on Unix/Linux Using Generic Binaries), except that it is used on all platforms and includes steps to configure and compile the distribution. For example, with a compressed `tar` file source distribution on Unix, the basic installation command sequence looks like this:

```
# Preconfiguration setup
$> groupadd mysql
$> useradd -r -g mysql -s /bin/false mysql
# Beginning of source-build specific instructions
$> tar zxvf mysql-VERSION.tar.gz
$> cd mysql-VERSION
$> mkdir bld
$> cd bld
$> cmake ..
$> make
$> make install
# End of source-build specific instructions
# Postinstallation setup
$> cd /usr/local/mysql
$> scripts/mysql_install_db --user=mysql
$> bin/mysqld_safe --user=mysql &
# Next command is optional
$> cp support-files/mysql.server /etc/init.d/mysql.server
```

`mysql_install_db` creates a default option file named `my.cnf` in the base installation directory. This file is created from a template included in the distribution package named `my-default.cnf`. For more information, see Using a Sample Default Server Configuration File.

A more detailed version of the source-build specific instructions is shown following.

> **Note**
>
> The procedure shown here does not set up any passwords for MySQL accounts. After following the procedure, proceed to Postinstallation Setup and Testing, for postinstallation setup and testing.

Perform Preconfiguration Setup

On Unix, set up the `mysql` user and group that are used to run and execute the MySQL server, and own the database directory. For details, see Create a mysql User and Group. Then perform the following steps as the `mysql` user, except as noted.

Obtain and Unpack the Distribution

Pick the directory under which you want to unpack the distribution and change location into it.

Obtain a distribution file using the instructions in How to Get MySQL.

Unpack the distribution into the current directory:

- To unpack a compressed `tar` file, `tar` can uncompress and unpack the distribution if it has `z` option support:

  ```
  $> tar zxvf mysql-VERSION.tar.gz
  ```

  If your `tar` does not have `z` option support, use `gunzip` to unpack the distribution and `tar` to unpack it:

  ```
  $> gunzip < mysql-VERSION.tar.gz | tar xvf -
  ```

  Alternatively, `CMake` can uncompress and unpack the distribution:

  ```
  $> cmake -E tar zxvf mysql-VERSION.tar.gz
  ```

- To unpack a Zip archive, use `WinZip` or another tool that can read `.zip` files.

Unpacking the distribution file creates a directory named `mysql-VERSION`.

Configure the Distribution

Change location into the top-level directory of the unpacked distribution:

```
$> cd mysql-VERSION
```

Build outside of the source tree to keep the tree clean. If the top-level source directory is named `mysql-src` under your current working directory, you can build in a directory named `bld` at the same level. Create the directory and go there:

```
$> mkdir bld
$> cd bld
```

Configure the build directory. The minimum configuration command includes no options to override configuration defaults:

```
$> cmake ../mysql-src
```

The build directory needs not be outside the source tree. For example, you can build in a directory named `bld` under the top-level source tree. To do this, starting with `mysql-src` as your current working directory, create the directory `bld` and then go there:

```
$> mkdir bld
$> cd bld
```

Configure the build directory. The minimum configuration command includes no options to override configuration defaults:

```
$> cmake ..
```

If you have multiple source trees at the same level (for example, to build multiple versions of MySQL), the second strategy can be advantageous. The first strategy places all build directories at the same level, which requires that you choose a unique name for each. With the second strategy, you can use the same name for the build directory within each source tree. The following instructions assume this second strategy.

On Windows, specify the development environment. For example, the following commands configure MySQL for 32-bit or 64-bit builds, respectively:

```
$> cmake .. -G "Visual Studio 12 2013"
$> cmake .. -G "Visual Studio 12 2013 Win64"
```

On macOS, to use the Xcode IDE:

```
$> cmake .. -G Xcode
```

When you run `cmake`, you might want to add options to the command line. Here are some examples:

- `-DBUILD_CONFIG=mysql_release`: Configure the source with the same build options used by Oracle to produce binary distributions for official MySQL releases.
- `-DCMAKE_INSTALL_PREFIX=`*`dir_name`*: Configure the distribution for installation under a particular location.
- `-DCPACK_MONOLITHIC_INSTALL=1`: Cause `make package` to generate a single installation file rather than multiple files.
- `-DWITH_DEBUG=1`: Build the distribution with debugging support.

For a more extensive list of options, see Chapter 4, *MySQL Source-Configuration Options*.

To list the configuration options, use one of the following commands:

```
$> cmake .. -L   # overview
$> cmake .. -LH  # overview with help text
$> cmake .. -LAH # all params with help text
$> ccmake ..     # interactive display
```

If `CMake` fails, you might need to reconfigure by running it again with different options. If you do reconfigure, take note of the following:

- If `CMake` is run after it has previously been run, it may use information that was gathered during its previous invocation. This information is stored in `CMakeCache.txt`. When `CMake` starts, it looks for that file and reads its contents if it exists, on the assumption that the information is still correct. That assumption is invalid when you reconfigure.

- Each time you run `CMake`, you must run `make` again to recompile. However, you may want to remove old object files from previous builds first because they were compiled using different configuration options.

To prevent old object files or configuration information from being used, run these commands in the build direcotry on Unix before re-running `CMake`:

```
$> make clean
$> rm CMakeCache.txt
```

Or, on Windows:

```
$> devenv MySQL.sln /clean
$> del CMakeCache.txt
```

Before asking on the MySQL Community Slack, check the files in the `CMakeFiles` directory for useful information about the failure. To file a bug report, please use the instructions in How to Report Bugs or Problems.

Build the Distribution

On Unix:

```
$> make
$> make VERBOSE=1
```

The second command sets `VERBOSE` to show the commands for each compiled source.

Use `gmake` instead on systems where you are using GNU `make` and it has been installed as `gmake`.

On Windows:

```
$> devenv MySQL.sln /build RelWithDebInfo
```

If you have gotten to the compilation stage, but the distribution does not build, see Chapter 5, *Dealing with Problems Compiling MySQL*, for help. If that does not solve the problem, please enter it into our bugs database using the instructions given in How to Report Bugs or Problems. If you have installed the latest versions of the required tools, and they crash trying to process our configuration files, please report that also. However, if you get a `command not found` error or a similar problem for required tools, do not report it. Instead, make sure that all the required tools are installed and that your `PATH` variable is set correctly so that your shell can find them.

Install the Distribution

On Unix:

```
$> make install
```

This installs the files under the configured installation directory (by default, `/usr/local/mysql`). You might need to run the command as `root`.

To install in a specific directory, add a `DESTDIR` parameter to the command line:

```
$> make install DESTDIR="/opt/mysql"
```

Alternatively, generate installation package files that you can install where you like:

```
$> make package
```

This operation produces one or more `.tar.gz` files that can be installed like generic binary distribution packages. See Installing MySQL on Unix/Linux Using Generic Binaries. If you run `CMake` with `-DCPACK_MONOLITHIC_INSTALL=1`, the operation produces a single file. Otherwise, it produces multiple files.

On Windows, generate the data directory, then create a `.zip` archive installation package:

```
$> devenv MySQL.sln /build RelWithDebInfo /project initial_database
$> devenv MySQL.sln /build RelWithDebInfo /project package
```

You can install the resulting `.zip` archive where you like. See Installing MySQL on Microsoft Windows Using a `noinstall` ZIP Archive.

Perform Postinstallation Setup

The remainder of the installation process involves setting up the configuration file, creating the core databases, and starting the MySQL server. For instructions, see Postinstallation Setup and Testing.

> **Note**
>
> The accounts that are listed in the MySQL grant tables initially have no passwords. After starting the server, you should set up passwords for them using the instructions in Postinstallation Setup and Testing.

Chapter 3 Installing MySQL Using a Development Source Tree

This section describes how to install MySQL from the latest development source code, which is hosted on GitHub. To obtain the MySQL Server source code from this repository hosting service, you can set up a local MySQL Git repository.

On GitHub, MySQL Server and other MySQL projects are found on the MySQL page. The MySQL Server project is a single repository that contains branches for several MySQL series.

MySQL officially joined GitHub in September, 2014. For more information about MySQL's move to GitHub, refer to the announcement on the MySQL Release Engineering blog: MySQL on GitHub

- Prerequisites for Installing from Development Source
- Setting Up a MySQL Git Repository

Prerequisites for Installing from Development Source

To install MySQL from a development source tree, your system must satisfy the tool requirements listed at Source Installation Prerequisites.

Setting Up a MySQL Git Repository

To set up a MySQL Git repository on your machine:

1. Clone the MySQL Git repository to your machine. The following command clones the MySQL Git repository to a directory named `mysql-server`. The initial download may take some time to complete, depending on the speed of your connection.

```
~$ git clone https://github.com/mysql/mysql-server.git
Cloning into 'mysql-server'...
remote: Counting objects: 1035465, done.
remote: Total 1035465 (delta 0), reused 0 (delta 0)
Receiving objects: 100% (1035465/1035465), 437.48 MiB | 5.10 MiB/s, done.
Resolving deltas: 100% (855607/855607), done.
Checking connectivity... done.
Checking out files: 100% (21902/21902), done.
```

2. When the clone operation completes, the contents of your local MySQL Git repository appear similar to the following:

```
~$ cd mysql-server
~/mysql-server$ ls
client             extra                mysys              storage
cmake              include              packaging          strings
CMakeLists.txt     INSTALL              plugin             support-files
components         libbinlogevents      README             testclients
config.h.cmake     libbinlogstandalone  router             unittest
configure.cmake    libmysql             run_doxygen.cmake  utilities
Docs               libservices          scripts            VERSION
Doxyfile-ignored   LICENSE              share              vio
Doxyfile.in        man                  sql                win
doxygen_resources  mysql-test           sql-common
```

3. Use the `git branch -r` command to view the remote tracking branches for the MySQL repository.

```
~/mysql-server$ git branch -r
  origin/5.5
  origin/5.6
```

```
  origin/5.7
  origin/8.0
  origin/HEAD -> origin/8.0
  origin/cluster-7.2
  origin/cluster-7.3
  origin/cluster-7.4
  origin/cluster-7.5
  origin/cluster-7.6
```

4. To view the branches that are checked out in your local repository, issue the `git branch` command. When you clone the MySQL Git repository, the latest MySQL GA branch is checked out automatically. The asterisk identifies the active branch.

```
~/mysql-server$ git branch
* 8.0
```

5. To check out an earlier MySQL branch, run the `git checkout` command, specifying the branch name. For example, to check out the MySQL 5.6 branch:

```
~/mysql-server$ git checkout 5.6
Branch 5.6 set up to track remote branch 5.6 from origin.
Switched to a new branch '5.6'
```

6. To obtain changes made after your initial setup of the MySQL Git repository, switch to the branch you want to update and issue the `git pull` command:

```
~/mysql-server$ git checkout 5.6
~/mysql-server$ git pull
```

   To examine the commit history, use the `git log` option:

```
~/mysql-server$ git log
```

   You can also browse commit history and source code on the GitHub MySQL site.

   If you see changes or code that you have a question about, ask on the MySQL Community Slack. For information about contributing a patch, see Contributing to MySQL Server.

7. After you have cloned the MySQL Git repository and have checked out the branch you want to build, you can build MySQL Server from the source code. Instructions are provided in Chapter 2, *Installing MySQL Using a Standard Source Distribution*, except that you skip the part about obtaining and unpacking the distribution.

   Be careful about installing a build from a distribution source tree on a production machine. The installation command may overwrite your live release installation. If you already have MySQL installed and do not want to overwrite it, run `CMake` with values for the `CMAKE_INSTALL_PREFIX`, `MYSQL_TCP_PORT`, and `MYSQL_UNIX_ADDR` options different from those used by your production server. For additional information about preventing multiple servers from interfering with each other, see Running Multiple MySQL Instances on One Machine.

   Play hard with your new installation. For example, try to make new features crash. Start by running `make test`. See The MySQL Test Suite.

Chapter 4 MySQL Source-Configuration Options

The `CMake` program provides a great deal of control over how you configure a MySQL source distribution. Typically, you do this using options on the `CMake` command line. For information about options supported by `CMake`, run either of these commands in the top-level source directory:

```
cmake . -LH
ccmake .
```

You can also affect `CMake` using certain environment variables. See Environment Variables.

For boolean options, the value may be specified as 1 or `ON` to enable the option, or as 0 or `OFF` to disable the option.

Many options configure compile-time defaults that can be overridden at server startup. For example, the `CMAKE_INSTALL_PREFIX`, `MYSQL_TCP_PORT`, and `MYSQL_UNIX_ADDR` options that configure the default installation base directory location, TCP/IP port number, and Unix socket file can be changed at server startup with the `--basedir`, `--port`, and `--socket` options for `mysqld`. Where applicable, configuration option descriptions indicate the corresponding `mysqld` startup option.

The following sections provide more information about `CMake` options.

- CMake Option Reference
- General Options
- Installation Layout Options
- Storage Engine Options
- Feature Options
- Compiler Flags
- CMake Options for Compiling NDB Cluster

CMake Option Reference

The following table shows the available `CMake` options. In the `Default` column, `PREFIX` stands for the value of the `CMAKE_INSTALL_PREFIX` option, which specifies the installation base directory. This value is used as the parent location for several of the installation subdirectories.

Table 4.1 MySQL Source-Configuration Option Reference (CMake)

Formats	Description	Default	Introduced	Removed
`BUILD_CONFIG`	Use same build options as official releases			
`CMAKE_BUILD_TYPE`	Type of build to produce	`RelWithDebInfo`		
`CMAKE_CXX_FLAGS`	Flags for C++ Compiler			
`CMAKE_C_FLAGS`	Flags for C Compiler			
`CMAKE_INSTALL_PREFIX`	Installation base directory	`/usr/local/mysql`		

Formats	Description	Default	Introduced	Removed
COMPILATION_COMMENT	Comment about compilation environment			
CPACK_MONOLITHIC_INSTALL	Whether package build produces single file	OFF		
DEFAULT_CHARSET	The default server character set	latin1		
DEFAULT_COLLATION	The default server collation	latin1_swedish_ci		
ENABLED_LOCAL_INFILE	Whether to enable LOCAL for LOAD DATA	OFF		
ENABLED_PROFILING	Whether to enable query profiling code	ON		
ENABLE_DEBUG_SYNC	Whether to enable Debug Sync support	ON		5.6.36
ENABLE_DOWNLOADS	Whether to download optional files	OFF		
ENABLE_DTRACE	Whether to include DTrace support			
ENABLE_GCOV	Whether to include gcov support			
ENABLE_GPROF	Enable gprof (optimized Linux builds only)	OFF		
IGNORE_AIO_CHECK	With -DBUILD_CONFIG=mysql_release, ignore libaio check	OFF		
INNODB_PAGE_ATOMIC_REF_COUNT	Enable or disable atomic page reference counting	ON	5.6.16	
INSTALL_BINDIR	User executables directory	PREFIX/bin		
INSTALL_DOCDIR	Documentation directory	PREFIX/docs		
INSTALL_DOCREADMEDIR	README file directory	PREFIX		
INSTALL_INCLUDEDIR	Header file directory	PREFIX/include		
INSTALL_INFODIR	Info file directory	PREFIX/docs		
INSTALL_LAYOUT	Select predefined installation layout	STANDALONE		
INSTALL_LIBDIR	Library file directory	PREFIX/lib		

Formats	Description	Default	Introduced	Removed
INSTALL_MANDIR	Manual page directory	PREFIX/man		
INSTALL_MYSQLSHAREDIR	Shared data directory	PREFIX/share		
INSTALL_MYSQLTESTDIR	mysql-test directory	PREFIX/mysql-test		
INSTALL_PLUGINDIR	Plugin directory	PREFIX/lib/plugin		
INSTALL_SBINDIR	Server executable directory	PREFIX/bin		
INSTALL_SCRIPTDIR	Scripts directory	PREFIX/scripts		
INSTALL_SECURE_FILE_PRIVDIR	secure_file_priv default value	platform specific	5.6.34	
INSTALL_SECURE_FILE_PRIVDIR_EMBEDDED	secure_file_priv default value for libmysqld	INSTALL_MYSQLSHAREDIR	5.6.34	
INSTALL_SHAREDIR	aclocal/mysql.m4 installation directory	PREFIX/share		
INSTALL_SQLBENCHDIR	sql-bench directory	PREFIX		
INSTALL_SUPPORTFILESDIR	Extra support files directory	PREFIX/support-files		
MEMCACHED_HOME	Path to memcached; obsolete	[none]		5.6.51
MYSQL_DATADIR	Data directory			
MYSQL_MAINTAINER_MODE	Whether to enable MySQL maintainer-specific development environment	OFF		
MYSQL_PROJECT_NAME	Windows/macOS project name	MySQL		
MYSQL_TCP_PORT	TCP/IP port number	3306		
MYSQL_UNIX_ADDR	Unix socket file	/tmp/mysql.sock		
ODBC_INCLUDES	ODBC includes directory			
ODBC_LIB_DIR	ODBC library directory			
OPTIMIZER_TRACE	Whether to support optimizer tracing			
REPRODUCIBLE_BUILD	Take extra care to create a build result independent of build location and time		5.6.37	

Formats	Description	Default	Introduced	Removed
SUNPRO_CXX_LIBRARY	Client link library on Solaris 10+		5.6.20	
SYSCONFDIR	Option file directory			
TMPDIR	tmpdir default value		5.6.16	
WITHOUT_xxx_STORAGE_ENGINE	Exclude storage engine xxx from build			
WITH_ASAN	Enable AddressSanitizer	OFF	5.6.15	
WITH_BUNDLED_LIBEVENT	Use bundled libevent when building ndbmemcache; obsolete	ON		5.6.51
WITH_BUNDLED_MEMCACHED	Use bundled memcached when building ndbmemcache; obsolete	ON		5.6.51
WITH_CLASSPATH	Classpath to use when building MySQL Cluster Connector for Java. Default is an empty string.			
WITH_DEBUG	Whether to include debugging support	OFF		
WITH_DEFAULT_COMPILER_OPTIONS	Whether to use default compiler options	ON		
WITH_DEFAULT_FEATURE_SET	Whether to use default feature set	ON		
WITH_EDITLINE	Which libedit/ editline library to use	bundled	5.6.12	
WITH_EMBEDDED_SERVER	Whether to build embedded server	OFF		
WITH_EMBEDDED_SHARED_LIBRARY	Whether to build a shared embedded server library	OFF	5.6.17	
WITH_ERROR_INSERT	Enable error injection in the NDB storage engine. Should not be used for building binaries intended for production.	OFF		

Formats	Description	Default	Introduced	Removed
WITH_EXTRA_CHARSETS	Which extra character sets to include	all		
WITH_GMOCK	Path to googlemock distribution			
WITH_INNODB_MEMCACHED	Whether to generate memcached shared libraries.	OFF		
WITH_LIBEDIT	Use bundled libedit library	ON		5.6.12
WITH_LIBEVENT	Which libevent library to use	bundled		
WITH_LIBWRAP	Whether to include libwrap (TCP wrappers) support	OFF		
WITH_NDBAPI_EXAMPLES	Build API example programs	OFF		
WITH_NDBCLUSTER	Build the NDB storage engine	ON		
WITH_NDBCLUSTER_STORAGE_ENGINE	For internal use; may not work as expected in all circumstances; users should employ WITH_NDBCLUSTER instead	ON		
WITH_NDBMTD	Build multithreaded data node.	ON		
WITH_NDB_BINLOG	Enable binary logging by default by mysqld.	ON		
WITH_NDB_DEBUG	Produce a debug build for testing or troubleshooting.	OFF		
WITH_NDB_JAVA	Enable building of Java and ClusterJ support. Enabled by default. Supported in MySQL Cluster only.	ON		
WITH_NDB_PORT	Default port used by a management server built with this option. If this option was not	[none]		

Formats	Description	Default	Introduced	Removed
	used to build it, the management server's default port is 1186.			
WITH_NDB_TEST	Include NDB API test programs.	OFF		
WITH_NUMA	Set NUMA memory allocation policy		5.6.27	
WITH_SSL	Type of SSL support	system		
WITH_SYMVER16	Whether libmysqlclient.so.18 contains both symver 16 and 18 symbols.	OFF	5.6.31	
WITH_UNIT_TESTS	Compile MySQL with unit tests	ON		
WITH_UNIXODBC	Enable unixODBC support	OFF		
WITH_VALGRIND	Whether to compile in Valgrind header files	OFF		
WITH_ZLIB	Type of zlib support	bundled		
WITH_xxx_STORAGE_ENGINE	Compile storage engine xxx statically into server			

General Options

- `-DBUILD_CONFIG=mysql_release`

  This option configures a source distribution with the same build options used by Oracle to produce binary distributions for official MySQL releases.

- `-DCMAKE_BUILD_TYPE=`*`type`*

  The type of build to produce:

  - `RelWithDebInfo`: Enable optimizations and generate debugging information. This is the default MySQL build type.
  - `Debug`: Disable optimizations and generate debugging information. This build type is also used if the `WITH_DEBUG` option is enabled. That is, `-DWITH_DEBUG=1` has the same effect as `-DCMAKE_BUILD_TYPE=Debug`.

- `-DCPACK_MONOLITHIC_INSTALL=`*`bool`*

  This option affects whether the `make package` operation produces multiple installation package files or a single file. If disabled, the operation produces multiple installation package files, which may be useful

if you want to install only a subset of a full MySQL installation. If enabled, it produces a single file for installing everything.

Installation Layout Options

The `CMAKE_INSTALL_PREFIX` option indicates the base installation directory. Other options with names of the form `INSTALL_xxx` that indicate component locations are interpreted relative to the prefix and their values are relative pathnames. Their values should not include the prefix.

- `-DCMAKE_INSTALL_PREFIX=dir_name`

  The installation base directory.

  This value can be set at server startup with the `--basedir` option.

- `-DINSTALL_BINDIR=dir_name`

  Where to install user programs.

- `-DINSTALL_DOCDIR=dir_name`

  Where to install documentation.

- `-DINSTALL_DOCREADMEDIR=dir_name`

  Where to install `README` files.

- `-DINSTALL_INCLUDEDIR=dir_name`

  Where to install header files.

- `-DINSTALL_INFODIR=dir_name`

  Where to install Info files.

- `-DINSTALL_LAYOUT=name`

  Select a predefined installation layout:

  - `STANDALONE`: Same layout as used for `.tar.gz` and `.zip` packages. This is the default.
  - `RPM`: Layout similar to RPM packages.
  - `SVR4`: Solaris package layout.
  - `DEB`: DEB package layout (experimental).

  You can select a predefined layout but modify individual component installation locations by specifying other options. For example:

  ```
  cmake . -DINSTALL_LAYOUT=SVR4 -DMYSQL_DATADIR=/var/mysql/data
  ```

- `-DINSTALL_LIBDIR=dir_name`

  Where to install library files.

- `-DINSTALL_MANDIR=dir_name`

  Where to install manual pages.

- `-DINSTALL_MYSQLSHAREDIR=dir_name`

  Where to install shared data files.

- `-DINSTALL_MYSQLTESTDIR=dir_name`

  Where to install the `mysql-test` directory. As of MySQL 5.6.12, to suppress installation of this directory, explicitly set the option to the empty value (`-DINSTALL_MYSQLTESTDIR=`).

- `-DINSTALL_PLUGINDIR=dir_name`

  The location of the plugin directory.

  This value can be set at server startup with the `--plugin_dir` option.

- `-DINSTALL_SBINDIR=dir_name`

  Where to install the `mysqld` server.

- `-DINSTALL_SCRIPTDIR=dir_name`

  Where to install `mysql_install_db`.

- `-DINSTALL_SECURE_FILE_PRIVDIR=dir_name`

  The default value for the `secure_file_priv` system variable. The default value is platform specific and depends on the value of the `INSTALL_LAYOUT` `CMake` option; see the description of the `secure_file_priv` system variable in Server System Variables.

  This option was added in MySQL 5.6.34. To set the value for the `libmysqld` embedded server, use `INSTALL_SECURE_FILE_PRIV_EMBEDDEDDIR`.

- `-DINSTALL_SECURE_FILE_PRIV_EMBEDDEDDIR=dir_name`

  The default value for the `secure_file_priv` system variable, for the `libmysqld` embedded server. This option was added in MySQL 5.6.34.

- `-DINSTALL_SHAREDIR=dir_name`

  Where to install `aclocal/mysql.m4`.

- `-DINSTALL_SQLBENCHDIR=dir_name`

  Where to install the `sql-bench` directory. To suppress installation of this directory, explicitly set the option to the empty value (`-DINSTALL_SQLBENCHDIR=`).

- `-DINSTALL_SUPPORTFILESDIR=dir_name`

  Where to install extra support files.

- `-DMYSQL_DATADIR=dir_name`

  The location of the MySQL data directory.

  This value can be set at server startup with the `--datadir` option.

- `-DODBC_INCLUDES=dir_name`

  The location of the ODBC includes directory, and may be used while configuring Connector/ODBC.

- `-DODBC_LIB_DIR=dir_name`

  The location of the ODBC library directory, and may be used while configuring Connector/ODBC.

- `-DSYSCONFDIR=dir_name`

  The default `my.cnf` option file directory.

  This location cannot be set at server startup, but you can start the server with a given option file using the `--defaults-file=file_name` option, where *`file_name`* is the full path name to the file.

- `-DTMPDIR=dir_name`

  The default location to use for the `tmpdir` system variable. If unspecified, the value defaults to `P_tmpdir` in `<stdio.h>`. This option was added in MySQL 5.6.16.

Storage Engine Options

Storage engines are built as plugins. You can build a plugin as a static module (compiled into the server) or a dynamic module (built as a dynamic library that must be installed into the server using the `INSTALL PLUGIN` statement or the `--plugin-load` option before it can be used). Some plugins might not support static or dynamic building.

The `InnoDB`, `MyISAM`, `MERGE`, `MEMORY`, and `CSV` engines are mandatory (always compiled into the server) and need not be installed explicitly.

To compile a storage engine statically into the server, use `-DWITH_engine_STORAGE_ENGINE=1`. Some permissible *`engine`* values are `ARCHIVE`, `BLACKHOLE`, `EXAMPLE`, `FEDERATED`, `PARTITION` (partitioning support), and `PERFSCHEMA` (Performance Schema). Examples:

```
-DWITH_ARCHIVE_STORAGE_ENGINE=1
-DWITH_BLACKHOLE_STORAGE_ENGINE=1
-DWITH_PERFSCHEMA_STORAGE_ENGINE=1
```

To build MySQL with support for NDB Cluster, use the `WITH_NDBCLUSTER` option.

> **Note**
>
> `WITH_NDBCLUSTER` is supported only when building NDB Cluster using the NDB Cluster sources. It cannot be used to enable clustering support in other MySQL source trees or distributions. In NDB Cluster source distributions, it is enabled by default. See Building NDB Cluster from Source on Linux, and Compiling and Installing NDB Cluster from Source on Windows, for more information.

To exclude a storage engine from the build, use `-DWITHOUT_engine_STORAGE_ENGINE=1`. Examples:

```
-DWITHOUT_EXAMPLE_STORAGE_ENGINE=1
-DWITHOUT_FEDERATED_STORAGE_ENGINE=1
-DWITHOUT_PARTITION_STORAGE_ENGINE=1
```

If neither `-DWITH_engine_STORAGE_ENGINE` nor `-DWITHOUT_engine_STORAGE_ENGINE` are specified for a given storage engine, the engine is built as a shared module, or excluded if it cannot be built as a shared module.

Feature Options

- `-DCOMPILATION_COMMENT=string`

  A descriptive comment about the compilation environment.

- `-DDEFAULT_CHARSET=charset_name`

  The server character set. By default, MySQL uses the `latin1` (cp1252 West European) character set.

  `charset_name` may be one of `binary`, `armscii8`, `ascii`, `big5`, `cp1250`, `cp1251`, `cp1256`, `cp1257`, `cp850`, `cp852`, `cp866`, `cp932`, `dec8`, `eucjpms`, `euckr`, `gb2312`, `gbk`, `geostd8`, `greek`, `hebrew`, `hp8`, `keybcs2`, `koi8r`, `koi8u`, `latin1`, `latin2`, `latin5`, `latin7`, `macce`, `macroman`, `sjis`, `swe7`, `tis620`, `ucs2`, `ujis`, `utf8`, `utf8mb4`, `utf16`, `utf16le`, `utf32`. The permissible character sets are listed in the `cmake/character_sets.cmake` file as the value of `CHARSETS_AVAILABLE`.

  This value can be set at server startup with the `--character_set_server` option.

- `-DDEFAULT_COLLATION=collation_name`

  The server collation. By default, MySQL uses `latin1_swedish_ci`. Use the `SHOW COLLATION` statement to determine which collations are available for each character set.

  This value can be set at server startup with the `--collation_server` option.

- `-DENABLE_DEBUG_SYNC=bool`

  > **Note**
  >
  > As of MySQL 5.6.36, `ENABLE_DEBUG_SYNC` is removed and enabling `WITH_DEBUG` enables Debug Sync.

  Whether to compile the Debug Sync facility into the server. This facility is used for testing and debugging. This option is enabled by default, but has no effect unless MySQL is configured with debugging enabled. If debugging is enabled and you want to disable Debug Sync, use `-DENABLE_DEBUG_SYNC=0`.

  When compiled in, Debug Sync is disabled by default at runtime. To enable it, start `mysqld` with the `--debug-sync-timeout=N` option, where *`N`* is a timeout value greater than 0. (The default value is 0, which disables Debug Sync.) *`N`* becomes the default timeout for individual synchronization points.

  For a description of the Debug Sync facility and how to use synchronization points, see MySQL Internals: Test Synchronization.

- `-DENABLE_DOWNLOADS=bool`

  Whether to download optional files. For example, with this option enabled, `CMake` downloads the Google Test distribution that is used by the test suite to run unit tests.

- `-DENABLE_DTRACE=bool`

  Whether to include support for DTrace probes. For information about DTrace, wee Tracing mysqld Using DTrace

- `-DENABLE_GCOV=bool`

  Whether to include gcov support (Linux only).

- `-DENABLE_GPROF=bool`

  Whether to enable `gprof` (optimized Linux builds only).

- `-DENABLED_LOCAL_INFILE=bool`

This option controls the compiled-in default `LOCAL` capability for the MySQL client library. Clients that make no explicit arrangements therefore have `LOCAL` capability disabled or enabled according to the `ENABLED_LOCAL_INFILE` setting specified at MySQL build time.

By default, the client library in MySQL binary distributions is compiled with `ENABLED_LOCAL_INFILE` enabled. If you compile MySQL from source, configure it with `ENABLED_LOCAL_INFILE` disabled or enabled based on whether clients that make no explicit arrangements should have `LOCAL` capability disabled or enabled, respectively.

`ENABLED_LOCAL_INFILE` controls the default for client-side `LOCAL` capability. For the server, the `local_infile` system variable controls server-side `LOCAL` capability. To explicitly cause the server to refuse or permit `LOAD DATA LOCAL` statements (regardless of how client programs and libraries are configured at build time or runtime), start `mysqld` with `local_infile` disabled or enabled, respectively. `local_infile` can also be set at runtime. See Security Considerations for LOAD DATA LOCAL.

- `-DENABLED_PROFILING=`*`bool`*

  Whether to enable query profiling code (for the `SHOW PROFILE` and `SHOW PROFILES` statements).

- `-DIGNORE_AIO_CHECK=`*`bool`*

  If the `-DBUILD_CONFIG=mysql_release` option is given on Linux, the `libaio` library must be linked in by default. If you do not have `libaio` or do not want to install it, you can suppress the check for it by specifying `-DIGNORE_AIO_CHECK=1`.

- `-DINNODB_PAGE_ATOMIC_REF_COUNT=`*`bool`*

  Whether to enable or disable atomic page reference counting. Fetching and releasing pages from the buffer pool and tracking the page state are expensive and complex operations. Using a page mutex to track these operations does not scale well. With `INNODB_PAGE_ATOMIC_REF_COUNT=ON` (default), fetch and release is tracked using atomics where available. For platforms that do not support atomics, set `INNODB_PAGE_ATOMIC_REF_COUNT=OFF` to disable atomic page reference counting.

  When atomic page reference counting is enabled (default), "`[Note] InnoDB: Using atomics to ref count buffer pool pages`" is printed to the error log at server startup. If atomic page reference counting is disabled, "`[Note] InnoDB: Using mutexes to ref count buffer pool pages`" is printed instead.

  `INNODB_PAGE_ATOMIC_REF_COUNT` was introduced with the fix for MySQL Bug #68079. The option is removed in MySQL 5.7.5. Support for atomics is required to build MySQL as of MySQL 5.7.5, which makes the option obsolete.

- `-DMYSQL_MAINTAINER_MODE=`*`bool`*

  Whether to enable a MySQL maintainer-specific development environment. If enabled, this option causes compiler warnings to become errors. It may also cause some minor changes in generated code, to initialize some variables to 0.

- `-DMYSQL_PROJECT_NAME=`*`name`*

  For Windows or macOS, the project name to incorporate into the project file name.

- `-DMYSQL_TCP_PORT=`*`port_num`*

  The port number on which the server listens for TCP/IP connections. The default is 3306.

This value can be set at server startup with the `--port` option.

- `-DMYSQL_UNIX_ADDR=file_name`

  The Unix socket file path on which the server listens for socket connections. This must be an absolute path name. The default is `/tmp/mysql.sock`.

  This value can be set at server startup with the `--socket` option.

- `-DOPTIMIZER_TRACE=bool`

  Whether to support optimizer tracing. See MySQL Internals: Tracing the Optimizer.

- `-DREPRODUCIBLE_BUILD=bool`

  For builds on Linux systems, this option controls whether to take extra care to create a build result independent of build location and time.

  This option was added in MySQL 5.6.37.

- `-DWITH_ASAN=bool`

  Whether to enable AddressSanitizer, for compilers that support it. The default is off. This option was added in MySQL 5.6.15.

- `-DWITH_DEBUG=bool`

  Whether to include debugging support.

  Configuring MySQL with debugging support enables you to use the `--debug="d,parser_debug"` option when you start the server. This causes the Bison parser that is used to process SQL statements to dump a parser trace to the server's standard error output. Typically, this output is written to the error log.

  As of MySQL 5.6.36, enabling `WITH_DEBUG` also enables Debug Sync. For a description of the Debug Sync facility and how to use synchronization points, see MySQL Internals: Test Synchronization.

- `-DWITH_DEFAULT_FEATURE_SET=bool`

  Whether to use the flags from `cmake/build_configurations/feature_set.cmake`.

- `-DWITH_EDITLINE=value`

  Which `libedit`/`editline` library to use. The permitted values are `bundled` (the default) and `system`.

  `WITH_EDITLINE` was added in MySQL 5.6.12. It replaces `WITH_LIBEDIT`, which has been removed.

- `-DWITH_EMBEDDED_SERVER=bool`

  Whether to build the `libmysqld` embedded server library.

- `-DWITH_EMBEDDED_SHARED_LIBRARY=bool`

  Whether to build a shared `libmysqld` embedded server library. This option was added in MySQL 5.6.17.

- `-DWITH_EXTRA_CHARSETS=name`

  Which extra character sets to include:

  - `all`: All character sets. This is the default.
  - `complex`: Complex character sets.
  - `none`: No extra character sets.

- `-DWITH_GMOCK=path_name`

  The path to the googlemock distribution, for use with Google Test-based unit tests. The option value is the path to the distribution Zip file. Alternatively, set the `WITH_GMOCK` environment variable to the path name. It is also possible to use `-DENABLE_DOWNLOADS=1` so that `CMake` downloads the distribution from GitHub.

  If you build MySQL without the Google Test-based unit tests (by configuring wihout `WITH_GMOCK`), `CMake` displays a message indicating how to download it.

- `-DWITH_INNODB_MEMCACHED=bool`

  Whether to generate memcached shared libraries (`libmemcached.so` and `innodb_engine.so`).

- `-DWITH_LIBEVENT=string`

  Which `libevent` library to use. Permitted values are `bundled` (default), `system`, and `yes`. If you specify `system` or `yes`, the system `libevent` library is used if present. If the system library is not found, the bundled `libevent` library is used. The `libevent` library is required by `InnoDB` memcached.

- `-DWITH_LIBEDIT=bool`

  Whether to use the `libedit` library bundled with the distribution.

  `WITH_LIBEDIT` was removed in MySQL 5.6.12. Use `WITH_EDITLINE` instead.

- `-DWITH_LIBWRAP=bool`

  Whether to include `libwrap` (TCP wrappers) support.

- `-DWITH_NUMA=bool`

  Explicitly set the NUMA memory allocation policy. `CMake` sets the default `WITH_NUMA` value based on whether the current platform has `NUMA` support. For platforms without NUMA support, `CMake` behaves as follows:

  - With no NUMA option (the normal case), `CMake` continues normally, producing only this warning: NUMA library missing or required version not available
  - With `-DWITH_NUMA=ON`, `CMake` aborts with this error: NUMA library missing or required version not available

  This option was added in MySQL 5.6.27.

- `-DWITH_SSL={ssl_type|path_name}`

  For support of encrypted connections, entropy for random number generation, and other encryption-related operations, MySQL must be built using an SSL library. This option specifies which SSL library to use.

  - `ssl_type` can be one of the following values:

  - `no`: No SSL support. This is the default before MySQL 5.6.6. As of 5.6.6, this is no longer a permitted value and the default is `bundled`.
  - `yes`: Use the system OpenSSL library if present, else the library bundled with the distribution.
  - `bundled`: Use the SSL library bundled with the distribution. This is the default from MySQL 5.6.6 through 5.6.45. As of 5.6.46, this is no longer a permitted value and the default is `system`.
  - `system`: Use the system OpenSSL library. This is the default as of MySQL 5.6.46.
- *`path_name`*, permitted for MySQL 5.6.7 and after, is the path name to the OpenSSL installation to use. This can be preferable to using the *`ssl_type`* value of `system` because it can prevent CMake from detecting and using an older or incorrect OpenSSL version installed on the system. (Another permitted way to do the same thing is to set `WITH_SSL` to `system` and set the `CMAKE_PREFIX_PATH` option to *`path_name`*.)

For additional information about configuring the SSL library, see Configuring SSL Library Support.

- `-DWITH_SYMVER16=`*`bool`*

  If enabled, this option causes the `libmysqlclient` client library to contain extra symbols to be compatible with `libmysqlclient` on RHEL/OEL 5, 6, and 7; and Fedora releases. All symbols present in `libmysqlclient.so.16` are tagged with symver 16 in `libmsqlclient.so.18`, making those symbols have both symver 16 and 18. The default is `OFF`.

  This option was added in MySQL 5.6.31.

- `-DWITH_UNIT_TESTS={ON|OFF}`

  If enabled, compile MySQL with unit tests. The default is ON unless the server is not being compiled.

- `-DWITH_UNIXODBC=`*`1`*

  Enables unixODBC support, for Connector/ODBC.

- `-DWITH_VALGRIND=`*`bool`*

  Whether to compile in the Valgrind header files, which exposes the Valgrind API to MySQL code. The default is `OFF`.

  To generate a Valgrind-aware debug build, `-DWITH_VALGRIND=1` normally is combined with `-DWITH_DEBUG=1`. See Building Debug Configurations.

- `-DWITH_ZLIB=`*`zlib_type`*

  Some features require that the server be built with compression library support, such as the `COMPRESS()` and `UNCOMPRESS()` functions, and compression of the client/server protocol. The `WITH_ZLIB` option indicates the source of `zlib` support:

  - `bundled`: Use the `zlib` library bundled with the distribution. This is the default.
  - `system`: Use the system `zlib` library.

Compiler Flags

- `-DCMAKE_C_FLAGS="`*`flags`*"

Flags for the C Compiler.

- `-DCMAKE_CXX_FLAGS="flags"`

  Flags for the C++ Compiler.

- `-DWITH_DEFAULT_COMPILER_OPTIONS=bool`

  Whether to use the flags from `cmake/build_configurations/compiler_options.cmake`.

  > **Note**
  >
  > All optimization flags were carefully chosen and tested by the MySQL build team. Overriding them can lead to unexpected results and is done at your own risk.

- `-DSUNPRO_CXX_LIBRARY="lib_name"`

  Enable linking against `libCstd` instead of `stlport4` on Solaris 10 or later. This works only for client code because the server depends on C++98.

  This option was added in MySQL 5.6.20.

To specify your own C and C++ compiler flags, for flags that do not affect optimization, use the `CMAKE_C_FLAGS` and `CMAKE_CXX_FLAGS` CMake options.

When providing your own compiler flags, you might want to specify `CMAKE_BUILD_TYPE` as well.

For example, to create a 32-bit release build on a 64-bit Linux machine, do this:

```
mkdir bld
cd bld
cmake .. -DCMAKE_C_FLAGS=-m32 \
  -DCMAKE_CXX_FLAGS=-m32 \
  -DCMAKE_BUILD_TYPE=RelWithDebInfo
```

If you set flags that affect optimization (`-Onumber`), you must set the `CMAKE_C_FLAGS_build_type` and/or `CMAKE_CXX_FLAGS_build_type` options, where `build_type` corresponds to the `CMAKE_BUILD_TYPE` value. To specify a different optimization for the default build type (`RelWithDebInfo`) set the `CMAKE_C_FLAGS_RELWITHDEBINFO` and `CMAKE_CXX_FLAGS_RELWITHDEBINFO` options. For example, to compile on Linux with `-O3` and with debug symbols, do this:

```
cmake .. -DCMAKE_C_FLAGS_RELWITHDEBINFO="-O3 -g" \
  -DCMAKE_CXX_FLAGS_RELWITHDEBINFO="-O3 -g"
```

CMake Options for Compiling NDB Cluster

The following options are for use when building NDB Cluster with the NDB Cluster sources; they are not currently supported when using sources from the MySQL 5.6 Server tree.

- `-DMEMCACHED_HOME=dir_name`

  `NDB` support for memcached was removed in NDB 7.3.32 and NDB 7.4.31, and thus this option is no longer supported for building `NDB` in these or later versions.

- `-DWITH_BUNDLED_LIBEVENT={ON|OFF}`

  `NDB` support for memcached was removed in NDB 7.3.32 and NDB 7.4.31, and thus this option is no longer supported for building `NDB` in these or later versions.

- `-DWITH_BUNDLED_MEMCACHED={ON|OFF}`

  `NDB` support for memcached was removed in NDB 7.3.32 and NDB 7.4.31, and thus this option is no longer supported for building `NDB` in these or later versions.

- `-DWITH_CLASSPATH=`*`path`*

  Sets the classpath for building NDB Cluster Connector for Java. The default is empty. In MySQL NDB Cluster 7.2.9 and later, this option is ignored if `-DWITH_NDB_JAVA=OFF` is used.

- `-DWITH_ERROR_INSERT={ON|OFF}`

  Enables error injection in the `NDB` kernel. For testing only; not intended for use in building production binaries. The default is `OFF`.

- `-DWITH_NDBAPI_EXAMPLES={ON|OFF}`

  Build API example programs in `storage/ndb/ndbapi-examples/`.

- `-DWITH_NDBCLUSTER_STORAGE_ENGINE={ON|OFF}`

  For internal use only; may not always work as expected. To build with `NDB` support, use `WITH_NDBCLUSTER` instead.

- `-DWITH_NDBCLUSTER={ON|OFF}`

  Build and link in support for the `NDB` storage engine in `mysqld`. The default is `ON`.

- `-DWITH_NDBMTD={ON|OFF}`

  Build the multithreaded data node executable `ndbmtd`. The default is `ON`.

- `-DWITH_NDB_BINLOG={ON|OFF}`

  Enable binary logging by default in the `mysqld` built using this option. ON by default.

- `-DWITH_NDB_DEBUG={ON|OFF}`

  Enable building the debug versions of the NDB Cluster binaries. OFF by default.

- `-DWITH_NDB_JAVA={ON|OFF}`

  Enable building NDB Cluster with Java support, including `ClusterJ`.

  This option was added in MySQL NDB Cluster 7.2.9, and is ON by default. If you do not wish to compile NDB Cluster with Java support, you must disable it explicitly by specifying `-DWITH_NDB_JAVA=OFF` when running `CMake`. Otherwise, if Java cannot be found, configuration of the build fails.

- `-DWITH_NDB_PORT=`*`port`*

  Causes the NDB Cluster management server (`ndb_mgmd`) that is built to use this *`port`* by default. If this option is unset, the resulting management server tries to use port 1186 by default.

- `-DWITH_NDB_TEST={ON|OFF}`

  If enabled, include a set of NDB API test programs. The default is OFF.

Chapter 5 Dealing with Problems Compiling MySQL

The solution to many problems involves reconfiguring. If you do reconfigure, take note of the following:

- If `CMake` is run after it has previously been run, it may use information that was gathered during its previous invocation. This information is stored in `CMakeCache.txt`. When `CMake` starts, it looks for that file and reads its contents if it exists, on the assumption that the information is still correct. That assumption is invalid when you reconfigure.
- Each time you run `CMake`, you must run `make` again to recompile. However, you may want to remove old object files from previous builds first because they were compiled using different configuration options.

To prevent old object files or configuration information from being used, run the following commands before re-running `CMake`:

On Unix:

```
$> make clean
$> rm CMakeCache.txt
```

On Windows:

```
$> devenv MySQL.sln /clean
$> del CMakeCache.txt
```

If you build outside of the source tree, remove and recreate your build directory before re-running `CMake`. For instructions on building outside of the source tree, see How to Build MySQL Server with CMake.

On some systems, warnings may occur due to differences in system include files. The following list describes other problems that have been found to occur most often when compiling MySQL:

- To define which C and C++ compilers to use, you can define the `CC` and `CXX` environment variables. For example:

  ```
  $> CC=gcc
  $> CXX=g++
  $> export CC CXX
  ```

  To specify your own C and C++ compiler flags, use the `CMAKE_C_FLAGS` and `CMAKE_CXX_FLAGS` CMake options. See Compiler Flags.

  To see what flags you might need to specify, invoke `mysql_config` with the `--cflags` and `--cxxflags` options.

- To see what commands are executed during the compile stage, after using `CMake` to configure MySQL, run `make VERBOSE=1` rather than just `make`.
- If compilation fails, check whether the `MYSQL_MAINTAINER_MODE` option is enabled. This mode causes compiler warnings to become errors, so disabling it may enable compilation to proceed.
- If your compile fails with errors such as any of the following, you must upgrade your version of `make` to GNU `make`:

  ```
  make: Fatal error in reader: Makefile, line 18:
  Badly formed macro assignment
  ```

  Or:

  ```
  make: file `Makefile' line 18: Must be a separator (:
  ```

Or:

```
pthread.h: No such file or directory
```

Solaris and FreeBSD are known to have troublesome `make` programs.

GNU `make` 3.75 is known to work.

- The `sql_yacc.cc` file is generated from `sql_yacc.yy`. Normally, the build process does not need to create `sql_yacc.cc` because MySQL comes with a pregenerated copy. However, if you do need to re-create it, you might encounter this error:

  ```
  "sql_yacc.yy", line xxx fatal: default action causes potential...
  ```

  This is a sign that your version of `yacc` is deficient. You probably need to install a recent version of `bison` (the GNU version of `yacc`) and use that instead.

  Versions of `bison` older than 1.75 may report this error:

  ```
  sql_yacc.yy:#####: fatal error: maximum table size (32767) exceeded
  ```

  The maximum table size is not actually exceeded; the error is caused by bugs in older versions of `bison`.

For information about acquiring or updating tools, see the system requirements in Chapter 1, *Installing MySQL from Source*.