

Database Settings

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Introduction

Parasoft DTP requires a relational database. A DTP distribution is available that automatically installs and configures an embedded database server so you can immediately begin using DTP after installation. Most organizations, however, connect their DTP deployments to an external MySQL or Oracle database server which provides greater flexibility and scalability. If you installed the embedded database distribution, you can still connect to an external database server if necessary (see [Configuring the Database Connection](#)).

This section describes installing and configuring MySQL servers. Contact your Oracle administration for details on installing and configuring Oracle database servers.

Database Requirements

DTP supports MySQL 5.6.25 to 8.0.x.

A known issue in versions of MySQL prior to 5.6.25 may result in problems when databases hosting large amounts of data are queried (see <https://bugs.mysql.com/bug.php?id=76996>). This issue can cause DTP to wait indefinitely for a query result because no error will be thrown. If you are unable to upgrade to or install MySQL 5.6.25, you can edit the my.cnf or my.ini MySQL configuration file to avoid this (see <https://dev.mysql.com/doc/refman/5.7/en/option-files.html> to locate this file in your installation):

1. Stop DTP server, Data Collector, and MySQL server
2. Open the my.ini or my.cnf file in an editor and add the following line under the [mysqld] section: `read_rnd_buffer_size=1048576`.
3. Save the file and start MySQL server
4. Start DTP server and Data Collector

If data continuously loads in an explorer view, increase the value of the `read_rnd_buffer_size` variable.

DTP does not ship with the MySQL and Oracle JDBC drivers necessary to set up a database connection. Download the drivers and place them in the <DTP_DATA_DIR>\lib\thirdparty directory after completing the installation.

Installing MySQL Database Server

Refer to the MySQL documentation for instructions on how to install and configure MySQL:

- Windows: <http://dev.mysql.com/doc/refman/8.0/en/index.html>.
- Linux: <https://dev.mysql.com/doc/refman/8.0/en/linux-installation-native.html>

Many Linux distributions come with MySQL pre-installed. Contact your Linux administrator for details on your Linux system. If you need to install MySQL, consult the MySQL documentation for installation instructions specific to your Linux distribution.

Additional Notes

- MySQL should be installed as a service to be launched automatically upon system startup.
- Do not set for an international character set.
- Check the available disk space in the location where Report Center data will be located. On Windows, the location is usually: C:\Program Files\MySQL\MySQL Server [version]\data\
- Assign and remember a password for the root user. You can set the password from the command line:

```
mysqladmin -u root password 'new-password'
```

- Check your MySQL database for corruption on a regular basis to ensure data integrity using the following command (Windows):

```
mysqlcheck -u dtp -pgrs DTP
```

DTP Enterprise Pack Database

[DTP Enterprise Pack](#), which includes Extension Designer, ships with its own embedded MongoDB. If you are installing DTP Enterprise Pack, we recommend using an XFS file system in Linux per the [MongoDB documentation](#).

From MongoDB Documentation

MongoDB on Linux

Kernel and File Systems

When running MongoDB in production on Linux, you should use Linux kernel version 2.6.36 or later, with either the XFS or EXT4 filesystem. If possible, use XFS as it generally performs better with MongoDB.

With the [WiredTiger storage engine](#), use of XFS is strongly recommended to avoid performance issues that may occur when using EXT4 with WiredTiger.

Asynchronous I/O Library

The libaio package, which is included in some Linux distributions, is required if you are using the DTP distribution for Linux that ships with an embedded database server. If the library is not already on your Linux system, install it using the appropriate package manager for your distribution. The following instructions are provided to help you install libaio on several common Linux distributions:

Red Hat and CentOS

```
sudo yum install libaio
```

Ubuntu

```
sudo apt-get install libaio1
```

Fedora

Install the RPM for the libaio package from the Fedora website at <http://fedoraproject.org/>.

Minimum Number of Database Connections

The database server should provide at least 150 concurrent connections for DTP. If the database server does not provide sufficient connections, DTP may not be able to create a new connection to the database prior to reaching the maximum number of connections.

JDBC Drivers

The standard DTP distribution installation does not ship with the MySQL and Oracle JDBC drivers necessary to set up a database connection. You will need to download the driver for your database software separately.

MySQL

For MySQL databases, you will need to download MySQL Java Connector version 5.1.32 or later.

The MySQL Connector/J 8.0 JDBC driver has a known defect that may impact MySQL servers hosted on CentOS and Red Hat Enterprise Linux systems. See <https://bugs.mysql.com/bug.php?id=90813> for details.

Oracle	<p>For Oracle databases, you will need to download the JDBC driver version recommended for your version of Oracle that will work with DTP (JDK 8):</p> <ul style="list-style-type: none">• Oracle 11.2 or 11gR2: ojdbc6.jar• Oracle 12.1 or 12cR1: ojdbc7.jar• Oracle 12.2 or 12cR2: ojdbc8.jar• Oracle 18.3: ojdbc8.jar• Oracle 19.x: ojdbc8.jar <p>Refer to the Oracle documentation for information on choosing the correct driver: https://www.oracle.com/database/technologies/faq-jdbc.html</p>
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When the installation is complete, place the drivers in the <DTP_DATA_DIR>/lib/thirdparty directory. By default, the <DTP_DATA_DIR> directory for Windows is installed in the C:\ProgramData\Parasoft directory. On Linux, the data directory is set during installation. See [Installation Directories](#) for details.

You do not need to download and install the JDBC drivers if you are installing the DTP distribution that includes an embedded database server. The drivers are packaged with the database server so that you can begin using the database immediately.

MySQL Charset and Collation Settings

The MySQL creation script for the DTP database uses the character set utf8 and collation utf8_general_ci so that UTF-8 characters (e.g., Japanese or Chinese) can be stored in the database. DTP does not support UTF-8 4 byte character encoding ("utf8mb4")

The MySQL server character set and collation must also be set to UTF-8 to save UTF-8 characters in the database. We highly recommend that the MySQL server changes are made prior to creating the database:

1. Locate the my.ini (Windows) or my.cnf (Linux) and open it in an editor
2. In the section under [mysqld], add/edit the following properties:

```
character-set-server = utf8  
  
collation-server = utf8_general_ci
```

See the MySQL documentation for more information about server character set configuration: <https://dev.mysql.com/doc/refman/5.6/en/charset-server.html>.

Oracle Charset and Collation Settings

Oracle recommends setting the target character set to AL32UTF8. See the Oracle Database Migration Assistant for Unicode documentation for instructions: <https://docs.oracle.com/database/121/DUMAG/ch2migrasteps.htm#DUMAG136>.

Open File Descriptor Limit

DTP may make many simultaneous requests to the server, which may cause the MySQL server to open many files at the same time to process the requests. As a result, the limit on open file descriptors set by MySQL may be exceeded. Please refer to the MySQL documentation for more information on this issue, including possible resolutions: <http://dev.mysql.com/doc/refman/5.6/en/table-cache.html>.