



# Database Solutions for Small Business

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Updated 28-September-2002

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Consider your choice of database systems carefully before you start developing a database application. The easy and seemingly obvious choices may not be the best for your project's needs. Some popular database systems, for example, are great for single-user applications, but will cause you much grief if you try and use them for a database that requires multiple users. The most common database choices are Microsoft Access, SQL Server, IBM DB2, and Oracle. There are also lesser-known database alternatives such as My SQL and PostgreSQL. By giving you the highlights and drawbacks of each of these databases, I hope to help you choose the right database for your project's specific needs.

The most popular database used in small businesses is Microsoft Access. Forms, queries, and reports are very easy to create with this tool. Access comes as part of Microsoft Office Professional-Developer editions and is also available separately. For simple, single-user, single-computer databases, Access is a good choice. If future expandability, performance, or multi-user capabilities are part of your current or future requirements, look elsewhere. (The Macintosh equivalents to Access are Hypercard and FileMaker<sup>1</sup>).

The next database we will consider is Microsoft SQL Server. If you are looking for a multi-user database with good performance and moderate scalability, then SQL Server is an acceptable choice. However, in high-performance situations where over several million records are being processed, SQL Server has been observed to occasionally drop a record or two.

The next class of database systems consists of IBM's DB2 and Oracle. Both of these databases are multi-user, scalable, fast, and very robust. The downside is that both of these databases may be cost-prohibitive for small businesses. Many comparisons of these two databases are found on the Internet.

Perhaps the most overlooked databases are those in the Open Source category. The great advantage to both MySQL and PostgreSQL is that they are either free or very low cost, yet still provide most of the features of the high-end database systems.

MySQL is available for free for non-commercial use. For commercial use, MySQL costs only \$200 per server. MySQL is commonly used as a database back-end for web sites. It offers excellent performance for simple database schemas. However, it should be noted that it does not offer row-level locking or fully functional foreign key support<sup>2</sup>. This means that it will slow down under heavy use on databases where there are complex relationships between tables. Support is available from the Internet community and commercially via My SQL AB. MySQL is a great choice for many applications.

Last, but not least, is the PostgreSQL database. PostgreSQL is free, feature rich, rock solid, offers good performance, and is an excellent choice for organizations with complex database needs. Like SQL Server, DB2, and Oracle, this database supports foreign keys and row-level locking. It also offers transaction support. As all Open Source packages, support is free via user groups on the Internet. However, unique to PostgreSQL, commercial support is provided by multiple vendors. PostgreSQL is considered by many to be the low-cost database of choice for complex database applications.

So, which database should you choose? It depends on your project's specific requirements and budget. It should always be kept in mind that no database system is a perfect fit for all projects. The table below should help you in your choice:

Database	Cost	Speed	End-User Friendly	Foreign Keys	Multi-User	Scalability	Stability
MS Access	Low	Slow	Yes	Yes	Unsafe	Poor	Poor
Hypercard	Low	Slow	Yes	No	No	Nonexistent	Excellent
FileMaker	Low	Mid	Yes	Yes	Yes	Good	Excellent
SQL Server	Mid	Fast	No	Yes	Yes	Average	Average
IBM DB2	High	Fast	No	Yes	Yes	Excellent	Excellent
Oracle	High	Fast	No	Yes	Yes	Excellent	Excellent
My SQL	Low	Fast	No	No	Yes	Good	Good
PostgreSQL	Free	Fast	No	Yes	Yes	Average	Good

#### Footnotes

1 FileMaker is also available on the Linux and Windows platforms. However, it is used most often on Mac OS.

2 MySQL recently added support for foreign keys and row-level locking in InnoDB format tables.

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