

# Comparison of relational database management systems





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The following tables compare general and technical information for a number of relational database management systems. Please see the individual products' articles for further information. This article is not all-inclusive or necessarily up-to-date. Unless otherwise specified in footnotes, comparisons are based on the stable versions without any add-ons, extensions or external programs.

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## General information

	<b>Maintainer</b> 	<b>First public release date</b> 	<b>Latest stable version</b> 	<b>Softw</b>
<b>4th Dimension</b>	4D s.a.s	1984	v11 SQL	P
<b>Adabas</b>	Software AG	1970	?	
<b>Adaptive Server Enterprise</b>	Sybase	1987	15.0	P
<b>Apache Derby</b>	Apache	2004	10.3.1.4	Apá
<b>DB2</b>	IBM	1982	9	P
<b>DBISAM</b>	Elevate Software ( <a href="http://www.elevatesoft.com">http://www.elevatesoft.com</a> )	?	4.25	P
<b>ElevateDB</b>	Elevate Software ( <a href="http://www.elevatesoft.com">http://www.elevatesoft.com</a> )	?	1.01	P
<b>Firebird</b>	Firebird project ( <a href="http://www.firebirdsql.org">http://www.firebirdsql.org</a> )	July 25, 2000	2.0.1	( <a href="http://www.firebirdsql.org">http://www.firebirdsql.org</a> ) ( <a href="http://www.firebirdsql.org">http://www.firebirdsql.org</a> )
<b>Informix</b>	IBM	1985	11.0	P
<b>HSQldb</b>	HSQl Development Group	2001	1.8.0	
<b>H2</b>	H2 Software	2005	1.0	]
<b>Ingres</b>	Ingres Corp.	1974	Ingres 2006 II 9.0.4	GPL &
<b>InterBase</b>	CodeGear	1985	2007	P
<b>MaxDB</b>	MySQL AB, SAP AG	?	7.6	GPL
<b>Microsoft Access</b>	Microsoft	1992	12 (2007)	P
<b>Microsoft Visual Foxpro</b>	Microsoft	?	9 (2005)	P
<b>Microsoft SQL Server</b>	Microsoft	1989	9.00.3042 (2005 SP2)	P
<b>MonetDB</b>	The MonetDB Developer Team ( <a href="http://www.monetdb.nl">http://www.monetdb.nl</a> )	2004	4.16 (Feb. 2007)	MonetDB ( <a href="http://monetdb.cwi.nl/L">http://monetdb.cwi.nl/L</a> )
<b>MySQL</b>	MySQL AB	November 1996	5.0.45	GPL
<b>HP NonStop SQL</b>	Hewlett-Packard	1987	SQL MX 2.0	P

<b>Oracle</b>	Oracle Corporation	November 1979	11g Release 1 (September 2007)	P
<b>Oracle Rdb</b>	Oracle Corporation	1984	7.2	P
<b>OpenEdge</b>	Progress Software Corporation	1984	10.1B	P
<b>OpenLink Virtuoso</b>	OpenLink Software ( <a href="http://www.openlinksw.com/">http://www.openlinksw.com/</a> )	1998	4.5.3 (April 2006)	GPL
<b>Pervasive PSQL</b>	Pervasive Software	?	9	P
<b>PostgreSQL</b>	PostgreSQL Global Development Group ( <a href="http://www.postgresql.org/developer/">http://www.postgresql.org/developer/</a> )	June 1989	8.2.5	
<b>Pyrrho DBMS</b>	University of Paisley	November 2005	0.5	P
<b>SmallSQL</b>	SmallSQL	April 16, 2005	0.19	
<b>SQL Anywhere</b>	Sybase	1992	10.0	P
<b>SQLite</b>	D. Richard Hipp	August 17, 2000	3.5.1	Pub
<b>Teradata</b>	Teradata	1984	V2R8.2	P
<b>Valentina</b>	Paradigma Software	February 1998	3.0.1	P

## Operating system support

The operating systems the RDBMSes can run on.

	Windows ☒	Mac OS X ☒	Linux ☒	BSD ☒	UNIX ☒	z/OS <sup>1</sup> ☒
<b>4th Dimension</b>	Yes	Yes	No	No	No	No
<b>Adabas</b>	Yes	No	Yes	No	Yes	Yes
<b>Adaptive Server Enterprise</b>	Yes	Yes	Yes	Yes	Yes	No
<b>Apache Derby<sup>2</sup></b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>DB2</b>	Yes	No	Yes	No	Yes	Yes
<b>Firebird</b>	Yes	Yes	Yes	Yes	Yes	Maybe
<b>HSQldb<sup>2</sup></b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>H2<sup>2</sup></b>	Yes	Yes	Yes	Yes	Yes	Maybe
<b>Informix</b>	Yes	No	Yes	Yes	Yes	No
<b>Ingres</b>	Yes	No	Yes	Yes	Yes	Maybe
<b>InterBase</b>	Yes	Yes	Yes	No	Yes (Solaris)	No
<b>MaxDB</b>	Yes	No	Yes	No	Yes	Maybe
<b>Microsoft Access</b>	Yes	No	No	No	No	No
<b>Microsoft Visual Foxpro</b>	Yes	No	No	No	No	No
<b>Microsoft SQL Server</b>	Yes	No	No	No	No	No
<b>MonetDB</b>	Yes	Yes	Yes	No	Yes	No
<b>MySQL</b>	Yes	Yes	Yes	Yes	Yes	Maybe
<b>Oracle</b>	Yes	Yes	Yes	No	Yes	Yes
<b>Oracle Rdb<sup>3</sup></b>	No	No	No	No	No	No
<b>OpenEdge</b>	Yes	No	Yes	No	Yes	No
<b>OpenLink Virtuoso</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>PostgreSQL</b>	Yes	Yes	Yes	Yes	Yes	No
<b>Pyrrho DBMS</b>	Yes (.NET)	No	Yes (Mono)	No	No	No
<b>SmallSQL<sup>2</sup></b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>SQL Anywhere</b>	Yes	Yes	Yes	No	Yes	No
<b>SQLite</b>	Yes	Yes	Yes	Yes	Yes	Maybe
<b>Teradata</b>	Yes	No	Yes	No	Yes	No
<b>Valentina</b>	Yes	Yes	Yes	No	No	No

Note (1): Open source databases listed as UNIX-compatible will likely compile and run under z/OS's

built-in UNIX System Services (USS) subsystem. Most databases listed as Linux-compatible can run alongside z/OS on the same server using Linux on zSeries.

Note (2): The database availability depends on Java Virtual Machine not on the operating system

Note (3): Oracle Rdb was originally developed by DEC, and runs on OpenVMS

## **Fundamental features**

Information about what fundamental RDBMS features are implemented natively.

	<b>ACID</b> 	<b>Referential integrity</b> 	<b>Transactions</b> 	<b>Unicode</b> 	<b>Interface</b> 
<b>4th Dimension</b>	?	?	?	?	?
<b>Adabas</b>	?	?	?	?	?
<b>Adaptive Server Enterprise</b>	Yes	Yes	Yes	Yes	?
<b>Apache Derby</b>	Yes	Yes	Yes	Yes	?
<b>DB2</b>	Yes	Yes	Yes	Yes	SQL
<b>Firebird</b>	Yes	Yes	Yes	Yes	SQL
<b>HSQLDB</b>	Yes	Yes	Yes	Yes	?
<b>H2</b>	Yes	Yes	Yes	Yes	?
<b>Informix</b>	Yes	Yes	Yes	Yes	?
<b>Ingres</b>	Yes	Yes	Yes	Yes	?
<b>InterBase</b>	Yes	Yes	Yes	Yes	SQL
<b>MaxDB</b>	Yes	Yes	Yes	Yes	?
<b>Microsoft Access</b>	No	Yes	Yes	Yes	?
<b>Microsoft Visual Foxpro</b>	No	Yes	Yes	?	?
<b>Microsoft SQL Server</b>	Yes	Yes	Yes	Yes	SQL
<b>MonetDB</b>	Yes	Yes	Yes	Yes	?
<b>MySQL</b>	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	SQL
<b>Oracle</b>	Yes	Yes	Yes	Yes	SQL
<b>Oracle Rdb</b>	Yes	Yes	Yes	Yes	?
<b>OpenEdge</b>	Yes	No <sup>5</sup>	Yes	Yes	?
<b>OpenLink Virtuoso</b>	Yes	Yes	Yes	Yes	?
<b>PostgreSQL</b>	Yes	Yes	Yes	Yes	?
<b>Pyrrho DBMS</b>	Yes	Yes	Yes	Yes	?
<b>SQL Anywhere</b>	Yes	Yes	Yes	Yes	?
<b>SQLite</b>	Yes	No <sup>4</sup>	Basic <sup>4</sup>	Yes	?
<b>Teradata</b>	Yes	Yes	Yes	Yes	?
<b>Valentina</b>	No	Yes	No	Yes	?

Note (3): For transactions and referential integrity, the InnoDB table type must be used; Windows installer sets this as default if support for transactions is selected, on other operating systems the default table type is MyISAM. However, even the InnoDB table type permits storage of values that exceed the data range; some view this as violating the Integrity constraint of ACID.

Note (4): FOREIGN KEY constraints are parsed but are not enforced. Triggers can be used instead. Nested transactions are not supported. [1] (<http://www.sqlite.org/omitted.html>)

Note (5): Available via Triggers.

## Limits

Information about data size limits.

	Max DB size	Max table size	Max row size	Max columns per row	Max Blob/Clob size	Max CHAR size	Max NUMBER size
<b>DB2</b>	512TB	512TB	32,677 bytes	1012	2GB	32KB	64 bits
<b>Firebird</b>	> 30 TB	37 GB compressed?	32,767 bytes	?	2GB	?	?
<b>Microsoft Access</b>	2GB	2GB	16MB	255	64KB (memo field)	255 bytes (text field)	32 bits
<b>Microsoft Visual Foxpro</b>	4GB	4GB	?	?	?	?	32 bits
<b>Microsoft SQL Server</b>	524,258TB (32,767 files * 16TB max file size)	524,258TB	8060 bytes	1024	2GB	8000 bytes	64 bits
<b>MySql 5</b>	Unlimited	2GB (Win32 FAT32) to 16TB (Solaris)	64KB	3398	4GB (longtext, longblob)	64KB (text)	64 bits
<b>Oracle</b>	Unlimited (4GB * block size per tablespace)	4GB * block size (with BIGFILE tablespace)	Unlimited	1000	4GB (or max datafile size for platform)	4000 bytes	126 bits
<b>PostgreSQL</b>	Unlimited	32TB	1.6TB	250-1600 depending on type	1GB (text, bytea) - stored inline	1GB	64 bits

## Tables and views

Information about what tables and views (other than basic ones) are supported natively.

	<b>Temporary table</b>	<b>Materialized view</b>
<b>4th Dimension</b>	?	?
<b>Adabas</b>	?	?
<b>Adaptive Server Enterprise</b>	Yes <sup>5</sup>	No
<b>Apache Derby</b>	Yes	No
<b>DB2</b>	Yes	Yes
<b>Firebird</b>	Will be in 2.1	No (only common views)
<b>HSQLDB</b>	Yes	No
<b>H2</b>	Yes	No
<b>Informix</b>	Yes	Yes
<b>Ingres</b>	Yes	Ingres r4
<b>InterBase</b>	Yes	No
<b>MaxDB</b>	Yes	No
<b>Microsoft Visual Foxpro</b>	Yes	Yes
<b>Microsoft SQL Server</b>	Yes	Yes
<b>MonetDB</b>	Yes	No
<b>MySQL</b>	Yes	No <sup>6</sup>
<b>Oracle</b>	Yes	Yes
<b>Oracle Rdb</b>	Yes	Yes
<b>OpenEdge</b>	Yes	No
<b>OpenLink Virtuoso</b>	Yes	Yes
<b>PostgreSQL</b>	Yes	No <sup>7</sup>
<b>Pyrrho DBMS</b>	No	No
<b>SQL Anywhere</b>	Yes	Yes
<b>SQLite</b>	Yes	No
<b>Teradata</b>	Yes	Yes
<b>Valentina</b>	Yes	No

Note (5): Server provides tempdb, which can be used for public and private (for the session) temp tables.[2]  
([http://sybooks.sybase.com/onlinebooks/group-as/asg1250e/sag/@Generic\\_\\_BookTextView/3225;](http://sybooks.sybase.com/onlinebooks/group-as/asg1250e/sag/@Generic__BookTextView/3225;))

Note (6): Materialized views can be emulated using stored procedures and triggers.[3]  
(<http://pure.rednoize.com/archives/13/>) .

Note (7): Materialized views can be emulated with stored procedures and triggers using PL/pgSQL,

PL/Perl, PL/Python, or other procedural languages.[4]

([http://jonathangardner.net/PostgreSQL/materialized\\_views/matviews.html](http://jonathangardner.net/PostgreSQL/materialized_views/matviews.html)) .

## Indices

Information about what indices (other than basic B-/B+ tree indices) are supported natively.

	<b>R-/R+ tree</b> 	<b>Hash</b> 	<b>Expression</b> 	<b>Partial</b> 	<b>Reverse</b> 	<b>Bitmap</b> 	<b>GiST</b> 	<b>GIN</b> 
<b>4th Dimension</b>	?	?	?	?	?	?	?	?
<b>Adabas</b>	?	?	?	?	?	?	?	?
<b>Adaptive Server Enterprise</b>	No	No	No	No	Yes	No	No	No
<b>Apache Derby</b>	No	No	No	No	No	No	No	No
<b>DB2</b>	No	?	No	No	Yes	Yes	No	No
<b>Firebird</b>	No	No	Yes	No	Yes <sup>16</sup>	No	No	No
<b>HSQldb</b>	No	No	No	No	No	No	No	No
<b>H2</b>	No	Yes	No	No	No	No	No	No
<b>Informix</b>	Yes	Yes	Yes	Yes	Yes	Yes	No	No
<b>Ingres</b>	Yes	Yes	Ingres r4	No	No	Ingres r4	No	No
<b>InterBase</b>	No	No	No	No	No	No	No	No
<b>MaxDB</b>	?	?	No	No	No	No	No	No
<b>Microsoft Visual Foxpro</b>	No	No	Yes	Yes	Yes <sup>18</sup>	Yes	No	No
<b>Microsoft SQL Server</b>	?	Non/Cluster & fill factor	Yes <sup>8</sup>	Yes <sup>9</sup>	Yes <sup>8</sup>	No	No	No
<b>MonetDB</b>	No	Yes	No	No	No	No	No	No
<b>MySQL</b>	MyISAM tables only	MEMORY, Cluster (NDB), InnoDB, <sup>17</sup> tables only	No	No	No	No	No	No
<b>Oracle</b>	EE edition only	Cluster Tables	Yes	Yes <sup>15</sup>	Yes	Yes	No	No
<b>Oracle Rdb</b>	No	Yes	?	No	No	?	No	No
<b>OpenLink Virtuoso</b>	Yes	Cluster	Yes	No	No	Yes	No	No
<b>PostgreSQL</b>	Yes	Yes	Yes	Yes	Yes <sup>10</sup>	Yes <sup>11</sup>	Yes	Yes
<b>Pyrrho DBMS</b>	No	No	No	No	No	No	No	No
<b>SQL Anywhere</b>	No	No	No	No	No	No	No	No
<b>SQLite</b>	No	No	No	No	Yes	No	No	No

<b>Teradata</b>	No	Yes	Yes	Yes	No	Yes	No	No
<b>Valentina</b>	No	No	Yes <sup>8</sup>	Yes <sup>17</sup>	Yes	Yes	No	No

Note (8): Can be implemented by indexing a computed column or by using an indexed view. [5]  
([http://msdn.microsoft.com/library/default.asp?url=/library/en-us/createdb/cm\\_8\\_des\\_05\\_8os3.asp](http://msdn.microsoft.com/library/default.asp?url=/library/en-us/createdb/cm_8_des_05_8os3.asp))

Note (9): Can be implemented by using an indexed view. [6]  
(<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnsq12k/html/indexedviews1.asp>)

Note (17): InnoDB automatically generates adaptive hash index  
(<http://dev.mysql.com/doc/refman/5.0/en/innodb-adaptive-hash.html>) entries as needed.

Note (10): A PostgreSQL functional index can be used to reverse the order of a field.

Note (11): PostgreSQL will likely support on-disk bitmap indexes in 8.3. Version 8.2 supports a related technique known as "in-memory bitmap scans".

Note (15): Can be implemented using Function-based Indexes in Oracle 8i and higher.

Note (16): The users need to use a function from freeAdhocUDF library or similar. [7]  
([http://www.udf.adhoc-data.de/index\\_eng.html](http://www.udf.adhoc-data.de/index_eng.html))

Note (17): Can be implemented using Function-based Indexes in Valentina.

Note (18): Can be implemented for most data types using expression-based indexes.

## Database capabilities

	<b>Union</b> 	<b>Inner joins</b> 	<b>Outer joins</b> 	<b>Inner selects</b> 	<b>Merge</b> 	<b>Blobs and Clobs</b> 
<b>4th Dimension</b>	?	?	?	?	?	?
<b>Adabas</b>	?	?	?	?	?	?
<b>Adaptive Server Enterprise</b>	Yes	Yes	Yes	Yes	No	No
<b>Apache Derby</b>	Yes	Yes	Yes	?	?	Yes
<b>DB2</b>	Yes	Yes	Yes	?	Yes	Yes
<b>Firebird</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>HSQldb</b>	?	?	?	?	?	?
<b>H2</b>	Yes	Yes	Yes	?	?	Yes
<b>Informix</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Ingres</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>InterBase</b>	?	Yes	Yes	?	?	Yes
<b>MaxDB</b>	?	?	?	?	?	?
<b>Microsoft Visual Foxpro</b>	Yes	Yes	Yes	Yes	?	Yes
<b>Microsoft SQL Server</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>MonetDB</b>	?	?	?	?	?	?
<b>MySQL</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Oracle</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Oracle Rdb</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>OpenEdge</b>	Yes	Yes	Yes	?	?	Yes
<b>OpenLink Virtuoso</b>	Yes	Yes	Yes	Yes	?	Yes
<b>PostgreSQL</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Pyrrho DBMS</b>	?	?	?	?	?	?
<b>SmallSQL</b>	?	?	?	?	?	?
<b>SQL Anywhere</b>	?	?	?	?	?	?
<b>SQLite</b>	Yes	Yes	LEFT only	?	?	?
<b>Teradata</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Valentina</b>	Yes	Yes	Yes	Yes	Yes	Yes

## Other objects

Information about what other objects are supported natively.

	<b>Data Domain</b> 	<b>Cursor</b> 	<b>Trigger</b> 	<b>Function</b> <sup>12</sup> 	<b>Procedure</b> <sup>12</sup> 	<b>External routine</b> <sup>12</sup> 
<b>4th Dimension</b>	?	?	?	?	?	?
<b>Adabas</b>	?	?	?	Yes?	Yes?	?
<b>Adaptive Server Enterprise</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Apache Derby</b>	No	Yes	Yes	Yes <sup>13</sup>	Yes <sup>13</sup>	Yes <sup>13</sup>
<b>DB2</b>	No	Yes	Yes	Yes	Yes	Yes
<b>Firebird</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>HSQLDB</b>	?	No	Yes	Yes	Yes	Yes
<b>H2</b>	Yes	No	Yes	Yes	Yes	Yes
<b>Informix</b>	?	Yes	Yes	Yes	Yes	Yes
<b>Ingres</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>InterBase</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>MaxDB</b>	Yes	Yes	Yes	Yes	Yes	?
<b>Microsoft Visual Foxpro</b>	No	Yes	Yes	Yes	Yes	Yes
<b>Microsoft SQL Server</b>	Yes (2000 and beyond)	Yes	Yes	Yes	Yes	Yes
<b>MonetDB</b>	No	No	Yes	Yes	Yes	Yes
<b>MySQL</b>	No	Yes	Yes	Yes	Yes	Yes
<b>OpenEdge</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Oracle</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Oracle Rdb</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>OpenLink Virtuoso</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>PostgreSQL</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>Pyrrho DBMS</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>SQL Anywhere</b>	Yes	Yes	Yes	Yes	Yes	Yes
<b>SQLite</b>	No	No	Yes	No	No	Yes
<b>Teradata</b>	No	Yes	Yes	Yes	Yes	Yes
<b>Valentina</b>	No	Yes	Yes	Yes	Yes	No

Note (12): Both **function** and **procedure** refer to internal routines written in SQL and/or procedural language like PL/SQL. **External routine** refers to the one written in the host languages, such as C,

Java, Cobol, etc. "Stored procedure" is a commonly used term for these routine types. However, its definition varies between different database vendors.

Note (13): In Derby, users code **functions** and **procedures** in Java.

## Partitioning

Information about what partitioning methods are supported natively.

	Range	Hash	Composite (Range+Hash)	List	Shadow	Native Replication API
<b>4th Dimension</b>	?	?	?	?	?	?
<b>Adabas</b>	?	?	?	?	?	?
<b>Adaptive Server Enterprise</b>	Yes	Yes	No	Yes	?	?
<b>Apache Derby</b>	No	No	No	No	?	?
<b>IBM DB2</b>	Yes	Yes	Yes	Yes	?	?
<b>Firebird</b>	No	No	No	No	Yes	Yes
<b>HSQldb</b>	?	?	?	?	?	?
<b>Informix</b>	Yes	Yes	Yes	Yes	?	?
<b>Ingres</b>	Yes	Yes	Yes	Yes	?	?
<b>InterBase</b>	No	No	No	No	Yes	Yes
<b>MaxDB</b>	No	No	No	No	?	?
<b>Microsoft Visual Foxpro</b>	No	No	No	No	No	No
<b>Microsoft SQL Server</b>	Yes	No	No	No	?	?
<b>MonetDB</b>	Yes (M5)	Yes (M5)	Yes (M5)	No	?	?
<b>MySQL</b>	Yes (5.1.6)	Yes (5.1.6)	Yes (5.1.6)	Yes (5.1.6)	?	?
<b>Oracle</b>	Yes	Yes	Yes	Yes	?	?
<b>Oracle Rdb</b>	Yes	Yes	?	?	?	?
<b>OpenLink Virtuoso</b>	Yes	No	No	No	?	?
<b>PostgreSQL</b>	Yes <sup>14</sup>	Yes <sup>14</sup>	Yes <sup>14</sup>	Yes <sup>14</sup>	?	?
<b>Pyrrho DBMS</b>	No	No	No	No	?	?
<b>SQL Anywhere</b>	No	No	No	No	?	?
<b>SQLite</b>	No	No	No	No	?	?
<b>Teradata</b>	Yes	Yes	Yes	Yes	?	?
<b>Valentina</b>	No	No	No	No	?	?

Note (14): PostgreSQL 8.1 provides partitioning support through check constraints. Range, List and Hash methods can be emulated with PL/pgSQL or other procedural languages. [8]  
(<http://developer.postgresql.org/docs/postgres/release.html#RELEASE-8-1>)

## Databases vs Schemas (terminology)

The SQL specification makes clear what an "SQL schema" is; however, different databases implement it incorrectly. To compound this confusion the functionality can, when incorrectly implemented, overlap with that of the parent-database. An SQL schema is simply a namespace within a database, things within this namespace are addressed using the member operator dot ". ". This seems to be a universal amongst all of the implementations.

A true fully (database, schema, and table) qualified query is exemplified as such: `select * from database.schema.table`

Now, the issue, both a schema and a database can be used to isolate one table, "foo" from another like named table "foo". The following is pseudo code:

- `select * from db1.foo` vs. `select * from db2.foo` (no explicit schema between db and table)
- `select * from [db1.]default.foo` vs. `select * from [db1.]alternate.foo` (no explicit db prefix)

The problem that arises is that former MySQL users will mistakenly create multiple databases for one project. In this context MySQL databases are analogous in function to Postgres-schemas, inasmuch as Postgres lacks off-the-shelf cross-database functionality that MySQL has. Conversely, Postgres has rightfully applied more of the specification, in a sane-bottom-up approach, implementing cross-table, cross-schema, and then left room for future cross-database functionality.

MySQL aliases *schema* with *database* behind the scenes, such that `create schema` and `create database` behave identically. It can be said that MySQL therefore has implemented cross-table functionality, skipped schema functionality entirely and provided similar functionality into their implementation of a database. In summary, Postgres fully supports schemas, but lacks some functionality MySQL has with databases, while MySQL doesn't even attempt to support true schemas.

The end result is spin from both communities. While the Postgres community maintains that one database is all that is needed for one project, MySQL claims that schemas have no legitimate purpose when the functionality can be achieved with databases. Postgres adheres to more of the SQL specification in a more intuitive fashion (bottom-up), while MySQL's pragmatic counterargument allows their users to get the job done without any major drawback.

## See also

- List of relational database management systems
- Comparison of object-relational database management systems
- Comparison of database tools

## External links

- Comparison of different SQL implementations against SQL standards (<http://troels.arvin.dk/db/rdbms/>) . Includes Oracle, DB2, Microsoft SQL Server, MySQL and PostgreSQL. (08/Jun/2007)
- Comparison of Oracle 8/9i, MySQL 4.x and PostgreSQL 7.x DBMS against SQL standards (<http://www-css.fnal.gov/dsg/external/freeware/mysql-vs-pgsql.html>) . (14/Mar/2005)
- Comparison of Oracle and SQL Server ([http://www.wisdomforce.com/dweb/resources/docs/MSSQL2005\\_ORACLE10g\\_compare.pdf](http://www.wisdomforce.com/dweb/resources/docs/MSSQL2005_ORACLE10g_compare.pdf)) . (2004)
- Comparison of geometrical data handling in PostgreSQL, MySQL and DB2 (<http://wiki.astrogrid.org/pub/Astrogrid/DataFederationandDataMining/cross.htm>) (29/Sep/2003)
- Open Source Database Software Comparison (<http://www.geocities.com/mailsoftware42/db/>) (Mar/2005)
- PostgreSQL vs. MySQL vs. Commercial Databases: It's All About What You Need (<http://www.devx.com/dbzone/Article/20743>) (12/Apr/2004)
- The SQL92 standard (<http://www.contrib.andrew.cmu.edu/~shadow/sql/sql1992.txt>)

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"[http://en.wikipedia.org/wiki/Comparison\\_of\\_relational\\_database\\_management\\_systems](http://en.wikipedia.org/wiki/Comparison_of_relational_database_management_systems)"

Categories: Software comparisons | Database management systems

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