



Firebird

... going where you're going

Firebird Technical Specifications

Updated 2007-07-16 and subject to review

Database Limits

Item	Firebird 2.x	Firebird 1.5
Maximum size of database	Practically unlimited using multiple database files (largest known database is over 980 GB)	32 TB using multiple files
Maximum size of one database file	Multiple terabytes on most platforms; limited by file systems (4 GB or 2 GB on some platforms)	Same
Maximum number of database files	64.535	Same
Maximum number of tables	64.535	Same
Maximum size of one table	~32 TB	~36 GB
Maximum size of external table file	2 GB	Same
Maximum number of rows per table	> 16 Billion (not been measured beyond this). Note: 1 Billion is 1024^3	~ 4 Billion
Maximum row size	65.536 bytes (64 KB)	Same
Maximum database page size	16 KB Note: Page size (PAGE_SIZE) can be 1024, 2048, 4096, 8192 or 16384. Size 1024 is not recommended.	Same
Maximum number of columns per table	Depends on data types used. (Example: 16384 INTEGER (4-byte) values per row.) Note: 8-byte ID is stored for each BLOB or ARRAY reference; size of BLOB or ARRAY data is not counted in row size.	
Maximum number of indexes per table	65.535	Same
Maximum size (total width) of index key	4096 bytes when page size is 16 KB (limited to $\frac{1}{4}$ of database page size). Important: Limit decreases for character columns when character set is multi-byte; non-binary collation further reduces limit.	252 bytes
Maximum number of indexes per database	4.398.046.511.104	Same

Data Type Specifics

Name	Size	Range/Precision	Description
Varchar(n)	n chars	1 to 32,767 bytes	Variable length char or text string. NB, multi-byte character sets reduce number of possible characters proportionately
Smallint	16 bits	-2 ¹⁵ to 2 ¹⁵ -1	Signed short (word)
Integer	32 bits	-2 ³¹ to 2 ³¹ -1	Signed long (longword)
Float	32 bits	3.4x10 ⁻³⁸ to 3.4x10 ³⁸	Accurate to 7 digits
Double Precision	64 bits	1.7x10 ⁻³⁰⁸ to 1.7x10 ³⁰⁸	Accurate to 15 digits
Timestamp	64 bits (2x32 bits)	1 jan 100 CE to 28 feb 32768 CE	Includes time and date as two 32-bit structures
Date	32 bits	1 jan 100 CE to 28 feb 32768 CE	Date only. Time part is not stored.
Time	32 bits	0:00 to 23:59,9999	
BLOB	< 32 GB		Stores data of variable indeterminate size
Numeric (<i>precision,scale</i>)	Variable (16, 32 or 64 bits)	specifies exactly <i>precision</i> digits of precision	Example: Numeric(10,3) holds numbers accurately in the following format: ppppppp.sss

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