

Firebird 2 Cheat Sheet

Author: Lorenzo Alberton, <https://www.alberton.info>

Firebird SQL Cheat Sheet - details

The cheat sheet is organized in 5 sections. The first section contains a list of the available datatypes, their description and the range of values that each of them supports.

The second section contains a list of the internal functions. The ones listed here are the Firebird 2 built-in functions; they're grouped by field of interest (aggregate, conditional, string functions).


The third section contains a list of the *Default UDF functions*. Firebird bundles a UDF library with some useful functions not included in the core. These functions are listed here, grouped by field of interest (mathematical and string functions).

The fourth section contains some useful queries, like the most useful queries to manage `TRANSACTIONS`s, `SAVEPOINTS`s, `SEQUENCES`s, a sample query with a `LIMIT / OFFSET` clause, and some queries against the System Tables to retrieve a list of the tables, fields, indices and constraints.

The last section holds a list of the PHP `ibase_*` functions. PHP has a Firebird/Interbase module and this is used by PHP developers to connect to, and query, a Firebird database. This section lists the functions available in PHP for connecting to and managing a Firebird database.

FireBird Data Types		FB internal functions	Default UDF Functions
BLOB	Variable ⁽¹⁾	Group COUNT, AVG, MIN, MAX, SUM	Mathematical ABS (value) ACOS (value) ASIN (value) ATAN (value) ATAN2 (val1, val2) BIN_AND (val1, val2) BIN_OR (val1, val2) BIN_XOR (val1, val2) CEILING (value) COS (value) COSH (value) COT (value) DIV (val1, val2) FLOOR (value) LN (value) LOG (base, value) LOG10 (value) MOD (val1, val2) PI RAND () SIGN (value) SIN (value) SINH (value) SQRT (value) TAN (value) TANH (value)
BIGINT	Integer, 64 bits (-2 x 10 ⁶³ to 2 x 10 ⁶³ -1)	Conditional CASE WHEN condition THEN result [WHEN ...] [ELSE result] END CASE condition WHEN val THEN result [WHEN ...] [ELSE result] END COALESCE (value [, ...]) IIF (condition, val1, val2) NULLIF (val1, val2)	String BIT_LENGTH (value) CHAR_LENGTH (value) LOWER (value) OCTET_LENGTH (value) SUBSTRING (str FROM start [FOR count]) TRIM ([LEADING TRAILING BOTH] [chars FROM] value) UPPER (value)
CHAR(n)	String, n characters (1 to 32,767 bytes ⁽²⁾)	Other CAST (value AS datatype) EXTRACT (part FROM ts)	String ASCII_CHAR (int) ASCII_VAL (char) LTRIM (value) STRLEN (value) SUBSTR (str, start, end)
DATE	Integer, 32 bits 01-01-100 to 31-12-9999	System CURRENT_CONNECTION CURRENT_DATE CURRENT_ROLE CURRENT_TIME CURRENT_TIMESTAMP CURRENT_TRANSACTION CURRENT_USER USER	
DECIMAL (precision [, scale])	Decimal (precision: 1-18, scale: 1-18) DECIMAL(8,3)=ppppp.sss		
DOUBLE PRECISION	Floating point, 64 bits 2.225 x 10 ⁻³⁰⁸ to 1.797 x 10 ³⁰⁸		
FLOAT	Floating point, 32 bits 1.175 x 10 ⁻³⁸ to 3.402 x 10 ³⁸		
INTEGER	Integer, 32 bits, signed -2,147,483,648 to 2,147,483,647		
NUMERIC (precision [, scale])	similar to DECIMAL(precision [, scale])		
SMALLINT	Integer, 16 bits (-32,768 to 32,767)		
TIME	Integer, 32 bits 0:00:00 to 23:59:59.9999		
TIMESTAMP	Integer, 64 bits		
VARCHAR(n)	String, up to n characters (0 to 32,765 bytes ⁽²⁾)		

(1) Dynamically sizeable datatype for storing large data such as graphics, text, and digitized voice. Blob subtype describes Blob contents.
(2) Charset character size determines the maximum number of characters that can fit in 32K.



Firebird®

Available on Windows, MacOS, Linux, BSD, Solaris, Unix, HP-UX

Many ways to access your database: native API, dbExpress drivers, ODBC, OLEDB, JDBC, .Net, Python, PHP, Perl...

You can write your own UDF functions in any programming language that is compiled into a shared library

Useful queries	FireBird functions in PHP5																																																		
<pre>-- Limit query SELECT FIRST limit SKIP offset * FROM table_name ... -- List tables SELECT RDB\$RELATION_NAME FROM RDB\$RELATIONS WHERE RDB\$SYSTEM_FLAG=0 AND RDB\$VIEW_BLR IS NULL -- List table fields SELECT RDB\$FIELD_NAME FROM RDB\$RELATION_FIELDS WHERE RDB\$RELATION_NAME='table_name' -- List table constraints SELECT RDB\$INDEX_NAME FROM RDB\$INDICES WHERE RDB\$RELATION_NAME='table_name' AND (RDB\$UNIQUE_FLAG IS NOT NULL OR RDB\$FOREIGN_KEY IS NOT NULL) -- List table indices SELECT RDB\$INDEX_NAME FROM RDB\$INDICES WHERE RDB\$RELATION_NAME='table_name' AND RDB\$UNIQUE_FLAG IS NULL AND RDB\$FOREIGN_KEY IS NULL -- Handle sequences (NB: they're called GENERATORS in FB 1.x) • CREATE DROP SEQUENCE name; • SET SEQUENCE name TO value; • SELECT GEN_ID(name, increment) FROM RDB\$DATABASE; • SELECT NEXT VALUE FOR name FROM RDB\$DATABASE; -- Transactions • SET TRANSACTION [READ WRITE READ ONLY] [WAIT NO WAIT] [ISOLATION LEVEL {SNAPSHOT [TABLE STABILITY]} READ COMMITTED [[NO] RECORD_VERSION]]; • SAVEPOINT name; • ROLLBACK [WORK] [TO [SAVEPOINT] name]; • COMMIT;</pre>	<table border="0"> <tr><td>ibase_add_user</td><td>ibase_field_info</td></tr> <tr><td>ibase_affected_rows</td><td>ibase_free_event_handler</td></tr> <tr><td>ibase_backup</td><td>ibase_free_query</td></tr> <tr><td>ibase_blob_add</td><td>ibase_free_result</td></tr> <tr><td>ibase_blob_cancel</td><td>ibase_gen_id</td></tr> <tr><td>ibase_blob_close</td><td>ibase_maintain_db</td></tr> <tr><td>ibase_blob_create</td><td>ibase_modify_user</td></tr> <tr><td>ibase_blob_echo</td><td>ibase_name_result</td></tr> <tr><td>ibase_blob_get</td><td>ibase_num_fields</td></tr> <tr><td>ibase_blob_import</td><td>ibase_num_params</td></tr> <tr><td>ibase_blob_info</td><td>ibase_param_info</td></tr> <tr><td>ibase_blob_open</td><td>ibase_pconnect</td></tr> <tr><td>ibase_close</td><td>ibase_prepare</td></tr> <tr><td>ibase_commit_ret</td><td>ibase_query</td></tr> <tr><td>ibase_commit</td><td>ibase_restore</td></tr> <tr><td>ibase_connect</td><td>ibase_rollback_ret</td></tr> <tr><td>ibase_db_info</td><td>ibase_rollback</td></tr> <tr><td>ibase_delete_user</td><td>ibase_server_info</td></tr> <tr><td>ibase_drop_db</td><td>ibase_service_attach</td></tr> <tr><td>ibase_errcode</td><td>ibase_service_detach</td></tr> <tr><td>ibase_errmsg</td><td>ibase_set_event_handler</td></tr> <tr><td>ibase_execute</td><td>ibase_timefmt</td></tr> <tr><td>ibase_fetch_assoc</td><td>ibase_trans</td></tr> <tr><td>ibase_fetch_object</td><td>ibase_wait_event</td></tr> <tr><td>ibase_fetch_row</td><td></td></tr> </table>	ibase_add_user	ibase_field_info	ibase_affected_rows	ibase_free_event_handler	ibase_backup	ibase_free_query	ibase_blob_add	ibase_free_result	ibase_blob_cancel	ibase_gen_id	ibase_blob_close	ibase_maintain_db	ibase_blob_create	ibase_modify_user	ibase_blob_echo	ibase_name_result	ibase_blob_get	ibase_num_fields	ibase_blob_import	ibase_num_params	ibase_blob_info	ibase_param_info	ibase_blob_open	ibase_pconnect	ibase_close	ibase_prepare	ibase_commit_ret	ibase_query	ibase_commit	ibase_restore	ibase_connect	ibase_rollback_ret	ibase_db_info	ibase_rollback	ibase_delete_user	ibase_server_info	ibase_drop_db	ibase_service_attach	ibase_errcode	ibase_service_detach	ibase_errmsg	ibase_set_event_handler	ibase_execute	ibase_timefmt	ibase_fetch_assoc	ibase_trans	ibase_fetch_object	ibase_wait_event	ibase_fetch_row	
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You can download the cheat sheet [here](#) or view at Lorenzo's website:

https://www.alberton.info/firebird_cheat_sheet.html

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