ISQL - Firebird Interactive SQL Tool

ISQL is a command-line tool for interactive SQL access to databases. It can also be used to perform administrative tasks in command-line environments (like (metadata) updates via a batch file).

General Syntax

```
isql <options> [<database>]

    or

isql -?
```

Options

Option	Description
`-a(ll)`	Extract metadata incl. legacy non-SQL tables
`-b(ail)`	Bail on errors (set bail on)
`-c(ache) <num>`	Number of cache buffers
`-ch(arset) <charset>`	Connection Character Set (set names)
`-d(atabase) <database>`	Database name to put in script creation
`-e(cho)`	Echo commands (set echo on)
`-ex(tract)`	Extract metadata
`-fet[ch_password] <filename>`	Instead of -password: Fetch password from the file so it is not visible in the command line. When <filename> is stdin, the user will be prompted for the password. [Firebird 2.5]
`-i(nput) <filename>`	Process SQL script file (set input)
`-m(erge)`	Merge standard error
`-m2`	Merge diagnostic
`-n(oautocommit)`	No autocommit DDL (set autoddl off)
`-nodbtriggers`	Suppresses Database Triggers from running. Only available to the database owner and SYSDBA [Firebird 2.1]
`-now(arnings)`	Do not show warnings
`-o(utput) <filename>`	Output file (set output)
`-pag(elength) <size>`	Page Length
`-p(assword) <password>`	Connection Password

`-q(uiet)`	Do not show the message "Use CONNECT..."
`-r(ole) <role>`	Role Name
`-r2 <role>`	Role (uses quoted identifier)
`-s(qldialect) <dialect>`	SQL Dialect (set sql dialect)
`-t(erminator) <term>`	Command Terminator (set term)
`-u(ser) <user>`	User Name
`-x`	Extract Metadata
`-z`	Show Program and Server Version

Interactive Mode

ISQL enters an interactive mode. Command lines start with a SQL> prompt, continuing lines with a CON> prompt.

NOTE that *every* command has to be terminated by a semi-colon (;).

```
C:\Programme\Firebird2\bin>isql
Use CONNECT or CREATE DATABASE to specify a database
SQL> connect elias:apqp user sysdba password masterkey;
Database:  elias:apqp, User: sysdba
SQL> _
```

You can now enter DDL, DML or special ISQL commands.

You can also specify the database directly in the isql call:

```
C:\Programme\Firebird2\bin>isql -user SYSDBA -password masterkey elias:apqp
Database:  elias:apqp, User: SYSDBA
SQL> exit;
```

ISQL Commands

You can get a list of commands by calling the HELP; command.

`BLOBDUMP <blobid> <file>`	Dump BLOB to a file
`BLOBVIEW <blobid>`	View BLOB in text editor
`EDIT [<filename>]`	Edit SQL script file and execute
`EDIT`	Edit current command buffer and execute
`HELP`	Display Help
`HELP SET`	Display Help for the SET command

`INput <filename>`	Take input from the named SQL file
`OUTput [<filename>]`	Write output to named file
`OUTput`	Return output to stdout
`SET <option>`	Set option. Use HELP SET for a complete list
`SHELL <command>`	Execute Operating System command in sub-shell
`SHOW <object> [<name>]`	Display system information on a database object. <object> can be: CHECK, COLLATIONS [FB2.5], DATABASE, DOMAIN, EXCEPTION, FILTER, FUNCTION, GENERATOR,GRANT, INDEX, PROCEDURE, ROLE, SQL DIALECT, SYSTEM, TABLE, TRIGGER, VERSION, VIEW
`EXIT`	Exit and Commit changes
`QUIT`	Exit and Roll back changes

SET Options

There are several options that influence the behaviour of ISQL (this list can be retrieved by calling HELP SET;)

`SET`	Display current SET options
`SET AUTOddl`	Toggle autocommit of DDL statements
`SET BAIL`	Toggle bailing out on errors in non-interactive mode
`SET BLOB [ALL|<n>]`	Display BLOBS of subtype <n> or ALL
`SET BLOB`	Turn off BLOB display
`SET COUNT`	Toggle count of selected rows on/off
`SET ECHO`	Toggle command echo on/off
`SET HEADING`	Toggle display of query column titles
`SET LIST`	Toggle column or table display format
`SET NAMES <csname>`	Set name of runtime character set
`SET PLAN`	Toggle display of query access plan
`SET PLANONLY`	Toggle display of query plan without executing
`SET SQL DIALECT <n>`	Set SQL Dialect to <n>
`SET STATs`	Toggle display of performance statistics

`SET TIME`	Toggle display of timestamp with DATE values
`SET TERM <string>`	Change statement terminator string
`SET WIDTH <col> [<n>]`	Set/unset print width to <n> for column <col>

By just calling SET without parameters you can get a list of all settings.

SET TERM

SET TERM is special in that it changes the statement termination character. The default statement termination character is a semi-colon. However, if you want to create or alter a Stored Procedure or Trigger, the semi-colons contained in the body would also terminate the command that define the procedure. So to define a stored procedure:

- Use SET TERM to change the statement termination to something that does not occur in your procedure
- Create or alter your Stored Procedure or Trigger
- Terminate this command with the new termination character
- Change the termination character back to a semi-colon using SET TERM

Example

```
SQL> set term ^ ;
SQL> create procedure Mul (a integer, b integer)
CON>   returns (Result integer)
CON> as begin
CON>   Result = a * b;
CON>   suspend;
CON> end ^
SQL> set term ; ^
```

Note that the *end* statement of the procedure is terminated with a caret (^) instead of a semi-colon (;). The caret has been defined as the new termination character by the first SET TERM statement.

Running SQL Scripts

You can run an SQL script by using the `-i` command line option. To further suppress the "Use CONNECT or CREATE DATABASE to specify a database" message that appears everytime when ISQL starts, use the `-q` option.

```
C:\Programme\Firebird2\bin>isql -q -i c:\Scripts\CreateScript.sql

C:\Programme\Firebird2\bin>
```

In this case, the script must contain a CONNECT or CREATE DATABASE command.

Scripts should also use SET NAMES to define the Client Character Set they use.